

## Protecting teens from the dangers of alcohol use and abuse: wishful thinking versus science

Convened by Mothers Against Drunk Driving, American Medical Association, National Transportation Safety Board and Insurance Institute for Highway Safety to support 21 minimum drinking age

Presentation by Adrian Lund, IIHS president  
October 9, 2007 • Washington, D.C.

In 1972, at a conference on road safety in Canberra, Australia, William Haddon Jr., M.D., the first head of what is now the National Highway Traffic Safety Administration and President of IIHS from 1969-1985, talked about the beginning of a transition “away from a pre-scientific period. That is, from a period in which folk culture has dominated — in which virtually everyone, both in and out of public life, has been a self-certified expert with his own pet, dogmatically advanced panacea — in which the notion has been virtually absent that public and private conclusions, pronouncements and measures to reduce the losses should be based on well-done, carefully scientific determinations of relevance and efficacy rather than on the unsubstantiated assertions of some individual or group.”

We are here today because this transition to science-based approaches to reducing the deaths and injuries from motor vehicle crashes is not yet complete. Thirty-five years later, John M. McCardell, Jr. has mounted a campaign to reduce the drinking age from 21 to 18 in the United States. His justification — a desire to reduce the clandestine and sometimes biologically dangerous levels of alcohol consumption among 18-20 year-olds — is laudable. However, his reasoning about what works is quintessentially pre-scientific. Highway safety policies need to be grounded in solid research, not wishful thinking. His arguments are demonstrably wrong. My comments today are limited to his two central theses:

- that the benefits of the 21-year-old drinking age are unproven; and
- that alcohol education for teens promises to be more effective in dealing with the problem of teen alcohol use and abuse.

Both theses are contradicted by fact.

### Teen crashes vary with drinking age laws

On his website, Mr. McCardell says, “Advocates of the 21-year-old drinking age have long argued that the decrease in fatalities was a result of the lowered drinking age but cannot offer a cause and effect relationship.”

That view ignores 30 years of research. ▶

currently encountered with the 50th percentile surrogate" — an adult size test dummy — "in sled tests at 50 miles per hour are considered solvable by the contractor."

• DOT has tested, with human volunteers, a passive "advanced belt restraint system" developed by Takata-Kojyo Co., Ltd. The "dynamic human volunteer test runs" were at 22.5 and 25 miles per hour, DOT said; "the volunteer has sustained no injuries and will probably volunteer to ride again at 27.5 miles per hour. These runs are the highest injury-free tests ever attained by human volunteers restrained by automotive type lap and shoulder belts."

• Under still another DOT contract (DOT-HIS-053-2-280), Calspan Corp. has developed a system that combines air bags and "collapsible" energy-managing dashboards. As described by Calspan in a "final report" published last month, the energy-managing "collapsible panel section of the restraint system provides adequate protection for all occupant sizes larger than 50 pounds at impact speeds up to at least 20 miles per hour without the necessity of deploying the air bag.

"The restraint system performance is generally satisfactory in restraining a 95th percentile male in a 45 mile per hour frontal impact. Somewhat better performance was achieved in protecting a 50 pound child (6 year old) and a 50th percentile male at speeds of 40 and 50 miles per hour, respectively."

Status Report, April 9, 1974

Lowered Drinking Age Brings Increased Highway Deaths

State laws reducing legal minimum drinking ages to 18 years of age represent "social policy that by the

Lowered Drinking Age Brings Increased Highway Deaths

d to 18

Wisconsin — where the legal drinking age was dropped from 21 to 18 in either 1971 or 1972 — with fatal crash involvement of similar drivers in Indiana, Illinois and Minnesota — where the legal drinking age was 21.

The researchers estimated that for each 100,000 of their numbers in the population, 15-20 year-olds were involved in 2.6 to 3.3 more fatal crashes in the first year after the legal drinking age was lowered than would have been expected from prior experience.

"The estimated number of 15-20 year-olds involved in fatal crashes, in the year after the legal minimum drinking age was reduced, that would not have been involved had the law not changed, was approximately 19 in Michigan, 26 in Ontario and 13 in Wisconsin," the researchers said.

In studying the effects of lowering the legal drinking age, the researchers found "a significant increase in involvement in fatal crashes of drivers under 21 in areas that changed the law, particularly in nighttime and single vehicle crashes where alcohol is most often involved."

Only one state — Wisconsin — had "adequate data on blood alcohol concentration in fatally injured drivers." In those data the researchers found that "almost half (48 per cent) of the 15-17 year-olds and

Status Report

April 9, 1974

insurance institute for highway safety

the highway loss reduction

Status Report

Vol. 16, No. 10

July 15, 1981

DOT Seeks to Kill National Driver Register

Transportation Secretary Drew Lewis has asked Congress to abolish the National Driver Register (NDR), a file to help states identify problem drivers.

The draft measure would make official the Department of Transportation's (DOT) informal abandonment of the program indicated in its appropriations request for winding down the program during fiscal 1982.

One of the oldest highway safety programs still

Raising Drinking Age Reduces Fatal Crashes

A substantial reduction in nighttime fatal crashes involving young drivers has been found by Insurance Institute for Highway Safety researchers in states that have recently raised their legal minimum drinking age.

By January of this year, 14 states had raised their minimum drinking age since 1976, reversing the trend of the early 1970's when more than half of the states lowered the minimums. In those 14 states (including nine states studied and five others) the researchers estimated about 380 fewer young drivers are involved each year in nighttime fatal crashes since the minimums were raised.

Among the nine states studied there were reductions in the nighttime fatal crash rate of affected drivers in eight of the states, ranging from 6 to 75 percent. "Any single state that raises its drinking age can expect the involvement in nighttime fatal crashes of the age groups to which the change in the law applies to drop by about 28 percent," the researchers reported.

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Raising Drinking Age Reduces Fatal Crashes

who often hold multiple licenses. (See Status Report, Vol. 15, No. 4, March 5, 1980.)

William Haddon, Jr., M.D., first head of the National Highway Traffic Safety Administration (NHTSA) and since 1969 president of the Insurance Institute for Highway Safety, said: "Cutting off the flow of driver license information enabled by the register will directly impair highway law enforcement and increase the maiming and killing of Americans throughout the United States. Such a step would make sense only if better sources of such information were otherwise already available."

In a letter to Congress accompanying the draft bill, Lewis said the reason for abolishing the register is that it is not effective. Not all states participate in the register, Lewis said, either because of state privacy laws or because the

(Cont'd on page 6)

Status Report, July 15, 1981

Protecting Company Car Drivers

Fleet Buyers Get Latest Facts and Figures

More than 200 risk managers and fleet administrators attended a day-long Capitol Hill meeting on Dec. 11 to discuss the latest advances in automatic restraints and their availability for company automobiles.

The meeting was sponsored by the Insurance Institute for Highway Safety, together with the National Safety Council and the National Association of Governors' Highway Safety Representatives.

"For the first time," noted Brian O'Neill, Institute president, "a number of car manufacturers are beginning to put air bags and other automatic protection in their new cars. Next year, every manufacturer will be offering automatic crash protection — air bags or automatic belts — on some of their models. So now is the time to seriously consider a policy of buying cars with automatic restraints in order to better protect your company employees."

Sen. Jack Danforth, Missouri Republican, talked of the tragic experience of his niece who was hit by a car nine years ago. A high school senior, she had just been accepted by St. Lawrence University. She lay in a coma for a month



Lautenberg: There can be a profound effect.

Status Report, December 28, 1985

Study of States Shows Raising of Drinking Age Reduces Fatal Crashes

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State laws that have raised the alcohol purchase age since 1975 have resulted in 13 percent fewer nighttime fatal driver crash involvements of youthful drivers covered by the laws, report researchers from the Massachusetts Institute of Technology and the Insurance Institute for Highway Safety.

Based on 26 states that had raised their minimum purchase age during the study period — a much larger number of states than studied previously — the study con-

Danforth's presentation was followed by a panel of public and private sector experts who discussed the importance of motor vehicle occupant safety in achieving corporate safety goals. Next, automobile company representatives discussed the availability and costs of air bags and automatic belts. After a noon address by Sen.

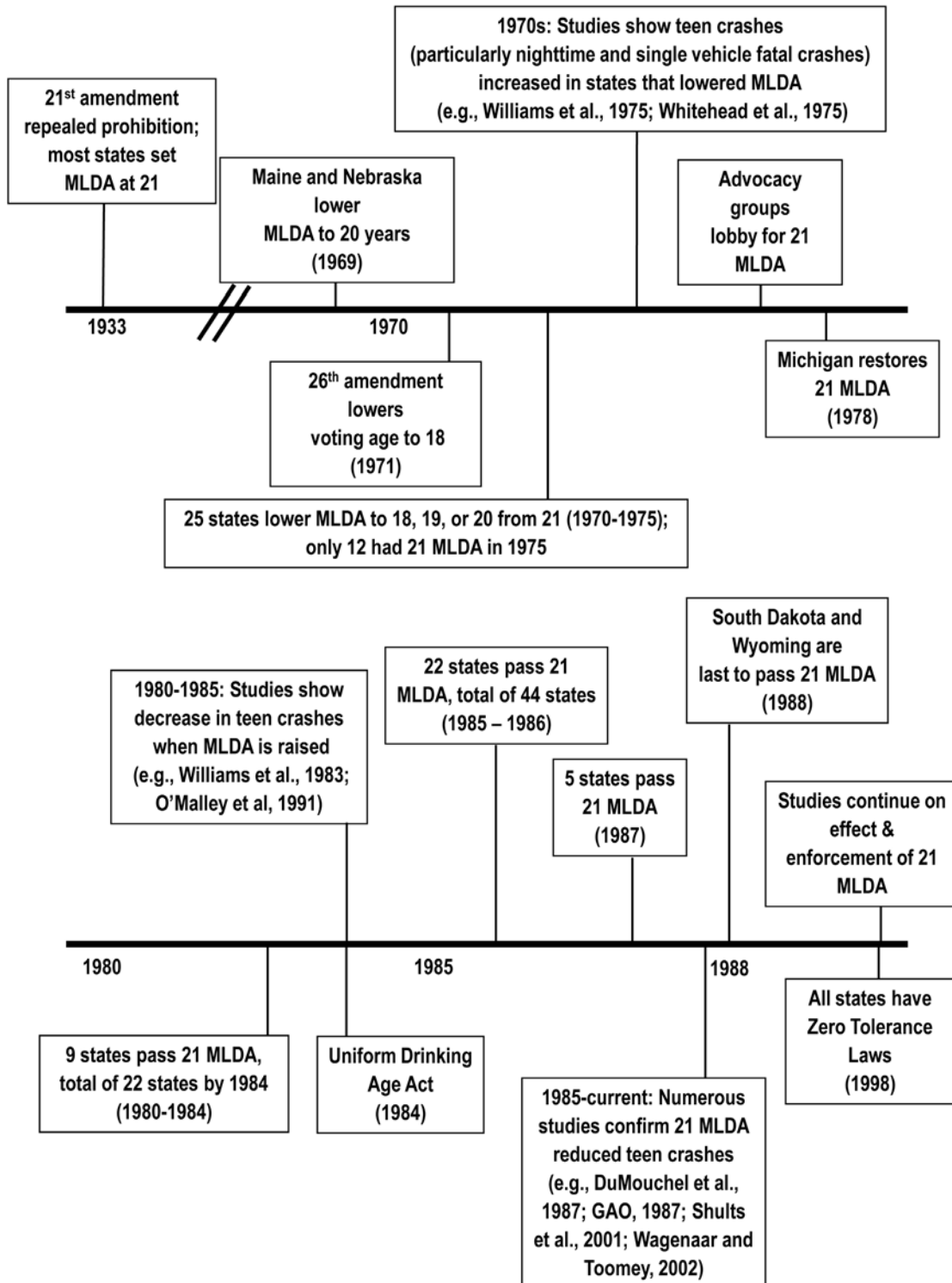
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The truth is, the cause and effect are clear. If we lower the drinking age, we will be killing more teens on the highway. Actions among the states in lowering, raising, lowering, and raising again the age at which it is legal to purchase alcohol have provided a series of opportunities to evaluate the effects of these changes on motor vehicle crashes.

In the 1960s and 70s, in the context of the Vietnam war and lowering the voting age to 18, many states also lowered the drinking age from 21 to 18.

### History of US minimum legal drinking age (MLDA) laws



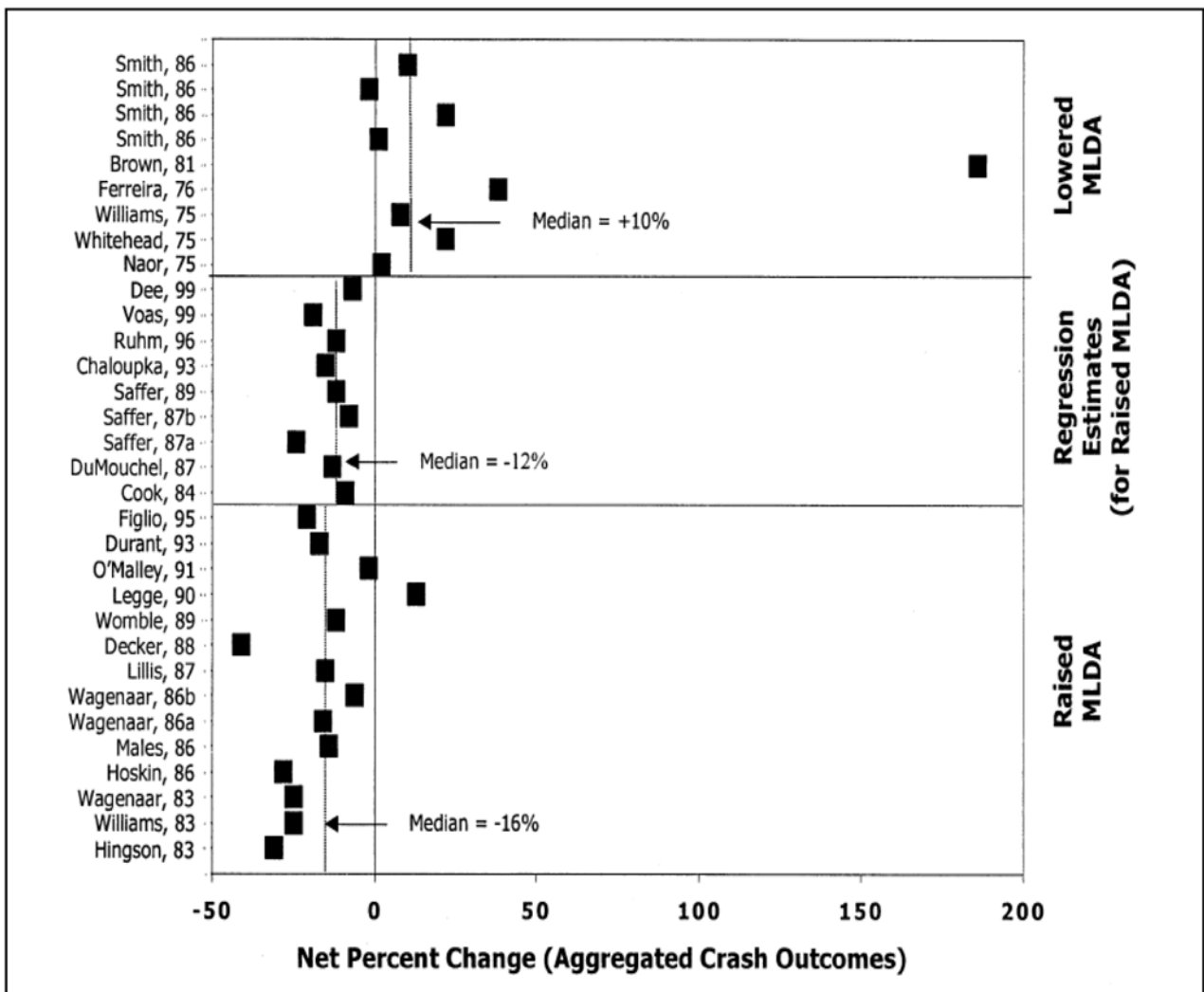
IIHS's first study in 1974 looked at two states and one Canadian province that lowered the drinking age, carefully comparing their experience to that of adjacent states that did not change. That study showed that the number of 15-20 year-olds involved in fatal crashes increased in the jurisdictions that lowered the drinking age.

Subsequently, in the late 1970s, states began to increase drinking ages again. Again, it was possible to compare states that made this change to states that didn't. Again, we saw a change related to the drinking age — this time, fatal crash rates declined as teen drinking and teen drinking and driving declined.

IIHS has been a leader in studying the effect of drinking age, but it hasn't been alone.

The CDC identified many more strong, empirical studies examining the effects of either raising or lowering the minimum drinking age.

**CDC review of evidence regarding interventions to reduce alcohol-impaired driving, Shults et al., 2001**



Although there's variation, the effects are consistent: deaths go up when the drinking age is lowered and they go down when it is raised. The 21-year-old drinking age is saving lives.

## Drinking education won't counteract easier availability of alcohol

While ignoring the vast literature confirming the public health benefit of the 21-year-old minimum drinking age, Mr. McCardell asserts that drinking education could effectively supplant and improve upon 21-year-old drinking laws in combating the problem of alcohol among 18-20 year-olds. What's the evidence?

Mr. McCardell offers none. Nor is there much in the way of evidence about what effect drinking education might have on 18-20 year-olds. However, there is evidence about the effects of driver education, which offers some insights about how drinking education and a drinking license, as recommended by McCardell, might affect teens.

It isn't encouraging.

*Status Report, May 12, 1984*

4 — *IIHS Status Report, Vol. 19, No. 8, May 12, 1984*

### Amendment to Restore 5 MPH Bumpers Added To Car Theft Bill

The Senate Commerce Committee has voted to report a bill to the floor that would restore the 5 mph bumper rule and require manufacturers to stamp identification numbers on components of their most frequently stolen car models.

By a ten to five vote, the Commerce, Science, and Transportation Committee endorsed the unexpected amendment to S. 1400, offered by Sen. Jack Danforth, Missouri Republican, despite the opposition of Sen. Donald Riegle, Michigan Democrat.

Danforth noted that in 1982, when former National Highway Traffic Safety Administration (NHTSA) head Raymond Peck announced the rollback of the rule from a 5 mph crash test standard to a 2.5 mph rule, three promises were made:

bill, that contains a provision to restore the bumper rule. Because of its controversial nature, Danforth said it is unlikely to wend its way to the floor. By attaching the provision to the theft bill, he said its chances for consideration would be considerably enhanced.

The theft bill is the product of lengthy negotiations between automakers, the transportation subcommittee, and the bill's chief sponsor, Sen. Charles Percy, Illinois Republican.

Riegle said the automobile companies had agreed to drop their opposition to the bill prior to the addition of the bumper amendment. The version reported by the committee would require automakers to stamp certain parts of only those vehicles with a record of high theft rates. Riegle admitted the measure would apply to only about 70 percent of those vehicles in the "high theft" category.

The bill would also increase criminal penalties for trafficking in stolen vehicles and component parts, its sponsors say.

### Federal Study Finds No Improvement Following Driver Ed Courses

An extensive government study of about 16,000 high-school students has reported that neither a specially augmented driver education course emphasizing safety nor a less elaborate program of instruction has resulted in lower crash involvement or traffic violations.

The final report on the \$4 million dollar project, begun in September 1976, has been prepared by Battelle Columbus Laboratories for the National Highway Traffic Safety Administration. According to the authors, it is part of a 12-year evaluation of driver education.

The project, sometimes called the DeKalb County, Georgia, driver education demonstration program, was designed to test "the crash reduction potential of a quality competency-based driver training program known as the Safe Performance Curriculum (SPC)." The course involved 70 hours of instruction, including classroom, simulation, range, and on-street training. A second course—more typical of high school driver education courses—providing only the minimum training necessary to obtain a driver license, Pre-Driver Licensing (PDL), was also evaluated. Students who wanted to take driver education were randomly assigned to one of these courses or to a control group of pupils who did not receive high school driver

### Federal Study Finds No Improvement Following Driver Ed Courses

*Status Report, Vol. 19, No. 6, April 14, 1984.*

"The results were really remarkable," said Danforth. "The difference in the bumpers was approximately \$300 to the consumer" in low speed crashes.

Danforth said arguments in favor of the weaker rule are "really nonexistent" with the exception of a possibility brought up by a witness during a subcommittee hearing.

That witness said "that it was simply a matter of the automobile companies trying to sell parts, and that they could sell more parts — which is a very profitable business — if they had simply ornamental bumpers on cars, not if they had bumpers that really work," Danforth said.

Earlier this year, the full committee considered and reported S. 1108, an omnibus motor vehicle safety

Again, IIHS has done much of the research on driver education, a fair task since, in years past, much of the funding for driver education in high schools came from insurers. However, when IIHS studied the effects of driver education carefully in the 1970s, a main finding was that teen crashes tended to be higher when high school driver education was available. In the late 1970s, this correlation was confirmed when Connecticut stopped state funding for high school driver education, and many schools in the state dropped the course. The result was fewer teen crashes, based on our study that compared those schools with schools that continued to fund driver education locally.

In response to criticism that these driver education courses were too simplistic, the U.S. DOT spent millions to develop a model course. It was called the Safe Performance Curriculum and was submitted to a proper study in DeKalb County, Georgia. When compared to other high school students who received either no driver education or a more basic information course, the result was the same: SPC increased the number of teens getting licensed and the number involved in crashes. This is an unintended consequence of driver education — it can encourage earlier licensure that is not offset by any improvement in knowledge or skill.

**DeKalb County, Georgia test of model driver education**  
*Lund et al., 1986*

- Students assigned to SPC were at significantly greater hazard of crashing and of receiving traffic violations than control students.
- No evidence that SPC reduced the per capita likelihood of crashes or violations
- SPC drivers had more crashes and violations despite the fact that they were more skilled when licensed.
- High school driver education courses do not decrease the crashes and violations among teenagers as a group.
- Greater availability of driver's education leads to earlier licensure which in turn leads to more crashes and violations per capita.

Driver education can help drivers learn to operate vehicles and to understand why traffic laws are what they are. Driver education, however, is not itself an effective public health strategy. Drinking education will teach teens about alcohol, but it may only produce better educated drinking and driving teenagers while at the same time making our highways more dangerous. McCardell offers no scientific evidence to the contrary.

## Summary

The scientific evidence is clear.

Lowering the legal age to purchase and consume alcohol to 18 would increase the number of 18-20 year-olds killed or injured in motor vehicle crashes.

### What does the evidence show?

- Lowering the drinking age to 18 would increase the number of 18-20 year-olds dying on our nation's highways
- There is no evidence that drinking education will offset these effects
- Evidence from driver education is that we could get more drinking teenagers as a result of drinking education as licensed teenagers will explain that schools have said they know how to drink

Others too would die in crashes involving drinking teenagers.

Experience with driver education suggests that drinking education wouldn't counteract this effect. In fact, one implication of driver education experience is that exposing students to drinking education could increase the number drinking. Receiving a license to drink could cause teens and some parents to conclude that the school thinks their teens will drink safely.

This is not the path to reducing the problem of teenage drinking — it is a proven formula for increasing the number of dead teens. Clandestine underage drinking is a problem, but lowering the drinking age is not a solution. ■