Study Finds that Rigorous Graduated Teen Driver Licensing Programs Reduce Traffic Fatalities

Examining the effects of state alcohol policy and motor vehicle fatalities among young adults

SUMMARY

Many states have established graduated driver licensing programs that require teen drivers to advance through distinct stages before receiving full driver licenses.

Between May 2003 and September 2004, Michael Morrisey, PhD, at the University of Alabama at Birmingham, examined the effects of graduated driver licensing programs on motor vehicle fatalities among teenagers. Morrisey worked with research colleagues at Swarthmore College and Harvard University.

The project was part of the Robert Wood Johnson Foundation's (RWJF) national Substance Abuse Policy Research Program (SAPRP) (for more information see the Program Results Report).

Key Findings

- Graduated driver licensing programs reduced overall traffic fatalities among 15–17-year-olds by 5.6 percent, or 131 teen deaths per year.

- More rigorous graduated driver licensing programs were more effective in reducing fatalities among 15–17-year-olds than less rigorous programs. "Good" programs reduced fatalities by 19.2 percent; "fair" programs reduced fatalities by 5.8 percent; and "marginal" programs had no effect on fatalities. The Insurance Institute for Highway Safety, a nonprofit organization dedicated to reducing death, injury and damage from highway crashes, has defined these concepts. See the Appendix for the states in each category.

- Graduated driver licensing programs reduced teen passenger fatalities but not driver fatalities when other teens were in a car driven by a 15–17 year old.

Funding

RWJF supported the project with a grant of $137,609.
THE PROBLEM

In 1999, the federal Centers for Disease Control and Prevention (CDC) characterized improvements in motor vehicle safety as one of the 10 great public health achievements of the 20th century. These gains have been particularly striking for young adults, the age group with the highest traffic fatality risk.

- Between 1975 and 1992, traffic fatality rates for 16–20-year-olds fell from 39 per 100,000 people to 28, a reduction of more than 25 percent, according to the National Highway Traffic Safety Administration.

- These gains are due to factors such as minimum legal drinking ages, mandatory seatbelt laws and drunk driving regulations.

Since 1992, the annual traffic fatality rate of young adults has stabilized at about 29 deaths per 100,000 people, according to researchers at Harvard University and the University of Alabama at Birmingham.


The CDC estimates that one-quarter to one-third of young adult motor vehicle fatalities are associated with blood alcohol concentration levels of 0.10 or higher.

Graduated Driver Licensing Programs

To reduce fatalities, by 2002, 39 states had enacted graduated driver licensing programs that give new young drivers opportunities to drive in the presence of experienced drivers and limit high-risk driving situations likely to involve alcohol or to cause fatalities. These programs vary across states but generally involve some combination of the following:

- A learner's phase requiring a licensed driver to be in the vehicle for a young driver's first months of driving.

- An intermediate phase allowing new young drivers to drive only during daylight and early evening hours and/or with a limited number of passengers.

- Full licensure available after the intermediate phase and sometimes only at age 17 or older.

THE PROJECT

Michael Morrisey, PhD, at the University of Alabama at Birmingham, and research colleagues at Swarthmore College and Harvard University examined the effects of graduated driver licensing programs and other alcohol control policies on teen traffic
fatalities. Traffic fatalities include motor vehicle crashes that occur on a public road and involve a fatality (driver, passenger or non-motorist) within 30 days of the crash.

Using data from the Fatality Analysis Reporting System of the National Highway Traffic Safety Administration, researchers:

- Analyzed traffic fatalities among 15–17-year-olds each year from 1992 to 2002 for all states except Alaska and Hawaii and the District of Columbia.
- Analyzed fatalities among drivers aged 18 to 26 to ascertain whether reduced fatalities among 15–17-year-olds resulting from graduated driver licensing programs merely delayed those fatalities until young drivers received their full licenses.

**Definition of Graduated Driver Licensing Programs**

Researchers compared teen traffic fatalities with each state's graduated driver licensing program, using categories created by the Insurance Institute for Highway Safety. These categories are the following:

- "Good" programs:
  - Have mandatory learner's periods of at least six months and
  - Restrict night driving or the number of passengers until the driver is age 17.
- "Fair" programs:
  - Restrict night driving or the number of passengers until the driver is age 17 or
  - Have mandatory learner's periods of any length and restrict either night driving or the number of passengers until the driver is age 16½.
- "Marginal" programs:
  - Have mandatory learner's periods of any length and restrict either night driving or the number of passengers, or
  - Have mandatory learner's periods of six months or longer, or
  - Restrict either night driving or the number of passengers.

See the Appendix for listings of states in each category.

To isolate the effects of graduated driver licensing programs from other state policies and environments that might affect fatalities, researchers:

- Analyzed state drunk driving laws, mandatory seatbelt laws, increased speed limits and unemployment rates.
• Accounted for differences across states in enforcement of traffic laws and weather patterns and for changes such as motor vehicle improvements.

Communications

Researchers reported findings in articles published in the *Journal of Health Economics* and in *Accident Analysis & Prevention*. See the Bibliography for details.

Researchers presented findings:

• At annual meetings of the RWJF *Substance Abuse Policy Research Program*.

• To the Unintentional Injury Committee of the Emergency Response Commission to Address the Health Care Crisis in Alabama.

• At a seminar at the Medical University of South Carolina.

FINDINGS

Morrisey and colleagues reported the following findings in articles published in the *Journal of Health Economics* and in *Accident Analysis & Prevention*:

• **Graduated driver licensing programs reduced overall traffic fatalities among 15–17-year-olds by 5.6 percent, or 131 teen deaths per year.** (*Journal of Health Economics*)

• **More rigorous graduated driver licensing programs were more effective in reducing fatalities among 15–17-year-olds than less rigorous programs.**
  — Good programs reduced 15–17-year-old fatalities by 19.2 percent.
  — Fair programs reduced fatalities by 5.8 percent;
  — Marginal programs had no statistically significant effect on fatalities. (*Accident Analysis & Prevention*)

• **Graduated driver licensing programs reduced teen passenger fatalities but not driver fatalities when other teens were in a car driven by a 15–17 year old.**
  — Good programs reduced teen passenger fatalities by 34.6 percent.
  — Fair programs reduced fatalities by 13.8 percent.
  — Marginal programs reduced fatalities by 22.7 percent. (*Accident Analysis & Prevention*)

See the Bibliography for details.
Graduated driver licensing programs affected teen driver fatalities as follows:

- Good programs reduced nighttime driver fatalities by 10.1 percent. Researchers noted that only one of the good programs included a restriction on night driving, making the effect of good programs on nighttime fatalities hard to determine.

- Fair programs reduced nighttime driver fatalities by 12.6 percent.

- Good programs reduced daytime driver fatalities by 29.0 percent.

- Neither fair nor marginal programs had an effect on daytime driver fatalities.

(Accident Analysis & Prevention)

Reduced motor vehicle fatalities among 15–17-year-olds were not offset by increases in fatalities among those teenagers when they got older. There was no evidence of a delay in fatalities because of graduated driver licensing programs. (Accident Analysis & Prevention)

Unemployment rates, speed limit laws and seatbelt enforcement laws had no effect on fatalities. Blood alcohol levels had a small, but not statistically significant, effect. (Accident Analysis & Prevention)

Limitations

Project researchers noted the following limitations to the study in an article published in Accident Analysis & Prevention.

- Graduated driver licensing programs, especially good programs, are relatively new and there is not a long track record on which to judge their effectiveness.

- This study was unable to measure the extent and consistency of enforcement of graduated driver licensing programs among the states.

- The data used for the study do not indicate "blame" for the crashes; some fatalities were likely the result of errors by other, older drivers.

- The lack of a national database of non-fatal crashes limited the evaluation of the effects of these laws to fatal crashes only.

CONCLUSIONS

Researchers offered the following conclusions from the study in an article published in Accident Analysis & Prevention.

- Some graduated driver licensing programs have been very successful in reducing fatalities among 15–17-year-olds, and the more stringent programs are more effective than programs rated as marginal or fair.
- **Positive effects can result from different licensing program features.** The mandatory learning periods in good programs may improve overall driving skills and reduce fatalities; imposing a 10:00 p.m. driving curfew in good programs could save substantial numbers of lives.

- **Restrictions on the number of passengers do not appear to have been effective in reducing young driver fatalities but have saved the lives of teenage passengers, perhaps by simply putting fewer passengers at risk, rather than reducing the "distraction factor."**

**AFTERWARD**

With funds from the Federal Highway Administration, Morrisey and colleagues are examining changes in state speed limit laws and ways that younger and older drivers respond to those changes. As of January 2006, Morrisey had applied for a grant from the *Substance Abuse Policy Research Program* to study alcohol-related teen traffic fatalities and the effects of gasoline prices and beer taxes.

---

**Prepared by: Mary Nakashian**
Reviewed by: Mary B. Geisz and Molly McKaughan
Program Officers: Victor A. Capoccia and Michelle A. Larkin
Grant ID # 48279
Program area: Vulnerable Populations (formerly Addiction Prevention and Treatment, and Tobacco)
APPENDIX

States by Driver Licensing Category

(Current as of the end date of the program; provided by the program’s management; not verified by RWJF.)

States with "Good" Programs (7):
California
Georgia
Massachusetts
New Hampshire
Oregon
Tennessee
Washington

States with "Fair" Programs (23):
Alabama
Colorado
Delaware
Florida
Illinois
Indiana
Iowa
Louisiana
Maryland
Michigan
Missouri
New Jersey
New Mexico
New York
North Carolina
Ohio
Pennsylvania
Rhode Island
South Carolina
Texas
Utah

States with "Marginal" Programs (13):
Arkansas
Connecticut
Idaho
Kentucky
Maine
Minnesota
Mississippi
Nebraska
Nevada
North Dakota
South Dakota
West Virginia
Wisconsin

States with no graduated driver licensing programs (5):
Arizona
Kansas
Montana
Oklahoma
Wyoming

Note: Alaska and Hawaii were not included in the study.
BIBLIOGRAPHY

(Current as of date of the report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

Articles
