



Evaluation of Iowa's graduated driver's licensing program

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ABSTRACT

The effectiveness of Iowa's graduated driver's licensing (GDL) program was evaluated for a 4-year period before and after implementation in 1999. Since some changes had occurred in the crash reporting format, changes in crash rates for younger drivers were compared to those for 35–44-year-old drivers (middle-age group of drivers) who were used as a control group.

After implementation of GDL, the 14-, 16- and 17-year-old age groups experienced a greater decrease in crash rate than the middle-age control group while 15-year-old experienced a smaller decrease. This suggests that the crash rate for 15-year-old drivers may actually have increased when downward trends were adjusted for. Iowa's GDL program allows holders of the instruction permit to travel unaccompanied to and from school and school-endorsed activities after obtaining a minor school license. Fifteen-year-old with minor school licenses account for up to 26.7% of 15-year-old license holders yet represent up to 74.8% of 15-year-old drivers involved in crashes (depending on the year) from 1998 to 2004. As a result, 15-year-old drivers with minor school licenses are involved in 7.2–8.9 times more crashes, are 7.7 times more likely to have one or more sanctions, and are 4.8 times more likely to receive one or more moving convictions than their peers with a regular instruction permit. This help may explain why 15-year-old drivers did not seem to benefit from implementation of the GDL program in Iowa.

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1. Background

Motor vehicle crashes are the leading cause of death for 15–20-year-old in the United States, representing about one-third of all fatalities in this age group. 15–20-year-old also make up only 6.3% of the driving population but are involved in 12.6% of all traffic fatalities (NHTSA, 2005). Crash rates are dramatically higher for younger drivers than for older drivers. In the United States in 1995, the crash rate per million miles driven for 16–19-year-old was more than double the rate for drivers in their 1920s and more than four times the rate for drivers ages 30–69.

In order to combat the number and severity of crashes among teenage drivers, as of 2007 all states and the District of Columbia have passed legislation for GDL programs (IIHS, 2007). A graduated licensing process allows younger drivers to learn the driving pro-

cess in stages. Most programs have a three-stage approach which consists of a “learner” stage requiring supervised driving at all times, an “intermediate” stage which allows unsupervised driving with restrictions and conditions, and then full licensure. Most states allow teenagers to obtain their “learner” permit between ages 15.5 and 16 (Baker et al., 2007).

The impact of GDL programs has generally been positive. In 1983, California implemented a GDL program and evaluated its effect on 16- and 17-year-old. Teens could get a learner's permit at age 15, a provisional license at age 16, and a full adult license at age 17. Both driver education and driver training were required, and parents had to certify that the student had the required hours of driving practice (NHTSA, 2004). California's GDL became a law rather than a program in July of 1998. The California GDL program has a stringent passenger restriction (no passengers under age 20 for the first 6 months), and a 1-year nighttime driving restriction (midnight to 5:00 a.m.). Five years after the initiation of California's GDL program, a report issued by the California Department of Motor Vehicles found that GDL contributed to a 5.3% reduction in the rate of crashes involving drivers ages 15–17 (NHTSA, 2004).

The GDL program in Florida was instituted in 1996 for drivers younger than 18. Drivers holding learner's licenses are restricted from driving between 7:00 p.m. and 6:00 a.m. Learner's licenses

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are held for 6 months before drivers are eligible for an intermediate license. Nighttime driving restrictions for 16-year-old with intermediate licenses are from 11:00 p.m. to 6:00 a.m. and for 17-year-old from 1:00 a.m. to 6:00 a.m. Drivers younger than 18 have a limit on the number of violations they can accumulate; and drivers younger than 21 are subject to a zero tolerance law for drinking and driving. Crash data for Florida teenage drivers from 1995 to 1997 was compared with crash data from Alabama, which did not have a GDL program in place at the time. A 9% reduction in fatal and injury crashes resulted for the 15–17-year-old age group after implementation of GDL. No reduction was noted for 18-year-old drivers (Ulmer et al., 2000).

Mayhew et al. (2003) examined month-to-month changes in collisions among new drivers in Nova Scotia prior to the enactment of a GDL program. They calculated crash rate per driver and evaluated novices (drivers from 6 months to 24 months from first licensing), in age groups 16–19 and 20 and older. A regression model indicated that among novice drivers the crash rate for younger novice drivers was significantly higher during the first few months of driving alone than the older age group. Mayhew et al. also found that both age groups had a reduction in crash rate as experience increased. Both groups experienced a significant decline in crashes during the first 7 months after licensing; although the effect was more significant for younger, rather than older drivers.

Baker et al. (2007) recently conducted a nationwide review of GDL programs. They evaluated the effectiveness of programs based on the number of and types of restrictions present in the GDL program using an analysis of fatal and injury crashes. Forty-three states were evaluated using fatalities and 35 states were evaluated for injury crashes. Baker et al. evaluated the period from 1994 to 2004 in quarters (3-month periods), in terms of whether a GDL was in place for the quarter. They used a population-based exposure estimate and considered whether programs had the following components:

- Minimum age of 16 years for learner's permit.
- Learner's permit must be held for at least 6 months before driving unsupervised.
- At least 30 h of supervised driving during the learner stage.
- Nighttime driving restriction starting at least by 10:00 p.m.
- Passenger restriction of no more than one teenage passenger except for family members.
- Minimum age of 16.5 years for intermediate license.
- Minimum age of 17 years for full licensure.

Baker et al. found an 11% lower fatal crash rate for 16-year-old drivers for all programs with a three-stage GDL program, regardless of which specific components were used, as compared to programs that did not have a three-stage GDL program. They also found a 21% lower fatal crash involvement rate for 16-year-old drivers when a GDL included four of the above components and a 38% lower crash rate when five GDL components were in effect. Baker et al. also found that when fewer than four components were present there was no statistically significant reduction in fatal crashes.

Baker et al. also found an injury crash rate for 16-year-old drivers that was 19% lower when any GDL program was in place and a 40% lower injury crash rate when a program had five of the GDL components. Their study suggests that the type of restrictions is a critical component of a GDL program.

Shope and Molnar (2003) summarized the results of 17 states who had enacted GDL programs from 1996 to 1999. Overall they found that all states had identified some crash reduction after enacting a GDL. They also indicated that fatal or injury crash involvement for 16-year-old drivers had decreased by 11% for

Florida and 24% for Michigan. Involvement in any type of crash decreased for 16-year-old by 35% in Michigan and 27% in North Carolina. A later study by Shope (2007) summarized more recent results of GDL programs in 14 jurisdictions. Shope found that crash reductions were reported for almost all the studies and that results were somewhat consistent with reductions in crashes from 20% to 40% being reported.

2. Description of Iowa's GDL program

Prior to the enactment of Iowa's current GDL program, young people were able to get an instruction permit at age 14 by passing the Iowa written driver's test and providing a signed state parental consent form. In order to get a driver's license by age 16, a young person had to complete a state approved driver education course (30 classroom hours and 6 h of driving). There were no restrictions on driving times or number of passengers, no provisions for early driver improvement intervention, and no requirements for continued parental supervision of driving. Once the young person got his or her "regular" driver's license, the only restriction that applied to this young person because of his or her age and new driver status was "zero tolerance" for a 0.02 alcohol level which would result in license revocation. In every other instance, the young person with an Iowa driver's license was subject to the same driver restrictions as the adult driver.

The Iowa GDL program was implemented on 1 January 1999 and has three stages. An instruction permit is available at age 14. Instruction permit holders must be supervised by a licensed adult driver and must complete 20 h of supervised driving with a minimum of 2 h between sunrise and sunset. A teenage driver must hold the instruction permit for a minimum of 6 months and drive accident and conviction free for 6 consecutive months immediately preceding application for an intermediate license. Driver's education is required during the instruction permit stage and consists of 30 h of classroom time and 6 h of driving.

Iowa has a provision that allows instruction permit holders who are 16 years old and younger to obtain a minor school license which allows the licensee to travel unaccompanied to and from the school of attendance and school-endorsed activities by the most direct route. The school license is available after the applicant has held an instruction permit for 6 months and has been crash and conviction free for that period. However, minor school license holders are not required to carry any documentation about times when endorsed school activities are occurring or a map showing their home and the shortest location to the school. As a result, an officer who stops a solo minor school license holder has no way of verifying whether this minor is complying with the terms of the minor school license or is driving alone to other activities.

An intermediate license is available at age 16 and must be held for 12 months. A nighttime restriction requires that the teenage driver be supervised by a licensed adult driver between the hours of 12:30 a.m. and 5:00 a.m. Intermediate license holders must complete 10 h of supervised driving with a minimum of 2 h from sunrise to sunset. If a driver is convicted of a moving violation or contributes to a crash, he or she is required to attend a remedial driver interview with his or her parents before a Department of Transportation (DOT) driver's license representative. As a minimum, the driver is required to retain his or her intermediate license for another year. Additionally, new restrictions may be added to the license by the DOT or the driver may have his or her license downgraded to an instruction permit or have the license suspended.

The number of passengers that can ride in a vehicle with a young driver is limited by the number of seat belts in the car for both the instruction permit and intermediate license stages.

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