

## GRADUATED DRIVER LICENSING EVALUATION RESULTS FROM EARLY PROGRAMS IN THE UNITED STATES

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Graduated driver licensing (GDL) allows young novice drivers to gain experience and maturity under conditions of low risk before progressing to more risky driving situations. GDL addresses youthful risk taking by limiting access to driving privileges and providing serious consequences for driving infractions. Although a comprehensive approach to GDL was proposed as early as the 1970s (Waller, 1977), only recently has the concept gained widespread acceptance in the United States, with many of the legislative initiatives having been undertaken in the late 1990s. Thirty-six U.S. jurisdictions now have adopted three-stage GDL systems, and 48 U.S. jurisdictions have one or more elements of GDL (Williams and Mayhew, 2003). Early evaluation results for the six states that had comprehensive GDL programs in place long enough to evaluate (California, Florida, Michigan, North Carolina, Ohio, and Pennsylvania), and for which at least preliminary evaluation results were available, are reported here. Results from a recent evaluation update of Michigan's GDL program also are reported.

GDL PROGRAMS - Program features vary across the six states. California, Michigan, Ohio, and Pennsylvania have a learner stage lasting 6 months; Florida and North Carolina require a 12-month learner stage. The minimum age for attaining a learner stage license ranges from 14 years, 9 months in Michigan to 16 years in Pennsylvania (with California, Florida, and North Carolina at 15, and Ohio at 15 years, 6 months). Fifty hours of supervised driving are specified in the learner stage by all these states except North Carolina; Florida's requirement was not added until October 2000 (Williams and Mayhew, 2003). In Pennsylvania, the supervised practice can occur at any time, while in California, Florida, Michigan, and Ohio, 10 of the hours must occur at night. The minimum age for attaining the intermediate stage license is 16 years in all states except Pennsylvania, where it is 16 years, 6 months. All states have a night driving restriction in the intermediate stage, although the hours vary. North Carolina's restriction begins at 9:00 p.m., Florida and Pennsylvania's (for 16 year-olds) at 11 p.m., California and Michigan's at midnight, and Ohio's at 1 a.m. Only California and North Carolina (just since December 2002) have implemented passenger restrictions. Driver education is required of license applicants younger than 18 in California, Michigan, and Ohio. All these states have requirements for crash/conviction-free periods before young licensees can progress to the next stage (Williams and Mayhew, 2003).

EARLY GDL EVALUATION RESULTS - Every one of the six states identified some type of crash reduction among young novice drivers following the implementation of GDL (see Shope and Molnar (2003) for detailed information on individual published reports). This overall positive effect typically was observed in years 1999 and 2000, across different geographic regions, and with different GDL programs. In all cases, simple counts were down — fewer teenagers were experiencing crashes. After calculating crash rates to adjust for changes over time in populations or numbers of licensed drivers, reductions generally were still found. Direct comparison among the various results is inappropriate and difficult because of differences in pre-GDL young driver licensing programs, differences in GDL programs, and differences in the methodology used to assess changes following GDL. But a few of the findings were obtained by reasonably similar, sound methods and stand out as noteworthy. The population-adjusted risks for injury/fatal crash involvement of 16-year-old drivers in Florida and Michigan were reduced by 11 and 24 percent, respectively, following implementation of GDL. The population-adjusted risks of any crash involvement of 16-year-old drivers in Michigan and North Carolina were reduced by 25 and 27 percent, respectively, following implementation of GDL. Reductions in the night (restricted hours) crash risk were particularly impressive in Florida, Michigan, and North Carolina. A comparison state design was only possible in the Florida evaluation, where the results clearly showed greater crash reductions under GDL than under the comparison licensing system. It is too early to draw conclusions about GDL passenger effects. Taken as a whole, however, these reports demonstrate the early effectiveness of GDL in reducing the crash risk of young novice drivers.

MICHIGAN'S FOUR-YEAR GDL EVALUATION RESULTS - Crash rates overall and for various crash types among Michigan 16-year-old drivers from 1996 (pre-GDL) were compared with crash rates from 1998, 1999, 2000, and 2001 (post-GDL) and adjusted for crash rates of drivers ages 25 or older. The total number of times 16-year-old drivers were involved in crashes was 22,625 in 1996 and went down to 16,408 in 2001. In 1996, the overall crash rate was 154/1,000 16-year-olds and, in 2001, it was 112/1000, with significant unadjusted reductions of 26, 28, 21, and 27 percent for the years 1998 to 2001 when compared with 1996. The largest reductions were seen in crashes occurring between midnight and 5 a.m. during the restricted hours (41, 55, 50, and 58 percent). Crashes between 11 p.m. and midnight (not restricted) were less reduced (18, 16, 5, and 19 percent). Crashes involving passengers (not restricted) were significantly reduced, yet 16-year-old drivers remained three to four times more likely than older drivers to crash when passengers

were involved. Adjusting the reductions to take into account crash rates of drivers ages 25 or older generally tempered the reductions somewhat and rendered the late evening crash reduction insignificant. Overall, analyses over the first 4 years following Michigan's GDL program implementation indicate significant reductions in crashes of 16-year-old drivers generally were maintained.

DISCUSSION - The effectiveness of GDL in reducing crashes seems clear. Now emphasis should be placed on (1) ensuring that the reductions are maintained through full compliance with GDL and (2) refining the program to enhance its effectiveness. It is desirable and should be possible to further reduce teenage crashes. Amendments to individual states' GDL program legislation may be necessary to accomplish these reductions.

#### REFERENCES

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