

**Licensing Age and Teenage Driver
Crashes: A Review of the Evidence**

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ABSTRACT

Objectives: To discuss the variation in licensing ages around the world, and summarize what is known about the effects of differing age limits.

Methods: Review of the international literature on the rationale for establishing licensing ages, debates about the justification for higher or lower minimum ages, safety effects of higher minimums, mobility consequences, public opinion, and recent attempts to raise licensing ages.

Results: Minimum licensing ages vary from 14 to 18 years old. Early licensing countries have reduced the young driver problem through graduated licensing systems, but consideration is now being given to increasing the licensing age. The available evidence indicates that this would further reduce young driver crashes. There are mobility consequences that are difficult to quantify. In New Jersey, which has long been the one US state with a 17-year-old licensing age, the delay in licensing appears to have minimal effects on lifestyles of 16 year-olds. Public opinion in the United States favors licensing ages higher than 16.

Conclusions: In debates about higher licensing ages, jurisdictions are deciding how they want to balance safety and mobility. From a safety standpoint, New Jersey, with its combination of higher licensing age and strong graduated licensing provisions, is the model.

Keywords: Licensing ages; Teenagers; Motor vehicle crashes; Public opinion; Graduated driver licensing; Learner's permits; Nighttime and passenger restrictions

LICENSING AGES AND THEIR ESTABLISHMENT

One of the functions of a licensing system is to ensure that people allowed to drive on public roadways have demonstrated a minimum level of proficiency to do so in a safe manner. Licensing systems measure knowledge and skills, but jurisdictions also have to decide at what age people are mature enough to be granted this opportunity. There is substantial variation around the world in where the minimum licensing age has been set, anywhere from 14 to 18. In the United States, with 51 jurisdictions setting separate policies, unsupervised driving has been allowed at 14, 15, 16, and 17 years old, with most states opting for 16.

In the United States, state licensing ages were established long ago, and the rationale for choosing one age in preference to another is not well understood (Mayhew et al., 2000). Many state laws pertaining to minimum licensing ages date back to the beginning of the 20th century, when the United States was a more agrarian society. Historical records note the age restrictions but not the rationale behind them. Canada is similar. More information is available for New Zealand, where the minimum age was set at 15 when the first national licensing system was introduced in 1925. Influencing factors in New Zealand are believed to be the rural economy, and the need for young people to drive to and from school and related activities, and to work. Fifteen was the legal age for being able to drop out of school at that time.

Whatever the original rationale for setting a minimum licensing age and its relevance in today's environment, until recently there has been little discussion or debate about changing the status quo. Policy decisions to increase the licensing age have been rare. Two US states (Mississippi in 1995, Louisiana in 1998) raised the licensing age from 15 to 16, although Mississippi changed back to 15, 6 months when it introduced graduated licensing in 2000. In Australia, the state of South Australia raised the licensing age from 16 to 16, 6 months in 1989. In this paper, raising the age refers to the minimum age at which an initial license allowing unsupervised driving can be obtained, although there may be restrictions on the types of driving that can be done and/or special penalties or other provisions that do not apply to a full license.

RISE OF GRADUATED LICENSING

The early licensing countries — Canada, New Zealand, and the United States — have addressed the young driver crash problem by introducing graduated driver licensing (GDL). In a graduated system, beginners are phased in to full driving privileges in stages, in ways designed to protect them while they are accumulating on-road driving experience. The first stage is an extended learner phase of driving under adult supervision, followed by an intermediate license with restrictions on unsupervised driving in the highest-risk situations, late at night or with young passengers present. Following completion of these stages, a license with no restrictions on unsupervised driving is granted. Such a system was introduced in New Zealand in 1987, and since the mid-1990s, all US states and Canadian provinces have enacted versions of graduated licensing that include some or all of these features.

GDL raises the age of full privilege driving, since the intermediate license now comes with restrictions. Evaluations of GDL have been strongly positive, with crash reductions generally in the 20-40 percent range (Shope, 2007). However, recognition that graduated licensing has only partially reduced the crash problem has spurred interest in raising the licensing age, and legislation was introduced in several US states in 2006-07 to raise the age from 16 to 17 or even 18 (discussed later).

It should be noted that some states have increased licensing ages by a few months as a byproduct of graduated licensing policies. That is, policies designed to augment the learner stage have occasionally resulted in a situation in which the minimum required permit holding period extends beyond the minimum licensing age. For example, that would be the case if the minimum permit age were 15, 6 months, the minimum holding period 9 months, and the minimum licensing age 16. In this example, it is not possible to get a license until 16 years, 3 months, even though there may have been no official change in the legal minimum driving age. This development will be discussed separately in this paper.

During the past 50 years there have been a few occasions when the policy issue of raising (or lowering) the existing driving age has surfaced, both in the United States and in other countries. In the ensuing debates, arguments have been made about the justification for doing so, based largely on comparisons of crash rates by age. Separately, there are a few studies on the safety and mobility effects of having a higher or lower licensing age in jurisdictions where different minimum ages actually exist.

Both sets of studies will be reviewed in an attempt to inform current debates about changing the licensing age in the United States.

DEBATES ABOUT CHANGING THE EXISTING LICENSING AGE

The issue has usually been debated in terms of whether the youngest licensed drivers have a higher crash rate than drivers in adjacent older age groups. For example, in California, concern about the teenage driver crash problem in the 1960s led to discussions about raising the driving age to 18. A study undertaken in response found no difference in crash rates per licensed driver by age among a cross-section of 16-19 year-olds (Ferdun et al., 1967). In a subsequent, more detailed study, a longitudinal analysis was undertaken in which the same people were followed for their first four years of driving (Harrington, 1972). According to Harrington, the average number of crashes showed little change over the four years, although as Drummond (1994) has noted, as 16-17 year-olds, the group actually had 17 percent more crash involvements than they did as 18-19 year-olds. Both studies concluded that differences between the crash rates for 16-17 and 18-19 year-olds did not support raising the driving age.

In Australia, where the licensing age has been 16, 17, or 18, Cameron (1972) addressed the question of what the appropriate driving age should be, arguing that driving privileges should not be denied to 16 and 17 year-olds unless they can be shown to be more dangerous than 18 year-olds. He concluded that on safety grounds, there was no reason why the minimum licensing age should not be 16, based on California data and a study conducted in a suburb of Detroit that found that crash rates per miles driven were highest at 18 and 19 (Pelz and Schuman, 1971).

In Canada, the opposite conclusion was reached in a study conducted in response to a proposal to raise the licensing age from 16 to 18 in Quebec (Laberge-Nadeau et al., 1992). In this study, drivers were divided according to whether they had less than one year of experience or one year or more. It was found that newly licensed 16 year-olds, particularly females, had higher injury crash rates than newly licensed older teenagers, and that 16-18 year-olds as a group had the highest crash rates of any age taking driving experience into account. Based on these findings, it was recommended that the driving age be raised to 18, although this did not happen.

Despite the mixture of findings reported in the above studies regarding comparative crash rates by age, more modern pre-GDL national US data indicate that 16 year-olds have the highest crash rates

per licensed driver and per miles driven, with rates decreasing linearly at ages 17-19, and further decreases in the 20s and beyond (Williams, 1996). More current California data also have consistently reported a linear decrease in crash rates per licensed driver from age 16 to 19 (Aizenberg and McKnezie, 1997; Gebers et al, 1993; Janke et al., 2003). However, in cross-sectional comparisons such as these, the effects of age and driving experience are confounded. That is, although 17 year-olds may have a lower crash rate than 16 year-olds, is this because they have an extra year of maturity, or because they have an extra year of driving experience, known to reduce crash risk? Of the above studies, only Laberge-Nadeau et al. (1992) addressed this issue.

The best current evidence concerning the relative contribution of age and experience to young driver crash rates comes from a review of 11 studies undertaken since 1990 that tried to separate these effects (McCartt et al., 2008). Taken together, the studies consistently found that 16-19 year-old drivers had substantially higher crash rates than older drivers, after controlling for length of licensure. Four of the five studies that distinguished 16 year-old drivers reported that during the first licensure year, per-driver crash rates for 16 year-olds were higher than at any other age. However, crash rates of novice 17 year-olds were not consistently higher than crash rates of novice 18-19 year-olds. The authors concluded that efforts in the United States to increase the licensing age from 16 to 17 as a way to reduce the young driver problem are warranted.

EFFECTS OF DIFFERENT LICENSING AGES ON CRASHES

Opportunities for studying the effects of different licensing ages are limited. Comparing countries like the United States with the United Kingdom (17) or northern European countries (18) is not meaningful because of the substantial differences in driving practices and amount and type of exposure. Much of the relevant information comes from cross-sectional studies in the United States and Australia, comparing jurisdictions within these countries with different licensing ages.

In terms of having a higher minimum licensing age, the issue from a safety standpoint is the extent to which reductions in exposure are counterbalanced by increases in driver inexperience. For example, raising the age from 16 to 17 eliminates 16-year-old driver crashes, other than those involving illegal driving or supervised learner driving. On the other hand, driving experience is known to be a major

factor affecting crash rates, and newly licensed 17 year-olds would have less driving experience than 17 year-olds who had been licensed at age 16.

In a study of New Jersey's licensing law for 17 year-olds, based on 1975-80 data (Williams et al., 1983), there were four 16-year-old drivers in fatal crashes in New Jersey per 100,000 population, compared with 26 in Connecticut, where licenses were available at age 16. At age 18, rates were slightly lower in New Jersey than in Connecticut, but there was evidence of a partial offset at age 17, with per capita fatal crash involvement higher in New Jersey (46) than in Connecticut (40). When ages 16 and 17 were combined, the resulting per capita rate in New Jersey (25) was lower than in Connecticut (33; Connecticut/New Jersey =1.32). It was estimated that Connecticut could realize a 66 percent reduction in driver fatal crash involvements by raising the licensing age to 17, assuming that Connecticut would have New Jersey's lower rate for 16 year-olds and higher rate for 17 year-olds. Further analyses indicated that New Jersey and Connecticut 16 year-olds had equivalent rates of deaths in all other motor vehicle categories (primarily passengers, bicyclists, and pedestrians), suggesting that there was no substitution effect.

The New Jersey and Connecticut data were subsequently used in a report to the US Congress on injury costs, with estimates that about 1,375 deaths would have been avoided nationwide if all states had a licensing age of 17 in 1985, translating to savings of \$1.25 to \$4.5 billion, depending on the method used to estimate costs (Rice et al., 1989).

A subsequent study of New Jersey's law, based on 1988-90 injury crashes, was consistent with the earlier findings (Ferguson et al., 1996). The per capita fatal and injury crash involvement rate for 16 year-olds was 0.13 in New Jersey, adjusted for population and relative to ages 25-59, compared with 1.56 in Connecticut and 1.73 in Delaware, states where the minimum licensing age was 16. The rate for 17 year-olds was highest in New Jersey, but for 16 and 17 year-olds combined, the overall rate in New Jersey (1.34 times the rate for 25-59 year-olds) was still much lower than the rates in Connecticut (1.82) and Delaware (1.83). There were modest but significant differences in crash rates among 18-20 year-olds in the three states.

Since these studies were undertaken, New Jersey has added graduated licensing provisions, instituting on January 1, 2001, a 6-month minimum permit period and night and passenger restrictions.

New Jersey is unusual in that its graduated licensing law applies to novices of all ages, although the night and passenger provisions are waived for new drivers 21 and older. Connecticut began adding graduated licensing provisions in 1997, starting with a 6-month learner period. In an update of the earlier study comparing fatal crash rates in New Jersey and Connecticut based on 1975-80 data (Williams et al., 1983), a similarly wide differential in 16-17 year-old fatal crash rates was found in 1992-96, the five years prior to either state adopting graduated licensing. That is, in 1992-96, New Jersey had a much lower rate for 16-year-old drivers in fatal crashes per 100,000 population than Connecticut (4.4 vs. 20.7), a slightly higher rate for 17 year-olds (32.3 vs. 31.1), and a lower rate for 16-17 year-olds combined (18.2 vs. 25.9). The Connecticut/New Jersey crash rate ratio for 1992-96 was 1.42, slightly higher than the differential of 1.32 in 1975-80.

The effect of New Jersey's graduated licensing program on fatal crash involvement can be estimated by comparing crash rates per 100,000 population for various age groups before the law (1992-2000) and after (2002-06), leaving out the transition year 2001 when some in the affected age groups were under the new GDL rules and some were not. Table 1 displays the data.

[Table 1 inserted about here]

Subsequent to graduated licensing, there were large declines in crash rates for 16 year-olds (44 percent) and 17 year-olds (33 percent). New Jersey 16 year-olds are not directly affected by GDL policies, so this may not be a law effect. However, it is possible that the restrictions on the initial license available at age 17 make it less attractive and delay learner permit driving. Given that graduated licensing in New Jersey applies to all beginners, the 20 percent reduction at age 18 also may be a law effect. At higher age levels there were minimal changes. The post-GDL results in New Jersey indicate that the combination of a higher licensing age and graduated licensing provisions is particularly effective.

Results similar to those in New Jersey were found in a 1986 study in Australia, in which Victoria, licensing at age 18, was compared with South Australia (16) and other Australian states (17) (Drummond, 1986). The study was undertaken in response to proposals to lower the licensing age in Victoria to bring it in line with the rest of the country. Results indicated that Victoria's licensing age was associated with a net safety benefit. The crash rate for 18 and 19 year-olds in Victoria was higher than in other states, but this negative factor was overwhelmed by the virtual elimination of crashes at ages 16 and 17, combined

with a lower licensing rate in Victoria at ages 18-21 than in most other states. It was estimated that lowering Victoria's licensing age to 17 would result in an additional 30-50 fatal and 650-700 injury crashes annually; lowering the age to 16 would mean 80-100 more fatal and 1,275-1,325 additional injury crashes.

OTHER WAYS TO ACHIEVE LICENSE DELAY

In order to provide the opportunity for more supervised practice driving, graduated licensing extends the learner stage, and in many cases parents are required to certify that a certain number of hours of practice driving have been acquired. As of mid-2008, in 45 states and DC a learner's permit must be held for a minimum of 6 months; 34 states and DC require 30 or more hours of supervised driving. Both policies may delay licensing. Delay can occur in any state with these policies, especially states in which the minimum learner's permit age (which ranges from age 14 to 16) is higher. As noted earlier, some states have in effect raised the licensing age by a few months by introducing a lengthy holding period combined with a higher starting age for obtaining a permit. Thirteen states have raised the licensing age 1-6 months in this indirect manner, which is likely to delay licensing along with producing more practice driving.

Studies indicate positive effects on crashes in states that have instituted learner policies that result in higher licensing ages. The studies were done in states in which a 6-month holding period was the only change made at the time, so the effects could be isolated, apart from other GDL features. In Connecticut, where a permit can be obtained at age 16, a new law requiring the permit to be held 6 months (4 months with driver education) went into effect January 1, 1997. In the first year of the law, there was a 22 percent decrease in the per capita crash rate for 16-year-old drivers, relative to the rate among 25-44 year-old drivers (Ulmer et al., 2001). Licensing data were not available to document the delay effect.

In Kentucky, institution of a 6-month holding period changed the effective minimum licensing age from 16 to 16, 6 months. This resulted in a 33 percent decrease in crashes for 16 year-olds from before GDL (1993-95) to after (1997-99) (Agent et al., 1998). Notably, the proportion of 16-year-old drivers with permits increased by 31 percent in the post-GDL period, and all of the crash reduction for 16-year-olds occurred among drivers ages 16 to 16,6 months (those ineligible for licenses in the post-GDL period). Crashes decreased 83 percent among drivers of these ages, whereas for drivers ages 16, 6 months to

17, crash rates pre- and post-GDL were virtually identical. Thus there were strong delay effects in Kentucky.

It is likely that license delay also will occur in states in which the time between permit age and licensing age is equal to the time that must be spent in the permit period. As of mid-2008, this was the case in 15 states as a result of graduated licensing. For example, a permit can be obtained at age 15, 6 months in Ohio, has to be held for 6 months minimum, and the licensing age is 16. Studies are needed to determine the extent to which this affects licensing rates and crashes.

More studies are needed of the effects of permit policies in general, in particular the amount of delay that is generated as well as the overall effects. Information is scant on licensing rates for 16 year-olds before and after graduated licensing, and little is known about how teens in the post-GDL period differ from pre-GDL teens in the timing of obtaining permits and scheduling driving tests.

There are other ways that licensing can be delayed. Basically, anything that makes license acquisition more difficult or more costly can delay the process. Britain is an example, with tough written and driving tests (with a high failure rate) and high costs for training, testing, and license purchase (Calian and Stecklow, 2002). The licensing age is 17, low by European standards, but the process cannot be started until this age and it can be a lengthy one. In 1999-2001, only 41 percent of male 17-20 year-olds, and 31 percent of females of these ages had full licenses (Office for National Statistics, 2007). In 2007 the Department of Transport proposed a 12-month training period for new drivers, which if enacted would in effect raise the licensing age to 18.

MOBILITY CONSEQUENCES OF HIGHER LICENSING AGES

It is axiomatic that higher licensing ages result in mobility loss. In graduated licensing systems, there is an effort to maintain essential driving privileges for those who are subject to the restrictions, e.g., night driving restrictions generally exempt work-related driving and in some states driving to and from school activities. However, raising the age takes away all unsupervised driving privileges. Getting a driver's license at a young age is clearly important to many teenagers. It is a milestone life event, which carries prestige, and gives young people the opportunity to achieve some independence from their parents, traveling without them present.

Two studies of New Jersey's licensing law have addressed the question of how not being allowed to be licensed at 16 impacts the lifestyles of New Jersey 16 year-olds. In the first study, surveys of high school students were conducted in New Jersey and Michigan (licensing age 16) in 1983 (Preusser et al., 1985). Fifty-six percent of the Michigan 16 year-olds surveyed were licensed drivers. Results indicated that New Jersey's older minimum licensing age had minimal impact on the surveyed activities of 16 year-olds. In fact, New Jersey 16 year-olds were more likely to work at paying jobs, probably a reflection of New Jersey's higher employment rate at the time, and more likely to go to parties. However, the transportation patterns were different. New Jersey 16 year-olds were more likely to rely on other family members for transportation and less likely to do family errands.

The second study, conducted in the early 1990s, extended this earlier work, covering the entire high school experience (Preusser et al., 2000). High school students in New Jersey and in three states licensing at age 16 (Connecticut, Delaware, and New York) were surveyed by telephone every 6 months from their freshmen through senior years. To address the question of the effect of later licensure on teen activities, comparisons were made in the junior year, when licensing rate differences were most extreme. Despite these differences in licensure, students in the respective states were not different in regard to time spent at activities such as a paying job, homework, watching television, dating, parties, being with friends, talking on the phone, or participating in sports or school activities. As in the earlier survey, New Jersey 16 year-olds spent less time doing family errands, and they were more reliant on their parents for transportation.

These two studies are dated and are based on only New Jersey, but they suggest that 16 year-olds and their families can adapt to a 17-year-old licensing age, finding ways to do desired social, work, and school activities.

PUBLIC OPINION ABOUT THE LICENSING AGE

Several telephone surveys of parents of teenagers were undertaken in the United States in the 1990s, prior to the widespread adoption of graduated licensing, to determine views about the most appropriate licensing age (Ferguson and Williams, 1996; Williams and Lund, 1986; Williams et al., 1996). Table 2 summarizes these results. There was quite a bit of variation, but a clear indication of dissatisfaction with the status quo. In the majority of surveys, fewer than half chose age 16 as

appropriate. In the national surveys, and in states where the licensing age is 16, 38-66 percent of parents endorsed an age higher than 16. Overall, age 17 and age 18 were about equally popular, although there was variation across surveys. New Jersey parents stood out. Sixty-five percent endorsed New Jersey's licensing age of 17; 27 percent wanted a higher age (25 percent selected 18 or older; 2 percent chose an age between 17 and 18).

[Table 2 inserted about here]

More recent surveys of parents of teenagers were done in Minnesota, North Carolina, and Rhode Island in 2006 (McCartt et al., 2007). Parents of 16-17 year-olds were interviewed while their teens were taking an on-road driving test to obtain their license. These surveys inquired about licensing age and included a category "depends on the teen," which drew some support and complicates comparisons with earlier surveys. Still, the results are consistent with the Table 2 data. Minnesota parents were most favorable toward a licensing age of 16 or younger (49 percent), with 15 percent favoring 17, 18 percent age 18, and 18 percent saying it depends. In North Carolina, 43 percent endorsed 16, 27 percent 17, 23 percent 18, and 8 percent said it depends. In Rhode Island, 39 percent favored 16, 21 percent 17, 27 percent 18, and 14 percent said it depends. Despite these views of parents, it is notable that the large majority of their sons and daughters obtained licenses well before reaching age 17.

Surveys of adults in general (parents plus others) have found strong support for higher licensing ages. A survey conducted by the Insurance Research Council in 1999 found that 56 percent thought the licensing age should be at least 18. A USA Today/CNN/Gallup poll conducted in 2004 found 37 percent of respondents endorsed 16 or younger, compared with 8 percent who wanted 17, and 53 percent who favored 18 or older.

RECENT DEVELOPMENTS

New Zealand came close to raising its driving age in 1999, when its graduated licensing system was revamped. Prior to the 1987 graduated licensing law, a license could be obtained on the 15th birthday. Under graduated licensing, a learner license was available at age 15, permitting supervised driving, and a license with night and passenger restrictions at 15, 6 months, or 15, 3 months upon passing an approved driving course. A proposal to raise the learner's permit age to 16 was not adopted. Among the interested public, it had support, however, as a greater-than-expected number of people

(41,000) responded to a questionnaire that was included in all daily newspapers, with 80 percent saying they favored the increased age (Land Transport Safety Authority, 1998). In 2007 a bill was introduced to raise the driving age to 16, but as of mid-2008 no action had been taken.

In jurisdictions worldwide where licensing ages are higher than in other jurisdictions, attempts to lower the age have been resisted. Pressure on Victoria to lower its licensing age of 18 inspired the Drummond (1986) study, which found safety benefits for age 18. During the early 1990s there was discussion of a trade-off, lowering the licensing age to 17 or 17, 6 months, but adding restrictions on high risk driving. Analyses indicated that even with substantial constraints on driving at age 17, this policy would increase crashes because of the increased exposure, and it did not go forward (Cameron, 2001). There have been no legislative attempts to lower the licensing age in New Jersey, and as indicated earlier, New Jersey parents overwhelmingly support a licensing age of 17 or older.

The most recent discussions of the policy of raising the driving age have come from the United States. In 2006-07, Delaware, Florida, and Georgia introduced legislation to increase the age to 17; North Carolina proposed 16, 6 months; Massachusetts introduced one bill to raise the age to 17 and another to raise it to 18; Illinois proposed a licensing age of 18. No state has raised the age to 17 or higher so far. It is unclear whether this recent interest in higher licensing ages will culminate in any states actually doing so. In this context it is of interest to note that it took more than 20 years for graduated licensing to catch on, despite its popularity with parents in surveys, although once it was enacted by the early adopters, it spread rapidly across the country.

During 2006, the Organisation for Economic Co-operation and Development and European Conference of Ministers of Transport (2006) issued a comprehensive report on the young driver problem around the world and available countermeasures. Based on a review of international crash data, it recommended that jurisdictions seriously consider raising licensing ages, especially where solo driving ages are younger than 17. In regard to the trade-off between safety and mobility, it was noted that "...the need for mobility at a given age should be balanced with the cost of that mobility, in terms of human life and health, as well as economic impact...Put differently, how much personal mobility should be exchanged for how many deaths and injuries related to young driver risk?" Clearly this is not an easy decision for societies. Drummond (1989) also has commented on the acceptance of the status quo,

saying “the choice of licensing age is a crucial determinant of the public health outcomes of young driver training. However, licensing age is often viewed as a given in any jurisdiction rather than a variable that can be manipulated to achieve optimal safety outcomes.”

SUMMARY

Licensing ages around the world have varied from 14 to 18. There is limited information to gauge the effects of higher licensing ages. However, the evidence suggests they would save many lives, primarily through reductions in exposure. In the United States, 16 year-olds have the highest per driver crash rates, there is evidence that 16 year-olds are more crash prone than older teenagers after controlling for driving experience differences, and there is public support for licensing ages older than 16. There is evidence from studies in New Jersey in the 1980s and 1990s that lifestyles are not unduly affected by a licensing age of 17. Debates in states about higher licensing ages often include concerns about inconveniences to parents, and disruption of work, social, and educational opportunities of teens (Keilman and Aduroja, 2006). However, there also have been supportive articles (Davis, 2005) and favorable comment from teenagers (Willingham, 2005).

Since the mid-1990s, North American jurisdictions have adopted graduated licensing systems. GDL has reduced the young driver problem among 16 year-olds, but it is not a panacea, and the continuation of teen deaths has influenced some states to consider raising the licensing age to 17 or 18. Graduated systems can be configured so that they increase the licensing age by raising the permit age and/or the permit holding period, and this has positive benefits. However, currently the highest licensing age achieved by this approach is 16, 6 months, and night and/or passenger restrictions are generally lifted prior to age 18. Licensing at 17 raises the age an additional 6 months or more, thereby addressing a larger number of crashes. In New Jersey, night and passenger restrictions are in place at least until age 18 and the law also applies to older novices. With a licensing age of 17 and a strong and successful graduated system, New Jersey is a model for the United States. In this context it is notable that a study commission appointed by New Jersey's governor has recommended several measures to strengthen the graduated licensing system, including extending the present 6-month permit phase to 1 year for all new drivers 16 to 20 years of age, and strengthening night and passenger restrictions (New Jersey Teen Driver Study Commission, 2008). The New Jersey legislature has introduced bills calling for these

actions and they are presently under consideration. The minimum permit age in New Jersey is 16 and, if the 12-month learner period is adopted, this policy would be likely to further delay licensure past age 17.

Concurrently, countries with higher licensing ages are starting to consider New Zealand/North America-style graduated licensing, with restrictions on nighttime driving and driving with peer passengers once an initial license is obtained. This development has been spurred by recognition that crash risk is very high the first few months of licensed driving, whether the licensing age is 16, 17, or 18. Several Australian states with licensing ages of 17 are adopting these provisions (Senserrick, 2007), suggesting that some global convergence may be developing in how to address the young driver problem that all motorized societies face.

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Table 1 Drivers in fatal crashes per 100,000 population in New Jersey, before and after graduated licensing

Age	Pre-GDL (1992-2000)	Post-GDL (2002-06)	Percent change
16	3.9	2.2	-44
17	30.6	20.6	-33
18	32.1	25.7	-20
19	25.7	27.1	+5
20-24	27.4	26.4	-4
25-59	15.2	14.2	-7

Table 2 Licensing age preferences of parents (percent)

	16 or younger	17	18 or older	Older than 16*
1985: US parents of 17 year-olds	47	13	41	53
1994: US parents of 17 year-olds	60	22	17	41
1996: FL parents of 15 year-olds	56	28	15	44
1996: CT parents of 15 year-olds	34	28	29	66
1996: CT parents of graduating seniors	37	26	33	63
1996: DE parents of graduating seniors	61	17	20	38
1996: NJ parents of graduating seniors	6	65	25	93
1996: NY parents of graduating seniors	36	36	25	64

*Includes those who chose ages between 16 and 17 and between 17 and 18