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# Research Report KTC-23-14

# **Graduated Driver Licensing Program**

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#### 16. Abstract

To address challenges related to teen driver safety, Kentucky adopted a simple graduated driver licensing (GDL) program in 1996 and further expanded it in 2006 by adding an intermediate licensing phase, requirements for supervised practice driving, and instituting restrictions on passenger age. Despite GDL programs having been adopted throughout the US, young drivers (ages 16 – 20) continue to be overrepresented in fatal crashes. In 2019, despite this segment making up roughly 5.3 percent of licensed drivers it accounted for 11.5 percent of fatal vehicle crashes (Kentucky recorded 732 crash fatalities, of which 73 involved young drivers). Although teen driver safety has improved significantly in Kentucky since 2006 the state ranks near the bottom nationally in teen driver fatalities per 10,000 licensed teen drivers. Based on an extensive literature review, survey of state transportation agencies, and an examination of recommendations issued by safety advocacy organizations, this report proposes eight best practices to further strengthen Kentucky's GDL program: (1) mandate or incentivize parents/legal guardians to complete a driver education course; (2) increase the minimum age for obtaining an unrestricted driver's license to 18; (3) begin nighttime driving restrictions at 10:00 pm (rather than 12:00 am); (4) minimize invehicle distractions by adjusting rules on the transport of passengers under the age of 20; (5) update the GDL program so it covers all drivers between the ages of 18 and 21; (6) allow the use of mobile apps to log practice driving hours; (7) offer a free decal that can be placed on the rear of a vehicle or on the license plate to indicate a novice driver is driving; and (8) partner with the Kentucky State Police to conduct routine, visible enforcement.

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# **Executive Summary**

In the US, young drivers (ages 16 – 20) are overrepresented in fatal crashes. In 2019, despite this segment making up roughly 5.3 percent of licensed drivers it accounted for 11.5 percent of fatal vehicle crashes. Trends in Kentucky have mirrored those at the national level. In 2019, the state recorded 732 crash fatalities — 73 involved young drivers (10 percent). Although the percentage of fatalities in crashes involving young drivers in Kentucky declined steadily between 2010 and 2019, the state ranks near the bottom nationally in teen driver fatalities per 10,000 licensed teen drivers. For example, in 2018 Kentucky had 5.58 teen driver fatalities per 10,000 licensed teen drivers.

Kentucky, like all other states and Washington, D.C., has a graduated driver licensing (GDL) program whose goal is to help novice drivers accumulate experience driving and negotiating risks in complex roadway environments before they are eligible for a full, unrestricted license. Kentucky adopted a simple GDL program in 1996 and revised it in 2006 by incorporating best practices recommended by safety organizations. Major changes included adding an intermediate licensing stage that lasts for six months, during which teen drivers can only transport one non-family passenger under the age of 21, and requiring learner's permit holders to complete 60 hours of supervised driving practice (10 at night) before they can apply for an intermediate license. With these changes, Kentucky's GDL program divided licensing into three stages: (1) permit phase, (2) intermediate license phase, and (3) full unrestricted license phase.

Following Kentucky's 2006 GDL program expansion, fatal and severe injury crashes involving teen drivers declined. Improvements in safety were most apparent for 16-year-old drivers. Compared to the 2001 – 2005 average, 2007 – 2020 data reveal a 65 percent reduction in fatal crashes and 69 percent in severe injury crashes for this group. The number of fatal and severe injury crashes involving 17-year-old drivers fell 51 percent and 61 percent, respectively. Despite impressive gains in safety, Kentucky's continued high levels of teen driver fatalities per 10,000 licensed teen drivers suggests the GDL program could benefit from further modifications.

To identify best practices for improving Kentucky's GDL program, researchers undertook a comprehensive literature review, examined long-term GDL program performance at the state and national levels, and conducted a nationwide survey of state transportation agencies to better understand how other jurisdictions structure their GDL programs and what changes have been made to improve safety outcomes. Nationwide, the fundamental structure of GDL programs and the core provisions of each licensing phase are well-defined, and program effectiveness has been demonstrated through multi-scale analyses. Most states last revised their GDL programs between 2006 and 2014 and do not have a plan to change core provisions soon. As Kentucky has already integrated core provisions into its GDL program, researchers identified eight best practices that will further strengthen the program and bolster roadway safety:

- Mandate or incentivize parents/legal guardians to complete a driver education course.
- Increase the minimum age for obtaining an unrestricted driver's license to 18.
- Begin nighttime driving restrictions at 10:00 pm (rather than 12:00 am).
- Minimize in-vehicle distractions by adjusting rules on the transport of passengers under the age of 20.
- Update the GDL program so it covers all drivers between the ages of 18 and 21.
- Allow the use of mobile apps to log practice driving hours.
- Offer a free decal that can be placed on the rear of a vehicle or on the license plate to indicate a novice driver is at the wheel.
- Partner with the Kentucky State Police to conduct routine, visible enforcement.

# **Chapter 1 Introduction**

In 2019, 33,244 fatal vehicle crashes occurred in the US — 11.53 percent of these involved young drivers (ages 16 to 20).<sup>1</sup> This age group was significantly overrepresented given that it makes up only 5.26 percent of licensed drivers (Federal Highway Administration [FHWA], 2020). High fatal crash rates among young drivers arguably spurred the first proposals for graduated driver licensing (GDL) programs (Croke and Wilson, 1977), although GDL programs did not take off until the 1990s and early-2000s. Despite ongoing efforts to improve the safety of teen drivers, several factors contribute to this group being involved in fatal crashes at higher rates than other age cohorts, including (1) risk-taking behaviors; (2) excessive driving during crash-prone hours, including nighttime and weekends; (3) improper use of restraints; (4) distracted driving; (5) speeding; and 6) use of alcohol and drugs (Center for Disease Control and Prevention [CDC], 2021).

Kentucky recorded 732 crash fatalities in 2019 — 73 were young drivers (9.97 percent). Although the percentage of fatalities in crashes involving young drivers fluctuated between 2010 and 2019, a downward trend is evident (Table 1.1.). In 2010, Kentucky ranked 24<sup>th</sup> in road safety for young drivers; by 2019 it had climbed to 10<sup>th</sup>. Although trends are promising, they could be misleading if annual crashes resulting in a fatality dramatically outpace other states.

Year	Percentage	National Ranking
2010	15.00%	24
2011	12.78%	11
2012	12.20%	13
2013	13.17%	29
2014	13.84%	34
2015	12.61%	23
2016	11.75%	14
2017	12.53%	26
2018	12.71%	32
2019	9.97%	10

Table 1.1 Percentage of Fatalities in Crashes Involving Young Drivers in Kentucky

Source: FARS

A better way to contextualize teen driver safety is to look at the number of teen driver fatalities per 10,000 licensed teen drivers in each state. In 2018, Kentucky had 5.58 teen driver fatalities per 10,000 licensed teen drivers. In comparison, Oregon — whose population is similar to Kentucky — recorded 1.92 teen driver fatalities per 10,000 licensed teen drivers. Using teen driver fatalities per 10,000 licensed teen drivers as a road safety indicator for teen drivers, Oregon ranked 24<sup>th</sup>. Kentucky ranked 50<sup>th</sup> (Table 1.2). Based on this metric, since 2010 Kentucky has routinely ranked among the worst states for teen driver safety. This performance suggests that the structure of that state's GDL program needs to be revisited.

Year	Teen Driver Fatalities Per 10,000 Licensed Teen Drivers	National Ranking
2010	5.71	50
2011	4.77	47
2012	5.89	51
2013	3.98	50
2014	5.67	49

<sup>1</sup> Data source: Fatality Analysis Reporting System (FARS). 2005-2018 Final File and 2019 Annual Report File (ARF)

Year	Teen Driver Fatalities Per 10,000 Licensed Teen Drivers	National Ranking
2015	5.17	51
2016	5.28	51
2017	5.32	50
2018	5.58	50

Source: FHWA (2020)

This report explores ways to improve Kentucky's GDL program by examining best practices from across the US and through an analysis of the state's evolving program. Table 1.3 summarizes the report's structure and content.

Chapter	Content	
2	Review of Kentucky's GDL program and crash statistics.	
3	• Discussion of changes in Kentucky's GDL program and their influence on road	
	safety. Evaluations of GDL programs in other states.	
4	Survey of other state GDL programs.	
5	• Overview of national trends in the core provisions of GDL programs.	
6	Proposed best practices for Kentucky's GDL program.	

# Table 1.3 Report Structure and Content

# Chapter 2 Kentucky's Graduated Driver Licensing Program and Fatal Crash Trends

#### 2.1 Overview of the Graduated Driver Licensing Program in Kentucky

In 1996, Florida was the first state to introduce a GDL program. Over the next 10 years all 50 states and Washington, D.C., adopted GDL programs. These programs typically divide licensing procedures for young drivers into three phases — (1) permit phase, (2) intermediate license phase, (3) full unrestricted license phase — although program structures vary by state. According to Masten et al. (2015), GDL programs have seven core components:

- Minimum age for a learner's permit
- Minimum learner's permit holding time
- Required supervised driving hours
- Minimum age for an intermediate license
- Nighttime driving restrictions
- Restrictions on number of passengers
- Minimum age for an unrestricted license

Introduced in 1996, Kentucky's GDL program applied to drivers under 18. During its first 10 years of existence, the program did not meet National Highway Traffic Safety Administration (NHTSA) guidelines for a model GDL program because it lacked a distinguishable intermediate phase, a limitation on unsupervised nighttime driving during the intermediate stage, and a requirement to be free of traffic violations for a period of time before progressing to the next phase of licensing (Agent et al. 2000). A new GDL program became effective on October 1, 2006, that met NHTSA's guidelines. The major change was the addition of an intermediate phase between the permit phase and the full unrestricted license phase that lasts 180 days. Below we describe the three phases of Kentucky's current GDL program (Kentucky Transportation Cabinet, 2021).

#### Permit Phase (Provisions Apply to Drivers Under 21)

- Minimum age: 16
- Upon passing the permit test, an Under 21 permit is issued
- Must hold a permit for at least 180 days
- Must be accompanied by a licensed driver at least 21 years old
- Driving restriction between 12:00 am and 6:00 am (exceptions are granted for emergencies, work, and school)
- Conviction of a moving violation (KRS 186, 189, and 189A) restarts the 180-day holding period
- No more than one passenger under the age of 20 years old who is unrelated to the driver may ride in a vehicle
- Must complete a minimum of 60 hours of practice driving, including 10 hours at night

#### **Intermediate License Phase**

- Upon passing the road test, an Intermediate License sticker is affixed to the permit
- Must hold the intermediate license for at least 180 days
- Driving restriction between 12:00 am and 6:00 am (exceptions are granted for emergencies, work, and school)
- Conviction of a moving violation (KRS 186, 189, and 189A) restarts the 180-day holding period
- No more than one passenger under the age of 20 years old who is unrelated to the driver may ride in a vehicle
- Must complete a driver education program

#### **Full Unrestricted License Phase**

• An Under 21 distinctive license is issued

- Drivers under 21 are subject to the Zero Alcohol Tolerance policy (defined as .02 BAC)
- A driver under 18 who accumulates more than 6 points has their license suspended
- A driver 18 or over who accumulates 12 points may have their driving privileges suspended
- All vehicle occupants must wear a seatbelt at all times

To compare GDL programs in different states, Advocates of Highway and Safety (2021a) evaluated programs for the following features:

- A minimum of age 16 for learner's permits
- A 6-month holding period
- 50 hours of supervised driving
- At least a 10:00 pm to 5:00 am nighttime driving restriction
- No more than one non-familial passenger younger than age 21
- Age 18 for an unrestricted license

No state had enacted all six provisions, although New York and Delaware came the closest by adopting all provisions except setting 18 as the minimum age for obtaining an unrestricted license (Figure 2.1). Seven states (Kentucky, Mississippi, New Jersey, North Carolina, Oklahoma, Rhode Island, and South Dakota) include four provisions in their GDL programs. Kentucky's period of nighttime driving restriction is too short (12:00 am to 6:00 am), and it does not set 18 as the minimum age for issuing unrestricted licenses.

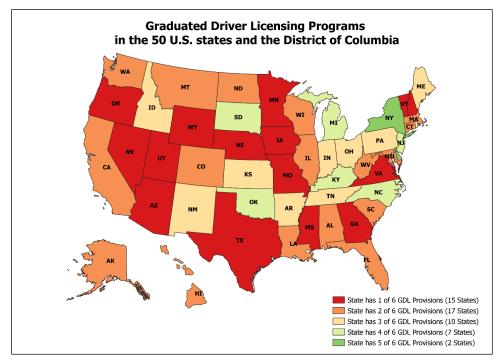
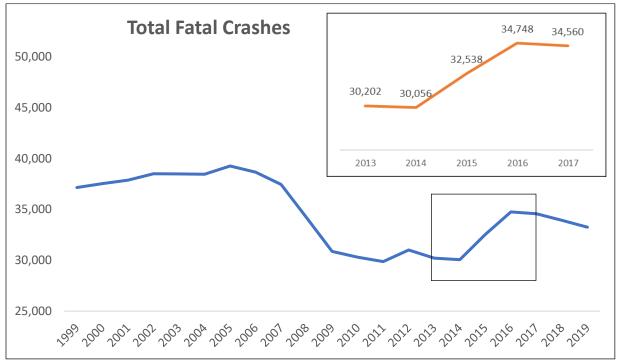


Figure 2.1 Graduated Driver Licensing Programs in the U.S. states and Washington, D.C.

#### 2.2 Road Safety for All Drivers in Kentucky

Across the US, the number of fatal crashes fell from 37,140 in 1999 to 33,244 in 2019. These declines have been attributed to increased seatbelt use, fewer people driving under the influence, and improvements in vehicle safety.



The years 2015 and 2016 bucked the downward trend in fatal crashes, with increases of 8.3 percent and 6.8 percent, respectively (Figure 2.2).

From 2016 through 2019 crash numbers resumed their downward trajectory before rebounding in 2020. Despite Americans driving less due to the pandemic, traffic fatalities rose by 7.2 percent compared to 2019 (NCSA, 2021a). Traffic fatalities for the 16-to-24 age group rose 15 percent (NCSA, 2021b). Fatalities continued to rise in 2021, with 20,160 deaths in the first half of the year — an 18.4 percent increase over the same period in 2020 (NCSA, 2021c). Trends in Kentucky have been similar to those observed nationwide. Between 20015 and 2013, fatalities steadily declined (Table 2.1). However, deaths jumped between 2014 and 2016, before the trend reverse course from 2016 through 2019.

Year	Total Fatal Crashes	Fatalities
2005	885	985
2006	837	913
2007	803	864
2008	751	825
2009	730	791
2010	694	760
2011	669	720
2012	694	746
2013	590	638
2014	612	672
2015	694	761

Table 2.1 Number of Fatal Crashes in Kentucky <sup>2</sup>
------------------------------------------------------------

Figure 2.2 Nationwide Total Fatal Crashes

<sup>&</sup>lt;sup>2</sup> Data source: FARS 2019 ARF. National Highway Traffic Safety Administration's Traffic Safety Facts Annual Report

Year	Total Fatal Crashes	Fatalities
2016	763	834
2017	721	782
2018	664	724
2019	667	732

From 2010 through 2019, the number of driver fatalities per 10,000 licensed drivers in Kentucky ranged from 1.58 to 1.91 (Table 2.2). Kentucky was consistently toward the bottom of national rankings for this metric. For example, in 2019, the national average was 1.07, the median was 1.00, and Kentucky was at 1.72, which indicates the state's driving environment requires improvements.

Year	Driver Fatalities Per 10,000 Licensed Drivers	National Ranking
2010	1.78	46
2011	1.73	44
2012	1.81	44
2013	1.50	41
2014	1.58	44
2015	1.75	46
2016	1.91	50
2017	1.78	48
2018	1.68	43
2019	1.72	49

Table 2.2 Number of Driver Fatalities Per 10,000 Licensed Drivers in Kentucky<sup>3</sup>

#### 2.3 Road Safety for Young Drivers in Kentucky

Teen Drivers are nearly three times more likely than drivers 20 or older to be involved in a fatal crash (Insurance Institute for Highway Safety 2019). Using Kentucky's Fatality Analysis Reporting System (FARS), we determined that over the last decade the number of driver fatalities per 10,000 licensed teen drivers was 3.25 times more than for all licensed drivers (Table 2.3).

 Table 2.3 Driver Fatalities Per 10,000 Licensed Drivers and Licensed Teen Drivers in Kentucky<sup>4</sup>

Year	Driver Fatalities Per 10,000 Licensed Drivers	Driver Fatalities Per 10,000 Licensed Teen Drivers
2010	1.78	5.71
2011	1.73	4.77
2012	1.81	5.89
2013	1.50	3.98
2014	1.58	5.67
2015	1.75	5.17
2016	1.91	5.28
2017	1.78	5.32
2018	1.68	5.58
2019	1.72	5.71

<sup>&</sup>lt;sup>3</sup> Data source: Fatality Analysis Reporting System (FARS). 2005-2018 Final File and 2019 Annual Report File (ARF)

<sup>&</sup>lt;sup>4</sup> Data source: Fatality Analysis Reporting System (FARS). 2005-2018 Final File and 2019 Annual Report File (ARF)

From 2005 through 2019 traffic fatalities involving young drivers fell, except for 2014 – 2016 (Figure 2.3). In 2005, Kentucky had 182 traffic fatalities involving young drivers. By 2019 fatalities had dropped by 73 percent — which indicates a significant improvement in safety.

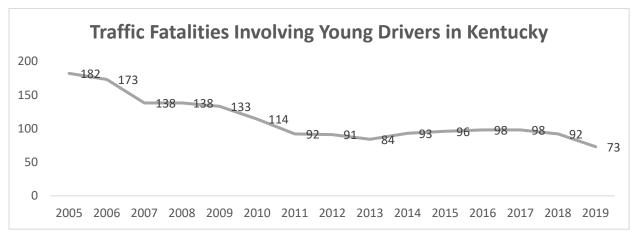


Figure 2.3 Traffic Fatalities Involving Young Drivers in Kentucky

Figure 2.4 compares the magnitude of change in traffic fatalities involving young drivers for Kentucky and the US for 2006 – 2019. Trends within Kentucky mirrored nationwide trends, with a steady decline in fatalities punctuated by a small uptick during 2014 – 2016. The magnitude of changes in Kentucky were generally larger, reaffirming the comparative safety improvements observed.

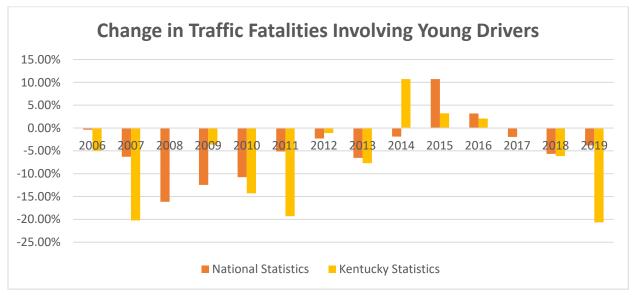


Figure 2.4 Change in Traffic Fatalities Involving Young Drivers

Table 2.4 compares Kentucky's performance to five states — Massachusetts, New Jersey, Utah, Illinois, Minnesota — that outperformed other jurisdictions over the last 10 years. In 2019, Kentucky recorded 5.58 driver fatalities per 10,000 licensed teen drivers. Among the other states in this comparison, the closest was Minnesota, where just 1.56 driver fatalities occurred per 10,000 licensed drivers. Massachusetts excelled on this metric, recording 0.66 driver fatalities per 10,000 licensed drivers in 2018.

Year	Kentucky	Massachusetts	New Jersey	Utah	Illinois	Minnesota
2010	5.71	1.28	0.97	0.94	1.47	1.27
2011	4.77	1.44	1.53	0.90	1.33	1.62
2012	5.89	1.21	1.29	0.99	1.19	1.35
2013	3.98	0.79	0.68	1.36	1.34	1.21
2014	5.67	0.68	0.97	1.56	1.00	0.96
2015	5.17	0.97	0.76	0.98	1.54	1.55
2016	5.28	1.10	0.89	1.09	1.54	1.04
2017	5.32	1.15	0.75	0.91	1.50	1.14
2018	5.58	0.66	0.76	1.22	1.08	1.56

Table 2.4 Comparison of Number of Driver Fatalities Per 10,000 Licensed Teen Drivers

Teen driver safety has improved significantly in Kentucky since 2005. However, Kentucky still lags the performance of peer states. To determine why Kentucky's fatality rates remain stubbornly high, in the next chapter we scrutinize crashes involving teen drivers to isolate major contributing factors to traffic fatalities. We then look at how the 2006 revisions to Kentucky's GDL program influenced roadway safety.

# Chapter 3 The Effect of the Graduated Driver Licensing Program on Crashes in Kentucky

Researchers have argued that higher crash rates among teens is attributable to their higher propensity for risk-taking behaviors, including less frequent seatbelt usage, speeding, driving at night, driving under the influence, and having teenage passengers in their vehicles (Compton and Ellison-Potter 2008). GDL programs were designed to expose novice drivers gradually to risky driving environments by requiring them to accumulate experience through supervised driving before getting a full, unrestricted license. Several states began adopting weak GDL programs in the mid-1990s, with most adding and strengthening core provisions over the next 10 years (e.g., lengthening the learner period duration, adding restrictions related to nighttime driving and passenger age) (Williams et al. 2016). Many studies have examined the effects of GDL programs at the national and state level.

#### 3.1 Summary of the GDL Programs Evaluations in the U.S.

#### 3.1.1 Multi-State Evaluations of GDL Programs

Within individual states, GDL programs can reduce crash rates by 20 – 40 percent. However, multi-state studies have found smaller positive impacts (Masten 2015). Using FARS data from 1994 through 2004, Chen et al. (2006) examined the effect of GDL programs on fatal crashes involving 16-year-old drivers. They concluded that GDL programs with more core provisions lowered fatal crash involvement rate for 16-year-old drivers roughly 20 percent — more than weaker GDL programs. The most impactful provisions were having a three-month or longer waiting period before the intermediate license stage, nighttime driving restrictions, 30 hours or more of supervised driving, and passenger restrictions.

Using data from 1992 through 2002, Dee et al. (2005) found a 5.6 percent reduction in traffic fatalities for drivers aged 15 - 17. Based on a classification scheme that categorized GDL programs as good, fair, or marginal, they showed that good programs were associated with a 19 percent decrease in traffic fatalities for this age group. States with marginal programs saw only a 4.6 percent decline. McCartt et al. (2010) examined the relationship between GDL program strength and fatal crash rates among 15- to 17-year-old drivers, demonstrating that crash rates in states with good programs were 30 percent lower than in states whose programs rated poorly. Program attributes associated with lower fatal crash rates included increasing age requirements for permits and intermediate licenses and imposing restrictions related to nighttime driving and passengers. Requiring driving practice, however, did not significantly influence fatal crash rates. Using data from 1992 to 2006, Vanlaar et al.'s (2009) multi-state study found that GDL programs reduced the risk of fatalities among 16-year-old drivers by 19 percent. No effects were found for drivers aged 17 - 19. Fatality risk also decreased in jurisdictions that imposed passenger restrictions during the intermediate stage.

#### 3.1.2 State-Level Evaluations of GDL Programs

Some researchers have focused on the impacts of GDL programs at the level of individual states. In New Jersey, Williams et al. (2010) calculated that fatal crash rates among 17-year-old drivers fell 31.8 percent in the five years after its GDL program was introduced. In Massachusetts, introducing stricter penalties for violating nighttime driving restrictions was associated with crash rates for 16- and 17-year-old drivers dropping from 16.24 to 13.22 per 100 licensed drivers — an 18.6 percent reduction (Rajaratnam et al. 2015).<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> Prior to this change, a first-time offender paid a fine of \$35. Subsequent offenses resulted in fines of \$75 – \$100. After the change went into effect, a first-time offender had their license suspended for 60 days; a second offense resulted in a 180-day suspension, and the third offense a one-year suspension. Beginning with the second offense, offenders would have to participate in driver retraining.

Kentucky's original GDL program — enacted in October 1996 — was categorized as *marginal* due to its lack of nighttime driving restrictions and the passenger restriction for 16 ½- and 17-year-old drivers. Agent et al. (2000), comparing crash data from the 1993-95 and 1997-2000 periods found a 31-33 percent declines in the number of crashes, fatal crashes, and crashes resulting in an injury involving 16-year-old drivers in the years after the GDL program began. However, crashes involving 17-, 18-, and 19-year-old drivers increased during the same period. Agent et al. detected a similar pattern in crash rates for these age groups. One notable finding was the difference in the GDL program's impact on drivers aged 16 to 16 ½ years old and 16 ½ and 17 years old. The crash rate for 16 to 16 ½-year-olds fell 83 percent, but increased 4.4 percent for 16 ½ to 17 year olds. The crash rate between 12:00 am and 6:00 am dropped significantly for 16- to 16 ½-year-old drivers but increased for 16 ½- to 17-year-old drivers. Discrepancies in crash rates prompted calls to update the GDL program.

#### 3.2 Kentucky's GDL Program Expansion in 2006

Like many states, Kentucky started its GDL program with one core provision (a six-month learner period). The state significantly modified the program in 2006. Major changes included the addition of an intermediate period of six months with nighttime driving and passenger restrictions, and the requirement to complete 60 hours of supervised driving (10 at night) before a permit holder is eligible for an intermediate license.

Before states added nighttime driving restriction to GDL programs, nighttime driving was often cited as a key risk factor. Williams (2003) showed that 32 percent of crashes involving 16 and 17 year olds occurred between 9:00 pm and 5:59 am. Several reasons explain why the dark imposes greater risks:

- Driving is more difficult in the dark
- Novice drivers tend to have less driving experience in the dark
- Fatigue is related to distraction
- Recreational driving involving alcohol takes place more often at night

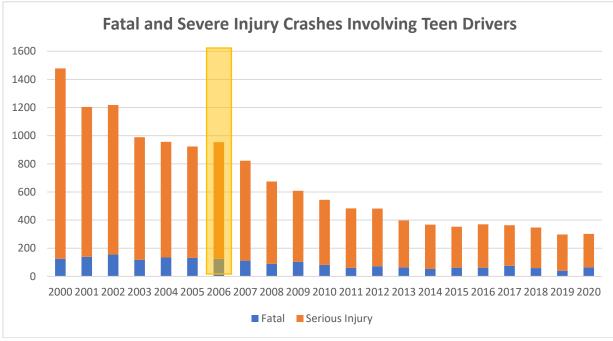
In Kentucky, an intermediate license holder younger than 18 may not drive between 12:00 am and 6:00 am unless they can demonstrate a good cause (e.g., emergencies, school, or work-related activities).

With the 2006 changes, Kentucky limited the number of passengers under the age of 20 who could ride in a vehicle with an intermediate license holder to one. This restriction was justifiable given previous research findings. For example, NCSA (2006) showed that 41 percent of the people killed in crashes involving young drivers in 2004 were young drivers themselves; 27 percent were passengers in a vehicle driven by young drivers. Chen et al. (2000) found that the relative risk of death per 10 million trips for 15 and 16-year-old drivers with one passenger was 1.39 compared to drivers without passengers. The risk was 1.86 for drivers with two passengers and 2.82 for drivers with three passengers.

In 2006 Kentucky also enacted its primary seatbelt law, which requires all vehicle occupants who are at least 7 years old to wear a seatbelt. Younger passengers are covered by the Child Safety Seat Law. Kentucky's seatbelt usage rate improved from 67.2 percent in 2006 to 86.7 percent in 2014, improving road safety (Kentucky Transportation Cabinet Office of Highway Safety, N/A).

#### 3.3 Effects of the 2006 GDL Program Expansion on Teen Driver Safety

Using crash data for the 2001 – 2020 period, in this section we investigate the influence of the 2006 GDL program changes on teen driver safety in Kentucky.



#### 3.3.1 Impact of GDL Program Expansion on Fatal and Severe Injury Crashes

Since 2000, fatal and severe injury crashes involving teen drivers have declined (Figure 3.1). It appears 2006 was an inflection point, with crash reductions accelerating following updates to the GDL program.

Breaking down fatal and severe injury crashes by age group highlights the benefits of the 2006 GDL program updates (Table 3.1). Each year between 2001 and 2005, an average of 23 fatal crashes involved 16-year-old drivers. This fell to 8 fatal crashes per year during the 2007 – 2020 period. A similar trend is evident for severe injury crashes, which dropped from about 151 per year to just under 47. While fewer crashes occurred within each age group, 16-year-old drivers benefitted the most. Agent et al. (2000) found a 31 percent reduction in fatal crashes involving 16-year-old drivers in the years following the introduction of Kentucky's first GDL program, while the 2006 program updates are associated with a 65 percent reduction.

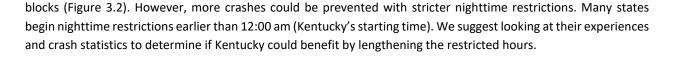
	•				
	Fatal	Crash	Severe Injury Crash		
	2001-2005 Average	2007-2020 Average	2001-2005 Average	2007-2020 Average	
Age 16	23.0	8.07 (- 64.91%)	150.6	46.86 (- 68.88%)	
Age 17	36.6	18.00 (- 50.82%)	259.6	101.5 (- 60.90%)	
Age 18	36.6	22.50 (- 38.52%)	284.2	125.36 (- 55.89%)	
Age 19	40.8	24.29 (- 40.47%)	257.4	122.29 (- 52.49%)	
Age 20	31.6	21.43 (- 32.18%)	243.8	118.43 (-51.42%)	

**Table 3.1** Crashes Involving Teen Drivers Before and After Kentucky's GDL Program Updates

#### 3.3.2 Impact of Nighttime Driving Restrictions

Most nighttime fatal and severe injury crashes involving teens occur between 6:00 pm and 12:00 am. We found very few crashes that resulted in fatalities and severe injuries during restricted nighttime driving hours. Comparing the 2001 – 2005 and 2007 – 2020 averages indicates sharp reductions in fatal and severe injury crashes across all time

Figure 3.1 Fatal and Severe Injury Crashes Involving Teen Drivers



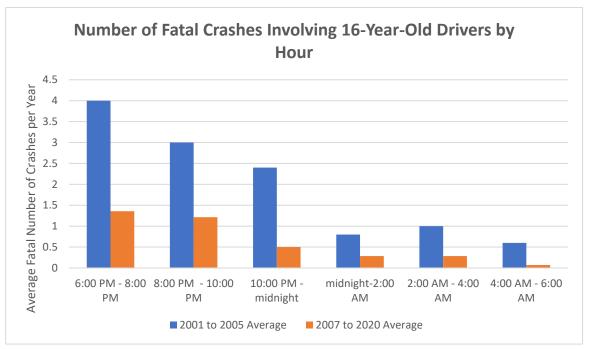


Figure 3.2 Number of Fatal Crashes Involving 16-Year-Old Drivers by Hour

#### 3.3.3 Impact of Passenger Restrictions

Distractions contribute to 58 percent of all crashes involving teen drivers, with 15 of crashes involving interactions with vehicle passengers (Carney et al. 2015). Recognizing the harm distractions by peer passengers inflict on novice drivers, the 2006 GDL program update requires that no more than one passenger under the age of 20 can be in a vehicle if the driver is in the intermediate licensing stage (family members are excluded). During 2001 – 2005, in 84 percent of crashes involving a 16-year-old driver, no passengers were in the teen driver's vehicle (Figure 3.3). This fell to 83 percent during the subsequent period, indicating the restriction had little effect.

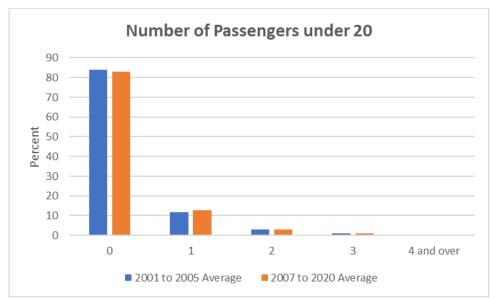


Figure 3.3 Number of Passengers under 20 in a Car Operated by a 16-Year-Old Driver

Nonetheless, more than 15 percent of the 16-year-old drivers involved in a crash had one or more passengers under the age of 20 in their vehicle. Table 3.2 maps the relationship between the number of passengers and injury severity for crashes involving 16- and 17-year-old drivers in Kentucky. Of 92,012 crashes in which a 16- or 17-year-old driver had no passengers in their vehicle, 0.22 percent resulted in a fatality and 1.31 percent resulted in a severe injury (Table 3.2). We see a positive relationship between the number of crashes and injury severity. A Chi-squared test confirmed that a statistically significant relationship exists between the number of passengers under 20 and crash injury severity when a driver is 16 or 17 years old.

No. of Passengers	Injury Severity					
under 20	Fatal	Severe Injury	Minor Injury	Possible Injury	None Detected	Total
0	203 (0.22%)	1,202 (1.31%)	4,880 (5.3%)	7,796 (8.47%)	77,931 (84.7%)	92,012 (100.00%)
1	102	590	2,179	3,044	23,270	29,185
	(0.35%)	(2.02%)	(7.47%)	(10.43%)	(79.73%)	(100.00%)
2	37	183	664	838	5,275	6,997
	(0.53%)	(2.62%)	(9.49%)	(11.98%)	(75.39%)	(100.00%)
3	23	90	220	307	1,580	2,220
	(1.04%)	(4.05%)	(9.91%)	(13.83%)	(71.17%)	(100.00%)
4	3	27	89	88	364	571
	(0.53%)	(4.73%)	(15.59%)	(15.41%)	(63.75%)	(100.00%)
Total	371	2,104	8,052	12,097	108,479	131,103
	(0.28%)	(1.06%)	(6.14%)	(9.23%)	(82.74%)	(100.00%)

Table 3.2 Cross Tabulation of Number of Passengers Under 20 and Injury Severity

Tightening restrictions on passengers could benefit road safety in Kentucky. Instead of letting drivers have one passenger under the age of 20 in their vehicle immediately after passing the skills test, prohibiting any for a few months following the skills test and gradually increasing the number of passengers allowed could give young drivers time to practice driving without distractions. A well-structured passenger restriction schedule could help drivers gain adequate experience driving unsupervised before welcoming passengers into their vehicles.

#### 3.3.4 Impact of 2006 Seat Belt Law

Law enforcement can stop vehicles — and issue citations — if they observe any occupant not wearing a seatbelt. Since the 2006 Seat Belt Law's enactment, seat belt usage has increased even among drivers involved in severe crashes, which may help to explain why fatal and severe injury crashes in crashes involving 16-year-old drivers fell during 2007 - 2020 relative to 2001 - 2005 (Figure 3.4).

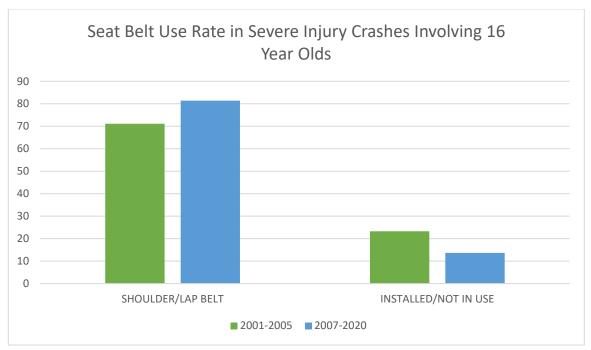


Figure 3.4 Seat Belt Use Rate in Severe Injury Crashes Involving 16-Year-Old Drivers

#### 3.4 Conclusion

In the years after Kentucky updated its GDL program in 2006, fatal and severe crashes involving teen drivers dropped. Crashes involving 16-year-old drivers declined significantly compared to older teens (17-19). Given the number of severe and fatal crashes that occur between the hours of 6:00 pm and 12:00 am — the time at which driving restrictions go into effect in Kentucky — roadway safety could modestly benefit from extending the duration of driving restrictions at night. Likewise, the state may consider revisiting when teen drivers are first allowed to have passengers under the age of 20 in their vehicles. Pushing the timeline back slightly could give drivers more experience driving unsupervised before introducing passengers into the equation.

# Chapter 4 Survey on the Current Graduated Driver Licensing Program in the Other States

To understand how other states currently approach their GDL programs, we distributed an online survey to the GDL program managers/coordinators of all 50 states and Washington, D.C. Questions touched on many topics, ranging from adoption and program updates to verification of driving practice requirements and driver education programs. We conducted the survey from May 23 to June 17, 2022, and ultimately received 22 completed responses (Figure 4.1). This chapter presents findings from each survey question.

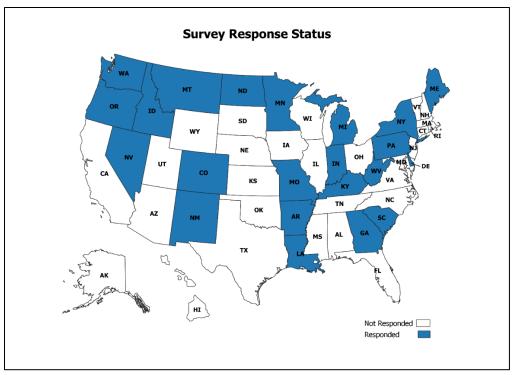


Figure 4.1 Survey Response Status

#### 4.1 Adoption and Revision

Most states first implemented GDL programs in the late-1990s and early-2000s (Figure 4.2). Montana and Arkansas lagged slightly, first introducing their programs in 2006 and 2009, respectively.

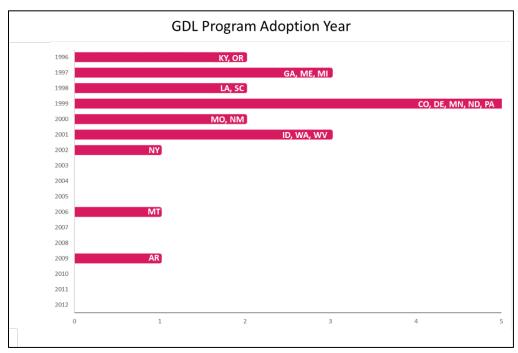


Figure 4.2 GDL Program Adoption Year

When enacted, most state GDL programs had only a few components. States gradually added more provisions (e.g., minimum learner periods, night restrictions, passenger restrictions, supervised driving hours requirements) as their safety benefits became apparent (Williams et al. 2016). Just over half of responding states had made a substantial change to their GDL programs following initial adoption (55 percent; Figure 4.3).

Among states that had added or removed provisions from their GDL program, 75 percent said the last major change was made between 2006 and 2014. Georgia, Oregon, and West Virginia made updates in 2021 and 2022. Changes made in these states are summarized below.

- Georgia Effective July 1, 2021, all individuals under 18 seeking a provisional driver's license must show proof they have completed an approved driver's education course in Georgia. Previously, this was only required for drivers under 17.
- Oregon Removed the requirement of passing the Safe Driving Practices knowledge test to obtain a provisional driver's license, in addition to the standard knowledge test required for an instruction permit. This condition was in place about 10 years before Oregon began to mandate a six-month holding period for an instruction permit. Because the additional knowledge test conferred no significant benefits, the requirement was eliminated in March 2021.
- West Virginia No longer suspends teen driver's licenses for school absenteeism or poor academic performance. However, driving privileges may be restricted, allowing teens to drive only to work or for educational, religious, or medical emergency purposes. The age group impacted by this provision was revised from 15-18 to 15-17.

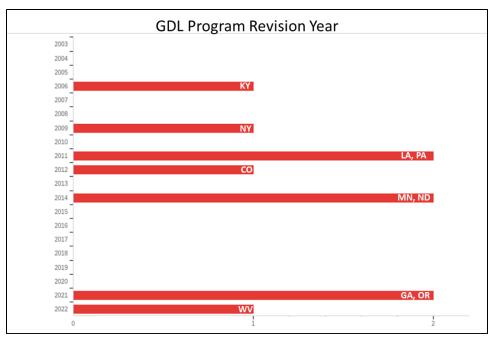


Figure 4.3 GDL Program Revision Year

# 4.2 Statewide GDL Program Evaluation

Just five respondents said a state-level evaluation of their state's GDL program had been conducted. These states — Delaware, Georgia, Indiana, Kentucky, and New Mexico — provided links to study results. New Mexico reported an increase in fatal and severe injury crashes among teen drivers following GDL program implementation. Indiana observed very little or no change in fatal crashes, however crashes resulting in severe injury increased after the state adopted its program.

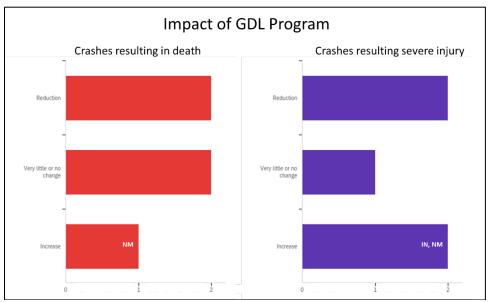


Figure 4.4 Impact of GDL Programs

#### 4.3 Use of Smartphone Apps to Verify Required Driving Practice Hours

Except for Arkansas, Mississippi, and New Jersey, jurisdictions require teens to accrue a certain number of driving practice hours during the learner stage. With respect to tracking driving hours, licensing agencies in nine states only accept paper logs (Figure 4.5) No state accepts logs generated by mobile phone apps as sole proof of driving hours, but three states — Michigan, Nevada, New Mexico — let drivers submit paper and smartphone app logs as proof of driving activity. Most of respondents that identified the other option for this question said their states provide a sample log and encourage parents/guardians to use it, but do not require it be submitted. Instead, they require the parent/legal guardian to attest that the applicant drove the required number of hours. on the day of the road test. An app-based electronic logbook could simplify and improve the accuracy of documentation. While the impact of a smartphone application log on the quantity and quality of supervised driving has not been widely studied (Ehsani et al., 2021), it could prevent falsification of driving hours data.

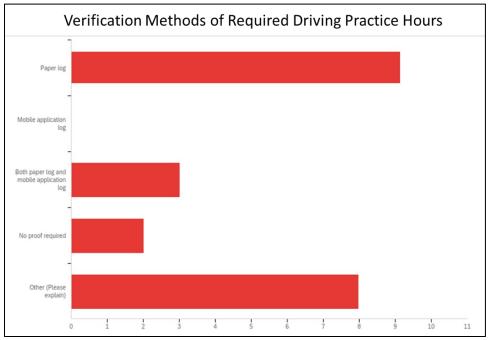


Figure 4.5 Verification Methods of Required Driving Practice Hours

#### 4.4 Provisions to Reduce Distracted Driving

Distracted driving is problematic for drivers of all ages, but can pose significant challenges for younger drivers. In 2019, nine percent of drivers between the ages of 15 and 20 involved in fatal crashes were distracted at the time of the crash (NCSA, 2021d). To prevent distracted driving among participants in their GDL programs, most states ban the use of cell phones/electronic devices, place limits on passenger numbers, and/or restrict nighttime driving (Figure 4.6). Respondents cited other policies as well:

- New York The nighttime driving restriction allows exceptions for driving to school, medical appointments, or work.
- Nevada Prohibits cellphone for all drivers.
- Maine For the 270 days of the intermediate license period, teen drivers cannot carry passengers unless they
  are immediate family members, cannot drive from 12:00 am to 5:00 am, and cannot use cell phones/mobile
  devices while driving.

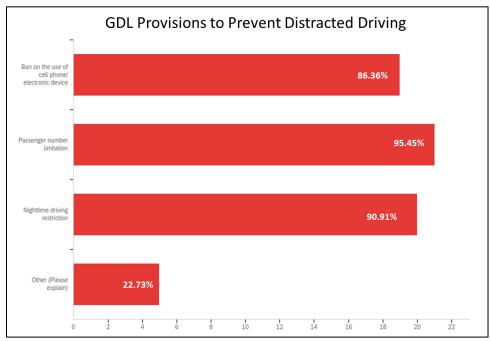


Figure 4.6 GDL Provisions to Prevent Distracted Driving

## 4.5 Parent Outreach Activities

States use several strategies to inform parents about GDL programs. About 37 percent of states organize campaigns on social media platforms, while 22 percent attend community events to spread the word. Kentucky said it presents on its GDL program at local high schools when invited. Four states mandate that parents/legal guardians participate in driving education courses, while other states offer optional parent classes. Other strategies are listed below.

- Minnesota Offers a 90-minute class that reviews the GDL program, safety risks associated with teen drivers, the potential influence of parental supervision, and available resources.
- Delaware and Michigan Offer optional parent courses and encourage parents to participate.
- New York, South Carolina, West Virginia Post information or a booklet on the DMV website.
- West Virginia Introducing a new program in cooperation with JFG Publishing and Safe Road Alliance geared toward helping parents teach their teens about driving skills and techniques.

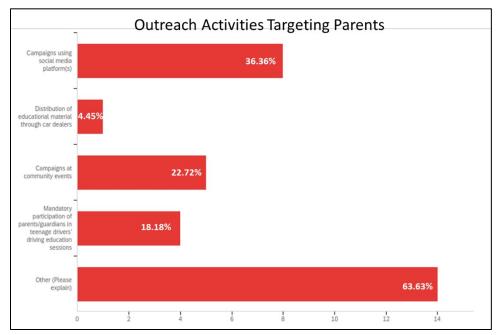


Figure 4.7 Outreach Activities Targeting Parents

## 4.6 Teen Outreach Activities

Successfully implementing a GDL program requires teen drivers to learn about and adhere to GDL regulations. To reach teens, 33 percent of states organize campaigns at community events and on social media (Figure 4.8). Half of the states distribute educational materials in schools (the most common method). Over half of respondents reported their states use other methods to reach teen drivers, including those reviewed below.

- Oregon and Maine Newly licensed drivers receive information on restrictions after successfully passing their road exam and obtaining a provisional driver's license.
- Michigan, New York, and South Carolina Provide information about GDL programs on DMV websites.
- Montana Most students learn about requirements through driver education.
- Oregon Encourages teenagers to sign up for driver education courses.

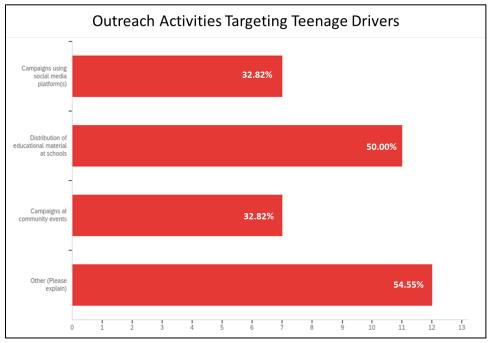


Figure 4.8 Outreach Activities Targeting Teenage Drivers

#### 4.6 Mandatory Driving Education

Sixty-four percent (14) of responding states require young drivers to a complete driving education course before they can obtain a full unrestricted license. These programs generally consist of classroom education and behind-the-wheel instruction. Of these states, 77 percent require between 21 and 30 hours of classroom training (Figure 4.10). Kentucky (four hours) and South Carolina (eight hours) require much less classroom education than most states. In New Mexico, drivers must complete  $\geq$  41 hours of classroom education. If a program does not offer in-vehicle training, it must provide 56 credit hours of classroom instruction to be certified. If a program offers at least seven hours of behind-the-wheel training, the minimum required classroom instruction time is 30 hours. The same 14 states were also asked about the number of hours of in-vehicle training they require. Eleven states (79 percent) mandate 1 - 15 hours of training, while the remaining states require 46 - 60 hours.

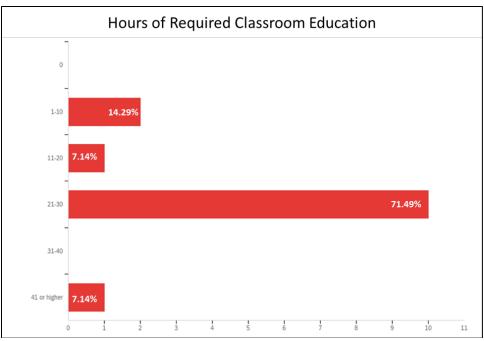


Figure 4.9 Hours of Required Classroom Education

## 4.7 Zero Tolerance Laws

For drivers under the age of 21, the threshold blood alcohol concentration (BAC) for driving under the influence (DUI) is 0.02. All but one (Nevada) of the responding states have a zero tolerance laws for teenage drivers. We asked states with zero tolerance laws to share detailed information on the possible penalties for the underage DUI charge (Figure 4.10). In 16 states, a license can be suspended, with suspension periods for the first offense ranging from one month to one year, or until the driver reaches the age of 18. Minnesota suspends a driver's license for 30 days if they are caught with BAC higher than 0.02. In Delaware, the suspension is two months, while Indiana and Missouri levy three-month suspensions, Idaho, Maine, and Oregon all suspend licenses for one year.

Forty-three percent of states mentioned licenses can be revoked for the first offense. Washington, for the first DUI charge, revokes licenses for a year or until the driver turns 17, whichever is longer. New Mexico also reported a one-year license revocation. West Virginia revokes licenses until the driver turns 18 and all requirements are met according to the DUI mandate.

The second most common penalty for underage DUI is a fine. In some states, a court sets the fine's amount (e.g., Georgia, Maine, Missouri), while in other states the fine is contingent on BAC. Minimum fines in Kentucky, Louisiana, and Oregon are \$100, \$300, and \$1,000, respectively. Some states have established maximum fines. In Kentucky and New Mexico, this figure is \$500, while Idaho, Louisiana, and Michigan cap fines at \$1,000.

Forty-seven percent of the respondents indicated that community service could be a penalty for violating zero tolerance laws. In Georgia, Indiana, Maine, Missouri, New Mexico, and New York, courts determine the amount of community service a driver must complete. In Kentucky, a driver may have the option of completing 20 hours of community service in lieu of paying fine, while Montana requires 20-60 hours of community service, and Michigan indicated up to 360 hours.

In Oregon, drivers convicted of DUII (the state uses the term *driving under the influence of intoxicants* (DUII) instead of DUI) for the first time must install an ignition interlock device for one year once they complete their suspension. Louisiana mandates a driver improvement course, and West Virginia requires a violator to complete its Alcohol Safety and Treatment Program, and in some cases more extensive therapies. Idaho requires an alcohol evaluation, and a violator can be sentenced up to 90 days in jail.



Figure 4.10 Penalties for Violating Zero Tolerance Laws

Most respondents (19 of 22) did not know court dismissal rates for DUI charges against teenage drivers in their state. In Arkansas, 15-20 percent of charges get dismissed, while 15-20 percent of charges are negotiated down to a lesser offense. In New Mexico the dismissal rate tops 20 percent.

# 4.8 Penalties for Speeding Citation

Recognizing that teens are more likely to speed and tailgate than older drivers (Simons-Morton, 2005) and that — based on 2019 crash data — 31 percent of the male drivers and 17 percent of the female drivers between the ages 15 and 20 involved in crashes were speeding (NHTSA 2021c), we asked about penalties for speeding. In eight states (36 percent), a speeding citation results in points on the driver's license. Seventeen respondents (77 percent) gave more detailed information on the consequences of speeding citations. This information is summarized below.

- Missouri A driver may not obtain a full license until they have zero points assessed for 12 months.
- Kentucky A speeding conviction for a minor driver results in a 180-day permit or 180-day intermediate license phase restarting from the date of conviction. Points are added to the license based on how far over the speed limit the vehicle was traveling.
- Georgia A speeding citation could result in an immediate license suspension if the vehicle speed significantly exceeded the speed limit (even for a first offense).
- West Virginia The first conviction results in a warning, but a second conviction results in license revocation until the age of 18.

• Washington — Parents/guardians are notified of the first conviction and the license is suspended for six months, or until the person reaches 18, whichever occurs first.

#### 4.9 Revision Planned for Core GDL Provision

Many states revised their GDL programs during the 2006 – 2014 period, but few changes have been occurred since the mid-2010s. Nonetheless, we were interested in whether respondents knew of plans to revise GDL programs and that lobbying groups promoting the change. Most states are not planning changes to their programs (Figure 4.11). Washington plans to extend the amount of time that teen drivers hold a learning permit, increase supervised driving hours, lengthen nighttime driving restrictions, and reduce restrictions on the number of passengers. New Mexico is considering increasing requirements for supervised driving hours as well. In Missouri, mandatory driver education legislation has been introduced in previous legislative sessions, but it has not passed.

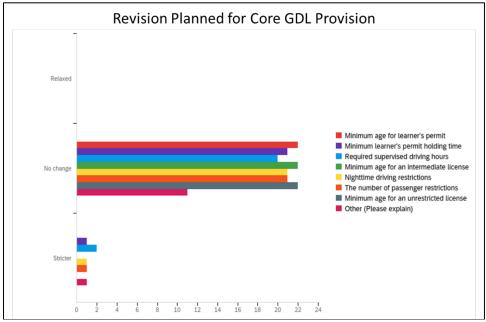


Figure 4.11 Revision Planned for Core GDL Provisions

Highway safety organizations are the groups that most commonly lobby for GDL programs, followed by law enforcement and state government. Missouri mentioned that other safety partners (e.g., AAA) support GDL program revisions. In Colorado, local organizations and non-profits lobby for changes. However, Indiana indicated that special interest groups hold negative opinions of driver's education and want to weaken the program.

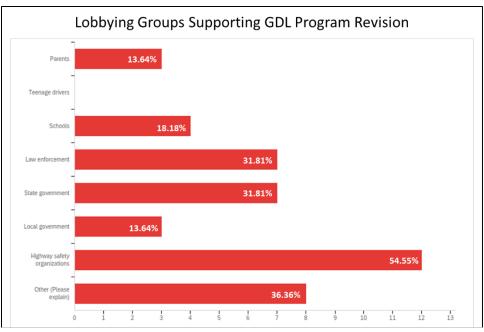


Figure 4.12 Lobbying Groups Supporting GDL Program Revisions

## 4.10 Key Takeaways

- Most GDL programs came online in the late-1990s and early-2000s. Over the years, states gradually added more provisions to their programs. Seventy-five percent of responding states last made significant changes to their GDL programs between 2006 and 2014.
- Just five states have had their GDL programs evaluated. Two states saw a decline in fatal crashes, while two other states recorded little or no change in crashes.
- Licensing agencies in nine states only accept paper logs as proof of practice hours driven. No state accepts only logs generated by mobile apps. Three states (Michigan, Nevada, New Mexico) allow paper and mobile app logs.
- Most states ban the use of mobile phones and electronic devices, limit the number of young passengers who can accompany a teen driver, and restrict nighttime driving.
- Eight agencies use campaigns on social media platforms to raise awareness of GDL programs. In-person events are less common. Just four states mandate that parents/legal guardians participate in driving education courses, although optional classes for parents are available in some states.
- States target teen drivers through several types of outreaches, including the distribution of educational materials at schools, social media campaigns, presence at community events, and at DMV offices/ websites.
- In 16 states, a teen can have their driver's license suspended if their BAC exceeds 0.02. First-time offenders may
  have their license suspended up to one year and/or pay a fine (up to \$1,000, depending on the state). Other
  penalties include community service, installation of an ignition interlock device, completion of a program, and
  jail time.
- In eight states, a speeding citation results in points being added to a license. Other potential penalties include immediate license suspension, a warning with notification to parents/guardians, and restarting the mandatory holding period for the learner and intermediate licensing stages.
- Most states plan no further revisions to their GDL programs. Washington intends to strengthen a few GDL core provisions, and New Mexico plans to require more supervised driving practice.

# **Chapter 5 Review of Graduated Driver Licensing Program in Other States**

The Governors Highway Safety Association, Insurance Institute for Highway Safety (IIHS), National Transportation Safety Board, and insurance companies endorse the use of GDL programs. But they differ slightly on what they view as core provisions of a GDL program, they rate the stringency of programs based on:

- Minimum age for learner's permit
- Minimum holding period for learner's permit
- Supervised driving practice with an adult driver during the learner's stage
- Minimum age for an intermediate license
- Nighttime driving restriction for intermediate license holders
- Passenger restriction for intermediate license holders
- Minimum age for full licensure

This chapter discusses how states vary with respect to these features and reviews national trends.

#### 5.1 Minimum Age for Learner's Permit

As required by 23 CFR 1200.26(c)(2)(i)(C), an applicant must be older than 15 years and six months to be eligible for a learner's permit for states to qualify for funding under the State Graduated Driver Licensing Incentive Grant program. The IIHS GDL program rating system classifies programs as *Good* if the minimum age for obtaining a learner's permit is 16. Kentucky's GDL program satisfies both guidelines.

Across states, we see considerable variability in the minimum age at which a learner's permit can be obtained, ranging from 14 to 16, with 15 being the most common (Figure 5.1). States that do not mandate driver's education often incentivize enrollment by lowering for attendees the minimum age at which they can get a learner's permit. For example, Washington and Oklahoma lower the minimum age by six months if an applicant completes state-approved driver education classes. New Jersey requires 16 year olds to complete six hours of behind-the-wheel instruction; teens must wait until 17 to obtain a learner's permit if they do not wish to enroll in a course. In Colorado, requirements are contingent on an applicant's age. Although 16 year olds do not have to attend a program, 15 year olds must complete a 30-hour driver education course and 15 ½ year olds must attend a four-hour driver awareness program.

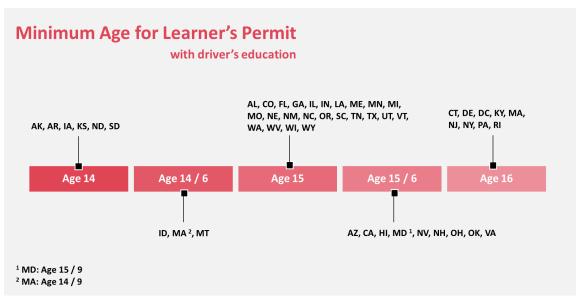
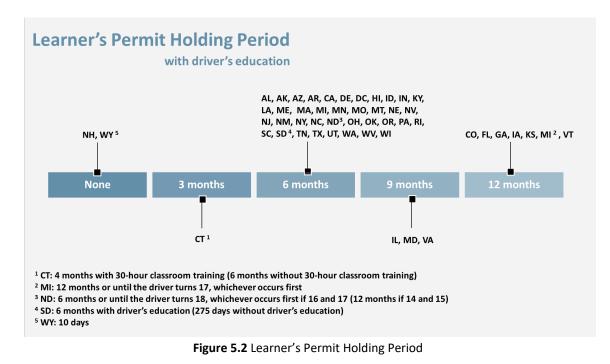


Figure 5.1 Minimum Age To Obtain a Learner's Permit

#### 5.2 Minimum Holding Period for Learner's Permit

NHTSA and IIHS recommend at least a six-month holding period for a learner's permit. Most states — including Kentucky — require learner's permit holders under 21 to practice driving under the supervision of fully licensed adults for at least six months before they are eligible for an intermediate license (Figure 5.2). Two outliers are New Hampshire, which does not have a holding period, and Wyoming, which requires a permit holder to wait just 10 days before applying for an intermediate license. In seven states, the required holding period is 12 months, but in Michigan this period ends before the 12-month mark if a permit holder turns 17.,



#### **5.3 Supervised Driving Requirements**

NHTSA recommends that drivers holding learner's permits complete 40 hours of supervised driving, while IIHS gives its highest rating to states requiring more than 30 hours of practice driving. Requirements vary by state — Arkansas has the most relaxed policy and does not require logged practice hours (driver education is optional), while North Carolina has the strictest rules, requiring 72 practice hours and mandating driver education (30 hours of classroom instruction, 6 hours of behind-the-wheel sessions) if the permit holder is under 18. Over half of the states require  $\geq$  50 hours of practice driving. Kentucky's requires at least 60 hours of practice driving during the permit phase (10 hours at night).

Some states require fewer practice hours if (1) a permit holder completes a driver's education course, (2) a permit holder's parent/legal guardian takes an optional parent class, or (3) a permit holder is older than a specified age. Cutting back on the required hours incentivizes driver education enrollment and parent participation. For instance, Alabama and Oregon reduce the mandated practice hours by 50 if a permit holder shows proof of completing driver education. Minnesota requires 50 hours of practice driving, but only 40 hours if a parent/legal guardian takes an optional 90-minute parent education session. Age can also be factored into rules. North Dakota requires 50 hours if a permit holder is under 16, but none for drivers who are at least 16.

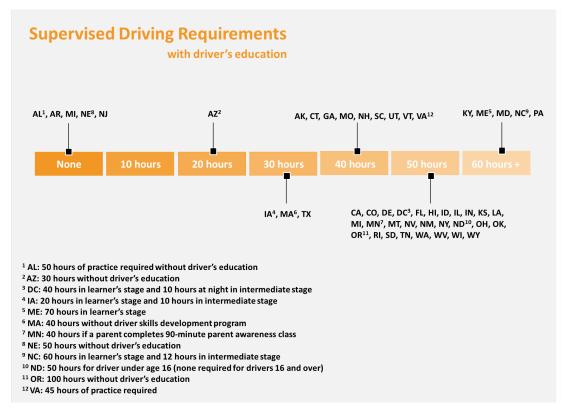


Figure 5.3 Supervised Driving Requirements

#### 5.4 Minimum Age for Intermediate License

All but six states require that permit holder reach the age of 16 before they can apply for an intermediate license that grants them the ability to drive unsupervised during the day (night restrictions differ by state) (Figure 5.4). In Kentucky, the minimum age eligible for a learner's permit is 16. With a mandatory holding period of six months, the minimum age for obtaining an intermediate license is 16 ½. Only in New Jersey is do drivers have to be 17 in order to drive unsupervised.

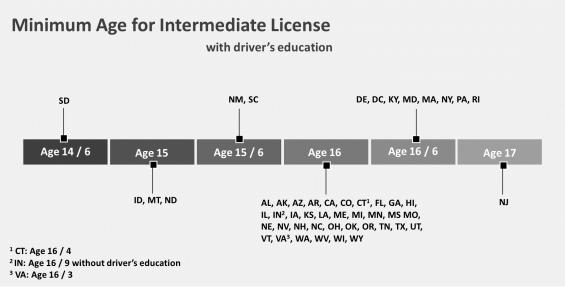
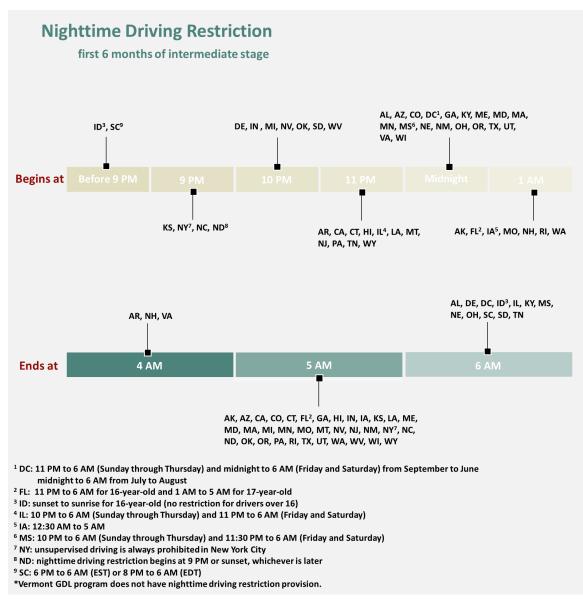


Figure 5.4 Minimum Age for Intermediate License

# 5.5 Nighttime Driving Restrictions

During the intermediate phase of a GDL program, drivers generally can travel unsupervised. But most states have a few restrictions (e.g., nighttime driving restrictions for the first six months or a year). NHTSA recommends that nighttime driving restrictions start no later than 10:00 pm, but most states prohibit intermediate license holders from driving unsupervised starting 11:00 pm or later (Figure 5.5). Kentucky's restrictions go into effect at 12:00 am and wrap up at 6:00 am. The earliest times are sunset (Idaho) and 6:00 pm (South Carolina) and the latest is 1:00 am (seven states).

Some states tie nighttime restrictions to age and the day of the week. Florida and Idaho are more restrictive with 16-year-old intermediate license holders. However, 17 year olds cannot drive unsupervised from 1:00 am to 5:00 am (Florida), or no restriction is in place (Idaho). Illinois, Indiana, and Mississippi strengthen restrictions during the week but relax them over the weekend (e.g., Illinois pushes back the beginning of restricted driving hours from 10:00 pm to 11:00 pm on Fridays and Saturdays).





#### 5.6 Passenger Restriction

During the first six months of the intermediate stage of their GDL programs, 36 states prohibit young passengers from riding with teen drivers or cap the number of young passengers at one. How states define young passenger varies, but 21 is the threshold most commonly used (see Appendix A). A few states permit more. South Carolina allows up to two passengers during the first six months of the intermediate phase. Florida, Mississippi, and North Dakota do not have passenger restrictions. Without passenger restrictions, the maximum number of passengers is determined by a state's seatbelt law.

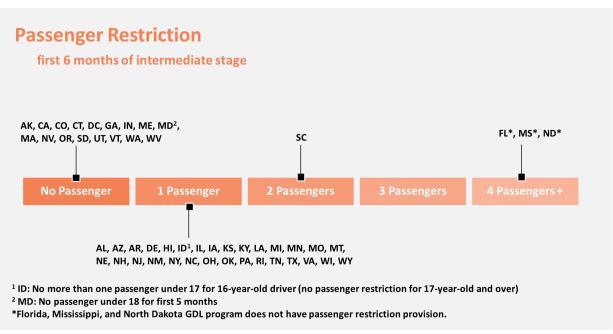


Figure 5.6 Passenger Restrictions During the Intermediate Licensing Phase

#### 5.7 Minimum Age for Obtaining Unrestricted Licenses

States use two major criteria for graduating drivers from the intermediate stage to a full, unrestricted license: (1) the intermediate driver's license mandatory holding period and (2) minimum age. NHTSA and IIHS recommend 18 as the minimum age for drivers to obtain an unrestricted license. Some states require a 6 - 12 month intermediate driver's license holding period, while others do not issue unrestricted licenses until drivers turn 18 or 21. Over 70 percent of states prohibit drivers under 17 from driving unrestricted (Figure 5.7). In Kentucky, 17-year-old drivers are eligible for an unrestricted license after the six-month intermediate license holding period. Other states have more idiosyncratic rules. For example, in Alaska drivers under the age of 18 must wait six months after obtaining a provisional license to be eligible for an unrestricted license. Because the minimum age for a provisional license is 16, the minimum age for an unrestricted license 16 ½.

# **Minimum Age for Unrestricted License** with driver's education AL, CA, CO, DE, HI, ID, IA, AR, CT, DC, FL, GA, IL, IN, MD, KS, KY, LA, MI, MN, NE, MA, MO, NV, NH, NJ, OH, TX, MT, ND, SD NY<sup>2</sup>, OR, TN, UT, WV VA, WA Age 16 Age 16 / 6 Age 17 Age 17 / 6 Age 18 AK, AZ, ME<sup>1</sup>, MS, NM, RI NC, OK<sup>3</sup>, SC, VT, WI<sup>4</sup>, WY <sup>1</sup> ME: Age 16 / 9 <sup>2</sup> NY: Age 18 without driver's education <sup>3</sup> OK: Age 17 without driver's education <sup>4</sup> WI: Age 16 / 9

Figure 5.7 Minimum Age for Unrestricted License

# 5.8 Key Takeaways

- Most GDL programs include key requirements, but specific provisions vary among states.
- The least restrictive states issue learner permits to 14 year olds. The most restrictive states delay eligibility until the age of 16.
- The minimum amount of time states require a person to hold a learner's permit ranges from 0 to 12 months.
- More than half of the states require a person to complete at least 50 hours of supervised driving practice before they are eligible for an intermediate driver's license.
- The minimum age for obtaining an intermediate license ranges from 14 ½ to 17. Most states let 16-year-old learner's permit holders who satisfy the mandatory holding period to apply for an intermediate license.
- All states but Vermont restrict unsupervised driving of intermediate license holders at night. Most restrictions go into effect between 10:00 pm and 12:00 am and end at 5:00 am or 6:00 am.
- For the first six months after the issuance of an intermediate license, 30 states do not allow more than one young passenger in the car with teen drivers.
- The minimum age for an unrestricted license varies from 16 to 18, while a few states allow young drivers to drive unsupervised at night without passenger restrictions before turning 17.

# Chapter 6 Best Practices to Improve Teenage Driver Safety in Kentucky

# 6.1 Best Practices and Strategies

We propose revising Kentucky's GDL program to incorporate best practices identified through our survey, review of state-level policies, and guidelines put forward by safety-related organizations.

#### 1. Mandate or incentivize parents/legal guardians to complete a driver education course.

Getting parents/guardians more involved when teens are just beginning to drive is linked to lower crash rates. Teen drivers who perceive their parents as highly involved are less likely to use a cell phone and more likely to use seatbelts and avoid DUI (CHOP 2009). The revised 2017 *Novice Teen Driver Education and Training Administrative Standards* (NTDETAS) — developed and endorsed by NHTSA and other safety-related organizations — provides standards that states can use to coordinate parental involvement. NTDETAS urges states to offer a parent seminars and mandate that parents of teen drivers complete a parent seminar before or at the start of a driver education course. The seminar should discuss the parent's responsibility and provide information on how to (1) determine when a teen driver is ready to advance to the next stage, (2) effectively supervise driving practice, (3) manage the overall driving experience, and (4) adopt a written agreement between themselves and teen drivers with clearly defined rules and consequences. Kentucky could incentivize parents/guardians by reducing number of supervised practice driving hours required of teen drivers with the certificate of program completion. Expanding the existing driver education course with a parental involvement component is thus recommended.

#### 2. Increase the minimum age for obtaining an unrestricted driver's license to 18.

In Kentucky, if a driver obtains a learner's permit as soon as they are eligible (16 years old) and takes a skills test immediately after the 180-day mandatory holding period, they could obtain an intermediate license at the age of 16 ½. After fulfilling the intermediate license's mandatory 180-day holding period, a young driver could apply for a full, unrestricted license with their certificate of driver education completion. If progress is made in the shortest time possible, young drivers could drive without nighttime driving restrictions and passenger restrictions soon after they turn 17.

The American Academy of Pediatrics (AAP), IIHS, and USDOT recommend against issuing unrestricted licenses to drivers before they turn 18. Currently, 17 states require drivers to be 18 years old or older to be eligible for a full license. As studies have shown that nighttime driving and the presence of peer passengers increase severe injury and fatal crash risks for young drivers, we strongly recommend revising the eligibility criteria for a full, unrestricted license. This will help young drivers gain more experience and improve their safety.

#### 3. Begin nighttime driving restrictions 10:00 pm (rather than 12:00 am).

For young drivers who have obtained an intermediate driver's license, about 50 percent of states impose nighttime driving restrictions that go into effect before 12:00 am. The AAA Foundation for Traffic Safety, Advocates for Highway and Auto Safety, AAP, IIHS, and NHTSA recommend nighttime driving restriction hours go from 10:00 pm to 5:00 am. Although many states have exceptions — travel between home, school, and work —safety organizations urge exceptions be granted for emergencies only.

Kentucky's nighttime restrictions extend from 12:00 am to 6:00 am. This may only provide minimal protection since most night driving trips taken by young drivers end before 12:00 am. Kentucky also allows intermediate license holders to drive unsupervised during the restricted period if they demonstrate the driving is related to work or school. Moving up the start of the restricted period to 10:00 pm — with limited carve outs for emergencies — will improve the safety of teenage drivers without compromising their mobility.

# 4. Minimize in-vehicle distractions by adjusting rules on the transport of passengers under the age of 20.

When multiple peer passengers are in a vehicle, teen drivers are more likely to be distracted. This has significant consequences for safety. In 2020, 56 percent of teenage passenger deaths occurred in vehicles helmed by a teen driver. Research has also found that crash risk increases exponentially as the number of peer passengers increases and that teen drivers transporting peer passengers are more likely be distracted just before a serious crash than when driving alone (CHOP 2022).

In Kentucky, drivers who hold an intermediate license may transport up to one passenger under the age of 20, excluding family members. AAP recommends no young passengers be allowed in vehicles during the first six months a driver holds intermediate license, and that no more than one passenger be allowed until a driver turns 18. NHTSA supports capping the number of teen passengers at one for a period of one year. IIHS also calls for restricting the number of teen passengers to one until a driver turns 18.

To minimize in-vehicle distractions, we recommend (1) that teen drivers not be allowed to transport teen passengers during the first six months that they hold an intermediate license and (2) capping the number of teen passengers at one (1) until a driver turns 18.

# 5. Update the GDL program so it covers all drivers between the ages of 18 and 21

About one-third of the US population does not obtain their first driver's license until they reach at least 18 years of age. Novice drivers who wait until they are 18 to get a license are not covered by GDL programs in most states, including Kentucky. A few states (Connecticut, Indiana, Maryland, New Jersey) require all novice drivers, regardless of age, to progress through the three levels of licensing.

GDL programs confer little benefit when applied to drivers who are at least 21 years old. As such, we recommend Kentucky revise its GDL program to cover all novice drivers between the ages of 18 and 21 as it can improve driving ability, reduce risk-taking behavior during the first few months of driving, and improve safety by managing exposure to risk (e.g., nighttime driving, inclement weather). Ample driving practice during the mandatory holding period can prepare novice drivers for unsupervised driving, and eventually full driving privileges.

# 6. Allow the use of mobile apps to log practice driving hours.

In Kentucky, before a teen driver can apply for an intermediate license they must complete 60 hours of supervised practice driving (10 at night). Applicants must submit a paper log that documents these hours which is certified by their parent/guardian. However, paper logs are prone to falsification, especially if parents/guardians are not deeply engaged in their child's progress through a GDL program. Mobile apps are simpler to use and less vulnerable to falsification. When using apps, drivers log practice house by simply pressing the start and end buttons for each trip. Under this proposal, only valid trips recorded on the log could be submitted as proof of practice driving.

# 7. Offer a free decal that can be placed on the rear of a vehicle or on the license plate to indicate a novice driver is at the wheel.

Only New Jersey mandates that drivers under 21 with a learner's permit or intermediate license purchase two magnetic decals from the DMV and display them on the top-left corner of license plates on the front and the rear of a vehicle. Since this requirement took effect, the GDL citation rate has increased significantly as law enforcement have an extra tool to enforce curfews, passenger restrictions, and other limitations associated with an intermediate license. Another benefit of decals is that other drivers may notice them and drive with more caution. We recommend

that Kentucky launch a program that provides free decals at DMV offices and study the effect of the voluntary display of such decals.

#### 8. Partner with the Kentucky State Police to conduct routine, visible enforcement.

GDL program effectiveness positively correlates with strict enforcement of its provisions. High-visibility enforcement campaigns focusing on passenger restrictions and cell phone use near high schools at the beginning of a school year could send a strong signal to teen drivers that they must abide by GDL program provisions.

#### 6.2 Conclusions

Using crash data from 2001 to 2020, we found that Kentucky's 2006 expansion of its GDL program improved teen driver safety by reducing the number of fatal and severe crashes involving teen drivers. However, looking at nationwide data on normalized teen crash fatalities per 10,000 licensed teen drivers shows that Kentucky ranks near the bottom of all states. The eight best practices described in Section 6.1 provide a solid foundation for improving the effectiveness of Kentucky's GDL program. Because parents/guardians are the primary partners in guiding teen drivers through the licensing process, including them in decision making about the GDL program will be critical. Public outreach activities targeting parents and teen drivers and raising public awareness about the need to improve Kentucky's GDL program may open a forum for discussions on adopting specific best practices.

# References

Advocates of Highway and Safety. (2021). 2021 Roadmap of State Highway Safety Laws. <u>https://saferoads.org/wp-content/uploads/2021/01/2021-Roadmap-of-State-Highway-Safety-Laws-Hyperlinked.pdf</u>

Agent, K., J.G. Pigman, L.C. Steenbergen, S.H. Pollack, P.S. Kidd, C. McCoy. (2000). Evaluation of Kentucky's Graduated Driver Licensing System (Report No. KTC-0 1-28/NHTSA 1-98-1 F). Kentucky Transportation Center. https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2531&context=ktc\_res earchreports

Carney, C., McGehee, D.V., Harland, K., Weiss, M. & Raby, M. (2015). Using Naturalistic Driving Data to Assess the Prevalence of Environmental Factors and Driver Behaviors in Teen Driver Crashes (Technical Report). Washington, D.C.: AAA Foundation for Traffic Safety. <u>https://aaafoundation.org/using-naturalistic-driving-data-assess-prevalence-environmental-factors-driver-behaviors-teen-driver-crashes/</u>

Center for Disease Control and Prevention [CDC]. (2021, May 21). Teen Drivers: Get the Facts. https://www.cdc.gov/transportationsafety/teen\_drivers/teendrivers\_factsheet.html

Chen L. H, Baker, S. P., & Li, G. (2006). Graduated driver licensing programs and fatal crashes of 16-year-old drivers: A national evaluation. Pediatrics, 118, 56–62.

Compton, R. P., & Ellison-Potter, P. (2008). Teen driver crashes: A report to congress (No. DOT-HS-811-005). United States. National Highway Traffic Safety Administration.

Croke, J. A., & Wilson, W. B. (1977). Model for provisional (graduated) licensing of young novice drivers (Report No. DOT HS 802 313). National Highway Traffic Safety Administration.

Dee, T. S., Grabowski, D. C., & Morrisey, M. A. (2005). Graduated driver licensing and teen traffic fatalities. Journal of Health Economics, 24, 571–589.

Ehsani, Johnathon P., Weast, Rebecca., Chirles, Theresa., Hellinger, Andrew., Shields, Wendy., Yenokyan, Gayane., & Igusa, Takeru. "Evaluating a Smartphone Application to Increase the Quantity and Improve the Quality of Supervised Practice Driving." Injury prevention 27.6 (2021): 587–591. Web. Federal Highway Administration [FHWA]. (2020, December 24). Highway Statistics 2019. https://www.fhwa.dot.gov/policyinformation/statistics/2019/dl22.cfm

Foss, Robert D., Scott V. Masten, Arthur H. Goodwin, Natalie P. O'Brien. (2012). The Role of Supervised Driving Requirements in Graduated Driver Licensing Programs. (Report No. DOT HS 811 550). National Highway Traffic Safety Administration.

Gershon P, Zhu C, Klauer SG, Dingus T, Simons-Morton B. (2018). Teens' distracted driving behavior: Prevalence and predictors. J Safety Res.

Governors Highway Safety Association. (2013). Promoting Parent Involvement in Teen Driving. https://www.ghsa.org/sites/default/files/2016-11/TeenDrivingParentReport%20low.pdf

Heck KE, Carlos RM. Passenger distractions among adolescent drivers. (2008). J Safety Res.

Insurance Institute for Highway Safety. Fatality Facts 2019: Teenagers. Highway Loss Data Institute; March 2021. http://www.iihs.org/topics/fatality-statistics/detail/teenagers Kentucky Transportation Cabinet. (2021). Graduated Driver Licensing Program. <u>https://drive.ky.gov/driver-licensing/Pages/Graduated-Driver-Licensing-Program.aspx</u>

Kentucky Transportation Cabinet Office of Highway Safety (N/A). Seat Belt Safety. https://transportation.ky.gov/HighwaySafety/Documents/SeatBelt.pdf

Masten, S., F. Dennis Thomas, Kristopher T. Korbelak, Raymond C. Peck, and Richard D. Blomberg. (2015). Meta-Analysis of Graduated Driver Licensing Laws (Report No. DOT HS 812 211). National Highway Traffic Safety Administration.

McCartt, A. T., Teoh, E. R., Fields, M., Braitman, K. A., & Hellinga, L. A. (2010). Graduated licensing laws and fatal crashes of teenage drivers: A national study. Traffic Injury Prevention, 11, 240–248.

Monroe, K., Nichols, M., Crew, M. et al. Evaluating teen driving knowledge and behaviors following educational outreach. Inj. Epidemiol. 7, 30 (2020). https://doi.org/10.1186/s40621-020-00255-0

National Center for Statistics and Analysis [NCSA]. (2006, July). Most Fatalities in Young (15- to 20-Year-Old) Driver Crashes Are Young Drivers and Their Young Passengers. (Report No. DOT HS 810 597). National Highway Traffic Safety Administration.

NCSA. (2021a, May). Early estimate of motor vehicle traffic fatalities in 2020 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 115). National Highway Traffic Safety Administration.

NCSA. (2021b, June (revised)). Early estimates of motor vehicle traffic fatalities and fatality rate by sub-categories in 2020 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 118). National Highway Traffic Safety Administration.

NCSA. (2021c, October). Early estimate of motor vehicle traffic fatalities for the first half (January–June) of 2021 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 199). National Highway Traffic Safety Administration.

NCSA. (2021d, April). Distracted driving 2019 (Research Note. Report No. DOT HS 813 111). National Highway Traffic Safety Administration.

National Highway Traffic Safety Administration [NHTSA]. (2012, April). The Role of Supervised Driving in a Graduated Driver Licensing Program. (Report No. DOT HS 811 598). https://www.adtsea.org/webfiles/fnitools/documents/nhtsa-role-supervised-driving-requirementssummary.pdf

NHTSA. (2021a, May 25). Traffic Safety Facts Annual Report Tables. https://cdan.nhtsa.gov/tsftables/tsfar.htm#

NHTSA. (2021b). National Statistics. https://www-fars.nhtsa.dot.gov/Main/index.aspx

NHTSA. (2021c). Traffic Safety Facts 2019: Young Drivers (Report No. DOT HS 813 130). U.S. Department of Transportation; June 2021. Available at: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813130external icon. Accessed 7 September 2021.

Plainis, S., Murray, I. J., & Pallikaris, I. G. (2006). Road traffic casualties: understanding the nighttime death toll. Injury prevention: journal of the International Society for Child and Adolescent Injury Prevention, 12(2), 125–128. https://doi.org/10.1136/ip.2005.011056

**KTC Research Report** Graduated Driver Licensing Program

Pollock III, P. H. (2016). The essentials of political analysis. CQ Press.

Rajaratnam, Shantha M. W., Christopher P. Landrigan, Wei Wang, Rachel Kaprielian, Richard T. Moore, and Charles A. Czeisler, (2015). Teen Crashes Declined After Massachusetts Raised Penalties For Graduated Licensing Law Restricting Night Driving. Health Affairs, 34(6), 963-970.

Shope, J. T. (2007). Graduated driver licensing: Review of evaluation results since 2002. Journal of Safety Research, 38, 165–175.

Simons-Morton B, Lerner N, Singer J. The observed effects of teenage passengers on the risky driving behavior of teenage driversexternal icon. Accid Anal Prev 2005;37(6):973–982. doi:10.1016/j.aap.2005.04.014

U. S. Census Bureau. (2019). Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2019 (NST-EST2019-01). <u>https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html</u>

The Children's Hospital of Philadelphia Research Institute. (2009). Driving through the eyes of teens a closer look, second in a series of teen driver safety issues.

The Children's Hospital of Philadelphia Research Institute. (2022). Teen Passenger Risks. https://www.teendriversource.org/teen-crash-risks-prevention/distracted-driving/peer-passengers

Vanlaar, W., Mayhew, D., Marcoux, K., Wets, G., Brijs, T., & Shope, J. (2009). An evaluation of graduated driver licensing programs in North America using a meta-analytic approach. Accident Analysis and Prevention, 41, 1104–1111.

Williams, A. F. (2003). Teenage drivers: patterns of risk. Journal of safety research, 34(1), 5-15.

Williams, A.F., Chaudhary, N.K. & Tison, J. (2010). Evaluation of New Jersey's Graduated Driver Licensing System (Technical Report). Washington, D.C.: AAA Foundation for Traffic Safety.

Williams, A. F., McCartt, A. T., & Sims, L. B. (2016). History and current status of state graduated driver licensing (GDL) laws in the United States. Journal of safety research, 56, 9-15.

Appendix A State GDL Provisions for the Learner Permit Stage

	Learner Stage			
Min. Age (yrs/mos)		Min. Dur. (mos)	Supervised Driving Hrs (night)	
AL	15	6	• 50	
			• 0 with driver ed.	
AK	14	6	40 (10)	
AZ	15/6	6	• 30 (10)	
			• 20 (6) with driver ed.	
AR	14	6	None	
CA	15/6	6	50 (10)	
СО	• 15 w/ driver ed.	12	50 (10)	
	• 15 / 6 w/ driver awareness			
	prog.			
	• 16 w/o driver ed. or prog.			
СТ	16	• 4 w/ 30-hour classroom	40	
		training		
		<ul> <li>6 w/o 30-hour classroom training</li> </ul>		
DE	16	6	50 (10)	
DC	16	6	40 (10 in intermediate stage)	
FL	15	12	50 (10)	
GA	15	12	40 (6)	
HI	15/6	6	50 (10)	
ID	14/6	6	50 (10)	
IL	15	9	50 (10)	
IN	• 15 w/ driver ed.	6	50 (10)	
	• 16 w/o driver ed.			
IA	14	12	• 20 (2) during learner stage	
			• 10 (2) during intermediate	
KS	14	12	stage 50 (10)	
	16	6	60 (10)	
KY				
LA	15	6	50 (15)	
ME	15	6	70 (10)	
MD	15/9	9	60 (10)	
MA	16	6	• 40	
			• 30 with driver skills	
N 41	14.40	6	development prog.	
MI	14/9	6	50 (10)	
MN	15	6	• 50 (15)	
			• 40 (15) if parent completes 90-mins class	
МІ	15	12 months or until 17,	None	
1411	L.J.	whichever occurs first		

MT	14/6	6	50 (10)	
NE	15	6	• 50 (10)	
			• 0 with driver ed.	
NV	15/6	6	• 50 (10)	
			• 100 (10) if driver ed. not	
			offered within 30 miles	
NH	15/6	None	40 (10)	
NJ	• 16 w/ 6 hours of behind-	6	None	
	the-wheel instruction			
	• 17 w/o 6 hours of behind-			
	the-wheel instruction		=== (( =)	
NM	15	6	50 (10)	
NY	16	6	50 (15)	
NC	15	6	• 60 (10) during learner stage	
			• 12 (6) during intermediate	
			stage	
ND	14	12 for drivers under 16;	50 for drivers under 16	
		otherwise, 6 months or until	otherwise none	
		age 18 (whichever comes		
		first)		
ОН	15/6	6	50 (10)	
ОК	• 15 / 6 w/ driver ed	6	50 (10)	
	• 16 w/o driver ed			
OR	15	6	50	
			100 without driver ed.	
ΡΑ	16	6	65 (10 night driving + 5 in	
			inclement weather)	
RI	16	6	50 (10)	
SC	15	6	40 (10)	
SD	14	<ul> <li>180 days with driver ed.</li> </ul>	50 (10 night driving + 10 in	
		<ul> <li>275 days without driver</li> </ul>	inclement weather)	
		ed.		
TN	15	6	50 (10)	
ТХ	15	6	30 (10)	
UT	15	6	40 (10)	
VT	15	12	40 (10)	
VA	15/6	9	45 (15)	
WA	<ul> <li>15 w/ driver training</li> </ul>	6	50 (10)	
	course			
	• 15 / 6 w/o training course			
WV	15	6	50 (10)	
WI	15	6	50 (10)	

(Sources: IIHS, GHSA, and DMV websites of 50 states and the District of Columbia)

Appendix B State GDL Provisions for the Intermediate Licensing Stage

	Intermediate Stage		
-	Min. Age (yrs/mos)	Nighttime Driving Restriction	Passenger Restrictions (Except Family, Unless Noted)
AL	16	Midnight - 6 a.m.	No more than 1
AK	16	1 a.m 5 a.m.	First 6 mos: no passengers under 21
AZ	16	First 6 mos: midnight - 5 a.m.	First 6 mos: no more than 1 under 18
AR	16	11 p.m 4 a.m.	No more than 1 under 21
CA	16	11 p.m 5 a.m.	First 12 mos: no passengers under 20
со	16	Midnight - 5 a.m.	<ul> <li>First 6 mos: no passengers</li> <li>Second 6 mos: no more than 1 under 21</li> </ul>
со	16/4	11 p.m 5 a.m.	<ul> <li>First 6 mos: parents or instructor only</li> <li>Second 6 mos: parents, instructor or immediate family only</li> </ul>
DE	16/6	10 p.m 6 a.m.	First 6 mos: no more than 1
DC	16 / 6	<ul> <li>September – June <ul> <li>11 p.m 6 a.m. (Sun-Thrs)</li> <li>midnight - 6 a.m. (Fri-Sat)</li> </ul> </li> <li>July – August <ul> <li>midnight - 6 a.m.</li> </ul> </li> </ul>	<ul> <li>First 6 mos: no passengers</li> <li>Thereafter: No more than 2 under 21</li> </ul>
FL	16	<ul> <li>Age 16: 11 p.m 6 a.m.</li> <li>Age 17: 1 a.m 5 a.m.</li> </ul>	None
GA	16	Midnight - 5 a.m.	<ul> <li>First 6 mos: no passengers</li> <li>Second 6 mos: no more than 1 under 21</li> <li>Thereafter: No more than 3</li> </ul>
HI	16	11 p.m 5 a.m.	No more than 1 under 18
ID	15	Sunset – Sunrise <sup>1</sup>	First 6 mos: no more than 1 under 17 <sup>1</sup>
IL	16	<ul> <li>Sun-Thurs: 10 p.m 6 a.m</li> <li>Fri-Sat: 11 p.m 6 a.m.</li> </ul>	First 12 mos: no more than 1 under 20
IN	16 / 3 or 16 / 9 <sup>2</sup>	<ul> <li>First 180 days: 10 p.m 5 a.m.</li> <li>After 180 days:         <ul> <li>11 p.m 5 a.m. (Sun-Thrs)</li> <li>1 a.m 5 a.m. (Fri-Sat)</li> </ul> </li> </ul>	First 180 days: no passengers
IA	16	12:30 a.m 5 a.m.	First 6 mos: no more than 1 under 18, parents may waive
KS	16 <sup>3</sup>	First 6 mos: 9 p.m 5 a.m.	First 6 mos: no more than 1 under 18
КҮ	16/6	Midnight - 6 a.m.	No more than 1 under 20
LA	16	11 p.m 5 a.m.	No more than 1 under 21 between 6 p.m 5 a.m.
ME	16	Midnight - 5 a.m.	First 270 days: no passengers
MD	16/6	Midnight - 5 a.m.	First 5 mos: no passengers under 18
MA	16/6	Midnight 5 a.m.	First 6 mos: no passengers under 18
МІ	16	10 p.m 5 a.m.	No more than 1 under 21
MN	16	First 6 mos: midnight - 5 a.m.	<ul> <li>First 6 mos: no more than 1 under 20</li> <li>Second 6 mos: no more than 3 under 20</li> </ul>
MS	16	• Sun-Thurs: 10 p.m 6 a.m.	None

		• Fri-Sat: 11:30 p.m 6 a.m.	
мо	16	1 a.m 5 a.m.	<ul> <li>First 6 ms: no more than 1 under 19</li> <li>Thereafter: no more than 3 under 19</li> </ul>
MT	15	11 p.m 5 a.m.	<ul> <li>First 6 mos: no more than 1 under 18</li> <li>Second 6 mos: no more than 3 under 18</li> </ul>
NE	16	Midnight - 6 a.m.	First 6 mos: no more than 1 under 19
NV	16	10 p.m 5 a.m.	First 6 mos: no passengers under 18
NH	16	1 a.m 4 a.m.	First 6 mos: no more than 1 under 25
NJ	17	11 p.m 5 a.m.	No more than 1
NM	15/6	Midnight - 5 a.m.	No more than 1 under 21
NY	16/6	9 p.m 5 a.m. <sup>4</sup>	No more than 1 under 21
NC	16	9 p.m 5 a.m.	No more than 1 under 21
ND	15	Sunset or 9 p.m. (whichever is later) - 5 a.m.	No restriction <sup>5</sup>
ОН	16	<ul> <li>First 12 mos: midnight - 6 a.m.</li> <li>After 12 mos: 1 a.m 5 a.m.</li> </ul>	First 12 mos, no more than 1
ОК	16	10 p.m 5 a.m.	No more than 1
OR	16	Midnight - 5 a.m.	<ul> <li>First 6 mos: no passengers under 20</li> <li>Second 6 mos: No more than 3 passengers under 20</li> </ul>
ΡΑ	16/6	11 p.m 5 a.m.	<ul> <li>First 6 mos: no more than 1 under 18</li> <li>Thereafter: no more than 3 under 18</li> </ul>
RI	16/6	1 a.m 5 a.m.	First 12 mos: no more than 1 under 21
SC	15 / 6 <sup>6</sup>	<ul> <li>EST: 6 p.m 6 a.m.</li> <li>EDT: 8 p.m 6 a.m.</li> </ul>	No more than 2 under 21 unless to/from school
SD	14/6	10 p.m 6 a.m.	<ul> <li>First 6 mos: no passengers</li> <li>Thereafter: no more than 1</li> </ul>
TN	16	11 p.m 6 a.m.	No more than 1
ТΧ	16	Midnight - 5 a.m.	No more than 1 under 21
UT	16	Midnight - 5 a.m.	First 6 mos: no passengers
VT	16	No restriction	First 3 mos: no passengers Second 3 mos: family only
VA	16/3	Midnight - 4 a.m.	<ul> <li>First 12 mos: no more than 1 under 21</li> <li>Thereafter: no more than 3 under 21<sup>7</sup></li> </ul>
WA	16	1 a.m 5 a.m.	<ul> <li>First 6 mos: no passengers under 20</li> <li>Second 6 mos: no more than 3 under 20</li> </ul>
WV	16	10 p.m 5 a.m.	<ul> <li>First 6 mos: no passengers under 20</li> <li>Second 6 mos: no more than 1 under 20</li> </ul>
WI	16	Midnight - 5 a.m.	No more than 1
WY	16	11 p.m 5 a.m.	No more than 1 under 18

(Sources: IIHS, GHSA, and DMV websites of 50 states and the District of Columbia)

1. Applicable to 16-year-old only

2. 16 / 3 with driver's education and 16 / 9 without driver's education

3. 15-year-old can drive unsupervised to and from work or school only

4. Unsupervised driving prohibited at all times in New York City.

5. The number of passengers you can carry is limited by the number of seat belts in the vehicle

6. 15 / 6 with driver's education

7. For travel to and from school-sponsored activities and emergencies only

Appendix C State GDL Provisions on Minimum Age for Full Driving Privileges, Cell Phone Bans, and Driver Education Requirements

	Full Privilege Min. Age (yrs/mos)	All Cell Phone Ban	Driver Education
AL	17	Drivers with instruction permit and intermediate license	Optional
AK	16/6	No (texting ban only)	Optional
AZ	16/6	Drivers with instruction permit and intermediate license (first 6 month)	Optional
AR	18	Drivers under 18	Optional
CA	17	Drivers under 18	<ul> <li>Mandatory if under 17 / 6</li> <li>either 30 hrs or 2 1/2 semester periods of classroom instruction, and</li> <li>six hours of behind-the-wheel (BTW) training</li> </ul>
со	17	Drivers under 18	<ul> <li>Mandatory if under 15 / 6</li> <li>Mandatory driver awareness program (4 hrs) if between 15 / 6 and 16</li> </ul>
СТ	18	Drivers under 18	<ul> <li>Mandatory 8-hour Safe Driving Practices, including the 2-hour parent/legal guardian training.</li> <li>Optional 30-hour classroom training</li> </ul>
DE	17	Drivers with instruction permit and intermediate license	<ul> <li>Mandatory if under 18</li> <li>30 hrs of classroom instruction</li> <li>7 hrs of in-car BTW instruction, and</li> <li>7 hrs of in-car observation</li> </ul>
DC	18	Drivers with learner's permit	Optional
FL	18	No (handheld ban in school or work zone only)	Mandatory Traffic Law and Substance Abuse Education course for all first-time drivers (regardless of age)
GA	18	No (handheld ban only)	Mandatory if under 18 • 30 hrs of classroom instruction, and • 6 hrs of BTW training
ні	17	No (handheld ban only)	<ul> <li>Mandatory if under 18</li> <li>30 hrs of classroom instruction, and</li> <li>6 hours of BTW training (cannot be completed in less than six weeks</li> </ul>
ID	17	No (handheld ban only)	Mandatory if under 17 • 30 hrs of classroom instruction, • 6 hrs of BTW instruction, and • 6 hrs in-car observation
IL	18	Drivers under 19	<ul> <li>Mandatory if under 18</li> <li>30 hrs of classroom instruction, and</li> <li>6 hrs of BTW instruction</li> </ul>
IN	18	Drivers under 21	Mandatory if 15, but optional if 16 or older

	1	I	
			<ul> <li>30 hrs of classroom training, and</li> <li>6 hrs of BTW training</li> </ul>
		Drivers with restricted or	Mandatory if under 18
IA	17	intermediate license	30-hr drivers education course
			Mandatory for restricted driver's license
		Drivers with learner or intermediate	if 15
KS	17	license	• 8 hrs of classroom instruction, and
			<ul> <li>6 hrs of BTW training</li> </ul>
			Mandatory if under 18
KY	17	Drivers under 18	4-hour classroom instruction
			Mandatory under 18
LA	17	Drivers under 18	• 30 hrs classroom instruction, and
			• 8 hrs of BTW instruction
		Drivers with learner or intermediate	-
ME	16/9	license	Mandatory under 18
			Mandatory for all new Maryland drivers,
			regardless of age
MD	18	Drivers under 18	• 30 hrs of classroom learning, and
			• 6 hrs of BTW training
			Mandatory under 18
			30 hrs of classroom instruction
МА	18	Drivers under 18	<ul> <li>12 hrs of BTW instruction</li> </ul>
IVIA	10	Drivers under 18	<ul> <li>6 hrs of observation, and</li> </ul>
			• A parent or guardian must participate in
			2 hours of instruction
			Mandatory under 18
		No (handheld ban and texting ban	30 hrs of classroom instruction
MI	17	for Drivers with Level 1 or Level 2	• 6 hrs of BTW instruction, and
		licenses)	• 4 hrs of observation time in a training
			vehicle
			Mandatory under 18
MN	17	Drivers with instruction permits or	<ul> <li>30 hrs of classroom instruction, and</li> </ul>
		provisional licenses	• 6 hrs of BTW instruction
		No (texting ban only for drivers with	Optioanl parent class
MS	16/6	an intermediate license or	Optional
IVIS	10/0	temporary permit)	Optional
		No (texting ban only for drivers	
MO	18	under 21)	Optional
			Mandatory if under 16
•	10		• 54 hrs of traffic education instruction,
MT	16	No	and
			• 6 hours of behind-the-wheel in-traffic
			instruction
NIF	17	Drivers with learner or intermediate	Ontional
NE	17	license	Optional
	1		

NV	18	No (handheld ban only)	Mandatory if under 18 unless no classroom course is offered within a 30- mile radius of a driver's residence
NH	18	Drivers under 18	<ul> <li>Mandatory if under 18</li> <li>30 hrs of classroom instruction</li> <li>10 hrs of practice driving, and</li> <li>6 hrs of driving observation</li> </ul>
NJ	18	Drivers with permit or provisional license	<ul> <li>Mandatory for 16 for special learner's permit         <ul> <li>6 hrs of BTW instruction</li> </ul> </li> <li>Optional for 17 and over for learner's permit</li> </ul>
NM	16/6	Drivers with learner or provisional license	<ul> <li>Mandatory if under 18</li> <li>30 hrs of classroom instruction and 7 hrs of BTW training, or</li> <li>56 hrs of classroom instruction with 0 hrs of BTW training</li> </ul>
NY	17 <sup>1</sup>	No (handheld band and texting ban only)	<ul> <li>Mandatory pre-licensing course (5 hrs)</li> <li>Optional driver education</li> </ul>
NC	16/6	Drivers under 18	Mandatory if under 18 <ul> <li>30 hrs of classroom instruction, and</li> <li>6 hrs BTW</li> </ul>
ND	16	Drivers under 18	Mandatory if under 18 <ul> <li>30 hrs of classroom instruction, and</li> <li>6 hrs BTW</li> </ul>
ОН	18	Drivers under 18	Mandatory if under 18 <ul> <li>24 hrs of classroom instruction, and</li> <li>8 hrs BTW</li> </ul>
ОК	16 / 6 <sup>2</sup>	No (texting ban only)	Mandatory if under 16
OR	17	Drivers under 18	Optional
PA	17 / 6 <sup>3</sup>	No (texting ban only)	Optional
RI	17/6	Drivers under 18	Mandatory if under 18
sc	16/6	No (texting ban only)	Required if under 17 to get restricted license or special restricted license • 8 hrs of classroom, and • 6 hrs of BTW driving
SD	16	Drivers with learner or intermediate license	Optional
TN	17	Drivers with learner or intermediate license	Optional
тх	18	Drivers under 18	Mandatory if under 18 • 32 hrs classroom • 7 hrs BTW training, and • 7 hrs in-car observation
UT	17	Drivers under 18	<ul> <li>Mandatory if under 18</li> <li>30 hrs of Utah approved online/home study course, and</li> </ul>

			• 6 hrs of BTW instruction.
VT	16/6	Drivers under 18	Mandatory if under 18 • 30 hrs of classroom study • 6 hrs BTW training, and • 6 hrs of observation.
VA	18	Drivers under 18	<ul> <li>Mandatory if under 18</li> <li>36 classroom periods (90-minute parent/student driver education component is part of the in-classroom portion)</li> <li>7 periods of driving, and</li> <li>7 periods of observation</li> </ul>
WA	18	Drivers with learner or intermediate license	Optional
wv	17	Drivers under 18 with learner or intermediate license	Optional
wı	16/9	Drivers with learner or intermediate license	Mandatory if under 18 • 30 hrs of classroom instruction, and • 12 hrs of BTW training
WY	16 / 6	No (handheld and texting ban only)	Mandatory if under 17 • 30 hrs of classroom instruction • 6 hrs of BTW training, and • 6 hrs of observation time

(Sources: IIHS, GHSA, and DMV websites of 50 states and the District of Columbia)

1. 17 years with driver's education and 18 years without driver's education.

2. 16 years and six months with driver's education and 17 years without driver's education.

3. 17 years and six months with driver's education and 12 months free of crash or conviction. Eighteen years without driver's education.