

After GDL, what's next?

The role of peer influence in reducing car crashes among young drivers

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Introduction

Throughout the United States, more teens die in car crashes than from any other cause. And while the number of teens involved in fatal crashes has shown a downward trend in recent years, the number of deaths still exceeds 5,000 each year. Drivers aged 16 to 19 drive fewer miles than those in other age groups, but they are disproportionately responsible for more crashes. The persistent severity of this public health crisis strongly suggests that it cannot be effectively addressed through any single countermeasure. The solution toolbox must include proper training, effective laws, consistent enforcement of those laws and parental involvement. In addition, however, recent experience in Texas suggests that peer influence is emerging as another invaluable tool to reduce the frequency of serious car crashes involving young drivers. This tool, as demonstrated through experience with the Teens in the Driver Seat (TDS) program, can be coupled with effective Graduated Driver Licensing (GDL) laws to deliver an effective one-two punch in the fight to reverse the young driver crash epidemic.

This paper reviews recent national crash trends for teenage drivers, examines graduated driver licensing laws and their effect on fatal crash frequency, and highlights various studies on the effects of peer influence among young people. In addition, this document describes the scope and success of TDS, a growing grassroots peer-to-peer safety program for young drivers in Texas, the design and content of which augment and complement GDL laws. The degree to which this program has contributed to the teen fatal crash reduction in Texas demonstrates that its benefits substantially outweigh its cost.

Recent crash trends involving young drivers

Federal statistics in recent years show a nationwide decline in teen crash fatalities and in young driver-related crashes, but in few states has that decline been sharper than it has been in Texas. From 2002 to 2007, the number of 16- to 19-year-old drivers involved in fatal crashes in Texas has declined by 32.9 percent – more than double the 15.9 percent decline in the rest of the U.S. Furthermore, Texas is the only state in the nation to experience a decline every single year over this time period (see Figure 1).

Equally significant is Texas' improvement in two other comparisons: among states with similar Graduated Driver License (GDL) laws, and among the nation's ten most populous states (and those with at least five years of post-GDL data). Texas realized a 32.9 percent reduction in the number of teen drivers involved in fatal crashes five years after its GDL law went into effect, while the other seven states with similar laws saw an average reduction of 15.7 percent. Additionally, Texas experienced a steady

and sharp decline in the number of teen drivers involved in fatal crashes in the three to five years following GDL, while the other nine most populous states actually experienced an average **increase** in that number during the same period.

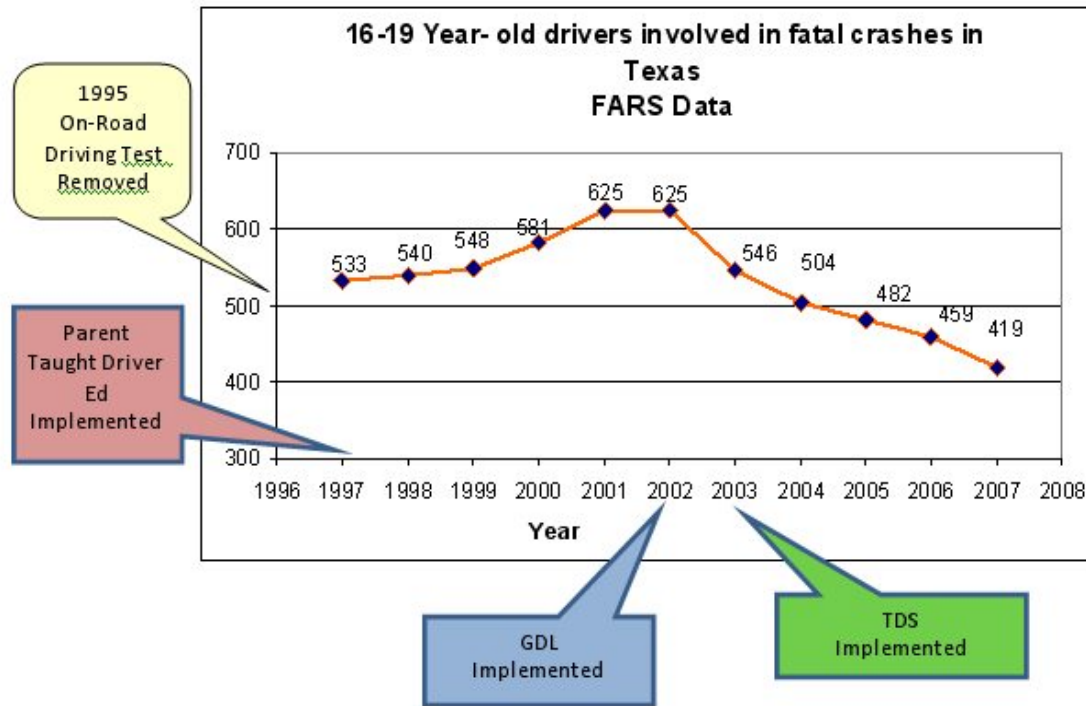


Figure 1. Teen Driver Fatal Crashes in Texas

Clearly, Texas is improving much faster and more substantially than the nation as a whole, and even more importantly, much faster than its peer states (i.e., states with similar teen driving policies and populations). What is especially noteworthy is that the improvement is being seen despite several obstacles that the state faces:

1. Texas is one of only a few states permitting teen drivers to secure a license through parent-taught driver education. Parent-taught teen drivers are nearly three times more likely to be involved in a fatal crash in their early months of full licensure. (Pezoldt, et al., 2007)

2. The GDL law in Texas is rated as only “fair” by the Insurance Institute for Highway Safety, while 33 states have laws rated as “good” (i.e., better). In other words, Texas is doing better in the face of stiffer competition, because states with stronger GDL laws should expect those laws to have a more positive effect on the frequency of crashes and fatalities.
3. Until 2009, Texas was the only state in the nation that did not require an on-road driving test for novice drivers seeking a license. Again in this case, Texas is doing better in the face of stiffer competition, because states which require this on-road test should expect it to have a more positive effect on crash frequency because the test helps to ensure that novice drivers are kept off the roads until they have learned and ably demonstrated the skills they need to be safe drivers. (Recent legislation enacted by the Texas Legislature reinstated the on-road test requirement, which will go back into effect September 1, 2009).
4. Total VMT (vehicle miles traveled) in Texas was up in 2007 while VMT declined nationwide. Reduced travel volume should be expected to lessen crash frequency while increased travel volume brings with it increased crash frequency. In the case of Texas, teen driver fatal crashes continued to decline even as travel volume actually increased.

Given these obstacles, the expected safety performance in Texas would be modest at best. The number of fatal crashes involving teen drivers would reasonably be expected to improve at or below the nationwide pace, or – like many other states – Texas might have actually experienced an upturn in this measure rather than the significant improvement it has seen.

In seeking to explain the contrasting performance between Texas and other states, the question arises as to what other factors may have contributed to such sharp differences. During the six-year post-GDL period studied (2002-2007), the state implemented no new policy changes for young drivers other than adding a restriction on wireless communication devices to the state’s GDL law in 2005. Even with the new restriction, the Texas law continued to carry a “fair” rating from the Insurance Institute for Highway Safety (IIHS). Also, the young drivers are restricted from using wireless devices for only six months and it is difficult to enforce, so it is doubtful that the new restriction could have had a noticeable or long-term impact on crash frequencies. State laws related to alcohol and seat belt use saw no changes during the period examined in this study.

The state also did not expand any existing safety education or outreach programs (which, apart from policy, tend to be the most visible countermeasures in place). Texas Department of Transportation spending on established safety outreach and education programs increased by only a few percent each year, consistent with inflation. These programs typically are aimed at a general population, not specifically to teenagers. The state's annual "Click it or Ticket" safety belt campaign targeted teen drivers and passengers for the first time in 2009, well after the period examined in this study.

During the 2002-2007 timeframe, the most notable new element in Texas was the introduction and expansion of the Teens in the Driver Seat (TDS) program. TDS is the nation's first grassroots peer-to-peer safety program for young drivers. The program relies upon young people to develop and deliver safety messages that are consistent with foundational research that has identified and documented the risks most commonly associated with novice drivers, in particular nighttime driving and distractions created in large part by young passengers (Mayhew, et al., 2006; Preusser, et al., 1998 and Chen, et al., 2000). Evidence strongly suggests that it is the combination of the state's GDL law and the TDS program (the design and content of which augment and complement GDL restrictions) that are primarily responsible for the state's significant improvement in teen crash frequencies.

The GDL component and its expected impact

Graduated Driver License laws typically follow a three-stage process for licensing novice drivers. The process includes a learning stage (requiring full supervision), and then a provisional stage (involving a range of restrictions on unsupervised driving, followed by full licensure. The most common restrictions during the young driver's provisional stage include limitations on the number of passengers and the time of day when driving is allowed. The nature and extent of those restrictions is the basis of a rating system developed by the Insurance Institute for Highway Safety, in which laws receive a grade of good, fair, marginal or poor. A total of 33 states hold "good" ratings, 10 are rated as "fair," and 7 are rated "marginal." The varying strength of these laws from state to state has recently prompted the filing of federal legislation in 2009 – the Safe Teen and Novice Driver Uniform Protection (STANDUP) Act – which would establish minimum national standards for GDL laws and require states to adopt those minimum standards or face the partial loss of federal highway funding.

Generally speaking, the most stringent GDL restrictions tend to produce the most positive results. Evidence suggests that these restrictions, when properly enforced, can help reduce both the number and severity of crashes involving the youngest drivers on the road. Specifically, according to research prepared for the AAA Foundation for Traffic Safety, GDL laws nationwide have brought about an 11 percent reduction in fatal crashes and a 19 percent drop in injury crashes. (Baker, et al., 2007) Similarly, a recent analysis by the Insurance Institute for Highway Safety noted that states which enact a GDL law (rated as fair) should expect an average reduction of 11 percent in fatal crashes involving 16-year old drivers. (McCart, et al., 2009) Additional research states that GDL restrictions were responsible for a 5.8 decrease in traffic deaths for 15- to 17-year olds, assigning direct credit to GDL for preventing 131 fatalities annually in this age group. (Dee, et al., 2005)

GDL laws also have a positive effect on the frequency of collision insurance claims. A 2009 study by the Highway Loss Data Institute states that the collision claim frequency for 16-year-old drivers is 22 percent lower for GDL laws rated as “good” as compared to those rated as “poor.” The study noted that collision claims are typically dominated by minor crashes, and that roughly half of all collision claims involve damage below \$2,000 (excluding deductible). The similarity between GDL effect on these crashes and that of more serious fatal crashes, the study notes, highlights the positive effect that GDL laws have on the extensive range of crashes involving young drivers.

Studies demonstrate that states with stronger GDL laws can expect correspondingly greater effectiveness and more reduced crash frequencies among young drivers. The same studies also state that 16-year-old drivers are the most likely to be positively affected by GDL laws, with somewhat less impact expected for older teenage drivers. The following figure (Figure 2) reflects the expected fatal crash reduction effect of GDL laws (rated as “fair”) by age, compared to the actual fatal crash reduction experienced in Texas from 2002 to 2007. These comparisons suggest that other influences apart from GDL are present to account for the state’s significantly higher improvement levels.

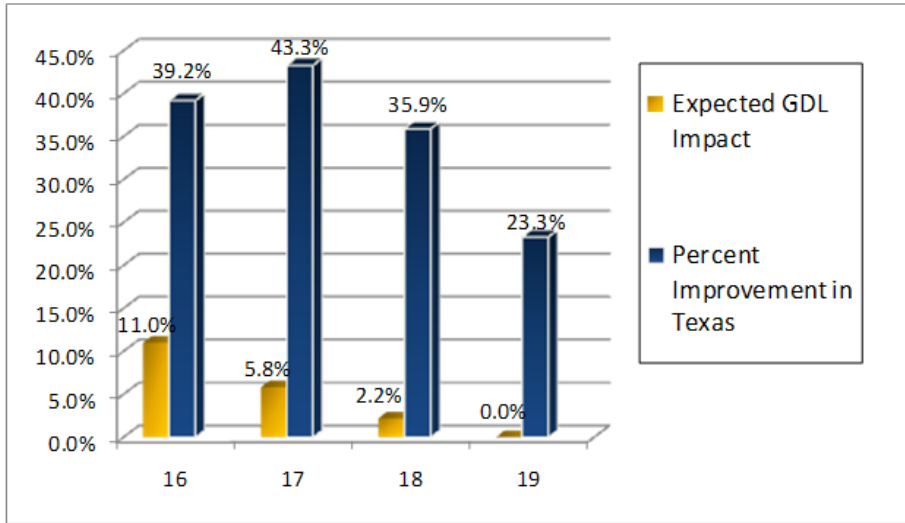


Figure 2 . Percent Improvement in Texas Teen Drivers involved in Fatal Crashes by Age, 2002-2007

Based on the findings of previous studies on the benefits of GDL laws, it is reasonable to expect that those benefits should be seen primarily in the few years following their effective date, because a GDL law in effect establishes a new baseline or “norm” in crash frequencies. It is, therefore, relevant to examine states’ crash trends in the years following implementation of their GDL laws.

In the case of Texas’ experience, two comparisons are particularly relevant. The first involves a comparison of all states with GDL laws rated as “fair” by the Insurance Institute for Highway Safety. There are ten such states, but consideration here is limited to those with at least five years of post-GDL data available for review. In addition to Texas, they include: Alabama, Florida, Iowa, Louisiana, Michigan, New Hampshire, and Vermont. GDL laws have been on the books in Wyoming and Arizona for less than five years.

Illustrated in Figure 3 is the reduction in fatal crashes in Texas as compared to the average reduction in the other “fair-rated” states for each single-year age group five years after implementation of GDL laws. As other studies have noted, the most significant benefits of GDL should be expected for 16-year-old drivers, while the effect is less pronounced for older teenage drivers. Consistent with that analysis, an examination of fatal crash frequency in other states with “fair” GDL laws demonstrates that the beneficial returns diminish for older teen drivers after a few years. While the same is generally true in Texas, two differences are notable: first, the fatal crash reduction is significantly greater in Texas for

each single-year age group; second, that reduction in Texas is experienced not only by 16-year-old drivers, but also by older teen drivers (to a somewhat lesser degree) while that is not the case in other fair-GDL states. One explanation for this sustained benefit in Texas relates to the fact that the TDS program is directed toward all teenage drivers for multiple years, while GDL laws, as previously noted, focus almost exclusively on 16-year-old drivers.

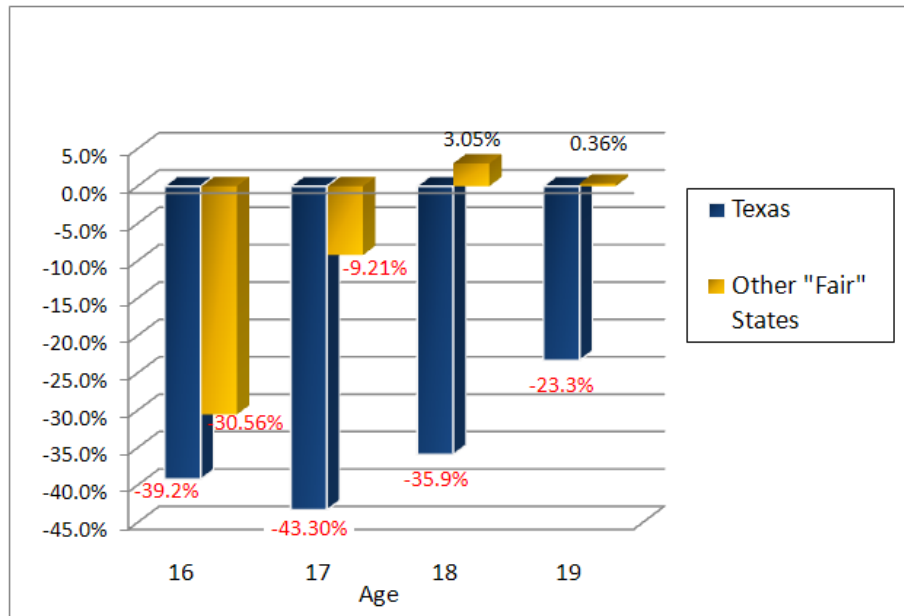


Figure 3. 5-Year Post -GDL Change Fatal Crashes- "Fair" GDL Rating

The second comparison involves an examination of the nation’s ten largest states (in this application, New York is excluded because the state has fewer than five years of post-GDL data available). These ten states account for nearly half of the nation’s teen driving population. They include: California, Illinois, New Jersey, North Carolina, Ohio, Pennsylvania, Georgia, Michigan, Florida, and Texas. The first seven states listed have GDL laws classified as “good,” while the last three are considered “fair.” As shown in Figure 4, Texas has experienced a progressive reduction in teen driver fatal crashes in the years after the state implemented its GDL law and the TDS Program was also deployed and rapidly expanding. The other large states in the U.S. have not seen such changes and collectively saw an increase in such crashes over the same period.

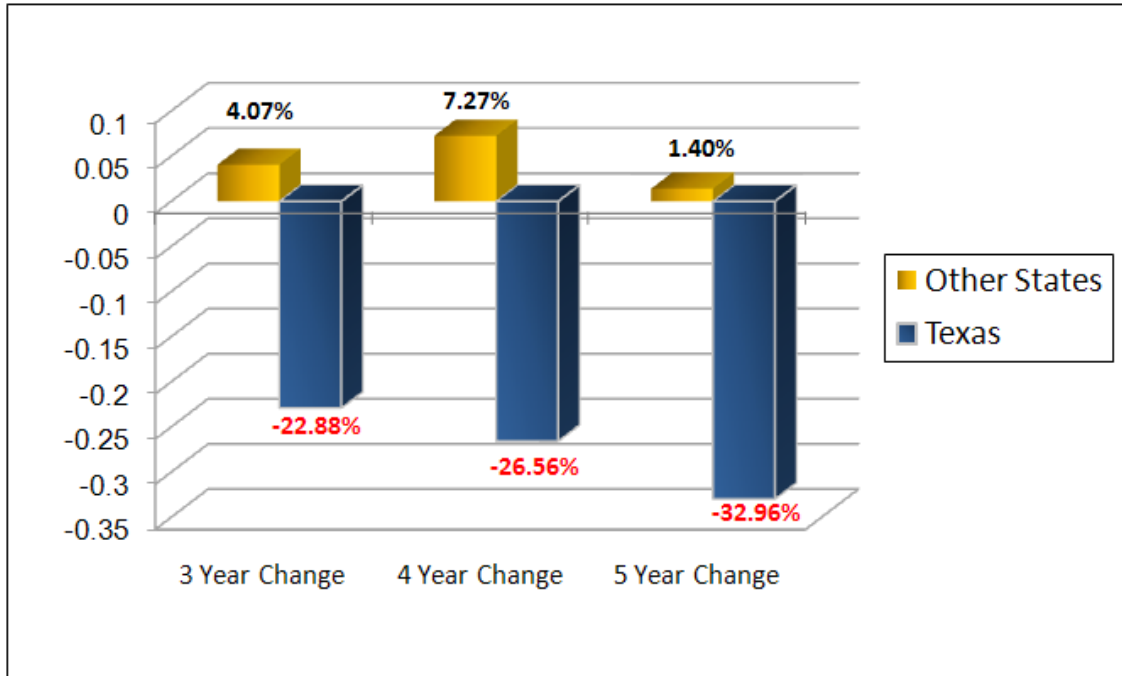


Figure 4. Post-GDL Percent Change 16 to 19-year-old Drivers in Fatal Crashes, Ten Largest States

One additional illustration (see Figures 5 and 6) demonstrates that the decline in teen-driver fatal crashes is seen when measured in terms of rate as well as frequency. In fact, the improvement in Texas is even more pronounced in the rate comparison, as it is the only state of all “fair” GDL states – and the only one of the 10 biggest states – to show a steady year-to-year decline in the number of fatal crashes per 10,000 licensed teenage drivers in the five years following GDL law implementation. Each of the other seven “fair” states and each of the other nine large states experienced a fluctuation in this rate in post-GDL years. Most of those in each group eventually recorded a net decrease at the five-year post-GDL mark, but none experienced such a substantial decline – 33 percent – as did Texas. The specific yearly data (illustrated in Figures 5 and 6) are also included in Tables 1 and 2. Additional analyses show that the drop in the crash rate for teen drivers far outpaced the decline for the balance of drivers in Texas (i.e., drivers age 20 and older), which was only 5.5 percent during this same period.

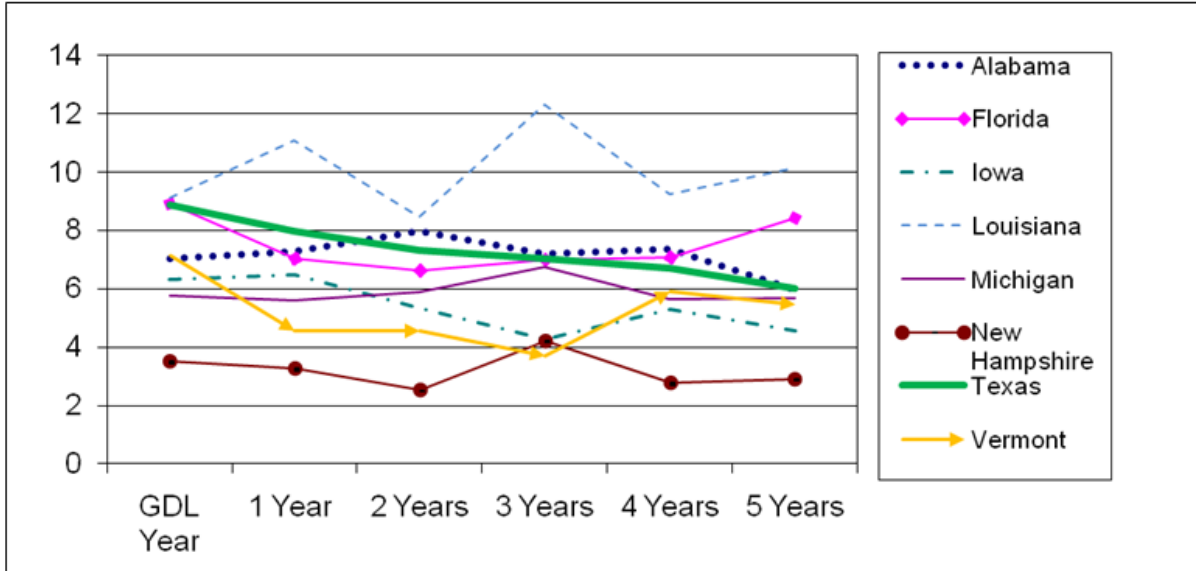


Figure 5. 5-year Post-GDL Change Fatal Crashes per 10,000 16 to 19-year-old Licensed Drivers, States with "Fair" GDL Ratings

Table 1. 5-year Post-GDL Change Fatal Crashes per 10,000 16 to 19-year-old Licensed Drivers, States with "Fair" GDL Ratings

State	GDL Year	1 Year	2 Years	3 Years	4 Years	5 Years
Alabama	7.02	7.28	7.99	7.22	7.35	5.99
Florida	8.92	7.05	6.63	7.01	7.07	8.41
Iowa	6.32	6.48	5.32	4.26	5.28	4.57
Louisiana	9.11	11.11	8.48	12.30	9.26	10.14
Michigan	5.78	5.61	5.88	6.76	5.65	5.69
New Hampshire	3.49	3.24	2.54	4.20	2.75	2.90
Texas	8.90	7.98	7.31	7.05	6.70	6.01
Vermont	7.17	4.57	4.59	3.73	5.92	5.49

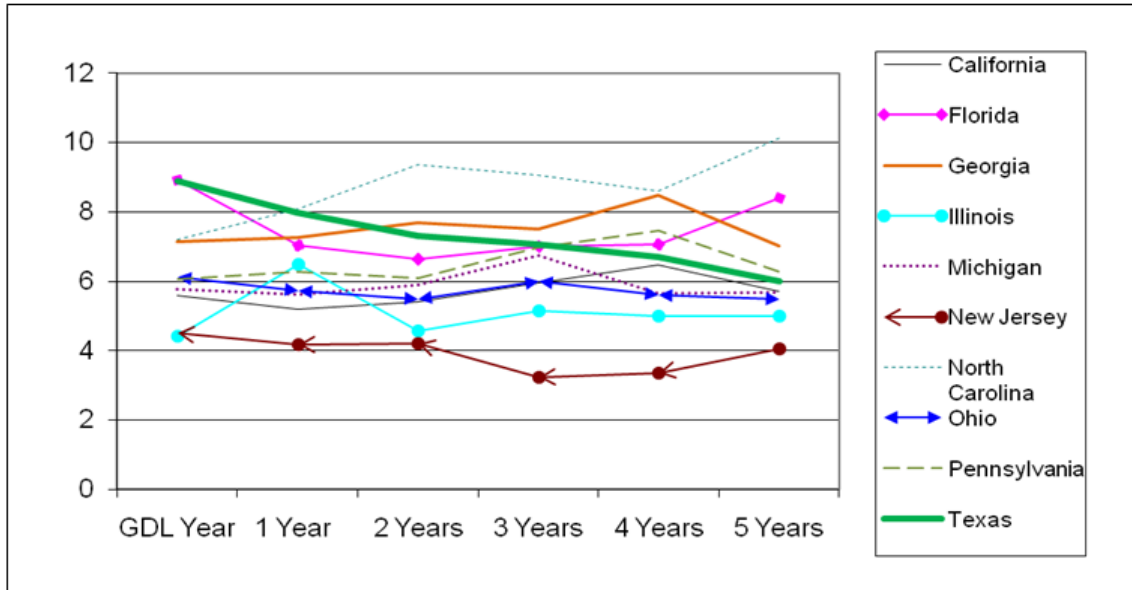


Figure 6. 5-year Post-GDL Change Fatal Crashes per 10,000 16 to 19-year-old Licensed Drivers, Ten Largest States

Table 2. 5-year Post-GDL Change Fatal Crashes per 10,000 16 to 19-year-old Licensed Drivers, Ten Largest States

State	GDL Year	1 Year	2 Years	3 Years	4 Years	5 Years
California	5.58	5.20	5.41	5.95	6.48	5.70
Florida	8.92	7.05	6.63	7.01	7.07	8.41
Georgia	7.15	7.26	7.70	7.50	8.49	7.03
Illinois	4.43	6.48	4.55	5.15	5.00	5.00
Michigan	5.78	5.61	5.88	6.76	5.65	5.69
New Jersey	4.52	4.19	4.23	3.22	3.37	4.05
North Carolina	7.20	8.08	9.35	9.06	8.59	10.12
Ohio	6.13	5.75	5.47	6.02	5.62	5.50
Pennsylvania	6.07	6.27	6.09	6.96	7.47	6.26
Texas	8.90	7.98	7.31	7.05	6.70	6.01

Although part of Texas' improvement can fairly be attributed to GDL, an assessment of young drivers conducted by the Texas Transportation Institute suggests that GDL's impact in the state may be limited. In 2007 and 2008, TTI studied the responses of nearly 11,000 teens representing 24 high schools

across the state. Of those respondents, more than half – 54 percent – said that the state’s GDL law had no impact on their driving habits, and another 35 percent said the law had impacted their habits only a little.

The fact that the decline in teen-involved fatal crashes in Texas greatly exceeds both the national average, the experience in many other states, and the expected effect of GDL laws suggests that some other factor (or factors) must be present to produce such a significant improvement in Texas, especially in light of the obstacles the state has faced regarding public policy related to young drivers (namely, parent-taught driver education and the absence of an on-road skills test for novice drivers to acquire a license). As was previously noted, other than the introduction of one of the weaker GDL laws in the nation, the most significant change in Texas during the study period was the introduction and expansion of the Teens in the Driver Seat (TDS) program – an initiative that employs and facilitates peer influence among young drivers and passengers, and focuses on those risks that research has shown to be most prevalent for young drivers.

The peer influence component

Numerous studies have focused on the effects – both negative and positive – of peer pressure on teens’ behavior. Although the success of any peer education effort depends on a wide range of factors (strategic, cultural, environmental, etc.), many studies and analyses underscore the power of peer-to-peer communication in general.

One study examining the link between peer pressure and driving behavior, the findings of which were summarized in *Criminal Justice Studies* in March 2008, pointed out that “Young drivers’ perceptions of driving as a means of attaining social prestige and their apprehension about their friends’ evaluations correlated positively and significantly with their involvement in traffic violations and car accidents” and that these perceptions “increase the drivers’ tendency to take risks.” The study also suggests that peer pressure can be applied in a positive sense, noting that the findings “have practical implications for prevention and intervention among young drivers: the significant effect found for young drivers’ perceptions of peer pressure from friends riding in the car might be taken into account, for example, in education for road safety and drivers’ education.” (Sela-Shayovitz, 2008)

Despite the negative connotation typically implied at the general mention of teen peer pressure, other research on the topic demonstrates that not all of the effects of peer pressure are detrimental. An essay in the *Journal of Clinical and Child and Adolescent Psychology* in 2005, for instance, notes that “a basic hypothesis of peer research has been that positive experiences with peers will decrease, or moderate, the negative effects that typically result from nonoptimal experiences in other domains.” The essay further explains that “a fundamental concept of the peer literature is the view that positive relations with peers serve an important protective function for at-risk boys and girls.” (Bukowski, et al., 2005)

Researchers also point out that positive peer pressure can be applied successfully in health promotion – an important consideration, given the growing sentiment among experts that the teen driver safety topic has become not only a traffic safety issue, but a public health issue as well at both the national and global level. “One potentially productive avenue for the development of more effective behavior-change interventions could be the incorporation of a peer-assisted component into school or community-based prevention programs,” says an article in a 1993 edition of the *Journal of Adolescent Research*. “Trained peer educators are a more credible source of information and could serve also as positive role models who could dispel misconceptions that all adolescents engage in high-risk behaviors.” (DiClemente, 1993)

A 1999 national survey of 513 teens and 303 parents conducted for the National Campaign to Prevent Teen Pregnancy suggests that the same positive effects can be expected when employing peer education efforts to limit prevent teenage pregnancy. “Despite conventional wisdom about ‘peer pressure,’ the consensus among parents and teens is that peers exert a positive influence when it comes to decisions about sex. Nearly six of ten parents and teens (59%) describe peer influence as either very positive or somewhat positive.”

In an extensive meta-analysis of 143 adolescent drug prevention programs published in the *Journal of Drug Issues*, researchers examined a range of different modalities of such programs: Of those studied, peer programs showed the largest effect on knowledge and attitude. The analysis noted that “peer programs were identified as successful for the average school based population,” and concluded that “Peer programs produced the only results which showed change toward the ultimate aim of reducing drug-abusing behaviors. This was done with low-intensity programs, making them very cost effective for the general school-based programs.” (Tobler, 1986)

A series of rationales for peer education are outlined in a 1995 article in *Health Education Research Theory & Practice*: “First, peer education projects are considered to be inexpensive, relative to other interventions; second, studies indicate that young people frequently turn to their peers for information and advice. These peer interactions tend to be more frequent, intense and diverse than those with other people; third, research on child and adolescent friendships clearly indicates the important and protective role peer social networks play in the positive development of youth. (Again, such evidence casts new light on ‘peer pressure’.); fourth, peer education offers the opportunity to participate in meaningful roles and to benefit from being a helper; and fifth, research indicates that similarities between the influencer and recipient increase the persuasiveness of any message.” (Milburn, 1995) Many of these rationales are apparent in a 1993 entry in the *Journal of American College Health*: “Peer education continues to be an effective means of delivering messages to any target population, whether by physician to physician, blue collar worker to blue collar worker, or student to student. People are more likely to hear and personalize a message that may result in changing their attitudes and behaviors if they believe the messenger is similar to them in lifestyle and faces the same concerns and pressures. This appears to be particularly true for youth, who are often at a stage in their lives when they are unable to trust, communicate with, or identify with adults.” (Sloane, et al., 1993)

And, a 1992 article in *The Peer Facilitator Quarterly* notes that “For youth, peers are the significant others that can destroy most effectively the feeling of safety or worth if social support is withheld. On the other hand, peers are also the most powerful to provide that support. With the ever-increasing number of teenage tragedies such as suicide, eating disorders, alcoholism and pregnancies, peer programs are an absolute necessity if many youth today are to survive as adults with any kind of health.” The same article noted that “as social problems have increased dramatically, more and more professionals have come to realize the need to supplement the scarcity of helping resources and are turning to peer helping as an answer to this need.” (Varenhorst, 1992)

For the most part, these “social problems” for which peer influence has been employed as a countermeasure include efforts to curb or prevent cigarette smoking, drug and alcohol use, and teen pregnancy. Until recently, however, this strategy has not been applied to driving safety, and the absence of that application is conspicuous, given the fact that many health and safety officials believe that the teen driver safety problem has reached epidemic proportions, making it one of the most serious public health crises in recent memory.

Peer influence and Teens in the Driver Seat

Established in 2003, Teens in the Driver Seat is the nation's first peer-to-peer safety program for young drivers. TDS is distinct in two primary ways. First, it focuses attention on the five risks that are most common to teen drivers (nighttime driving, speeding, distractions such as cell phones and other teen passengers, low seat belt use, and alcohol). Second, it involves teen drivers directly in the development and dissemination of safety messages. Teen driving safety campaigns in the past have typically focused exclusively on alcohol (at the expense of risk factors that are more common to novice drivers), and they have also typically been designed and implemented by adults, failing to involve the target audience directly or indirectly in their development. This peer-to-peer dynamic is essential to ensure that messages carry sufficient credibility and target audience influence (particularly on content) to ensure their effectiveness.

TDS programs are routinely conducted through high schools and are led by student groups. Although the participating groups receive resources and staff assistance from TDS program developers, it is the students themselves who are responsible for action plans and activities designed to raise risk awareness and affect the driving behavior of the target audience. The programs are most effectively deployed when they follow a four-step process:

1. Identification of project leaders and team members, which typically involves a recognized group such as student council, though any other existing or newly formed group are free to take on this role as well. With the assistance of an assigned school faculty or administration sponsor, the team develops an action plan for designing and delivering safety messages to their peers. The action plan is based in part on the findings of a pre-program assessment.
2. Administration of a pre-program assessment, in which students complete a questionnaire to determine their levels of awareness regarding the top five risks for young drivers (nighttime driving, speeding, distractions including cell phones and other teen passengers, lack of seat belt use and alcohol) along with their self-reported frequency of engaging in those driving risks. The assessment also collects other information, including the respondent's age, the method of driver education through which they were instructed.
3. Execution of the action plan, which usually includes student-led press conferences, school showcase pages on the TDS web site, skits, assemblies, observational surveys of student

driving behavior, activities at athletic events and community fairs, and a wide range of other efforts. The one characteristic common to all such efforts is that the teenage participants are exclusively responsible for both the development and delivery of all messages. Action plans are constructed to ensure sustained levels of message delivery throughout the school year, rather than concentrating resources on only one project activity. A wide variety of promotional items, downloadable print and video materials, and project ideas are provided as part of the support system for teen activities.

4. Administration of a post-program assessment, in which the pre-program assessment is replicated to determine changes in risk awareness or driving behavior.

Throughout the process, the student-led TDS teams have the option to seek assistance from professional staff at TTI. This assistance is provided at the request of the teams, but it is provided without direct involvement in the individual programs, ensuring that those programs bear as few adult “fingerprints” as possible to ensure that a premium is placed on credibility with the target audience. Funding for TDS is provided through the Texas Department of Transportation and the Texas Zone of State Farm Insurance.

TDS has grown rapidly in Texas. Active programs have been established in nearly 300 schools in Texas, reaching well in excess of a quarter million teens. Additional measures further illustrate the increasing reach of the program:

- Distribution of some 450,000 (mostly non-disposable) campaign materials, including awareness wristbands, key chains, t-shirts, etc. – all of which are designed to reinforce the program’s identity, messages and purpose.
- An average of 4,000 visits each month to the program web site, www.t-driver.com.
- More than 11,000 teens reached each month through downloads of program message materials from the program web site.
- More than 6 million news media impressions about the TDS program in Texas.
- Professional recognition of the program through honors awarded by the American Association of State Highway and Transportation Officials and the Institute of Transportation Engineers.

Like any law, a GDL law's effectiveness is directly tied to compliance. That compliance depends upon a number of factors, including law enforcement and influence that teen drivers receive from parents and from each other. The previously-cited research for the AAA Foundation for Traffic Safety similarly noted that "a major determinant of the impact of GDL is compliance, which is likely to reflect parental restrictions, peer pressure, and law enforcement." The AAA study states further that such factors "vary among states and are difficult to measure." The TDS program, however, represents a rare example of a peer-based safety program that has been measured through pre-and post-implementation assessments of risk awareness and driving behavior, documented field observations (described in detail subsequently) and further supported by the state and national data presented earlier in this paper.

City of Garland

In a detailed regional case study, researchers examined the effectiveness of TDS in the city of Garland, Texas, where all seven of the high schools in the Garland Independent School District launched the program in the Spring of 2006. Researchers conducted observational studies in Garland and a few miles away in the neighboring community of Mesquite (see Figure 7), the latter of which served as a control group because no TDS programs had been initiated in that area/school district.

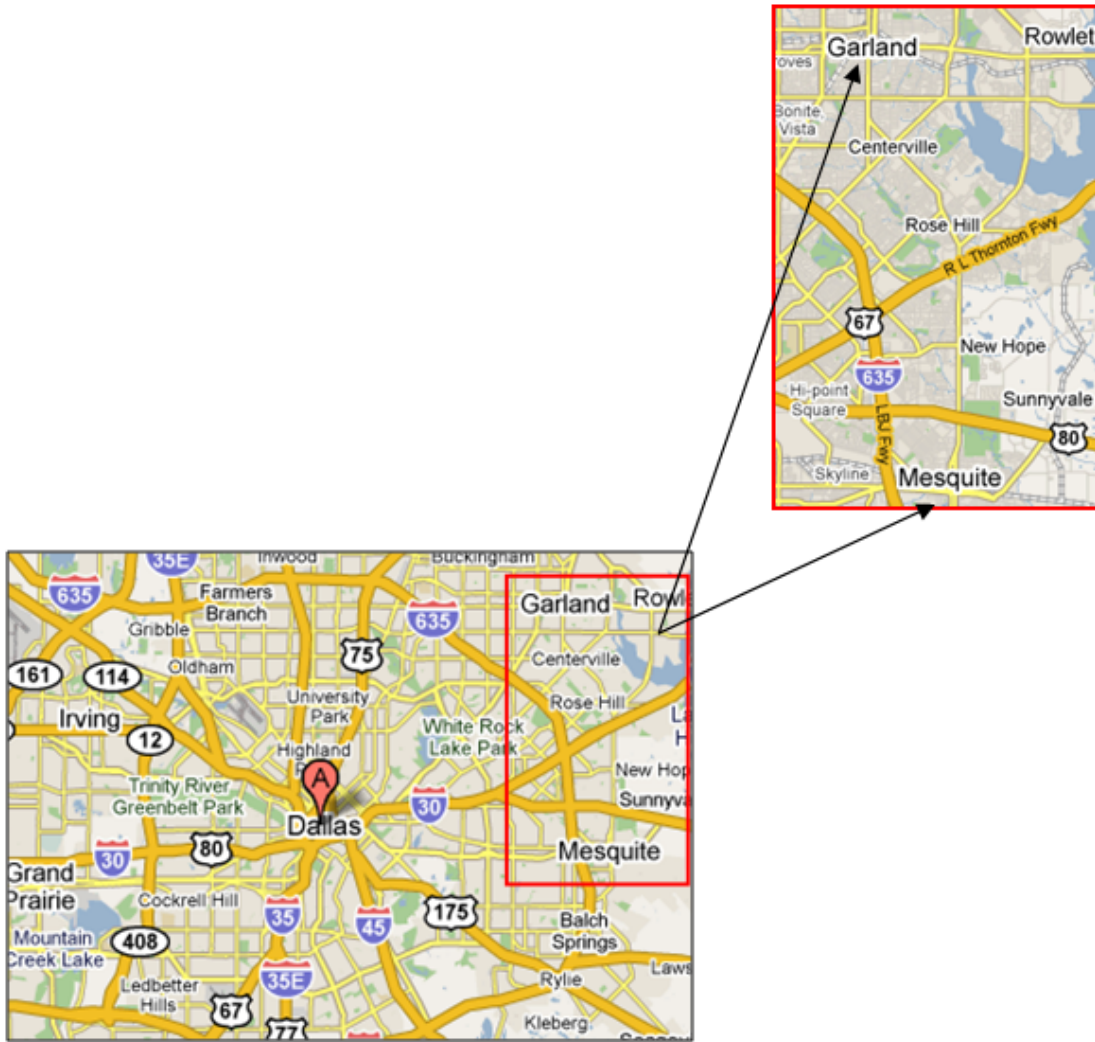


Figure 7. Regional Map Showing Location of Garland and Mesquite

Field observations at program schools (in school parking lots and nearby streets/intersections) revealed a 30 percent drop in cell phone use while driving, along with an increase in seat belt use of 14 percent. As is outlined in the following chart, in the four years prior to TDS implementation in Garland, teen drivers were involved in 28 percent of all crashes (i.e., ranging in severity from property damage only to fatalities). Teen driver involvement in crashes has dropped to an average of 16 percent in the three years TDS programs have been in place. Additionally, the city experienced 12 teen traffic fatalities in the four years prior to TDS, while there has been only one such death in the three years since the program began (see Figure 8).

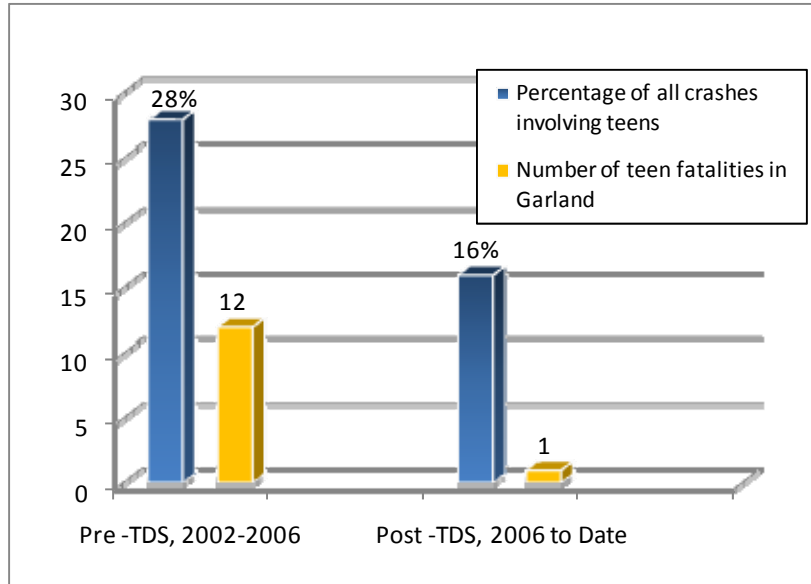


Figure 8. City of Garland Data

The following tables provide a more detailed summary of data gathered in the cities (and schools districts) of Garland and Mesquite. As noted in Table 3, noteworthy improvements in awareness have occurred in Garland for the majority of top risk factors faced by teens while driving.

Table 3. Summary of Garland High School Risk Awareness Data

Teen Driving Risk	Pre-TDS % Aware (n = 1,105)	Post-TDS % Aware (n = 617)	Net Change	Percent Change
Driving at night	1	14	+ 13	+ 1,300%
Teen passengers	31	43	+ 12	+ 39%
Cell phone/"texting"	60	83	+ 23	+ 38%
Seat belt use	13	16	+ 3	+ 23%
Speeding	48	47	- 1	- 2%
Drinking & driving	84	77	-7	- 8%

The following tables (Tables 4 and 5) summarize seat belt use data for teens in Garland (exposed to the TDS Program) for the years 2007 and 2008 as compared to the control group/area of teens in Mesquite. Two points worth noting are the fact that Garland teens buckle up more frequently in every position in the vehicle than teens in Mesquite, and that there continue to be year-over-year improvements in seat belt use in Garland schools, while teens in Mesquite continue to buckle up at a consistently lower rate.

Table 4. Teen Belt Use, Post-TDS Garland compared to Mesquite School District, April 2007

Category	Garland, with TDS Program (n = 1,308)	Mesquite, no TDS Program (n = 1,672)
Driver	90.8	83.6
Front Passengers	77.3	67.4
Back Passengers	48.8	27.0
Overall	85.7	77.4

Table 5. Teen Belt Use, Post-TDS Garland compared to Mesquite School District, May 2008

Category	Garland, with TDS Program (n = 1,566)	Mesquite, no TDS Program (n = 1,491)
Driver	93.5	80.7
Front Passengers	89.1	66.8
Back Passengers	40.6	33.3
Overall	90.2	75.3

The results outlined previously from Garland can be expected to represent the high end of program impacts in Texas, as this area has been one of the most consistent and aggressive in their

deployment of the TDS Program in recent years. Additional case studies are underway in Texas to further examine and document the impacts of the TDS program on a broader range of deployment intensity.

Estimated Benefits

A recent document from the United States Department of Transportation (USDOT) recommends that the value of a human life that is saved be placed at \$5.8 million. (USDOT, 2008; Viscusi, 2004) This same document outlines economic values to estimate costs associated with crashes of varying degrees of severity. Applying these federally-recommended economic values with a (conservative) assumption that the TDS Program can be credited with a mere 25 percent of the net improvements in teen crashes in Texas, the estimated economic benefit of this initiative is approximately \$500 million per year. With an annual operating budget of roughly \$1 million per year (this includes all program materials, video productions, media buys and web site development/maintenance), the benefits of the TDS Program outweigh its cost by a dramatic margin.

Conclusions

A number of peer-based traffic safety programs have been initiated in the years following the launch of TDS in 2003. And while many of them have emulated one or more specific aspects of TDS, none have incorporated all of the key components of TDS – those being a focus on previously-underemphasized driving risks, a true grassroots deployment strategy, a strong base of technical support for teens deploying the program, and a commitment to ongoing evaluation and effectiveness measurement.

The positive influence of GDL laws on teen traffic crashes is well documented. While GDLs represent a useful component in an overall strategy to improve safety for novice drivers, they do not constitute a panacea in and of themselves. While GDL is important, additional strategies are needed to dramatically curb an epidemic that annually kills more teenagers each year – across the U.S. and worldwide – than any other single cause.

In addition to effective laws, quality training and meaningful parental involvement, positive peer pressure is an essential element in the solution mix. Experience in Texas strongly suggests that this peer-to-peer element – as demonstrated by Teens in the Driver Seat – can contribute significantly to lessening the frequency of teen driver crash fatalities and injuries. Recent studies have asserted that GDL laws reduce crash frequencies by anywhere from 5 to 15 percent for the youngest teen drivers, assigning credit directly to those laws for saving young lives. When the crash frequency reduction in Texas is more than twice that percentage for 16-year olds, and double-digit improvements are also prevalent amongst older teens – the latter of which is something even GDL laws have not impacted in a positive way – some other major element(s) must be in play in Texas. The establishment and rapid expansion of the Teens in the Driver Seat program clearly offers one logical explanation for these changes and should, accordingly, be associated with an appropriate share of credit for these positive results in Texas. The results of deployment to date in Texas suggest that the TDS Program shows significant potential to be a valuable new addition to the nation’s safety toolbox for addressing the teen crash challenges that currently plague the United States.

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