

Orientation Sessions for  
Parents of Young Novice Drivers:  
An Assessment of U.S. Programs  
and Recommendations

---

May 2018

**Title**

---

Orientation Sessions for Parents of Young Novice Drivers: An Assessment of U.S. Programs and Recommendations

*(May 2018)*

**Authors**

---

Arthur H. Goodwin, Stephanie Harrell, Robert D. Foss, Natalie P. O'Brien, Bevan B. Kirley, & Yudan Wang

*University of North Carolina Highway Safety Research Center*

## Foreword

---

Although parents have long been an important part in the learning and licensing process of their teenage drivers, this role has expanded greatly with graduated driver licensing (GDL) provisions. In spite of this added responsibility, many parents often do not know what, where and when teen drivers should be practicing. In response, many states, jurisdictions and organizations have created programs to aid parents during the learning and licensing process. However, to date, few rigorous evaluations of these programs have emerged.

The current report describes a comprehensive assessment of nine existing parent orientation sessions across the United States and makes recommendations based on a review of the scientific literature aimed at improving existing programs or guiding the development of new ones. The report should be a useful resource for researchers and practitioners who work in the area of driver training and traffic safety.

C. Y. David Yang, Ph.D.

Executive Director  
AAA Foundation for Traffic Safety

## About the Sponsor

---

AAA Foundation for Traffic Safety  
607 14<sup>th</sup> Street, NW, Suite 201  
Washington, D.C. 20005  
202-638-5944  
[www.aaafoundation.org](http://www.aaafoundation.org)

Founded in 1947, the AAA Foundation for Traffic Safety in Washington, D.C., is a not-for-profit, publicly supported charitable research and education organization dedicated to saving lives by preventing traffic crashes and reducing injuries when crashes occur. Funding for this report was provided by voluntary contributions from AAA/CAA and their affiliated motor clubs, individual members, AAA-affiliated insurance companies, and other organizations or sources.

This publication is distributed by the AAA Foundation for Traffic Safety at no charge, as a public service. It may not be resold or used for commercial purposes without the explicit permission of the foundation. It may, however, be copied in whole or in part and distributed for free via any medium, provided the Foundation is given appropriate credit as the source of the material. The AAA Foundation for Traffic Safety assumes no liability for the use or misuse of any information, opinions, findings, conclusions, or recommendations contained in this report.

If trade or manufacturer's names are mentioned, it is only because they are considered essential to the object of this report and their mention should not be construed as an endorsement. The AAA Foundation for Traffic Safety does not endorse products or manufacturers.

## Table of Contents

---

Executive Summary .....	1
Introduction .....	2
Method .....	5
Nationwide Scan .....	5
Selecting Promising Programs for Comprehensive Assessment .....	5
Site Visits .....	5
Assessment of Selected Programs .....	6
Auto Club Driving School of Southern California .....	9
Connecticut Injury Prevention Center’s parent program .....	12
Delaware’s <i>Graduated Driver’s License Parent Orientation Program</i> .....	15
Minnesota’s <i>Point of Impact</i> .....	17
Minnesota: Wright County program .....	20
New Jersey’s <i>Share the Keys</i> .....	23
North Carolina: Johnston County parent meeting .....	26
Northern Virginia: <i>Partners for Safe Teen Driving</i> .....	28
Utah’s <i>Parent Night Program</i> .....	31
Recommendations for Future Efforts .....	33
Summary .....	52
Acknowledgements .....	54
References .....	55

## List of Figures

---

Figure 1. Nine parent orientation sessions assessed in the present project .....	8
Figure 2. Sample “learning pyramid” .....	42

## List of Abbreviations and Acronyms

---

AAA	American Automobile Association
AAAFTS	AAA Foundation for Traffic Safety
AAMVA	American Association of Motor Vehicle Administrators
ADTSEA	American Driver and Traffic Safety Education Association
BTW	Behind-the-wheel
DETA	Driver Education & Training Administrators
DHTS	Division of Highway Traffic Safety
DVD	Digital video disc
DWI	Driving while impaired
EMS	Emergency Medical System
GDL	Graduated driver license/licensing
GLL	<i>Green Light for Life</i>
IPC	Injury Prevention Center
NHTSA	National Highway Traffic Safety Administration
OTS	Office of Traffic Safety
SHSO	State Highway Safety Office
TDP	<i>TeenDrivingPlan</i>
TPB	Theory of Planned Behavior
TRB	Transportation Research Board

## Executive Summary

---

The role of parents in the licensing process has expanded greatly since the arrival of graduated driver licensing (GDL). Lengthy learner stages, supervised hours requirements and driving restrictions have created new responsibilities for parents that did not exist 20 years ago. A growing body of research has investigated how parents handle these responsibilities. In many cases, parents do not have a clear understanding of what, where and when teens should be practicing. With respect to GDL restrictions, parents show good awareness and understanding of the nighttime and passenger restrictions; however, the limits imposed by parents often lack strictness, focus on less important safety concerns and are not sustained.

Given the current shortcomings in parents' supervision and management of young novice drivers, many researchers have pointed to the need to assist parents with this responsibility. In recent years many states, local jurisdictions, and private and nonprofit organizations have created programs intended to provide guidance to parents of new drivers. "Parent orientation sessions," where parents (and sometimes teens) attend an in-person meeting, have become especially popular. Although such programs are becoming commonplace, few have been rigorously evaluated. The objectives of the present project were to: 1) select promising parent orientation sessions for comprehensive assessment, and 2) prepare recommendations that states and other jurisdictions can use in implementing or improving orientation sessions for parents of new drivers.

Following a nationwide review of programs, nine were selected for an in-depth assessment. This assessment considered program history, the extent of audience coverage, content and delivery, efforts to ensure program fidelity, and any existing evaluations. Program strengths and weaknesses were noted.

Based on the program assessments and review of the scientific literature, nine recommendations were provided for states and other jurisdictions that currently provide — or are planning to implement — an orientation session for parents of new drivers. These recommendations included: (1) be evidence-based and grounded in research, (2) provide clear guidance for parent action, (3) have repeated contacts with parents, (4) incorporate principles of adult learning, (5) explain the rationale for GDL and the role of parents, (6) be designed and conducted by individuals outside the driver education system, (7) have systems in place to ensure the program is standardized and delivered consistently, (8) evaluate outcomes, and (9) mandate parent attendance.

## Introduction

---

The role of parents in the licensing process has expanded greatly since the arrival of graduated driver licensing (GDL). Lengthy learner stages, supervised hours requirements and driving restrictions have created new responsibilities for parents that did not exist 20 years ago. A growing body of research has investigated how parents handle these responsibilities. At the outset of the learner period, many parents are concerned about their teen's safety (Mirman & Kay, 2012). Moreover, parents seem to understand the value and importance of practice (Mirman & Kay, 2012; Goodwin et al., 2010). However, parents do not have a clear idea of what, where and when teens should be practicing (Mirman & Kay, 2012). Much of teen practice appears to take place in relatively benign conditions; teens obtain relatively little supervised practice in potentially challenging settings such as on highways or country roads or in inclement weather, darkness and heavy traffic (Ehsani et al., 2017; Goodwin et al., 2010). Although parents provide a great deal of instruction during supervised driving, the instruction largely focuses on skills related to vehicle control such as braking and turning (Ehsani et al., 2017; Goodwin et al., 2014). Parents pay far less attention to helping their teen acquire more advanced skills such as hazard anticipation and detection.

Research has also examined parental management of teen drivers during the intermediate stage of GDL, when teens are permitted to drive unsupervised with certain restrictions. Awareness of GDL's nighttime and passenger restrictions are high among both parents and teens (Goodwin & Foss, 2004). Moreover, violations of these restrictions appear to be relatively rare (Curry et al., 2017; Goodwin & Foss, 2004). Many families report driving rules/restrictions beyond those required by GDL. Common rules include requiring teens to inform parents where they are going, allowing teens to take the car only to certain places, having the car back at a specified time and requiring teens to contact parents if their plans change (Beck et al., 2001a). A number of studies show that greater parental restrictions are associated with less risky driving and fewer traffic violations and crashes among teens (Simons-Morton & Ouimet, 2006). However, the limits imposed by parents tend not to be very strict, may not focus on the most important safety concerns for new drivers and are not maintained for long (Simons-Morton et al., 2008). Moreover, surveys suggest substantial disagreement between parents and teens about parent-imposed restrictions, with parents generally reporting more driving restrictions than teens (Beck et al., 2001a, 2001b; Sherman et al., 2004).

Given the current shortcomings in parents' supervision and management of young novice drivers, many researchers have pointed to the need to assist parents with this responsibility (Goodwin et al., 2010; Simons-Morton et al., 2008; Williams, 2013). In recent years many states, local jurisdictions, and private and nonprofit organizations have created programs intended to provide guidance to parents of new drivers. "Parent orientation sessions," where parents (and sometimes teens) attend an in-person meeting, have become especially popular. Although such programs are becoming commonplace, few have been rigorously evaluated.

One of the few programs that has been carefully studied is *Steering Teens Safe*. Developed by researchers at the University of Iowa, the program "equips parents with communication skills to talk about, demonstrate, and practice safe driving behaviors and skills with their teens" (Ramirez



et al., 2013). The program uses motivational interviewing techniques to help parents talk with their teen about 19 separate topics such as safely making left turns, judging following distance, avoiding distractions, driving safely in bad weather, and driving on narrow rural roads. The program includes a 45-minute session, a DVD with sample parent-teen conversations and follow-up phone calls to provide additional support. A process evaluation found that parents were receptive to the intervention (Ramirez et al., 2013). In a subsequent study, parents were randomly assigned to *Steering Teens Safe* or a control condition, in which they received only a safety booklet. Surveys of teens at one month and six months post-licensure found a higher quality of parent communication among the *Steering Teens Safe* group than controls and slightly lower rates of self-reported risky driving (Peek-Asa et al., 2014).

At the University of North Carolina, researchers developed a program called *Time to Drive* to assist parents with supervising a novice driver (Goodwin et al., 2013). The content of the program was based on naturalistic driving research performed as part of a project for the AAA Foundation for Traffic Safety that identified the strengths and weaknesses of parental supervision of teens' early driving (Goodwin et al., 2010). During the 90-minute in-person session, parents view real-life video clips of parents and teens during supervised practice. The session has two behavioral objectives: 1) ensure teens obtain considerable driving experience in a wide variety of situations, and 2) show parents how they can help their teen begin to develop a higher-order understanding of driving. To evaluate the program, 517 parents were randomly assigned to either *Time to Drive* or a standard (and typical) driver education-led program. Telephone interviews were conducted with parents and their teens several months later during the supervised driving period. The intervention had a modest influence on parent-teen communication. For example, teens whose parents participated in the *Time to Drive* session were more likely to agree with statements such as, "When I'm driving, my [Mom/Dad] tells me ahead of time what I need to," and more likely to disagree with statements such as, "My [Mom/Dad] yells at me while I'm driving." However, no differences were found in the amount or variety of driving among *Time to Drive* participants and the comparison group (Goodwin, Foss, et al., 2015).

In Israel, a program called *Green Light for Life* (GLL) was initiated in 2005 to assist young drivers and their parents with supervised driving (Taubman-Ben-Ari & Lotan, 2011). The program involved a 45-minute home visit with each family of a new driver. The meeting was held shortly after the teen passed the on-road test and obtained a learner license. The GLL program encouraged: 1) as much driving as possible in varied driving conditions, 2) parents using their own driving experience to help teens develop hazard perception skills, and 3) agreement on the rules and language allowed during supervised driving. Participation in the program was voluntary, but it reached 55% of eligible families within a few years after it was introduced. An evaluation found that teens whose families participated in GLL had a 10% lower rate of injury crashes in the first 24 months after licensure than those who did not participate (Toledo, Lotan, Taubman-Ben-Ari & Grimberg, 2012). However, the study could not rule out self-selection bias since families were not randomly assigned to the program or the comparison group.

A series of studies conducted by researchers at the Children's Hospital of Philadelphia have described the development and evaluation of an online parent program called *TeenDrivingPlan* (TDP; Mirman, Albert, et al., 2014; Mirman, Curry, et al., 2014; Mirman et al., 2012). The program was designed to increase the quantity, quality and diversity of teens' supervised practice by encouraging parents to plan and log their teens' trips. The online TDP program included 53 short video tutorials that illustrate practice activities and common errors made by teens. Videos were grouped by driving environment and included empty parking lots, suburban residential streets, intermediate roads, highways, rural roads and commercial districts. Parents were also contacted by phone and encouraged to visit the website. To evaluate the program, 217 families were randomly assigned to TDP or a control group that received a copy of the Pennsylvania driver's manual. TDP families logged into the website an average of 11 times. Compared with the control group, the quantity of self-reported practice driving was somewhat higher for the TDP group in 5 of the 6 environments. Additionally, fewer teens in the TDP group failed a subsequent on-road driving assessment administered by an evaluator (who was blinded to the participant's condition) compared with teens in the control group (6% vs. 15%).

Beyond these few programs, no evaluations of parent orientation sessions have examined anything beyond parent opinions of such programs. Curry and colleagues (2015) recently reviewed the effectiveness of parent-focused interventions to improve teen driver safety. Parent orientation sessions were included in the review, along with other parent-centered approaches such as parent-teen driving agreements and in-vehicle monitoring systems that provide feedback to parents of newly licensed drivers. The review concluded that promising programs: (1) provide parents with concrete tools, (2) directly engage parents, and (3) have a strong conceptual approach. The review also stressed the need for rigorous process and outcome evaluations, noting that many programs have been widely disseminated without ever being evaluated.

The objectives of the present project were to: 1) select promising parent orientation sessions for comprehensive assessment, and 2) prepare recommendations that states and other jurisdictions can use in implementing or improving orientation sessions for parents of new drivers. Presently, little is known about the content, delivery, reach and effectiveness of existing programs. This project was designed to shed light on these programs, to identify common strengths and weaknesses and to highlight the most essential program elements for producing the desired outcome: safer teen drivers.

## **Method**

---

### **Nationwide Scan**

The first task in this study was to identify existing orientation sessions for parents of beginning drivers. Our research team conducted a broad search for programs that were currently active in the United States or Canada. Emails soliciting information about such programs were distributed through the Transportation Research Board (TRB) Operator Education and Regulation Committee and state health departments in the U.S. The project team also contacted leadership within the driver education community including the American Driver and Traffic Safety Education Association (ADTSEA) and the Driver Education and Training Administrators (DETA). Additionally, the project team reached out to a number of public and private organizations such as the American Automobile Association (AAA), the American Association of Motor Vehicle Administrators (AAMVA) and the Traffic Injury Research Foundation in Canada. Finally, targeted internet searches were carried out to identify driver education-based programs that may be less well known.

### **Selecting Promising Programs for Comprehensive Assessment**

The search identified approximately two dozen programs of various size and scope. The next task was to select the most promising programs for in-depth investigation. The project team conducted telephone interviews with at least one representative of each of the programs identified during the initial scan. During interviews, the project team asked about the structure of the program (number and location of meetings, length of meeting, whether they were for parents only or parents and teens together), the program's objectives, content and delivery, program administration, and efforts at evaluation. The research team then devised a system to rank programs on their potential for helping parents of new drivers. The ranking system awarded points to each program based on factors such as a standardized curriculum, coverage of GDL, success in getting parents to attend and efforts at evaluation. Available funding for this project allowed us to select the nine highest-scoring programs for comprehensive assessment. The selected programs were considered the most likely to be implementing principles and practices that might realistically be expected to influence parent behavior during the learning-to-drive process. The programs represented a mix of statewide, locally based and online programs.

### **Site Visits**

Research team members visited eight of the nine selected programs (one program was online only). During site visits, the project team observed one or more parent orientation sessions in person. The team also met with key personnel who administer or oversee the programs to discuss the history, objectives, content, delivery, quality control procedures and previous efforts at evaluation. For the online program, members of the research group who are parents of adolescents accessed and participated in the program in the same manner as the intended audience would. Site visits were conducted between June 2016 and August 2017.

## Assessment of Selected Programs

---

This section describes the main findings for each of the nine programs the project team assessed. Issues examined in these assessments included:

- **Brief program history:**
  - How and when was the program developed?
- **Extent of audience coverage:**
  - What is the reach of the program? A statewide program will reach far more parents than a program based in a specific county, region or school.
  - Are parents required to attend? Mandatory programs reach more parents, including those who may be less motivated and less engaged with their teen's driving.
  - What is the typical class size and number of families who participate each year? In very large classes, it can be difficult to engage the audience directly or to include interactive elements.
- **Content and delivery:**
  - What are the behavioral objectives of the program (if any)? High quality programs provide clear direction for what parents should do once they leave the class.
  - Who delivers the program? Is the program delivered by individuals who are specifically trained to administer the program and to work with adult learners?
  - What is the length of the program?
  - What information is covered during the program?
  - Does the program explain the purpose and rationale for GDL? Parents need to know the requirements of GDL, but they also need to understand how GDL — with their active involvement — improves the safety of teen drivers.
  - Does the program rely on passive learning methods (e.g., lecture, videos), or does it use active learning methods such as group discussion, problem solving, role playing and small group activities? Research shows retention of information is higher when adults are engaged in the learning process through active learning methods (Bonwell & Eison, 1991).
  - Is the program a one-time meeting, or does it involve multiple contacts with parents? Multiple contacts require more time and effort but greatly increase the likelihood that key information from the program will be retained and acted upon by parents.
  - What materials are provided to parents?
  - Does the program include a parent-teen driving agreement? Driving agreements clarify the roles and expectations for both parents and teens. Research shows that driving agreements can increase parental involvement; however, parents seldom complete such agreements unless they are helped to do so (Zakrajsek et al., 2013).

- **Efforts to ensure program fidelity:**
  - Are systems in place to ensure the program is standardized and delivered consistently? A program with good content will not be successful if the program is not delivered consistently.
  - How are new instructors trained?
  - Is there continuing education for approved instructors?
- **Evaluation:**
  - What efforts have been made to evaluate how well the program is working? Measuring parent satisfaction is a first step, but a full evaluation is critical to ensure a program is achieving desired outcomes.
  - Are there reports or publications documenting evaluation efforts?
- **Summary of the program's strengths and weaknesses**
  - Strengths and weaknesses were established by comparing programs against an a priori list of key program features thought to be important for effectively reaching parents and producing safer teen drivers.

The nine programs the project team assessed are:

- Auto Club Driving School of Southern California
- Connecticut Injury Prevention Center's parent program
- Delaware's *Graduated Driver's License Parent Orientation Program*
- Minnesota *Point of Impact*
- Minnesota Wright County program
- New Jersey *Share the Keys*
- North Carolina Johnston County parent meeting
- Northern Virginia *Partners for Safe Teen Driving*
- Utah *Parent Night Program*

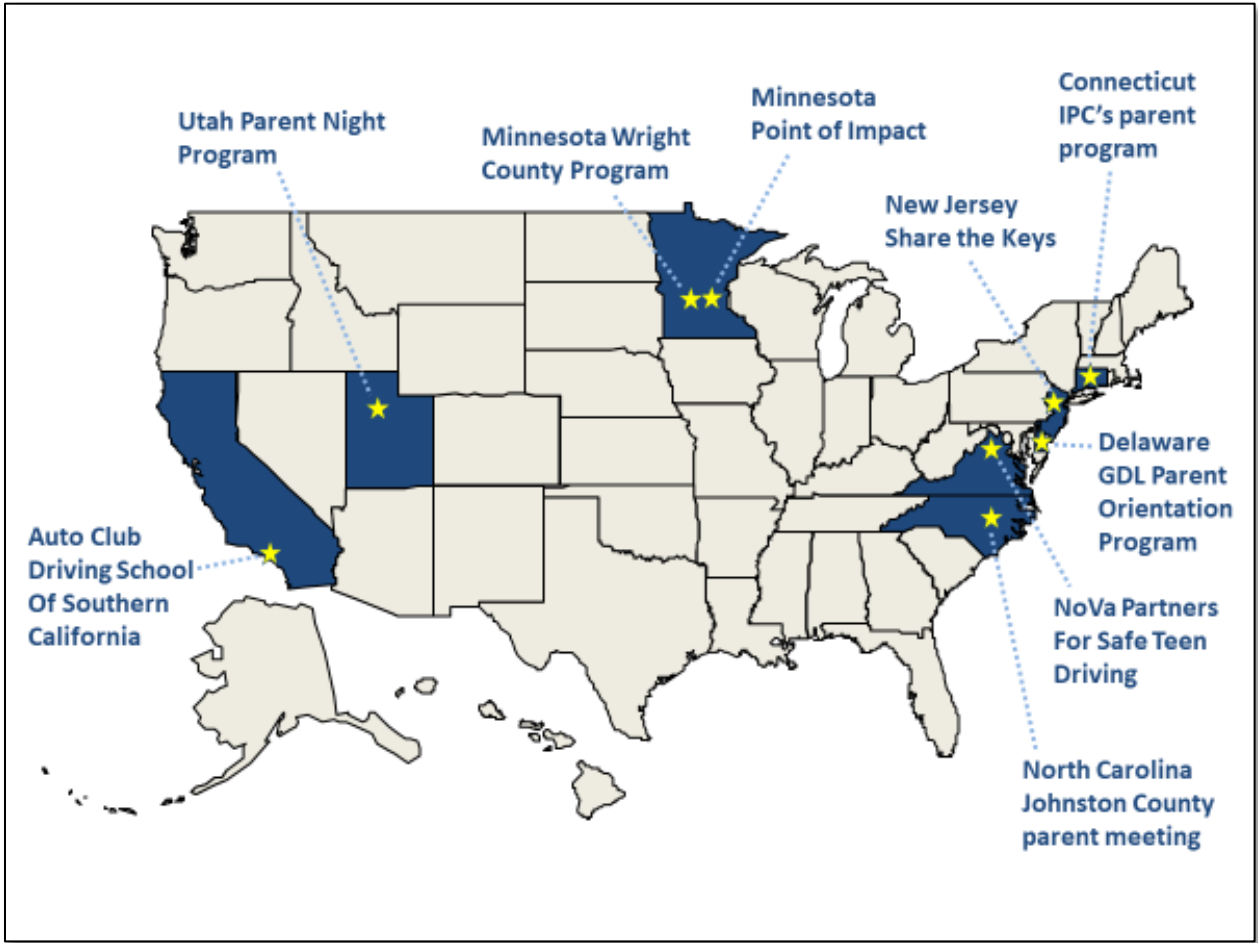


Figure 1. Nine parent orientation sessions assessed in the present project

## **Auto Club Driving School of Southern California<sup>1</sup>**

### *Program history*

To obtain a license before age 18, new drivers in California are required to complete an approved driver education course. The Automobile Club of Southern California has offered driver education for 17 years. A “Parent Night” has been part of its driver education course for that entire period.

### *Extent of audience coverage*

The parent session is mandatory for those who sign up for the Auto Club Driving School of Southern California. Approximately 3,000 families participate in the parent session each year. Since 2014, Auto Club has offered an online option for the classroom component of driver education. Parents are not required to attend the in-person session if they choose the online course, but they must complete the online parent session prior to the teen beginning the online novice course.

Because the course is only available to AAA members and only mandatory for those who elect to take the Auto Club Driving School driver education course in person, the course reaches only a small fraction of families with a new teen driver in California each year.

### *Content and delivery*

The parent session takes place during the first hour of the teen’s initial driver education class. Parents are dismissed at the end of the hour, but teens stay in the room to complete their first class. (Each driver education class lasts three hours.) The maximum class size is 24 students.

The 60-minute program is delivered with a PowerPoint presentation by a AAA driver education instructor. The class starts with a description of the history of AAA and the products offered. Classroom policies and the procedures for in-car instruction are then reviewed, followed by a discussion of GDL requirements for permit and provisional license holders in California. The instructor then spends approximately 10 minutes focusing on the role of parents: the importance of making sure teens get practice, providing support/encouragement, driving in a variety of conditions, staying involved and setting limits. The importance of discussing expectations with teens is highlighted, and a parent-teen driving agreement is provided. The program wraps up with a description of benefits for AAA members, a review of the timeline for the driver education course and an opportunity for parents to ask questions. There are no built-in activities, but the instructor occasionally asks questions or seeks input from the audience.

Parents receive the following materials to take home after the meeting:

---

<sup>1</sup> Note: The Automobile Club of Southern California contributes funding annually to the AAA Foundation for Traffic Safety but had no influence on the assessment presented in this report. The project team performed an independent evaluation of the program being offered by the Automobile Club of Southern California.

- A handout that describes teen driver risks, elements of the AAA program, parent and teen commitments, and classroom rules and policies.
- California Parent-Teen Driving Agreement.
- Brochure: “Teen Drivers: A Guide to California’s Graduated Driver License.”

A unique aspect of the Auto Club Driving School is that parents have repeated contacts with driver education instructors after the initial parent session. These contacts take place during parent “debriefings” after each of six to 10 behind-the-wheel (BTW) driving lessons. The BTW lessons include only the driver education instructor and the teen (no other passengers) and follow a predetermined route with specific learning objectives (i.e., skills for the teen to practice). At the end of each BTW lesson, driving instructors briefly meet with parents to discuss the teen’s progress. Additionally, because teens in California must obtain a permit before they can begin the BTW component of driver education, instructors encourage parents to give their teen practice with those same skills/situations covered during BTW lessons. Hence, parent-supervised practice and BTW lessons work in combination to help the teen acquire experience.

#### *Program fidelity*

At the time of the visit, Auto Club had 48 licensed instructors, all of whom are employees of the Automobile Club of Southern California. All new instructors participate in 160 hours of training (which is more than what is required by the state of California). The training includes classroom instruction, lessons and instruction on BTW training. Each instructor is also required to attend an additional training course each summer to learn about changes/improvements to the program.

All BTW driving lessons are recorded by in-vehicle cameras. A sample of these sessions is reviewed and incorporated in the instructor’s yearly evaluation. At present, driving instructors do not share the videos during debriefings with parents.

#### *Evaluation*

Auto Club conducts a member satisfaction survey, which has found nearly 99% satisfaction with the program. No outcomes for participating families have been examined.

#### *Summary of the program’s strengths and weaknesses*

The program is relatively unique in that instructors have multiple contacts with parents, which provides an opportunity to provide guidance beyond the initial class. Additionally, the program is exemplary with respect to the training of new instructors and the degree of oversight to ensure the program is being delivered as intended. However, the initial class is short and focuses largely on non safety-related material. Only about 10 minutes is devoted to providing guidance to parents. Although GDL requirements are described, the rationale for GDL and the role of parents in the licensing process are not fully explained. A parent-teen driving agreement is provided, but it cannot be customized and families are not assisted in completing the agreement.

#### *Strengths*

- The program is mandatory.



- It involves repeated contacts with parents.
- The behavioral objectives of the BTW lessons and debriefings are clear.
- The program is standardized and there are procedures in place to ensure it is delivered with fidelity.

#### Weaknesses

- The program is only available to a small, select group of parents and reaches a small subset of those.
- It is relatively brief (60 minutes), and only a small portion of the session is devoted to the parents' role.
- The behavioral objectives of the 60-minute in-person program are not clear.
- The program is delivered through an instructor-centered, passive learning approach.
- No evaluation has been conducted to document program effectiveness in producing intended results.

#### *Addendum*

As of July 2017, and well after the project team's visit, the Auto Club Driving School began to phase out classroom driver education to reflect changing consumer preference. The Auto Club Driving School now exclusively offers the required 30 hours of education via an online course. In an effort to maintain parent involvement, the course is preceded by a mandatory virtual parent orientation, which covers the same topics discussed in the classroom parent-teen orientation session. Parents and teens also receive a welcome packet during the first in-car lesson, which provides information about supervised driving and getting ready for the road test. Additionally, each driving lesson still concludes with a feedback session and a progress report, which the parent can use while they practice with their teen.

## **Connecticut Injury Prevention Center's parent program**

### *Program history*

Following several high-profile crashes involving teen drivers in 2007, Connecticut became the second state (after Massachusetts) to mandate an orientation session for parents of new drivers. These sessions are administered by driver education instructors. Because the driver education system is privatized in Connecticut, there is no single program that is offered across the state; each driver education provider decides how to fulfill the state mandate. Researchers at the Connecticut Injury Prevention Center (IPC), part of the Connecticut Children's Medical Center, observed a number of parent sessions across the state and found that key topics such as driver inexperience, adolescent brain development and the importance of the role of parents in enforcing GDL were not being addressed. The Center subsequently developed a parent program to meet the state requirement.

### *Extent of audience coverage*

The IPC parent program has been adopted by Connecticut's largest driver education provider, which currently serves approximately 25% of new teenage drivers in the state. Attendance at the program is mandatory for parents of teens who take driver education from that provider.

### *Content and delivery*

Both parents and teens attend the two-hour class. Classes are held at a local high school or an office of the driver education school. A typical class size is 30 to 40 people. The program is delivered by the driver education instructor using a PowerPoint presentation.

The IPC parent course is designed to help parents actively manage their teen's driving experience from the learner's permit stage through the first 5,000 miles of unsupervised driving. The course uses adult learning principles and deploys a five-step process to encourage parents to adopt desired behaviors:

- 1) Gain attention by introducing a topic in a compelling way.
- 2) State the desired behavioral outcome of the activity.
- 3) Stimulate recall by asking parents what they know about the topic.
- 4) Provide new content using interactive strategies.
- 5) Provide guided practice so participants can practice applying what they learned.

The course has five units. The first is a pre-survey and introduction (10 minutes). This is followed by a unit addressing risks for teen drivers (30 minutes). Per the five-step model described above, parents first discuss the most common things that Americans fear. Parents then learn that motor vehicle crashes kill far more people than other things that are typically feared (e.g., being a victim of a mass/random shooting) and that crashes are the leading cause of death for teens. To stimulate recall, parents are asked for factors that contribute to teen crashes. The instructor then presents information about major crash risk factors for teens including brain development, inexperience, night driving, speed, teen passengers, alcohol/drugged driving, distraction and seat belts. For guided practice, parents work in small groups to discuss what rules

they would implement to address each risk factor. Unit 3 describes Connecticut's GDL system and vehicle selection for teen drivers (25 minutes). Unit 4 is called "Managing Your Teen Driver" and covers parent liability, parental authority, parents as role models and supervised hours requirements (40 minutes). A parent/teen safe driving agreement is also introduced, and families are given 10 minutes to work on the agreement together. The final unit includes a post-course survey and closing comments (five minutes). Videos are shown at various points during the program. For example, at the beginning of Unit 3 parents see a video called "Reid's Story" that provides testimony from a father and sister of a teen who died in a crash.

### *Program fidelity*

Program materials are provided to driver education providers that express interest in the program. The materials include an instructor's manual, which describes in detail how the course should be delivered. Based on our assessment, however, it appears no systems are in place to train new instructors or to monitor them to ensure consistent delivery across time and locations.

To get a feel for program delivery, the project team attended two parent classes provided by the driver education program that had adopted the IPC program. The two classes were selected at random, and instructors were not provided advance notice about the visit. In one class, the instructor spent the first 75 minutes taking attendance, reviewing rules and logistics regarding driver education, describing the state's GDL system and talking about offerings of the driving school. The instructor then began the IPC course but only had time to complete the first two units. In the second class, the instructor did not spend any time actually delivering the IPC course as designed. Instead the entire two hours were devoted to driver education policies/procedures, GDL, advice for coaching a teen, insurance, parent questions and videos.

### *Evaluation*

There has been no formal evaluation of the IPC parent program.

### *Summary of the program's strengths and weaknesses*

The IPC parent program is mandatory for parents of teenagers who take driver education with the state's largest driver education provider. The program uses adult learning principles and incorporates a number of activities for parents and teens. A large portion of the session (more than an hour) is devoted to GDL and "managing a teen driver." Parents and teens are provided time during the session to complete a parent-teen driving agreement (although the agreement itself is not customizable).

Presently, it appears there is no oversight to ensure the class is delivered as intended. During the two classes the project team visited, the IPC parent course curriculum was only partially delivered or not delivered at all. Instead, most of the class time was devoted to requirements/logistics of driver education. The project team suspects this failure to deliver the curriculum as intended is commonplace given that no systems are in place to train new presenters or to monitor program delivery. The IPC parent course, as designed, has not been evaluated.

### Strengths

- The IPC parent program is mandatory for parents of teenagers who take driver education from the state's largest driver education provider.
- It recognizes and incorporates the perspectives and needs of adult learners.
- It incorporates active learning approaches, such as small group discussion and other activities.

### Weaknesses

- Classes are conducted by individuals with no training in their delivery.
- There is no apparent oversight or quality control to ensure consistent delivery and adherence to the content and concepts it is designed to provide.
- The program involves only one contact with parents.
- No evaluation has been conducted to document program effectiveness in producing intended results.

## ***Delaware's Graduated Driver's License Parent Orientation Program***

### *Program history*

Delaware's *Graduated Driver's License Parent Orientation Program* was originally developed in 2004 as an in-person parent session. Because the program was time- and resource-intensive, it was moved online in 2013. Several agencies dealing with areas including law enforcement, the insurance industry and driver licensing provided content for the online program. The program is available on the Delaware Office of Highway Safety website.

### *Extent of audience coverage*

Being online, this program is available to all parents. However, its use is voluntary. To encourage parent participation, some driver education teachers give teens extra credit (or other incentives) if parents complete the course. Program administrators estimate that approximately 4,000 parents each year complete the program, representing about 40% of families of teens who take driver education.

### *Content and delivery*

The program takes about 60 minutes to complete. Users can pause or stop the program at any time, then later resume where they left off. The program is a series of slides with two voiceovers (one male, one female). The "feel" is similar to watching an in-person program. Other than quizzes (described below), the program requires no action on the part of the user. To earn a certificate of completion, parents must watch the entire program (i.e., they cannot skip through sections).

The program includes seven sections. The first, "GDL Start," describes the overall course and includes a video with stories from Delaware families who lost loved ones in a teen driver crash. The second section, created by the Delaware Division of Motor Vehicles, describes the state's GDL system in detail. This is followed by a "What Parents Should Know" section. Statistics are presented about the effectiveness of GDL and a four-stage approach to supervising a teen driver is described. This section also introduces the concept of a parent/teen contract and the importance of vehicle choice, and emphasizes that driving is a privilege, not a right. The next section, "An Insurance Perspective," was created by State Farm and addresses the financial impact of a crash for a family. "Think First" describes what happens from a medical perspective when a teen crashes and also covers adolescent brain development, risk-taking, teen passengers and other factors that contribute to teen crashes. The next section was designed by the Delaware State Police and examines factors contributing to three separate fatal teen crashes. The final section is a memorial tribute to teens who lost their lives in Delaware.

Following five of the seven sections, the program includes a brief (five question) quiz covering the main points of that section. Parents are required to complete the quiz before advancing to the next section, but they are not required to answer questions correctly.

### *Program fidelity*

Because the program is online, all participating parents are exposed to the same program.

## *Evaluation*

There has been no formal evaluation of the parent orientation program.

## *Summary of the program's strengths and weaknesses*

The online platform ensures that all parents receive consistent information. However, it is delivered through a video-centered, passive learning approach — there is little opportunity to engage parents with the program material. Although GDL requirements are described, the rationale for GDL and the role of parents in the licensing process are not fully explained. Parents are encouraged to complete a driving agreement, but no sample agreement or template is provided. The information concerning insurance, what happens after a crash and police crash reconstruction is intended to motivate parents, but parents receive relatively little information about key actions they should take to help a teen become a safe driver.

### Strengths

- The program is standardized.

### Weaknesses

- Completion of the program is not required.
- The parent behaviors the program seeks to promote are not clear.
- With the exception of the quizzes, it adopts a passive learning approach.
- The program involves only one contact with parents.
- No evaluation has been conducted to document program effectiveness in producing intended results.

## **Minnesota's *Point of Impact***

### *Program history*

*Point of Impact* was developed in 2013 by the Minnesota Department of Public Safety, Office of Traffic Safety (OTS). On Jan. 1, 2015, a law took effect requiring that every parent in Minnesota be offered a "Supplemental Parental Curriculum." The law stipulated the curriculum must: 1) be at least 90 minutes in length, 2) be provided by (or in the presence) of a driver education instructor, and 3) provide information about GDL, safety risks for novice drivers, and potential influence of adults on the driving behavior of novices. The *Point of Impact* program satisfies these requirements.

### *Extent of audience coverage*

Attendance at *Point of Impact* is voluntary for parents. The 2015 law stipulated that parents must be offered a class but cannot be required to attend. The Minnesota OTS has offered *Point of Impact* to a majority of driver education providers in the state. It is not known how many currently administer the program. Adoption has reportedly been greater among school-based providers (as opposed to commercial driving schools) and among driving schools outside of the Twin Cities area. The number of families who have participated in the program is not known.

Although the program is voluntary, some driver education providers have used incentives, such as extra credit for students whose parents attend the class, to boost participation. Additionally, completing the parent curriculum allows families to reduce the number of required hours of supervised driving during the learner period from 50 hours to 40 hours.

### *Content and delivery*

Class size ranges from five families to more than 100. A typical class has roughly 40 participants. Teens are encouraged to attend the program with their parents.

The goal of *Point of Impact* is to help parents manage a new teen driver. Specifically, the program aims to:

- 1) Increase parental awareness of teen driving risks and Minnesota's teen driver laws.
- 2) Increase parental understanding of the strong influence they have on their teen's driving behavior.
- 3) Provide useful information and tools to support parents in helping their teens to be safer drivers.

The 90-minute program is delivered jointly by the driver education instructor and a police officer using a PowerPoint presentation. Much of the program content focuses on the three project aims listed above, with an overarching theme of making decisions based on safety over convenience. The driver education instructor speaks for approximately 30 minutes and begins by discussing how teen crashes are preventable. Statistics about teen crashes and fatalities are presented, including many local statistics. The facilitator points out factors that can be controlled (e.g., inexperience, seat belt use) and those that cannot (e.g., teen brain development). The instructor then discusses the role of parents including: the importance of practice in a wide variety of

conditions, limiting the teen's exposure to high risk situations (e.g., nighttime driving and having passengers in the car), and treating Minnesota's licensing requirements for teens as minimum standards. The police officer then speaks for approximately 30 minutes. Requirements for the permit and provisional license stage are reviewed, and parents are invited to ask questions. During the final 30 minutes, the lead facilitator talks about establishing family driving rules that emphasize safety over convenience. Families are given a driving contract, and the role of the contract is discussed (although the contract is completed and signed after the session). Parents are encouraged not to rush the process with their teen, and to wait or even withdraw their consent for their teen's license if necessary. The session concludes with a short video that relates a personal story about a teen driver fatality. Several times during the program the facilitators emphasize that the state's GDL requirements should be viewed as the minimum rather than the ideal.

Parents receive the following materials at the meeting:

- "Teens Behind the Wheel: A Road Map for Parents" (includes a supervised driving log and driving contract).
- "Teen Driver Road Rules" (a pamphlet that explains Minnesota's laws for newly licensed teen drivers).
- "In Case of a Crash: A Guide for Minnesota Motorists."

#### *Program fidelity*

There is currently no tracking or oversight of the program. It is not known whether, or how, the program is administered in most locations. In the absence of any systematic training for those who deliver the program, or other efforts to ensure the program is delivered consistently, it is highly likely that over time these classes will further evolve, drifting away from the program's underlying principles.

#### *Evaluation*

In 2014, the Minnesota Office of Traffic Safety mailed two surveys over the course of a year to 680 parents who attended *Point of Impact*. The first asked about teens' driving practice during the permit stage. The second asked about family rules and consequences for breaking rules during the provisional license stage. The response rates to the two surveys were 45% and 32%, respectively. The findings suggested most class participants planned to have their teen drive more hours than were required by the state. Also, most parents reported their teen had practiced driving on country roads, in inclement weather and at night, although the amount of practice in these settings was not clear. During the provisional license stage, 40% of parents reported their family set an earlier night restriction than what the state required, and 28% of parents allowed no teenage passengers (whereas the state permits one passenger). Only a few teens had received a citation during their first year of their provisional license. Although encouraging, the results reflect a self-selected sample of parents and no comparison group was included. Also, the study relied on parent self-report, which provides a potentially biased measure of what transpired. For example, studies usually find low agreement between parent and teen reports about supervised



driving and parent enforcement of teen driving restrictions (Beck et al., 2005; Goodwin, Waller, et al., 2006).

### *Summary of the program's strengths and weaknesses*

*Point of Impact* provides parents with specific actions to improve teen driver safety. Moreover, some initial efforts have been made to evaluate outcomes of parents who participate in the program. Participation is voluntary, and it is not known how many driver education instructors are currently delivering the program. Overall, there is little oversight or quality control to ensure the program is being delivered as intended. The program relies on a lecture-based, passive learning approach. Finally, the contract provided to parents allows minimal customization, and families are not assisted in completing the contract.

#### Strengths

- The program has clear behavioral objectives that are emphasized during the class.
- Efforts have been made to evaluate outcomes, although it is still not known whether the program produces the intended results.

#### Weaknesses

- Attendance is not required.
- The program is delivered through an instructor-centered, passive learning approach.
- The program involves only one contact with parents.
- It is delivered by individuals with no training, and there is no oversight or quality control to ensure consistent delivery and adherence to the content and concepts it's meant to provide.

## **Minnesota: Wright County program**

### *Program history*

Wright County, Minnesota, (population 131,000) received a Safe Communities grant from NHTSA in 1997. An analysis of crash data during the first year of the grant revealed that teenagers were overrepresented in crashes in Wright County compared with adults. Based on this finding, a parent program was developed and required for families at one high school. Following initial positive feedback from parents, the program was expanded to all nine school districts in the county.

Program administrators have a contract with the driver education system in Wright County to provide the program. The program charges \$10 for driver education for each family that participates.

### *Extent of audience coverage*

Attendance is voluntary for parents. As described under the *Point of Impact* program above, Minnesota law stipulates that parents must be offered a class but cannot be required to attend. The program is currently offered to all families who take driver education through the public schools. Only a few private driving schools offer the program. Program administrators estimate that approximately 80% of eligible parents participate in those schools where the program is offered. During 2016, 34 classes were held with a total of 1,411 parents and 1,298 teens.

Even though program attendance is voluntary, it appears to reach well over half of all families of beginning teen drivers in Wright County.

### *Content and delivery*

Both parents and teens attend the class. Classes range from a dozen to several hundred people, but a typical class has 60-80 people. All participating schools except one hold classes in the evening.

Parents participate in the program when teens are enrolled in driver education. Although the class is arranged by the driver education teacher, the program is delivered by a trained group of speakers. Each 90-minute class includes four speakers: a primary facilitator, a person affected by a teen driver crash, a law enforcement officer and an EMS paramedic. A PowerPoint presentation is used throughout the session. Although the speakers differ by school, all speakers use the same PowerPoint slides.

The lead facilitator begins the program with a brief introduction that includes local teen driver crash statistics. The facilitator also emphasizes that crashes are predictable and preventable. A parent or other individual then shares a personal story of a tragedy involving a teen driver. The law enforcement officer follows and discusses teen passengers, nighttime driving, cell phones, distractions, seat belts, impaired driving and what to do if stopped by a law enforcement officer. The officer's talk also includes two videos. One tells the story of a distracted driver who killed a bicyclist; the other shows how vehicle occupants wearing seat belts can be injured by an unbelted occupant. The EMS paramedic then discusses (and shows pictures of) crashes involving

distractions, speeding, seat belt nonuse, drunk driving, fatigue and other common causes of teen driver crashes. At the end of the session, the lead facilitator briefly introduces a parent-teen contract (which parents and teens are encouraged to complete later) and a driving log to keep track of supervised driving (which must be signed by a parent and submitted to the licensing office before the teen can obtain a provisional license).

Parents who attend the meeting receive the “Responsible Driving Handbook for Parents & Teens.” The handbook includes:

- Wright County crash statistics.
- Top 10 teen traffic risks.
- Information about GDL in Minnesota.
- A driving skills checklist.
- A parent-student contract.
- A driving practice log.

#### *Program fidelity*

The parent program is revised annually. Each summer, all speakers are invited to a luncheon to review the PowerPoint slides and give feedback. Throughout the year, program administrators also work with individual speakers to ensure they keep their message on point. When a new speaker joins the program, he/she first watches the program in person, then meets with program administrators to learn more about how to deliver his/her part of the program.

#### *Evaluation*

For a number of years, paper and pencil questionnaires were administered to parents following completion of the program. Results showed parents had positive opinions about the program and planned to change their behavior. No longer-term follow-up or measurement of outcomes has been conducted.

#### *Summary of the program’s strengths and weaknesses*

The Wright County program is an excellent example of a close partnership between driver education and a group of outside instructors. The driver education system makes the program available to every parent of a teen who enrolls in driver education, but the program itself is delivered by staff who are highly experienced with the program. Even though participation is voluntary, the program appears to reach a majority of families of beginning teen drivers in Wright County. The large size of most classes precludes anything but a lecture-based approach. Also, relatively little information is provided about specific actions parents can take to improve their teen’s safety. Although GDL requirements are described, the rationale for GDL and the role of parents in the licensing process are not fully explained. Finally, families are encouraged to complete a parent-teen contract but do not receive assistance in doing so.

### Strengths

- The program appears to reach most families who take driver education through the public schools.
- Although the program is offered through driver education classes, it is delivered by trained instructors.
- The program is standardized and there are procedures in place to ensure it is delivered with fidelity.

### Weaknesses

- Attendance is not required.
- The program is delivered through an instructor-centered, passive learning approach.
- The parent behaviors the program seeks to promote are not clear.
- The program involves only one contact with parents.

## **New Jersey's *Share the Keys***

### *Program history*

*Share the Keys* was developed in 2010 through a partnership between the New Jersey Division of Highway Traffic Safety (DHTS) and Kean University. Both agencies currently work together to oversee and administer the program. DHTS provides financial support for printing resource guides and other program materials. The program is independently operated and not part of the driver education or the public school system in New Jersey.

### *Extent of audience coverage*

Attendance is voluntary and program availability is limited as well. The program is delivered only when *Share the Keys* is invited to a school or other community setting. The program is not mandatory for teens to obtain a license but may sometimes be required for other purposes (e.g., in order to obtain a parking permit at a high school). The number of families who participate in the program is not known. Program administrators noted that 25,000 resource guides, which are provided to each family who attends, were printed and distributed in 2016. However, this number proved insufficient and more had to be printed. Approximately 100,000 young drivers obtain an intermediate license in New Jersey each year (Curry et al., 2014). This suggests the program currently reaches 25% or more of eligible families.

### *Content and delivery*

The program content was largely based on research by the Children's Hospital of Philadelphia, the Centers for Disease Control and Prevention, and the University of Michigan Transportation Research Institute. The program has five clearly articulated objectives for parents:

- Encouraging parents to model appropriate driving behaviors such as wearing seat belts, obeying the speed limit and avoiding cell phone use.
- Understanding the graduated driver license.
- Increasing practice driving hours.
- Enforcing GDL nighttime and passenger restrictions.
- "Controlling the keys" (i.e., requiring teens to request permission to use the car).

Both parents and teens attend the 90-minute program. The program is delivered by a network of regional instructors primarily recruited from law enforcement, health education and driver education agencies. Each program is delivered by a team of two instructors. A PowerPoint presentation is used throughout. The program begins with a humorous video about parents of teen drivers. A number of statistics (nationwide, New Jersey and local) are then presented, followed by slides covering each of the five main behavioral goals. Participants then see a video called "Sydnee's Story" showing consequences of texting while driving and seat belt nonuse. A parent-teen driving agreement is introduced, and parents and teens spend approximately five minutes working together on one portion of the contract. This is followed by another activity in which parents and teens discuss how they would handle potentially challenging scenarios, such as teens being pressured to carry more than one teen passenger or to drive after 11 p.m. (the night

limit for intermediate licensees in New Jersey). The session ends with a brief questionnaire to assess understanding of GDL and behavioral intentions, and a drawing for door prizes.

Parents who attend the meeting receive the “Share the Keys Resource Guide,” which includes:

- A description of New Jersey’s GDL system.
- A parent-teen driving agreement.
- A pledge for parents and teens not to use a cell phone while driving.
- Information about choosing a driving school and selecting a vehicle for teens.
- A driving practice log.

### *Program fidelity*

All instructors must be certified to deliver the program. Moreover, to ensure consistency and quality of program delivery, all instructors are required to attend at least one training session per year. These sessions are conducted by program administrators with DHTS and Kean University. During training sessions, instructors participate in a simulated class and learn about the basis for the program, research supporting the program, how to work with adult learners and how to prepare for a class. Participants also practice delivering a portion of the class, and feedback is offered by peers. To date, 500 individuals have successfully completed the training to become certified instructors. Instructors receive a facilitator guide that includes talking points, tips and directions for the interactive exercises of the program.

### *Evaluation*

Surveys are administered to parents after each class. Additionally, follow-up questionnaires have been emailed to parents six months and one year following their participation in the class. Results showed high awareness/understanding of New Jersey’s GDL restrictions. Parents also reported they had become better about exhibiting appropriate driving behavior for their teens. After one year, most parents reported their teens had no violations (98%) and no crashes (92%). Although encouraging, the evaluation relied on a self-selected sample of parents, did not include a comparison group and relied on parent self-report.

### *Summary of the program’s strengths and weaknesses*

*Share the Keys* provides parents with specific actions to improve the safety of a teen driver. Also, the program is exemplary with respect to the training of new instructors and the degree of oversight to ensure the program is being delivered as intended. A customizable driving agreement is provided during the class, and parents and teens are assisted in completing a portion of the agreement together. The program is not simply lecture-based but incorporates several activities for parents and teens. At present, participation in the program is voluntary. The program only reaches about 25% of eligible families in New Jersey, and the program is not delivered at a consistent point during the licensing process. Some teen participants are just beginning supervised driving, whereas others are driving independently. Consequently, the information presented in the program may not be relevant to all families.

### Strengths

- The program has clear behavioral objectives that are emphasized during the class.
- It is standardized and there are procedures in place to ensure it is delivered with fidelity.
- It incorporates active learning approaches, such as role-playing and other activities.
- Efforts have been made to evaluate outcomes, although it is still not known whether the program produces the intended results.

### Weaknesses

- Attendance is not required.
- The program involves only one contact with parents and is not delivered at a consistent point during the licensing process.

## **North Carolina: Johnston County parent meeting**

### *Program history*

During 2007, Johnston County, North Carolina, experienced an unusually large number of teen fatalities in motor vehicle crashes. In response, a community-based group called Joco Teen Drivers was formed to find solutions to the problem. As a result of these efforts, a local ordinance was passed requiring all parents of new drivers to attend a parent orientation session when the teen enrolls in driver education. Driver education is required to obtain a license before age 18 in North Carolina. Teens must pass the class to obtain a learner license and begin supervised driving.

### *Extent of audience coverage*

Attendance is mandatory for all parents of teens in Johnston County.

### *Content and delivery*

Both parents and teens attend the class. Class size typically ranges from 40 to 100 or more. Because the mandate is county-wide, each class is typically provided to parents of teens from multiple high schools. Depending on the size and location of the class, it may be held in a school auditorium, gymnasium or cafeteria.

The 60- to 90-minute program is delivered by a driver education instructor. The instructor typically shows a few PowerPoint slides, but the program does not have standard content or sets of slides. At the beginning of the class, families receive a handout called the “Student/Parent Driving Guide: Parental Involvement Program.” The first 10 to 30 minutes of the parent session are devoted to administrative issues. Parents are required to fill out and submit several forms, and the instructor describes the logistics and requirements of driver education. The instructor then talks about common risks for teen drivers, such as distractions, alcohol and teenage passengers. Most instructors share stories about teens they taught who were involved in crashes. Next, a law enforcement officer describes state laws pertaining to teen drivers and shares stories and personal anecdotes. Some sessions also include a talk by a parent of a teen driver who was involved in a fatal crash. This individual speaks about the loss of his/her teen and the toll of the crash on family and friends. Finally, a driving log and parent/teen driving agreement is introduced (as part of the packet of materials).

The “Student/Parent Driving Guide: Parental Involvement Program” handout includes:

- Suggestions for parent as driving supervisors.
- Nine driving lessons beginning with car controls and ending with night driving.
- A description of North Carolina’s GDL system.

### *Program fidelity*

As mentioned above, the program does not have a standard set of PowerPoint slides. On some occasions, a law enforcement officer or other person is not available to speak about the traumatic effects of a teen crash. Consequently, the program’s content varies from one session to the next.



There appear to be no procedures to train new presenters and instructors, or to ensure program quality.

### *Evaluation*

Questionnaires administered immediately following the program found most parents thought the class was useful and should be required of all parents of new drivers in Johnston County. No outcomes for participating families have been examined.

### *Summary of the program's strengths and weaknesses*

Johnston County is an excellent example of a jurisdiction that has successfully required a class for all parents of new drivers. However, there are no apparent conceptual underpinnings to the program nor any behavior goals for parents. The program also lacks the consistency a standard PowerPoint presentation helps provide. The large size of most classes precludes anything but a lecture-based approach. Finally, the driving agreement provided to parents does not allow customization, and families are not assisted in completing the agreement.

### Strengths

- The program is mandatory.

### Weaknesses

- The parent behaviors the program seeks to promote are not clear.
- The program is delivered through an instructor-centered, passive learning approach.
- The program involves only one contact with parents.
- The program is not standardized.
- No evaluation has been conducted to document program effectiveness in producing intended results.

## **Northern Virginia: *Partners for Safe Teen Driving***

### *Program history*

*Partners for Safe Teen Driving* was originally developed in Prince William County in 2004, in response to a high-profile fatal crash involving a teen driver. A few years later the program was expanded to Virginia's Planning District 8, which includes Arlington, Fairfax, Loudoun, and Prince William counties and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park. The program now covers 43 school districts across the state. The program is administered through a partnership between Prince William County Public Schools, the Virginia Department of Motor Vehicles and the Virginia Department of Education, with support from the State Highway Safety Office.

### *Extent of audience coverage*

Attendance is mandatory for parents in Virginia Planning District 8. Parents must complete the program before the teen is eligible to receive a license to drive unsupervised in Virginia.

### *Content and delivery*

Both parents and teens attend the 90-minute session. They do this while the teen is taking driver education, and the program is delivered by a driver education instructor. The program is designed to teach parents:

- How to coach teenagers as they learn to drive.
- Virginia laws pertaining to teenage driving.
- The newest driving techniques.
- Virginia's licensing process.

A PowerPoint presentation is used throughout. As parents enter the room, they see eight true/false questions about teen drivers projected on a screen. These questions are revisited at various points during the program.

The program begins with a video entitled "Parents, You Are the Key," which gives an overview about teen drivers, GDL and the role of parents. This is followed by encouragement for parents to model safe behaviors, provide practice, set limits on driving and suspend driving privileges, if necessary. Many statistics (both national and local) are presented, as well as research findings about teen brain development, teen driving risks, drinking and driving, seat belts, speed, fatigue, nighttime driving and distractions. Requirements for getting a license in Virginia are reviewed, and tips for parent supervisors are suggested. The instructor also reviews topics that are typically taught in driver education classes, such as proper hand positioning, off-road recovery, managing a skid, mirrors, tire inflation and what to do if stopped by a police officer. Finally, families are encouraged to develop a parent-teen contract (provided in the materials they receive at the session). Approximately six videos are shown at various points during the program, presenting stories of tragedies, encouraging parents to be good role models, showing the dangers of distracted driving and describing proper hand positioning, among other topics.

Parents who attend the meeting receive a number of materials including:

- Brochure: “Parent Guide: What You Need to Know Before Your Teen Drives.”
- Information about the state’s licensing system.
- Driver Education requirements.
- Information about Virginia traffic laws.
- Tips for coaching a teen driver.
- The “Virginia Department of Education 45-Hour Parent/Teen Driving Guide,” which includes a series of 45 practice sessions for supervised driving, a parent/teen driving agreement and a driving log.

### *Program fidelity*

Program materials are provided to any agency that requests them. There appears to be no system in place to train new presenters, or to ensure quality or consistency of program delivery across settings and over time.

### *Evaluation*

Parents complete a post-program questionnaire to assess satisfaction with the program. Additionally, a nonscientific survey of a small sample of program participants was conducted to measure changes in knowledge one to two months later. Improvements were noted, but there has been no attempt to evaluate behaviors or outcomes.

### *Summary of the program’s strengths and weaknesses*

*Partners for Safe Teen Driving* is required for all parents of new drivers in Virginia Planning District 8. The program focuses on the role of parents in the licensing process, although it also includes information that is less relevant for parents (e.g., proper hand positioning). There is little oversight or quality control to ensure the program is being delivered as intended. Similar to most programs for parents, the program relies on a lecture-based, passive learning approach. Finally, the contract provided to parents can be customized, but families are not assisted in completing the contract.

### *Strengths*

- Attendance is required for parents in Virginia Planning District 8.
- There is a strong focus on the role of parents in the licensing process.
- The program is standardized.
- Efforts have been made to evaluate outcomes, although it is still not known whether the program produces the intended results.

### *Weaknesses*

- The parent behaviors the program seeks to target and promote are not clearly defined.
- The program is delivered through an instructor-centered, passive learning approach.

- The program involves only one contact with parents.
- The program is delivered by individuals with no training, and there is no oversight or quality control to ensure consistent delivery and adherence to the content and concepts it's meant to provide.

## ***Utah's Parent Night Program***

### *Program history*

The Utah *Parent Night Program* was introduced in 2011. Inspired by research on the importance of parent involvement in the driver education process, the program was developed by a consulting firm with funding from the Utah Department of Education and the Utah Teen Driving Task Force. Currently the program is funded by the Utah Department of Transportation.

### *Extent of audience coverage*

Attendance is mandatory for parents in some school districts; in other districts, individual driver education instructors determine whether the program is mandatory or voluntary. During 2015, 35 schools in Utah offered the program out of approximately 200 high schools in the state. Originally concentrated in urban areas, the program has gradually expanded into rural parts of Utah.

### *Content and delivery*

Both parents and teens attend the 60-minute class. Classes range from as high as 300 people to as low as 16. Parents participate in the program when their teen takes driver education. Although driver education teachers arrange the date and time for the class, the program is delivered entirely by a group of trained instructors. A PowerPoint presentation is used throughout the session.

The instructor begins by citing five important causes of crashes and injuries for teens: drowsy driving, distracted driving, aggressive driving, impaired driving and seatbelt nonuse. These five topic areas comprise the focus of the class, and each topic is covered separately. Within each topic, the instructor describes Utah law, facts, tips for parents and personal stories. For example, for the topic of seat belts, the instructor first explains Utah law (e.g., it is illegal to ride without a seat belt in Utah, regardless of age). Facts are then presented (e.g., being unbuckled in a crash increases the risk of injury or death to other passengers by 40%). Tips for parents include setting an example by always wearing a seat belt and making it a rule that the vehicle does not move until everyone is buckled correctly. Finally, a video is shown with a personal story about a teen driver fatal crash. The presentation is didactic but includes frequent questions posed to the audience. GDL is discussed when it relates to one of the five topic areas.

Parents and teens who attend the meeting are given a handbook, "Be Smart. Be Safe. A Parent's Guide to Smart Teen Driving" that mirrors the presentation. The handbook also includes a chart of Utah's GDL requirements and a parent-teen driving agreement.

### *Program fidelity*

The parent program is presented by employees of a private consulting firm. They are primarily trained by watching presentations, co-teaching and being mentored by more experienced individuals. In addition, in order to teach the parent class, they must already be a certified Child Passenger Safety Technician. Backgrounds differ but many are community educators and

facilitators of other traffic safety programs. Once trained, instructors are generally left to conduct the presentations on their own.

### *Evaluation*

At the completion of each session, parents are asked to complete a brief post-program questionnaire. Results suggest parent approval of the program is high. In 2015, an evaluation of the *Utah Parent Night Program* was initiated to determine the impact of the *Parent Night Program* on parents' attitudes, knowledge, and behaviors, and to identify areas for improvement of the program. The evaluation included a baseline survey and three follow-up surveys. Presently, a report describing the evaluation results is not available.

### *Summary of the program's strengths and weaknesses*

Similar to the Wright County, Minnesota, program, Utah's *Parent Night Program* is an excellent example of a close partnership between driver education and a group of outside instructors. The driver education system makes the program available to every parent of a teen who enrolls in driver education, but the program itself is delivered by staff who are highly experienced with the program. Only a small percentage of schools in Utah currently offer the program. Moreover, the program is voluntary for parents at some of those schools. The large size of most classes precludes anything but a lecture-based approach, although instructors try to engage the audience by posing frequent questions. The class focus is clearly defined by the five broad topic areas; however, little guidance is provided to parents about supervised driving. Also, the rationale for GDL and the role of parents in the licensing process are not fully explained. Finally, the driving agreement provided to parents allows very little customization, and families are not assisted in completing the agreement.

### Strengths

- Although the program is offered through driver education classes, it is delivered by trained instructors.
- The program is standardized.
- There is some attempt to incorporate active learning approaches, for example, by engaging the audience through frequent questions.

### Weaknesses

- The program is not available to parents of teens at a large majority of schools in the state, and parent attendance is not required at all schools where it is offered.
- Although the program offers tips for parents, little guidance is provided about supervised driving.
- The program is primarily delivered through an instructor-centered, passive learning approach.
- The program involves only one contact with parents.
- The program's effectiveness in producing intended results is not yet known.

## **Recommendations for Future Efforts**

---

In this section, the project team presents nine recommendations for states and other jurisdictions that currently provide — or are planning to implement — an orientation session for parents of new drivers. These recommendations stem from 1) research on young driver safety; 2) research from social psychology, education and related fields; and 3) our observations of existing programs for parents. Programs that follow these recommendations should have a greater likelihood of enrolling and motivating parents, and ultimately producing safer teenage drivers.

The nine recommendations are (not in order of importance):

- 1) Be evidence-based and grounded in research.
- 2) Provide clear guidance for parent action.
- 3) Have repeated contacts with parents.
- 4) Incorporate principles of adult learning.
- 5) Explain the rationale for GDL and the role of parents.
- 6) Be designed and conducted by individuals outside the driver education system (even if the program is delivered within driver education classes).
- 7) Have systems in place to ensure the program is standardized and delivered consistently.
- 8) Evaluate outcomes.
- 9) Mandate parent attendance.

## 1) Be evidence-based and grounded in research

Nearly every parent program uses research in some capacity. Most programs share statistics about teen involvement in motor vehicle crashes and the causes of those crashes. Often this includes statistics about teen driver fatalities and/or graphs showing how crashes are the leading cause of death for teens. However, being “evidence-based” means more than including the latest data. A program that is grounded in research brings an understanding of how teens learn to drive and how parents can best assist with that process. It also recognizes what research shows to be effective — or ineffective — at promoting safe behaviors.

Many parent programs appear to be largely based on common-sense notions of what *should* work rather than evidence about what *does* work. A common belief underlying most programs is that if parents simply understood that driving is dangerous for a newly licensed teen, they would somehow take appropriate steps to ensure their teen’s safety. In a summary of the research on this kind of approach, Allan Williams — traffic safety expert and former chief scientist at the Insurance Institute for Highway Safety — writes:

“The simplistic assumption is that if individuals are made aware of behaviors that will enhance their personal health and safety and they are urged to adopt these behaviors, they will do so. Although seemingly logical, this sequence of events is unlikely to happen.... It is well established that information-only programs are unlikely to work” (Williams, 2007, p.4).

The unfortunate truth is that awareness-raising and education-based programs rarely influence health-related behaviors (drug prevention, weight loss, etc.). This is especially true with traffic safety programs. Many factors contribute to this failure. Research on risk perception shows humans are poor at estimating risk and the likelihood of undesirable outcomes. Most people have an “optimism bias” — they underestimate the likelihood of being in a crash, think of themselves as above average drivers and assume that negative events such as accidents usually happen to other people (DeJoy, 1989; DeJoy, 1992; Gosselin et al., 2010; Harré et al., 2005; Horswill et al., 2004; Svenson, 1981). Consequently, they may feel that safety messages are more important for other people than themselves (McKenna & Horswill, 2006; Svenson, 1981; Tyler & Cook, 1984). Regarding parent orientation sessions, some parents may believe their son or daughter is a “good kid” who would not use a cell phone or engage in other high-risk behaviors while driving, so they might discount the importance of the information for their family. However, novice driver crashes often result from actions or errors attributable to inexperience rather than intentional misbehavior (Foss et al., 2011). Consequently, *all* teenagers, even “good” ones, have a high risk of crashing in their early months of driving. Most programs, however, focus on misbehaviors rather than inexperience.

Another issue with education-based programs is they fail to provide new information. Most parents (and teens) know that drinking and driving or using a cell phone while driving is dangerous (Williams et al., 2006). They have already heard that message dozens, if not hundreds of times before. What parents may not know are the specific actions they can take to improve their teen’s safety. With drinking and driving, for example, families can create agreements that



parents will pick up their teen if he or she has been drinking, and that the matter will not be discussed until the next day. Here, the education is about what parents can *do*, rather than the risky behavior itself. This substantially increases the likelihood that parents will learn something they did not previously know. (See Recommendation No. 2 below for more information about providing clear direction for parents.) Education about the rationale for graduated driver licensing and the key elements of the state's GDL system is also important. Many parents, especially first-time supervisors, may not understand how and why GDL works and the importance of parents to this process (see Recommendation No. 5).

Beyond education, another common-sense approach employed by many programs is testimony from a victim of a teen driver crash. Often this person is a parent or friend of a teen who died in a crash; other times it may be EMS personnel, a law enforcement officer or other safety professional who relates personal stories about teen driver crashes they have witnessed. Sometimes these individuals appear in person, but many programs show videos because it can be difficult (both logistically and emotionally) for these individuals to relate their stories repeatedly. Individuals who provide personal stories are motivated by a genuine desire to prevent future tragedies. Program administrators hope this emotional appeal will hold parents' attention and inspire them to take their teen's safety seriously. Unfortunately, research suggests this approach is usually ineffective. For example, well-controlled studies of the effects of victim impact panels on recidivism (repeat offenses) among DWI offenders have found no evidence of any effect (C'de Baca et al., 2001; Crew & Johnson, 2011; Shinar & Compton, 1995; Wheeler et al., 2004).

In the context of parent orientation sessions, it is important to recognize that the learning-to-drive process takes a few years, not a few weeks. A motivational speech at the outset of driver education is unlikely to have an effect many months later when the parent is expected to closely monitor the teen's independent driving and to enforce GDL provisions. Also, research shows most parents of teen drivers are already concerned about their teen's safety (Simons-Morton et al., 2008; Williams et al., 2006). Hence, the motivation assumed to result from hearing a victim's story stands to have little benefit.

Many parent programs emphasize the negative consequences that can happen when driving, often by showing photos from crash scenes or shocking videos. Again, the assumption is these types of "fear messages" will motivate families to act, although the desired action is often left unstated or put in vague terms (e.g., "don't drive distracted"). The research on fear messages is mixed (Lewis et al., 2007). In some cases, this approach can produce a defensive response that *increases* the likelihood of risky behavior (Witte & Allen, 2000). To prevent this, to the extent they are used at all, it is important that fear appeals are followed by concrete information about what parents are expected to do to improve their teen's safety (see Recommendation No. 2).

A similar approach to fear appeals is describing the legal sanctions for misbehavior. Many programs have a police officer discuss the fines and penalties for speeding, DWI, texting and other violations. It is highly unlikely these distant negative consequences provide much motivation for teen drivers — especially those who may not yet even have a permit. As an alternative, a large body of research suggests that positive approaches are helpful for achieving a desired behavior. This can include tangible rewards, social approval and highlighting positive

social norms. For example, rather than highlighting the potential consequences of seat belt nonuse or citing the number of people killed who were not wearing a seat belt, programs could underscore that most teens already wear seat belts. In fact, belt use is nearly as high for young people as adults and is approaching 90% (Pickrell et al., 2016). Contrary to common belief, behaviors such as seat belt nonuse and drinking and driving are relatively uncommon among high-school age drivers. By focusing on relatively rare misbehaviors, programs inadvertently give the impression these behaviors are more common than they actually are.

Instead of using common-sense approaches that are intuitively appealing but often ineffective, to be successful, parent programs must incorporate what is known about the things that actually influence human behavior. This means heeding general principles that are well-known to behavioral scientists, current understanding of the nature of driving and specific evidence from studies that have examined the effectiveness of various kinds of interventions to increase traffic safety. A substantial and growing body of research has investigated the process by which teens learn to drive and the role of parents in that process. This literature points to the important issues to address and the approaches that will be most beneficial. Additionally, many theoretical models are available that can help guide program development and provide an understanding of the behavior change process.

One well-known and well-studied theoretical model is the Theory of Planned Behavior (TPB; Ajzen, 1991), which conceptually identifies major determinants of human behavior. Prior to TPB, it was generally believed that attitudes cause (i.e., predict) behavior. To influence behavior, one only needed to change a person's attitudes. However, research consistently failed to show any clear causal link between attitudes and behavior. As theories evolved further, it was recognized that when an attitude-behavior relationship exists, it is usually because behavior leads to attitudes that are consistent with that behavior, rather than the reverse (Atchley et al., 2010). "Cognitive dissonance" is an example of this — people typically feel discomfort when there is a mismatch between their behavior and their attitudes. As a result, people adjust their attitudes to align with their behavior (Festinger, 1957). In terms of parent orientation sessions, those programs that try to change attitudes (e.g., "you need to be concerned about your teen's safety") typically fail to produce the desired behaviors because attitudes do not affect behavior. Consequently, rather than seeking to influence attitudes, to succeed, programs need to directly target the behaviors they want to encourage.

Many resources are available to help program developers understand the key research on teen drivers and how parents can best assist in the process. Some key references and resources are listed below.

*General resources about teen drivers:*

- Handbook of Teen and Novice Drivers: Research, Practice, Policy and Directions (Fisher et al., 2016).
- A Guide for Reducing Collisions Involving Young Drivers (Goodwin et al., 2007).
- Countermeasures That Work (Goodwin, Thomas, et al., 2015).

*Parent involvement:*

- Effectiveness of Parent-Focused Interventions to Increase Teen Driver Safety: A Critical Review (Curry et al., 2015).
- Parents, Teens and the Learner Stage of Graduated Driver Licensing (Goodwin et al., 2010).
- Parenting and the Young Driver Problem (Simons-Morton et al., 2008).

*Social norms:*

- Basic Social Influence is Underestimated (Cialdini, 2005).

*Educational approaches:*

- Public Information and Education in the Promotion of Highway Safety (Williams, 2007).
- Effectiveness of Behavioral Highway Safety Countermeasures (Preusser et al., 2008).

## 2) Provide clear guidance for parent action

Perhaps the greatest collective weakness of the programs the project team assessed was lack of a clear sense of exactly what parents should do once they leave the class. Parents generally received little guidance on concrete actions they could and should take to improve their teens' driving competence. Instead, programs devoted most of their time to teen misbehaviors (e.g., distracted driving) and the consequences of those misbehaviors, and to motivating parents through videos, testimony from victims, etc. The typical program devoted 10 minutes or less to the role of parents and what they can do to help their teen become a safe driver.

To be effective, programs need a small number of clear, concrete, measurable behavioral objectives for parents — ideally no more than four or five. Too many behavioral objectives will result in parents forgetting the most important points. Once the behavioral objectives are established, programs should be structured to maximize the likelihood parents will engage in these behaviors. Examples of behavioral objectives for parents include:

- Provide as much supervised practice as possible during the learner period.
- Provide substantial practice in a wide variety of settings (nighttime, inclement weather, interstate highways, rural roads, heavy city traffic, etc.).
- Ensure the teen drives the safest vehicle the family can afford (i.e., a vehicle with front and side airbags as well as curtain airbags, electronic stability control, not too small, neither under- nor over-powered, with a low center of gravity).
- Ensure that teens adhere to important graduated driver license (GDL) provisions (e.g., nighttime driving and passenger limits). If the state's restrictions are inadequate, set restrictions that are more appropriate (e.g., a 9 or 10 p.m. night restriction, a limit of zero or one teen passenger).

The key here is to focus less on *dangers* and more on *solutions*. The emphasis should be on getting parents to do things that will be beneficial, and — for particularly challenging issues — helping parents figure out how to best do them. If a behavioral objective is “lots of practice in many situations/locations/conditions,” it is important to help parents recognize the real-world obstacles that are likely to occur. Busy schedules can make it challenging to find time to practice. Depending on where a family lives, teens may have few opportunities to drive in bad weather, on interstate highways or on rural backroads. Programs can help parents identify and overcome these barriers. Making a plan to practice — either through driving agreements or scheduling driving practice on the calendar — can help ensure a teen drives regularly. To obtain practice in less common conditions (e.g., heavy rain), special trips will be necessary.

It is important to bear in mind that most parents of new teen drivers obtained their license before the era of GDL, when the typical learner period was just a few weeks and there were no state-mandated restrictions. Consequently, parents' own experience from when they learned to drive offers little help or direction. Not surprisingly, research shows most parents are little more than passengers during supervised driving, and they provide relatively little higher-order instruction to their teens (Goodwin et al., 2014). Moreover, many parents do not help their teen obtain the wide variety of practice needed to become an experienced driver (Goodwin et al., 2010). To maximize

the effectiveness of GDL, parents need guidance on how to best spend the six- to-12-month learner period and how to enforce GDL restrictions.

Many programs encourage parents to be good role models. This recommendation is understandable but unlikely to be helpful. The recommendation is: 1) far too vague, 2) too late, and 3) another example of assuming that behavior can be affected by simply telling people what they should do (see Recommendation No. 1). A parent who tells his or her teen, “don’t use your cell phone while driving” is likely to be called out as a hypocrite if they themselves use their cell phone while driving. Parents can (and should) be encouraged to set a good example, but more for their own safety as opposed to any influence this might have on their teens. On the other hand, there may be benefit to parents and teens creating a *mutual agreement* to not use their cell phone while driving (or speed, etc.). When both parties make a common commitment, this removes the “hypocrite” argument and makes everyone accountable for driving safely and monitoring the behavior of others.

Most programs also encourage families to complete a parent-teen driving contract or agreement. The term “agreement” more accurately captures the underlying notion. Contracts are often thought of as a way to control the behavior of another party, by formally laying out punishments (“consequences”) for doing, or failing to do, certain things. However, the value of creating such documents lies in the discussion by both parties of the issues that are important to them. To be effective in influencing behavior, it is essential for both parties to sign and they must be agreeing to abide by something they have discussed, understood and considered to be fair and appropriate. If one party (in this case, parents) simply dictates all the terms, there is essentially no value in such an “agreement.”

Programs typically include the driving agreement as part of a large informational packet. Families are encouraged to complete these agreement after the meeting. Research shows parents seldom complete such agreements unless they are helped to do so during a session (Zakrajsek et al., 2013). The project team identified only two programs that attempted to do this: the Connecticut Injury Prevention Center’s parent program and *Share the Keys* in New Jersey. For example, *Share the Keys* introduces a parent-teen driving agreement during the class and provides approximately five minutes for families to complete one portion of it. (Whether families finish the agreement after the session is not known.)

In sum, programs need to identify specific behavioral objectives for parents that will increase their teen’s driving competence, then concentrate on getting parents to undertake those behaviors.

### 3) Have repeated contacts with parents

Nearly all the programs the project team investigated involved only one contact with parents. Usually the contact was near the beginning of the learning-to-drive process (e.g., during the teen's first driver education class). In their recent review of parent-focused interventions, Curry et al. (2015) noted a relationship between the frequency of an intervention and the strength of the intervention's effect. Specifically, they found that "one-time informational programs — arguably the most scalable — appear to have the lowest effectiveness" (p. 512).

Although it is common to believe that a single exposure to important information will forever establish or change an individual's behavior, that's not realistic. The "Rule of Seven" is an old marketing adage that asserts a customer must see an advertisement seven times before it becomes effective. In fact, other research suggests *10 or more* exposures may be needed to influence recall (Schmidt & Eisend, 2015). Seeing an advertisement just once has virtually no effect. With respect to parent-focused programs, the programs should endeavor to find a way to have repeated contacts with parents. Only one program the project team visited included multiple contacts as a feature of the program. In Southern California, parents who participate in the Auto Club Driving School are required to attend the first hour of their teen's initial driver education class. During the weeks that follow, the driving instructor engages parents at least six more times — once at the end of each behind-the-wheel driving lesson. These brief meetings are viewed as an opportunity for the driving instructor to report on the teen's progress, to answer questions and to discuss what parents and teens should be practicing. (Parents supervise driving concurrently with behind-the-wheel instruction.) Multiple contacts with parents requires more time and effort, so such programs are inevitably more costly than one-time programs. However, to succeed in creating safer drivers, these additional contacts may be critical.

The importance of multiple contacts is illustrated in a study by Simons-Morton and colleagues (2006), who tested a program called *Checkpoints* with almost 4,000 families in Connecticut. *Checkpoints* was designed to encourage parents to limit teens' driving in high-risk conditions. Parents received a video followed by a series of eight newsletters that described the risks of teen driving, the role of parent restrictions and the benefits of adopting a driving agreement to reduce risks. Families also received guidance by mail — just before teens were eligible for an intermediate license — on how to develop a driving agreement. In follow-up surveys, both parents and teens reported greater limits on the teen's driving. A year later, teens in the *Checkpoints* program were less likely to have received a ticket for a traffic violation. Although the effects of the program were modest, it shows that thoughtful, carefully designed programs that emphasize multiple contacts with parents are feasible and can persuade parents to take actions that do influence their teens' driving. Although difficult, multiple contacts are needed to ensure that key information from the program is retained and acted upon by parents.

Another key issue is program timing. Some programs are delivered at the very outset of the learning-to-drive process. For example, the mandatory parent meeting in Johnston County, North Carolina, takes place before teens begin the first driver education class, which must be passed in order to obtain a learner permit. This means it will be several months before parents will begin supervising the teen's driving. During that period parents will have forgotten many of the

insights they developed about supervising their teen. Moreover, any guidance provided about nighttime and passenger limits will almost certainly be forgotten by the time a teen has reached the intermediate licensing stage approximately 18 months later. Other programs have the opposite issue — they provide guidance too late for some families. *Share the Keys* in New Jersey holds a parent session when invited by a school or other group. Teens who attend the session are at widely differing points in the licensing process, from just starting out to driving independently. Any guidance provided about supervised driving, for example, will be irrelevant for families who have moved beyond that stage.

To be effective, guidance should be provided as close as possible to the point in time when that guidance is most needed. Advice about supervised driving needs to be provided when teens are just beginning the learner stage. Guidance about the importance of night driving and passenger limits is most appropriate when teens begin unsupervised driving. Once again, this indicates the need for multiple contacts with parents. Ultimately, parents might benefit more from a series of brief, more targeted sessions, than a single longer session.

In their review of parent-focused interventions, Curry et al. (2015) argue that *comprehensive programs* are needed that guide families through the entire licensing process. The initial orientation session, while important, would be just one step of a carefully sequenced structure to guide and support parents. For example, during the supervised driving period, parents need reminders of the key actions they should be taking (e.g., providing lots of practice in a variety of settings). Technology can assist with this: Smartphone apps can track a teen's practice and set goals for getting experience in a variety of settings such as darkness, bad weather, interstate highways, rural roads, heavy city traffic, etc. Once the teen earns an intermediate license, parents need to understand the importance of GDL restrictions and their role in managing the teen's independent driving. Ideally, programs would have a second in-person meeting at this stage, but it has proved exceedingly difficult to get parents to return for an additional session. However, a wide variety of strategies and tools (driving agreements, in-vehicle records, smartphone apps, etc.) are available to assist parents during the intermediate license period. Additional contacts with parents entail costs but stand to greatly increase the likelihood that a program will produce positive outcomes. No U.S. state or jurisdiction, to our knowledge, has created a comprehensive system to support parents through the entire licensing process.

#### 4) Incorporate principles of adult learning

Zemke and Zemke observed: “Adults can be ordered into a classroom and prodded into seats, but they can’t be forced to learn” (Zemke & Zemke, 1995). Fortunately, a sizeable collection of research literature exists on effective methods and techniques for increasing the likelihood that adults will learn. Figure 2 illustrates a sample “learning pyramid,” showing the amount of information retained based on how the information is presented.

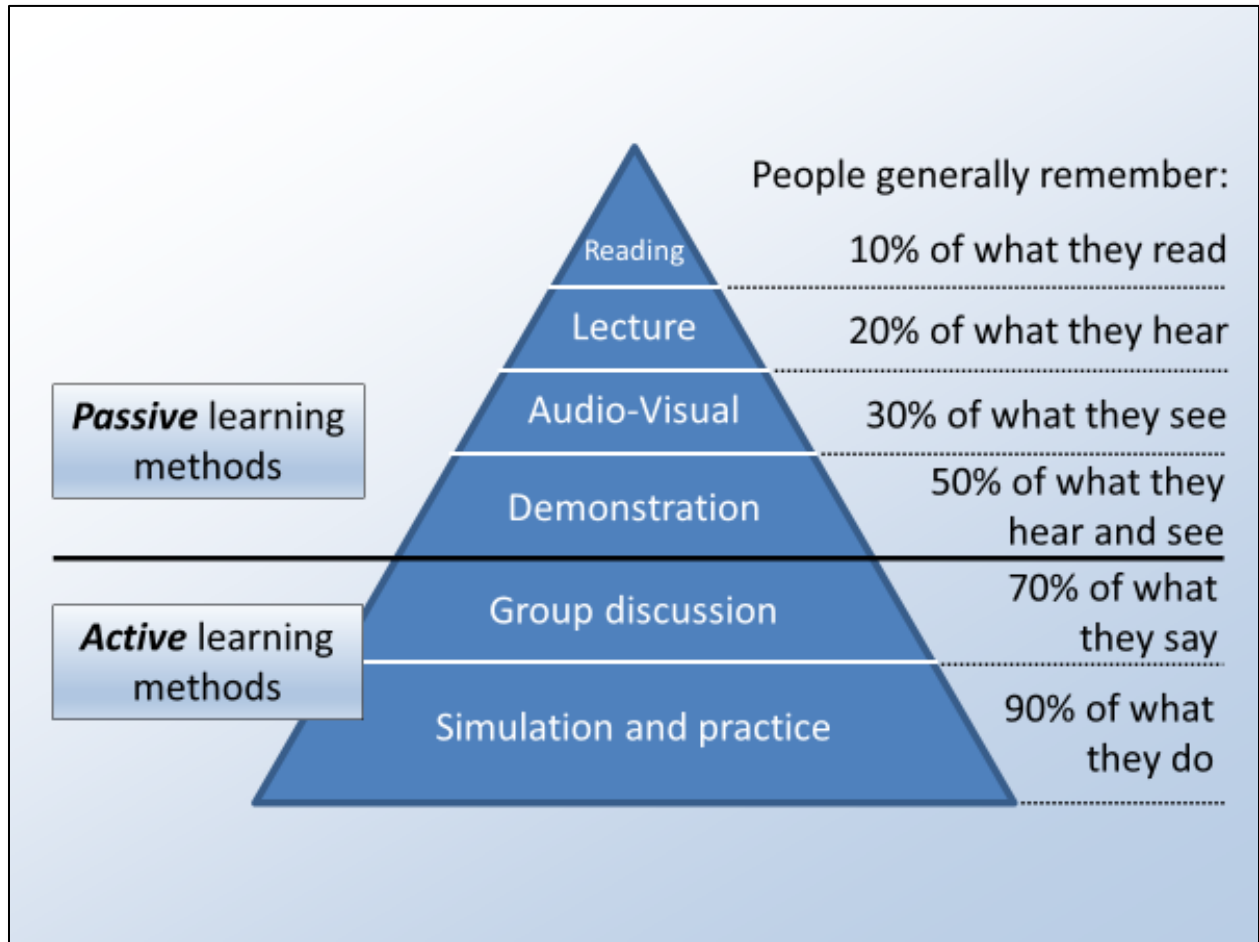


Figure 2. Sample “learning pyramid”. Adapted from Edgar Dale (1969). *Audio-Visual Methods in Teaching*. New York, NY: Holt, Rinehart, and Winston.

The percentages presented in the figure are just approximations, but the general pattern is instructive. Adult learners retain only a small amount of information provided by lecturing. Retention is only slightly better for audiovisual approaches (e.g., watching a video). These are considered *passive learning methods*. Individuals are simply observers as information is presented to them. Most of the programs the project team assessed relied on passive learning methods, especially lecture and videos.



Retention is higher when *active learning methods* are employed. This happens when people are experientially involved in the learning process (Bonwell & Eison, 1991). Active learning can involve group discussion, problem solving, role playing, debates, simulations, brainstorming, small group activities and other techniques where students engage with the information to be learned. Only a handful of programs the project team assessed employed active learning methods. *Share the Keys* in New Jersey presents challenging scenarios to parents and teens to generate thought and discussion. In addition, parents and teens work together to establish a driving agreement. The Connecticut Injury Prevention Center's parent program incorporates several active learning approaches such as problem solving and small group discussion.

Additional principles of adult learning include (adapted from Goodwin et al., 2013):

- Concepts should be presented one at a time, so learners have time to organize and integrate information. To increase the likelihood new information will be retained, it is important to introduce only a small number of new concepts and to summarize these concepts frequently.
- To enhance learning, multiple instructional formats should be used whenever possible; for example, combining group discussion with videos, printed materials and other media.
- Analogies and “storytelling” can help adults incorporate new knowledge into their existing knowledge or understanding.
- Adult learners' experiences can be a valuable resource. Having adults share situations and perspectives from their own lives not only provides useful information for others, but makes learning a cooperative enterprise in which both teachers and learners have something to contribute.

All the in-person programs the project team visited used a PowerPoint presentation. PowerPoint can provide a useful structure for a program, but it is important participants engage with the *instructor* rather than the *slides*. Slides should list key points in as few words as possible which the instructor can then expand upon. Data and statistics should be de-emphasized. Ideas, concepts and stories convey meaning in a way that statistics do not.

Because they are video/audio based, online programs face additional challenges with incorporating active learning methods. To our knowledge, Delaware's *GDL Parent Orientation Program* is the only statewide web-based program. The program's “feel” is very similar to most of the in-person programs the project team assessed (most likely because the program was originally delivered in classrooms before it was moved to an online platform). Apart from occasional quizzes, the program is delivered entirely through a lecture-based, passive learning approach. Online programs have the advantage of reduced costs and standardization (assuming the program is effectively designed to discourage or prevent participants from skipping ahead). However, an online program that passively delivers information to parents is unlikely to be successful. The *TeenDrivingPlan* (mentioned in the Introduction) is a web-based program for parent supervisors developed by researchers at the Children's Hospital of Philadelphia. It includes several interactive elements such as an online practice planner and tools for logging and rating a teen's driving. The program demonstrates that a web-based program for parents can incorporate elements of active learning.

In sum, high quality programs focus on helping parents understand key points and taking appropriate action (active learning approaches), rather than concentrating on delivering information to parents (passive learning approaches). It is easier to administer and standardize programs that simply deliver information, but the information is less likely to be retained and acted upon by parents. Instead, programs should be interactive and include demonstration, discussion, activities and practice doing, all focused on moving participants toward engaging — appropriately and consistently — in the program’s behavioral objectives.

Key resources on active learning methods can be found here:

- **Active Learning (Vanderbilt University):** Defines active learning, explains why it is important and describes several techniques for teaching. Available at: <https://cft.vanderbilt.edu/active-learning/>
- **Interactive Techniques (Creative Commons):** Includes 228 examples of active learning techniques for classroom instruction. Available at: [www.usf.edu/atle/documents/handout-interactive-techniques.pdf](http://www.usf.edu/atle/documents/handout-interactive-techniques.pdf)
- **Active Learning (University of Minnesota):** Describes how to successfully implement active learning approaches with adult learners and address challenges that may arise. Available at: <https://cei.umn.edu/active-learning>

## **5) Explain the rationale for GDL and the role of parents**

Nearly all states have graduated driver licensing (GDL) systems in place, although the quality of these systems varies from state to state (IIHS, 2018). Research shows the best GDL systems have produced substantial reductions in crashes among 16- and 17-year-old drivers (Chen et al., 2006; Masten et al., 2013; Williams et al., 2016; Zhu et al., 2013). Most of the parent programs the project team visited provided information to parents about their state's GDL system. This is important because parents are essential to the success of this licensing approach. However, too many programs treat GDL as a series of laws, with legal consequences if violated. Instead, parents need to understand the logic of GDL and how — with their active involvement — it improves the safety of teen drivers.

The only way to learn to drive is by doing. But driving entails risk, especially for someone who is inexperienced. GDL addresses this problem by ensuring beginners get the experience necessary to learn, while being protected from the crash risk that their lack of experience creates. GDL is founded on two pillars. First, it has a mandatory period of supervised driving, usually lasting six to 12 months. This provides an opportunity for teens to get substantial driving experience, so they can move as far down the road as possible (figuratively speaking) to becoming a proficient, safe driver. Like learning anything new — a sport, a musical instrument or a language — this process takes time. In fact, research shows it takes several years of driving before teens have crash rates that begin to resemble adult drivers (McCartt et al., 2009). Six months — or even 12 months — of supervised driving is just a first step, but it provides a safe environment for teens to begin the potentially dangerous endeavor of learning to drive. Parents need to understand that the purpose of the learner stage is for teens to get substantial experience in a wide range of settings, and that parents are responsible for making sure this happens.

The second pillar of GDL is an intermediate stage, which restricts teens from driving unsupervised in certain high-risk settings. The strongest state GDL requirements restrict driving after 9 or 10 p.m. and carrying more than one teen passenger. The intermediate period is an opportunity for teens to learn to manage the vehicle independently, without also having to manage other situations and conditions that may increase risk. There is good evidence that nighttime and passenger restrictions reduce crashes for newly licensed drivers (Goodwin, Thomas et al., 2015; Masten et al., 2013). Parents need to understand that the intermediate stage is about keeping teens out of high-risk situations/settings and that parents play a critical role during this period too.

Although parents need to know the basic elements of their state's GDL system (e.g., the time the night restriction begins), the particulars of a state's GDL system are not important (e.g., exemptions to the night restriction, penalties for noncompliance). Parents who are interested in this level of detail can talk with the facilitator after the session. Additionally, depending on a state's GDL system, encouraging parents to go beyond existing requirements may be important. For example, a nighttime restriction that begins at midnight is inadequate. Driving after midnight is extremely risky for teen drivers, but only a tiny fraction of teen driver trips happen that late. Nighttime crashes are much more common during the early evening. For that reason, good

programs encourage parents to establish a nighttime restriction beginning at 9 or 10 p.m., regardless of the state's requirement.

With respect to the learner period, no state currently requires more than 70 hours of supervised practice. Most require 40 to 50 hours. There is no evidence that 40, 50 or even 70 hours of practice is sufficient to reduce a teen's crash risk (Ehsani et al., 2013; O'Brien et al., 2013). In fact, the limited research to date suggests well over 100 hours may be needed (Senserrick & Williams, 2015). That amount of practice is difficult to obtain in six months. The key point is that novice drivers need as much practice as possible, and that a state's requirements about the amount of practice needed during the learner period, as well as its duration, should be viewed as the bare minimum. Parent programs can — and should — encourage parents to do more than these requirements. Presently, most GDL systems require that some practice be done at night, usually 10 hours. Supervised practice at night is important, but again no evidence suggests that 10 hours is adequate to reduce teen crash risk. State requirements cannot cover the full range of potentially important settings and conditions in which teens need practice. Programs should help parents understand that to become a reasonably capable driver, teens need considerable practice in a wide variety of challenging settings, not just nighttime.

Finally, good programs emphasize that parents — not police — are the primary enforcers of GDL requirements. It is extremely difficult for officers to enforce laws that apply to specific age groups. For example, an officer cannot determine whether a young person is violating the GDL nighttime restriction without first stopping the driver and verifying the conditions of his license. Before the officer can do so, the teen would need to commit some other violation (e.g., speeding). By contrast, parents are in a much better position than police to verify that teens are complying with GDL restrictions. Additionally, a heavy focus on GDL violations and legal consequences is unnecessary. Research shows most teens comply with both the nighttime and passenger limits (Curry et al., 2017). Most teens find these limits reasonable and parents (by and large) appear vigilant about enforcing them (Goodwin, Wells et al., 2006). As mentioned earlier under Recommendation No. 1, programs should consider highlighting that the existing norm is for parents to enforce — and teens to comply — with GDL requirements. Most parents care about their teen's safety and take an active role in making GDL work.

**6) Be designed and conducted by individuals outside the driver education system (even if the program is delivered within driver education classes)**

Many parent programs are either run by — or in cooperation with — driver educators. Logistically, driver education is one of the few places where many teen drivers (and their parents) can easily be reached. Additionally, the driver education system provides a mechanism for mandating parent involvement.

Although driver education provides an opportunity to reach parents, programs should be delivered by individuals *outside* the driver education system. Driver educators are trained to teach the fundamentals of driving. They are experts who spend their careers helping teenagers make the transition from being a raw, novice driver to a (still inexperienced) learner who is capable of handling simple driving situations. However, driving instructors typically are not trained on the actions parents need to take or how to work effectively with adult learners. When driver educators talk with parents, they tend to provide information about risky behaviors for teen drivers (distraction, alcohol, speeding, fatigue, etc.). They often talk about what they do as educators, and they encourage parents to serve as “amateur” driving instructors. Specific guidance about what actions parents need to take to improve their teen’s safety, of the type described in Recommendation No. 2, is usually lacking. Driver education instructors also spend a good deal of time talking with parents about the various requirements and logistics of the driver education class — how payments should be made, the consequences of no-showing a class, etc. One of the programs the project team observed devoted most of the parent session to covering such issues. This often left little time to address what parents needed to know and do to increase their teens’ safety.

For these reasons, even programs delivered within the driver education system should be designed and conducted by individuals outside the system. Utah’s *Parent Night Program* and the parent program in Wright County, Minnesota, are excellent examples of a close partnership between driver education and a group of outside facilitators. The driver education system makes the program available to every parent of a teen who enrolls in driver education, but the program itself is delivered by staff who are highly experienced with the program. Consequently, the tone, style and content of the program is quite different from programs typically delivered by driving instructors.

## **7) Have systems in place to ensure the program is standardized and delivered consistently**

It can be easy for a program's quality to degrade over time. Experienced instructors move away or depart because of competing commitments. Program content is rarely updated, so slides and videos begin to feel "dated." Instructors may add their own tweaks to the program. Some of these changes may be minor, such as adding a personal story or changing the point of emphasis on a slide. Other changes may be meaningful, perhaps leaving out part of the presentation, or adding significant new content that diverts from the original intent of the program. Program administrators may not even realize instructors are modifying the program or doing anything different.

To be effective, programs must have systems in place to ensure the program is standardized and delivered consistently. This involves several crucial features. First, it is important to make sure that new instructors are properly trained on how to deliver the program. The Auto Club Driving School of Southern California and *Share the Keys* in New Jersey do a nice job of this. For example, *Share the Keys* conducts facilitator training sessions several times a year. These sessions train new instructors to deliver the program and provide a refresher for continuing instructors, who are required to attend a facilitator training session at least once per year. The training session also includes guidance on dealing effectively with adult learners, role-playing activities (using adult learning principles in training facilitators) and discussion of logistics of running the class.

It is also important to have quality control mechanisms in place to ensure the program delivery does not drift or degrade over time. Refresher training is a good way to guard against this, but it is also useful for program administrators to periodically conduct unannounced visits to classes to ensure the program is being delivered as designed. In addition to keeping instructors on point, another issue is making sure they are informed whenever changes are made to the program. The Auto Club Driving School in Southern California and the parent class in Wright County, Minnesota, have yearly meetings for instructors, which provide a good opportunity for keeping instructors up-to-date. In sum, even the best designed programs will fail if they do not have sound program administration and quality control procedures in place to maintain quality over time.

## 8) Evaluate outcomes

In the field of traffic safety, more time and resources are typically devoted to expanding programs than to evaluating them. Many program administrators believe that evaluation is out of reach, being too costly and too time-consuming, and requiring expertise they do not have. Without a well-designed, carefully conducted evaluation, it is impossible to know whether a program is producing the intended results. An evaluation can reveal what is working, what is not working and what changes are needed for moving forward. Program administrators make big investments in their programs. By not conducting an evaluation, they may be wasting time, effort and resources of everyone involved.

Most of the programs the project team visited had attempted to gather some information about the program's results. In most cases, this consisted only of a brief post-program questionnaire to measure parents' satisfaction with the program (e.g., "How would you rate today's program?") and sometimes behavioral intentions (e.g., "How likely are you to enforce the GDL nighttime restriction with your teen?"). Clearly it is worth knowing if a program is irritating or boring people, but this falls short of what is needed. A full evaluation measures whether a program is delivering the ultimate desired result — in this case, safer teen drivers (by way of better parent involvement).

In our experience, nearly all programs are rated extremely highly by parents, no matter what the program's quality or potential usefulness. Parents seem to appreciate any effort to provide them with help. Moreover, a program's *approval* does not equate with its *effectiveness*. And while behavioral intentions are easy to measure, research suggests they are only weakly related to future behavior (Webb & Sheeran, 2006).

Program evaluation takes time and resources, but conducting a high-quality evaluation is a critical step to ensure a program is effective and achieving desired outcomes. Good evaluations have the following characteristics in common:

- They are conducted by an independent third party.
- They include carefully selected comparison groups.
- They use random assignment.
- They measure knowledge and actual behaviors.

Having an evaluation conducted by an independent third party is important for obtaining unbiased, objective feedback. Most program administrators and providers are highly invested in their program, which makes it difficult for them to assess their program in an impartial way. Also, a third party can provide needed expertise and credibility to the evaluation. Most states have researchers available who can assist with program evaluation. State universities are a good resource for individuals who have knowledge and experience in conducting evaluations. They can craft a well-designed evaluation that includes carefully selected comparison groups, uses random assignment, and measures knowledge and actual behaviors.

Administrators of some parent programs have noted changes in teen driver injuries or fatalities following introduction of the program. However, teen crashes declined for nearly a decade

throughout the United States, due to the far-reaching and long-lasting effects of the Great Recession and teen unemployment (HLDI, 2013). Therefore, identifying the effect of a particular program requires a special study specifically designed to look for program effects above and beyond this long-term trend.

Many programs would also benefit from a *process evaluation*. This type of evaluation assesses whether a program is being implemented as intended. Here, the focus is on a program's delivery and operations, rather than participant outcomes. With a few of the programs the project team visited, program administrators were surprised to learn that instructors were deviating from the curriculum or in some instances barely employing the curriculum at all. Other site visits revealed significant logistical problems such as technology failures (e.g., videos that failed to work). The process evaluation should come before the outcome evaluation — a program that is not being delivered properly is unlikely to have positive results.

Every state has a State Highway Safety Office (SHSO) charged with distributing federal funding to improve the safety of drivers and all road users. The SHSO can be a good source of funding to support an independent evaluation of a parent orientation session.



## 9) Mandate parent attendance

Even a program that is demonstrated to be effective will not succeed if it does not reach a substantial proportion of the target population. One extremely clear finding from numerous efforts to assist parents through direct contact is that many parents do not take advantage of such opportunities. Families lead extremely busy lives. Even when parents are motivated, it can be difficult to find time to attend a Parent Night given competing needs and obligations. Voluntary programs are particularly likely to miss the parents who most need to be present — those who are less motivated and less engaged with their teen’s driving. Another drawback of voluntary programs is that program staff must spend time recruiting and encouraging parents to attend, rather than devoting that time to the program itself.

Several of the programs the project team assessed were mandatory for parents, including programs in Connecticut; Johnston County, North Carolina; Northern Virginia; Southern California and certain school systems in Utah. The program in Connecticut is mandated by state statute. Making a program mandatory requires political will. However, some of the perceived obstacles to taking this step are fictional. For example, it is widely believed that many parents do not support required attendance at a parent orientation session. In fact, when parents who attend such programs are surveyed, nearly all express gratitude and agree that such programs should be required. As one example, parents attending the mandatory orientation session in Johnston County, North Carolina, were asked: “Do you think this type of meeting should be *required* for parents of all new drivers?” Fully 96% of parents agreed (Goodwin, Foss et al., 2015).

To reach the largest number of parents, an orientation session ideally would be mandated on a statewide level. When state support is lacking, such programs can often be mandated locally. *Partners for Safe Teen Driving* is mandated for counties in Virginia Planning District 8. The program in Johnston County, North Carolina, has successfully required an orientation session for all parents of new drivers in the absence of a statewide mandate. Programs can also be required by a school system or a driver education class. To give such requirements “teeth,” teens must be prohibited from advancing through the licensing system unless a parent completes the required program. For example, several driver education programs require parents to attend the session for the teen to complete driver education, including those in Connecticut; Johnston County, North Carolina; and Southern California.

But with this discussion about mandating programs, it is important not to put the cart before the horse. Prior to mandating parent attendance at an orientation session, it is critical to take the necessary time to develop a high-quality, demonstrably beneficial program. Mandating attendance will get parents in the room, but it does not guarantee they will benefit. Several programs currently required for parents provide little or no guidance on how parents can help their teen become a safer driver. In addition, it is important that programs be evaluated to ensure they produce the desired result of better teen driver learning and ultimately a reduced crash rate. Evidence that parents like or approve of a program is inadequate. (See Recommendation No. 8 about program evaluation for more information.)

## Summary

---

The goal of parent programs is a particularly daunting one. They seek to reduce teen crashes and the resulting injuries and fatalities by increasing parental involvement. Changing the behavior of parents has proven challenging in itself; these programs have the added complexity of trying to influence teens by working through parents.

All of the programs the project team assessed had important strengths. However, each program also had weaknesses that may reduce the likelihood of producing the intended result (safer beginning teen drivers). These represent areas for potential improvement for existing programs. Many of the weaknesses not only apply to programs designed to help parents of new drivers but are also characteristic of a wide range of efforts to encourage people to adopt safer behaviors and to reduce injury.

Limitations of existing programs include:

- **Emphasis on “common sense” approaches.** Awareness raising, victim testimony and fear messages rarely influence behavior. Instead, programs need to be evidence-based and grounded in research.
- **Unclear goals and behavioral objectives.** Parents generally received little guidance on concrete actions they could and should take to improve their teens’ driving competence.
- **Ineffectual approaches to influence behavior.** Even with appropriately clear behavioral objectives, passive learning (i.e., didactic) approaches are unlikely to influence parent behavior.
- **Inappropriate timing.** Parents often receive information they will not be applying until months (or even years) in the future.
- **Inadequate coverage.** Even a highly effective program will have minimal impact if it only reaches a small proportion of the target population.
- **Insufficient oversight.** A program’s quality will degrade over time unless systems are in place to ensure the program is standardized and delivered consistently.
- **No evaluation, or inadequate evaluation.**

Despite these limitations, most programs had one or more of the necessary elements for a truly successful program. The strengths of existing programs include:

- **Required attendance.** Some communities have found a way to require a program even without a statewide mandate. In so doing, they have laid the groundwork for success — but only if an efficacious program is delivered.
- **Clear focus.** The best programs have a laser like focus on a small number of parent behaviors that might reasonably influence teens’ subsequent safety.
- **Appropriately interactive and engaging.** These programs embrace principles of adult learning, as well as research on how to bring about behavior change most effectively.
- **Ongoing or multiple contacts with parents.** Humans learn in small, delineated bits of information. Stringing out contact with parents embraces this concept and also allows provision of more timely guidance.

- **Dedicated personnel.** Every program was delivered by people who are committed to reducing teen crashes and fatalities.

Developing, implementing and evaluating a program that contains all these elements will require considerable time and resources. Despite the extreme challenge, most young-driver experts believe that striving to help parents is worth the effort. The recommendations provided in this report are intended to extend those of Curry et al. (2015). Programs that follow these recommendations should have a greater likelihood of enrolling and motivating parents, and ultimately in producing safer teenage drivers.

## Acknowledgements

---

The project team gratefully acknowledges the assistance of the many program administrators who took considerable time to meet with us, answer our questions, and coordinate the site visits and program observations. The project team was consistently impressed with the helpfulness, friendliness and dedication of the individuals with whom the team met in each and every state. This project would not have been possible without their support. We thank the many individuals at the following agencies for their time and assistance:

- Auto Club Driving School of Southern California
- Connecticut Injury Prevention Center's parent program
- Delaware's *Graduated Driver's License Parent Orientation Program*
- Minnesota's *Point of Impact*
- Minnesota's Wright County program
- New Jersey's *Share the Keys*
- North Carolina's Johnston County parent meeting
- Northern Virginia's *Partners for Safe Teen Driving*
- Utah *Parent Night Program*

## References

---

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Atchley, P., Atwood, S., & Boulton, A. (2011). The choice to text and drive in younger drivers: Behavior may shape attitude. *Accident Analysis & Prevention*, 43(1), 134-142.
- Beck, K. H., Hartos, J. L., & Simons-Morton, B. G. (2005). Parent-teen disagreement of parent-imposed restrictions on teen driving after one month of licensure: Is discordance related to risky teen driving? *Prevention Science*, 6(3), 177-185.
- Beck, K. H., Shattuck, T., & Raleigh, R. (2001a). Parental predictors of teen driving risk. *American Journal of Health Behavior*, 25(1), 10-20.
- Beck, K. H., Shattuck, T., & Raleigh, R. (2001b). A comparison of teen perceptions and parental reports of influence on driving risk. *American Journal of Health Behavior*, 25(4), 376-387.
- Bonwell, C. C. & Eison, J. A. (1991). *Active Learning: Creating Excitement in the Classroom*. 1991 ASHE-ERIC Higher Education Reports. Washington, D.C.: ERIC Clearinghouse on Higher Education.
- C'de Baca, J., Lapham, S. C., Liang, H. C., & Skipper, B. J. (2001). Victim impact panels: do they impact drunk drivers? A follow-up of female and male, first-time and repeat offenders. *Journal of Studies on Alcohol*, 62(5), 615-620.
- 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(1), 56-62.
- Cialdini, R. B. (2005). Basic social influence is underestimated. *Psychological Inquiry*, 16(4), 158-161.
- Crew, B. K. & Johnson, S. E. (2011). Do victim impact programs reduce recidivism for operating a motor vehicle while intoxicated? Findings from an outcomes evaluation. *Criminal Justice Studies*, 24(2), 153-163.
- Curry, A. E., Peek-Asa, C., Hamann, C.J., & Mirman, J. H. (2015). Effectiveness of parent-focused interventions to increase teen driver safety: A critical review. *Journal of Adolescent Health*, 57, S6-S14.
- Curry, A. E., Pfeiffer, M. R., Durbin, D. R., Elliott, M. R., & Kim, K. H. (2014). *Young Driver Licensing in New Jersey: Rates and Trends, 2006-2011*. Washington, D.C.: AAA Foundation for Traffic Safety.
- Curry, A. E., Pfeiffer, M. R., & Elliott, M. R. (2017). Compliance with and enforcement of graduated driver licensing restrictions. *American Journal of Preventive Medicine*, 52(1), 47-54.
- Dale, E. (1969). *Audio-Visual Methods in Teaching*. New York, NY: Holt, Rinehart, and Winston.

- DeJoy, D. M. (1989). The optimism bias and traffic accident risk perception. *Accident Analysis & Prevention, 21*(4), 333-340.
- DeJoy, D. M. (1992). An examination of gender differences in traffic accident risk perception. *Accident Analysis & Prevention, 24*(3), 237-246.
- Ehsani, J. P., Bingham, C. R., & Shope, J. T. (2013). The effect of the learner license Graduated Driver Licensing components on teen drivers' crashes. *Accident Analysis & Prevention, 59*, 327-336.
- Ehsani, J. P., Klauer, S. G., Zhu, C., Gershon, P., Dingus, T. A., & Simons-Morton, B. G. (2017). Naturalistic assessment of the learner license period. *Accident Analysis and Prevention, 106*, 275-284.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Evanston, IL: Row, Peterson, Evanston.
- Fisher, D. L., Caird, J. K., Horrey, W. J., & Trick, L. M. (2016). *Handbook of Teen and Novice Drivers: Research, Practice, Policy, and Directions*. Boca Raton, FL: CRC Press.
- Foss, R. D., Martell, C. A., Goodwin, A. H., & O'Brien, N. P. (2011). *Measuring Changes in Teenage Driver Crash Characteristics During the Early Months of Driving*. Washington, D.C.: AAA Foundation for Traffic Safety.
- Goodwin, A. H. & Foss, R. D. (2004). Graduated driver licensing restrictions: Awareness, compliance, and enforcement in North Carolina. *Journal of Safety Research, 35*(4), 367-374.
- Goodwin, A., Foss, R., Harrell, S., Kirley, B., O'Brien, N., & Margolis, L. (2015). *Evaluation of UNC's Time to Drive Parent Coaching Session: Final Report*. Chapel Hill, NC: UNC Highway Safety Research Center.
- Goodwin, A. H., Foss, R. D., Margolis L. H., & Harrell, S. (2014). Parent comments and instruction during the first four months of supervised driving: An opportunity missed? *Accident Analysis and Prevention, 69*, 15-22.
- Goodwin, A., Foss, R., Margolis, L., & Waller, M. (2010). *Parents, Teens and the Learner Stage of Graduated Licensing*. Washington, D.C.: AAA Foundation for Traffic Safety.
- Goodwin, A., Foss, R., Sohn, J., & Mayhew, D. (2007). *A Guide for Reducing Collisions Involving Young Drivers* (NCHRP Report 500). Washington, DC: Transportation Research Board.
- Goodwin, A. H., Margolis, L. H., Foss, R. D., Harrell, S., O'Brien, N. P., & Kirley, B. B. (2013). *Improving Parental Supervision of Novice Drivers Using an Evidence-Based Approach*. Washington, D.C.: AAA Foundation for Traffic Safety.
- Goodwin, A., Thomas, L., Kirley, B., Hall, W., O'Brien, N., & Hill, K. (2015). *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Eighth Edition*. (Report No. DOT HS 812 202). Washington, D.C.: National Highway Traffic Safety Administration.

- Goodwin, A. H., Waller, M. W., Foss R. D., & Margolis, L. H. (2006). Parental supervision of teenage drivers in a graduated licensing system. *Traffic Injury Prevention*, *7*, 224-231.
- Goodwin, A. H., Wells, J. K., Foss, R. D., & Williams, A. F. (2006). Encouraging compliance with graduated driver licensing restrictions. *Journal of Safety Research*, *37*(4), 343-351.
- Gosselin, D., Gagnon, S., Stinchcombe, A., & Joanisse, M. (2010). Comparative optimism among drivers: An intergenerational portrait. *Accident Analysis & Prevention*, *42*(2), 734-740.
- Harré, N., Foster, S., & O'Neill, M. (2005). Self-enhancement, crash-risk optimism and the impact of safety advertisements on young drivers. *British Journal of Psychology*, *96*(2), 215-230.
- Highway Loss Data Institute (2013). Evaluation of changes in teenage driver exposure. *Bulletin*, *30*(17). Arlington, VA: Highway Loss Data Institute.
- Horswill, M. S., Waylen, A. E., & Tofield, M. I. (2004). Drivers' ratings of different components of their own driving skill: A greater illusion of superiority for skills that relate to accident involvement. *Journal of Applied Social Psychology*, *34*(1), 177-195.
- Insurance Institute for Highway Safety (2018). *Teenagers*. Retrieved from <http://www.iihs.org/iihs/topics/laws/graduatedlicenseintro?topicName=teenagers>.
- Lewis, I., Watson, B., Tay, R., & White, K. M. (2007). The role of fear appeals in improving driver safety: A review of the effectiveness of fear-arousing (threat) appeals in road safety advertising. *International Journal of Behavioral Consultation and Therapy*, *3*(2), 203-222.
- Masten, S. V., Foss, R. D., & Marshall, S. W. (2013). Graduated driver licensing program component calibrations and their association with fatal crash involvement. *Accident Analysis & Prevention*, *57*, 105-113.
- McCartt, A. T., Mayhew, D. R., Braitman, K. A., Ferguson, S. A., & Simpson, H. M. (2009). Effects of age and experience on young driver crashes: Review of recent literature. *Traffic Injury Prevention*, *10*(3), 209-219.
- McKenna, F. P. & Horswill, M. S. (2006). Risk taking from the participant's perspective: The case of driving and accident risk. *Health Psychology*, *25*(2), 163-170.
- Mirman, J. H., Albert, W. D., Curry, A. E., Winston, F. K., Thiel, M. C. F., & Durbin, D. R. (2014). TeenDrivingPlan effectiveness: The effect of quantity and diversity of supervised practice on teens' driving performance. *Journal of Adolescent Health*, *55*(5), 620-626.
- Mirman, J. H., Curry, A. E., Winston, F. K., Wang, W., Elliott, M. R., et al. (2014). Effect of the Teen Driving Plan on the driving performance of teenagers before licensure: A randomized clinical trial. *JAMA pediatrics*, *168*(8), 764-771.
- Mirman, J. H. & Kay, J. (2012). From passengers to drivers: Parent perceptions about how adolescents learn to drive. *Journal of Adolescent Research*, *27*(3), 401-424.

- Mirman, J., Lee, Y. C., Kay, J., Durbin, D., & Winston, F. (2012). Development of web-based parent support program to improve quantity, quality, and diversity of teens' home-based practice driving. *Transportation Research Record: Journal of the Transportation Research Board*, 2318, 107-115.
- O'Brien, N. P., Foss, R. D., Goodwin, A. H., & Masten, S. V. (2013). Supervised hours requirements in graduated driver licensing: Effectiveness and parental awareness. *Accident Analysis & Prevention*, 50, 330-335.
- Peek-Asa, C., Cavanaugh, J. E., Yang, J., Chande, V., Young, T., & Ramirez, M. (2014). Steering Teens Safe: A randomized trial of a parent-based intervention to improve safe teen driving. *BMC Public Health*, 14(1), 777.
- Pickrell, T. M., Li, H., & Shova, K. C. (2016). *Occupant Restraint Use in 2015: Results from the NOPUS Controlled Intersection Study* (DOT HS 812 330). Washington, D.C.: National Highway Traffic Safety Administration.
- Preusser, D. F., Williams, A. F., Nichols, J. L., Tison, J. & Chaudhary, N. K. (2008). *Effectiveness of Behavioral Highway Safety Countermeasures*. (NCHRP Report 622). Washington, DC: Transportation Research Board.
- Ramirez, M., Yang, J., Young, T., Roth, L., Garinger, A., Snetselaar, L., & Peek-Asa, C. (2013). Implementation evaluation of Steering Teens Safe: Engaging parents to deliver a new parent-based teen driving intervention to their teens. *Health Education & Behavior*, 40(4), 426-434.
- Schmidt, S. & Eisend, M. (2015). Advertising repetition: A meta-analysis on effective frequency in advertising. *Journal of Advertising*, 44(4), 415-428.
- Senserrick, T. M. & Williams, A. F. (2015). *Summary of Literature of the Effective Components of Graduated Driver Licensing Systems*. (Report No. AP-R476/15). Sydney, Australia: Austroads.
- Sherman, K., Lapidus, G., Gelven, E., & Banco, L. (2004). New teen drivers and their parents: What they know and what they expect. *American Journal of Health Behavior*, 28(5), 387-396.
- Shinar, D. & Compton, R. P. (1995). Victim impact panels: Their impact on DWI recidivism. *Alcohol Drugs and Driving*, 11, 73-344.
- Simons-Morton, B. G., Hartos, J. L., Leaf, W. A., & Preusser, D. F. (2006). The effect on teen driving outcomes of the Checkpoints Program in a state-wide trial. *Accident Analysis & Prevention*, 38(5), 907-912.
- Simons-Morton, B. & Ouimet, M. C. (2006). Parent involvement in novice teen driving: A review of the literature. *Injury Prevention*, 12(S1), i30-i37.
- Simons-Morton, B. G., Ouimet, M. C., & Catalano, R. F. (2008). Parenting and the young driver problem. *American Journal of Preventive Medicine*, 35(3S), S294-S303.
- Svenson, O. (1981). Are we all less risky and more skillful than our fellow drivers? *Acta Psychologica*, 47(2), 143-148.



- Taubman-Ben-Ari, O. & Lotan, T. (2011). The contribution of a novel intervention to enhance safe driving among young drivers in Israel. *Accident Analysis & Prevention*, 43(1), 352-359.
- Toledo, T., Lotan, T., Taubman-Ben-Ari, O., & Grimberg, E. (2012). Evaluation of a program to enhance young drivers' safety in Israel. *Accident Analysis & Prevention*, 45, 705-710.
- Tyler, T. R. & Cook, F. L. (1984). The mass media and judgments of risk: Distinguishing impact on personal and societal level judgments. *Journal of Personality and Social Psychology*, 47(4), 693.
- Webb, T. L. & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132(2), 249.
- Wheeler, D. R., Rogers, E. M., Tonigan, J. S., & Woodall, W. G. (2004). Effectiveness of customized Victim Impact Panels on first-time DWI offender inmates. *Accident Analysis & Prevention*, 36(1), 29-35.
- Williams, A. F. (2007). Public information and education in the promotion of highway safety. *NCHRP Research Results Digest*, 322.
- Williams, A. F. (2013). *Motor Vehicle Crashes and Injuries Involving Teenage Drivers: Future Directions for Research* (Transportation Research Circular E-C180). Washington, DC: Transportation Research Board.
- Williams, A. F., Leaf, W. A., Simons-Morton, B. G., & Hartos, J. L. (2006). Parents' views of teen driving risks, the role of parents, and how they plan to manage the risks. *Journal of Safety Research*, 37(3), 221-226.
- 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.
- Witte, K. & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education & Behavior*, 27(5), 591-615.
- Zakrajsek, J. S., Shope, J. T., Greenspan, A. I., Wang, J., Bingham, C. R., & Simons-Morton, B. G. (2013). Effectiveness of a brief parent-directed teen driver safety intervention (Checkpoints) delivered by driver education instructors. *Journal of Adolescent Health*, 53(1), 27-33.
- Zemke, R. & Zemke, S. (1995). Adult learning: What do we know for sure? *Training*, 32(6), 31-34.
- Zhu, M., Cummings, P., Chu, H., Coben, J. H., & Li, G. (2013). Graduated driver licensing and motor vehicle crashes involving teenage drivers: An exploratory age-stratified meta-analysis. *Injury Prevention*, 19(1), 49-57.