



The Children's Hospital of Philadelphia®
RESEARCH INSTITUTE

Teen driving safety

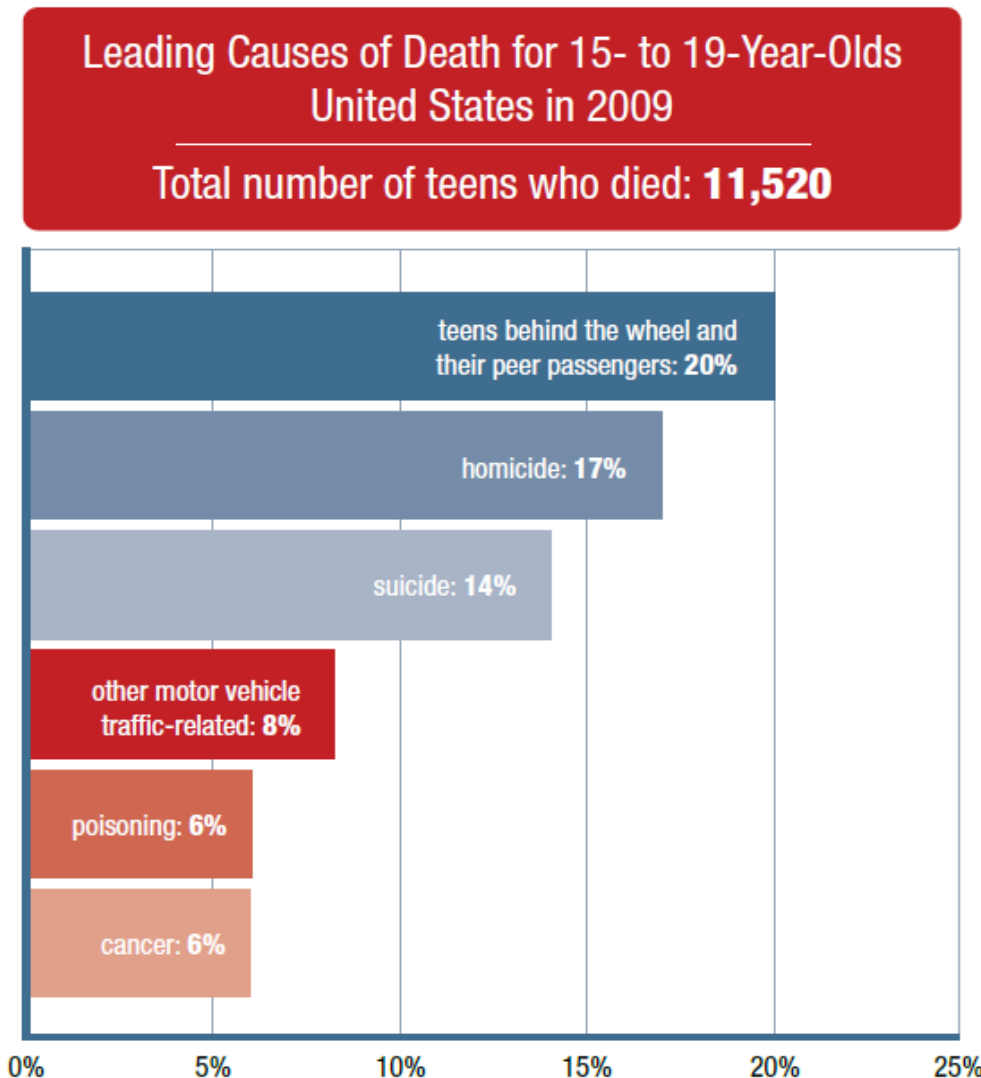
Evidence in Support of Public Policy

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The Center for Injury Research and
Prevention
The Children's Hospital of
Philadelphia



LEADING CAUSE OF DEATH FOR TEENS



Crashes kill 5 times as many teens as cancer or poisoning

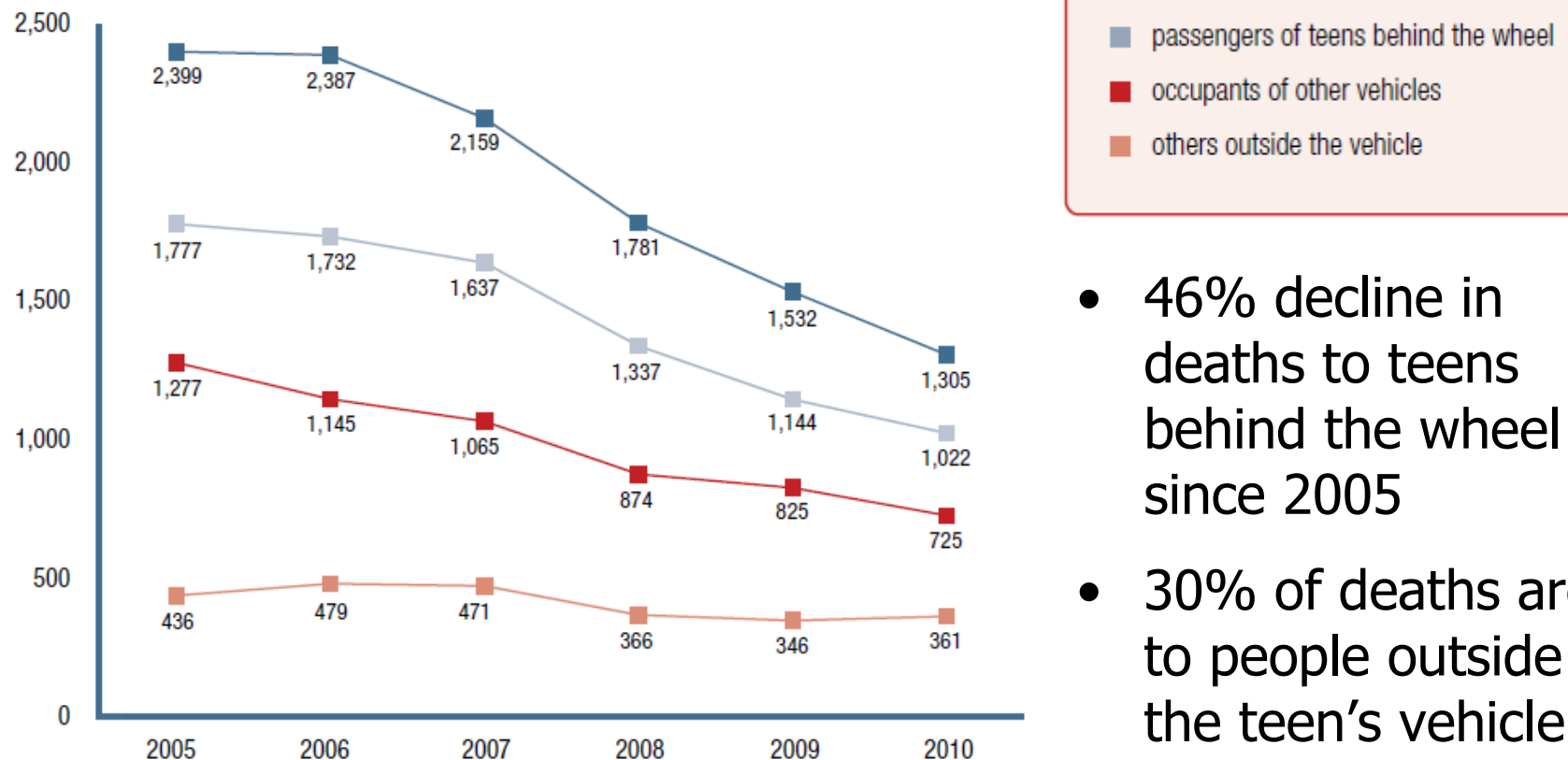
For each fatality, 400 more children and youth receive medical treatment for injuries.



WE'RE MAKING PROGRESS

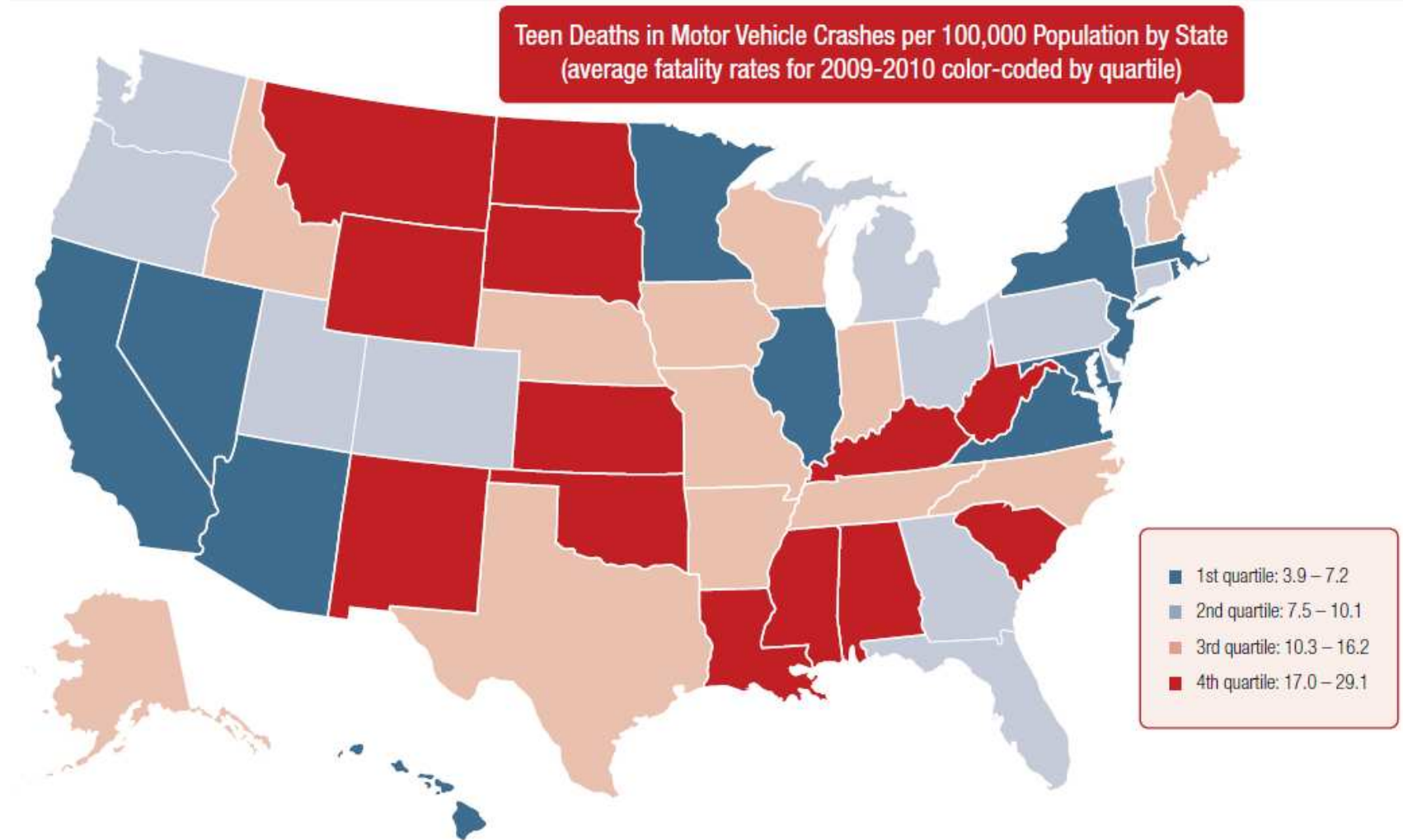
Crash Fatalities with Teens Behind the Wheel (2005-2010)

Total number of deaths in 2010: **3,413**
Total number of fatal crashes in 2010: **3,198**



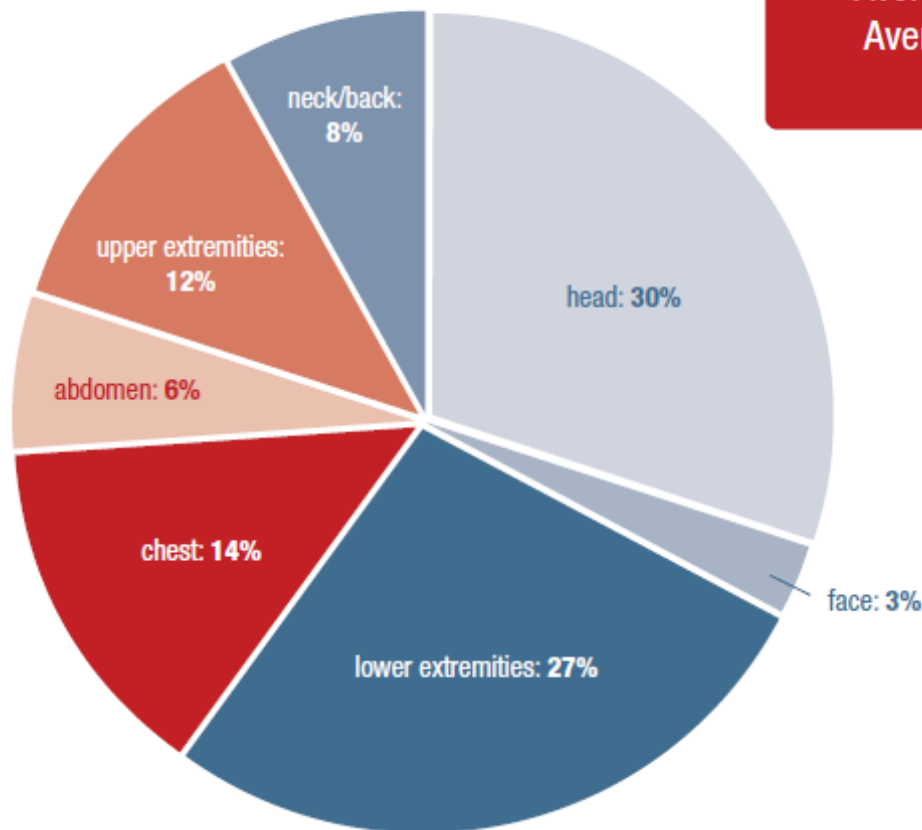
- 46% decline in deaths to teens behind the wheel since 2005
- 30% of deaths are to people outside the teen's vehicle

VARIATION IN FATALITY RATES



THE BURDEN OF INJURIES

Distribution of injuries among teens



People Injured in Tow-away Crashes with Teens Behind the Wheel (Annual Average, 2009-2010)

Average number of injured persons: **94,479 per year**

Average number of tow-away crashes with an injury: **60,264 per year**

- Motor vehicle crashes are the leading cause of traumatic brain injuries among 15-19 year olds in the US.

CRASHES: A LINKED CHAIN OF CAUSE-EFFECT EVENTS



Underlying Cause

Inexperience

Immaturity/age

Alcohol

Prevention Effort

Graduated Driver Licensing (GDL) restrictions, driver education

↑ GDL minimum age requirements

Zero tolerance policies, education



Linked cause-
effect events

The diagram features a central dark blue rounded rectangle with the text "Linked cause-effect events" in white. A light blue arrow points from the left towards this rectangle. To the left of the arrow is a thick dark blue vertical bar. To the right of the rectangle is a light blue horizontal bar. At the bottom, there is a green textured horizontal bar with a dark blue segment on its left side.

Proximate
cause



?

Identified Proximate *Factors*

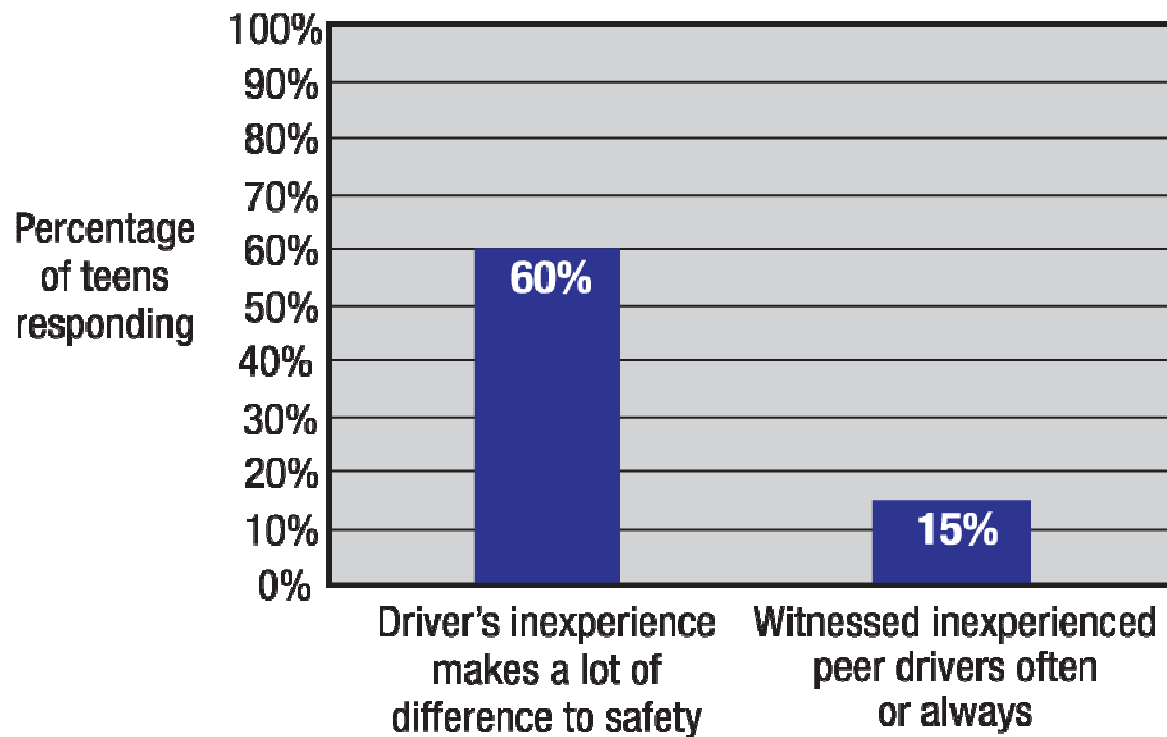
- Peer passengers
- Nighttime driving
- Risky driving behaviors
- In-car distraction

WHAT ARE THE MOST COMMON REASONS THAT TEENS CRASH?

Reason for the crash	How common is it?
Driver errors	95% of crashes
Speeding	23%
Not noticing a hazard	23%
Distraction	20%
Bad decision	14%
Lost control	8%
Bad road conditions	3%
Vehicle problem	1%
Unknown cause	1%

WHY TEENS CRASH

INEXPERIENCED? NOT ME!



WHY TEENS CRASH

POOR SCANNING



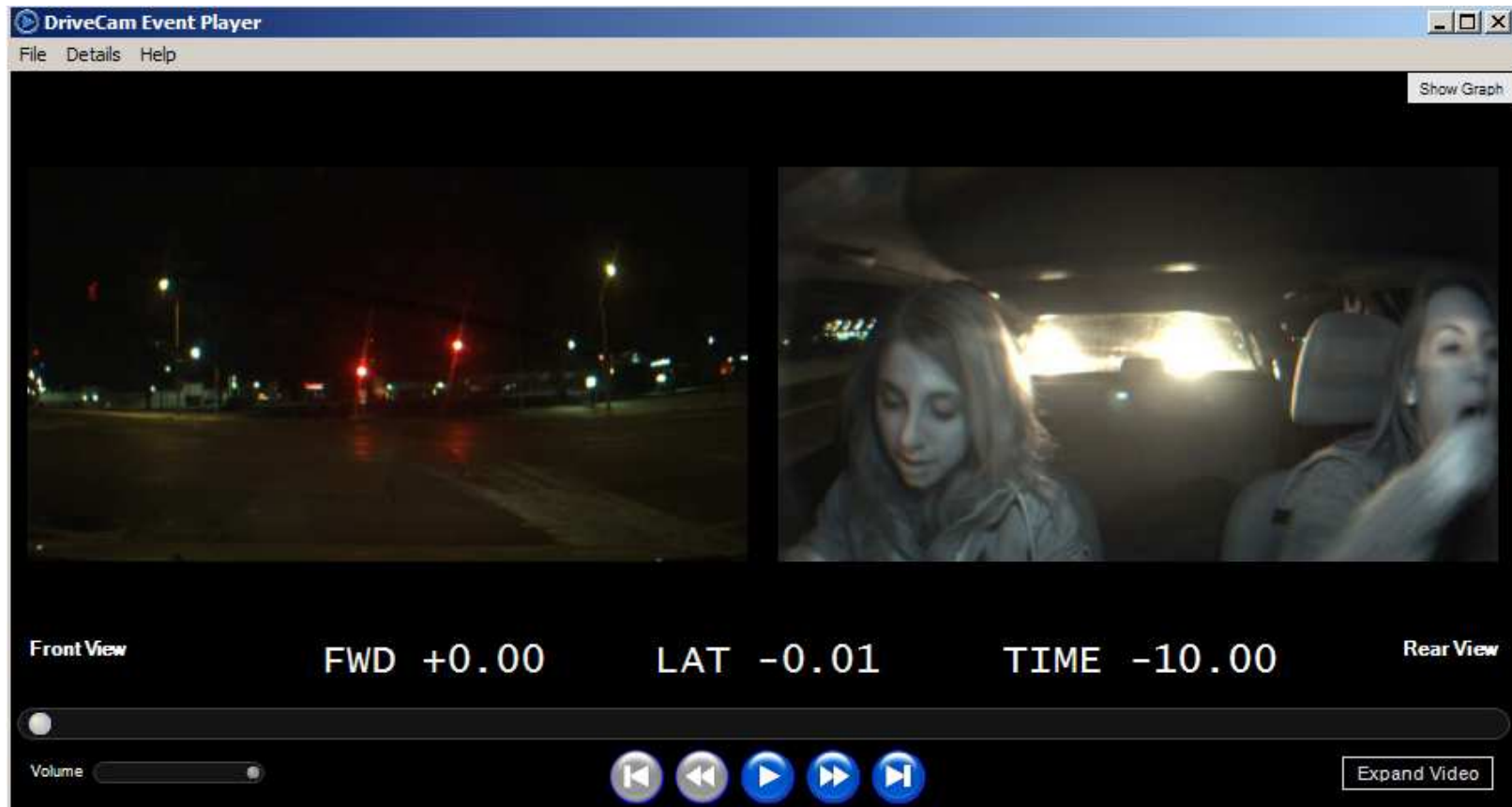
WHY TEENS CRASH

POOR HAZARD DETECTION



WHY TEENS CRASH

BAD DECISION



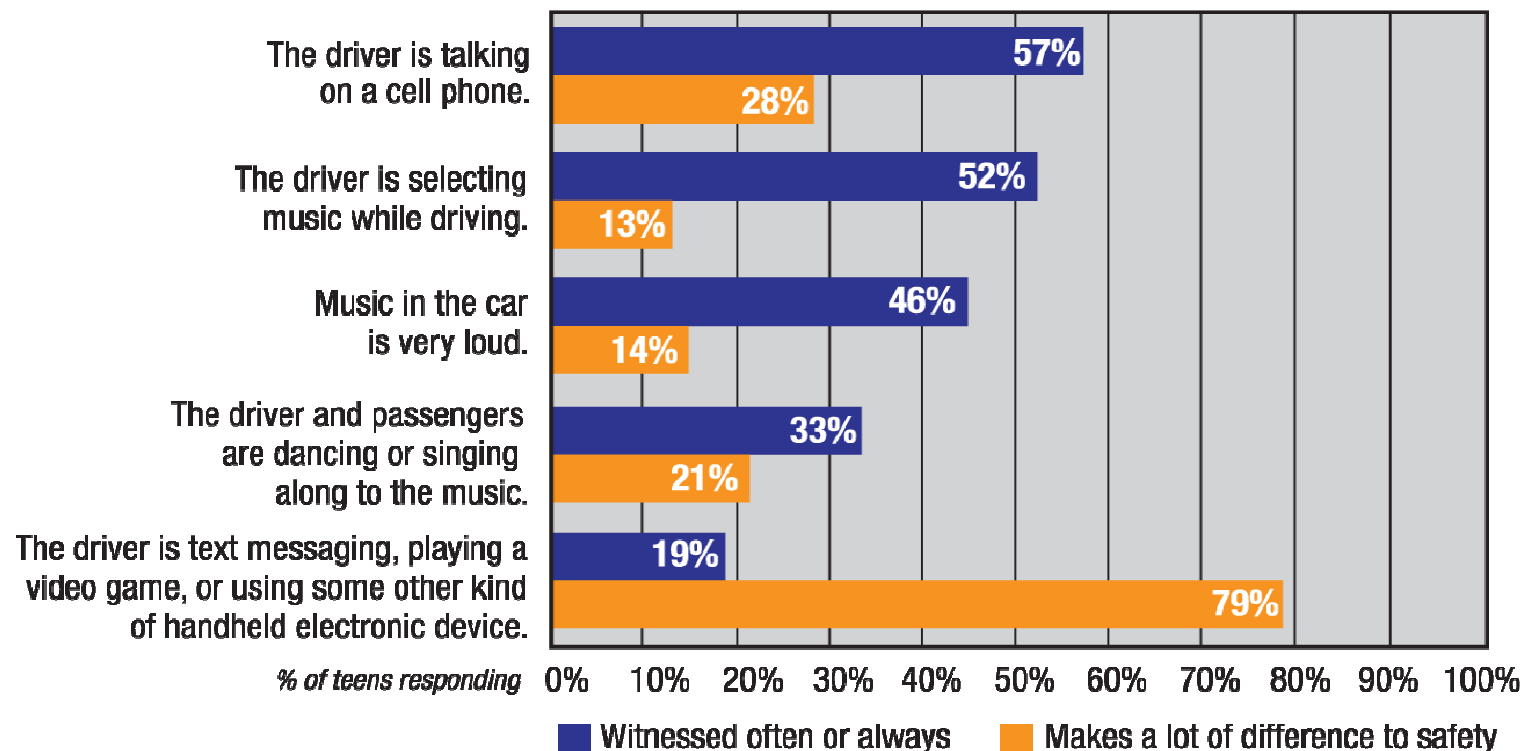
WHY TEENS CRASH

DISTRACTION



TEEN PERSPECTIVE: Cell Phones

Things drivers do that take
their eyes and focus off the road



RESULTS: CELL PHONE USE

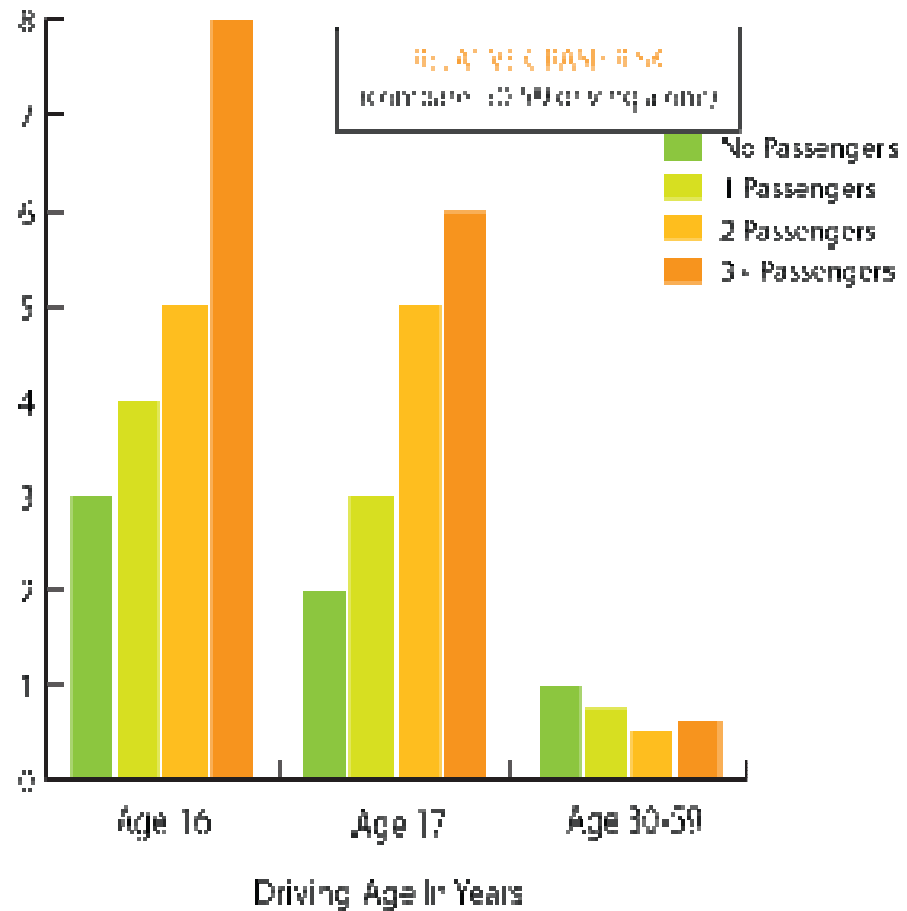
- 75% of US 9th to 11th grade adolescents reported owning a cell phone
- Cell Phone use While Driving
 - 52% rarely engage
 - 38% sometimes or occasionally
 - 10% often or always
- Greater use associated with:
 - being in a higher grade
 - having poorer grades
 - greater sensation seeking
 - more frequent driving in general



Peer passengers

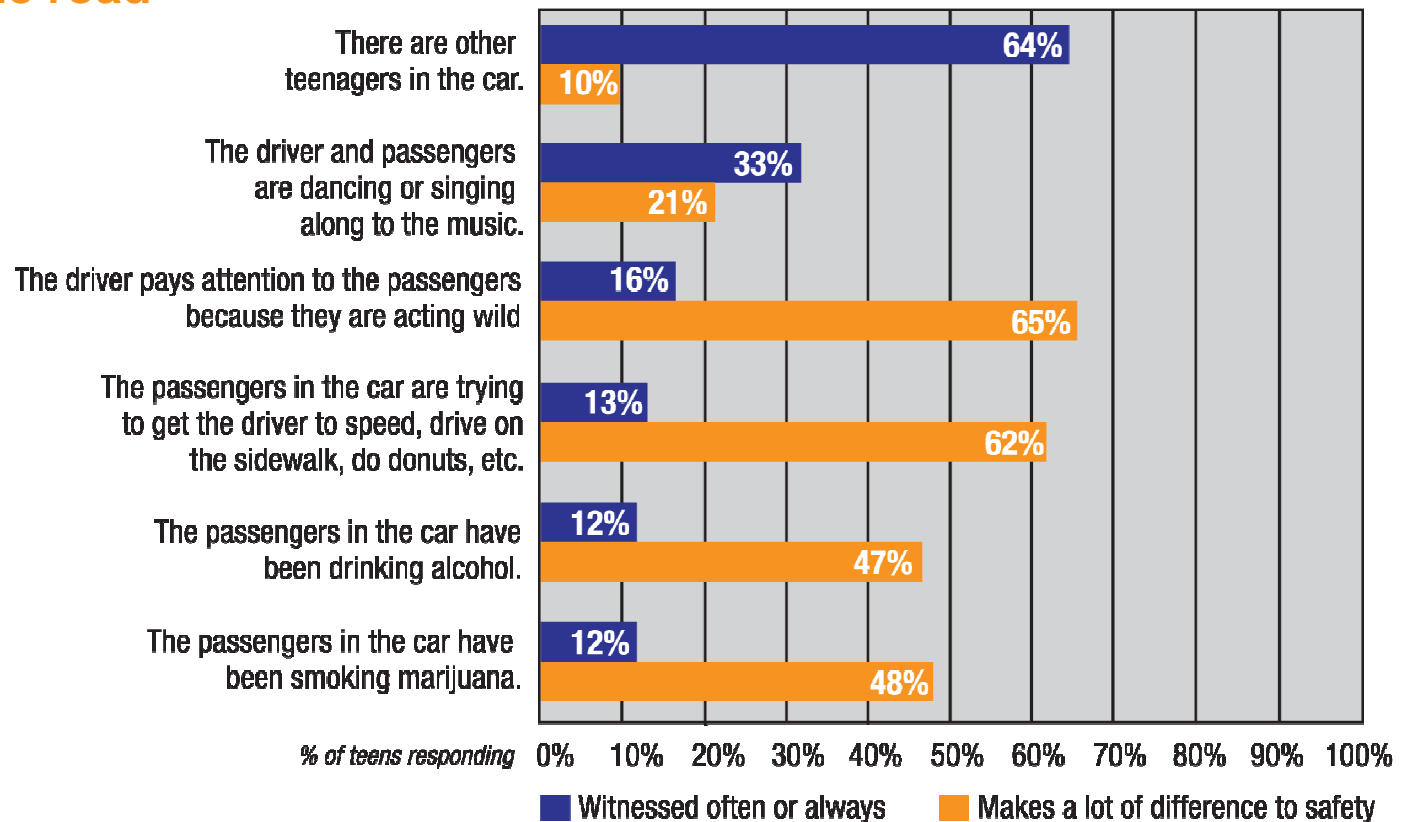
Increase the risk of a fatal crash

The more passengers, the greater the danger.

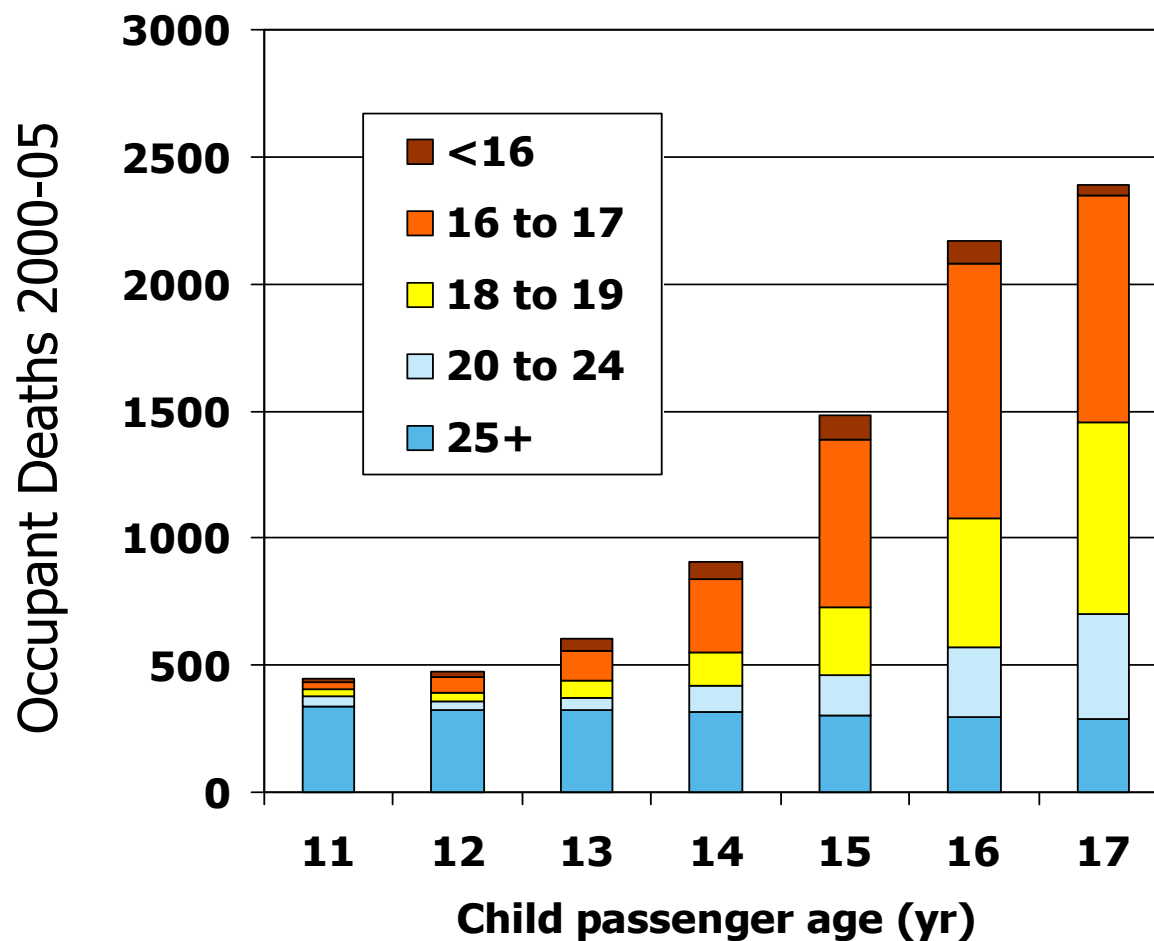


TEEN PERSPECTIVE: PASSENGERS

Things Passengers do that take the driver's eyes and focus off the road

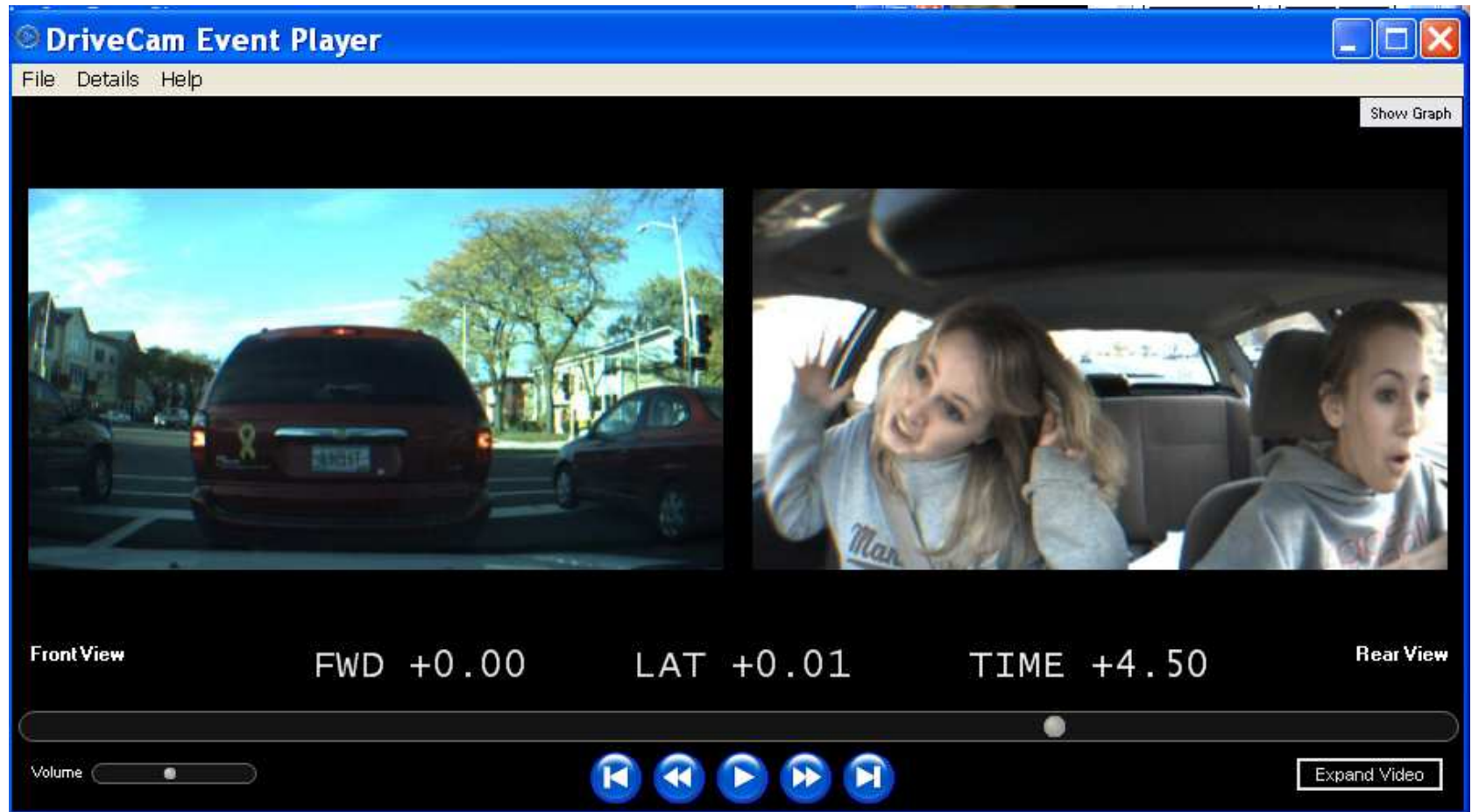


RISK TO YOUNGER PASSENGERS



WHY TEENS CRASH

PASSENGERS – COMPOUND CHALLENGES



TIMELINE FOR SAFETY

Prepare

Assess
Model
Teach



Coach

Monitor
Assess
Set rules
Remediate

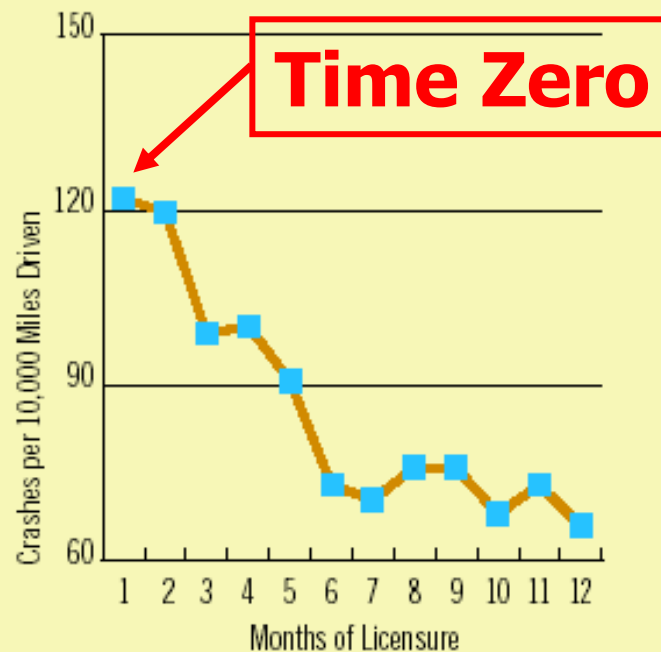
Time Zero

Independent driving

THE FIRST 6 MONTHS: HIGHEST RISK

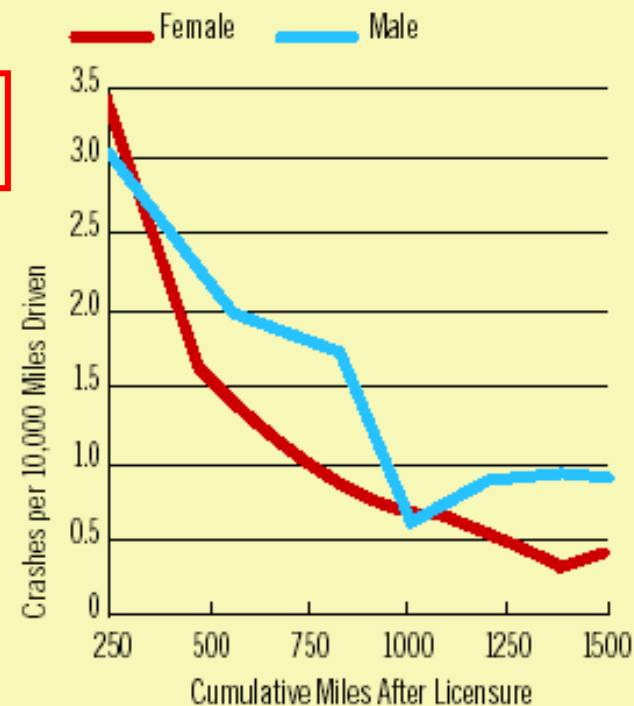
Novice Driver's Risk Begins To Drop With Experience

There is a steep drop in the crash risk as new drivers gain experience during the first 12 months of driving.



Novice Driver's Risk Begins To Drop With Experience

The crash risk drops by more than 2/3 after the first 1000 – 1500 miles of independent driving.



PREPARING TEENS TO DRIVE ALONE

PA GDL LAW

- **Learner phase**
 - Adult supervisor in vehicle
 - 65 hours of practice required
 - 10 at night
 - 5 in inclement weather
- **Junior/ restricted license**
 - 6 mos minimum holding period
 - Passenger restriction
 - Night driving restriction / curfew
- **Full unrestricted license**

DL-180 (8-04) **NON-COMMERCIAL LEARNER'S PERMIT APPLICATION**

THIS FORM IS VALID FOR 1 YEAR FROM THE DATE OF PHYSICAL EXAMINATION. The physical date may not be more than 6 months prior to your 16th birthday.

PRINT ALL INFORMATION IN BLACK OR BLUE INK

DRIVER'S LICENSE NUMBER/I.D. NUMBER: _____

LAST NAME: _____ JR., ETC.: _____

FIRST NAME: _____ MIDDLE NAME: _____

DATE OF BIRTH: _____ HEIGHT: _____ SOCIAL SECURITY NUMBER: _____ SEX: _____ TELEPHONE: (800-831-7635) _____

EYE COLOR (Please check one): ☐ BLUE ☐ BROWN ☐ GREEN ☐ HAZEL ☐ PINK ☐ BLACK ☐ GRAY ☐ DICHROMATIC ☐ OTHER _____

STREET ADDRESS: _____ CITY: _____ STATE: _____ ZIP CODE: _____

PERMIT(S) DESIRED

PERMIT(S) DESIRED	FEE	ENTER FEE FOR EACH (IF APPLICABLE)
<input type="checkbox"/> CLASS A (Combination Vehicle over 26,000)	\$5.00	
<input type="checkbox"/> CLASS B (Truck or Bus over 26,000)	\$5.00	
<input type="checkbox"/> CLASS C (Automobile)	\$5.00	
<input type="checkbox"/> CLASS M (Motorcycle) MSEA Fee is included	\$15.00	

LICENSE REQUIRED

LICENSE REQUIRED	FEE
<input type="checkbox"/> 4-Year Photo	\$26.00
<input type="checkbox"/> 2-Year Photo (Age 65 & Over)	\$15.50
<input type="checkbox"/> Organ Donor Awareness Trust Fund (I wish to contribute \$1.00)	\$1.00

PAID BY: ☐ Check ☐ Money Order Payable To PENNDOT (Cash CANNOT be accepted) TOTAL \$ _____

ALL QUESTIONS MUST BE ANSWERED (Check [X] Applicable Blocks)

1. Have you ever held or possessed a PA Driver's License/Learner's Permit/Photo Identification Card? ☐ YES ☐ NO

2. Is your right to apply for a license or your privilege to operate a vehicle in this or any other state currently suspended, revoked, or subject to installation of an ignition interlock device? ☐ YES ☐ NO

If yes, give state _____ date _____ and reason _____

3. Have you been arrested or cited in this state or any other state for any violation which carries a possible penalty of suspension or revocation of your driver's license or driving privilege? ☐ YES ☐ NO

If yes, give state _____ date _____ and reason _____

AUTHORIZATION AND CERTIFICATION

I certify under penalty of law that this information contained herein is true and correct. I hereby authorize the Social Security Administration to release to the Department of Transportation information concerning my Social Security Identification Number for the purpose of identification. I hereby acknowledge this day that I have received notice of the provisions of Section 3709 of the Vehicle Code. (See back for provisions)

WARNING: Misstatement of fact is a misdemeanor of the third degree punishable by a fine of up to \$2,500 and/or imprisonment up to 1 year (18 PA C.S. Section 4904(b)).

☐ I am under the age of 18 years and I hereby request Organ Donor designation on my PA Driver's License. Parent must check consent block on the Parent/Guardian Consent Form (DL-180TD). (Applicants 18 years of age or older will have the opportunity to request Organ Donor designation at the Photo Center at the time they have their photo taken.)

I hereby certify that I am a resident of the Commonwealth of Pennsylvania.

SIGN HERE

APPLICANT'S SIGNATURE (IN INK) _____ (DATE) _____

FOR PENNDOT USE ONLY

Exam Center: _____ Date: _____ MEDICAL RESTRICTIONS: _____

Signature of Examiner: _____ Badge No.: _____ ☐ QUALIFIED YES ☐ UNABLE TO DETERMINE MEDICAL QUALIFICATIONS

VERIFICATION OF BIRTH DATE AND IDENTITY: ☐ BIRTH CERTIFICATE ☐ OTHER _____

PREPARING TEENS TO DRIVE ALONE

PA GDL LAW

ALL INFORMATION IN THIS SECTION MUST BE COMPLETED IN FULL BY A HEALTH CARE PROVIDER					
Please check any of the following that would prevent control of a motor vehicle.					
<input type="checkbox"/> Neurological disorders	<input type="checkbox"/> Neuropsychiatric disorders	<input type="checkbox"/> Circulatory disorder	<input type="checkbox"/> Cardiac disorder	<input type="checkbox"/> Hypertension	
<input type="checkbox"/> Uncontrolled Epilepsy	<input type="checkbox"/> Uncontrolled Diabetes	<input type="checkbox"/> Cognitive Impairment	<input type="checkbox"/> Alcohol abuse	<input type="checkbox"/> Drug abuse	
<input type="checkbox"/> Conditions causing repeated lapses of consciousness (e.g. epilepsy, narcolepsy, hysteria, etc.)					
Specify: _____ If seizure disorder, date of last seizure: _____					
<input type="checkbox"/> Impairment or Amputation of an appendage. If so, list: _____					
<input type="checkbox"/> Other: _____					
NOTE: Any recommendations/additional comments must accompany this certificate on a health care provider's letterhead.					

- Unique role of pediatrician/ health care provider in assessing readiness to drive
- Focused on medical/physical/cognitive issues

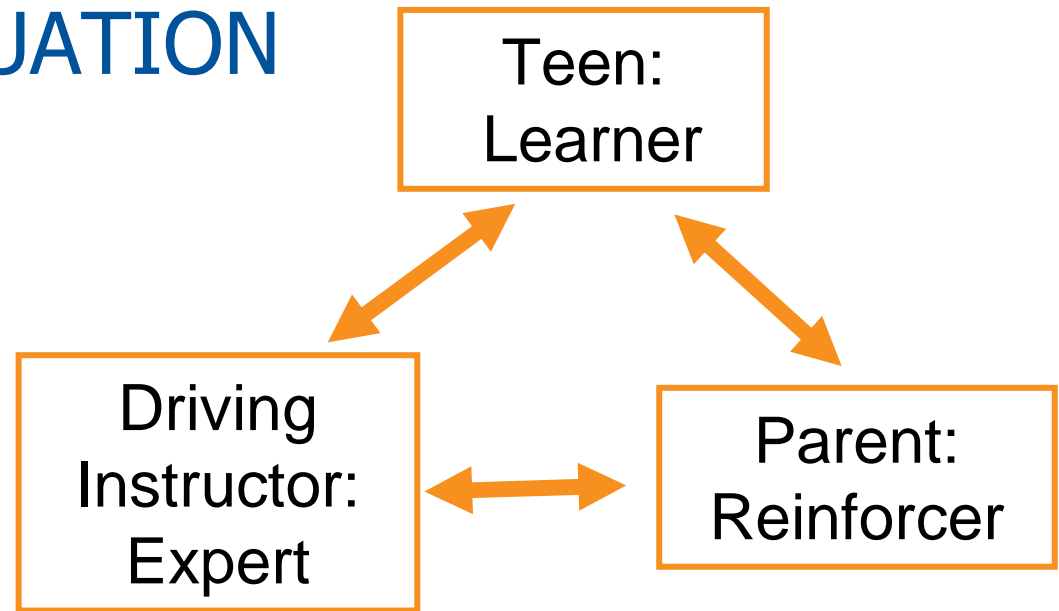
ASSESSING READINESS TO DRIVE

- Ready to accept responsibility?
- Good judgment and maturity?
- Knowledge of the rules of the road?
- Ready to commit to sufficient practice?
 - Adult able to commit?
- Able to receive constructive criticism?

DRIVER EDUCATION

THE IDEAL SITUATION

- Driving Instructor is expert coach
 - Teaches new skills
- Parent is reinforcer of skills
 - Regular practice



DRIVING PRACTICE LOG

- **Beginning**
 - Vehicle operation
 - Low speed
 - Low traffic volume
- **Intermediate**
 - Higher speed limits
 - More traffic
- **Advanced**
 - Busier roads
 - Unfamiliar routes
 - Night and bad weather



DRIVING PRACTICE LOG

WEEKS/ HOURS COVERED	SKILLS COVERED			
____ Week ____ Hours	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready
____ Week ____ Hours	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready
____ Week ____ Hours	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready
____ Week ____ Hours	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready	<input type="checkbox"/> More practice <input type="checkbox"/> Ready
____ Total # of hours				

NATIONAL DRIVER EDUCATION STANDARDS- 2009

- Multidisciplinary working group
- Standards for
 - Program Administration
 - Education/Training
 - Instructor Qualification
 - Parent/guardian involvement
 - Coordination with Driver Licensing



PARENTING STYLES:

The balance between support and control

INCREASING SUPPORT

The Permissive Parent is highly supportive but makes few rules and trusts rather than monitors.

"I trust you'll do the right thing."

The Uninvolved Parent sets few rules, does not monitor, and offers little active support.

"Kids will be kids — you'll learn from your mistakes."

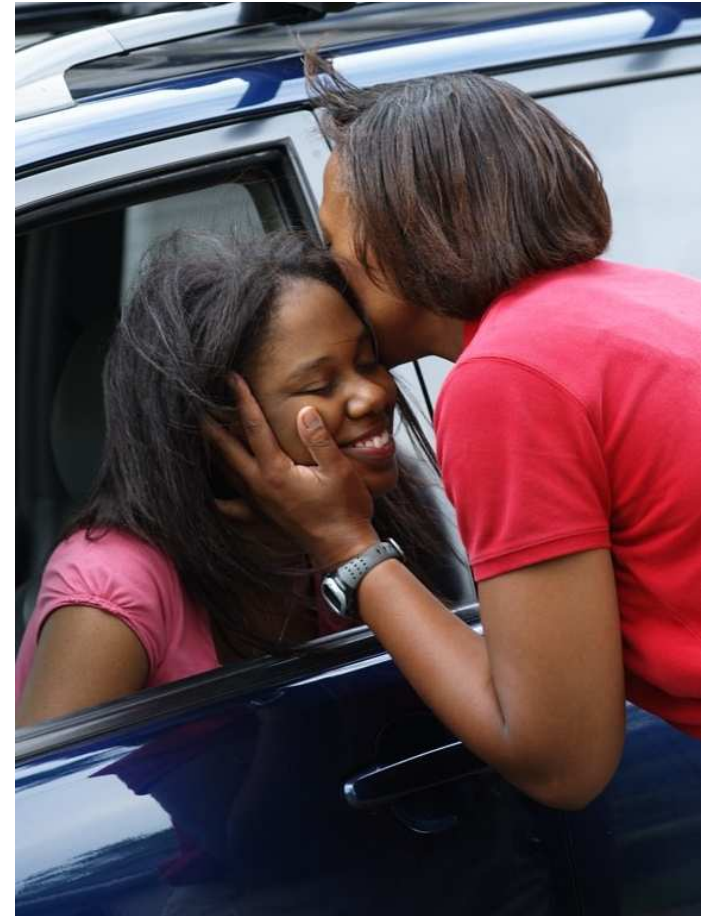
The Authoritative Parent is highly supportive AND closely monitors and sets rules.

"I care, and I'll give you the freedoms you earn; but, for safety-related issues, you'll do as I say."

The Authoritarian Parent sets many rules and closely monitors but offers little support.

"You'll do as I say."

INCREASING CONTROL



PARENTS REALLY DO MATTER



Teens who describe
authoritative parents are

- Half as likely to crash
- 71% less likely to drive while intoxicated
- 30% less likely to use a cell phone while driving

- as compared to teens of uninvolved parents

PARENTS REALLY DO MATTER



Teens who describe authoritative or authoritarian parents are

- Twice as likely to use seatbelts
- Twice as likely to believe belts affect safety
 - *as compared to teens of uninvolved parents*
- Speed half as often
 - *as compared to teens of uninvolved or permissive parents*

HOW DO YOU EMPOWER PARENTS?

- Understand importance of lots of varied supervised practice driving and monitoring during first year of driving
- Set rules during first year, gradually introducing new privileges
- Be role models
- Understand GDL
- Control Access to the Keys



HOW DO YOU EMPOWER PARENTS?

Communicate in a way that helps their teen be receptive to their guidance:

- Honor teen's independence
- Emphasize safety not control
- Reward teens for responsibility



SUMMARY

- Not Driving yet?
 - Teach child to be a good passenger
- Learning to Drive?
 - Get enough practice (>65h)
 - Practice under varied conditions
 - Don't move on until they've proven they can
- New Driver (first 6-12 months)?
 - Work with teen to set rules and expectations:
 - Low risk then higher risk driving situations
 - No passengers at first
 - Mandatory seat belt use for everyone at all times
 - Zero tolerance for alcohol, cell phone use, texting

RESOURCES FOR YOU TO USE

WWW.TEENDRIVERSOURCE.ORG

The Children's Hospital Of Philadelphia | Research Institute

teendriversource
Research put into action

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- I educate & support policymakers
- I am a teen
- I am a parent/guardian
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Get Ready for National Teen Driver Safety Week

Our Latest Research
New Insights on Reaching Teen Drivers About Cell Phone Use
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