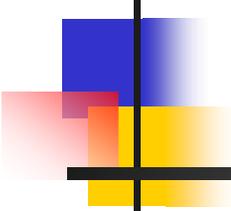


Novice teen drivers: Recent developments and progress



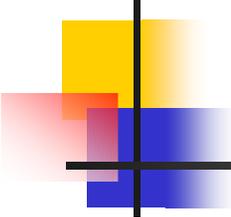
Brendan T. Campbell, MD, MPH

Kevin Borrup, JD, MPA

April 17, 2008

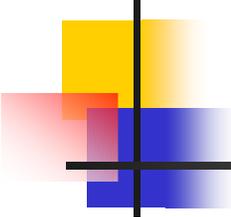
Pediatric Trauma Program and
Injury Prevention Center





Learning Objectives

- To understand the unique characteristics of teen car crashes.
- To describe current safety recommendations and laws regarding teen drivers.
- To integrate teen driver safety recommendations into clinical practice.



Overview

- Trauma Perspective
- Characteristics of crashes
- Graduated driver licensing
- CT Teen Driving Safety Partnership
- Governor Rell's Task Force

10 Leading Causes of Death by Age Group – 2001

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 5,513	Unintentional Injury 1,714	Unintentional Injury 1,283	Unintentional Injury 1,553	Unintentional Injury 14,411	Unintentional Injury 11,839	Malignant Neoplasms 16,559	Malignant Neoplasms 49,562	Malignant Neoplasms 90,223	Heart Disease 582,730	Heart Disease 700,142
2	Short Gestation 4,410	Congenital Anomalies 557	Malignant Neoplasms 493	Malignant Neoplasms 515	Homicide 5,237	Homicide 5,204	Unintentional Injury 15,945	Heart Disease 36,399	Heart Disease 62,486	Malignant Neoplasms 390,214	Malignant Neoplasms 553,768
3	SIDS 2,234	Malignant Neoplasms 420	Congenital Anomalies 182	Suicide 272	Suicide 3,971	Suicide 5,070	Heart Disease 13,326	Unintentional Injury 13,344	Chronic Low Respiratory Disease 11,166	Cerebrovascular 144,465	Cerebrovascular 163,538
4	Maternal Pregnancy Comp. 1,499	Homicide 415	Homicide 137	Congenital Anomalies 194	Malignant Neoplasms 1,704	Malignant Neoplasms 3,994	Suicide 6,635	Liver Disease 7,259	Cerebrovascular 9,608	Chronic Low Respiratory Disease 1,06,604	Chronic Low Respiratory Disease 123,013
5	Placenta Cord Membranes 1,018	Heart Disease 225	Heart Disease 98	Homicide 189	Heart Disease 999	Heart Disease 3,160	HIV 5,867	Suicide 5,312	Diabetes Mellitus 9,570	Influenza & Pneumonia 55,518	Unintentional Injury 191,537
6	Respiratory Distress 1,011	Influenza & Pneumonia 112	Benign Neoplasms 52	Heart Disease 174	Congenital Anomalies 505	HIV 2,101	Homicide 4,268	Cerebrovascular 5,910	Unintentional Injury 7,666	Diabetes Mellitus 53,707	Diabetes Mellitus 71,372
7	Unintentional Injury 976	Septicemia 108	Influenza & Pneumonia 46	Chronic Low Respiratory Disease 62	HIV 225	Cerebrovascular 601	Liver Disease 3,336	Diabetes Mellitus 5,343	Liver Disease 5,750	Alzheimer's Disease 53,245	Influenza & Pneumonia 62,034
8	Bacterial Sepsis 696	Perinatal Period 72	Chronic Low Respiratory Disease 42	Benign Neoplasms 53	Cerebrovascular 196	Diabetes Mellitus 595	Cerebrovascular 2,491	HIV 4,120	Suicide 3,317	Nephritis 33,121	Alzheimer's Disease 53,852
9	Circulatory System Disease 622	Benign Neoplasms 58	Cerebrovascular 38	Influenza & Pneumonia 46	Influenza & Pneumonia 181	Congenital Anomalies 458	Diabetes Mellitus 1,958	Chronic Low Respiratory Disease 3,324	Nephritis 3,294	Unintentional Injury 32,694	Nephritis 39,480
10	Intrauterine Hypoxia 534	Cerebrovascular 54	Septicemia 29	Cerebrovascular 42	Chronic Low Respiratory Disease 171	Liver Disease 387	Influenza & Pneumonia 983	Homicide 2,457	Septicemia 3,111	Septicemia 25,418	Septicemia 32,236

Note: Homicide and suicide counts include terrorism deaths associated with the events of September 11, 2001, that occurred in New York City, Pennsylvania, and Virginia. A total of 2,926 U.S. residents lost their lives in these acts of terrorism in 2001, of which 2,922 were classified as (transportation-related) homicides and 4 were classified as suicides.

Source: National Center for Health Statistics, (NCHS) Vital Statistics Systems.

Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.

If 12 fully loaded jumbo jets
crashed every year,
something would be done about it.

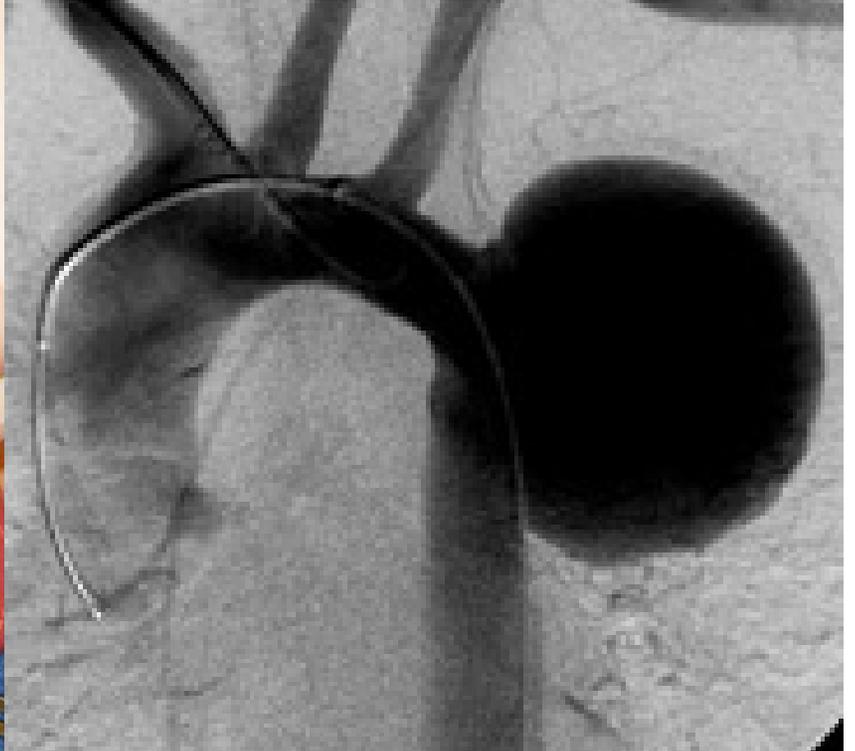
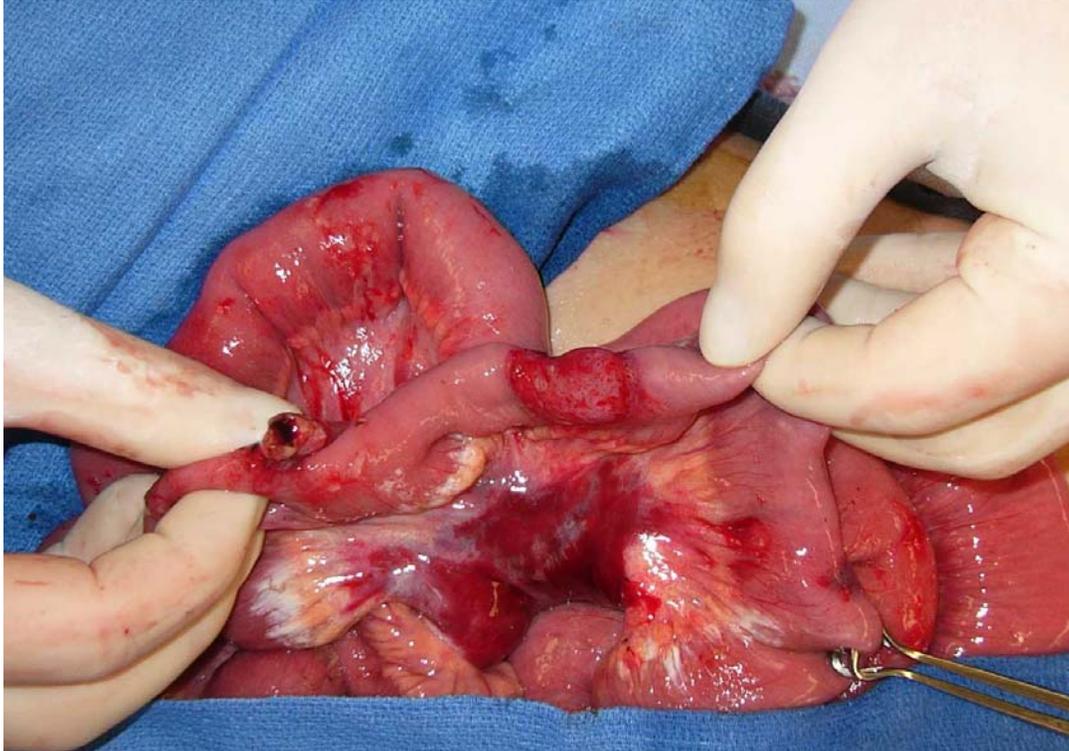


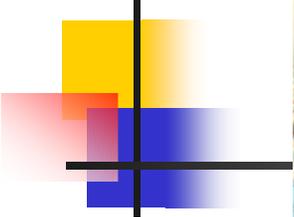
EVERY YEAR, NEARLY 6,000 TEENS DIE IN CAR CRASHES.

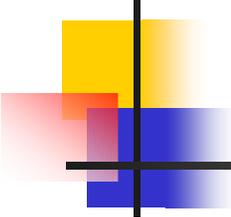








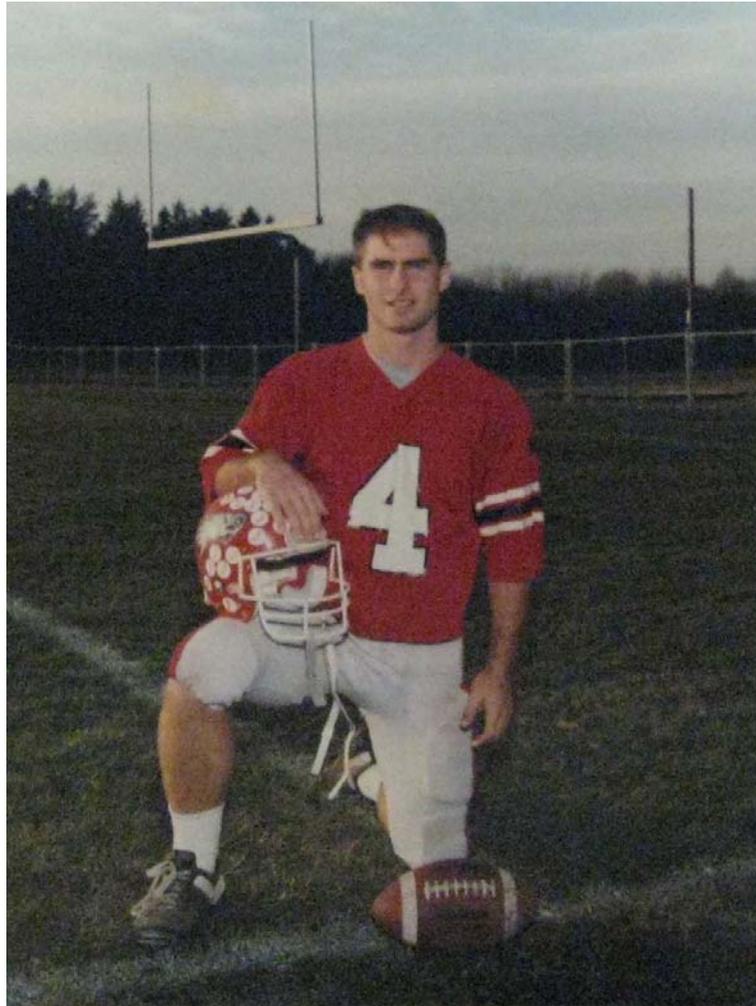




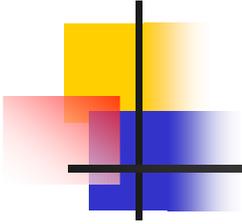
Injury Prevention

- **PRIMARY** – Pre-injury activities that seek to completely avoid the occurrence of the injury (GDL, parent-teen contracts)
- **SECONDARY** – At the time of injury interventions (seatbelts, airbags, ABS)
- **TERTIARY** – Trauma system issues (EMS, Level 1 trauma centers, Rehab)

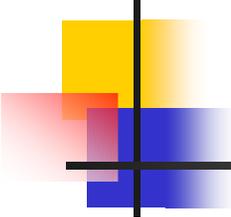
Perspective



Human cost ■ !IMPACT

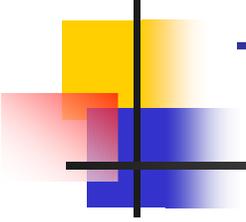


www.ctdrive.blogspot.com



Magnitude of the Problem

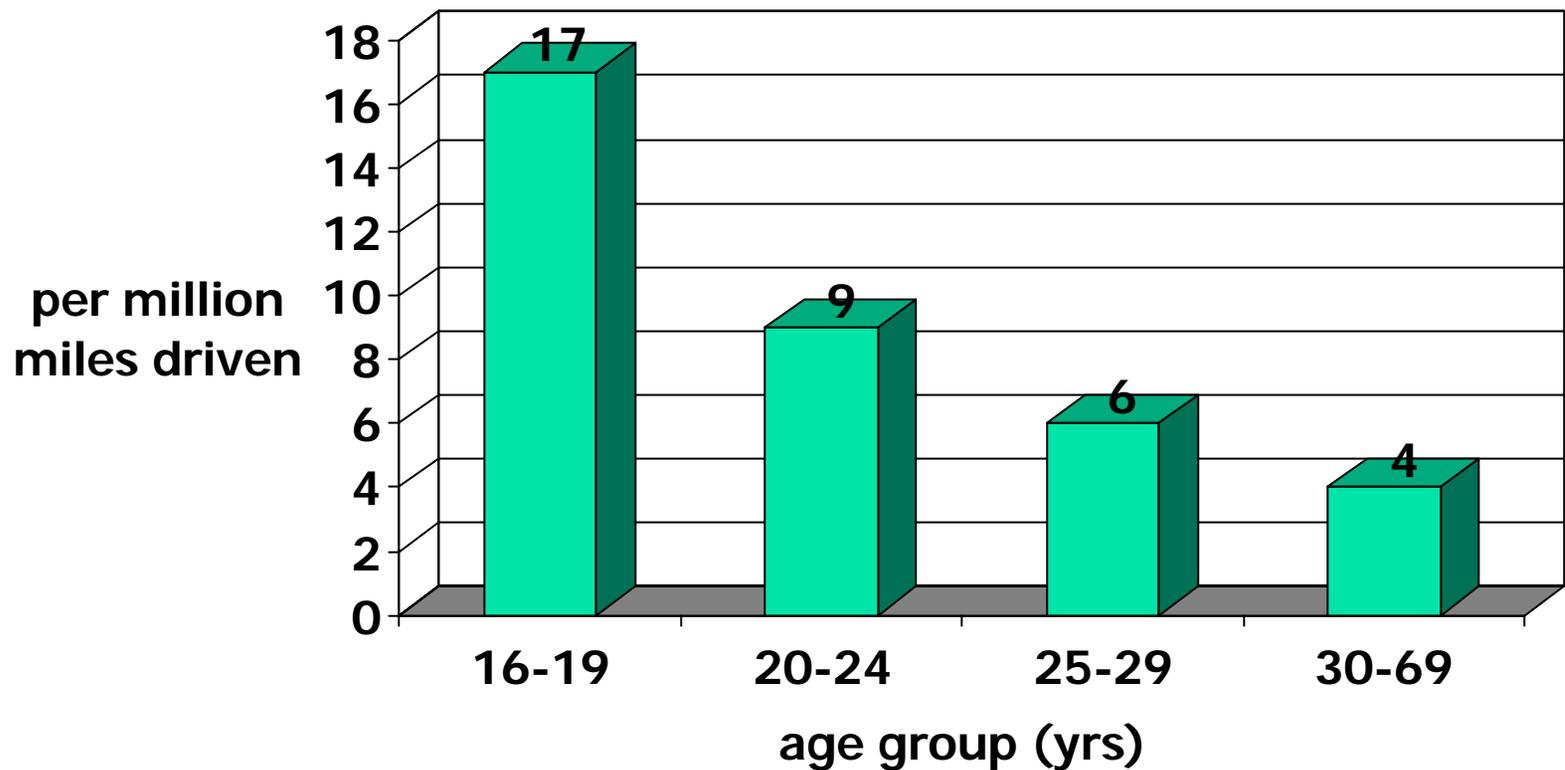
- Leading cause of death for 16-20 yr olds
- 5,500 deaths/yr or 10 per day in the US
- 27,000 hospitalizations
- 450,000 injuries



Teen drivers

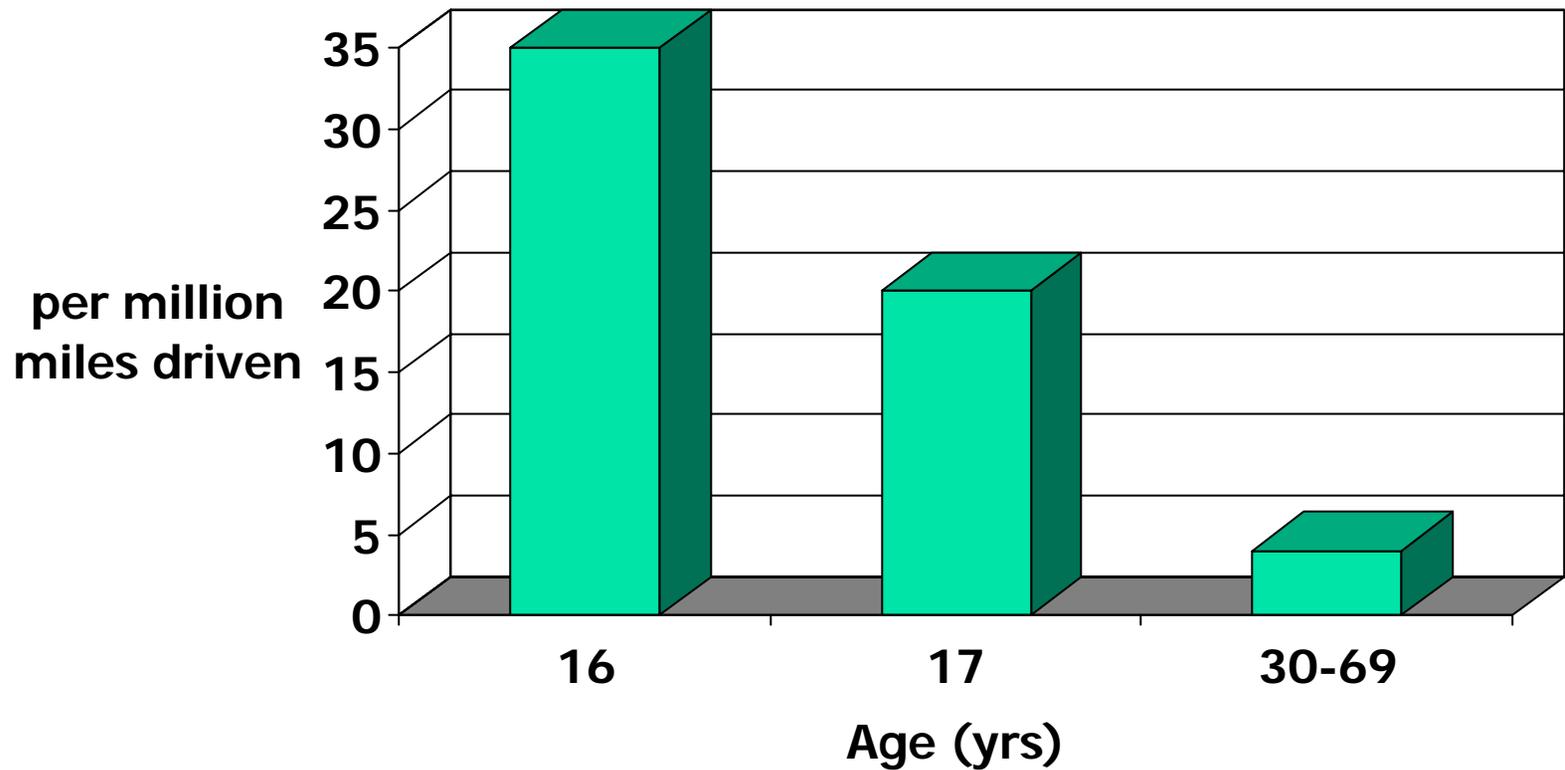
- Represent 6% of all drivers but 14% of fatal crashes

Crash rate by age group

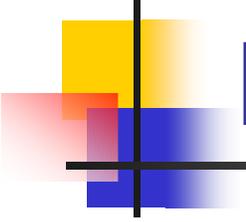


J Safety Research, 2003

Crash risk by age

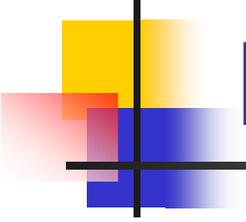


J Safety Research, 2003



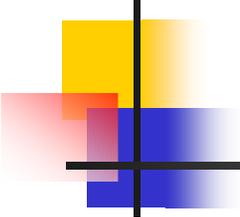
Risk factors: Inexperience

- Less proficient:
 - detecting and responding to hazards
 - controlling vehicle, especially at high speeds
- learner permit crash rates are low



Risk factors: Inexperience

- First months after licensure high crash risk
 - 1st month (120 crashes/10,000 drivers)
 - 5 month (70)
 - 18 month (50)

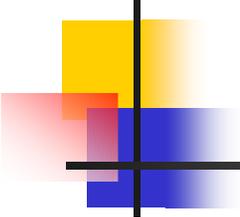


Risk factors: risk taking

- Normal to take chances, succumb to peer pressure, overestimate abilities, mood swings
- Males at high risk
 - social norms and media images
- Immature pre-frontal cortex
 - planning, impulse control, decision making

Inj Prev, 2002

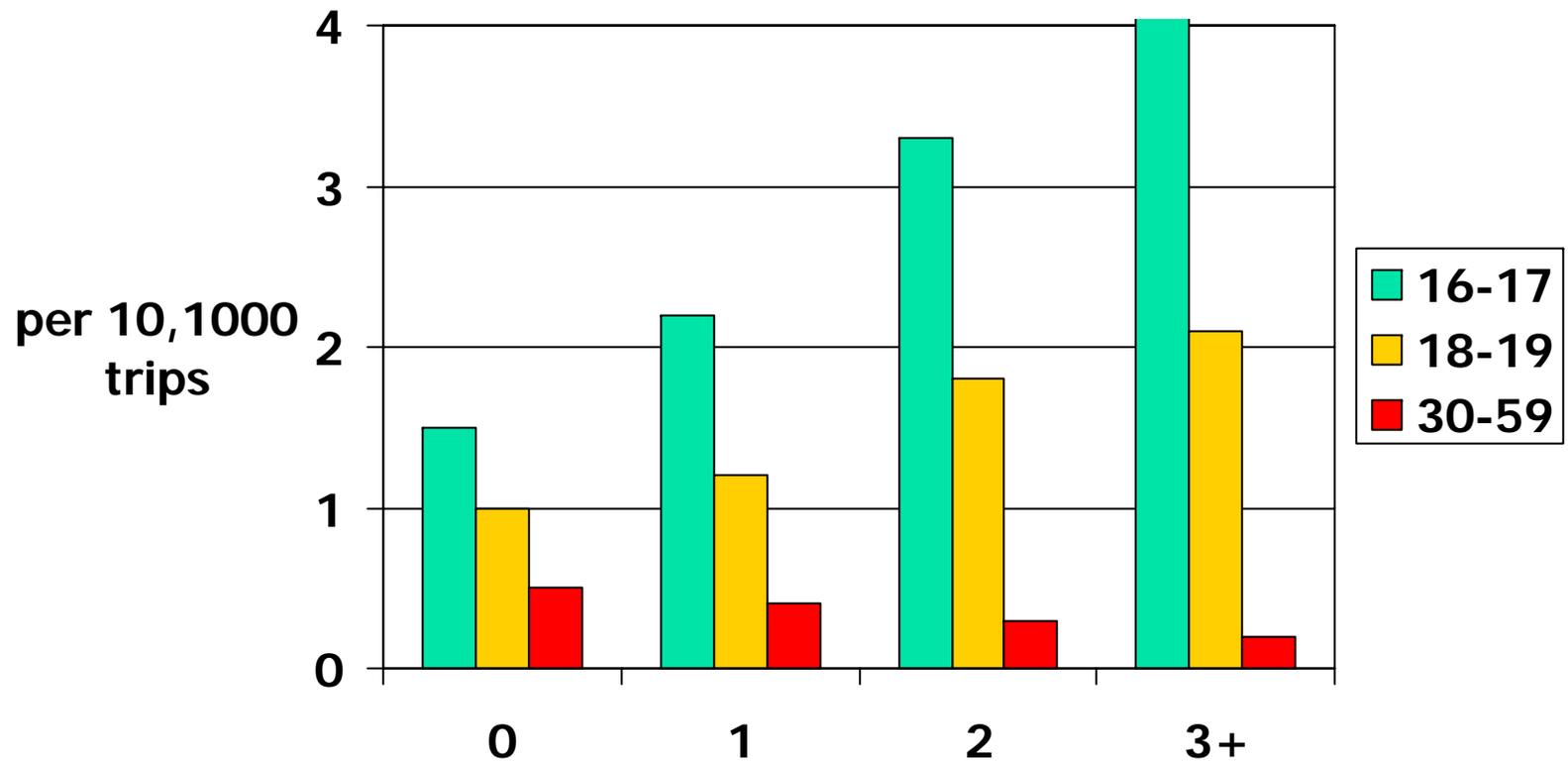
Ann NY Acad Sci, 2004



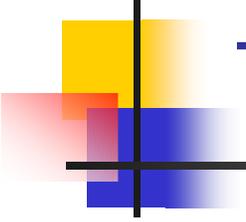
Risk factors: Teen passengers

- Crash risk directly proportional to number of teen passengers

Crash rates by driver age and passenger presence



Williams, J Safety Res, 2002

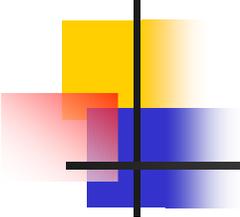


Teen passengers: reasons

- General distraction
- Encouragement of risky driving
- For both male and female drivers, male passengers results in more risk

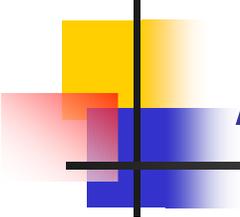
Night driving





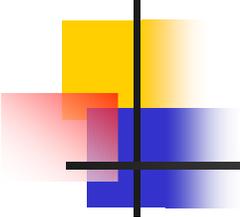
Night driving: reasons

- Fatal night crashes more likely to involve multiple teen passengers, speeding, and alcohol
- Night time driving is more challenging
 - fatigue and inexperience handicap teens



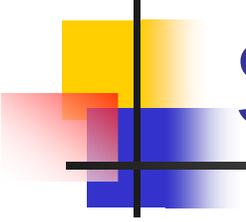
Alcohol

- Drink and drive less often than adults but crash rates higher
- 9th-12th graders
 - 10% drink and drive
 - 29% riding with driver who had been drinking



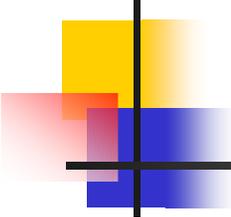
Distractions including cell phones

- Eating, drinking, adjusting radio/ipod
- Cell phone use (increase crash risk 4X)
 - Hands-free (same risk)
 - Text messaging



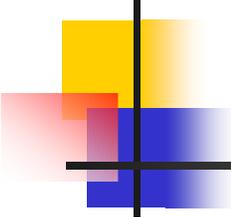
Graduated Driver Licensing Systems

- New Zealand 1987, Florida 1996
- A system where novice drivers can gain knowledge, skills and experience under conditions of minimal risk.



Graduated Driver Licensing

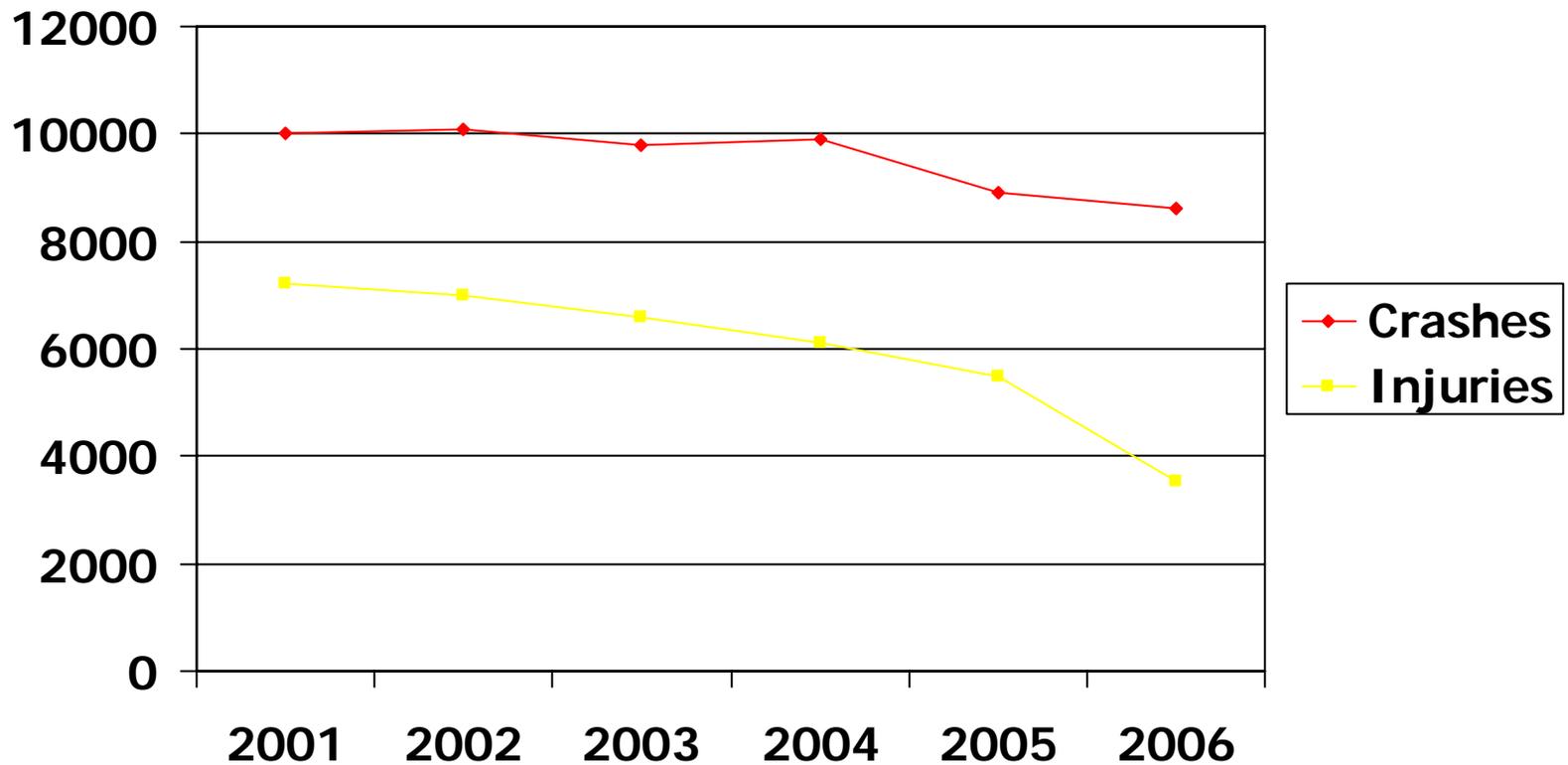
- **Learner's permit** – allows driving only while supervised by an experienced driver
- **Intermediate License** – allows unsupervised driving under certain restrictions
- **Full license** – no restrictions.

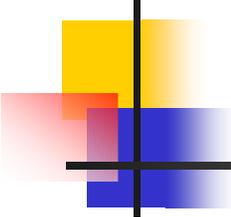


Graduated Driver Licensing

- Research in the US & Canada has conclusively shown that GDL has reduced teenage driver crashes & fatalities
- Crash reductions greater for stronger GDL systems

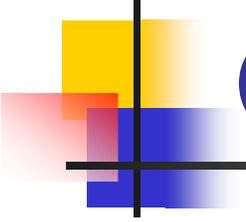
Crashes and Injuries, 16-18 years, Connecticut





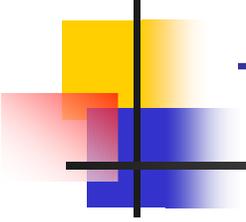
Key Components of GDL Systems

- Extended holding period for learner's permit
- Passenger and Nighttime restrictions during the intermediate license period



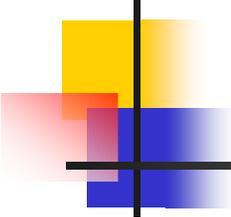
CT learner's permit

- 16 years old
- Vision and knowledge test
- Hold permit to 6 months
 - 4 months with completed drivers ed course
- 20 hours practice with licensed driver, at least 20 years and 4 years experience



Restrictions for newly licensed teens

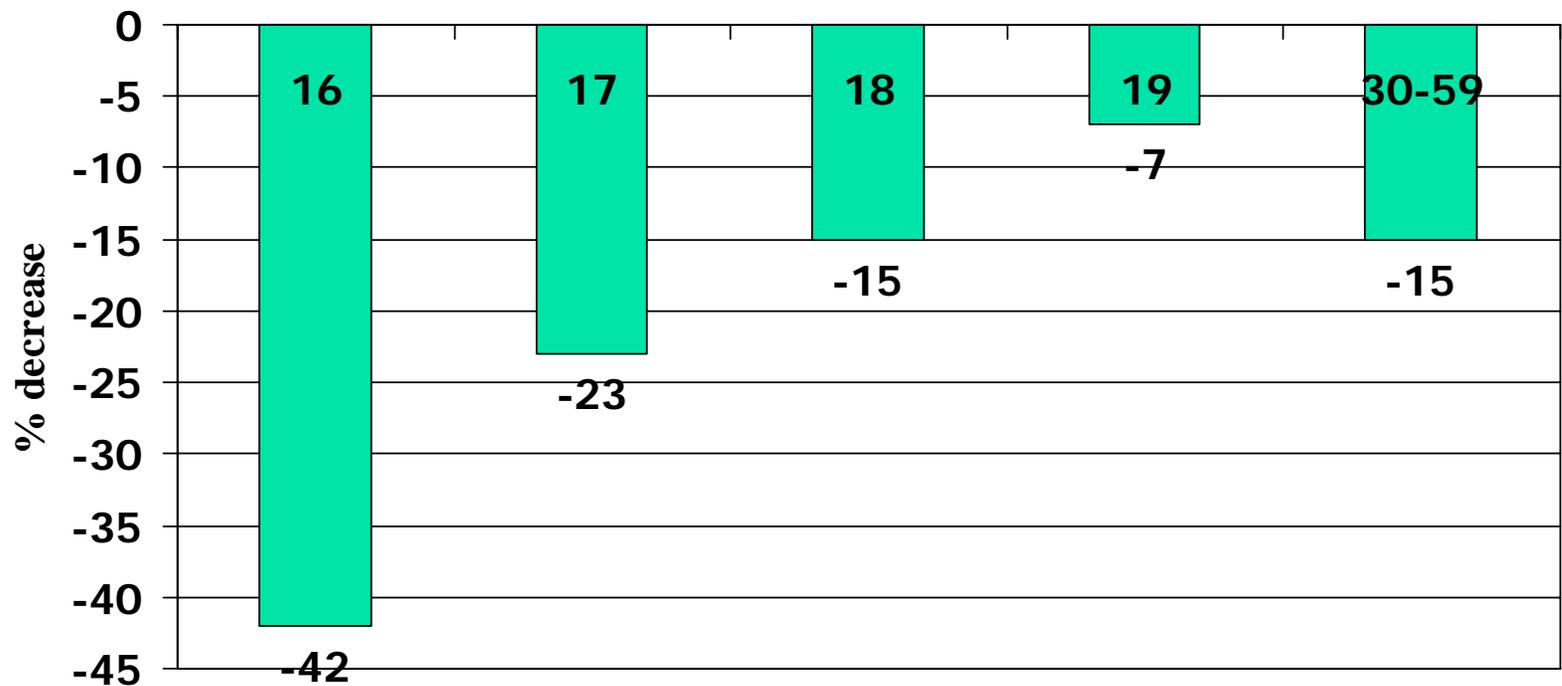
- First 3 months:
 - No passengers except parents, legal guardian or licensed driver instructor
- 3-6 months
 - Only immediate family members



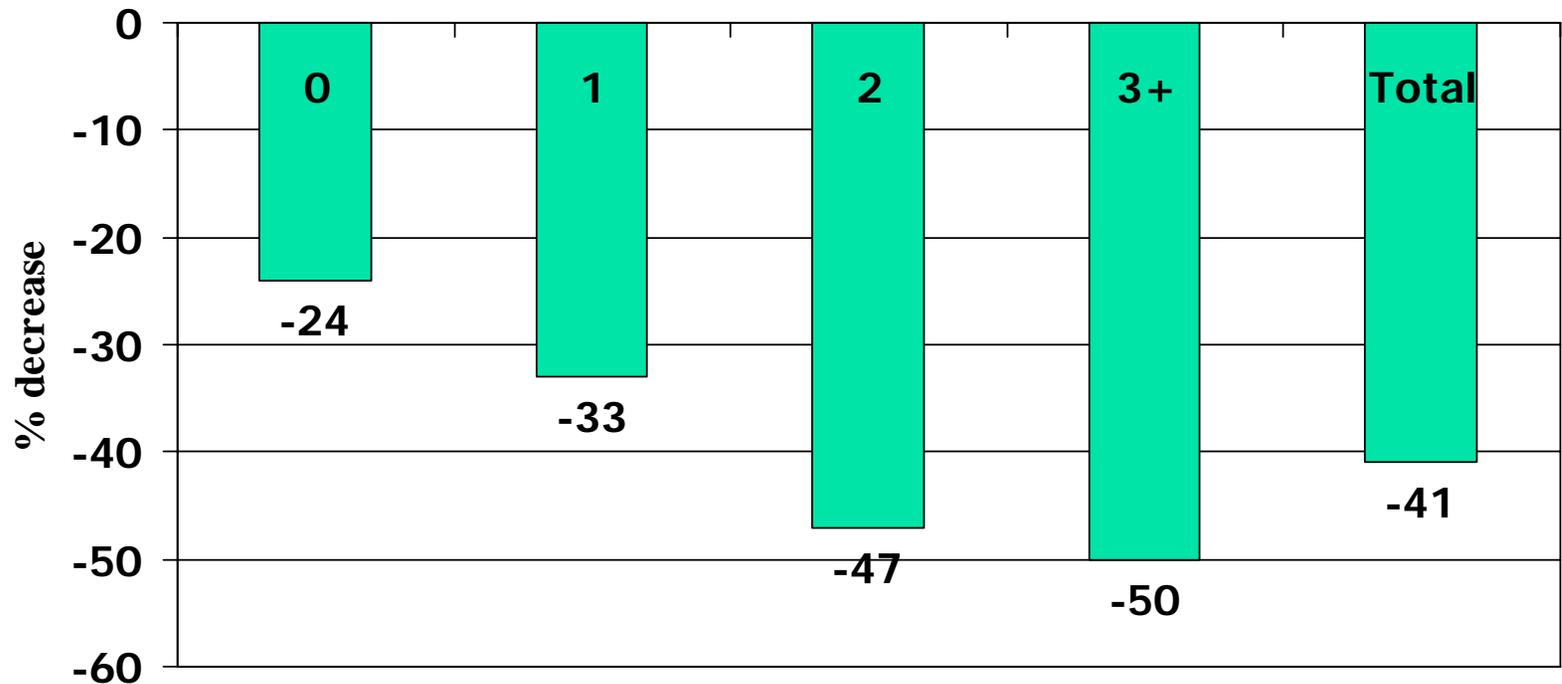
Drivers under 18

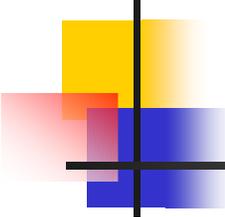
- No cell phones (including “hands free” or mobile electronic devices) while driving
- No driving between 12 midnight and 5 A.M.
 - Except for employment, school, religious activities, medical reasons

Percent reduction in fatal crash rate by driver age, 1996 vs. 2005



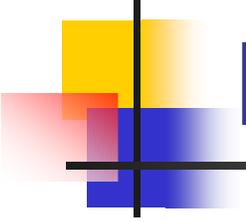
Percent reduction in fatal crash rate of 16 yr old drivers by passenger presence, 1996 vs. 2005





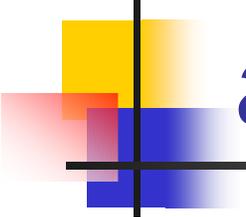
CT Data 1998-2006

- ⑩ **16-year olds have the highest rate for crashes involving a fatality.** From 1998-2006, crash rates were 49.2 per 10,000 in 16 year old drivers, which was followed by 43 per 10,000 in 18 year, 40.5 per 10,000 in 17 year, and 34.2 per 10,000 in 19 year old drivers.
- ⑩ **Male drivers represent an overwhelming majority of drivers involved in fatal crashes.** Seventy six percent of the teen drivers were male and 24% were female.
- ⑩ **About forty percent (40%) of the fatal car crashes occurred between 9:00 p.m. and 3:00 a.m.**
- ⑩ **Less than a quarter (22.3%) of the participants were drinking drivers**
- ⑩ **Forty eight percent (48%) used a known restraint system (shoulder belt, lap belt, and lap and shoulder belt).**
- ⑩ **Crash rates decreased significantly for female drivers from ages 16 to 19, with a starting rate of 42.3 declining to 12.5 (per 10,000), respectively.**
- ⑩ **Percentage of fatal crashes involving one or more passengers were 71.5% in 16 year, 57.5% in 17 year, 46.8% in 18 year, and 44.5% in 19 year old drivers.**



Parent role: monitor driving

- Ride along often
- Require permission for trips
- Limit teen passengers
- Enforce curfew
- Write contract



Parent/Teen safe driving agreement

- Written document that defines:
 - Restrictions
 - Privileges
 - Rules
 - Consequences
- For Parent
 - A plan to reduce risk

Connecticut Teen Driving Safety Partnership

American Academy
of Pediatrics
Connecticut Chapter



Connecticut
Children's
MEDICAL CENTER



Connecticut Academy
of Family Physicians

IMPACT

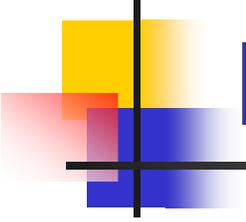
Mourning Parents ACT



Allstate
FOUNDATION

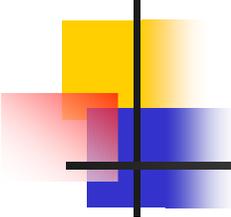


The partnership includes the Injury Free Coalition for Kids of Hartford at Connecticut Children's Medical Center, American Academy of Pediatrics, CT Academy of Family Physicians, Mourning Parents Act (IMPACT), Dept. Motor Vehicles, and The Allstate Foundation. This year-long initiative will provide a package of teen driver safety materials to doctors across the state for use in counseling teens and parents.



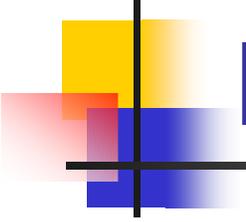
Project objective

- Increase the number of Connecticut physicians providing safe teen driving anticipatory guidance.



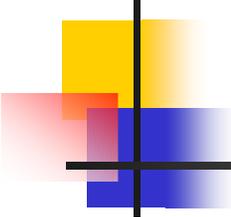
Project activities

- complete pre-campaign survey describing current teen driver safety anticipatory guidance practice in their offices



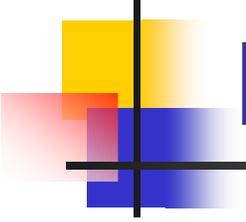
Project activities

- mail physicians teen driver safety package
 - description of current CT GDL law, driving tips
 - waiting room posters
 - in-office conversation starters, in home reminders
 - parent and teen brochures
 - parent teen driving contracts
 - community advocacy materials



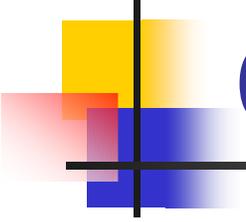
Project activities

- the campaign promoted through CT AAP/AAFP chapter correspondence, newsletters, teleconferences, and meetings
- follow-up physician survey to measure use of the materials and change in practice.



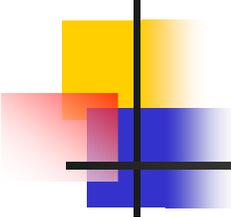
Preliminary Results

- 45% of responding physicians had lost a teen patient due to a motor vehicle fatality.



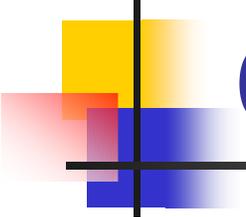
Governor's Task Force

- Survey of Connecticut Residents
- Task Force Recommendations
- The Golden Opportunity



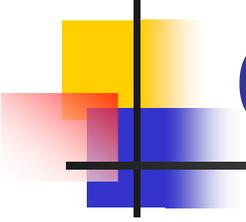
Connecticut Teen Driving Survey

- Week of January 7, 2008
- 398 parents of teens & 409 adults
- Are you aware of current teen driver requirements?
- Do you support changing the requirements?



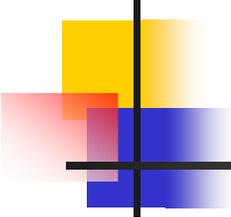
Overall Results

- Majority support from parents & others
 - Increased supervised driving hours
 - Longer learner's permit period
 - Longer passenger restriction period
 - Increased penalties for multiple moving violations



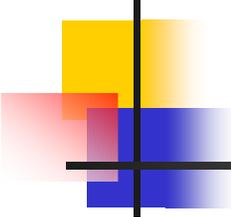
Overall Results (con't)

- Half of parents & others support
 - Earlier nighttime restriction
 - Increased learner's permit age
- Fewer than half support stickers to identify novice drivers cars



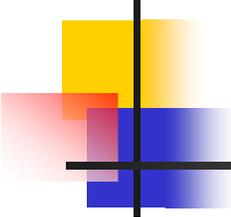
Task Force Recommendations

- Eliminate youthful offender plea for moving violations
- Require all passengers in a car driven by a driver under age 20 wear seatbelts
- Increase penalties for moving violations (MA model)



Task Force Recommendations

- Amend nighttime driving curfew for drivers <18yrs to 11PM (retain exceptions)
- Increase supervised driver training requirement from 20 to 50 hours
- No passengers except parent(s) during the learner's permit period
- Intermediate License – no passengers except parent(s) for first 6 months



Conclusions

- Significant progress since 1996
- Graduated Driver Licensing systems are the most effective approach available to reduce teen driving fatalities
- Anticipatory guidance from physicians provides valuable strategies to teenagers and their parents that can reduce risk.

By 16, teens have had
the “*Birds and Bees*” talk and
the “*Say No to Drugs*” talk.



UNFORTUNATELY, NEARLY 6,000 TEENS DIE EACH YEAR
BECAUSE THEY DIDN'T HAVE THE “DRIVING TALK.”

