

# Identifying and Addressing Challenges to the Global Road Safety Decade of Action

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Global Road Safety NGO Working Group

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# At a Glance Moscow Ministerial Resolutions

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1. Implement recommendations of WHO World Report on Road Traffic Injury Prevention, includes to reduce drink-driving
2. Reinforce governmental leadership and guidance in road safety
3. Set targets for casualty reductions and mobilize resources
4. **Protect all road users**
5. Implement sustainable transportation and land use
6. Promote harmonization of road and vehicle safety regulations and good practices
7. **Address legislation and vehicle driver registration systems**
8. Adopt best practices in fleet management
9. Encourage collaborative action
10. Improve national data collection and comparability
11. Strengthen pre-hospital and hospital trauma care

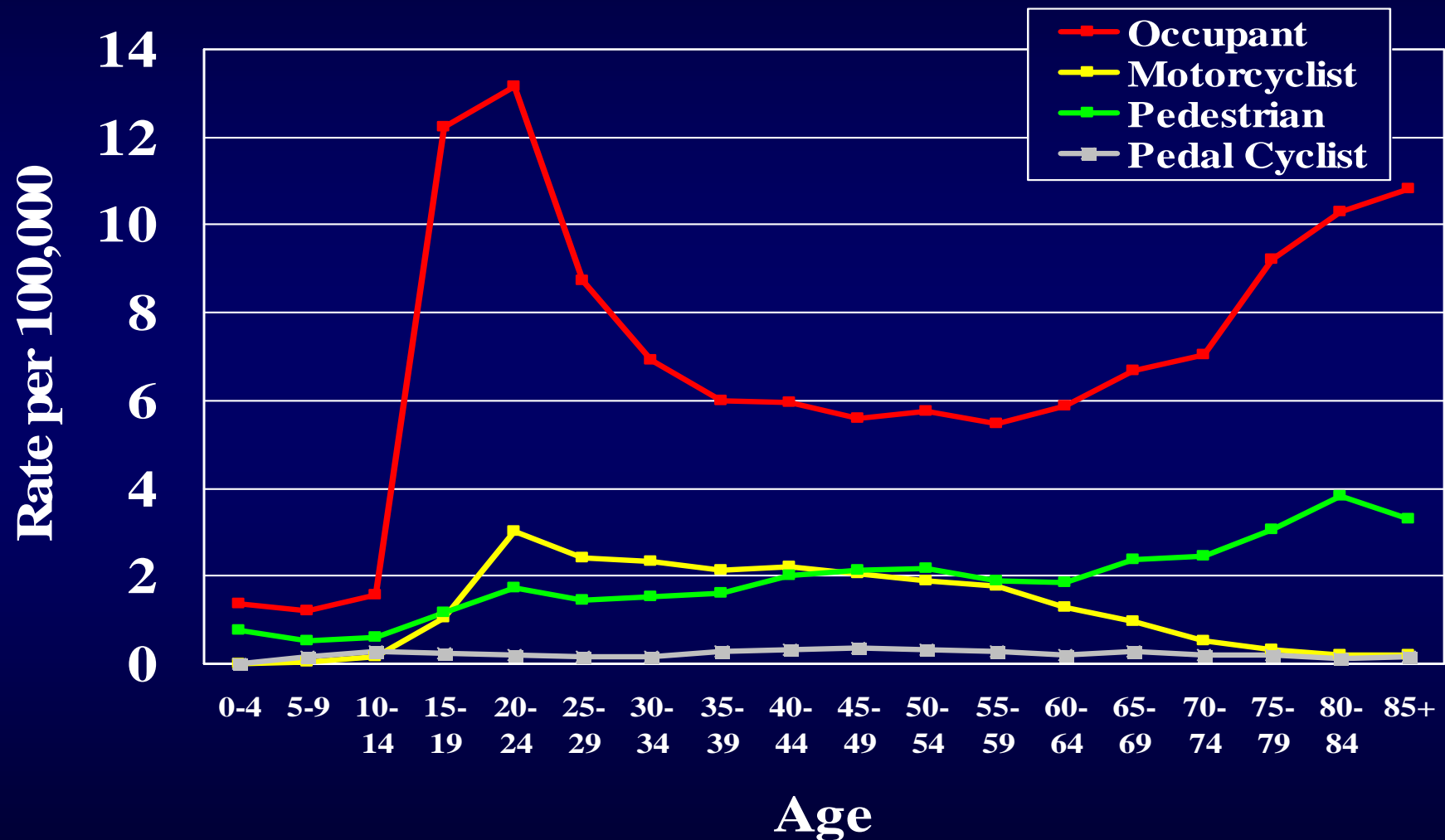
# Resolution 1: Implement Recommendations of WHO/World Bank World Report on Road Traffic Injury Prevention

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## Six major conclusions of the WHO World Report

1. Identify lead government agency
2. Assess the status, problem, policies, institutions and capacity for injury prevention
3. Prepare a national road safety strategy and plan of action
4. Allocate financial and human resources to address the problem
5. Implement specific actions to prevent crashes and reduce injury:
  - Reduce excessive and inappropriate speed
  - Reduce drink-driving
  - Increase use of helmets, seat belts and child restraints
6. Support the development of national capacity and international cooperation

# U.S. Motor Vehicle Traffic Mortality Across the Age Span

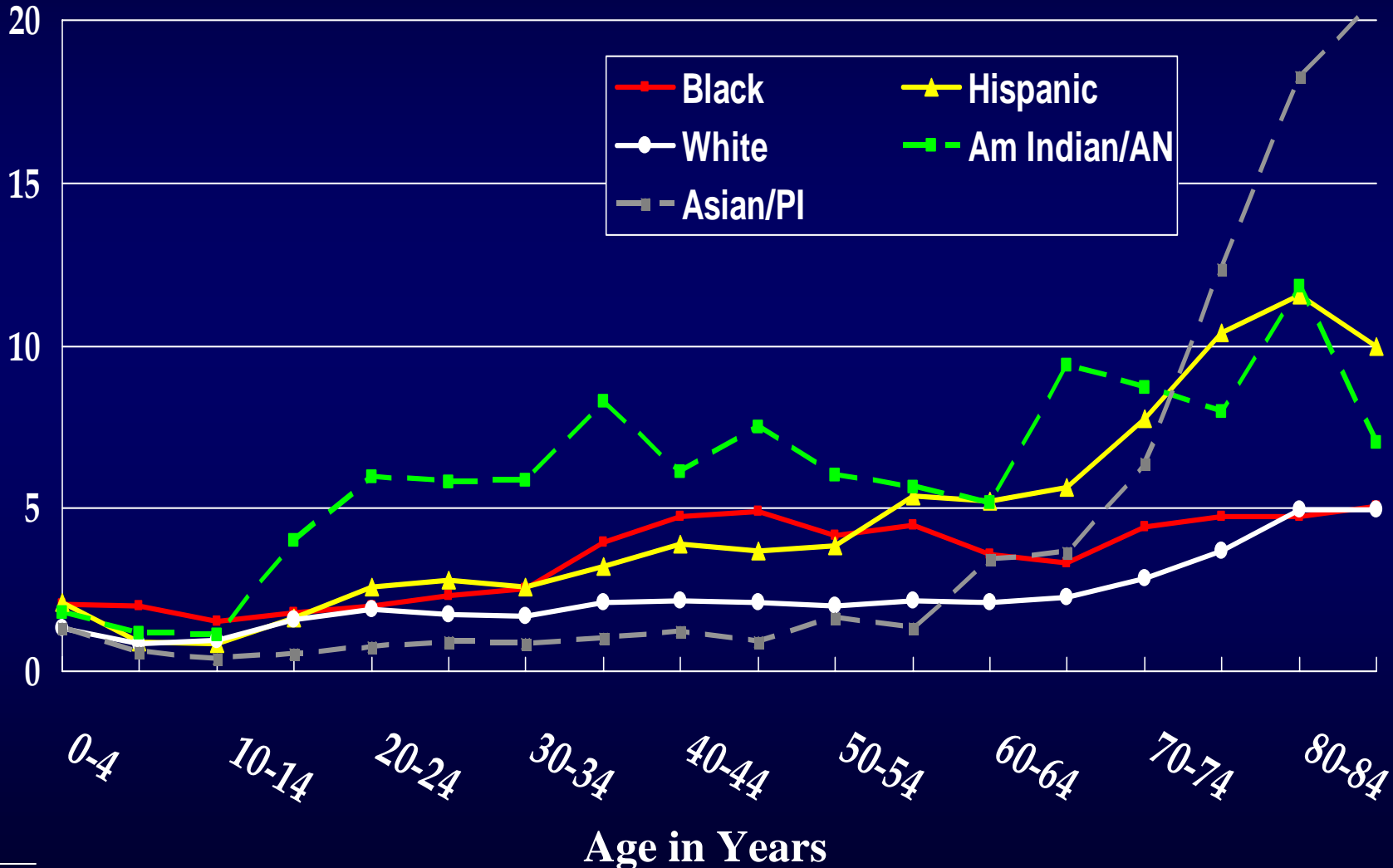


Pressley et al 2009

Data source: WISQARS 2005 [www.cdc.gov/ncipc/wisqars](http://www.cdc.gov/ncipc/wisqars); (Occupant category includes drivers)

# Pedestrian Injury Mortality Rates by Age and Race/Ethnicity

Rates per 100,000



Pressley JC et al 2007

Data source: WISQARS 2005 [www.cdc.gov/ncipc/wisqars](http://www.cdc.gov/ncipc/wisqars); (Occupant category includes drivers)

# Decreasing Injury from Drink Driving

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- Drinking and driving increases
  - Risk of having a MV crash
  - Severity of injury, likelihood of death
- Laws that establish zero to 0.02 for young drivers reduce MV crash 4%-24%
- Sobriety checkpoints and random breath testing have been reported to reduce crashes by 20%

## Challenges Ahead: Decreasing Injury from Drink Driving

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- The majority of countries (96%) report having national or subnational laws on drink-driving
- Many of these laws do not meet the WHO World Reports criteria for being a good law recommended BAC of  $\leq 0.05$
- Varies by country income
  - Most of Europe (86%) and the US laws meet BAC recommendations
  - Only 49% of countries have a law that meets the World Report criteria

# Alcohol Enforcement

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- 13% of countries report “passing” enforcement levels (7 or higher on scale of 10)
  - 21% high income countries
  - 11% of middle-income countries
  - 9% of low income countries
- Only 10% of participating countries (24% of world’s population) have both recommended BAC limits less than 0.05 g/dl and enforcement ratings over 7.

# Proportion of Road Traffic Deaths Attributable to Alcohol for Select Countries

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- Canada, Australia 30%
- US 32%
- UK 17%
- Sweden 20%
- South Africa 60%
- Russian Federation 10%
- Estonia 48%
- Uruguay 38%
- Vietnam 34%
- Japan 8.3%
- Burundi 70%

# Alcohol Laws and Highway Funding

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- The National Minimum Drinking Age (NMDA) law requires that States in the U.S. who are out of compliance on underage drinking face a reduction in the amount of Federal Aid Highway Act funds they receive
  - Some states enacted laws primarily to protect their highway funds
  - Laws and enforcement can be weak
- Exportability of concept to other countries has not been fully explored

# World Report Recommendations

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- World report notes young or novice drivers are at increased risk when under influence
- Advises that limits for this group be lower than the general population
- Fewer than 15% of countries had laws that provided for lower limits
  - Primarily in the European Union with some states in the US

# Teen and Young Adult Drivers are Highest Risk Age Group

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- The leading cause of death in U.S. teenagers is motor vehicle-injury
- Despite multiple laws aimed at reducing risk, teens continue to have elevated crash risk compared to other age groups
- Crash risk is greatest in the first few months after licensure, at night, and with other teen passengers in the car
- Nearly 2/3 of persons killed in teen driver crashes are people other than the teen driver (Ministerial Resolution 4)

## Mortality Rates for 15-17 Year Olds By Strength and Effective Date of GDL Law (per 100,000)

	Good	Fair	Marginal Poor	Total
<b>Year prior to GDL law</b>	12.30	14.07	18.92	13.95
<b>Year GDL law passed</b>	11.18	14.02	16.95	13.36
<b>Year after GDL law</b>	9.10	13.08	14.57	11.9
<b>X<sup>2</sup> for trend ( p-value)</b>	<b>12.3 (0.0005)</b>	<b>2.02 (0.16)</b>	<b>5.34 (0.02)</b>	<b>15.89 (0.0001)</b>
<b>X<sup>2</sup> prior &amp; after (p-value)</b>	<b>12.4 (0.0004)</b>	<b>2.04 (0.15)</b>	<b>5.36 (0.02)</b>	<b>16.02 (0.0001)</b>

Pressley JC et al. Hospitalized motor vehicle crash injury and associated costs for persons aged 15-17 years by presence and strength of graduated driver licensing laws in 36 states. Journal of Trauma 2009; 67(1):S43-S53.

## Mortality Rates for 15-17 Year Olds By Strength and Effective Date of GDL Law

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- GDL legislation is associated with a lower burden of MV driver injury, death, and lower proportion of injury expenditures for MVO
- Lower burden is change in incidence not severity of cases; per case cost was not improved with GDL
- Good GDL laws were associated with significant reductions in mortality
  - 26% “Good”
  - 6.3% “Fair”
  - 16.4% for “Marginal”
- Presence of any GDL law is protective, but mortality by strength of law was not linear suggesting that other variables, such as underage drinking laws and all age laws could also be important factors

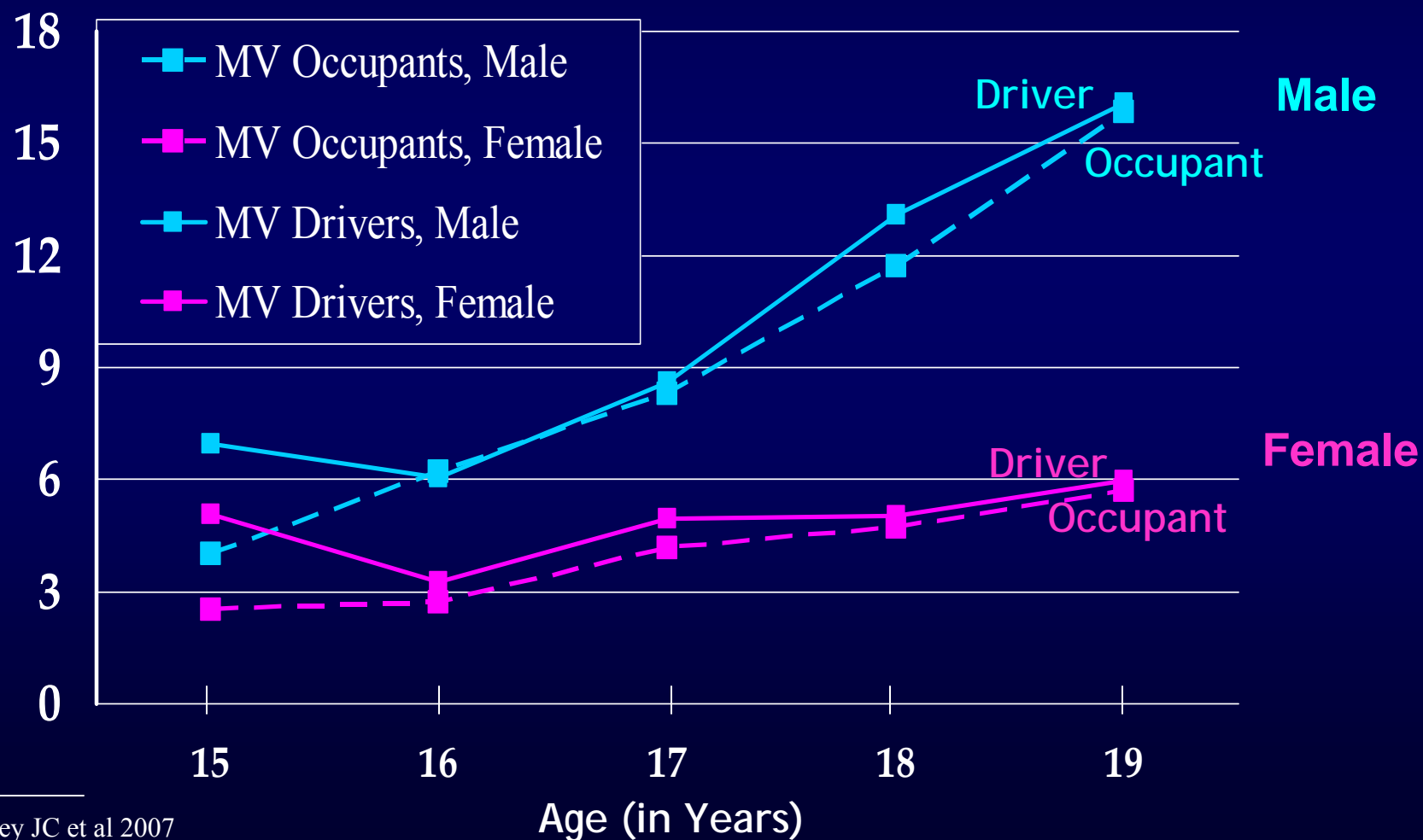
# Select Alcohol Laws Reviewed

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1. Underage possession of alcohol
2. Underage consumption of alcohol
3. Underage purchase of alcohol
4. Furnishing alcohol to minors
5. Hosting underage drinking parties
6. Minimum ages for on-premises servers and bartenders
7. Minimum ages for off-premises sellers
8. False ID for obtaining alcohol
9. Blood alcohol concentration (BAC) limits
10. Keg registration
11. Loss of driving privileges for alcohol violations by minors (Use/Lose)
12. Open containers of alcohol in motor vehicles

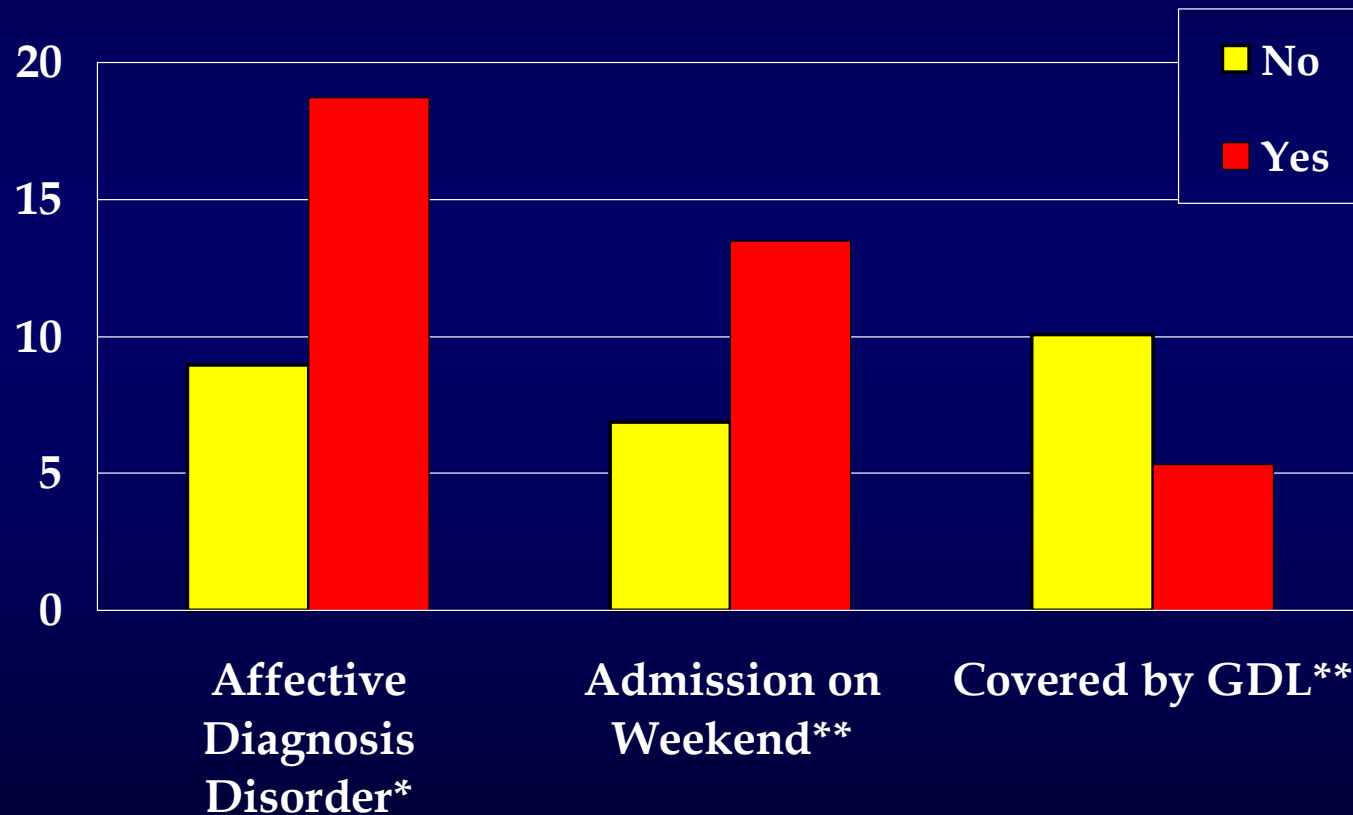
# Age and Gender Specific Rates of Alcohol-Related Hospitalizations for MV Driver, MV Occupant

Per 100,000



# Percent of Motor Vehicle Drivers Hospitalized with an Alcohol Diagnosis

Percent



# Conclusions

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- Alcohol is a major contributor to MV injury and death in developed and developing societies
- There is evidence to suggest that it is underreported
- Progress on ministerial set mortality targets could be accelerated with highly effective population-level approaches to drink driving
- Shifting the relatively high US mortality compared to other OECD countries will require addressing mortality in:
  - Teen and young adult populations
  - The contribution of alcohol to nearly one-third of MV fatal crashes
  - Disparities in vulnerable populations
- Supplemental and complementary alcohol laws have potential to increase the impact of BAC initiatives/sobriety checkpoints

# Conclusions

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- Preliminary multivariate analyses suggest the most protective laws for 15-17 year olds in a high income country were:
  - Longer mandatory driver licensing suspensions
  - Open container laws
  - Allowing underage purchase of alcohol by minors for law enforcement purposes
- Preliminary analyses suggest that effectiveness of laws may vary across outcomes (fatal vs. nonfatal injury) and by age within the teen and young adult populations
- Some laws that appear to be best practices in high income societies are limited in their utility for developing societies due to vehicle ownership, driver licensing registration systems as well as other related factors

# Backup Slides

# GDL Defined

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- Cochrane review requires a minimum of 3 stages for categorization as a GDL law
  - First stage- Initial period limited to supervised driving (licensed adult driver must be in vehicle)
  - Intermediate stage – Unsupervised driving with conditional limitations to reduce risk (night-time driving, passenger restrictions etc)
  - Final stage-Full unrestricted licensure

# IIHS Optimal GDL Law

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- According to the IIHS, an optimal graduated licensing system includes the following elements:
  - Min. age of learner's permit  $\geq$  16 years
  - Learner's stage duration of  $\geq$  6 months
  - Parent certified supervised driving time of at least 30-50 hours
  - Intermediate stage up till age  $\geq$  18 years
  - Nighttime driving restriction beginning at 9-10 pm
  - Restriction on the number of teenage passengers allowed to 0-1
- Per these guidelines in 2003, “no state had an optimal graduated licensing system.”

# Methods-Rating Points for Strength of Law

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- Points were awarded as follows:

Learner's entry age: 1 point for learner's entry age of 16

Learner's holding period: 2 points for  $\geq 6$  months; 1 point for 3-5 months; none for  $< 3$  months

Practice driving certif: 1 point for  $\geq 30$  hours; none for  $< 30$  hours

Night driving restriction: 2 points for 9 or 10 pm; 1 point for after 10 pm

Passenger restriction: 2 points for  $\leq 1$  underage passenger; 1 for 2 passengers; none for 3; where supervising driver may be  $< 21$ , point values were determined including the supervising driver as a passenger

Driver education: Where completion of driver education changed a requirement, point values were determined for the driver education track

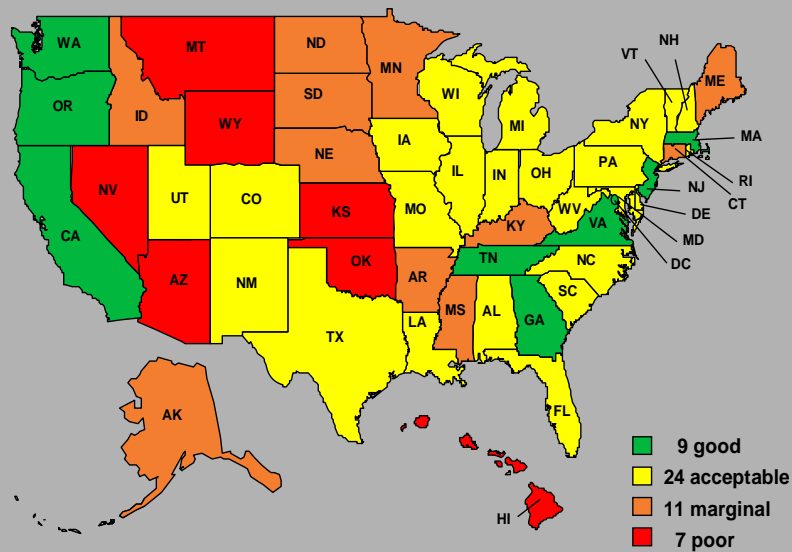
Duration of restrictions: 1 point if difference between minimum unrestricted license age and minimum intermediate license age is 12 or more months; night driving and passenger restrictions were valued independently

# Law Upgrades Since Study: IIHS Ratings for 2003 vs. 2007

## Strength of Law At Time of Study (Jan 2003)

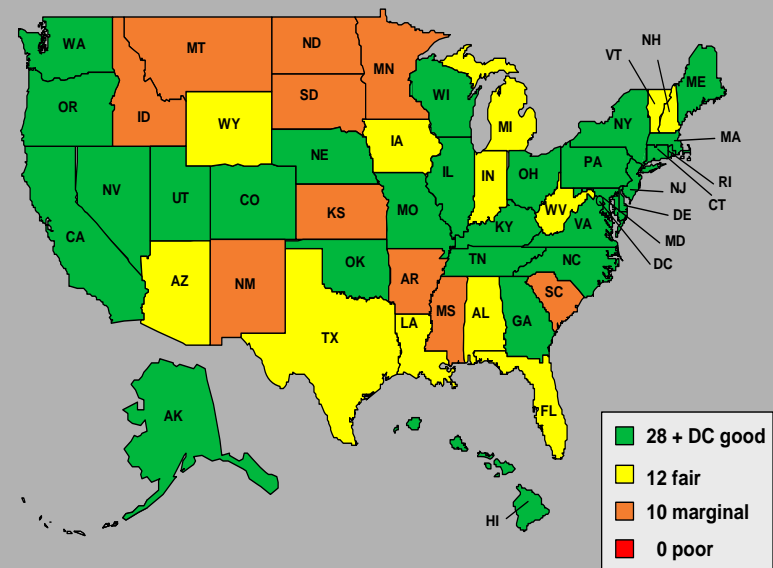
## Strength of Law (Sept 2007)

Strength of graduated licensing programs  
January 2003



IIHS

Strength of graduated licensing programs  
September 2007



IIHS

# States Included in Nonfatal analyses KID-HCUP 2003

Data (n=36)

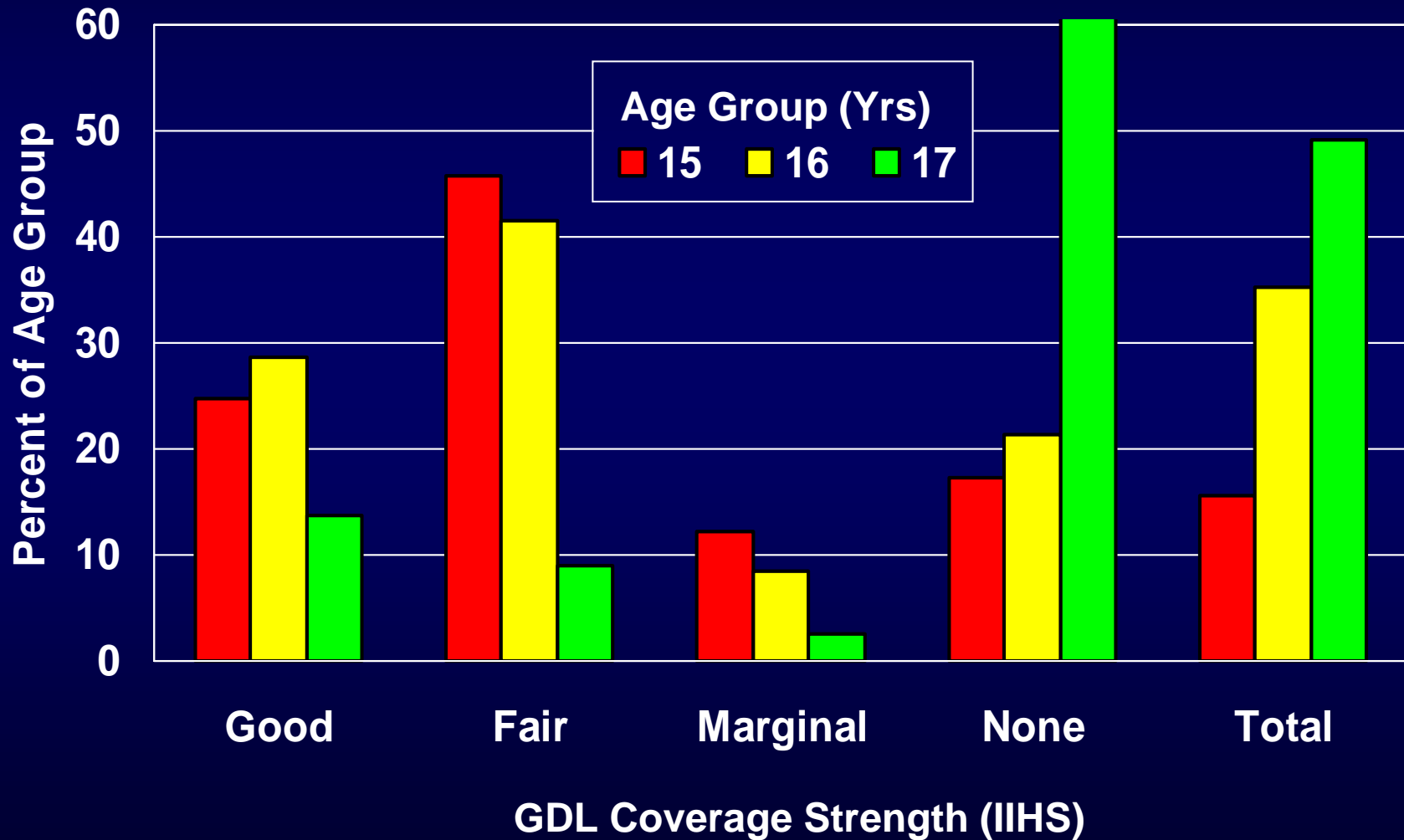
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- Arizona
- California
- Colorado
- Connecticut
- Florida
- Georgia
- Hawaii
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Missouri
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New York
- North Carolina
- Ohio
- Oregon
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin

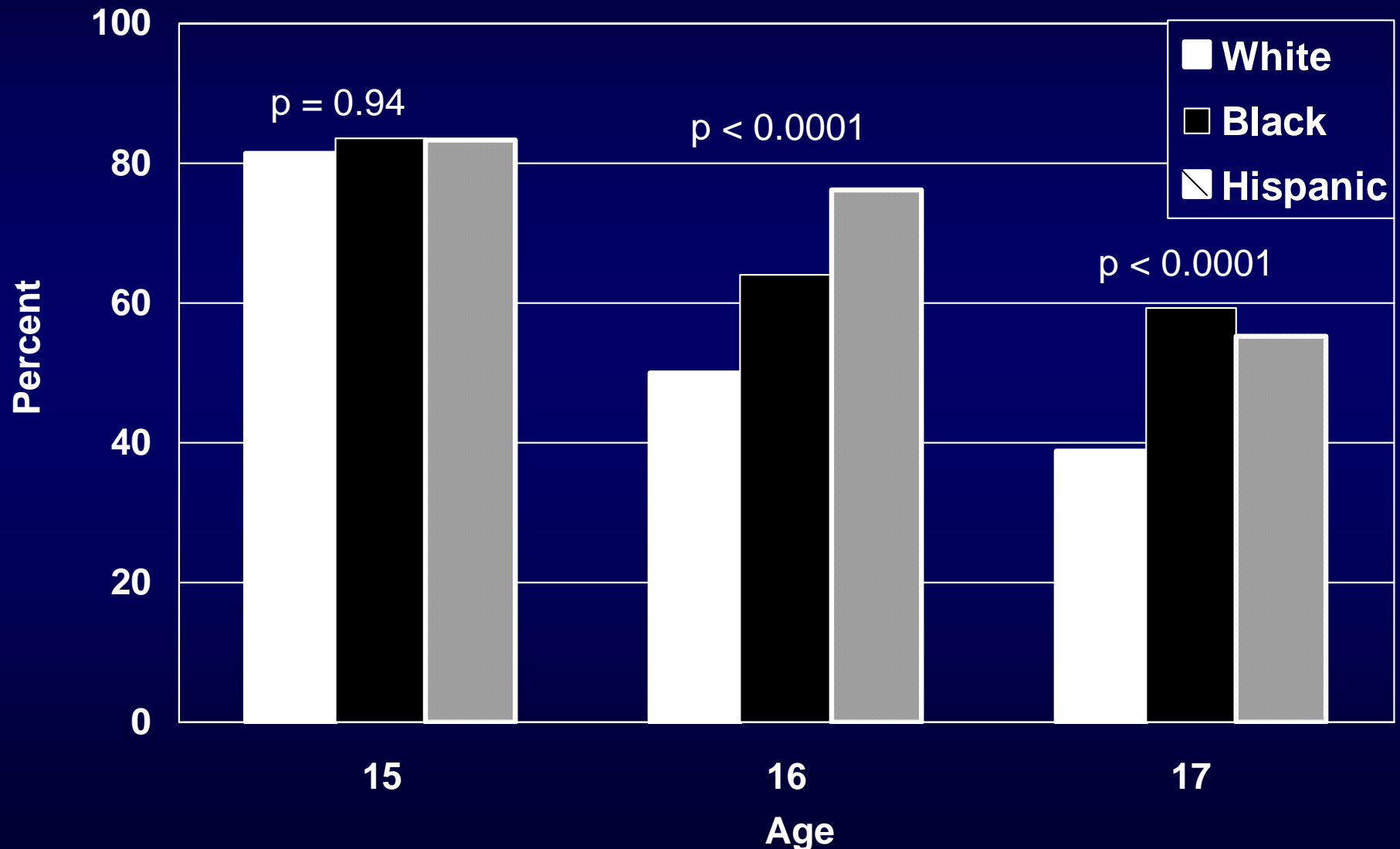
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Maine and Pennsylvania, included in previous versions of KID-HCUP, did not report in 2003

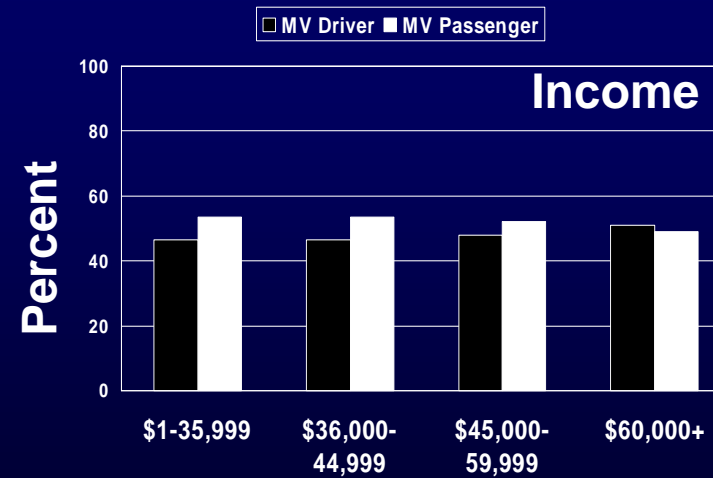
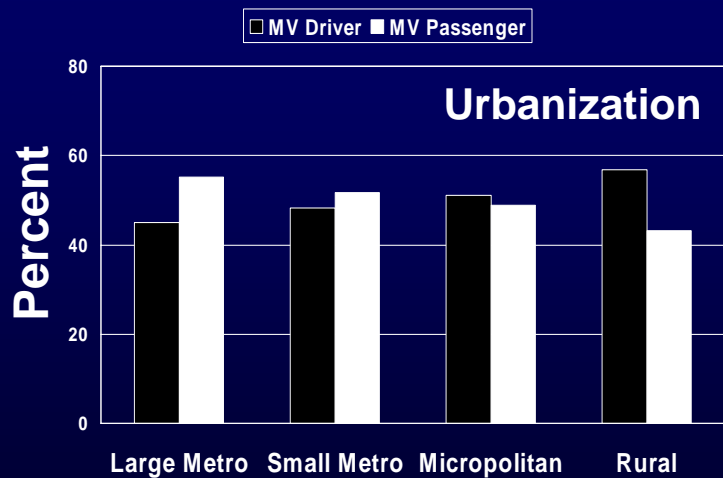
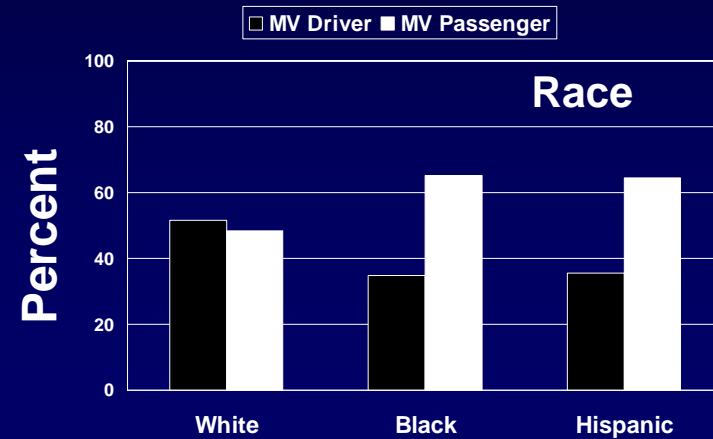
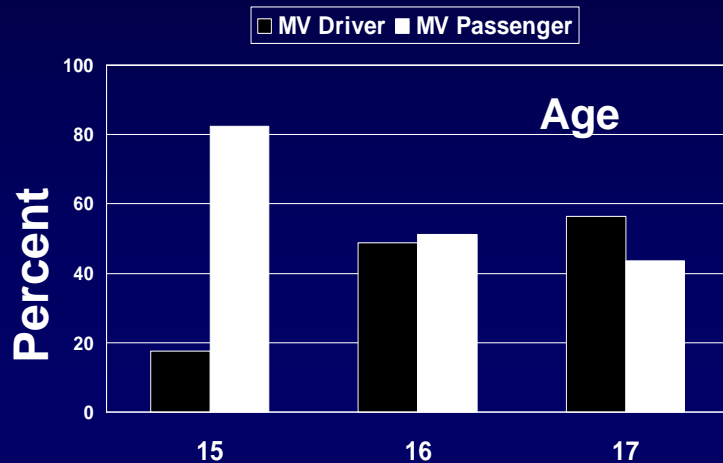
# Age Distribution of Teenagers Hospitalized for Motor Vehicle Occupant Injury by IIHS Strength of GDL Coverage



## Distribution of MV Passenger Injury by Age and Race/Ethnicity



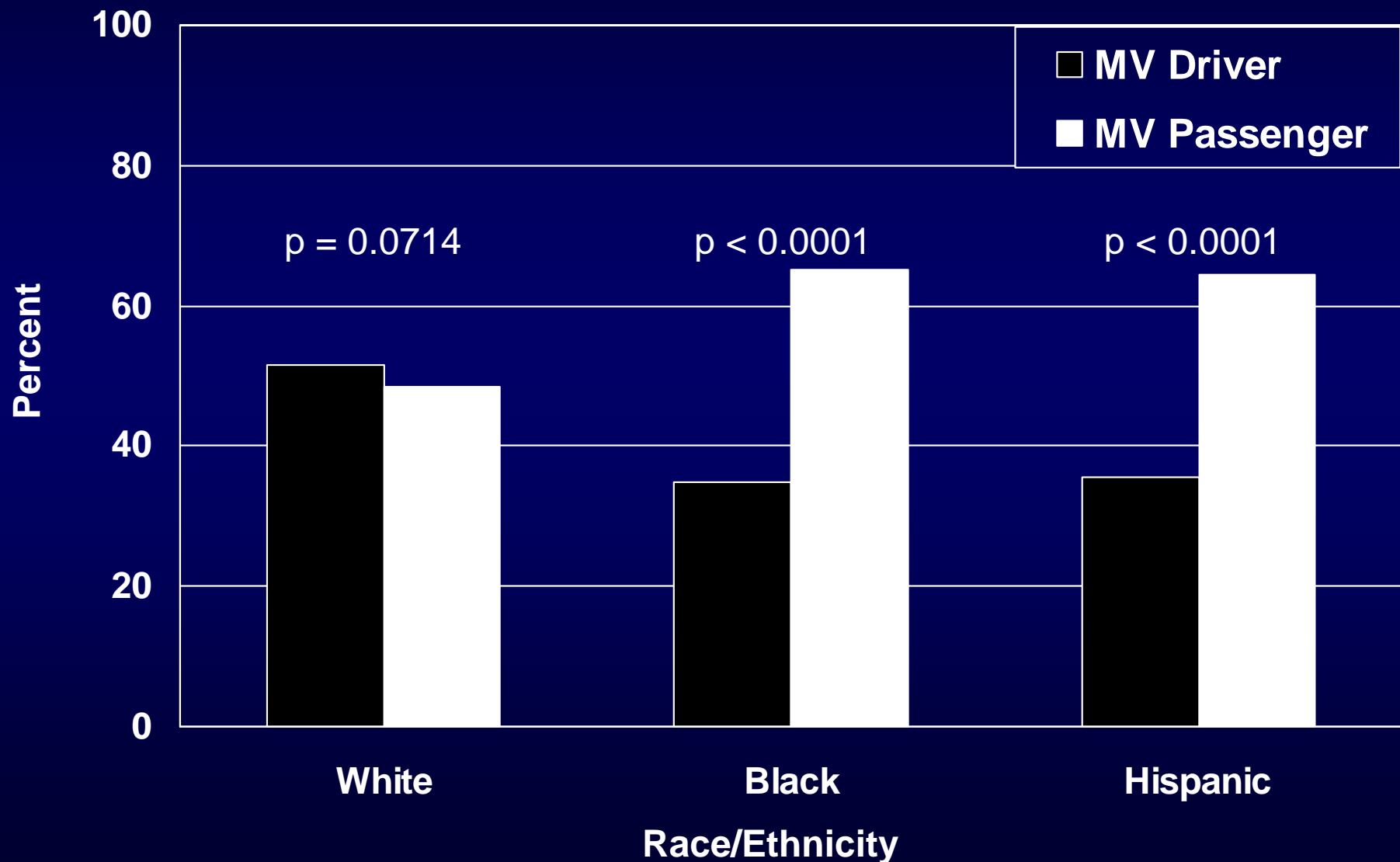
# Injury as a Teenage Driver vs. Passenger Differs by Demographic Characteristics



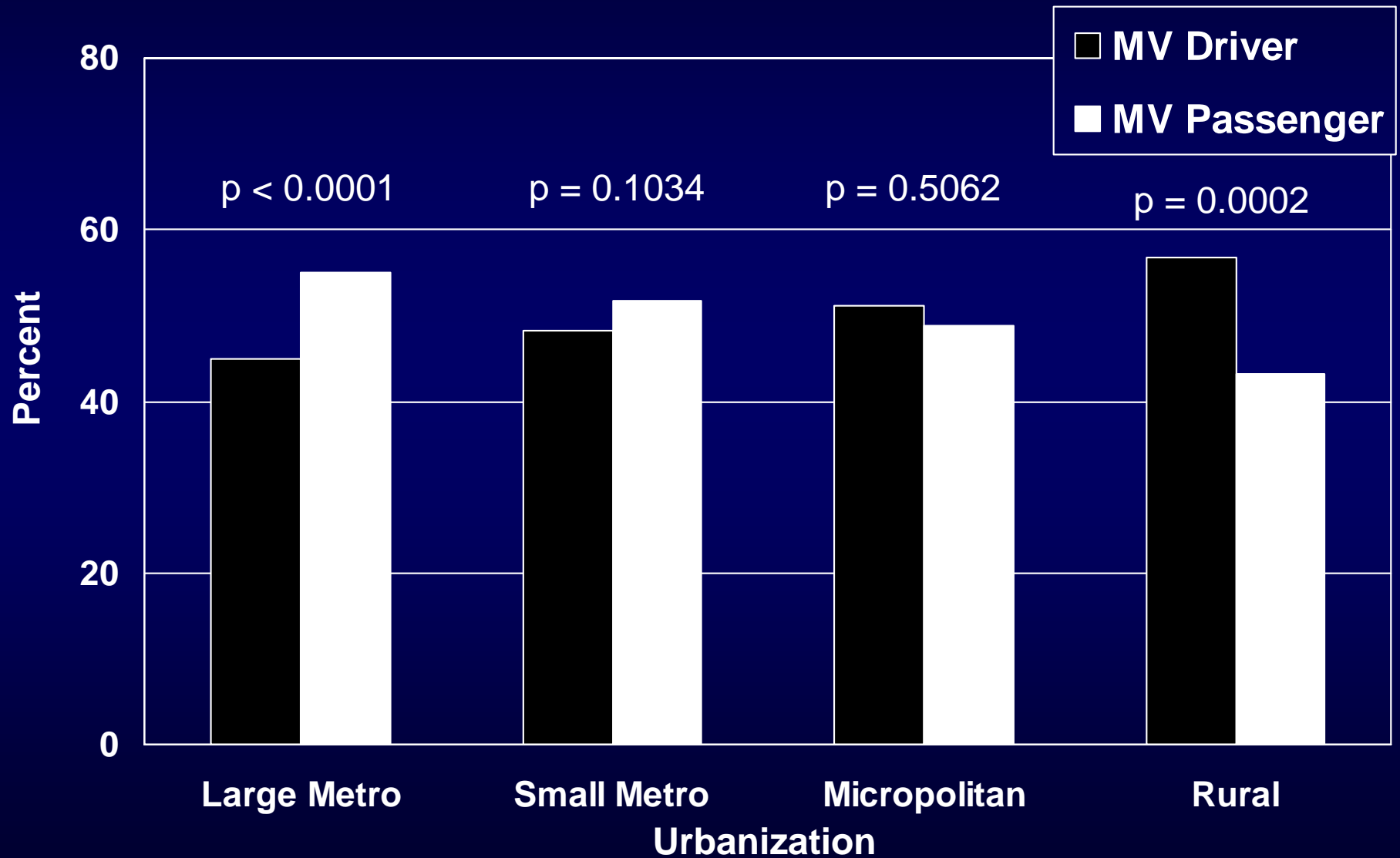
# Distribution of MV Driver and Passenger Injury by Age



## Distribution of MV Driver and Passenger Injury by Race/Ethnicity



# MV Driver and Passenger Injury by Urbanization



## Distribution of MV Driver/Passenger Injury by Median Household Income

