Overview of Impaired Driving

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National Highway Traffic Safety Administration

- **MISSION: Save Lives, Prevent Injuries and Reduce Traffic-Related Crashes and Associated Costs**

Alcohol Impaired Driving

Overview of Presentation:

- **Effect of Alcohol on Driving Related Skills**
- **Relationship of BAC Level to Crash Risk**
- **Who, When, Where of Impaired Driving Crashes**
- **The US Experience Combating Impaired Driving**
- **Conclusions and Recommendations**

NHTSA
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Top 10 Leading Causes of Death in the United States for 2004, by Age Group[1]

National Highway Traffic Safety Administration's National Center for Statistics and Analysis

RANK	Cause and Number of Deaths											Years of Life Lost[2]
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+	All Ages	
							25-34	35-44	45-64			
1	Perinatal Period 14,079	Congenital Anomalies 511	**MV Traffic Crashes 478**	**MV Traffic Crashes 1,603**	**MV Traffic Crashes 5,914**	**MV Traffic Crashes 4,290**	**MV Traffic Crashes 6,824**	Malignant Neoplasms 14,723	Malignant Neoplasms 146,476	Heart Disease 533,302	Heart Disease 652,486	Malignant Neoplasms 23% (8,741,953)
2	Congenital Anomalies 5,622	**MV Traffic Crashes 398**	Malignant Neoplasms 432	Malignant Neoplasms 623	Homicide 2,409	Homicide 2,515	Suicide 5,074	Heart Disease 12,925	Heart Disease 101,169	Malignant Neoplasms 385,847	Malignant Neoplasms 553,888	Heart Disease 21% (7,912,765)
3	Heart Disease 421	Accidental Drowning 386	Congenital Anomalies 193	Suicide 462	Suicide 1,972	Suicide 2,167	Homicide 4,496	Suicide 6,639	Diabetes 16,347	Stroke 130,539	Stroke 150,074	**MV Traffic Crashes 5%-(1,742,625)**
4	Homicide 325	Homicide 318	Exposure to Smoke/Fire 179	Homicide 426	Accidental Poisoning 826	Accidental Poisoning 1,389	Accidental Poisoning 3,641	**MV Traffic Crashes 6,451**	Stroke 16,147	Chronic Lwr. Resp. Dis. 105,197	Chronic Lwr. Resp. Dis. 121,987	Stroke 4% (1,616,418)
5	Influenza/ Pneumonia 273	Malignant Neoplasms 290	Accidental Drowning 131	Congenital Anomalies 311	Malignant Neoplasms 759	Malignant Neoplasms 823	Malignant Neoplasms 3,693	Accidental Poisoning 6,444	Chronic Lwr. Resp. Dis. 15,265	Alzheimer's 65,313	Diabetes 73,138	Chronic Lwr. Resp. Dis. 4% (1,458,092)
6	Septicemia 271	Heart Disease 171	Homicide 129	Heart Disease 254	Heart Disease 404	Heart Disease 575	Heart Disease 3,169	HIV 4,826	Chronic Liver Disease 14,065	Diabetes 53,956	Alzheimer's 65,965	Suicide 3% (1,151,559)
7	Nephritis/ Nephrosis 174	Exposure to Smoke/Fire 165	Heart Disease 66	Accidental Drowning 222	Accidental Drowning 331	Accidental Drowning 203	HIV 1,468	Homicide 2,994	Suicide 10,917	Influenza/ Pneumonia 52,760	Influenza/ Pneumonia 59,664	Perinatal Period 3% (1,099,806)
8	**MV Traffic Crashes 139**	Influenza/ Pneumonia 106	MV Nontraffic Crashes[4] 50	Exposure to Smoke/Fire 153	Congenital Anomalies 249	Congenital Anomalies 183	Diabetes 599	Chronic Liver Disease 2,799	**MV Traffic Crashes 10,024**	Nephritis/ Nephrosis 35,105	**MV Traffic Crashes 43,432**	Diabetes 3% (1,066,772)
9	Stroke 127	MV Nontraffic Crashes[4] 104	Benign Neoplasms 43	MV Nontraffic Crashes[4] 133	Accidental Falls 122	HIV 149	Stroke 567	Stroke 2,361	Accidental Poisoning 7,610	Septicemia 25,644	Nephritis/ Nephrosis 42,480	Homicide 2% (809,816)
10	Malignant Neoplasms 74	Septicemia 73	Septicemia 39	Chronic Lwr. Resp. Dis. 119	MV Nontraffic Crashes[4] 107	Stroke 121	Congenital Anomalies 420	Diabetes 2,026	Nephritis/ Nephrosis 6,090	Hypertension Renal Dis. 19,619	Septicemia 33,373	Accidental Poisoning 2%(809,122)
ALL[3]	27,936	4,047	2,535	6,564	15,927	15,957	40,868	85,362	442,394	1,755,669	2,397,615	All Causes 100% (37,394,946)

[1]When ranked by specific ages, motor vehicle crashes are the leading cause of death for ages 2 through 34.
[2]Number of years calculated based on remaining life expectancy (2000 data from CDC) at time of death; percents calculated as a proportion of total years of life lost due to all causes of death.
[3]Not a total of top 10 causes of death. [4]A motor vehicle nontraffic crash is any vehicle crash that occurs entirely in any place other than a public highway.
Source: National Center for Health Statistics (NCHS) CDC, Mortality Data 2004.
Note: The cause of death classification is based on the National Center for Statistics and Analysis (NCSA) Revised 66 Cause of Death Listing. This listing differs from the one used by the NCHS for its reports on leading causes of death by separating out unintentional injuries into separate causes of death, i.e., motor vehicle traffic crashes, accidental falls, motor vehicle nontraffic crashes, etc. Accordingly, the rank of some causes of death will differ from those reported by the NCHS. This difference will mostly be observed for minor causes of death in smaller age groupings.

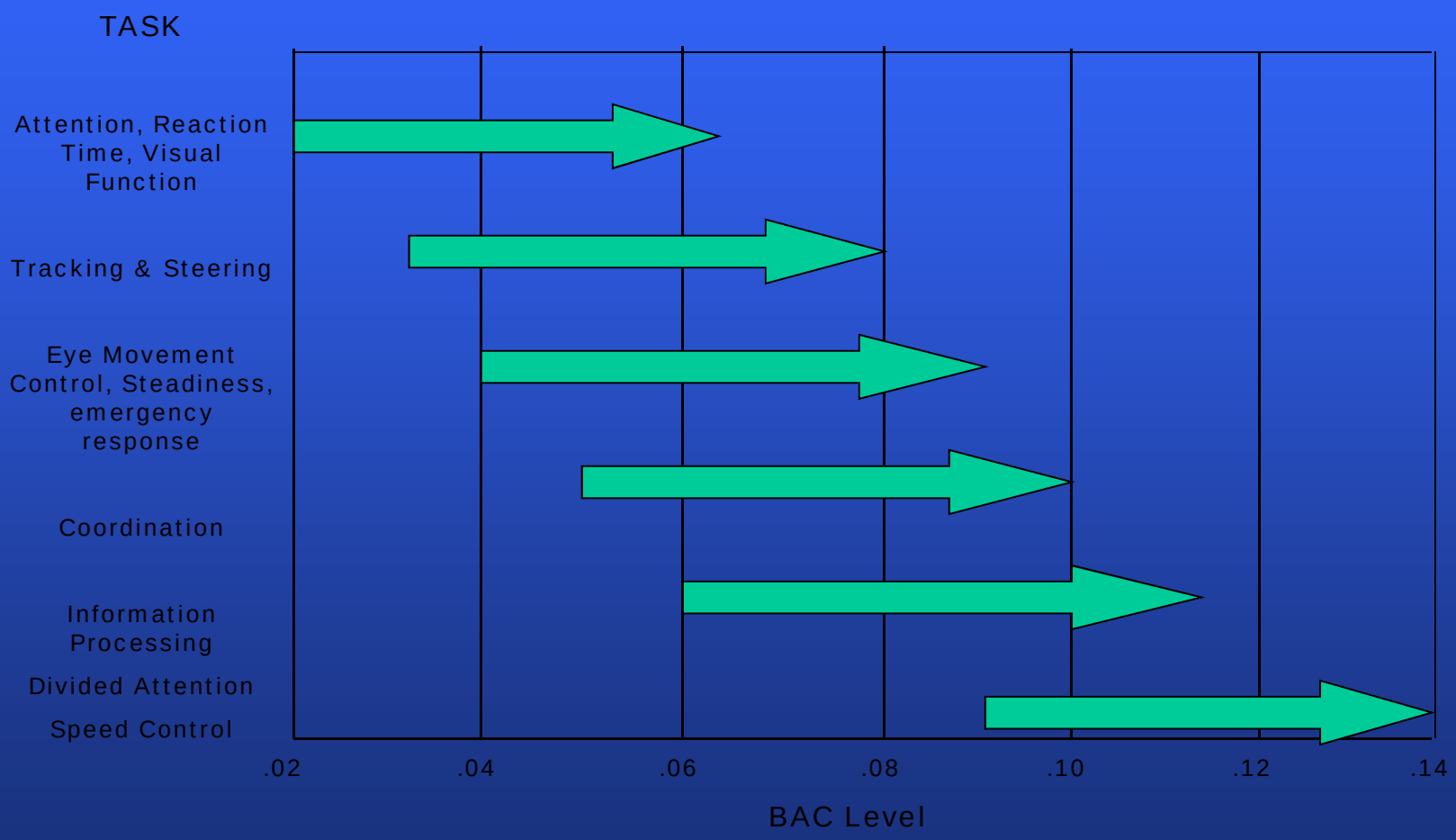
Physiological Effects of Alcohol

- **Acute**
  - **CNS Depressant**
    - Drowsiness
    - Euphoria
    - Loss of inhibition
- **Chronic**
  - **Liver Disease**
  - **Increased risk of mortality**
  - **Increased risk of death and severe injury in traffic crashes**

Effect of Alcohol on Driving Related Behaviors

- **Laboratory experimentation**
  - **Demonstrated numerous driving–related skills are degraded beginning at low BACs**
- **Epidemiological research**
  - **Estimated crash risk at various BACs**

Effects of Alcohol on Driving Related Skills



Relationship Between Alcohol Use and Crash Involvement

- **Crash risk estimated by comparing BACs of crash-involved drivers and similarly at risk non-crash-involved drivers**
- **Relative risk function determined**
  - **Likelihood of a driver at a specified BAC becoming involved in a crash compared to similar drivers under the same conditions at 0.00 BAC**
- **Borkenstein - Grand Rapids Study**

NHTSA Study of the Crash Risk of Alcohol Impaired Driving

- **Improved understanding of the relative risk at various BACs**
- **Determine the BAC level at which elevated risk first occurs**
- **Determine whether relative risk changed over time**
  - **Change in driving and/or drinking environments**

Approach

- **Crash involved driver sample**
  - **Data collected on drivers involved in crashes of all severities**
- **Control driver sample**
  - **Two drivers at the same location, day of week, time of day, traveling in the same direction as a crash involved driver sampled a week after the crash**

Study Locations

- **Long Beach, California**
  - **June 1997 – September 1998**
- **Fort Lauderdale, Florida**
  - **September 1998 – September 1999**

Sampling Procedure

- **Crashes sampled during late afternoon, evening and nighttime hours**
  - **4 PM to 2 AM in Long Beach**
  - **5 PM to 3 AM in Fort Lauderdale**

Data Collection Procedure

- **Drivers asked to answer questions**
  - **Drinking habits**
  - **Mileage**
  - **Prior DUI arrests**
  - **Fatigue**
  - **Use of medicines**
  - **Trip origin**
  - **Demographics (age, income, education, marital status, etc.)**
- **Drivers asked to provide breath sample**

Crashes

- **2,871 crashes were sampled**
  - **1,419 in Long Beach**
  - **1,452 in Fort Lauderdale**

Crash Severity

Crash Severity	Number of Crashes	Percent of Crashes
Property Damage	1,760	59.1%
Injury	603	21.0%
Fatality	19	0.7%
Hit-and-Run	546	19.0%
Missing Severity	7	0.2%
Total	**2,935**	**100%**

Crash-Involved and Control Drivers

- **14,985 drivers were sampled**
  - **4,919 crash-involved drivers**
    - 2,422 in Long Beach
    - 2,497 in Fort Lauderdale
  - **10,066 control drivers**
    - 5,006 in Long beach
    - 5,060 in For Lauderdale

Sample Participation Rates

- **Crash-involved drivers**
  - **81% participated**
  - **320 refused participation**
  - **603 hit-and-run**
    - 94 arrested within 2 hours and provided a breath sample
- **Control drivers**
  - **98% participated**

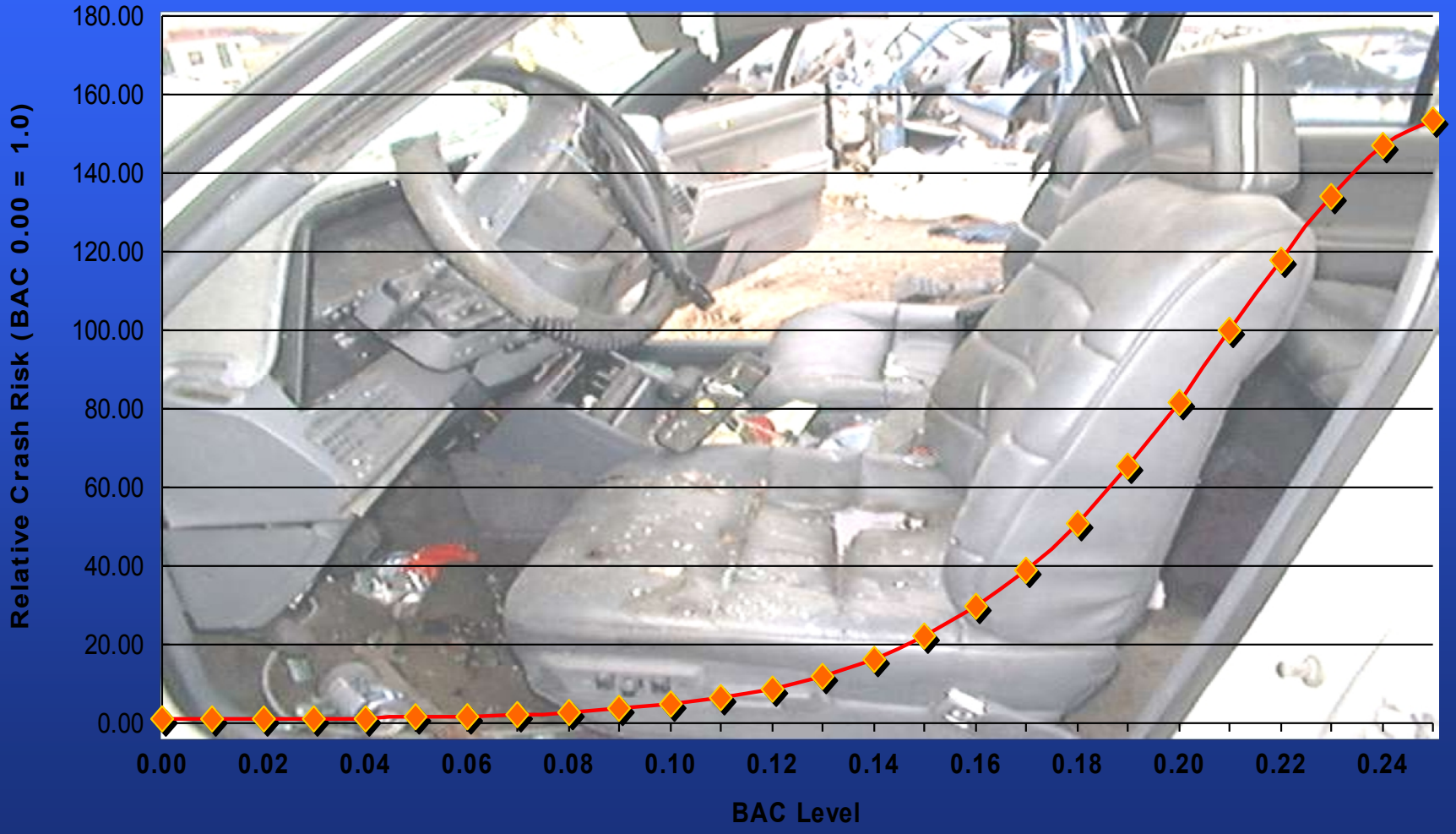
Relative Risk Models

- **Three models presented**
  - **Unadjusted relative risk estimates**
  - **Adjusted for demographic covariates**
    - Age, gender, and other demographic and socioeconomic variables
  - **Adjusted relative risk estimates (demographic and socioeconomic variables and differential non-participation rates)**

Relative Risk Models and Comparison with Grand Rapids Results

BAC Level	Unadjusted	Demographic Covariates	Final Adjusted Estimate	Grand Rapids *
.00	1.00	1.00	1.00	1.00
.01	.89	.94	1.03	.92
.02	.84	.92	1.03	.96
.03	.83	.94	1.06	.80
.04	.85	1.00	1.18	1.08
.05	.91	1.10	1.38	1.21
.06	1.01	1.25	1.63	1.41
.07	1.15	1.46	2.09	1.52
.08	1.34	1.74	2.69	1.88
.09	1.60	2.12	3.54	1.95
.10	1.95	2.62	4.79	
.11	2.41	3.28	6.41	5.93
.12	3.00	4.14	8.90	
.13	3.76	5.23	12.60	4.94
.14	4.72	6.60	16.36	
.15	5.90	8.31	22.10	10.44
.16	7.32	10.35	29.48	
.17	9.00	12.74	39.05	
.18	10.88	15.43	50.99	
.19	12.92	18.31	65.32	
.20	14.97	21.20	81.79	21.38
.21	16.88	23.85	99.78	
.22	18.44	25.99	117.72	
.23	19.43	27.30	134.26	
.24	19.68	27.55	146.90	
.25+	19.07	26.60	153.68	

Relative Risk Estimate



Conclusions

- **Risk of drinking and driving has not changed since the 1960's**
- **The adjustments made to the univariate risk curve show that previous studies may have seriously underestimated the true crash risk produced by alcohol**

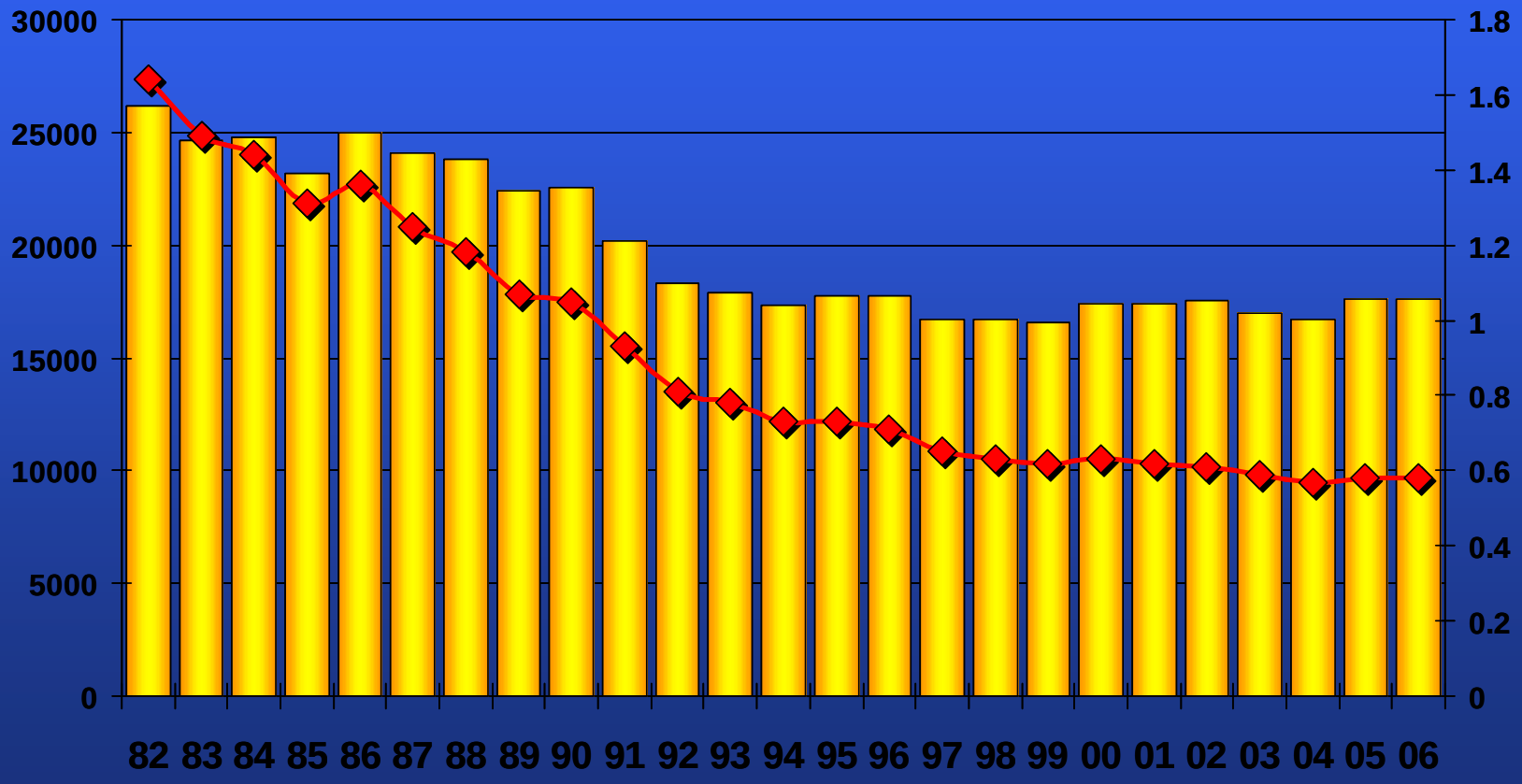
Conclusions

- **No measurable elevated risk was found in this study below BACs of 0.04**
- **Sample size too small to allow for meaningful calculations of relative risk for certain subgroups**
  - **Youth**
  - **Heavy drinkers**

The US Experience

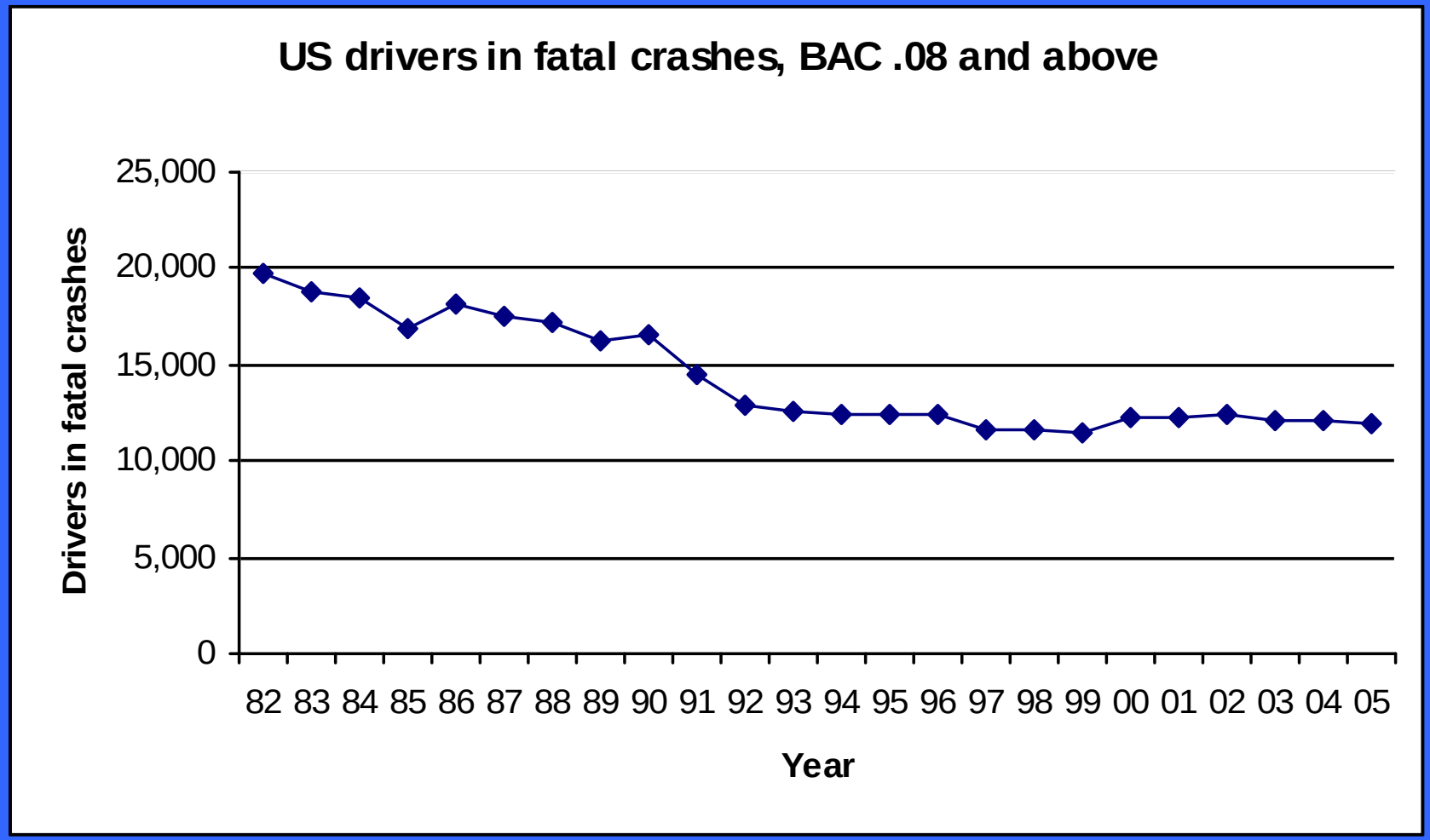
- **Trends in Alcohol-Related Crashes**
- **Who , When, Where**
- **Type of Crash**

Alcohol-Related Fatalities & Rates: 1982 – 2006

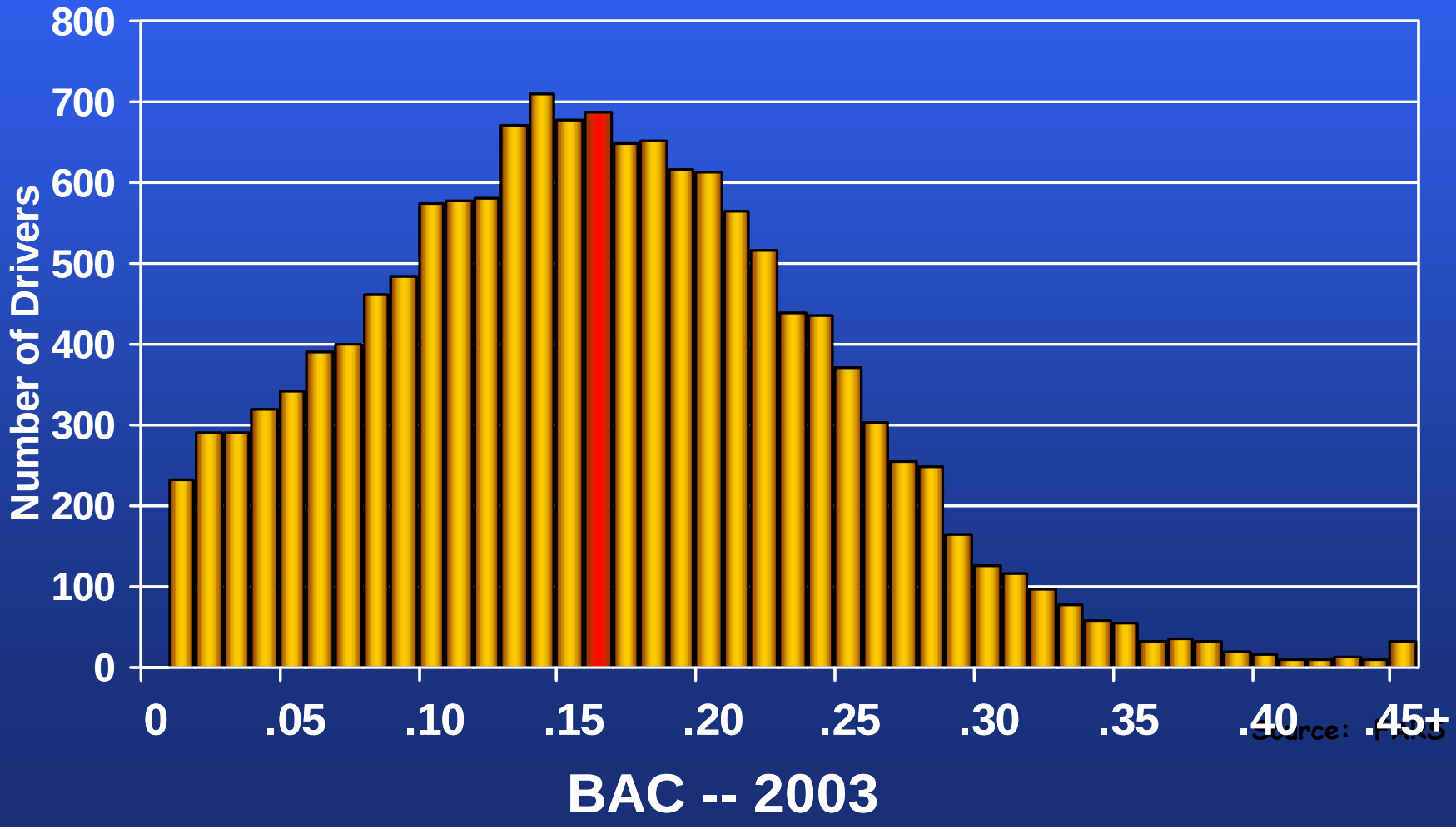


Source: FARS

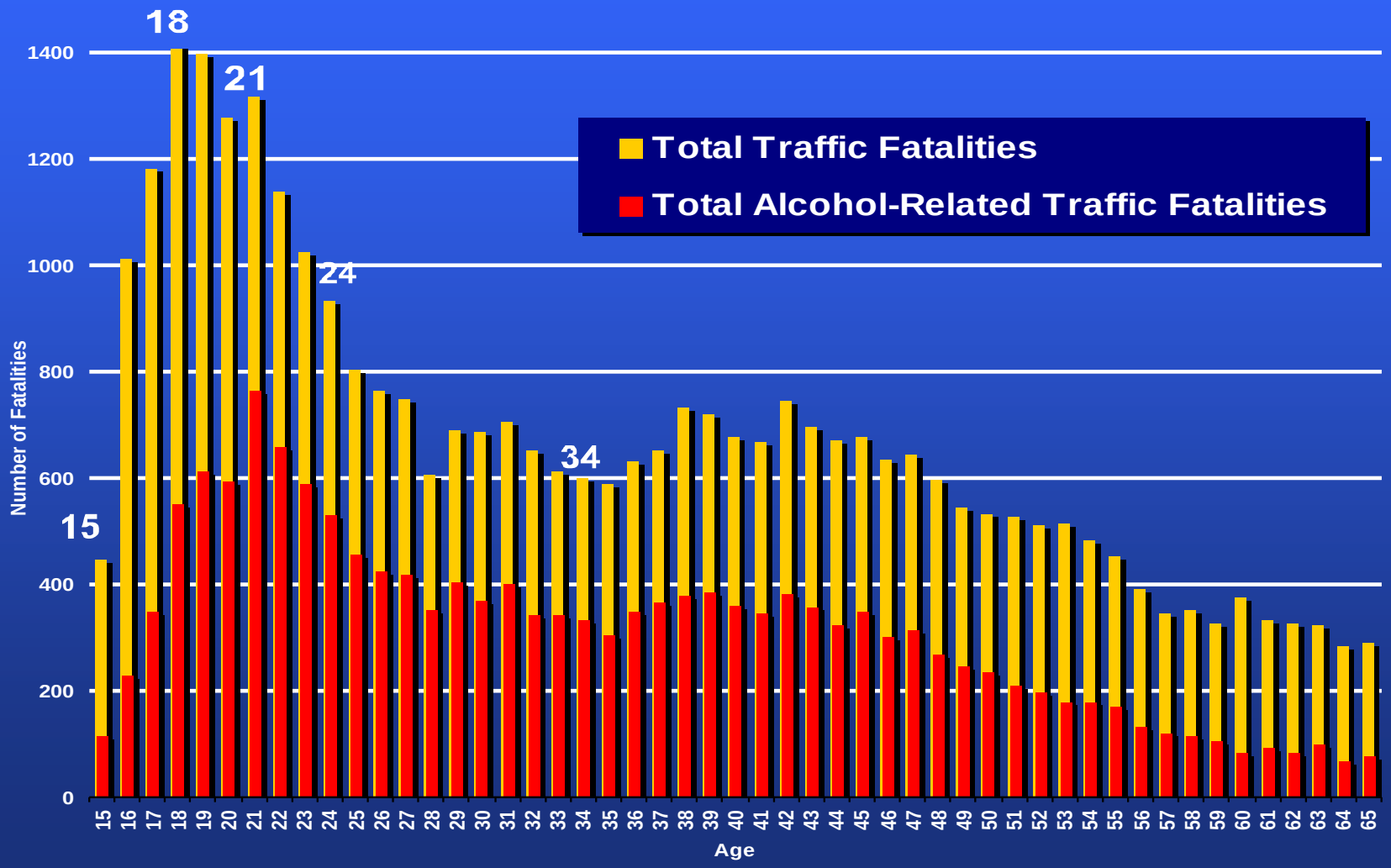
Trend in Number of Drivers in Fatal Crashes with BACs of >0.08 1982 -2005



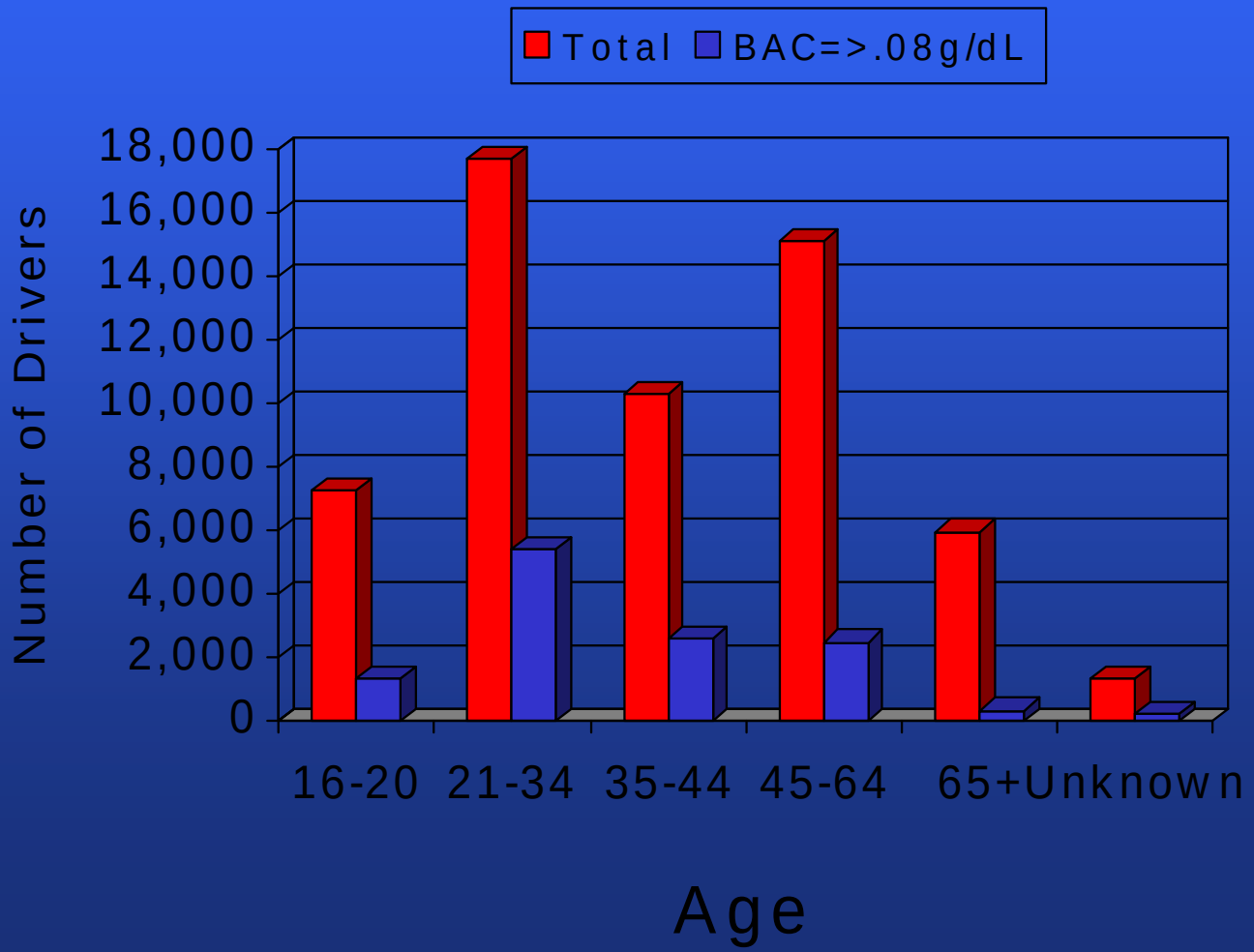
Drivers in Fatal Crashes with Positive BACs



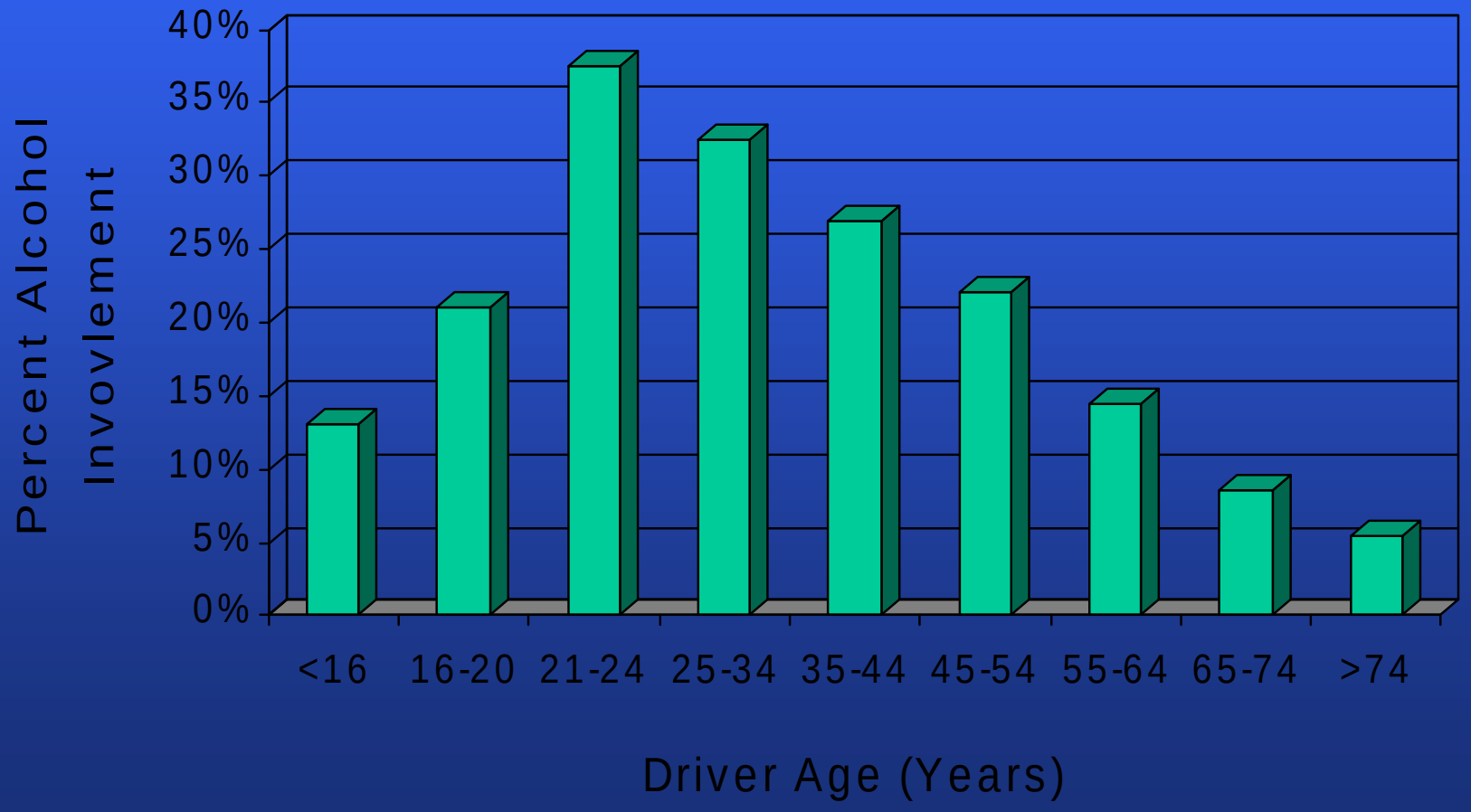
2002 Traffic Fatalities by Age Comparison



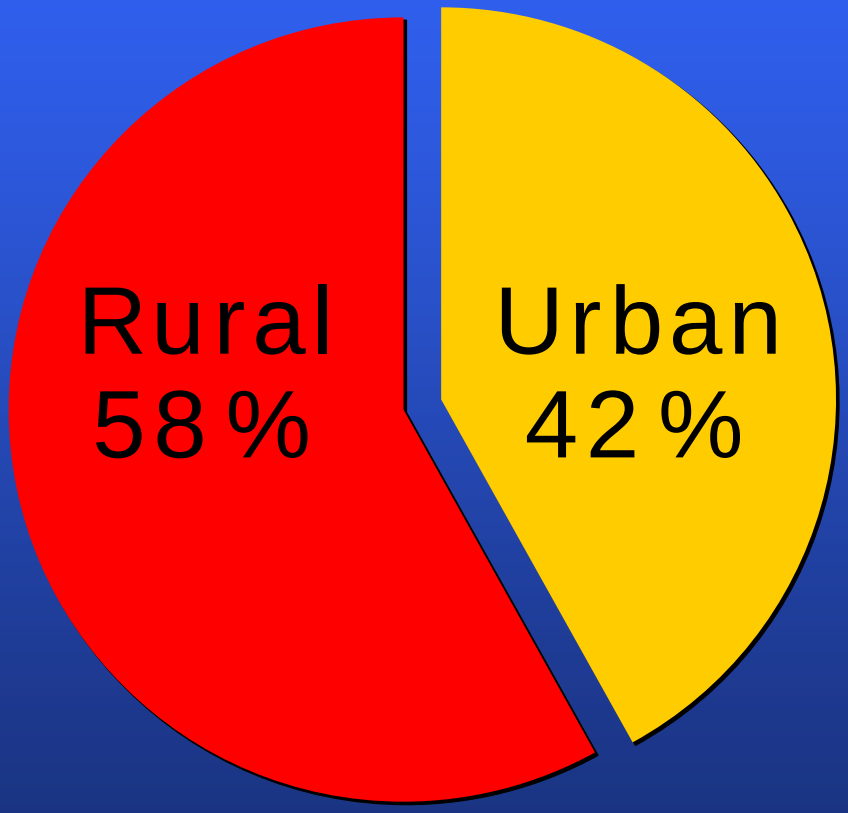
Drivers in Fatal and Alcohol-Related Crashes by Age



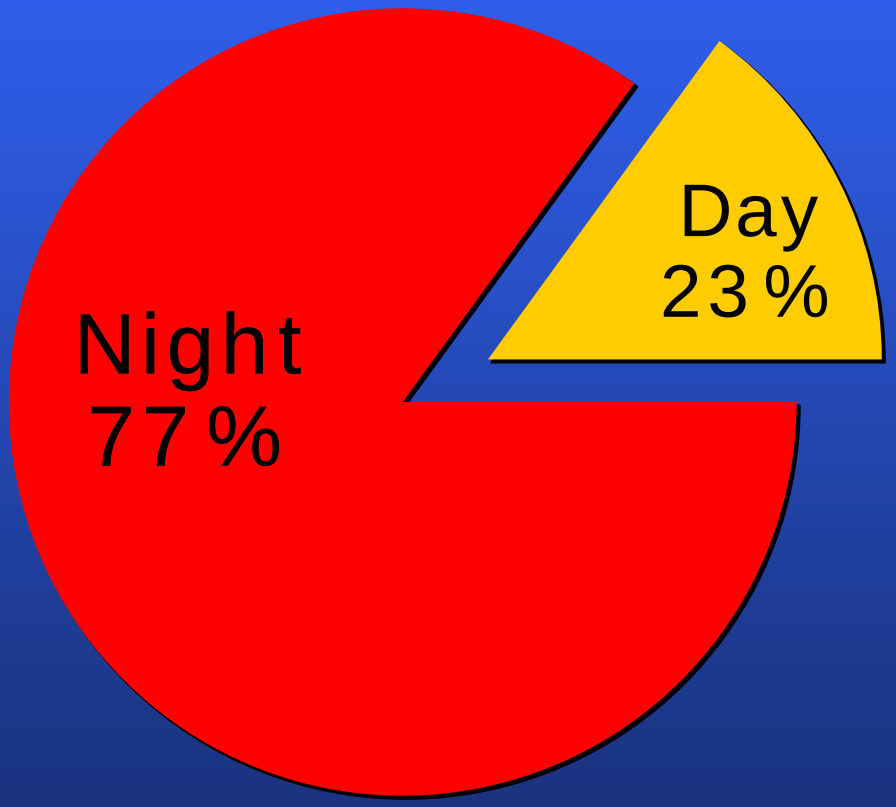
Percent Alcohol-Related for Fatal Crashes By Driver Age



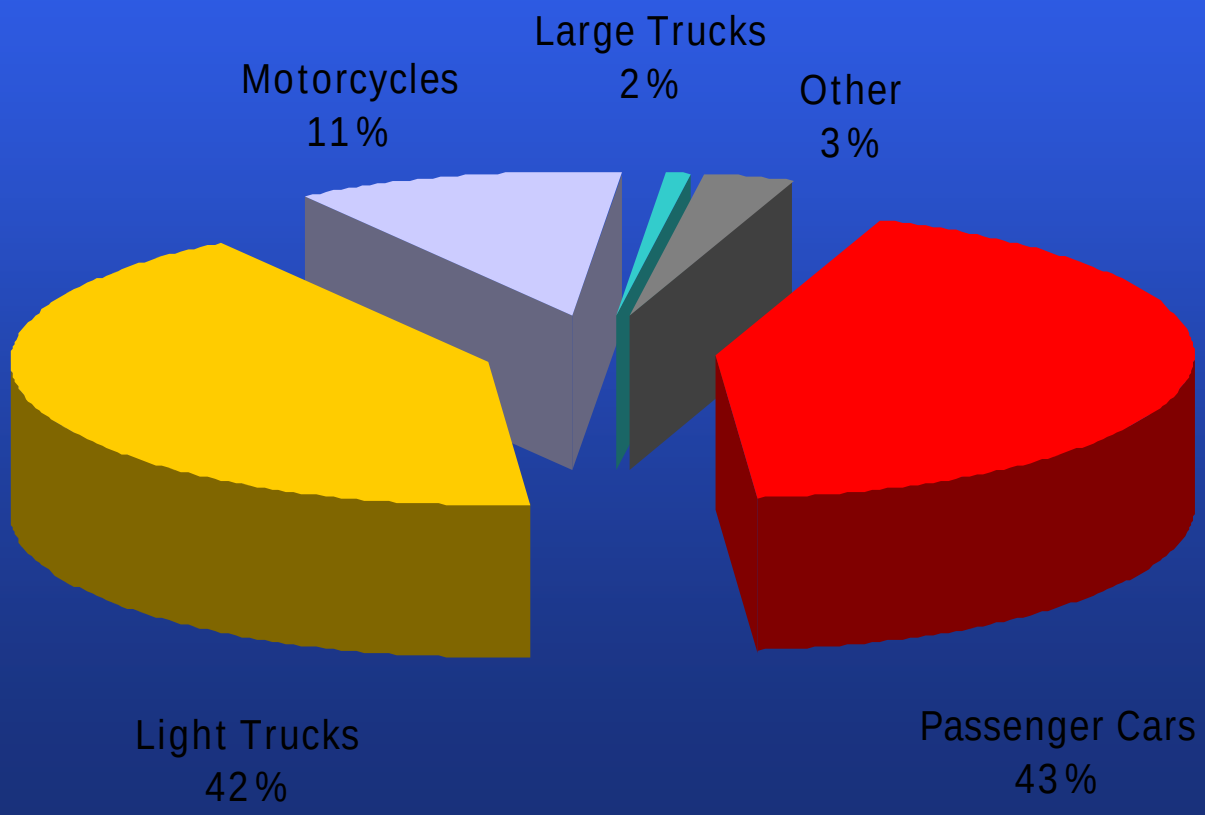
Alcohol-Related Fatalities by Location



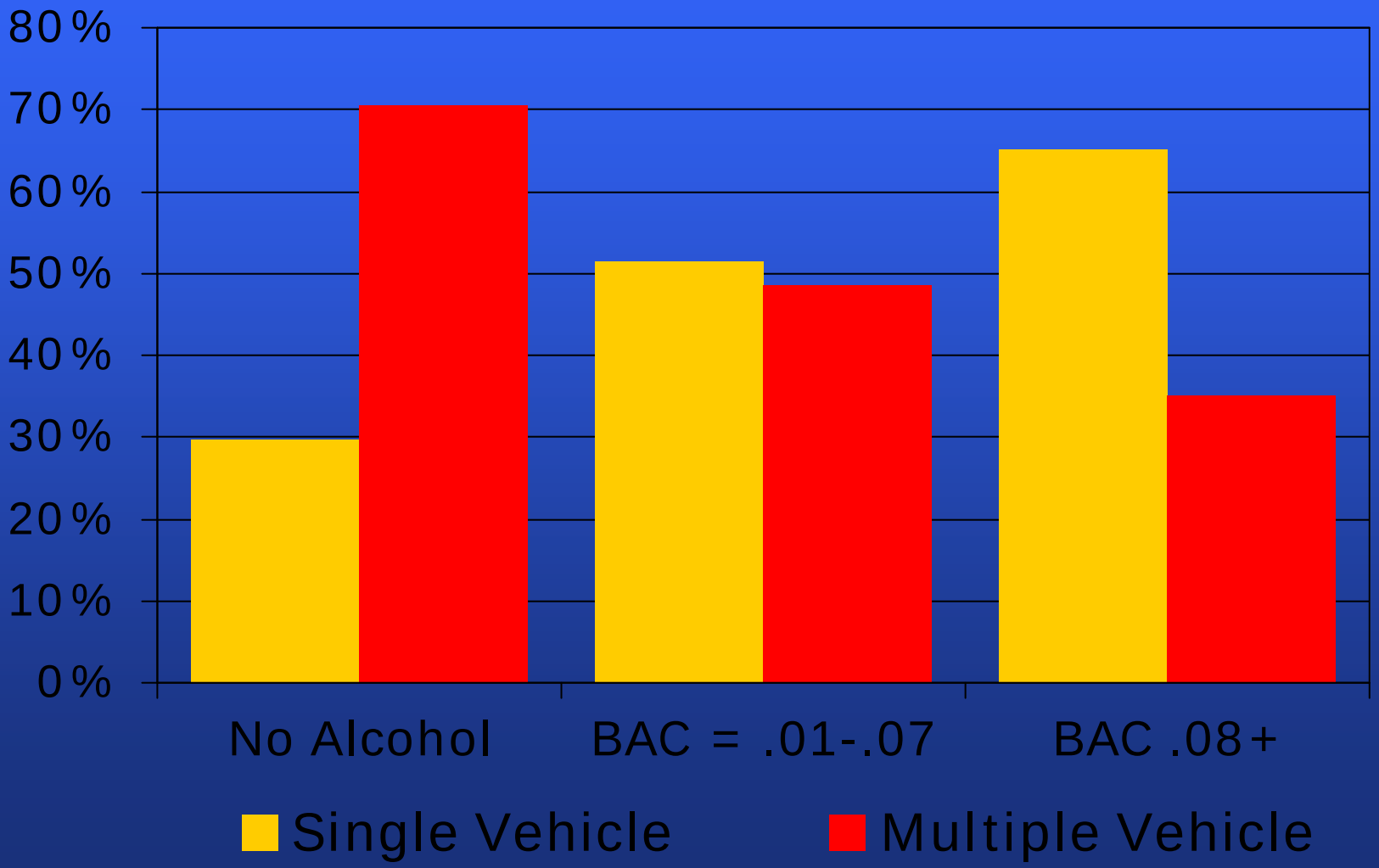
Alcohol Related Fatalities by the Time of the Day



Alcohol Related Fatalities by Vehicle Type - 2006

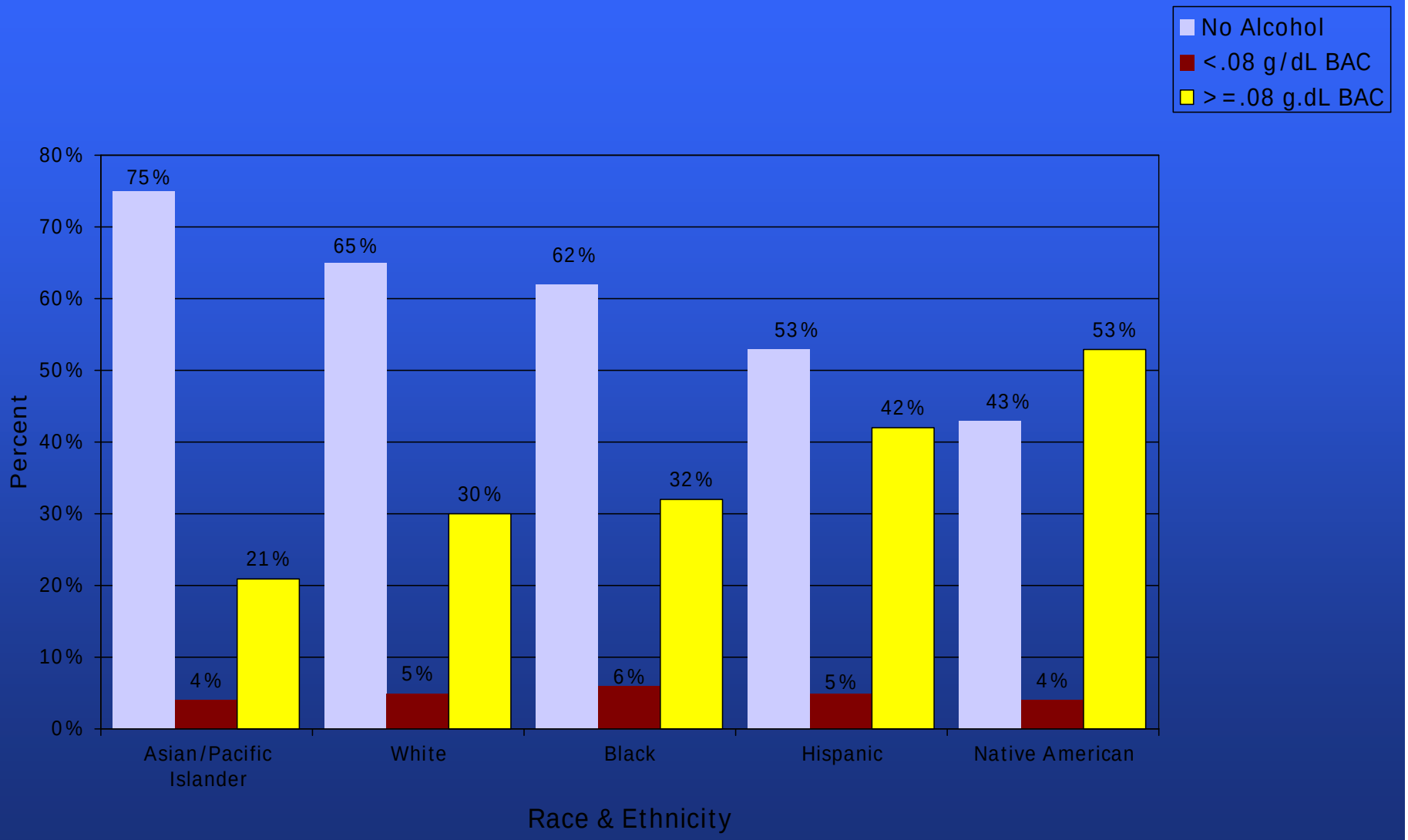


Crash Type By Driver BAC



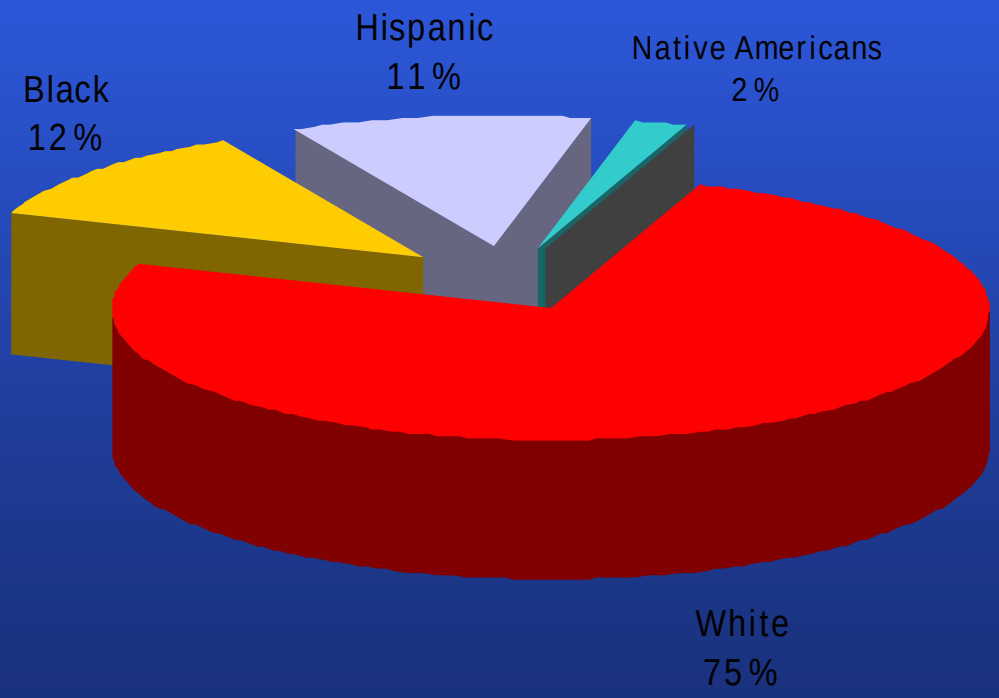
Source: 2006 FARS

Ethnicity By Driver BAC in Fatal Crashes

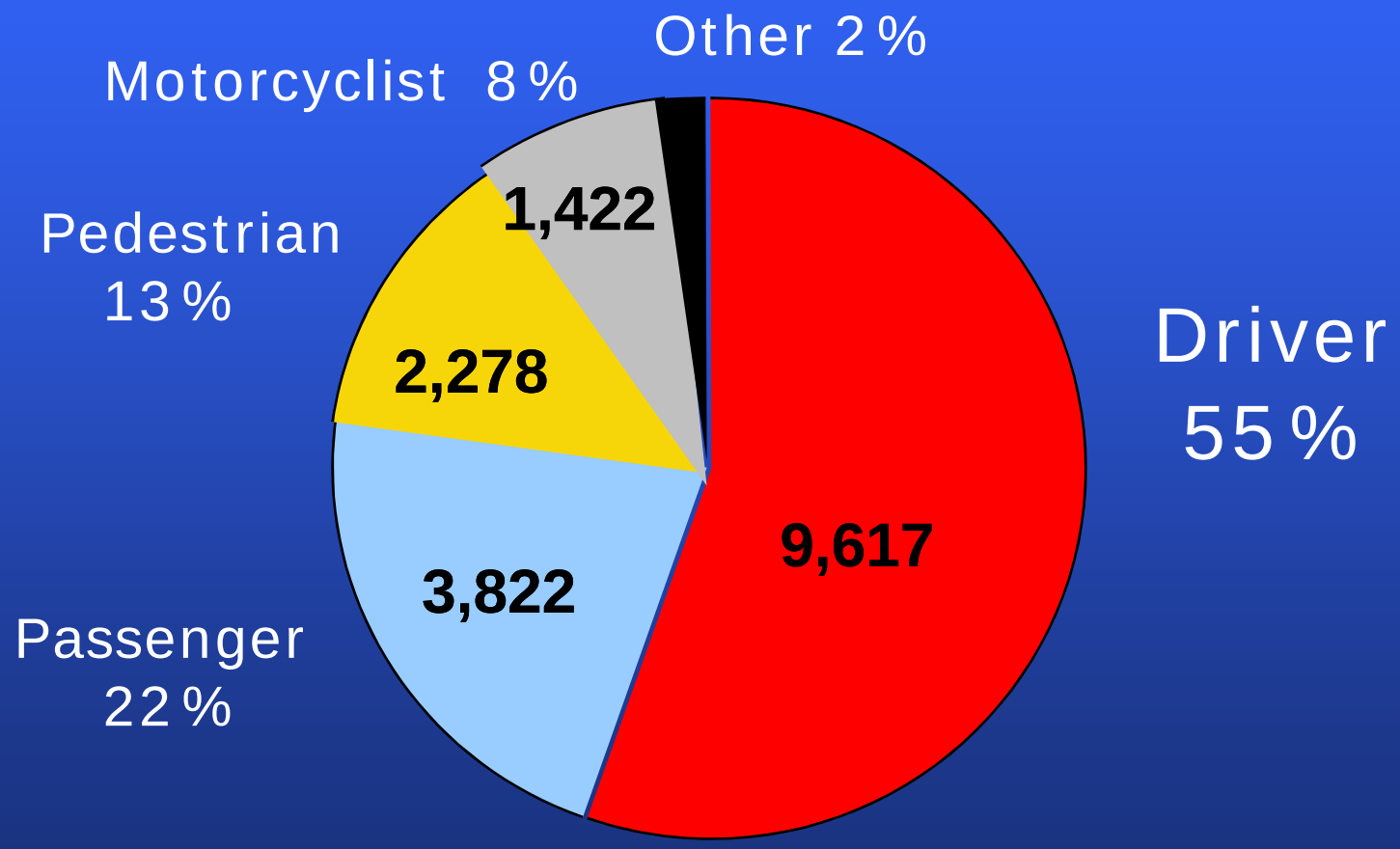


Source: 2002 FARS

Alcohol Related Fatalities by Ethnicity

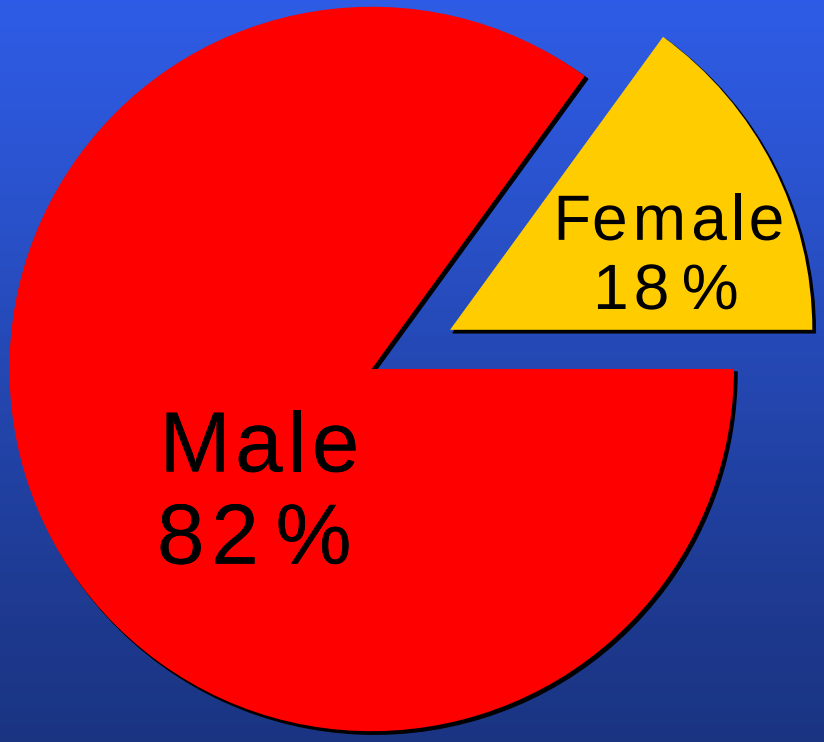


Fatalities in Alcohol Related Crashes by Role

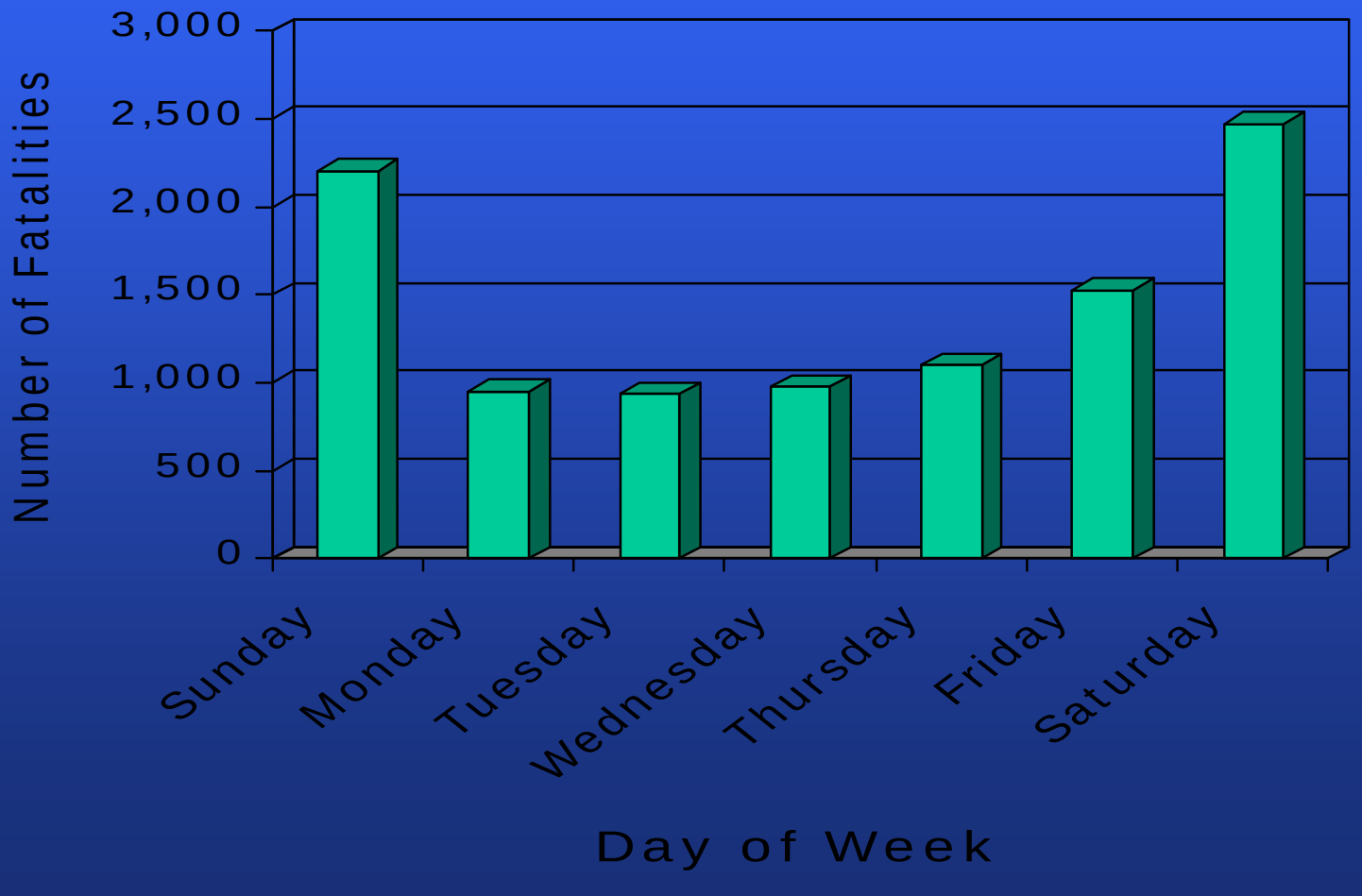


Source: 2002 Annual Report File

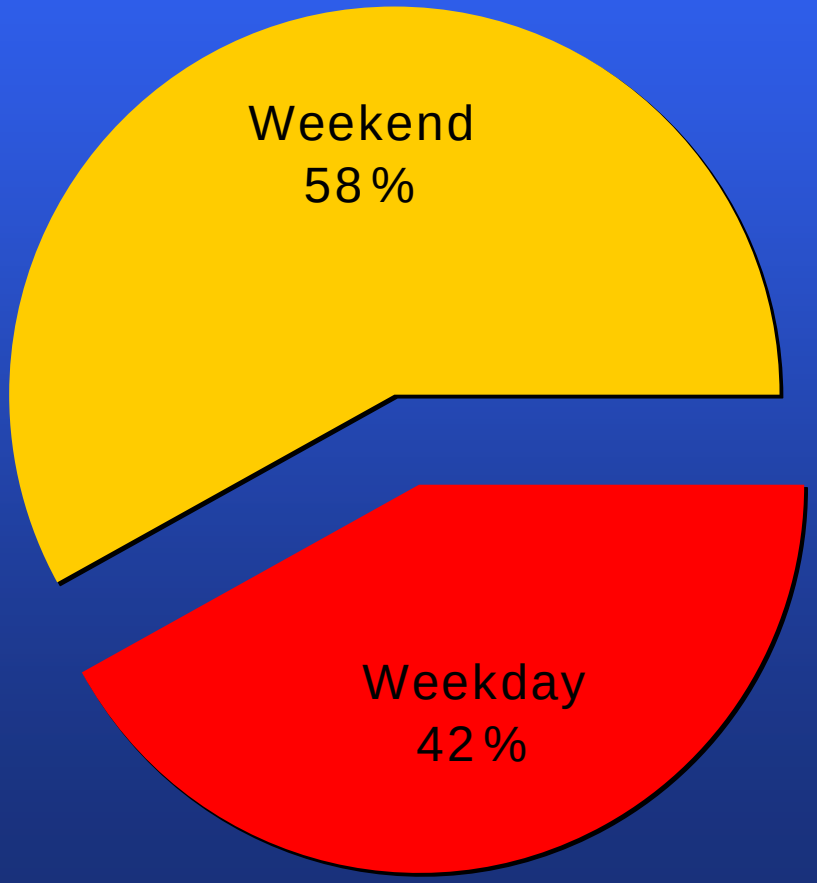
Drivers With BAC .08 and Above, by Gender - 2006



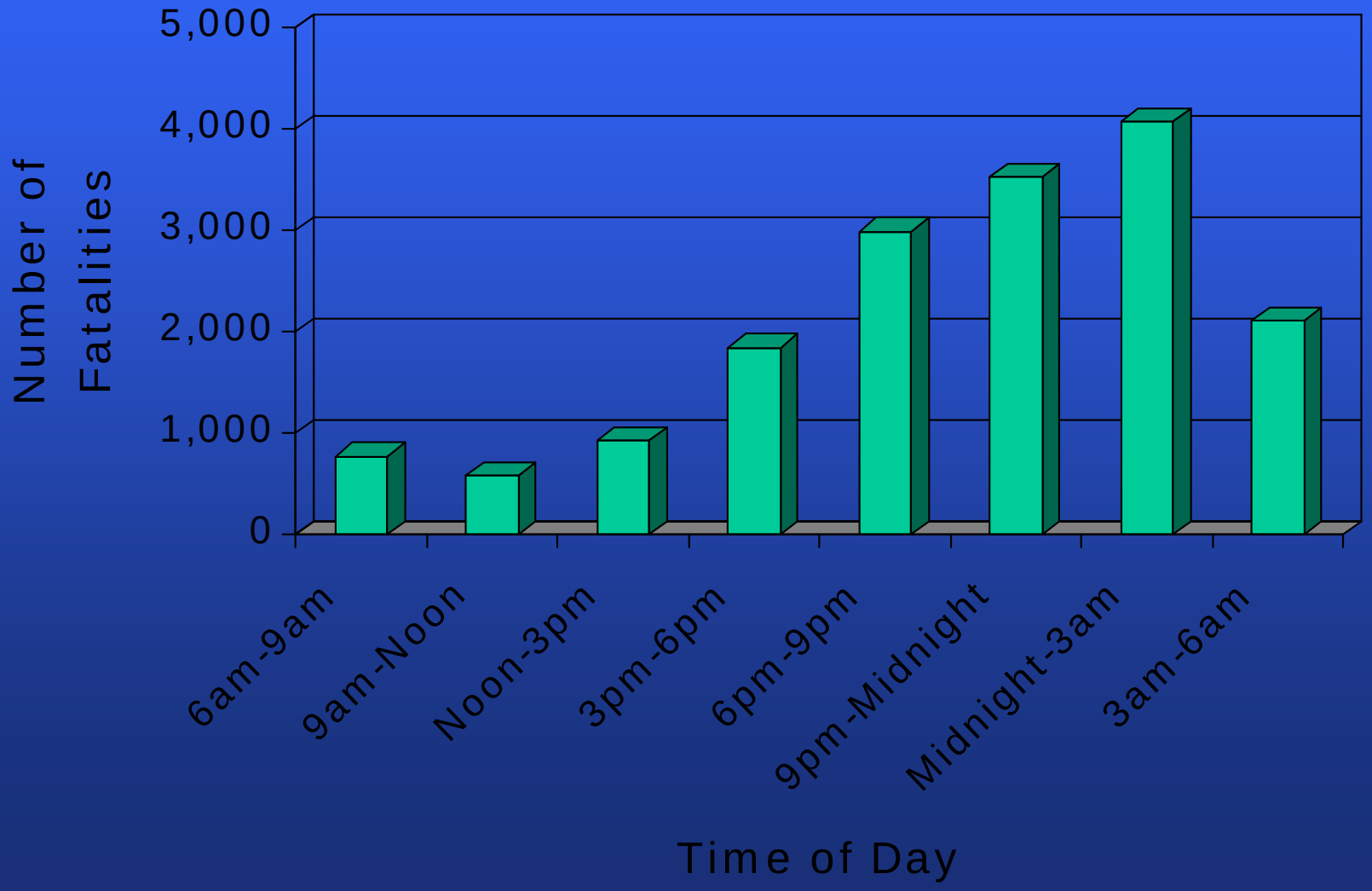
Alcohol-Related Fatalities By Day of Week



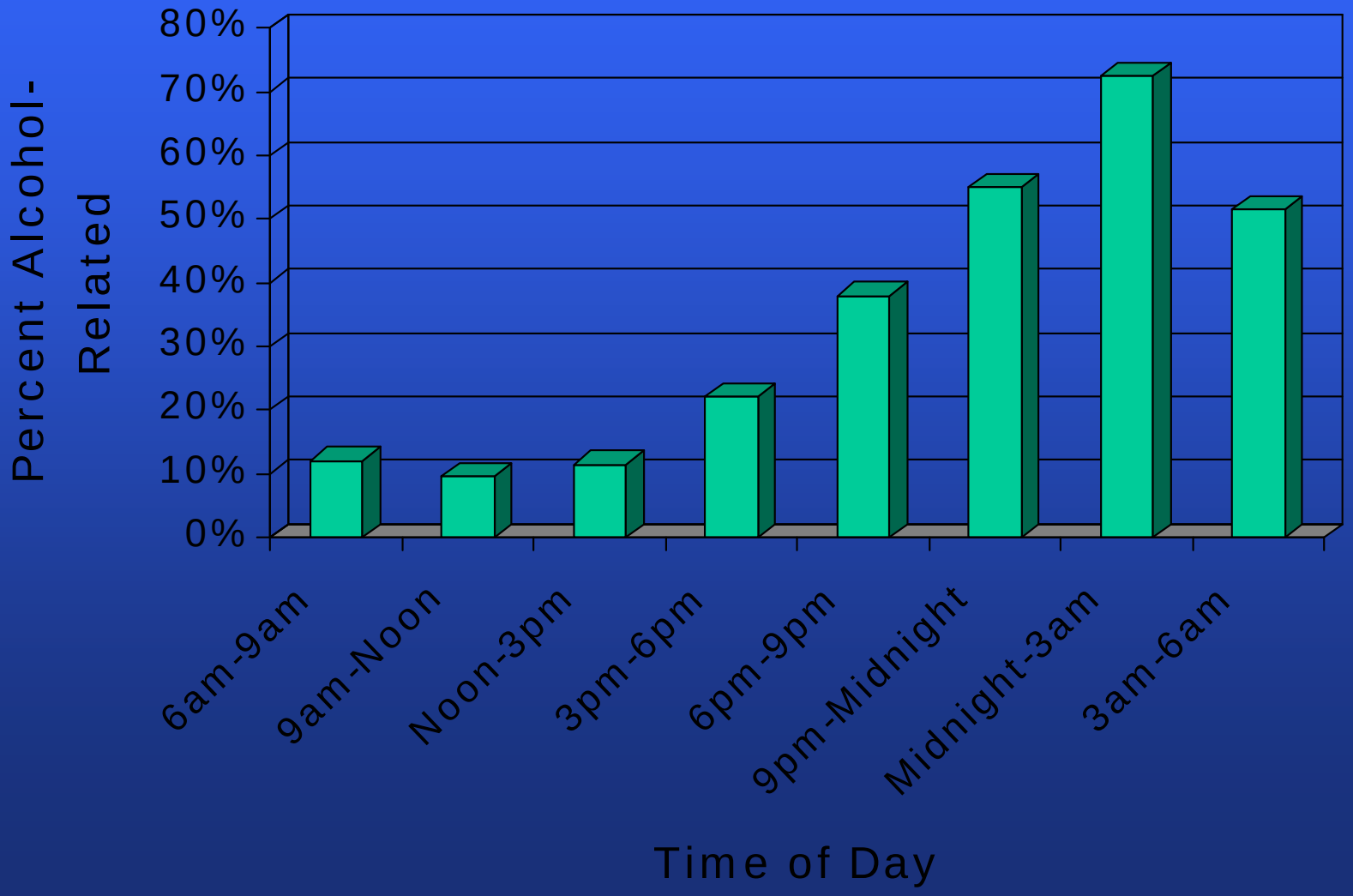
Alcohol-Related Fatalities By Weekday & Weekend - 2006



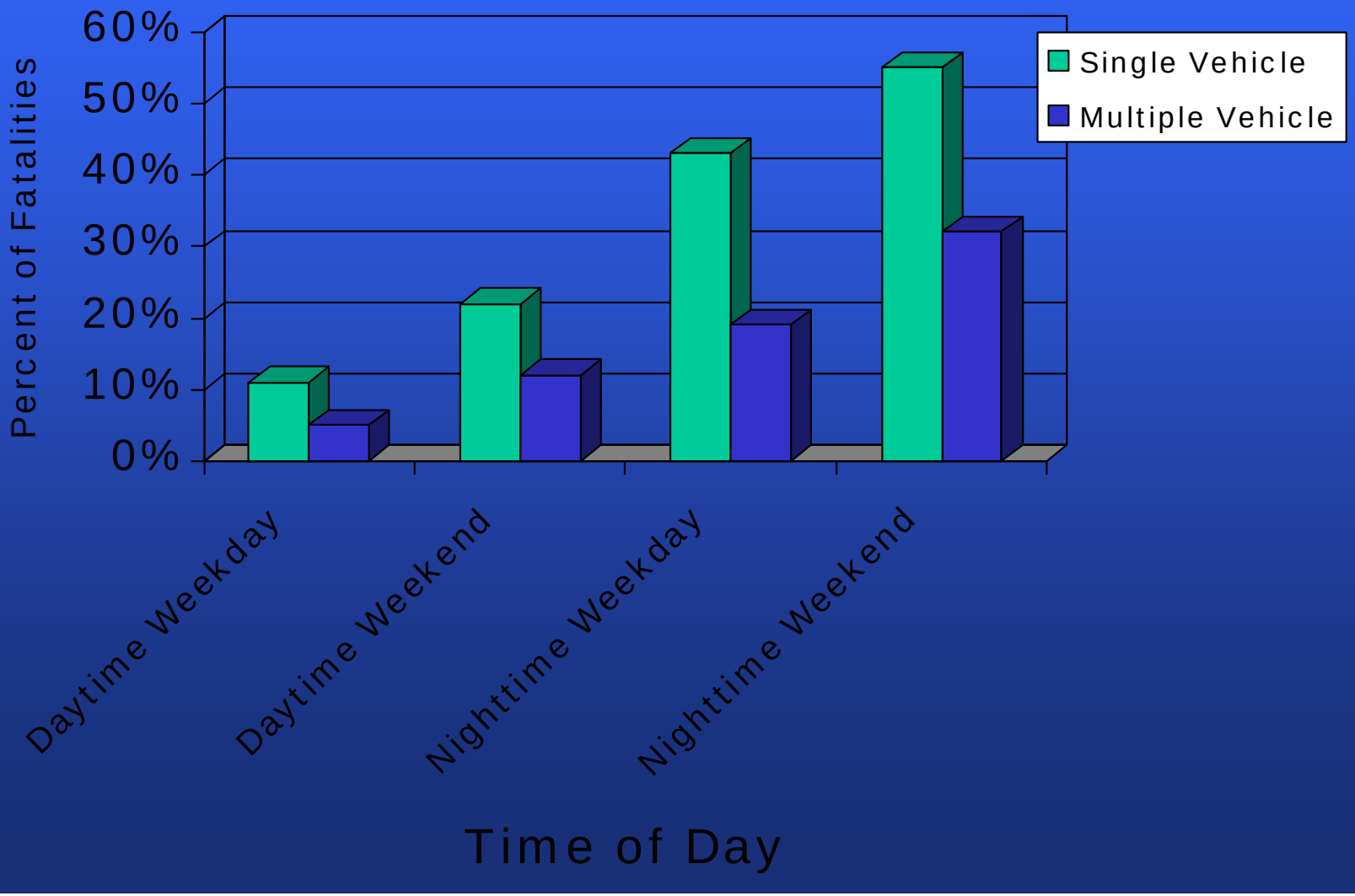
Alcohol-Related Fatalities By Time of Day



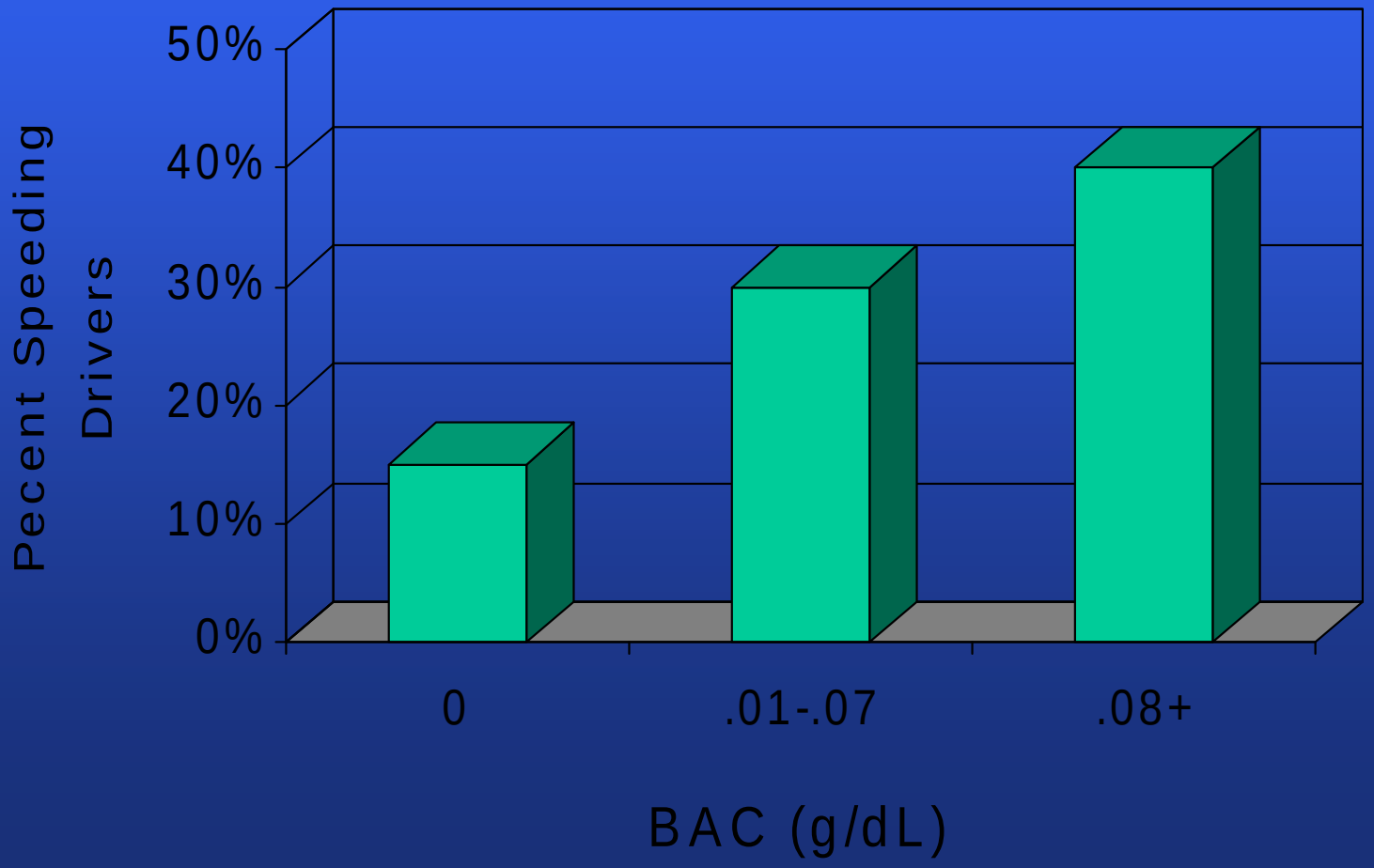
Percent Alcohol-Related Fatalities By Time of Day



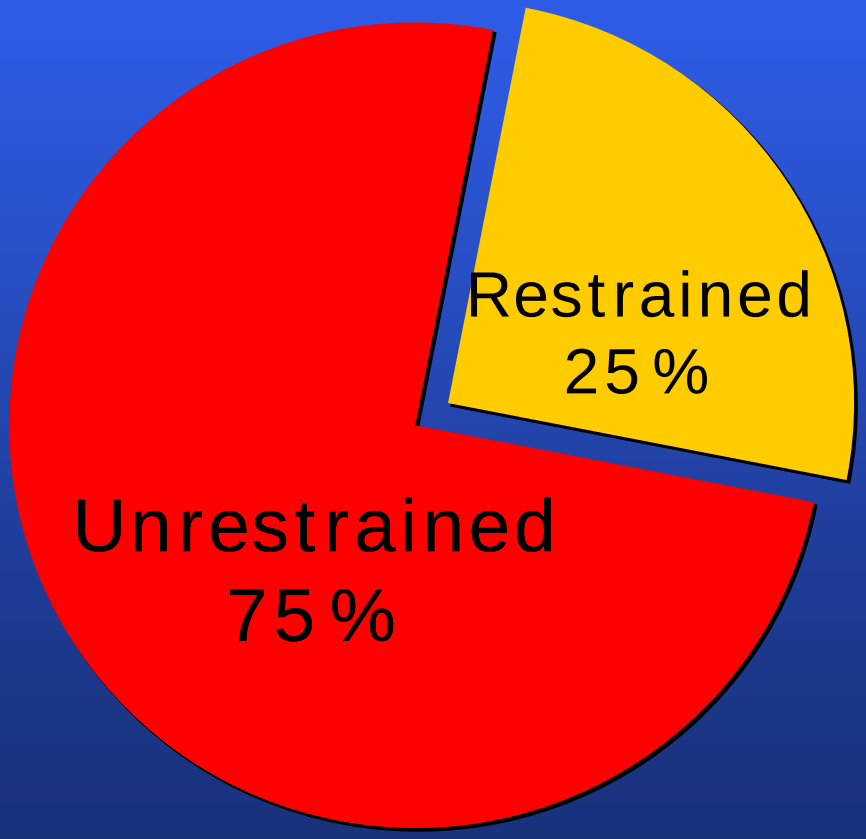
Percent A/R Fatalities By Time of Day, Day of Week and Crash Type



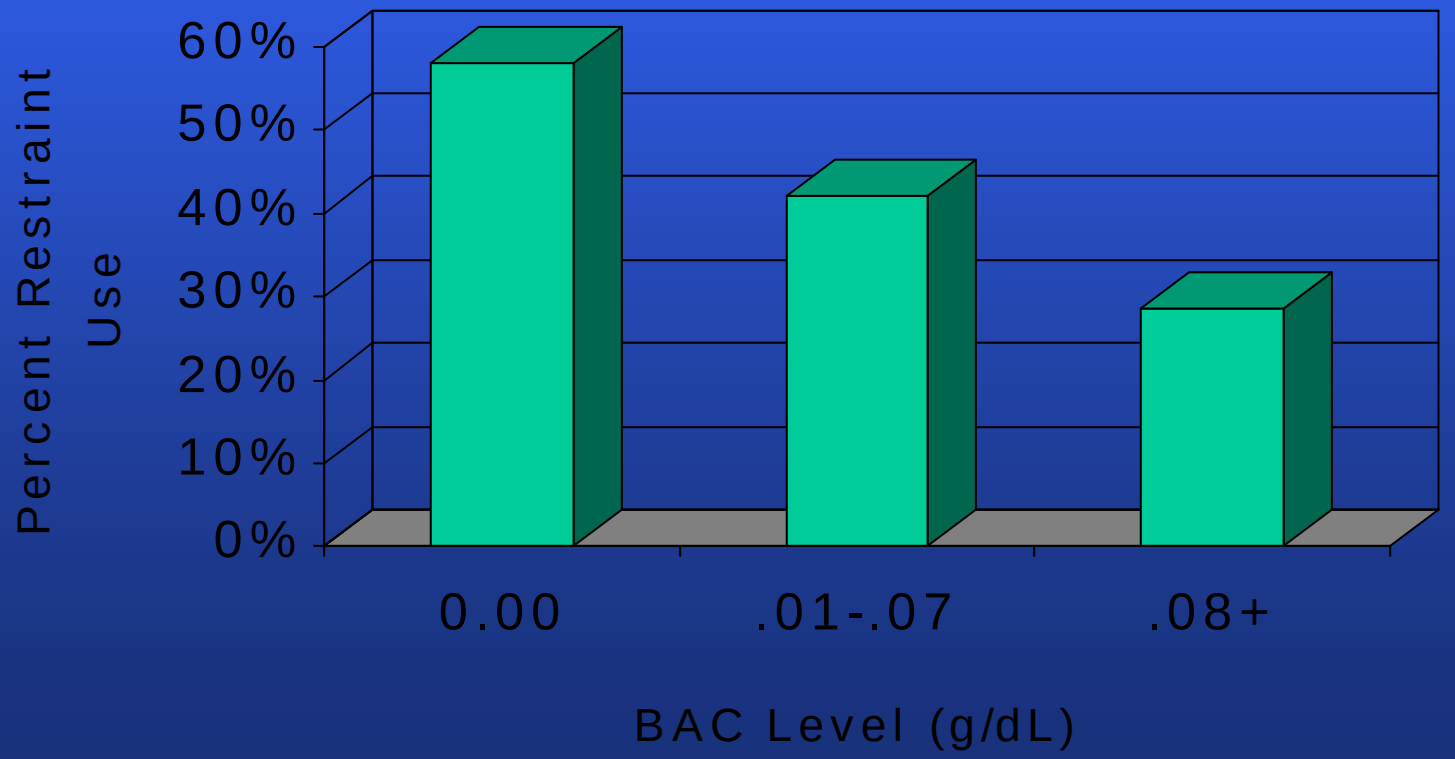
Percentage of Drivers in Fatal Crashes That Were Speeding By BAC Level



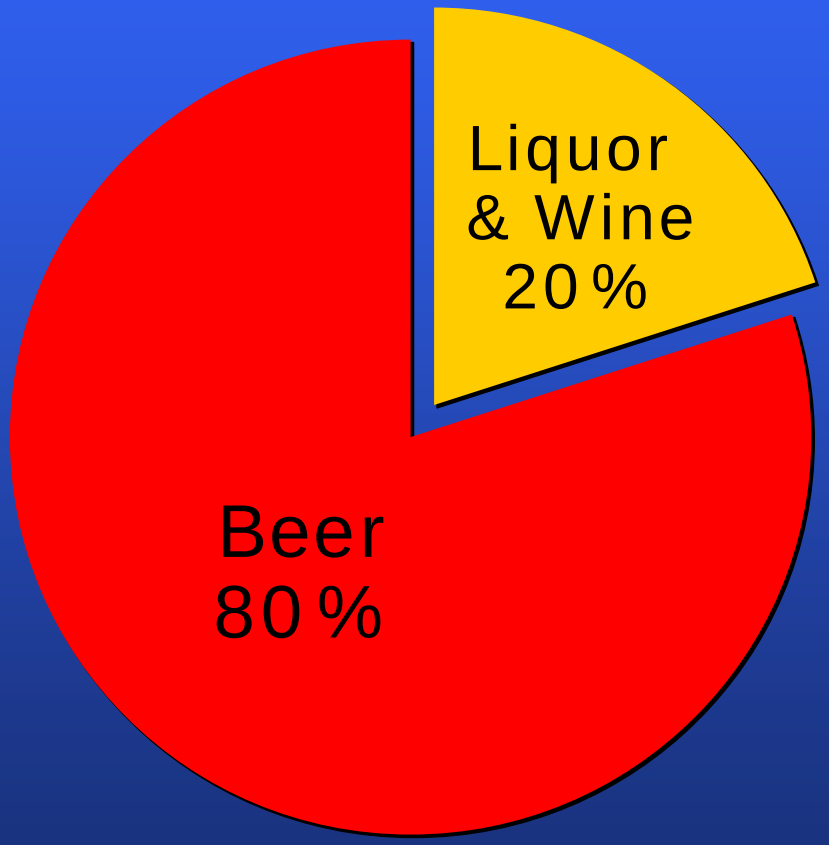
Restraint Use Among Fatally Injured Passenger Vehicle Drivers in Alcohol-Related Crashes



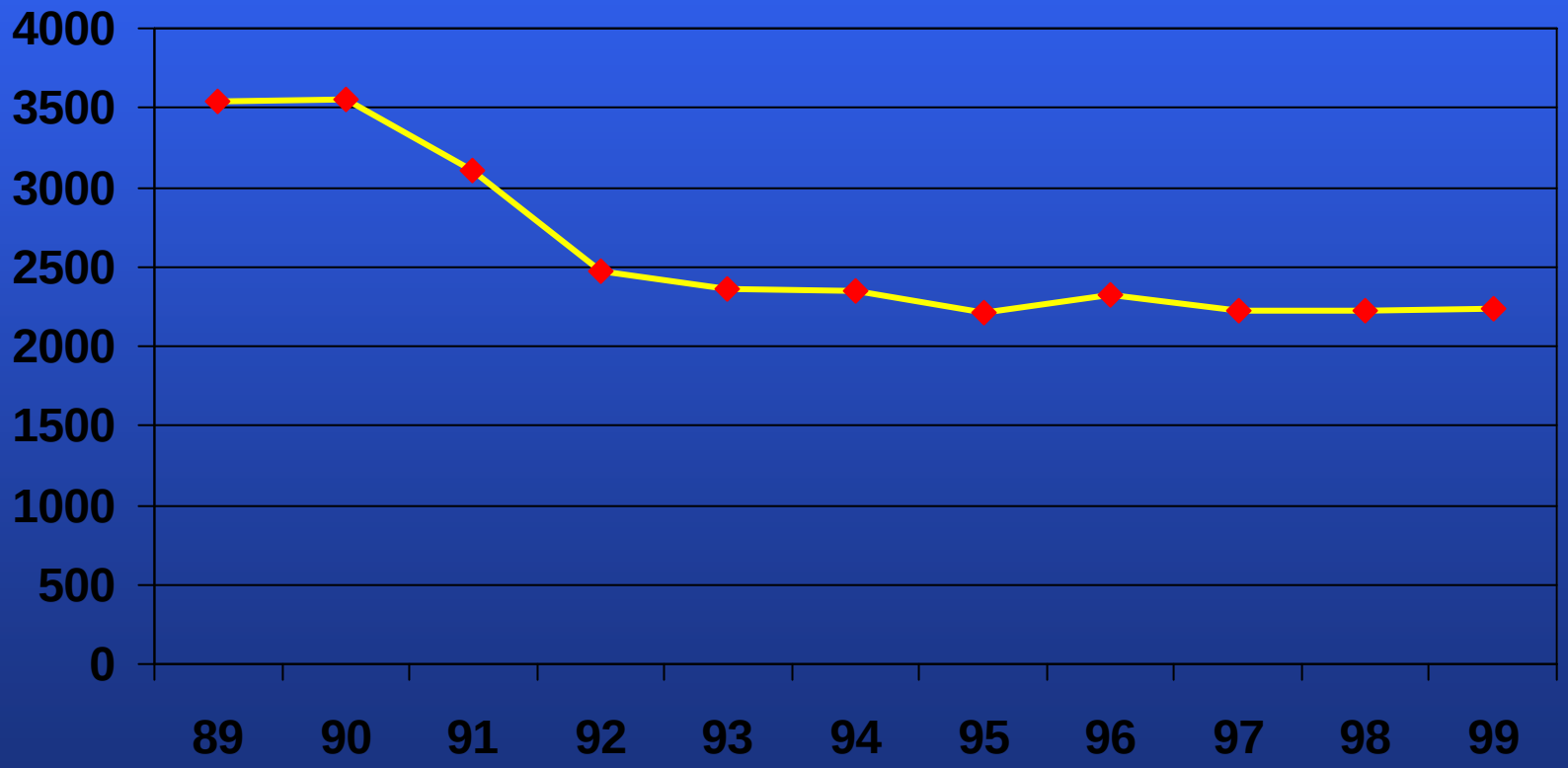
Percent Restraint Use of Fatally Injured Drivers By BAC Level



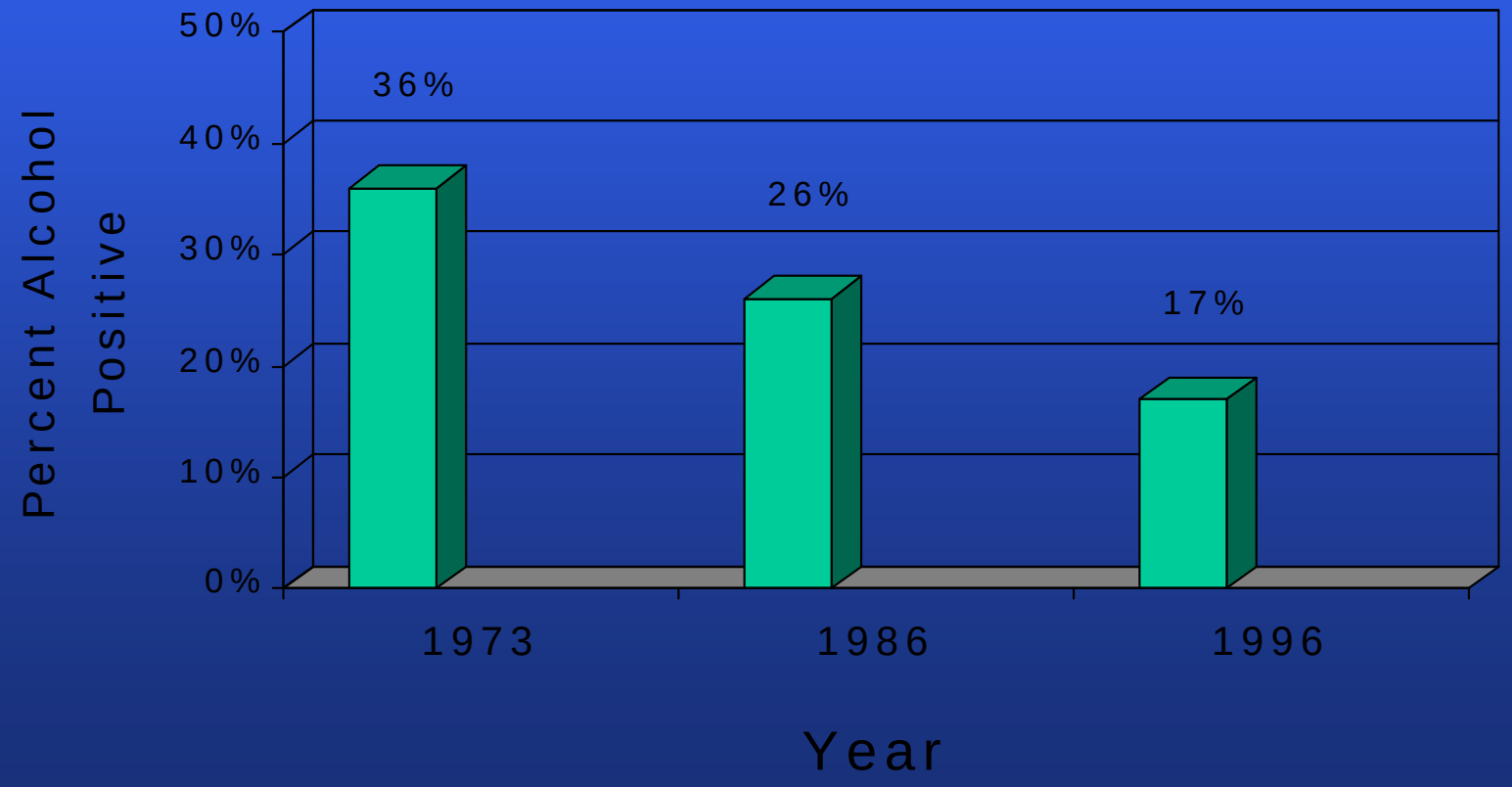
Alcohol Beverage of Choice for Impaired Drivers



Youth A/R Fatalities 1989-1999

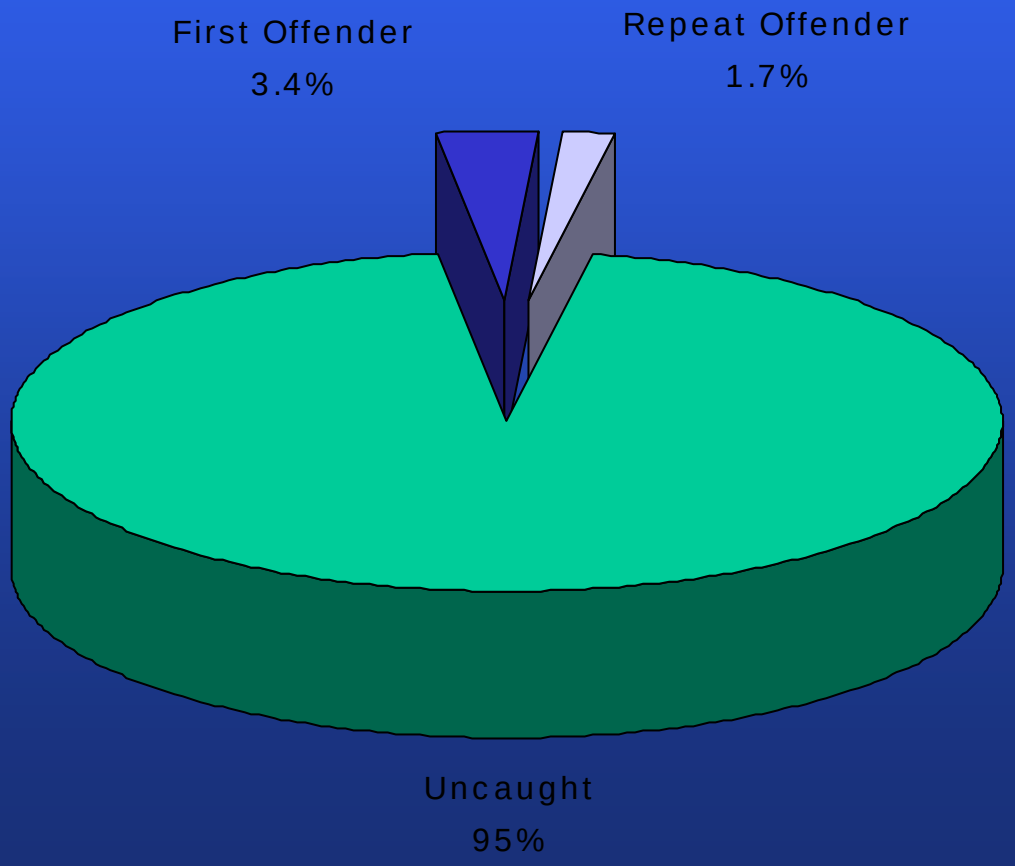


Alcohol Positive Drivers on the Road
Weekend Evenings
National Roadside Survey



Estimated % of DWI's Caught

(One Year Period)



Programs To Reduce Alcohol-Related Crashes

Major Approaches:

- **Prevention**
- **Intervention**
- **Deterrence**
  - **Enforcement**
  - **Laws and Sanctions**
- **Rehabilitation/Treatment**
- **Technology**

Prevention

- **Mass Media PI&E**
- **School Based Alcohol Education**
- **Environmental Approaches**

Mass Media – PI&E

- **Potential for population-wide impact**
- **Public service announcements**
- **Contributes to impact of other programs**
- **Evidence suggests little effect as a stand alone program, but enhances other programs by raising awareness**

Alcohol Education

- **Major obstacles to population-wide impact**
- **Normative, peer, resistance training**
- **Evidence of self-reported impact in classroom and on campus**
- **No evidence of crash reduction impact**

Environmental Approaches

- **Strong potential for population-wide effect**
- **Examples:**
  - **Pricing**
  - **Taxation**
  - **Reduction in Advertising**
  - **Host Liability Laws**
  - **Responsible Beverage Service**
    - Server Training
    - Liquor Law Enforcement – Stings, Decoys, Cops in Shops
    - Reduction in “Happy Hours”

Environmental Approaches

- **Some programs have shown small reductions in crashes**
- **Consistent findings that advertising and availability can affect consumption**
- **Very little evidence of crash reductions**

Intervention

- **Designated Driver Programs**
- **Ride Service Programs**
- **Personal Intervention**
- **Screening and Brief Intervention at Hospital Settings**

Designated Driver Programs

- **Two types of programs:**
  - **Population based campaigns**
  - **Community based at drinking establishments**
- **Limited implementation**
- **Abstinence versus least number of drinks**
- **No Evidence for reduced A/R crashes**
  - **Self-reported use of designated drivers**
  - **Self-reported drinking and driving**

Ride Service Programs

- **Community based programs**
  - **Free ride home**
    - Shared vans
    - Taxi
    - Tow trucks
    - “Ask Jeeves”
- **No evidence for crash reduction**

Personal Intervention

- **Mass Media Campaigns**
  - **“Friends Don’t Let Friends Drive Drunk”**
  - **Take the Keys**
- **Social Marketing programs**
- **No Evidence for Crash Reductions**

Brief Screening and Intervention

- **Screening for alcohol abuse**
- **Hospital emergency rooms**
- **Short set of questions**
- **Specific information about where to receive counseling**

Deterrence

- **Law Enforcement**
- **Laws**
- **Sanctions**

Deterrence Programs

- **General Deterrence Theory**
- **Examples of Successful Programs**
  - **Binghamton, NY**
  - **Experimental Evaluation of Sobriety Checkpoint Programs**
  - **Checkpoint Tennessee**

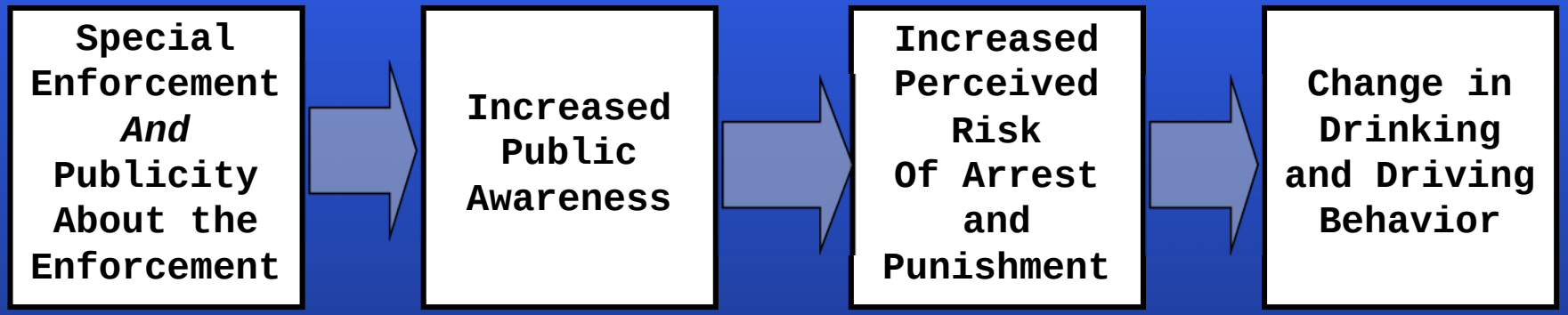
General Deterrence Theory

- **Classic Deterrence Theory**
  - **Human behavior is rational**
  - **Deviant behavior can be deterred by the prospect of punishment if it is:**
    - Certain
    - Swift
    - Severe
  - **Policing and punishment serve:**
    - Retribution and incapacitation
    - Discouraging would-be offenders from engaging in prohibited acts

Types of Deterrence

- **Specific Deterrence**
  - Prevention of repeat offenses
    - Incarceration - Fines
    - License Suspension
    - Vehicle Sanctions
- **General Deterrence**
  - Prevention of prohibited behavior
    - Increase perceived risk of detection, arrest, and severe punishment

General Deterrence Model Applied to Impaired Driving



Sobriety Checkpoint Program – Binghamton, NY

- **Designed to reduce alcohol-impaired driving and increase seat belt use**
- **Publicized Use of Sobriety Checkpoints and Passive Alcohol Sensors**
- **Two year program**
  - **Fall 1988 – Fall 1990**

Binghamton, NY

- **Small city (population 55,860)**
- **Distinct media market**
  - Three TV stations
  - Several radio stations
  - Daily newspaper
- **Illegal Per Se .10 BAC law**
- **Primary Seat Belt law**

Binghamton, NY - Checkpoints

- **Conducted during late night hours**
- **Thursday, Friday, and Saturday nights:**
  - **9:30 p.m. – 11:45 p.m.**

    or
  - **12:30 p.m. - 2:45 a.m.**
- **Passive alcohol sensors used to screen drivers**

Binghamton, NY - Checkpoints

- **72 Checkpoints conducted in six sets:**
  - **Baseline 1988 (Oct – Nov)**
  - **Fall 1988 (Nov – Dec)**
  - **Spring 1989 (Apr – Jun)**
  - **Fall 1989 (Oct – Nov)**
  - **Spring 1990 (Apr – Jul)**
  - **Fall 1990 (Oct – Nov)**

Binghamton, NY
Publicity

- **Earned media**
  - **Press conferences**
  - **Television, radio, and newspaper coverage**
- **Public service announcements**
  - **Mayor, police chief, passive alcohol sensor**
  - **Posters**
- **Paid media**
  - **Local network television and cable channels**

Binghamton, NY
Evaluation Approach

- **Impaired driving**
  - **Change in proportion of drinking drivers baseline vs 24 month program period**
- **Crash rates**
  - **Changes in injury producing and late-night crashes**
- **Public awareness**
  - **Telephone surveys before and during program**

Binghamton, NY Changes in Alcohol- Impaired Driving

- **Measured Driver BAC**
  - **Arrested drivers**
    - Evidential breath tests
  - **All other drivers**
    - Researcher requested voluntary breath test
    - Consent 93%

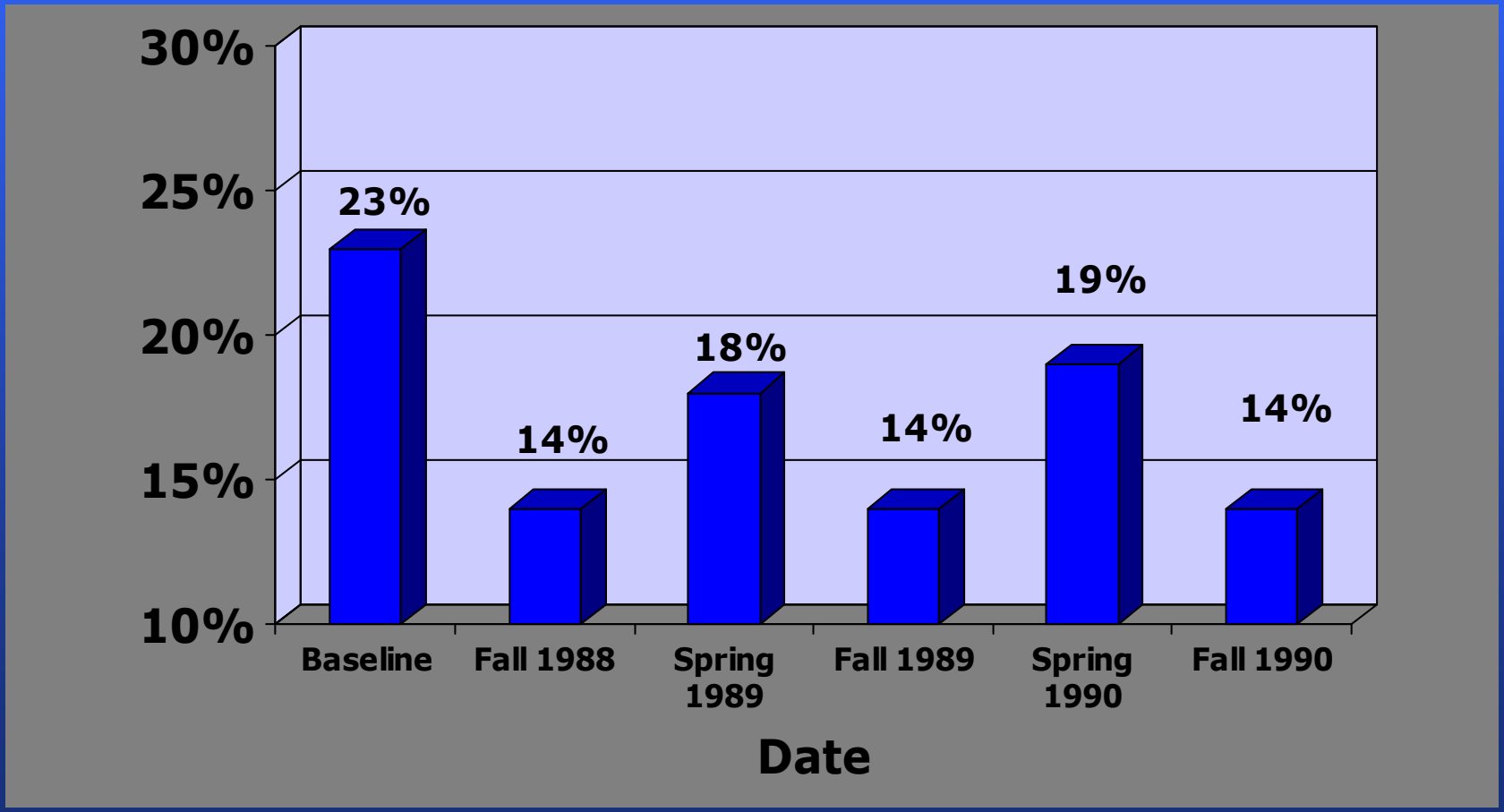
Binghamton, NY
Crash Rates

- **Examined crash trends 1986 through 1990**
- **2 years before compared to 2 program years**
  - **Monthly crashes**
    - Injury crashes
    - Late night crashes

Binghamton, NY
Results: Impaired Driving

- **The percentage of drinking drivers declined 39% from Fall 1988 to Fall 1990**
- **Greatest effects on drivers with BAC's < .10**
- **No difference**
  - **Gender, Age, Trip Length**

Binghamton, NY
Percentage of Drinking Drivers
(BAC > .01)



Binghamton, NY Awareness

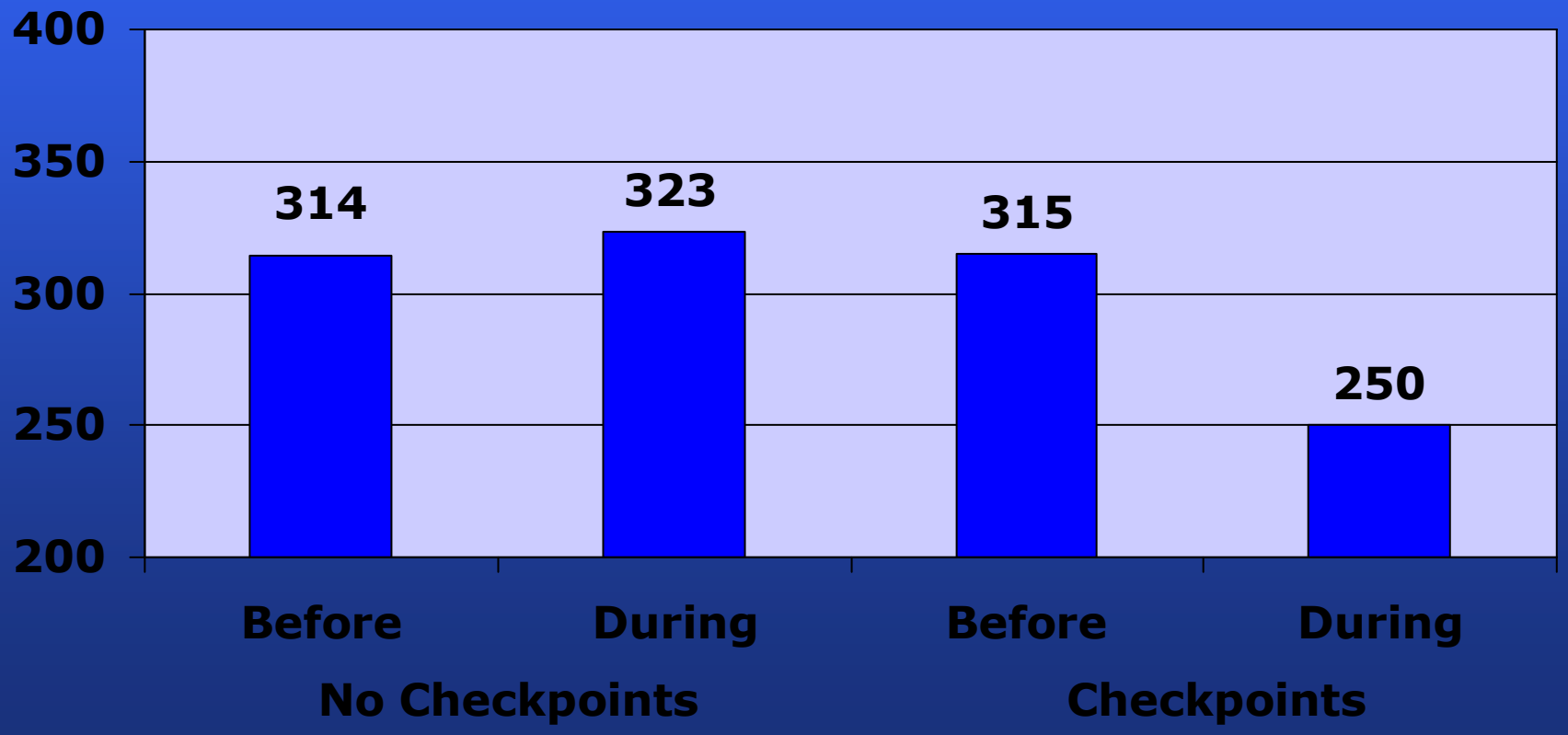
- **Perceptions of changes in the enforcement of impaired driving increased**
  - **Baseline – 49%**
  - **Program 1 – 74%**
  - **Program 2 – 59%**
- **Perceptions of risk of arrest increased**

Binghamton, NY
Crash Trends

- **Two years before program compared to program years**

- **Months with no checkpoints compared to months with checkpoints**
  - **No Checkpoints**
    - Injury crashes up 7%
    - Late night crashes up 3%
  - **With Checkpoints**
    - Injury crashes down 16%
    - Late night crashes down 21%

Binghamton, NY
Number of Late-Night Crashes



Binghamton, NY
Crash Trends

- **Trend analysis (using all crashes as a comparison series) showed a statistically significant decrease in:**
  - **Injury crashes (24%)**
  - **Late-night crashes (23%)**

Experimental Evaluation of Sobriety Checkpoint Programs

- **Study conducted to evaluate the effectiveness of sobriety checkpoints and “roving patrols” in reducing alcohol-related crashes**
- **Conducted in six communities in CA**
- **9 month program (August 1992 – April 1993)**

CA Sobriety Checkpoint Program Enforcement Programs

- **Sobriety Checkpoints:**
  - **Staffing levels**
    - Low (3 – 5 officers)
    - High (6 –12 officers)
  - **Mobility**
    - One location (4 hours, 10:30 – 2:30)
    - Three locations (1 hour at each, 10:30 – 2:30)

CA Sobriety Checkpoint Program Checkpoint Program Variations

- **Four communities conducted 18 sobriety checkpoints (Modesto, Santa Rosa, Ventura, Visalia):**
  - **Twice a month for 9 months**
    - High staffing – Low mobility
    - High staffing – High mobility
    - Low Staffing – Low mobility
    - Low Staffing – High mobility

CA Sobriety Checkpoint Program Roving Patrols and Control

- **One community conducted "Roving DWI Patrols" (Ontario)**
  - **Special DWI squad on Thursday, Friday, Saturday nights**
  - **Level of effort equal to conducting high staffing level sobriety checkpoints**
  - **Patrolled areas with high DWI crashes or arrests**
- **Control community (Santa Barbara)**
  - **No special DWI enforcement effort or publicity**

CA Sobriety Checkpoint Program Publicity

- **Traffic safety program support committees formed in each community**
- **Publicity efforts included:**
  - **Press conferences**
  - **Media events**
  - **Posters, Brochures, and billboards**
  - **Public Speakers**
  - **TV and radio public service announcements**

CA Sobriety Checkpoint Program Evaluation

- **Attitudes and awareness measured by DMV surveys conducted monthly (starting two months before program and continuing during program)**
- **Results:**
  - **Public awareness elevated in all 5 test communities**
    - Checkpoint program communities average 80%
    - Roving patrol community doubled to 30%
  - **Public awareness unchanged in control community**

CA Sobriety Checkpoint Program Program Impact on Crashes

- **Examined changes in alcohol-related fatal and injury crashes (BAC > .01%)**
- **Compared the four checkpoint programs and the “roving patrol” program, to the control community and the rest of the State**
- **Interrupted time series analysis conducted**

CA Sobriety Checkpoint Program Results: Crashes

- **Statewide decline in alcohol-related crashes during this time period**
- **The four checkpoint communities experienced an additional 28% decline**
- **The “roving patrol” community experienced an additional 5% decline**
- **The control community experienced no change in the decline in crashes**

CA Sobriety Checkpoint Program Checkpoint Differences

- **No significant differences were found in effectiveness between the four sobriety checkpoint programs**

Checkpoint Tennessee

- **Statewide year-long program of highly publicized sobriety checkpoints**
  - **April 1994 – March 1995**
- **Checkpoints conducted every weekend**
  - **Four sets of three checkpoints across the state**
  - **On five weekends checkpoints were conducted in each of the 95 counties**

Checkpoint Tennessee
Checkpoint Program

- **Coordinated by Tennessee Highway Patrol with support from local law enforcement agencies**
  - **Used special vans, lights, signs,video taping, on-site evidential breath testing, passive alcohol sensors and SFST's to detect impaired drivers**
  - **Non-blitz checkpoints were smaller scale**

Checkpoint Tennessee
Checkpoints Conducted

- **882 checkpoints conducted during project period**
- **10 – 15 checkpoints a year conducted on average during five previous years**
- **Selected statistics:**
  - **144,299 drivers checked**
  - **773 arrested for DUI or DWI**
  - **201 arrested for drug violations**
  - **84 for youth offender violations**
  - **35 felony arrests**
  - **1,517 cited for seat belt or child restraint**

Checkpoint Tennessee
Publicity

- **Special cooperation obtained from a TV station in each major market in the state to publicize the program**
- **Earned media coverage:**
  - **Hard news coverage from other outlets**
  - **Statewide billboard campaign**
  - **Press releases covering checkpoints and results**
- **TV, radio and print media coverage was extensive during the 12 month operational phase of the program**

Checkpoint Tennessee
Awareness Measured

- **Three waves of DMV surveys conducted to measure awareness and attitudes**
  - **March 1994 – baseline**
  - **Summer 1994 – 4 months**
  - **Spring 1995 – project completion**
- **Analysis showed awareness increased**

Checkpoint Tennessee
Impact

- **Impaired driving fatal crashes analyzed:**
  - **Interrupted time series analysis of crashes involving a driver with a BAC of .10% or higher 1988 – 1996**
  - **Five surrounding States (KY, GA, AL, MS, LO) used as comparison**
- **20.4% reduction in fatal crashes for the year in Tennessee**
  - **9 crashes per month**
- **Impaired driving fatal crashes increased in the comparison States**

Summary

- **High visibility enforcement conducted weekly can raise perceived risk of detection and arrest**
- **Result in reductions in impaired driving and alcohol–related crashes of 5% - 20%**

Characteristics of Successful Programs

- **Frequent (weekly) enhanced impaired driving enforcement (sobriety checkpoints or saturation patrols)**
  - **Intensive**
  - **Sustained**
  - **Highly publicized**
  - **Visible**

Laws

- **Illegal Per Se**
- **Administrative License Revocation (ALR)**
- **Lower BAC Limits (.08 Illegal Per Se)**
- **Minimum Drinking Age (MDA)**
- **Zero Tolerance for Youth**
- **Lower BAC Limits for Offenders**
- **Tiered Sanctions – High BAC**

Sanctions

- License Suspension/Revocation
- Jail
  - Home Detention
- Fines
- Education
  - DWI School
- Vehicle Sanctions
  - Impoundment
  - Forfeiture
  - Vehicle Plate Impoundment
- Alcohol Ignition Interlocks

Rehabilitation and Treatment

Post Conviction:

- **Screening for Alcohol Abuse**
  - **Before Sentencing**
- **Alcohol Treatment**
- **Intense Supervision and Probation**
- **DWI School**

Vehicle Technology

- **Advanced Vehicle Technology to Reduce Impaired Driving**
  - **Government - Industry Initiative**
  - **Design vehicle to Prevent Impaired Driving**
    - Interlock based on BAC
    - Performance monitoring

Conclusions

- ***Evidence Based Practice Requires Good Quality Data***
  - ***Surveillance Systems Critical***
- ***Evidence on Effectiveness of Countermeasure Programs Suggests Maximum Short-term Impact from High-Visibility Enforcement***
  - ***Random Breath Testing***
    - *Sobriety Checkpoints*
  - ***Sustained***
  - ***Enforcement Oriented Publicity***