

Where are the Increases in Motorcycle Rider Fatalities?

***International Motorcycle
Safety Conference***

Long Beach, CA

March 28, 2006

Presenter:

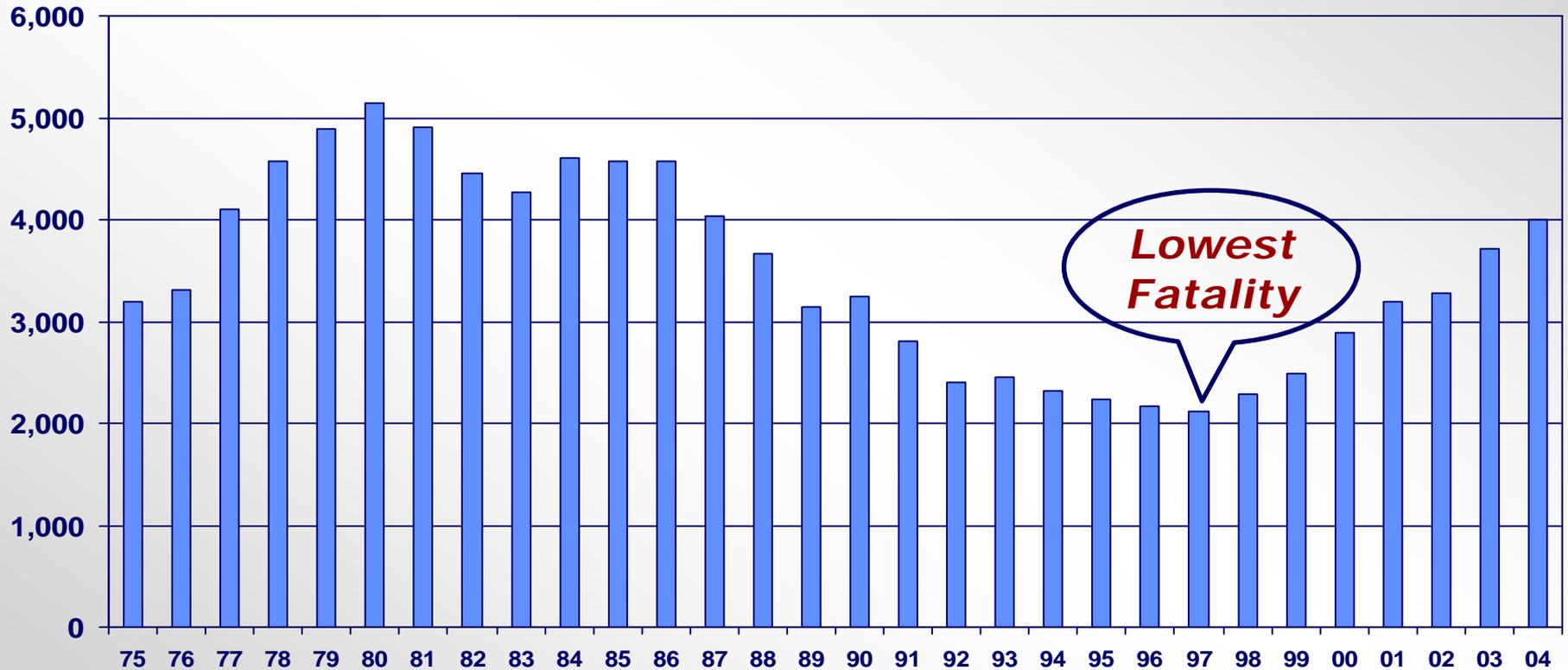
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- **Motorcycle Rider Fatalities**
Increased 7th Year in a Row
Compared to 1997, an **increase** of 89%
-- 1,892 more fatalities
- ◆ **Reaching the level last seen in 1987**

Motorcycle Riders Killed by Year



Source: FARS

- **Motorcycle rider fatalities increased to 9.4% of all motor vehicle traffic crash fatalities compared to 5% in 1997**

Motorcycle Riders Killed by Year, 1997-2004

| | Year | | | | | | | |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Total Killed | 42,013 | 41,501 | 41,717 | 41,945 | 42,196 | 43,005 | 42,884 | 42,636 |
| Change | --- | -512 | +216 | +228 | +251 | +809 | -121 | -248 |
| Motorcycle Riders Killed | 2,116 | 2,294 | 2,483 | 2,897 | 3,197 | 3,270 | 3,714 | 4,008 |
| Increase | --- | +178 | +189 | +414 | +300 | +73 | +444 | +294 |
| % Increase | --- | 8.4% | 8.2% | 17% | 10% | 2.3% | 14% | 7.9% |
| Cumulative Increase | --- | +178 | +367 | +781 | +1,081 | +1,154 | +1,598 | +1,892 |
| Percent of all Fatalities | 5.0% | 5.5% | 6.0% | 6.9% | 7.6% | 7.6% | 8.7% | 9.4% |

Source: FARS

Overall Fatalities Have Not Declined the Past 10 Years. Why?

Between 1995 and 2004

- **Overall** motor vehicle fatalities remained fairly **constant**, with a low of 41,501 fatalities in 1998 to a high of 43,005 fatalities in 2002.
- **Passenger vehicle** occupant fatalities ranged from a high of 32,843 in 2002 to a low of 31,693 in 2004.
- **Non-occupant** fatalities decreased from a high of 6,526 in 1995 to a low of 5,494 in 2004.
- **Other occupant** fatalities ranged from a low of 1,073 in 1995 to a high of 1,441 in 2004.
- **However**, motorcycle rider fatalities have increased from a low of 2,116 in 1997 to a high of 4,008 in 2004.



Motor Vehicle Crash Fatalities by Person Type and Year

| Year | Person Type | | | | Total |
|------|------------------------------|-------------------|-----------------|--------------------|--------|
| | Passenger Vehicle Occupants* | Motorcycle Riders | Non-Occupants** | Other Occupants*** | |
| 1995 | 31,991 | 2,227 | 6,526 | 1,073 | 41,817 |
| 1996 | 32,437 | 2,161 | 6,368 | 1,099 | 42,065 |
| 1997 | 32,448 | 2,116 | 6,288 | 1,161 | 42,013 |
| 1998 | 31,899 | 2,294 | 6,119 | 1,189 | 41,501 |
| 1999 | 32,127 | 2,483 | 5,842 | 1,265 | 41,717 |
| 2000 | 32,225 | 2,897 | 5,597 | 1,226 | 41,945 |
| 2001 | 32,043 | 3,197 | 5,756 | 1,200 | 42,196 |
| 2002 | 32,843 | 3,270 | 5,630 | 1,262 | 43,005 |
| 2003 | 32,271 | 3,714 | 5,543 | 1,356 | 42,884 |
| 2004 | 31,693 | 4,008 | 5,494 | 1,441 | 42,636 |

* Include passenger cars, vans, SUVs, pickups and other light trucks

** Include pedestrians, pedalcyclists and other/unknown non-occupants

*** Include occupants of large trucks, buses & other/unknown vehicle types

Source: FARS

Motorcycle Rider Fatalities and Fatality Rates, by Year, 1997-2004

| Rate | Year | | | | | | | |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Motorcycle Rider Fatalities | 2,116 | 2,294 | 2,483 | 2,897 | 3,197 | 3,270 | 3,714 | 4,008 |
| /100M MC VMT | 20.99 | 22.31 | 23.46 | 27.67 | 33.17 | 34.23 | 38.78 | 39.89 |
| /100K Reg. Vehicles | 55.30 | 59.13 | 59.80 | 66.66 | 65.20 | 65.35 | 69.16 | 69.33 |
| /100K Population | 0.79 | 0.85 | 0.91 | 1.03 | 1.12 | 1.14 | 1.27 | 1.36 |

Source: FARS, FHWA

- **Motorcycle rider fatalities and motorcycle registrations have both been on the rise since 1997**
- **However, in most of these years the rate of increase in motorcycle rider fatalities has been higher than the rate of increase in motorcycle registrations (as reflected in the rate increase).**

Where Are the Increases?

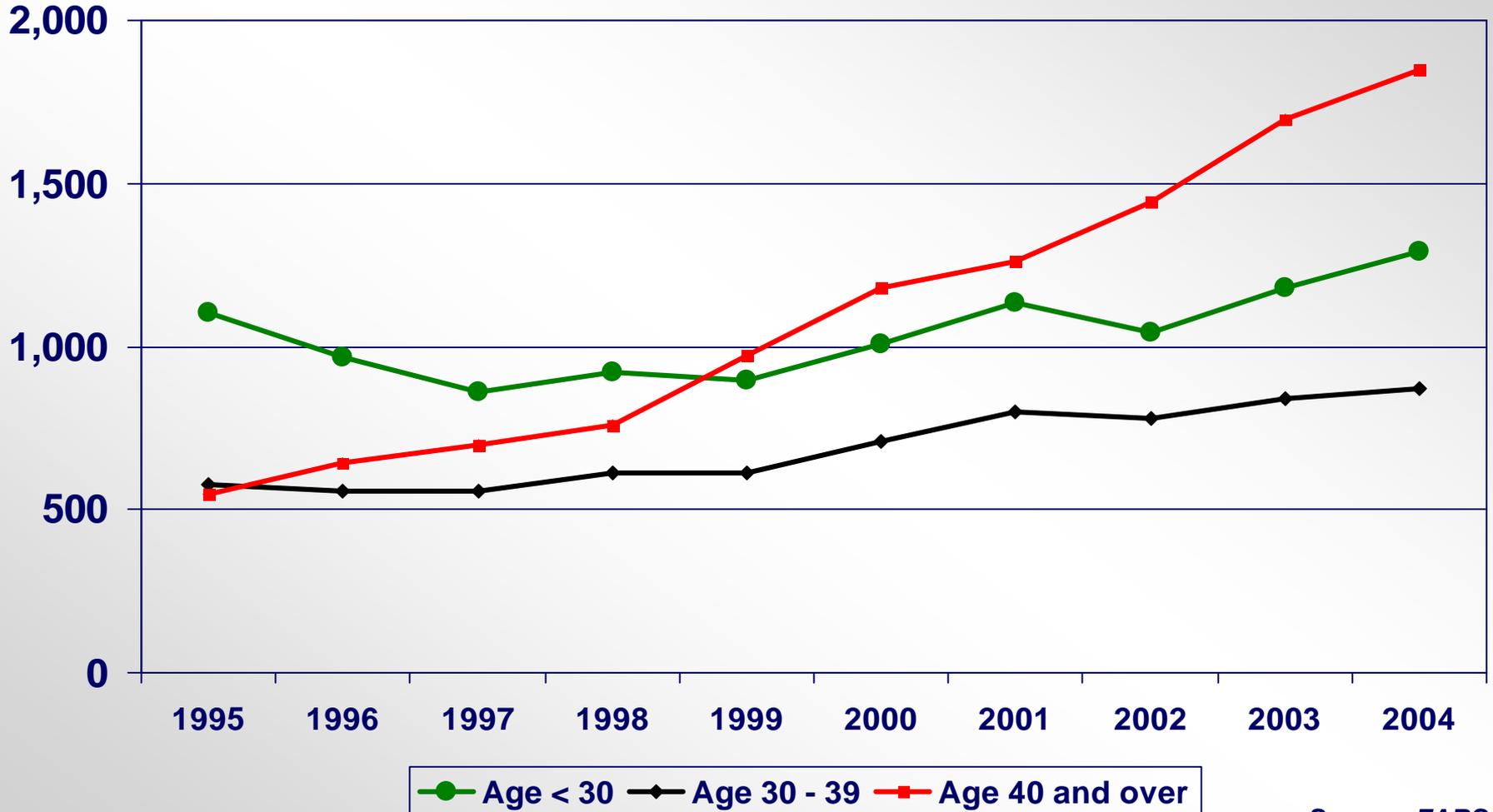
- **10-Year Trend by Age Group Shows**
 - ◆ **Less than 20% increase in under-30 group**
 - ◆ **Over 50% increase in 30-39 age group**
 - ◆ **Nearly 250% increase in 40+ age group**
 - **Over 350% increase in 50+ age group**
- **10-Year Trend by Engine Size Shows**
 - ◆ **Declines in under-500 cc engine size**
 - ◆ **60% increase in 501-1,000 cc engine size**
 - ◆ **Over 125% increase in 1,001-1,500 cc engine size**

Motorcycle Rider Fatalities by Age Group and Year

| Year | Age Group | | | | | | | Total |
|------|-----------|-------|-------|-------|-------|------|---------|-------|
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | > 59 | Unknown | |
| 1995 | 195 | 909 | 576 | 359 | 131 | 57 | 0 | 2,227 |
| 1996 | 202 | 763 | 555 | 420 | 151 | 70 | 0 | 2,161 |
| 1997 | 166 | 694 | 556 | 405 | 207 | 87 | 1 | 2,116 |
| 1998 | 201 | 720 | 612 | 475 | 199 | 86 | 1 | 2,294 |
| 1999 | 137 | 761 | 612 | 570 | 286 | 117 | 0 | 2,483 |
| 2000 | 189 | 818 | 707 | 677 | 348 | 153 | 5 | 2,897 |
| 2001 | 211 | 925 | 798 | 729 | 383 | 149 | 2 | 3,197 |
| 2002 | 177 | 866 | 781 | 770 | 496 | 178 | 2 | 3,270 |
| 2003 | 229 | 950 | 839 | 904 | 575 | 215 | 2 | 3,714 |
| 2004 | 250 | 1,041 | 869 | 971 | 646 | 230 | 1 | 4,008 |

Source: FARS

Motorcycle Riders Killed, by Age Group and Year



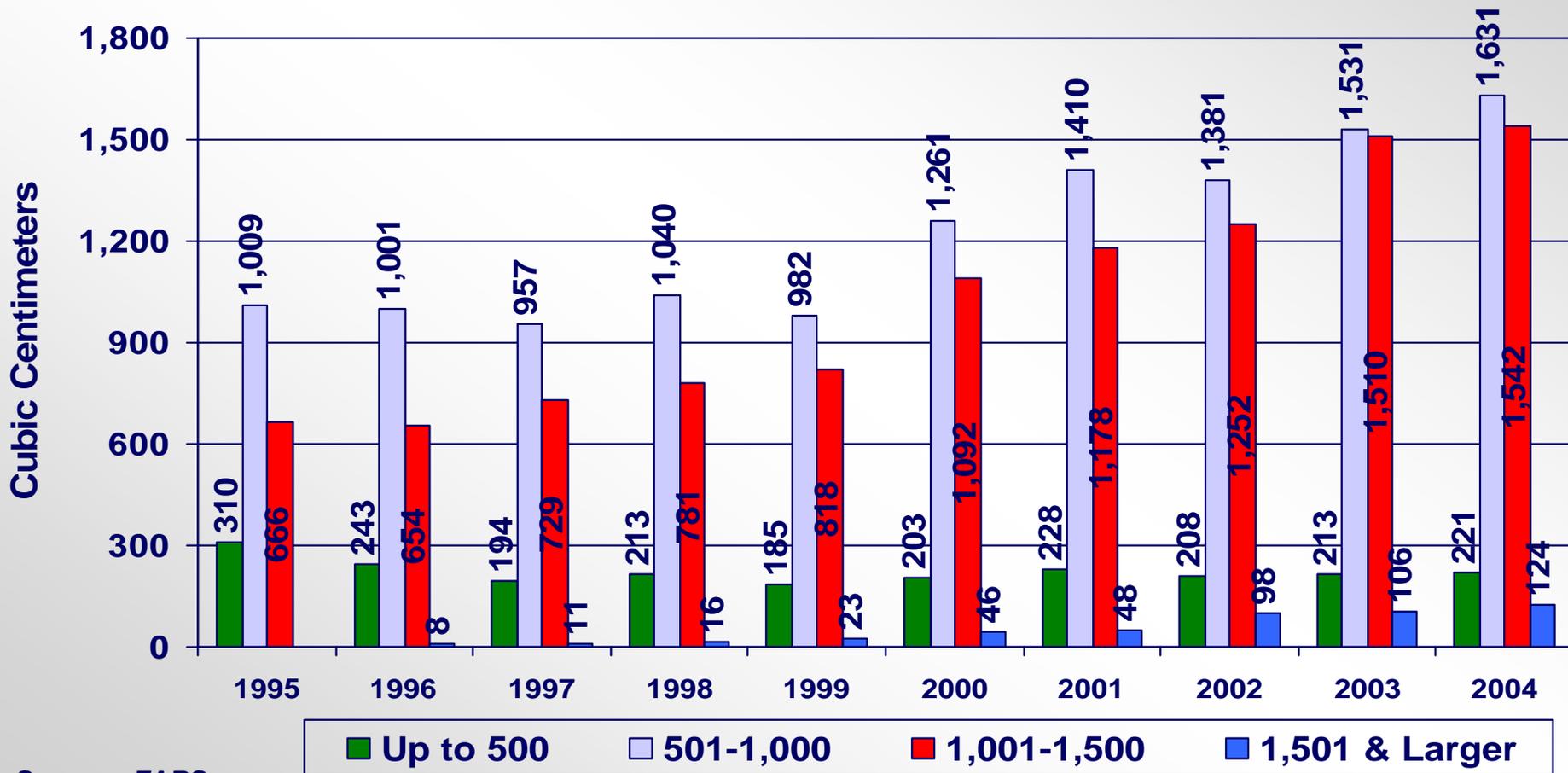
Source: FARS

Motorcycle Rider Fatality Rate* by Age Group and Year

| Year | Age Group | | | | | | Total |
|------|-----------|-------|-------|-------|-------|------|-------|
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | > 59 | |
| 1995 | 0.26 | 2.46 | 1.31 | 0.95 | 0.53 | 0.13 | 0.85 |
| 1996 | 0.26 | 2.09 | 1.27 | 1.07 | 0.60 | 0.16 | 0.81 |
| 1997 | 0.22 | 1.91 | 1.28 | 1.02 | 0.77 | 0.20 | 0.79 |
| 1998 | 0.26 | 1.99 | 1.43 | 1.17 | 0.71 | 0.19 | 0.85 |
| 1999 | 0.18 | 2.10 | 1.45 | 1.37 | 0.98 | 0.26 | 0.91 |
| 2000 | 0.23 | 2.13 | 1.64 | 1.58 | 1.11 | 0.33 | 1.03 |
| 2001 | 0.26 | 2.39 | 1.86 | 1.67 | 1.17 | 0.32 | 1.12 |
| 2002 | 0.22 | 2.21 | 1.83 | 1.74 | 1.47 | 0.38 | 1.14 |
| 2003 | 0.28 | 2.38 | 1.99 | 2.02 | 1.65 | 0.44 | 1.27 |
| 2004 | 0.30 | 2.56 | 2.09 | 2.14 | 1.79 | 0.47 | 1.36 |

*Per 100,000 population. Source: FARS & Census Bureau

Motorcycle Riders Killed by Engine Size and Year



Source: FARS

Increases in Fatalities on Larger (1,001-1,500 cc) Motorcycles

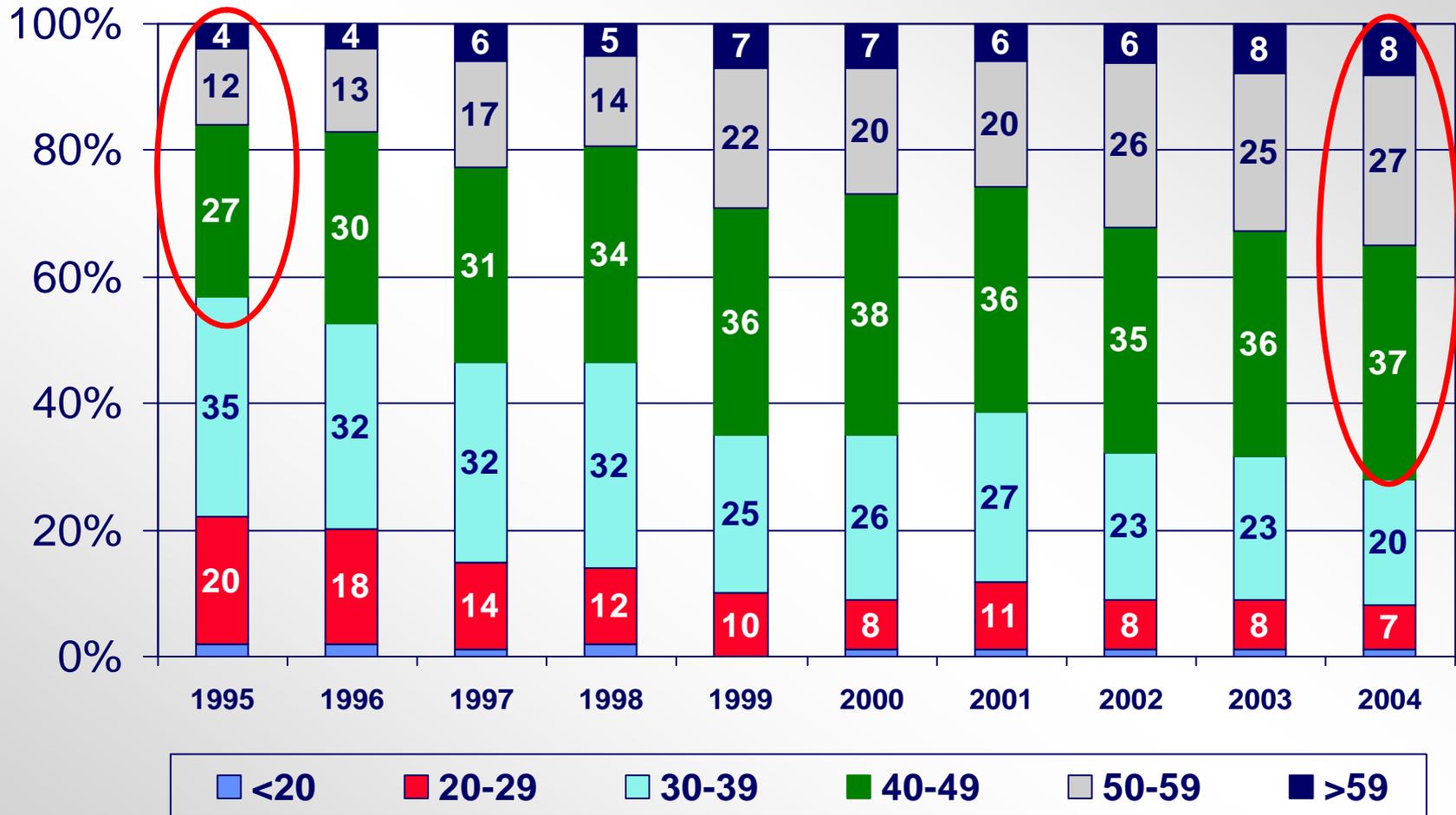
- ***10-Year Trend by Age Group Shows***
 - ◆ ***Decline in under-30 group***
 - ◆ ***One-third increase in 30-39 age group***
 - ◆ ***Almost 300% increase in 40+ age group***
 - ***Over 400% increase in 50+ age group***
- ***Trends since 1997 by Age Group Show***
 - ◆ ***Of the 813 fatality increase on larger motorcycles, 724 (89%) were age 40 and older riders***
 - ◆ ***Out of the total 1,148 increase among 40 and older age group, 724 (63%) were on larger motorcycles.***

Motorcycle Rider Fatalities on 1,001-1,500 cc Engine Size Motorcycles by Age Group and Year

| Year | Age Group | | | | | | | Total |
|------|-----------|-------|-------|-------|-------|------|---------|-------|
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | > 59 | Unknown | |
| 1995 | 12 | 135 | 233 | 182 | 77 | 27 | 0 | 666 |
| 1996 | 15 | 119 | 211 | 198 | 85 | 26 | 0 | 654 |
| 1997 | 8 | 99 | 232 | 225 | 124 | 41 | 0 | 729 |
| 1998 | 17 | 91 | 252 | 267 | 111 | 42 | 1 | 781 |
| 1999 | 3 | 79 | 205 | 294 | 177 | 60 | 0 | 818 |
| 2000 | 9 | 92 | 282 | 416 | 215 | 75 | 3 | 1,092 |
| 2001 | 12 | 125 | 313 | 420 | 236 | 71 | 1 | 1,178 |
| 2002 | 9 | 105 | 290 | 443 | 324 | 81 | 0 | 1,252 |
| 2003 | 18 | 122 | 342 | 541 | 371 | 116 | 0 | 1,510 |
| 2004 | 13 | 105 | 310 | 575 | 413 | 126 | 0 | 1,542 |

Source: FARS

Motorcycle Riders Killed (percent) on 1,001-1,500 cc Engine Size by Age Group and Year



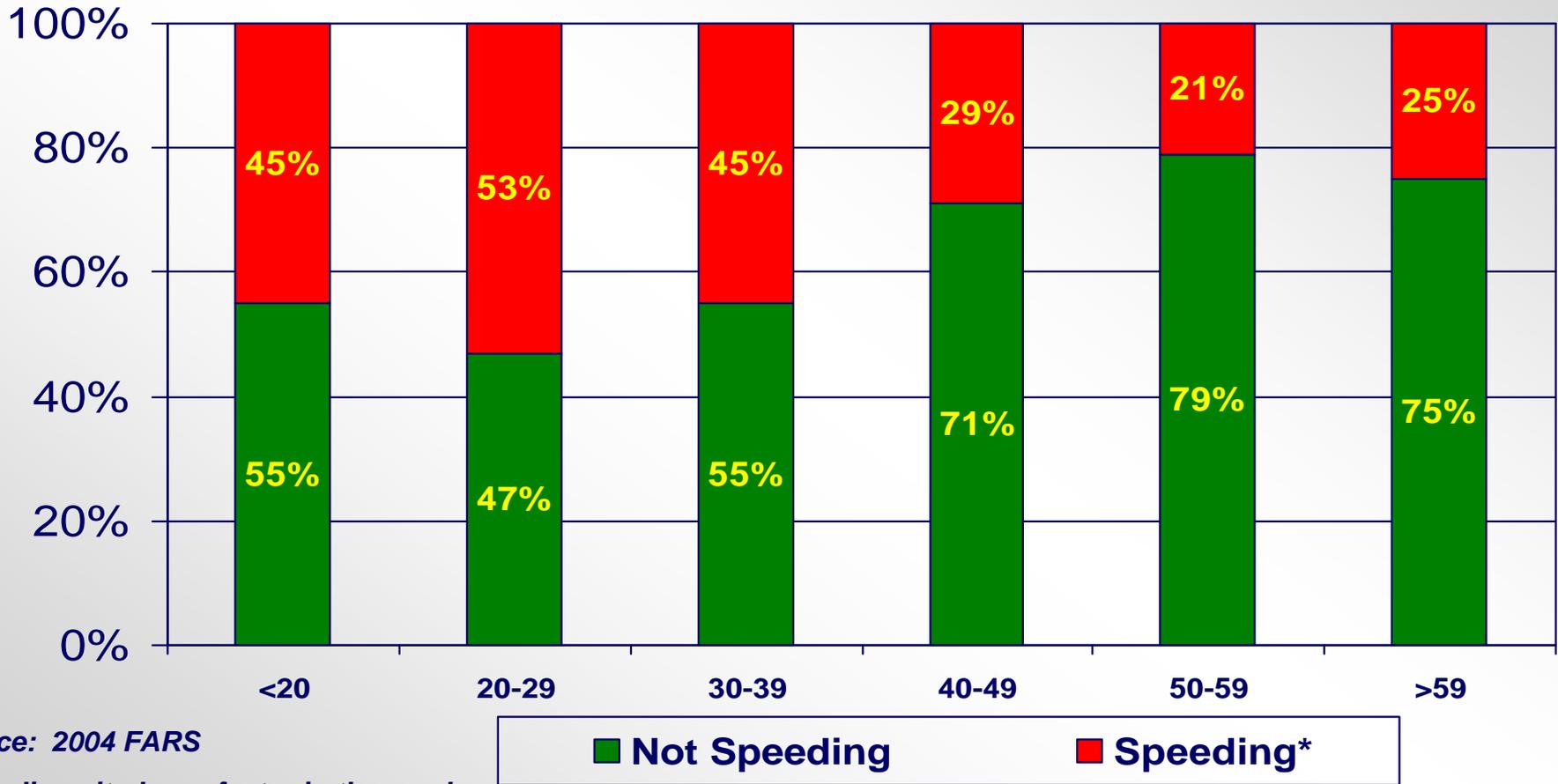
Source: FARS

- ◆ *Mean age of motorcycle rider killed is increasing*
- ◆ *Mean engine size of motorcycle involved in a fatal crash is increasing*

Mean Age of Motorcycle Rider Killed and Mean Engine Size Involved in Fatal Crashes

| <i>Year</i> | <i>Mean Age (yrs.)</i> | <i>Mean Engine Size (cc)</i> |
|---------------------|------------------------|------------------------------|
| 1995 | 32.1 | 841 |
| 1996 | 33.4 | 866 |
| 1997 | 34.8 | 897 |
| 1998 | 34.6 | 902 |
| 1999 | 36.5 | 927 |
| 2000 | 36.8 | 961 |
| 2001 | 36.3 | 957 |
| 2002 | 37.9 | 1,002 |
| 2003 | 38.0 | 1,014 |
| 2004 | 38.0 | 1,015 |
| <i>Source: FARS</i> | | |

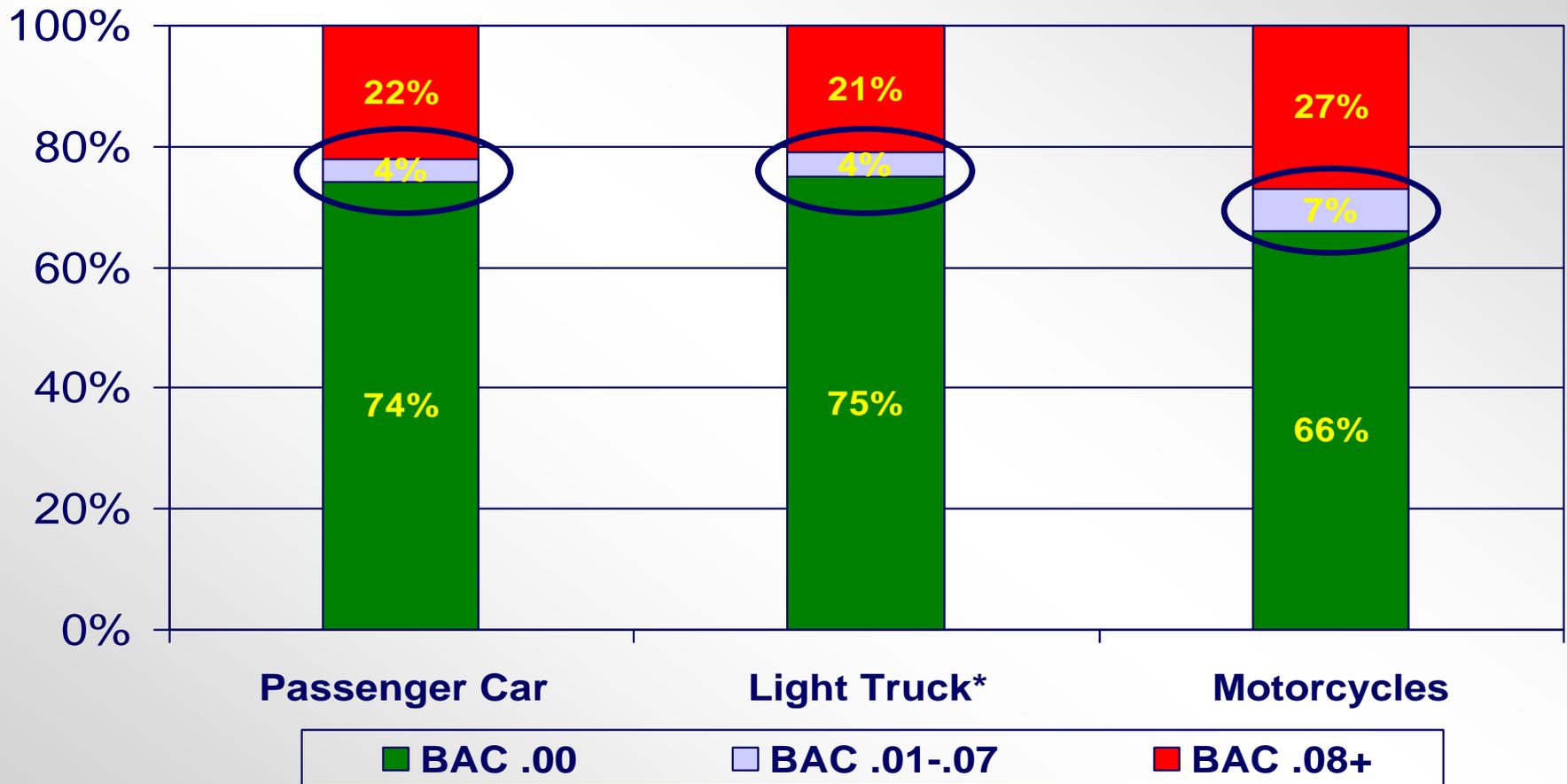
Motorcycle Operators Killed by Speeding Factor and Age Group



Source: 2004 FARS

*Speeding cited as a factor in the crash.

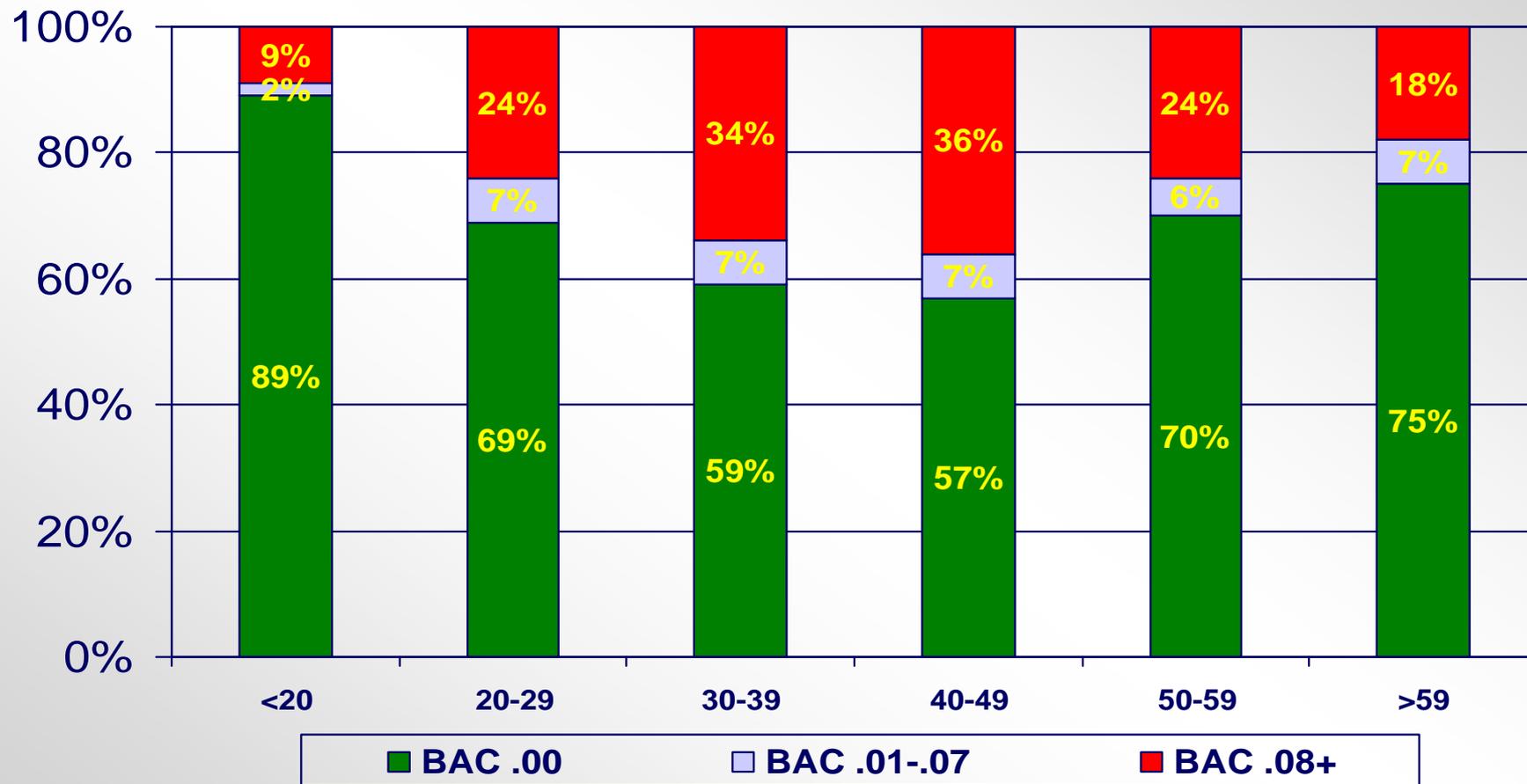
Comparison of Driver/Operator Alcohol Involvement in Fatal Crashes by Vehicle Type



*Includes SUVs, Vans and Pickups

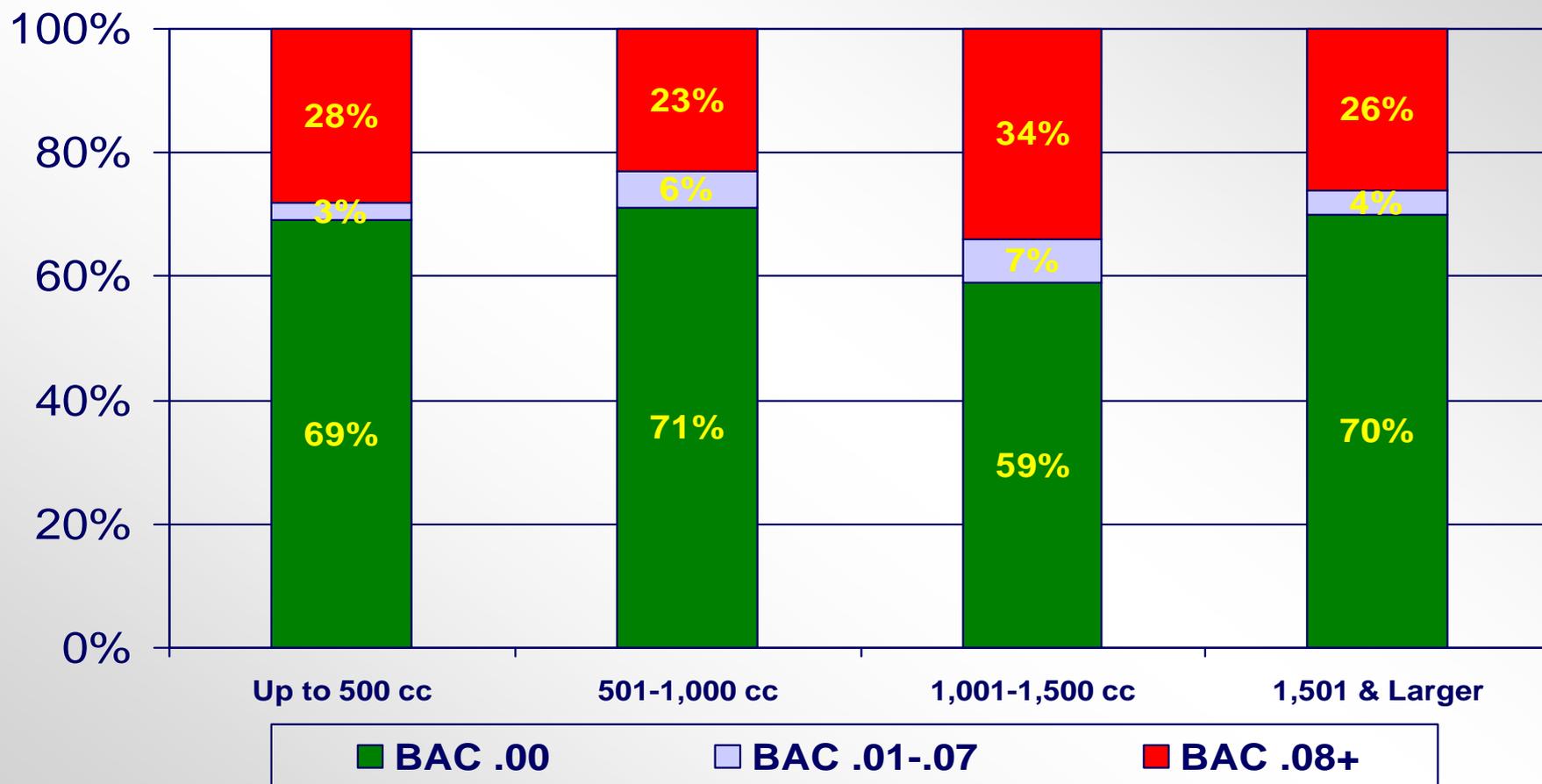
Source: 2004 FARS

Motorcycle Operators Killed by Alcohol Level and Age Group



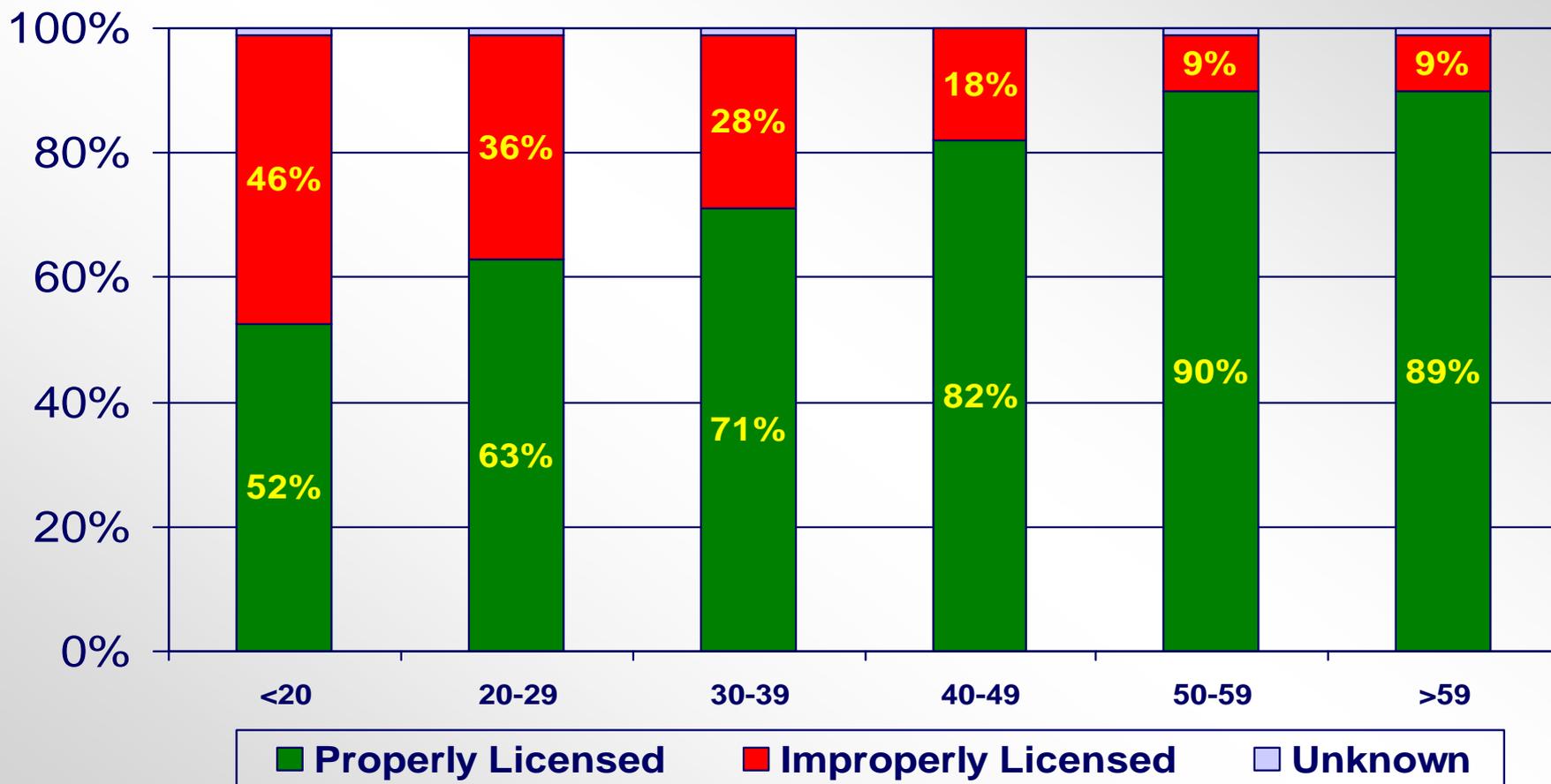
Source: 2004 FARS

Motorcycle Operators Killed by Alcohol Level and Engine Size



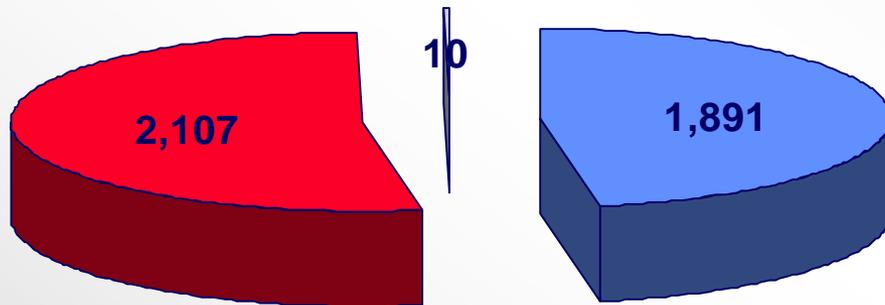
Source: 2004 FARS

Motorcycle Operators Killed by Licensing and Age Group



Source: 2004 FARS

Motorcycle Rider Fatalities by Day of Week



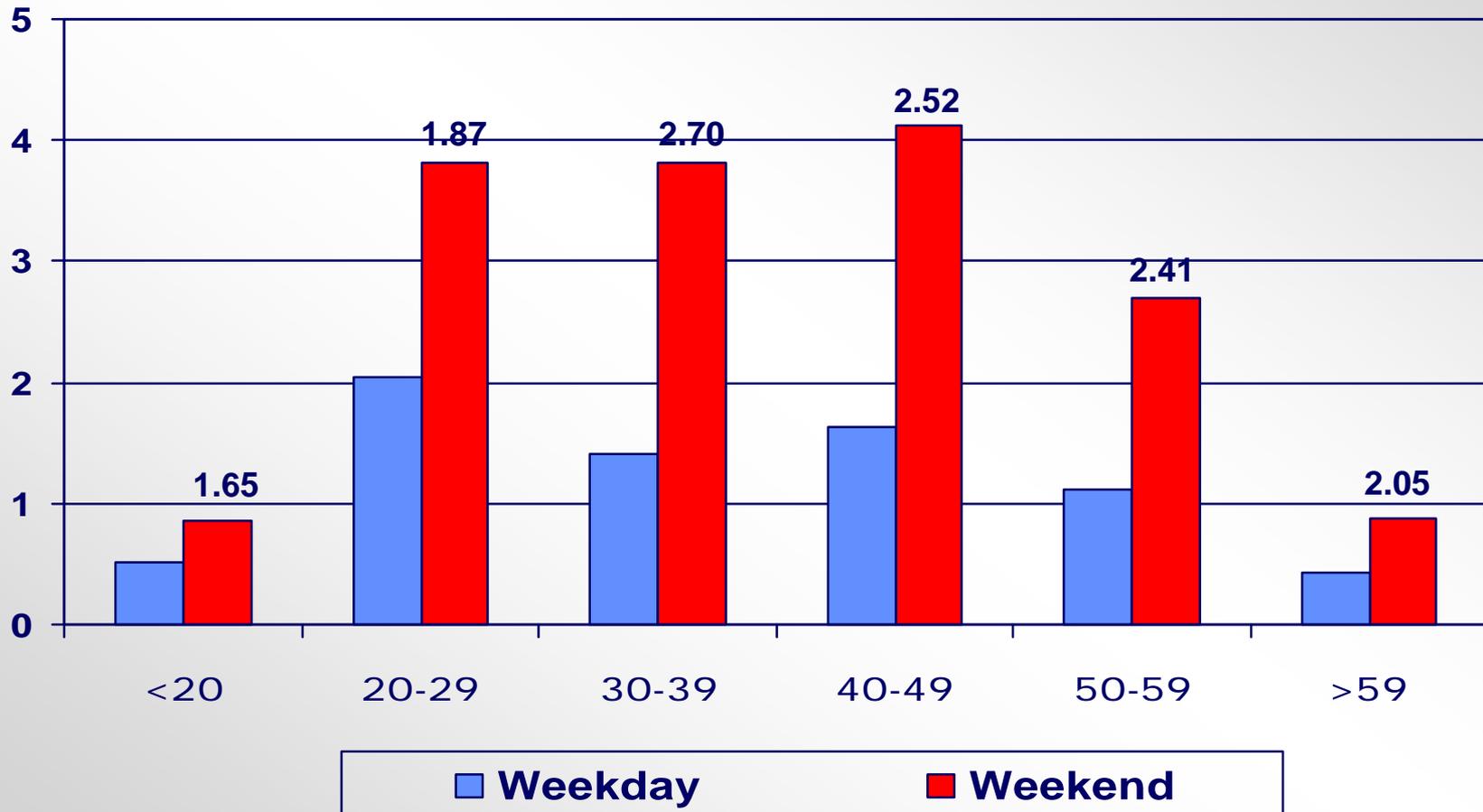
■ Weekday ■ Weekend ■ Unknown

Based on the number of hours, there were **twice** as many motorcycle rider fatalities during **weekends** than during **weekdays** (16 vs. 8)

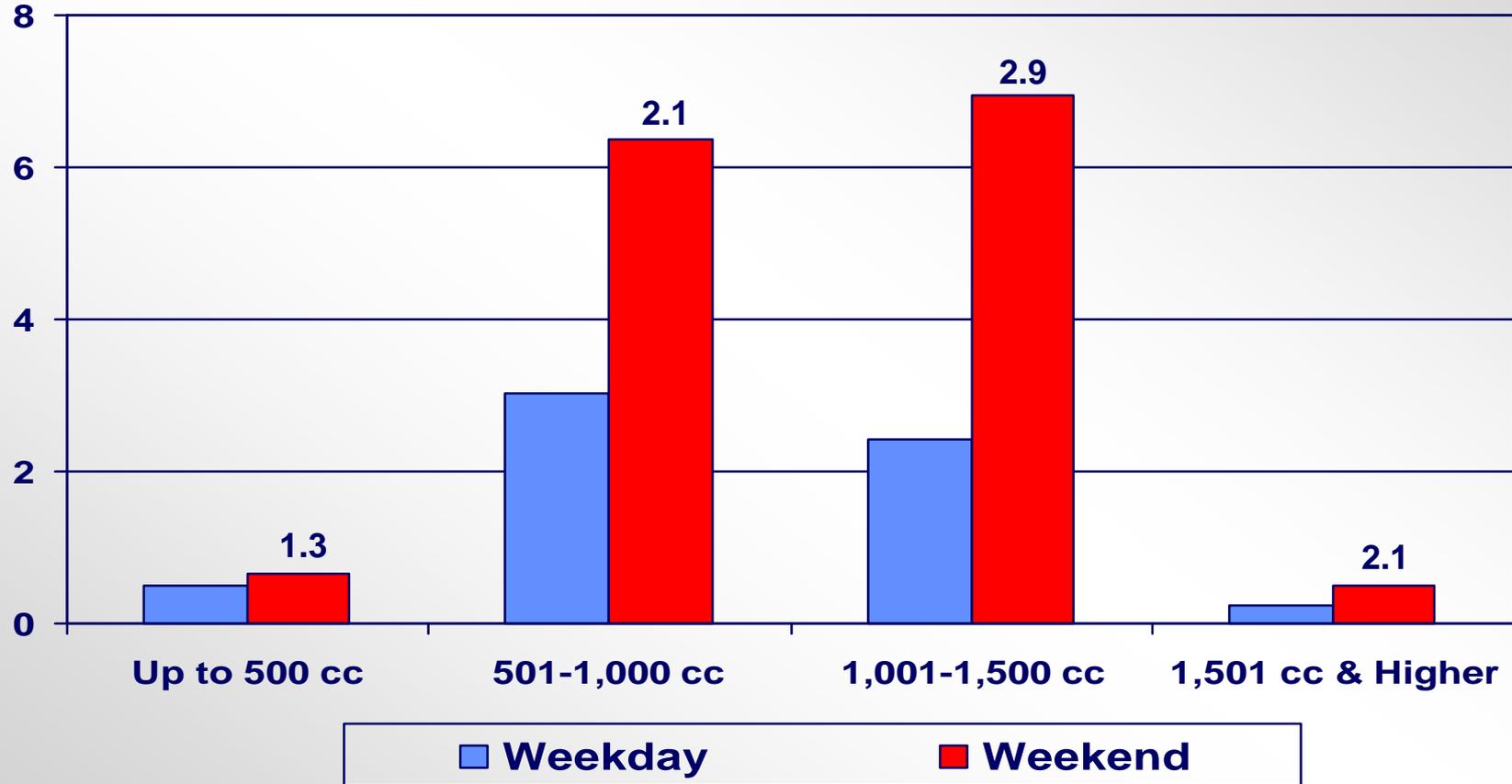
Weekday = 6 a.m. **Monday** through 5:59 p.m. **Friday**

Weekend = 6 p.m. **Friday** through 5:59 a.m. **Monday**

Motorcycle Rider Fatalities by Age Group and Day of Week



Motorcycle Rider Fatalities by Engine Size and Day of Week



- ***Fatal crash data shows***
 - ◆ *Increasing age of motorcycle riders*
 - ◆ *Increasing size of motorcycles involved*
- ***Fatality data shows***
 - ◆ *Increases in 40-and-older age group*
 - ◆ *Increases on larger motorcycles*
- ***Fatality rate data shows***
 - ◆ *Overall increase in rate by vehicle miles traveled and registered vehicles*
 - ◆ *Large increases in 40-and-older age group*

- **Crash Data**
 - ◆ **Fatality Analysis Reporting System**
 - *2004 Annual Report File (Final File in 2003 and prior years)*
- **Exposure Data**
 - ◆ **Vehicle Miles of Travel**
 - *Federal Highway Administration*
 - ◆ **Population Estimates (based on 2000 Census)**
 - *Census Bureau*
 - ◆ **Registered Vehicles**
 - *Federal Highway Administration*