

Easy Rider Redux — Balding, Pot-Bellied Boomers on Big Bikes:

What Can Rider Demographic Changes, Motorcycle Crash Data, and
Motorcycle Registration Data
Tell Us About **Who Goes Boom Today?**

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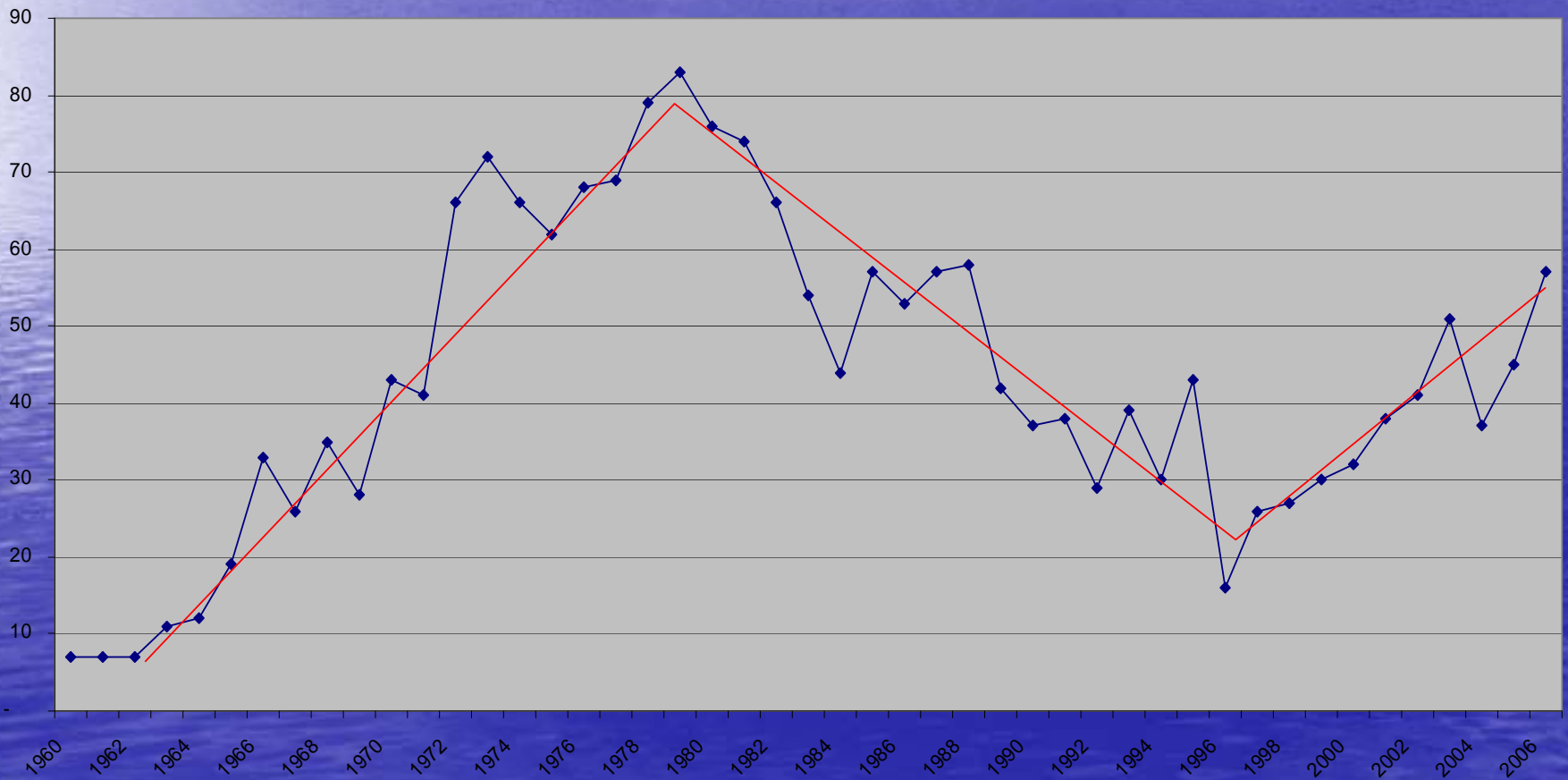
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Iowa FARS Program

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Iowa Department of Transportation
Office of Vehicle Services

Just the Facts, Jack:

- Iowa had 57 motorcycle fatalities in 2006.
 - Highest number since 1988
- 50% of fatal crashes were single vehicle crashes.
- Iowa had 859 motorcycle injuries in 2006.
 - Highest number since 1994.

Motorcycle Fatalities from 1960 through 2006 (With Simple Trend Line in Red)



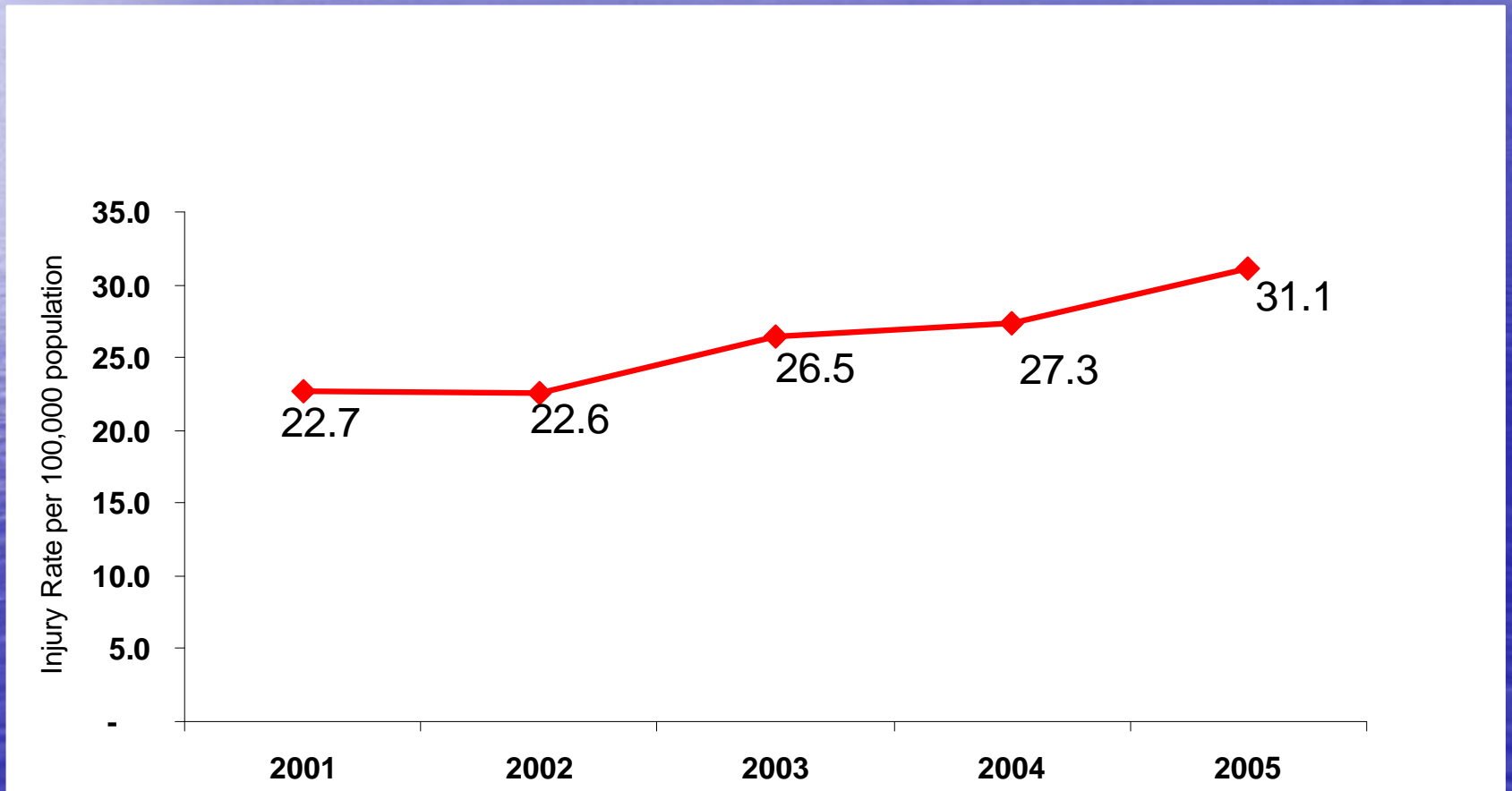
Motorcycle Crash Snapshot of This Decade

	2000	2001	2002	2003	2004	2005	2006
Fatalities	32	38	41	51	36	45	57
Injuries	779	665	662	779	807	922	859
Fatal Crashes	31	37	37	46	34	43	55
Injury Crashes	663	582	585	701	697	832	787
Property Crashes	80	147	147	114	115	134	147
Total Crashes	774	766	769	861	846	1,009	989
Motorcycle Registrations	110,395	120,916	124,203	127,700	131,761	138,443	146,473

Iowa Motorcycle Crash Rates, 2001-2005



Iowa Motorcycle Injury Rates Increase 37% (2001 to 2005)



Motorcycle Licensed Drivers By Age Group

Comparison: 1977 to 2006

Age	1977	2006	Increase or Decrease	Percent Change
15-24	87,915	10,156	-77,759	-88.4%
25-34	78,456	25,462	-52,994	-67.5%
35-44	31,514	46,164	14,650	46.5%
45-54	17,189	79,407	62,218	362.0%
55-64	6,027	49,942	43,915	728.6%
65-74	1,211	18,886	17,675	1459.5%
75+	105	5,395	5,290	5038.1%
Total	222,417	235,412	12,995	5.8%

From Iowa Driver File and historical data documents.

2006 data used here run in January, 2007.

Motorcycle Licensed Drivers By Age Group

Comparison: 1993 to 2006

Age	1993	2006	Increase or Decrease	Percent Change
15-24	13,677	10,156	-3,521	-25.7%
25-34	50,141	25,462	-24,679	-49.2%
35-44	79,377	46,164	-33,213	-41.8%
45-54	42,345	79,407	37,062	87.5%
55-64	20,373	49,942	29,569	145.1%
65-74	7,910	18,886	10,976	138.8%
75+	1,108	5,395	4,287	386.9%
Total	214,931	235,412	20,481	9.5%

From Iowa Driver File
and historical data
documents.

2006 data used here run in January, 2007.

2006 Licensed Drivers Valid for Motorcycle

Age Group	Female	Male	Total	% Female
15 to 24	708	9,448	10,156	7.0%
25 to 34	2,384	23,078	25,462	9.4%
35 to 44	5,276	40,888	46,164	11.4%
45 to 54	10,166	69,241	79,407	12.8%
55 to 64	5,856	44,086	49,942	11.7%
65 to 74	1,934	16,952	18,886	10.2%
75+	328	5,067	5,395	6.1%
Total	26,652	208,760	235,412	11.3%

Changes in Motorcycle Crash Rates* and in the Ages of Licensed Motorcyclist

Age	Change in Motorcycle Crash Rate* by Age 2002-2005	Change in Licensed Motorcyclists by Age 2002-2005
15-24	24.4%	-1.8%
25-34	29.9%	-5.1%
35-44	37.3%	-17.9%
45-54	71.0%	6.6%
55-64	26.4%	27.7%
65-74	-11.8%	20.9%
75+	-15.9%	42.6%
Total	31.7%	3.3%

* Crash Rate calculated per 1000 Motorcycle Licenses

Motorcyclists in Crashes by Position and Motorcycle Make

Motorcycle Makes	Driver	Percent Driver	Passenger	Percent Passenger	Total	Total Percent
BMW	13	1.3%	0		13	1.2%
Harley Davidson	383	38.3%	54	48.2%	437	39.3%
Honda	180	18.0%	20	17.9%	200	18.0%
Kawasaki	125	12.5%	13	11.6%	138	12.4%
Suzuki	116	11.6%	11	9.8%	127	11.4%
Triumph	11	1.1%	0	0.0%	11	1.0%
Yamaha	107	10.7%	8	7.1%	115	10.3%
Others	66	6.6%	6	5.4%	72	6.5%
Total	1,001	100.0%	112	100.0%	1,113	100.0%

Motorcycle Injury Status by Motorcycle Make

Motorcycle Makes	Killed	Percent Killed	Injured	Percent Injured	Uninjured or Unknown	Percent Uninjured	Total
BMW	2	5%	10	1%	1	0.5%	13
Harley Davidson	20	45%	336	38%	81	43.3%	437
Honda	7	16%	161	18%	32	17.1%	200
Kawasaki	5	11%	114	13%	19	10.2%	138
Suzuki	4	9%	99	11%	24	12.8%	127
Triumph	0	0%	9	1%	2	1.1%	11
Yamaha	3	7%	97	11%	15	8.0%	115
Others	3	7%	56	6%	13	7.0%	72
Total	44	100%	882	100%	187	100.0%	1,113

Comparison of Registrations, Percent of Registrations and Crash Rate

Motorcycle Make	Registrations	Percent of Registrations	Crash Rate
BMW	2,588	1.9%	50.23
Harley Davidson	55,594	40.9%	78.61
Honda	47,853	35.2%	41.79
Kawasaki	17,393	12.8%	79.34
Suzuki	15,132	11.1%	83.93
Triumph	1,608	1.2%	68.41
Yamaha	22,296	16.4%	51.58

Who had Contributing Circumstances in Multi-vehicle Fatal Crashes

Which Driver Had Contributing Circumstances in the Crash	Number	Percent
Motorcyclists	18	64.3%
Other Motorists	11	39.3%
Both	1	3.6%

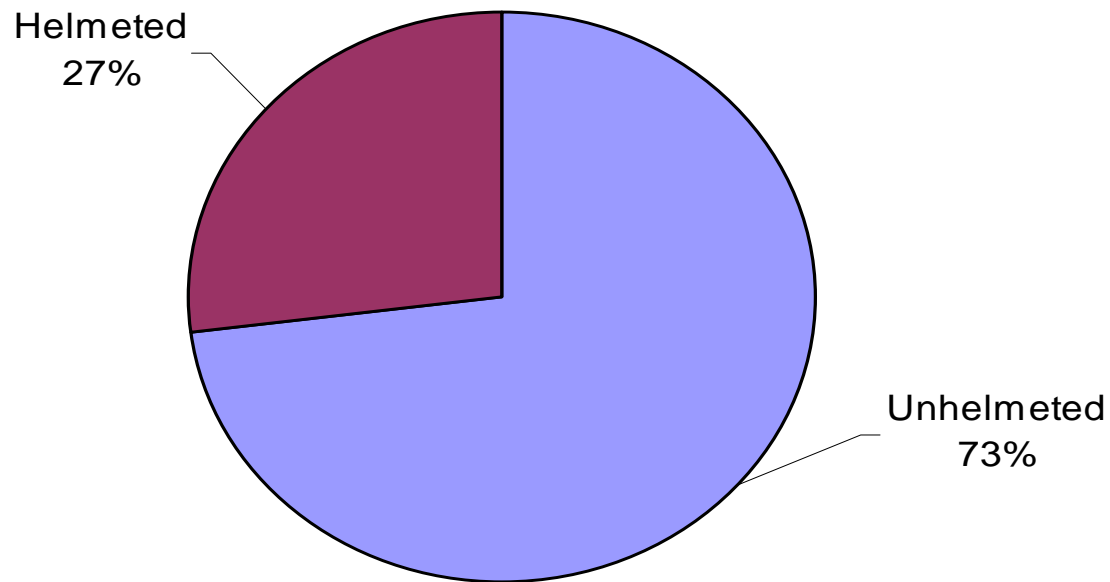
What Motorcyclists Make Contact With

Motorcycle/Fixed Object	14	Single Vehicle Crashes
Motorcycle/Overturned	6	
Motorcycle/Animal	9	
Motorcycle/Car	8	Vehicles In Multi-Vehicle Crashes
Motorcycle/Pickup	5	
Motorcycle/SUV or Pass. Van	4	
Motorcycle/Large Truck	3	

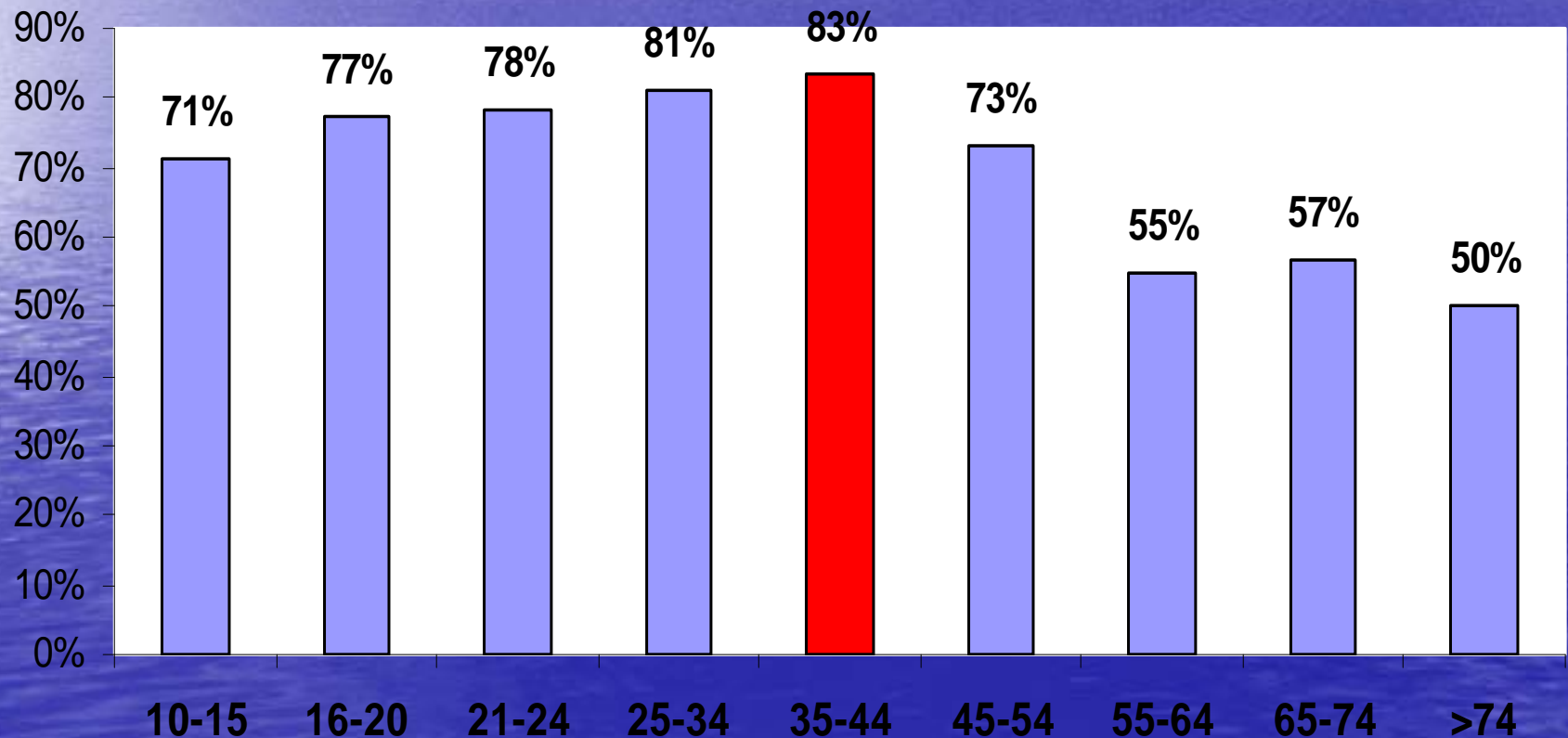
Motorcyclist Contributing Circumstances in Fatal Crashes

Contributing Circumstances	Number	Percent
Motorcyclist Speed	20	48.8%
Too Fast for Conditions	3	7.3%
Motorcyclist Lost Control	22	53.7%
Motorcyclist Reckless Driving	5	12.2%
Motorcyclist Ran Stop Light	2	4.9%
Motorcyclist Lane Departure	4	9.8%
Motorcyclist Failed-to-Yield	2	4.9%
Others	7	16.8%
Contributing Circumstance not yet Reported	7	

Helmet Use of Motorcycle Riders in Iowa Crashes, 2005



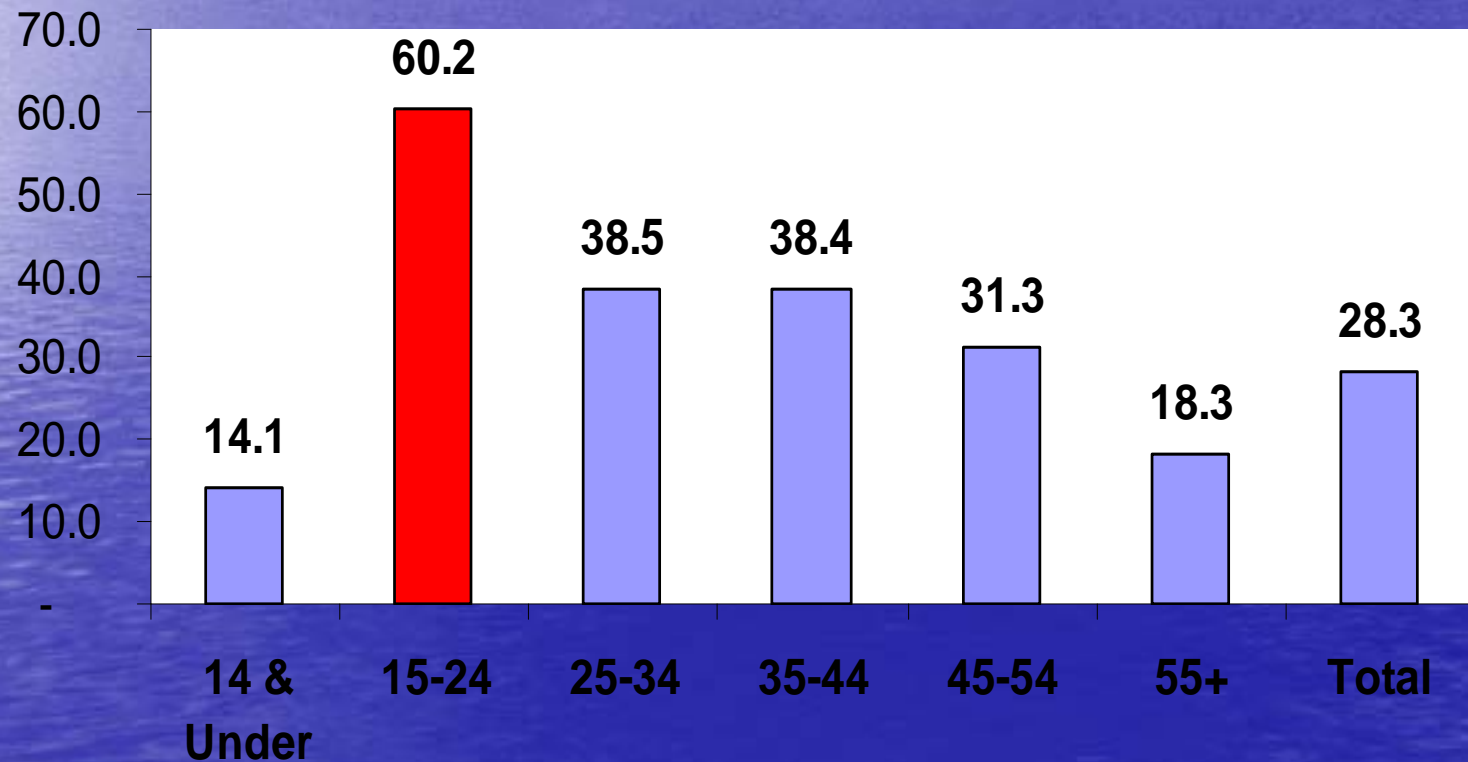
Helmet Not Used in Iowa, by Age Group,



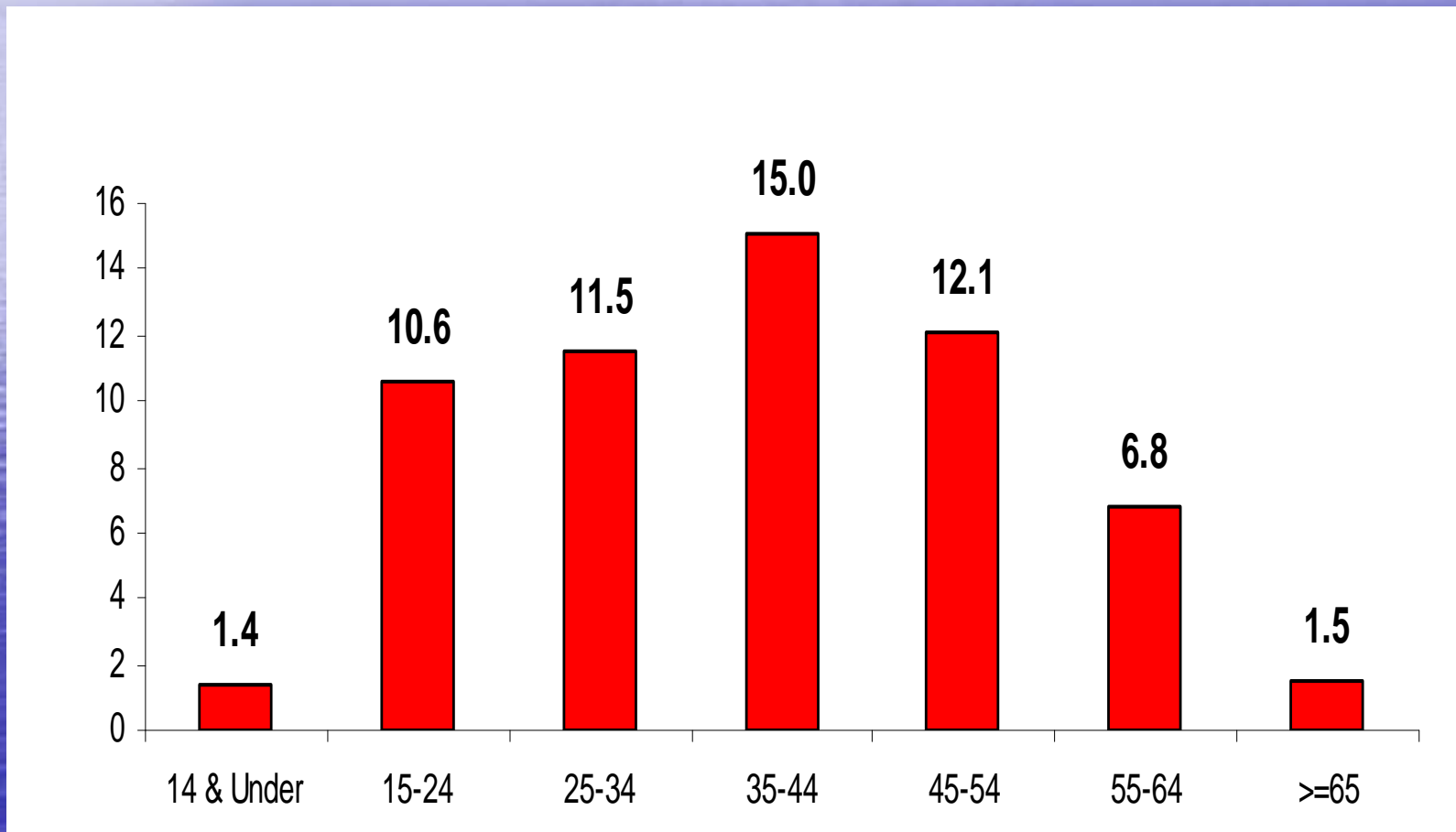
Injury, E.D., Hospital Data and Costs

CODES Value Added Data

Average Annual Iowa Motorcycle Rider ED Visit Rate, by Age Group, 2003-2005

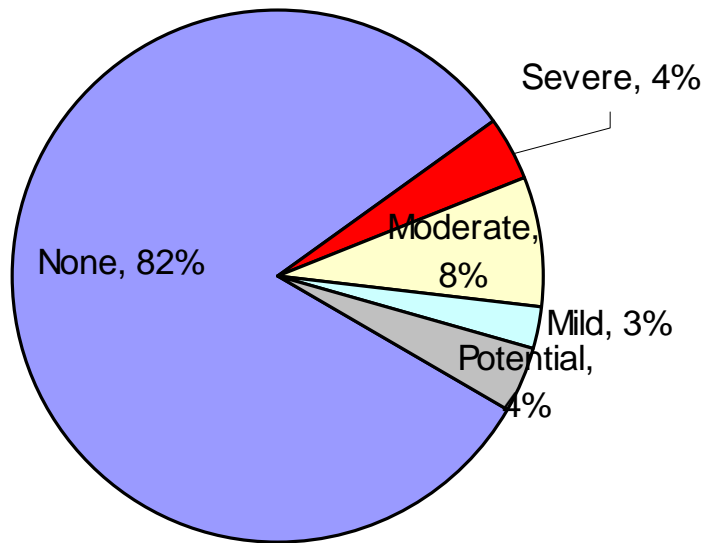


Iowa Motorcycle Injury Hospitalization Rate, by Age Group, Average Annual Rate 2001-2005

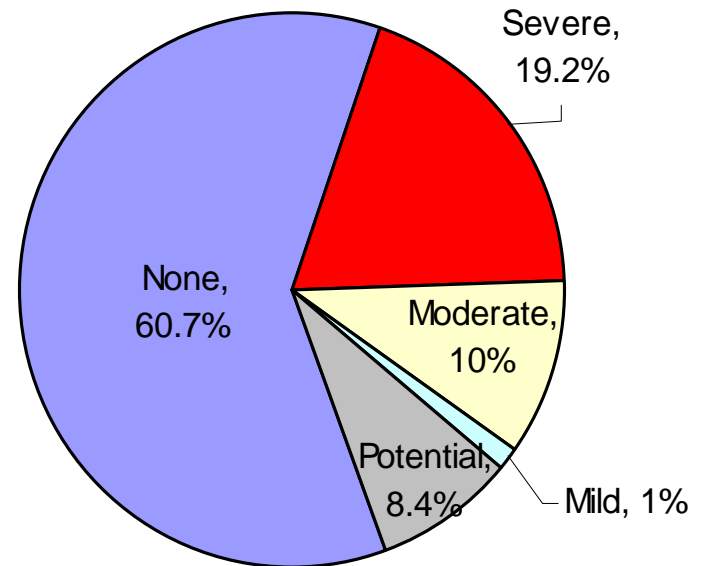


TBI By Helmet Use: Comparing the Percentages in TBI Severity

Helmeted



Unhelmeted



Helmet Use and Brain Injury

- Head injuries were the second most common medical condition treated for motorcycle riders after fractures of the lower limbs.
 - 35% sustained traumatic brain injury (TBI)
 - 16% of them were severe TBI.

Continued...

- Unhelmeted riders are nearly **5 TIMES MORE LIKELY** to suffer Traumatic Brain Injury (TBI):
 - **19%** of unhelmeted riders had severe TBI
 - **4%** of the helmeted riders suffered severe TBI (2003, 2005).

The Difference of Hospital Charges

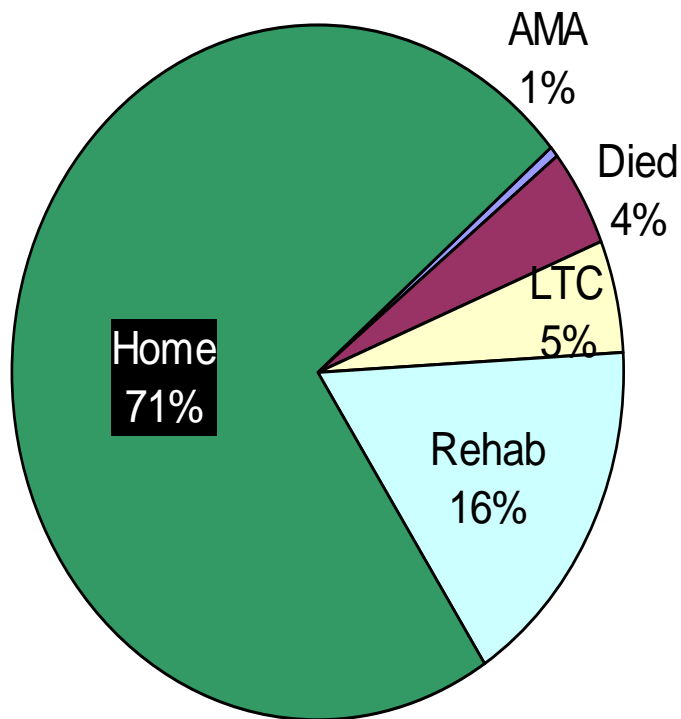
- In Iowa, CODES-linked data (2003) showed the average charge for:
 - **Unhelmeted** hospitalized was **\$30,843**
 - **Helmeted** rider was **\$13,284**.
 - **Unhelmeted** average charges were **2.3** times higher

Continued...

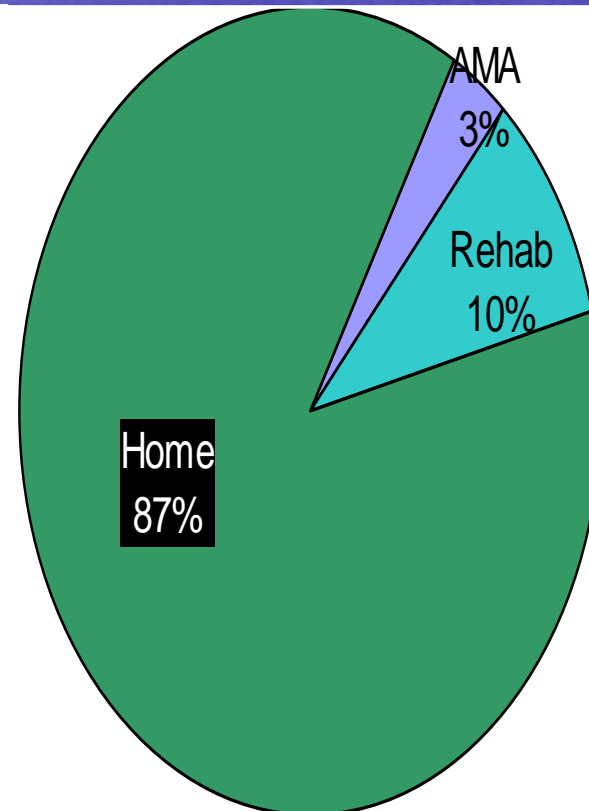
- 84% of hospitalized riders **did not wear a helmet;**
- And most of the hospital charges (93%) incurred to the **unhelmeted riders.**

Hospital Discharge Status of Motorcycle Riders, by Helmet Use (2003)

No helmet



Helmet



Conclusions:

- Middle Age riders are the largest growing age group of motorcyclists.
 - 45-54 year olds are the largest group with motorcycle licenses.
 - 55-64 year olds are now the second largest group with motorcycle licenses.
- Riders age 45-54 had the largest increase in Motorcyclist crash rate

Conclusions 1.1

- Riders age 15-44 have a large increase in crash rate despite declining numbers of license holders.
- Riders age 45-54 has the largest percentage of female license holders.
- Riders age 55-64 has the second largest percentage of female license holders.
- The youngest riders has the lowest percentage of female riders.

Continued...

- **Harley Davidson** riders have the highest number of registered motorcycles **and** the highest number of crashes and the **third highest crash rate**.
- **Honda** had the 2nd highest number of registered motorcycles and but the **lowest crash rate**.
- **Suzuki and Kawasaki** which with their high-power bikes that appeal to young riders had the **highest crash rate**.

Conclusions 1.2

- Half of the fatal crashes were single vehicle crashes.
- In multi-vehicle crashes, motorcyclists had contributing circumstances 64.3% of the time.
 - The other motorists have contributing circumstances 39.3% of the time.
 - (3.6% of the time both drivers had contributing circumstances.)

Continued...

- Where motorcyclist had Contributing Circumstances*:
 - 53.7% cite motorcyclist last control.
 - 48.8% list motorcyclist speeding.
 - 12.2 % list motorcyclist reckless driving.
- Only 27% of motorcyclists wore a helmet in all crashes—less than 20% in fatal crashes.

* From both statistics and crash narratives.

Conclusions 1.3:

- Youngest Drivers Make up the largest number ED patients.
- Middle age riders make up the largest share of Hospital admissions.
- Unhelmeted riders require more services after release from hospital.

Continued...

- Motorcycle riders are the most vulnerable injury victims involved in a motor vehicle crash:
 - Though they accounted for only **4%** of all MVC injuries, they comprised **12%** of the total MVC hospitalizations;
 - **10%** of all MVC fatalities in Iowa;
 - **19%** of total MVC hospital charges in Iowa (2005).

Continued...

- Despite declining number of riders, teens and young adults are the most likely to be involved in a crash compared to any other age groups.
- Meanwhile, there was a clear sign that motorcyclists between ages **35 and 54** had the highest increased crash rate as more baby-boomers were riding motorcycles.

Continued...

- As Iowa is one of 30 states which eliminated universal helmet law, it is not surprising to see that **only 27% of riders** involved in crashes in Iowa were wearing helmets (2005).
- From the view of public health and safety, there is repeated evidence that helmets prevent head injury and reduce the likelihood of a crash fatality

Questions?

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