

## INJURY EXPERIENCE FOR PERSONS WHO HAD BEEN DRINKING

Alcohol and/or drug use affects the judgment and behavior of persons in addition to motor vehicle drivers. Consider the experience of drinking bicyclists, pedestrians, motorcyclists, snowmobilers, and ORV/ATV riders, when looking at crash statistics. Alcohol should not be used by anyone intending to navigate a roadway.

<b>BICYCLIST</b>	Total	Drinking in Crash	Drinking Bicyclist
Bicyclists Killed	32	9	5
Bicyclists Injured	2,534	122	74
Bicyclists in Crashes	3,091	145	87



<b>PEDESTRIAN</b>	Total	Drinking in Crash	Drinking Pedestrian
Pedestrians Killed	192	75	59
Pedestrians Injured	3,404	331	225
Pedestrians in Crashes	3,971	425	295



<b>MOTORCYCLIST</b>	Total	Drinking in Crash	Drinking Motorcyclist
Motorcyclists Killed	62	29	28
Motorcyclists Injured	2,200	324	259
Motorcyclists in Crashes	2,887	400	319



<b>SNOWMOBILER *</b>	Total	Drinking in Crash	Drinking Snowmobiler
Snowmobilers Killed	13	7	6
Snowmobilers Injured	276	75	69
Snowmobilers in Crashes	522	112	94

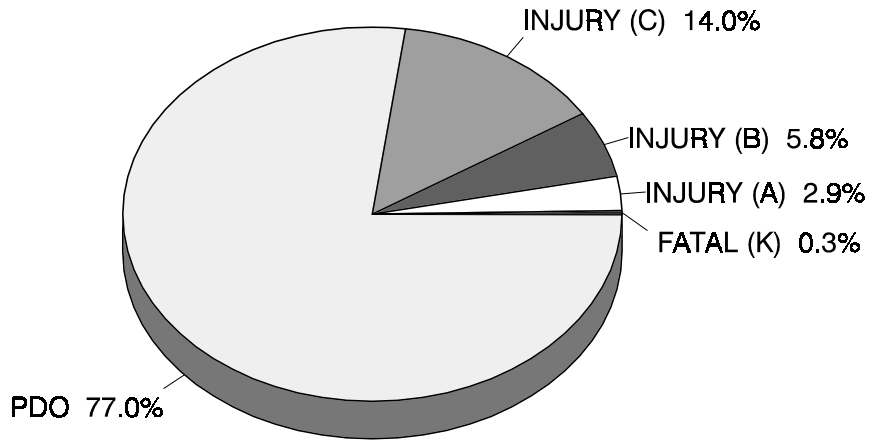


<b>ORV/ATV RIDER *</b>	Total	Drinking in Crash	Drinking ORV/ATV Rider
ORV/ATV Rider Killed	9	7	7
ORV/ATV Rider Injured	170	27	22
ORV/ATV Rider in Crashes	246	36	31

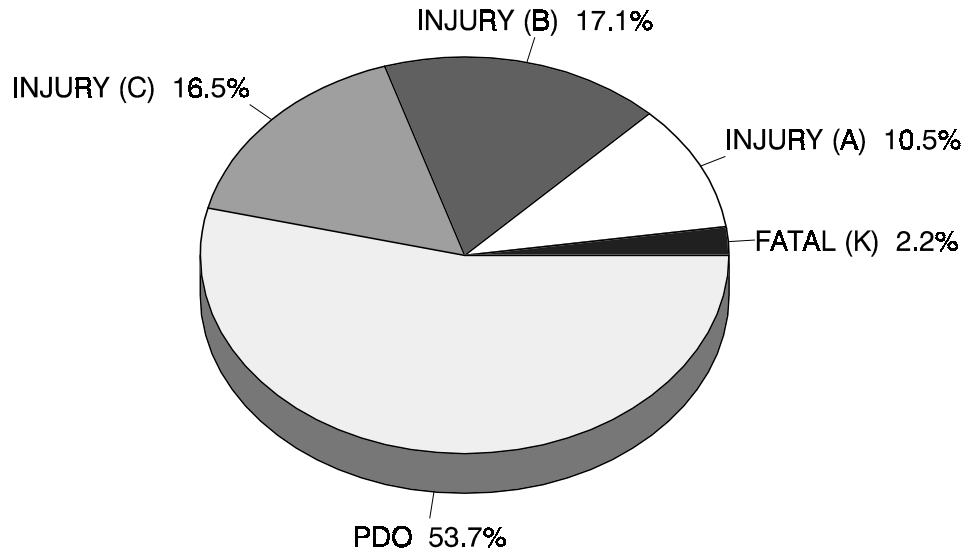


\* on-road crashes

## ALL CRASHES BY INJURY SEVERITY



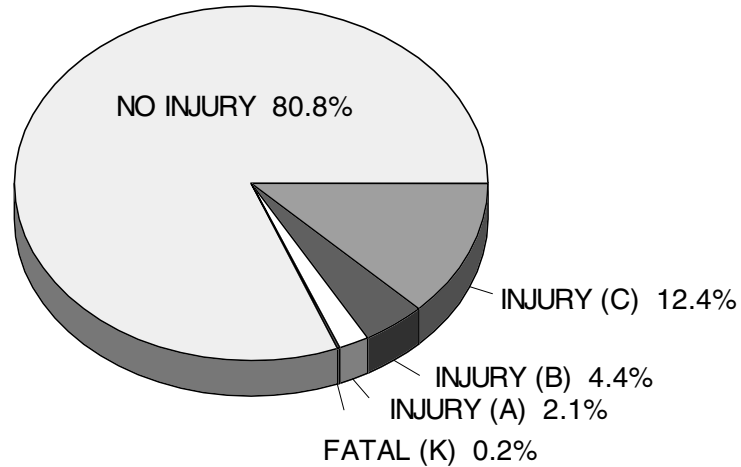
## HBD CRASHES BY INJURY SEVERITY



The problem of the drinking driver, pedestrian, and/or cyclist is seen when one compares the two charts on this page. A fatality in the crash is seven times more likely when one of the crash-involved operators is reported as had been drinking.

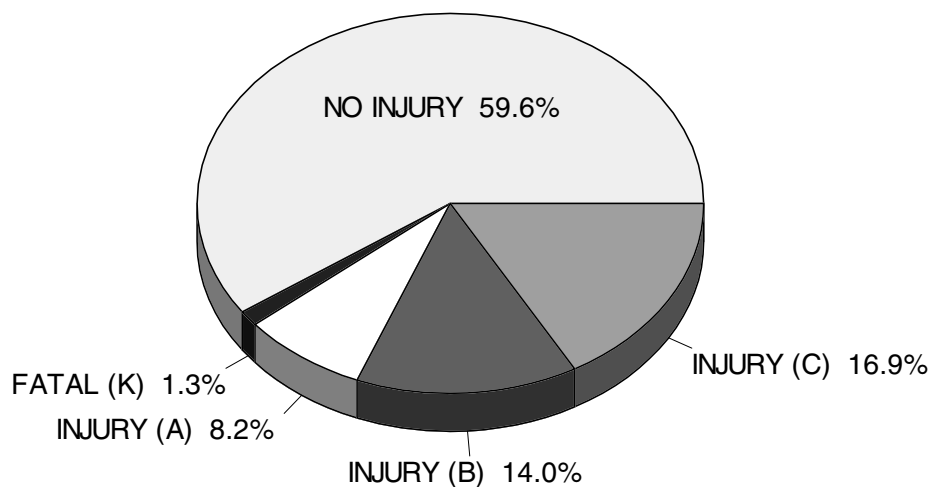
## DEATH & INJURY PER CRASH INVOLVED OCCUPANT

### Occupants in Crashes



The majority of occupants involved in crashes are not injured (80.8%). Half of those who are injured receive only minor (C) injuries. Increased use of occupant restraints and airbags can reduce the number of killed and injured even further.

### Occupants in HBD Crashes

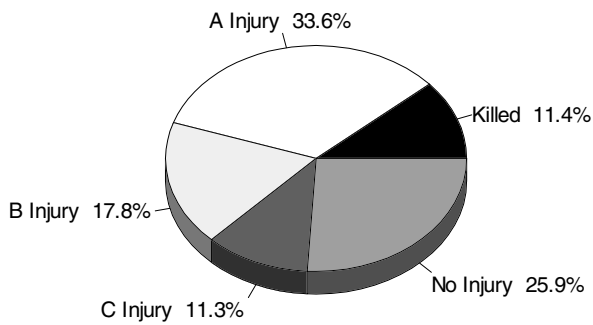


Crashes involving drinking tend to be more serious than nondrinking crashes. The percentage of fatalities is six times higher than in all crashes and the more serious injury levels are three to four times higher.

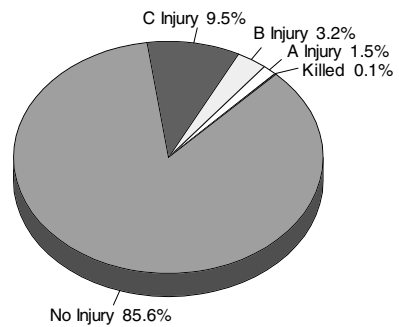
## ALL DRIVERS and HBD DRIVERS INJURY SEVERITY - EJECTED vs. NOT EJECTED

As can be seen in the two charts below, death and injury are much more likely when drivers are ejected from their vehicles.

Ejected

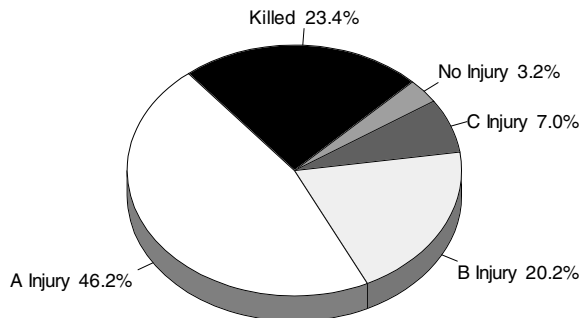


Not Ejected

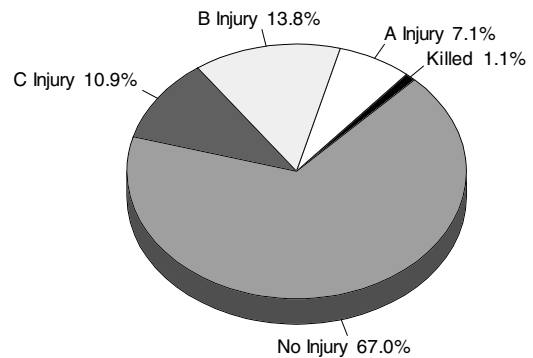


When compared to the charts above, the charts below demonstrate that the injury severity is much worse for drivers who had been drinking in both ejected, and nonejected events.

HBD Ejected



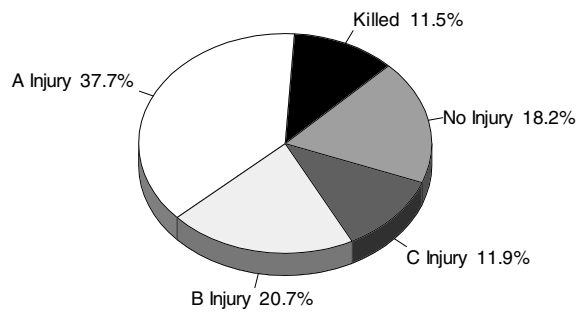
HBD Not Ejected



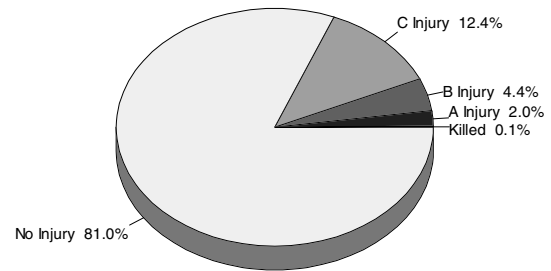
## ALL OCCUPANTS and OCCUPANTS of HBD CRASHES INJURY SEVERITY - EJECTED vs. NOT EJECTED

As can be seen in the two charts below, death and injury are much more likely when occupants are ejected from their vehicles.

### Ejected

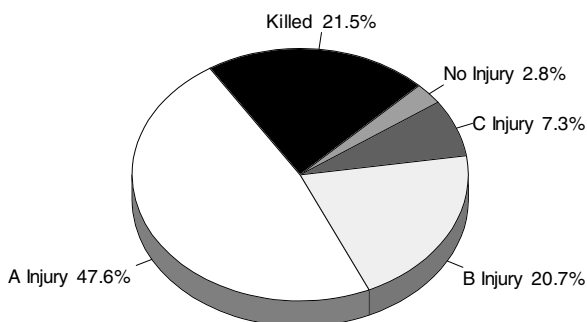


### Not Ejected

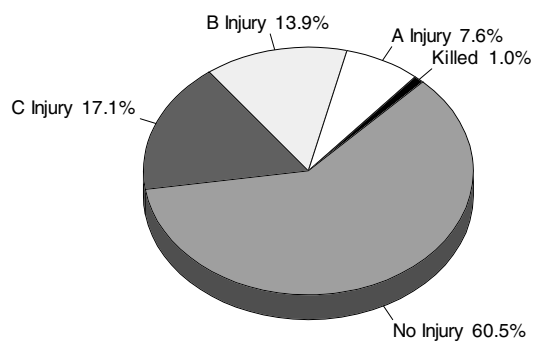


When compared to the charts above, the charts below demonstrate that the injury severity is much worse for occupants in a crash where drinking is reported in both ejected, and nonejected events.

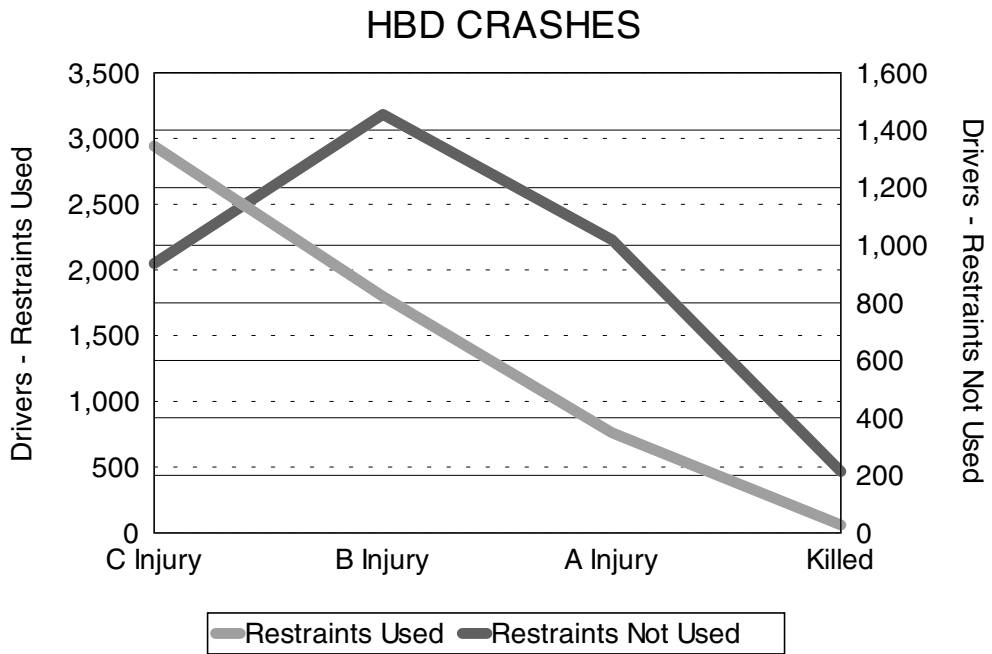
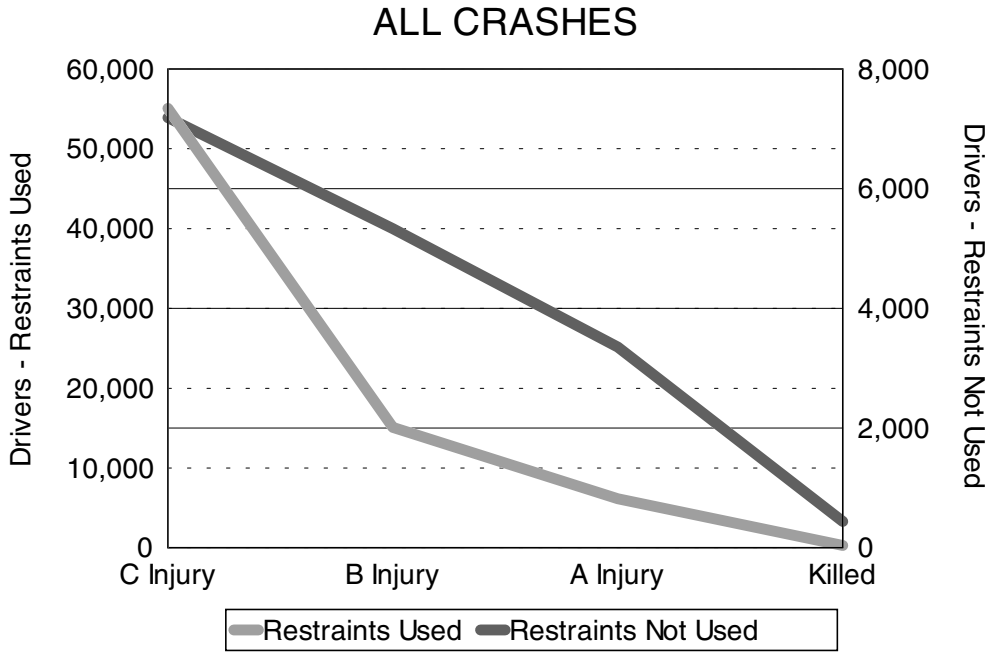
### HBD Ejected



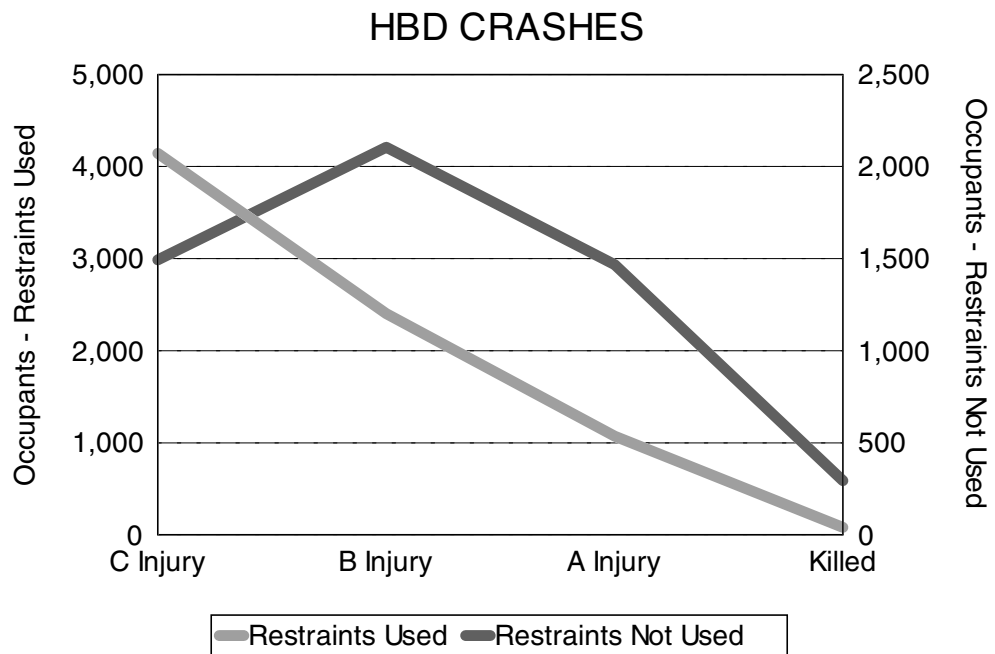
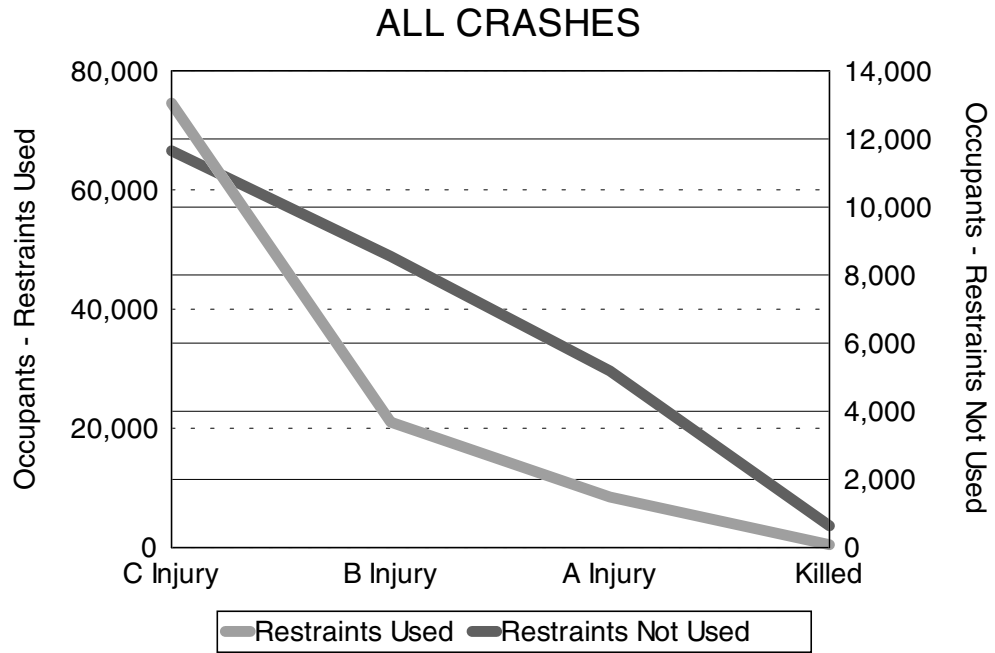
### HBD Not Ejected



## INJURY SEVERITY & RESTRAINT USE FOR CRASH INVOLVED KABC DRIVERS



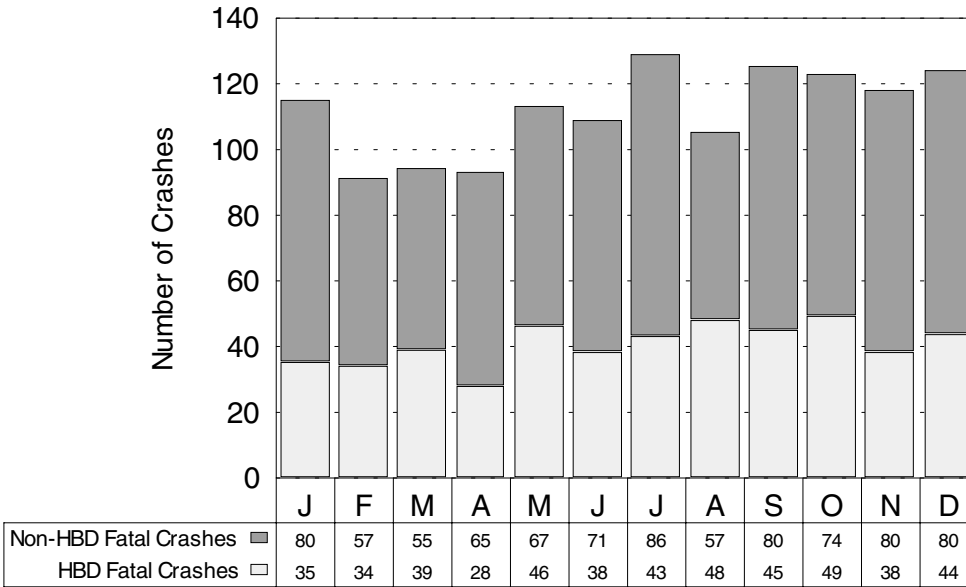
**INJURY SEVERITY & RESTRAINT USE FOR  
CRASH INVOLVED KABC OCCUPANTS**



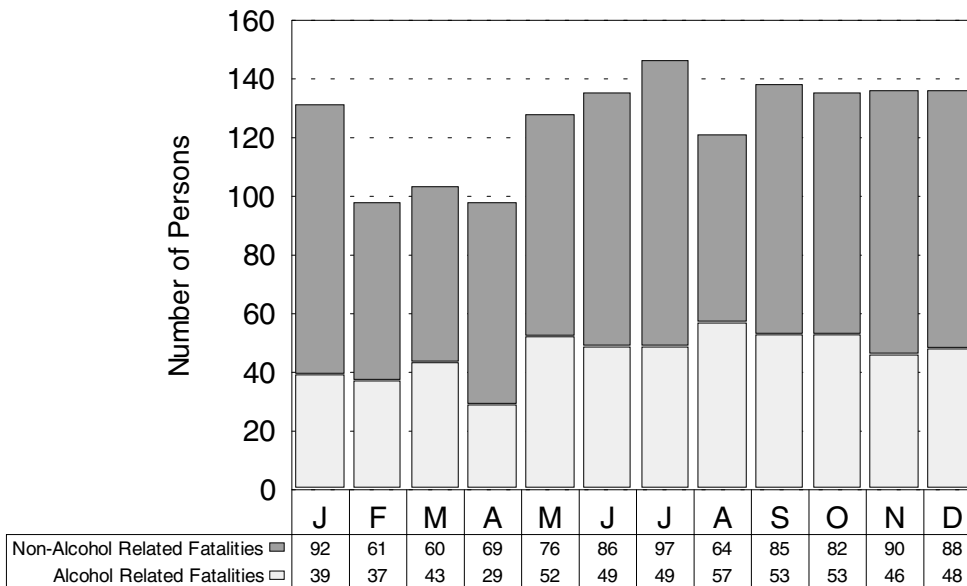
## ALCOHOL INVOLVEMENT IN FATAL CRASHES

Fatal crashes were lowest in number during February, March and April. The number of fatal crashes then increased, peaking in July. These numbers follow the increase in travel during the summer months. The number of HBD fatal crashes by month does not show a discernible trend. Total persons killed in fatal crashes closely follows the number of crashes, as would be expected.

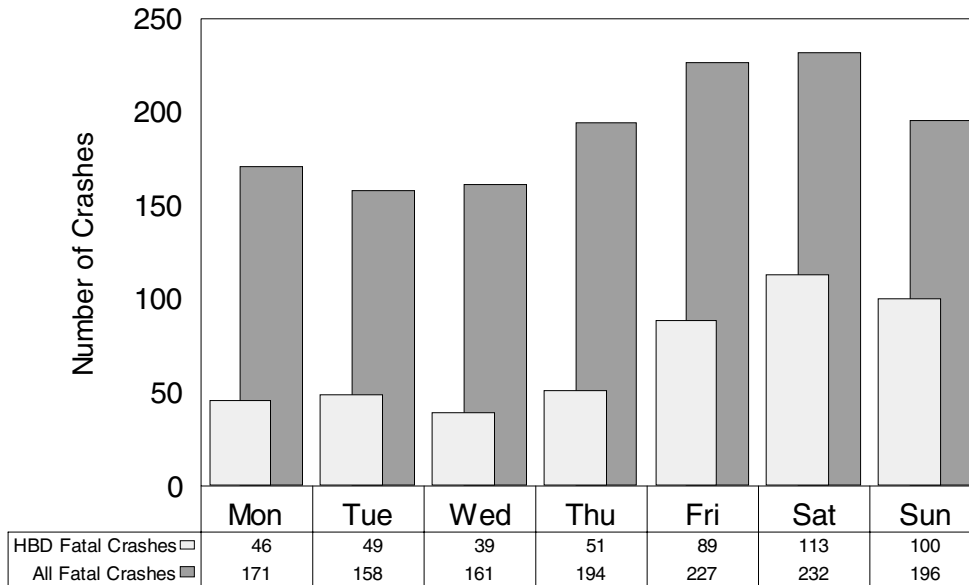
### HBD Fatal Crashes by Month



### Alcohol Related Fatalities by Month

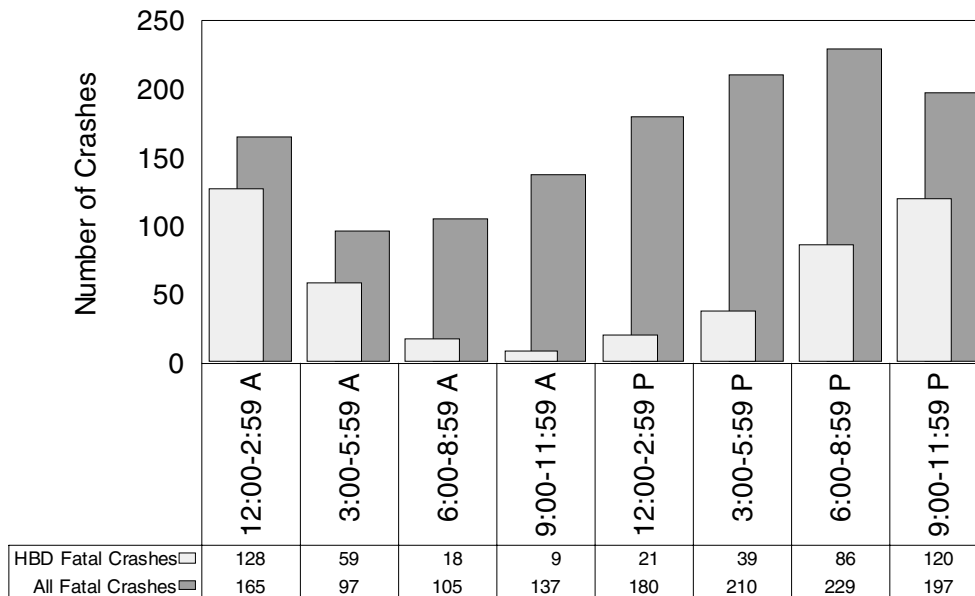


## HBD Fatal Crashes by Day of Week



Saturday had the most fatal crashes in 1996. Saturday and Sunday had the highest proportions of drinking related fatal crashes. Almost half of weekend fatal crashes involved drinking, while only 24.2 percent of fatal crashes on Wednesday involved drinking.

## HBD Fatal Crashes by Time of Day



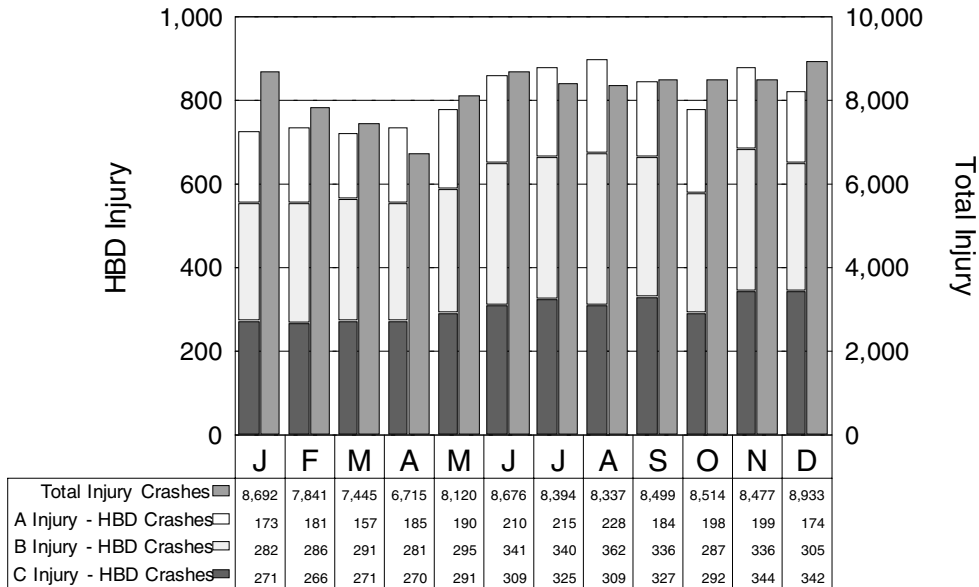
Not surprisingly, the midnight to 2:59 AM time period had the highest rate of drinking involvement (77.6%), while the late morning hours had the lowest (6.7%).

There were 19 fatal crashes where the time of day was unknown. Of these 19 fatal crashes, 7 were HBD.

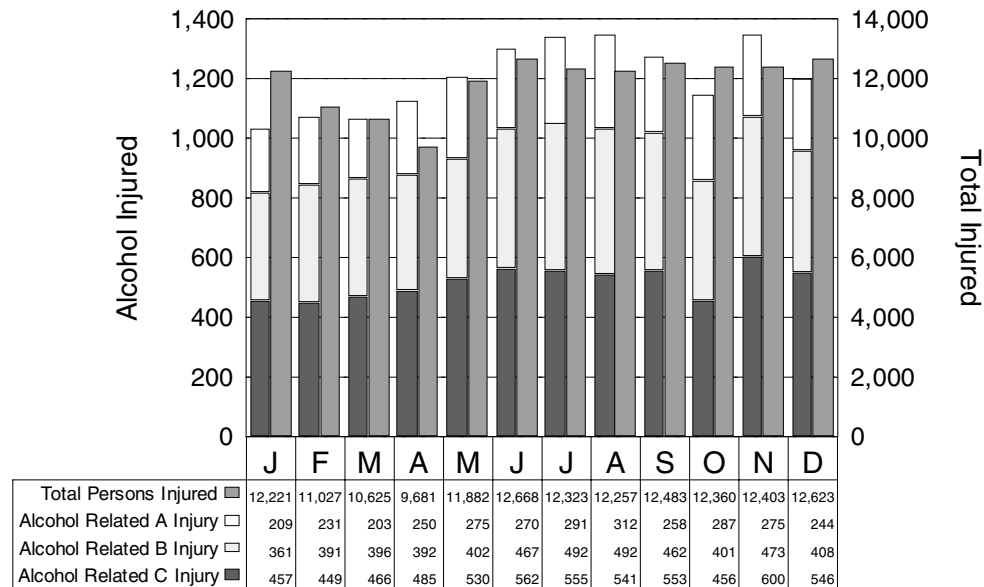
## ALCOHOL INVOLVEMENT IN INJURY CRASHES

Alcohol involvement in injury crashes is an important indicator of the alcohol impaired driving problem. In 1996, the highest number of HBD injury crashes occurred in August with 899. The highest proportion of HBD injury crashes occurred in April with 11 percent of the injury crashes in that month involving alcohol.

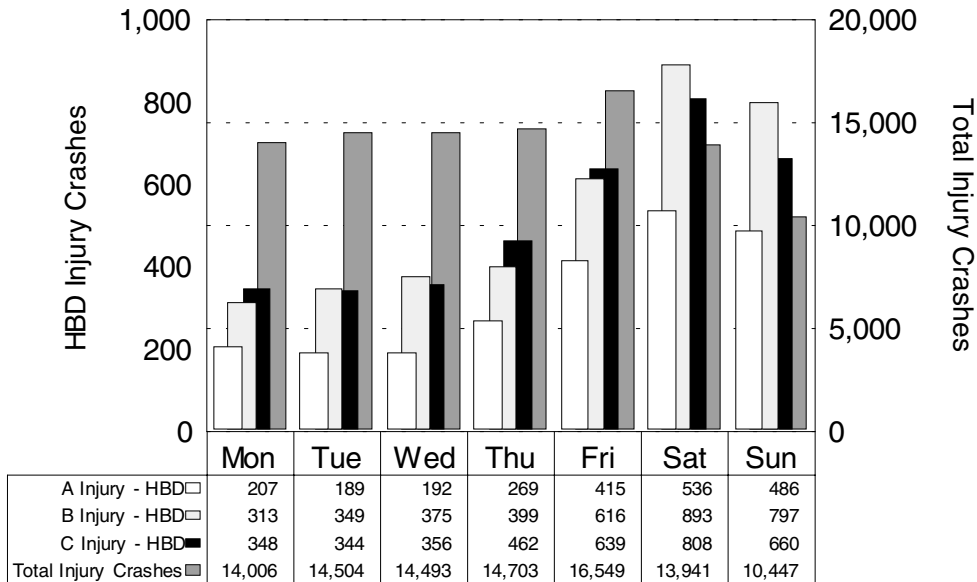
### HBD Injury Crashes by Month



### Alcohol Related Injuries by Month

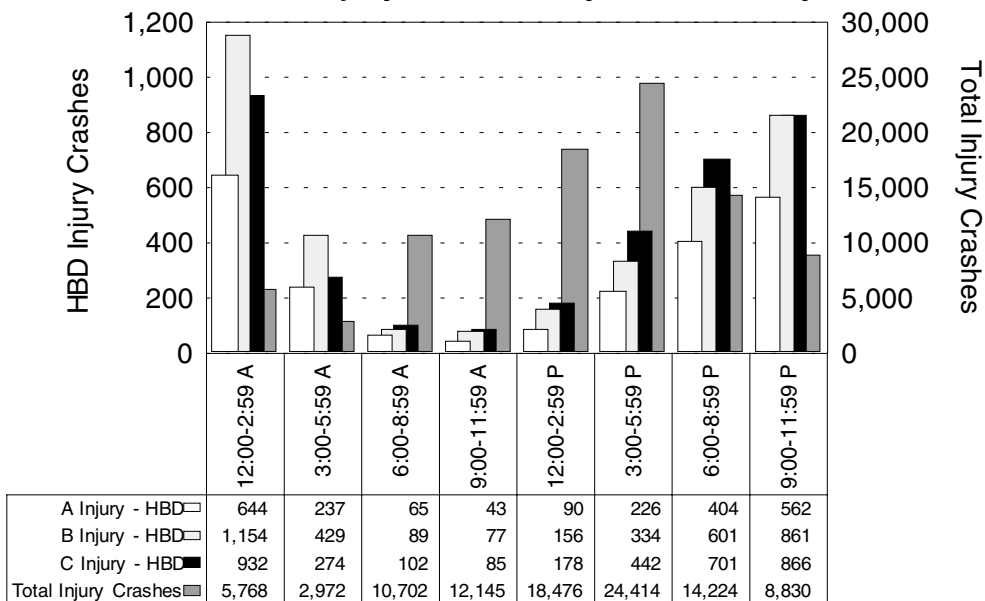


## HBD Injury Crashes by Day of Week



HBD injury crashes follow the same basic trends as total crashes through the work week, but the weekend sees a dramatic increase in the proportion of HBD injury crashes to total injury crashes.

## HBD Injury Crashes by Time of Day



Total injury crash frequencies peak in the hours between 12:00 PM and 5:59 PM, while HBD injury crash frequencies peak between 9:00 PM and 2:59 AM. A particularly hazardous travel period is 12:00 AM to 2:59 AM.

## REPORTED AGE OF DRINKING DRIVERS INVOLVED IN CRASHES

COUNTY	All ages	0-15 years	16-20 years	21-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75 yrs & over	DOB unk
Alcona	45	0	4	4	13	14	3	3	2	2	0
Alger	41	0	3	4	9	13	5	4	0	1	2
Allegan	303	1	23	53	102	73	27	7	3	0	14
Alpena	81	1	13	17	19	17	7	4	2	0	1
Antrim	51	0	5	7	20	10	1	2	0	0	6
Arenac	63	0	10	9	14	19	8	1	1	0	1
Baraga	21	0	1	6	8	5	0	0	0	0	1
Barry	165	1	25	19	51	41	13	4	1	1	9
Bay	365	1	37	53	105	94	37	16	7	3	12
Benzie	30	0	4	5	9	4	4	2	2	0	0
Berrien	342	4	29	37	90	92	30	14	6	1	39
Branch	111	0	11	16	36	24	8	3	1	0	12
Calhoun	344	0	31	50	94	77	49	14	9	0	20
Cass	152	0	12	12	40	39	13	2	2	0	32
Charlevoix	48	0	3	10	16	9	5	3	0	1	1
Cheboygan	84	0	11	12	30	14	10	2	3	1	1
Chippewa	115	0	10	22	34	21	9	4	1	1	13
Clare	82	0	10	8	26	25	6	4	2	0	1
Clinton	132	0	13	20	41	33	15	3	4	0	3
Crawford	33	0	3	5	11	10	1	1	1	0	1
Delta	96	0	15	14	26	15	13	4	1	1	7
Dickinson	70	0	4	13	21	13	7	2	1	1	8
Eaton	209	0	26	31	57	54	19	4	2	2	14
Emmet	93	0	9	11	28	26	7	5	2	0	5
Genesee	1,492	2	102	168	446	365	167	57	23	5	157
Gladwin	76	0	7	14	29	10	9	5	1	0	1
Gogebic	40	1	7	4	9	7	1	1	0	0	10
Grand Traverse	168	0	17	32	50	38	15	5	4	1	6
Gratiot	81	0	5	17	25	20	8	1	3	0	2
Hillsdale	102	0	12	27	23	20	8	2	3	2	5
Houghton	98	0	15	11	30	17	11	2	2	2	8
Huron	75	0	13	15	20	11	10	2	2	1	1
Ingham	597	8	72	112	136	147	58	20	13	2	29
Ionia	190	1	31	36	64	36	13	3	0	0	6
Iosco	103	0	12	11	29	28	9	5	7	1	1
Iron	37	0	1	3	11	4	8	0	1	0	9
Isabella	144	0	30	26	38	30	11	5	1	0	3
Jackson	443	2	40	71	125	126	40	10	4	6	19
Kalamazoo	535	3	76	84	135	120	49	21	6	3	38
Kalkaska	56	0	8	8	14	14	7	2	1	0	2
Kent	1,092	1	105	170	394	212	113	28	19	6	44
Keweenaw	12	0	0	0	4	1	6	0	0	1	0
Lake	39	0	3	2	17	8	5	1	2	0	1
Lapeer	240	0	28	37	83	59	25	3	2	2	1
Leelanau	71	1	6	15	21	18	4	1	0	0	5

## REPORTED AGE OF DRINKING DRIVERS INVOLVED IN CRASHES (continued)

COUNTY	All ages	0-15 years	16-20 years	21-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75 yrs & over	DOB unk
Lenawee	215	0	19	29	61	55	20	6	2	0	23
Livingston	341	2	48	53	84	93	33	13	5	1	9
Luce	15	0	4	0	7	1	2	0	1	0	0
Mackinac	56	0	9	7	15	7	9	3	0	0	6
Macomb	1,675	1	146	218	479	472	194	72	27	11	55
Manistee	50	0	3	8	10	13	11	4	1	0	0
Marquette	131	0	19	29	41	21	7	2	4	1	7
Mason	75	0	9	8	30	17	2	3	0	1	5
Mecosta	83	0	6	19	33	11	5	4	1	0	4
Menominee	83	0	8	10	26	15	4	6	0	1	13
Midland	152	2	12	22	48	40	14	3	3	1	7
Missaukee	31	0	2	6	9	5	3	2	1	0	3
Monroe	386	2	36	41	115	84	34	8	6	6	54
Montcalm	179	0	16	23	58	56	16	4	3	0	3
Montmorency	36	0	3	4	8	10	4	4	2	0	1
Muskegon	339	1	31	47	106	86	31	12	9	1	15
Newaygo	158	0	14	17	68	25	14	8	4	0	8
Oakland	2,256	5	191	301	690	572	282	81	42	8	84
Oceana	100	0	13	15	31	20	6	6	3	0	6
Ogemaw	64	0	4	8	25	18	5	2	0	1	1
Ontonagon	30	0	4	3	6	8	1	3	1	0	4
Osceola	80	0	8	11	19	24	12	5	0	1	0
Oscoda	40	0	6	7	12	3	6	3	2	0	1
Otsego	61	0	6	8	21	13	4	3	2	1	3
Ottawa	350	1	48	68	88	90	19	14	2	1	19
Presque Isle	33	0	2	4	8	9	5	4	1	0	0
Roscommon	69	0	5	5	29	16	9	3	1	0	1
Saginaw	517	1	52	80	156	124	58	17	7	4	18
Sanilac	87	0	12	14	22	23	8	3	0	1	4
Schoolcraft	38	0	6	2	8	8	6	1	2	0	5
Shiawassee	162	2	21	25	44	43	21	1	1	1	3
St. Clair	415	1	58	47	134	92	35	16	10	3	19
St. Joseph	166	0	24	27	51	24	13	5	1	0	21
Tuscola	149	0	18	26	47	29	19	5	2	1	2
Van Buren	196	0	17	24	72	37	18	6	4	3	15
Washtenaw	552	1	53	85	173	119	56	23	5	3	34
Wayne	3,667	3	259	424	991	957	463	197	111	28	234
Wexford	111	1	6	16	42	23	13	6	1	1	2
UNKNOWN	4	1	0	0	0	1	1	0	0	0	1
<b>Totals</b>	<b>21,919</b>	<b>51</b>	<b>2,100</b>	<b>3,042</b>	<b>6,470</b>	<b>5,297</b>	<b>2,337</b>	<b>840</b>	<b>414</b>	<b>127</b>	<b>1,241</b>



**MALE DRIVERS &  
INJURY SEVERITY IN CRASH**

**ALL CRASHES**

**MOST SEVERE OUTCOME IN CRASH**

AGE OF DRIVER IN CRASH	Male Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	158	0.0	0	0.0	3	11	19	125
1 - 3 years	23	0.0	0	0.0	1	2	3	17
4 - 10 years	78	0.0	0	0.0	6	14	16	42
11 - 15 years	1,006	0.3	3	0.2	82	158	152	611
16 - 20 years	61,079	15.2	216	14.4	1978	4435	9313	45137
21 - 24 years	38,053	9.5	168	11.2	1288	2578	5769	28250
25 - 34 years	88,224	22.0	343	22.9	2813	5369	13405	66294
35 - 44 years	74,754	18.6	260	17.4	2279	4309	11089	56817
45 - 54 years	49,674	12.4	169	11.3	1486	2688	7389	37942
55 - 64 years	26,573	6.6	80	5.3	749	1436	4060	20248
65 - 74 years	17,943	4.5	79	5.3	533	1160	2944	13227
75 years and over	10,204	2.5	86	5.7	363	702	1703	7350
Not Stated	33,581	8.4	93	6.2	886	1521	4740	26341
<b>TOTAL</b>	<b>401,350</b>	<b>100.0</b>	<b>1,497</b>	<b>100.0</b>	<b>12,467</b>	<b>24,383</b>	<b>60,602</b>	<b>302,401</b>

The fatal crash involvement for male drivers is down 4.4 percent from 1995.

**DRINKING DRIVER**

**MOST SEVERE OUTCOME IN CRASH**

AGE OF DRINKING DRIVER IN CRASH	Male Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	11	0.1	0	0.0	0	1	2	8
1 - 3 years	0	0.0	0	0.0	0	0	0	0
4 - 10 years	4	0.0	0	0.0	0	2	1	1
11 - 15 years	26	0.2	0	0.0	1	4	3	18
16 - 20 years	1,689	9.8	50	14.0	187	327	240	885
21 - 24 years	2,516	14.6	57	16.0	265	505	365	1324
25 - 34 years	4,970	28.9	107	30.1	529	932	773	2629
35 - 44 years	3,982	23.2	70	19.7	407	667	647	2191
45 - 54 years	1,902	11.1	28	7.9	189	243	364	1078
55 - 64 years	717	4.2	14	3.9	61	107	128	407
65 - 74 years	356	2.1	7	2.0	30	58	74	187
75 years and over	105	0.6	8	2.2	8	12	20	57
Not Stated	908	5.3	15	4.2	80	120	157	536
<b>TOTAL</b>	<b>17,186</b>	<b>100.0</b>	<b>356</b>	<b>100.0</b>	<b>1,757</b>	<b>2,978</b>	<b>2,774</b>	<b>9,321</b>

The fatal crash involvement for male drinking drivers is down 12.1 percent from 1995.



## FEMALE DRIVERS & INJURY SEVERITY IN CRASH

### ALL CRASHES

#### MOST SEVERE OUTCOME IN CRASH

AGE OF DRIVER IN CRASH	Female Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	109	0.0	0	0.0	1	4	17	87
1 - 3 years	23	0.0	0	0.0	0	2	3	18
4 - 10 years	47	0.0	0	0.0	5	4	10	28
11 - 15 years	613	0.2	2	0.3	42	74	113	382
16 - 20 years	43,246	15.8	84	13.2	1396	3262	8118	30386
21 - 24 years	26,917	9.8	51	8.0	816	1714	5041	19295
25 - 34 years	62,757	23.0	151	23.8	1720	3787	12072	45027
35 - 44 years	55,861	20.4	127	20.0	1495	3098	10342	40799
45 - 54 years	34,780	12.7	84	13.2	944	1913	6404	25435
55 - 64 years	16,570	6.1	27	4.3	458	923	3108	12054
65 - 74 years	11,199	4.1	43	6.8	343	653	2133	8027
75 years and over	7,485	2.7	41	6.5	292	544	1342	5266
Not Stated	13,754	5.0	24	3.8	304	588	2055	10783
<b>TOTAL</b>	<b>273,361</b>	<b>100.0</b>	<b>634</b>	<b>100.0</b>	<b>7,816</b>	<b>16,566</b>	<b>50,758</b>	<b>197,587</b>

The fatal crash involvement for female drivers is down 0.9 percent from 1995.

### DRINKING DRIVER

#### MOST SEVERE OUTCOME IN CRASH

AGE OF DRINKING DRIVER IN CRASH	Female Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	2	0.0	0	0.0	0	1	1	0
1 - 3 years	0	0.0	0	0.0	0	0	0	0
4 - 10 years	0	0.0	0	0.0	0	0	0	0
11 - 15 years	8	0.2	0	0.0	2	0	3	3
16 - 20 years	379	9.0	7	9.0	55	90	55	172
21 - 24 years	469	11.1	10	12.8	64	80	81	234
25 - 34 years	1,396	33.0	25	32.1	147	232	273	719
35 - 44 years	1,233	29.2	24	30.8	126	188	230	665
45 - 54 years	394	9.3	8	10.3	32	54	76	224
55 - 64 years	111	2.6	1	1.3	5	15	21	69
65 - 74 years	51	1.2	2	2.6	0	11	7	31
75 years and over	20	0.5	0	0.0	1	3	4	12
Not Stated	162	3.8	1	1.3	15	19	31	96
<b>TOTAL</b>	<b>4,225</b>	<b>100.0</b>	<b>78</b>	<b>100.0</b>	<b>447</b>	<b>693</b>	<b>782</b>	<b>2,225</b>

The fatal crash involvement for female drinking drivers is up 2.6 percent from 1995.

The tables on this page and the previous page exclude 508 drinking drivers of unknown gender.

## FATAL CRASHES AND FATALITIES WITH DRINKING INVOLVEMENT BY COUNTY

COUNTY	C R A S H E S			P E R S O N S		
	All Fatal Crashes	HBD Fatal Crashes	Percent HBD	Total Fatalities	HBD Fatalities	Percent HBD
Alcona	1	0	0.0	1	0	0.0
Alger	0	0	0.0	0	0	0.0
Allegan	21	8	38.1	24	9	37.5
Alpena	3	1	33.3	3	1	33.3
Antrim	3	1	33.3	3	1	33.3
Arenac	12	2	16.7	14	2	14.3
Baraga	1	1	100.0	1	1	100.0
Barry	12	4	33.3	12	4	33.3
Bay	15	5	33.3	15	5	33.3
Benzie	4	0	0.0	5	0	0.0
Berrien	27	8	29.6	29	9	31.0
Branch	8	4	50.0	8	4	50.0
Calhoun	25	11	44.0	28	13	46.4
Cass	12	4	33.3	12	4	33.3
Charlevoix	2	0	0.0	2	0	0.0
Cheboygan	3	3	100.0	3	3	100.0
Chippewa	5	2	40.0	5	2	40.0
Clare	10	4	40.0	14	5	35.7
Clinton	11	5	45.5	14	8	57.1
Crawford	3	1	33.3	3	1	33.3
Delta	6	3	50.0	6	3	50.0
Dickinson	1	0	0.0	1	0	0.0
Eaton	26	5	19.2	30	6	20.0
Emmet	5	1	20.0	6	1	16.7
Genesee	58	27	46.6	69	33	47.8
Gladwin	6	3	50.0	6	3	50.0
Gogebic	3	1	33.3	4	1	25.0
Grand Traverse	10	4	40.0	12	5	41.7
Gratiot	7	2	28.6	10	2	20.0
Hillsdale	9	3	33.3	12	6	50.0
Houghton	1	0	0.0	1	0	0.0
Huron	6	4	66.7	7	4	57.1
Ingham	24	13	54.2	27	16	59.3
Ionia	12	6	50.0	15	9	60.0
Iosco	5	2	40.0	5	2	40.0
Iron	4	0	0.0	4	0	0.0
Isabella	11	6	54.5	12	7	58.3
Jackson	25	9	36.0	30	10	33.3
Kalamazoo	35	7	20.0	44	9	20.5
Kalkaska	8	2	25.0	9	2	22.2
Kent	60	17	28.3	70	17	24.3
Keweenaw	1	1	100.0	1	1	100.0
Lake	2	1	50.0	2	1	50.0
Lapeer	15	6	40.0	20	10	50.0

**FATAL CRASHES AND FATALITIES  
WITH DRINKING INVOLVEMENT  
BY COUNTY (continued)**

COUNTY	C R A S H E S			P E R S O N S		
	All Fatal Crashes	HBD Fatal Crashes	Percent HBD	Total Fatalities	HBD Fatalities	Percent HBD
Leelanau	3	1	33.3	3	1	33.3
Lenawee	21	10	47.6	25	12	48.0
Livingston	41	12	29.3	45	12	26.7
Luce	1	0	0.0	1	0	0.0
Mackinac	5	2	40.0	10	6	60.0
Macomb	72	24	33.3	73	24	32.9
Manistee	5	4	80.0	5	4	80.0
Marquette	7	3	42.9	9	4	44.4
Mason	5	1	20.0	6	1	16.7
Mecosta	8	2	25.0	9	2	22.2
Menominee	3	2	66.7	3	2	66.7
Midland	12	3	25.0	17	3	17.6
Missaukee	3	2	66.7	3	2	66.7
Monroe	29	11	37.9	32	12	37.5
Montcalm	10	3	30.0	12	3	25.0
Montmorency	2	1	50.0	2	1	50.0
Muskegon	34	12	35.3	40	15	37.5
Newaygo	9	6	66.7	10	7	70.0
Oakland	74	25	33.8	87	29	33.3
Oceana	4	1	25.0	4	1	25.0
Ogemaw	5	2	40.0	5	2	40.0
Ontonagon	5	3	60.0	5	3	60.0
Osceola	6	3	50.0	6	3	50.0
Oscoda	1	0	0.0	1	0	0.0
Otsego	4	1	25.0	4	1	25.0
Ottawa	29	5	17.2	30	5	16.7
Presque Isle	4	2	50.0	4	2	50.0
Roscommon	6	1	16.7	7	2	28.6
Saginaw	29	14	48.3	32	17	53.1
Sanilac	14	5	35.7	15	5	33.3
Schoolcraft	3	2	66.7	5	3	60.0
Shiawassee	11	8	72.7	12	9	75.0
St. Clair	35	15	42.9	36	15	41.7
St. Joseph	17	5	29.4	20	6	30.0
Tuscola	18	10	55.6	21	11	52.4
Van Buren	19	3	15.8	20	3	15.0
Washtenaw	26	13	50.0	32	16	50.0
Wayne	232	80	34.5	243	85	35.0
Wexford	9	3	33.3	12	6	50.0
Totals	1,339	487	36.4	1,505	555	36.9



## MOST SEVERE OUTCOME IN HBD CRASHES BY COUNTY

Note: While the Michigan *Traffic Crash Report* (UD-10) requests officers to report Bodily Alcohol Content (BAC) of all persons tested for alcohol after a traffic crash, only the BAC testing of deceased motor vehicle drivers and deceased railroad train engineers is required by law. Consequently, alcohol involvement in nonfatal crashes is frequently unreported, and is therefore generally believed to be higher than indicated in this table.

### MOST SEVERE OUTCOME IN HBD CRASH

COUNTY	All HBD Crashes	Fatal	Injury			PDO
			A	B	C	
Alcona	44	0	9	10	4	21
Alger	43	0	9	7	6	21
Allegan	301	8	32	54	30	177
Alpena	82	1	10	17	9	45
Antrim	50	1	5	11	5	28
Arenac	60	2	11	12	8	27
Baraga	21	1	3	2	5	10
Barry	164	4	29	35	25	71
Bay	362	5	44	64	53	196
Benzie	30	0	2	4	6	18
Berrien	344	8	36	66	56	178
Branch	110	4	10	19	12	65
Calhoun	348	11	38	59	40	200
Cass	153	4	28	29	21	71
Charlevoix	49	0	4	10	10	25
Cheboygan	82	3	8	13	14	44
Chippewa	117	2	8	14	10	83
Clare	83	4	9	20	12	38
Clinton	130	5	17	27	11	70
Crawford	34	1	7	6	4	16
Delta	90	3	6	20	9	52
Dickinson	70	0	8	10	11	41
Eaton	210	5	26	34	27	118
Emmet	93	1	9	18	8	57
Genesee	1,480	27	73	300	259	821
Gladwin	74	3	11	13	10	37
Gogebic	38	1	3	9	4	21
Grand Traverse	166	4	12	24	26	100
Gratiot	80	2	15	15	9	39
Hillsdale	102	3	9	19	19	52
Houghton	95	0	13	16	9	57
Huron	77	4	13	7	19	34
Ingham	605	13	61	99	94	338
Ionia	191	6	34	28	21	102
Iosco	99	2	14	28	4	51
Iron	36	0	4	4	5	23
Isabella	147	6	19	21	20	81
Jackson	437	9	36	82	66	244
Kalamazoo	543	7	58	90	91	297
Kalkaska	58	2	7	10	7	32
Kent	1,083	17	99	152	169	646
Keweenaw	13	1	3	0	0	9

## MOST SEVERE OUTCOME IN HBD CRASHES BY COUNTY (continued)

### MOST SEVERE OUTCOME IN HBD CRASH

COUNTY	All HBD Crashes	Fatal	Injury			PDO
			A	B	C	
Lake	40	1	3	5	4	27
Lapeer	238	6	22	42	36	132
Leelanau	71	1	7	18	12	33
Lenawee	213	10	20	46	41	96
Livingston	342	12	49	48	44	189
Luce	15	0	1	3	3	8
Mackinac	55	2	9	9	10	25
Macomb	1,677	24	161	252	311	929
Manistee	51	4	5	7	8	27
Marquette	131	3	16	26	15	71
Mason	74	1	20	11	8	34
Mecosta	81	2	8	17	8	46
Menominee	82	2	12	10	14	44
Midland	152	3	15	32	16	86
Missaukee	30	2	7	8	1	12
Monroe	380	11	44	76	71	178
Montcalm	174	3	20	30	22	99
Montmorency	37	1	7	4	2	23
Muskegon	334	12	39	56	43	184
Newaygo	154	6	23	17	9	99
Oakland	2,247	25	202	347	437	1236
Oceana	97	1	12	16	12	56
Ogemaw	65	2	10	12	8	33
Ontonagon	30	3	4	2	4	17
Osceola	80	3	14	12	10	41
Oscoda	39	0	5	13	3	18
Otsego	61	1	11	11	6	32
Ottawa	349	5	36	50	72	186
Presque Isle	32	2	4	7	4	15
Roscommon	69	1	5	16	9	38
Saginaw	513	14	62	104	69	264
Sanilac	86	5	11	15	9	46
Schoolcraft	37	2	4	6	4	21
Shiawassee	166	8	20	31	19	88
St. Clair	410	15	44	78	52	221
St. Joseph	167	5	18	28	28	88
Tuscola	149	10	19	22	15	83
Van Buren	198	3	35	45	28	87
Washtenaw	562	13	57	114	111	267
Wayne	3,717	80	372	592	795	1878
Wexford	108	3	9	26	15	55
Unknown	4	0	0	0	1	3
Totals	21,911	487	2,294	3,742	3,617	11,771

**COUNTY RANKING BY HBD FATAL CRASH RATE  
per 1,000 Michigan Residents**

COUNTY	1996 Population Estimate	All Crashes	Fatal Crashes	HBD Crashes	HBD Fatal Crashes	HBD Fatal Crash Rate per 1,000 people
Keweenaw	2,010	85	1	13	1	0.4975
Ontonagon	8,405	647	5	30	3	0.3569
Schoolcraft	8,653	671	3	37	2	0.2311
Mackinac	11,096	1,046	5	55	2	0.1802
Manistee	22,902	1,175	5	51	4	0.1747
Tuscola	57,837	2,572	18	149	10	0.1729
Missaukee	13,607	886	3	30	2	0.1470
Clare	28,618	1,776	10	83	4	0.1398
Presque Isle	14,407	780	4	32	2	0.1388
Osceola	22,047	1,697	6	80	3	0.1361
Newaygo	44,285	2,271	9	154	6	0.1355
Cheboygan	22,993	1,168	3	82	3	0.1305
Kalkaska	15,325	911	8	58	2	0.1305
Arenac	16,268	1,162	12	60	2	0.1229
Gladwin	24,615	1,187	6	74	3	0.1219
Baraga	8,472	612	1	21	1	0.1180
Sanilac	42,440	2,333	14	86	5	0.1178
Huron	35,281	2,190	6	77	4	0.1134
Shiawassee	72,333	2,736	11	166	8	0.1106
Isabella	57,118	3,227	11	147	6	0.1050
Wexford	28,789	1,966	9	108	3	0.1042
Lenawee	97,133	3,870	21	213	10	0.1030
Lake	9,874	699	2	40	1	0.1013
Montmorency	9,868	530	2	37	1	0.1013
Ionia	60,378	3,034	12	191	6	0.0994
St. Clair	155,636	5,662	35	410	15	0.0964
Ogemaw	20,790	1,448	5	65	2	0.0962
Branch	42,991	2,306	8	110	4	0.0930
Livingston	137,616	5,739	41	342	12	0.0872
St. Joseph	60,977	2,677	17	167	5	0.0820
Menominee	24,551	1,997	3	82	2	0.0815
Allegan	99,019	4,332	21	301	8	0.0808
Iosco	24,761	1,409	5	99	2	0.0808
Clinton	62,239	2,916	11	130	5	0.0803
Cass	50,050	2,242	12	153	4	0.0799
Calhoun	140,112	7,169	25	348	11	0.0785
Monroe	140,488	5,026	29	380	11	0.0783
Delta	39,047	2,659	6	90	3	0.0768
Barry	53,145	3,066	12	164	4	0.0753
Crawford	13,671	887	3	34	1	0.0731
Muskegon	164,913	6,385	34	334	12	0.0728
Lapeer	85,479	4,014	15	238	6	0.0702
Saginaw	211,808	9,391	29	513	14	0.0661
Hillsdale	45,887	2,474	9	102	3	0.0654
Genesee	436,128	16,677	58	1,480	27	0.0619

## COUNTY RANKING BY HBD FATAL CRASH RATE per 1,000 Michigan Residents (continued)

COUNTY	1996 Population Estimate	All Crashes	Fatal Crashes	HBD Crashes	HBD Fatal Crashes	HBD Fatal Crash Rate per 1,000 people
Jackson	154,563	7,559	25	437	9	0.0582
Gogebic	17,704	673	3	38	1	0.0565
Grand Traverse	72,072	3,944	10	166	4	0.0555
Leelanau	18,430	813	3	71	1	0.0543
Chippewa	37,289	1,807	5	117	2	0.0536
Mecosta	38,460	3,071	8	81	2	0.0520
Montcalm	58,969	3,400	10	174	3	0.0509
Eaton	99,562	4,712	26	210	5	0.0502
Gratiot	39,978	1,964	7	80	2	0.0500
Berrien	161,434	6,414	27	344	8	0.0496
Antrim	20,595	1,216	3	50	1	0.0486
Marquette	62,017	3,200	7	131	3	0.0484
Otsego	21,343	1,192	4	61	1	0.0469
Ingham	285,737	12,910	24	605	13	0.0455
Bay	110,824	4,367	15	362	5	0.0451
Washtenaw	295,149	12,917	26	562	13	0.0440
Roscommon	22,847	1,250	6	69	1	0.0438
Oceana	24,379	1,217	4	97	1	0.0410
Van Buren	75,308	3,227	19	198	3	0.0398
Wayne	2,039,819	93,682	232	3,717	80	0.0392
Midland	80,669	3,292	12	152	3	0.0372
Mason	27,725	1,744	5	74	1	0.0361
Emmet	27,870	1,765	5	93	1	0.0359
Macomb	734,625	27,973	72	1,677	24	0.0327
Alpena	30,746	1,516	3	82	1	0.0325
Kent	536,103	25,544	60	1,083	17	0.0317
Kalamazoo	229,008	10,857	35	543	7	0.0306
Ottawa	215,064	8,341	29	349	5	0.0232
Oakland	1,162,098	48,423	74	2,247	25	0.0215
Alcona	10,799	866	1	44	0	0.0000
Alger	9,971	654	0	43	0	0.0000
Benzie	14,037	647	4	30	0	0.0000
Charlevoix	23,503	1,409	2	49	0	0.0000
Dickinson	27,285	1,771	1	70	0	0.0000
Houghton	36,230	1,505	1	95	0	0.0000
Iron	13,121	900	4	36	0	0.0000
Luce	6,180	394	1	15	0	0.0000
Oscoda	8,775	526	1	39	0	0.0000
Unknown		108	0	4	0	
<b>State Totals</b>	<b>9,594,350</b>	<b>435,477</b>	<b>1,339</b>	<b>21,911</b>	<b>487</b>	<b>0.05076</b>



## Summary of Michigan's "Zero Tolerance" Law

Public Act 211 of 1994 makes it a crime for a person under the age of 21 to have any Bodily Alcohol Content (BAC) while operating a motor vehicle.

The presumptive levels for this statute are 0.02g - 0.07g BAC.

**Persons Arrested** since law began 11/1/94 (as of 10/9/97) **3,707**

### Other Statewide OUIL Arrests for Under Age 21 (not related to "Zero Tolerance" law)

	Total	Change		Total (All Ages)
*1997	3,196	-4.4%	7.8% of Total OUIL Arrests	41,160
1996	3,342	-15.1%	8.1% of Total OUIL Arrests	41,340
1995	3,937	68.8%	9.7% of Total OUIL Arrests	40,447
1994	2,332	-27.0%	6.4% of Total OUIL Arrests	36,327

*For comparison purposes, data is for January-August for each year shown*

### Drivers Under Age 21 Involved in Traffic Crashes (by Crash Type)

	Total	Change	Fatal	Change	Injury	Change	Property	Change	
*1997	63,264	-7.9%	125	-36.5%	17,529	-9.5%	45,610	-7.2%	Total
	<b>1,187</b>	-17.5%	<b>20</b>	-44.4%	<b>524</b>	-22.3%	<b>643</b>	-11.7%	<b>HBD</b>
1996	68,713	-35.8%	197	-39.2%	19,371	-37.0%	49,145	-35.3%	Total
	<b>1,438</b>	-34.2%	<b>36</b>	-33.3%	<b>674</b>	-34.1%	<b>728</b>	-34.4%	<b>HBD</b>
1995	107,092	7.3%	324	0.6%	30,761	3.5%	76,007	9.0%	Total
	<b>2,185</b>	-7.5%	<b>54</b>	1.9%	<b>1,022</b>	-8.8%	<b>1,109</b>	-6.7%	<b>HBD</b>
1994	99,772		322		29,734		69,716		Total
	<b>2,362</b>		<b>53</b>		<b>1,120</b>		<b>1,189</b>		<b>HBD</b>

*For comparison purposes, data is for January-August for each year shown*

\*1997 data is incomplete, and is subject to change as new or revised data is reported

NOTE: Data includes only those Traffic Crash Reports (UD-10s) received and processed as of 10/9/97

**HBD** = Had Been Drinking (or Using Drugs)

**HNBD** = Had NOT Been Drinking (or Using Drugs)

Source: Michigan Department of State Police, Office of Highway Safety Planning

Data Run 10/9/97