

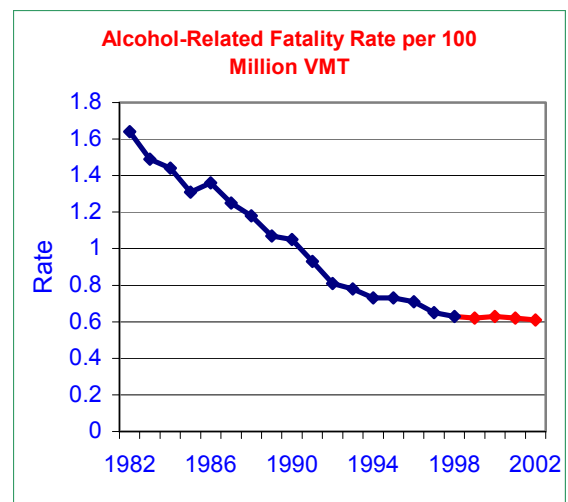


Recent Trends in Alcohol-Related Fatality Rates

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Introduction

This Research Note serves as a companion publication to the Technical Report *State Alcohol Related Fatality Rates* (DOT HS 809 673). The purpose of this publication is to analyze the trend of alcohol-related fatality rates – expressed as the number of alcohol-related fatalities per 100 Million Vehicle Miles of Travel (VMT), over the last few years by state. As shown in Figure 1, the alcohol-related fatality rate for the nation has been dropping since 1982, the year NHTSA started estimating alcohol involvement in fatal crashes but has maintained a relatively flat since 1998. In 2002, the rate dipped marginally to 0.61 alcohol-related fatalities per 100 Million VMT for the nation from 0.62 in 2001.



Data and Methodology

Alcohol-related fatalities are defined as fatalities that occur in crashes where at least one driver or nonoccupant (pedestrian or pedalcyclist) involved in a crash has a positive (0.01+) Blood Alcohol Concentration (BAC) value. The estimates of alcohol involvement are based on reported BAC values as well as estimated BAC values in those cases where the alcohol test results are not known. BAC values have been assigned using statistical procedures¹ to drivers, pedestrians and pedalcyclists involved in fatal crashes only when their alcohol test results are unknown. The Federal Highway Administration (FHWA) releases VMT data each year by state and this enables the reporting of the rate of alcohol-related fatalities per 100 Million VMT for each state. This is the metric that will be used in analyzing the trends of the state rates since 1998.

Results

In 2002, the national rate of alcohol-related fatalities declined marginally, about 3 percent, as compared to the rate in 1998. In the period between 1998 and 2002, the rate for 32 states declined, remained the same for two states and increased for 17 states. Thus, when comparing the alcohol-related fatality rate in 2002 as compared to that in 1998, the number of states with a lower rate outnumbered the number of states with a higher rate by a margin of 2 to 1. In this time, the number of alcohol-related fatalities increased by 746. Table 1 summarizes the change from 1998 to 2002 along the two categories of states with rising and declining rates. The states are sorted by the magnitude of the 2002 alcohol-related fatality rate. The rates are also highlighted if it reflects a decrease from the previous year.

¹ NHTSA uses *multiple imputation* to estimate missing BAC values in FARS. For more information refer to *Transitioning to Multiple Imputation: A New Method for estimating missing BAC values in FARS* [DOT HS 809 403]

Table 1: Alcohol-related Fatalities per 100 Million VMT by State, 1998-2002. Sorted by Ascending 2002 Rate

State	Alcohol-Related Fatality Rate					% Change (Rank)	
	1998	1999	2000	2001	2002	1998 to 2002	2001 to 2002
Vermont	0.61	0.51	0.47	0.35	0.28	-54.10% (1)	-20.00% (6)
Utah	0.31	0.41	0.47	0.3	0.3	-3.23% (26)	0.00% (31)
Maine	0.41	0.42	0.36	0.45	0.35	-14.63% (12)	-22.22% (5)
New York	0.37	0.38	0.37	0.39	0.36	-2.70% (28)	-7.69% (18)
Indiana	0.59	0.55	0.43	0.45	0.37	-37.29% (2)	-17.78% (8)
New Hampshire	0.54	0.55	0.41	0.54	0.41	-24.07% (7)	-24.07% (3)
Massachusetts	0.36	0.38	0.41	0.43	0.41	13.89% (43)	-4.65% (26)
Iowa	0.56	0.58	0.47	0.51	0.42	-25.00% (5)	-17.65% (9)
New Jersey	0.41	0.43	0.48	0.41	0.43	4.88% (36)	4.88% (36)
Connecticut	0.49	0.45	0.52	0.52	0.45	-8.16% (19)	-13.46% (11)
Minnesota	0.57	0.4	0.49	0.42	0.47	-17.54% (8)	11.90% (40)
Virginia	0.49	0.46	0.48	0.46	0.48	-2.04% (30)	4.35% (35)
Maryland	0.46	0.44	0.48	0.54	0.49	6.52% (39)	-9.26% (15)
Michigan	0.59	0.59	0.54	0.53	0.49	-16.95% (9)	-7.55% (19)
Georgia	0.54	0.53	0.56	0.52	0.49	-9.26% (18)	-5.77% (24)
California	0.47	0.47	0.47	0.5	0.5	6.38% (38)	0.00% (31)
Ohio	0.51	0.51	0.53	0.57	0.52	1.96% (33)	-8.77% (16)
Oregon	0.7	0.5	0.55	0.54	0.52	-25.71% (3)	-3.70% (28)
Oklahoma	0.64	0.61	0.53	0.62	0.54	-15.63% (11)	-12.90% (12)
Washington	0.6	0.52	0.54	0.52	0.54	-10.00% (17)	3.85% (34)
Hawaii	0.74	0.54	0.64	0.68	0.56	-24.32% (6)	-17.65% (10)
Rhode Island	0.45	0.43	0.49	0.6	0.56	24.44% (46)	-6.67% (20)
Delaware	0.57	0.49	0.74	0.77	0.57	0.00% (32)	-25.97% (2)
Illinois	0.61	0.63	0.61	0.6	0.61	0.00% (32)	1.67% (33)
Wisconsin	0.54	0.54	0.61	0.64	0.62	14.81% (45)	-3.13% (29)
Pennsylvania	0.64	0.61	0.63	0.63	0.63	-1.56% (31)	0.00% (31)
Nebraska	0.68	0.7	0.58	0.52	0.63	-7.35% (20)	21.15% (45)
Idaho	0.74	0.74	0.88	0.65	0.64	-13.51% (14)	-1.54% (30)
Kentucky	0.66	0.63	0.6	0.54	0.64	-3.03% (27)	18.52% (44)
North Dakota	0.63	0.8	0.57	0.73	0.65	3.17% (35)	-10.96% (14)
North Carolina	0.68	0.65	0.69	0.59	0.65	-4.41% (25)	10.17% (39)
Tennessee	0.82	0.8	0.82	0.79	0.69	-15.85% (10)	-12.66% (13)
Dist of Columbia	0.94	0.66	0.57	0.91	0.7	-25.53% (4)	-23.08% (4)
Alaska	0.69	0.88	1.21	1	0.71	2.90% (34)	-29.00% (1)
Colorado	0.62	0.56	0.64	0.76	0.71	14.52% (44)	-6.58% (21)
Florida	0.76	0.8	0.85	0.75	0.72	-5.26% (23)	-4.00% (27)
Alabama	0.8	0.83	0.75	0.66	0.72	-10.00% (17)	9.09% (38)
Missouri	0.79	0.66	0.77	0.77	0.77	-2.53% (29)	0.00% (31)
Wyoming	0.88	0.91	0.61	0.95	0.78	-11.36% (16)	-17.89% (7)
Texas	0.85	0.81	0.84	0.84	0.79	-7.06% (21)	-5.95% (23)
Arkansas	0.76	0.72	0.76	0.66	0.8	5.26% (37)	21.21% (46)
Kansas	0.61	0.7	0.57	0.69	0.81	32.79% (48)	17.39% (42)
West Virginia	0.8	0.78	0.94	0.69	0.9	12.50% (42)	30.43% (48)
Mississippi	1.04	1.05	1.08	0.77	0.91	-12.50% (15)	18.18% (43)
Arizona	0.98	0.91	0.95	0.98	0.93	-5.10% (24)	-5.10% (25)
New Mexico	0.88	0.92	0.94	0.93	0.94	6.82% (40)	1.08% (32)
Louisiana	1.1	1.08	1.11	1.03	0.95	-13.64% (13)	-7.77% (17)
Nevada	1.02	0.88	0.79	0.73	0.95	-6.86% (22)	30.14% (47)
South Dakota	0.84	0.8	0.98	1	1.08	28.57% (46)	8.00% (37)
South Carolina	0.87	0.89	1.05	1.25	1.17	34.48% (49)	-6.40% (22)
Montana	1.1	1.11	1.18	1.04	1.22	10.91% (41)	17.31% (41)
U.S.	0.63	0.62	0.63	0.62	0.61	-3.17%	-1.61%
Puerto Rico*	1.76	1.47	1.53	1.44	1.33	-24.43%	-7.64%

Source: NCSA FARS 1998-2001 (Final) and 2002 (ARF) Files, FHWA Highway Statistics Series
 Highlighted cells reflect a lower rate as compared to previous year

Also shown in Table 1 is the percentage change in alcohol-related fatality rate since last year and the rank of this percentage change, as indicated in parenthesis. The lower ranks reflect highest decline in the rates among all the states. For example, when comparing the percentage change in the rates from 1998 to 2002, Vermont had the highest percentage decrease (-54%) and was hence ranked 1. For the same period, South Carolina had the highest percentage increase in the rate (34%) and was hence ranked 51. In 1998, Montana and Louisiana had the highest alcohol-related fatality rate of 1.1 in the nation while Utah's rate of 0.31 was the lowest in the nation. In 2002, Montana had the highest rate of alcohol-related fatalities in the nation at 1.22 while Vermont had the lowest rate at 0.28.

The following points highlight some of the year-to-year changes and trends among the states:

Changes since 1998

- The alcohol-related fatality rate for nineteen states increased or remained flat from 1998.
- Thirty-two states had a decrease in their alcohol-related fatality rates from 1998.
- Since 1998, only Vermont has shown a consistent, year-to-year decline in their alcohol-related fatality rate. In the same period, its rate declined by 54 percent, the highest percentage decline among the states. The rate for South Carolina increased by about 34 percent since 1998, the highest percentage increase among the states.
- Since 1998, the highest rate of alcohol-related fatalities for any state was for 1.25 for South Carolina in 2001 and the lowest was 0.28 for Vermont in 2002.

Changes from 2001

- The alcohol-related fatality rate for twenty-one states increased or remained flat from 2001
- Thirty states had a decrease in their alcohol-related fatality rates from 2001.
- For the thirty states that showed a decrease in their alcohol-related fatality rates, there were a total of 603 fewer fatalities as compared to 2001. This however, was offset by an increase of 622 fatalities for the twenty-one states that showed an increase in their alcohol-related fatality rate.
- The alcohol-related fatality rate for West Virginia increased by about 30 percent from 2001, the highest such increase in the nation in terms of percentage change from 2001. On the other hand, the alcohol-related fatality rate in 2002 dropped 29 percent for Alaska, the highest such decrease among the states.

Table 2 summarizes the changes in rates and fatalities.

Table 2: Alcohol-Related Fatalities and Fatality Rates by Categories of Increasing and Decreasing Rates				
Alcohol-Related Fatality Rates	Since 1998		Since 2001	
	Number of States	Change in Fatalities	Number of States	Change in Fatalities
States with Higher/Flat Rates	19	923	21	+622
States with Lower Rates	32	-180	30	-603
U.S.	-	+746*	-	+19

Source: NCSA FARS 1998-2001 (Final) and 2002 (ARF) Files, FHWA Highway Statistics Series
 *Note: Change in fatalities do not sum up to 746 due to independent rounding of the states numbers.

Conclusions

In the absence of an exposure measure to quantify the extent of drunk driving on our roads, the Vehicle Miles of Travel (VMT) data serves as a proxy in order to standardize the extent of alcohol-related fatalities across the states. The rate of alcohol-related fatalities per VMT provides a metric to compare the extent of impaired driving across the states. Furthermore, states can use this metric to assess their progress over a period of time.