

Blood Alcohol Concentration (BAC) in Fatal Crashes, Utah, 2007-2016

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Introduction

On 14 May 2013, the National Transportation Safety Board recommended that states establish a *per se* blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers in a national effort to reduce alcohol-impaired driving.¹ Several studies have concluded the risk of being involved in a crash of any severity increases at each positive BAC level, however the risk rises rapidly after a driver reaches or exceeds 0.05 BAC compared to drivers with no alcohol in their blood systems.²⁻⁵ This report will briefly examine the blood alcohol concentration (BAC) of drivers in fatal crashes in Utah especially looking at drivers with a BAC between 0.05 and 0.07 percent.

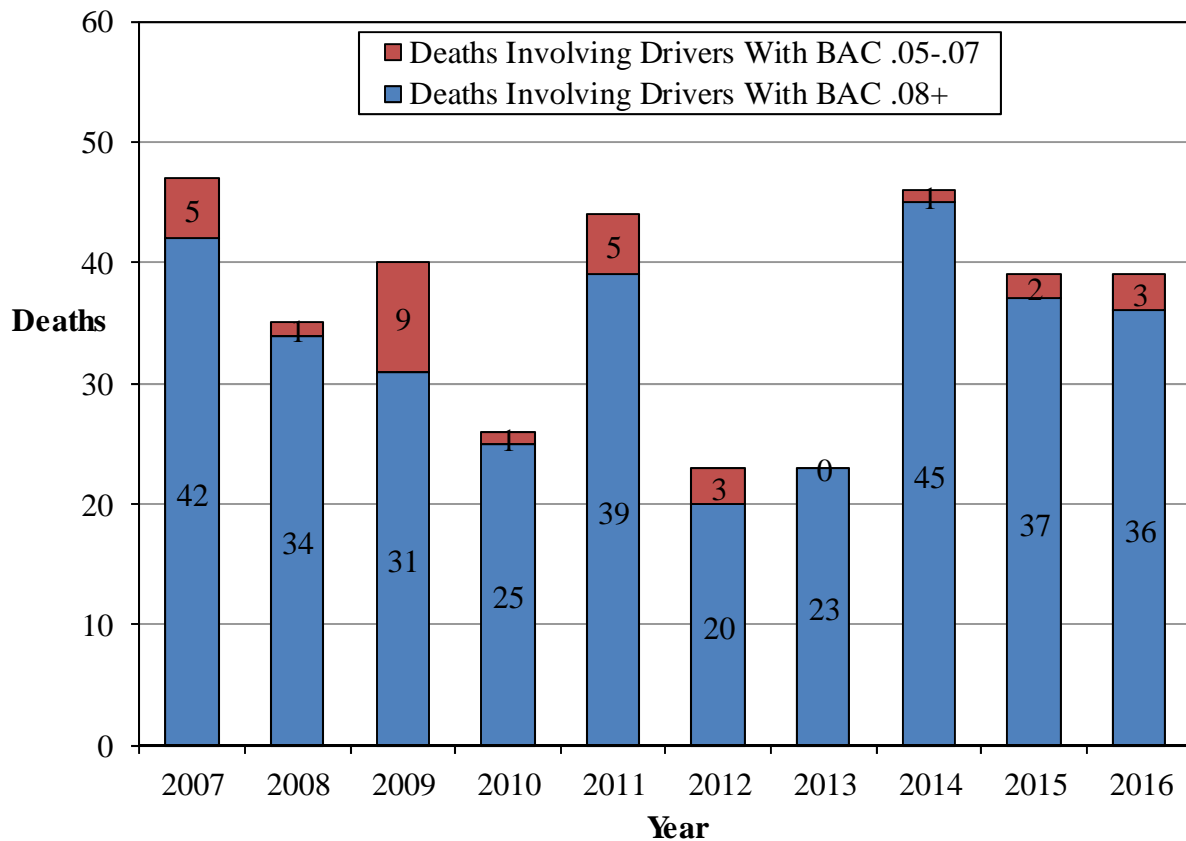
Drivers in Fatal Crashes With BAC 0.08+

Over the last 10 years in Utah (2007-2016) there have been 332 traffic deaths involving drivers with a BAC of 0.08 percent and above. This is an average of 33 deaths a year. Yearly totals ranged from a low of 20 in 2012 to a high of 45 in 2014. Graph 1 shows yearly totals of deaths involving a drunk driver.

Drivers in Fatal Crashes With BAC 0.05—0.07

Over the last 10 years in Utah there have been 30 traffic deaths involving drivers with a BAC of 0.05 to 0.07 percent. This is an average of 3 deaths a year. Yearly totals ranged from a low of 0 in 2013 to a high of 9 in 2009. Graph 1 shows yearly totals of deaths involving a driver with a BAC 0.05-0.07.

Graph 1: Deaths Involving Drivers by BAC, Utah 2007-2016



Drivers in Fatal Crashes Who Tested Positive for Alcohol by BAC

Over the last 10 years in Utah there have been 350 drivers in fatal crashes who tested positive for alcohol. This is an average of 35 drivers a year. Over four-fifths (85.1%) of these drivers had a BAC over the current limit of 0.08 or above. Over one-half (54.6%) were more than double the legal limit.

There were 52 drivers (14.9%) in fatal crashes testing positive for alcohol with a BAC less than 0.08. Of these, 25 (7.1% of all positive alcohol tests) had a BAC between 0.05 and 0.07. This is an average of 2.5 drivers a year.

Chart 1 shows drivers in fatal crashes who tested positive for alcohol by BAC. The BAC levels of 0.18 (24 drivers), 0.13 (21 drivers), and 0.21 (21 drivers) had the highest amount of drivers in fatal crashes.

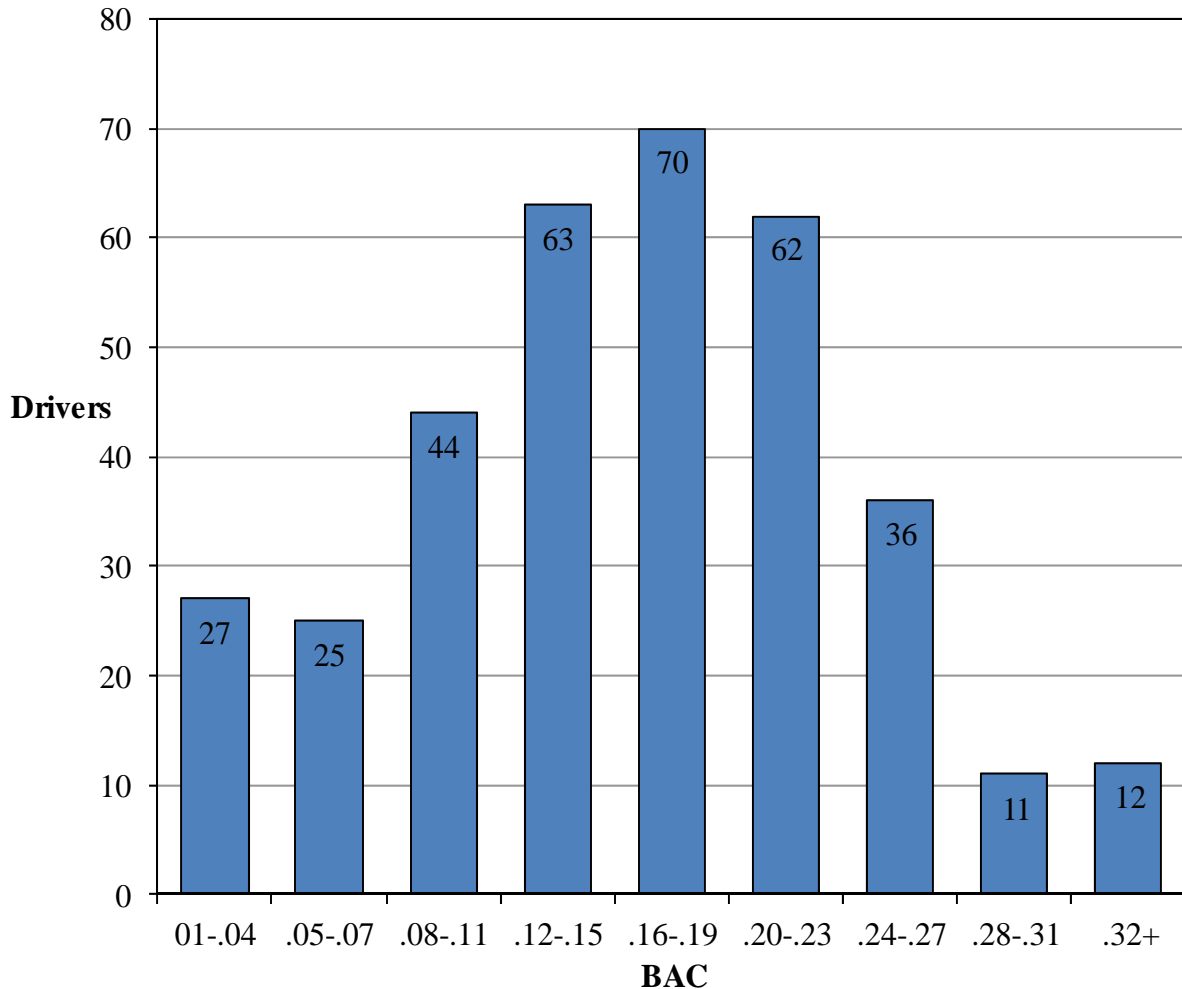
Chart 1: Drivers in Fatal Crashes Who Tested Positive for Alcohol by BAC, Utah, 2007-2016												
BAC	Year										Total	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	#	%
0.01			2	1	1	1			1		6	1.7%
0.02			1		1		2	1	1		6	1.7%
0.03		1				1			2	1	5	1.4%
0.04	2	2				2	1	2	1		10	2.9%
0.05	1		2					1		2	6	1.7%
0.06		1	2		1	2					6	1.7%
0.07	3		2	1	3	1			2	1	13	3.7%
0.08		2			1		1		2		6	1.7%
0.09	4	4	1	2						1	12	3.4%
0.10		2	2	2				1		1	8	2.3%
0.11				2	6	1	2	1	3	3	18	5.1%
0.12	3	4	1	2	1		1			1	13	3.7%
0.13	4	2	3		4	1	1	4	1	1	21	6.0%
0.14	3	4	1	1	1	2	1	2	1	3	19	5.4%
0.15		2	1	2			1	2	1	1	10	2.9%
0.16	2	2	2	2	2			1	1		12	3.4%
0.17	5	1	2		3	1	1	1	2		16	4.6%
0.18	2	2	2	2	3	2		2	3	6	24	6.9%
0.19	1	1	2	1	2		3	4	1	3	18	5.1%
0.20	2		1	1			1	4	2	1	12	3.4%
0.21	2	4	1	2	2	4	2	3		1	21	6.0%
0.22	4	1			1	2		4	1	2	15	4.3%
0.23			4	1	2		2		3	2	14	4.0%
0.24	1		2	1	1	2	1	2	1		11	3.1%
0.25		1			1	1		2	1		6	1.7%
0.26					1	1		1	3	3	9	2.6%
0.27	1	1	2	2	1	1	1		1		10	2.9%
0.28							1				1	0.3%
0.29	2				1		1	1	1		6	1.7%
0.30								1			1	0.3%
0.31			1	1			1				3	0.9%
.32+	1	0	0	1	0	1	2	1	3	3	12	3.4%
Total	43	37	37	27	39	26	26	41	38	36	350	100.0%

Chart 2 and Graph 2 shows drivers in fatal crashes who tested positive for alcohol by BAC grouped into categories. The highest categories were drivers with a BAC of .16-.19 (70 drivers), .12-.15 (63 drivers), and .20-.23 (62 drivers).

Chart 2: Drivers in Fatal Crashes Who Tested Positive for Alcohol by BAC, Utah, 2007-2016

BAC	Year										Total	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	#	%
.01-.04	2	3	3	1	2	4	3	3	5	1	27	7.7%
.05-.07	4	1	6	1	4	3	0	1	2	3	25	7.1%
.08-.11	4	8	3	6	7	1	3	2	5	5	44	12.6%
.12-.15	10	12	6	5	6	3	4	8	3	6	63	18.0%
.16-.19	10	6	8	5	10	3	4	8	7	9	70	20.0%
.20-.23	8	5	6	4	5	6	5	11	6	6	62	17.7%
.24-.27	2	2	4	3	4	5	2	5	6	3	36	10.3%
.28-.31	2	0	1	1	1	0	3	2	1	0	11	3.1%
.32+	1	0	0	1	0	1	2	1	3	3	12	3.4%
Total	43	37	37	27	39	26	26	41	38	36	350	100.0%

Graph 2: Drivers in Fatal Crashes Who Tested Positive for Alcohol by BAC, Utah, 2007-2016



Summary

Over the last 10 years in Utah, there have been 362 traffic crash deaths involving a driver with a BAC of 0.05 or higher. Drivers with a BAC of 0.05-0.07 were involved in 30 (8.3%) of these traffic crash deaths. Of all drivers who tested positive for alcohol in fatal crashes in Utah over the last 10 years, 7.1% had a BAC of 0.05-0.07.

References

1. National Transportation Safety Board. *Reaching Zero: Actions to Eliminate Alcohol-Impaired Driving* [Safety Report] Washington, DC: National Transportation Safety Board; 2013. (NTSB/SR-13/01 PB2013-106566).
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3. Blomberg RD, Peck RC, Moskowitz H, Burns M, Fiorentino D. *Crash Risk of Alcohol Involved Driving: A Case–Control Study*. Stamford, CT: Dunlap & Associates, Inc.; 2005.
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