FIRST OFFENDER BACS AS A PREDICTOR OF DUI RECIDIVISM

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Abstract

Are there BAC values that are consistently associated with a DUI offender's propensity to re-offend? Previously, few studies have demonstrated a compelling relationship between recidivism and BAC. The DMV provided an EXCEL dataset of first-time DUI offender data of persons arrested during calendar years 2000, 2001 and 2002. 43,403 study-subjects were measured, where each individual record represented an unduplicated first-time DUI offender having a BAC measurement of 0.10 or greater[1] (at the time of arrest), the number of days it took that DUI offender to re-arrest for a subsequent DUI event[2] (if 0 value, then no recidivism value: i.e., no subsequent re-arrest), and the total number of subsequent DUI events (value equals 0 if days to re-arrest equal 0).

Results: Under a BAC of 0.150, first-time DUI offenders are less likely to re-offend and get a subsequent DUI. As first-time offenders get arrested for DUIs with BACs at or above 0.150, they will begin to produce subsequent DUIs, and this will increase as a function of their BAC at initial arrest. It is therefore recommended to the PDDC that resources be set aside to examine offenders producing initial BAC values of 0.150 and above, rather than specifically at 0.170 and above.

1. Introduction

The Persistent Drunk Driver Committee (PDDC), a multi-agency group created following the enactment of the Persistent Drunk Driver (PDD) Act of 1998, requested analysis of Colorado data to determine what, if any, relationship there is between Blood Alcohol Content (BAC) and recidivism in impaired driving offenders.

The PDDC consists of The Colorado Department of Revenue, Division of Motor Vehicles (DMV), Colorado Department of Human Services, Division of Behavioral Health, Colorado Department of Transportation, and the Colorado Judicial Branch, State Court Administrator's Office, as well as other interested parties. The PDDC is tasked with administering the Persistent Drunk Driver Cash fund, to support programs that are intended to deter persistent drunk driving or intended to educate the public regarding the dangers of persistent drunk driving.

When measuring DUI recidivism (re-offending after the initial arrest), considerable attention has been focused on high BAC offenders. In Colorado in 1998, The PDD Act (House Bill 98-1334) increased penalties for high BAC and multiple DUI offenders. The legislation also defined a PDD as any person convicted of or whom had their driver's license revoked for two or more alcohol related driving violations, or a person driving with a BAC of 0.20 or more. In 2006 Colorado passed

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[1] **The per se law was changed to 0.08 BAC after the years analyzed in this study.**

[2] **Any subsequent impaired driving episode.**

legislation (HB 06-1171) that further reduced the defined PDD BAC level to 0.17. However, there are still a large number of first time offenders with a BAC below 0.17 who have a subsequent impaired driving episode.

The National Highway Traffic Safety Administration (NHTSA) encourages states to enact enhanced sanctions for drivers with a BAC of 0.15 or greater.[i] However, few studies have demonstrated a compelling relationship between recidivism and specific BAC levels. That is, are there BAC values that are consistently associated with an offender's propensity to re-offend?

2. **Methodology**

2.1 Procedure

The DMV database, which is housed on the state-servers mainframe legacy system, was used as the source for this study data. Since DMV has information on all types of motor vehicle violations, a computer algorithm was established to isolate only DUI codes for the study population. 43,403 records were created from violation dates of 2000, 2001 and 2002 DUI arrests.

Each individual record represented an unduplicated first-time DUI offender having a BAC measurement of 0.10 or greater (at time of arrest), the number of days it took that DUI offender to re-arrest (if 0 value, then no recidivism value: i.e., no subsequent re-arrest), and the total number of subsequent DUI events (value equals 0 if days to re-arrest equal 0). Re-arrests were captured up to five years from the date of the original DUI arrest.

2.2 Measures

2.2.1 Subjects

The DMV provided an EXCEL dataset of first-time DUI offenders with arrest dates during calendar years 2000, 2001 and 2002.

2.2.2 Study Groups

43,403 subjects were sorted by no re-arrest for a DUI or re-arrest for a DUI. Any subject with a number greater than 0 for days to re-arrest assumes recidivism.

First-time DUI Offender subjects are either producing:

- No recidivism (days to re-arrest equal 0) or

- Recidivism (number greater than 0 for days to re-arrest up to 1825 days {5 years}).

2.2.3 Recidivism

As mentioned earlier under 'Procedure', any number greater than zero in 'number of days to re-offend' assumes recidivism. This also provided internal validity to the analysis, in that persons having a number in this field should also have at least one for subsequent DUI events: and they did. Also, no one observed having a zero value for days to re-offense had any subsequent DUI events.

2.3   Data Analysis

All analysis was performed using *SPSS 17.0 for Windows, Version 17.0.0* on a Windows XP Professional Local Area Network (LAN) platform. Measures of analysis utilized were descriptives, frequencies and cross-tabs; also employed were reports, tables, regressions, means testing, ANOVAs, correlations and several other non-parametric tests.

3. **Results**

Are there BAC values that consistently predict an offender's propensity to re-offend?   Yes, measurements from this study show that BACs of 0.150 and above are more associated with recidivism than for those who don't re-offend; and that BACs of less than 0.150 are more associated with those who don't re-offend than with recidivism. Before looking at the evidence supporting this conclusion, we will examine means from the recidivism/non-recidivism groupings.

For all 43,403 study-subjects, an average BAC of 0.166 was observed.   7,720 (17.8%) were re-arrested within 5 years; 35,683 (82.2%) were not re-arrested. Those re-arrested produced a mean BAC of 0.171, whereas those without re-arrest had a mean BAC of 0.166.   A highly significant difference was observed between

these two BAC group means.[3]   Therefore there is a significant difference between first-time offenders, when grouped by whether they get re-arrested or not.

The average first-offense BAC for those re-arrested (7,720) was 0.171.   Of these recidivists, 6,625 (85.8%) subjects had 1 recidivism event, 744 (9.6%) had 2, and the remaining 351 (5.6%) had 3 or more.   50% of these persons re-offended within 1.9 years (700 days); 75% were re-arrested within 3.3 years (1211 days) and 90% were re-arrested within 4.3 years (1561 days).

If first-time offenders get re-arrested, they are most likely to get only one re-arrest, and that occurring two years after their initial DUI arrest. If they get a second DUI re-offense (their 3rd DUI), they are most likely to get that re-arrest 3 years from their initial DUI arrest.

Out of all first-time offenders, those who re-offend are most likely to get another DUI offense within 3.5 years. Any predictive relationship between BAC and these first-time offenders who re-offend would be helpful.   One final metric examines this association.

Table 1 on page 5 shows BAC groupings across all study subjects, sorted by no re-arrests and those who were re-arrested within 5 years of their initial DUI. BAC value increments of 0.024 were used to measure BAC, for reasons explained in more detail shortly. Subjects not re-arrested maintain a larger proportion than those arrested, when measured below a BAC value of 0.150. Notice that 42.8% of those not re-arrested have a BAC of less than 0.150 (20.3% + 22.5%).   38.3% of those re-arrested have a BAC less than 0.150 (17.6% + 20.7%). For BACs '0.150 thru 0.174', re-offenders produce a higher percentage than those who don't get re-arrested (20.5% versus 19.9%).   Moving up through the higher BAC levels engenders the same pattern.   Chart 1 on page 6 graphically illustrates this relationship.

The sorting of BAC values into 0.024 increments was not an arbitrary decision. With over 400 BAC data values possible for each of the 43,403 study subjects (0.100 thru 0.199 represent 99 unique data points: 0.100, 0.101, 0.102, 0.103, 0.104…) it was quickly observed that the smaller the BAC grouping size, the more difficult it became to identify a linear relationship between a BAC value and no recidivism, or between a BAC value and recidivism. Therefore BAC increments of

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[3] A t-test and a one-way ANOVA both showed significance at the .000 level.

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BAC 0.024 increments		Not Re-arrested	Re-arrested Within 5 years	Total
.100 thru .124	Count	7243	1356	8599
	%	20.3%	17.6%	19.8%
.125 thru .149	Count	8045	1597	9642
	%	22.5%	20.7%	22.2%
.150 thru .174	Count	7086	1583	8669
	%	19.9%	20.5%	20.0%
.175 thru .199	Count	5672	1348	7020
	%	15.9%	17.5%	16.2%
.200 thru .224	Count	3598	798	4396
	%	10.1%	10.3%	10.1%
.225 thru .249	Count	2031	516	2547
	%	5.7%	6.7%	5.9%
.250 thru .274	Count	988	264	1252
	%	2.8%	3.4%	2.9%
.275 thru .299	Count	561	119	680
	%	1.6%	1.5%	1.6%
.300 thru .324	Count	259	66	325
	%	.7%	.9%	.7%
.325 thru .349	Count	103	46	149
	%	.3%	.6%	.3%
.350 thru .374	Count	47	15	62
	%	.1%	.2%	.1%
.375 thru .399	Count	27	8	35
	%	.1%	.1%	.1%
.400 thru .424	Count	14	1	15
	%	.0%	.0%	.0%
.425 thru .449	Count	4	2	6
	%	.0%	.0%	.0%
.450 thru .474	Count	3	1	4
	%	.0%	.0%	.0%
.475 thru .499	Count	2	0	2
	%	.0%	.0%	.0%
Total	Count	35683	7720	43403
	%	100.0%	100.0%	100.0%

Table 1 – No Re-arrests versus Re-arrests (within 5 years) by BAC levels.

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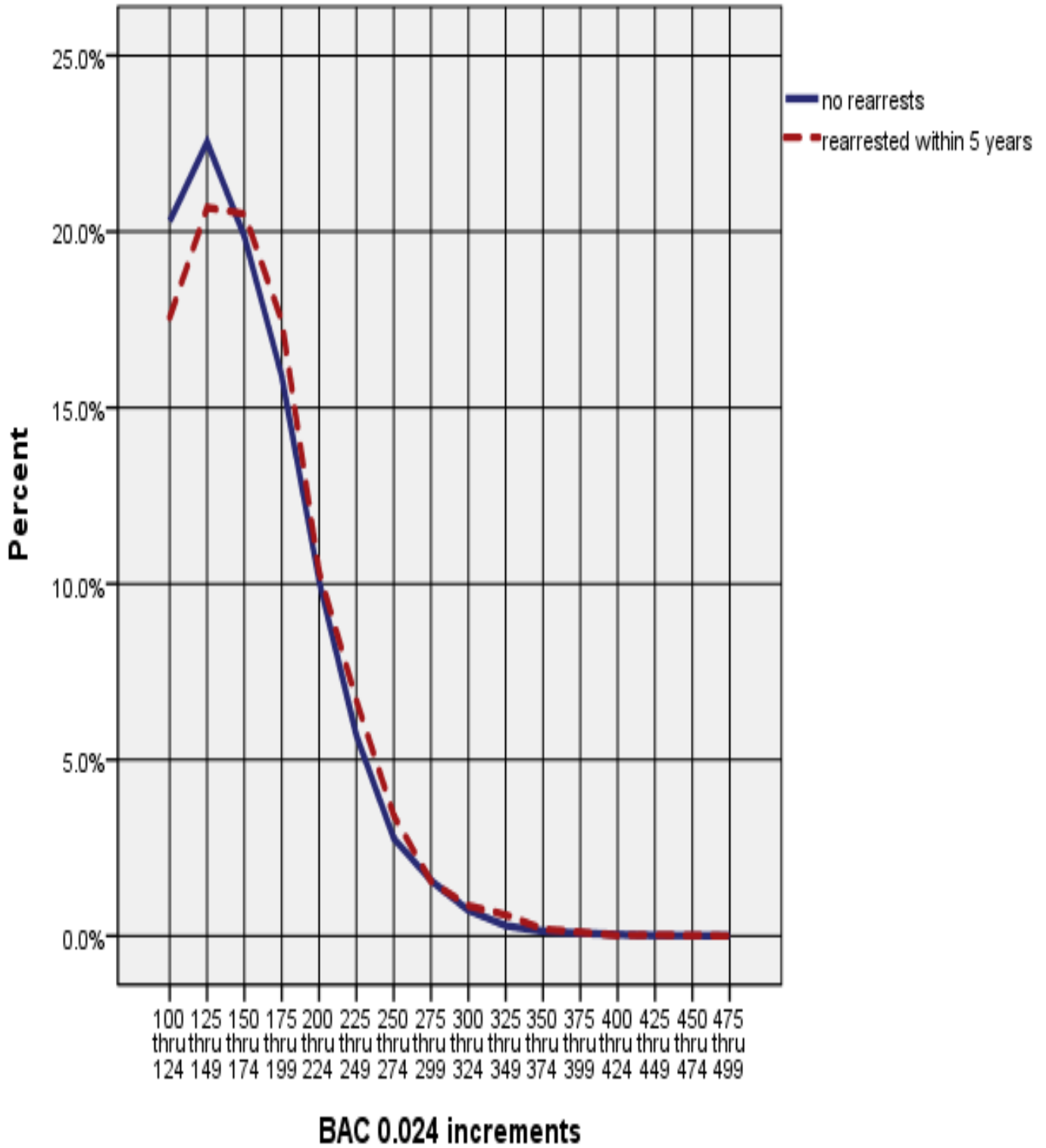February 2010

Chart 1 – No Re-arrests versus Re-arrests (within 5 years) by BAC levels.

0.002, 0.005, 0.010, 0.019 and 0.024 were analyzed, with only the last group, 0.024 producing a clear, direct relationship between BAC and no re-arrest/re-arrest (See Table 1 and Chart 1).

The higher proportion of re-arrested offenders within all BAC categories at 0.150 and above certainly cannot be ignored (as compared to those not re-arrested for another DUI). **Especially** given the very pronounced higher proportion of those not re-arrested below a BAC of 0.150. 42.8% of all first-time, non re-offenders had a BAC below 0.150, as compared to 38.3% for all first-time re-offenders (11.8% variance).

Under a BAC of 0.150, first-time DUI offenders are less likely to re-offend and get a subsequent DUI. As first-time offenders get arrested with BACs at or above 0.150, they will begin to produce subsequent DUIs, and this will increase as a function of their BAC at initial arrest.

4. <u>Discussion</u>

It is possible to identify first-time DUI offenders who are more likely to get subsequent DUI arrests. Not only are those with BACs of 0.150 and above more susceptible to re-arrests: first-time offenders are most likely to get another DUI re-arrest within 3.5 years of their initial DUI.

It goes without saying: earlier detection leads to earlier intervention. And for first-time DUI offenders getting another DUI, this study identified those with BACs at or above 0.150. As shown, there were a higher proportion of re-arrested offenders within all BAC categories, starting at 0.150 and above.

There is a preponderance of data that confirms 'first-time DUI offenders' are really not 'first-time offenders' at all. "Studies of enforcement patterns find that one arrest is generally made for every 88 instances of driving over the illegal limit". [ii] In other words, 'the average first[-time] offender will have driven drunk 87 times before being caught'. Colorado study-data produced a much higher average BAC for first-time DUI offenders than would be expected (0.166); most notably in reference to the currently defined PDD BAC level of 0.170.

In Colorado, for years 2000, 2001 and 2002 (the study parameters), the DUI per se/driving with excessive alcohol content level was 0.10 BAC. While first-time

offenders had, on the low end, BACs of 0.10; and on the high end, BACs of 0.483, **their average was 66% greater than the legal BAC limit.**

If these data were referenced against the current per se level of 0.08 BAC**, these study first-time offenders would be AVERAGING BACs more than twice (100%) the legal limit (0.166 vs 0.08).**

5. <u>Conclusion</u>

The Persistent Drunk Driver Committee (PDDC) tasked this study to see what, if any relationship exists between BAC and recidivism in impaired driving offenders. It was observed that indeed, at the 0.150 level, Colorado offenders are more likely to produce recidivism; and that as the initial BAC level of first time offenders increases above 0.150, re-arrests will continue to be more associated with these offenders than for those not re-arrested.

It is therefore recommended to the PDDC that resources be set aside to examine offenders producing initial BAC values of 0.150 and above, rather than specifically at 0.170 and above. The across-systems implications of lowering the PDD level from 0.170 to 0.150 may be controversial and far-reaching; which is why the PDDC is the best group to carry this task forward.

Future studies of interest would measure the effectiveness of availing more resources to these 0.150 and above BAC first-time DUI offenders, especially in relation to its effect on recidivism. Examining the evidence of recidivism under 0.150 could help to further unravel this multi-faceted problem. Also of interest would be looking at offenders who refuse to give a BAC at time of initial arrest (refusals): these offender's produce demographic and severity indicators that mirror PDD offenders.

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[i] *Enhanced Sanctions for Higher BACs: Evaluation of Minnesota's High BAC Law.* National Highway Traffic Safety Administration, Washington, DC, DOT HS 809 677, May 2004.

[ii] Zador, Paul, Sheila Krawchuk, and B. Moore. (1997) "Drinking and Driving Trips, Stops by Police, and Arrests: Analysis of the 1995 National Survey of Drinking and Driving Attitudes and Behavior," Rockville, MD: Estat, Inc, 1997.

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