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EDUCATION/TREATMENT INTERVENTION AMONG DRINKING DRIVERS AND RECIDIVISM

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Abstract

Introduction: Education and treatment intervention, as well as recidivism were measured among Colorado drinking drivers. *Methods:* 16,194 offenders discharged from treatment in 2004 were examined. Participants were placed into intervention and recidivism groupings. *Results:* Offenders differed by treatment level, completion status and recidivism. *Discussion*: 92.1% of all subjects were not re-arrested after starting treatment and 78.1% completed their assigned treatment. Those subjects not completing treatment were 44% more likely to re-offend than those who completed. Data system enhancements in latter 2008 will noticeably improve evaluation/treatment record matching.

1. Introduction

In Colorado last year (2007), more than 30,000 persons were arrested for drinking while driving, or for driving while being impaired by some other psychoactive substance: hereafter referred to in this report as DUI*/DWAI**. In 2006, 42%, or 226 out of 535 Colorado fatal crashes involved a person having a BAC (blood alcohol concentration) of .08 or greater: the nationwide average was 41% (NHTSA, 2007).

Prior to 1970, there were few, if any, alternatives available to the judiciary in regard to rehabilitative sanctions for alcohol involved traffic offenders. Fines, jail, and license restraints were the approaches typically utilized (Booth, 1986). However, since 1971, screening, referral and education/treatment programs have proliferated with the overall goal of rehabilitating these offenders (Jones and Joscelyn, 1978).

As of October 1979, the Colorado State Legislature mandated that all convicted DUI/DWAI drivers would be assessed prior to sentencing, to determine their substance abuse involvement (42-4-1301.3 CRS). This legislation authorized Alcohol and Drug Driving Safety (ADDS) programs, providing pre-sentence and post-sentence alcohol and drug evaluations on all persons convicted of DUI/DWAI offenses. The state judicial department currently manages the ADDS programs for Colorado's twenty-two judicial districts.

The alcohol/drug evaluation is conducted and a report prepared by a probation officer who is specially trained and knowledgeable in substance abuse screening and chemical dependency diagnosis. The report process incorporates a differential screening. This screening includes a validated, self-report psychometric differential screening instrument designed for and normalized on DUI offenders; additional report data reviewed include the BAC level, prior arrest/convictions, treatment history and a clinical interview conducted with each DUI offender. This data is utilized in conjunction with standardized placement criteria in the decision making process.

This evaluation determines whether a substance use disorder and impaired driving problem co-exist: what is the severity of such problems; the offender's amenability to treatment; the setting, length and intensity of any needed treatment; and adjuncts such as antabuse or self-help groups.

Prior to sentencing, the evaluation report is considered by the court unless the court proceeds to immediate sentencing. The probation officer makes referrals to ADDS education or treatment programs that are approved by ADAD. Probation officers provide supervision and monitoring of all persons whose sentences or terms of probation require completion of an ADDS program. Figure 1 gives a pictorial accounting of this process.

1.1   DUI/DWAI Education/Treatment

Interventions

*Driving Under The Influence/**Driving While Ability Impaired

Level II Education and typically includes more group discussion and therapeutic processing with an emphasis on behavior change. It can range in length from 5 to 10 months. Clients undergo an in-depth assessment of their alcohol and drug use
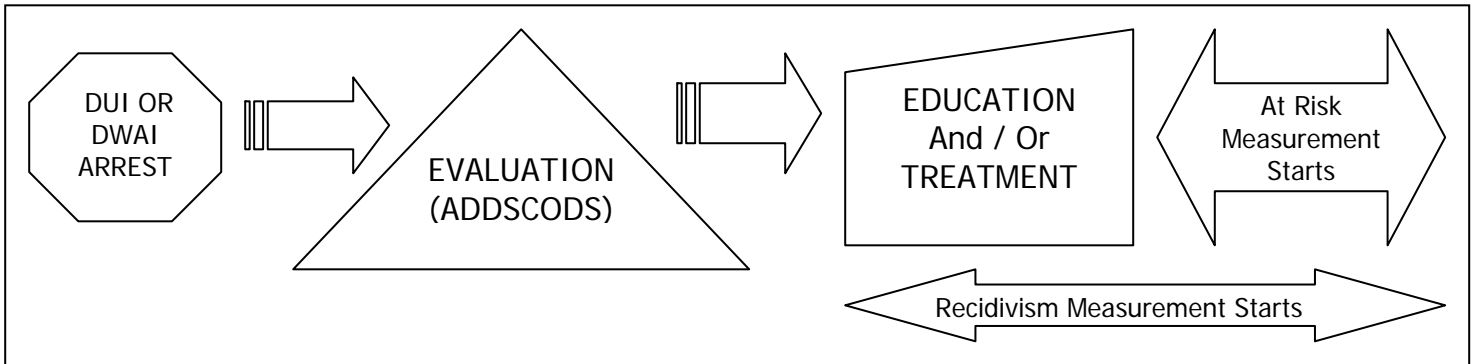

Figure 1.   Typical Process for a DUI offender.

There are more than 450 DUI/DWAI treatment sites, representing 243 agencies licensed and monitored by ADAD, which provide the offenders Level I Education, Level II Education and Level II Treatment.   Following is a description of each type of education/treatment.

Level I Education is a 12-hour, two-day, didactic course of alcohol and drug education designed for non-problem DUI offenders. Level I Education is not appropriate for someone who has had more than one impaired driving offense, or one offense with an elevated BAC.

Level II Education consists of therapeutically oriented sessions, which combine cognitive education on alcohol/drugs and driving within a group process. It is designed around more structure and treatment orientation than Level I Education. It requires 24 hours over 12 weeks. Usually given in a group setting, class size is limited to no more than 12 regularly attending. Level II Education can be recommended alone or may be followed by Level II Treatment.

Level II Treatment (Therapy) is for individuals who may show signs of alcohol and drug misuse and problems or have a history of alcohol and drug problems, a high BAC or evidence of substance abuse or dependence.   It is more intensive and therapeutically based than

and impaired driving patterns, and their life situation problems. An individualized treatment plan is built around the in depth assessment findings.

As stated previously, recommendations for treatment are made by the alcohol evaluator (probation) or in the absence of an evaluation, by the treatment agency. Matching an offender to the correct level of education or treatment is crucial to his/her success.   The goal is for offenders to fully participate in their own habilitation, such that any subsequent DUI/DWAI behavior would be perceived as harmful to themselves and others.

ADAD has previously produced 3 reports evaluating the effectiveness of DUI/DWAI offender assessment and treatment: one in 1986, one in 1988 and one in 1997.

This report describes the most current study conducted by ADAD during fiscal year 2008 (July 1, 2007 to June 30, 2008), which examined DUI/DWAI offender data, including recidivism. Any discussion of treatment success must account for recidivism, defined as *any re-arrest for drinking and driving subsequent to the arrest which brought the individual into this study*.

2. Method

2.1   Subjects

Study subjects were 16,194 individuals who were arrested and subsequently convicted of a DUI/DWAI offense between 2001 and 2004 (evaluation data from ADDSCODS, The Alcohol and Drug-Driving Safety Coordinated Data System). All persons were discharged from alcohol/drug driving treatment in 2004 (treatment data from DRS, The DUI/DWAI Reporting System). Currently on the state-server mainframe as a legacy system, ADDSCODS is soon to be moved onto ADAD's web-based platform TMS (Treatment Management System), where the DRS and DACODS (The Drug and Alcohol Coordinated Data System) reside.

Probation evaluated all study subjects between 2001 and 2004, during which time drinking/drug problems (if any) were determined and recommendations for appropriate interventions were made. Some subjects started treatment as early as 2001, and all offenders were discharged from treatment in 2004.

2.2   Procedure

25,345 unduplicated DRS treatment records were created, using 2001 through 2004 data records. By aggregating each offender's (possible) multiple treatment admissions onto a single line record, each record had the complete history of that subject's treatment episode. An algorithm was used to match the DRS file to the ADDSCODS evaluation records, producing 16,194 unduplicated matched ADDSCODS/DRS records.

9,210 subjects, or 36% of the offenders on DRS were not found on the ADDSCODS database. This will be revisited in the *Discussion* section. Finally, these complete ADDSCODS/DRS records were matched with DMV (The Colorado Department of Revenue, Division of Motor Vehicles) violation records, allowing for the calculation of recidivism. Each study population

subject had an evaluation record, a treatment record and a DMV record.

2.3   Measures

2.3.1   Level of Treatment

Subjects were sorted into four levels of education and/or treatment: Level I Education, Level II Education, Level II Education and Treatment and Level II Treatment only. The level of treatment was calculated by examining the total treatment record history of each offender. If he /she had only Level I Education hours, then level of treatment was Level I Education. For an offender showing both Level II Education hours and Treatment hours, level of treatment was Level II Education and Treatment.

Unexpectedly, 87 subject records were lacking treatment level designations, due to the absence of education or treatment hours associated with any of their admissions. Their records do contain admission and discharge dates, and therefore they appear as 'zero hours recorded' (0HR) in the *Results* section.

2.3.2   Treatment Completion Status

This metric was based upon the observed discharge client status value of either "completed treatment" or "did not complete treatment" on a subjects DRS treatment record. If an offender had more than one admission, the last client status value (most recent treatment admission) was applied.

2.3.3   Recidivism

Any alcohol or drug related driving violation subsequent to treatment admission was defined as "recidivism" (Figure 1). Any subject having another DUI/DWAI arrest prior to starting treatment was excluded from this study (N =17).

The DMV database was used to calculate recidivism, as has been the history of these previous studies. Since DMV has information on all types of motor vehicle violations, a computer

procedure was established, isolating only DUI/DWAI codes for the study population.

This computer procedure, which accesses the state-server's mainframe legacy system, matched the appropriate DUI/DWAI violation date

with arrest dates specified on the ADDSCODS

Table 1.   Demographic and Severity Indicators by Intervention Levels.

Intervention Level	Mean Age	Gender(male)	Income/mo	Unemployment	BAC > .15%	Prior TX	Prior DUI
LI ED	32.3	68.8%	$1,686	20.0%	21.8%	3.2%	2.0%
LII ED	31.2	76.9%	$1,433	23.0%	52.2%	21.0%	19.5%
LII ED & TX	34.3	78.9%	$1,501	21.3%	72.0%	54.4%	55.6%
LII TX	33.5	78.4%	$1,369	23.0%	70.2%	61.1%	64.6%
0HR	32.9	81.0%	$1,021	30.6%	72.1%	43.7%	54.0%

evaluation record.   This violation/arrest date match provided the study reference point for calculating recidivism. Measuring the time between starting treatment and getting arrested, whether it's during or after treatment produces a recidivism value of yes and a timeframe of recidivism that can be measured.

2.3.4   At-risk

Consistent with all previous ADAD recidivism studies, the marker for being 'at-risk' (when a subject is susceptible to re-arrest) is set immediately after a person discharges from treatment (Figure 1). Two scenarios are possible.

For those persons not arrested, at-risk time was measured from their treatment discharge date to 05/20/08 (the date the DMV file was created for all alcohol or drug related driving arrests for the study subjects).

Any DMV alcohol or drug related driving violation date occurring after the treatment discharge date would produce an at-risk timeframe, even though the person was re-

All analysis was performed using *SPSS 16 for Windows*, Version 16.0.1 on a Windows XP Professional Local Area Network (LAN) platform. Measures of analysis utilized were descriptive statistics like frequencies and cross-tabs; also employed were reports, tables, means, ANOVA's, correlations and other nonparametric tests.

3.   Results

Was treatment effective in preventing re-arrest for drinking/drugging and driving? Yes, most definitely: and, the level of intervention the offender attended and whether he completed treatment or not is undeniably linked to this answer.

In order of presentation are demographic data and severity indicators of study subjects at

each level of treatment, followed by treatment completion status analysis and lastly, recidivism and at-risk measurement.   Study subjects, when viewed by their respective treatment intervention exhibit significantly different profiles. Table 1 presents these indicators by intervention level.

Congruent with previous ADAD reports, an inverse relationship was observed between the intervention level and income; a direct relation-

ship was observed between intervention level and age, unemployment, BAC, prior treatment and prior arrests.

3.1   Study Subjects by Intervention

3.1.a   Level I Education

The 1,435 subjects who attended Level I Education were mostly White (84.0%), followed by Hispanic (10.9%).   68.8% were male, 31.2% female.   Their average age was 32.3 years, almost identical to the 1997 recidivism study Level I average age of 32.2 years. Most persons were never married (56.3%), followed by married at 23.7%.   66% were employed full time with an average income of $1,685.52 per month. 45.6% attended college or graduate school.

In terms of severity, their average blood alcohol content (BAC) was .103; 21.8% tested for a BAC greater than .15 at the time of their arrest. Almost none (3.2%) had any prior treatment or a prior DUI (2.0%), and nine out of ten had no accident involvement.   65.1% of these offenders were designated to a higher level of treatment (based upon the Adult Substance Use and Driving Survey, {ASUDS} test score), but placed into this level of treatment (over-ridden) because of 'clinical' reasons.

3.1.b   Level II Education

The 5,661 subjects who attended Level II Education were less White (76.4%)   and more Hispanic (17.9%) than their Level I counterparts. Their average age was one year lower (31.2 years) and more male (76.9%).   Most persons were never married (57.9%), followed by married

at 20.4%. 62.8% were employed full time with a lower average income than Level I education, at $1,433.24 per month. 35.5% attended college or graduate school.

Severity indicates an average BAC of .142; 52.2% tested for a BAC greater than .15 at the time of their arrest (over twice the Level I percentage). 21.0% had prior treatment episodes and 19.5% had a prior DUI. 85.4% had no

accident involvement but there was one fatality. One out of every two offenders was over-ridden to this level of treatment from a different level because of clinical reasons.

3.1.c   Level II Education and Treatment

The 7,805 subjects who attended Level II Education and Treatment were predominately White (76.7%) followed by Hispanic (18.8%). Their average age was 34.3 years (over two years older than Level I) and 78.9% male.   Just less than half (49.2%) of these persons were never married, having the second highest percentage of divorce (18.5%) of all education/treatment levels. 66.9% were employed full time with an average income of $1,500.84 per month. 34.8% attended college or graduate school.

Severity indicators show an average BAC of .173; 72.0% tested for a BAC greater than .15 at the time of their arrest.   54.4% had prior treatment and 55.6% had a previous DUI. Almost 20% had an accident involvement with four people having fatalities.   Only 34.4% of these offenders were over-ridden into this level of treatment.
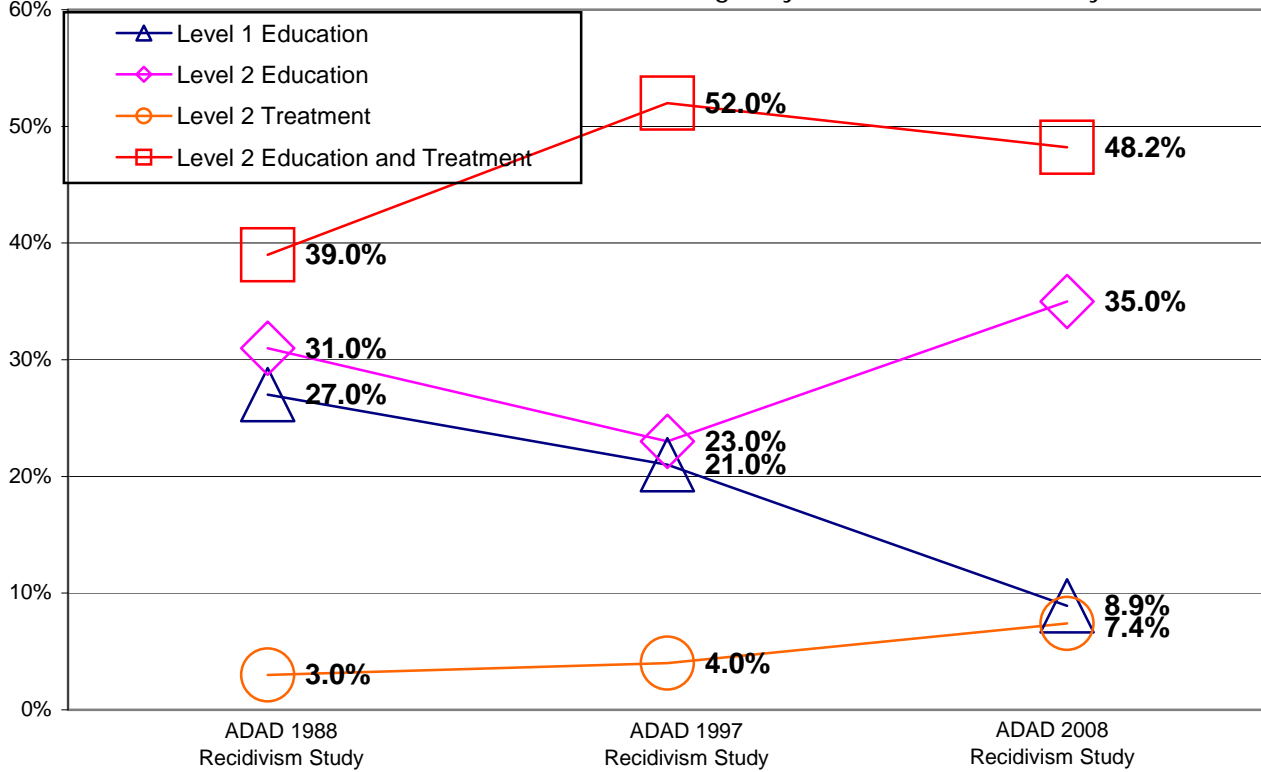
3.1.d   Level II Treatment

The 1,206 subjects who attended Level II Treatment only were primarily White (80.3%) followed by Hispanic (14.2%).   Their average age was 33.5 years and mostly male (78.4%). Slightly over half (51.7%) were never married and 17.3% were divorced.   Six out of ten persons were working full time and they had next to the lowest average income of all levels of

education/treatment, at $1,368.54 per month. 35.7% attended college or graduate school.

Looking at severity, their average BAC was identical to Level II Education and Treatment at .173; 70.2% tested for a BAC greater than .15 at the time of their arrest. 61.1% had prior treatment and 64.6% had a previous DUI. One in five persons had an accident involvement and one subject had a fatality. 40.4% of these offenders were over-ridden into this level of treatment.

Chart 1.   Intervention Level Percentages by ADAD Recidivism Study.

3.1.e   Zero Hours Recorded

The 87 subjects with zero hours recorded (0HR) exhibit a markedly different profile when compared to the four education and treatment groups. They were 62.1% White, 24.1% Hispanic and 12.6% Black. Both Black and Hispanic were quite over-represented, with White very much under-represented. Their average age was 32.9 and 81.0% male. They had the highest percentage of divorce, at 20.0%. Their unemployment was the highest (30.6%) and their full time employment was the lowest (55.3%) of any of the other groups. Persons with 0 hours recorded had the lowest average income at $1,020.53 per month. They had the lowest amount of education (almost half of them only

graduated from high school at 49.4%), and 22.9% attended college or graduate school.

Severity indicates an average BAC of .167; 72.1% tested for a BAC greater than .15 at the time of their arrest. These persons had the highest rate of refusing to take the BAC test, at

20.9%. In other words, one out of every five persons refused to take this test at the time of their arrest. The next highest group that refused to take the BAC test was the Level II Treatment only, at 13.5%. 43.7% had prior treatment and 54.0% had a previous DUI. One in four people had an accident involvement. Only 39.1% of these offenders were over-ridden into this treatment level.

3.1.1   Intervention Level Percentages

Chart 1 exhibits observed intervention level percentages for this study, and for the two previous ADAD recidivism studies. For the FY 2008 study they are: Level I Education (8.9%), Level II Education (35.0%), Level II Education and Treatment (48.2%), Level II Treatment only (7.4) and zero hours recorded (0.5%).

While intervention levels varied across studies, they have remained discretely unique without overlapping each other. The use of Level I Education only has markedly decreased, with

Table 2.   Means (and ANOVA) of demographic and severity indicators by treatment success.

Intervention Level / Participation		Age*	Education*	Income/mo*	BAC*	Prior TX*	Prior DUI*
LI ED	Completed (98.0%)	32.3	13.1	1,696.	.102	.04	.02
	Did Not Complete (2.0%)	29.6	11.6	1,170.	.119	.21	.21
LII ED	Completed (68.4%)	31.4	12.6	1,640.	.133	.14	.12
	Did Not Complete (31.6%)	30.5	11.9	984.	.160	.66	.74
LII TX	Completed (75.3%)	33.8	12.5	1,423.	.173	.91	1.07
	Did Not Complete (24.7%)	32.4	12.3	1,200.	.171	.94	1.18
LII ED & TX	Completed (82.7%)	34.7	12.5	1,600.	.173	.74	.85
	Did Not Complete (17.3%)	31.8	11.9	1,027.	.174	.84	.95
0HR	Completed (9.2%)	36.5	13.0	2,025.	.186	.62	.88
	Did Not Complete (90.8%)	32.5	11.8	918.	.167	.66	.96

* p< 0.001

both Level II Education only and Level II Education and Treatment increasing (over all 3 studies).

3.2   Intervention Study Subjects by Completion Status

Regardless of level of intervention, eight out of every ten offenders (78.1%) completed the education and/or treatment they were referred to.

Across level of intervention, treatment completion rates vary (Table 2). As the requirements of the intervention increase, inversely, the treatment completion rate decreases.   For Level I Education, 98.0% completed their intervention; for Level II Education, 68.4% completed their intervention;

(9.2%). With an average length of stay of 99.4 days (over 3 months) and given the detail of the other information in their record, zero hours recorded for any of these records was perplexing. Possibly these clients only did the initial treatment intake, and never showed up again. ADAD policy stipulates the treatment discharge of any offender having no treatment contact within 30 days.

Offender demographic and severity interactions were statistically significant for every

intervention when grouped by completion status. Offenders not completing treatment were more likely to be younger, have less education, make substantially less money, have a higher BAC, have had more treatment and a prior DUI, when compared to those completing treatment.

Those completing treatment tended to be male, between the ages of 21 to 30, White, having at least a high school education, working full time, having never been married, making between $1,000. to $1,900. per month, having a

Table 3.   Recidivism Comparisons between FY 2008, FY 1997 and FY 1988 Reports.

STUDY	PARTICIPATION	NOT ARRESTED	RE-ARRESTED DURING	RE-ARRESTED AFTER	TOTAL RECIDIVISM
2008	ALL	92.1%	1.5%	6.4%	7.9%
	COMPLETED	92.8%	1.1%	6.1%	7.2%
	DID NOT COMPLETE	89.6%	3.1%	7.3%	10.4%
1997	ALL	86.0%	3.5%	10.5%	14.0%
	COMPLETED	87.6%	2.5%	9.9%	12.4%
	DID NOT COMPLETE	80.4%	6.8%	12.8%	19.6%
1988	ALL	91.7%	1.9%	6.4%	8.3%
	COMPLETED	92.8%	1.4%	5.9%	7.3%
	DID NOT COMPLETE	86.0%	4.5%	9.5%	14.0%

BAC between .10 and 15 and having had no prior treatment and no prior arrests.

3.3   Study Subjects by Recidivism

7.9% of all study subjects (less than one in ten) were re-arrested after they began their DUI/DWAI education and/or treatment. Table 3 shows a comparison of recidivism values across the last three studies (Including this one, that is: FY 2008, FY 1997 and FY 1988.). This report's rate of recidivism was lower than the 1988 study value of 8.3% and almost half the 1997 study value of 14.0%.

DUI/DWAI offender severity, the level of intervention and recidivism all directly interact with each other. As the intervention level gets more intense, more severe offenders were observed, as were greater recidivism rates.

Without breaking out treatment completion, recidivist rates were (going from highest to lowest): Level II Education and Treatment at 9.0%; Level II Treatment only, at

As observed in every previous ADAD recidivism study, the largest recidivist rates were found among offenders not completing treatment; they were: Level II Education and Treatment at 11.5%; Level II Treatment only at 10.1%; and Level II Education, at 9.8%. The exception was Level I Education (3.4%), which was 1.1% lower than those completing Level I Education (4.5%). Overall, the non-completion group produced a 10.4% recidivism rate: 44% greater than those offenders who completed their treatment (7.2%).

Recidivism occurring during treatment was indicated as anyone who was re-arrested after beginning treatment but before finishing. Anyone re-arrested after their treatment was indicated as recidivism occurring after treatment. This was absolute even for offenders who were discharged

from treatment without completion. For all study subjects, recidivism was over four times more likely to occur after treatment than during. As intervention level increased in severity, 7.9%; Level II Education, at 7.3%; Zero hours recorded at 5.7%; and Level I Education at 4.5%. (Table 4).

correspondingly less of this relationship was observed, especially for those who did not complete their treatment.

Table 4.   2008 Report Treatment and Recidivism by Level of Intervention and Treatment Completion.

LEVEL	PARTICIPATION	NOT ARRESTED	RE-ARRESTED DURING	RE-ARRESTED AFTER	TOTAL RECIDIVISM
LI ED	ALL	95.5%	0.1%	4.4%	4.5%
	COMPLETED	95.5%	0.1%	4.4%	4.5%
	DID NOT COMPLETE	96.6%	0.0%	3.4%	3.4%
LII ED	ALL	92.7%	1.0%	6.3%	7.3%
	COMPLETED	93.8%	0.5%	5.7%	6.2%
	DID NOT COMPLETE	90.2%	2.2%	7.6%	9.8%
LII TX	ALL	92.1%	1.8%	6.1%	7.9%
	COMPLETED	92.8%	1.5%	5.7%	7.2%
	DID NOT COMPLETE	89.9%	3.0%	7.1%	10.1%
LII ED & TX	ALL	91.0%	2.2%	6.8%	9.0%
	COMPLETED	91.6%	1.7%	6.7%	8.4%
	DID NOT COMPLETE	88.5%	4.4%	7.1%	11.5%

3.4   Length of Stay

Chart 2 examines the mean length of stay for all study subjects; and more specifically, mean length of stay sorted by: (a) treatment completion or, (b) did not complete treatment; and lastly looks at mean length of stay sorted by: (c) not re-arrested or, (d) re-arrested.

The top section of Chart 2 examined the timeframe between an offender's arrest and how long it took for them to begin treatment. It took on average 291 days, or 10 months for an offender to get into treatment, after getting a DUI/DWAI arrest.   When examined by treatment completion, persons not completing treatment

especially for Level I Education.

The time between getting an arrest and starting education and /or treatment interacts with both completion and recidivism; but it appeared appreciably conspicuous on treatment completion.   For both treatment completion and re-arrest dimensions, Level I Education showed the most susceptibility to time waited.

The mid section of Chart 2 considers the length of stay between an offender's admission and when he/she discharged.   The average amount of time measured between admission and discharge was 226 days, or 7 months. As levels of intervention increased, so did the variance between days measured.   Persons in education and/or treatment registered, from lowest to highest: 22 days (1 month) for Level I Education; 124 days (4 months) for Level II Education; 201 days (7 months) for Level II Treatment only; and 342 days (almost 1 year) for Level II Education and Treatment.

Chart 2.   Mean Length of Stay for Study Subjects, Sorted by Completion Status (a,b) and Recidivism (c,d).

Length of Stay* days (months)				

Time to Treatment

	Level I ED	Level II ED	Level II TX	Level II ED And TX	Total Population
1. Arrest to Treatment Admission - **Total Population.**	299 (10)	284 (9)	548 (18)	252 (8)	291 (10)
1a. Arrest to Treatment Admission - **Completed TX**.	295 (10)	243 (8)	529 (17)	238 (8)	267 (9)
1b. Arrest to Treatment Admission - **TX NOT Completed**.	507 (17)	374 (12)	607 (20)	318 (10)	377 (12)
1c. Arrest to Treatment Admission - **NOT Re-arrested**.	293 (10)	282 (9)	544 (18)	252 (8)	290 (10)
1d. Arrest to Treatment Admission - **Re-arrested**.	420 (14)	314 (10)	603 (20)	244 (8)	304 (10)

Time in Treatment

	Level I ED	Level II ED	Level II TX	Level II ED And TX	Total Population
2. Admission to Treatment Discharge – **Total Population.**	22 (1)	124 (4)	201 (7)	342 (11)	226 (7)
2a. Admission to Treatment Discharge – **Completed TX**.	20 (1)	119 (4)	212 (7)	355 (12)	235 (8)
2b. Admission to Treatment Discharge – **TX NOT Completed**.	92 (3)	135 (4)	169 (6)	280 (9)	192 (6)

2c. <u>Admission to Treatment</u>	22	123	201	340	223
<u>Discharge</u> – **NOT Re-arrested**.	(1)	(4)	(7)	(11)	(7)
2d. <u>Admission to Treatment</u>	22	129	211	365	259
<u>Discharge</u> – **Re-arrested**.	(1)	(4)	(7)	(12)	(8)

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*p< 0.001

When subjects are examined by completion status, those completing their intervention level showed a mean length of stay of 235 days (8 months) compared to persons not completing, at 192 days (6 months). Persons who completed either Level I Education or Level II Education exhibited shorter lengths of stay than their non-completion counterparts (20 days and 119 days, versus 92 days and 135 days, respectively).

Level II Treatment and Level II Education and Treatment offenders who completed their intervention produced longer lengths of stay (212 days and 355 days, respectively) than their non-completion counterparts (169 days and 280 days, respectively).

The average length of time for study subjects re-arrested for a DUI/DWAI was 259 days, or 8 months. Their average length of stay was: 1) longer than the average admission to discharge time observed for subjects who completed their treatment (235 days, or 8 months) and; 2) longer than the average length of stay for those who didn't get re-arrested (223 days, or 7 months). Although representing a small number (7.9%) compared to the total population of study subjects, their slightly longer length of stay warrants further examination.

Persons receiving services for DUI/DWAI offenses were considered at-risk (most-susceptible to another DUI/DWAI arrest) immediately after they were discharged from their treatment, even if they were discharged as non-completed. Chart 3 examined at-risk time for all persons; persons grouped by whether they were discharged as completed treatment or not; and finally, persons grouped by whether they were arrested or not.

When grouped by arrests, subjects not arrested evidenced the greatest at-risk time, averaging 4 years. This represented 92.1% of all the subjects in this study.

Offenders who were re-arrested (7.9% of all study subjects) had on average 19 months of at-risk time. Although re-arrested, on average they remained DUI/DWAI arrest-free for over a year and a half. Level II Treatment only offenders averaged 20 months at-risk time.

4. Discussion

Was treatment effective in preventing re-arrest for drinking/drugging and driving? For the 16,194 study subjects, 1,281 (7.9%) were re-arrested for a DUI/DWAI after they began their education and/or treatment intervention.

This re-arrest percentage was the lowest ever measured for any of ADAD's recidivism studies: 0.4% lower than the 1988 study average of 8.3% and a significant 77% improvement over the 1997 study recidivism average of 14.0% (Table 3). Recidivism numbers for this 2008 study resemble the 1988 study values more than those observed in the 1997 report.

Offenders displayed an at-risk time average of 45 months (3.7 years), regardless of intervention level. When comparing treatment completion status, those discharged as completed had longer at-risk times then those discharged as "did not complete". This was most apparent when intervention levels were examined.

92.1% of all persons studied in this report did not get re-arrested for any DUI/DWAI offenses during, and more importantly after they finished DUI/DWAI intervention services. It was clearly demonstrated that persons who complete their treatment have longer lengths of stay and less recidivism than those not completing their treatment. It also was observed that those persons not completing their treatment had greater severity indicators, such as prior DUI/DWAI offenses and higher BAC's than those persons who completed their treatment.

Before discussing some of the changes that have impacted this current study, there was a data-matching issue that required examination.

Chart 3. Mean At-risk Length of Stay for Study Subjects.

Length of Stay* days (months)				
	Level I ED	Level II ED	Level II TX	Level II ED And TX	Total Population
1. Discharge to 05/20/2008 - **Total Population**.	1,406 (47)	1,359 (45)	1,365 (46)	1,339 (45)	1,353 (45)
1a. Discharge to 05/20/2008 - **Completed TX**.	1,406 (47)	1,370 (46)	1,370 (46)	1,343 (45)	1,360 (45)
1b. Discharge to 05/20/2008 - **TX NOT Completed**.	1,364 (46)	1,335 (45)	1,347 (45)	1,319 (44)	1,331 (45)
1c. Discharge to 05/20/2008 - **NOT Re-arrested**.	1,465 (49)	1,435 (48)	1,436 (48)	1,416 (47)	1,428 (48)
1d. Discharge to RE-ARREST - **Re-arrested**.	573 (19)	561 (19)	596 (20)	576 (19)	570 (19)

*$p < 0.001$

The data record-matching procedure for the current study did not deviate from any of the previous ADAD recidivism studies. Historically more than eighty-five percent of persons with a DUI/DWAI education and/or treatment record (DRS) have had a corresponding DUI/DWAI evaluation (ADDSCODS) record. 25,345 unduplicated DRS records were matched against over 125,000 ADDSCODS records.

After matching DRS/ADDSCODS, the combined file was examined, and it was observed that 36% of the DRS records were non-matched. Further analysis revealed: 7% of these non-matches were due to: 1) incorrect or missing birth dates; or 2) name variation mis-matches between DRS and ADDSCODS. The remaining 93% non-matched records indicated the absence of these DRS subjects from the ADDSCODS dataset.

Several explanations are possible for the missing records. In 2003, multiple historical state-server mainframe ADDSCODS files were damaged. Although backups were available and

utilized to restore the file, its structure as a generational dataset meant that some of the generational data files could not be recovered.

Also ADDSCODS files were electronically sent monthly to the state-server mainframe from each of the 22 judicial districts across the state. These electronic transmissions not only occurred monthly, but for each of the 22 judicial districts, the day they send their files corresponded to their judicial district number. The 3rd Judicial District would send on the 3rd day of the month; the 22nd Judicial District would send on the 22nd of the month, and so on. This procedure in and of itself had caused the continual loss of records into the file.

The 25,345 pre-match DRS records were analyzed against the final 16,194 DRS matched records to examine any variability. The two DRS pre-match and post-match data files indicated very similar distributions of their data: 1.7% variance was observed for subject intervention level groupings, and no variance was observed for the recidivism metrics.

Significant, positive changes have been made since the 1997 recidivism study, in ADAD data system improvements and in the relationship between agencies ADAD collaborates with concerning DUI/DWAI offenders.

The DRS was moved onto ADAD's web-based platform TMS (Treatment Management System) in 2003, giving treatment agencies the ability to do real-time data entry, allowing probation to see immediately and exactly how the DUI/DWAI offender they are monitoring is doing. It also allows more communication between probation and treatment agencies, especially for DUI/DWAI offenders who violate conditions of their probation.

Prior to TMS, probation (who monitors the offenders during and after their treatment) and treatment agencies (who deliver the actual treatment to the offender) relied on phone calls or emails between themselves to identify problems. TMS delivers real-time data to probation, giving them the opportunity to react

quicker with non-compliant offenders, resulting in better public safety.

The ADDSCODS data system will be moved onto TMS by late 2008. ADDSCODS will then automatically populate DRS records with name, date of birth and severity and demographic data. This could conceivably eliminate 100% of the data matching errors observed in all ADAD DUI/DWAI recidivism studies, including this one.

Other relevant system changes since the last study are summarized as follows. In 1998, the persistent drunk driver (PDD) Act (HB 98-1334) increased penalties for persistent drunk drivers (anyone arrested for DUI/DWAI having either a prior DUI or BAC higher than 0.20 and no prior DUI/DWAI offenses) and established the Persistent Drunk Driver Cash Fund, pursuant to (42-3-303, C.R.S.).

In 1999, changes were made to the statewide system that probation uses to evaluate DUI/DWAI offenders, increasing their ability to identify and place them in appropriate treatment settings. Also in 1999, ADAD rule revisions increased the amount of education and/or treatment hours for all levels of intervention.

In 2001, Colorado HB 00-18 required repeat alcohol offenders to have the Ignition Interlock when they reinstate driving privileges. In 2004, HB 04-1021 was passed, reducing the DUI per se/driving with excessive alcohol content level from 0.10% to 0.08% BAC. And in 2006, HB 06-1171 passed, which required first time, high BAC alcohol offenders to have the Ignition Interlock when they reinstate driving privileges.

This year (2008), HB 08-1194 was passed, increasing the driver's license revocation period for first time DUI offenders with a BAC of .08% or greater from 3 months to 9 months.

5. Conclusions

The results of this study clearly and substantially demonstrate the effectiveness of DUI/DWAI education and treatment in preventing re-arrest for DUI/DWAI offenses, especially for those persons who complete the level of intervention they are referred to.

Specifically, it was found that:

- Regardless of the education/treatment level of intervention, 9 out of every ten-study subjects (92.1%) were not re-arrested after starting DUI/DWAI services.

- Those persons not completing treatment were 44% more likely to be re-arrested than those

  who completed treatment   (10.4% versus 7.2%, respectively).

- 78.1% of all study subjects completed their assigned intervention education/treatment level.

- Re-arrest (recidivism) was over four times more likely to occur after treatment than during.

- As the intervention education/treatment level increased in intensity, going from Level I Education to Level II Education to Level II Education and Treatment: 1) more severe outcome indicators for offenders were observed (higher BAC, prior DUI/DWAI arrests, lower monthly income, etcetera); and 2) greater recidivism rates for offenders were observed (Level I Education subjects who did not complete had a re-arrest rate of 3.4% versus Level II Education and Treatment subjects who did not complete, at 11.5%).

- This study's re-arrest percentage of 7.9% was a significant improvement (77%) over the last report (1997) measurement of 14.0%.

Impacting DUI/DWAI recidivism further, builds upon the comprehensive approaches that Prevention, Intervention, Treatment and Law Enforcement share.   We support and are indeed indebted to all the agencies and persons who contributed, and together improved this report. Thank you.

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