NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION



Evaluation of Lower BAC Limits for Convicted OUI Offenders in Maine



Technical Report Documentation Page

1. Report No.	2. Government	Accession No.	3. Recipient's Catalog No.	
DOT HS 809 827				
4. Title and Subtitle	L		5. Report Date	
Evaluation of Lower BAC Limits for C	Convicted OU	I Offenders In Maine	December 2004	i
			6. Performing Organization	
7. Author(s)			8. Performing Organization	
Jones, R.K. and Rodriguez-Iglesias,	C.			
9. Performing Organization Name and Address			10. Work Unit No. (TRAIS)	
Mid-America Research Institute, Inc.				
611 Main Street			11. Contract or Grant No. DTNH22-98-D-25079	
Winchester, MA 01890				
12. Sponsoring Agency Name and Address National Highway Traffic Safety Administration			13. Type of Report and Perior Final Report)d
Office of Program Development and			Imarreport	
400 7 th Street SW.	,		14. Sponsoring Agency Code	
400 7" Street Sw. Washington, DC 20590			, o poneomi g , igono, codo	
15. Supplementary Notes			<u> </u>	
Amy Berning was the Contracting Of	ficer's Techni	ical Representative (Co	OTR) for this project.	
16. Abstract				
To. Abdited				
This is the final report of a project eva	aluating the e	effectiveness of a lower	BAC limit for drivers	
convicted of operating under the influ	ence of intox	icants (OUI) in Maine.	The law made it illegal	
for an OUI offender to drive with any				
process evaluation of the law's effect				
evaluation of the law's effect on OUI little or no burdensome effect on OUI				
tributed to a reduction of convicted O				
related fatal crashes in particular.			,	
				!
17. Key Words		18. Distribution Statement		
Impaired driving, drinking driving, DV	This report is availabl			
OUI, recidivism, traffic crashes, BAC, repeat offenders, traffic law legislation		Technical Information Service, Springfield, VA		
		22161, 703-605-6000, and is free of charge from the NHTSA Web site at		
		www.nhtsa.dot.gov) SILE AL	
19. Security Classif. (of this report)	20. Security Cla	essif. (of this page)	21. No. of Pages	22
Unclassified	-			

Acknowledgements

We are grateful for the help given us by a number of public servants in the State of Maine. In particular, we thank Robert E. O'Connell, Jr., Director, Division of Driver License Services, Bureau of Motor Vehicles, who provided data on alcohol-related violations and information on the nature and evolution of the Maine lower BAC law for convicted OUI offenders. We also thank Howard Beach, Systems Analyst Maine Bureau of Motor Vehicles, who provided the data we used in our analysis of OUI recidivism in Maine. And we are most grateful to Susan Long, Program Manager, of Maine's DEEP (Driver Education and Evaluation Programs) in the Office of Substance Abuse, for providing us the results of her organization's survey of law awareness among OUI offenders entering DEEP.

We spoke with a number of law enforcement officials and patrol officers in Maine who provided many useful insights about their role in enforcing the lower BAC law. Involved organizations were the Augusta Police Department, the Portland Police Department, the Cumberland County Sheriff's Office, the Kennebec County Sheriff's Office, and the Maine State Police. We appreciate their cooperation and help, and extend our thanks to them.

EVALUATION OF LOWER BAC LIMITS FOR OUI OFFENDERS IN MAINE

Table of Contents

Acknowledgements	i
Table of Contents	iii
Figures	iv
Tables	iv
Executive Summary	v
Conclusions	vii
1 - Introduction	1
Background	1
Study Approach	2
2 - Method	3
Overview	3
State Selection	3
Candidate States	3
Selecting a Study State	5
Study State	6
Process Analysis	6
Impact Analysis	8
3 - Results	9
Process	9
System Description	9
Level of General OUI Enforcement Activity	11
Conditional License Actions	14
Operational Environment	
Impact	19
All Fatal Crashes	19
Alcohol-Related Fatal Crashes	21
Recidivism	23
Awareness	25
4 - Conclusions	29
5 - References	31
Appendix - Maine Lower BAC Statute	33

Figures

Figure 3-1: Processing Of a Drinking Driving Suspect in Maine	10
Figure 3-2: OUI Arrests in Maine, 1978 - 2000	
Figure 3-3: OUI Convictions in Maine, 1978 - 2000	
Figure 3-4: Distribution of OUI Convictions in Maine by Offense Number	
2000	
Figure 3-5: Mean Percent of OUI Convictions with 95% Confidence Intervals for	
Multiple Offenders, Second Offenders, and Third Offenders by Time Period	13
Figure 3-6: Administrative Per Se Suspensions in Maine, 1984 - 2000	15
Figure 3-7: BAC Test Refusers in Maine, 1978 - 2000	
Figure 3-8: BAC Test Refusal Rate in Maine, 1978 - 1999	
Figure 3-9: Total Number of Conditional License Suspensions in Maine, 1988 - 20	
Figure 3-10: Number of Conditional License Suspensions in Maine by Type of	
	17
Figure 3-11: Hearings for Non-Refusal Conditional License Suspensions as a Perc	ent of
All Hearings in Maine, 1989 - 2000	
Figure 3-12: Number of Hearing Dispositions for Non-Refusal Conditional Licens	
Suspensions in Maine, 1989 - 2000	
Figure 3-13: Ratio of Percentage of Convicted Offender Drivers in Fatal Crashes i	n
Maine to the Percentage of Convicted Offender Drivers in Fatal Crashes in N	ew
Hampshire and Vermont, 1975 - 2000	19
Figure 3-14: Convicted Drivers in Fatal Crashes as a Percentage of All Drivers in	Fatal
Crashes in Maine, 1975 - 2000	20
Figure 3-15: Percent Convicted Drivers in Fatal Crashes in Comparison States, 19	75-
2000	20
Figure 3-16: Convicted Drivers as a Percentage of All Fatal-Crash Involved Drive	rs in
Maine with a BAC of .0109 by Period	
Figure 3-17: Convicted Drivers as a Percentage of All Fatal-Crash Involved Drive	rs in
Maine with a BAC of .10+ by Period	22
Figure 3-18: Convicted Drivers as a Percentage of All Fatal-Crash Involved Drive	rs with
a BAC of .10+ by Group and Year, 1996-2001	23
Figure 3-19: Modeled Recidivism of Male Drivers with Priors by Period	25
Figure 3-20: Recidivism of Male Drivers One Year and Two Years after the Index	•
Violation, With and Without Priors	26
Tables	
Table 3-1: Covariate Values by Period	24
Table 3-2: Awareness Survey Statistics	

Executive Summary

Objectives and Approach

The general objective of the project was to determine the effectiveness of establishing lower blood alcohol concentration (BAC) limits for convicted driving while intoxicated (DWI) offenders in one State. The project started with selecting the study State, involved developing State selection criteria, identifying potential case-study States that best met those criteria, and recommending a case-study State for consideration by the National Highway Traffic Safety Administration (NHTSA).

After NHTSA selected the study State (Maine), we prepared a plan for collecting and analyzing the data needed for the evaluation. The plan addressed both a process evaluation and an impact evaluation. The impact evaluation preceded along two lines, 1) an analysis of the general deterrent effect on alcohol-related fatal crashes, and 2) an analysis of the specific deterrent effect on recidivism.

Maine's Lower BAC Law

Conviction of a first OUI offense¹ in Maine results in an administrative license suspension under the condition that the offender does not drive with any measurable BAC for one year after reinstatement of the license. The law was passed in 1995 and was preceded by a similar law passed in 1988 that prohibited such an offender from driving with a BAC of .05 or higher.

Reinstatement of the driver license is in the form of a conditional license issued by the Bureau of Motor Vehicles (BMV), which stipulates that the violator must have satisfactorily completed an alcohol educational program and, when required, has satisfactorily completed an approved alcohol treatment or rehabilitation program. The text of the statute is contained in the Appendix to this report.

Findings

Data provided by the Maine Bureau of Motor Vehicles indicate that no large changes occurred in the level of general OUI enforcement activity after 1988. Arrests were fairly stable, averaging about 10,000 per year, and convictions trended down slightly, starting at 8,000 in 1988 and reaching 6,000 in 2000. Administrative per se actions against the driver license declined slightly to about 4,000 in the year 2000, but the BAC test refusal rate declined nearly 50%, from 18% to 10%.

Data from Maine's driver records file indicate that convictions of repeat offenders increased slightly to about 37% of all OUI convictions, but this was probably due to an increase in the look-back period for determining the existence of prior OUI convictions.

¹ Maine uses the term "operating under the influence of intoxicants" (OUI) instead of DWI for an alcohol-impaired driving offense.

License suspensions flowing from violations of the lower BAC law reached 250 in 1993 and settled down to about 200 in the year 2000, about half of which were for refusing to take a BAC test. Such suspensions amounted to less than 5% of all OUI-related administrative suspensions, and fewer than half were disposed of in administrative hearings. Of the 101 disposed cases in 2000, 41 of the suspensions were rescinded, 87% of which were due to the law enforcement officer failing to appear

Our discussion with staff from enforcement agencies and Maine's Bureau of Motor Vehicles indicated that the lower BAC law did not place any significant burden on those agencies.

Our impact analysis used two neighboring States, Vermont and New Hampshire, to help account for factors other than the lower BAC law that may have influenced the occurrence of fatal crashes in Maine. Neither of these two comparison States had a lower BAC law, and both had an OUI enforcement environment similar to Maine's. The impact analysis showed that in Maine, convicted OUI offenders in fatal crashes as a percent of all drivers in fatal crashes decreased from 12.9% to 7.1% (a decrease of 45%) after 1988, and decreased still more after 1995. At the same time, this percent increased slightly in the two comparison States.

With respect to *alcohol-related* fatal crashes, we found that for drivers at a BAC of .01-.09, convicted offenders as a percent of all such drivers in Maine stayed about the same over the 1988-2001 period, but increased gradually in the comparison States. But for drivers at .10+, this percent decreased from 18% in the 1982-1987 period to 15% in the 1996-2001 period; the percent increased from 15% to 17% in the comparison States. And after 1995, convicted offenders as a percent of all fatal crash-involved drivers in Maine decreased from 19% in 1996 to 11% in 2001. In the comparison States, this percent increased from 11% to 25%.

Our analysis of OUI recidivism in Maine revealed that the law affected recidivism very little. For offenders convicted in 1993-1994, the two-year recidivism rate was 14.6%. This fell to 13.6% for offenders convicted in 1996-1997. A similar decrease of 10.7% to 9.9% occurred for first offenders.

Finally, awareness of the lower BAC law in Maine was high in late 2002: 67% of the OUI offenders surveyed said they were aware of the law, and 45% knew about it before their most recent OUI convictions. Awareness was significantly higher among convicted offenders than among first offenders.

These measures of activity, impact, and awareness suggest strongly that Maine's lower BAC law had a positive effect on OUI fatal crashes involving drivers with prior OUI offenses, and also on fatal crashes involving drivers with a BAC of .10 or more. No effect was noted for fatal-crash-involved convicted offenders with a lower BAC. Further, the small number of enforcement actions against violators of the lower BAC law and the absence of any meaningful reduction in OUI recidivism, suggest that the effect was a general deterrent effect rather than a specific deterrent effect.

Despite the strong indications of an effect, we cannot say unequivocally that the lower BAC law alone was responsible because of the concurrent existence of other OUI countermeasures. However, it can be said with some confidence that the law was an important element of Maine's overall effort to decrease alcohol-impaired driving among convicted OUI offenders.

EXECUTIVE SUMMARY

Conclusions

We conclude from Maine's experience that, when included in a State's arsenal of DWI countermeasures, a lower BAC law can be effective in reducing fatal crashes involving convicted DWI offenders, and in reducing alcohol-related fatal crashes involving convicted DWI offenders. We also conclude that such a law can be enacted and implemented with essentially no negative effects on a State's DWI control system.

Driver licensing agencies in implementing States should include information on a person's driver license indicating the existence of any condition requiring the person not to drive with any amount of alcohol in the blood. Also, driver-licensing agencies in implementing States should modify their driver records systems to include records of any violations of the State's lower BAC law.

In implementing such a law, law enforcement agencies should train their officers in the provisions of the law, to be alert for signs of any drinking among stopped drivers, including those not visibly impaired, and to check for the existence of a driver license condition prohibiting driving with any amount of alcohol in the blood. In addition, the importance of attending administrative license revocation hearings should be stressed in officer training.

EVALUATION OF LOWER BAC LIMITS FOR OUI OFFENDERS IN MAINE

1 - Introduction

This document is the final report of a project entitled "Evaluation of Lower BAC Limits for Convicted DWI Offenders." The general objective of the project was to determine the effectiveness of establishing lower BAC limits for convicted DWI offenders in one State.

Background

Convicted DWI offenders have been identified as a special target group for DWI countermeasures. A recent review of the scientific literature about drivers who have been convicted more than once of driving while impaired by alcohol (DWI) found that repeat DWI offenders comprise a small, but not negligible, percentage of drivers involved in traffic crashes (Jones and Lacey, 2000). Unfortunately, there are very little data on the actual magnitude of that percentage, but data from California suggest it could be in the 26% range for *alcohol-related* fatal crashes, and data from Minnesota suggest it could be even higher when administrative violations are counted as convictions. FARS data for 2001 suggest a figure of some 9% for alcohol-related fatal crashes and a figure of about $3\frac{1}{2}$ % for *all* fatal crashes when only court convictions in the previous three years are counted as a prior DWI.

The amount of evaluative literature on repeat offender countermeasures has grown considerably in the last several years, nearly all of which is concerned with the specific deterrent effect of various sanctions. Sanctions classified as alternative sanctions appeared especially effective, offering potential reductions in recidivism in the 15% to 90% range. License suspension or revocation combined with treatment continues to look effective, with the potential for reducing recidivism by as much as 50%. Several evaluations also indicate strongly that certain vehicle-based sanctions can also be effective in reducing the recidivism of repeat DWI offenders.

An evaluation of another legal-system countermeasure for alcohol-related crashes involving convicted DWI offenders has created interest recently in the highway safety community. The evaluation (Hingson, Heeren, and Winter, 1998) examined the effect of a 1988 Maine law lowering the BAC limit from .10 to .05 for convicted DWI offenders. The law mandated an administrative license suspension for violators, but did not establish a .05 limit for the criminal offense of DWI (called operating under the influence of intoxicants or OUI in Maine). The evaluation found the proportion of fatal crashes involving drivers with recorded prior OUI convictions declined 25 percent following passage of the .05 OUI law, while the proportion rose in the rest of New England during the same years. This evaluation, while useful for indicating the potential of such a law, must be considered as preliminary, since (1) it did not consider important process-related questions (that is, the extent to which the law was implemented and its effect on the implementing agencies), and (2) involved a before-and-after treatment-and-control experimental design for the impact evaluation. Further, the law has since been changed to reduce the limit to .00, and the Maine law applies only to administrative sanctions, requiring li-

EVALUATION OF LOWER BAC LIMITS FOR OUI OFFENDERS IN MAINE

cense suspension for a period of one year for first time convicted offenders and 10 years for multiple repeat offenders who commit the violation after reinstatement following an OUI conviction or administrative action.

The mandatory nature of the lower limit provision in Maine's law required further examination. Many judges across the nation include a prohibition of drinking or driving after drinking in their standard OUI sentences. However, because there is no statutory sanction attached and officers on the street are unlikely to know of the prohibition from checks of computerized records, this violation of probation is in practice seldom reported and thus action is infrequently taken on low BACs.

Study Approach

Our approach to the project started with the State selection process which involved developing State selection criteria, identifying potential case-study States that best met those criteria, and recommending a case-study State for NHTSA consideration.

After the study State (Maine) was selected, we prepared a plan for collecting and analyzing the data needed for the evaluation. The plan addressed both a process evaluation and an impact evaluation. The impact evaluation preceded along two lines, (1) an analysis of the general deterrent effect on alcohol-related fatal crashes, and (2) an analysis of the specific deterrent effect on OUI recidivism. Execution of the data collection and analysis plan followed, and the final technical report (this document) was prepared.

This report is presented in five major sections. Section 2 describes the research method and the evaluation design, and Section 3 presents the results of the evaluation. Overall conclusions are contained in Section 4, and a bibliography of cited references is presented in Section 5. Appendix A contains the Maine statute setting forth the current version of its lower BAC law.

2 - Method

Overview

Our evaluation was composed of two components, a process evaluation and an impact evaluation. The process evaluation sought to determine the effect of the State's lower BAC law on the State's DWI control system. This included the nature and extent of the system's support to enforcement of the selected State's law. The impact evaluation sought to determine the deterrent effect of the law on the traffic crash involvement of convicted DWIs. Deterrent effect was measured in terms of general deterrence (reducing DWI among convicted DWIs in general), and specific deterrence (reducing DWI among convicted DWIs who have been caught and convicted for another DWI violation). The flow of the evaluation was as follows:

- 1. Select a case-study State.
- 2. Perform a process evaluation of the effect of the selected State's lower BAC law on its DWI control system.
- 3. Analyze the general deterrent effect of the selected State's law.
- 4. Analyze the specific deterrent effect of the selected State's law.
- 5. Synthesize the results of steps 2 through 4 into an overall evaluation of the selected State's law.

In this approach, we were looking for a case-study State that, among other things, had a law that seemed to have had a general deterrent effect. We wanted to find out, if possible, why a law worked rather than why it didn't work. Thus, in step 1 above we did a preliminary general deterrence analysis in States with lower BAC laws. In step 2, we performed a more detailed impact evaluation of the lower BAC law in the selected case-study State, Maine.

State Selection

This activity involved identifying candidate case-study States and then selecting a case-study State from these candidate States.

Candidate States

To identify States with lower BAC limits for DWI offenders, we first examined NHTSA's most recent digest of State laws (U.S. Department of Transportation NHTSA, 2001). We then searched State statutes in all of the contiguous United States to identify

any pertinent laws that might not have been captured in the NHTSA compendium. As result, five States were found with lower BAC laws, viz.:

Maine

Maine was the first State to pass a lower BAC law for convicted OUI offenders. The law lowered the per se limit for convicted offenders in two steps, the first step from .10 to .05 (in 1988) and the second step from .05 to .00 (in 1995). Adjudication and sanctioning are performed through an administrative process. Maine has a .08 per se law for OUI and an administrative per se law for drivers with a BAC of .08 or higher.

Conviction of a first-offense OUI results in an administrative license suspension under the condition the offender not drive with a BAC of .05+ (first step) or .01+ (second step) for one year after license reinstatement. The minimum period of license suspension is 90 days for a first offense, but increases to 18 months for a second offense within 10 years, and to four years for a third and subsequent offense within 10 years. In the second step, the period of suspension for violating this condition was raised from two months to one year and to two years for test refusal if there were probable cause the person was driving at the lower limit. Reinstatement of the driver license after suspension under the lower BAC law is in the form of a conditional license issued by the Bureau of Motor Vehicles (BMV), which stipulates the violator must have satisfactorily completed an alcohol educational program and, when required, has satisfactorily completed an approved alcohol treatment or rehabilitation program. The text of the statute is contained in the Appendix to this report.

Tennessee

Tennessee has a .10 per se law. For drivers with no prior alcohol-related offenses, its *presumptive* limit is .10 for the offense of DUI and .08 for the lesser offense of driving while impaired (DWI). For drivers with a prior DUI or DWI, its presumptive limit for DUI is .08.

Wisconsin

Since 1989, Wisconsin's illegal per se law has had a BAC limit of .10 for persons with one or fewer prior DWIs, a limit of .08 for persons with two priors, and a limit of .02 for persons with three or more priors. A prior study of the effectiveness of alternative sanctions for repeat DWI offenders (Jones, Wiliszowski, and Lacey, 1996) found only a small percentage of Wisconsin repeat offenders had three or more priors.

Utah

Utah's illegal per se law has a BAC limit of .08 for first offenders and, since 1998, a lower BAC limit for repeat offenders. The new law establishes a zero limit lasting for two years for repeat offenders with one prior and for six years for repeat offenders with two or more priors. However, our contacts in Utah tell us their law has not been enforced and only one case involving the law has arisen.

Connecticut

When we were selecting a study site, Connecticut's per se limit was .10 for drivers with no prior alcohol-related offenses². The State's lower BAC law for convicted DWIs reduced the per se limit from .10 to .07 for repeat DWI offenders.

Selecting a Study State

In accordance with the above discussion, our major State-selection criterion was that the law in the case-study State likely had a general deterrent effect. To estimate the extent of any general deterrent effect, we performed preliminary interrupted time-series analyses of fatal crashes in candidate States to determine (1) whether drivers had a DWI conviction prior to their crash, and (2) whether drivers with a prior conviction experienced a post-law reduction in fatal crash involvement. Data from NHTSA's Fatality Analysis Reporting System (FARS) were used in the analysis because it contained a field indicating whether a crash driver had a DWI conviction in the past three years. The measure of effectiveness was number of crash-involved drivers with such a prior conviction as a percentage of all crash-involved drivers. Data covering the period 1975 through 2000 were used in the analyses.

In Maine, we found a near-significant reduction (p=0.059) of 82% in the Maine series at the 1988 intervention point and continuing on through the remainder of the series but no statistically significant reduction at the 1995 intervention point³. We also performed an analysis that included a comparison series, which we constructed from pooled data from two similar adjoining States, New Hampshire and Vermont. This analysis confirmed the finding of a positive effect of the 1988 law and little or no effect of the 1995 law. However, note Maine's implementation of its standard .08 per se law for the general public (and other repeat offender provisions) also occurred in 1988 and these could have been at least partially responsible for the reduction noted above.

Our analysis of similar time series in the four other States with lower BAC limits for repeat offenders (Tennessee, Wisconsin, Utah, and Connecticut) followed the same approach as the Maine analysis. We found both Tennessee and Wisconsin had large reductions in this measure after their laws became effective. The reductions amounted to 37% for Tennessee (p=0.080) and 27% for Wisconsin (p=0.089). (These reductions were not statistically significant at p=0.050 level, the relatively high p levels for such large effects being due to the large variances in the data.) No reductions were found in Utah or Connecticut.

Thus, only Maine, Tennessee, and Wisconsin met our requirement for providing evidence of a positive effect on crashes involving drivers with a conviction of DWI. We chose Maine as the study State for this project, mainly because it would give us the opportunity to establish whether a limit of .05 or .00 can reduce fatal crashes among convicted offenders. Studying the effect of the relatively weak laws in Tennessee or Wisconsin would only provide an additional study of .08 (except in Wisconsin, which has an .02 limit for offenders with three or more priors), which has already been shown to be effec-

² The per se limit in Connecticut was reduced to .08 in July 2002.

³ The details of the time series analyses for Maine are provided in Chapter 3.

tive for DWIs in general. Finally, contacts in Maine were agreeable to providing us the data we need for the study, particularly driver records data needed for the analysis of specific deterrence.

Study State

Process Analysis

The process evaluation was tied to a functional description of the Maine implementation of the law. The description indicated the functions performed in implementing the law and the procedures followed in performing those functions. The sequencing and interdependencies of the functions were indicated through narrative descriptions and a flow chart. Because the Maine law is administrative in nature (see Appendix A), primary emphasis was placed on the enforcement function and BMV-related functions.

Changes to the operational environment of the law were also documented as a part of the system description, for example:

- Changes in operation of other OUI activities (for example, changes in enforcement strategies employed such as the adoption of OUI checkpoint operations, or changes in public information and education programs);
- Other changes in pertinent laws;
- Changes in general economic conditions which are known to effect impaired driving patterns; and
- Changes in pertinent socio-economic characteristics of the general population.

Most of the information required for the program description came from discussions with people in the several agencies having major involvement in implementing the lower BAC law, specifically:

- The Maine BMV,
- The Maine State Police, and police departments serving two local jurisdictions, and
- The Maine Driver Education and Evaluation Program, which administers postconviction alcohol education and treatment for OUI offenders.

Quantification of the activities described in the functional description followed. This involved stating to the extent possible the levels of performance obtained for each major function. For *enforcement*, measures of activity sought included:

- Volume of arrests for the new offense;
- Change in volume of arrests;
- Whether the arrest volume affects the overall number of arrests or replaces some other category of offense;
- Whether there are variations in enforcement by enforcement agency (State versus local versus county); and
- Average BACs for various categories of impaired driving offense including the new lower limit law.

To quantify these measures, detailed arrest and BAC data for both first and repeat offenders for a period both before and after initiation of the new BAC limits were sought. Information of interest included age of offender, prior record of offender, BAC (or refusal) at time of arrest, and charge filed.

The data elements to create the process data set for performing these analyses were obtained primarily from the BMV, which maintains a consistent driver history file that includes information on OUI offenders and administrative driver license actions statewide.

In addition to collecting and analyzing the objective data described above, we queried law enforcement personnel about such issues as:

- How offenders (particularly lower limit offenders) are initially detected?
- Are they identified through routine patrol because of standard OUI cues, or because of traffic stops for other offenses, or through sobriety checkpoints, or some combination of the above?
- Are passive alcohol sensors or PBTs used for their detection?
- Are the Standardized Field Sobriety Tests (SFSTs) used for this category of offense?

In general, law enforcement officers and supervisors were asked whether problems have arisen in detecting and charging violators for the new offense, and if so, whether any remedies were identified; what new policies were promulgated; what new training was implemented; and what other solutions were implemented or are needed.

Another issue we addressed in these informal discussions was the extent to which patrol officers are aware of the law and the procedures in place for its implementation and whether they support the concept.

The analysis of *BMV-related functions* addressed the extent to which the lower limits law has affected BMV operations and what actions the BMV has taken to respond to these demands. Issues of concern included:

- The extent to which license suspensions/revocations have been affected by the law, both in terms of suspensions specifically for the low BAC offense;
- Whether the lower BAC law had an effect on overall OUI suspensions/revocations; and
- Whether the law has affected BMV hearings and how any related problems may have been addressed.

The impact of the law on *sanction providers* such as treatment providers, probation departments, and jail administrators was also investigated. In general, we were interested in identifying changes in policies, procedures, and additional burdens may have resulted from the lower limit law, for example, additional reporting requirements to the BMV, and determining whether the lower limit violation violated the conditions of probation for a prior offense and reporting such a probation violation to the sentencing judge.

Finally, we examined the extent to which OUI offenders were aware of the law, along with the nature of any related public information and education (PI&E) programs involv-

ing hard news coverage, public service announcements (PSAs), and other media. With respect to awareness among OUI offenders, alcohol assessment staff from DEEP contractors queried OUI offenders during the intake process. In addition to data on law awareness, the assessment staff sought data on offender characteristics such as age, sex, and number of prior convictions, and we used the resulting data to determine awareness as a function of these variables.

Impact Analysis

As indicated above, the impact analysis was composed of two parts, an analysis of the law's general deterrent effect and an analysis of the law's specific deterrent effect. Time series analysis of FARS data going back to 1975 was the primary technique used in the general deterrence analyses. The main criterion variable used was percentage of convicted-offender drivers in fatal crashes. Fatal crashes were used because FARS includes a field indicating whether the driver had a prior OUI in the previous three years.

Regression to the mean is a well-known threat to the validity of the before-and-after experimental design. A random variable with a number of values above the mean before some point will eventually have a number of values below the mean after that point due to chance alone. The effect can be amplified when a trend is present. To overcome this problem, we used a time-series design. Our outcome measure was number of fatal - crash-involved drivers who were convicted offenders as a percentage of all fatal-crash-involved drivers. For a comparison series, we used pooled data from two similar adjoining States, New Hampshire and Vermont. Because of the small numbers of convicted-offender drivers in fatal crashes, and the need for enough points to perform a valid time-series analysis, we settled on a series of semi-annual data, giving us 50 data points for each series.

Additional analyses were also conducted in Maine using the Generalized Linear Model (GLM) method to determine the impact of the law on of percentage of convicted-offender drivers with a given BAC (.01+ and .10+) in fatal crashes. Three time periods were used in the analyses: 1982-1987 (no lower BAC law), 1988-1995 (a .05 limit for convicted offenders), and 1996-2000 (a .00 limit for convicted offenders). The GLM method was used instead of time series because of the small number of this type of crash in Maine.

Our analysis of the specific deterrent effect of the lower BAC limit was based on a special form of the before-and-after experimental design. The recidivism of five cohorts of drivers with prior OUIs was studied to see if the rates changed significantly after the implementation of the latest lower BAC limit in 1995. Each cohort consisted of all drivers convicted of an OUI-related offense in a given year, two cohorts before 1995 (1993 and 1994), one cohort during 1995, and two cohorts after 1995 (1996 and 1997). The analysis controlled analytically for period-to-period changes in the composition of the cohorts with respect to subject age, sex, and number of prior OUIs. Data for the analyses were extracted from driver records provided by the BMV. Information for identifying individual drivers was removed from the records by the BMV prior to delivery of the data to Mid-America.

3 - Results

Process

System Description

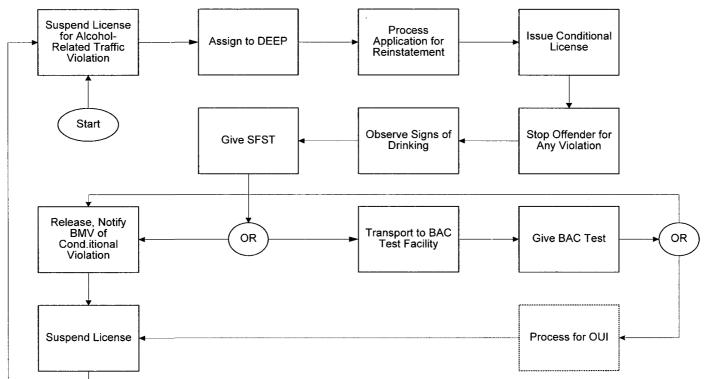
The lower BAC countermeasure is one of a class of alcohol-related crash countermeasures seek to prevent driving after drinking by deterring and incapacitating drinking-drivers. As is the case with most countermeasures of this class, the Traffic Law System is the major societal system that operates the lower BAC countermeasure, doing so through three of its major subsystems, Enforcement, Adjudication, and Sanctioning [See (Jones and Lacey, 2001) for a definition and discussion of these subsystems and their functions.] Drivers explicitly targeted by the lower BAC law are those who have been convicted and sanctioned for OUI or for violating the State's .08 per se law.

The process starts with a suspension of the driver license for OUI (Figure 3-1). The suspension is administrative in nature and is imposed by the Bureau of Motor Vehicles (BMV). The minimum period of suspension is 90 days for a first offense, but increases to 18 months for a second offense within 10 years, and to four years for a third and subsequent offense within 10 years. These periods have not changed since the lower BAC law first became effective in 1988. The suspension is a "hard" suspension for persons with two or more offenses, in that no work or limited licenses are granted.

The offender is also required to attend an alcohol education program and, if indicated by the BMV, to participate in alcohol treatment and rehabilitation. The State's Driver Education and Evaluation Program (DEEP) administers the program. After the period of suspension and after satisfactory completion of the program, the driver may apply for a conditional license. The license prohibits driving with any amount of alcohol in the blood, and the license will be granted if and only after the BMV has been notified of the driver's completion of DEEP. The conditional license is annotated with the letter "Q" on its face as a restriction, and the reverse side of the license explicitly defines the restriction as "Q – Conditional License. May not operate after consuming intoxicating liquor." In 1988, the conditional license prohibiting driving with any alcohol in the blood was in effect for two months, but in 1995 the effective period was increased to one year for a first offense, and to 10 years for a second and subsequent offense.

If the holder of a conditional license is lawfully stopped by a law enforcement officer (e.g., for speeding or an equipment violation), the officer notes the driver has a conditional license and observes for any signs of drinking. If any sign is observed, for example, an odor of alcohol, the officer may administer field sobriety tests such as NHTSA's Standardized Field Sobriety Test (SFST). If the driver is found not to have a BAC of .08 or higher but to have consumed alcohol, the officer prepares a short report indicating the driver "operated or attempted to operate a motor vehicle while having any amount of alcohol in the blood." At this point the driver is allowed to proceed, and the officer will submit the report to the BMV. The driver will later be notified of driver license action (a one-year suspension of the driver's license) by the BMV

Figure 3-1: Processing Of a Drinking Driving Suspect in Maine



Another course of action is followed when an SFST test or other factors lead the officer to believe the driver is at or above Maine's standard BAC limit of .08 and may have violated the provisions of the DUI law. Then, the driver is transported to a BAC testing facility and asked to submit to a BAC test. (The use of preliminary breath testers [PBT] is not permitted in Maine.) If the driver refuses, the officer reports the refusal to the BMV, and the conditional license is suspended for a period of two years for violating the State's implied consent law. If the driver takes the BAC test and is found to have a BAC of .08 or more, the conditional license is suspended for the same periods as apply to an OUI conviction for a second or third offense, 18 months and four years, respectively. Finally, if the driver takes the BAC test and is found to have a BAC substantially less than .08 (but greater than .00) and is deemed not to be impaired, he or she is released, and the BMV is notified the driver has violated the non-drinking requirement of the conditional license. The driver is then notified his or her license has been suspended. Drivers who have violated the conditional license law, the OUI law, or the implied consent law will then begin the above process all over again.

Note that driver license suspensions can be appealed and then adjudicated by a BMV hearing officer. However, the suspension may remain in effect pending a hearing. Decisions rendered by a hearing officer also may be appealed through the court system. Such appeals are heard initially by the Superior Court.

Note also that procedures for *detecting* suspected violators of the lower BAC law differ somewhat from those followed for suspected violators of the OUI law. Because of the very low BACs involved, signs of gross impairment will not be present, and as indicated above, detection will usually occur after a stop for some other driver action. Such actions are observed most often during routine patrol. Evidence of drinking most often consists of such signs as the presence of containers of alcoholic beverages in the vehicle and the odor of alcohol in the vehicle. However, SFST tests are administered when a driver appears to be impaired, but PBTs are not permitted by law. Officers we interviewed said they seldom used the lower BAC law as a basis for license action, having found most convicted OUI offenders who had been drinking were at a high enough BAC to charge for OUI. If a later BAC tests indicated the driver's BAC was too low to obtain an OUI conviction or there were other impediments to obtaining an OUI conviction, then the lower BAC law is used.

Level of General OUI Enforcement Activity

The number of OUI arrests in Maine has varied between 8,000 and 12,000 per year since 1978, with no noticeable trends (Figure 3-2). If anything, the number of arrests appeared to rise after the law changes of 1988 and 1995, only to decline again to their prelaw levels. By contrast, the number of OUI convictions tends to trend downward since 1984, while reflecting the peaks and valleys of the arrest figures (Figure 3-3).

Meanwhile, the *mix* of OUI convictions with respect to number of prior OUI convictions showed little change prior to 1995. The mix changed noticeably in 1995, when OUI convictions of drivers with priors became a larger component of all OUI convictions (Figure 3-4). Multiple offenders as a percent of all offenders went from an average of 28% in the 1988-1995 period to an average of 37% in the 1996-2000 period (Figure 3-5).

Figure 3-2: OUI Arrests in Maine, 1978 - 2000

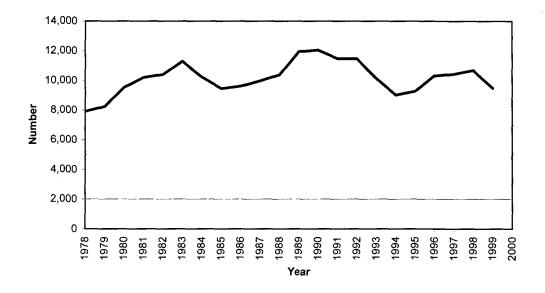


Figure 3-3: OUI Convictions in Maine, 1978 - 2000

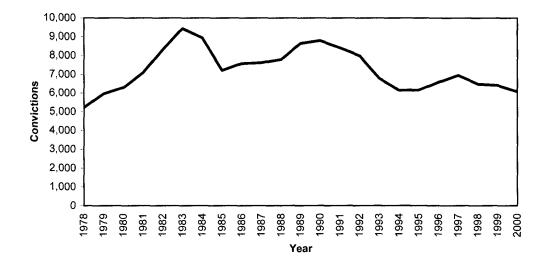


Figure 3-4: Distribution of OUI Convictions in Maine by Offense Number 1988 - 2000

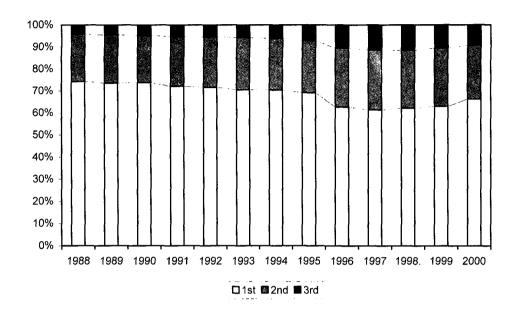
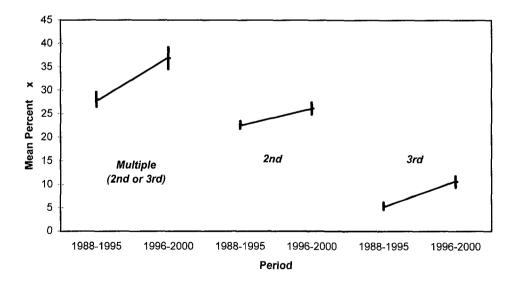


Figure 3-5: Mean Percent of OUI Convictions with 95% Confidence Intervals for Multiple Offenders, Second Offenders, and Third Offenders by Time Period



For second offenders, these percentages are 23% and 26%, respectively, and for third offenders, 5% and 11%, respectively. Because of the small 95% confidence intervals surrounding these figures (indicated by vertical bars on the figure), all of these changes are highly significant statistically ($p \approx 0.0001$).

While these increases in the multiple-offender component of OUI convictions could indicate an increase in system emphasis on this group, they are more likely to be due primarily to an increase from 6 years to 10 years in the so-called "look-back period" for defining a prior offense. Thus, some offenders who would be classified as a first offender in the 1988-1995 period would be classified as a second or third offender in the 1996-2000 period, as there were more years in which the offense could have occurred.

Administrative per se license suspensions increased markedly in 1984 when the State's first administrative per se law (.10) went into effect (Figure 3-6). In 1984, about 4,300 licenses were suspended under this law compared to about 6,100 in 1990. These suspensions declined again, and then reached their 1984 level in 1994, where they remained through 2000.

Finally, refusals to take a BAC test averaged about 1,500 per year in 1978 through 1986 (Figure 3-7). Refusals then increased sharply to about 2,000 per year in 1990, and dropped quickly again to about 1,100 per year, where they remained through 2000. However, refusal *rates* showed a quite different pattern, starting out at about 18% to 19% in 1978, dipping to 14% in 1984, rising to 18% in 1987-1988, and then falling steadily to 10% in 1999 (Figure 3-8). (Arrest data for 2000 were not available at this writing.) It is interesting that the rate for 1987 (18.4%) is almost identical to the mean of the rates in 41 States as noted in a NHTSA-sponsored study of implied consent refusal impact (Jones, Joksch, and Wiliszowski, 1991).

Conditional License Actions

In 1989, the first year after the passage of the first lower BAC law, the BMV suspended a total of 50 conditional licenses (Figure 3-9). The suspensions rose rapidly to about 250 in 1993 and remained there until 1997 before falling to about 200 in 1998. At this writing, only about half of the suspensions (100) are for non-refusal violations (Figure 3-10). Non-refusal conditional license suspension hearings are less than 2.5 % of all BMV hearings (Figure 3-11) and numbered fewer than 60 per year over the past few years (Figure 3-12).

Additional data were available for hearings for all conditional license suspensions scheduled for the year 2000, including those suspended for driving after drinking and those suspended for refusing to take a BAC test. A total of 202 such hearings were scheduled, of which 101 were continued until later, and 101 were disposed. Only 43 reached the actual fact-finding stage before a hearing officer, and of these, only four (9%) resulted in the suspension being rescinded. However, another 27 of the 101 cases (27%) were rescinded because the law enforcement officer did not appear at the hearing, so 31 of the total 101 disposed cases were rescinded. The preponderance of all the rescinded cases (87%) was due to the law enforcement officer failing to appear at the hearing.

Figure 3-6: Administrative Per Se Suspensions in Maine, 1984 - 2000

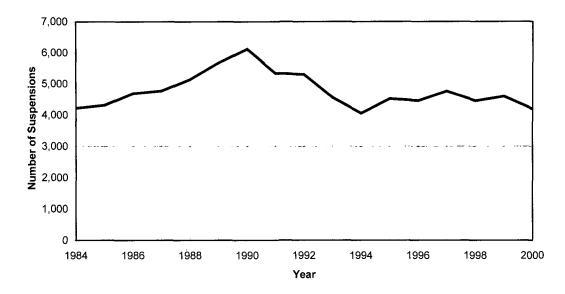


Figure 3-7: BAC Test Refusers in Maine, 1978 - 2000

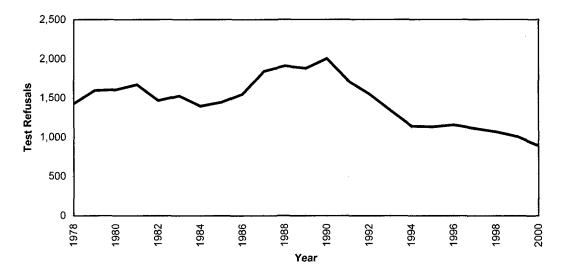


Figure 3-8: BAC Test Refusal Rate in Maine, 1978 - 1999

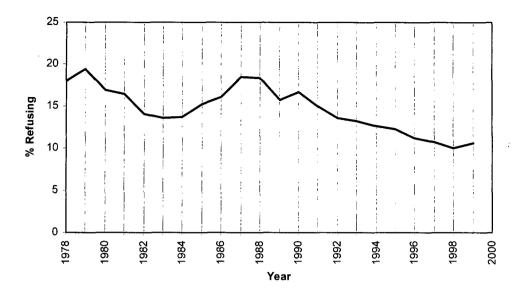


Figure 3-9: Total Number of Conditional License Suspensions in Maine, 1988 - 2000

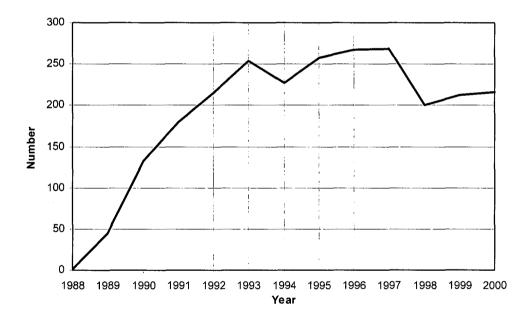


Figure 3-10: Number of Conditional License Suspensions in Maine by Type of Suspension, 1988-2000

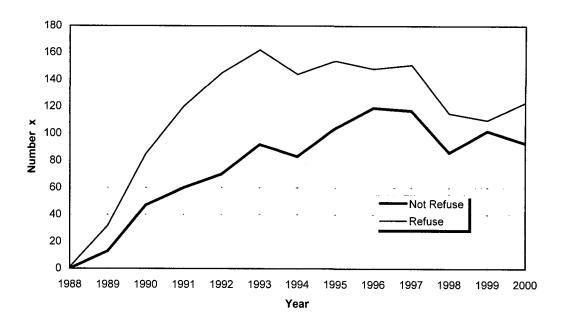
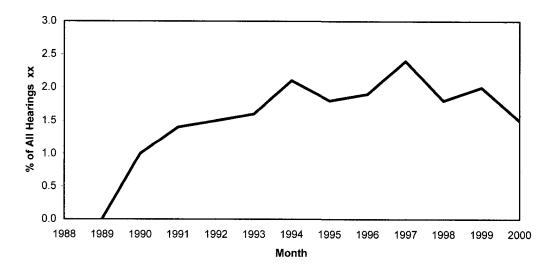


Figure 3-11: Hearings for Non-Refusal Conditional License Suspensions as a Percent of All Hearings in Maine, 1989 - 2000



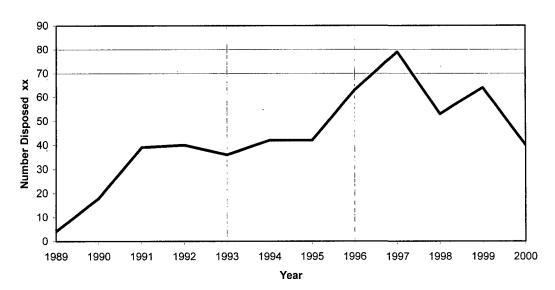


Figure 3-12: Number of Hearing Dispositions for Non-Refusal Conditional License Suspensions in Maine, 1989 - 2000

Operational Environment

The lower BAC law was one element of an ongoing series of legislation aimed at alcohol-impaired drivers, and must be assessed against this background. Typically, such laws lowered BAC limits, raised fines, made incarceration more likely and longer, and placed more emphasis on administrative sanctions. Such legislation was not unique to Maine, but occurred in most other States as well. As indicated above, Maine passed the first version of its lower BAC law in 1988, and then revised it in 1995 to explicitly proscribe any amount of alcohol as illegal for convicted OUI offenders. However, other traditional sanctions also became more severe as a result of the 1995 legislation, so that, strictly speaking, any effect the lower BAC law may have had post-1995 would have to be attributed to the totality of the legislative changes, plus any other changes in OUI enforcement processes that may have occurred.

However, our discussions with enforcement officials in Maine indicate their procedures for detecting, apprehending, and processing OUI offenders changed very little or not at all after 1988. Further, while our two comparison States also strengthened their impaired driving laws after 1988, neither State had a lower BAC law comparable in any way to Maine's law. Overall, the main difference between the operational environments in Maine and the comparison States with respect to impaired driving by convicted OUI offenders was Maine had a lower BAC law and the comparison States did not. Thus, any differential impact between Maine and the two comparison States could credibly be ascribed to the addition of lower BAC component to Maine's law. The impact analysis follows below.

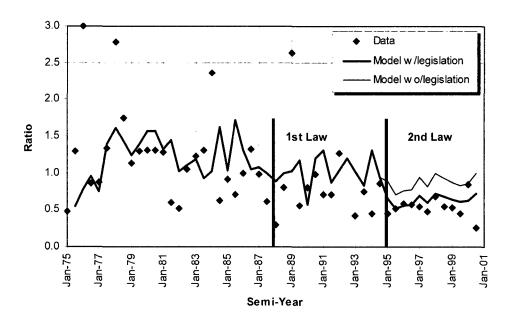
Impact

All Fatal Crashes

First, we examined the *ratio* of percent convicted offenders in Maine to percent convicted offenders in the two comparison States (New Hampshire and Vermont). Our interrupted time series model incorporated interventions at January 1988 (BAC limit =.05) and January 1995 (BAC limit=.00), and modeled the logarithm of the ratio differenced by one semi-month period. The logarithmic transformation gave the better fit, and differencing was necessary to achieve stationarity. Moving average components at 2 and 4 lags and an autoregressive component at 1 lag were also included in the model.

No effect was found at the 1988 intervention point, but the 1995 intervention did show a 27% reduction in the ratio from of what it would have been post-1995 without the law (Figure 3-13). However, the effect, though fairly large, was nowhere near significance (p=.396) because of the large standard error of the data.

Figure 3-13: Ratio of Percentage of Convicted Offender Drivers in Fatal Crashes in Maine to the Percentage of Convicted Offender Drivers in Fatal Crashes in New Hampshire and Vermont, 1975 - 2000



We then examined the Maine series and the comparison series separately, again using logarithms of the percentages differenced by one period. Maine series incorporated two moving average components, one at 1 lag and the other at 2 lags. The comparison series incorporated three autoregressive lags, at 1, 2, and 9 lags.

Figure 3-14: Convicted Drivers in Fatal Crashes as a Percentage of All Drivers in Fatal Crashes in Maine, 1975 - 2000

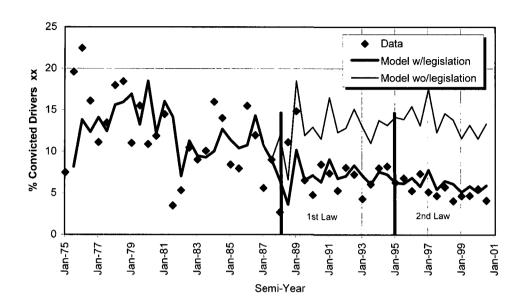
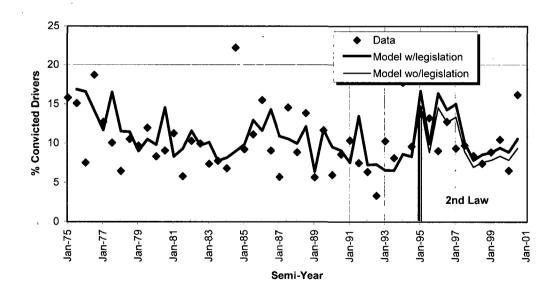


Figure 3-15: Percent Convicted Drivers in Fatal Crashes in Comparison States, 1975-2000



We found a near-significant reduction (p=0.059) in convicted offenders as a percentage of all drivers in fatal crashes. This percentage decrease amounted to 45% (from 12.9% to 7.1%) in the Maine series at the 1988 intervention point and continued on through the remainder of the series (Figure 3-14). Further, there was another 10% reduction (p=0.480) at the 1995 intervention point. By contrast, the series for the comparison group containing Vermont and New Hampshire *increased* slightly (11%) at the 1995 intervention point (Figure 3-15).

Thus, the time-series analyses strongly suggest a fairly large reduction in Maine's percent convicted-offender drivers in fatal crashes after the lower BAC law introduction in 1988. There is also evidence this lower percentage continued through the year 2000, and may have become even lower after the 1995 reduction in BAC to .00. Precise estimates of these reductions and their statistical significance are difficult because of the small number of crashes in Maine and resultant large standard errors.

Alcohol-Related Fatal Crashes

We also analyzed the effect of the Maine law on *alcohol-related* fatal crashes, using convicted offenders as a percentage of fatal-crash involved drivers with a given BAC as the effectiveness measure. We used FARS data going back to 1982 for this analysis. This is the earliest year for which imputed values of driver BAC⁴ were available, allowing analyses for BACs of .01-.09 and .10+. Because of the very small Ns involved, a time series analysis such as was used for all fatal crashes was no longer feasible, and a Generalized Linear Model (GLM) analysis was used instead. Two independent variables were used in the analysis: Group (Maine and Comparison States) and Period (B, 1982-1987; A1, 1988-1995; and A2, 1996-2000). Both main effects and interaction effects of these two independent variables were computed.

Figure 3-16 shows the results for the .01-.09 measure. In period B (before the .05 limit for convicted drivers), 7% of the Maine drivers at .01-.09 were convicted offenders. This percentage increased to about 9% in period A1 (after the .05 limit but before the .00 limit), and then decreased again to about 7% in period A2 (after the .00 limit). For the comparison group, the percentage of convicted offenders at .01-.09 had an increasing trend starting at 10% and ending at 12%. The interaction effect between Group and Period was nowhere near statistical significance (p=0.756).

The results for Maine at the .10+ BAC level indicated essentially no change from B to A1, but a decrease of 18% to 13% from A1 to A2 (Figure 3-17). Again, in the comparison States, the percentage of convicted offenders trended upward, going from 15% in B to 16% in A1 to 17% in A2. The interaction effect between Group and Period significance began to approach statistical significance (p=0.168). For the last two periods, Maine's reduction compared to the comparison group's increase was closer to being significant (p=0.106), but was still not significant at the 0.05 level.

⁴ FARS contains so-called imputed values of driver BACs for cases where BAC was not measured. NHTSA's new multiple imputation model was used here.

Figure 3-16: Convicted Drivers as a Percentage of All Fatal-Crash Involved Drivers in Maine with a BAC of .01 - .09 by Period

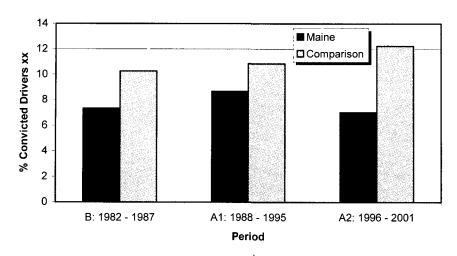
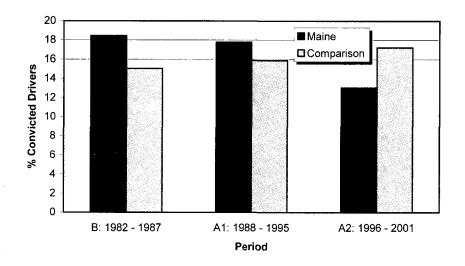
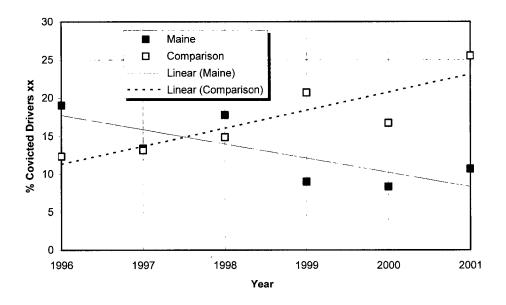


Figure 3-17: Convicted Drivers as a Percentage of All Fatal-Crash Involved Drivers in Maine with a BAC of .10+ by Period



The change in percent convicted offenders of all drivers per year within period A2 is also of interest. For .10+ drivers in Maine this percentage follows a *decreasing* trend amounting to 1.9% per year (p=0.0698), and for the comparison states this percentage follows an *increasing* trend amounting to 2.4% per year (p=0.0230) (Figure 3-18).

Figure 3-18: Convicted Drivers as a Percentage of All Fatal Crash-Involved Drivers with a BAC of .10+ by Group and Year, 1996-2001



Recidivism

The general design of our recidivism analysis was described earlier in this report on page 8. The recidivism file provided by the Maine BMV contained a record for each conviction of every driver in each cohort. Members of each cohort were drivers who had at least one alcohol-related traffic violation in a given study year. Years of concern were 1993, 1994, 1995, 1996, and 1997. Also included were the conviction date, the violation date, the violation type, driver age, and driver sex. All of each driver's recorded convictions were included, not just those occurring in their cohort year. For each driver, an index violation date was computed as the date of the driver's first conviction in the driver's cohort year. Prior alcohol-related traffic convictions were measured from this index date, as was the time before the first subsequent conviction. Four types of violations/convictions were included as alcohol-related: operating under the influence of liquor (OUI), administrative per se, refusal to take a BAC test, and driving with a BAC ≥ .05 or .00 (depending on the year of the violation).

Table 3-1: Covariate Values by Period

Period			
Before	During	After	
59%	58%	57%	
41%	42%	43%	
17%	18%	18%	
83%	82%	82%	
•			
61%	61%	61%	
39%	39%	39%	
	59% 41% 17% 83%	Before During 59% 58% 41% 42% 17% 18% 83% 82% . 61%	

The recidivism analysis examined the probability of another alcohol-related violation on or before a given time T after the index violation. The primary objective was to determine if this probability P(T) was lower for cohorts from the two-year period after the 1995 legislation lowering the BAC limit to .00 than it was for cohorts from the twoyear period before the 1995 legislation. To do this, survival analysis models of time to the first violation after the index date were developed using cohort time period as the independent variable, and age, sex and number of prior alcohol-related convictions as covariates. The major emphasis was on OUI violations, which had more severe consequences than did the administrative violations. To avoid over-counting priors, analyses of violations that included administra-

tive violations used a database from which duplicate violations occurring on the same date were removed. (A driver could accumulate more than one conviction for the same drinking-driving incident, one for administrative per se, refusal, or being a convicted offender driving with a lowered BAC; and one criminal for OUI.)

The driving records of 35,433 drivers of age 16 or more were included in the analysis, broken down by covariate value and period as shown in Table 3-1. There was little change in any of the covariates with respect to period – about 58% of the drivers were under the age of 35, 82% were male, and 39% had at least one alcohol-related prior offense. Also, the number of drivers in a cohort changed very little during the five years studied – there were about 7,300 each in 1993, 1996, and 1997; and about 6,800 each in 1994 and 1995.

The survival analysis used an accelerated failure time (AFT) model with censoring of observations having no violations after the index date. A Weibull distribution of the random disturbance factor ε was selected as giving an excellent fit to the data. The mechanization of the model provided in the SAS LIFEREG procedure was used. Driver age was not a significant covariate (p=0.102), but driver sex (p<0.0001), priors (p<0.0001), and most important, period (p=0.0047), were significant. The model indicated that, controlling for driver sex and priors, the recidivism time of the "after" group at any given value of **P** was about 12% longer than that of the "before" group. This means, for example, that if at **P**=0.15, the recidivism time of the "before" group was 24 months, then the recidivism time of the "after" group would be 1.12×24=27 months. The effect of driver sex and priors was larger, with females having a 33% longer recidivism time than males, and drivers without priors having a 38% longer recidivism time than drivers with priors.

The LIFEREG procedure also permits one to compute the recidivism probability **P** at any given time for given values of covariates. We used another model without the non-significant covariate "age" for this. Figure 3-19 shows the recidivism of male drivers with one or more priors by period. It is seen the "after" group has a lower recidivism probability than the "before" group for all values of months after index violation.

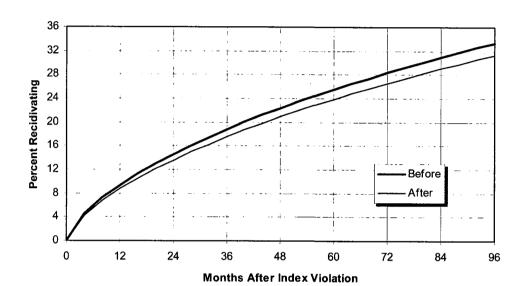


Figure 3-19: Modeled Recidivism of Male Drivers with Priors by Period

The data from Figure 3-19 were used to get a closer picture of the recidivism of the two groups one year and two years after the index violation. The results are shown in Figure 3-20 below for males in the before and after group. The recidivism of the "after" group was about 7% lower than the recidivism of the "before" group, both for drivers with priors and drivers without priors.

Awareness

To determine the level of awareness of the lower BAC law, staff from the Maine Driver Education and Evaluation Program conducted a survey of offenders statewide who were required to participate in the Program. Both first offenders and repeat offenders were included. Respondents were asked if they knew about the law, when and how they first heard about it, and how many times they had been convicted of OUI.

Results are summarized in Table 3-2. Of the 222 persons who responded, 67% said that they were aware of the law. Repeat offenders were more likely to know about the law than first offenders (91% of repeat offenders knew about it versus 61% of first offenders), but awareness did not differ significantly with respect to sex or age (under 40 or 40+).

Figure 3-20: Recidivism of Male Drivers One Year and Two Years after the Index Violation, With and Without Priors

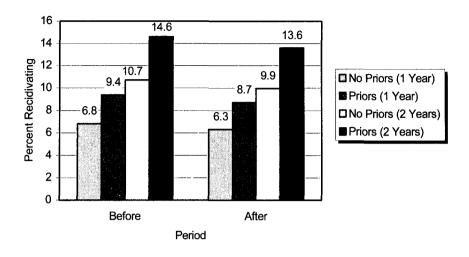


Table 3-2: Awareness Survey Statistics

Independent Variable	% Aware	р	Odds Ratio of Aware	р
Sex				
Female Male	68.9 66.3	0.741	 1.40	0.376
Age				
< 40	69.9	0.280		0.295
40+	62.7	0.200	0.70	0.233
Prior OUIs				
Yes	90.9	0.0001	5.34	0.0003
No	61.4	0.0001		0.0003

We also conducted a logistic regression analysis of law awareness with the same variables to determine the effect of one variable while controlling for the other two. Awareness ("yes" or "no") was the dependent variable, and again sex, age, and prior OUIs ("yes" or "no") were the independent variables. The analysis indicated a significant odds ratio for prior OUIs (OR= 5.3, p=0.0003), but none for offender sex and age. Thus, of the three independent variables examined in the survey, awareness of the lower BAC law among repeat offenders was very high for younger and older offenders of both sexes. Apparently, the existence of the law was well publicized: 45% of those who knew about the law learned about it before their latest OUI conviction.

These findings lend support to the hypothesis (but, of course, do not prove) that the lower BAC law has contributed to the reduction in alcohol-related fatal crashes in Maine.

Summary and Conclusions

Our evaluation of Maine's lower BAC law considered both the process of enforcing the law, and the law's impact on fatal crashes in general and alcohol-related fatal crashes in particular. Awareness of the law among convicted OUI offenders was also estimated.

With respect to the OUI enforcement process in general, data provided by the Maine Bureau of Motor Vehicles indicate no large changes occurred in the level of activity after 1988. Arrests were fairly stable, averaging about 10,000 per year, and convictions trended down slightly, starting at 8,000 in 1988 and reaching 6,000 in 2000. Administrative per se actions against the driver license declined slightly to about 4,000 in the year 2000, but the BAC test refusal rate declined nearly 50%, from 18% to 10% from 1988 - 1998.

For enforcement of impaired driving laws aimed at convicted OUI offenders, data from Maine's driver records file indicate convictions of previously convicted offenders increased slightly to about 37% of all OUI convictions, but this was probably due to an increase in the lookback period for determining the existence of prior OUI convictions. License suspensions flowing from violations of the lower BAC law reached 250 in 1993 and settled down to about 200 in the year 2000, about half of which were for refusing to take a BAC test. Such suspensions amounted to less than 5% of all OUI-related administrative suspensions, and less than half were disposed in an administrative hearing. Of the 101 disposed cases in 2000, 41 of the suspensions were rescinded, 87% of which were due to the law enforcement officer failing to appear

Our discussion with staff from enforcement agencies and Maine's Bureau of Motor Vehicles indicated the lower BAC law did not place any significant burden on those agencies.

Our impact analysis used two neighboring States, Vermont and New Hampshire, to help account for factors other than the lower BAC law that may have influenced the occurrence of fatal crashes in Maine. Neither of these two comparison States had a lower BAC law, and both had an OUI enforcement environment similar to Maine's. The impact analysis showed that in Maine, OUI-convicted drivers in fatal crashes as a percent of all drivers in fatal crashes decreased by 45% (from 12.9% to 7.1%) after 1988, and decreased still more after 1995. At the same time, the percent increased slightly in the two comparison States.

With respect to *alcohol-related* fatal crashes, we found that for drivers at a BAC of .01-.09, convicted offenders as a percent of all such drivers in Maine stayed about the same over the 1988-2001 period, but increased gradually in the comparison States. But for drivers at .10+, the percent in Maine decreased in the 1988-2001 period; and the percent in the comparison States increased. And after 1995, convicted offenders as percent of fatal-crash involved drivers at .10+ decreased in Maine, and increased in the comparison States.

Our analysis of OUI recidivism in Maine revealed the law affected recidivism very little. For drivers with prior convictions who were convicted in 1993-1994, the two-year recidivism rate fell from 14.6%, to 13.6% for drivers with prior convictions who were convicted in 1996-1997. A similar decrease of 10.7% to 9.9% occurred for drivers with no prior convictions.

EVALUATION OF LOWER BAC LIMITS FOR OUI OFFENDERS IN MAINE

Finally, awareness of the lower BAC law in Maine was high in late 2002: 67% of the OUI offenders surveyed said they were aware of the law, and 45% knew about it before their most recent OUI conviction. Awareness was significantly higher among repeat offenders than among first offenders.

These measures of activity, impact, and awareness suggest strongly Maine's lower BAC law had a positive effect on fatal crashes involving drivers with prior OUI offenses, and also on fatal crashes involving such drivers with a BAC of .10 or more. No effect was noted for fatal-crash-involved convicted offenders with a lower BAC. Further, the small number of enforcement actions against violators of the lower BAC law and the absence of any meaningful reduction in OUI recidivism, suggest the effect was a general deterrent effect rather than a specific deterrent effect.

Despite the strong indications of an effect, we cannot say unequivocally the lower BAC law alone was responsible because of the concurrent existence of other OUI countermeasures. For example, Maine's implementation of its standard .08 per se law for the general public (and other repeat offender provisions) also occurred in 1988, and these could have been at least partially responsible for the reduction in percent convicted offenders in fatal crashes after 1988 noted above. However, it can be said with some confidence the law was an important element of Maine's overall effort to decrease alcohol-impaired driving among convicted OUI offenders.

4 – Conclusions

We conclude from Maine's experience that, when included in a State's arsenal of DWI countermeasures, a lower BAC law can be effective in reducing fatal crashes involving convicted DWI offenders, and in reducing alcohol-related fatal crashes involving convicted DWI offenders. We also conclude such a law can be passed and implemented with essentially no negative effects on a State's DWI control system.

Driver licensing agencies in implementing States should include information on a person's driver license indicating the existence of any condition requiring the person not to drive with any amount of alcohol in the blood. Also, driver-licensing agencies in implementing States should modify their driver records systems to include records of any violations of the State's lower BAC law.

In implementing such a law, law enforcement agencies should train their officers in the provisions of the law, to be alert for signs of any drinking among stopped drivers, including those not visibly impaired, and to check for the existence of a driver license condition prohibiting driving with any amount of alcohol in the blood. In addition, the importance of attending administrative license revocation hearings should be stressed in officer training.

EVALUATION OF LOWER BAC LIMITS FOR OUI OFFENDERS IN MAINE

5 - References

- Hingson, R; Heeren, T; and Winter, M. (1998). Effects of Maine's 0.05% legal blood alcohol level for drivers with DWI convictions. *Public Health Reports* 113(5): 440-446.
- Jones, RK; Joksch, HC; and Wiliszowski, CH. (1991). *Implied consent refusal impact.* Final report. DOT HS 807 765. Washington, DC: National Highway Traffic Safety Administration.
- Jones, RK and Lacey, JH. (2000). State of knowledge of alcohol-impaired driving: research on repeat DWI offenders. DOT HS 809 027. Washington, DC: National Highway Traffic Safety Administration.
- Jones, RK and Lacey, JH. (2001). *Alcohol and highway safety 2001: A review of the state of knowledge*. DOT HS 809 283. Washington, DC: National Highway Traffic Safety Administration.
- Jones, RK; Wiliszowski, C; and Lacey, JH. (1996). Evaluation of alternative programs for repeat DWI offenders. DOT HS 808 493. Washington, DC: National Highway Traffic Safety Administration.
- U.S. Department of Transportation NHTSA. (2001). *Digest of State Alcohol-Highway Safety Related Legislation*. Washington, DC: National Highway Transportation Administration.

Appendix - Maine Lower BAC Statute

- 1. Suspension. The Secretary of State shall suspend for a minimum period of one year, without preliminary hearing, the conditional license issued pursuant to section 2506 of a person who while holding a conditional license:
 - A. Receives an OUI conviction; or [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).]
 - B. As the Secretary of State determines, has operated a motor vehicle while having any amount of alcohol in the blood. [1995, c. 368, Pt. AAA, §20 (amd).] [1995, c. 368, Pt. AAA, §20 (amd).]
- 2. Duty to submit to test. A person who operates a motor vehicle with a conditional license shall submit to a test if there is probable cause to believe that person holds a conditional license and operated a motor vehicle with any amount of alcohol in the blood. The other provisions of subchapter IV apply, except the suspension must be for a period of not less than 2 years. [1995, c. 368, Pt. AAA, §21 (amd).]
- 3. Period of suspension. The following provisions apply to suspensions of conditional licenses.
 - A. When a license is also suspended for an OUI conviction arising out of the same occurrence, the duration of the suspension under this section prior to the conviction is deducted from the period of a court-imposed suspension unless suspension was for failure to submit to a test. [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).]
 - B. If the suspension is for failure to submit to a test, the period of suspension for an OUI conviction must be consecutive to the period of suspension imposed for refusal. [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).]
 - C. If a person is determined to have operated a motor vehicle with a blood-alcohol level of 0.08% or more and both this section and section 2453 apply, the longer period of suspension applies. [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).] [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).]
- 4. Hearing; stay; issues. If a hearing is requested in accordance with section 2483, the suspension under subsection 1, paragraph B is stayed pending the outcome of the hearing. The scope of the hearing must include whether:
 - A. The person operated a motor vehicle with any amount of alcohol in the blood; [1995, c. 368, Pt. AAA, §22 (amd).]

- B. There was probable cause to believe the person was operating with any amount of alcohol in the blood; and [1995, c. 368, Pt. AAA, §22 (amd).]
- C. The person held a conditional license. [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).] [1995, c. 368, Pt. AAA, §22 (amd).]
- 5. Restoration of license. Following the expiration of the aggregate periods of suspension imposed pursuant to this section otherwise imposed by the Secretary of State and ordered by any court, the Secretary of State may issue a conditional license to the person, subject to the conditions, restrictions or terms the Secretary of State deems advisable, if the Secretary of State has received written notice that the person has satisfactorily completed the alcohol educational program of the Department of Human Services and, when required, has satisfactorily completed an alcohol treatment or rehabilitation program approved or licensed by the Department of Human Services. [1993, c. 683, Pt. A, §2 (new); Pt. B, §5 (aff).]

Section History:

PL 1993, Ch. 683, §A2 (NEW).

PL 1993, Ch. 683, §B5 (AFF).

PL 1995, Ch. 368, §AAA20-22 (AMD).

DOT HS 809 827 December 2004



