The Effect of Enforcement Upon Service of Alcohol to Intoxicated Patrons of Bars and Restaurants

A. James McKnight, PhD. and Fredrick M. Streff, Ph.D.
National Public Services Research Institute
Landover, MD USA

BACKGROUND
During any year, over a third of the drivers killed in automobile crashes had BACs in excess of .10%. Information compiled through roadside surveys as well as interviews with DWIs and crash victims shows the leading source of intoxicated drivers — accounting for between a third and a half of them — are bars and restaurants (Wolfe 1975, Damkot 1979, Ontario 1980, Palmer 1986, Fell 1988, Foss et al. 1990, Santana and Martinez 1992). Stockwell et al. (1992) and Werch et al. (1988) found approximately a third of patrons leaving bars and restaurants had BACs in excess of the legal limit.

Server education programs have shown some ability to improve the responsibility with which alcohol is served in bars and restaurants. Studies by Saltz (1987), Russ and Geller (1986), Glicksman and Single (1988), Mosher et al. (1989), McKnight (1991), and Howard-Pitney et al. (1991), have shown the introduction of server education to be followed by significant changes in what servers know, think, and do about the service of alcohol. However, none of the studies demonstrated significant reduction in the number of intoxicated patrons leaving the bars and restaurants involved in these studies. McKnight (1991) specifically examined the effect of server education upon service of alcohol to patrons who are already intoxicated. In 1,500 observations of servers in eight States, refusals of service to "pseudopatrons" feigning intoxication was only 5% prior to server education and 7% afterward.

Except in four States, the service of alcohol to intoxicated patrons is prohibited by State or local law as well as by liquor control regulation. Additionally, so called "dram shop" laws in 29 States allow injured third-parties to recover damages sustained in accidents resulting from service of alcohol to intoxicated patrons (NHTSA 1990). While laws in all but a few States prohibit the service of alcohol to intoxicated patrons of bars and restaurants, it is very obvious that these laws are not being observed. One likely reason is the almost total lack of enforcement. Informal surveys of citations issued for illegal alcohol service disclose very few cases of citations for service to intoxicated patrons.
METHODOLOGY

A study was undertaken to assess the impact of alcohol law enforcement upon the service of alcohol to patrons of bars and restaurants. Plainclothes officers from the Washtenaw County (Michigan) Sheriff's Office and the Ann Arbor Police Department entered licensed bars and restaurants periodically throughout a one-year period to watch for and issue citations for dispensing alcohol to intoxicated patrons.

The Enforcement Effort

The countermeasure under study was the level of enforcement given to State laws and regulations prohibiting service of alcohol to intoxicated patrons of bars and restaurants. Prior to initiation of the study, the level of enforcement was essentially zero. Under the program, it was increased to an average of 10 personnel hours per week by each of the two participating enforcement agencies. This level of enforcement was selected as one that was potentially capable of having an impact on illegal alcohol service while at the same time being maintainable by most law enforcement agencies within existing personnel levels.

Since the deterrent effect of any enforcement effort depends upon public awareness, three steps were taken to give visibility to the enforcement program: (1) a public information meeting to which all licensees were invited (and about half of which attended), (2) continuous media coverage including feature stories and reports of citations, and (3) after-visit reports to licensees notifying them that they had been objects of enforcement. Efforts to maintain visibility were limited to those that would be part of an enforcement effort and were not intended to form an anti-DWI information program or "campaign". A 10-minute video and brochure explaining the signs of intoxication to be used in enforcement were made available to licensees, along with tent cards that explained alcohol service laws to customers in seeking their support for responsible alcohol service.

Assessing Enforcement Effects

The effects of enforcement were assessed against two criteria (1) changes in the frequency of service to "pseudopatrons" displaying predetermined signs of alcohol impairment, and (2) changes in sources of drinking reported by arrested DWIs.

Two staff members serving as "pseudopatrons" paid a total of three visits to each of 40 randomly-selected bars and restaurants in the experimental county on four occasions, pre-intervention: the month prior to initiation of the enforcement effort in July 1990, three months: after the first three months of the enforcement effort, six months: after the program had been in effect for six months (including three months of citations), and one year: after the program had been in effect for one year. Both pseudopatrons also visited each of 20 establishments in a comparison community, Ingham County (which includes the City of Lansing) at the same four points in time as the visits in the experimental site. The two sites are similar in character and population, but sufficiently distant from one another (80 miles) as to
isolate the comparison community from the effects of the intervention. The observed responses of servers to feigned intoxication were categorized as follows: no intervention: serving alcohol without comment; partial intervention: discouraging further consumption, but still serving alcohol; and refusal: not serving alcohol.

One of the two enforcement agencies, the Washtenaw County Sheriff's Department, routinely collected information as to the source of the last drink consumed by DWIs prior to their arrest. The availability of such data allowed the portion of arrested DWIs coming from bars and restaurants within the county to be tallied for the year prior to initiation of the enforcement program. Collection of the same data over the following year provided information on drink sources over comparable periods of time prior to, and following the intervention. While the data were necessarily limited to arrests outside the City of Ann Arbor, the bars and restaurants from which those arrested had most recently come represented the entire county.

RESULTS

Over the one-year period following initiation of the enforcement effort, officers of the two agencies involved paid a total of 457 visits to licensed establishments throughout Washtenaw County. These visits produced 13 citations and 11 warnings for service to intoxicated patrons.

Refusals of Service

The responses of servers to pseudopatrons are depicted graphically in Figure 1. The baseline is extended backward in time to include the responses to pseudopatrons observed some four years earlier during assessment of a server education program at the same site. It is noteworthy that the baseline rate had apparently remained rather stable over the intervening period. The percent of observations resulting in refusals of service grows sharply from 17.5% prior to initiation of the
enforcement effort to 54.3% after the first three months of enforcement. Over the next three months, it dropped to 47.4%, and after one year to 41.0%. All three post-intervention refusal rates are significantly greater than the baseline rate ($\chi^2 \geq 12.9; p < .001$).

Results of observations gained in the comparison (Ingham) county appear in Figure 2. They follow the same pattern as that observed in the experimental county except that the refusal rates are consistently lower during each of the post-intervention observation periods. While each of the first two post-intervention refusal rates significantly exceeds that of the baseline rate, ($p < .05$), the third does not ($p = .14$). Given the increase in refusal rates within the comparison site, a critical question is whether those increases match the increases in refusal rates observed within the experimental community. Comparisons between the sites discloses no significant difference during the pre-intervention phase ($p = .42$), indicating that any differences prior to introduction of enforcement effort in the experimental community can be easily attributed to chance. Of the differences in refusal rates between the two sites over the three post-intervention phases, the first two differences are significant ($p < .05$); while the third is not ($p = .17$).

It is noteworthy that the increase in service refusals within both the experimental and comparison site is accompanied by a decline in "partial intervention," that is, steps to discourage drinking. It appears that much of enforcement's effect was not to increase the ability of servers to recognize patron intoxication, but rather to motivate refusal of service by those who would otherwise only have discouraged consumption.

Sources of DWI

While service refusals provide the most direct measure of enforcement's effect, a better measure of potential impact upon all motor vehicle accidents would be the changes in the relative numbers of arrested DWIs coming from bars and restaurants.

Figure 3 displays the percentage of DWI arrestees who reported having consumed their last drink in a bar or restaurant within the experimental county.
(Washtenaw), the comparison county (Ingham), and two additional counties that maintain records of drink sources (Kalamazoo, Kent). The one-fourth decrease in the experimental county, from 31.7% to 23.3%, is statistically significant ($\chi^2 = 7.5; p < .01$). None of the other changes even approaches statistical significance.

DISCUSSION

The results of the enforcement effort could be appropriately described as "promising." The three-fold increase in refusals of alcohol service to the intoxicated immediately following implementation of the enforcement effort represents a large change in server behavior, particularly in comparison with the changes that have resulted from efforts to modify behavior solely through training. The one-fourth decline (31.7% to 23.3%), in the proportion of DWIs coming from bars is also encouraging.

Three aspects of the outcome presented make it somewhat less than conclusive. Probably the most disconcerting result is the extent to which apparent changes in alcohol refusals over time within the comparison county parallel those found in the experimental county. If these changes represent the effect of some region-wide influence affecting both counties, then these broad trends should legitimately be subtracted from the apparent impact of the enforcement effort in the experimental community. On the other hand, it is possible that the pattern of drink refusals within the comparison county reflects the effect of some local influence that just happens to coincide with introduction of the intervention in the experimental county. The failure to see a decline in the proportion of arrested DWIs coming from bars and restaurants in the comparison county suggests that whatever increased the refusal rate within the 20 establishments in which observations occurred did not reduce drinking and driving throughout the county. This finding, along with the absence of any known circumstance that have might have had a region-wide effect upon alcohol service, strongly suggests that the results obtained from the experimental county are primarily the result of the enforcement effort taking place there and that those changes found in the comparison county are attributable to changes specific to that locale. However, alternative explanations cannot be discounted.

Figure 3

Percent of Arrested DWIs Coming from Bars and Restaurants, by County

<table>
<thead>
<tr>
<th>County</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washtenaw</td>
<td>31.7</td>
<td>23.3</td>
</tr>
<tr>
<td>Ingham</td>
<td>31.5</td>
<td>23.3</td>
</tr>
<tr>
<td>Kalamazoo</td>
<td>36.7</td>
<td>36.3</td>
</tr>
<tr>
<td>Kent</td>
<td>43.2</td>
<td>44.2</td>
</tr>
</tbody>
</table>

0 5 10 15 20 25 30 35 40
Pre Post Percent of total Arrestees

1300
a change in its enforcement, witness the long-term decline in compliance with the national 55mph speed limit after it was enacted following the fuel crisis of 1974. Also contributing to the decline, in this instance, could also be the large turnover among alcohol service personnel. Maintaining a high rate of compliance might require repetition of the workshop, and the publicity that attended it, on an annual basis.

The third characteristic of the study that undermines its conclusiveness is the fact that the enforcement program took place in only one county. If the mere emergence of an enforcement effect is not dependent upon the characteristics of the experimental county, the magnitude of that effect is very likely to be. We know, for example, that the baseline service refusal rate of 17.1% greatly exceeds that found across seven other communities in the study cited earlier (McKnight 1991), where the overall refusal rate without enforcement was even 7% after a server education program. The influences that encouraged a refusal rate this high in the absence of enforcement could have helped foster a response to enforcement that is more salutatory than could be achieved elsewhere.

In summary, it appears that simple enforcement of existing laws and regulations prohibiting service of alcohol to already intoxicated patrons of bars and restaurants represents a highly cost-beneficial way of reducing accidental injury and death. However, accurate estimate of the magnitude of enforcement’s effect upon alcohol service and alcohol-impaired driving awaits replication in other jurisdictions.

ACKNOWLEDGEMENTS

The work here described was carried out under a grant from the National Institute of Alcohol Abuse and Alcoholism (NIAAA). The authors wish to acknowledge the contribution to this study of Sgt. Tom Gray of the Washtenaw County Sheriff’s Office and Lt. John Atkinson of the Ann Arbor Police Department, who supervised enforcement efforts in their respective agencies. Ms. Jacqui Gannon supervised the on-site observations while Ms. Elizabeth A. Langston oversaw the data collection effort. Thanks are due to Mr. A. Scott Tippetts, who carried out all statistical analyses and Ms. Marcia W. Zior who prepared all printed materials, including the manuscript of this article. Finally, the authors wish to express their appreciation to Dr. Mary L. Ganikos and Dr. Susan E. Martin of the NIAAA for their encouragement and assistance.
REFERENCES


Russ, N.W.; Geller, E.S. *Evaluation of a server intervention program for preventing drunk driving* (Final Report No. DD-3). Blacksburg, VA: Virginia Polytechnic Institute and State University, Department of Psychology; (1986).


Santana, J.R.; Martinez, R. Alcohol purchase and consumption cite prior to an automobile collision, time from point of consumption to automobile collisions. *In the 36th Proceedings, Association for the Advancement of Automotive Medicine, Portland Oregon;* 1992

