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WASHTENAW COUNTY ALCOHOL SAFETY ACTION PROGRAM  
EVALUATION SUMMARY

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February 1974

Final Report

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Washtenaw County Health Department  
Ann Arbor, Michigan 48104

by

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<p>16. Abstract The Washtenaw ASAP, operative for 2-1/2 years and designed to reduce alcohol-related (AR) crashes, was evaluated at three levels. Crash criterion measures showed that the stated goals were not realized. Progress was evidenced by reductions in the proportions of night-time drivers with positive BACs measured by the intermediate criterion roadside surveys.</p> <p>Countermeasure-specific results showed the following. Drunk-driving (DUIL) law enforcement was effective in identifying problem drinking drivers for subsequent court processing but was not an effective stand-alone countermeasure. Pre-sentence investigation and court-supervised referral of DUILs were generally effective. Remedial activities and results were uneven, and long-term rehabilitation for identified problem drinkers was deficient. Subsequent AR driving events were lower for program-period ASAP-client arrestees than for baseline-period arrestees and similarly for program-period arrestees processed through ASAP remedial activities compared to defendants receiving traditional legal sanctions only; these are the most encouraging evaluative findings. The information components were marginally successful in informing the public and selected target groups about drinking-driving issues, and were not successful in altering attitudes or behaviors.</p> <p>Results are discussed and recommendations for future programs included.</p>			
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The opinions, findings, and conclusions expressed in this publication are those of the author and not necessarily those of Washtenaw County.

## PREFACE

The Highway Safety Research Institute has undertaken a number of activities pertaining to its evaluation of the Washtenaw County Alcohol Safety Action Program, including roadside surveys, surveys of the general public and selected target groups, and collection and analysis of crash, arrest, and recidivism data.

These activities and their findings are described in separately bound reports consistent with the reporting structure of the sponsoring agencies. This structure enables the reader interested in a single topic to access the relevant report conveniently. However, the individual reports in this series largely do not contain comparative data derived from separate evaluative activities. Such comparisons, when appropriate, will be found in the summary report.

Reports in this series, summaries of which comprise the material contained in Section 2, are listed in the References. Distribution of these reports is under the auspices of the National Highway Traffic Safety Administration, U.S. Department of Transportation.

Evaluative research of the type reported herein is not possible without the extensive cooperation of many persons and organizations. The participation and contributions of the following are gratefully acknowledged:

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Fourteenth and Fifteenth District Courts

State of Michigan, Departments of State, State Police,  
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Washtenaw County Health and Sheriff Departments, high  
schools and students, and individual attorneys,  
physicians, service club members, and residents.

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## 1.0 INTRODUCTION

The purpose of this report is to bring together, under one cover, the major findings that have emerged from the Highway Safety Research Institute's (HSRI) evaluation of the Washtenaw County Alcohol Safety Action Program. These findings, and the evaluative research techniques that have produced them, are described more fully in the twelve other companion reports cited in the Preface.

### 1.1 PROGRAM BACKGROUND

The Washtenaw ASAP was one of the first nine of 35 such programs throughout the country sponsored by the National Highway Traffic Safety Administration, U.S. Department of Transportation, and administered by NHTSA's Office of Alcohol Countermeasures. The proposal\* for this project was prepared in the spring of 1970, initial funding began in July 1970, and the start-up and detailed planning period continued to March 1971, when the program was deemed to be operational. Full-scale operations were in force nominally through June 1973, although a scaling-down of various countermeasure activities began earlier in the spring of 1973 for a variety of reasons.

The concept of the Washtenaw ASAP, similar to that of other ASAPs throughout the country, was to combine a variety of countermeasure activities, believed to be effective in ameliorating the consequences of the drinking-driving problem, into a single project under unified management. The project objective was to demonstrate that the number or proportion of alcohol-related crashes can be reduced, and to identify, through evaluative research techniques, the contribution of individual project components to achievement of the goal. Program emphasis

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\*A Washtenaw County Demonstration Program for Reduction of Alcohol-Related Crashes and Fatalities, prepared by Highway Safety Research Institute for the Board of Commissioners, Washtenaw County, Michigan, March 1970.

and resources were to be concentrated on the action-oriented operational countermeasures, but sufficient resources were to be devoted to the evaluative aspects to determine whether the program objectives had been achieved.

Countermeasures initially selected for implementation consisted of increased police enforcement directed to apprehension of drunk-drivers; pre-sentence investigation of defendants convicted of drunk driving charges and subsequent referral of defendants, under court probationary authority, to appropriate remedial activities; informational and educational efforts directed to the public and to selected target groups; and detection and referral of problem drinking drivers under the auspices of Michigan's driver licensing agency, the Driver Services Division of the Department of State. The last countermeasure was not fully implemented and was formally terminated midway through the operational phase. The initial concept and planned operation of these countermeasures are described in the proposal; further information about their administration and implementation may be found in the detailed operational plan (Countermeasures Program Description\*) and other reports prepared by the administering agency (Washtenaw County Health Department) and other operational agencies engaged in the countermeasure activities.

The program operated throughout the entire county area with its population of about 235,000. In 1972 there were about 8,000 reported traffic crashes resulting in some 4,500 injured persons and 69 fatalities. The eastern part of Washtenaw County is heavily industrialized and contains five major automotive production plants and many smaller industrial firms. Eastern Michigan University, with an enrollment of about 18,500 is also located here. Ann Arbor, with nearly half the county population, contains The University of Michigan and several

\*Countermeasures Program Description, Part III, Washtenaw County Alcohol Safety Action Program, Washtenaw County Health Department, Ann Arbor, Michigan, undated.

large research and development firms. The balance of the county is mostly rural, is devoted to agricultural and recreational purposes, and contains many smaller cities and villages. I-94, the main interstate route between Detroit and Chicago, is heavily traveled with both commercial and commuting traffic and traverses the county from east to west; US-23, a four-lane divided interstate-type highway, crosses the county from south to north and carries a high volume of out-of-state vacation travel to the resort areas of northern Michigan. Further information about the county's legal, demographic, and physical environment is contained in the Community Description report.\*

## 1.2 EVALUATION APPROACH

The Washtenaw ASAP was evaluated at three levels, each having a different relationship to the program goal of reducing alcohol-related crashes.

The first level consisted of monitoring crash criterion measures both before and during the program period. The frequency of all crashes and the frequency and proportion of alcohol-related crashes occurring in the program and selected comparison jurisdictions were reviewed for change from the baseline period of 1968-70 to the program period of 1971 to mid-1973. These criterion measures are the most direct measures of progress in achieving program objectives, and yet they are measures most influenced by non-program-related factors.

Three roadside surveys of motorists' blood alcohol concentrations (BAC) were used as a second-level, intermediate measure of change which might result from the program. The premises underlying use of this evaluative tool are that successful countermeasures should result in either fewer drinking-driving motorists or in lower BACs among drinking drivers, that either type of change is desirable and should

\*Community Description, Washtenaw County Alcohol Safety Action Program, Highway Safety Research Institute, The University of Michigan, Ann Arbor, February 1971.



result in fewer alcohol-related crashes, and that such changes in drinking-driving behavior are measurable by appropriately surveying drivers on the road.

Third-level evaluative activities dealt with the formulation and monitoring of measures of effectiveness directly related to the program countermeasure activities themselves. The countermeasures each had specific objectives, the achievement of which was expected to contribute to the overall program objective. Both in time and immediacy of impact, however, these sub-objectives were perhaps relatively removed--in a cause and effect sense--from the program objective. Two general countermeasure areas were reviewed. The first included the impact of informational and educational campaigns on the general public and on specific target groups having contact with segments of the population believed to be at high risk to involvement in an alcohol-related crash.

The second general countermeasure area concerned the improved handling, within the framework of the legal system, of persons identified as potential alcohol-crash-involved individuals, specifically persons convicted of drunk driving or drunk and disorderly offenses. System changes in handling DUIL defendants were part of the program countermeasures. Evaluative activity focussed on the major points of impact: police arrest activity, judicial processing, and the referral of individuals for diagnosis and treatment of problem drinking.

The initial formulation of these three levels of measures of effectiveness and their planned application are contained in the Evaluation Methodology report\* submitted at the end of the planning period. Details about their actual implementation are contained in the individual reports cited earlier.

\*C.D. Clark, et.al. Part II, Evaluation Methodology, Washtenaw County Alcohol Safety Action Program, Highway Safety Research Institute, The University of Michigan, Ann Arbor, February 1971.

## 2.0 EVALUATION RESULTS

Results from the three-level evaluative activity sketched earlier follow. These are taken directly from the individual reports cited earlier, and the reader is referred to those reports for information about methodology or further detail about the findings.

### 2.1 CRASH CRITERION MEASURES

An analysis of the Washtenaw County crash experience covering the years of 1968 through mid-1973 produced very little evidence to support achievement of the ASAP goal of reducing alcohol-related (AR) crashes. Such analyses may not be conclusive, being done under the handicap of incomplete alcohol determinations in fatal crashes, a rather limited time period after the initiation of the ASAP, and the absence of an adequate comparison area. However, available crash data are largely consistent and reveal the following.

2.1.1 FATAL CRASH FINDINGS. The number of fatal crashes has not decreased since ASAP was initiated. Although the fatal crash rate per registered vehicle has shown a general decrease over time, the decrease in Washtenaw County is no greater than evidenced for the State of Michigan.

When fatal crashes are analyzed for alcohol involvement (using blood alcohol concentrations or, in their absence, a police officer's judgment of drinking by a driver) the data reveal an increase in the proportion of such crashes during the ASAP program period. This change in the proportion of AR fatal crashes is, however, no larger than would be expected by chance. The change was a result of an increase in AR single-vehicle crashes, from 40% during the baseline to 54% during the program period. In the same time period, AR multi-vehicle crashes decreased but to a lesser extent.

No evidence was found suggesting that county-resident driver fatalities were drinking prior to their crashes any less frequently than were fatalities who were non-county residents and therefore not expected to be influenced by ASAP activities.

During the program period, 32% of the drivers involved in fatal crashes (both surviving and dead) were drinking, up from the 28% of the previous three years. The only age group showing a large decrease in prior drinking was that of 21- to 25-year-olds, while drinking among 18- to 20-year-old crash-involved drivers increased. If the latter group is excluded from the baseline-to-program-period comparison, the proportion of drinking drivers in the two time periods is the same, i.e., 31%.

2.1.2 NON-FATAL CRASH FINDINGS. For both Michigan and Washtenaw County, there was a slight yearly increase in the number of non-fatal crashes from 1968 to 1972. These increases are similar in both jurisdictions, with no change in trend occurring in Washtenaw County following the initiation of ASAP.

For both the state and the county, there was a slight decline in non-fatal crash rates (crashes per registered vehicle) from 1968 to 1972. The decline was no greater in Washtenaw County than in Michigan, and no acceleration of the rate of decline occurred in the county following initiation of ASAP activities.

The annual number of non-fatal alcohol-involved crashes in Washtenaw County increased slightly from 1968 to 1972. The rate of increase did not slow after the ASAP program began operation.

The proportion of Washtenaw County non-fatal crashes which were alcohol-involved remained fairly stable from 1968 to 1972.

The proportion of crash-involved drivers in Washtenaw County who "had been drinking" prior to the crash decreased slightly. The rate of decline was no greater after ASAP began.

In sum, examination of the number of non-fatal crashes during the baseline and program years, the number per registered vehicle, and the proportion of both crashes and drivers

which were alcohol-involved gave no evidence to indicate that ASAP activities produced clearly identifiable, highly favorable changes.

Somewhat positive results were identified in comparing Washtenaw County and Michigan. From 1971 to 1973, Washtenaw County consistently had a slightly better record than Michigan in the proportion of crash-involved drivers who "had been drinking." Washtenaw experienced lower rates of increase, greater rates of decrease, and occasionally decreases while Michigan experienced increases. ASAP activities may have contributed to the more favorable Washtenaw County record.

## 2.2 ROADSIDE SURVEY INTERMEDIATE CRITERION MEASURES

As noted above, an underlying assumption of the ASAP program was that a decrease in the number of persons who drink prior to driving, or a decrease in the amount consumed prior to driving, would favorably affect the ultimate objective of decreasing alcohol-related crashes. Unlike the crash criterion measures, which gave little evidence of favorable change, the intermediate measures did reveal that alcohol usage in the nighttime driving population decreased. Although the decrease was statistically significant, it was apparently not large enough to be reflected as a decline in AR crashes.

Three BAC roadside surveys were conducted, using generally the same procedures, in March of 1971, 1972, and 1973. Each survey took place over a period of four weeks on 16 different nights--eight on weekdays and eight on weekends--at three different geographic locations per night. The survey shifts included early evening (7-9PM), late evening (10-12PM), and early morning (1-3AM).

Drivers were stopped by law enforcement officers after having been randomly selected from the driving stream by a member of the survey team. If the driver was a Washtenaw County resident, he was asked to take an alcohol breath test and answer a few questions. Driver cooperation was comparable over

the three years, with a participation rate of 87.3% in 1971 (N=748), 90.4% in 1972 (N=1023) and 87.4% in 1973 (N=847).

The major conclusion to be drawn from the three surveys, and in accord with program goals, is that the proportion of drivers with measurable blood alcohol concentrations ( $BAC \geq .02$ ) decreased each year. Drinking drivers comprised 19% of the sample in 1971, 17% in 1972 and 15% in 1973. The reduction in the proportion of drinking drivers between 1971 and 1973 is statistically significant.

Reductions occurred both in the proportion of all drinking drivers as well as in the proportion of drivers within the high BAC categories. Survey findings indicate that the proportion of drivers with  $BAC \geq .05$  decreased from 10% in 1971 to 8% in 1973. A decrease also took place in the proportion of drivers with  $BAC \geq .15$  from 1% in 1971 to 0.5% in 1973.

The highest proportion of drinking drivers occurred during the 1-3AM period. The time-period variable was the one consistent predictor of drinking drivers in the experimental design. No significant differences in the proportion of drinking drivers occurred between weekend and weekday nights.

Although the late-hour time period (1-3AM) had the highest proportion of drinking drivers, the lower traffic volume during these hours produced an expected frequency of drivers with  $BAC \geq .05$  which would be roughly equivalent for the three time periods sampled.

Survey data indicate that the yearly decrease in the proportion of drinking drivers was actually due to a decrease among drivers aged 21 years and older. In 1972, Michigan's age of majority, including the right to drink legally, was lowered from 21 to 18 years. Between 1971 and 1973, a statistically significant increase occurred among 18- to 20-year-old drinking drivers. This was perhaps related to the change in the law. No clear trends in drinking-driving behavior were evident among 16- and 17-year-olds during the same time period.

In terms of other demographic variables, a decrease in the proportion of drinking drivers occurred most notably among blacks, divorced drivers and persons with at least one year of college education.

The proportion of drivers who reported themselves to be abstainers (16%) did not change over the three years. The proportion of drivers who admitted drinking on the day of the survey decreased slightly from 35.8% in 1971 to 34.4% in 1973. However, of those who admitted to drinking, the proportion with measurable BAC decreased from 50% in 1971 to 43% in 1973, and the proportion with measurable BAC who drank at more than one drinking location decreased from 92% in 1971 to 31% in 1973. These findings suggest that although drinking habits per se have not changed, there has been a notable decrease in the amount of driving after drinking.

With respect to knowledge of ASAP activities, an increase was noted in the proportion of drivers who had heard of the roadside survey, who had heard of the program to reduce alcohol-related accidents, and who were aware of more police on the alert for drunk drivers. Awareness of "drinking-driving" media messages decreased slightly. Persons with BAC  $\geq .10$  were generally as aware or slightly more aware of program activities than were abstainers or persons who were not drinking on the day of the survey.

### 2.3 EVALUATION OF SPECIFIC COUNTERMEASURES

The crash and intermediate criterion measure results presented in the two preceding sections are not necessarily tied to any specific program countermeasure. Favorable changes in those measures might have resulted from successful implementation of any single program countermeasure or from a combination of successful countermeasures.

The following sections, however, report the summary findings from evaluative activities designed to assess the impact of specific countermeasures. It would be unlikely that favorable changes in the criterion measures would have been found

had all countermeasure-specific evaluation results been negative, unless overriding non-program factors were concurrently at work to effect reductions in the drinking-driver problem. The converse is not true, however. Individual countermeasures, when evaluated in terms of their immediate effects and only from an internal, self-contained perspective, might appear successful and yet not be reflected in favorable changes in either of the criterion measures. It will be seen in the section immediately following that this sort of phenomenon has occurred.

2.3.1 INFORMATION AND EDUCATION CAMPAIGN. The primary goal of the public information and education campaign conducted by the Washtenaw Council on Alcoholism (WCA) was to increase the awareness of and support for the activities of the Washtenaw ASAP, both among the general public and among county professional groups with a particular involvement in the alcohol abuse area. A secondary goal was to educate potential alcohol abusers and their families and friends to the dangers of driving after drinking too much, hopefully leading to a reduction in drunk driving behavior in the county.

The major activities of the rather small-scale WCA campaign consisted of frequent newspaper articles, occasional radio spots, a speaker's bureau, information booths at community fairs, a monthly newsletter distributed to governmental officials and others involved in the ASAP program, and the production of some general fliers and an original film, "The Guilty Victim." In addition, more specialized activities included a seminar for driver education teachers, alcohol information packets distributed to school libraries and to physicians, and a series of training videotapes to be used in law enforcement agencies.

In order to evaluate the impact of these campaign activities, a series of surveys was conducted near the beginning and again near the end of the campaign among samples of the general public, service club members (both in Washtenaw County and in neighboring Jackson County), high school students, attorneys,

physicians (internists, psychiatrists, and general practitioners), and law enforcement personnel.

The sample survey of the general public found some increase in the number of persons who had heard of the ASAP program (11% to 23%), and, when asked about particular ASAP activities a full two-thirds of the sample in 1973 said they had heard of at least one. Ten percent of the general public, 12% of the high school students, 13% of the physicians, 45% of the attorneys, and 75% of the police said they had heard of five or more of the eight listed activities. The best-known activity among the professional groups was the Antabuse<sup>(R)</sup>\* program, which required voluntary probationers to take this drug in compliance with the probation terms. This activity was recognized by 89% of the police, 83% of the attorneys, and 44% of the physicians--also by 29% of the general public and 17% of the high school students. But this relatively high level of knowledge among the professional groups was more likely a result of direct involvement and word-of-mouth diffusion than of campaign activities.

Turning to the issue of support for alcohol safety efforts, there was a small increase in willingness to pay taxes for such a program among members of service clubs (76% to 82%), but there was a small decrease in such willingness among the general public sample (78% to 70%). Concerning new situations for requesting breath tests under the implied consent law there was also an increase in support among service club members (58% to 68%) for breathtesting in random traffic stops, but a decline among the general public in such support (57% to 49%). There was also a large increase in support for this idea among the police (20% to 42%) but virtually no change among the attorneys (17% to 15%). However, both the attorneys and the police did increase their support for police breathtesting whenever a person who appeared to have been drinking was involved in a crash (67% to 79% and 84% to 92%, respectively). The attorneys also

\*Antabuse is the registered trade name of Ayerst Laboratories for the prescription drug disulfiram.



indicated increased support for the present law requiring breath tests in drunk driving arrests (67% to 89%).

In regard to knowledge about drinking and driving, there was little evidence of significant change among any of the surveyed samples. Only about 25% of the respondents in each of the general public samples came close to estimating correctly the number of traffic fatalities in Washtenaw County the previous year, and only slightly over half of them estimated the alcohol-involved percentage of traffic fatalities in the roughly correct 35-65% range. In regard to the number of drinks one could safely consume before driving, there was some tendency among the sample respondents to make lower estimates in the second survey. It is undoubtedly safer for people to underestimate than to overestimate their safe limits, but the surveys did not provide any evidence of actual greater knowledge concerning safe drinking limits, the increased risks of accident resulting from consuming six or nine drinks, or the legal aspects of drunk driving arrests.

Turning to reported drinking and driving behavior, the second general public survey found a significant increase in such behavior. Sixty percent in 1973 compared to 50% in 1971 said that in the previous year, they had driven after drinking, and 26% in 1973 compared to 22% in 1971 said that in the previous year, they had driven after drinking too much. This increase was found almost entirely in the 18- to 20-year-old group for whom drinking in Michigan was legalized on January 1, 1972. In 1973, 40% of the sample in this age group said they had driven after drinking too much, compared to only 16% in 1971.

Along with this drinking-driving change it was not surprising to find a general change in the extent of alcohol use. Whereas in 1971 21% of the general public sample considered themselves abstainers and only 16% considered themselves moderate or fairly heavy drinkers, in 1973 16% considered themselves abstainers and 25% considered themselves moderate or fairly

heavy drinkers. The proportion of drinkers who said they consume four or more drinks at a time at least once a month rose from 40% in 1971 to 49% in 1973, and the proportion who said they drink eight or more drinks at a time rose from 12% in 1971 to 19% in 1973. Again this change was found to be particularly large among 18- to 20-year-olds, but substantial increases in alcohol use were indicated among all age groups under 35. For the younger ages this finding is corroborated by the high school surveys, which also found an increase in alcohol use from 1970-71 to 1972-73.

A finding more in accord with ASAP goals was the fact that a large proportion of the excessive drinking drivers in the 1973 general public survey said they at least sometimes used alternative means of transportation when they themselves had had too much to drink for safe driving.

In summary, the WCA campaign, along with the national campaign and other aspects of the ASAP program, apparently did contribute to an increased general consciousness among the general public and professionally involved groups regarding the drunk driving problem and local efforts to reduce alcohol-related crashes. However, it seems to have had a rather small impact on increasing public support for alcohol safety efforts and on actually changing public knowledge levels, attitudes, and behavior in regard to alcohol abuse--a not too surprising finding given the rather low level of campaign effort and our knowledge of the great difficulty of changing established behaviors by means of mass media campaigns.

2.3.2 LEGAL SYSTEM ACTIVITIES. A typical DUIL defendant handled through ASAP operations is arrested, tried, referred to a pre-sentence investigator if found guilty, sentenced, and referred to appropriate remedial activities. The evaluation results which follow are presented in the same chronological sequence.

2.3.2.1 Police Activities. The Washtenaw ASAP initiated special enforcement actions within three local police agencies: The Ann Arbor Police Department, the Washtenaw County Sheriff Department, and the Ypsilanti Police Department. The data indicate that the objective of increasing the number of arrests for drunk driving charges was achieved. During the first two operational years of the program (1971 and 1972), arrests increased 75% over the baseline period, a greater increase than would have been expected based on the experience of the remainder of the State.

Arrest data for the last five months of the special patrol activity (January through May 1973) indicate that the upward trend in the number of arrests appears to be over. Arrests dropped to a slightly lower level than during a comparable time period in 1971. This decrease cannot be fully related to the termination of the ASAP program, for although fewer arrests were made by police departments which were ending their participation in ASAP, a decline in arrest activity also occurred in other local police departments which were not funded ASAP participants.

Several factors may have contributed to the effectiveness of the special patrol activity. The Sheriff Department patrols were most effective (using arrest rate per patrol mile and patrol hour) during the first three quarters of 1972. It is likely that the use of more evening and late-night patrols contributed to their improvement. The Ann Arbor special patrols increased their effectiveness when a change was made from one-man to two-man patrol units. The same individual officers, when paired as a team, improved their arrest rates with a concurrent decrease in vehicle costs. The initial arrest rate of the Ypsilanti special patrols was high, as was the initial increase in Ypsilanti regular patrol arrests. The latter may have been related to the fact that officers on special patrol duty were rotated from among a department-wide pool of regular patrol officers.

Recent legal changes appear to have affected the pattern of arrests. In January 1972, Michigan's legal drinking age was changed from 21 to 18 years. Three months later, the presumptive limits for intoxicated driving were lowered from 0.15 to 0.10 and those for impaired driving from 0.10 to 0.08. In 1972, the number of arrested drivers aged 16 to 20 years increased 208% over the previous year, from 49 to 151 persons. During the January through May 1973 period, no further change was noted in the proportion of arrested young drivers compared to 1972. Although the proportion of young drivers with BACs below 0.10 increased, perhaps as a function of the newly lowered presumptive limits, it is possible to explain only a small proportion of the increase in arrests by the lower presumptive limits.

A positive trend was noted with regard to older arrestees. Notwithstanding an 11% increase in the number of 1972 arrestees aged 21 years or older, there were both absolute decreases and proportional decreases in the number of such drivers arrested with BAC > .20. This decrease in the number of persons with high BAC was clearly in accord with program objectives to the extent that it reflected a reduction in the number of very intoxicated drivers on the highways.

A slightly increasing proportion of arrestees was female. Unemployed and blacks were over-represented among the arrested population. Ann Arbor residents were under-represented, although they comprised a growing proportion of arrestees. Ypsilanti residents were considerably over-represented. Although the arrest population did not match the county population on a number of demographic variables, there is no evidence to suggest that police enforcement actions were selectively biased against any particular segment of the community.

2.3.2.2 Judicial, Referral, and Diagnostic Activities. A review of alcohol-related traffic cases handled by the courts during the ASAP operational period indicates that an increased proportion of defendants charged with Driving Under the Influence of Liquor (DUIL) received reductions to the lesser included offense of Impaired Driving. Whether this is an

ASAP-related change from pre-program years cannot be positively stated, but this is likely to be true, given the large increase in the number of cases coming before the courts. More important for the functioning of the ASAP is the finding that program-period combined conviction rates for DUIL and Impaired (94%) have remained at the very high levels of the baseline period (95%). Although reductions from DUIL to Impaired potentially could have negative effects on police attitudes or operations, conviction for either of the drunk driving charges provides the setting necessary for the ASAP referral and treatment subsystems to operate effectively.

Other factors influenced reductions from DUIL to Impaired-- factors that do not appear to be a result of the ASAP. Refusal to take a BAC test tends to result in more reductions. Of those DUIL arrestees who take the BAC test (81%), the likelihood increases that a conviction for Impaired will be obtained as BAC decreases. Representation by an attorney remains strongly associated with a conviction for the reduced charge.

Over 90% of 1971 and 1972 alcohol-related traffic offenders had their cases adjudicated without going to trial. Defendants who did go to trial had a higher proportion of convictions as charged than those whose cases were disposed of without a trial. This was particularly true for defendants having jury trials as compared to trials by a judge.

Approximately three-quarters of all defendants and 80% of county residents convicted of alcohol-related traffic offenses were referred to an ASAP court counselor. This referral rate appeared to be acceptable, particularly given temporary vacancies in several judgeships during the operational period of the program. Less satisfying is that only 43% of Washtenaw County drunk and disorderly offenders were referred for pre-sentence investigation.

Of the 1966 persons referred to an ASAP court counselor, 25% were diagnosed as alcoholics, 33% were diagnosed as problem drinkers, 9% were diagnosed as pre-alcoholics, and 27% did not

appear to exhibit problem drinking. Six percent of the cases received no diagnosis. Drunk and Disorderly offenders included a higher proportion of alcoholics (39%) than did driving-related offenders. DUIL offenders also tended to exhibit more serious drinking problems than did persons convicted of Impaired Driving.

Although only a small proportion of clients was diagnosed by both a court counselor and a counselor at the Washtenaw Council on Alcoholism, the agreement in diagnoses was high (94%).

In terms of demographic characteristics, whites, who comprise the bulk of referred clients, were slightly less likely to have alcohol problems than others. The severity of a drinking problem tended to be inversely associated with amount of education. Unemployed persons were over-represented in the population of arrestees and referrals, and they were also more likely to have alcohol problems. Separated, divorced, or widowed persons were more likely to have alcohol problems than married or single persons.

Defendants referred to ASAP appeared to be placed in appropriate treatment programs based on their drinking diagnoses. Seventy percent of the alcoholics were placed in the Antabuse program, 80% of the problem drinkers were on either Antabuse or general probation, and the majority of the remainder attended educational classes.

2.3.3 TREATMENT ACTIVITIES. The Washtenaw ASAP treatment activities were evaluated primarily in terms of alcohol-related (AR) driving recidivism. Measures of recidivism were defined and tabulated from statewide driving records. These included Driving Under the Influence of Liquor (DUIL)/Impaired Driving convictions, AR crashes, and AR incidents, either an AR violation, an AR crash, or both.

The ASAP population studied, all Michigan residents with driving records who received at least one DUIL conviction in Washtenaw County during 1971-72, was compared to a similar population of persons receiving convictions resulting from 1969

and 1970 arrests. Because of the absence of a randomly selected control group or a matched comparison group, the effects of the particular treatments utilized by ASAP could not be fully evaluated; however, recidivism rates were computed and compared for differing subgroups of the ASAP population. All recidivism rates were based on data during the period from the date the individual was "sentenced" to a treatment program through the end of the two-year period under study. For both the baseline and program period populations, an average of ten months of driving exposure pertained.

Recidivism rates, using DUIL convictions as a measure, were lower for the program population (5.4% of 1556 cases) than for the baseline population (6.3% of 1055 cases), although not significantly so. The AR crash experience of the two populations did differ significantly, with a lower proportion of crash recidivists among the ASAP population. Over the average of ten months driving exposure, the data suggest that 26 alcohol-related crashes did not occur which might have been expected, based on baseline period driving performance. Although no formal cost-benefit analysis was done, the figures suggest that an estimated 28% of the resources spent on this group of drivers were recovered through crash prevention during this very short driving period.

The two recidivism measures of DUIL convictions and AR crashes appear to identify different subgroups of recidivists. Only ten individuals in the two populations (0.9% of the baseline and 0.6% of the program population) had both a subsequent DUIL and an AR crash. This finding may have important implications in defining largely independent subgroups of interest.

DUIL recidivism rates, unlike AR crash rates, were found to differ significantly by treatment subgroup for the program period population. The largest contribution to this difference came from the higher recidivism rates of those who received legal sanctions only, rather than any of the ASAP-sponsored treatments. This finding is especially encouraging, since it

is believed that the legal sanctions subgroup probably had less serious drinking problems than the remainder of the population and therefore would be expected to do better, rather than worse, than those in other treatments.

A similar result occurred when cases referred to ASAP were compared to those not referred. Recidivism, as measured by DUIL offenses, was significantly lower for ASAP clients than for non-referrals. However, no significant differences were found in AR crash experience. The splits by treatment subgroup and by referred/non-referred subgroups are not independent, since the large majority of those receiving legal sanctions only also were not referred to ASAP.

Recidivism of ASAP referrals by drinking-diagnosis classification produced not unexpected results. A larger proportion of alcoholics had subsequent DUIL offenses than did problem drinkers. Problem drinkers had more offenses than did persons classified as non-problem drinkers. No differences were found in AR crash experience.

Probationers in the Antabuse treatment program were monitored for compliance using two procedures. Results suggested that neither method was entirely acceptable in determining whether or not a probationer was drinking, and thus inferences regarding this treatment were difficult to make. Attendance of probationers was moderately good under the blood testing procedure (60% appeared for 70-100% of the weekly tests). However, test results were inaccurate in that false positives were produced, and this method of monitoring Antabuse intake was subsequently dropped. Under twice-weekly supervised Antabuse administration, attendance dropped considerably to the extent that 88% of the clients appeared for one-half or fewer of the required visits. During this monitoring period, clients may have been drinking (having an insufficient level of Antabuse in the blood) or they may have found the twice-weekly attendance simply a matter of too great an inconvenience.



Overall, it appeared that the ASAP program had a positive and significant effect on the AR crash experience of persons convicted of DUIL offenses during its life. By referring more individuals to ASAP or placing them in the available treatment groups rather than imposing legal sanctions only, the subsequent AR crash experience would probably have improved more than it actually did over the previous two years.

Although the total ASAP population did not do significantly better than the baseline population in terms of DUIL recidivism, the data strongly suggest that had more individuals been referred, or had more persons received treatments other than legal sanctions, the proportion of DUIL recidivists would have dropped more than it in fact did, to the point where differences would have been statistically significant.

### 3.0 DISCUSSION

The preceding sections have presented a recap of the major evaluative findings emerging from specification of various measures of program effectiveness, definition and collection of data pertinent to those measures, analysis of the data, and inferences derived from the analytical work.

This section presents background information and material needed to interpret properly the above findings. Several non-programmatic factors which influenced the ASAP outcome are discussed. Brief commentaries about the program countermeasures and about some of the more important evaluation issues are also included.

The commentaries are offered by one who was active in drinking-driver research prior to the ASAP, who helped prepare the program proposal, and who was involved for three and a half years in the evaluative effort. It is obviously hoped that they have some intrinsic worth in themselves, but it is also believed that their utility will lie mainly in their ability to stimulate a problem-solving dialogue among concerned parties about the issues raised.

#### 3.1 INITIAL PROGRAM PLANNING

A retrospective view of how the Washtenaw ASAP came to life should help to provide a valuable contextual framework and may help to surface a number of topics which should be addressed before similar programs are launched.

Late in 1968 personnel from the Office of Safety Demonstration Projects, National Highway Safety Bureau, Federal Highway Administration, met informally with a small group of Washtenaw County people interested in alcohol-highway safety issues--representatives of the judiciary, the police, the local alcoholism agency, and the University research community. The purpose of the meeting was to exchange views and information

so that each group might benefit from knowledge of the other's evolving concepts and programs dealing with alcohol and highway safety.

From these beginnings HSRI prepared three different proposals during 1969. The first was in response to a suggestion from Washington that a 1-year, \$100,000 planning study be undertaken in preparation for a large-scale demonstration project. At a subsequent briefing the planned study was rejected out-of-hand by other government officials directly in the decision-making loop on the basis that it was not consistent with the demonstration schedule they had in mind and that such extensive and time-consuming planning functions were inappropriate. It was then suggested that a proposal for a demonstration program to be started "in a month or so" might be favorably received.

In response a second proposal entitled "Health-Legal Control of Problem Drinking Drivers in Washtenaw County" was prepared and submitted. The central concept was a formalization of the fledgling program underway in Washtenaw County under the joint leadership of District Judge S.J. Elden and the Washtenaw Council on Alcoholism; it is described in a paper given at the November 1969 conference in Ann Arbor.\* The core concept was found acceptable, but federal officials strongly urged that the program be expanded to include a variety of other countermeasures because of the justifiable concern that a single countermeasure activity probably would have insufficient visibility and impact. Subsequent revisions produced the final proposal which resulted in the program sketched in the Introduction.

Worthy of note is that a proposal\*\*similar to the second described above was submitted during 1969 by the City of Ann

\*L.D. Filkins. "Elements of a Combined Health-Legal Approach to the Control of the Problem Drinking Driver" in Proceedings of a Conference on Community Response to Alcoholism and Highway Crashes, Highway Safety Research Institute, The University of Michigan, 1970.

\*\*Court-Motivated Drinking Driver Rehabilitation, District Court, City of Ann Arbor, undated.

Arbor to the Office of Highway Safety Planning, Michigan's central agency responsible for safety planning and administration of federal funds under Section 402 of the Highway Safety Act of 1966. That office rejected the proposal, not because of its inherent content, but because it was believed too innovative and not consistent with their interpretation of federal guidelines that 402 monies were intended to be used for proven countermeasure activities.

From this scenario it can be inferred that there was then a wide divergence of opinion about what form alcohol countermeasure programs ought to take. Perhaps a part of the apparent lack of consensus can be ascribed to the fact that the research community had little guidance to offer. Part of it may have arisen from the fact that many of the agencies were new and themselves in an evolutionary state. And it seems clear in retrospect that the FHWA--subsequently NHTSA--office charged with implementing and monitoring the ASAP programs was grossly understaffed and undoubtedly underfunded to manage such a large-scale effort. Congressional pressure to get action started also may have contributed to premature implementation of the ASAP programs.

Another aspect related to initial local planning deserves particular consideration. Participants in the planning process, particularly those from the Washtenaw Council on Alcoholism, believed strongly that the drunk driving arrest process could generate many problem drinkers as input to the health-legal "system" being spliced together. This has been conclusively demonstrated. Their concern was whether adequate treatment resources could be mustered to adequately handle those persons identified as problem drinkers during the pre-sentence investigation process. The Antabuse program was never seen as a stand-alone treatment program but, rather, as a program with the limited goal of helping to establish short-term sobriety as the front end of a longer-term rehabilitation program. It was recognized that additional resources would be necessary to

implement the broader rehabilitation programs required to deal effectively with problem drinking drivers.

It was concluded, however, that it was better to proceed with the opportunity at hand and hope that the identification of a population of problem drinkers and alcoholics clearly in need of rehabilitation services would generate the resources needed to supply such services. This hope was only partially fulfilled. The local United Fund subsequently provided support and the State of Michigan bolstered its support for the Washtenaw Council on Alcoholism, but the combined sum of the additional rehabilitative resources was not nearly adequate for the case-load generated through the courts.

A major difficulty was that expected funds from the National Institute on Alcohol Abuse and Alcoholism failed to materialize. This may have been due to a lack of aggressive leadership at the local level in pursuit of such funds, inability to present a program judged worthy of support, or to indecisiveness in Washington regarding disbursement of NIAAA funds during that agency's embryonic period.

Irrespective of the cause, it is clear that the effect was to rob the health-legal approach of a fair operational test, in that the long-term rehabilitative component--the last sequentially but one of the most important functional elements--was severely penalized in terms of overall resource allocation. The NHTSA rubric that "ASAP funding stops at the hospital door" may have been necessary in terms of the scope of the mandate of the Department of Transportation. Nonetheless, the lack of long-term follow-up and rehabilitative follow-through of Washtenaw ASAP clients was the single most serious detriment to realizing the long-term potential payoff, in terms of reduced alcohol-related crash involvement, that the health-legal approach may hold.

### 3.2 PERSPECTIVE

If a single "yes" or "no" were to be given to the narrow question "Did the Washtenaw ASAP achieve its stated goals of

reducing the number or proportion of alcohol-related crashes?" then the answer would be "no." In view of the many uncertainties that prevailed at the time the Washtenaw ASAP started, however, a review of the appropriateness of the originally stated goals is reasonable.

Suppose that the objective had been stated as follows: "The goal of the Washtenaw ASAP is to make progress toward the long-range goal of reducing the number or proportion of alcohol-related crashes in Washtenaw County." If, again, a simple "yes" or "no" answer were to be given to the question of whether ASAP achieved these goals, the answer from this writer's perspective would be "yes."

This is not just an exercise in semantic gamesmanship. One's prior expectations are just as important as the results, and perhaps more so, in assessing the ASAP outcome. Either statement of the program objective would most likely have been accepted by local and federal officials, the funding level would not have been different, and the operational and evaluative procedures would have remained unchanged.

Either statement of objective is defensible at some level. The optimist would argue that prior research had established with acceptable precision that the problem drinking driver was a major portion of the drinking-driving problem, that techniques for identifying him and dealing with him effectively were emerging, that concentrated countermeasures directed to problem drinking drivers generally should reduce their subsequent involvement in alcohol-related crashes, and that such reductions should be reflected in lower alcohol-related crash statistics.

A hard-headed realist--and certainly the out-and-out pessimist--would undoubtedly adopt a far more cautious approach. He would surely observe that social drinking is an accepted and ingrained part of American life and that abusive drinking and its consequences are widespread and perhaps of epidemic proportions. He would further observe that most Americans rely heavily on personal automotive travel for fulfillment of their transportation needs, particularly so for those occasions in

which drinking is likely. Drinking and driving thus become deeply and perhaps inextricably intertwined, and an open question would exist in his mind whether a 2-1/2 year program of unproven countermeasures directed to residents of a county in populous southeastern Michigan could have much impact in separating the two. He might further add that trying to assess countermeasure impact by monitoring crash experience is difficult because of the many poorly understood factors which influence crashes.

In more formal language, there are no widely accepted theoretical models--much less so any empirically validated models capable of implementation--which map a given countermeasure input "x" into a resulting crash reduction "y." Such a model, however desirable conceptually, is a will-o'-the-wisp now and is likely to remain so for at least some time to come. In the meantime, judgment and opinion, based more or less on experience and insight, will be needed to formulate one's prior expectations regarding the potential outcome of the imposition of a set of countermeasures.

### 3.3 PROGRAM COUNTERMEASURE COMMENTARY

Leaving unresolved the open question about the reasonableness of the ASAP objectives, comments on the program results in terms of its component countermeasures are in order. These comments and the countermeasure activities themselves should be reviewed critically by program management and countermeasure operatives so that maximum benefit is derived from the ASAP experience.

The concept of the health-legal approach to control of problem drinking drivers embodies case-finding by law enforcement personnel, pre-sentence investigation to assess the nature and extent of defendants' drinking problems and to determine effective intervention programs, court-supervised attendance at such programs, and long-term rehabilitative programs for identified problem drinkers. As noted earlier, the rehabilitative component of this concept as implemented in Washtenaw County received the least attention and resources.

3.3.1 LAW ENFORCEMENT. There is no doubt that local law enforcement, through drunk-driving arrests, effectively served as a case-finding mechanism. Program-period arrests were 75% higher than baseline-period arrests, and it is questionable whether subsequent components of the system could have properly handled a higher caseload. It is also clear that about two-thirds of the arrestees referred for pre-sentence investigation had serious drinking problems.

If one views increased arrest activity as a stand-alone countermeasure, however, there is less room for optimism. The surveys did not indicate a high level of awareness of increased enforcement activity, and the crash criterion measures certainly do not reflect favorable changes. The roadside survey results are somewhat more encouraging, but it cannot be concluded with much certainty that police arrest activities solely accounted for the lowered BACs observed; neither, of course, can it be concluded that they did not.

These observations about increased police enforcement as a stand-alone countermeasure must be kept in perspective, however. It should be remembered that the three funded departments--Ann Arbor Police Department, Washtenaw County Sheriff Department, and Ypsilanti Police Department--each increased their enforcement levels by equivalents of approximately two road patrol officers, occasionally in two cruisers but more often in one. Figures on the normal activity devoted to road patrol are not available, but it is likely that the incremental effort of ASAP patrols amounted to no more than a few percent, perhaps 10% as a limit, of the county-wide effort. From this perspective, the 75% increase in the number of arrests was highly satisfactory. The resulting per capita drunk-driving arrest rate for 1970 was 0.0029, and for 1972, based on estimated population figures, was about 0.0052. Comparative data on the arrest rates for other jurisdictions are not readily available except for Michigan, which had a per capita arrest rate of 0.0027 in 1970.

The summary point is that increased police enforcement as a stand-alone countermeasure was not adequately tested in the



Washtenaw ASAP. At the given levels, for the period under study, with the limited publicity in Washtenaw County, the incremental increase was not effective in reducing alcohol-related crashes. However, it should not be generalized from the Washtenaw experience that increased police enforcement is not an effective deterrent. Results in a different jurisdiction or in Washtenaw County with doubled or tripled per capita enforcement, including widespread publicity, might have been greatly different.

3.3.2 COURT-RELATED ACTIVITIES. Pre-sentence investigation of DUIL defendants for determining the nature and extent of problem drinking is generally considered to have been effective. With few exceptions, the court counselors were able to interact effectively with the several involved judges and to recommend to them appropriate probation terms and remedial programs for defendants.

The Antabuse program, accepted voluntarily by probationers as part of their probation contract, was one of the key features of the Washtenaw ASAP. The blood test for determining the presence of Antabuse among probationers was found to be so unreliable that it was discarded. The subsequent twice-weekly supervised ingestion of the drug was also not entirely satisfactory, as indicated by low attendance. Both techniques seemed to suffer from inadequate liaison between Antabuse program operatives and court personnel with respect to the status of probationers and subsequent failure to exercise close supervision of delinquent probationers.

A further detailed review of court-connected operational activities should be made by court personnel. The summary impression is, however, that the judiciary are the key people who can materially influence four court-related functions: pre-sentence investigation, determination of effective probation contracts, follow-up of probationers to determine compliance with probation terms, and further legal action as appropriate for non-complying probationers. These functions were split

organizationally between ASAP employees hired by the Washtenaw County Health Department, Washtenaw Council on Alcoholism employees contractually related to ASAP, and permanent probation department employees not directly related to ASAP except through contact with ASAP clients. It is believed that these functions were not tightly enough integrated in the Washtenaw ASAP. There is no assurance, of course, that lodging the administration of them completely within the judicial system would have resolved the perceived problems. It is suggested, however, that careful consideration be given to this sort of managerial arrangement for cooperative judges in similar future programs.

3.3.3 INFORMATION AND EDUCATION. The public information and education campaign results, as summarized in Section 2, showed only marginal success with the several target groups to whom the campaign was directed.

There are no incisive insights as to why this was the case. The changing of public attitudes and behaviors about such deeply ingrained habits as drinking and driving by information campaigns is perhaps a doubtful proposition from the outset. TV, probably the most powerful of the media, was not directly available to the information specialists in that Washtenaw County is served by the three network TV stations in Detroit which cover that entire metropolitan area.

Given these factors it might not be surprising to find that even a hard-hitting campaign with extensive resources applied over several years would show little impact. In this light, results from the relatively low-key Washtenaw campaign might have been anticipated.

#### 3.4 NON-PROGRAM INFLUENCES

There can be little doubt that several factors completely beyond ASAP control influenced the ASAP outcome and measures used to assess ASAP performance.

Michigan's lower legal drinking age--from 21 to 18 effective January 1, 1972--is the most notable of these. Four different and independent measurement techniques concurrently

showed increased driving-after-drinking among 18-20 year olds after January 1. Crash criterion measures showed that alcohol-related crashes increased. Roadside survey intermediate criterion measures demonstrated a statistically significant increase among 18-20 year old drivers with positive blood alcohol concentrations. The number of 18-20 year olds arrested on drunk driving charges increased three-fold following the reduced legal drinking age, only a proportion of which could be accounted for by reduced presumptive limits for the two Michigan drunk driving charges which became effective in the spring of 1972. Finally, the general-public and high-school surveys made after January 1, 1972 revealed an increase in both self-reported alcohol consumption and in self-reported driving-after-drinking too much. None of the measures revealed a decline in 18-20 year old drinking-driving experience.

Although all alternative explanations relative to these observations were not postulated and investigated, these findings suggest, of course, the hypothesis that the lower legal drinking age caused increased drinking and driving among 18-20 year olds. This topic was studied further under a separately funded NHTSA-sponsored contract, and that analysis\*--carefully controlled for growth and cyclical effects in the crash experience--supports the hypothesis for Washtenaw and Oakland counties and for a subset of Michigan's entire experience.

It is concluded that the lowered legal drinking age was a negative force of such influence that its net effect was to completely override any progress that might have been made in reducing the alcohol-related crash experience of the 18-20 year old age group. The effect was particularly serious in Washtenaw County because, as 1970 census data\*\* show, 12.1% of

\*R.L. Douglass, et.al. The Effect of Lower Legal Drinking Ages on Youth Crash Involvement, UM-HSRI-AL-74-1. Highway Safety Research Institute, The University of Michigan, Ann Arbor, in preparation.

\*\*U.S. Bureau of the Census, U.S. Census of Population: 1970, GENERAL POPULATION CHARACTERISTICS, Final Report PC(1)-B24 Michigan.

the county population is in the 18-20 age bracket, compared to 5.4% throughout Michigan. The 12.1% figure is undoubtedly an under-reporting of the actual percentage of 18-20 year old residents because of the Census Bureau practice of not counting as residents many of the students at Eastern Michigan University and The University of Michigan.

Three growth factors--not independent, it should be noted--are believed to have influenced the ASAP outcome. Washtenaw County population increased from 234,103 (census data) in 1970 to an estimated 250,300 in 1973, an increase of 7%; reliable figures for 1968 and 1969 are not available, but it is likely that growth for these two years approximated the 2-1/3% average population growth for 1970-73.

Total Washtenaw County motor vehicle registrations increased more rapidly, from 119,982 in 1968 to 153,251 in 1973, a 35% growth. The program-period (1971-73) registrations averaged 20% higher than the baseline-period (1968-70) registrations.\*

Alcohol consumption also increased from baseline to program period.\*\* Although data are not available for Washtenaw County, several statewide Michigan consumption statistics showed considerable growth. Apparent per capita distilled spirits consumption increased from 1.56 gallons in 1968 to 1.71 in 1971, a 10% increase; although beer consumption remained just about constant at 21.5 gallons per capita for the same period, wine consumption increased 55%, from 0.82 gallons per capita in 1968 to 1.27 gallons in 1971. Sales figures show that these trends continued into 1972, with distilled spirits sales up 5.5% from 1971 and wine sales up 11.2%. It is judged that Washtenaw

\*Data are derived from the annual publication Michigan Traffic Accident Facts for 1968-1972, prepared by Department of State Police, Lansing, and from personal communication with the Safety and Traffic Division for 1973.

\*\*Data are taken from various publications of the Distilled Spirits Institute, Michigan Liquor Control Commission, and U.S. Department of Commerce.

County consumption figures proportionally equal or exceed those for the entire state.

Together these growth figures strongly suggest that the underlying exposure-to-crash factors of driving generally and driving-after-drinking were increasing; they certainly cannot be considered conducive to achieving the ASAP goals of reduced numbers of crashes. Neither do they explain away the fact that Washtenaw did not do significantly better than the comparison jurisdictions when compared on the number of crashes per registered vehicle.

### 3.5 EVALUATION COMMENTARY

HSRI, as noted earlier, played an active role in the initial program planning and coordination role. After July 1970 it served principally as program evaluator.

3.5.1 EVALUATION ISSUES. The 6-month planning period finally built into the program was stretched to eight months-- from July 1, 1970 to March 1, 1971--and it proved adequate, but not generous, for planning the evaluation. However, to generalize this to other programs and other evaluation groups would be unwise. HSRI had from the beginning an intact research staff, it had adequate before-the-fact information about the program to be evaluated, and it had proven working relationships with many local and state agencies that would subsequently be providing indispensable evaluative data. Further, many of the accident files to be used in subsequent analytical work were in place as part of HSRI's on-going HIT LAB operation. Without any one of the above it is most likely that eight months of planning time would have been inadequate. It is recommended that a 12-month, fully funded evaluative planning period be included in future programs of comparable scope and complexity.

The most notable error of omission, both in initial local planning and start-up, was not recognizing the need for a

management information system and budgeting for that purpose.\* In part this was because an early version of the program was predicated on HSRI management of ASAP. That notion was subsequently shelved, with agreement from all parties, but the management information needs of the Washtenaw County Health Department were neither properly addressed nor adequately budgeted until later. Even after recognition of the oversight, the analytic and management information data systems never interlaced smoothly. With a few exceptions, the ASAP program management and the countermeasure project directors did not request many of HSRI's analytic data. This condition persisted throughout the program period despite frequent verbal and written attempts\*\* on the part of the evaluators to interact more effectively with the ASAP staff. It is possible, of course, that the analytic data needs were fulfilled by the rather extensive quarterly reports that were prepared and distributed regularly. However, it is hard to identify many clear-cut management decisions regarding program operations that were based on evaluative data. This should not be so, and early and ongoing attention should be devoted to the management information system and its interaction with the analytic data system in similar ventures.

More generally, the entire subject of interaction between program operators and evaluators is fraught with a number of inherent problems. These and many other topics highly pertinent to program evaluation are discussed in the excellent book by Weiss.\*\*\* Had this book been available from the beginning

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\*Federal policy makers correctly foresaw this need. See October 26, 1970 memorandum to ASAP Project Directors from Director, Office of Alcohol Countermeasures, Subject: Preliminary ASAP Evaluation.

\*\*See, for example, December 6, 1971 memorandum to ASAP Staff from L. D. Filkins, Subjects: ASAP Staff - HSRI Interfaces and ASAP Staff Data Needs.

\*\*\*Carol H. Weiss. Evaluation Research: Methods of Assessing Program Effectiveness. Prentice-Hall, 1972.

it would have assisted policy makers, overall project management, the operational countermeasures directors, and the evaluators in understanding more fully evaluative issues vis-a-vis operational issues. The need for such understanding cannot be emphasized too strongly, and it is recommended that Evaluation Research or its equivalent be made mandatory reading for all responsible parties in future ASAP-like enterprises.

The most notable evaluation error of commission, from this writer's perspective, is that the evaluation team too quickly deferred to the perceived operational requirements and did not battle hard enough to keep sacrosanct the control groups it had defined in its original Evaluation Methodology. Rather it found itself, partly by circumstance and partly by intent, deferring to the operational requirements as described by Weiss in the opening paragraph of the chapter entitled "The Turbulent Setting of the Action Program":

A characteristic of evaluation research that differentiates it from most other kinds of research is that it takes place in an action setting. Something else besides research is going on; there is a program serving people. In fact, the service program is the more important element on the scene. The research is an appendage, an also-present, a matter of secondary priority. Researchers frequently propose changing the order of priority, and with some justification. If we do not find out whether the program is really doing what it is supposed to be doing, how do we know whether it is worth having at all? But whatever the cogency of the argument in any particular circumstance, the program almost universally remains the first order of business. The evaluation has to adapt itself to the program environment and disrupt operations as little as possible.

If rigorously defined control groups with random assignments to them (or, in their absence, suitable pseudo-control groups or naturally occurring comparison groups) cannot be kept intact, then evaluative research is emasculated from the outset. This point is illustrative of how evaluators can get caught between the operational demands of an action program and the demands for methodological rigor of a research program.

Some compromise between operational and evaluative demands is clearly necessary. It is suggested, however, that both operational and evaluative management go into an action or an evaluative research program with the prior expectation that research demands take precedence over operational demands with respect to the vital control group issue. If a decision to the contrary is required at least it should be made consciously, with full awareness of the compromised evaluative results that it entails.

3.5.2 ALLOCATION OF EVALUATION RESOURCES. One of the more difficult resource allocation issues facing management at all levels--from policy maker to project and evaluation directors--is the apportionment of total resources between operational programs designed to solve problems and evaluative research designed to determine the effectiveness of those programs. This is a complex issue, and a thorough discussion is clearly beyond the scope of this limited review.

It should be noted generally, however, that the number and type of individual projects that are packaged together into a single program can significantly influence the accompanying evaluative research. If several diverse countermeasures operate together at the same time and place, then determination of the effectiveness of each is more complex in a highly non-linear fashion. Ideally it is desirable to try to understand the interactive and synergistic effects between countermeasures and to try to sort out the contribution of each--separately and in combination--to attaining the overall program goals. Practically, however, this is far more difficult than assessing the effectiveness of only a single countermeasure. Indeed, mixing of countermeasures may complicate the inferential problem to the extent that it is impossible to separate out the contributions of individual countermeasures irrespective of the time and effort devoted to the task. Further, within the constraints of a fixed evaluation budget, the resources that can



be devoted to evaluation of any single countermeasure are necessarily reduced when several are mixed together and each must receive at least some evaluative attention.

The point here is that countermeasure program planners should consider with the utmost care the number and types of countermeasures that are packaged together. This recommendation holds even more strongly if there exists little prior knowledge about the effectiveness of the individual components and if one of the goals is to determine their effectiveness in a pseudo-experimental situation by evaluative research methodology. If such is not done then the evaluative research problem may be confounded beyond solution at any reasonable level of resources allocated for evaluation.

These remarks are somewhat gratuitous and more theoretical than practical in the context of the Washtenaw ASAP. This derives from the fact that the crash criterion measures revealed little progress in achieving the stated program goals, and thus the inferential problem of judging the contribution of individual countermeasures to total program success largely vanished.

Turning directly to the Washtenaw ASAP evaluation, the resources devoted to the crash criterion measures and to the intermediate criterion measure--the three roadside surveys--are considered appropriate in terms of the information produced from a retrospective view. However, two roadside surveys--a pre-program survey and a post-program survey--would have produced about as much useful information as the three that were actually conducted.

The information and education campaign, as originally planned, included activities directed to the general public and to numerous special target groups. These activities were scaled down as the program evolved and the evaluation of them was concurrently reduced to include the general public and only five of the special target groups--attorneys, high school students, physicians, police officers, and service club members. About 14% of the operating budget was spent on these

activities, while about 30% of the total evaluation budget was spent in their evaluation. With the benefit of hindsight one is tempted to argue that too much was spent evaluating the informational and education activities, particularly in view of their marginal achievements. There is no fundamental reason, however, why evaluation resources should be allocated in the same proportion as the allocation proportion for the countermeasure activities themselves. In different words, some relatively inexpensive countermeasures might be quite expensive to evaluate properly, and the converse is also a possibility. Further, it is clear that the outcome of implementing a set of countermeasures is not likely to be known before the fact, or there would be little need to evaluate them at all.

The point is that both program and evaluation planners should not casually assume that all countermeasure activities should be evaluated. Rather they should attempt to determine which of them are worthy of evaluation and with what care they are to be evaluated. Then, as was true in the Washtenaw ASAP, there should be considerable administrative and budgetary flexibility so that evaluation activities are appropriately scaled to the program activities as the latter evolve.

Federal guidelines\* originally noted that additional funds for data collection in control communities outside the ASAP areas were not generally available. A departure from this guideline was made in evaluating that part of the information campaign directed to service groups. Such groups were included in neighboring Jackson County at minimal cost, and their inclusion strengthened the evaluation considerably. It is concluded that this sort of flexibility is needed to maximize evaluation efficiency, and it is recommended that federal guidelines be revised to generally encourage data collection activities among control jurisdictions whenever possible.

\*September 28, 1970 Memorandum to Regional Administrators from Chief, Office of Alcohol Countermeasures, Subject: Evaluative Guidelines.

Many research endeavors are characterized by over-collection and under-analysis of data; in the Washtenaw ASAP evaluation this was most notably true of client-related information. Several reasons can be mentioned: some topics of interest, such as pre- and post-treatment emotional and physical health of clients, are inherently difficult to measure, and the data that were collected were subsequently believed to be of such potential unreliability as to be unworthy of analysis; pre-treatment data frequently were not paired with post-treatment data because a probation termination interview was not held; insufficient numbers of subjects in certain experimental countermeasures precluded worthwhile inferences from the data; and the evaluators' foresights were not sharp enough to avoid the specification and collection of useless data in some cases, particularly in view of the quality level that could be expected in those data from an operational program.

The cures for these ailments, other than the obvious ones suggested by the problems themselves, are not at all clear. Client sampling was considered during the evaluation period to reduce the amount of data collection, but meeting the federal Appendix H data requirements\* precluded the use of sampling techniques.

Closer coordination between the court counselors, rehabilitation workers, and evaluation specialists might have eliminated or reduced some of the client-related data collection problems. Certainly more face-to-face contact among all persons concerned with clients and client data, and a thorough indoctrination of all relevant persons about evaluation techniques and evaluation data requirements, are self-evident homilies worthy of repetition. In fact, training of this sort was offered several times by evaluation team members but nothing of substance followed. It can be inferred that meeting

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\*See, for example, Guidelines for Evaluation, Office of Alcohol Countermeasures, Traffic Safety Programs, National Highway Traffic Safety Administration, January 1973.

evaluation data requirements was a low-priority topic in the minds of the program operatives, again illustrating a divergence between evaluative research superimposed on an action program and a "pure" research effort in which data integrity is a key issue.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

The Washtenaw ASAP did not achieve its stated goals of reducing the number or proportion of alcohol-related crashes, nor were the number of crashes per registered vehicle significantly lower than those for comparison areas. These goals were ambitious in view of the historic intractability of the drinking-driving problem. Population growth, motor vehicle population growth, and increasing per capita consumption of beverage alcohol during the ASAP program period operated to increase exposure-to-crash and made achievement of the goals more difficult. Michigan's lower legal drinking age, effective midway through the program period, was definitely and unequivocally counter-productive to achieving the ASAP goals among 18-20 year old drivers, and with high probability operated to increase driving-after-drinking and alcohol-related crashes among this age group.

Self-reported attitudes, behavior, and knowledge by the general public and selected target groups about drinking-driving issues and practices indicated very little progress toward achieving the goals of the informational and educational campaign. The basic difficulty of the task, a modest campaign, and unavailability of targeted TV coverage in Washtenaw County are believed to be factors explaining in part why more positive results were not achieved.

Increased law enforcement activity showed mixed results. It was successful in increasing by 75% the number of drunk-driving arrests, and it served as an effective case-finding mechanism of problem-drinking drivers as input to the courts. As a stand-alone countermeasure, however, it was no more successful in reducing alcohol-related crashes than the program of which it was a part.

Progress toward achieving the ASAP goals was indicated by the three roadside surveys in which motorists' blood alcohol concentrations were measured. The surveys showed a statistically significant reduction in the proportion of nighttime drinking-driving residents, except for 18-20 year old drivers, from baseline to program period. Although reductions occurred at all BACs, these reductions in alcohol usage prior to driving apparently were not large enough to have been reflected in the crash experience.

The most encouraging ASAP results were observed among defendants whose drinking problems had been diagnosed during pre-sentence investigations and who subsequently entered various remedial programs as part of court-supervised probation. Recidivism, as measured by subsequent alcohol-related driving events, was generally lower for program-period drunk-driving arrestees than for baseline-period arrestees. Further, recidivism as measured by DUIL re-arrests was lower for defendants referred to ASAP and its remedial programs than for defendants receiving legal sanctions only during the program period. It is believed that strengthening the court-related diagnostic, referral, and treatment efforts, and applying them for a longer period, would have demonstrated an even greater positive effect.

Therefore it is recommended that subsequent efforts directed to the drinking-driving problem in Washtenaw County should first focus on improving the present court-motivated remedial programs for DUIL defendants. Attention should be given to restructuring the administrative and managerial arrangements for all court-related activities. A goal should be to increase the pre-sentence investigation referral rate for all defendants arrested on drunk-driving charges or on traffic-related drunk and disorderly offenses. Particular attention should be directed to augmenting long-term rehabilitative services for problem drinkers identified during pre-sentence investigation or during short-term remedial activities. Close coordination in monitoring the progress of probationers during their entire

probation period should be established and maintained by all concerned agencies and personnel.

Young drinking drivers should be a high priority target group in Washtenaw County and throughout the entire state of Michigan. Although young people are not overrepresented in alcohol-related crashes, early detection of developing drinking problems and subsequent intervention are likely to be more effective than later when unsound drinking-driving practices are established and more difficult to change. Research findings pertinent to promising preventive and remedial countermeasures should be incorporated into experimental situations designed and controlled to determine their effectiveness.

Washtenaw County law enforcement efforts directed to drinking drivers should be maintained at approximately their program-period levels. If it is subsequently established that law enforcement at a higher level is an effective stand-alone countermeasure, or if the courts demonstrate that they can handle effectively a higher DUIL case load as recommended above, then law enforcement should be increased progressively. Law enforcement activities should be widely publicized so that their general deterrent effects are enhanced.

Follow-up research on the recidivism rates of program-period and current DUIL defendants subsequently involved in alcohol-related traffic events should be conducted to determine the long-term effectiveness of the remedial activities through which the clients were processed.

Medical examiners in all jurisdictions should attempt to obtain blood alcohol concentration determinations on at least 90% of traffic fatalities who die within six hours of a fatal crash. These data are important in continuing to determine the extent of alcohol-involvement in fatal crashes and in evaluating the effectiveness of future countermeasure programs designed to reduce alcohol-related fatal crashes.

A general recommendation is that planners of future countermeasure programs, including but not limited to those directed

to drunk drivers, should establish clearly the fundamental purposes of such programs. Action programs consisting of relatively well-proven countermeasure components designed to solve an existing problem should be distinguished from trial demonstration programs undertaken to test the effectiveness of unproved techniques, and companion evaluative research activities should be tailored to fit the program purposes. Either type of program should include a management information system whose purposes, users, and outputs are clearly specified.

Trial countermeasure programs that are clearly experimental in nature should be identified as such and their purposes clearly articulated. Experimental design techniques should be imposed on these activities within a single program and also across programs to the extent applicable. Packaging of diverse countermeasures within a single program should be avoided so that inferential problems regarding countermeasure effectiveness are minimized. All levels of program management should undertake these types of programs with the understanding that research demands have precedence over operational demands in the event of conflicts, particularly with respect to control group and data collection issues.

Alternate technological approaches to prevention of drunk driving, such as alcohol interlock systems on ignition circuitry, should continue to be investigated and developed if found cost-effective on the basis of system analytic studies.



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