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The Prevention of Alcohol and Other Drug Abuse Among American Indians: A Review and Analysis of the Literature

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Introduction

The 1990 Census counted 1,959,873 American Indians and Alaska Natives in the United States, which is 0.8% of the entire population (U.S. Bureau of Census, 1991). There are currently over 300 federally recognized tribes, and the social and cultural variation among them is great. Although an increasing proportion of Indians and Alaska Natives are now living and working off-reservation, Indian populations tend to cluster in the Western states both on and next to reservations, and in municipalities that are near reservations. Sixty-six percent of all Indians live in ten states, eight of which are in the West or Midwest (Hodgkinson, Outtz, and Obarakpor, 1990; Snipp, 1989).

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The Indian population is young because of a birth rate that has been consistently twice that of the United States average. In 1987 the crude birth rate for Indians and Alaska Natives was 28.0 per 1,000 population compared to 15.7 for the general United States population. The median age of the Indian population was 22.6 in 1980 as compared to 30 years for the United States (Indian Health Service, 1991a). Some traditional tribes, such as the Navajo, had a median age as low as 18.8 in 1985 (Baris and Pineault, 1990). Average socio-economic indicators for many tribes are quite poor (Hodgkinson, et al., 1990; Snipp, 1989), but within these aggregated data there is a wide range of individual situations, from very poor, to a growing middle class, to some Indians who are quite well-to-do. Contemporary patterns of behavior vary widely from one Indian community to the next, based on a variety of factors including: the traditional folk culture of the tribal group and the relative rate of modernization and change that has occurred in recent decades (May, 1982).

By definition, prevention of alcohol and other drug abuse among Indians is very promising. Because so many American Indians are young, prevention efforts might prove to be particularly successful in heading off bad habits, risky behavior, and addiction before they form or become entrenched. Furthermore, the fact that many Indians live in relatively concentrated areas (e.g., reservations or urban neighborhoods) may also be an advantage. Tribal identity and close kinship ties may also be tapped for prevention advantage.

There are also many impediments to prevention as well. Some of these impediments have their roots in: the devastating history of Indian and U.S. Government relations over the past four centuries, the poor socio-economic status of many Indian families, and the lack of job and life opportunities that exists on many reservations and in the rural areas of the Western United States. Each of these factors creates barriers to prevention which challenge health and public health initiatives.

From a research and evaluation perspective, the prevention of alcohol-related and alcohol-specific problems in American Indian communities has received neither adequate nor sufficient attention. Of the prevention efforts that have been undertaken among Indians, few have been evaluated (Office for Substance Abuse Prevention (OSAP), 1990). When prevention evaluation has been done among Indians, process evaluation is most common, and measures of outcome are rare. Furthermore, much of this evaluation research is not pursued with adequate vigor or rigor, and little has reached print in any medium, particularly scientific journals. Finally, very little prevention research carried out among Indians has been prospective in nature. This does not mean that prevention performed by various tribes, the Indian Health Service (IHS), the Bureau of Indian Affairs (BIA), State agencies, or others are not effective. It has not really been researched or evaluated adequately, and therefore one has limited means of knowing whether it is effective.

History of Alcohol Treatment and Prevention Among American Indians

The prevention of alcohol and other drug abuse had received very little attention in Indian communities until the decade of the 1980s. Before that time, treatment was the most frequently discussed issue in alcohol circles. Many other public health problems were the major foci of attention. The general paradigm of the pre-1980s was treatment and prevention of infectious diseases. Epidemics of infant diarrhea, tuberculosis, hepatitis, otitis media, and influenza took precedence over other health issues, and their solutions tended to be centered around hospital and clinic settings (Broudy and May, 1983). Prevention, particularly of behavior-related health problems, was not a high priority before the 1980s. The record of the Indian Health Service in lowering the rates of infectious diseases has, however, been outstanding (IHS, 1991a; Rhoades, 1987; Office of Technology Assessment (OTA), 1986). This has made a paradigm shift possible in recent years toward a greater emphasis on health promotion and disease prevention.

The Office of Economic Opportunity (OEO) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) were the first Federal agencies to fund alcohol treatment programs for American Indians. These began in the late 1960s and early 1970s.

The Indian Health Service, however, did not have an office of alcoholism until 1976, when the "mature" NIAAA programs (those that had received five years of Federal funding) began a gradual transfer to the administrative control of IHS (IHS, 1986). The major focus of Indian alcoholism programs for many years was providing minimal treatment services to chronic alcoholics in most of the federally recognized reservations and tribal communities. Offering minimal treatment services is still the norm. Even those reservations with great need have inadequate resources for the problem at hand (Raymond and Raymond, 1984; Mail, 1985; Silk-Walker, et al., 1988).

Within Indian country today, and for at least the past seven years, health promotion and disease prevention are very much advocated. In a number of health promotion topics such as exercise for diabetes prevention and control, smoking cessation, injury control, and others, prevention is advocated and being programmed (see May, 1988a for a review of some of these programs for youth). Alcohol and other drug abuse prevention, however, appears a little slower to commence and gain momentum, except in a few special sub-topics (e.g., Fetal Alcohol Syndrome) and among some particular sub-populations (e.g., schools). This, however, is not unusual for many groups and/or communities in the United States. Ambivalence about alcohol is everywhere, and highly politicized discussions about treatment and prevention paradigms and policies consistently cloud the vision of, and planning for, the future (see Beauchamp, 1980).

In this paper, an eclectic, objective public health approach will be taken. The major criterion for judgment is whether a prevention program, policy, or idea *will reduce the toll* taken by alcohol abuse (whether chronic, acute, or sporadic). There are many types of alcohol abuse and many paths to alcohol problems and addiction (Institute of Medicine, 1990). Shakespeare wrote in "Twelfth Night" (IIv.):

> *"Some are born great,*
> *Some achieve greatness,*
> *and some have greatness thrust upon 'em."*
> *(documentation In Evans, 1968)*

The same can be said of many behaviors other than greatness, including alcohol abuse and addiction. Some people are born drunk (Fetal Alcohol Syndrome), some individuals and peer groups achieve alcohol abusive problems and addiction through purposive action, and others seem to fall victim to life's circumstances and more passively develop alcohol-abusive patterns and addictions.

Another way of stating this point is that alcohol problems are "heterogeneous." The Institute of Medicine (IOM) volume entitled *Broadening the Base of Treatment for Alcohol Problems* (1990) has pointed out that alcohol problems are heterogeneous: in etiology, in the course that the affected individuals and problems take, and in their presentation of consequences and needs for treatment and prevention. Therefore, the IOM advocated a terminological map and a broadly focused paradigm which covers drinking patterns from light to moderate to substantial and heavy. Furthermore, they indicate that these various drinking levels and styles are associated with particular types of problems from abuse and dependence which range in severity from mild to moderate to substantial to very severe (Institute of Medicine, 1990, pp. 31–36). This document makes a strong case for the need to coordinate multi-faceted prevention programs with a variety of treatment programs.

Therefore, programs of both prevention and intervention must be multiple and/or multifaceted to deal with the different paths to alcohol problems and the manifestations thereof. Furthermore, a variety of approaches are necessary to deal with the many controllable or manipulable aspects of the problem as presented by the various hosts, agents, and environments of alcohol abuse. Different types of abuse are associated with various manifestations of the problem and require different programs of prevention.

Four Common Drinking Styles

Some studies have described a variety of drinking styles among most American Indian groups (Weisner, et al., 1984; Levy and Kunitz, 1974). Most frequently mentioned are four: abstinence, recreational, anxiety, and moderated social drinkers (Ferguson,

1968; May, 1982, 1989a). Of these four styles only two are, by definition, linked to problems: the recreational and the anxiety. Abstinence, very common among many tribes (see May, 1989a), particularly among the middle-aged and older, obviously causes no alcohol-related problems. Similarly, many acculturated Indians tend to drink as do others in the occupations, organizations, or strata of society to which they are attached (see Levy and Kunitz, 1974; Liban and Smart, 1982). Many Indians, therefore, tend to practice a moderated or light social drinking style that produces few or no problems related to morbidity, mortality, arrest, or other health or social problems.

Ferguson (1968) described the recreational and anxiety drinkers among the Navajo, and these types are very common among most Indians and Alaska Native groups. The **recreational** drinker is typically a young male who drinks with friends (predominantly male, but mixed as well) for weekends, parties, special occasions, and other social events. As with other groups of young persons, drinking and intoxication are important for social cohesion and are generally highly valued. Recreational drinking among Indian groups of many tribes may only be different from other groups in the United States in matters of degree and cultural meaning. As described by many authors, Indian recreational drinking is more rapid, more forced, and the "bouts" are extended over long nights, entire weekends, and for other lengthy periods (Hughes and Dodder, 1984; Lurie, 1971; Dozier, 1966: Savard, 1968; and Weisner, et al., 1984). Very high blood alcohol concentrations are commonly found in Indians who practice this style of drinking.

The recreational drinker is more fitting of the term alcohol abuser, while the **anxiety** drinker is more akin to an alcoholic. Anxiety drinkers are older, drink chronically, are more solitary, and are generally physically addicted to alcohol. They generally drink cheap wine and beer and supplement with hard liquor, but will consume most any alcoholic beverage available. They also turn to non-beverage items that contain alcohol (e.g., hair spray, after shave, Lysol) when necessary or even for a special "kick." Anxiety drinkers are mostly unemployed, live in border towns and skid row areas, and are not usually associated with

the mainstream society of their tribe or of Western society. Most anxiety drinkers are ostracized to a great degree, whereas the recreational drinkers may be in mainstream society and only associated with abusive peer clusters when drinking.

The above two patterns represent at least two types of alcohol abusive or alcohol problem-generating styles that must be addressed by prevention and treatment programs in most tribes. If a prevention/treatment program is only addressing one type, it is an incomplete program. Furthermore, there is age variation associated with all drinking styles, and there may be other problem drinking patterns in communities that exist in addition to, or in place of, these types. The point is that different drinking styles dictate different prevention/intervention needs and approaches (see May, 1986).

Introduction to the Prevention Literature

As documented below, the literature on prevention among American Indians is not extensive, but it is larger than many might suspect. Many professionals and lay people alike frequently seem to assume that the published literature on Indian health issues is in general small. Furthermore, prevention efforts were, until recently, believed by many to be rare among Indians. Review articles on prevention of drug abuse among Indians have generally concluded that alcohol and other drug-related problems affect a significant number of American Indians, that a great deal needs to be done in prevention among American Indians, that the extremely young median age of Indian populations is an advantage for prevention, and that treatment and rehabilitation would not alone be sufficient, even with services of the highest caliber (see Westermeyer and Peake, 1983; Mail, 1985; Beauvais and LaBoueff, 1985; May, 1986, 1988b; Silk-Walker et al., 1988; OSAP, 1990). Furthermore, several reviews have called for a greater emphasis on drug abuse prevention. This area, then, is awaiting further development and documentation of its effectiveness.

Major Prevention-Review Documents on Indians

In the past decade and one half, several prevention theory/advocacy and literature review papers and monographs particular to American Indians have been published. Some cover drug abuse exclusively while others are predominantly from a mental health perspective.

An early document advocating a prevention approach to alcohol problems was a report from the 1977 Indian Health Service (IHS) Task Force on Alcoholism that was convened in 1969 and 1970. The report, titled *Alcoholism: A High Priority Problem,* started with a disease definition and emphasized treatment; but, the report also addressed alcohol-related problems as behaviors amenable to broader activity in the community and society. Besides the standard medical services, social services, and psychiatric care, this document called for health education for prevention, planning, and an emphasis on new community relationships related to alcohol programs and problems. Planning was emphasized on an interagency and a community-wide basis to support and complement medical and psychiatric care (IHS, 1977).

In a monograph that was produced and distributed from the Colorado State University Psychology Department, Beauvais (1980) reviewed the extant literature on alcohol and drug use among Indian youths and made explicit suggestions for Indian community prevention and health education programs. This monograph is unique among the prevention review documents covered in this section in that it has a stronger emphasis on drugs other than alcohol. Based on the literature, Beauvais (1980) presents several "ways to help" for prevention. These include: parent, student and school staff education, hospital-based interventions, the use of role models, and the application of traditional cultural and craft activities for prevention. Finally, the monograph contains detailed and valuable generic information about the effect of a variety of drugs on the human body and human functioning.

In another ground-breaking monograph, one that is primarily concerned with mental health issues, prevention is the sole topic.

Edited by Manson (1982), the monograph, *New Directions in Prevention Among American Indians and Alaska Native Communities,* contains 15 articles dealing with a variety of issues related to Indian mental health. Specific topics include general prevention research theory and practices applied to American Indian communities, primary prevention, evaluation of prevention efforts, training for prevention efforts, and the role of cultural networks in prevention. All of this is in addition to a variety of mental health topics, including alcohol abuse. Forty-six articles on prevention of alcohol and drug abuse problems (mostly primary prevention) are identified in the introductory chapter by Manson, Tatum, and Dinges (1982). The fact that mental heath and drug abuse issues are intimately related is underscored by this monograph. Further, the monograph represents an excellent resource for reviewing the issues, theory, and techniques of prevention among American Indians and Alaska Natives. Concepts and approaches in this work might be brought to bear on alcohol-specific problems. But the reader should bear in mind that the prevention of alcohol and other drug abuse requires somewhat different approaches than does the prevention of certain psychiatric problems. This will be evident in a later section of this paper.

Trimble (1984) concentrated on alcohol and drug abuse prevention research both by reviewing the literature and concepts and by making recommendations for needed direction in future prevention research. His work draws from 89 literature sources and makes ten recommendations for future primary prevention research projects, six recommendations for secondary prevention, and inquiry about research at the tertiary level (prevention of further medical, social, and psychological problems once an alcohol problem is manifest). Tertiary level research was found by Trimble to be virtually non-existent.

In 1985 Beauvais and LaBoueff published a paper that reviewed the theoretical issues related to drug and alcohol abuse prevention among Indians. This paper provided theory and data upon which to base such programs, reviewed approaches to prevention that begin from within the community, and provided guidelines for community action in prevention. Emphasis in this paper is placed on community activity that should be undertaken

on a step-by-step basis in prevention. The authors explicitly state that prevention activity should not use "top down" approaches initiated from the outside.

In a previous review of prevention programs for Indians, May (1986) addressed both treatment and prevention literature from an evaluative perspective. Treatment programs in Indian country that had been evaluated before 1984 were found to have no greater success than other treatment programs elsewhere. The range in success rates, using various definitions, was from 19% to 40%, which left room for improvement (May, 1986). Furthermore, there were (and still are) many drug and alcohol abuse problems that were not addressed by most Indian-oriented treatment and prevention programs (May, 1986; Weibel-Orlando, 1984, 1989; Weisner, Weibel-Orlando, and Lang, 1984). Many areas of alcohol-related morbidity and mortality (motor vehicle crashes, trauma, suicide, and homicide), women's drinking issues, drinking among the dropout and out-of-school population, and fetal alcohol exposure were salient examples of under-addressed issues cited in this article. The modal alcoholism programs for Indians were found to target middle-aged, adult males with chronic drinking problems (anxiety drinkers). As in the early 1980s, treatment is still emphasized in most programs, leaving little emphasis, time, or resources for prevention.

A final review document is a monograph written by Candice Flemming and others and published by the Office for Substance Abuse Prevention (OSAP, 1990). This monograph reviews 80 articles identifying 60 preventive interventions carried out among Indians. It further addresses cultural, historical, community, and research issues important to Indians. In addition to the literature review, this monograph contains brief descriptions of 52 different programs or approaches described in the literature. It also contains a section that provides an analysis of 16 Indian and Alaska Native programs funded by OSAP in 1990. Finally, the monograph summarizes data from a telephone survey with prevention project managers of Indian programs. This monograph is a complete and valuable review of the prevention literature on drug abuse (and a number of combined drug abuse/mental health programs). It is a snapshot of the state of the art in several existing prevention programs among American Indians and Alaska Natives.

The OSAP (1990) monograph concludes with seven recommendations. These recommendations are: (1) more needs to be known about how prevention programs survive for the long term, (2) the relationship between traditional culture and drug use needs to be studied further, (3) every project should be "rigorously" evaluated, (4) more should be learned about the role of peer clusters in drug abuse, (5) general community development can make prevention efforts more effective, (6) more comprehensive approaches are increasing and should be encouraged, yet broader economic and environmental risk factors are rarely addressed, and (7) more focus must be given to community norms concerning drug abuse and how change is accomplished and sustained. The monograph also reports that most prevention programs are school-based (OSAP, 1990, p. 39, Table 6) and that evaluation of most programs was lacking. Only 56% of the programs surveyed had research designs with both process and outcome evaluation.

The above themes presented in the review papers and monographs should serve as orientation and background for the reader of this paper. They very succinctly capture some of the ascendant and current issues in prevention of alcohol and other drug abuse among Indians today.

Prevention Literature: A Catalogue of Recently Published Sources

Prior to 1980, much of the literature which existed on American Indian alcohol and mental health issues were either unpublished or published in obscure places such as committee reports, center documents, or conference proceedings (Mail and McDonald, 1980). In some of these works prevention programs were mentioned, and in several cases presented in a detailed fashion. But overall, prevention ideas were neither widely distributed, nor did they receive adequate attention. In the major bibliography on alcohol use and abuse among American Indians by Mail and McDonald (1980), there are 25 citations in the index under

prevention of alcohol problems, eleven for prevention of suicide, and two for prevention of delinquency (p. 344). Of the alcohol prevention citations, 52% are papers that were unpublished and a major focus on prevention was not really evident in 42% of those papers. These works instead focused on issues (e.g., treatment or service delivery) or topics (e.g., suicide, self-esteem, and mental health) other than primarily on the prevention of alcohol abuse problems.

In preparing to write this paper, a literature search was initiated through MEDLINE on the topic of "prevention of alcoholism/substance abuse among Native Americans." The search was from 1982–1992, and 26 articles were identified. This search formed the basis of the review and discussion in this paper, along with the literature identified in the previously mentioned works by Manson (1982), Trimble (1984), OSAP (1990), and others. As a "key word" in the literature, then, prevention is not manifest to any great degree in the area of alcohol abuse among American Indians.

Presented below in figures 9-1 through 9-3 are listings of articles and other prevention-oriented works that should be useful to those researching and pursuing applied programs in prevention. An attempt has been made to focus as completely as possible on alcohol and other drug abuse programs that are primarily or substantially prevention oriented. There was a conscious attempt to exclude programs that are primarily oriented to mental health and psychiatric problems or those that exclusively focused on alcoholism *treatment*. The emphasis in these figures is on the three levels of prevention from tertiary to primary.[1] Because some programs have diverse elements that span all three levels, categorization was difficult.

Tertiary Level Prevention

In figure 9-1 the programs that emphasize tertiary strategies with Indian alcohol abuse are covered. As Trimble (1984) indicated, it is difficult to find tertiary programs described in the alcohol literature on Indians. One could include many more alcoholism treatment programs here, but that is not the intent. This paper is written to highlight those with the greatest emphasis on tertiary

Figure 9-1. Tertiary Level Prevention of Alcohol and Substance Abuse Problems Among American Indians

Author, Date	*Topic; Target Groups*
Shore and Von Fumetti, 1972.	Three adult alcohol treatment programs; Northwest Indians.
Wilson and Shore, 1975.	One adult alcohol treatment program; Northwest Indians.
Weibel-Orlando, 1989.	Description of 26 adult alcohol treatment programs; Far West.
Ferguson, 1968; 1970; 1976; Savard, 1968.	Etiology and description of treat-ment and intervention (including antabuse) with chronic adult alcoholics; Navajo.
Price, 1975; Hagan, 1976.	These two articles advocate new policy in the criminal justice system which decriminalizes alcohol intoxication and seeks therapeutic alternatives; Canadian Indians.
Westermeyer and Peake, 1983.	Etiology and evaluative follow-up of adult alcoholics; Chippewa.
Albaugh and Anderson, 1974; Pascarosa and Futterman, 1976; Blum, Futterman, & Pascarosa, 1977.	The use of Native American church rituals and the sacramental use of Peyote to treat alcoholism among adults; Plains tribes.
Masis and May, 1991.	Fetal Alcohol Syndrome prevention by focusing on chronically alcoholic women at high risk for causing FAS; Navajo.

prevention, efforts that minimize the adverse consequences of severe alcohol abuse once it is manifest. The above articles represent this thrust in several ways. The first three listings, Shore and Von Fumetti (1972), Wilson and Shore (1975), and Weibel-Orlando (1989) describe the typical methods used in Indian alco-

hol treatment programs and the tertiary prevention issues that are important to consider with adult Indian alcoholics. These articles show a thrust toward managing the effects of alcoholism. Additionally, many other alcohol-related tertiary prevention issues are linked to other areas of health such as injury, disability, and protection of the alcohol abuser's family, but these are beyond the scope of this paper.

Not exclusive of the scope of this paper, however, are the articles by Ferguson (1968, 1970, 1976) and Savard (1968) which very completely describe the use of antabuse, arrest diversion, milieu change, and other tertiary methods of prevention and intervention with chronic alcoholics. Price (1975) and Hagan (1976) have addressed decriminalization, arrest diversion, and arrest-keyed therapy as tertiary solutions to excessive arrest rates for alcohol intoxication among some Indians.

Westermeyer and Peake's (1983) article is unique, for the ten-year follow-up methodology is not only the longest in the Indian alcohol literature, but also is insightful for factors related to chronic alcoholism. The factors studied included (1) longevity, (2) social, occupational, and cultural survival, and (3) drug abuse outcomes and patterns for 45 people who had been treated for chronic alcoholism. Given the high relapse rate for alcoholics, these are vital issues in tertiary prevention.

Also included in the literature are three articles describing the therapeutic efficacy of providing the values, beliefs, structure, and rituals of the Native American Church to treat and prevent further problems from alcoholism. Albaugh and Anderson (1974), Pascarosa and Futterman (1976), and Blum, et al. (1977) all see Native American church practices and peyote as therapeutic agents that can treat problems with alcoholism. The latter two articles, however, seem to emphasize the pharmacology more than Albaugh and Anderson (1974).

The final article in figure 9-1, Masis and May (1991), describes a fetal alcohol syndrome prevention program in Arizona that is highly focused on chronic alcoholic women. The tertiary goals are to prevent future alcohol-damaged children, Fetal Alcohol Syndrome (FAS) or Fetal Alcohol Effect (FAE), from mothers who have already had one damaged child or are drinking heavily

while pregnant. This is done by providing counseling, support, birth control, and treatment for alcoholism.

Secondary Level Prevention

In figure 9-2 the more recent secondary prevention resources are listed. As is evident, there are many more secondary prevention programs described in the recent literature (N=38) than other types of programs. This has not always been the case, for in the 1960s several of the more influential articles (e.g., Dozier, 1966 and Stewart, 1964) emphasized primary prevention through large-scale social and community-wide influences.

The secondary prevention articles are very useful and provide one with an excellent set of complementary approaches for working with aggregates and/or groups within Indian communities who are high risk by definition (teenagers) or by demonstration of the earliest signs of alcohol use and abuse. The focus in secondary prevention is on these subgroups or aggregates and individuals within them rather than on the entire community, environment, or structural conditions promoting or discouraging drug abuse.

Of all the areas of prevention for American Indians, the secondary level programs provided for youths have been the most common. Although only a few of these programs have been rigorously evaluated, they have been researched and evaluated better than many Indian treatment programs and other levels of prevention. The empirical research that lays the theoretical and scientific groundwork for these programs is very extensively and rigorously researched, especially studies of alcohol and other drug abuse among Indian youth.

The first 15 articles in figure 9-2 are excellent resources for planning prevention, for they are theoretically sound and based on literally tens of thousands of survey responses from individual youths. These surveys have been done all over the United States. The work of Oetting, Beauvais, Edwards, Swaim, and colleagues at Colorado State University has been ongoing for two decades, as has that of Winfree, Griffiths, and colleagues, although on a much more modest scale. All of the overview articles listed in figure 9-2 provide a very sound and tight theoretical base for

Figure 9-2. Secondary Level Prevention Literature on Alcohol and Substance Abuse Among American Indians

Author, Date	Topic; Target Group(s)
(Overview Articles)	
Oetting and Beauvais, 1989; 1991.	Etiology of Alcohol and Substance Abuse applied to prevention techniques; Indian youths.
Beauvais, Oetting, and Edwards; 1985a; 1985b; 1988.	Correlates and trends of substance abuse for intervention/prevention; Indian youths.
Oetting, Swaim, Edwards, and Beauvais, 1989.	Places emotional distress in the proper prevention context; Indian youths.
Swaim, et al., 1993.	Cross-cultural comparisons for insight for prevention programs; Indian youths.
Bach and Bornstein, 1981.	A social learning rationale applied to potential Indian alcohol abuses; Indian youths and adults.
Winfree and Griffiths, 1983a; 1983b; 1985; Winfree et al., 1989; and Sellers and Winfree, 1990.	Social learning theory, differential association theory, and trends of alcohol and substance abuse with prevention applications; Indian youths in the Northwest.
Hoover, McDermott, and Hartsfield, 1990; and Boyle and Offord, 1986.	Alcohol, tobacco, and smokeless tobacco use patterns for designing prevention programs; Canadian Native youths.
(Secondary Prevention Within Alcohol, Mental Health Programs)	
Silk-Walker, Walker, and Kivlahan, 1988.	A survey of a number of the secondary and tertiary prevention issues in an alcohol treatment program; Alcohol abusing adults.
Levy and Kunitz, 1987.	Identifies factors of high risk for suicide and alcohol problems for secondary prevention; Hopi.

Figure 9-2. Secondary Level Prevention Literature on Alcohol and Substance Abuse Among American Indians (continued)

Author, Date	Topic; Target Group(s)
Shore and Kofoed, 1984.	Reviews the premise of five secondary prevention programs for community prevention success; Adults.
Kahn and Stephan, 1981; Kahn and Fua, 1985; Ward, 1984; Fox, Manatonabi, and Ward, 1984.	These four articles describe how alcohol abuse prevention can be undertaken and effective as a community-based mental health/suicide prevention program; Tono O'Odam and Canadian Indian adults.
Parker, et al., 1991.	An Indian-culture based prevention program to build self-esteem and reduce substance abuse; Northeastern Indians.
(School-based Programs)	
Indian Health Service, 1987.	A description and summary of the several hundred school-based alcohol abuse preventive programs of the Indian Health Service; Indian youths and parents.
Manson et al., 1989.	Alcohol consumption correlated with suicide attempts and 22% of all school-based suicide prevention programs have alcohol prevention components; Youths.
Duryea and Matzek, 1990.	Prevention among elementary school children is explained through resisting peer pressure; Pueblo.
Okwumabua, J. O., Okwumabua, T. M., and Duryea, E. J., 1989.	Health decision making was found to be quite efficacious among seventh graders, indicating knowledge of the consequences of their behavior; Pueblo.

Figure 9-2. Secondary Level Prevention Literature on Alcohol and Substance Abuse Among American Indians (continued)

Author, Date	Topic; Target Group(s)
Bernstein and Woodall, 1987.	Perceptions of riskiness increased with a program of health education and life experience; NM Indians, in grades 6–8.
Murphy and DeBlassie, 1984.	Counselor intervention strategies are emphasized; Mescalero Apache elementary school children.
Scott and Meyers, 1988.	Fitness training is found to stabilize alcohol and drug use; Canadian Indian youths ages 12–18.
Schinke, Mancher, et al., 1989; Schinke, Schilling, et al., 1989; Schinke, et al., 1988; Gilchrist, et al., 1987; Schinke, et al., 1985.	American Indian youth are found to benefit from skills training and health education. Results show the youths to have greater knowledge of drug effects, better peer pressure management and lower rates of substance use; Northwest Indian youths.
LaFromboise and Rowe, 1983.	Bi-cultural competence and assertiveness are improved by skills training in a culturally appropriate manner; Indian youths.
Carpenter, Lyons, and Miller, 1985.	A peer managed self-control program successfully taught responsible drinking to teenagers and the results held up for 12 months; Indian teenagers.
Davis, Hunt, and Kitzes, 1989.	A school-based teen center dispensing integrated health services including alcohol education and counseling is described; Pueblo teens.

prevention planning. The bulk of this literature is converging on a common set of variables, theories, and approaches that clearly describe the problem and lay out the most likely approaches for prevention. Most works focus on alcohol and other drug abuse, but a growing body of work is now building on tobacco as well (Hoover, et al., 1990; Boyle and Offord, 1986).

Reviewing the substantive highlights of these works is important here. In the literature, Indian youths generally report that they use alcohol as frequently as or more frequently than other youths in the United States. For example, by the 12th grade, lifetime prevalence of alcohol use is quite high: for Indian males, 96%, and females, 92% (Oetting and Beauvais, 1989). National studies of U.S. adolescents show similar use patterns in that 92% of all high school seniors report having used alcohol at least once (NIAAA, 1990). But the major difference is found in measures dealing with age at first involvement and degree of involvement. According to the major researchers in this area (Beauvais, Oetting, and Edwards, 1985b; Oetting, Beauvais, and Edwards, 1988), the age at first involvement with alcohol is younger for Indian youths, the frequency and amount of drinking are greater, and the negative consequences are more common (see also Hughes and Dodder, 1984; Forslund and Cranston, 1975; Forslund and Myers, 1974). Oetting, Beauvais, and colleagues have found that at all ages and grades a greater percentage of Indian youth are more heavily involved with alcohol than are non-Indians (Oetting and Beauvais, 1989). Several studies indicate that this is both encouraged and expected among many peer groups as the "Indian thing to do" (Winfree and Griffiths, 1983a; Lurie, 1971). Therefore, some drinking at a young age prior to the 12th grade is quite common among Indian youths as it is with other United States youths. By 12th grade, 80 percent of Indian youth are current drinkers, but there is some variation from reservation to reservation (see May, 1982). Severity measures show that Indian youths who drink are more likely to report having been drunk and to have "blacked out" (Oetting and Beauvais, 1989). Just as United States high school data showed an increase in drinking and marijuana use through 1980, and subsequent declines after 1980, the Indian patterns over time

are similar. That is, Indian youths have reported less use of drugs and alcohol in recent years (Oetting and Beauvais, 1989; Winfree and Griffiths, 1985), but a decline in heavy users has not occurred. Heavy use among Indian youth has remained steady at 17 to 20% (Beauvais, 1992a).

Those youths who are most likely to abuse alcohol are those who associate with alcohol and drug abusing "peer clusters." Furthermore, alcohol-abusing Indian youths are those who do not do well in school, who do not strongly identify with Indian culture, and who come from families who also abuse alcohol (Guyette, 1982). Oetting and colleagues (Oetting and Beauvais, 1989) concur, for their findings characterize abusers as having poor school adjustment, weak religious/spiritual foundations, poor family and peer group associations, and little hope for the future. Conversely, Indian youths with strong family attachments, where culture and school are valued and abusive drinking is neither common nor positively valued, tend to be less likely to get seriously involved with alcohol, marijuana, and inhalants, the "big three" drugs common for drug-abusing Indian youths. Low self-esteem, depression, anxiety, and other negative emotional states are not influential in alcohol abuse among Indian youths (Oetting and Beauvais, 1989; Oetting, et al., 1988). Biculturalism (the ability to function well in both tribal, Indian society and the modern, Western world) is a real strength for Indian youths, for it is a trait that is not associated with alcohol abuse or other negative traits that predispose youths to alcohol problems (Oetting and Beauvais, 1991). In their most recent works these same researchers emphasize resocialization (the learning or relearning of modes of adjustment to life that are drug free) in the family, schools, peer groups, and religious institutions as preventive of drug abuse among Indian youths (Swaim, et al., 1993; Beauvais, 1992b).

The second main grouping of articles in Figure 9-2 concerns secondary drug abuse prevention carried out within the context of mental health programs. Many, if not most, of all problems that come to the attention of mental health programs involve co-morbidity with alcohol and other drug consumption (May, 1988b). Therefore, drug abuse prevention has often been developed in mental health programs. Of the eight articles of this nature highlighted in figure 9-2, six are in a mental health/suicide prevention context, one is within an alcoholism treatment context (Silk-Walker, et al., 1988), and two are in a larger community mental health initiative context (Shore and Kofoed, 1984; Parker, et al., 1991). These articles underscore the many possibilities for initiating prevention of all types from mental health and alcoholism programs, an effort that has been too rare in the past in many Indian communities.[2]

The final group of articles in figure 9-2 concerns the school-based programs. Most of the prevention programs aimed at American Indians in recent years have been school-based programs that emphasize the previous information about the effects and consequences of drug abuse. Programs such as "Here's Looking at You," "Project Charley," and "Babes" have been used in many Indian communities both on and off reservation (IHS, 1987). Aimed at children from elementary school through high school, these programs are implemented in a variety of ways by staff, faculty, and counselors. Parent involvement is generally not a major component of these programs, and some say the influence seldom goes outside of the school grounds. The effectiveness of these programs has been studied and published very infrequently given the fact that literally thousands of them have been undertaken. The fifteen articles here represent the evaluation of only a few of the programs ongoing in Indian community schools. Furthermore, these programs evaluated and described in the literature are generally of more intensity and of a different modality than the mainstream programs cited above. One should consult the Indian Health Service (1986, 1987) documents for details on the most frequently used school-based prevention efforts.

The consistent themes in the school-based prevention programs are building bicultural competence (LaFromboise and Rowe, 1983), increasing self-esteem and self-efficacy (IHS, 1987), improving resistance and judgment skills, particularly in the face of peer pressure (Duryea and Matzek, 1990; Schinke, Mancher, et al., 1989; Schinke, et al., 1988; Gilchrist, et al., 1987), and increasing the perception of the riskiness of alcohol and drug use (Bern-

stein and Woodall, 1987). Certainly the current etiological literature supports these efforts if taken in the proper context. That is, building self-esteem alone will not solve the drug use and abuse problems. Building new perceptions, values, skills, and support systems along with self-esteem may be the key. Therefore, these programs must also have an effect on the socio-cultural aspects of life and the existence of abusive peer clusters in the life of these youths (Neucomb and Bentler, 1989). This can be accomplished by either direct or indirect influence, but the socio-cultural aspects must be addressed, not just the mental health and psychological issues (Oetting and Beauvais, 1989).

Nevertheless, the articles which document school-based prevention are very useful and can be used as guides and models for others in the future. Furthermore, long-term follow-up of the adolescents who participated in these programs should be pursued aggressively in the coming years, particularly after they leave school and move into adulthood. Eventually, studies of prevention among Indian youth will need to build a strong literature based on long-term outcome evaluation that will pinpoint factors associated with both a lack of drug abuse and overall success in life (Neumann, et al., 1991).

Primary Level Prevention

Moving now to figure 9-3, the primary prevention literature is listed. From overviews of the approach to specific changes in communities to prevent alcohol abuse, this literature is beginning to grow in size and specificity.

Community-based and primary prevention in general has not been pursued to any great degree, for the planning of community action on health problems is also a relatively new approach in many Indian communities (OSAP, 1990). Only in the last 15 years have most reservations been able to begin and to staff programs as basic as their first emergency medical services. Therefore, it is little wonder that the focus on community-wide prevention is new. Other problems were much more pressing in the past. In the 1980s, however, interest in prevention programs was built. This is especially true regarding prevention of behavior-related health programs, such as diabetes (Leonard and Leonard, 1985),

Figure 9-3. Primary Level Prevention of Alcohol and Substance Abuse Problems Among American Indians

Author, date	*Topic; Target Area*
	(Overview)
Rhoades et al., 1988; Indian Health Service, 1986.	Describes the IHS programs and/or philosophy in the treatment and prevention of alcoholism for over 300 reservations; U.S. Indians.
May, 1986.	A overview of the existing alcohol abuse problems, especially mortality, and a call for comprehensive prevention programs; U.S. Indians.
OSAP, 1990.	A comprehensive review of the literature, prevention programs instituted past and present, and recommendations; U.S. Indians.
Mail, 1985; Mail and Wright, 1989.	Two works on the concepts and necessity of designing comprehensive prevention from the indigenous cultural energies and point of view; U.S. Indians.
Beauvais and LaBoueff, 1985.	Prevention must come from the ground up and the process is described; All Indians.
Marum, 1988.	Community mobilization through workshops and training is described; Alaska Native communities.
Beauvais, 1992b.	A model of substance abuse prevention variables (peer, psychological, social structure, and socialization factors) are presented; Indian youths.
Maynard and Twiss, 1970.	A fully comprehensive study and plan for primary prevention of mental health and substance abuse problems; Oglala Sioux.

Figure 9-3. Primary Level Prevention of Alcohol and Substance Abuse Problems Among American Indians (continued)

Author, Date	*Topic; Target Group(s)*
(Alcohol-Related Injury Control)	
May, 1989b.	A literature review and overview of alcohol and motor vehicle crashes among Indians with primary, secondary, and tertiary prevention suggestions; All Indians and Alaska Natives.
Smith, 1991; IHS, 1990.	An article and a data monograph which lay out the details of the Indian injury problem, the IHS initiative to implement primary prevention and tools for prevention; All Indians and Alaska Natives.
Macedo, 1988.	A description of community-wide change and prevention of alcohol-related social trauma and injury in two communities and a framework for analysis are presented; Canadian Indians.
(Fetal Alcohol Syndrome)	
May and Hymbaugh, 1989.	Describes a nation-wide primary prevention program directed at Fetal Alcohol Syndrome and using public education through the training of trainers; All Indians and Alaska Natives.
May and Hymbaugh, 1983.	A comprehensive research, clinical assessment, and primary prevention program for a number of tribal communities is described; Southwestern Indians.
Plaisier, 1989.	A primary and secondary prevention program using health education as a vehicle; Indians in Michigan.

Figure 9-3. Primary Level Prevention of Alcohol and Substance Abuse Problems Among American Indians (continued)

Author, Date	*Topic; Target Group(s)*
(Prevention Based on Policy and Laws)	
May, 1975; 1976; 1977.	Two articles and a doctoral dissertation which examine alcohol legalization/prohibition policies on reservations and the effects of these laws on alcohol-related mortality; Northern Plains tribes.
Back, 1981.	An article which evaluates the effectiveness of prohibition on the Navajo reservation and calls for new policy as a preventive measure; Navajo.
Bellamy, 1984.	A doctoral dissertation which compares the behavioral and attitudinal characteristics of youths growing up on a pro-hibitionist, a long-term legalization, and a recently legalized reservation; Plains Indians.
May and Smith, 1988.	A survey of opinions about alcohol and alcohol policy with subsequent recommendations for alcohol policy and prevention; Navajo.
May, 1992.	A comprehensive survey of alcohol control policy and primary prevention measures from all over the world applied to Indians and border town communities; All Indians and Alaska Natives.

car seat protection (May, 1988a), and one successful community-wide alcohol prevention program in Alkali Lake, British Columbia ("The Honour of All," a documentary film).

The success of one primary prevention effort on any problem often generates interest in prevention topics of other types. Attention is, therefore, only recently being turned away from treatment, intervention, and other levels of prevention to primary prevention. The focus for solving health problems is leaving the once deadly (but now tamed to a significant degree) infectious diseases and turning toward other morbidity and mortality problems. The epidemiologic transition (Broudy and May, 1983) has made behavior-related health problems more obvious and more important on the list of health priorities. Alcohol abuse and related behavioral health concerns are now issues that can be discussed and eventually addressed in a number of Indian communities (IHS, 1986). The recent OSAP (1990) evaluation of Indian drug abuse programs concludes by calling for more comprehensive, community-based prevention programs that are rigorously evaluated.

The overview articles and monographs in figure 9-3 are excellent at putting forth the rationale and philosophy of primary prevention. The Rhoades, et al. (1988) article and, more particularly, the Indian Health Service (1986) monograph are in many ways a call to commence broader programs of prevention, particularly those that emphasize primary prevention via community change. Getting a large and complicated bureaucracy such as the Indian Health Service moving forcefully in this direction for alcohol abuse prevention, however, will take time. The May (1986) article calls for primary prevention of alcohol abuse, and particularly for a focus on reducing the toll of alcohol-related sequelae (mortality and morbidity) through social policy, environmental change, and broad-based action. The OSAP (1990) monograph's strengths and conclusions were presented in an earlier section, but the concluding emphasis of this work is on primary and comprehensive prevention. Mail (1985) lays out a rationale and several specific considerations for primary prevention initiatives in Indian communities, and the Mail and Wright (1989) piece says that successful prevention programs will have

to come from the communities themselves (see also Beauvais and LaBoueff, 1985). Marum (1988) describes this community generating process with one program in Alaska.

The last overview piece listed, by Maynard and Twiss (1970), was a piece far ahead of its time. From the pilot, model community mental health program at Pine Ridge, South Dakota (1966-the 1970s), a vast amount of research was generated on social and environmental conditions that were related to mental health, drug abuse, and other health and behavioral health conditions. This monograph is a summary of much of those studies. It details the historical, demographic, economic, social, and cultural conditions among the Oglala Lakota (Sioux) at Pine Ridge and analyzes their significance for behavioral health. A large part of the concern are the topics of alcohol and drug abuse. Each section of the monograph concludes with several suggestions for prevention, most of them primary level, as they involve community-wide, structural issues. As a monograph on the primary prevention of mental health and drug abuse problems among Indians, it is extensive and has no peers. It is unfortunately out of print, but might easily be resurrected and reprinted by an appropriate Federal or tribal agency. Too often the behavioral health sciences lack a memory or do not build on previous endeavors.

Four pieces listed in figure 9-3 relate to the prevention or control of alcohol-related injury. The May (1989b) article is a literature review that documents the close tie between alcohol and motor vehicle deaths and injuries and outlines a variety of suggestions for primary prevention. Similarly, the Smith (1991) and IHS (1990) documents outline specific strategies for prevention of all types of injury and present detailed data to guide and support these efforts. Finally, the Macedo (1988) article provides a primary prevention perspective on whole communities that are "injured" and traumatized by modern forces, particularly alcohol abuse, and the paradigm for recovery.

Fetal Alcohol Syndrome (FAS) has been upheld by many as the perfect "spark" or "motivating" topic for primary prevention among Indians (May, 1986). Some would say that Indian communities and some Indian organizations are leading the way in the area of FAS prevention. The three articles on FAS prevention in

figure 9-3 are all examples of using public education, awareness, research, and some diagnostic clinic work to change the primary perceptions and behaviors around this issue. It will be interesting in the coming years to evaluate the long-term effects of prevention programs in some communities that participated in the first FAS prevention efforts.

The final primary prevention area is that of alcohol control policy and laws. Though some scholars have suggested new laws such as legalization of alcohol sales on reservations (Stewart, 1964; Dozier, 1966; Price, 1975), alcohol policy has rarely been used for preventing alcohol-abuse problems. The earlier policy-oriented works in figure 9-3 generally address the issue from a polarized and simplistic legalization vs. prohibition perspective. More recent articles, however, emphasize alcohol policy as a complex web of specific provisions that must be tailored or matched to the tribal community or border towns involved.

All of the above pieces call for primary prevention to be made in a comprehensive, community-generated way. Other communities throughout the world have done so, and some have shown the efficacy of this approach to alcohol issues in a number of settings (Yates and Hebblethwaite, 1983; Beauchamp, 1980, 1990; Institute of Medicine, 1989; Moore and Gerstein, 1981; NIAAA, 1990, Chapter 9; Holder and Stoil, 1988; Pittman and White, 1991). It seems that the non-Indian literature could hold great promise for Indians as well. New community definitions and policy need to find their way further into both research on Indians and application in Indian communities.

While the theoretical worth of community-wide policy and normative change is immense, implementing such change is treacherous and slow. As Gordis (1991) has pointed out, going from science to social policy is an "uncertain road," highly influenced by the types of scientific evidence, cultural and social influences, timing, and many other factors. Similar or even greater pitfalls have been recorded in many Indian and Alaska Native communities (Levy and Kunitz, 1981; Foulks, 1989; Manson, 1989). The nature of the research, the specific research topic, the focus, and the method of scientific approach are all vital and must be matched with the community. Further, the role of the

researcher is very important (Beauvais and Trimble, 1992) and must be one of sensitivity and cooperation.

The Alcohol Abuse Problem That Comprehensive Prevention Must Address

So much has been written on the problem of alcohol and American Indians, both popular and scholarly, that it seems almost absurd to write any more on the scope of the problem. Unfortunately, however, much of what is written on the magnitude, nature, and characteristics of the problem is too general, not critical, and most importantly, not useful for targeted, public health prevention programs. Often the literature that is presented in alcohol epidemiology is too general. Usual presentations indicate that the problem is of great magnitude among Indians, it is out of control, and solutions are elusive. This "Oh, my gosh, ain't it awful" approach is still with us today, and it may lead to a "we gotta do *something*" program. However, more specific targeting is needed for: particular alcohol abuse and alcohol-related problems; specific high risk groups and abusive peer clusters; and particular host, agent, and environmental interventions. This section will briefly address the scope of these issues.

It should suffice here to review the latest mortality for the various Indian regions and to redirect some common approaches and understandings about alcohol and Indians. Therefore, the following data presentation will attempt to present mortality data in ways in which they are rarely addressed. The purpose is to raise the issue of adapting data collection and analysis most closely to the overall needs of prevention and social policy for broad and comprehensive community public health initiatives.

Alcohol and other drug abuse take a disproportionate toll among most groups of Indians and Alaska Natives in the Western United States as compared with both the United States averages and the average of the Western States in which Indians live. In table 9-1 some relevant and most current mortality data are summarized for Indians and Alaska Natives by age and sex-

specific categories. Without dwelling on the details in the text, one can conclude that the national Indian figures indicate higher rates of alcohol-related death for both Indian males and females in most age categories than found in United States averages. This is especially true for alcoholism deaths for both males and females in all age groups, but the ratio of Indian to non-Indian is highest in the ages before 45 years. Indian males have higher rates of death than Indian females for all types of alcohol-involved causes and in all age groups. Nevertheless, Indian females still have a substantial problem that cannot be ignored by prevention and treatment programs. For example, when Indian females aged 25 to 34 years are compared with non-Indian females for alcohol-involved causes, Indian females die 1.4 to 12.0 times more frequently, and chronic consumption is the most important style of drinking to address for improvement of female rates and causes of death.

Indian males also have higher rates of alcohol-involved death than other United States males in every age and cause category except suicide in the older age groups. In the age group 25–34, for example, Indian males die 2.8 times more frequently from motor vehicle crashes, 2.7 times more from other accidents, 2.0 more from suicide, 1.9 times more from homicide, and 6.8 times more frequently from alcoholism (alcohol dependence syndrome, alcoholic psychosis, and chronic liver disease and alcoholic cirrhosis). While these rates and ratios are insightful, they only tell part of the story that is useful for prevention planning.

In the far right-hand section of table 9-1, the **actual number** of deaths (not rates) from these causes is given for all Indians and Alaska Natives. For 1986 through 1988, motor vehicle and other accidents, suicide, homicide, and alcoholism caused 4,307 deaths for males and 1,474 deaths for females for a total of 5,781 deaths. Using an approximation of alcohol involvement that has been gleaned from the Indian and non-Indian alcohol literature (see May, 1989a, or May, 1992, for the methodology), the far right column provides an estimate of the extent of alcohol-involved death.[3] A total of 2,705 male deaths and 951 female deaths are estimated to have been alcohol-involved in these three years. Of the total of 21,943 Indian and Alaska Native deaths from all

causes in these years, 17.5% were, therefore, alcohol-involved. The differential, however, is very great between Indian males and females. Among Indian males, 26.5% of all deaths were alcohol-involved, while it was 13.2% for females. This translates to a ratio of 2.84 alcohol-involved male deaths to 1 female death, which is twice the ratio for non-alcohol-involved death (1.42 to 1).

In summary of table 9-1, the reader can conclude that: Indian males have a greater problem with alcohol-involved death (both rates and absolute numbers) than Indian females; the alcohol-involved mortality data are worse for both Native males and females than for the average United States statistics for most every alcohol-involved cause; and the disparity between Indians and the United States general population is greatest in the younger age groups (see also May, 1989a, 1986). The need, therefore, for preventing alcohol-involved problems is one of a different magnitude, it has very different age and gender implications, and it may require slightly different approaches than among the general United States population.

In order to focus prevention efforts on priorities based on alcohol-related mortality, programs and funding would have to change from what they are today. Below, the data will help explicate the priorities as indicated by mortality data.

From the absolute number of deaths in table 9-1, the highest priorities for males of all ages would be alcohol-involved motor vehicle accidents (N = 944) and alcoholism (N = 649), with other problems ranked less important. For females the priorities would be the same, but the disparity between motor vehicle accident deaths and alcoholism deaths is not as great (1.25 to 1) as it is with males (1.45 to 1). Furthermore, using similar and much more detailed analyses for particular age groups or particular communities, one could target specific and delimited secondary and tertiary prevention much more precisely than it is usually done. For example, analysis of actual deaths among Indian males under 25 or even 35 years of age would certainly emphasize that alcohol-related accidents, suicides, and homicides are of far greater concern in number of deaths than are other alcohol-related causes. One must also keep in mind that in some Indian communities the data would indicate that the priorities should

Table 9-1. Estimated Alcohol-Involved Causes of Death for U.S. Indians and Alaska Natives (1986–1988)** and the U.S. General Population (1987) by Age, Sex, Rates per 100,000, and Number

Cause of Death	RATES																		NUMBER		
	15–24			25–34			35–44			45–54			55–64			65–74			Total × Deaths (all ages)	Est. = % alcohol-involved	Total alcohol-involved (all ages)
	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio			
MALE																					
MV Accident	97.0	55.5	1.7	104.7	36.8	2.8	86.2	25.6	3.4	65.7	21.8	3.0	52.2	21.7	2.4	65.6	24.6	2.7	1452	(65%)	944
Other Accdt	42.5	18.6	2.3	63.5	23.6	2.7	77.1	23.8	32.	59.9	23.4	2.6	82.3	30.3	2.7	113.0	42.6	2.7	1139	(25%)	285
Suicide	40.7	21.3	1.9	49.6	24.8	2.0	30.3	22.9	1.3	21.7	23.8	0.9	.12.2	26.6	0.5	16.7	34.8	0.5	546	(75%)	410
Homicide	32.1	21.9	1.5	44.7	23.3	1.9	38.6	17.1	2.3	19.4	12.1	1.6	13.0	8.8	1.5	12.6	6.2	2.0	521	(80%)	417
Alcoholism*	0.8	0.1	8.0	21.8	3.2	6.8	65.6	12.9	5.1	98.6	24.4	4.0	95.4	33.1	2.9	79.5	27.0	2.9	649	(100%)	649
										Total deaths for above causes									4307		2705
										% of all Indian deaths									19.6%		12.3%
										% of all male Indian deaths									42.1%		26.5%
FEMALE																					
MV accident	30.7	19.7	1.6	39.5	11.5	3.4	32.2	9.3	3.5	27.8	9.2	3.0	18.3	10.2	1.8	17.7	13.7	1.3	577	(65%)	375
Other accdt	8.2	3.5	2.3	13.1	4.8	2.7	16.9	5.2	3.3	13.3	6.4	2.1	22.8	10.6	2.2	43.7	21.1	2.1	358	(25%)	90
Suicide	6.5	4.3	1.5	8.3	5.9	1.4	9.3	7.2	1.3	5.0	8.5	0.6	4.6	7.7	0.6	2.4	7.2	0.3	107	(75%)	80
Homicide	10.2	6.0	1.7	10.4	6.9	1.5	9.3	4.8	1.9	4.4	3.6	1.2	4.6	2.5	1.8	1.2	2.8	0.4	132	(80%)	106
Alcoholism*	1.2	0.1	12.0	16.8	1.4	12.0	25.1	4.2	8.4	57.3	7.6	7.5	50.2	9.4	5.3	20.1	7.3	2.8	300	(100%)	300
										Total deaths for above causes									1474		951
										% of all Indian deaths									6.7%		4.3%
										% of all female Indian deaths									20.5%		13.2%

*Alcoholism deaths include the following causes: alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

**Includes all Indian and Alaska Natives in all parts of the 32 reservation states served by IHS (total deaths in reservation states 1986–1988 = 21,943).

Source: Computed from U.S. Indian Health Service, 1991a.

be very different from the national Indian trends shown above. Local data analysis and planning are vital for tailoring of prevention programs.

To make a further distinction about the pattern of alcohol-involved mortality among Indians, table 9-2 is also concerned with the different causes of death by rate, number of deaths, and similar estimates of alcohol involvement applied to both Indians and the United States for 1986–88 and 1987 respectively. Considering the rates in the left-hand portion of table 9-2, one can see that the age-adjusted rates per 100,000 for United States Indians are higher (1.53 to 5.45) than general United States population rates for all five alcohol-involved causes. In fact, the overall rate for these five causes of death is 2.79 times that of the United States averages. In the middle section of table 9-2, the actual number of deaths for these causes is presented. For United States Indians the five causes that are frequently alcohol-involved accounted for 4,735 (17.2%) of all Indian deaths for 1986–1988. When the estimates of actual alcohol involvement from the far left column of the table are applied to each cause, the magnitude of alcohol involvement is 2,955 deaths, or 17.0% of all Indian mortality. This compares with the overall United States figures of 7.7% for the same causes and 4.7% estimated as definitely alcohol-related.[4] Therefore, the alcohol-involved mortality, as measured by rate and as a percentage of all deaths, is currently a greater health problem in Indian Country. This is obviously consistent with sex-specific data presented in table 9-1.

The Indian Health Service, Office of Planning Evaluation and Legislation, in recent years has attempted to correct for possible misidentification of Indian deaths in some areas of the country by basing some of its data breakdowns on only 9 of the 12 service areas.[5] This may yield a more accurate accounting of the true size of the problem as it exists in the more traditional reservation areas and isolated Western States. It may also be more representative of reservations and Native communities where conditions are different from major United States population concentrations, and where data are more complete. In the far right of table 9-2, these alternate data are presented. In these rates, deaths, and percentages based on the nine service areas, it is shown that the

ratio of alcohol-involved deaths (Indian vs. the United States population) is even higher than in the previous comparison (3.69), and the estimate of alcohol-involved deaths as a percent of total Indian deaths is 19.0% as compared to 4.7% for the overall United States population.

A final distinction from table 9-2 is very important for planning and prevention (see Westermeyer, 1976). This is the classification of different types or categories of alcohol-involved death (see also IOM, 1990). In the table, deaths are divided according to predominantly alcohol-abusive (sporadic alcohol use) and predominantly alcohol-specific (chronic alcoholism) deaths. Of the four causes of death listed in the upper part of the table, the alcohol-abusive causes (accidents, suicide, and homicide), are estimated to cause substantially more mortality than the alcohol-specific. In the total Indian comparison, the alcohol-abusive causes accounted for 2,213 deaths in 1986–1988, and the alcohol-specific caused 742 deaths. The percentages are: alcohol-abusive = 74.9%; alcohol-specific = 25.1% of all Indian alcohol-involved deaths. In the nine-area comparison the data are virtually the same: 1,678 (74.3%) for the alcohol-abusive and 580 (25.7%) for the alcohol-specific. In the general United States population (1987) the percentages are slightly different, 83.9% alcohol-abusive (N = 83,133) and 16.1% (N = 15,909) alcohol-specific (see table 9-2).

The real significance of the above data to prevention and intervention is great. The simple message is this: Alcoholism per se is not really the leading or number one health problem among Indians. *We would be much more accurate in stating that alcohol abuse and alcoholism (both sporadic and chronic consumption) combine to form the leading health problem among Indians.* If health and public health professionals and citizens focus solely on chronic alcohol consumptive behaviors (Indian anxiety drinkers), then up to three-fourths of the problem is ignored. This is also true for the overall United States population. *Prevention efforts, therefore, must embrace all alcoholic and alcohol-abusive behaviors.* Additionally, special prevention initiatives need to be aimed at the specific and particular characteristics of each type of alcohol-involved death. One cannot expect to improve all types of alco-

Table 9-2. Age-Adjusted Mortality (rates per 100,000) and Total Estimated Deaths* from Alcoholism** (Alcohol-Specific) and Alcohol-Abusive Causes for the U.S. General Population, 1987, and Indian Health Service Population, 1986–1988.

CAUSE OF DEATH	Estimated & Alcohol-Involved	All IHS Areas (Rate)	All U.S. (Rate)	Ratio IHS/US	Total Indian Deaths (Number)	Total Indian Alcohol-Involved Deaths (Number)	Total U.S. Deaths (Number)	Total U.S. Alcohol-Involved Deaths (Number)	Nine IHS*** Areas (Rate)	Ratio Nine Areas/U.S.	Total Deaths in 9 Areas (Number)	Total Alcohol-Involved in 9 Areas (Number)
ALCOHOL-ABUSIVE												
Accidents												
Motor Vehicle	65	57.5	19.5	2.95	1687	1087	48,290	31,389	75.2	3.89	1303	847
Other	25	45.5	15.2	2.99	1278	320	46,730	11,683	61.5	4.05	998	250
Suicide	75	17.9	11.7	1.53	534	401	30,798	23,099	22.8	1.95	403	302
Homicide	80	16.9	8.6	1.97	494	395	21,203	16,962	20.1	2.34	349	279
SUB-TOTAL (Abusive Deaths)	—	(137.8)	(55.0)	(2.51)	(3993)	(2213)	(147,021)	(83,133)	(179.6)	(3.26)	(3053)	(1678)
ALCOHOLISM** (Alcohol-Specific)	100	(32.7)	(6.0)	(5.45)	(742)	(742)	(15,909)	(15,909)	(45.8)	(7.63)	(580)	(580)
TOTAL (Abusive & Alcoholic)	—	170.5	61.0	2.79	4735	2955	162,930	99,042	225.4	3.69	3633	2258
SUMMARY OF ABOVE Deaths as a percent of total deaths (U.S. Total = 2,123,323 IHS = 17,409 9 Area IHS = 11,861	—	—	—	—	27.2%	17.0%	7.7%	4.7%	—	—	30.6%	19.0%

*Includes deaths of Indian and Alaska Natives only within those counties within reservation states where IHS maintains services. This, however, is the vast majority of all Indian deaths in Western States.

**Alcoholism deaths for both U.S. and I.H.S. rates include the following causes: Alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

***These nine areas are the ones which I.H.S. cites as not having major problems with under-reporting of Indian deaths. They are: Aberdeen (SD, ND, NE), Alaska (AK), Albuquerque (NM, CO), Bemidji (MN, MI), Billings (MT, WY), Nashville (ME, NY, NC, MS, FL, LA), Navajo (AZ, NM, UT), Phoenix (AZ, UT, NV) and Tucson Southern AZ). Not included in the nine areas because of reporting problems are: California (CA), Oklahoma (OK, KS) and Portland (WA, OR).

Source: Computed from U.S. Indian Health Service (1991b).

hol-involved death with a single type of initiative. Because alcohol-related problems are heterogeneous, multiple measures, techniques, and approaches of prevention and treatment are necessary to alleviate the extant problems.

The final table, table 9-3, presents data for the 12 different IHS service areas. This table could be considered a prototype for specific areas or specific communities to use for planning targeted prevention. It documents alcohol-involved causes by type, gives an estimate of the alcohol-relatedness of deaths in proportion to all deaths, and allows comparison of rates with the United States population and the total Indian population. Similar tables utilizing age and sex breakdown and local area-specific information, comparisons, calculations, analyses, and other considerations (e.g., types and locations of alcohol-involved crash deaths) could and should also be generated. Such local data constructions and analyses would be valuable for targeting specific prevention and intervention measures in a reservation or local community. Too often prevention efforts have not been built on the use of highly focused data, particularly locale-based data.

A summary of the significant information in table 9-3 is important. First, the areas vary widely in their experience with alcohol-involved mortality. The highest rates of alcohol-involved deaths are found in Tucson, Aberdeen, Phoenix, Navajo, and Billings, and the lowest in Oklahoma, California, and Nashville. Second, the areas have varying rates of the different kinds of deaths. For example, some have high rates of both alcohol-abusive and alcohol-specific (alcoholism) causes (Aberdeen, Albuquerque, Billings, Tucson, and Phoenix). Other areas (Nashville) have low rates of both alcohol-abusive and alcohol-specific deaths. Some other areas, as IHS reports indicate (1990), may be affected by under-reporting (California, Oklahoma, and Portland). Finally, others have an unequal mix of alcohol-abusive and alcohol-specific deaths (Alaska and Navajo), where the alcohol-abusive deaths far exceed the incidence of alcohol-specific. Third, the percentage of deaths that are alcohol-involved varies by area, from 8.3% to 22.4%. Therefore, variation in alcohol-involved behaviors does vary greatly from one reservation or community

to the next (see May, 1982, 1989a, 1992). Prevention efforts must adapt to these variations when planning for, or dealing with, alcohol problems from a community-wide, public health perspective.

Etiological Considerations Vital to Indian Prevention

Several variables have been explored to determine and explain the etiology of Indian rates and patterns of alcohol-involved behavior and mortality. Standard demographic variables explain some alcohol-involved problems in ways that tend to demystify Indian behavior and are therefore very useful for prevention.

First, factors such as the age of the population are very influential on alcohol-involved behavior. Because the average (median) age of the population of Indians in general, and particularly among some Western tribes, is below that of both the general United States population and the Western States, one would expect higher crude death rates from certain behavioral causes such as alcohol-involved accidents and violence (May, 1986, 1989a; May and Smith, 1988; Broudy and May, 1983; May, 1982b). Therefore the Indian causes of death reflect those typical of youthful populations. Prevention must therefore be geared to the high-risk peer clusters of younger Indian people. School-based programs only address part of the population and the problem, for the bulk of the morbidity, mortality, arrests, and problems occur among those who are not in school because or age and other reasons.

Second, most reservation and Western Indians (the bulk of the IHS service population) live in rural areas that have a low population density. This also elevates the rates of certain causes of death such as accidents and violence. Long distances to health care and emergency medical system response times in rural areas cause up to four times as much death from injuries as from similar injuries occurring close to a hospital (Waller, et al., 1964). Therefore, prevention in the environment needs to be addressed through highway engineering, motor vehicle policy, emergency medical care, health education programs appropriate for rural Indian lifestyles, and other issues.

Table 9-3. Area-Specific, Age-Adjusted Mortality (rates per 100,000) and Total Estimated Deaths for Alcoholism and Alcohol-Abusive Causes for the Indian Health Service Population, 1986–1988.

CAUSE OF DEATH LD	APPROX ALCOHOL INVOLVE	ALL IHS AREAS	TOTAL US	ABERDEEN	ALASKA	ALBUQUERQUE	BEMIDJI	BILLINGS	CALIFORNIA	NASHVILLE	NAVAJO	OKLAHOMA	PHOENIX	PORTLAND	TUSCON
ALCOHOL-ABUSIVE															
Accidents															
Motor Vehicle	65%	57.5	19.5	69.7	32.6	83.6	49.6	82.2	32.5	47.6	97.9	26.2	81.5	48.4	138.0
Other	25%	45.5	15.2	59.3	120.8	36.6	49.7	57.2	18.1	24.9	62.9	18.6	4.73	43.2	81.9
Suicide	75%	17.9	11.7	25.1	32.4	28.3	16.2	30.7	9.2	9.7	16.3	7.8	27.1	20.7	19.3
Homicide	80%	16.9	8.6	24.6	15.5	11.1	15.7	30.0	10.7	7.8	22.2	11.9	26.5	17.6	36.6
SUB-TOTAL - Abusive	—	(137.8)	(55.0)	(178.7)	(210.3)	(159.6)	(131.2)	(200.1)	(70.5)	(89.9)	(199.3)	(64.5)	(182.4)	(129.9)	(275.8)
		(55.0)													
ALCOHOLISM*	100%	(32.7)	(6.0)	(69.9)	(22.5)	(56.4)	(32.8)	(57.8)	(15.2)	(24.3)	(36.6)	(9.5)	(64.5)	(39.5)	(66.6)
TOTAL RATE OF		170.5		248.6	232.8	216.0	164.0	257.9	85.7	114.2	235.9	74.0	246.9	169.4	342.4
Alcohol-Involved Death		61.0													
(Rank)				(3)	(6)	(7)	(9)	(2)	(11)	(10)	(5)	(12)	(4)	(8)	(1)
Total Estimated Alcohol-Involved Deaths (N)				306	230	194	131	189	128	77	629	263	402	305	100
TOTAL DEATHS (N)				1837	1557	868	1008	961	771	632	2722	3155	1797	1622	479
Alcohol-Involved Deaths		17.0%		16.7	14.8	22.4	12.9	19.6	12.2	23.1	8.3	22.3	19.3	20.9	
as a Percent of Total		4.7%													
Deaths in Area															
(Rank)				(7)	(9)	(2)	(10)	(5)	(8)	(11)	(1)	(12)	(3)	(6)	(4)

*Alcoholism deaths for both U.S. and I.H.S. rates include the following causes: alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

**These nine areas are the ones which I.H.S. cites as not having major problems with under-reporting of Indian deaths. They are: Aberdeen (SD, ND, NE), Alaska (AK), Albuquerque (NM, CO), Bemidji (MN, MI), Billings (MT, WY), Nashville (ME, NY, NC, MS, FL, LA), Navajo (AZ, NM, UT), Phoenix (AZ, UT, NV) and Tucson (Southern AZ). Not included in the nine areas because of reporting problems are: California (CA), Oklahoma (OK, KS) and Portland (WA, OR).

Source: Computed from U.S. Indian Health Service (1991b).

Third, the cultural, social, and behavioral differences of the tribal and Indian sub-populations throughout the United States must also be considered, for they cause variance in the death patterns of some alcohol-related conditions such as cirrhosis of the liver, violence, and other causes of death (see Levy and Kunitz, 1974; Broudy and May, 1983; Katz and May, 1980; May, 1986, 1989a, 1989b; Van Winkle and May, 1986). As was shown in Tables 9-1–9-3, American Indian groups have different patterns of sickness and death for many alcohol-related causes from those of non-Indians. There is also aggregate variation between tribes and communities due to variations in particular social and cultural traits, norms, values, or laws.

Finally, and most important for this paper, alcohol policy directed at Indians has been rather unique. The historical influence of alcohol policy directed at Indians has produced particular patterns of drinking and mortality that are still evident today (Dozier, 1966; May, 1976, 1986, 1992). Knowing and understanding these factors are important in intervention and prevention planning. Etiological knowledge is very important and should be pursued as part of prevention activity. Gaining knowledge of cause, particularly as manifested in local Indian communities, is truly a key in picking and/or designing the proper prevention approaches. Without such knowledge, or a pursuit of such knowledge, prevention efforts or programs may not be effective. Furthermore, it is my experience that the pursuit of scientific notions of pattern, cause, and knowledge gain is very stimulating to prevention activities.

The above discussion of the problem of alcohol abuse among Indians is intended as a limited overview of mortality only. It is, however, one tailored to the needs of broadly focused prevention. Mortality provides excellent data for indicating problems from which to start prevention, for it is one of the few alcohol-involved outcomes that produce unduplicated counts.[6] It is also a type of data which is quite complete and less complicated by agency or local peculiarities. Arrests, morbidity, and health and social service program data all have the problem of aggregating multiple episodes or visits for a limited number of individuals. The data generated by these individuals might

appear to be a much larger number and therefore a larger, less specific, and different problem than that which needs to be addressed.

Discussion: The Orientation and Content of a Community Alcohol Abuse Prevention Program

In closing this paper a summary discussion is in order. What should be done for the prevention of alcohol abuse in an Indian community? Mohatt and Blue (1982) relate the following anecdote:

Peter Kelly, Chief of the Sabaskong Reserve in northwestern Ontario, has concluded that everyone studies the Indian to find out what is wrong, but that nobody does anything about it.

The literature summarized in this paper shows that programs are attempting to do something about it. The goal of the future should be to undertake comprehensive, community-wide efforts for alcohol abuse prevention.

A Public Health Perspective

A comprehensive community approach to prevention must focus on a *public health perspective*. In a public health approach the goal is to apply comprehensive strategies and programs that reduce the rates of affliction and early death among total groups and aggregates of individuals (Beauchamp, 1980). Often the target would be all people on a particular reservation and in border towns nearby. The focus therefore is on communities and particular geographic areas and *not* on individuals. Further, no one type of alcohol abuse prevention should be championed, but various programs and approaches should fit together in a mutually supportive and beneficial manner (May, 1992). This is not unlike the analogy of a patchwork quilt. Therefore, primary, secondary, and tertiary levels of prevention dealing with a variety of the alcohol-involved behaviors would all be utilized and coordinated (see Manson, Tatum, and Dinges, 1982; Bloom, 1981; May, 1992). All of the various programs described in this paper, then, are

not at all mutually exclusive, but can be mutually supportive if orchestrated by a comprehensive community-wide plan and approach. Once the problems and priorities of a community are set from research, data analysis, and local wisdom, the proper set of programs and approaches can be established drawing heavily on the literature presented here. A community will want/need to have some prevention programs of all levels (primary, secondary, and tertiary) in place, along with health and drug abuse treatment programs. Communities will also need to plan for monitoring or evaluation the outcome of their efforts.

In the past there have been studies on how some Indian communities have been destroyed by adverse forms of modernization and change, and how alcoholism has served as a major co-factor in the negative process (Maynard and Twiss; 1970; Shkilnyk, 1985). On the other hand, Alkali Lake and other experiences raise the hope for, and expectations of, the healing process (Ward, 1984; Fox, et al., 1984; Macedo, 1988). Comprehensive alcohol abuse prevention programs can be a major vehicle in the process. Below is a summary of the general considerations that the literature cites as important in prevention among Indian communities.

Cultural and Local Community Relevance

Prevention programs that are carried out in Indian country must be designed in a way that allows the content of the program to be shaped and molded to fit the tribal culture. Further, prevention programs must help the tribe in their efforts of empowerment (Beauvais and LaBoueff, 1985). Prevention programs can be initiated by outside "experts" working with tribal leaders, but the continuation and entrenchment of the activities must be carried on by individuals in the local community (OSAP, 1990). This does not mean that prevention plans cannot be designed for one tribe and then transferred to others. It means that programs should be made relevant to local norms, values, and conditions through particular, culturally sensitive adaptations (May and Hymbaugh, 1989). Many adjustments made for a particular tribe

or community can be very minor, and, while cultural specificity is important, it need not be a total obstacle either theoretically or politically.

Policy Considerations

Alcohol and other drug abuse policy initiatives are approaches to prevention that have been infrequently addressed or tried in the past (May and Smith, 1988). Alcohol policies of prescription are extremely rare, for the norm on most reservations is self-imposed proscription (May, 1977). Most tribal alcohol statutes are not very specific in their provisions for the control and enforcement of alcohol or prescription of behavior once a person has been drinking. Further, the informal norms that surround drinking behavior in many Indian peer groups and communities are not serving the best interests of either individuals or the masses. Normative expectations, therefore, need to be considered in prevention efforts. Specific and detailed policy designed to shape alcohol-related behavior has rarely been undertaken for a variety of reasons (May, 1986, 1992). Because most reservations are under prohibition, alcohol prevention efforts such as dram shop laws, bartender training, strict license provisions, tribal mandates, and situational drinking norms have seldom or never been used or researched for Indians on reservations or in other rural areas (May, 1976). Policy measures will very strongly support other prevention initiatives such as those that address the socio-cultural values of youths and other targeted drinkers (Newcomb and Bentler, 1989).

Programs to prevent alcohol and drug abuse among Indians must address both sporadic and binge use as well as chronic consumption (May, 1989a). As the data in this paper showed, Indians suffer twice as many deaths from alcohol-related accidents, suicide, and homicide as they do from indicators of chronic consumption such as cirrhosis of the liver, alcohol dependence syndrome, and alcoholic psychosis (OTA, 1986; IHS, 1991b). But age-adjusted rates of death for both chronic and sporadic abusive causes are above national average rates. This is particularly true on some very high-risk reservations in the Western United States.

Therefore, the actual programs must be tailored to the conditions of the particular community.

Alcohol Issues for Females

Among neglected and growing problems that must be addressed by prevention programs in the future is that of female alcohol and drug use. Prevalence of female drinking is growing rapidly in some tribes, and has been relatively high in others for some time (May and Smith, 1988; May, 1989a; Whittaker, 1962; 1982). Consequently, the cirrhosis death rate of Indian females is now about 50% that of Indian males. But the danger is that female alcohol problems will remain unrecognized or unaddressed, as in the past, with both Indians and other groups. Female alcoholism, particularly among those of childbearing age, has very grave implications for the future of major Indian groups (Dorris, 1989).

The Drunken Indian Stereotype and Prevention

Health education and prevention programs carried out in Indian country should address issues that are currently shrouded in the myth of the "Drunken Indian Stereotype." Many components of the myth are inaccurate (Westermeyer, 1974: Leland, 1976), and therefore may impede productive prevention planning and efforts (May and Smith, 1988; May, 1992). Prevention efforts cannot embrace, or fail to deal with, the scientifically inaccurate idea that Indians are so different biologically, culturally, or in other ways that they cannot benefit from the experience of other human beings. This, however, is a great challenge, for in some tribes like the Navajo, a majority (63%) of the people believe that Indians have a special physiological weakness to the effects of alcohol (May and Smith, 1988). A major deficit in the rate of alcohol metabolism or any other particular physiological predisposition to alcohol abuse has never been documented in the scientific literature to date (see Schaefer, 1981; Reed, 1985; or May, 1989a, for reviews).

Dealing with such misconceptions in a prevention program facilitates the transfer of many ideas and approaches for prevention. Once misconceptions and myth are examined with facts, many prevention strategies from mainstream and non-Indian populations can be transferred to Indian populations with only minor modification. As indicated in the literature review, many authors have concluded that social learning theory is quite generally applicable to solving problems of alcohol abuse among American Indian youths and adults (Bach and Bornstein, 1981; Winfree, et al., 1989; Sellers and Winfree, 1990). Knowledge and education-based programs that focus on correcting misconceptions and fostering new thinking about solutions are promising and may even be healing experiences (Beauvais and LaBoueff, 1985).

Indians generally know the negative consequences of alcohol quite well (May and Smith, 1988). But prevention efforts may have to work to reduce fatalism and to impart other, policy-relevant and action-specific information to initiate and entrench solutions. Prevention aimed at the presentation of knowledge on the adverse consequences of alcohol abuse alone will be of limited value. Prevention efforts designed to initiate specific, programmatic policy and community solutions are the thrust that might be taken in the future (OSAP, 1990). Prevention programs should begin with opinion and knowledge surveys of Indian adults in the target communities to assess the current conditions and traits. Then more relevant education and community-based programs will be forthcoming.

Strengthening Existing Institutions in Communities

A prevention program among Indians has to include plans for involving and strengthening the community and family. Indian families that are strong and well integrated produce children with better indicators of adjustment, and usually fewer indicators of deviance (Jensen, et al., 1977). Conversely, disorganized, multi-problem families have higher alcohol utilization and more health and deviance problems (Spivey, 1977; Lujan, et al., 1989). Community-wide programs can and must also serve to strengthen or mobilize a community in a number of ways.

Therefore, a complete prevention program in an Indian community must be built on the particular epidemiology of the area and be designed with local culture, norms, values, beliefs, and conditions in mind. Programs must aspire to research, understand, and decrease morbidity and mortality. Implementing programs of health education, policy initiatives, increasing community awareness of solutions, and initiatives designed to assist in norm clarification, definition, and prescription and proscription of behavior hold promise for prevention. Further, such efforts must be coordinated with a variety of health care and social service agencies, treatment programs, and criminal justice agencies.

Community mobilization, designed from within the community, seems to be the promise of the future in the prevention of alcohol and other drug abuse among Indians (May, Miller, and Wallerstein, in press). In spite of the extremely unfortunate treatment of Indians in North America in the past, most Indian communities have many cultural traditions, values, institutions, and structures that can add to or carry forward community-wide prevention initiatives. The research ideas and prevention techniques and proposals presented here can be meshed with tribal traditions to minimize the problems of alcohol abuse in the future.

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End Notes

1. **Primary prevention** is the promotion of health and elimination of alcohol abuse and its consequences through community-wide efforts, e.g., improving knowledge, the environment, and the social structure, norms, and values. **Secondary prevention** utilizes measures available to individuals and populations for early detection with high risk persons and groups (e.g., youth) and prompt and effective intervention to correct or minimize alcohol abuse in the earliest years of onset. **Tertiary prevention** consists of measures taken to reduce existing impairments and disabilities and minimize suffering caused by severe alcohol abuse or alcohol dependence (adapted from Last, 1983).
2. The reader who is even more interested in mental health issues, either independently or as they relate to drug abuse, should definitely consult Manson (1982) and OSAP (1990).
3. Actually this estimate may be conservative for Indians, for autopsy studies of motor accident victims that are in progress in New Mexico, by May, Bergdahl, Guerin, and others (See Bergdahl, 1991, and Guerin, 1991), show 70 to 85% alcohol involvement in Indian crashes. Further, other accidents might be 40% or more alcohol-involved in some areas.
4. Actually these estimates of alcohol involvement may overestimate U.S. alcohol-related deaths. For example, U.S. literature on suicide and homicide seldom indicates more than 50% alcohol-involvement for suicide or more than 70% for homicide. Further, motor vehicle accidents are usually reported as 50% alcohol-related in many states. Nevertheless, for consistency and to account for possible under-recording in various communities in the nation, these same alcohol-relatedness factors were used for both U.S. and U.S. Indian calculations.
5. These nine areas are: Aberdeen, Alaska, Albuquerque, Bemidji, Billings, Nashville, Navajo, Phoenix, and Tucson. Excluded are: California, Oklahoma, and Portland areas.
6. Mortality data for some causes of death and for states, cities and sub-populations of the United States might be less reliable than those produced for American Indians in western states. Factors such as incomplete or inaccurate classification of cause of death, missing data on alcohol relatedness, variation in coding by social class and other issues must be kept in mind and assessed when using mortality data from any group or community. Death data from the vital statistics should be cross-referenced with autopsy data, police data, state records and other sources when possible.