ALCOHOLISM, ALCOHOL ABUSE, AND HEALTH IN AMERICAN INDIANS AND ALASKA NATIVES

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Numerous indices of morbidity and mortality document the high risk of American Indians for alcohol-related problems. Indian Health Service (IHS) data reveal 4 of the top 10 causes of death among American Indians are attributable in large part to alcohol abuse: accidents, cirrhosis, suicides, and homicides (Department of Health & Human Services [DHHS], 1983; Raymond & Raymond, 1984). While there are many beliefs and stereotypes about the precursors of alcohol abuse and dependence, there is not yet sufficient data to identify specific factors which put individual American Indians at risk for alcohol problems. High rates of relapse and recidivism (Kivlahan, Walker, Donovan, & Mischke, 1985) indicate the acute need to better understand factors related to successful outcome for American Indian patients. To date, the predominant approach to intervention has been tertiary care (rehabilitation) for the chronic alcohol abuser. Raymond and Raymond's (1984) assessment of IHS-funded Community Alcohol Center Programs reveals that only 8% conducted any follow-ups in 1983. In addition, the research to date has focused upon the problem drinker and very little is known about factors which may serve to protect those who do not suffer from the biological, psychological, and social ravages of alcohol.

The Institute of Medicine's (IOM) recommendations on research needs in the field of alcohol use and abuse (Hamburg, Elliott, & Parron, 1982) identify a number of important gaps in our general understanding. Most of the recommendations in that chapter focus on the biological, physiological, and genetic aspects of alcohol abuse. The IOM report touched only briefly on the need to study the issues of early identification and intervention and did not address research needs in the area of treatment intervention and outcome.

While the Institute's recommendations are scientifically ambitious, the severity and extent of the problem among American Indians requires more immediate, pragmatic goals to counteract an epidemic. Toward that end, we review the specific research needs in American Indian and Alaska Native communities as related to: (a) epidemiology and natural history of alcohol use, (b) assessment and diagnostic indicators of alcohol misuse, (c) treatment intervention and outcome, and (d) prevention.

BEHAVIORAL HEALTH ISSUES AMONG AMERICAN INDIANS AND ALASKA NATIVES
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Epidemiology and Natural History

Morbidity and mortality data available from the IHS document alcohol-related problems of epidemic proportions: (a) In 1981, hospital discharge rates for Indian males and females with alcohol-related diagnoses were 3 times higher than for people in the United States as a whole and twice the rates for non-Caucasians, (b) Indians within the 15- to 44-year age group had acquired rates of alcohol-related discharge diagnoses 4 times that of the same group nationally, and (c) hospital discharge rates by alcohol-related diagnostic category (i.e., alcoholic psychosis, alcohol dependence, alcohol abuse, and liver disease) were all significantly higher than the rates for the general population (DHHS, 1983). The significant morbidity and mortality related to severe alcohol misuse, along with lack of access to appropriate social, medical, and economic services, may affect this population's productivity and ability to change the problems underlying alcohol misuse. All these issues, along with federal policy relating to American Indians, present a critical agenda for further research.

Diagnostic distinctions between alcohol abuse or dependence pose complex questions for the general population and often have been overlooked regarding American Indians. As Westermeyer, Walker, and Benton (1981) point out, there may be more Indians clustered at opposite poles of the consumption continuum of abstinence to chronic heavy use. According to the *Fifth Report to the U.S. Congress on Alcohol and Health* (DHHS, 1983), 10% of the U.S. population consumes 50% of the alcohol, and drinking surveys conducted in the 1970s indicate that one third of the general population of adults abstain, one third are light drinkers, and the final third are heavy drinkers (DHHS, 1983, pp. 2-3). Comparable survey data are unavailable for Indians, due to limited collection of incidence data. However, May (1982, p. 1189) reviews four studies which sampled alcohol use in Indian populations and describes their findings as follows: Standing Rock Sioux, 69% current users and 9-24% heavy users; Ute, 80% users and 26% "unusually heavy users;" Navajo, 30% users and 14% "Mulford's Type 5 drinkers" (heavy drinkers); and Ojibwa, 84% users and 42% drink 2 to 5 times each week.

The body of epidemiological knowledge for American Indians suffers from potential over-reporting in that "events" rather than "cases" (persons who may be involved in a number of events) are reported (Westermeyer, Walker, & Benton, 1981). With two exceptions, specifically Whittaker (1962) and Shore, Kinzie, Hampson and Pattison (1973), the literature on alcohol use among American Indians lacks adequate survey data on community-wide populations and subpopulations. Whittaker (1962) found a 31% prevalence of craving and a 29% prevalence of blackout among the Sioux, and Shore et al. (1973) found 27% of

their Northwest Coast sample were "habitual drinkers" and 4% "episodic excessive" drinkers. In a 20-year follow-up of the Sioux, Whittaker (1982) found that the prevalence of blackouts had increased to 62%.

Other epidemiological surveys of Indians include alcohol-related findings such as cirrhosis rates, sudden deaths, accidents, suicides, homicides, and arrest rates. Heath's (1983) review of this literature provides an excellent overview of the extent of present knowledge on these issues.

High rates of suicide and homicide are alarming when viewed collectively. However, at least in some areas, the individuals represented in these statistics are from relatively few families. For example, 90% of the suicides in a Shoshone-Bannock population are attributable to 5-10 families (Levy & Kunitz, 1981). What specifically leaves those families at high risk, and which factors protect the majority of the community?

Likewise, arrest data can reflect many repeat offenders who drink in public, drive under the influence of alcohol, etc. One wonders to what extent alcohol control policies contribute to those rates. May (1976) reports that more than half the reservations in Montana are "dry" due to tribal council decisions. Dry versus wet reservations could be natural settings for understanding the relationships of policy to arrests and accidents.

Our knowledge of the longitudinal development of alcohol problems among American Indians is very limited. Cooper (1983) states it is essential to identify the psychosocial factors which contribute to developing harmful drinking patterns. His literature review includes biological and physiological models, psychological models, and sociocultural models of causality, an organizing scheme adopted herein for reviewing the current level of knowledge on American Indians.

While some studies on sensitivity, metabolism, and genetic risk factors have included American Indians (Bennion & Li, 1976; Fenna, Mix, Shaefer, & Gilbert, 1971; Reed & Kalant, 1977; Rutstein & Veech, 1978; Wolff, 1972; Zeiner & Parades, 1978), available data are contradictory and inconclusive. Paradoxically, similar findings concerning sensitivity to alcohol are used to explain the low prevalence of alcohol problems among Asians and the high prevalence among American Indians (Wolff, 1973). Schaefer (1981, p. 106) recommends general population and large family studies as a "second generation" of metabolism research and thinks the interplay of these two types of study will help determine biopsychological or sociopsychological predispositions.

Studies of genetic factors involve significant methodological problems, especially with American Indians who adhere to various definitions of "family," only some of which follow Mendelian Law. While most studies have

investigated "pedigrees" of those known to suffer alcohol problems, information on those with positive family histories who do not suffer alcohol problems would provide much needed data on protective factors.

Psychological models of etiology include psychodynamic, personality trait, behavior learning, and stress models (Cooper, 1983). The psychodynamic formulation has been highly criticized because its hypothesized etiologic factors have been associated with a number of disorders. Of the many psychological models developed to account for deviant drinking behavior, few have been investigated within Indian samples. There is an emerging consensus that alcohol problems are multidimensional and multiply determined (Pattison, Sobell, & Sobell, 1977). The quest for "the alcoholic personality" has been all but abandoned in the general population, however, stereotypes of the Indian alcoholic persist (Leland, 1976; Schaefer, 1981). Given the limited longitudinal data on the natural history of various forms of alcohol problems in Indians, generalizations about etiology are premature. Future research on psychosocial factors in Indian alcohol abuse will benefit from the theory development that has received empirical support within other samples such as social modeling influences, the role of alcohol-related expectancies, individual differences for the effects of alcohol on response to stress response dampening, conflict models of alcohol-related disinhibition, the nature of alcohol as a reinforcer (Lindman, 1982; Taberner, 1980), attributional factors, etc. As Cooper (1983) points out, the stress model for the general population has been severely challenged by studies which indicate less drinking when "socially anxious" and no change in drinking pattern with increases or decreases in life stress. More recently, researchers have begun to look at alcohol as a reinforcer and its appeal for its excitatory effects (Small, 1984). Though the research on alcohol as reinforcer has focused on biological questions, alcohol as reinforcer may be a relevant component of Indian drinking behavior for recreational use, an essential element of Ferguson's stake theory (1976).

Sociocultural theories particularly attract those who study American Indians, because they focus upon environmental factors. Cahalan, Cisin, and Crossley (1969), Kilty (1978), Cooper (1983), and a sizable proportion of the available literature on American Indian alcohol problems emphasize the need to understand sociocultural variables in alcohol use. The conformity-deviance model of Jessor, Graves, Hanson, and Jessor (1968) and the deviance-social organization and "cultural legacy" model of Levy and Kunitz (1974) exemplify individual response to the environment. Graves (1967) reformulates the conformity-deviance model in terms of acculturation and suggests that it influences both psychological and social pressures and control for deviant drinking and social order. His study of Navajo in Denver focuses upon marginal economic conditions. He concludes that "the vast majority of Navajo

drunkenness, at least in Denver, can be accounted for without recourse to the fact that the subjects are Indians" (Graves, 1971, p. 307). Though he stated "no statistical significance will be presented..." (p. 290), Graves points out "social significance" and "patterns of association" and calls attention to the importance of socioeconomic variables (education, salary, status, etc.) in different patterns of alcohol use and alcohol-related consequences.

Wide cross-cultural variability in typical effects of alcohol on social behavior (e.g., aggression, sexual arousal) reveal the limited explanatory power of strict pharmacological models (McAndrew & Edgerton, 1969). Findings from social learning theory (Marlatt & Rohsenow, 1980) document the important influence of modeling and alcohol-related expectation on patterns of typical as well as experimental alcohol consumption. Evidence from studies using the balanced placebo design (Marlatt & Rohsenow, 1980) suggests that expectancies exert considerable influence over subjective experience of alcohol effects, independent of actual pharmacologic action. In addition, expectations concerning alcohol effects develop very early, suggesting that preventive interventions must begin before initial experiences with alcohol. Investigation of these psychosocial factors may help to clarify developmental processes related to alcohol problems, as well as to identify targets for preventive intervention that offer greater promise for modification than "inherited predispositions."

In light of the numerous sociocultural variables (e.g., economic, education, public law) affecting American Indians, one Institute of Medicine recommendation is particularly intriguing and ironic: to gather an "international perspective of the potential effects on drinking of public policy" (Hamburg et al., 1982, p. 96) using comparisons from different countries. Such research could be developed with the more than 400 American Indian tribal groups who constantly have to deal with state and federal public policy. The need for such a strategy is great and the IHS is ideally suited for the study.

Though multiple theoretical perspectives on the etiology of alcoholism exist, the body of our actual knowledge remains far from conclusive for the general population and further still for American Indians. Taken as a whole, available alcohol-related data indicate a severe problem for the conglomerate group of Indians. Very little is known about the natural history of alcohol use and abuse across tribal/cultural groups, about the continuum of abstinence to chronic heavy use, or about the sociodemographic elements which may predispose some groups and protect others. Much more needs to be learned about changes over time versus chronic progressive disease, "spontaneous remission" versus "unaided recovery" versus "maturing out" of problems. Research must seek to identify the dimensions for situational parameters and individual differences within which each of these processes are most likely to operate.

Assessment and Diagnosis

Since the disease model of alcoholism was introduced by Jellinek (1960) there has been increasing discussion of the continuum of alcohol problems with little basis for drawing categorical distinctions (e.g., any dependence symptoms in the past month versus the past year or a given number in the past month versus the past year). Sanchez-Craig and Isreal (1985) proposed studying the process of self-identification of "problem drinker" status, as well as assessment of community norms for non-problem drinking and/or need for treatment. Likewise, instruments designed to measure alcohol dependence symptoms have yet to be evaluated with American Indian groups. The continuum of dependence severity is documented in other samples (Skinner & Allen, 1982), but still raises difficult clinical and conceptual questions. For example, at what point does one fit into the dependence category?

The issues of assessment and diagnosis are complicated by a lack of validated criteria to distinguish between alcohol abuse and dependence. The *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* (1980) of the American Psychiatric Association and World Health Organization (WHO) (Edwards, Gross, Keller, Moser, & Room, 1977) criteria both emphasize this distinction but empirical support for its prognostic validity or implications for differential treatment are meager in general and nonexistent among Indians. While the Institute of Medicine (Hamburg et al., 1982) points out that existing screening tests lack validation on persons other than those defined as "alcoholics," such instruments developed for the population of alcoholics do not have established validity for American Indian alcoholics.

The epidemiologic evidence cited above documents the need to assess alcohol-related problems among American Indians in primary care medical or psychiatric settings. Within the framework of biological assessment, the *Fifth Report to the U.S. Congress on Alcohol and Health* (DHHS, 1983) indicates several laboratory screening tests for early detection and casefinding. These are the serum gammaglutamyl transpeptidase (GGTP), in conjunction with mean corpuscular volume (MCV) and several routine blood chemistries (e.g., serum total protein, albumen, calcium, phosphorous, cholesterol, uric acid, creatinine, total bilirubin, SGPT, SGOT, WBC, RBC, hemoglobin, hematocrit, etc.) (Ryback, Eckardt, Felsher, & Rawlings, 1982a; Ryback, Eckhardt, Rawlings, & Rosenthal, 1982b). Skinner and Allen (1982) report the validity of GGTP and MCV in screening medical patients. Given concerns about self-report of alcohol consumption in Indians, and the high incidence of alcohol dependence found in primary health care clinics, it is important to determine whether such independent data sources provide valid information in this population.

Evaluation Instruments

Several psychological instruments in use in the general population may be informative in clinical or research settings but are impractical for screening purposes. For example, test instruments to assess anxiety and depression, such as those developed by Zung (1965); Beck, Ward, Mendelson, Mock, and Erbaugh (1961); and Spielberger, Gorsuch, and Lushene (1970) are adequately standardized as long as the instructions for administration are followed. However, among Indians, these tests may be even less strongly related to clinical (DSM-III) depression than in Caucasians due to factors such as denial, lack of awareness of some of the symptom dimensions, different standards of "a lot," "somewhat," etc. The Minnesota Multiphasic Personality Inventory (MMPI) was administered to American Indians during its developmental stages (Hathaway & McKinley, 1951) and is reportedly the most frequently used psychometric instrument of the Indian Health Service, despite the lack of studies which establish Indian norms or its utility for screening purposes (McAndrew & Ceertsma, 1964).

The Alcohol Use Inventory (AUI) (Wanberg & Horn, 1983; Wanberg, Horn & Foster, 1977) is based on a multidimensional model for assessing alcoholism. Although developed on a predominantly Caucasian sample, the AUI is now used in several studies with American Indians. This 147-item self-report instrument yields empirically derived scales which measure perceived benefits, characteristic patterns, and negative consequences of alcohol use. Previous studies using the AUI in Indian samples have shown differential patterns between Indians and other ethnic groups (Jones-Saumty, Hochhaus, Dru, & Zeiner, 1983; Wanberg, Lewis, & Foster, 1978) as well as variability within samples of Indian drinkers (Jones-Saumty et al., 1983; Walker, Kivlahan, & Walker, 1984). Multidimensional studies are needed to challenge the prevalent stereotypes and "firewater myths" (Leland, 1976; Schaefer, 1981) about Indian drinking and may lead to identification of clinically meaningful subtypes of Indian patients with alcohol problems.

Within the realm of psychosocial screening tools, the Michigan Alcohol Screening Test (MAST) (Selzer, 1971; Brady, Faulks, Childress, & Pertschuck, 1982) has been the most investigated screening instrument with a demonstrated ability to differentiate between alcoholic and nonalcoholic men. The brief version of this instrument (BMAST) (Pokorny, Miller, & Kaplan, 1972) has been used in a broad-based Seattle project on alcohol abuse and treatment outcome with Indians. Initial analysis has found that the BMAST total score does not discriminate between abusers and nonabusers. One theory is that Indians subscribe to be abnormal drinkers and are seen by others to be not normal drinkers even if they abstain or drink very little. After the first two questions regarding whether or not an individual is a "normal" drinker are deleted from

analysis, the BMAST shows promise as an easily self-administered instrument with screening potential for Indian populations (Walker, Benjamin, Kivlahan, & Walker, in press). The BMAST will be analyzed more thoroughly for its utility as a screening instrument. As with all questions about alcohol-related problems, the intent of the BMAST questions is apparent and subject to processes of denial and falsification.

Alcohol Consumption

According to Armor and Polish (1982), alcohol consumption is one of the most difficult variables to measure accurately. This conclusion is consistent with the difficulties experienced in our work with American Indians in alcohol treatment programs, and with the findings of other alcohol researchers who indicate that self-report consumption measures suffer more validity problems than other indices of alcohol abuse (Midanik, 1982; Polich, 1982; Sobell & Sobell, 1975; Sobell, Sobell, & Vanderspek, 1979). Responses of our Indian sample to the Berkeley Quantity-Frequency Index (Cahalan et al., 1969) highlight some of the problems encountered when using survey measures of alcohol consumption. The Quantity-Frequency Index assumes several conditions that are unlikely to hold true for many of those in this sample. Therefore, it may yield misleading results in groups for which it is not applicable (Segal, 1983). For instance, it requires that drinking remain sufficiently consistent to be formed into an index of "typical" consumption, yet many drinkers in our sample report infrequent but intense binges occurring around payday, pow-wows, funerals, etc., where drinking may continue until no more alcohol is available. Second, the format asks for standard drink equivalents (glasses), an unfamiliar concept for those American Indians who share the bottle among a group. Third, the standard time frame used in such instruments may be less familiar and less relevant to Indian drinking than less exact periods such as seasons. While these same concerns may apply in clinical samples from other ethnic groups, our familiarity with the variability and complexity of drinking behavior within this Indian sample underscores the need for independent validation of this measure within this population.

Anxiety and Depression

Affective issues of anxiety and depression are commonly associated with alcohol dependence symptoms. Self-report instruments, for example, Zung Anxiety (1971) and Depression Scales (1965), State-Trait Anxiety Inventory (Spielberger, 1970), and the Beck Depression Inventory (1961), have not been

validated against diagnostic criteria. Thus their utility as screening or diagnostic tools for American Indian populations is an important, unanswered research question.

Standardized interviews are typically viewed as the criterion against which to validate other assessment techniques. The extent to which this is true in Indian samples is being investigated (Manson, Shore, Baron, Ackerson, & Neligh, in press; Manson, Shore, & Bloom, 1985; Manson, Shore, Bloom, Keepers, & Neligh, 1987) using the Diagnostic Interview Schedule (DIS). The primary focus of their investigation is on depression, but they are also examining alcohol abuse and the relationship between interview and self-report data.

Use of comprehensive interview protocols such as the DIS raise the important and largely unexplored issue of co-existing disorders. Poly-drug abuse is documented among Indian adolescents (May, 1982; Oetting & Beauvais, 1985; Oetting & Goldstein, 1978; Rachal et al., 1975) but unfortunately is ignored among adults in clinical settings. Depression commonly accompanies alcohol abuse (Schuckit, 1983), sometimes preceding the onset of alcohol problems while in other cases apparently following as a consequence of alcohol abuse. Very little is known about this relationship among American Indians despite the important implications it may have for appropriate intervention and for greater knowledge of the process underlying the alcohol problems.

Sociocultural Assessment

Any understanding of alcohol use and abuse with American Indians must include the sociocultural context, in conjunction with client characteristics along biological and psychological dimensions. The types of stressors listed in DSM-III, Axis V, may provide some useful guidance to relevant factors (e.g., conjugal, parenting, other interpersonal, occupational, living circumstances, financial, legal, physical illness, and injury). However, stressors may vary along ethnic lines (Walker, Kivlahan, & Walker, 1984) and conceivably along socioeconomic, tribal, and cultural lines within ethnic groups. The issue of community norms for alcohol use and behavior also needs to be addressed so the individual can be understood within the context of his or her environment.

A further set of unknowns involves the existence of alcoholic subtypes and the empirical identification of those subtypes. For example, how does the course of alcoholism in women differ from that in men? Leland's (1978) Nevada community ethnography discloses that women who are most heavily abusing alcohol are married to men who are also abusers, a relationship which has also been found in the general population (Gomberg, 1975). Women have been under-represented in research on alcoholism (Vannicelli, 1984) as have American Indian women (Leland, 1984). Weibel (1982) and Weisner,

Weibel-Orlando, and Long (1984) report that sex differences exist in alcohol use among Indians but little is known about the different reasons for drinking (e.g., celebration versus negative mood states), or different social consequences. Data is not available to assess whether individuals in the same environment manifest the same disorder.

Within cultures or tribes, it also seems that subtypes of the alcohol syndrome may exist. These subtypes may be similar or different, or perhaps clustered within given families while others within the same environment are protected. What is the history of alcohol use and alcohol-related problems within specific cultures or tribes and to what extent can community norms and expectations which contribute to excessive alcohol use be altered? What causes remission, and can protective and risk factors be determined? Spouse, family, and community adaptations to alcohol misuse and related problems may be enabling (an environment within which abusive drinking is given an opportunity and authorized or condoned) or protective (provide a shield against alcohol abuse and dependence). For example, failure to maintain family rituals in families of alcoholic parents has been associated with development of alcohol problems in offspring of Caucasians (Wolin, Bennett, Noonan, & Feitelbaum, 1980). Leland (1978) reports the behaviors of female spouses which allow the husband to continue to engage in abusive drinking. Whittaker (1982) reports sharing behavior of community members which allows the problem drinker to continue abusive drinking without negative consequences. Traditional values (such as sharing) seem to have become enmeshed with drinking behavior and thus enable the problem drinker to continue his/her abusive pattern. How can the valued behavior of sharing be directed to protecting from rather than enabling alcohol abuse?

Treatment Intervention and Outcome

"Theories of treatment should proceed from a clear understanding of the nature of the alcoholic client, his characteristics, the dilemmas he faces, and the choices he has to make" (Wallace, 1978, p. 43). Wallace also states that alcohol treatment programs seem to be developed and launched with "only the vaguest notion" which is "rather like putting the cart before the horse" (p. 43). A WHO comparative study of Poland, Finland, Switzerland, the Netherlands, Ireland, Canada (Ontario), and the U.S. (California) revealed a rapid expansion of alcohol treatment services in the late 1960s and early 1970s. "The expansion in treatment services occurred on similar lines regardless of the fact that the study societies have markedly different conceptions of alcohol problems. Common solutions were adopted for different problems" (Single, 1984, p. 251).

Within IHS, alcohol treatment programs seem to have followed patterns similar to the WHO study countries. Raymond and Raymond's (1984) evaluation of IHS alcohol treatment programs is replete with statements that programs are without a guiding philosophy of treatment. Of those few programs evaluated, there seems to be little direction to the assessment process and consequent structuring of treatment to meet individual client needs. Only 8% of those programs funded by IHS performed evaluation on outcome during 1983. Is treatment actually occurring, and if so, by what criteria are the programs administered and evaluated? Multidimensional criteria for measurement of successful treatment outcome must be consistent with community standards. Studies of relevant factors in the post-treatment environment and their impact upon outcome are also needed. Our present knowledge of treatment outcome is limited to those studies with the Chippewa (Westermeyer & Neider, 1984), the Navajo (Ferguson, 1970), and the Makah (Shore & Von Fumetti, 1972). Alcoholism treatment in those studies took place a decade ago and does not include any of the 177 IHS programs currently funded. Current alcoholism treatment programs exist on reservations and in rural and urban areas. The programs are established locally and use a wide array of treatment approaches. Most programs are integrated with selected portions of Alcoholics Anonymous precepts and principles along with traditional religion and activities to increase Indian identification and promote self-image. Although Westermeyer (1982) suggests few demonstrable differences exist between Indian specific and integrated treatment approaches, more research is needed in this area. The data thus far is sparse and there are no controlled studies.

Treatment Outcome

Early analysis of treatment outcome data among a sample of urban American Indian alcoholics in the Northwest indicates that subjects have multiple admissions at various treatment facilities, recidivism is the rule, and successful outcome is the rare exception despite extensive "treatment" (Walker et al., in press). It is essential to study those recovered patients to understand the role of treatment versus other factors which might contribute to successful outcome. The Raymond and Raymond report (1984) reveals that the focus of treatment, thus far, has been placed on the chronic user, primarily in residential treatment (halfway houses). The shortage of adequately trained professional staff, together with unsystematic assessment procedures and unspecified treatment interventions, seems to have resulted in a system of programs which can be considered primarily custodial.

At the same time, outcome data from a sample of Veterans followed over 9 months indicates that aftercare (following intensive multimodal inpatient treatment) is the most predictive variable for successful outcome (Walker, Donovan, Kivlahan, & O'Leary, 1983). The studies of relapse precipitants (Cummings, Gordon, & Marlott, 1980) are finding that negative mood states, interpersonal conflicts and social pressure to drink are the three high-risk situations most likely to precipitate relapse. Development and evaluation of relapse prevention techniques (Marlatt & Gordon, 1985) appropriate to Indian alcoholics are badly needed. The intensive inpatient treatment of American Indians, especially those whose pattern involves convivial drinking groups, seems unrealistic when a person is discharged to a network of friends with strong peer pressure to drink. One approach to intervention, with potential improvement of outcome, might be simultaneous treatment and follow-up of the entire drinking network.

Prevention

Our knowledge of treatment effectiveness is severely limited and the extent of alcohol-related problems is widely recognized. Nevertheless, a focus upon applied prevention research is slow to develop. The WHO, with the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as a representative of the United States, has adopted a resolution on alcohol which calls for "Health for all by the Year 2000" (Small, 1984, p. 51). While the national focus is upon highway safety, youth, and consumption issues, American Indian groups (or the IHS) also need to define specific goals, e.g., reducing morbidity and mortality rates to current national averages.

Alcohol-Related Medical Problems

Medical impairment as an alcohol-related consequence requiring early intervention seems to provide an important opportunity within primary care settings. Alcohol-related medical problems affect all body systems, yet no research data is available with respect to patient's awareness of the relationship of alcohol use to their presenting problems or the factors that influence their request for treatment. Data on the cost-effectiveness of alcohol treatment for Indian patients in these primary care settings is also unavailable. Studies with Health Maintenance Organization (HMO) groups (Putnam, 1982) indicate that alcohol abusers and their families are heavy users of health care services. When treatment of the underlying alcohol problem is administered, patient visits are reduced significantly, thereby improving cost-effectiveness for the system. It is an interesting

concept, which the IHS could implement, to study whether alcoholism screening and early intervention programs have an impact upon morbidity and mortality, and upon cost-effectiveness for the health care system as a whole.

Primary Prevention

While public information (primary prevention/education) alone "does not produce significant reductions in alcohol-related problems," (NIAAA, 1984, p. 4), one Swedish research project with middle-aged males shows some promise. The study used screening for elevated serum gammaglutamyl transpeptidase (GGTP) levels and feedback on those levels, together with encouragement not to drink. It showed "significant reductions in absenteeism, hospitalizations, and mortality up to 6 years after the initial screening" (DHHS, 1983, p. 105). Population screening in France has also demonstrated the feasi- bility of early screening and American Indian populations at high risk for alcohol abuse and dependency are natural subjects for similar research.

Antabuse and Antidepressants

The effectiveness of and contraindications to use of antabuse as a deterrent need to be evaluated with American Indian groups, both alone and as an adjunct to other strategies, for example, interpersonal skills development. Antabuse (disulfirum) is commonly used in alcohol treatment programs for American Indians despite the lack of scientific data on its effectiveness. Raymond and Raymond (1984), for example, report that antabuse is required in IHS primary residential and halfway house programs. Mail and McDonald's (1980) annotated bibliography reveals 19 citations to disulfiram, most of which are unpublished references to the Navajo. The work of Ferguson (1970) serves as a notable exception which states the utility of antabuse in one treatment program. Shore, Bopp, Waller, and Dawes' (1972) reservation-based suicide prevention center study revealed that 75% of the suicide attempts were associated with alcohol and inhalant use. Depression and alcoholism are the two illnesses which have the highest suicide rates (Tsuang, 1977). It may not be possible to definitatively attribute suicide of American Indians to one or the other of those. However, use of tricyclic antidepressants may have some usefulness and need to be evaluated systematically with different subtypes of alcoholics for whom depression may also be an issue.

Violence and Alcohol

The nature of the relationship between violence and alcohol is unclear for any population, including American Indians. It has long been recognized that alcohol is frequently present in homicides in general and homicides are a leading cause of death for American Indians. Baker (1959) reports that all of the American Indians imprisoned at Leavenworth for homicide had been drunk at the time of their crime. There are numerous anecdotes that Indians are not violent unless intoxicated and several authors have interpreted those observations along sociocultural lines. McAndrew and Edgerton (1969) states that intoxicated behavior is dependent upon social acceptability; Lemert (1958) remarked that alcohol allows aggression to be released without cultural sanction; and Levy and Kunitz (1969) imply that homicide behavior now is the same as prereservation, but that alcohol is a new component. However, systematic research on the relationship has not been conducted.

Detoxification

Detoxification as a singular approach to treatment is coming under increasing scrutiny and criticism. Kivlahan, Walker, Donovan, and Mischke (1985) recently reported on a group of 50 American Indians monitored over a 3-year period. This sample averaged 44.6 total documented admissions to detoxification units and 64.1 total days in other inpatient treatment settings excluding detoxification, with no significant change in number of annual detoxification admissions. These urban Indians continued to experience serious alcohol-related problems despite repeated treatment in both medical detoxification and inpatient rehabilitation settings. According to the NIAAA planning report (1984), such people need protection to prevent potential exacerbation of their problems. Research into mobile assistance patrols, drop-in facilities, sleeping-off places, and "dry hotels" are issues NIAAA and IHS might consider evaluating. Such social detoxification-like settings might impact the enormous alcohol-related problems of rural and urban Indians (e.g., arrest rates, accidents, and sudden deaths).

Research and treatment outcome for programs that study such concepts as social adjustment and adaptation, abstinence versus controlled drinking, vocational rehabilitation and placement, and patient attitudes and motivation for treatment are areas about which we currently know nothing with respect to American Indians. Further, an individual's interpersonal skills may be related to abuse patterns and treatment outcome. Recent work with college students at high-risk for alcohol problems shows that a cognitive behavioral skills training program results in changes in both the amount and pattern of self-reported alcohol consumption as compared to an equally intensive informational approach

or assessment-only control (Kivlahan, Coppel, Fromme, Williams, & Marlatt, in press). Such skills training approaches could be investigated with young adult, high-risk Indian drinkers. Finally, family intervention strategies might also be effective in reduction of alcohol abuse and alcohol-related problems. Family therapy approaches could support spouses as they change from a position of negative adaptation to abusive drinking which enables a continuing problem. There is an enormous need to identify factors within families that put them at higher risk while others are able to protect themselves and their offspring from alcohol misuse and its consequences.

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Discussion

Dr. Shore: It's a challenge to lead the discussion in this group. If I were asked to pull together a group of people who were the most knowledgeable about research issues in American Indian alcoholism from the point of view of field experience, the majority of those people would be in the room. I am going to ask them to share the formal discussion with me.

The representation of conference participants highlights the problem of whether we can do effective research in Indian alcoholism. We are here, sponsored by the National Institute of Mental Health, with representation from components of the Indian Health Service. None of the official bodies of the federal government responsible for delivering alcohol services to the American Indians are here. In my view, the people who have done the critical research are here; this happens time and time again. The compartmentalization between the service delivery system and research continues. As long as the service programs are on one side, NIMH and NIAAA are on another, and we're on the third or fourth side, we will not be effective in helping Indian people. Unless we come to grips with this political issue, we'll be here 10 years from now having the same discussion on the same group of pilot projects with the same group of people.

Basically that's my discussion, and I'll go on to make a few other points. As Westermeyer, Walker, and Benton point out, there may be more Indians clustered at opposite poles of the consumption continuum of abstinence to heavy use than in most other populations. It's a very important concept that the authors highlight for us. Ten percent of the American general population consumes 50% of the alcohol, and drinking surveys conducted in the 70s indicate that one third of the general population of adult Indians abstain. I want to come back and talk about the high risk group you're dealing with in Seattle, and perhaps contrast that to the general population of Indian people and the general population of Indian drinkers, because I think that contrast is essential for intervention.

Phil May's dissertation, looking at the natural experiment of dry versus non-dry reservations and the potential impact of such policy is a critical perspective on Indian drinking. Dry versus wet reservations can be a natural setting for understanding the relationship of policy to arrests, accidents, etc. Phil, could you help me with the discussion?

Dr. May: Essentially I looked at reservations that had similar cultural backgrounds and similar socioeconomic indicators, so we hopefully controlled for those. Then the only major difference we could assume, and that's a gross assumption, was that the prohibition on one set of reservations versus the legalization on other reservations was the major difference. When you compare those reservations over a long period of time, in my case 20 years, the long-term trend was that reservations who had legalized had lower rates of five of the six

leading alcohol-related mortalities. Cirrhosis, alcoholism, motor vehicle accidents, suicide, and homicide were all lower on the wet reservations. The arrest rate was less than half on the wet reservations in comparison to the prohibition reservations, and off-reservation it was about one eighth as high for the wet reservation. So, legalization over a long period of time, on the northern plains—Montana and Wyoming—appeared to be beneficial.

The big catch was I couldn't get adequate data for the first 6 years after legalization on those reservations, and when I went around and did a number of interviews with community elders, they said it was a zoo; alcohol-related mortality and social problems were highly manifested the first 3 or 4 years. However, they did begin to taper.

Dr. Shore: I personally am convinced after being involved in epidemiology for a long time and a variety of field studies with clinic samples and randomly selected community samples, that we can answer many of the next generation of questions with family pedigree studies. I would hope that we encourage investigators to consider those methods.

Thinking about models, I want to shift to Grave's work in his 1967 study of Navajo in the Denver area. He focused upon marginal economic conditions and concluded that the vast majority of Navajo drunkenness, at least in Denver, can be accounted for without recourse to the fact that the subjects were Indian. This is not Dr. Dale Walker's conclusion, and for good reason. It's extremely simplistic and inaccurate, and I hope we don't fall prey to thinking that we can totally discount Indian background in the epidemic of alcoholism, whether it is urban or reservation. Deviance theory, which is Grave's major model, is an example of how one can be seduced by a single model, to draw what I consider to be very misleading conclusions.

Let me shift to my next expert, Dr. Levy, with a quote from the Walkers' paper: "While the Institute of Medicine points out that existing screening tests lack validation on persons other than those defined as alcoholic, such instruments developed for the population of alcoholics do not have established validity for the subgroups of American Indian alcoholics." I'm interested in your comment on the Michigan Alcohol Screening Test. Jerry's and Steve's work together on Southwestern tribes has focused very appropriately on the lack of validity of many of the screening instruments for alcohol that are being used, and the difficulties as well as specific issues involved in trying to develop more valid approaches.

Dr. Levy: To me, some of the most fascinating things are the indicators of alcoholism that were thought to be a physiologically measured degree of dependence on alcohol, like the withdrawal symptoms. I forget the hard figures, but of the people who scored in the range where they would be called alcoholics, a very high proportion—these were Navajos—reported withdrawal symptoms,

trying to follow those people who finally get out of the process. One of my fears is that you may be right, that maybe one of the only ways out is to become a member of the treatment team.

Dr. Levy: Lest we feel badly about the treatment programs in the Indian world, I want to call your attention to the volume published by the Rand Corporation that did an evaluation of treatment programs at ADAMHA. They very carefully had no control group of untreated people, so everybody who came into these treatment programs was self-selected. They took as their nontreated the ones who came in but didn't stay long, but they were already self-selected, and you got a score for being cured if you managed to stay sober for something like 3 months. This is fascinating. They got very good recovery rates across the country, and for different ethnic groups as well as for Whites.

We took the whole Navajo data and applied the same criteria for recovery. We found almost all Navajos recovered without any treatment because of the definition of recovery. Navajo drinking is binge drinking, and going 3 months between binges is very common for people who live way up on reservation, a long way from the source of supply. So much of our talk of recovery rates and effectiveness of treatment is a problem nationwide.

Dr. Bloom: I wanted to ask Dale, was there any cultural intervention? You didn't report on that.

Dr. Walker: We have two samples: an alcoholism treatment sample and a primary medical clinic sample. As I recall, there are 34 tribes represented in the 150 people in the medical clinic sample. About 85% of the sample has lived in Seattle for at least a year. That surprised me; I did not expect them to be that stable. That sample has four tribes that are large enough to be looked at as tribal groups. They look alike, but the numbers are a little bit different.

Dr. Mohatt: What do you mean, they're different?

Dr. Walker: Different drinking styles, different styles of interacting with people. I don't have the data here, and I want to avoid the stereotyping that I'm complaining about with other people. I would say these people are more aggressive and assertive in getting their needs met, whether that's being in charge of voluntary things that happen, or getting involved in social things in the community. Unfortunately, those involvements don't help them stay sober. I don't have the information about the treatment sample, which might provide more important differences. We have not looked at the traditional-acculturation type indexes yet.

Dr. Trimble: Dale has a really nice measure of acculturation, traditionalism, which we have used, and it's held up very well. Once he looks at the full dimension of traditionalism, that probably will tell you a lot more.

hallucinosis, and some DTs, and we got similar results later talking with Hopi drinkers. This would indicate a very high proportion were alcoholics. But then when you looked at the drinking histories and saw how many of these men stopped in late middle age with no trouble and no treatment programs, although some did go into treatment, it didn't look like an addiction.

Help came far away from Indian country. Dr. Wolff, who now works in Consumer Advocacy Affairs with Nader, had done a study of withdrawal symptoms and found that the key thing precipitating withdrawal was the drinking pattern and the pattern of cessation. They found that young sailors who were on shore leave and binged, increased their alcohol content very rapidly and then were wheeled back on ship. The next morning they woke up seasick, but with no alcohol available to taper off, and a very high proportion of them experienced withdrawal symptoms.

When you think of Indian drinking contexts and people who go to off-reservation bars, and then are either picked up by the police for being drunk in public, or get home and wake up far from the source of supply, there is no hair of the dog that bit you. And you get these experiences much more compared to the Greenwich, Connecticut, high-income bum or the skid row, low-income bum. Even for the low-income skid row bum, the bars open up pretty early in the morning and these guys can share something with a friend and stave off the onset of these symptoms.

I'd like to add something to what you said before about treatment, Dale. Steve and I have a paper on why this happens. These are not treatment programs, these are employment programs, and they do not want to be evaluated, or keep running records and measure their success. They are there to employ "ex-alcoholics." There was one area where we found you could predict alcoholism. In tribes we've looked at, women don't drink as much as men, but when they drink they do it professionally and the case fatality in cirrhosis among women is much higher than the case fatality for men. This is an indicator. If you have 70% of the males drinking, with flamboyant scores that look alcoholic but are not, until you can find out how to spot a real alcoholic early, concentrate your efforts on the women. Try telling that to an Indian treatment program.

Dr. Walker: We were aware, Jerry, of these points. We also have a treatment outcome study going at this time. We've followed those patients for 3 years now. This is actual treatment, not detox only, but the whole rehabilitation program with outpatients, etc. The fact is, those people don't get better. In the state of Washington there is a tracking system that by law requires all admissions to state supported treatment programs be entered into a database. We can follow these people over the last 8 years, before they ever entered into treatment, so we're developing profiles about their experiences in the treatment process, and

Dr. Shore: After I finish my comments I'd like Gordon to respond to this, because there really are some exciting reports in the literature within the last 2 years on medical screening for alcoholics that might clarify the issue of questionnaire validity. For instance, Skinner's work screening medical patients reports on the validity of blood tests that give good sensitivity in identifying high-risk alcoholics.

What's striking is that there's a very important natural application to Indian country for evaluation. We may never solve the problem of valid screening questionnaires with all of the complex cultural issues, but we may be able to bypass these issues with a new methodology. There are problems with the validity of the Michigan Alcohol Screening Test (MAST) as Pat and Dale pointed out, so that if you use it as it has been published and validated on primarily White populations, it doesn't discriminate between many abusers and nonabusers. Indians subscribe to being abnormal drinkers and are seen by others as non-normal drinkers, even if they abstain because of their intermittent pattern and because of the way they describe their own drinking behavior. Possible omission of the first two questions of the Brief MAST is a very good example of the kind of thinking we're going to have to do to make these screening instruments valid in a cross-cultural setting. It's the same kind of thinking Spero and I are attempting to do for the depression, alcohol, and somatization components of the Diagnostic Interview Schedule. Westermeyer has used the Zung rating scale and similar self-report instruments, but these have not been validated against diagnostic criteria. Thus their utility as screening and diagnostic tools for the American Indian population is an important but unanswered research question.

I promised Spero I would tell you that in our own work we made what was an unanticipated, terrible labeling error. Long before we knew of the Auto-Immune Deficiency Syndrome, we developed the acronym for the American Indian Depression Schedule, and we published our first paper and called it AIDS. We obviously modified that very quickly and hope that all of the people who read that first paper will understand. We have renamed it the Indian Depression Schedule (IDS).

Let's talk about treatment effectiveness again. Raymond's report on evaluation of the Indian Health Service alcohol programs indicates that the expansion in treatment services occurred on similar lines regardless of the fact that the societies have markedly different conceptions of alcohol problems. Indian Health Service alcohol treatment programs seemed to follow the same pattern, in spite of our sensitivity to cultural differences. Raymond's evaluation of IHS alcoholic treatment programs is replete with statements that programs are without a guiding philosophy of treatment. Only 8% of those programs funded

by IHS performed evaluation on outcome during 1983. One is left to wonder if treatment is actually occurring. If so, by what criteria is it administered and evaluated? That's a critical issue, and I can't emphasize it strongly enough.

Focusing on another point, studies of relapse precipitants found that negative mood states, interpersonal conflicts, and social pressures to drink were the three high-risk situations most likely to precipitate relapse. This reminds us that in spite of the complexities in thinking about preventing future relapses, there are guidelines in the literature for designing some pilot projects with data and methodologies currently available.

In my experience, there are groups of alcoholics who don't go exclusively to the medical clinic or to the tribal alcohol program. I am still convinced that the majority of clients are people who go constantly in and out of both systems for reasons they identify as peculiar to the two systems. If it's a medicine man, they present their symptoms in a gestalt to the medicine man; if it's the clinic, they know what to tell the doctor; if it's the alcohol program, they know what to complain about there. They're all different.

When we did our depression studies I talked with Hopi clients about Hopi concepts of depression. They would not discuss those concepts with the non-Indian health staff who didn't know that these concepts existed. They would not discuss these concepts with the Hopi bilingual health professionals in the clinic who knew the concepts existed. Yet these concepts are extremely important for understanding how Hopi subjects and patients define their own depressive illness. They would only discuss the concepts in the appropriate setting, for example, with the medicine man, the traditional Hopi family, or the Hopi network, but not as part of health-seeking behavior in the medical clinic.

Dr. Guilmet: I did some work looking at family health-seeking behavior and out of all of the individuals, only one or two mentioned any alcohol problem at all, and two of the three were young female Puyallup tribal members. There just seemed not to be a willingness to discuss alcoholism or mental illness of any form as a problem with researchers.

Dr. Shore: That certainly points again to the limitations of treatment prevalence as a measure. It's an important measure, but it is limited when you're talking about treatment prevalence for, let's say, IHS services.

There are two areas I would hope you might expand in your paper. I'd like to see a broader section on your opinion of mandated antabuse. By not emphasizing it, I assume you question its efficacy and that might be an inappropriate conclusion, but the fact is that many tribal programs are mandating antabuse and we are obligated to look at that as a legitimate research issue.

The identification of the secondary alcoholic is also important, as is the need to identify those people and to treat them appropriately. Schuckit and others have shown that in the general population of alcoholics the primary depression rate is

lower than suspected. We know alcoholics experience depressive symptoms, but 60 to 90 days after a period of abstinence they do not have a major depression and should not receive antidepressants. The prevalence of primary depression or major depressive disorders with Indian alcoholics has never been studied, but we hope a valid way of measuring major depression in this population can be developed.

It's important to be as careful as we can in the kinds of studies that describe the population of Indian and Native alcoholics. We can talk about a model of drift, as we use in schizophrenia, or a high-risk group of chronic alcoholics drifting into the urban area, and therefore Dale's prevalence figures may not be universally applicable to Indian alcoholics.

Is it a labeling problem? Do they have the same drinking problem on the reservation that is handled entirely differently? They are not arrested so often, not pushed into treatment programs, and not identified as patients. Is it a network issue in terms of peer support, or in terms of treatment systems, or lack of access to treatment systems? I think it's extremely important to begin to define the subgroup of people that we try to treat. This has been a problem in many areas of mental health. It's important to be more precise with our nosology, so we can better evaluate etiologies and treatment effectiveness.

A second crucial area that you didn't expand in your paper is the association of violent behavior and acute and chronic alcohol intoxication. In my mind, Joe Bloom is the international expert in transcultural forensic issues. He probably has evaluated for the courts more Indian people who have committed homicide than anyone else. He's yet to come up with one that was not associated with alcohol intoxication. That's a critical area for several reasons. The association of violent behaviors and substance abuse is a critical area in and of itself. It is a current IHS and NIMH priority.

Dr. Bloom: I think it's the methodology that's the issue. When you evaluate someone for the court, or if you evaluate 50 or 100 people who have been charged with murder from various Indian reservations, that doesn't tell you anything about the general population. The only thing it can do is that you get these cases that have these themes that point you back toward the community or toward the culture group, and then you can use the themes to generate hypotheses about the groups.

I never saw any violent crime in Alaska that wasn't alcohol related in the Native population. We did do some comparison studies with Natives and non-Natives and found that not to be true in the northern Native population. So I think you definitely have clues in terms of what direction you want to investigate, but I think that's as far as you can take it.

Dr. Kunitz: Jerry and I did some work on homicide among Navajos which showed that there was a lot of alcohol involved in the homicide situation. But if you matched those people who had committed homicide to a non-homicide committer sample of the population, there weren't any differences in terms of arrest patterns. There wasn't a subculture of people within the population who seemed most likely to commit a homicide, as far as one could tell. We also wondered about how significant alcohol really was as a precipitating factor. In McAndrew and Edgerton's book they make the case that in many societies the use of alcohol is a way of legitimizing behavior and therefore escaping the consequences of retribution. If you were out of your mind when you committed the act, then you can't be held responsible for it as if you had done it in cold blood. It may well be, in some groups at any rate, that the connection as causal variable may be a tenuous one.

Dr. Levy: There are also two sets of longitudinal data. Navajos in the 1940s had very little association of alcohol with suicide and homicide in Syman's study, and we can measure the homicides by the degree of violence: how often you beat or shot the victim. By the 1950s and 1960s, the rate stayed the same, but the proportion of homicides and suicides associated with alcohol had gone up. But the violence of the homicide if the person was drunk was lower than the violence if he was sober. So your classical Navajo homicide followed by suicide, with a violent murder of the wife, is done by the sober person, and the violence is tempered if you have the alcohol variable.

With the Kiowa, which is about the only tribe I know of where there has been a study done of torts, there were accounts of prereservation suicides and homicides. You can go back about 3 decades before the establishment of the reservation. Even the obvious underreporting of these cases indicates that homicide and suicide were very high prior to the reservation, high during the early reservation period, and have been tapering off ever since then. The use of alcohol, of course, was increasing during the reservation period and has only been tapering off a bit since the Second World War in Kiowa country. Kiowas and Comanches still drink more and have higher violence rates than the tribes in the eastern part of the States. So while we see an association, we haven't found any firm data that shows a causal link.

Dr. Bloom: I think what it illustrates is that, first of all, you have to define how you view the use of alcohol at the time of the event. I don't think it's the cause, I think it's a necessary ingredient.

In relation to Eskimo homicide you're describing a very different situation. The traditional Eskimo homicide usually took place on the trail, outside of the community, where it was much more dangerous. In the towns now there is a lot

of homicide taking place and a lot of wife-beating taking place, all alcohol related. My own belief is that absent the alcohol, those events wouldn't be taking place.

Dr. Levy: Do you think they've replaced trail murders with town murders?

Dr. Bloom: No, I think that trail murders still exist and have their own dynamics.

Dr. Levy: With the Eskimo, do you have evidence of increasing homicide?

Dr. Bloom: Tremendous increases.

Dr. Walker: We are following both of our samples over time. We know, for instance, that five people in our treatment sample over 3 years have died. There are no violent deaths in that sample. Over a 1-year period in our health board sample, two people have died, and neither of those are violent.

We have tried to tie systems together. We have had to use the state systems for the death index and the tracking, the Washington State monitoring system, we have worked within AA, we have used the National Death Register Index, we have interviewed Indians in prison in Utah, we have interviewed Indians ship-to-shore and fishing in Alaska, we have gone to prisons in California to track people down.

The comment about the difficulty of follow-up of this sample is quite important. The Indian Health Service says, "Well, tell us your outcome, you must follow these people," but they don't give you the tremendous amount of money that is required.

Dr. Shore: It is very naive to assume that a national treatment program can, in the context of providing treatment, evaluate itself with the same resources. The evaluation must be done on a prioritized basis, with selected programs for evaluation.

Dr. Dinges: I've heard a lot of historical references, allusions to cultural factors, and suggested acculturation variables that might be incorporated in research, but so far I have heard very little that suggests Indian drinking is unique in any way. What is unique about Indian alcoholism?

Dr. Shore: It's a critical question, and the uniqueness is identified in looking at the etiology. Certainly there has been a lot of talk about the uniqueness of drinking patterns, there's been talk about the uniqueness of association, and the one-to-one association between certain violent behaviors and drinking. Those are to some extent unique.

I want to end on the note that the Walkers ended on, looking ahead to prevention. When we're thinking about prevention, we have to think about young people.