

**NATIONAL INSTITUTE ON ALCOHOL ABUSE
AND ALCOHOLISM**

NIH Health Disparities Strategic Plan Fiscal Years 2009-2013

MISSION/VISION STATEMENT

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) provides leadership to the alcohol research community by directing, supporting, and conducting biomedical and behavioral research on the causes, consequences, treatment, and prevention of alcoholism and alcohol-related problems. The Institute conducts its programs primarily by supporting research grants, contracts, and training awards at colleges, universities, and other public and private research institutions nationwide. Important to the mission of the NIAAA is research designed to address health disparities among racial and ethnic minorities, rural and economically disadvantaged populations in the causes and consequences of alcohol-use disorders and to develop treatment and prevention strategies to ameliorate them.

NIAAA provides leadership in the national effort to reduce alcohol-related problems by:

- Conducting and supporting research in a wide range of scientific areas including epidemiology, prevention, treatment, health services, genetics, neuroscience, and benefits of alcohol consumption.
- Conducting and supporting research across the lifespan, including extensive research on Fetal Alcohol Spectrum disorders and underage drinking.
- Collaborating with international, national, state, and local institutions, organizations, agencies, and programs engaged in alcohol-related work.
- Translating and disseminating research findings to health care providers, researchers, policymakers, and the public.

The special emphasis areas, objectives, and proposed action plans that follow comprise an overall strategy to make progress towards NIAAA's goal of a greater understanding of the biological, behavioral, cultural, and environmental factors that contribute to differences in pattern of alcohol use and alcohol-related problems. Through this understanding, we will devise more effective prevention and treatment approaches for everyone affected by alcohol use and abuse.

STRATEGY FOR ADDRESSING HEALTH DISPARITIES

Detailed information about patterns of alcohol use and alcohol-related problems among various racial and ethnic minority, rural, and low socioeconomic (SES) populations is fundamental to effective efforts to address alcohol-related health disparities. Over the past several decades, epidemiologic research has documented variation in patterns of alcohol consumption and differential consequences of alcohol use across various racial, ethnic, and rural populations. Epidemiological, intervention (both prevention and research), health services, genetic, and basic research increases understanding of the nature and scope of these disparities and generates hypotheses for subsequent research.

Alcohol consumption is associated with a broad range of adverse health and social consequences, both acute (e.g., interpersonal violence, traffic deaths, other injuries) and chronic (e.g., alcohol dependence, liver damage, stroke, cancers of the mouth and esophagus). The scope and variety of these problems are attributable to differences in the amount, duration, and patterns of alcohol consumption; differences in genetic vulnerability to particular alcohol-related consequences; and differences in economic, social, and other environmental factors.

While NIAAA's plan to address health disparities includes many specific objectives, activities and approaches, there are five components or themes to the Institute's overall strategy.

I. Encourage research on health disparities. NIAAA will develop a new NIAAA health disparities secondary analysis of existing data sets FOA, add health disparity bullets to other NIAAA FOAs, and participate in health disparity focused, NIH-wide Funding Opportunity Announcements (FOAs). Minority and other health disparities populations have been increasing well represented in most NIH funded research, although the research may not have been originally designed to detect potential outcome differences between majority and minority groups. In order to optimize the use of these previously collected data for health disparity purposes, NIAAA will issue an FOA soliciting secondary analysis of existing epidemiology, treatment, prevention, health services, genetic, and other data sets with high minority, rural or low SES participation to focus on health disparities questions that were not originally addressed. NIAAA has successfully participated in the NIH-wide, Office of Social Science and Behavioral Health's FOAs *Behavioral and social science research on understanding and reducing health disparities* (PAR-07-379/380). We will continue to participate when these are renewed in FY2010. By highlighting disparities issues in these and other program announcements, we will signal our intention to support additional research on health disparities.

II. Support the development of health disparities research infrastructure in research-intensive institutions, rural health care settings, and minority serving institutions (MSIs) to conduct alcohol research and to contribute to our understanding of alcohol problems. The NIAAA will continue to develop and maintain collaborative relationships between scientists/clinicians in MSIs and established alcohol scientists in research-intensive institutions to expand alcohol research in health disparities populations (RFA-AA-10-001). NIAAA will expand and maintain the recent efforts to develop infrastructure in rural health care settings (RFA-AA-06-003, RFA-AA-09-001). Workshops, contracts, cooperative agreements, and diversity supplements to ongoing research projects will continue to be employed to develop health disparities alcohol research infrastructure. Finally, NIAAA will enhance efforts to develop alcohol research infrastructure among Native Americans and Alaska Natives, in order to overcome the disproportionate impact of alcohol use disorders and associated problems in these populations.

III. Build a knowledge base for health disparity populations which have received relatively less attention in the evidence-based alcohol literature. This strategy is linked with strategic components I and II. While NIAAA is proud to have supported extensive alcohol research among the two largest minority groups in the US, African Americans and Hispanic/Latinos, we have been somewhat less successful in developing a comprehensive alcohol research agenda for Native American/Alaskan Natives and Asian American populations. NIAAA plans to augment its current Native American/Alaskan Natives research portfolio in response to evidence that they appear to suffer from the highest alcohol related mortality of any racial and ethnic minority group (see Epidemiology Emphasis area below). We will call upon experts in this area to help expand and better focus our efforts to address health disparities in this population. NIAAA plans on oversampling Asian American participants in its upcoming large-scale, nationally representative survey as a means of exploring the degree to which Asians of different national origins may be affected by alcohol abuse and alcoholism.

IV. Transfer research knowledge to practice and experiential/clinical knowledge to research. The NIAAA recognizes the need to assure that minority serving organizations utilize the results of alcohol research and that the experience and clinical knowledge of minority serving

health care professionals and community members are transferred to those conducting health disparities research. NIAAA will enhance efforts to disseminate research on alcohol use and abuse, both general and health disparity specific to a wide range of consumers of evidence based information. We will continue outreach to minority servicing health care professional and community members using the new Health Disparities exhibit and newly developed materials to highlight health disparities research at NIAAA. We will continue and expand efforts to translate alcohol related information into Spanish.

V. Build multi-disciplinary, multi-ethnic collaborating teams to address specific health disparities research areas. With encouragement and co-funding from NCMHD, the NIAAA has developed an approach to establish interdisciplinary collaborative teams. This has resulted in international collaborative research, working in both South African and US American Indian populations on fetal alcohol syndrome and other potentially alcohol related infant health research. This strategy is being expanded to cooperative research agreements in rural health care settings with excellent potential to serve as models for the integration of research, research capacity building, community outreach, information dissemination and public health education.

1.0 AREAS OF EMPHASIS IN RESEARCH

1.1 Area of Emphasis One: Incidence, Prevalence, and Patterns of Alcohol Use, Abuse and Effects

Over the past decade, NIAAA has conducted a large-scale longitudinal nationally representative epidemiologic survey, the National Epidemiology Survey on Alcohol and Related Conditions (NESARC), in which African Americans and Hispanics were oversampled. NESARC Wave I included a total of 43,093 respondents; participants were re-interviewed in Wave II and culturally relevant data were collected. In the period from FYs 2009 to 2016, NIAAA will expand this seminal work to a new sample, collect DNA material, oversample African American, Hispanic, and *also oversample* Asian populations, and refine the focus on culturally relevant data collection.

The epidemiologic evidence of alcohol-related health disparities is complex; health disparities are based on both (1) rates of alcohol use disorders and (2) disproportionate rates of alcohol related problems and mortality. Data from the Wave I NESARC documented that rates of AUDS and of heavy drinking were higher among Whites and Native Americans than among Blacks, Asians and Hispanics. However, rates of binge drinking (i.e., 5+ drinks for men or 4+ drinks for women) were higher among Whites, Native Americans and Hispanics than among Blacks and Asians. The prevalence of binge drinking was inversely proportional to income¹. Rates of alcohol abuse and dependence tended to increase with income and were higher among rural than urban residents². Comparing data from NESARC Wave I and Wave II allowed us to examine disparities in the first incidence of alcohol use over the three-year follow-up interval between the two surveys. After adjusting for all socio-demographic factors, the incidence of alcohol abuse was lower for Blacks than Whites, but beyond this, the incidence of alcohol and drug use disorders did not vary by race-ethnicity, family income, or urban/rural residence³.

In general it has been found that compared with Whites, Native Americans are less likely to drink--that is, a greater percentage of the population abstains--but they consume more alcohol when they do drink, as is the case for both Blacks and Mexican Americans⁴. NESARC Wave I data on drinking patterns within age/sex/race--ethnic groups were used in the development of

new estimates of alcohol-attributable fractions to determine the burden of disease associated with alcohol use⁵. For most diseases, the proportion of mortality attributable to drinking volume and pattern was highest for Native Americans and lowest for Asians, with relatively small differences among Whites, Blacks and Hispanics. Nevertheless, in spite of relatively lower prevalence of AUDs among Hispanic and African Americans, there continue to be ethnic and racial disparities in morbidity and mortality associated with alcohol use for these groups.

Alcohol-related health disparities have been documented in the *consequences and problems* associated with alcohol use for racial and ethnic minority groups. For example, cirrhosis death rates are very high among white Americans of Hispanic origin, lower among non-Hispanic African Americans, and lower still among non-Hispanic whites⁶; the incidence of fetal alcohol syndrome (FAS) appears to be higher in some African American and American Indian communities than in the general population⁷; Black and Hispanic couples are at higher risk than Whites for interpersonal violence and up to 41% of men and 24% of women were drinking at the time of the violent incident⁸; alcohol-related traffic deaths are many times more frequent (per 100,000 population) among American Indians or Alaska Natives than among other minority populations⁹; self-reported rates of DUI are highest among mixed race and Native American/Alaskan Natives¹⁰; Hispanics are overrepresented among drunk drivers and DUI-related fatalities¹¹.

There has been relatively less attention to within ethnic/racial group differences including research on the influence of national origin, acculturation and stress. These differences are important as they may provide information about subtle biological, social, or cultural differences associated with risk and resiliency. Among Asians, Japanese Americans consume more alcohol than Asian Americans of other national origins⁴. Examination of NESARC data revealed differences in the prevalence and incidence of AUDs among Hispanics of different national origins. Overall, prevalence rates were lower for Hispanics of Cuban or South/Central American/Dominican origin than for those of Mexican or Puerto Rican origin. Incidence rates (new cases) for both alcohol abuse and dependence were significantly lower for those of Cuban origin¹². Results from a different survey indicate that among Hispanics, Mexican Americans have higher prevalence rates of frequent heavy drinking (drinking 5 or more drinks at a sitting) and problems¹³; and those on the Border seem to have higher rates of abuse and dependence than the national U.S. average^{14, 15}.

NIAAA will publish a Health Disparities Funding Opportunity Announcement (FOA) to encourage applicants to conduct secondary analysis of existing data sets in which the primary focus will be health disparities-related issues. This will provide an expeditious, low-cost opportunity to expand our knowledge base of health disparities concerns so that we can develop new understanding of alcohol health disparities. NIAAA will continue to fund new initiatives which promise to expand our knowledge of ethnic and racial minority use of alcohol to integrate data on national or tribal origin and incorporating cultural constructs (e.g., acculturation, stigma, perceived discrimination). For Hispanics this will include studies that sample from specific national origins groups, e.g., Mexican, Puerto Rican, Dominican, Cuban, Central and South American; at the US/Mexican border, and in Mexico or other country of origin. This will provide the first broad-based information on alcohol use among the increasingly diverse Hispanic population.

1.1.1 Objective One: Assess changes in the prevalence of alcohol disorders and disability in the U. S.

The aim of this objective is to ascertain patterns of alcohol use and to determine the incidence and prevalence of alcohol dependence and abuse and their associated disabilities in the U.S. general population and among its racial/ethnic subgroups.

1.1.1.1 Action Plan

Conduct a nationally representative survey of 48,000 individuals, the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) III, in 2012-2013. As was the case in the Wave I and Wave II NESARC surveys conducted in 2001-2002 and 2004-2005, respectively, the NESARC III sample will again include Alaska Natives and Native Hawaiians, oversample African-Americans and Hispanics in order to derive more precise estimates of major alcohol-related variables. Unlike its predecessors, the NESARC III will also oversample individuals of Asian/Pacific Islander origin.

Other new innovations in the NESARC III include the use of new, 2-dimensional acculturation scales. In addition, the NESARC III will yield diagnoses for the new, upcoming DSM-V diagnoses of substance use and mental disorders. Perhaps most significantly, the NESARC III entails collecting DNA samples for the first time in a nationally representative U.S. population sample of this size.

1.2.1 Objective Two: Expand our understanding of within group differences in patterns of alcohol consumption and problems in health disparity populations.

Develop research initiatives that address gaps in our knowledge of patterns of alcohol consumption and alcohol-related problems within specific minority, low SES and rural versus urban populations; subgroups of these populations (e.g., Hispanics of Cuban, Puerto Rican, Mexican origin, Asians of Korean origin) and for rural versus urban dwellers (e.g. reservation versus urban American Indians). Expand scientific research about patterns of Hispanic alcohol consumption and alcohol-related problems in their country of origin and within border communities.

1.2.1.1 Action Plan

Continue to support existing grants and increase the number of new awards to conduct alcohol-related epidemiologic research focused on specific minority populations and subgroups of these populations. Continue to encourage and expand emphasis on health disparity focused secondary analysis of existing data sets.

2.1 Area of Emphasis Two: Prevention Interventions for High Risk Groups

Studies sponsored by NIAAA continue to find empirical support for the effectiveness of a number of prevention strategies. These include public policies^{16,17}, community wide interventions¹⁸, college and underage drinking initiatives¹⁹, and screening, brief intervention, and referral to treatment^{20,21}. Most of these studies are conducted in the general population with no specific reference to effectiveness among health disparity target groups although frequently these are well represented in the studies. However, there are cases where an intervention protocol with previously-demonstrated effectiveness in the general population has been adapted and applied to a health disparity population.

One such case is Project Northland, an underage drinking intervention that combines school-based curricula, family interventions, extra-curricular activities, and community-wide initiatives that were first demonstrated effective among mostly white youth in small towns in Minnesota²². Consistent with the Institute's emphasis on prevention of underage drinking, an NIAAA study adapted and tested this intervention in ethnically and racially diverse, economically disadvantaged neighborhoods in Chicago²³.

So far, results among the urban Chicago youth have been much weaker than they were among Minnesota youth. This raises a question that is critical for the Institute to pursue: Why is a strategy known to be effective among majority, non-urban dwelling youth not similarly effective among their minority, inner city dwelling counterparts? Advancing the health disparities strategic agenda depends precisely on resolving questions of this nature. Continuing analyses of the Chicago results will concentrate on uncovering the mediators and moderators that can explain this variation in effectiveness.

More typically, NIH and NIAAA funded prevention trials were not originally designed to detect potential outcome differences between majority and minority groups. In these cases, our strategy will be to expand the originally-stated Specific Aims and supplement secondary analyses of such potential effects. While we intend to pursue such a strategy across the full spectrum of the current portfolio, college drinking is likely to emerge as a focus of much of this analysis. The Institute has recently completed a multi-year initiative on the prevention of college drinking problems²⁴. Thus, there is a critical mass of data on college drinking prevention trials that can be mined for evidence that program effects might vary by minority status.

2.1.1 Objective One: Enhance prevention of alcohol abuse and alcoholism in minority communities

Develop research initiatives that address gaps in the current state of basic behavioral and applied knowledge on alcohol-focused prevention strategies that are effective for specified minority populations. Ascertain whether prevention interventions that have been proven effective in the general population are also effective for minority groups and subgroups.

2.1.1.1 Action Plan

Expand secondary analyses of existing data sets that have not yet been analyzed in terms of minority, rural or low socioeconomic status to determine: 1) whether prevention strategies have differential effects in minority vs. majority communities and 2) determine the mediators and moderators that produce these varying results. Such analyses should be applied to any ongoing trials where minority participation yields adequate statistical power. Also, support new efforts to adapt existing prevention protocols to health disparity populations based on existing knowledge about such variations.

3.1 Area of Emphasis Three: Alcoholism Treatment and Health Services Research

There are approximately 2.1 million minorities that suffer from alcohol use disorders in the U.S., most of whom do not receive any specialty alcohol treatment, indicating a need to broaden and enhance the continuum of health care for alcohol-related problems and disorders. The menu of alcohol services, and the organizations that deliver them, needs to be diversified, enhanced, extended, and provided in a range of settings that meet the needs of health disparity groups, tailoring treatment interventions to address their specific alcohol-related issues. Treatments that

are attractive, affordable, accessible, and effective for different types of drinkers need to be identified, tested, and adopted. In addition, more alcohol treatment trials need to be conducted in health disparity populations. Such research is needed to determine if evidence-based treatments are effective and, if there is evidence of differential effectiveness, where these may require adaptation.

Over the past 20 years, research on the behavioral treatment of alcohol use disorders has progressed substantially. Behavioral interventions that have demonstrated efficacy include motivational enhancement therapy, cognitive behavioral therapy, brief interventions, behavioral couples' therapy, twelve-step facilitation therapy, and the community reinforcement approach. Most of these therapies, however, need to be validated in racial and ethnic minorities. Currently, very little information is available on if, how, and why these treatments are effective with health disparities populations. Understanding the underlying mechanisms of action of an intervention involves identifying the active processes and their specific effects on diverse patient groups, including racial/ethnic minority, rural, and low-income populations.

Advances have been made in medications to treat alcohol use disorders. However, little research has been conducted in health disparity populations. O'Malley & colleagues²⁵ demonstrated that alcohol dependent Alaska Natives and other Alaskans living in rural settings treated with Naltrexone had higher total abstinence rates than those treated with placebo. In addition, Naltrexone increased time to first heavy drinking day, improved percent days abstinent, and attenuated drinking-related consequences. Recently, Ray and Oslin²⁶ reported Naltrexone ineffective in alcohol dependent African Americans using the COMBINE data set. There were no differences between Naltrexone and placebo groups in percent days they were abstinent, time to first heavy drinking day, and global clinical outcome. Future studies not only need to test medications in the health disparity population, but also identify those who favorably respond to the medication through new technologies like pharmacogenomics.

Barriers to treatment for health disparity populations must be identified and effective strategies determined to offset these barriers in a variety of settings, including specialty addiction settings, general medical settings (e.g., primary care and mental health care), and settings outside the medical sector (e.g., the workplace and criminal justice, social welfare, and school systems). At a minimum, services should include screening, brief intervention, and referral, if needed. New approaches in establishing more effective evidence-based practices include adaptive models personalized to subtypes of drinkers, long-term management of chronic alcohol dependence, concurrent management of multiple co-morbidities, and the patient-centered medical home model. These and other innovative health care approaches need to be adapted and tested for application in real-world practice settings, that include minorities, rural and low income populations.

3.1.1 Objective One: Improve our understanding of the impact of race, ethnicity and other socio-cultural factors on treatment.

Little is known about the differential effectiveness of evidence-based treatment by race, ethnicity, and other socio-cultural factors. We plan to continue and expand a research program that examines the influence of race/ethnicity and associated socio-cultural factors on treatment outcome. This includes conducting research aimed at addressing and developing methodology and measurement models for health disparities research and clinical trials for health disparity and

other diverse populations. Where appropriate, develop new, culturally sensitive treatments for racial and ethnic minorities and for those who are economically disadvantaged. Develop and improve the existing programs of research for special subgroups within racial and ethnically diverse populations such as Native American persons and those with concurrent psychiatric and/or medical co-morbidity.

3.1.1.1 Action Plan

Identify which behavioral therapies work in diverse health disparity populations and understand how these interventions are best adapted, where necessary, to address their specific needs. Support research to evaluate the efficacy and effectiveness of established behavioral/psychosocial and pharmacological treatments for alcohol abuse and alcoholism in minority populations and to develop and test new approaches hypothesized to enhance treatment outcomes in these populations.

Fund research to enhance the reliability and validity of culturally relevant constructs and measures (e.g., demographic, economic, and socio-cultural), and encourage the development of new indices where appropriate. Write a program announcement to stimulate treatment research in health disparities. Participate in NIH and NIAAA-wide requests for applications wherever possible to achieve these objectives. Conduct a literature review to identify the nature and scope of what is currently known about the influence on alcoholism treatment outcomes of race/ethnicity and associated socio-cultural variables. Evaluate new alcohol medications in the health disparity populations using individual biological, psychological, behavioral, environmental factors for personalized interventions. Encourage researchers to submit applications on Behavioral and Social Science Research on Understanding and Reducing Health Disparities (Reissue of PAR-07-379, available in April 2010).

Finally, continue NIAAA's annual collaboration with the Association of American Indian Physicians (AAIP). Among activities proposed for implementation in 2010 are: sponsoring one or more NIAAA-funded researchers to speak at next year's conference, and facilitating access to the *NIAAA Clinician's Guide* and its related products for the AAIP membership which will include providing hard copies of the Guide as well as making available an online tutorial and a video case series that illustrates how to apply the *Guide* in actual practice (see www.niaaa.nih.gov/guide). Conduct grant writing and mentoring workshops to provide technical assistance to potential applicants interested in conducting research among health disparities populations.

3.2.1 Objective Two: Examine the effect of access to alcoholism treatment and establish evidence-based treatments on health disparities.

Evaluate the current knowledge base and support future research on how to meet special treatment and service needs for alcohol problems in minority, rural and low income subgroups including persons with concurrent psychiatric co morbidity, alcohol-related medical co morbidity, as well as individuals in the criminal justice system, adolescents, the elderly, and pregnant alcoholic women who place their children at risk for negative birth outcomes. Support further research on evidence-based screening, diagnosis, and treatment guidelines for racial and ethnic minorities and special populations for clinical practice. Explore and examine the impact of health delivery system practices that may adversely impact the health care provider workforce, thus creating disparities in access and services, such as the closure, relocation, or establishment of public hospitals, community health centers, and rural health centers; Medicare

reimbursements; and policies relating to nursing and long-term care. Consider priority-setting, monitoring, and evaluation of health disparities research to assess progress and effectiveness of research studies and programs. Evaluate economic burden and personal costs as they relate to the disproportionate use, availability, and satisfaction with health and social services among health disparity groups and medically underserved populations. Support further research on evidence-based screening, diagnosis, and treatment guidelines for racial and ethnic minorities and special populations for clinical practice.

3.2.1.1 Action Plan

Support research to learn how to improve access to and utilization of alcohol treatment services (including access to health coverage) in targeted economically disadvantaged, rural and racial/ethnic minority subgroup. Evaluate the current knowledge base and support research on under-studied issues related to disparities in access to and utilization of treatment for alcohol abuse and alcoholism (including disparities in coverage under health insurance policies). Investigate disparities in the cost effectiveness and cost benefit of treatments tailored to specific socioeconomic, racial, and ethnic minority groups. Publish results of a literature review, workshop proceedings, and research findings in peer reviewed journals and NIAAA publications. Support projects that evaluate interventions and services designed to improve alcohol-related treatment outcomes in minority subgroups. Support research to assess the effectiveness of established treatments through secondary analyses and to develop and evaluate new treatments, or combinations of treatments, hypothesized to meet the special needs of minority and economically disadvantaged subgroups. Support research to examine and reduce disparities in access to and utilization of treatment.

4.0 Area of Emphasis Four: Adverse Pregnancy and Infant Health Outcomes Related to Alcohol Use

Alcohol consumption during pregnancy has a broad spectrum of deleterious effects on the developing fetus. These include Fetal Alcohol Syndrome (FAS), facial dysmorphism that typifies children with FAS, other assorted birth defects, and a host of neurobehavioral and cognitive impairments, ranging from attention and learning deficits to frank mental retardation. Indeed, fetal alcohol exposure is the most common cause of preventable mental retardation. On the other hand, more mildly affected children may lack outward manifestations but nonetheless may have life-long neurobehavioral problems (Alcohol Related Neurodevelopmental Disorders - ARND) that hinder the development of independent living skills and often predispose them to entanglements with the criminal justice system. Collectively, these varied manifestations of fetal alcohol exposure are referred to as Fetal Alcohol Spectrum Disorders (FASD).

Estimates of the prevalence of FAS vary from 0.2 to 3 cases per 1000 live births, while FASD prevalence is thought to be several-fold higher, approaching 1 per 100 live births in high alcohol-consuming populations^{27,28}. Refined estimates, based on active case ascertainment methods, suggest the prevalence of FAS and FASD are even higher²⁹. It is estimated that 40,000 infants with FASD are born each year across the nation and that the annual economic cost of FAS alone exceeds \$4 billion in the United States²⁸. The prevalence of FAS and FASD is thought to be disproportionately high among some African Americans, American Indians, and Alaska Natives^{27,30,31}. These disparities may reflect high alcohol consumption rates associated socioeconomic, genetic, or environmental susceptibility factors. Thus, FASD represents a significant health disparities issue.

NIAAA recognizes the need for research to address a variety of issues related to FASD and FASD health disparities. These research priorities include studies aimed at preventing fetal alcohol exposure and FASD, improving the tools available for diagnosing FASD more accurately and at earlier stages of development, and broadening our understanding of the mechanisms involved in FASD pathogenesis in order to inform the development of effective therapeutic interventions. To these ends, NIAAA expends roughly 8-9% (~\$30M) of its annual research budget to fund nearly 100 basic and clinical grants that address these FASD research priorities. Several of these NIAAA grants support the Collaborative Initiative on FASD (CIFASD), a multidisciplinary research consortium focused largely on improving FAS and FASD diagnostic criteria and methodology through basic science and multi-ethnic clinical studies that involve American Indians of the Northern Plains. In addition, CIFASD is exploring the utility of choline for treating FASD.

Although much less prevalent than FASD, sudden infant death syndrome (SIDS) has also been linked to prenatal alcohol exposure in studies of Northern Plains Indians, who experience perhaps the highest SIDS rate in the nation³². Consequently, NIAAA supports research aimed at elucidating the role of alcohol in SIDS and stillbirth, which may be related to SIDS. This research effort is being undertaken by the PASS Network, a research consortium jointly funded by NIAAA/NICHD, and involves two ethnically diverse at-risk study populations, namely U.S. Northern Plains American Indians and South African Cape coloureds.

4.1 Objective One: Improve our Understanding of FASD Prevalence across Multi-ethnic U.S. communities.

Multiple studies have estimated the overall prevalence of FAS to range from as low as 0.1 per 1000 births to as high as 9.0 per 1000 births in some select U.S. communities^{33,34}. The primary focus of many of these studies has been to gain an understanding of FASD risk factors and implement prevention and treatment in communities of known high rates of maternal drinking. Reported rates of FASD also may vary by gender and racial/ethnic category of cases, criteria for case definitions, population size, and normative drinking patterns. A number of maternal risk factors have been identified that place offspring at risk for FASD, including, moderate to heavy maternal alcohol consumption prior to, during and after pregnancy; poor prenatal care and nutrition; maternal age and multiple pregnancies; and low socioeconomic status^{35,36,37,38}. While prevalence estimates for FASD via active case ascertainment have been obtained in the U.S. among purposively selected populations, including isolated minority populations, greater precision in ascertaining a more accurate prevalence of FASD is warranted in order to reduce economic and medical burden and ultimately improve health outcomes.

NIAAA is developing an initiative to improve estimates of comparative FASD prevalence measures across *multiple* racial/ethnic populations by using standardized FASD diagnostic criteria. This initiative will require research teams to demonstrate knowledge of culturally-based norms about drinking and the cultural competency to exercise sensitivity in performing assessments of women who consume alcohol during pregnancy and their children, to avoid undue stigmatization of individuals, families, members of racial/ethnic groups, or other communities considered at high risk for FASD.

4.1.1 Action Plan

Develop a multidisciplinary initiative to establish FASD prevalence (including FAS, partial FAS and ARND) by using integrated, age-appropriate and culturally relevant diagnostic thresholds

and case definitions to examine and diagnose children from multi-ethnic/cultural U.S. communities.

4.2 Objective Two: Develop interventions to prevent and mitigate FASD in high risk and minority populations.

Reduction and eventual elimination of drinking during pregnancy requires preventive interventions at all levels: universal population-wide approaches to promote awareness and healthy lifestyles; selective screening, counseling, and intervention for those identified as at risk; and indicated special interventions for those at highest risk. Develop, test, and evaluate targeted strategies to prevent or decrease maternal drinking. Develop, test, and evaluate interventions to prevent or otherwise mitigate behavioral problems (including alcohol use and abuse) among affected children and youth.

4.2.1 Action Plan

Stimulate research that develops and tests interventions to prevent maternal drinking and FASD among high-risk minority and low SES populations. Encourage investigators to develop and test interventions to prevent behavioral problems (including alcohol use/abuse) among affected children. Solicit opinions from experts in high risk populations on the development of a research initiative to prevent alcohol affected pregnancies in minority populations at high risk for FASD health disparities.

4.3 Objective Three: Improve Criteria and Technologies for Diagnosis of FASD

FASD is often not diagnosed until the affected child enters the school system. In order to increase early identification of children affected by FASD, improved diagnostic criteria and methodologies that enhance sensitivity and specificity of diagnosis, earlier detection, and that can be broadly implement are needed. Refinement of existing diagnostic criteria for FAS and FASD are desirable to improve the sensitivity and specificity of diagnosis and has the potential to reveal a stratification of FASD diagnoses that may have distinct prognostic and/or therapeutic implications. These refinements and earlier diagnosis will likely require the application of new technologies, such as fetal ultrasound, 3D imaging coupled with computational analysis, functional brain imaging, and biomarkers. Ultimately, these improved FASD diagnostics must be validated across ethnicities, including African Americans, American Indians, and Alaska Native populations, in order to mitigate existing health disparities related to FASD. Emphasize the application of these refined FASD diagnostic techniques to health disparity research populations.

4.3.1 Action Plan

Support and encourage ongoing and new research projects aimed at; (1) refining our understanding of neurobehavioral, cognitive, and other deficits that accompany FASD, (2) develop and demonstrate the utility of new approaches that improve the sensitivity and specificity FASD diagnosis, (3) develop new tools capable of extending FASD diagnostic potential to younger children and perhaps also the developing fetus, and (4) define biomarkers capable of substantiating FASD diagnoses.

4.4 Objective Four: Elucidate Mechanisms of FASD Pathogenesis and Develop Interventions for the Treatment of FASD

NIAAA has supported a significant basic science research effort aimed at developing in vitro and animal models of FASD. These model systems have, in turn, yielded important insights into the mechanisms by which alcohol exerts its neurotoxic effects on the fetus, disrupts normal brain development, and have the potential to yield insights into biological, genetic, and environmental factors that may interact with alcohol in shaping disparate FASD outcomes. Importantly, these studies are revealing potential therapeutic targets for FASD intervention and, in some instances, have demonstrated the promise of specific small molecule or behavioral interventions in ameliorating the fetal alcohol effects in animal models. Although NIAAA has recently begun funding clinical studies aimed at assessing the potential for choline to effectively treat children with FASD or prevent FASD occurrences when administered in pregnancy, there is great need to advance other promising candidates into clinical trials. At the same time, it will be important to extend our knowledge of FASD pathogenesis through the continued study of model systems in order to develop additional therapeutic candidates. The effectiveness of FASD interventions the result from these efforts will have to be assessed across ethnic and other demographic distinctions in order to effectively addressing existing health disparities.

4.4.1 Action Plan

NIAAA will continue to promote research aimed at defining mechanisms that underlie FASD pathogenesis, identifying potential therapeutic targets, and developing effective FASD therapeutics. NIAAA will identify health disparity populations at increased risk for FASD and encourage their participation in research on these potential therapeutic targets and FASD therapeutics.

5.1 Area of Emphasis Five: Alcohol and HIV/AIDS

Although there have been many advances in the prevention and treatment of HIV/AIDS in the diagnosis, care, and management of HIV infection and its sequelae, these advances have not been realized uniformly. The epidemic continues to be characterized by striking disparities across race, gender, and socioeconomic status, with far-reaching implications for the health and well-being of the nation as a whole. In 2008 rates of HIV/AIDS were highest among racial and ethnic minority populations, at approximately 70 per 100,000 for Blacks and 30 per 100,000 for Hispanics³⁹. Disparities in the growing incidence and prevalence of HIV/AIDS are most striking among women of color. In 2005, the rate of AIDS diagnosis for black women (45.4/100,000) was approximately 23 times the rate for white women (2/100,000) and 4 times the rate for Hispanic women (11.2/100,000)⁴⁰. Between 1999 and 2004 Black women accounted for 13% of the U.S. population of women, but 64% of the *new* AIDS cases – almost five times greater than their representation in the general population⁴¹. Findings such as these underscore the need to improve understanding of the multiple factors affecting HIV transmission and disease progression in racial and ethnic minority communities, and to increase access to preventive interventions, testing, and treatment in those communities.

There is growing evidence that alcohol consumption may play an important role in sexual transmission, susceptibility to infection, and progression of HIV disease in both the general population and in racial and ethnic minority communities. Studies have shown that a large proportion of HIV infected individuals are current or past drinkers with a history of alcohol use disorders (AUDs)^{42,43,44}. Recent research has focused on the specific mechanisms by which alcohol may influence HIV transmission and progression in racial and ethnic minority communities and is providing a foundation for the development of culturally informed and

sensitive interventions. This research provided sufficient evidence to conclude that an effective national strategy to eliminate race and gender-related disparities in HIV/AIDS morbidity and mortality must include evidence-based interventions to reduce the impact of alcohol on HIV transmission and progression in racial and ethnic minority communities.

Key findings from the research on the epidemiology of problem drinking and HIV/AIDS include the high prevalence of alcohol use disorders in minority populations at highest risk for HIV infection. For example, in one large ongoing observational study of HIV/AIDS among veterans, the Veterans Aging Cohort Study (VACS), 30% of minority participants have been found to have a current alcohol use disorder^{45,46}. Other research supports a strong association between at-risk drinking and alcohol use disorders in minority populations and rates of involvement in high risk sexual behavior. For example, men and women of color who drink and/or use drugs are significantly more likely to engage in unprotected sex with partners of unknown HIV status. These high-risk behaviors are of particular concern for young women 18-25 years of age with the highest rates of infection. Among these young women, studies have shown an inverse relationship between levels of drinking and frequency of condom use. Among sexually active minority adolescents, alcohol use disorders are associated with occurrence of both HIV and other sexually transmitted infections (STIs) which may facilitate HIV infection, such as herpes simplex 2 (HSV-2), and hepatitis B^{47,48,49}.

In addition to influencing rates of HIV and other STI transmission, alcohol use moderates the effectiveness of HIV prevention and treatment interventions. For example, in one study of an HIV intervention delivered in minority populations it was found that moderate drinkers reduced sexual risk behaviors and used condoms more consistently after the intervention. On the other hand the intervention had no impact among heavy drinkers^{50,51,52}. There were race, ethnicity, and alcohol-related differences in levels of HIV/AIDS treatment engagement and clinical outcomes in the VACS study. For example, African Americans patients were sicker at time of first HIV diagnosis; experienced greater lag time to HIV diagnosis; and had delayed initiation of highly active antiretroviral therapies (HAART) compared to white patients. Among patients of all races and ethnicities, levels of alcohol use differentially interacted with a wide range of AIDS treatment outcomes, including delay to system entry, medication adherence, and long term survival^{53,54,55}. Burden of illness at the time of HIV diagnosis plays a significant role in the racial variation in long-term survival rates in this population.

There is a pressing need to incorporate screening for problem drinking and, if necessary, referral to alcohol treatment in all HIV/AIDS prevention and treatment efforts. The need is particularly acute in those geographic areas (e.g. coasts, the South, D.C., etc.) and venues (e.g. bars) with a high incidence of new infections. To date few alcohol-focused HIV preventive interventions have been developed, and their applicability to minority populations has not been tested. In particular, interventions addressing alcohol use among young minority women at high risk for HIV infection have rarely been examined. Similarly, many questions remain unanswered with regard to how the co-occurrence of HIV/AIDS, at-risk drinking, and alcohol abuse/dependence currently influences HIV treatment in racial and ethnic minority communities, and interventions could be modified to improve clinical outcomes. Research is needed to guide the development of combined alcohol and HIV treatment regimens tailored to the needs of racial and ethnic minority individuals with coexisting alcohol misuse, including strategies to improve motivation and adherence to treatment. To be successful, such strategies must be informed by knowledge of how environmental, venue or contextual/setting factors beyond the actual treatment administered (e.g., social support, relationship, economic, and housing status, etc.) may moderate the

outcomes of interventions for HIV/AIDS and alcohol use, and include plans for maximizing assessment and treatment opportunities in resource-limited settings.

1.5.1 Objective One: Prevention - Reducing the rates of alcohol-related new infections among minority populations at-risk for HIV/AIDS.

NIAAA participates in the Office of AIDS Research planning process for the development and implementation of the Trans-NIH Plan for HIV/AIDS Research. Its initiatives for reducing health disparities in HIV/AIDS are developed as part of this planning process. The primary goals set forth in the NIAAA plan for HIV research are to develop and test innovative research models, methods, and measures to accurately assess risk and protective behaviors in diverse populations, including minority communities.

1.5.1.1 Action Plan

Continue research which includes populations with significant numbers of at-risk or HIV infected minority individuals. Where possible, expand studies that include large numbers of individuals from racial and ethnic minority groups, such as the Women's Interagency HIV Study (WIHS). Develop an operations framework to address the planning, testing, and implementation of alcohol-related HIV/AIDS preventive interventions in populations with the greatest need for these interventions, including racial and ethnic minority populations. Continue and expand emphasis on the interrelationship of alcohol and the social and environmental factors that contribute to HIV infection, behaviors after infection, and co-occurring conditions (e.g., substance use, mental illness, homelessness, hepatitis, STDs, tuberculosis), including the causes and implications of stigma.

1.5.2 Objective Two: Understand and address how alcohol use influences all aspects of the course of HIV infection, complications of treatment, rate of progression, and mortality

1.5.2.1 Action Plan

Support studies to examine the social, cultural, and structural determinants; social structures; social environments; and health care systems that sustain, perpetuate, resist, or counter health disparities among racial and ethnic minorities who are HIV+ and continue to drink. Encourage research on interventions to overcome impediments and promote facilitators of equitable treatment for racial and ethnic minority populations with co-occurring HIV/AIDS and problem drinkers. Such HIV treatment research should also emphasize the importance of examining the influence of stigma and cultural stereotyping related to drinking, both within these communities and among health care providers and health care systems, on HIV testing and counseling behaviors in racial and ethnic minority communities.

1.6 Area of Emphasis Six: Genetic and Neurobehavioral Risk Factors in Ethnic and Minority Populations for Alcohol Abuse and Dependence

Abusive alcohol drinking significantly impacts the health of ethnic and minority populations. Differences in social and environmental factors along with variations in genes may contribute to the risk for the development and the maintenance of alcohol abuse and dependence. Health disparities are evident among ethnic populations in alcohol-related problems. The rate of past heavy drinking, for example, is significantly higher in Native American populations than for Caucasian populations. Problems associated with alcohol use are higher among Mexican

American and African American than for Caucasians in spite of their relatively lower overall rates of AUDs.

Studies have shown that alcoholism has a heritability between 49 and 60%, which demonstrates a significant genetic influence. Studies of allele frequency differences resulting from polymorphisms in candidate or novel genes may provide one mechanism for diversity in alcohol-related problems observed across multiple populations. The NIAAA has been very successful in funding investigators who are studying genetic factors in ethnic and minority populations. Funded research programs are looking at genetic differences in populations with health disparities such as Mexican-Americans, African-Americans, Chinese of Han ancestry, and the Mission Indians of southern California.

In addition to genes that may contribute to risk for abuse and dependence, behavioral and neurological factors may be associated with genetic influences and may also be risk factors. Studies to further elucidate the genetic factors in health disparity populations that contribute to alcohol abuse and dependence are vital to public health efforts to reduce health disparities. Behavioral and neurological differences in populations and their relationship to genetic factors will be an important area of research to develop potential markers of risks for clinical application. Studies, funded by NIAAA, are beginning to investigate the behavioral and neurological factors in ethnic and minority populations and their contribution to subsequent alcohol abuse and dependence. For example, one recently published study found that genetic polymorphisms associated with the function of the brain reward system were associated with alcoholism in Mexican-Americans.

1.6.1 Objective One: Genetic and Neurobehavioral Risk Factors for Alcohol Abuse and Dependence

Through this objective, the genetic risk factors for the development and maintenance of alcohol abuse and dependence in ethnic and minority populations will be further elucidated. In addition to the study of genetic factors that contribute to risk, behavioral and neurological factors in different health disparities populations that also contribute to risk and may be associated with genetic factors will be investigated. Understanding genetic factors along with the differences in behavioral and neurological variables in health disparity populations will contribute to the development and eventual clinical application of markers for risk of alcohol-related problems. The NIAAA is currently supporting research projects in ethnic and minority populations that are investigating genetic differences (e.g., variability in allele frequencies and SNPs) in these populations. The continued support of these funded projects is essential to the NIAAA mission of determining risk factors for subsequent alcohol-related health problems. In addition, investigators are beginning to investigate associated variables, such as attention, reward sensitivity and brain electrophysiological (e.g., EEG) responses, that may also differ among health disparity populations and could contribute to risk for alcohol abuse and dependence. The combined investigation of genetics along with behavioral and neurological factors in different health disparity populations will be strongly encouraged. The NIAAA has funded a number of investigators who have been very successful in working with understudied health disparity populations. How and why these investigators were able to access these populations and to maintain a long-term positive relationship will be emphasized in a health disparities methodology conference during the fourth year of the Strategic Plan.

1.6.1.1 Action Plan

- 1) Continue support for funded research projects that are investigating genetic factors in ethnic and minority populations. Encourage minority student's involvement in the research studies by the use of minority/diversity supplements to funded grants.
- 2) Work to recruit junior and/or experienced investigators to develop new research programs in health disparity populations that emphasize studies investigating heritable phenotypes of risk for alcohol abuse and dependence and their association with behavioral and neurological factors in these unique populations. Program Officers at NIAAA will contact investigators and provide encouragement and guidance on submission of new grant applications.
- 3) Hold a conference on the methods that have been successful in accessing health disparity populations and maintaining a positive working relationship during conduct of research studies. The NIAAA has been very successful in funding investigators who conduct genetic research in ethnic and minority populations. The conference will be designed so that other potential investigators in health disparity research can learn about successful approaches. The conference will also provide an avenue for NIAAA-funded investigators to report on their findings and the status of research efforts to address the objective.

1.7 Area of Emphasis Seven: Health Disparities in Alcohol-Induced Liver Damage

The prevalence of and the mortality rates for alcoholic liver disease (ALD) substantially differ among ethnic groups. In the United States, cirrhosis rates are higher in black men than in whites, while Hispanics present the highest cirrhosis mortality⁵⁶. Interestingly, no significant difference in alcohol consumption among these ethnic groups have been found, suggesting that factors other than drinking rates are involved in setting such differences. Namely, demographic factors related to gender, age, income, education and employment as well as biological or environmental factors have been postulated to explain ethnic variations in the development of ALD. However, it is still not clear whether ethnic differences in rates of ALD are due to genetic differences, or different amounts and types of alcohol consumption or different socio-economic status and access to medical care.

1.7.1 Objective One: Improve our Understanding of Ethnic Differences in the Development of Alcoholic Liver Disease

Chronic alcohol consumption causes disproportionate liver damage in various ethnic minorities. The mechanism underlying this health disparity is still unknown; NIAAA will fund research to understand this better.

1.7.1.1 Action Plan

NIAAA will support research on biomarkers for alcoholic liver disease (ALD among ethnic groups). Funded projects may include human and animal databases/tissue repositories that are difficult to collect. Employing such unique databases, research can compare/contrast the proteomics/metabolomics signatures in specimens from well-characterized ethnically diverse patients. Issue an FOA to explore and expand understanding of ethnic/racial differences in susceptibility to ALD.

2.0 AREAS OF EMPHASIS IN RESEARCH CAPACITY

2.1 Area of Emphasis One: Extramural Alcohol Research Infrastructure Development

NIAAA has identified areas where new and enhanced activities could strengthen its alcohol research infrastructure to better address health disparities. These include support for the Minority-Serving Institutions (MSIs) and minority research organizations in their capacity to conduct health disparities research and for their capability to attract, retain, and train minority investigators in alcohol research. Established alcohol researchers have demonstrated a willingness to collaborate with minority clinicians/investigators and to include minority populations and communities in their research. Efforts to enhance research at MSIs and an emphasis on health disparities research have evolved into a model for promoting health disparities research participation at several minority-serving institutions.

Minority clinicians and scientists have much to add to the resolution of alcohol-related health disparities. NIAAA recognizes the need to attract and promote the career development of minority investigators to conduct alcohol research. NIAAA has enhanced outreach to and support of alcohol research symposiums for ethnic and racial minority professional groups. This has served to increase interest in alcohol research by minority scientists and practitioners and provided opportunities to provide technical assistance to those interested in conduct research.

In the recent past, NIAAA has also increased use of established NIH programs to enhance the diversity of the alcohol research workforce. These include enhanced efforts to recruit minorities through the Mentored Career Awards (K01, K23, K08), Individual Pre- and Postdoctoral Training Awards (F31 and F32), and Institutional Training Grants (T32s). Since 2005 NIAAA has nearly doubled its investment in the Administrative Supplements to Promote Diversity in Health-Related Research. In addition to supporting more investigators and dedicating more funds, NIAAA also has expanded the program to include Asian Americans and Pacific Islanders in behavioral research and clinical research because they are underrepresented in these areas of alcohol research. We have found that some recipients are applying for and receiving independent research awards, which sometimes focus on disparities research issues and/or intend to mentor other underrepresented students and scholars.

2.1.1 Objective One: Increase alcohol research capacity at Minority Serving Institutions (MSIs):

The current strategic plan builds upon previous efforts and further enhances this partnership model of research capacity building at MSIs. In an effort to expand health disparities research established alcohol researchers will team with minority clinicians and scientists at minority serving institutions to promote alcohol research that relates to racial/ethnic minority, rural and low SES populations. These objectives enhance research at MSIs, increase the involvement of minority research staff at all levels in rigorous alcohol research and promote awareness and opportunities for students at MSIs in research experience.

- 1) Develop alcohol research infrastructure at MSIs.
- 2) Increase research capacity development in MSIs through support of collaborative research with leaders in alcohol research.
- 3) Involve minority populations and communities in alcohol research and wellness strategies.

2.1.1.1 Action Plan

To better formalize and foster research collaborative partnerships between MSIs and established alcohol research institutions and promote the training and career development of ethnic minority scientists, the NIAAA will issue a FOA to establish a Collaborative Minority Alcohol Research Center Development (CMARCD) program. This program will use *linked applications* and awards (between the MSI and proposed research-intensive institution partners) in order to enhance the development of sustained research programs, increase expertise on minority health issues, and build the capacity of minority researchers to conduct independent alcohol research.

2.2 Objective two: Conduct targeted research infrastructure development at ethnic and racial minority professional organizations.

NIAAA has found it productive to reach out to ethnic and racial minority scientists/practitioner professional organizations to engage them in alcohol research. NIAAA has increased its involvement with and sponsorship of the National Hispanic Science Network (NHSN). Sponsoring young investigators attending their annual meetings, serving on the planning committee, and organizing research symposia featuring top alcohol researchers has resulted in increased applications from members of this organization for NIAAA research grants, career development awards, and diversity supplement applications.

While maintaining this commitment to the NHSN, NIAAA has plans to extend similar efforts and support for Native American/Alaskan Natives attending the meetings such as the Association of American Indian Physicians (AAIP) and the Native American Research Centers for Health (NARCH) awardees. At the annual meetings of the AAIP, NIAAA will sponsor research symposia, training in alcohol screening and brief interventions, provide health education information, and provide technical assistance to members interested in applying for research grants. We have funded one or more NARCH research projects over the past several years. We will continue to support alcohol focused research as an additional means of developing the next generation of American Indian and Alaska Native researchers. Finally, we will collaborate with NIDA to host a working group of experts in Native American/Alaska Native alcohol and substance use research to focus on improving the research and resulting scientific knowledge in this critically underserved health disparity population.

2.2.1 Action Plan

Support research symposia at annual meetings with large minority participation such as the annual meetings of NHSN, AAIP, Hispanic Serving Institutions (HSIs), and Historically Black Colleges and Universities (HBCUs). Expose students and investigators to research and training opportunities in alcohol research. Expand research capacity among Native American/Alaska Native alcohol and substance abuse researchers by organizing an expert working group to evaluate the current research, develop a strategic plan for future research in this population, and provide grantsmanship technical assistance.

2.3 Objective Three: Increase minority investigators' participation in NIH training and career development programs.

The T32 Institutional Training grants are intended to provide research training opportunities for pre and/or postdoctoral students who intend to establish a career in the biomedical and/or behavioral sciences with an emphasis in alcohol research. The language in the FOA is designed to enhance the recruitment and retention of underrepresented groups and provide reviewers with guidelines to evaluate strategies (and their success rates) used in the recruitment and retention plan to increase diversity. In addition, recruitment and retention of minority alcohol research scientists and students will be encouraged within the Alcohol Research Centers program. Finally, the Diversity Supplement program will be expanded to include more years of mentored training experience in order to enhance retention of new minority investigators in alcohol research.

NIAAA conducts multiple grantsmanship workshops and networking poster sessions at national and regional meetings (e.g., Research Society on Alcoholism, Neuroscience, T32 Directors' and Trainee Meeting) that encourage participation of minority scientists, offer training in building grant writing skills, and promote opportunities for more scientific collaborations. Mentoring workshops are conducted at both the T32 and Alcohol Research Center Directors' meetings to augment skills used by more experienced scientists to nurture the development of trainees, including minority students and investigators. Taken together, these efforts serve to promote a more diverse workforce that will contribute to the advancement of alcohol research.

2.3.1 Action Plan

NIAAA will monitor performance of T32 training programs and Alcohol Research Centers programs in their compliance with efforts to promote diversity. NIAAA will offer mentoring workshops at the T32 and Alcohol Research Center Directors' meetings to promote more effective mentor/mentee relationships and networking to better recruit and retain minority investigators.

NIAAA will expand the number of years a candidate may be supported on a Diversity Supplement from two years to three or more years depending on the training needs and plans as indicated in the application.

3.0 AREAS OF EMPHASIS IN COMMUNITY OUTREACH, INFORMATION DISSEMINATION, AND PUBLIC HEALTH EDUCATION

3.1 Area of Emphasis One: Increase At-Risk and Minority Access to Alcohol-Related Health Messages

Important to the mission of NIAAA is research designed to identify racial and ethnic disparities in the causes and consequences of alcohol-related problems; develop methods to ameliorate them; and disseminate research-based, culturally relevant information to special populations through appropriate venues. Groups of particular concern include Hispanics, African Americans, American Indians/Alaska Natives, Asian Americans, Native Hawaiians and other Pacific Islanders, as well as rural and low-SES populations.

3.1.1 Objective One: Increase awareness of alcohol abuse, alcohol dependence, and alcohol-related problems experienced by minority, rural, and economically disadvantaged populations.

Develop and make available to health disparities communities linguistically appropriate and culturally relevant health messages on a variety of alcohol-related issues. For example, for Hispanic populations, this process includes conducting Spanish-speaking focus groups and pretesting of materials for linguistic and cultural suitability. NIAAA plans to translate its *Rethinking Drinking* brochure to Spanish in the next few years. We also expect to develop additional outreach materials for Native Americans through partnerships with the National Organization on Fetal Alcohol Syndrome (NOFAS) and American Indian health associations.

Relevant to this objective, during FY2009, NIAAA's traveling health disparities exhibit debuted at the National Center for Minority Health and Health Disparities, December 15–18, 2008, and was subsequently shown at Association of American Indian Physicians (AAIP) Annual Meeting, July 22–26, 2009. A series of fliers highlighting NIAAA's work in the health disparities arena also were developed and displayed along with the new exhibit.

Additionally, two of NIAAA's most popular Spanish-language publications were revised in 2009—*Helping Patients Who Drink Too Much: A Clinician's Guide* and *Make a Difference: Talk to Your Child About Alcohol*. NIAAA updated the data and resource sections in these publications. Work also is underway to develop a new template for the Web version of the Spanish-language Clinician's Guide. The new template will make the text accessible to a broad Spanish-speaking audience and will be fully 508 compliant to meet the needs of people with disabilities.

3.1.1.1 Action Plan

Translate/adapt additional NIAAA consumer health materials for minority populations. Pretest such materials in focus groups consisting of the members of the targeted communities. Get input from experts to improve the cultural relevance of health messages. Explore appropriate partnerships, both financial and substantive, for translation of materials. Explore partnership opportunities with NOFAS and American-Indian health associations to develop culturally-appropriate outreach materials and activities for Native American women regarding alcohol and pregnancy. NIAAA will consider new options for the traveling health disparities exhibit, such as the NBC4 Health and Fitness Expo in Washington, DC and the Jackson (MS) Medical Mall. Additionally, NIAAA will exhibit at the Latino Behavioral Health Institute (LBHI) annual conference and the Association of American Indian Physicians annual conference to reach out to these important audiences.

3.2.1 Objective Two: Develop and build partnerships with government and private organizations to transmit research-based information to minority, rural, and economically disadvantaged populations.

Form partnerships with government agencies, private organizations, and associations whose goals are to promote healthy and safe behaviors and to develop comprehensive research plans to address alcohol-related problems for specific populations. The work of these partnerships will consist of providing information and educational materials as well as collaborating to increase the availability of research-based information to their constituencies. Speeches and presentations by NIAAA staff to partners are included.

3.2.1.1 Action Plan

Identify and establish collaborative partnerships with other NIH Institutes, other governmental and national organizations such as the National Highway Traffic Safety Administration, Community Anti-Drug Coalition of America, National Council on Alcoholism and Drug Dependence, Mothers Against Drunk Driving, NOFAS, and Latino and American Indian associations and rural health organizations to implement various alcohol education and outreach programs.

3.1 Area of Emphasis Two: Education for and Outreach to Current and Future Health Professionals and Scientists

Because alcohol-related disorders occur in approximately 26 percent of general medical patients, the Institute of Medicine recommends that questions about alcohol use be included among the routine behavioral/lifestyle questions asked of all those seeking medical care. And because medical and other health professional schools provide only minimal training to recognize and treat alcohol problems, NIAAA has developed a number of resources—including a guide to screening, online training, and slide presentation—to aid health care professionals in the screening and treatment of people with alcohol-use disorders (AUDs). Special issues for health disparity groups, such as higher incidence rates for alcoholic liver disease and FAS, treatment barriers, and cultural and financial factors, must be incorporated in health professions training for those who care for racial and ethnic minority, rural, and economically disadvantaged individuals. Because many patients are willing to accept suggestions from health care professionals, the skills to intervene effectively, refer, and follow-up with these groups of individuals must be included in general medicine training and continuing education programs. Further, there is a need to reach children—future teen and adult patients—with information concerning alcohol and its effects on health. Not only is it important to educate existing professionals but also to ensure that those being trained are aware of cultural diversity issues in alcohol treatment and research.

3.1.1 Objective One: Continue Development of Program for Health Professionals and Scientists

Improve physician/health care provider intervention skills in health disparities communities by making educational materials available in other languages. Make research-based education regarding AUDs, interventions, and treatment a priority in the training of health professionals serving minority populations. Increase the number of faculty role models effectively handling alcohol use disorders and intervention; improve patient physician interaction around the topic of alcohol use, abuse and, alcoholism. Through organizations such as the National Hispanic Science

Network and the Association of American Indian Physicians, increase knowledge about alcohol-related issues among scientists, health practitioners, and students.

3.1.1.1 Action Plan

Improve physicians' and other health care providers' skills in detecting alcohol problems, including AUDs, through the use of research-based NIAAA materials such as the Clinician's Guide, which is available in Spanish. Increase awareness among practitioners of the availability of culturally and/or linguistically appropriate materials that physicians can provide to their patients, including *Drinking and Your Pregnancy*, *A Family History of Alcoholism: Are You at Risk*, *Alcohol: A Women's Health Issue*, *Harmful Interactions: Mixing Alcohol With Medicines*, *Tips for Cutting Down on Drinking*, and *Make a Difference: Talk to Your Child About Alcohol*.

Additionally, NIAAA will consider new options for the traveling health disparities exhibit, such as planning for a presence at the NBC4 Health and Fitness Expo in Washington, DC in January 2011, including partnering with an organization to provide free alcohol screening, and the Jackson (MS) Medical Mall, both of which attract audiences with limited healthcare options. NIAAA will continue to explore opportunities to reach out to typically underserved populations and to develop materials that target these audiences.

Explore Spanish and other language subtitling for existing online training on screening and treatment. Continue to provide support for ethnically oriented groups such as the National Hispanic Science Network and the Association of American Indian Physicians.

3.2.2 Objective Two: Science education outreach to minority and underserved students.

NIAAA will participate in and/or sponsor summer and other special educational events for minority and underserved students. A key goal of these activities is to interest students in science as a career seeding the pipeline for a future generation of scientist practitioners and contributing to the diversity of this future health sciences workforce. A second goal is to provide research-based information to young people about alcohol to encourage/support good decisions about underage drinking and their future health.

3.2.2.1 Action Plan

NIAAA will continue (and expand if possible) its cadre of partnerships with programs that identify and encourage high school students to remain in the academic pipeline and consider careers in health sciences. NIAAA will continue and expand its work with groups such as Jeter's Leaders; the National Hispanic, Native American, and African American Youth Initiatives; the Minority Medical Students' Association and the American Psychological Association's summer research program for minority young investigators. These programs provide day or week-long training, tours, and interactive programs on alcohol and minority populations, medical research, and science and health careers at the National Institutes of Health, as well as at other institutions. Going forward, NIAAA will develop and use short surveys to gather input from students who receive alcohol-related presentations as part of their NIH experience, which will be used to improve programs and measure their impact.

4.0 AREAS OF EMPHASIS IN INTEGRATION OF RESEARCH, RESEARCH CAPACITY BUILDING, AND COMMUNITY OUTREACH, INFORMATION DISSEMINATION AND PUBLIC HEALTH EDUCATION

4.1 Area of Emphasis One: Develop mechanism to support the integration of research, research capacity building, community outreach, information dissemination and public health education in projects benefiting health disparity populations.

Integration of research, research capacity building, community outreach, information dissemination and public health education is a difficult process in light of the limitations of the NIH mechanisms that support research. The most common award mechanism, the R01 is not well-suited to provide *simultaneous* support for advances in these diverse areas. In addition to efforts to build research infrastructure at Minority Serving and extensive efforts to establish a Health Disparities focused Alcohol Research Center Institutions (see Area of Emphasis Two), NIAAA with support from NCHMD has been employing a series of Cooperative Agreements to explore the potential to include all these in one comprehensive project. We have focused these pilot efforts on rural health disparities communities; since 2004 NIAAA has been working to enhance research on the prevention of underage drinking in rural areas.

Underage drinking and the prevention of the morbidity and mortality associated with alcohol consumption in youth are among NIAAA's highest research priorities. According to data from the 2006 National Survey on Drug Use and Health⁵⁷, almost million 12-20 year olds (28.3% of this age group) reported drinking alcohol in the past month. About 7.2 million (19.0%) were binge drinkers, and 2.4 million (6.2%) were heavy drinkers. These figures have remained essentially the same since 2002. However, NSDUH data suggest an even more serious and growing problem of binge and heavy drinking among youth aged 12-20 in *rural* as compared to *non-rural* areas. Results indicate that 20.1% of youth aged 12-20 living in less urban, non metro settings were binge drinkers, and 6.7 were heavy drinkers; both rates were significantly higher than in 2005. The percentages for underage youth living in completely rural areas were similarly high, 21.4% and 6.2%, respectively.

Based on suggestions from this meeting, in 2006 NIAAA solicited applications under RFA-06-003 "*Underage Drinking: Building Health Care System Responses*" for Phase I cooperative agreements (U01s) to enable rural and small urban health care systems to become platforms for research programs on underage drinking. NIAAA funded four cooperative agreements to: (1) to assess the extent of underage drinking the areas they serve and (2) develop capacity for intervening with this problem. Phase I allowed for considerable attention to community outreach, education and input; relationship and partnership building; identification of and training of members of health care systems to engage in underage drinking prevention; research capacity development, and collection of preliminary data in the three years dedicated to Phase I activities. Two of the original four programs successfully competed for Phase II awards under RFA-AA-09-00 "*Limited Competition: Underage Drinking: Building Health Care System Responses (Phase II) (U01)*". NIAAA will continue to support these pilot efforts and evaluate this as a potential model program to achieve the multiple goals and integrate them in to a successful health disparities project to address underage drinking among rural and/or minority youth.

4.1.1 Objective One: Develop and expand exploratory efforts to include the integration of research, research capacity building, community outreach, information dissemination and public health education in projects benefiting health disparity populations.

4.1.1.1 Action Plan

NIAAA will continue financial, scientific and programmatic support for Phase II Cooperative Agreements. We will conduct conference calls with PIs and key staff to discuss process; document achievements and problems of model; continue efforts to standardize measures and procedures to allow for comparison across sites. NIAAA will evaluate the success of the use of cooperative agreements to support the integration of research, research capacity building, community outreach, information dissemination and public health education in project benefiting health disparity populations.

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