Final Report

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BrightOutcome Inc.*

Alcohol Research Group**

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Thoughts from Experts

"This will be an excellent and unique resource in the alcohol research field, particularly for researchers who are new to the alcohol field and those from lower-resourced countries, but also for more experienced investigators from higher-income countries. The coverage of major national and international surveys, measures, and variables is broad and inclusive, and can be expanded as new surveys become available. The Q & A feature will be valuable for junior investigators searching for "gold standard" measures in areas of interest and eager to learn about possible pitfalls or risks of certain measures in specific cultural contexts, as well as for experienced senior investigators looking for measures of new constructs in which they have become interested (and for colleagues who may share their interests)."

Sharon C. Wilsnack, Ph.D.
Chester Fritz Distinguished Professor
Department of Clinical Neuroscience
University of North Dakota School of Medicine & Health Sciences

"Excellent set up, especially the ability to have information about psychometric properties, papers published, export references to Endnote."
"I suspect that this site will be greatly utilized."

Raul Caetano, M.D., M.P.H., Ph.D.
Dean and Professor of Health Care Sciences and Psychiatry
University of Texas School of Public Health

"I love it!" "I really like how it is displaying everything!" "[H]ad no idea how good this site is!"
Maristela G. Monteiro, M.D., Ph.D.
Senior Advisor, Alcohol and Substance Abuse
Pan American Health Organization

"[H]aving something like this would help alleviate researchers' anxiety in picking measures."

Roland Moore, Ph.D.
Senior Research Scientist
Prevention Research Center, Pacific Institute for Research and Evaluation

"[G]ood research resource for people because it is centralized."
Elizabeth D'Amico, Ph.D.
Senior Behavioral Scientist
RAND Corporation

"The content and resources provided are super helpful and the website is very user-friendly."
"Goes way beyond what I'd expect."

Camillia Lui, Ph.D.
Associate Scientist
Alcohol Research Group, Public Health Institute

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1   Background and Significance

Alcohol is ubiquitous in U.S. society. The U.S. alcohol industry is responsible for over $400 billion of the total U.S. economy,[1] and alcohol companies spend approximately $2 billion on advertising in the United States alone.[2] The result is a society where alcohol use and abuse are prevalent. According to the World Health Organization, the average American adult drinks 9.4 liters of alcohol per year and approximately 65% of all adults have drank alcohol at some point in the previous twelve months.[3] Additionally, underage drinkers account for at least 11% of all alcohol consumption within the U.S.[4,5]

The result is that everyone in the U.S.—whether a consumer of alcohol or not—is affected by alcohol in some way. The most dramatic consequence of alcohol use is death, and annually approximately 80,000 individual deaths are attributable to alcohol use.[6] Included in these numbers are more than 15,000 deaths each year from liver disease, 19,500 from alcohol-related cancer deaths,[7] and more than 14,000 deaths related to vehicle crashes. Beyond death, alcohol use is associated with abuse, behavioral health problems, disease, injury, mental health illnesses, neglect as well as many other public health problems.

While not every individual who uses alcohol abuses it, a significant percentage of people do and yet, the percentage of individuals seeking treatment for alcohol abuse is extremely low. According to the National Survey on Drug Use and Health (NSDUH),[8] 7.8% of all Americans over the age of eleven in 2007 needed treatment for an alcohol problem at some point in the previous year. The vast majority of these individuals (87.4%) did not even perceive a need for treatment, and, therefore, did not get it. Another 4.5% perceived a need for treatment but were unable to obtain it.

Many barriers currently exist in obtaining treatment for alcohol abuse and other alcohol-related disorders. First and foremost, the NSDUH data suggests that a large barrier to alcohol abuse treatment is the inability of most alcohol abusers to realize they need treatment. However, barriers continue to exist to getting treatment even for individuals who realize that treatment is needed. The NSDUH explains that the majority of individuals who realize they need treatment but did not get it indicated that the barrier to getting treatment was either because the individual was not ready to stop drinking (42.0%), or because there were cost/insurance barriers to obtaining treatment (34.5%).

In addition to barriers surrounding individual attitudes about their own use of alcohol and costs associated with treatment, recent research has indicated that additional procedural and institutional barriers to both alcohol abuse treatment and alcohol abuse research may be operating to prevent individuals, particularly of racial and ethnic minorities, from participating in such programs. Although data is scarce, there is sufficient evidence to indicate that a disparity exists with respect to minority participation in alcohol abuse research and treatment. The remainder of this section examines what that research has to say on the following questions:

- What are the rates of alcohol use and abuse by racial and ethnic minorities?
- What are the rates of participation in clinical trials and alcohol research by racial and ethnic minorities?
- What barriers exist to participation in clinical trials and alcohol research for racial and ethnic minorities?

1.1   Rates of alcohol use and abuse by racial and ethnic minorities

The data clearly indicates that race and ethnicity play a role in rates of alcohol use and alcohol abuse of individuals within the United States. Specifically, there is strong evidence from epidemiologic surveys to indicate that "minority groups are disproportionately affected by the adverse health and social consequences of alcohol and alcoholism."[9] Not all racial and ethnic minorities use alcohol to the same extent, and the manner of use of alcohol also varies substantially among racial and ethnic minorities. Understanding the specifics of how different racial and ethnic minorities use alcohol is essential to developing sound research projects, clinical trials, and ultimately, treatments programs.

United States General Population. When race is not taken into account, a typical U.S. citizen consumes an average of 9.4 liters of alcohol per year with approximately 65% of all adults having had alcohol at some point in the previous twelve months.[3] According to the CDC, 51.5% of Americans are "regular drinkers," having an average of at least one alcohol beverage per month.[10] More than half of all the alcohol consumed by Americans, however, is in the form of binge drinking, with the prevalence of binge drinking reaching a rate of 15.2% in 2009.[10] Rates of binge drinking among men (20.8%) were over double the rates for women (10.0%).[10] The reality of these numbers is that, according to date from 2007, 7.8% of all Americans over the age of eleven needed treatment for an alcohol problem at some point in the previous year. The vast majority of these individuals (87.4%) did not even perceive a need for treatment and fewer than 8% of individuals in need of treatment actually obtained it.[8]

Alcohol usage in the United States has a large number of serious public health consequences. Perhaps due to the combination of high binge drinking rates with low treatment rates it is not surprising to learn that excessive alcohol use is the third leading preventable cause of death and was responsible for an average of 79,000 deaths per year from 2001-2005.[10] Among the most significant public health risks associated with alcohol consumption are liver disease, driving while under the influence of alcohol, and, under certain circumstances, intimate partner violence.[11]

Underage drinkers account for at least 11% of all alcohol consumption within the U.S.[4] Nationally, approximately 52.2% of girls and 54.1% of boys have used alcohol at least once in their lifetime by eighth grade, with approximately 24% of those same individuals having used alcohol within the last thirty days.[12] The number of individuals who have tried alcohol at least once rise to 80.5% for girls and 80.8% for boys by time they are seniors in high school, at which point 47.3% of girls and 55.9% of boys have used alcohol within the last thirty days.[12] These numbers are aggregates of both urban and rural youth, although some research has indicated significant differences between such populations. For instance, although rural youth tend to have lower alcohol usage rates than urban youth, rural youth aged 12 to 17 have higher rates of binge drinking.[13]

White/Caucasian. As a percentage of the entire U.S. population, Whites are declining. In 2010, according to the U.S. Census, the White population increased in raw numbers since 2000 (194.6 million to 196.8 million), but had decreased as a percentage of the total population (69% to 64%).

Among White adults in the United States, approximately 51.8% are regular users of alcohol, while another 13.3% considered infrequent users.[10] The total percentage of regular and infrequent users of alcohol among White Americans (65.1%) is higher than for any other racial or ethnic group. Additionally, there is evidence that White adults engage in heavy drinking (defined as having five or more drinks on the same occasion on at least five days in the past thirty days) more than other racial and ethnic groups, with a total of 6.6% of the White population engaging in such behavior.[11]

Alcohol use among White youth is substantial. By eighth grade, just over half of all White youth have tried alcohol at least once in their lives, and by the time White youths have become seniors in high school 83.0% of girls and 82.5% of boys have had alcohol at least once. While approximately 1 out of every 4 eighth graders have had alcohol within the last thirty days, that number more than doubles by the time White students become seniors, with 52.6% of White girls and 59.7% of White boys reporting alcohol use in the last thirty days as twelfth graders.[12]

African-American. According to the U.S. Census, in 2010 there were 38.9 million African-Americans in the United States, comprising 12.6% of the total population.

According to the Center for Disease Control, 39.3% of African-Americans consume alcohol regularly. An additional 14.4% consume alcohol infrequently, while 29.5% of the population are lifetime abstainers.[10] The data also indicates that approximately 4.5% of African Americans engage in heavy drinking, which is slightly lower than the rates for Hispanics (4.7%) or Whites (6.6%).[11] The data also indicates that African Americans are less likely to drive cars under the influence of alcohol, with only 14% of such individuals indicating they have done so in the past 12 months. This self-reporting seems backed up by the number of African-Americans who have ever been arrested for a DUI, which is 11% for black men—a lower rate than either

Hispanic (19%) or White (13%) men.[11] Finally, African-Americans, as compared to other racial and ethnic minorities, are far more likely to be comorbid for alcohol dependence and drug dependence. Thus, of African-American men seeking treatment for dependency issues, only 17% of them seek it for alcohol-only issues, which is considerably lower rate than either Hispanics (38%) or Whites (47%).[11]

The available data indicates that, as a whole, African American youth are less likely to have had alcohol in their lifetimes than White youth. The number of African-American eighth grade students who have tried alcohol at least once is approximately 49%, which is slightly lower than the rate for White youth of that same age. However, the rate of African-American high school seniors who have tried alcohol at least once is 71.8% for girls and 71.6% for boys, both of which are significantly lower rates than their White counterparts. Similarly, the number of African-American youth who have consumed alcohol in the last thirty days is substantially lower than White or national averages with only 16.6% of African-American eighth graders reporting such conduct. By time African-American youth are in twelfth grade those numbers have risen to 27.8% for girls and 39.0% for boys, but those rates are still well below the national averages.

Asian American. According to the U.S. Census, in 2010 there were 14.6 million Asian Americans, which is equivalent to 4.8% percent of the total population.

Among Asian American adults, alcohol consumption is considerably lower than for other racial and ethnic groups. According to the Center for Disease Control, 43.7% of Asian Americans are lifetime abstainers from alcohol, and only 34.1% of Asian American adults regularly consume the beverage. The amount of research on alcohol usage rates within the Asian American population is considerably less than for other racial and ethnic groups, and this is likely due, at least in part, to the relatively low usage levels among this population.

Asian American youth are far less likely to have tried alcohol than any other racial or ethnic group. Nationally, "only" approximately 34.2% of Asian American girls and 34.8% of Asian American boys in eighth grade have tried alcohol at least once in their lifetime. Although those rates rise to 58.8% for girls and 69.7% for boys by time they are seniors in high school, the rates remain the lowest among all racial and ethnic groups. Likewise the number of Asian American youth who have had alcohol at least once in the last thirty days is lower than any other race or ethnic group for both eighth grader students (9.5% usage rate for girls; 9.8% usage rate for boys) and twelfth grade students (28.4% usage rate for girls and 35.9% usage rate for boys).[12] However, variation is seen between Asian-American subgroups with Korean-Americans drinking more than groups with other national origins.[14]

Native American/Alaska Native/Native Hawaiian. The 2010 U.S. Census indicated that there were 2.9 million Native Americans/Alaska Natives living within the United States. That number is equivalent to 4.8% of the total population. Additionally, the Census counted 540,000 Native Hawaiians and Other Pacific Islanders, which made up another 0.2%. Thus, the total Native population in the United States is around 5% of the total population.

American Indian and Alaska Native adults have relatively high alcohol usage rates. According to the CDC, 44.1% use alcohol regularly, with an additional 11.5% using it infrequently.[10] Additionally, the data for Native Hawaiian adults (which includes other Pacific Islanders as well), indicates that 42.4% of their adult population are regularly consumers of alcohol.[10] The NSDUH has indicated that American Indians/Alaska Natives are more likely to need treatment for alcohol abuse in the past year than any other racial and ethnic minority (14.4% for Native Americans/Alaska Natives; 7.6% for other racial and ethnic minorities).[8] Alaska Natives, in particular, had extremely high rates of death from alcohol induced disorders, with nearly 1 out of every 13 deaths in the state being alcohol induced.[15] In another study focusing on Alaska Natives, 61% of men and 37% of women indicated they had engaged in binge drinking in the past twelve months.[15] Overall, however, the data on Alaska Natives is sparse, particularly in rural indigenous communities. On the positive side, this same demographic was more likely to receive specialty treatment for alcohol abuse (12.4%) than other racial and ethnic groups (8.1%).[8]

The vast majority of data on alcohol use among Native youth focuses solely on Native Americans living within the continental United States. The data indicates very high levels of alcohol consumption by Native American youth. Approximately 65.2% of Native American girls and 59.2% of Native American boys have

had alcohol at least once in their lifetime by eighth grade. Those numbers rise to 85.7% and 80.6% for girls and boys, respectively, by the time they reach twelfth grade. The number of Native American youth who have consumed alcohol in the past thirty days also exceeds national averages on that same question. In eighth grade, 29.0% of girls and 33.5% of boys had used alcohol in the past thirty days. Amongst high school seniors, those numbers rose to 54.5% for girls and 55.6% for boys.[12]

Latino or Hispanic Origin. According to the U.S. Census, in 2010 there were 50.5 million Hispanics in the United States, which means Hispanics make up 16% of the nation's population.

Hispanic adults, according to the CDC, consist of 42.1% regular drinkers and 12.7% infrequent drinkers of alcohol (the numbers for just Mexican-Americans are 43.1% and 12.5% respectively). Hispanic adults have a heavy drinking rate of 4.7%, which is lower than that of Whites (6.6%), but higher than that of African Americans (4.5%).[11] That said, Hispanic men have higher rates of self-reporting that they had driven home while under the influence of alcohol in the past twelve months (22%) than either Whites or African-Americans. As of 2000, Hispanic men also have an arrest rate for DUIs within the past twelve months that is four times higher than that of African-Americans or Whites. They also have the highest rate of ever having been arrested for DUI at 19%.[11]

Taken as a whole, Latino/Hispanic Origin youth have among the highest alcohol usage rates within the United States. According to the American Association of Suicidology, "Stress caused by the immigration experience, minority status, and increased levels of acculturation can influence, and have been associated with, the increased abuse of alcohol and other substances by Hispanic youth."[16] That said, some of the best data on alcohol usage by Latino or Hispanic Origin youths is further divided into data on three distinct sub-sets of this population: Mexican-Americans, Puerto Ricans, and Other Latino/a Americans. Given the different rates produced by looking at these three sub-populations and, in particular, the high levels of alcohol usage among Mexican-American youth, it is valuable to examine the data from all three data subsets independently:

>   **Mexican Americans.** Alcohol use among Mexican American youth is exceptionally high. By eighth grade, approximately 60% of all Mexican American youth have consumed alcohol at least once in their lives—nearly 7% higher than the national average. By senior year, the numbers are closer to the national averages but still higher than average with 81.9% of Mexican American girls and 83.7% of Mexican American boys having already tried alcohol at least once. Similarly, at the eighth grade level, Mexican American are more likely than the average youth to have consumed alcohol in the last thirty days (31.4% of girls; 28.8% of boys), although by senior year these numbers are slightly lower than average for girls (44.3%) and slightly higher than average for boys (58.1%).[12]

>   **Puerto Ricans:** Puerto Rican youth, like Mexican American youth, have rates of alcohol usage higher than the national average. 60.1% of Puerto Rican girls and 54.9% of Puerto Rican boys in eighth grade have tried alcohol at least once in their lifetimes. By time these youths are seniors in high school, 81.1% of them have tried alcohol at least once. The number of Puerto Rican youths who have used alcohol at least once in the past thirty days is also higher than national averages. Just under 24% of all eighth grade Puerto Rican students indicate having used alcohol in the last thirty days, whereas 40.5% of senior Puerto Rican girls and 50.1% of senior Puerto Rican boys reported the same.[12]

>   **Other Latino/a Americans:** While the rates of Other Latino/a Americans using alcohol are lower than either their Mexican American or Puerto Rican counterparts, they remain at or above national averages in most cases. By eighth grade, 57.5% of girls and 55.4% of boys have used alcohol at least once. These numbers climb to 79.7% for girls and 83.1% for boys, by the time these youth are seniors in high school. The number of Other Latino/a American youths using alcohol at least once in the past thirty days goes from 26.4% in eighth grade to 43.0% in twelfth grade for girls, and from 23.4% to 52.4% for boys.[12]

Other Races. While not explicitly discussed in the data below, it is important to note that 6.2% of the U.S. population self-identify as a race other than those discussed above, while 2.9% of the population self-identify

as two or more races. Among those identifying as two or more races, 47.1% consume alcohol regularly with an additional 14.5% drinking alcohol infrequently.[10] Individuals not portrayed in the standard racial or ethnic group compositions presumably experience disparities with respect to alcohol use clinical trials, research, and treatment similar to those of other racial and ethnic minorities.

1.2   Rates of participation in clinical trials by racial and ethnic minorities

Racial and ethnic minorities are underrepresented in clinical studies and trials.[17] But while this fact has been repeated time and again in the scientific literature, quantifying the extent of this underrepresentation in either a general sense or specifically with respect to alcohol research is nearly impossible. An extensive literature review utilizing PubMed found many individual studies related to alcohol and the populations involved, but there were no articles that analyzed participation levels in alcohol studies by racial and ethnic minorities more broadly. While not on the topic of alcohol use specifically, three pieces stand out above the rest of the literature in their effort to provide some concrete data to repeated statements about minority underrepresentation in clinical trials: The first article is by Yancey et al[18], written in 2006, titled "Effective Recruitment and Retention of Minority Research Participants;" the second is a 2008 article entitled, "Recruitment of Minority and Underserved Populations in the United States: The Centers for Population Health & Health Disparities Experience;"[19] and the second is a 2009 article entitled, "Policies to Address Disparities in Clinical Trials: The EDICT Project."[20]

Yancey et al[18] noted major difficulties in recruitment and retention of such participants based on 95 studies published between 1999 and 2005 on methods of increasing participation. Identifying the nature and extent of a study's cultural adaptations can be challenging, but one factor in cultural competence of such adaptations is "increasing accessibility by using the preferred native language or dialect of the group and providing questionnaires written at an appropriate reading level for the target group." (p. 18) Although as Yancey et al[18] point out "Asian Americans are not federally defined as underrepresented in health research" (p.2), clearly this group is "an understudied population in which many health disparities exist" (p. 6). Given the relatively small population sizes and marked heterogeneity in languages of Asian groups in the US (and also their varied nationality and acculturation status), the task of improving access to non-English speaking Asian-Americans for inclusion in US alcohol studies remains significant.

In "Recruitment of Minority and Underserved Populations in the United States: The Centers for Population Health & Health Disparities Experience" (hereinafter, "Recruitment Article") recruitment strategies from seventeen different clinical studies conducted through the Centers for Population Health and Human Disparities initiative were selected and examined. The goal of the study was to determine what types of recruitment strategies were successful at recruiting underrepresented populations in clinical studies, including racial and ethnic minorities. In order to determine what strategies had been effective, the paper had to analyze whether recruitment of racial and ethnic minorities had been effective or not. The authors of the article made no comment on whether the recruitment goals were adequate to avoid minority underrepresentation in a particular study, but rather simply examined whether the seventeen studies in question met their recruitment goals or not. Of the seventeen studies analyzed, only six fully recruited the number of participants desired. More importantly:

> In those studies desiring to recruit a multi-racial/ethnic population and reporting specific accrual results for each race/ethnicity, no clear pattern in terms of recruitment success was observed. For example, the Biological and Behavioral Predictors of Prostate Cancer Project at the University of Pennsylvania reported recruiting 1,149 Caucasian participants, more than two times their March 31, 2007 accrual goal of 500; yet they had recruited only 200 African American participants, eighty percent of their March 31, 2007 accrual goal of 250. Likewise, the Environmental Risk, Coping and Mexican Health Study at UTMB experienced somewhat greater success in recruiting non-Hispanics (1,297 to a March 31, 2007 accrual goal of 800 (162.1%)) than in recruiting Hispanics (1,458 to a March 31, 2007 accrual goal of 1,600 (91.1%)). Conversely, projects 1 and 4 at the University of Illinois at Chicago reported greater success in recruiting minorities (297 African Americans to a March 31, 2007 goal of 270 (110.0%), and 78 Hispanics to a March 31, 2007 goal of 96 (81.3%)) than they did in recruiting Caucasian participants (185 to a March 31, 2007 goal of 270 (68.5%)).[19]

Ultimately, while the Recruitment Article is a meaningful attempt to give some context to the extent of minority underrepresentation in clinical trials, the data it presents allows for few new conclusions to be drawn, although it does support the proposition that racial and ethnic minority representation in clinical studies is lacking.

In "Policies to Address Disparities in Clinical Trials: The EDICT Project," the authors discuss the purpose of the EDICT (Eliminating Disparities In Clinical Trials) project as the development of "practical and implementable policy solutions to disparities in participation in clinical trials through which change can occur at the federal government, state government, and institutional levels and across public, private, and nonprofit sectors."[20] Relying on a comprehensive literature review coupled with interviews of key experts and stakeholders, the EDICT Project article provides several important conclusions. First, they concluded that there is a "hole in the literature regarding policy and disparities in clinical trials." Second, despite a stated policy in the NIH Revitalization Act of 1993 mandating the inclusion of women and minorities in federally funded clinical studies, the data available indicated that disparities had actually increased since the law's enactment. Third, citing a 2006 study, the EDICT Project article indicated that the racial enrollment in publicly funded cancer clinical trials over a thirty-month period was comprised of the following demographic breakdown: 88.6% White; 8.0% African American; 2.8% Asian American; 0.5% Native American/Alaska Native; and 0.1% identifying as multiracial. For the same period of time, the ethnic enrollment of the same studies was: 94.4% non-Hispanic/Latino; and 5.6% Hispanic/Latino. Fourth, the article concluded that within the scarce literature on minority participation in clinical studies, the vast majority focused only on the issue of recruitment and largely ignored the issue of retention even though there is ample evidence indicating that racial and ethnic minorities are substantially more likely to withdraw from studies before their completion than other individuals. And finally, the EDICT Project article found that underrepresented populations in clinical trials went "beyond racial and ethnic minorities and women and include the elderly, children, and adolescents, persons of low socio-economic status, disabled persons, and members of rural populations."[20]

1.3   Barriers for participation in clinical trials by racial and ethnic minorities

While participation in clinical trials may be beneficial for racial and ethnic minorities, recruitment of minority populations has proven to be a difficult challenge.[19] Many barriers exist that hinder and/or prevent participation by minorities in many types of clinical trials, including those related to alcohol. "Barriers have been identified at the patient, provider, system, and community level, and include mistrust of medical research, lack of awareness of available studies, economic burden, and failure to meet eligibility criteria."[19] Fortunately, a robust body of literature is developing on the nature of barriers to participation in clinical studies as well as proposed strategies for overcoming such barriers.

Although barriers to recruitment may take many forms, they can be separated into two primary categories: (1) individual and cultural barriers; and (2) structural barriers. Individual and cultural barriers are those barriers that derive from either the individual beliefs, attitudes and cultural norms of the participant, or of the health care provider/researcher, or both. Structural barriers, on the other hand, revolve around those non-attitudinal hindrances to participation, including awareness issues, communication issues, logistical issues, and economic issues.

Individual and cultural barriers – attitudes and beliefs. Individual and cultural barriers are relatively straightforward to understand in principle, but may take on many different and complex forms in practice. For instance, many studies may inadvertently create individual and cultural barriers through the application of a theoretical framework developed and tested with members of a different culture. The result will be an attempt to impose one set of cultural assumptions or beliefs onto an individual from another cultural, which, in turn, may reduce the probability of recruitment and retention. Additionally, other individual and cultural barriers include "the lack of knowledge of clinical research, cultural differences from the Western biomedical model of health and treatment, the sociocultural context and experiences with research for various populations, and the support for the concept of altruism."[21] Individual attitudes towards research and study

procedures—often influenced by cultural attitudes on the same topics—also can be a barrier to participation.[21]

Structural barriers – availability and accessibility. Structural barriers can also take on many different forms, but largely revolve around the concepts of availability and accessibility. The concept of availability is concerned with whether individuals have clinical trials occurring within the geographical region they are able to participate and whether those trials will take in a temporal manner that is compatible with an individual's schedule.[21] That is, an individual must be able to get to the location of a clinical study and must have the time to do so. Implicit in the concept of availability is awareness. An individual who has free time and the ability to participate in a study, but is not aware of the study's existence will, quite obviously, be unable to participate.

The concept of accessibility includes such issues as "safety, transportation, child/family care, literacy and language."[21] Several of the accessibility issues—namely transportation and the presence of child/family care—have strong relationships to an individual's socioeconomic conditions. Given that the socioeconomic conditions of many racial and ethnic minority individuals are worse than those of Whites, it is easy to see how these conditions may negatively affect minority access to clinical studies and trials.

Additionally, language barriers are an enormous challenge with respect to recruiting racial and ethnic minorities into clinical studies and trials. According to the United States Census Bureau, as of 2011, more than 60.6 million Americans (21% of the total population) spoke a language other than English at home.[22] Approximately 22.4% of these individuals (just over 13.5 million people) speak English "not well" or "not at all." Although no official count exists, the Census Bureau estimates that more than 300 distinct languages are spoken within the United States. The most common spoken language by far is Spanish with 37.5 million speakers, but Chinese, French, German, Korean, Tagalog, and Vietnamese all boast more than one million speakers each as well.[22]

Language barriers not only limit participation, but also help contribute to a wide range of health disparities, including: decreased access to preventative health services, decreased satisfaction with care, poor understanding of instructions or medications, longer hospital stays, and increased risk of medical errors and misdiagnoses.[23] Health care professionals tend to exacerbate these problems by underutilizing interpreters, while over-relying on their own, frequently limited, non-English language skills.[23] The diversity of languages spoken in the Unites States is substantial, and trying to design clinical trials and recruitment strategies that take into account language differences can, in some instances, be a nearly insurmountable barrier.

As stated previously, while the types of barriers are extensive but finite, the reality is that these barriers take on many, many different forms in practice.

1.4   Our Solutions to Barriers

It is obvious that health disparities in general, and racial and ethnic minority participation in research specifically, are undesirable for many reasons. We propose a solution that will be a step toward improving access to such research for racial and ethnic minorities and thus, toward increasing participation rates of such groups. The previously barriers to participation in clinical trials involve individual and cultural barriers (such as culturally-based attitudes toward research) and structural barriers (such as geographic location of a study). The barriers related to cultural and individual beliefs are not the target for the solution proposed herein. Rather, we believe that our solution will help to alleviate some of the structural barriers that occur in research with racial and ethnic minority groups.

More specifically, our solution addresses the two concepts that are involved with structural barriers (availability and accessibility). As discussed above, availability issues include if a study is in the individual's geographic location, if the individual can travel to a study location, and if the needs of the study can fit into the individual's time schedule. Our AlcoholMeasures solution can help to ease some of these issues by providing access to study measures.

Another such barrier, involving accessibility, is the individual's understanding the questions that are asked in the study measures. Our solution overcomes this language barrier, thus improving accessibility, by providing the study measures in a language that is understandable to the racial or ethnic group under study. Instead of depending on someone else to translate the study measures, the individual can read (or listen to) the questions that are asked in the language that he or she speaks. This key feature combined with a planned web-based solution for the administration of such measures help to eliminate (language barriers) or reduce (transportation, childcare, time) the structural barriers that often prevent racial and ethnic minorities from participating in alcohol research.

2 Our Approach

2.1 Overarching Product Goals

Primary deliverables. Two deliverables were explicitly requested in Topic 088: 1) A **measure database** of non-English measures used in alcohol research, especially for racial/ethnic minorities; and 2) a 508-compliant **measure catalog system** available on smartphones and tablets to access this measure database. These two deliverables, the measure database and the measure catalog application, specified for Topic 088 were developed in Phase I and expanded in Phase II. Typical SBIR budget and timeline requirements was experienced for the development of these two deliverables.

Product vision. The end result of these two deliverables is a commercial product: **AlcoholMeasures™**. This product was modeled after our existing system, PROmeasure™ that we developed in other R&D efforts and which we leveraged in this project. The acronym 'PRO' in this original product name refers to Patient-Reported Outcomes, which is the foundation of our technology and our business. We replace the acronym 'PRO' with the word 'Alcohol' to clearly indicate that the measures maintained within this new product is specific to alcohol research.

PROmeasure™ is our existing measure catalog system. It provided about 70% of the system features required for this project, which were extended to add new features to meet the requirements for this project.

The final product AlcoholMeasures was developed using augmented PROmeasure systems coupled with alcohol-specific and alcohol-related measures identified in this project. This product was based on the Software-as-a-Service (SaaS) business model and can be subscribed to. AlcoholMeasures allows researchers to search and compare alcohol measures in different languages and select the ones appropriate for their target study populations. This comprehensive measure catalog is designed to facilitate the easy adoption and deployment of alcohol measures in various languages in alcohol research projects, with the ultimate goal to encourage study participation from racial/ethnic minority groups.

Target users. AlcoholMeasures can be marketed as a measure catalog application. The primary intended users are alcohol researchers who may need to use alcohol measures and surveys for their research studies. These research studies are often funded by government agencies, non-profit foundations, and pharmaceutical companies. The government/foundation-funded alcohol research market and the pharma-funded alcohol clinical trial market are two separate markets. Furthermore, the researchers who develop, validate, translate, and/or compare alcohol measures or surveys are also likely users of AlcoholMeasures to research related measures, provide support/guidance for the use of their own measures, and/or seek collaboration with other researchers with similar interests.

Rationale for approach. There were three reasons for this project scope:

First, from a scientific research perspective, a measure database of non-English measures was a very important step in promoting the participation of racial/ethnic minorities in alcohol studies.

Second, from a business perspective, a measure database has market potential. Our closest, if not only, commercial competitor for a measure database would be PROQOLID from Mapi Research Trust. We estimated the market for this measure database at about $10MM annually based on PROQOLID's pricing model.

Third, one out of these two deliverables, the measure catalog application is a software system. Because of our funding history and strategic direction, we already had 70% of this software system developed and ready to be leveraged for this project. Our PROmeasure system was made to meet the specific requirements for this project with modest development efforts that was achieved within the typical SBIR Fast-Track scope.

3 Methods

Our work plan is designed to accomplish our overarching goal of providing a central hub of information and services for researchers conducting human alcohol research studies, especially as they relate to ethnic and racial minorities in the general population of the U.S., including those from different language groups. The two Specific Aims for Phase I are designed to ensure that we meet the expectations set forth in the solicitation for Topic 088 and, ultimately, provide a more robust and commercially viable product to alcohol researchers.

Building upon our efforts in Phase I, and toward our goal of providing a centralized site for information and services for researchers interested in alcohol-based topics, we propose three Specific Aims that will be accomplished during Phase II. These aims will build upon the work completed in Phase I.

3.1 Phase II Aims

Aim 1: Expansion of AlcoholMeasures Database

> In Phase I we identified some alcohol-specific and alcohol-related measures and surveys available in Spanish, Chinese, Japanese, and Korean. In Phase II, we planned to expand our list of alcohol measures and surveys by finding more measures in the original target languages and also by expanding our search to include more languages.

Aim 2: Feature Additions and Enhancements for AlcoholMeasures

> Through three rounds of system design reviews and usability/usefulness evaluations in Phase I with alcohol researchers of varying research experience and background, we had collected many excellent suggestions for feature additions and usability enhancements from the alcohol research community in the review and update of measure information. We will implement these features in Phase II.

Aim 3: Evaluation of AlcoholMeasures Usability and Usefulness

> We evaluated our final product in order to assess its usability and usefulness. This was accomplished through a usability study in which we interviewed potential customers and asked them to complete product use-based tasks, comment on the look and feel of the site, the experience using the site, and to complete questionnaires about the usability and usefulness of the final Phase II product.

3.2 Aim 1: Expansion of the AlcoholMeasures Database

The work completed in Phase I set the foundation for the activities of this Aim. We continued the search effort in the Phase I target languages of Spanish, Chinese, Japanese, and Korean. We also expanded the languages we targeted. The activities for this Aim were very similar to those conducted in Phase I.

3.2.1 Activities

We had planned to create a database of both measures (questionnaires about a few closely related topics developed as a unit, i.e. a survey on alcohol consumption) and surveys (questionnaires about a many diverse topics, usually developed independently, and administered across a wide geographical area). However, after performing our initial interviews and searches, and after feedback from the government, we agreed to focus on measures in Phase II. Additionally, we originally planned to expand our search to Portuguese, Hindi, Vietnamese, and written Native American languages. However, this effort changed over the course of Phase II. Firstly, after interviewing one of our experts who works with Native American populations, we accepted that it would be uncommon for written Native American languages to be used in research questionnaires. We agreed to discontinue work on these languages. Secondly, in an attempt to search more broadly, we expanded our search of Asian languages from Hindi and Vietnamese to include most major languages from South and Southeast Asia. However, after conducting our literature search and feedback from the

government, we agreed that the Phase I languages were our first priority with Thai, Vietnamese, and Tagalog as our second priority.

We used two major sources of information in our investigation of alcohol-specific and alcohol-related measures in certain non-English languages: 1) the combined expertise and experience of our Phase II project Subject Matter Experts (SMEs), who collectively guided our search efforts to the most relevant researchers, research organizations, and research funders likely to be involved in alcohol research in Portuguese, Vietnamese, Hindi, and Native American populations; and 2) the published scientific literature, which we accessed by conducting a comprehensive literature search. We also consulted other sources including researchers from the Adolescent Brain Cognitive Development (ABCD) study (the longest long-term study of brain development and child health in the U.S.), a new alcohol intervention manual from the American Academy of Family Physicians (AAFP), and from the Research Society on Alcoholism Scientific Meeting 2018.

3.2.1.1 Subject Matter Expert Interviews

In order to ensure that our efforts for Aim 1 yielded a comprehensive list of alcohol-specific and alcohol-related measures and surveys available in our Phase II languages of interest, we planned to speak to up to nine (9) SMEs, in accordance to the OMB rule, before the start of the measure research activities. These interviews were expected to provide information and guidance for all three steps that comprise Aim 1. The SMEs were all experienced alcohol or substance abuse researchers, conducting clinical, human laboratory and epidemiological studies and have worked with populations that speak Portuguese, Hindi, Vietnamese, or Native American languages (e.g. Navajo and Hopi). We recruited SMEs through recommendations from the highly qualified researchers at ARG, who have conducted alcohol and/or substance abuse studies. From this initial set of SMEs, we used snowball sampling to identify other qualified SMEs. We interviewed each expert on the following questions as it relates to alcohol-based research involving these populations:

1. the current list of alcohol and alcohol related measures;
2. measure search parameters; and
3. the current AlcoholMeasures website; and
4. the ePROmeasure website.

Interviewer notes were analyzed to identify trends in the recommendations in order to help guide the literature reviews and organizational research of this Aim.

3.2.1.2 Comprehensive Literature Search of Published Studies

3.2.1.2.1 Forward Searching

A literature review of alcohol-based studies that have employed alcohol-specific and alcohol-related measures or surveys in the aforementioned languages of interest was conducted. In accordance to the solicitation, we focused our literature review on publications since 1990.

The main goal of this step was to identify the studies that have used alcohol-related measures in Portuguese, Hindi, Vietnamese, and Native American languages (e.g. Navajo and Hopi). Our secondary goal was to expand this search to English-only studies—particularly validation studies—and to continue searching for studies that have used alcohol-related measures in Spanish, so that the resultant product will have a broader appeal and thus better commercial potential. An English-only study was included in our database only if a measure was identified during a language-specific search (e.g., searching for Portuguese measures) and that measure had an English version. The review of peer-reviewed publications involved a search of specific publication databases with key search terms.

Key Search Terms: The search terms included four parts: terms related to alcohol, terms related to questionnaires, terms related to publication years, and terms related to the language of interest. In Phase I, we worked with the librarian at ARG and our SMEs to define the first three parts as

> ("alcohol drinking"[MH] OR "alcohol-related disorders"[MH]) AND (data collection[TW] OR measure[TW] OR survey[TW] OR assessment[TW] OR questionnaire[TW] OR instrument[TW] OR scale[TW]) AND ("1990/01/01"[PDAT] : "2018/12/31"[PDAT])

The language terms were determined based on the conversation with SMEs familiar with our target Phase II languages, and terms related to dialects, countries/regions, and populations were added to help identify language-specific studies (e.g., a study conducted in India could use Hindi even though the word Hindi might not appear in the article).

Database: PubMed.

Inclusion Criteria: The publications obtained as a result of these search terms went through an initial review of the publication abstracts to determine if the publication was a suitable fit for inclusion in our literature review. To be deemed a suitable fit for further analysis, the publication must have met the following inclusion criteria: 1) Involve alcohol research/studies; 2) Involve populations that speak the languages of interest; and, 3) Include alcohol-specific or alcohol-related measures in the languages of interest.

Article Type Classification: In addition, each article was classified into one of the following six article types to help organize the publications related to a measure and prioritize our data extraction effort:

Original: The original article first publishing the measure and describing how the measure was developed, evaluated, and validated. If a measure has different versions, each version could have its own original article.

Translation: An article describing how a measure was translated (adapted) into the language (culture) of interest and then evaluated and validated. If a measure has different versions, each version could have its own translation article for a given language (culture).

Validation: An article describing a validation study of a measure that is different from any validation studies described in the measure's original article. It may report the validation results with the measure's originally targeted population, in a new targeted population, or across cultural settings. In the context of translated measures, this is not a translation study, as it describes validation work conducted after the measure translation was completed and reported on.

Use: An article describing the use of a measure in a research study, for example, in a clinical trial or in an epidemiology study. In these articles, study conclusions are made based on the assumption of validity of the measures used in the study.

Review: An article reviewing the use of a measure or measures across multiple studies (and potentially multiple settings). The article's findings are based on the pooled examination of individual study results previously published in the literature. This may be a narrative (subjective) review or a systematic (objective) review.

Comparison: An article comparing the psychometric properties of like-construct measures in a single study or in a series of related, single-investigative team studies. The article's findings are based on the study's or study series' original data sets.

3.2.1.2.2 *Backward Searching*

Each measure found in the forward search, was searched again in PubMed using the following search criteria to identify additional publications related to any of the target languages:

(<measure short name> OR <measure full name>) AND ("alcohol drinking"[MH] OR "alcohol-related disorders"[MH]) AND (<language-specific terms>)

Any articles that were found this way were recorded and classified by article type.

3.2.1.2.3 *Publication Extraction*

Due to the large quantity of articles to review, our effort was prioritized toward articles that were in English and had titles containing the terms "alcohol*" or "drink*". If required due to the quantity of results, two more possible prioritization criteria were to 1) favor articles involving individual measures over those analyzing data from national/regional surveys since our focus is on measures, and 2) give a lower priority to "Use" articles that describe the use of a presumably-validated measure in a research study (e.g., a clinical trial). For any given measure, especially the well-known ones, the number of "Use" articles usually far exceeded the total number of other types of articles. Although they do provide certain psychometric data, these "Use"

articles were not designed to specifically validate a measure, hence were a lower priority. The number of articles returned from the search and the expected timeline and workload for investigators to review the selected articles determined our final prioritization scheme, ensuring that our effort was best spent on the most critical articles to review.

Specifically, to ensure critical content areas and measures were included, we 1) consulted our experts on the priority of measures, which affected the order in which we conducted detailed literature reviews to extract psychometric data; 2) conducted language-specific literature search in cycles with focus on newer and higher-priority publications first across all target languages before moving to older and lower-priority publications; 3) checked measure/publication counts per alcohol research topic periodically to re-assess literature search priority and target measures for research topics that lack coverage; and 4) regularly reviewed the progress of our literature review effort with our ARG colleagues and SMEs on a monthly basis to adjust the scope, priority and approach for the subsequent literature review effort to ensure that critical content areas and measures were covered.

The literature review and the extraction and compilation of pertinent measure information was extremely laborious and time consuming. New articles are frequently published and require additional effort to stay current. We believe that the addition of new articles and new measures is a continuous effort that will go indefinitely beyond Phase II and will have to rely on the research community to work together on a "crowdsourcing" basis in order to maintain a sustainable business model. Both the design of AlcoholMeasures and our business model have this "crowdsourcing" concept embedded within them.

Information Collection: After the initial review of publications was complete and there was a final set of publications that met the inclusion criteria, we conducted a more thorough review of the content of the publications. This review was designed to elicit a number of characteristics about each study and/or measure that was cited in the publications. We included the following characteristics in our analysis of each publication:

1) PubMed ID, or PMID (which is used to programmatically retrieve the general publication information such as title, journal, date, authors, etc.);
2) Languages used;
3) Racial/ethnic group studied;
4) Geographic location of the study sites;
5) The names (or common acronyms) of measures or surveys used.
6) Article type (Original, Translation, Validation, Use, Review, or Comparison)

It is worth noting that we included both alcohol-specific and alcohol-related measures in this literature review with the former focusing on alcohol consumption patterns including intake parameters and drinking contexts, and drinking behaviors including alcohol problems, and alcohol related cognitions such as expectancies, attitudes and so forth, and the latter including assessments of the physical, mental, and social issues related to alcohol use and abuse. The specific measurement domains to cover were determined by the SMEs.

3.2.1.3   Collect data on Each of the Identified Measures

The activities for this step were designed to collect detailed information, such as psychometric properties, about alcohol measures identified from Steps 1 and 2. This was done in several sub-steps.

Sub-step 1*: Review Original/Translation/Validation articles*

First, we focused on collecting the following additional measure information from all the Original, Translation, and Validation articles identified from Steps 1 and 2 that were specific to the languages of interest in Phase II.

a) Study setting
b) Sample size
c) Study sample characteristics (e.g., racial/ethnic group(s) studied, age, gender, disease, treatment)
d) Specific vulnerable population (e.g., pregnant women, prisoners, homeless, drug addicts)

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e) Indication if the measure was developed or validated under Human Subjects approval
f) Translation methodology employed (for Translation articles)
g) Study design (in particular for Use articles)
h) Study results
i) Psychometric properties of the measure
   a. **Reliability**: internal consistency, test-retest reliability, intra-interviewer reliability, and inter-interview reliability
   b. **Validity**: criterion, construct, known groups, convergent, discriminant, content, clinical, cross-cultural, concurrent, face, procedural, and structural validity
   c. **Responsiveness**: internal and external responsiveness
   d. **Other**: floor/ceiling effects, ROC analysis, and any other psychometric data not classified in any of three broad categories above

Sub-step 2: *Collect general measure information*

For each measure identified from Steps 1 and 2, we also collected the following data through literature, via the measure licensor's website, or via Google searches: 1) Various versions/variants of the measure; 2) Original author(s); 3) Constructs; 4) Administration mode(s); 5) Score interpretation; 6) Licensor; 7) Access rights; 8) Measure website; and 9) Contact information.

Sub-step 3: *Search for additional Original/Translation/Validation articles*

Because we limited our literature search to post-1990 articles only, we expected to miss some of the earlier original, translation or validation studies. We searched additional Original, Translation, and Validation articles specific to the measure by using the following search terms without a year restriction. For any article found in this sub-step, we collected the detailed measure data mentioned in Sub-step 1.

(Full Measure Name OR Measure Abbreviated Name) AND
(Psychometric OR Validation OR Translation) AND language-terms

Sub-step 4: *Review remaining articles*

This, optional step, depended on the number of found articles and the workload and timeline for completing the first 3 sub-steps. If feasible, we planned to review the remaining Review, Comparison, and Use articles (in that order) to collect further detailed measure data as described in Step 1.

3.3   Aim 2: Feature Additions and Enhancements for AlcoholMeasures

The SME interviews and the three rounds of usability/usefulness evaluations of AlcoholMeasures in Phase I produced a long list of suggestions for new features and usability enhancements. It was our intention to implement many of these suggestions in AlcoholMeasures because they were from the experts in the field and/or potential users of this system.

3.3.1   Activities

Although received many excellent suggestions in Phase I, we did not plan to adopt all of them because some would have been technically infeasible or very costly to implement, with some we disagreed, and some were contradictory to one another. We worked with our colleagues at ARG, our SMEs, and used our own technical knowledge to prioritize these suggestions based on the assessed importance of each suggestion (i.e., Must-have, Nice-to-have, Neutral, Do-not-implement) and the complexity (i.e., Major, Moderate, Minor, Infeasible) of the corresponding technical implementation. Prioritized suggestion items were assigned to different release versions by the two PI's (Dr. Yang and Ms. Haas). All technical implementations followed our standard software development process, from requirement gathering, user interface design, software and database design, to implementation, testing, and deployment (see **Appendix A**).

3.4   Aim 3: Evaluation of AlcoholMeasures Usability and Usefulness

In order to ensure that AlcoholMeasures is usable and useful to potential customers, we conducted a round of Online Interview Evaluations, a round of Independent Use Evaluation, and a 508 Compliance Evaluation during Phase II:

1) The first Online Interview Evaluation occurred at the conclusion of the major development activities for Aim 2 and reviewed the enhanced version of AlcoholMeasures developed in Aim 2.

2) The Independent Use Evaluation occurred near the end of Phase II and involved the participants using AlcoholMeasures as beta-testers. This online evaluation allows us to test the system in a non-structured environment to gather real-life usage behaviors, issues, and suggestions that arise from longer-term use by alcohol researchers.

3) The 508 Compliance Evaluation of AlcoholMeasures was based on the "36 CFR Part 1194.22 Web-based Intranet and Internet Information and Applications" file. Compliance was defined as meeting the requirements set forth in the Section 508 Subpart B - Technical Standards, 1194.22 Web-based Intranet and Internet Information and Applications, Subpart C - Functional Performance Criteria and Subpart D - Information, Documentation and Support.

3.4.1   Activities

3.4.1.1   Participants

Each round of usability/usefulness evaluations included up to nine (9) participants who work as alcohol/addiction researchers and/or ethnic minority researchers. The sample sizes for both the In-Person Evaluation and the Online Evaluation were restricted by the OMB regulation on information collection. They were also justified because it is a general practice in usability studies that 5-7 subjects are sufficient to uncover about 80% of the usability issues.[24]

3.4.1.2   Protocol

In-Person Evaluation. Each interview lasted approximately one hour and took place in person with Dr. Center serving as the interviewer. Participants were asked to complete a series of pre-determined tasks that required the user to navigate through the AlcoholMeasures website and find information or complete activities using the website. Examples of these tasks include searching for measures based on the given search criteria, finding the available languages of a measure, finding the original translation article for a specific measure, asking and responding to a question on a particular measure on the discussion forums, etc. Participants were also asked to discuss the aesthetic design, the pros and cons, and the usefulness of the system. After the participant completed the series of tasks, he/she completed the System Usability Scale[25] (SUS, see **Appendix D**) and the Perceived Usefulness Questionnaire (PUQ, see **Appendix E**) to evaluate the usefulness of AlcoholMeasures.

Independent Use Evaluation. Participants were asked to use the AlcoholMeasures system for a trial period of two weeks. During this time, the participants completed an initial set of tasks (similar to the tasks requested of Online Interview Evaluation subjects to perform) but were also asked to use the systems in whatever way they wish to add realistic usage scenarios into the testing. Participants will be asked to share their usage of AlcoholMeasures, issues they encountered when using it, and any suggestions that they have for system improvement. The system will also maintain usage logs to monitor usage patterns. At the end of participation, the participants were asked to complete the SUS and the PUQ as explained above for In-Person Evaluation.

3.4.1.3   Evaluation Criteria

The usability of AlcoholMeasures were evaluated by 10 key industry standard usability heuristics[26] and by the scores from the subject-completed SUS. The industry standard usability heuristics are as follows:

1. **Visibility of system status**: The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
2. **Match between system and the real world**: The system should speak the users' language, with words, phrases and concepts familiar to the user. Follow real-world conventions, making information appear in a natural and logical order.
3. **User control and freedom**: Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without going through an extended dialogue. Support undo and redo.
4. **Consistency and standards**: Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.
5. **Error prevention**: Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option.
6. **Recognition rather than recall**: Minimize the user's memory load by making objects, actions, and options visible. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
7. **Flexibility and efficiency of use**: Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
8. **Aesthetic and minimalist design**: Interfaces should not contain irrelevant or rarely needed information. Extra unit of information competes with the relevant units of information and diminishes their relative visibility.
9. **Help users recognize, diagnose, and recover from errors**: Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
10. **Help and documentation**: Although it is better if the system can be used without documentation, it may be necessary to provide help/ documentation that is easy to search, focused on the user's task, listing concrete steps, and not too large.

The completed SUS and PUQ served as our metrics for system usability and usefulness. We expect the overall SUS score to exceed 77.80, the lower bound of the top quartile.[27] In general, a system score of 77.80 and above is considered acceptable in usability.[27] We also expected the overall PUQ score to exceed 4.0 (out of 5.0) as the evidence for acceptable usefulness to participants. The interview notes of the In-Person Evaluation and the comments of the Online Evaluators were qualitatively analyzed to create a list of issues/bugs and suggestions for improvement that we can address before commercially launching AlcoholMeasures.

3.4.1.4 Section 508 Compliance

The 508 compliance was evaluated based on two standards: the Web Content Accessibility Guidelines (WCAG) 2.0 and Section 508 36 CFR Part 1194.22. These two standards largely overlap but do have their differences. When the two standards differ, the more stringent requirements were followed.

At the beginning of our design process, an accessibility guideline review meeting was held between the PI (Dr. Yang) and all designers and front-end programmers to ensure adequate understanding of accessibility guidelines amongst designers/programmers. Another similar meeting was convened when the designers were ready to hand off the design to programmers to code. Each item was reviewed from both standards to make sure the design appropriately addressed accessibility concerns. These accessibility review meeting was held one more time with just the programmers after the vast majority of the programming tasks were completed to ensure that all accessibility solutions were adequately implemented.

Lastly, prior to the Online Evaluation, the PI's (Dr. Yang and Ms. Haas) personally reviewed the system and completed the entire Section 508 36 CFR Part 1194.22 Web-based Intranet and Internet Information and Applications Checklist as the final assurance of 508 compliance.

4   Results

The study results section is organized by our three project aims:

- Aim 1: Expansion of AlcoholMeasures to Measures in English and Other non-English Languages
- Aim 2: Feature Additions and Enhancements for AlcoholMeasures
- Aim 3: Evaluation of AlcoholMeasures Usability and Usefulness

4.1   Aim 1: Expansion of the AlcoholMeasures Database

This aim focused on identifying alcohol-specific and alcohol-related measures in our Phase II target languages. Specific tasks included the 1) expansion of a list of alcohol-specific and alcohol-related measures by a group of SMEs to identify the most widely used and best-validated measures in our target languages; 2) language-specific literature search of alcohol research publications since 1990 that employed alcohol-specific and alcohol-related measures in our target languages; and 3) collection of data about each of the identified alcohol-specific and alcohol-related measures.

4.1.1   Subject Matter Expert Interviews

We identified six (6) potential respected SMEs that have extensive experience in both alcohol research and one of our targeted languages. All of the identified SMEs were emailed and one (1) could not participate due to scheduling. Ultimately, we secured interviews with five (5) SMEs that had extensive experience with alcohol research in Portuguese, Hindi, Vietnamese, or Native American languages (e.g. Navajo and Hopi). Our Phase II SMEs are listed below with their names and positions.

1. **Raul Caetano, MD, MPH, PhD**, Dean and Professor of Health Care Sciences and Psychiatry, the University of Texas School of Public Health. (Interviewed on Jun. 10, 2014 and referred to as RC below)
2. **Gabriel Andreuccetti, BSc, MS, PhD**, Postdoctoral Fellow, Alcohol Research Group, Emeryville. (Interviewed on Jun. 7, 2016 and referred to as GA below)
3. **Aravind Pillai, MBBS, MPH, MPhil**, Program Coordinator- Global Health, Columbia University. (Interviewed on Jun. 8, 2016 and referred to as AP below)
4. **Phil May, PhD**, Research Professor, University of North Carolina, Gillings School of Global Public Health. (Interviewed on Jul. 20, 2016 and referred to as PM below)
5. **Ethige Prasantha De Silva, MBBS, MSc, MD,** Specialist in Community Medicine, Toronto, Canada. (Interviewed on August 18, 2016 and referred to as EPS below)

The interviews were conducted via GoToMeeting by Ms. Niina Haas, the Vice President at BrightOutcome. Each interview lasted for about two hours. All subjects were requested to examine our list of alcohol measures (n=723), a list of major national surveys on alcohol (n=64), and a list of measure descriptors (n=20), before the interview (see **Appendix B**). During the interview, the discussion covered four main areas:

1. the current list of alcohol and alcohol related measures and surveys;
2. measure search parameters; and
3. the current AlcoholMeasures website; and
4. the ePROmeasure website.

The detailed responses from each SME interview are available in **Appendix F** of this report.

4.1.1.1 The List of Alcohol and Alcohol Related Measures and Surveys

Interviews with 5 SMEs were conducted in order to obtain feedback and direction on alcohol-specific and alcohol-related measures available in our Phase II languages of interest (Portuguese, Hindi, Vietnamese, or Native American languages). In general, the SMEs considered the lists of measures (n=723) and surveys (n=64) to be fairly inclusive. The sheer number of these measures emphasized the need for our efforts to focus on 1) measures that are frequently used in relatively recent studies, and on 2) having meaningful ways to cataloging these measures to facilitate effective measure searches.

4.1.1.2 Measure Search Parameters

The SMEs approved overall of the measure descriptors to be used in searches on the AlcoholMeasures website. The most popular suggested additions were cognitive expectancies, attitudes toward alcohol, alcohol norms, population sampled, and prior conditions.

4.1.1.3 The Current AlcoholMeasures Website

In general, this site was described as a useful tool. Concerns primarily involved accessing measures and exporting data. SMEs emphasized the importance of accessing measures, and suggested including open access measures, and allowing researchers to share personal links to work they have the rights to. SMEs requested the ability to download references into endnote or other reference software. They also suggested that notifications be enabled so that users receive emails about activity relevant to them. Additionally, SMEs suggested that the ability to compare measures would be a useful feature, especially if it allowed users to select the parameters, scales, or language.

4.1.1.4 The ePROmeasure Website

We had originally planned to develop an additional site (eAlcoholMeasures) to coordinate research studies using the measures in AlcoholMeasures. Experts generally agreed that being able to collect data and track study progress would be a useful feature, and they offered many suggestions to make this feature more usable for research. Suggestions included integrating the consent process into the site, providing summary screens of both the overall study and individual sites, and capturing data required by federal funding agencies. Experts also agreed about the importance of being able to download data into PDF and Excel formats. Experts did express some concerns. Concerns about subject confidentiality were particularly high and it was highly recommended to have the option of anonymous subject enrollment. Experts also suggested that this feature should be easy to utilize with populations that don't utilize computers or email. Although we had planned to implement eAlcoholMeasures in Phase II, the subsequent software design tasks for eAlcoholMeasures were stopped per later directions from the government.

4.1.2 Comprehensive Literature Search of Published Studies

4.1.2.1 Forward Searching

A search of PubMed for studies that have employed alcohol-specific and alcohol-related measures or surveys in the target languages was conducted. The main goal of this search was to identify the studies that have used alcohol-related measures in Portuguese, Hindi, Vietnamese, and Native American languages (e.g. Navajo and Hopi). Additionally, this search was updated for the Phase I target languages Chinese, Japanese, Korean, and Spanish. A secondary goal was to expand this search to English-only studies—particularly validation studies—and to continue searching for studies that have used alcohol-related measures in Spanish, so that the resultant product will have a broader appeal and thus better commercial potential. A total of 4,838 articles were found using the searches in the Table 1. Of these, 498 were not in English, 846 did not have "alcohol" or "drink*" in the title, and 2,382 had "alcohol" or "drink*" in the title—but did not name a measure or survey in the title or abstract. This left 764 articles that were reviewed, to find alcohol-specific and alcohol-related measures or surveys in any of the target languages.

Table 1. Forward Searching.

Language	Found	Not-English	Title had "alcohol" or "drink*" AND measure or survey named in title or abstract	Title had "alcohol" or "drink*" BUT no measure or survey was named in title or abstract	Title did not have "alcohol" or "drink*"	Search Term*
Chinese	588	49	42	497	0	(Chinese[TW] OR Taiwanese[TW] OR Mandarin[TW] OR Cantonese[TW] OR China[TW] OR "Hong Kong"[TW] OR Taiwan[TW])
Japanese	586	94	45	447	0	(Japan*[TW])
Korean	234	15	105	114	0	(Korea*[TW])
Native American	586	0	N/A**	N/A**	238	("Alaska Native" OR "American Indian" OR Apache* OR Blackfoot* OR Cherokee* OR Choctaw* OR Cree* OR Dakota* OR Diné* OR Hopi* OR indigenous* OR Inuit* OR Keres* OR Native* OR Navajo* OR Ojibw* OR Pueblo* OR Sioux* OR "Tohono O'odham" OR Tribal* OR Tribe* OR Yupik*)
Portuguese	534	128	75	163	168	(Portug* OR Brazil* OR luso* OR lusi*)
South Asian	588	1	103	211	273	(Brunei* OR Burma* OR Myanma* OR Cambodia* OR Timor* OR Indonesia* OR Laos OR Malay* OR Philippine* OR Singapore* OR Thai* OR Viet* OR Burme* OR Khmer OR Tetum OR Bahasa OR Bhasa OR Filipino OR Tamil OR Bamar OR Mamba* OR Java* OR Lao OR Laotian OR Tai OR Dai OR Kinh OR Tay)
Southeast Asian	337	3	63	104	167	(Afghanistan* OR Bangladesh* OR Bhutan* OR India* OR Maldiv* OR Nepal* OR Pakistan* OR Lanka*) NOT ("American Indian" OR "American Indians" OR "Native American" OR "Native Americans" OR "Afghanistan Veteran" OR "Iraq Veteran" OR Alaska*)
Spanish	1385	208	331	846	0	(Spanish[TW] OR Hispanic*[TW] OR Latino*[TW] OR Spain*[TW] OR Mexic*[TW] OR Colombia*[TW] OR Argentina*[TW] OR Venezuela*[TW] OR Peru[TW] OR Peruvian*[TW] OR Chile*[TW] OR Ecuador*[TW] OR Guatemala*[TW] OR Cuba*[TW] OR "Dominican Republic"[TW] OR Bolivia*[TW] OR Honduras*[TW] OR Salvador*[TW] OR Nicaragua*[TW] OR "Costa Rica"[TW] OR Puerto[TW] OR Panama*[TW] OR Uruguay*[TW])
Totals	4838	498	764	2382	846	

*All searches included: ("alcohol drinking"[MH] OR "alcohol-related disorders"[MH]) AND (data collection[TW] OR measure[TW] OR survey[TW] OR assessment[TW] OR questionnaire[TW] OR instrument[TW] OR scale[TW]) AND ("1990/01/01"[PDAT] : "2017/12/31"[PDAT]) AND

**The searches for Native American languages were not completed based on our SME interviews. It was agreed that it was very rare to use measures in Native American languages in the U.S.

4.1.2.2 Backward Searching

Each measure found in the forward search, was used in a backward search in PubMed. The following search criteria was used to identify additional publications related to any of the target languages:

(<measure short name> OR <measure full name>) AND ("alcohol drinking"[MH] OR "alcohol-related disorders"[MH]) AND (<language-specific terms>)

This search found 1,613 articles (see Table 2). Of those, 1409 were recorded and classified by article type and added to the list of measures.

Table 2. Backward Search Results.

Language	Articles Found	Articles Added to the List
Chinese	214	197
Japanese	108	71
Korean	128	117
Native American	106	102
Portuguese	225	191
South Asian	172	151
Southeast Asian	72	72
Spanish	588	508
Total	1613	1409

Using forward and backward search techniques, 318 measures were identified. To date, we have verified and entered 200 measures in AlcoholMeasures. Table 3 lists all the measures currently included in the AlcoholMeasures site along with the completed literature search for these measures.

Table 3. Measures in AlcoholMeasures along with Literature Search Results

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
AAAS	Alcoholics Anonymous Affiliation Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9726265 (O)
AADIS	Adolescent Alcohol and Drug Involvement Scale	N/A	9438538 (U) | 19938650 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
AAI	Alcoholics Anonymous Involvement Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28080094 (U) | 8830150 (U)	15706756 (U) | 22152661 (U)
AAIM	Alcoholics Anonymous Intention Measure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19581057 (O*)
AASE	Alcohol Abstinence Self-Efficacy Scale	N/A	N/A	28280514 (U)	21066905 (U)	N/A	N/A	N/A	16736076 (U)	22867296 (V-German) | 25704134 (U)
ABTI	Allen Barriers to Treatment Instrument	20537658 (C)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
ACOA	Adult Children Of Alcoholics Index	N/A	N/A	N/A	12943187 (U)	N/A	8382663 (V) | 1743816 (U)	N/A	8747499 (U) | 1806664 (V) | 8036965 (V) | 25802055 (U)	8382663 (O)
ADBS	Alcohol Decisional Balance Scale	16849974 (V)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22867296 (V-German) | 11271968 (V)
ADS	Alcohol Dependence Scale	20156524 (U) | 21176104 (U) | 16679343 (U)	23659007 (U)	16679343 (U) | 18303191 (U) | 21176104 (U) | 25283991 (U) | 26792039 (U) | 26405456 (U) Lee, D. K., Shin, J. K., Yun, S. M. et al. (2000) A reliability and validity study of the Korean version of the	23439720 (U)	N/A	23439720 (U)	N/A	26613839 (U) | 19389200 (U) | 20811276 (U) | 25208199 (U) | 26573323 (U) | 19332992 (U) | 28388836 (U)	7096790 (O*)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
				alcohol dependence scale in alcoholics. Journal of Korean Academy of Addiction Psychiatry 4, 30–37. (T)						
AEQ	Alcohol Expectancy Questionnaire (also Adolescent and Children versions)	19783558 (U) | 16818871 (U) | 21303522 (U) | 27032607 (U)	N/A	25381786 (U)	8947322 (U)	19669045 (U) | 23461484 (U)	23380321 (U) | 21409864 (U) | 17785887 (U)	21409864 (C) | 17118816 (U)	7960309 (U) | 11090745 (U)	3669677 (O-) | 26635680 (C)
AFAT	Alcohol Free Associations Test	N/A	N/A	22168764 (V*)	N/A	N/A	N/A	N/A	N/A	
AFQ	Alcohol Flushing Questionnaire	N/A	9419411 (O*) | 14652286 (V) | 22458712 (U) | 12949054 (U) | 17071628 (U) | 16499490 (U)	29205834 (V)	N/A	N/A	N/A	N/A	N/A	
ALST	Alcohol Sensitivity Screening Test	N/A	12380847 (U) | 9802521 (U) | 26815288 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
AOES	Alcohol Outcome Expectancies Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
APQ	Alcohol Problems Questionnaire	7888979 (U)	N/A	N/A	N/A	24016641 (U)	N/A	7888979 (U)	N/A	24148799 (U)
AQ-27	Attribution Questionnaire Short Form	N/A	N/A	N/A	N/A	20973851 (U)	N/A	N/A	25985111 (T)	
ARPQ	Alcohol Related Problems Questionnaire	N/A	N/A	N/A	N/A	18852481 (U)	N/A	N/A	N/A	9131895 (C)
ARRS	Alcohol Relapse Risk Scale	22834107 (U)	19084356 (O) | 22834107 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
ASI	Addiction Severity Index (Baseline, Followup, Lite, Self-	23043535 (U) | 19742156 (V) | 24565169 (U) | 15136959 (U) |	19742156 (V) | 22073020 (U)	N/A	N/A	22392385 (V) | 23875554 (U) | 28876377 (U) | 25029583 (U)	23170840 (U) | 19535831 (U) | 23043535 (U)	23043535 (U) | 23170840 (U) | 19535831 (U)	8312732 (U) | 26054494 (U) | 25376716 (V) | 16930162 (U) | 20977038 (U) |	7351540 (O*)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Administered, Version 6)	23146314 (V) | 23170840 (U)							24708431 (U) | 17127547 (U) | 17559549 (U) | 15488340 (V) | 9581003 (U) | 9106242 (U) | 10706977 (V) | 18718727 (V)	
ASSIST	Alcohol , Smoking and Substance Involvement Screening Test	N/A	N/A	N/A	N/A	24836089 (U) | 12199834 (V) | 23429776 (U) | 23429775 (U) | 20973851 (U) | 24727111 (D) | 22126102 (U)	22126102 (U) | 12199834 (O)	N/A	24629887 (V) | 24755018 (V) | 25578000 (V) | 12199834 (V)	12199834 (O)
AUDADIS	Alcohol Use Disorders and Associated Disabilities Interview Schedule	21382305 (U) | 21294995 (U) | 19946867 (U) | 23423971 (U) | 21295001 (U) | 19390295 (U) | 19472431 (U) | 19394088 (U) | 24131162 (U)	25065388 (U) | 11923585 (U)	20570084 (U)	15960559 (U) | 18426259 (U) | 19467669 (U) | 27106853 (U) | 19438839 (U) | 15291684 (U) | 27035627 (U) | 17916222 (U) | 17485608 (U) | 29241081 (U) | 19407710 (U) | 19487086 (U)	18760540 (U) | 26002376 (V) | 24440273 (U) | 25065388 (U) | 11923585 (U)	N/A	12695273 (V)	26886046 (U) | 26714255 (U) | 21077975 (U) | 10606491 (V) | 24401044 (U) | 9088785 (V) | 27339661 (U) | 20667292 (U) | 21044992 (U) | 15351767 (U) | 18426259 (U) | 19443694 (U) | 21440383 (U) | 20361899 (U) | 15960559 (U) | 22480900 (U) | 27444794 (U) | 19298332 (U) | 21903358 (U) | 25604321 (V) | 21939615 (U) | 17400849 (U) | 24882181 (U) | 17916222 (U) | 19438839 (U) | 20471093 (U) | 23896190 (U) | 25939727 (V) | 24330896 (U) | 28623859 (V) | 22534180 (U) | 22626529 (U) | 22172996 (U) | 23128062 (U) |	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
									20439391 (U) | 19407710 (U) | 21846424 (U) | 21875720 (U) | 25595052 (V) | 17559544 (U) | 21802737 (U) | 19467669 (U) | 23171498 (U) | 23995036 (U) | 18381900 (U) | 26809837 (U) | 9436896 (U) | 18801620 (C)	
AUDIT	Alcohol Use Disorders Identification Test (also Consumption version)	20729011 (U) | 21036515 (U) | 24613950 (U) | 19154215 (U) | 21827531 (U) | 21812867 (U) | 15121350 (U) | 15834225 (V) | 20843637 (V) | 23311906 (V) | 26402349 (U) | 25511733 (U) | 25502013 (U) | 24273684 (U) | 19335391 (U) | 21314695 (U) | 20025435 (U) | 25594829 (U) | 25569677 (U) | 21176104 (U) | 21314258 (U) | 19075207 (V) | 15654291 (V) | 24776816 (U) | 18945220 (U) | 23876859 (U) | 22989276 (U) | 21426419 (U) | 18720269 (U) | 26850753 (U) | 22242740 (U) | 22899442 (U) | 20441859 (U) | 23392227 (U) | 21908108 (U) |	24427902 (U) | 20843637 (V) | 27165437 (U) | 26873982 (U) | 25169489 (V) | 28486959 (U) | 24031141 (U) | 23808320 (U) | 23659006 (U) | 14750357 (U) | 8940804 (U)	25457098 (U) | 18346956 (U) | 23904957 (U) | 20729011 (U) | 22917753 (V) | 27222415 (U) | 24950716 (U) | 26402349 (U) | 26081651 (U) | 21693063 (U) | 26690626 (U) | 25008215 (U) | 26463219 (U) | 18640538 (V) | 25786249 (U) | 23372901 (V) | 24117450 (U) | 19606424 (U) | 23392227 (U) | 22989276 (U) | 21908108 (U) | 21314258 (U) | 26130945 (U) | 21176104 (U) | 22899442 (U) | 24776816 (U) | 26846433 (U) | 25802690 (U) | 26885318 (U) | 28384270 (U) | 26424100 (U) | 22435855 (U) | 24340159 (U) | 25920001 (U) | 27565751 (U) |	12707531 (U) | 25594247 (U) | 17364845 (V) | 18720269 (U) | 22925046 (U) | 21950704 (U) | 22236536 (U) | 25409441 (U) | 27491526 (U) | 11912078 (U) | 19411355 (U) | 26573116 (U) | 25474728 (U) | 29110243 (U) | 26294678 (U) | 12745359 (V) | 28528115 (U) | 28777805 (U) | 23691641 (U) | 27271071 (U) | 28406727 (U) | 16279320 (V) | 28027668 (U)	26154261 (U) | 20602014 (U) | 17030500 (U) | 25323127 (R) | 21584348 (V) | 27812131 (U)| 27243904 (U) | 27399226 (U) | 26896169 (U) | 28081435 (U) | 25323127 (R) | 19142548 (U) | 12780368 (U) | 25821523 (U) | 23131077 (U) | 25179410 (U) | 23090305 (U) | 23828056 (U) | 24714902 (U) | 26131701 (U) | 25493668 (U) | 24861287 (U) | 25992693 (U) | 23546329 (U) | 25945467 (U) | 24637978 (U) | 23527945 (U) | 27036154 (U) | 25495898 (U) | 27192216 (U) | 21877030 (U) | 26055457 (V) | 20590374 (U) | 22092940 (U) | 23384369 (U) |	19740136 (C) | 12554613 (T) | 9726267 (V) | 20887581 (O) (V) | 15700518 (V) | 27426424 (U) | 23039711 (V) | 27212823 (U) | 12934976 (V) | 25634440 (U) | 22524122 (U) | 24086861 (U) | 26685035 (U) | 23231462 (U) | 24922163 (U) | 25722517 (U) | 24594465 (U) | 26032055 (U) | 26549791 (U) | 26409753 (U) | 20025435 (U) | 24891652 (U) | 24339573 (U) | 21611189 (U) | 25409441 (U) | 17855334 (V) | 26294678 (U) | 25589089 (U) | 22409642 (U) | 23439801 (U) | 19070970 (U) | 26519457 (U) | 25694493 (U) | 26014623 (U) | 12554613	9557105 (R) | 16115822 (T) | 10540976 (V) | 12695273 (V) | 20347584 (U) | 16077051 (U) | 27292004 (U) | 9669791 (R) | 24086861 (U) |20025435 (U) | 29084631 (U) |15536772 (U) | 23691641 (U) | 28814870 (U) | 28273489 (U) | 9813904 (U)	19423240 (U) | 19411355 (U) | 20873896 (U) | 23936364 (U) | 24755018 (U) | 27940696 (U) | 9751955 (U) | 19418376 (U) | 12707531 (U) | 26437317 (U) | 11543985 (U) | 27399226 (U) | 12414553 (U) | 27243904 (U) | 23059926 (U) | 26207410 (U) | 26990260 (U) | 19320676 (U) | 26463727 (U) | 10540976 (U) | 23546329 (U) | 18299773 (U) | 9735062 (U) | 23321293 (U) | 22676340 (U) | 21452920 (U) | 23721108 (U) | 26760454 (U) | 20816605 (U) | 9158231 (U) | 22987021 (U) | 14743947 (U) | 23072444 (U) | 26616473 (U) | 25493668 (U) |	8329970 (O*) | 18406079 (C)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
		23146314 (V) |		21549549 (U) |		22471695 (U) |	(U) | 24690184		24960302 (U) |	
		21549549 (U) |		27000703 (U) |		25651008 (U) |	(U) | 25995242		24922163 (U) |	
		11115194 (U) |		20577615 (U) |		21989043 (U) |	(U) | 14572184		21354703 (U) |	
		26632032 (U) |		27548609 (U) |		18364361 (U) |	(U) | 27320325		25863581 (U) |	
		18460770 (U) |		17466946 (U) |		27000709 (U) |	(U) | 26842258		23354268 (U) |	
		27053369 (U) |		28323556 (V) |		27167661 (U) |	(U) | 21407951		22644983 (U) |	
		23948698 (U) |		20046350 (U) |		16919746 (U) |	(U) | 28721960		17613954 (U) |	
		21467046 (R) |		28383395 (U) |		25224459 (U) |	(U) | 28571168		25428404 (U) |	
		26081651 (U) |		28328110 (U) |		16143704 (V) |	(U) | 29061428		19845554 (U) |	
		28521730 (U) |		28590346 (U) |		27463107 (U) |	(V) | 27988144		15957683 (U) |	
		23691641 (U) |		28599145 (U) |		27687145 (U) |	(U) | 28921778		24430840 (U) |	
		28814870 (U) |		28805605 (U) |		27901240 (U) |	(U) | 29220783		27614152 (U) |	
		21402122 (U) |		17596653 (U) |		20491736 (V) |	(U) | 15834777		18189209 (U) |	
		18430475 (U) |		26996582 (U) |		11018847 (U) |	(U) | 28930059		25602606 (U) |	
		28510498 (U) |		25381786 (U) |		17546274 (U) |	(U) | 28515554		10218752 (U) |	
		28371811 (U) |		16323631 (U)		17934382 (U) |	(U) | 28784393		26716697 (U) |	
		29096647 (U) |				27424165 (U) |	(U)		23319506 (U) |	
		28274343 (U) |				26610768 (U) |			22849748 (U) |	
		28805605 (U) |				25719561 (U) |			11912078 (U) |	
		10687810 (T) |				28380136 (U) |			11115194 (U) |	
		18467488 (C) |				28902931 (U) |			28081435 (U) |	
		16046879 (U) |				28777805 (U) |			18823000 (U) |	
		24452724 (U) |				28921778 (U) |			27491526 (U) |	
		26790824 (U) |				27783128 (U) |			9564375 (U) |	
		23281383 (U)				28380128 (U) |			10869247 (U) |	
						28833276 (U) |			15825973 (U) |	
						28939936 (U) |			27391846 (U) |	
						28599713 (U) |			26573116 (U) |	
						24016641 (V) |			26424100 (U) |	
						21519700 (V) |			23577910 (U) |	
						19649412 (U)			17673484 (U) |	
									11097199 (U) |	
									27463107 (U) |	
									28199918 (U) |	
									28430385 (U) |	
									16938691 (U) |	
									28003244 (U) |	
									18421511 (U) |	
									28704164 (U) |	
									12585523 (U) |	
									28609804 (U) |	
									12598055 (U) |	
									27409300 (U) |	
									28492955 (U) |	
									28320796 (U) |	
									27815628 (U) |	
									12466660 (U) |	
									28687533 (U) |	
									28749526 (U) |	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
									28599713 (U) | 28694269 (U) | 26155748 (U) | 8616463 (V)	
AUI	Alcohol Use Inventory	N/A	N/A	N/A	11259207 (V) | 7752633 (U)	N/A	N/A	N/A	7752633 (U) | 11259207 (V) | 8908706 (U) | 26613839 (U) | 9273919 (U)	7752633 (U) | 7096790 (C) | 11259207 (U)
AUQ	Alcohol Urge Questionnaire	N/A	17927528 (U)	24939441 (U) | 17927528 (U) | 23325372 (U)	N/A	N/A	27742833 (U)	N/A	N/A	7573780 (O*) | 12410786 (V*) | 12608492 (R*) | 16899034 (V) | 17524566 (C) | 17768272 (U)
B-YAACQ	Brief Young Adult Alcohol Consequences Questionnaire	N/A	N/A	N/A	N/A	26055457 (V)	N/A	N/A	24583273 (V) | 24322673 (U)	
BAI	Beck Anxiety Inventory	16679343 (U)	N/A	16679343 (U) | Yook, S. P. and Kim, J. S. (1997) A clinical study on the Korean version of Beck Anxiety Inventory: comparative study of patient and non-patient. Korean Journal of Clinical Psychology 16, 185–197. (T)	N/A	18161646 (U) | 20304181 (U) | 22392389 (U) | 23880834 (U) | 24098478 (U)	N/A	N/A	N/A	3204199 (O) | 28281290 (C)
BASICS	Brief Alcohol Screening and Intervention for College Students	N/A	N/A	N/A	N/A	18364361 (U)	N/A	N/A	N/A	22967716 (R) | 25844834 (U)
BASQ	Brief Alcoholism Screening Questionnaire	12833189 (V)	N/A	N/A	N/A	N/A	N/A	12833189 (V)	N/A	
BDI	Beck Depression Inventory	23202771 (U) | 23585838 (U) | 16679343 (U) | 23302055 (U)	N/A	25683990 (U) | 23302055 (U) | 16679343 (U) | 27085658 (U) | 23325372 (U) |	16279320 (V) | 15371136 (U)	18833578 (U) | 15679537 (U) | 24129117 (U) | 23875554 (U) | 23880834 (U) |	24846000 (U)	N/A	15371136 (U) | 7886169 (U) | 11068077 (U) | 2002133 (U) | 26076099 (U) |	13688369 (O*)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
				28049245 (U) | Lee, Y. H. and Song, J. Y. (1991) Development of Korean version of BDI, SDS, and MMPI-D: a reliability and validity study. Korean Journal of Clinical Psychology 10, 98–113. (T)		26150309 (U) | 24861287 (U) | 22392389 (U) | 24918850 (U)			9894307 (U) | 18165894 (U)	
BHS	Beck Hopelessness Scale	N/A	N/A	N/A	N/A	22392389 (U) | 23880834 (U)	N/A	N/A	19845554 (V)	
BIS	Barratt Impulsiveness Scale / the Barratt Impulsiveness Scale version 11	17879649 (V) | 16679343 (U)	18717158 (U)	25592310 (U) | 16679343 (U)	N/A	15236828 (U) | 18176726 (U) | 18494839 (U)	N/A	21930285 (U)	26660886 (U) | 19926401 (U) | 19332992 (U) | 27614152 (U)	8778124 (O*)
BSQF	Beverage-Specific Quantity, Frequency	25904719 (V)	N/A	N/A	N/A	N/A	17855334 (V)	N/A	N/A	
BSSS	Brief Sensation Seeking Scale	25269100 (V)	N/A	N/A	N/A	N/A	N/A	N/A	17850617 (V)	
CAGE	Cut-down, Annoyed, Guilty, Eye-opener & CAGE w/ Drugs	126850511 (V) | 27515322 (U) | 18467488 (V) | 22493045 (U) | 19323869 (U) | 26133752 (U) | 25780028 (U) | 25311581 (U)	26825972 (U) | 26969341 (U) | 18183080 (U) | 25777820 (U) | 15759597 (U) | 10080257 (U) | 16440672 (U) | 23912205 (U) | 24427902 (U) | 16262142 (U)	27118285 (U) | 17472086 (U) | 18437000 (U) | 22917753 (U) | 27085658 (U) | 23372901 (V)	25311581 (U) | 11414338 (V) | 2069737 (U) | 21999696 (U) | 16279320 (V) | 10487741 (V) | 16050317 (U) | 1599623 (U) | 8708164 (U) | 22105723 (U)	24879488 (V) | 21584348 (V) | 20102571 (U) | 21864643 (U) | 19768699 (U) | 25623403 (U) | 18337017 (U) | 21308159 (U) | 27001551 (U) | 8709583 (U) | 20491736 (V) | 18176726 (U) | 11018847 (U) | 18533775 (U) | 25323127 (R) | 15867984 (V) | 15957667 (V) | 26676194 (U) |	9726267 (V) | 27832220 (U) | 9529584 (U) | 7490389 (U) | 9518641 (U) | 23333154 (U) | 12603233 (U) | 27748296 (U) | 2135809 (U) | 17472087 (U) | 26044906 (U) | 22150802 (U) | 25335779 (U) | 25800078 (U) | 1930367 (V) | 15125403 (U)	1417638 (V) | 27832220 (U) | 16735098 (U) | 11586172 (U) | 7676267 (V) | 8006555 (U) | 9557105 (R) | 22542864 (U) | 24964687 (V) | 9669791 (V) | 9217639 (U)	26253580 (U) | 25288520 (U) | 24659415 (U) | 25046568 (U) | 25540925 (U) | 1409799 (U) | 21388591 (U) | 17010139 (U) | 18976344 (U) | 10218752 (V) | 12436057 (U) | 26842256 (U) | 8745137 (U) | 19185890 (U) | 9647424 (U) | 24755025 (U) | 24164355 (U) |	6471323 (R*) | 9436896 (V) | 9735062 (C)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
						17624998 (U) | 18833382 (U) | 22092940 (U) | 28954040 (U) | 21860911 (U) | 12602806 (U) | 14963832 (U)			25323127 (V) | 19413565 (U) | 8478156 (U) | 23434130 (U) | 24124774 (U) | 18791825 (U) | 11414336 (U) | 16425237 (U) | 22375572 (U) | 10078798 (U) | 18189209 (U) | 20472341 (U) | 10921432 (U) | 10487741 (U) | 17458327 (U) | 21999696 (U) | 15018426 (U) | 27965352 (U) | 18646328 (U) | 9735062 (U) | 15506570 (U) | 26676194 (U) | 7934055 (U) | 10080040 (U) | 16938691 (U) | 18243580 (U) | 1930368 (U) | 15988430 (U) | 17716538 (V) | 9436896 (U) | 16639874 (U)	
CAPS	College Alcohol Problems Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28692952 (V)	
CASI	Cognitive Abilities Screening Instrument	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CAST	Children of Alcoholics Screening Test	N/A	N/A	24622496 (U) | 22143213 (U)	N/A	N/A	N/A	N/A	N/A	2723091 (V) | 1757170 (V) | 1602033 (V) | 8342446 (O - CAST-6) | 7896930 (V) | 7703819 (V) | 7484322 (V) | 7760560 (V*) | 7484331 (V) | 9811136 (V*) | 21802213 (U - German) |

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
										22248564 (U - Sweden) | 23761932 (U - Sweden) | [25204100] (U - Polish) | 7760560 (V)
CCAST	Cross-Cultural Alcohol Screening Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10596461 (O)	
CCOS	Chinese Cultural Orientation Scale	23359611 (U)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CEOA	Comprehensive effects of Alcohol survey	N/A	N/A	N/A	N/A	N/A	N/A	21409864 (C)	N/A	
CES-D	Center for Epidemiological Studies - Depression Scale	8115582 (T*- diabetes) | 9529665 (V*) | 27661013 (U) | 23651861 (U) | 23726260 (U)	22591931 (U) | 21740930 (U) | 14623283 (U)	17472086 (U)	N/A	24918850 (U) | 18161646 (U)	N/A	N/A	16536126 (U) | 20094003 (U) | 22686123 (U) | 9552270 (U) | 20868526 (U) | 17141880 (T)	
CHORDS	Characteristics of Responsible Drinking Survey	N/A	N/A	N/A	N/A	N/A	21721955 (V)	N/A	N/A	21721955 (O)
CIDI	Composite International Diagnostic Interview (also Substance Abuse Module, World Mental Health, U Michigan, and Composite International Diagnostic Interview (CIDI core) Version 2.1 [based on DSM-IV/ICD-10] versions)	21138708 (U) | 20805016 (V) | 23637731 (U) | 23190706 (U) | 20854335 (U) | 19438840 (U) | 27572872 (U) | 18597549 (U) | 19382899 (U) | 18298879 (U)	18597549 (U) | 14675748 (U) | 21431807 (U) | 19190833 (U)	26539014 (U) | 21218038 (U) | 17136754 (U) | 21528435 (U) | 15685402 (U) | 19636479 (U) | 17468679 (U) | 27500456 (U) | 20570084 (U) | 20591495 (U)	23808386 (U) | 16135633 (U) | 18493709 (U) | 16368657 (U) | 12733762 (U) | 15630077 (U) | 23072253 (U)	19669045 (U) | 25027830 (U) | 21845332 (U) | 23540818 (U) | 17149514 (U) | 26094010 (U) | 22473399 (U) | 26000304 (U) | 8952376 (U) | 25272008 (U) | 27267456 (U) | 27426631 (U) | 23384369 (U) | 27572872 (U) | 21414952 (U) | 16143704 (U) | 21308261 (U)	27270744 (U) | 17855334 (V) | 25639711 (U) | 22747513 (U) | 25440566 (U) | 26169683 (U) | 23904251 (U)	24120385 (U) | 22296228 (U) | 23190706 (U) | 20805016 (U) | 26041637 (U) | 22789169 (U) | 23261141 (U) | 19215598 (U) | 24713327 (U) | 23904251 (U) | 24499269 (U)	20078482 (U) | 22987021 (U) | 24438842 (U) | 21845332 (U) | 15851400 (U) | 22473399 (U) | 10218752 (V) | 21727248 (U) | 25272008 (U) | 16877648 (U) | 19486727 (U) | 26094010 (U) | 12380858 (U) | 15128384 (U) | 20472341 (U) | 25583889 (U) | 9306047 (U) | 24071570 (U) | 9564375 (U) | 20801585 (U) | 19423240 (U) | 10986817 (U) | 27572872 (U) |	2848472 (O*)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
									28067756 (U) | 18597549 (U) | 19118403 (V) | 17980975 (U) | 22842058 (T) | 19507168 (C)	
CIWA-Ar	Clinical Institute Withdrawal Assessment for Alcohol (also revised version)	25336159 (U) | 21070251 (U) | 24346753 (U) | 18996163 (U)	N/A	19060480 (U)	8672322 (U)	N/A	19371497 (U) | 28139538 (U) | 27105601 (U) | 25097273 (U) | 24826372 (U)	27733668 (U)	23740536 (U) | 24487674 (U) | 22479099 (U) | 20927698 (U)	2597811 (O*) | 7804089 (T-German) | 15123853 (V) | 16115538 (R) | 16449097 (V) | 23579238 (V-Native Americans) | [17675922] (U-French) | 24826372 (V*)
CPQ	Close Persons Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CQ	Coping Questionnaire	26451595 (U)	N/A	N/A	N/A	N/A	21776145 (C)	N/A	16277623 (U) | 9926569 (U) | 11331034 (U)	
CTS	Conflict Tactics Scale	20140329 (U)	24750322 (V)	N/A	N/A	21290096 (U)	2026410 (U) | 22996628 (U) | 26824611 (V)	N/A	14506406 (U) | 10512315 (U) | 21341898 (U) | 10938451 (U)	
DAPA-PC	Drug Abuse Problem Assessment for Primary Care	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DAST	Drug Abuse Screening Test	12839525 (U) | 28125822 (U)	19938650 (U)	N/A	7752633 (U)	17063218 (U)	12934976 (V)	N/A	15979248 (V) | 24999283 (U) | 7752633 (U)	7752633 (U)
DBI	Decisional Balance Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21316862 (V)	9183504 (O)
DDQ	Daily Drinking Questionnaire - Revised	N/A	N/A	22686146 (U)	25798727 (U)	26055457 (V)	N/A	N/A	25798727 (U)	
DIGS	Diagnostic Interview for Genetic Studies	14672249 (U)	N/A	N/A	N/A	N/A	27776093 (V)	24964687 (V)	N/A	
DIS-IV Alcohol Module	Diagnostic Interview Schedule, Alcohol Module	2281809 (U) | 2322082 (U) | 12833189 (U)	23967886 (U)	2322082 (U) | 8149719 (U)	N/A	N/A	N/A	N/A	N/A	
DMQ	Drinking Motives Questionnaire -	26576670 (V)	N/A	N/A	18493904 (U) | 25536236 (U)	24766755 (V) | 22178599 (V)	N/A	N/A	21691118 (U) | 17716823 (U) | 22994420 (U)	Cooper, Russell, Skinner and Windle (1992)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Revised (also "Modified" version and "Short Form" version)									[Psychological Assessment, 4, 123-132] (O) | Copper's [Psychological Assessment 6 (1994) 117.] (O) | 8561766 (V) | 10822750 (V) | 22178599 (V-Brazilian)
DRCS	Drinking-Related Cognition Scale	N/A	18786774 (V) | 22559788 (V)	N/A	N/A	N/A	N/A	N/A	N/A	
DRIE	Drinking-Related Internal-External Locus of Control Scale	17614237 (T*)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DrInC	Drinker Inventory of Consequences (also with Short Index of Problems)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17182194 (V)	
DRSEQ	Drinking Refusal Self-Efficacy Questionnaire (also Revised and Adolescent versions)	19481874 (V)	N/A	25457098 (U)	N/A	N/A	N/A	N/A	N/A	15893161 (O*-DRSEQ-R) | 16919885 (O*-DRSEQ-RA) | 19481874 (V - Muslim)
DUDIT	Drug Use Disorders Identification Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15608468 (V - Swedish)
EAFAAA	Scale of Attitudes Toward Alcohol, Alcoholism and Alcoholics	N/A	N/A	N/A	N/A	19061028 (O) | 21876893 (V)	N/A	N/A	N/A	
EDAS	Effects of Drinking Alcohol Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25519237 (U)
EQ	Expectancy Questionnaire	19783558 (U)	N/A	N/A	8947322 (U)	19669045 (U) | 23461484 (U)	26334561 (U) | 17785887 (U) | 21409864 (U) | 23380321 (U)	17118816 (U) | 21409864 (U)	24124788 (V) | 7960309 (U) | 11090745 (U)	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
EQ-5D	EQ-5D	27363921 (U)	N/A	25786249 (U) | 25347169 (U) | 23803059 (U)	N/A	N/A	N/A	24499269 (U) | 23261141 (U) | 24120385 (U)	26900145 (U) | 25694495 (U)	
FES	Family Environment Scale	N/A	N/A	N/A	N/A	28876377 (U)	N/A	N/A		11672495 (U) | 11331034 (U) | 10946437 (U)
FMI	Family Member Impact scale	21726307 (U)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16277623 (O)
Form 90	Form 90, Form 90 - AIR/ED version	16818871 (U)	N/A	N/A	23739014 (U)	N/A	N/A	N/A	25919978 (U) | 21109355 (U) | 23739014 (U) | 26573323 (U) | 16736076 (U) | 26098375 (U) | 28080094 (U) | 9203116 (V) | 18298237 (V) | 7722987 (V)	9203116 (V)
FTND	Fagerstrom Test for Nicotine Dependence	26518023 (U) | 23963531 (U)	18289145 (U)	22560408 (U)	N/A	29176892 (U) | 11018847 (U) | 24145162 (U)	20837653 (U)	N/A	9632031 (U) | 24071570 (U)	8197891 (V)
GAATOR	General Alcoholics Anonymous Tools of Recovery (alo Al-Anon version)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8830150 (O) | 22867293 (V) | 23739014(U) | 22051214(U) | 16970532 (U)
HAIS	Hanil Alcohol Insight Scale	N/A	N/A	9498315 (O) | 18346956 (U)	N/A	N/A	N/A	N/A	N/A	
Ho	Cook-Medley Hostility Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
HOPE	Hopefulness-Hopelessness scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16277623 (O)
IAC	International Alcohol Control Survey	N/A	N/A	24440793 (U) | 22404733 (U) | 25442376 (U)	N/A	N/A	N/A	22404733 (T)	N/A	
IDS	Inventory of Drinking Situations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11325169 (V) | 8908706 (V)	26718394 (U)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
IPDA	Important People Drug and Alcohol Interview	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18835677 (V*)
IPSF	Inventory of Perceived Family Support	N/A	N/A	N/A	N/A	23880834 (U)	N/A	N/A	N/A	
KAST	Kurihama Alcoholism Screening Test	8727242 (U)	9514293 (U) | 18289145 (U) | 11197873 (U) | 12211622 (U) | 1411749 (U) | 8727242 (U) | 19607688 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
LAST	Lubeck Alcohol Dependence and Abuse Screening Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LAT	Lesch Alcoholism Typology	N/A	N/A	N/A	N/A	19666906 (U)	N/A	N/A	N/A	
LOCUS	Level of Care Utilization System for Psychiatric and Addiction Services	N/A	23192607 (V)	N/A	N/A	N/A	N/A	N/A	N/A	10863991 (O)
LOI	Leyton Obsessional Inventory	24856548 (V)	12198397 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
LTE	List of Threatening Experiences	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MADRS	Motgomery and Asberg Depression Rating Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21669381 (C)	
MAQ	Marcus Alcoholism Questionnaire	N/A	N/A	N/A	N/A	9778885 (V)	N/A	N/A	N/A	
MAST	Michigan Alcoholism Screening Test (also Short, Adapted Short, Alcohol/Drug, Mother/Father, Geriatric versions)	18467488 (C) | 26518023 (U) | 28125822 (U) | 23963531 (U) | 24689489 (V) | 12839525 (U) | 9177105 (U) | 27479103 (U)	24689489 (U)	24939441 (U) | 22787534 (U) | 27829188 (U) | 24340159 (U)	19219670 (U) | 7752633 (U) | 26280378 (U) | 9177105 (U) | 8436362 (U)	11156749 (V) | 9195283 (U)	9726267 (V) | 20703341 (U) | 21494442 (U) | 1583902 (V) | 7484314 (U) | 15700518 (V) | 20703398 (U) | 2026410 (U) | 21927497 (U)	10459742 (U) | 12519453 (U) | 11414429 (V) | 9914717 (V)	7752633 (U) | 16796090 (U) | 15941128 (U) | 11331109 (U) | 1626659 (U) | 9273919 (U) | 1645109 (U) | 7943671 (U)	10080040 (U)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
MC-SDS	Marlowe-Crowne Social Desirability Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MINI	Mini International Neuropsychiatric Interview	12046095 (T) | 12839525 (U) | 23170840 (U) | 17610661 (U)	16194252 (T*) | 25411394 (U)	25831960 (U)	N/A	26517793 (U) | 23527945 (U) | 21277023 (U) | 24845116 (U) | 18494839 (U) | 23394411 (U) | 15684915 (U) | 14718777 (U) | 19026263 (U) | 20633743 (U) | 26816160 (U)	23170840 (U)	23170840 (U) | 27292004 (U) | 22001084 (U) | 22781878 (U)		12153836 (U) | 24755018 (U) | 25128860 (U) | 23122636 (U)
MMSE	Mini-Mental State Examination	27883167 (U) | 25239015 (U) | 21086537 (U) | 26864717 (U) | 22302076 (U) | 23243119 (U) | 12615566 (U) | 16084641 (U) | 20705480 (U) | 19154211 (U) | 19419739 (U) | 26740384 (U)	23909966 (U) | 15782582 (U) | 23858514 (U) | 21675042 (U) | 25798332 (U) | 26740384 (U)	27118285 (U) | 25708946 (U) | 18346293 (U) | 21722975 (U)	N/A	18494839 (U) | 15684915 (U) | 17470472 (U) | 20102571 (U) | 24256621 (U) | 19768699 (U)	N/A	N/A		27628432 (U) | 20699263 (U) | 16601215 (U) | 17470472 (U) | 15481070 (U) | 27261471 (U)
MoCA	Montreal Cognitive Assessment	N/A	27009579 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
MUST	Malnutrition Universal Screening Tool	N/A	N/A	N/A	N/A	21632576 (U)	N/A	N/A	N/A	
NIAAA/AAP BAUS?	National Institute on Alcohol Abuse and Alcoholism/American Academy of Pediatrics Brief Alcohol Use Screener	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27940696 (U)	
OCDS	Obsessive-Compulsive Drinking Scale (also Adolescent Obsessive-	24346753 (U) | 16679343 (U) | 27144979 (U)	11929576 (T*)	12634260 (U) | 16679343 (U)	10899729 (V)	N/A	N/A	N/A	19389200 (V) | 17378918 (U) | 27614152 (U)	7771669 (O*) | 12608492 (R*) | 17524566 (C)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Compulsive Drinking Scale)									
PACS	Penn Alcohol Craving Scale	16818871 (U)	N/A	20046362 (V)	N/A	27367491 (U)	24860218 (U) | 28529367 (U)	N/A	26573323 (U) | 24846619 (U)	12608492 (C)
PBSS	Protective Behavioral Strategies Scale	N/A	N/A	N/A	25798727 (U)	N/A	N/A	N/A	22456255 (U) | 25798727 (U)	
PDD	Perceived Devaluation-Discrimination Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21044992 (U)	20230720 (U)
PEDD-Y	Positive Expectancies for Drinking and Driving for Youth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23156951 (T)	
PWI	Personal Wellbeing Index	23043535 (U)	N/A	N/A	N/A	N/A	N/A	23043535 (U)	25694495 (U)	
QF	Quantity-Frequency Methods	N/A	N/A	15451126 (U)	N/A	N/A	N/A	N/A	N/A	2621007 (O) | 2359305 (V) | 1943107 (O)
QWB	Quality of Well-Being	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22903285 (U) | 22810158 (U)	
RALD	Reasons for Abstaining or Limiting Drinking	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19769427 (O*)
RAPI	Rutgers Alcohol Problem Index	N/A	N/A	17426426 (U) | 22686146 (U)	N/A	18364361 (U)	25040879 (U) | 17539362 (U) | 27038220 (U)	20347584 (U)	21109355 (U) | 26589725 (V) | 22004303 (U)	2927120 (O-) | 17154761 (O*) | 18547738 (O*) | 22051212 (V) | 18406079 (C) | 17568966 (V) | 17236724 (V) | 22686146 (U)
RAPS4	Rapid Alcohol Problems Screen (also Quantity Frequency version)	N/A	N/A	22579122 (U)	N/A	N/A	19740136 (C) English, Konkani, Hindi, Marathi	N/A	18189209 (V) | 11414336 (V)	10080040 (U) | 20472341 (U)
RSES	Rosenberg Self-Esteem Scale	23811062 (U)	19938650 (U)	23811062 (U) | 24622496 (U)	N/A	N/A	N/A	N/A	23618108 (U)	
RTCQ	Readiness to Change Questionnaire (also Treatment Version)	N/A	N/A	18346956 (U) | 17596653 (U)	N/A	N/A	N/A	N/A	11825865 (V) | 21109355 (U) | 15621412 (U) | 10869247 (V)	1591525 (O)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
SAAS	Substance Abuse Attitude Survey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SAAST	Self-Administered Alcoholism Screening Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9735062 (U)	
SADD	Short Alcohol Dependence Data / Short Form Alcohol Dependence Data scale	N/A	N/A	N/A	N/A	15684915 (U) | 18176726 (U) | 26150309 (U) | 24879488 (U) | 25314036 (U) | 26894525 (U) | 23525317 (U) | 20602010 (U)	24762342 (U) | 24459307 (U)	N/A	27533106 (U)	
SADQ	Severity of Alcohol Dependence Questionnaire (also Community version)	18430475 (U) | 20025435 (U) | 2265286 (U) | 2346797 (U) | 7888979 (U) | 28814870 (U)	N/A	18303191 (U)	18303191 (U)	N/A	28456858 (U) | 28827865 (U) | 23226850 (U) |21407983 (U) | 28066009 (U) | 28139538 (U) | 20025435 (U) | 26600582 (U) | 21180409 (U)	20025435 (U) | 7888979 (U) | 28814870 (U)	N/A	6135435 (O-) | 6536297 (V-) | 8173482 (O*: SADQ-C)
SAQ	Student Alcohol Questionnaire	9090809 (T)	N/A	21733051 (U)	N/A	N/A	8153201 (V) | 24070819 (U)	N/A	N/A	ENGS, R. C. Drinking patterns and drinking problems of college students. J. Stud. Alcohol 38: 2144-2156, 1977 (O) | 3347074 (V) | 8153201 (V*) | 9644420 (V) | 11523322 (U) | 23261497 (U - UK) | 24070819 (U) | 24176824 (U - UK)
SCAN	Schedules for Clinical Assessment in Neuropsychiatry	17067345 (U) | 16046872 (U) | 15121350 (U) | 26842247 (U) | 23064397 (U) | 15834225 (U)	N/A	N/A	N/A	15236828 (U)	N/A	17214067 (V)	9306047 (V)	
SCID	Structured Clinical Interview for the DSM. (also	22650033 (U) | 15482587 (U) | 21731995 (U) | 19683618 (V) |	27716976 (U) | 25065388 (U) | 16440672 (U)	19637400 (U) | 28328110 (U) | 19636479 (U) |	28117059 (U) | 15654937 (U) | 17485608 (U) | 22443915 (U) |	18365940 (U) | 17067869 (U) | 19004577 (U) | 18214722 (U) |	8271808 (V) | 23039711 (U) | 28040410 (U) |	18258726 (U)	26039070 (U) | 24689445 (U) | 20409436 (U) | 24438842 (U) |	15654937 (U)

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Substance Use Disorder Module - Adapted for Adolescents)	21382305 (U) | 26683251 (U) | 26565120 (U) | 21294995 (U) | 19946867(U) | 23064397 (U) | 24131162 (U) | 15654937 (U) | 23637731 (U) | 19637400 (U)		17468679 (U) | 26539014 (U)	26565120 (U) | 21314696 (U) | 26896167 (U) | 27106853 (U) | 19467669 (U) | 26039070 (U) | 18426259 (U) | 15960559 (U) | 23072253 (U)	25065388 (U) | 26002376 (U) | 27426631 (U) | 21308261 (U) | 24442788 (U) | 25847677 (U) | 18760714 (U) | 27423121 (U)	24988262 (U) | 7484314 (U)		20667292 (U) | 21077975 (U) | 25833029 (U) | 21440383 (U) | 26886046 (U) | 25595052 (V) | 19298332 (U) | 22085024 (U) | 23527679 (U) | 27808561 (U) | 20078482 (U) | 15960559 (U) | 12380858 (U) | 15654937 (U) | 18426259 (U) | 27038594 (U) | 22065531 (U) | 7695029 (U) | 24988262 (U) | 9468741 (U) | 11576032 (U) | 20361899 (U) | 23795881 (U) | 15753245 (U) | 19467669 (U) | 17559544 (U) | 23373632 (U) | 23182839 (U) | 15797883 (U) | 25604321 (V) | 19443694 (U) | 9564375 (U) | 27614152 (U) | 21802737 (U) | 24164917 (U) | 11198707 (U) | 18517287 (U) | 22333341 (U) | 24766765 (U) | 21875720 (U) | 21352249 (U) | 26489844 (U) | 27019218 (U) | 18381900 (U) | 15351767 (U) | 23906994 (U) | 12957342 (U) | 26002376 (U) | 28324815 (U) |	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
									18182270 (U) | 25527893 (U) | 10921432 (U) | 24033811 (V) | 17449448 (U) | 25716113 (U) | 26809837 (U) | 27184605 (U) | 10080047 (U) | 27667499 (U) | 28067756 (U) | 9589269 (U) | 19507168 (C)	
SCL-90-R	Symptom Checklist-90-Revised	N/A	N/A	28328110 (U)	26510467 (U)	15684915 (U) | 15892436 (U)	N/A	N/A	26054494 (U) | 26510467 (U)	
SDS	Zung Self-Rating Depression Scale	14596355 (U)	12198397 (U) | 8749819 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
SEQ	Self-Efficacy Questionnaire	19481874 (V)	N/A	25457098 (U)	N/A	N/A	N/A	19481874 (V)	N/A	
SF	SF-12 and SF-36 Health Survey Questionnaires	19169129 (V*) | 21062502 (U) | 22644543 (U) | 23202771 (U) | 24131162 (U) | 17046514 (U) | 20408932 (U)	11368212 (U) | 16369112 (U) | 21422705 (U)	22616848 (U)	N/A	16441607 (U)	N/A	N/A	26098375 (U) | 25919978 (U)	1593914 (O) | 8450681 (V) | 8277801 (V)
SIAC	Systematic Inventory of Alcohol Consumption	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20816605 (U)	
SIP	Short Index of Problems (also SUD, BD versions)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24148139 (V)	19261243 (V)
SMNATA	Seaman Mannello Nurses' Attitudes Towards Alcohol and Alcoholism Scale	N/A	N/A	N/A	N/A	9778885 (V)	N/A	N/A	N/A	
SOCRATES	Stages of Change Readiness and Treatment	19207792 (T*)	N/A	21198218 (T*)	21950704 (U)	15561456 (V) | 12975673 (U) | 20565162 (V)	N/A	25841703 (U)	24079649 (V) | 10487739 (U) | 21375643 (U)	19395177 (V) | Miller, W. R., & Tonigan, J. S. (1996). Assessing

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Eagerness Scale (also v. 8 -- Alcohol/Drugs)									drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). Psychology of Addictive Behaviors, 10, 81–89.
SOS	Service to Others in Sobriety	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SPPA	Harter Self-Perception Profile for Adolescents	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SPQ	Social Problems Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SRT	Symptom Rating Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11331034 (V) | 16277623 (V)	
SSI	Scale of Suicide Ideation	N/A	15974142 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
SSRQ	Short Self-Regulation Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16366813 (V)
STAI	State-Trait Anxiety Inventory	12171769 (U) | 25308612 (U)	17285407 (U) | 11197872 (U) | 26964290 (U) | 17420943 (U)	18307984 (U)	N/A	12716330 (U) | 27742291 (U) | 25534406 (U)	28139538 (U)	N/A	2002133 (U)	
SVANUM	Svanum's scale	N/A	N/A	N/A	N/A	N/A	9726267 (V)	N/A	N/A	
SYRAAP	Survey of Readiness for Alcoholics Anonymous Participation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
T-ACE	Tolerance, Annoyed, Cut down, Eye-opener	N/A	N/A	N/A	9676158 (U) | 23670862 (U)	21584348 (V) | 15957667 (V) | 27155839 (U)	N/A	9669791 (U)	N/A	
TAS	Toronto Alexithymia Scale	N/A	15974142 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
TATA	Tolor-Tamarin Attitudes Towards	N/A	N/A	N/A	N/A	9778885 (V)	N/A	N/A	N/A	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Alcoholism Scale									
TLFB	Alcohol Timeline Followback (also Self-Administered version)	N/A	N/A	N/A	N/A	18852481 (U)	N/A	N/A	11325169 (V)	8908706 (V)
TPQ	Tridimensional Personality Questionnaire	19298328 (U) | 28182634 (U) | 23685324 (U) | 26120847 (U) | 18063047 (U) | 17707567 (U)	11391056 (U) | 19298328 (U)	18063047 (U)	16314872 (U)	N/A	1583902 (V)	N/A	N/A	
TPQ-TRE	Treatment Perceptions Questionnaire	23043535 (U)	N/A	N/A	N/A	N/A	N/A	23043535 (U)	N/A	
TRAUMA	Skinner Trauma History	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11414336 (C)	
TSPEQ	12-Step Participation Expectancies Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16736073 (O)
TSR	Treatment Services Review	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
TWEAK	Tolerance, Worried, Eye-Opener, Amnesia, K/Cut down	18467488 (C*)	N/A	N/A	14624966 (U) | 10487741 (U)	15957667 (V) | 21584348 (V)	20947921 (U)	9669791 (R) |9557105 (R)	14624966 (U) | 19801277 (U) | 9647424 (U) | 11414336 (U) | 11816228 (U) | 18189209 (U) | 10921432 (U) | 16536126 (U) | 11097199 (U) | 14743939 (U) | 20472341 (U) | 10487741 (V) | 10080040 (U)	8116829 (O*)
URICA	University of Rhode Island Change Assessment Scale (also with Short Form)	N/A	N/A	N/A	N/A	12975673 (U)	N/A	N/A	N/A	8934434 (V) | 19157723 (U)
WAIS	Wechsler Adult Intelligence Scale	19968830 (U) | 20353953 (U)	19968830 (U) | 12537864 (U)	N/A	19076243 (U)	N/A	26270548 (U)	N/A	16341908 (U) | 16717499 (U) | 10790468 (U) | 19836375 (U) |	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
									15893159 (U) | 12182273 (U)	
WCST	Wisconsin Card Sorting Test	22909248 (U) | 27537550 (U) | 26120847 (U)	10932471 (U)	N/A	N/A	19506769 (U) | 20584570 (U)	N/A	N/A	117382487 (U) | 11311300 (U) | 12713192 (U)	
WMS	Wechsler Memory Scale	20353953 (U)	21535102 (U)	N/A	N/A	23791027 (U)	N/A	N/A	10779833 (U) | 16717499 (U) | 12182273 (U)	
YBOCS-HD	Yale-Brown Obsessive Compulsive Scale for heavy drinking	16046872 (V)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
AC-OK	AC-OK Co-occurring Disorder Screen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
AQoLS	Alcohol Quality of Life Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
ARSMA	Acculturation Rating Scale for Mexican Americans	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CBCL	Child Behavior Checklist	N/A	N/A	24622496 (U)	11740976 (U) | 10656189 (U)	16648904 (U)	19487630 (U)	N/A	1994127 (U)	
CCMQ	Constitution in Chinese Medicine Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CLDH	Cognitive Lifetime Drinking History	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27534259 (U) | 22681457 (U)	
CLDQ	Concordia Lifetime Drinking Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
BSI	Brief Symptom Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26098375 (U) | 26926320 (U) | 9604554 (U) | 26760454 (U) | 26573323 (U)	
CRAFFT	CRAFFT Screening Test	20805016 (V)	N/A	N/A	N/A	N/A	N/A	20805016 (V)	27940696 (U) | 25727823 (V)	
CSQ	Client Satisfaction Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DAI	Drug Attitude Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
DASS	Depression Anxiety Stress Scales	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DHQ	Diet History Questionnaire	N/A	24555868 (U) | 23158193 (U) | 23858514 (U) | 27928133 (U) | 24553622 (U)	N/A	N/A	N/A	N/A	N/A	25288520 (U)	
EPDS	Edinburgh Postnatal Depression Scale	N/A	N/A	N/A	N/A	23394411 (U) | 22840607 (U) | 21290096 (U)	17364302 (U)	N/A	N/A	
FAS	Family Affluence Scale	23188069 (U)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
GHQ	General Health Questionnaire	18430475 (U) | 23666839 (U) | 20441859 (U)	28123138 (U) | 21740930 (U) | 14623283 (U)	N/A	N/A	12571658 (U)	22038567 (U) | 22409642 (U) | 12554613 (U) | 25040879 (U)	24555674 (U) | 26861542 (U)	24755025 (U) | 11068077 (U) | 8766467 (U) | 26098375 (U)	
GJSQ	General Job Stress Questionnaire	N/A	17634691 (U)	N/A	N/A	N/A	N/A	N/A	N/A	
HAM-A	Hamilton Anxiety Rating Scale	N/A	N/A	26996582 (U)	N/A	N/A	N/A	N/A	20927698 (U)	
HAM-D	Hamilton Depression Rating Scale	27537550 (U)	N/A	26996582 (U)	N/A	15679537 (U)	27128479 (U) | 28139538 (U) | 20071816 (U)	16623028 (U)	20927698 (U) | 19387879 (U) | 11903208 (U)	
HITS	Hurt-Insult-Threaten-Scream	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24659415 (U)	
HSI	Hispanic Stress Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11331109 (U)	
IGT	Iowa gambling task	22486330 (U)	N/A	N/A	N/A	19506769 (U)	18565158 (U) | 24011986 (U)	N/A	19346083 (U) | 21332527 (U) | 17403069 (U)	
IPA	Important People and Activities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
IPDE	International Personality Disorder Examination	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17449448 (U) | 15824064 (U)	
KAT	Khavari Alcohol Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEC	Life Events Checklist for DSM-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24455782 (U)	
MACVS	Mexican American	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Cultural Values Scale									
MCMI	Millon Clinical Multiaxial Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26054494 (U) | 15824064 (U) | 12014812 (U)	
MDQ	Mood Disorder Questionnaire (MDQ)	19683618 (V)	N/A	18702932 (U)	N/A	22372024 (U) | 23527945 (U)	N/A	N/A	22372024 (U)	
MEIM	Multigroup Ethnic Identity Measure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MFWSI	Migrant Farmworker Stress Inventory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24659415 (U)	
NAAS	Native American Acculturation Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
PCL	PTSD Checklist	N/A	N/A	N/A	N/A	N/A	22234270 (U)	N/A	25602606 (U) | 26625353 (U) | 24615746 (U) | 28109459 (U) | 24831753 (U) | 26520448 (U)	
PES	Progress Evaluation Scale	15136959 (U)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
PESQ	Personal Experience Screening Questionnaire	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27940696 (U)	
PHQ-9; PHQ-2	Patient Health Questionnaire (9 and 2)	27053369 (U) | 27240394 (U)	N/A	N/A	23978684 (U)	27192216 (U) | 28355343 (U)	26307144 (U) | 24690184 (U) | 23978684 (U) | 27643850 (U) | 26163294 (U)	28319167 (U)	23659483 (U) | 28355343 (U) | 24615746 (V) | 23295007 (U) | 26625353 (U) | 25599962 (U) | 27965352 (U) | 26045212 (U) | 18291294 (U)	
POSIT	Problem Oriented Screening Instrument for Teenagers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25727823 (U) | 19845554 (U)	
PROMIS Anxiety	PROMIS Anxiety	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26926320 (U) | 28649483 (V)	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
PROMIS Depression	PROMIS Depression	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26926320 (U) | 26228413 (U) | 26245710 (U) | 28042307 (U) | 20336180 (U)	
PROMIS Pain Intensity	PROMIS Pain Intensity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
PROMIS Pain Interference	PROMIS Pain Interference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28224257 (V) | 26034444 (U) | 28983449 (V)	
PROMIS Parent Proxy Pain Interference	PROMIS Parent Proxy Pain Interference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
PROMIS Pediatric Pain Interference	PROMIS Pediatric Pain Interference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
QOLI	Quality Of Life Interview (also with Brief Version)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
RAB	Risk Assessment Battery	N/A	N/A	N/A	N/A	21308256 (U)	N/A	N/A	15723726 (U)	
RAGS	Reduce Annoyed Guilt Start	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15979248 (T)	
RCOPE	Religious Coping Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SASH	Short Acculturation Scale for Hispanics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18791825 (U)	
SDSC	Sleep Disturbance Scale for Children	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SHAS	Subjective High Assessment Scale	N/A	N/A	N/A	24961146 (U) | 18433502 (U) | 15222586 (U)	N/A	9514308 (U) | 25208201 (U)	N/A	24961146 (U) | 15222586 (U) | 11512039 (V)	
SOGS	South Oaks Gambling Screen	26935871 (U)	N/A	18346956 (U) | 26935871 (U)	8500926 (U)	15895141 (U)	18540729 (U)	N/A	25879473 (U)	
SQST	Single-Question Screening Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SSADDA	Semi-structured Assessment for Drug	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17590536 (V)	

Short Name	Long Name	Chinese	Japanese	Korean	Native American	Portuguese	South Asian	Southeast Asian	Spanish	Other
	Dependence and Alcoholism									
SSAGA	Semi-Structured Assessment for the Genetics of Alcoholism	26935871 (U)	N/A	26935871 (U)	N/A	N/A	N/A	N/A	26758567 (U) | 23862295 (U) | 22702843 (U)	
TAPS	Tobacco, Alcohol, Prescription medications, and other Substance Tool	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
TTAS	Temptations to Try Alcohol Scale	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21227594 (V)	
UPPS-P	Impulsive Behavior Scale	N/A	N/A	N/A	N/A	N/A	22096214 (V) | 27172580 (U)	N/A	28749526 (V) | 20386885 (U)	
VIA	Vancouver Index of Acculturation - Short Survey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

4.1.2.3   Collect data on Each of the Identified Measures

Detailed information was collected on the measures identified from the previous steps. This was done by:

- collecting general measure information by searching the literature, the measure licensor's website, and Google searches. Measure information included:
  a. Various versions/variants of the measure;
  b. Original author(s);
  c. Constructs;
  d. Administration mode(s);
  e. Score interpretation;
  f. Licensor;
  g. Access rights;
  h. Measure website; and
  i. Contact information.
- reviewing Original/Translation/Validation articles. Data extracted included:

  a. Study setting
  b. Sample size
  c. Study sample characteristics (e.g., racial/ethnic group(s) studied, age, gender, disease, treatment)
  d. Specific vulnerable population (e.g., pregnant women, prisoners, homeless, drug addicts)
  e. Indication if the measure was developed or validated under Human Subjects approval
  f. Translation methodology employed (for Translation articles)
  g. Study design (in particular for Use articles)
  h. Study results
  i. Psychometric properties of the measure
      i. **Reliability**: internal consistency, test-retest reliability, intra-interviewer reliability, and inter-interview reliability
      ii. **Validity**: criterion, construct, known groups, convergent, discriminant, content, clinical, cross-cultural, concurrent, face, procedural, and structural validity
      iii. **Responsiveness**: internal and external responsiveness
      iv. **Other**: floor/ceiling effects, ROC analysis, and any other psychometric data not classified in any of three broad categories above

4.2   Aim 2: Feature Additions and Enhancements for AlcoholMeasures

During Phase II, we made three releases of AlcoholMeasures. The following describes the system features currently implemented in the live version of the AlcoholMeasures site.
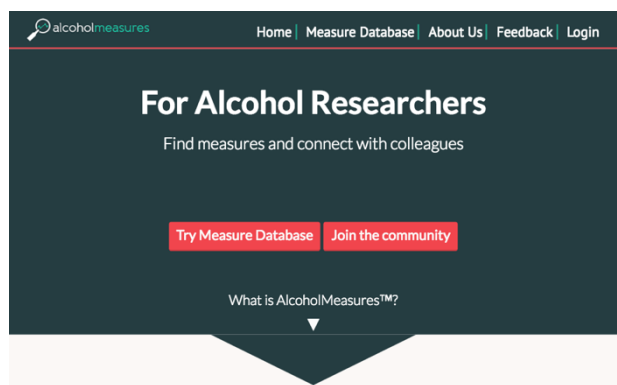
The AlcoholMeasures site is an electronic catalog system of alcohol-specific and alcohol-related measures. As made explicit on the parallax-styled message-driven landing page (see left), AlcoholMeasures is designed specifically for alcohol researchers who need to review, compare, and/or use these measures. On this site, these researchers can find and compare the measures of their interests from a large collection of published measures in several languages.

AlcoholMeasures also facilitates the communication and collaboration among alcohol researchers by establishing an online research community where members can connect with their colleagues and provide peer support via a variety of discussion formats.

In addition, AlcoholMeasures is actually not just a measure catalog system, but also a catalog of alcohol publications that document the development, validation, translation, comparison, review, and use of these measures and surveys.

4.2.1 Dashboard/Profile Features

The user can create a new user account on our site and log in using his/her own selected username and password. AlcoholMeasures offers individualized services once a user logs in.

My Profile

Once logged in, a user can create his or her own profile (see left). The profile includes the typical information found on most member-based websites: photo, background, education, affiliation, title, login, and contact.

The profile also contains user specified Topics of Interest and Languages of Interest. These two lists are the basis for the site to offer individualized features and contents as the topics and languages of interest to the user are used to recommend measures, and discussions to the user, which will be explained further below.

The profile also contains the measures that the user developed and the user's publications.

Member Profile (profile viewed by other members)

The two screens below show how this user's profile is displayed to others.

This "public" member profile page includes most of the information from the My Profile page. In addition, it pulls information related to this user from other parts of the system, including the questions asked and answers provided by the user in Community Q&A, and the measures that this user follows.

Dashboard

Following a similar structure as the Member Profile page, the Dashboard is the first page that a user sees after logging in. This is the place where the user can access all the site features, especially those specifically tailored for the user. The two screens below show a user's dashboard (the left showing the top half of the page and the right the bottom half of the page).
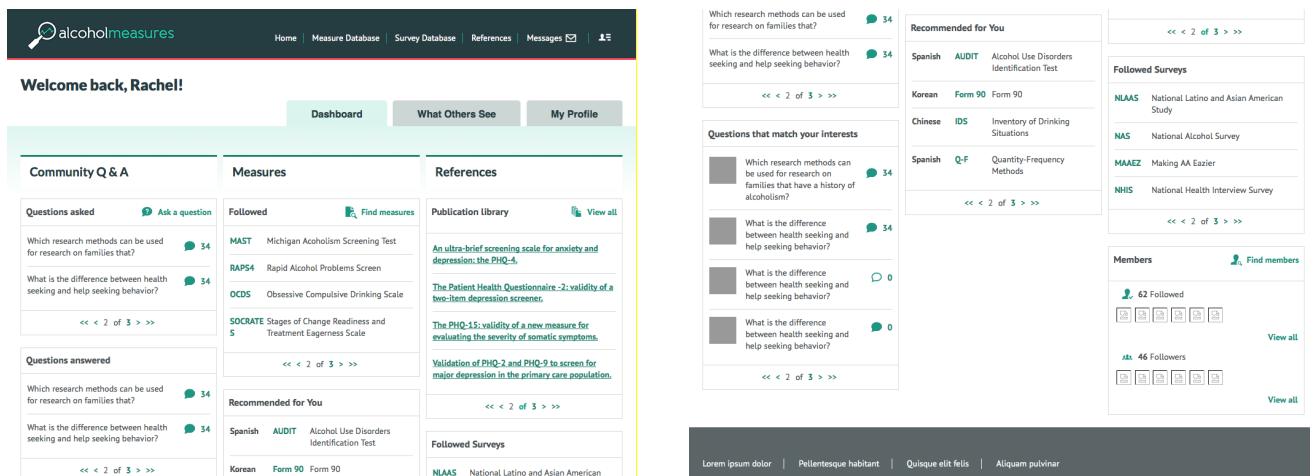
On this page, a user can actively participate in the Community Q&A activities by asking questions to the community and/or posting answers. Based on the user's Topics of Interest and Languages of Interest settings in the My Profile page, the system can list the questions asked by other members that matched the user's topics/languages of interest. As can be seen below, members can ask questions at different places on the site, typically specific to a particular measure.

Also, based on the user's Topics/Languages of Interest settings, the system can recommend measures that match the user's interests. Since all measures are tagged with research topics and available languages, this recommendation is done by matching the user's interested topics/languages against the topics/languages associated with the measures in the system.

As mentioned earlier, a user can follow a measure and a member, and all the followed measures and members are displayed on the Dashboard. The member can elect to receive email updates when the information of the followed entity is updated (e.g., a new publication).

Lastly AlcoholMeasures also offers the concept of My Reference Library where a user can save the references that the user encounters while navigating the site. These saved references are maintained in a personal library where publications can be organized and exported to other bibliography tools such as EndNote.

4.2.2 Measure-Related Features

Since AlcoholMeasures is mainly an electronic catalog system of alcohol-specific and alcohol-related measures, the features related to the search and the display of these measures are the core offering of the AlcoholMeasures site. The main measure-related features include search, summary, details, and access.

Measure Search

Currently we have 200 measures used in alcohol research maintained at AlcoholMeasures. The sheer number of measures, coupled with the wide range of topics covered in alcohol research, makes the search of particular measures difficult. To facilitate effective measure searches, AlcoholMeasures offers several different ways for alcohol researchers to search for the measures that they need. Also, the search result table is specially designed to help researchers easily compare different measures in terms of related publications for different translations. The image to the left shows the Measure Search page.

There are three basic ways to conduct measure searches in AlcoholMeasures: by search parameters, by keywords, and by looking a the alphabetical list of measure names.

When a keyword search is used, the entered keywords are used to search against all the text fields associated with the measure, including but not limited to the measure full and short names, description, authors, licensors, constructs, or the titles, authors, and abstracts of associated publications.

When search parameters are used, there are six parameters to choose from. Multiple search parameters may be used at the same time and their conditions are conjoined together. In our system, all measures are tagged with specific values for these parameters and the search essentially becomes a matching between the selected search parameter values and those associated with each measure. The six parameters are Language, Topics (e.g., Consumption, Screener, etc.), Administration Mode (e.g., self-reported, clinician-rated, etc.), Age Group, Vulnerable Population, and Study Setting (e.g., general population, clinical setting, school setting). Specific options for these parameters can be seen below.

Measure Summary

Clicking the measure short name in the search result table takes the user to the Measure Summary page (shown on the top of the next page). The Summary section of the page displays a measure's basic information, including a brief description, available versions, original authors, constructs, number of items, age groups, administration modes, and score interpretation (if available). It also displays the Topics that this measure has been assigned to.

Below the Summary section is the Publications section. Six types of publication types are included: Original, Validation, Translation, Use, Review, and Comparison. The specific definitions of these publication types can be found in Section 3.2.1.2.1. Selecting a language from the language dropdown limits the publications to those involving populations speaking the selected language. Clicking a publication type tab will display the publications of the selected type (and the selected language, if selected).

For users that are logged in, each publication has three links underneath the reference. The View Abstract allows a user to view the article abstract, extracted from PubMed, directly in the AlcoholMeasures site. The Open in PubMed link takes the user to the PubMed page of the article in a new tab. The Save to References link saves the publication to the user's My Reference Library. If the user is not logged in, the last link (Save to References) will not be available.

The top panel of the right-hand side of the page displays the "Measures that are similar to:", "Measures that you followed", "Measures that match your interests". Because each member can specify his or her Topics of Interest and Languages of Interest, and each measure is associated/tagged with the Topics, as well as available measure languages. The Similar To panel displays measures that share common topics with measure being displayed on the page.

At the top of this page, a user can elect to "follow" this measure, meaning that 1) this measure shows up on the user's Dashboard and on the Followed Measures panel wherever it appears on a page; and 2) the user may elect to receive email notifications when the information about the measure is updated (e.g., new versions, new publications, corrections of data fields, or new discussion messages).

Measure Details

The Psychometric tab takes the user to a page with all the detailed psychometric data reported from publications related to the measure. The psychometric data are organized into five sub-tabs: General, Reliability, Validity, Responsiveness, and Other. The General sub-tab includes Target Population, Geographic Site/Location, Study Setting, Sample Size, Gender Composition, Racial/Ethnic Composition, Age Composition, Disease/Treatment Composition, Other Composition, Vulnerable Population, Human Subjects Approval, Translation Methodology, Study Design (for Use articles) and Study Results. The Reliability sub-tab includes Internal Consistency, Test-Retest Reliability, Intra-Interviewer Reliability, and Inter-Interviewer Reliability. The Validity sub-tab includes Criterion Validity, Construct Validity, Know Groups Validity, Convergent Validity, Discriminant Validity, Content Validity, Clinical Validity, Cross-Cultural Validity, Concurrent Validity, Face Validity, Procedural Validity, and Structural Validity. The Responsiveness sub-tab includes Internal Responsiveness and External Responsiveness. The Other sub-tab includes Floor/Ceiling Effects, ROC Analysis, and Free Association Chaining.

For each piece of psychometric data, the source article is displayed both to the left of the data in citations and at the bottom half of the page as full references, associated with the psychometric data via superscripted reference numbers. The images below show some of these pages as examples. Also the right-side panels of these pages are identical to those shown on the Measure Summary page and thus not repeated here.

Psychometric Details

Japanese

| General | Reliability | Validity | Responsiveness | Other |

TARGET POPULATION
Stafford, L., Berk, M., et al. (2007) — Japanese [1]

GEOGRAPHIC SITE / LOCATION
Stafford, L., Berk, M., et al. (2007) — Japan (Kanagawa, Yamagata, Tokyo, Mie, Hokkaido, Ishikawa, Saga, Gunma, Miyagi) [1]

STUDY SETTING
Löwe, B., Spitzer, R., et al. (2004) — 9 nationwide hospitals for addiction treatment [2]

SAMPLE SIZE
Stafford, L., Berk, M., et al. (2007) — N = 370 [1]

GENDER COMPOSITION
Williams, J. R., Hirsch, E. S., et al. (2012) — 100% male [3]

RACIAL / ETHNIC COMPOSITION
Stafford, L., Berk, M., et al. (2007) — Japanese [1]

AGE COMPOSITION
Stafford, L., Berk, M., et al. (2007) — Mean=49.7 yrs (SD=11.0) [1]

General – 1

DISEASE / TREATMENT COMPOSITION
Stafford, L., Berk, M., et al. (2007) — Alcohol-dependent inpatients of hospitals for addiction treatment [1]

OTHER COMPOSITION
Löwe, B., Spitzer, R., et al. (2004) — Education mean=11.8 yrs (SD=2.7); 69.5% full-time employed; 54.2% married; 47.4% voluntary abstinence for <1 month [2]

VULNERABLE POPULATION
None

HUMAN SUBJECTS APPROVAL
Not reported

TRANSLATION METHODOLOGY
Stafford, L., Berk, M., et al. (2007) — Forward-Back: forward (2 translators + addiction expert review); back (native English-speaking editors) [1]

STUDY DESIGN
Stafford, L., Berk, M., et al. (2007) — 9-month, double-blind, placebo-controlled study; treatment=100 mg/day naltrexone plus BRENDA psychosocial intervention [1]

STUDY RESULTS
Stafford, L., Berk, M., et al. (2007) — Regression: PACS (strongest), OBS (2nd strongest), AUQ (3rd strongest) all predicted drinking. Craving=a stronger predictor of subsequent drinking than drinking during prior treatment week [1]

1. Stafford, L., Berk, M., et al. (2007). "Validity of the Hospital Anxiety and Depression Scale and Patient Health Questionnaire-9 to screen for depression in patients with coronary artery disease."

General – 2

| General | Reliability | Validity | Responsiveness | Other |

INTERNAL CONSISTENCY
Stafford, L., Berk, M., et al. (2007) — Cronbach's alpha: Medical (.79); Employment (.67); Alcohol (.67); Drug (.70); Legal (.71); Family/Social (.53); Psychiatric (.84) [1]

Löwe, B., Spitzer, R., et al. (2004) — Chronbach's alpha: Alcohol (.88) [2]

TEST-RETEST RELIABILITY
Williams, J. R., Hirsch, E. S., et al. (2012) — kappa=.83; Wilcoxon test showed significant score differences between testing times [3]

INTRA-INTERVIEWER RELIABILITY
None

INTER-INTERVIEWER RELIABILITY
Williams, J. R., Hirsch, E. S., et al. (2012) — kappa: past year (.56 to .79); prior to past year (.59 to .77); lifetime (.50 to .73). Exception: alcool abuse: past year (.01); prior to past year (.32); lifetime (.20) [3]

What do these scores mean?

1. Stafford, L., Berk, M., et al. (2007). "Validity of the Hospital Anxiety and Depression Scale and Patient Health Questionnaire-9 to screen for depression in patients with coronary artery disease." Gen Hosp Psychiatry 29(5): 417-424.
View Abstract | Open in PubMed | Saved

Reliability

| General | Reliability | Validity | Responsiveness | Other |

CRITERION VALIDITY
Stafford, L., Berk, M., et al. (2007) — Pearson r: Alcohol subscale with AUDIT r=.69 [1]

CONSTRUCT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Correlation with "drink in the past 30 days" (r=.33), "days since last drink" (r=-.25), # of voluntary abstinences (r=.36), # of previous detoxifications (r=.31), ADS (r=.21) [1]

KNOWN GROUPS VALIDITY
Stafford, L., Berk, M., et al. (2007) — 1) Abstinent vs. relapsed alcohol-dependent (ANOVA, p<.05): Family/Social (Relapsed higher at 3 months, 1 yr) 2) Alcohol-dependent vs. drug users (ANOVA, p<.05): [1]

CONVERGENT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Pearson r (p<.05) with Attitude toward Treatment-Overall and 5 individual items (Lack of cooperation, Lack of leadership, Rule breaking, Relapse, Substance abuse): Employment (with 2 items); Drug (with 2 items, Overall); Legal (with 2 items); Family/Social (with 3 items, Overall); Psychiatric (with 4 items, Overall) [1]

DISCRIMINANT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Pearson r: of 21 CS subscale intercorrelations 8 were significant, 13 were ns; Psychiatric CS significantly related with 3 subscales (Family/Social r=.32, Drug r=.23, Alcohol r=.11; Family/Social significantly related with 2 subscales (Alcohol r=.16, Drug r=.14) [1]

CONTENT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Content validity index=.93 [1]

Validity – 1

CONTENT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Content validity index=.93 [1]

CLINICAL VALIDITY
Stafford, L., Berk, M., et al. (2007) — sensitivity: .660-.997; specificity: .580-.934 [1]

CROSS-CULTURAL VALIDITY
None

CONCURRENT VALIDITY
Stafford, L., Berk, M., et al. (2007) — Correlation with OCDS (thought about drinking) r=.42 [1]

FACE VALIDITY
Stafford, L., Berk, M., et al. (2007) — Translation and review team [1]

PROCEDURAL VALIDITY
Stafford, L., Berk, M., et al. (2007) — lay to psychiatrist interviews compared: kappa: past year (.64 to .83); prior to past year (.66 to .80); lifetime (.41 to .70). Exception: alcool abuse: past year (.01); prior to past year (.36); lifetime (.23). Lay vs. clinical "best estimate" diagnosis: kappa: lifetime (.34 to .73). Exception: alcohol abuse (.12) [1]

STRUCTURAL VALIDITY
Stafford, L., Berk, M., et al. (2007) — Dimensionality (principal components analysis):good fit to a unidimensional solution for each scale taken independently; in primary scales 1 factor explained 33-86% of total variance, in secondary scales 1 factor explained 54-87% of total variance [1]

1. Stafford, L., Berk, M., et al. (2007). "Validity of the Hospital Anxiety and Depression Scale and Patient Health Questionnaire-9 to screen for depression in patients with coronary artery disease."

Validity – 2

| General | Reliability | Validity | Responsiveness | Other |

RESPONSIVENESS

INTERNAL RESPONSIVENESS
None

EXTERNAL RESPONSIVENESS
None

1. Stafford, L., Berk, M., et al. (2007). "Validity of the Hospital Anxiety and Depression Scale and Patient Health Questionnaire-9 to screen for depression in patients with coronary artery disease." Gen Hosp Psychiatry 29(5): 417-424.
View Abstract | Open in PubMed | Saved

2. Löwe, B., Spitzer RL, et al. (2004). "Comparative validity of three screening questionnaires for DSM-IV depressive disorders and physicians' diagnoses." Journal of Affective Disorders 78(2): 131-140.
View Abstract | Open in PubMed | Save to References

3. Williams, J. R., Hirsch, E. S., et al. (2012). "A comparison of nine scales to detect depression in Parkinson disease: which scale to use?" Neurology 78(13): 998-1006.
View Abstract | Open in PubMed | Save to References

4. Kroenke, K., Spitzer RL, et al. (2001). "The PHQ-9: validity of a brief depression symptom severity measure." Journal of general internal medicine 16(9): 606-613.
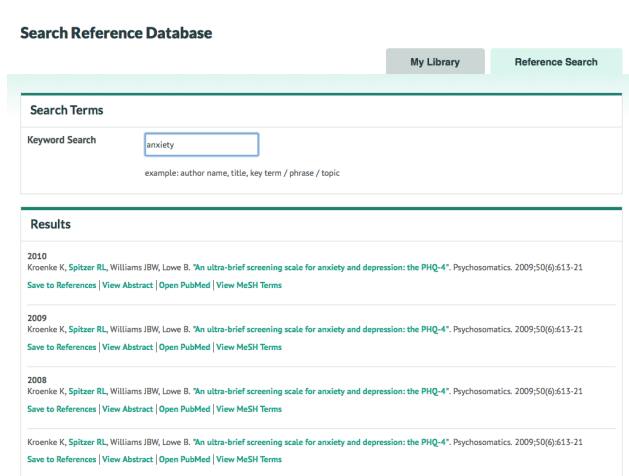View Abstract | Open in PubMed | Save to References

Responsiveness

| Summary | Psychometrics | Get Questionnaire |

Use in ePROmeasure | Download Questionnaire | What Others Say About: PHQ

Access

Ask a Question / Make a Statement

| Caveats | Experience Using | Sage Advice |

Rights: The PHQ questionnaires can be used without permission as they are in the public domain.

Website: http://www.phqscreeners.com

Contact: questions@phqscreeners.com

Special Instructions: Instructions for use can be found here: http://www.phqscreeners.com/instructions/instructions.pdf

Languages: Spanish, Chinese, Korean, Japanese, Vietnamese

Ethnic Groups: Hispanics, Spanish, Japanese, Korean, Chinese, Taiwanese

Which research methods can be used for research on families that have a history of alcoholism? 💬 34 View

Which research methods can be used for research on families that have a history of alcoholism? 💬 34 View

Which research methods can be used for research on families that have a history of alcoholism? 💬 34 View

Measure Access

The ultimate purpose of searching for measures is to be able to use them in alcohol studies. The Get Questionnaire page is designed to simplify the process of obtaining measure licenses and accessing the measure questionnaire either on paper or electronically. Currently this page has basic license information with language availability and allows the user to download the paper questionnaire if available in the public domain.

4.2.3   Reference-Related Features

In addition to maintaining a measure database and a survey database, AlcoholMeasures also maintains a database of alcohol publications related to alcohol measures. These publications include an extensive collection of original, validation, translation, review, comparison, and use articles of alcohol measures and surveys. Each user also has his or her own Reference Library and the user can add a publication into his/her personal library by clicking the "Save to References" link whenever a publication reference appears on a page. The user has the ability to structure the library into folders to better organize the references within the personal library. In Phase II, we will also implement the feature to allow the export of references in the personal reference library to other bibliography tools such as EndNote.

Reference Database Search Page
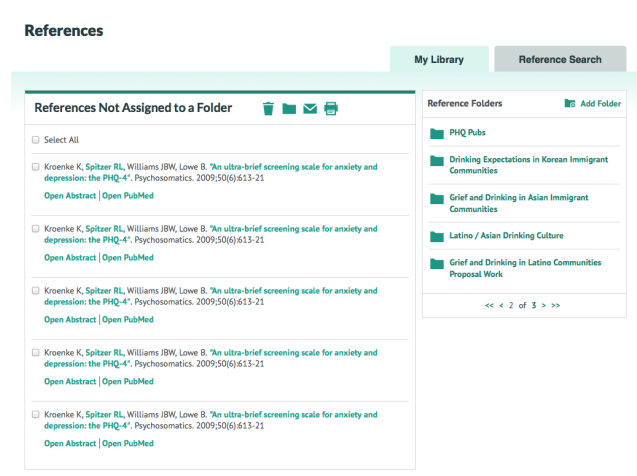
My Reference Library Page

4.2.4   Mobile Support

Because of our use of the latest responsive design techniques, the AlcoholMeasures website is optimized for display on a variety of screen sizes including typical desktops/laptops, tablets, and smartphones. Due to the large number of possible combinations of site pages and screen sizes, below lists only a number of pages as displayed on smartphones, in both portrait and landscape orientations, as examples. The same concept works on tablets and other devices as well.
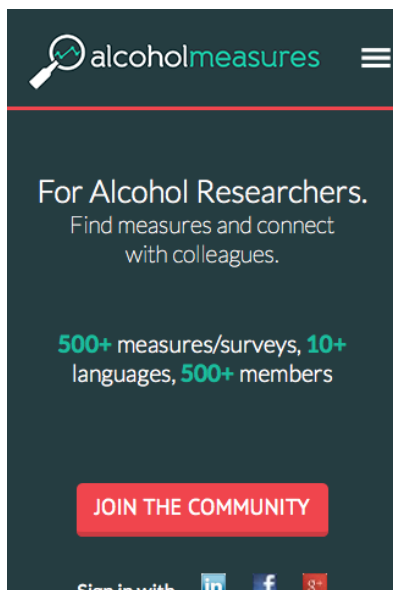
Landing Page
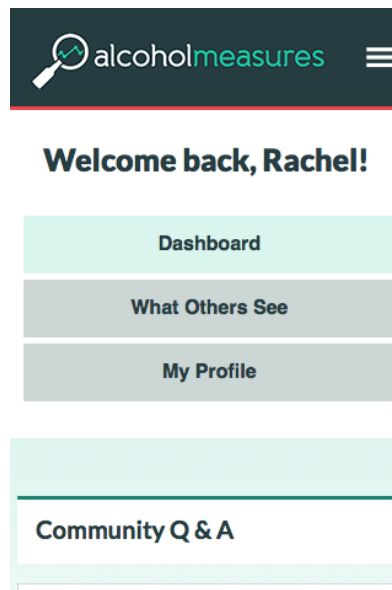
Dashboard Menu

Top-Level Nav. Menu

Dashboard

Measure Search

Measure Search Results

Measure Publications

Measure Details

Reference Search

Dashboard

My Reference Library

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4.3 Aim 3: Evaluation of AlcoholMeasures Usability and Usefulness

In order to ensure that AlcoholMeasures is usable and useful to potential customers, we conducted a round of Interview Evaluations, a round of Independent Use Evaluation, and a 508 Compliance Evaluation during Phase II:

1) The Interview Evaluations reviewed the enhanced version of AlcoholMeasures developed in Aim 2 and occured in early April 2018.

2) The Independent Use Evaluations involved participants using AlcoholMeasures as beta-testers. This online evaluation allowed us to test the system in a non-structured environment to gather real-life usage behaviors, issues, and suggestions that arose from longer-term use by alcohol researchers. This also occured in April 2018.

3) The 508 Compliance Evaluation of AlcoholMeasures was based on the "36 CFR Part 1194.22 Web-based Intranet and Internet Information and Applications" file. Compliance was defined as meeting the requirements set forth in the Section 508 Subpart B - Technical Standards, 1194.22 Web-based Intranet and Internet Information and Applications, Subpart C - Functional Performance Criteria and Subpart D - Information, Documentation and Support.

4.3.1 Interview Evaluations

To evaluate the usability and usefulness of AlcoholMeasures, 6 alcohol researchers were guided through the website using a prepared checklist (see **Appendix C**). Qualitative data (notes from the interviews) were recorded and analyzed and the participants were also asked to complete two questionnaires that rated the usability and usefulness of the prototype. The detailed comments from these evaluations can be seen in **Appendix G**, a summary of the evaluations follows.

4.3.1.1 Qualitative Results

4.3.1.1.1 Measure Database Pages

The most common comments about the database page and searching options reflect users' confusion about finding the results at the bottom of the page, trying to use the search button with the parameter search terms, and finding the 'reset' button at the bottom of the page. Half of the users suggested that they would prefer to be able to save a search, to be able to use the back button and return to a previous search, and to choose the language(s) under the Alpha tab. A third of the users suggested that they would want the option to choose more than one topic when performing a search and that parameters shouldn't show up if there's are no measures available for them. One user, with a history of working with relevant populations, suggested replacing Tagalog with Filipino as a more inclusive language term. One user suggested that on the alpha search page there should be an alphabet that users can use to jump to each letter instead of trying to scroll or jump through many pages.

4.3.1.1.2 Measure Specific Pages

Most users recommended making website and email links live. Some also suggested making a publications tab on top of the page as it wasn't clear where to find them. Several users were confused when searching for publications by article type and suggested getting rid of one of the ways to search (the dropdown menu or the boxes). Additionally, it was suggested that the option to search for publications by type was confusing and that the categories weren't clear.

4.3.1.1.3 Dashboard

Testers liked being able to see measures similar to the ones they're interested in. Testers were also able to find minor errors of logic for us to correct. One tester suggested sorting the Q&As by topic or measure so users can know why they're seeing them.

4.3.1.1.4 References

All testers suggested the ability to export references into something other than Endnote. Suggestions included RefWorks, Excel and especially Zotero (free). Something like the options in Google Scholar was also suggested.

4.3.1.1.5 General Comments

Overall, users were enthusiastic about the website and content it offered researchers. They liked the clean look of it, found it very easy to use, and thought it would be useful for grant writing. Several users recommended advertising this website to potential users. One user suggested that email alerts or a moderator would be necessary, otherwise no one would answer posted questions. Ways to not inundate users with frequent emails were discussed.

4.3.1.2   Quantitative Results

Each participant completed a System Usability Scale (see **Appendix D**) and a Perceived Usefulness Questionnaire (see **Appendix E**) at the end of the interview. We expected that the usability score exceed 77.8 and the usefulness score be above 4.0.

System Usability Scale		Mean (Median)
1	I think that I would like to use AlcoholMeasures frequently.	3.83 (4)
2	I found AlcoholMeasures unnecessarily complex. *	1.33 (1)
3	I thought AlcoholMeasures was easy to use.	4.33 (5)
4	I think that I would need the support of a technical person to be able to use AlcoholMeasures. *	1.50 (1.50)
5	I found the various functions in AlcoholMeasures were well integrated.	3.83 (4)
6	I thought there was too much inconsistency in AlcoholMeasures. *	1.67 (1)
7	I would imagine that most people would learn to use AlcoholMeasures very quickly.	4.50 (5)
8	I found AlcoholMeasures very cumbersome to use. *	1.00 (1)
9	I felt very confident using AlcoholMeasures.	4.50 (5)
10	I needed to learn a lot of things before I could get going with AlcoholMeasures. *	1.67 (2)
Overall SUS Score		**87.67 (93.00)**

      * Item responses reverse coded for overall score.

The overall usability score (mean = 87.67, median 93.00) easily surpassed our target SUS score of 77.8, affirming again the usability of AlcoholMeasures. The most endorsed positively worded items were items #7 (I would imagine that most people would learn to use AlcoholMeasures very quickly) and #9 (I felt very confident using AlcoholMeasures), and the least endorsed negatively worded item was item #8 (I found AlcoholMeasures very cumbersome to use). These also speak to the user-friendliness and usability of AlcoholMeasures.

Perceived Usefulness Questionnaire		Mean (Median)
LP	The landing page makes me want to explore and learn more about the site.	4.33 (4)
	Landing Page (LP)	*4.33 (4)*
MD1	The measure search parameters are relevant and useful in helping me find the alcohol measures of interest to my research.	4.33 (4)

Perceived Usefulness Questionnaire		Mean (Median)
MD2	The keyword search is useful in helping me find the alcohol measures of interest to me.	4.33 (4.5)
MD3	The language-specific publication counts in the measure search result table are useful in helping me identify measures suitable for the race/ethnicity/culture populations in my studies.	3.83 (4)
	Measure Database (MD)	*4.17 (4.17)*
MS1	The psychometric details of a measure are comprehensive and useful for me to evaluate the quality of the measure.	4.67 (5)
MS2	It is useful to have the publications of a measure listed in one place, and organized by article type as original, validation, translation, use, and review.	4.50 (5)
MS3	It is useful to see what others say about a measure and for a user to ask questions about a measure.	4.83 (5)
MS4	It is useful to be able to follow a measure and see when there is new information about the measure (e.g., a new question or publication).	4.67 (5)
MS5	It is useful to have the system suggest other measures that are similar to the current one in terms of research topics and/or languages.	5.00 (5)
MS6	It is useful to be able to download measures directly from AlcoholMeasures.	4.83 (5)
	Measure Specifics (MS)	*4.75 (5)*
DSC1	It is useful to see questions from others that match my research interests.	4.50 (4.5)
DSC2	It is useful to review the professional profiles of other members.	4.00 (4)
DSC3	It is useful to be able to see measures that match my research interests.	4.67 (5)
DSC4	It is useful to be able to select my topics of interest and see when there is new information about that topic (e.g., alcohol screeners).	4.67 (5)
	Dashboard and Social Connections (DSC)	*4.46 (4.63)*
RL1	It is useful to view article abstracts extracted from PubMed directly on this site.	4.83 (5)
RL2	It is useful to be able to save and organize the references I am interested in.	4.67 (5)
RL3	It is useful to be able to export the references I am interested in to bibliography tools like EndNote.	4.83 (5)
	Reference Library (RL)	*4.78 (5)*
GS1	It is useful to be able to use this site on mobile devices.	4.50 (5)
GS2	I would use this site in my work.	4.83 (5)
GS3	I would recommend this site to my colleagues.	4.83 (5)
	General Statement (GS)	*4.72 (5)*
Overall Usefulness Score		**4.58 (4.75)**

The overall usefulness score (mean = 4.58 and median = 4.75) easily surpassed our target of 4.0. and confirmed the acceptability and usefulness of AlcoholMeasures. The usefulness scores among the different sections of the AlcoholMeasures site were all above 4 (mean and median), greatly validating their usefulness to alcohol researchers.

4.3.2   Independent Use Evaluations

Independent use avaluations with 6 alcohol researchers were conducted in order to evaluate the usability and usefulness of the AlcoholMeasures website. Each participant ffrom the Interview Evaluations agreed to use the AlcoholMeasures website for two weeks and complete the System Usability Scale (see **Appendix D**)

and a Perceived Usefulness Questionnaire (see **Appendix E**) at the end of the evaluation period. We expected that the usability score to exceed 77.8 and the usefulness score to be above 4.0.

System Usability Scale		Mean (Median)
1	I think that I would like to use AlcoholMeasures frequently.	3.67 (4)
2	I found AlcoholMeasures unnecessarily complex. *	1.50 (1)
3	I thought AlcoholMeasures was easy to use.	4.50 (4.5)
4	I think that I would need the support of a technical person to be able to use AlcoholMeasures. *	1.33 (1)
5	I found the various functions in AlcoholMeasures to be well integrated.	4.17 (4)
6	I thought there was too much inconsistency in AlcoholMeasures. *	1.50 (1.5)
7	I would imagine that most people would learn to use AlcoholMeasures very quickly.	4.67 (5)
8	I found AlcoholMeasures very cumbersome to use. *	1.33 (1)
9	I felt very confident using AlcoholMeasures.	4.33 (4.5)
10	I needed to learn a lot of things before I could get going with AlcoholMeasures. *	1.67 (2)
Overall SUS Score		**86.67 (91.00)**

* Item responses reverse coded for overall score.

The overall usability score from the independent testing (mean = 86.67, median = 91.00) was virtually identical to that obtained in the Interview Evaluations, it easily surpassed our target SUS score of 77.8, affirming again the usability of AlcoholMeasures. The most endorsed positively worded item was item #7 (I would imagine that most people would learn to use AlcoholMeasures very quickly) and the least endorsed negatively worded items were item #4 (I think that I would need the support of a technical person to be able to use AlcoholMeasures) and #8 (I found AlcoholMeasures very cumbersome to use). These also speak to the user-friendliness and usability of AlcoholMeasures.

Perceived Usefulness Questionnaire		Mean (Median)
LP	The landing page makes me want to explore and learn more about the site.	4.33 (4.5)
	Landing Page (LP)	*4.33 (4.5)*
MD1	The measure search parameters are relevant and useful in helping me find the alcohol measures of interest to my research.	4.33 (4)
MD2	The keyword search is useful in helping me find the alcohol measures of interest to me.	4.50 (4.5)
MD3	The language-specific publication counts in the measure search result table are useful in helping me identify measures suitable for the race/ethnicity/culture populations in my studies.	4.50 (5)
	Measure Database (MD)	*4.44 (4.5)*
MS1	The psychometric details of a measure are comprehensive and useful for me to evaluate the quality of the measure.	4.50 (5)
MS2	It is useful to have the publications of a measure listed in one place, and organized by article type as original, validation, translation, use, and review.	4.83 (5)
MS3	It is useful to see what others say about a measure and for a user to ask questions about a measure.	4.83 (5)
MS4	It is useful to be able to follow a measure and see when there is new information about the measure (e.g., a new question or publication).	4.67 (5)

Perceived Usefulness Questionnaire		Mean (Median)
MS5	It is useful to have the system suggest other measures that are similar to the current one in terms of research topics and/or languages.	4.83 (5)
MS6	It is useful to be able to download measures directly from AlcoholMeasures.	4.50 (5)
	Measure Specifics (MS)	*4.69 (5)*
DSC1	It is useful to see questions from others that match my research interests.	4.17 (4)
DSC2	It is useful to review the professional profiles of other members.	4.33 (4)
DSC3	It is useful to be able to see measures that match my research interests.	4.83 (5)
DSC4	It is useful to be able to select my topics of interest and see when there is new information about that topic (e.g., alcohol screeners).	4.83 (5)
	Dashboard and Social Connections (DSC)	*4.54 (4.50)*
RL1	It is useful to view article abstracts extracted from PubMed directly on this site.	4.67 (5)
RL2	It is useful to be able to save and organize the references I am interested in.	4.67 (5)
RL3	It is useful to be able to export the references I am interested in to bibliography tools like EndNote.	4.83 (5)
	Reference Library (RL)	*4.72 (5)*
GS1	It is useful to be able to use this site on mobile devices.	4.00 (4)
GS2	I would use this site in my work.	4.67 (5)
GS3	I would recommend this site to my colleagues.	5.00 (5)
	General Statement (GS)	*4.56 (4.67)*
	Overall Usefulness Score	**4.63 (4.78)**

The overall usefulness score (mean = 4.63 and median = 4.78) easily surpassed our target of 4.0. and was virtually identical to the usefulness score in the Interview Evaluations. Overall, testers agreed to the statements "I would use this site in my work" and "I would recommend this site to my colleagues", and the usefulness scores among the different sections of the AlcoholMeasures site were all above 4 (mean and median), greatly validating the usefulness of this site to alcohol researchers and confirming the acceptability and usefulness of AlcoholMeasures. The Phase II results (mean = 4.54 and median = 4.5) for the questions pertaining to Social Connections were higher than those achieved in Phase I (mean = 3.68 and median = 4). This may be because the users in Phase II were junior researchers and less established among their peers than those users who participated in the Phase I usability testing. Overall, the usability and usefulness scores were solidly above a priori cutoffs and confirm the acceptability and usefulness of AlcoholMeasures to alcohol researchers.

4.3.3   508 Compliance Evaluation of AlcoholMeasures

We used the "36 CFR Part 1194.22 Web-based Intranet and Internet Information and Applications" file (converted to Table 4, below) to document our 508 compliance evaluation. Compliance is defined as meeting the requirements set forth in the Section 508 Subpart B - Technical Standards, 1194.22 Web-based Intranet and Internet Information and Applications, Subpart C - Functional Performance Criteria and Subpart D - Information, Documentation and Support.

Evaluation Measures Used: Screen Reader (JAWS), standard browsers (Microsoft Edge, IE11, Google Chrome (64), Mozilla Firefox (Quantum 58), and source code analysis (HTML/CSS). Deque AXE Accessibility Tools (Chrome/Firefox), and AXE Core Library with PhantomJS used to provide hard copy evaluation results.

Additional Accessibility Parameters: W3C/WHATWG WAI-ARIA Recommendation (2014) for Rich Internet Applications, as specified in Best Practices (ref, https://www.w3.org/TR/wai-aria-practices-1.1/, last updated December, 2017)

Table 4. 508 Compliance Evaluation

ID	1194.22 Standard Criteria & Checklist Questions	Compliance Codes*				
		FC	PC	NC	NA	NT
1 (a)	Text equivalent **(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).**	X				
a.1	Are ALT tags provided for every image?	X				
a.2	Are ALT tags provided for every hotspot on an image map and the map as a whole?				X	
a.3	Are ALT tags provided for every animated image?				X	
a.4	Are ALT tags provided for every applet?				X	
a.5	Are ALT tags provided for Programmatic objects?				X	
a.6	Are null (alt="") ALT tags provided for Images used as list bullets?				X	
a.7	Are null ALT tags provided for Images used as spacers?				X	
a.8	Are ALT tags provided for every image-type button in forms?				X	
a.9	Do audio files have transcripts?				X	
a.10	Do video files have synchronized captions?				X	
a.11	If flash is used does each user selectable element have an alternate tag?				X	
2 (b)	Multimedia alternatives **(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.**				X	
b.1	If there is a video presentation on your web page, does the auditory, text equivalent (captioning) or other alternatives synchronize with the video?				X	
b.2	Is the auditory or text equivalent descriptions accurate and adequate?				X	
b.3	Is a link to any player or plug-in that is required to render multimedia provided?				X	
3 (c)	Color **(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.**	X				
c.1	Does the page avoid using color to convey information (e.g. Click on the red link to proceed.)?	X				
c.2	Do images with text in them use contrasting colors so that the text is easily readable?	X				
4 (d)	Cascading Style Sheets (CSS) **(d) Documents shall be organized so they are readable without requiring an associated style sheet.**	X				
d.1	Can the page content be viewed without style sheets (e.g. doe the content still appears)?	X				
d.2	Does the reading order of the page still make sense without style sheets? To test: Disable style sheets in your browser's preferences, and see if all the information is still available and in a logical order.	X				
5 (e)	Server-side image maps **(e) Redundant text links shall be provided for each active region of a server-side image map.**				X	
e.1	If possible, has the server-side image map been converted to a client-side image map?				X	

ID	1194.22 Standard Criteria & Checklist Questions	FC	PC	NC	NA	NT
e.2	If a server-side image map is used are redundant text links provided for every active region on the server-side image map?				X	
6 **(f)**	Client-side image maps **(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.**				X	
f.1	Are client-side image maps being used instead of server-side except where the region(s) cannot be defined with an available geometric shape?				X	
f.2	Is appropriate alternative text provided for images as well as each map hot spots?				X	
7 **(g)**	Data table headers **(g) Row and column headers shall be identified for data tables.**	X				
g.1	Are all column and row headers identified using the <th> instead of the td tag in data tables?	X				
g.2	Is a unique id attribute associated with each th element and its corresponding td cells?	X				
g.3	Is the scope or the headers and id attributes used for row and column header cells?	X				
g.4	Does the text in the summary attribute accurately describe the related table data?	X				
g.5	Is the th tag not used to achieve formatting (i.e., to bold text)?	X				
g.6	Is the <pre> tag not used to create a tabular layout of text?	X				
g.7	Are table header not used in decorative or layout tables?	X				
8 **(h)**	Multi-logic row or column headers **(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.**				X	
h.1	Are data cells and header cells associated for data tables that have two or more logical levels of row or column headers?				X	
h.2	Are all column and row headers identified using the <th> instead of the td tag in data tables?				X	
h.3	Is a unique id attribute associated with each th element cell?				X	
h.4	Is the scope or the headers and id attributes used for row and column header cells?				X	
h.5	Does the text in the summary attribute accurately describe the related table data?				X	
h.6	Is the th tag not used to achieve formatting (i.e., to bold text)?				X	
h.7	Is the <pre> tag not used to create a tabular layout of text?				X	
h.8	Are table header not used in decorative or layout tables?				X	
9 **(i)**	Frames **(i) Frames shall be titled with text that facilitates frame identification and navigation** Frames are not allowed on the ihs.gov domain. (IHS & HHS requirement)				X	
10 **(j)**	Flicker **(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.**	X				
j.1	Does the page avoid using blinking text and/or images?	X				

ID	1194.22 Standard Criteria & Checklist Questions	FC	PC	NC	NA	NT
j.2	Does the page avoid using effects that cause the screen to "flicker" as pages are loaded?	X				
j.3	Are screen items which flash, blink or flicker set at a rate of less than twice a second or more than 55 times a second? (Hertz (Hz)is a cycle per second)	X				
11 (k)	Text-only equivalent pages **(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.**	X				
k.1	Reference the HHS 508 checklist below.	X				
k.2	Are all pages accessible?	X				
12 (l)	Scripting language **(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.**				X	
l.1	Is information provided by the script with functional text readable by assistive technology when pages utilize scripting languages to display content or to create interface elements?				X	
l.2	Are accessible alternatives provided for scripts and applets that are inaccessible with assistive technologies (e.g. <noscript> tags)?				X	
13 (m)	Applets and plug-ins **(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).**				X	
m.1	If a page uses plug-ins, applets, etc. is a link to that plug-in or applet provided to interpret the page content?				X	
m.2	Does the plug-in or applet comply with the Section 508 standards listed in 1194.21(a) through (l)? (Reference the CDC Section 508 36 CFR Part 1194.21 "Software Applications and Operating Systems Standards" checklist)				X	
14 (n)	Electronic forms **(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.**	X				
n.1	For all form controls implicitly associated with labels, are the labels properly positioned?	X				
n.2	Can you navigate and follow links and forms with the keyboard?	X				
n.3	Can the form be used with assistive technologies?	X				
15 (o)	Skip navigation links **(o) A method shall be provided that permits users to skip repetitive navigation links.** Is there a way to skip over a group of links (e.g. the header, page navigation, and footer)?			X		

ID	1194.22 Standard Criteria & Checklist Questions	Compliance Codes*				
		FC	PC	NC	NA	NT
16 (p)	Timed response **(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.**				X	
p.1	Is the user alerted when a timed response is required and given sufficient time to indicate more time is required?				X	
p.2	Does the page avoid automatic redirects, automatic refreshing, etc?	X				

*The compliance codes used for each standard criteria item are defined as follows:
  Fully Compliant (FC): All instances fully meet the standard as defined below
  Non-Compliant (NC): All instances did *not* meet the standard
  Partially Compliant (PC): Partially met and requires further explanation
  Not Applicable (NA): Standard is not applicable to this application
  Not Tested (NT): Standard was not tested

5   References

1.   Latest Economic Contribution Fact Sheet (2010). In: Distilled Spirits Council of the United States; 2010.
2.   Jernigan D. Intoxicating Brands: Alcohol Advertising and Youth. *Multinational Monitor* 2008;30(1).
3.   *Global Status Report on Alcohol and Health (2011).* World Health Organization;2011.
4.   Prevalence of Underage Drinking Fact Sheet (July 2011). In: Center on Alcohol Marketing and Youth; 2011.
5.   Foster SE, Vaughan RD, Foster WH, Califano JA, Jr. Alcohol consumption and expenditures for underage drinking and adult excessive drinking. *JAMA.* 2003;289(8):989-995.
6.   *Alcohol-Related Disease Impact (ARDI) Application* Center for Disease Control;2012.
7.   Nelson DE, Jarman DW, Rehm J, et al. Alcohol-attributable cancer deaths and years of potential life lost in the United States. *Am J Public Health.* 2013;103(4):641-648.
8.   *The NSDUH Report: Alcohol Treatment: Need, Utilization, and Barriers.* Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies;2009.
9.   Le Fauve CE, Lowman C, Litten RZ, 3rd, Mattson ME. Introduction: National Institute on Alcohol Abuse and Alcoholism workshop on treatment research priorities and health disparities. *Alcoholism, clinical and experimental research.* 2003;27(8):1318-1320.
10.   Schiller JS LJ, Peregoy JA. *Summary health statistics for U.S. adults: National Health Interview Survey, 2011.* Center for Disease Control and Prevention;2012.
11.   Caetano R. Alcohol-related health disparities and treatment-related epidemiological findings among whites, blacks, and Hispanics in the United States. *Alcoholism, clinical and experimental research.* 2003;27(8):1337-1339.
12.   Wallace JM, Jr., Bachman JG, O'Malley PM, Schulenberg JE, Cooper SM, Johnston LD. Gender and ethnic differences in smoking, drinking and illicit drug use among American 8th, 10th and 12th grade students, 1976-2000. *Addiction.* 2003;98(2):225-234.
13.   Choi J. A Portrait of Rural Health in America. *Journal of Rural Social Science.* 2012;27(3):1-16.
14.   Cook WK, Hofstetter CR, Kang M, Hovell MF, Irvin V. Rethinking acculturation: a study of alcohol use of Korean American adolescents in Southern California. *Contemporary Drug Problems.* 2009;36(1-2):217-244.
15.   Allen J, Levintova M, Mohatt G. Suicide and alcohol-related disorders in the U.S. Arctic: boosting research to address a primary determinant of health disparities. *International journal of circumpolar health.* 2011;70(5):473-487.
16.   Hispanic Suicide Fact Sheet: Based on 2010 Data. In: American Association of Suicidology; 2011.
17.   Mullins CD, Blatt L, Gbarayor CM, Hui-Wen Keri Y, Baquet C. Health disparities: A barrier to high-quality care. *American Journal of Health-System Pharmacy.* 2005;62(18):1873.
18.   Yancey AK, Ortega AN, Kumanyika SK. Effective recruitment and retention of minority research participants. *Annual review of public health.* 2006;27:1-28.
19.   Paskett ED, Reeves KW, McLaughlin JM, et al. Recruitment of minority and underserved populations in the United States: The centers for population health and health disparities experience. *Contemporary clinical trials.* 2008;29(6):847-861.
20.   Spiker CA, Weinberg AD. Policies to address disparities in clinical trials: the EDICT Project. *Journal of cancer education : the official journal of the American Association for Cancer Education.* 2009;24 Suppl 2:S39-49.
21.   Killien M, Bigby JA, Champion V, et al. Involving minority and underrepresented women in clinical trials: the National Centers of Excellence in Women's Health. *Journal of women's health & gender-based medicine.* 2000;9(10):1061-1070.
22.   Ryan C. *Language Use in the United States: 2011.* 2013.
23.   Diamond L, Jacobs E. Let's Not Contribute to Disparities: The Best Methods for Teaching Clinicians How to Overcome Language Barriers to Health Care. *Journal of General Internal Medicine.* 2010;25(2):189-193.
24.   Nielsen J. Why You Only Need to Test with 5 Users. 2000; http://www.useit.com/alertbox/20000319.html. Accessed March 20, 2009.
25.   Brooke J. SUS: a 'quick and dirty' usability scale. In: Jordan PW, Thomas B, Weerdmeester BA, McClelland IL, eds. *Usability Evaluation in Industry.* London: Taylor and Francis; 1996:189-194.
26.   Nielsen J. 10 Usability Heuristics for User Interface Design. 1995; http://www.nngroup.com/articles/ten-usability-heuristics/. Accessed August 31, 2015.
27.   Bangor AK, P.; Miller, J. Determining what individuals SUS scores mean: adding an adjective rating scale. *J Usability Studies.* 2009;4(3):114-123.
28.   Johnson K, Brown S, Amtmann D, et al. Web accessibility in post-secondary education: legal and policy considerations. *Information Technol Disabilities.* 2003;9:2-24.
29.   Summary of Section 508 Standards. http://www.section508.gov/index.cfm?FuseAction=Content&ID=11. Accessed March 24, 2009.

30.   Chisholm W, Vanderheiden G, Jacobs I. Web Content Accessibility Guidelines 1.0. http://www.w3.org/TR/WAI-WEBCONTENT/. Accessed March 24, 2009.
31.   Thatcher J. Side by Side WCAG vs. 508. http://jimthatcher.com/sidebyside.htm. Accessed 2009, March 24.

6 Appendices

6.1 Appendix A: Development Process

The design of AlcoholMeasures was based on PROmeasure with our SMEs first to give their feedback on system features, usability, and usefulness. The feedback provided invaluable insights as to how alcohol researchers may use a measure database and led to the development of the feature roadmap for AlcoholMeasures that guided the design of the Phase I prototype and Phase II versions and will continue to be used to guide future development work in production.

Our intention was to involve potential end-users in our design process as early and as often as possible, in an iterative fashion, and consistent with both user-centered design (UCD) and object-oriented analysis and design (OOA/D) principles. In many aspects, UCD and OOA/D share the same philosophy to design software to accommodate end-users' typical workflow instead of forcing them to accommodate themselves to new system functions. For instance, the "use case" concept in OOA/D leverages many concepts from UCD, such as the clear identification of the audience (Actor), the purpose (Descriptions), the context (Pre- and Post-conditions, and Exceptions), and the detailed tasks to be performed (Course of Actions). UCD does cover more visual design factors, including visibility, accessibility, legibility, and language, which are typically covered by usability guidelines such as http://www.usability.gov.

More specifically, the following is a list of design/development tasks and artifacts for this project.

Task	Description	Artifacts
Information Architecture	Develop wireframes leveraging insights gleaned from the SME interviews. Apply an iterative design approach to develop and revise wireframes for key pages to illustrate the user experience.	Clickable wireframes.
Visual Graphic Design	Utilize the approved key wireframes to provide a creative look and feel leveraging the existing brand, color palette and style guide, in an iterative process. The design is "responsive," meaning it is optimized for different screen sizes: normal, tablet, and smartphone. Separate design artifacts for different devices may be offered to better illustrate the responsive concept.	Visual design for all pages.
HTML Development	Incorporate front-end design and develop key templates into actual HTML pages that can be turned into Drupal themes. Browser compatible with Chrome, Firefox, Safari and IE is tested with consideration of responsive design.	HTML prototype.
Design-Based Usability Study	Conduct usability interviews utilizing clickable wireframes and/or HTML pages to illustrate features, functionality, key tasks, and navigational terminology.	First usability study report.
Drupal/CMS Development	Utilize W3C standards and Drupal best practices to build pages using Drupal templates, develop custom modules as needed, add content and images, and configure page/user permissions.	Testable Drupal instance available in our dev environment.
Metric-Based Usability Study	Conduct final usability study to evaluate key features, functionality, and tasks. Use System Usability Scale and expect to achieve a score above 77.8, and the Perceived Usefulness Questionnaire for a target score of 4.0.	Final usability study report.
Quality Assurance Testing	Test all intended features of site. Test links, functionality and overall experience of different browser and device types. Quality Assurance Testing includes final sign off from the client to go live. The purpose of	Online access to a defect/enhancement list.

Task	Description	Artifacts
	Quality Assurance Testing is to identify, prioritize, and fix all critical and some noncritical defects/enhancements before launch.	

Technical considerations

Content Management System (CMS): We use Drupal, a popular open-source content management solution and a web application framework, as our CMS solution. Its default installation already supports a variety of features such as content management, workflow tools, blogs, forums, polls, and access control. Besides these default functionalities, the Drupal community has collectively created 4,000+ free modules for additional features that we could leverage.

Responsive design. The current version of PROmeasure is a traditional website that has a fixed layout optimized for browser display on desktops/laptops. When accessed and viewed from a smartphone or a tablet, the site looks compressed and requires zoom-in and scrolling to access various parts of the site. We utilized the principles of "responsive design" such as fluid grids and media queries using HTML5, CSS3 and the Bootstrap framework that allows a web page to automatically detect the viewing device/size and adapt its display to maximize the user experience for the viewing device. Converting our existing PROmeasure site in a responsive design site involves frontend Drupal "theming" while keeping much of the Drupal configuration and custom logic on such Drupal concepts as entities, content types, and users intact. Standard web design artifacts such as sketches, wireframes, and mock-ups were produced in an iterative design process involving our Project Investigators and SMEs.

Section 508 compliance. A variety of standards and models inform efforts to maximize accessibility by people with disability.[28] The widest reaching standards are derived from Section 508 of the Rehabilitation Act Amendments of 1998.[29] The intent of Section 508 was to ensure that information technology (IT) be accessible in the same way that physical environments must be accessible. Although Section 508 broadly covers accessible IT, there are additional guidelines developed by the World Wide Web Consortium that apply specifically to web development. Their Web Content Accessibility Guidelines (WCAG) delineate three levels of accessibility.[30] Levels 1 and 2 of WCAG overlap with the Section 508 standards.[31]

Drupal has specific accessibility "plug-ins" that could automatically check for the compliance of each page with a variety of accessibility standards, including both 508 and WCAG. We have used this Drupal feature to ensure our 508 compliance.

6.2 Appendix B: Materials used in SME Interviews

List of Alcohol Measures used in SME Interviews

Short Name	Full Name
	4P's Plus
ARME, ARME-SF	Abstinence-Related Motivational Engagement (also Short Form)
AC-COD	AC-Co-Occurring Disorder Screen
AAQ-SA	Acceptance and Action Questionnaire - Substance Abuse
AAII	Acceptance of an Alcoholic Identity Instrument
ARSMA	Acculturation Rating Scale for Mexican Americans
AHIMSA	Acculturation, Habits, and Interests Multicultural Scale for Adolescents
AHS	Acute Hangover Scale
AAS	Addiction Admission Scale
ABC	Addiction Behaviors Checklist
ABI	Addiction Belief Inventory
ABS	Addiction Belief Scale
ACSES	Addiction Counseling Self-Efficacy Scale
ADS-7	Addiction Disorder Screen-7
APS	Addiction Potential Scale
ARCI	Addiction Research Center Inventory
ASI-B, ASI-F, ASI-Lite, ASI-SA	Addiction Severity Index, 5th Ed. - Baseline/Follow-Up/Lite, Self Administered
ATAQ	Addiction Treatment Attitudes Questionnaire
ABQ	Addictive Behaviors Questionnaire
ARSW	Adjective Rating Scale for Withdrawal
AAEQ	Adolescent Alcohol Expectancies Questionnaire
AAIS	Adolescent Alcohol Involvement Scale
ACEQ	Adolescent Cannabis Expectancies Questionnaire
ACDI	Adolescent Chemical Dependency Inventory
ADI	Adolescent Diagnostic Interview
ADSI	Adolescent Domain Screening Inventory
ADi	Adolescent Drinking Index
ADAD	Adolescent Drug Abuse Diagnosis
ADIS	Adolescent Drug Involvement Scale
APSI	Adolescent Problem Severity Index
ARFQ	Adolescent Reasons For Quitting
ARCQ	Adolescent Relapse Coping Questionnaire
ASAP	Adolescent Self-Assessment Profile
ASCQ	Adolescent Smoking Consequences Questionnaire
ASUDS, ASUDS-R	Adult Substance Use and Driving Survey (Revised)
ASUS, ASUS-R	Adult Substance Use Survey (Revised)
ASIQ	Adult Suicidal Ideation Questionnaire
AWARE	Advanced Warning of Relapse
ACSUS	Adverse Consequences of Substance Use Scale
AE	Adverse Events (CTN)
AIM	Affect Intensity Measure
AEI-R	Alchol Education Inventory--Revised

Short Name	Full Name
	Alcohol (and Illegal Drugs) Decisional Balance Scale
AASE	Alcohol Abstinence Self-Efficacy Scale
AACRI	Alcohol Abuse Coping Response Inventory
	Alcohol Abuse/Dependence Screener
ADCS	Alcohol and Drug Confrontation Scale
ADCQ	Alcohol and Drug Consequences Questionnaire
AODI	Alcohol and Other Drug Identification Scale
ACI	Alcohol Clinical Index
ACE	Alcohol Craving Experience Questionnaire
ACQ-R, ACQ-SF-R	Alcohol Craving Questionnaire - Revised (also Short-Form, Revised)
ACS-3F	Alcohol Craving Scale Based on Three Factors
ADS	Alcohol Dependence Scale
AEI	Alcohol Education Inventory
AEFQ	Alcohol Effects Questionnaire
AEQ, AEQ-A, AEQ-AB	Alcohol Expectancy Questionnaire (also Adolescent, Brief)
AI-IAT	Alcohol Identity Implicit Associations Test
AKS	Alcohol Knowledge Survey and Drug Knowledge Survey
AOES	Alcohol Outcome Expectancies Scale
AOM	Alcohol Outcomes Module
APRA	Alcohol Perceived Risks Assessment
AlQoL9	Alcohol Quality of Life
ARS-CC	Alcohol Reduction Strategies - Current Confidence
A-RSAQ	Alcohol Relapse Situation Appraisal Questionnaire
ATOM	Alcohol Treatment Outcome Measure
AUQ	Alcohol Urge Questionnaire
AUDADIS	Alcohol Use Disorders and Associated Disabilities Interview Schedule
AUDIT, AUDIT-C	Alcohol Use Disorders Identification Test (also Consumption items)
AUI	Alcohol Use Inventory
AWSC	Alcohol Withdrawal Symptom Checklist (Revised)
ARAQ-28	Alcohol-Related Aggression Questionnaire
AGLOC	Alcohol-Related God Locus of Control Scale
ARPS	Alcohol-Related Problems Survey
ASRPT	Alcohol-Specific Role Play Test
ADF SSS	Alcohol, Drugs and the Family Social Support Scale
ASSIST	Alcohol, Smoking, and Substance Involvement Screening Test
AIS	Alcoholic Involvement Scale
AAAS	Alcoholics Anonymous Affiliation Scale
AAIM	Alcoholics Anonymous Intention Measure
AAI	Alcoholics Anonymous Involvement Scale
AOS	Alcoholism Outcome Scale
	Alcoholism Self-Test
	Alcoholism Treatment Evaluation
ATOS	Alcoholism Treatment Outcome Scale
ABTI	Allen Barriers to Treatment Instrument
ADAS	American Drug and Alcohol Survey

Short Name	Full Name
A-BAES	Anticipated Biphasic Alcohol Effects Scale
ARQ	Anxiety Rumination Questionnaire
ALEXSA	Assessment of Liability and EXposure to Substance Use and Antisocial Behavior
ASMA	Assessment of Substance Misuse in Adolescents
ADS	Athlete Drinking Scale
ADDS	Attitudes on Drinking and Driving Scale
ATS-18	Attitudes Towards Smoking Scale
AUTOS	Autonomy Over Smoking Scale
BIS-11	Barratt's Impulsiveness Scale
BTI	Barriers to Treatment Inventory
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
BASIS-32	Behavior and Symptom Identification Scale
BECCI	Behavior Change Counseling Index
BADDS	Behaviors and Attitudes Drinking and Driving Scale
BEI	Behaviors and Experiences Inventory
BEACH-Q	Behaviors, Expectancies, Attitudes, and College Health Questionnaire
BDCQ	Belongingness to a Drug Culture Questionnaire
BAES	Biphasic Alcohol Effects Scale
BAM	Brief Addiction Monitor
BASDA	Brief Addictive Behavior Social Density Assessment
BACH	Brief Alcohol Consumption History
BASIC	Brief Alcohol Screening Instrument for Medical Care
	Brief Alcohol Social Density Assessment
B-BAES	Brief Biphasic Alcohol Effects Scale
CEAQ	Brief Comprehensive Effects of Alcohol Questionnaire
BDP	Brief Drinker Profile
BHTS	Brief Helper Therapy Scale
BIRCS	Brief Individual Readiness for Change Scale
B-MACQ	Brief Marijuana Consequences Questionnaire
BPI	Brief Pain Inventory
BPRS, BPRS-E	Brief Psychiatric Rating Scale(Expanded)
QSU-Brief	Brief Questionnaire on Smoking Urges
BRI	Brief Risk Interview
BSTAD	Brief Screener for Tobacco, Alcohol, and Other Drugs
Lifetime MDE	Brief Screening Scale for Lifetime Major Depressive Episodes
BSCS	Brief Self-Control Scale
BSSS	Brief Sensation Seeking Scale
BSCQ-A	Brief Smoking Consequences Questionnaire - Adult
BSCS	Brief Substance Craving Scale
BSI	Brief Symptom Inventory
TCAT-Lite	Brief Treatment Cost Analysis Tool
BTOM	Brief Treatment Outcome Measure
	Brief Treatment Update - Drug Version
BVC	Broset Violence Checklist

Short Name	Full Name
B-PRPI	Brown-Peterson Recovery Progress Inventory
ADH	BSFT Therapist Adherence Form
CEQ	Caffeine Expectancy Questionnaire
CWSQ	Caffeine Withdrawal Symptom Questionnaire
CAGE, CAGE-AID	CAGE (Adapted to Include Drug)
DHQ	Cahalan's Drinking Habits Questionnaire
CES-D	Center for Epidemiological Studies - Depression Scale
CYD	Check Your Drinking Screener
CDAP	Chemical Dependency Assessment Profile
CUAD	Chemical Use, Abuse, and Dependence Scale
CAP	Child Abuse Potential Inventory Form
CAFAS	Child and Adolescent Functional Assessment Scale
CHQ	Child Health Questionnaire
CPSS	Child PTSD Symptom Scale
	Child Self Efficacy Scale
CTQ	Childhood Trauma Questionnaire
COALES	Children of Alcoholics Life-Events Schedule
CAST, CAST-6	Children of Alcoholics Screening Test (Short Form)
CYAYDU	Chinese Youth Attitudes toward Young Drug Users
CISS	Christo Inventory for Substance-Misuse Services
CIPI	Chronic Illness Problem Inventory
CDS-12	Cigarette Dependence Scale
CEQ	Cigarette Evaluation Questionnaire
CPT	Cigarette Purchase Task
CWS-21	Cigarette Withdrawal Scale
CMRS	Circumstances, Motivation, and Readiness Scale
COVR	Classification of Violence Risk
	Classifying a Smoker Scale
CEMI	Client Evaluation of Motivational Interviewing
CSQ-18B	Client Satisfaction Questionnaire - 18B
CSI	Client Substance Index
CSI-S	Client Substance Index - Short Form
CAIS	Clinical Alcoholism Interview Schedule
CGI	Clinical Global Impressions Scale
CGI-BP	Clinical Global Impressions Scale for Bipolar Disorder
CINA	Clinical Institute Narcotic Assessment Scale for Withdrawal Symptoms
CIWA-AD, CIWA-Ar	Clinical Institute Withdrawal Assessment for Alcohol (Revised)
AUS	Clinician Alcohol Use Scale
CODSI	Co-Occurring Disorders Screening Instrument
CLDH	Cognitive Lifetime Drinking History
CSPRS	Collaborative Study Psychotherapy Rating Scale
CIF	Collateral Interview Form
CAPS-r	College Alcohol Problems Scale - Revised
CDIS	College Drinking Influences Survey
CLASS	College Life Alcohol Salience Scale

Short Name	Full Name
	Colorado Family Physicians' Attitudes Toward Medical Marijuana
COMBINE SAFTEE	COMBINE Systematic Assessment for Treatment Emergent Events
	Combined Alcohol and Other Drug Contemplation Ladder
CCA	Commitment to Change Algorithm
CSS	Commitment to Sobriety Scale
CAL	Common Alcohol Logistics Scale
CIDI, WHM-CIDI, UM-CIDI, CIDI-SAM	Composite International Diagnostic Interview (also Substance Abuse Module, World Mental Health and U Michigan versions)
CQF	Composite Quantity Frequency Index
CAAPE	Comprehensive Addictions and Psychological Evaluation
CASI	Comprehensive Adolescent Severity Inventory
CAEQ	Comprehensive Alcohol Expectancy Questionnaire
CDP	Comprehensive Drinker Profile
CEOA	Comprehensive Effects of Alcohol Questionnaire
CHAT	Comprehensive Health Assessment for Teens
CLA	Computerized Lifestyle Assessment
CTSPC	Conflict Tactics Scales: Parent-Child Version
CAADID	Conners' Adult ADHD Diagnostic Interview for DSM-IV
CAARS	Connors Adult ADHD Rating Scales
CHQ	Consumptive Habits Questionnaire
CLADDER	Contemplation Ladder
	Context of Drinking
CMBQ	Contingency Management Beliefs Questionnaire
CMCS	Contingency Management Competence Scale
CM-TAM	Contingency Management Therapist Adherence Measure
CDSES	Controlled Drinking Self-Efficacy Scale - Moderate Drinking Version
CCAPS-62	Counseling Center Assessment of Psychological Symptoms-62
CCFS	Counselor Compassion Fatigue Scale
CEQ	Craving Experience Questionnaire
CIRS-SA	Cumulative Illness Rating Scale (Substance Abuse)
CBS	Current Behavior Scale Self-Report
CDDR	Customary Drinking and Drug Use Record
DDQ	Daily Drinking Questionnaire
DALI	Dartmouth Assessment of Lifestyle Inventory
	DASA Target Data Elements
DBI, DBI-SF	Decisional Balance Inventory (also Short Form)
DAS	Delinquent Activities Scale
DRS	Denial Rating Scale
DASS	Depression Anxiety Stress Scales
DTQ	Desire Thinking Questionnaire
DEoDS	Desired Effects of Drinking Scale
DAQ	Desires for Alcohol Questionnaire
DICA	Diagnostic Interview for Children and Adolescents
DIS-IV	Diagnostic Interview Schedule (Alcohol Module)
DCI	Dimensions of Change Instrument

Short Name	Full Name
DTDS	Dimensions of Tobacco-Dependence Scale
DREAM	Dose Response Expectancies for Alcohol Metrics
DrInC	Drinker Inventory of Consequences
DCS	Drinking Context Scale
DEQ	Drinking Expectancy Questionnaire
DMQ-R, DMQ-R-SF	Drinking Motives Questionnaire - Revised (also Short Form)
DNRF	Drinking Norms Rating Form
DPQ	Drinking Patterns Questionnaire
DPI	Drinking Problems Index
	Drinking Profile
DRSEQ -R, DRSEQ-RA	Drinking Refusal Self-Efficacy Questionnaire - Revised (also Adolescent)
DRIE	Drinking Related Internal External Locus of Control Scale
DRS	Drinking Restraint Scale
DSML	Drinking Self-Monitoring Log
DSQ	Drinking Styles Questionnaire
DCSAS	Drinking to Cope Social Anxiety Scale
DIDS	Drinking-Induced Disinhibition Scale
DRCS	Drinking-Related Cognitions Scale
DRI-II	Driver Risk Inventory-II
DAX	Driving Anger Expression Inventory
DAST	Drug Abuse Screening Test
	Drug Abuse/Dependence Screener
DAP Quick Screen	Drug and Alcohol Problem Quick Screen
DDPPQ	Drug and Drug Problems Perceptions Questionnaire
DAI	Drug Attitude Inventory
DAS	Drug Attitude Scale
DASES	Drug Avoidance Self-Efficacy Scale
DHQ	Drug History Questionnaire (or Psychoactive Drug History Questionnaire)
DSRS	Drug Services Research Survey
DTCQ	Drug Taking Confidence Questionnaire
DUDIT, DUDIT-E	Drug Use Disorders Identification Test (also Extended)
DUF	Drug Use Frequency Measure
DUHI	Drug Use History Interview
DUS	Drug Use Screening
DUSI-R	Drug Use Screening Inventory - Revised
DTES	Drug-Taking Evaluation Scale
PL	DrugCheck Problem List
	DSM-IV Checklist
DDCAT	Dual Diagnosis Capability in Addiction Treatment Index
DTEI	DWI Therapeutic Educator Inventory
DASA	Dynamic Appraisal of Situational Aggression
DARSSA	Dynamic Assessment and Referral System for Substance Abuse
ESE	Early Smoking Experience Questionnaire
EASE	Ecological Assessment of Substance-Abuse Experiences
EDS	Ethanol Dependence Syndrome Scale

Short Name	Full Name
EuroADAD	European Adolescent Assessment Dialogue
EQ-5D	EuroQol http://www.euroqol.org/
EBPAS	Evidence-Based Practice Attitude Scale
FTND, FTND-ST	Fagerstrom Test for Nicotine Dependence (also Smokeless Tobacco)
FES	Family Environment Scale
FTQ	Family Tree Questionnaire for Assessing Family History of Alcohol Problems
	FAS Screen
FACE	Fast Alcohol Consumption Evaluation
FAST	Fast Alcohol Screening Test
FFMQ	Five Facet Mindfulness Questionnaire
	Five-Shot Questionnaire
FDP	Followup Drinker Profile
Form 90	Form 90, Form 90 - AIR/ED version
FAB	Frontal Assessment Battery
FrSBe	Frontal Systems Behavior Scale
FAI	Functional Assessment Interview
GAATOR, Ala-GAATOR	General Alcoholics Anonymous Tools of Recovery (Al-Anon)
GHQ-28	General Health Questionnaire-28
GAAP	Geneva Appetitive Alcohol Pictures
GAIN	Global Appraisal of Individual Needs
GAF	Global Assessment of Functioning
GF	Graduated frequencies scale
HII	H-Impairment Index
HAM-A	Hamilton Rating Scale for Anxiety
HAM-D	Hamilton Rating Scale for Depression
HSS	Hangover Symptoms Scale
HRSEQ	Harm Reduction Self-Efficacy Questionnaire
	Harms to Others Scale - NAS
HEADSS	HEADSS for Adolescents
HDL	Health and Daily Living Form
HDI	Health Dynamics Inventory
HoNOS	Health of the Nation Outcome Scales
HRRI	Health Reform Readiness Index
HRQOLDA	Health-Related Quality of Life for Drug Abusers Test
HSI	Heaviness of Smoking Index
HTS	Helper Therapy Scale
HAq	Helping Alliance Questionnaire
HCQ-45	Heroin Craving Questionnaire
HRAR	High Risk of Alcohol Relapse
HSQ	High School Questionnaire - Inventory of Experiences
HAP	Hilson Adolescent Profile
HCR-20	Historical Clinical Risk-20
	ICD-10 Symptom Checklist for Mental Disorders, v. 1.1 -- Psychoactive Substance Use Syndromes Module
ICS	Idaho Codependency Scale

Short Name	Full Name
IADW	Identification of Alcohol Dependence in Women Scale
IES	Impact of Event Scale - Revised
ICS	Impaired Control Scale
IRISA	Impaired Response Inhibition Scale for Alcoholism
IAT	Implicit Association Test
IPA	Important People and Activities Instrument
IPDA	Important People Drug and Alcohol Interview
IPI	Important People Inventory
IRIS	Indigenous Risk Impact Screen
IAP	Individual Assessment Profile
IDQ	Initial Direction Questionnaire
IRQ	Injecting Risk Questionnaire
IDUQOL	Injection Drug User Quality of Life Scale
ISS	Internal State Scale
IPDE	International Personality Disorder Examination
	Interpersonal Functioning of Alcoholism Counselors and Patient Outcome
IDQ-S	Intolerance for Smoking Abstinence Questionnaire
IDS	Inventory of Drinking Situations
InDUC	Inventory of Drug Use Consequences
IDTS	Inventory of Drug-Taking Situations
IPPA	Inventory of Parent and Peer Attachment
IS2-A	Inwald Survey 2 - Adolescent Version
IASI	Iowa Alcoholic Stages Index
JACQ	Jellinek Alcohol Craving Questionnaire
J-PTSD	Jellinek-PTSD
JASAE	Juvenile Automated Substance Abuse Evaluation
JSAP	Juvenile Substance Abuse Profile
K10	Kessler Psychological Distress Scale
KAT	Khavari Alcohol Test
KS	Knupfer Series (Beverage Specific Volume Measure)
KMSK	Kreek-McHugh-Schluger-Kellogg Scale
LDQ	Leeds Dependence Questionnaire
LRBA	Legal Risk Behaviors while Using Alcohol
LOCI-2R	Level of Care Index - 2R
	Lie/Bet Questionnaire
	Life Decades Heavy Drinking Measure
LEC	Life Events Checklist
LES	Life Experiences Survey
LOT-R	Life Orientation Test - Revised
LDH	Lifetime Drinking History
LDU	Lifetime Drug Use Questionnaire
LTUQ	Lifetime Tobacco Use Questionnaire
LAST	Lubeck Alcohol Dependence and Abuse Screening Test
MAC / MAC-R	MacAndrew Alcoholism Scale
MLEQ	Malt Liquor Expectancy Questionnaire

Short Name	Full Name
MACQ	Marijuana Consequences Questionnaire
MCQ	Marijuana Craving Questionnaire
MDBS	Marijuana Decisional Balance Scale
MEEQ, MEEQ-B	Marijuana Effect Expectancy Questionnaire (also Brief)
MEICA	Marijuana Expectancy Inventory for Children and Adolescents
ML	Marijuana Ladder
MMM	Marijuana Motives Measure
MPS	Marijuana Problem Scale
MJQQ	Marijuana Quit Questionnaire
MSI	Marijuana Screening Inventory
MSHQ	Marijuana Smoking History Questionnaire
MWSC	Marijuana Withdrawal Symptoms Checklist
	Marin Short Scale
MCS	Marlowe-Crowne Scale
	Marlowe-Crowne Social Desirability Scale
MAYSI	Massachusetts Youth Screening Instrument
MSAC	Maternal Substance Abuse Checklist
MAP	Maudsley Addiction Profile
Max	Maximimum Quantity Consumed
MDMA-BQ	MDMA Beliefs Questionnaire
MATE	Measurements in the Addictions for Triage and Evaluation
MORC	Medical Organizational Readiness for Change
MMBMEQ	Memory Model-Based Marijuana Expectancy Questionnaire
MHSF-III	Mental Health Screening Form - III
MICA	Mental Illness: Clinicians' Attitudes Scale
MEQ	Methamphetamine Experience Questionnaire
MAST, MAST-G, MAST/AD, SMAST, F-SMAST, M-MAST	Michigan Alcoholism Screening Test (also Geriatric, Alcohol and Drug, Short, Father, Mother)
MCMI-II	Millon Clinical Multiaxial Inventory-II
	Milwaukee Selective Severity Assessment
MINI, MINI-KID	Mini International Neuropsychiatric Interview (also for Children/Adolescents)
MMSE	Mini-Mental State Examination
MNWS, MNWS-R	Minnesota Nicotine Withdrawal Scale (Revised)
MSQ	Minnesota Satisfaction Questionnaire
M-SAPS	Minnesota Substance Abuse Problems Scale
MASS	Missouri Alcoholism Severity Scale
DMQ-R-5	Modified Drinking Motives Questionnaire
MSSA	Modified Selective Severity Assessment
	Monitoring the Future
MADRS	Montgomery and Asberg Depression Rating Scale
MoCA	Montreal Cognitive Assessment
MASQ	Mood and Anxiety Symptoms Questionnaire (MASQ)
MDQ	Mood Disorder Questionnaire
	Mortimer-Filkins Test
MAC2-A	Motivation To Change 2 - Alcohol

Short Name	Full Name
	Motivation to Change Inventory for Adolescents
MTSS	Motivation To Stop Scale
MARS	Motivational Areas Rating Scale
MALT	Munich Alcoholism Test
M-3	My Mood Monitor
NAAS	Native American Acculturation Scale
NACVBS	Native American Cultural Values and Beliefs Scale
NEEDS	NEEDS (Adult Evaluation)
NAEQ	Negative Alcohol Expectancy Questionnaire
NAMS	Negative Alcohol Metacognitions Scale
NMR	Negative Mood Regulation Scale
NASF	Neonatal Abstinence Scoring Form
NNWI	Neonatal Narcotic Withdrawal Index
	NET
NIAAA-2Q, NIAAA-4Q	NIAAA Alcohol Consumption Questions
NAMIE	Nicotine and Marijuana Interaction Expectancy Questionnaire
NOSIE	Nicotine and Other Substance Interaction Expectancies Questionnaire
NDSA	Nicotine Dependence Scale for Adolescents
NDSS	Nicotine Dependence Syndrome Scale
N-WAY	Nicotine Withdrawal Assessment for Youth
	NIDA Quick Screen
NM ASSIST	NIDA-Modified Alcohol, Smoking, and Substance Involvement Screening Test
NTLI	Non-Transmissible Liability Index
NDP	Numerical Drinking Profile
OCDS, OCDS-R, A-OCDS	Obsessive-Compulsive Drinking Scale (Revised, Adolescent)
OCS	Online Cognition Scale
OSIQ	Openness to Spiritual Ideas Questionnaire
PAT	Paddington Alcohol Test
P-FIB	Pain Frequency, Intensity, and Burden Scale
PMQ	Pain Medication Questionnaire
PDMTS	Paradigm Developmental Model of Treatment Scale
PSM	Parent Support Measure
PPS	Parental Punitiveness Scale
PSI, PSI-SF	Parenting Stress Index (Short Form)
STATCHG	Participant Status Change
PATHOS	PATHOS Questionnaire
PFS	Patient Feedback Survey
PHQ	Patient Health Questionnaire
PAOFI	Patient's Assessment of Own Functioning Inventory
PDS	Peer Delinquency Scale
PEPA	Peer Proficiency Assessment
PACS	Penn Alcohol Craving Scale
	Penn Inventory for Posttraumatic Stress Disorder
	People who would have Liked you to Drink Less Scale
PBDS	Perceived Benefit of Drinking Scale

Short Name	Full Name
PCQ	Perceived Coercion Questionnaire
PRBQ	Perceived Risk and Benefits Questionnaire
PSCS	Perceived Sense of Community Scale
PSAS	Perceived Stigma of Addiction Scale
PSS	Perceived Stress Scale
PLP	Perception of Legal Pressure Questionnaire
PCTQ	Perceptions of Computerized Therapy Questionnaire
PCI	Personal Concerns Inventory
PDHQ	Personal Drinking Habits Questionnaire
PEI, PEI-A	Personal Experience Inventory (Adult)
PESQ	Personal Experience Screening Questionnaire
PWI-A	Personal Wellbeing Index - Adult
PAI	Personality Assessment Inventory
PBS	Physician Belief Scale
P-CSAT	Physicians' Competence in Substance Abuse Test
PEAQ	Physiological Effects of Alcohol Questionnaire
PAL	Pleasant Activities List
PAMS	Positive Alcohol Metacognitions Scale
PANAS	Positive and Negative Affect Schedule
PDCQ	Positive Drinking Consequences Questionnaire
PDS	Posttraumatic Stress Diagnostic Scale - Self-Report
PADDI	Practical Adolescent Dual Diagnostic Interview
PSA-MI	Practitioner Self-Assessment of MI Interview
PAWSS	Prediction of Alcohol Withdrawal Severity Scale
PGMM	Pregaming Motives Measure
	Pregnancy and Health Study
	Pregnancy Assessment (CTN)
PMI	Preparty Motivations Inventory
PRS	Pretreatment Readiness Scale
PMAAQ	Preventive Medicine Attitudes and Activities Questionnaire
PRIME-MD	Primary Care Evaluation of Mental Disorders
PC-PTSD	Primary Care Posttraumatic Stress Disorder Screen
PCM	Prior and Concomitant Medications
PDQ	Problem Drinking Questionnaire
POSIP, POSIT	Problem Oriented Screening Instrument for Parents/Teenagers
PRQ	Problem Recognition Questionnaire
PSI	Problem Situation Inventory
PUM	Problematic Use of Marijuana
PUN	Problematic Use of Narcotics
PASUPP-R	Problems Assessment for Substance Using Psychiatric Patients - Revised
	Professional and Public Conceptions of Alcoholism
POMS	Profile of Mood States
PCQ	Pros and Cons of Quitting Questionnaire
PCT	Pros and Cons of Treatment Questionnaire
PBS	Protective Behavioral Strategies Measure

Short Name	Full Name
PBSS	Protective Behavioral Strategies Survey
PSI	Provider Survey of Incentives
	PsyCheck
PDSQ	Psychiatric Diagnostic Screening Questionnaire
PRISM	Psychiatric Research Interview for Substance and Mental Disorders
PSAS	Psychotic Symptom Assessment Scale
PCL	PTSD Checklist
PSS-I-SR, PSS-I	PTSD Symptom Scale - Self-Report/Interview
P-AEQ	PTSD-Alcohol Expectancy Questionnaire
PAAS	Public Attitudes about Addiction Survey
QOLI, QOLI-BV	Quality of Life Interview (also Brief)
QWB, QWB-SA	Quality of Well-Being Scale (Self Administered)
QF	Quantity-Frequency Methods
QSU	Questionnaire on Smoking Urges
QDS	Quick Drinking Screen
QTAQ	Quitting Time for Alcohol Questionnaire
	RAFFT
RAPS4, RAPS4-QF	Rapid Alcohol Problems Screen, Rapid Alcohol Problems Screen - Quantity Frequency
	Readiness for Mental Health Treatment
RTC Algorithm	Readiness to Change Drinking Algorithm
RTCQ, RTCQ-TV, RTCQ-SB	Readiness to Change Questionnaire (Treatment Version)
	Readiness to Change Rulers for Decreased Drinking and Increased Condom Use
RDT	Reasons for Delaying Treatment
RFDQ	Reasons for Drinking Questionnaire
RLTQ	Reasons for Leaving Treatment Questionnaire
	Reasons for Limiting Drinking or Abstaining
RFQ	Reasons for Quitting Scale
ReSUS	Reasons for Substance Use in Schizophrenia
RAATE	Recovery Attitude and Treatment Evaluator - Clinical Evaluator (CE) and Questionnaire I (QI)
RAQ-7	Recovery Attitudes Questionnaire
RGPS	Recovery Group Participation Scale
RI	Recovery Interview
RPI	Recovery Process Inventory
RAGS	Reduce Annoyed Guilty Start
RAS	Reflective Activity Scale
RPS	Reflective Processes Scale
RPI	Relapse Precipitants Inventory
RSAQ	Relapse Situation Appraisal Questionnaire
RHI	Relational Health Indices
RHS	Relationship Happiness Scale
RBB	Religious Background and Behavior
RBBQ	Religious Background and Behavior Questionnaire
RIASI	Research Institute on Addictions Self-Inventory

Short Name	Full Name
RESPPI	Residential Substance Abuse and Psychiatric Programs Inventory
RDS	Restrained Drinking Scale
RETROSUB	Retrospective Alcohol and Other Substance Use Measure
RACS	Retrospective Alcohol Context Scale
RANT	Risk and Needs Triage
RAB	Risk Assessment Battery
RBA	Risk Behavior Assessment
RBS	Risk Behavior Survey
	Risk Inventory for Substance Abuse-Affected Families
RARS	Risk of Alcoholic Relapse Scale
RCQ	Risks and Consequences Questionnaire
RSES	Rosenberg Self-Esteem Scale
	RUFT-Cut
RAPI	Rutgers Alcohol Problem Index
RMPI	Rutgers Marijuana Problem Index
SWLS	Satisfaction With Life Scale
STIDD	Scale for Treatment Integration of the Dually Diagnosed
SEE	Scale of Ethnic Experience
STEPP	Screening Tool for Early Predictors of PTSD
SWAG	Screening, Women, and Alcohol in Goteborg
SSAS	Seeking Safety Adherence Scale
SAAST-R	Self-Administered Alcoholism Screening Test - Revised
SCS	Self-Control Scale
SELD	Self-Efficacy List for Drug Users
SEQ	Self-Efficacy Questionnaire
SEQ	Self-Efficacy Questionnaire for Marijuana
SRE	Self-Rating of the Effects of Alcohol Questionnaire
SRQ	Self-Regulation Questionnaire
	Self-Report of the Effects of Alcohol Questionnaire
SRQ-R	Self-Reporting Questionnaire-Revised
SSADDA	Semi-Structured Assessment for Drug Dependence and Alcoholism
SSAGA-II	Semi-Structured Assessment for the Genetics of Alcoholism
SSS	Sensation Seeking Scale
SSSC	Sensation Seeking Scale for Children
SPSRQ	Sensitivity to Punishment and Sensitivity to Reward Questionnaire
SSS-16	Service Sarisfaction Scale-16
SOS	Service to Others in Sobriety
SSS-30	Servics Satisfaction Scale-30
SADQ	Severity of Alcohol Dependence Questionnaire
SADS	Severity of Alcohol Dependence Scale
SAmDQ	Severity of Amphetamine Dependence Questionnaire
SDS	Severity of Dependence Scale
SASH	Short Acculturation Scale for Hispanics
SADD	Short Alcohol Dependence Data Questionnaire
SF-12, SF-36	Short Form Health Survey Questionnaires

Short Name	Full Name
SIP, SIP-D, SIP-AD, SIP-DU, Modified SIP, SIP-SUD, SIP-BD	Short Index of Problems (Drug, Alcohol and Drugs, Drug Use, AUD)
SSRQ	Short Self-Regulation Questionnaire
START	Short Term Assessment of Risk and Treatability
SUSS	Short Understanding of Substance Abuse Scale
SPQ	Shorter PROMIS Questionnaire
SOS	Significant Other Survey
SSI-SOA, SSI-SA	Simple Screening Instrument for Alcohol and Other Drug Abuse, Substance Abuse
SCT	Situational Competency Test
SCQ	Situational Confidence Questionnaire
SCQ-H	Situational Confidence Questionnaire - Heroin
	Situational Norms Scale
SAEQ	Smoking Abstinence Expectancies Questionnaire
SAS	Smoking Attitudes Scale
SBS	Smoking Belief Survey
SCPCS	Smoking Cessation Processes of Change Scale
SCAS	Smoking Cue Appeal Survey
	Smoking History Questionnaire
S-KAP	Smoking Knowledge, Attitudes and Practices
S-KAS	Smoking Knowledge, Attitudes and Services
SEQ-12	Smoking Self-Efficacy Questionnaire
SWEET	Smoking-Related Weight and Eating Episodes Test
	Social Context of Cannabis Use Scale
SPSI-R	Social Problem Solving Inventory - Revised
SSQ	Social Support Questionnaire
STI	Social Tolerance Index
SEDARE	Specific Event Drug and Alcohol Refusal Efficacy Scale
STAI	Spielberger State-Trait Anxiety Inventory for Adults
SHI	Spiritual Health Inventory
SIBS	Spiritual Involvement and Beliefs Scale
STI	Spiritual Transcendence Index
SWB	Spiritual Well-being Scale
SIWB	Spirituality Index of Well-being Scale
SSRS	Spirituality Self-Rating Scale
SATS	Stage of Treatment Scale
SOCRATES-8A, 8D	Stages of Change Readiness and Treatment Eagerness Scale, v. 8 -- Alcohol/Drug
SEEQ	Stimulant Effect Expectancy Questionnaire
SMOEQ	Stimulant Medication Outcome Expectancy Questionnaire
SRRS	Stimulant Relapse Risk Scale
SDQ	Strengths and Difficulties Questionnaire
SCID	Structured Clinical Interview for the DSM. Substance Use Disorder Module - Adapted for Adolescents
SIDP-IV	Structured Interview for DSM-IV Personality
SAQ	Student Alcohol Questionnaire
SHAS	Subjective High Assessment Scale

Short Name	Full Name
SAMISS	Substance Abuse and Mental Illness Symptoms Screener
SAAS	Substance Abuse Attitude Survey
SAHI	Substance Abuse History Interview
SALCE	Substance Abuse Life Circumstance Evaluation
SAOM	Substance Abuse Outcomes Module
SAQ	Substance Abuse Questionnaire
SASSI	Substance Abuse Subtle Screening Inventory
SATSES	Substance Abuse Treatment Self-Efficacy Scale
SDSQ	Substance Dependence Screening Questionnaire
SDSS	Substance Dependence Severity Scale
SMAQ	Substance Misuse in Adolescence Questionnaire
SUDDS-IV	Substance Use Disorders Diagnostic Schedule
SUESS	Substance Use Event Survey for Severe Mental Illness
SUI	Substance Use Inventory
SUII	Substance Use Involvement Index
SURPS	Substance Use Risk Profile Scale
SURPPS	Substance Use Risk Profile-Pregnancy Scale
SACS	Substances and Choices Scale
	Subtle Trauma Symptom Screening Scale
SIQ	Suicidal Ideation Questionnaire
SASII	Suicide Attempt Self-Injury Interview
	Surrender Scale
SPREAD	Survey of Practiced Research Efforts to Aid Dissemination
SYRAAP	Survey of Readiness for Alcoholics Anonymous Participation
SPDQ	Survivors of Problem Drinking Questionnaire
SCL-90-R	Symptom Checklist-90-Revised
SDDS-PC	Symptom-Drive Diagnostic System for Primary Care
T-ACE	T-ACE
T-ASI, T-ASI-2	Teen Addiction Severity Index (Two)
TCI	Temperament and Character Inventory
TRI	Temptation and Restraint Inventory
DUKE	The Duke Health Profile
TRQ	Time to Relapse Questionnaire
TLFB, STLFB, TLFB-DCM	Timeline Followback (Self-Administered, Drugs, Cigarettes, and Marijuana)
TCS	Tobacco Control Scale
TCQ, TCQ-SF	Tobacco Craving Questionnaire (also Short Form)
TDS	Tobacco Dependence Screener
TOT-AL	TOT-AL
TLI, TLI-CV	Transmissible Liability Index (also College Version)
THQ	Trauma History Questionnaire
THS	Trauma History Screen
TSC-40	Trauma Symptom Checklist-40
AEQ	Treatment Attitudes and Expectations Questionnaire
TCAT	Treatment Cost Analysis Tool
TEA	Treatment Effectiveness Assessment

Short Name	Full Name
TEQ	Treatment Entry Questionnaire
TOP	Treatment Outcomes Profile
TPQ	Treatment Perceptions Questionnaire
TReaT	Treatment Readiness Tool
TREAT	Treatment Research Experiences and Attitudes Task
TSS	Treatment Seeking Scale
TSNR	Treatment Services Needed and Received
TSR	Treatment Services Review
TSA	Treatment Session Attendance
TSRS	Treatment Spirituality / Religiosity Scale
TAAD	Triage Assessment for Addictive Disorders
TAPD	Triage Assessment of Psychiatric Disorders
TPQ	Tridimensional Personality Questionnaire
TWEAK	TWEAK
TPS	Twelve Promises Scale
TSAPS	Twelve Step Affiliation and Practices Scale
TSAS	Twelve Step Ambivalence Scale
TSAQ-DD	Twelve Step Attitudes Questionnaire for Dual Diagnosis
TSF ACES	Twelve Step Facilitation Adherence Competence Empathy Scale
TSPEQ	Twelve Step Participation Expectancies Questionnaire
TSPQ	Twelve-Step Participation Questionnaire
TICS	Two Item Conjoint Screen for Alcohol and Other Drug Problems
NHI	UCLA Natural History Interview
UNCOPE	UNCOPE
UAS	Understanding of Alcoholism Scale
ULSUS	University Life and Substance Use Survey
URICA	University of Rhode Island Change Assessment
	Urine Drug Screen
VAST	Veterans Alcoholism Screening Test
VEQ	Violence Exposure Questionnaire
V-RISK-10	Violence Risk Screening 10
VV-M	Volume Variable-Maximum Scale
WAS	Ward Atmosphere Scale
WIDUS	Wayne Indirect Drug Use Screener
WOQ	Ways of Quitting Questionnaire
WSH	Weekly Self-Help Questionnaire
WURS	Wender Utah Rating Scale
WPI	Western Personality Inventory (Manson Evaluation & Alcadd Test)
	What I Want From Treatment
WDS	Why Do You Smoke?
WISDM-68, B-WISDM	Wisconsin Inventory of Smoking Dependence Motives (Brief)
WI-PREPARE	Wisconsin Predicting Patients' Relapse
WSWS	Wisconsin Smoking Withdrawal Scale
	Women with Alcohol Problems
WAI-T, WAI-C	Working Alliance Inventory -- Therapist/Client

Short Name	Full Name
WHOQOL	World Health Organization Quality of Life
WRAES	Worry-Reduction Alcohol Expectancy Scale
YACS	Yale Adherence and Competence Scale
Y-BOCS, Y-BOCS-hd	Yale-Brown Obsessive Compulsive Scale (Heavy Drinking)
YC	Year Consumption Questionnaire on Alcohol Consumption
YAACQ, B-YAACQ	Young Adult Alcohol Consequences Questionnaire (Brief)
YAAPST	Young Adult Alcohol Problems Screening Test
YASR	Young Adult Self Report
YWP	Your Workplace
YSR	Youth Self Report
YFHS-WHO+	Youth-Friendly Health Services - World Health Organization
Youth-Specific NDSS	Youth-Specific Nicotine Dependence Syndrome Scale
ZKPQ	Zuckerman-Kuhlman Personality Questionnaire

List of Major National Surveys on Alcohol used in SME Interviews

Short Name	Full Name
ADAS	American Drug and Alcohol Survey
Add Health	National Longitudinal Study of Adolescent to Adult Health
BHIS	Barcelona Health Interview Survey
BRFSS	Behavioral Risk Factor Surveillance System
CABRFS	China Adolescent Behavioral Risk Factor Survey
CAPES	Chinese American Psychiatric Epidemiological Survey
CAS	Harvard School of Public Health College Alcohol Study
CHIS	California Health Interview Survey
CHKS	California Healthy Kids Survey
CHNS	China Health and Nutrition Survey
CLESA	Cross-national determinants of quality of life and health services for the elderly
CNHSS	Chinese National Health Service Survey
CNS	Catalan Nutrition Survey
CNYRBS	China National Youth Risk Behaviour Survey
COGA	Collaborative Study on the Genetics of Alcoholism
COMBINE	COMBINE Study
CORE	Core Institute
CSFII	Continuing Survey of Food Intakes by Individuals
EDADES	Household Survey on Alcohol and Drugs in Spain
ENSS	Spanish National Health Survey
ESPAD	European School Survey Project on Alcohol and Other Drugs
FACES	Filipino American Community Epidemiologic Study
GENACIS	Gender, Alcohol, and Culture: International Study
GSHS	Global School-based Student Health Survey

Short Name	Full Name
ILSAH-Mexico	International Longitudinal Survey of Adolescent Health (Mexico)
HABLAS	Hispanic Americans Baseline Alcohol Survey
HHANES	Hispanic Health and Nutrition Examination Survey
KNHANES	Korean Health and Nutrition Examination Survey
KYPS	Korea Youth Panel Survey
KYRBSS	Korean Youth Risk Behavior Surveillance Survey
KYRBWS	Korean Youth Risk Behavior Web-based Survey
MATCH	Matching Alcoholism Treatments to Client Heterogeneity: Project MATCH Study
MES	Maternity Experience Survey (Canada)
MTF	Monitoring The Future
NAS	National Alcohol Survey
NCHRBS	National College Health Risk Behavior Survey
NCS	National Comorbidity Survey
NESARC	National Epidemiologic Survey on Alcohol and Related Conditions
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
NHIS-Taiwan	National Health Interview Survey in Taiwan
NHSDA	National Household Survey of Drug Abuse
NLAAS	National Latino and Asian American Study
NLAES	National Longitudinal Alcohol Epidemiologic Survey
NLSY	National Longitudinal Survey of Youth
NMEHS	New Mexico Elder Health Survey
NMIHS	National Maternal and Infant Health Survey
NPES	National Performance Evaluation Survey (Mexico)
NRS	National Roadside Survey
NSALD-J	National Survey of Alcoholic Liver Disease in Japan
NSDC	National Survey on Drugs in Chile
NSIDUAT	National Survey of Illegal Drug Use among Adolescents in Taiwan
NSDUH	National Survey on Drug Use and Health
NSRFCD-Cuba	National Survey on Risk Factors and Chronic Diseases (Cuba)
NYSADU-Panama	National Youth Survey on Alcohol and Drug Use (Panama)
PRAMS	Pregnancy Risk Assessment Monitoring System
SCHS	Singapore Chinese Health Study
STEPS	STEPwise approach to Surveillance
TSCS	Taiwan Social Change Survey
UMSARC	US-Mexico Study on Alcohol and Related Conditions
YRBSS	Youth Risk Behavior Surveillance System
WHO/ISBRA	WHO/ISBRA Study on State and Trait Markers of Alcohol Use and Dependence

Short Name	Full Name
WMH	World Mental Health Survey Initiative

List of Measure Descriptors of Measures used in SME Interviews

Primary Topics: Alcohol Use and Consequences	Ancillary Topics
(AC) Alcohol Consumption (e.g., drinking amount, pattern, and contexts; age of initiation)	(DC) Drinking-related Cognitions (e.g., alcohol-related attitudes, expectancies, and motives)
(AUD) Alcohol Diagnosis/ Dependence/Alcohol Use Disorder (AUD) (e.g., ICD-10, DSM)	(SNSS) Social Norms and Social Support (e.g., perceived drinking norms, peer alcohol use)
(AS) Alcohol Screeners (e.g., CAGE, AUDIT)	(PRF) Psychological Resources and Functioning (e.g., approach coping, mood regulation)
(ASH) Alcohol-related Social Harms (e.g., social, legal, and employment consequences; driving under intoxication)	(TS) Trauma and Stressors (e.g., child abuse; adult victimization; stigma and discrimination)
(AHH) Alcohol-related Health Harms (e.g., alcohol-related health conditions, alcohol-related injuries, overall physical and mental health)	(PF) Personality Factors (e.g., sensation seeking, impulsivity)
(AHO) Alcohol's Harms to Others (e.g., sexual coercion, assault)	(PD) Psychiatric Disorders (e.g., depression, anxiety)
(HSU) Health Services Utilization (e.g., alcohol treatment utilization; utilization of 12-step groups; emergency room visits)	(FRP) Family Risk and Protective Factors (e.g., familial history of alcoholism; parental attitudes)
(TPO) Treatment Process and Outcome Assessment (e.g., treatment satisfaction, abstinence)	(CF) Cultural Factors (e.g., acculturation, acculturation stress, immigration history, intergenerational stress, ethnic identity)
	(NEC) Neighborhood and Environmental Characteristics (e.g., collective efficacy, perceived alcohol availability)
	(GH) General Health (e.g., quality of life)
	(APO) Alcohol Policy Opinions (e.g., attitudes toward alcohol taxation)
	(ODU) Other Drug Use

6.3 Appendix C: AlcoholMeasures^TM Usability Testing

Planning
Contact person: Address: Room: Direct phone number in the room: Internet access: Schedule:
Notes
Make sure the interaction is friendly, relaxed, and informal so the subject doesn't feel like s/he is being "judged".   Adapt your test cases to what's working. After the first couple, you probably will see the pattern of where people would struggle and can adapt your testing strategies.   Watch the time and put some markers on where the session should be every 20 mins so you can control the pace.   Depending on how much time you have, show testers how the site looks on your iPad and your (or their) phone.   When using a phone, think about which mode (landscape—holding phone horizontally or portrait—holding phone vertically) would work better for different pages.   Take notes.
Intro to BrightOutcome
Our team includes technical experts in Web/mobile app development, patient-centered design, eHealth/mHealth technology, and health IT.
Intro to AlcoholMeasures
To increase the participation of under-represented non-English speaking racial and ethnic minorities in the U.S. in alcohol research, the NIAAA awarded a small business contract to us in partnership with the Alcohol Research Group (ARG), to develop AlcoholMeasures™, a mobile-friendly, searchable database of measures for alcohol research in multiple languages. Today my goal is to find out how usable the website is and to see where we might make improvements.
Landing Page
Can you try the Measure Database?
Measure Database Pages
Can you search for a measure in Chinese? (33)   Can you limit that search to 'Alcohol Screeners'? (6)   Can you Limit that search to 'Clinician-reported'? (4)   Can you Limit that search to 'Adolescents'? (2)   Can you search for measures by the keyword marijuana or cannabis? (2 and 1)

Can you find any measures for Tagalog? (1, but you have to 'Reset' the choices)

Can you open the ABTI measure? [Show features of just the Summary Page]

What languages is this scale available in? (English, Tagalog, Vietnamese, Chinese, Spanish)

What age groups has this scale been evaluated on? (Older Adults (65+), Adulthood (18-64))

Can you go to back to the Alphabetical directory and open the AUDIT measure?

Measure – Specific Pages (AUDIT)

What versions of the AUDIT do we have? (AUDIT, AUDIT-C ('Concise' or 'Harmful Drinking'), AUDIT-IV (Interview Version), AUDIT-5 (5-item))

Can you find the publications for the AUDIT?

Can you find which articles are for Spanish and are translation articles? (1)

Please pull up the abstract for it.

Where would you go to find the psychometric details of the AUDIT?

Can you find the validity in Spanish?

How about Chinese?

Can you try to get the questionnaire?

Let's login and see what other features we can access…

Once we login we see the Dashboard, let's come back to this after we finish looking at the AUDIT, can you get us back to the AUDIT page?

What new features do you see? (Follow this measure, Q&A about this measure, Measures that are similar to, Measures you followed, Measures that match your interests)

Can you follow the AUDIT?

And can we see if there are any questions posted about the AUDIT?

And one last thing with the AUDIT, can you find a review article for Chinese? (1)

Do you see anything new? (Save to references)

Can you save this article to your references?

Can you take us to My References?

My References

Can you export the reference to EndNote?

And can you search for references by Skinner? (2)

Can you take us to the Profile page?

Profile Page

Can you edit the Topics of Interest?

Can you edit the Languages of Interest?

Can you take us to the Dashboard?

Dashboard

Can you find any measures that match your interests?

And let's say that we weren't sure what that means…can you find any more information if you needed it? (Use the '?')

Can you ask a question? (Ask them to enter a question if they feel comfortable putting in one. If they don't feel comfortable doing it right there, explain to them and ask to do after the session (and you may have to follow up with them afterwards to get them to enter questions).

Sample questions might be…

My understanding is that the CAGE isn't good at identifying risky drinking, is the AUDIT or AUDIT-C better?

The BASQ was modified from the Chinese-modified version of the Diagnostic Interview Schedule, does anyone know if BASQ has been validated in China?

What do you typically use in your own research studies, a short screener or a measure of alcohol consumption?

What timeframe do you prefer for measuring alcohol consumption (week, month, year)?

Has anyone had difficulty using alcohol measures in a high school or below? How did you get IRB and other approvals?

Feedback Page

If you wanted to contact us, how would you do that?

Wrap up

Would you use the AlcoholMeasures™ site?

Would you recommend this site to others?

Do you have any suggestions about this site?

I have a questionnaire for you to complete on the iPad and I'll get your mailing address so we can mail you a check for participating today.

We also have a second round of testing where we're asking people to use the site over the next 2 weeks and answer another survey. If you'd like to do that I'll get your email so I can email you a link to the last survey in two weeks. You would earn an additional $100 for participating in that round of testing.

Have them complete the surveys on Survey Monkey.

001   [paste links from survey monkey]

Have them complete their name and address for the accountant to mail the check. If they agree to participate in a second round of usability testing, get their email.

THANK YOU!

6.4 Appendix D: System Usability Scale

	Strongly Disagree				Strongly Agree
1. I think that I would like to use AlcoholMeasures frequently.	1	2	3	4	5
2. I found AlcoholMeasures unnecessarily complex.	1	2	3	4	5
3. I thought AlcoholMeasures was easy to use.	1	2	3	4	5
4. I think that I would need the support of a technical person to be able to use AlcoholMeasures.	1	2	3	4	5
5. I found the various functions in AlcoholMeasures to be well integrated	1	2	3	4	5
6. I thought there was too much inconsistency in AlcoholMeasures.	1	2	3	4	5
7. I would imagine that most people would learn to use AlcoholMeasures very quickly.	1	2	3	4	5
8. I found AlcoholMeasures very cumbersome to use.	1	2	3	4	5
9. I felt very confident using AlcoholMeasures.	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with AlcoholMeasures.	1	2	3	4	5

6.5 Appendix E: Perceived Usefulness Questionnaire

Instructions: This questionnaire will present you with statements about the usefulness of the different features on the AlcoholMeasures site. You can agree or disagree with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree). Please mark your response by placing an "X" in the box that matches your level of agreement / disagreement.

Landing Page	Strongly Disagree				Strongly Agree
	1	2	3	4	5
The landing page makes me want to explore and learn more about the site.					

Measure Database Search Page	Strongly Disagree				Strongly Agree
	1	2	3	4	5
The measure search parameters are relevant and useful in helping me find the alcohol measures of interest to my research.					
The keyword search is useful in helping me find the alcohol measures of interest to me.					
The language-specific publication counts in the measure search result table are useful in helping me identify measures suitable for the populations in my studies.					

Measure – Specific Pages	Strongly Disagree				Strongly Agree
	1	2	3	4	5
The psychometric details of a measure are comprehensive and useful for me to evaluate the quality of the measure.					
It is useful to have the publications of a measure listed in one place, and organized by article type as original, validation, translation, use, and review.					
It is useful to see what others say about a measure and for a user to ask questions about a measure.					
It is useful to be able to follow a measure and see when there is new information about the measure (e.g., a new question or publication).					
It is useful to have the system suggest other measures that are similar to the current one in terms of research topics and/or languages.					
It is useful to be able to download measures directly from AlcoholMeasures.					

Dashboard and Social Connections	Strongly Disagree				Strongly Agree
	1	2	3	4	5
It is useful to see questions from others that match my research interests.					
It is useful to review the professional profiles of other members.					
It is useful to be able to see measures that match my research interests.					
It is useful to be able to select my topics of interest and see when there is new information about that topic (e.g., alcohol screeners).					

Reference Library	Strongly Disagree				Strongly Agree
	1	2	3	4	5
It is useful to view article abstracts extracted from PubMed directly on this site.					
It is useful to be able to save and organize the references I am interested in.					
It is useful to be able to export the references I am interested in to bibliography tools like EndNote.					

General Statements	Strongly Disagree				Strongly Agree
	1	2	3	4	5
It is useful to be able to use this site on mobile devices.					
I would use this site in my work.					
I would recommend this site to my colleagues.					
Please write down any other comments or thoughts about the AlcoholMeasures site in the space below. THANK YOU!					

6.6 Appendix F: Detailed Subject Matter Experts Feedback

6.6.1 The List of Alcohol and Alcohol Related Measures and Surveys

- (AP) measures he uses in Indian dialects: AUDIT, GHQ, Prime MD, RAPS4, Geriatric depression scales, CIDI, GHQ12, SAOQ, CAGE
- (AP) Suggests using national surveys, such as the National Study of Substance Abuse in India
- (AP) Suggests using family health surveys
- (GA) Most used measure is the AUDIT, and ASSIST, but also uses RAPS4, CAGE, TWEAK, MAST
- (GA) Suggests that most researchers tend to pick measures based on recommendation or journals they want to publish in
- (GA) Suggests using national surveys
- (RC) Commonly uses acculturation scale, expectancies, AUDADIS, CIDI, AUDIT, Beck, Cognitive measures (norms, attitudes, expectancy (AES), CTS)
- (RC) Suggests the most important measures are the federal surveys that are repeated periodically
- (RC) Suggests two national Brazilian surveys, Federal University of Sao Paulo, 2002, 2012; oversampled adolescents; LENAD (Brazilian name)/BNDAS Brazilian National Drug and Alcohol Survey; includes urban and rural samples; State University of Sao Paolo and department of psychiatry covers larger urban areas; Brazilian government national telephone survey; school surveys; local surveys
- (PM) Uses AUDIT, Beck, TACE
- (PM) Suggests that only two Native American languages are written: Cherokee & Navajo. But that most Native American people only speak English.

6.6.2 Measure Search Parameters

6.6.2.1 Primary Parameters

- (AP) Suggests including age related category to capture underage drinking.
- (GA) Suggests that researchers want to determine which measure is the best to use, perhaps the site could list number of publications for each measure.
- (GA) Suggests search setting could include subject type, e.g. seniors, adolescents.
- (RC) Suggests adding cognitive measures like cognitive expectancies, attitudes toward alcohol, alcohol norms, discriminative distress. These could be added as search parameters or as other measures
- (RC) Suggests adding neighborhood measures with census level variables, e.g. neighborhood disorganization (education, poverty)

6.6.2.2 Ancillary Parameters

- (AP) Likes having cultural factors
- (AP) Suggests other drug use/smoking
- (AP) Study setting: separate clinics into primary care, specialist, hospital (ER)
- (AP) Admin Type: in his research he finds that responses can be different depending on the researcher (clinician vs. lay health worker)
- (GA) Suggests self-control attitudes/behavior; sensation seeking; impulsivity; population; types of deaths, injuries, outcomes; alcohol related genetics
- (GA) Suggests biologic measures that have published validity with alcohol measures, e.g. urine, breath, blood; this could be listed as another tab along with validity and reliability
- (RC) Admin type: doesn't think additional fields are needed, but suggests definitions would be useful
- (RC) Suggests study setting should include correctional facility, industrial or occupational settings, native/tribal settings, schools
- (PM) Admin Type: suggests 'clinician rated' and 'clinician administered' parameters

- (PM) Study setting: 'small group', 'general population', 'home observation'
- (PM) Suggests having home environment measures

6.6.3 The Current AlcoholMeasures Website

- (AP) Need to be able to capture that translating team may not be the original author.
- (AP) Would like to capture contact information for translating team.
- (EPS) Has found that accessing articles is a major problem from developing countries suggests capturing contact information for original author.
- (AP) unsure about payment.
- (AP) Suggests there are notifications of activity in your topics, like Research Gate uses.
- (AP) Suggests an option to download into endnote or other reference software.
- (AP) Has found that focusing on American research loses information from European (GHQ) research in developing countries.
- (AP) Suggests searching for measures in grey literature. He finds measures: validation studies in thesis/dissertations, Research in India or China, Google Scholar, uses university library search engine that uses multiple databases (PsycInfo).
- (AP) Suggests keywords for India: Hindi, Tamil, Kanada, Marathi, Malayalam, Gujarati (big immigrant population in US), Kerala (high drinking rates).
- (AP) Suggests India has a national survey.
- (AP) Alcohol prohibition is gaining momentum in India.
- (GA) Suggests allowing researchers to post in their preferred language
- (GA) Suggests it would be good to be available in other languages
- (GA) Suggests ways to access measures, e.g. open access. Or similar to Research Gate, in which researchers can share personal links to work they have the rights to.
- (GA) Suggests Hinari, for LMIC
- (GA) Suggests the database can be used to compare between measures, a visual or table, with comparison checks or graph/histogram, could be useful
- (GA) Suggests publishing a paper on the platform to reach researchers
- (PM) Suggests subscription fees should be kept at a minimum or have institutional fees
- (EPS) Suggests email reminders for users

6.6.4 Comments on the current ePROmeasure Website

[Please note that a summary of responses from SME's are in the "SME Interview Summary" file.]

- (GA) Suggests a way to record number of refusals in subject table
- (GA) Suggests having a way to enroll subjects anonymously
- (GA) wonders how this could be utilized with prison population, or populations that wouldn't utilize computers
- (GA) suggests including country codes
- (GA) suggests having a method of downloading study enrollment information into PDF or Excel format
- (GA) suggests having the ability to add questions to measures
- (GA) suggests having the ability to upload a consent form, automatically sent it to subjects' email when registered, and have some record of subject signing it (sign electronically or scan in signed copy
- (GA) suggests planning how this site could be used for 'big-data' studies (those that combine the data from multiple studies) in the future. Issues to be addressed would include how the data would be used and shared (this would need to be addressed both for researchers and subjects)
- (RC) Suggests having a way to see a list of pending subjects
- (RC) Suggests tracking dropouts, or those late in completing study visits/milestones

- (RC) Suggests including alternate contact information
- (RC) Suggests including field to capture contact attempts/results
- (RC) Suggests having a method to ensure that the subject is answering the surveys, not another person
- (RC) Suggests the dashboard is too granular, important to provide a snapshot (study and site overviews, recruitment per site, recruitment rate (approached/consented), retention/dropout rates)
- (RC) Suggests all data on the dashboard should be reportable by site
- (RC) Suggests in project set-up: clarifying what to do on randomization schedule, have other randomization schemes, parameters for evaluation of clinic
- (RC) Suggests finding federal reporting requirements (such as NCI Cancer Centers), for example, NCI requires reporting time from IRB approval to first subject consent and accrual over time
  - (RC) Suggests NCATS, list of potential measures by NIH, he can send this when he receives it
- (RC) Suggests fields that allow open ended data entry and calculator
- (RC) Suggests 'start date' is too vague a term. Each should be defined, e.g. site start date, subject start date, overall study start date
- (RC) Suggests other fields should be defined, e.g. project name (protocol name, short name)
- (RC) Suggests alcohol experimentation studies where alcohol is administered need to record data— not just input from subject. Researcher data entry needs to include vitals, amount of alcohol administered, symptoms
- (PM) Likes that he could add questionnaires and contacts
- (PM) Would want to be able to set-up subject accounts here, but needs to work with cell phones

6.7 Appendix G: AlcoholMeasures™ Usability Testing Detailed Results

6.7.1 Tester 001

6.7.1.1 Measure Database Pages

- Suggested that we use Tagalog/Filipino, perhaps we should talk to Tom about whether we should use 1 or both of them.
- It was confusing to find the reset button on the bottom of the page, suggested that the reset button should be in both top and bottom.
- It was confusing to find the results on the bottom of the page, tried to use the search button with the language/parameter search.
- The alpha search page should list this at the top…A-B-C-D-…Z and it should be a link to where that letter begins in the list.
- Might need instructions that searches should be like pubmed or google scholar?

6.7.1.2 Measure Specific Pages

- Under 'Get Questionnaire' Can we make the website links and the email links live?
- What about putting the publications tab on top, wasn't clear where to find them.

6.7.1.3 Dashboard

- Even when the topics of interest are set, this message shows in the dashboard for the questions that match your topics……"Set your Topics of Interest in your Profile page to see community questions matching your research interests."

6.7.1.4 References

- What about RefWorks or Excel. Something like Google Scholar would be nice.

6.7.1.5 General Comments

- It's easy to use
- It's very clean
- Would like to see people who like the same topics/language as me. Would make it more like a community.

6.7.2 Tester 002

6.7.2.1 Measure Database Pages

- Would be nice to be able to choose more than 1 parameter
- It was confusing to find the reset button on the bottom of the page, suggested that the reset button should be in both top and bottom.
- It was confusing to find the results on the bottom of the page, tried to use the search button with the language/parameter search.

6.7.2.2 Measure Specific Pages

- Under 'Get Questionnaire' Can we make the website links and the email links live?

- What about putting the publications tab on top, wasn't clear where to find them.

6.7.2.3   References

- Would want to export into something other than Endnote.

6.7.3   Tester 003

6.7.3.1   Measure Database Pages

- When searching using the parameters/keywords, after clicking on a measure, I would want to be able to use the back button and return to the search I just did
- It would also be nice to be able to save a search
- Under the Alpha tab, can we add a way to choose the language(s) we see instead of only seeing English?

6.7.3.2   Measure Specific Pages

- Make the citation number a link to that publication at the bottom of the page, or a pop-up with the entire citation (would like to see easily title or journal)
- AUDIT English version PDF should be from WHO like the Spanish

6.7.3.3   Dashboard

- Would like to see the Q&As sorted by topic or measure so you can know why you're seeing them.

6.7.3.4   References

- Would want to export into something other than Endnote.

6.7.3.5   General Comments

- When the '?' is used, want to be able to hit anywhere on the page to make it go away
- Not the best search because can't go back to it.
- Suggests that we will need to advertise this, suggested the Kettilbruun Society, ARS, APHA

6.7.4   Tester 004

6.7.4.1   Measure Database Pages

- When searching using the parameters/keywords, after clicking on a measure, I would want to be able to use the back button and return to the search I just did
- It was confusing to find the reset button on the bottom of the page, suggested that the reset button should be in both top and bottom.
- It was confusing to find the results on the bottom of the page, tried to use the search button with the language/parameter search.
- Under the Alpha tab, can we add a way to choose the language(s) we see instead of only seeing English?

6.7.4.2 Measure Specific Pages

- It would be helpful to have the abstract formatting from PubMed or spaces between paragraphs to make it easier to read.
- Items listed on the individual measure page (across all tabs: summary, parameter, get survey) would be easier to see if instead of separating info with ';' we put new info on a new line
- Article type has two ways to search (a dropdown menu and the boxes) it's confusing.
- Would like to see the available article types change based on the language selected. So only the types that are available in that language are available to choose from.
- In the AUDIT, what's the difference between industrial and workplace?

6.7.4.3 References

- Thought that reference search would only search MY references, because it's part of 'My References' page. Maybe a better title would be "References".
- Would want to export into something other than Endnote.

6.7.4.4 General Comments

- Suggests that we will need to advertise this, suggested community groups, state level
- #18 on our survey has a type-o

6.7.5 Tester 005

6.7.5.1 Measure Database Pages

- It seems to be wrong that we have measures showing up for infants that clearly aren't.
- We shouldn't have parameters show up if we have nothing available under them. Like 'Neighborhood and environmental'
- If I search for PEDD-Y as a keyword it doesn't show up?
- When searching using the parameters/keywords, after clicking on a measure, I would want to be able to use the back button and return to the search I just did
- It was confusing to find the reset button on the bottom of the page, suggested that the reset button should be in both top and bottom.
- It was confusing to find the results on the bottom of the page, tried to use the search button with the language/parameter search.

6.7.5.2 Measure Specific Pages

- Under 'Get Questionnaire' Can we make the website links and the email links live?

6.7.5.3 Dashboard

- Very cool

6.7.5.4 References

- Would want to export into something other than Endnote.

6.7.5.5   General Comments

- This would be useful for grant writing.

6.7.6   Tester 006

6.7.6.1   Measure Database Pages

- Would be nice to be able to choose more than 1 parameter
- It was confusing to find the reset button on the bottom of the page, suggested that the reset button should be in both top and bottom.
- It was confusing to find the results on the bottom of the page, tried to use the search button with the language/parameter search.
- Chinese pubs show up with just Chinese selected even though they have 0 [note from KC: I tried making this happen afterwards and didn't have this issue, I'm guessing we just needed to reset the search]
- Under the Alpha tab, can we add a way to choose the language(s) we see instead of only seeing English?
- It might be useful to tell users our methods for looking for measures and publications so they get the limitations of what's here?
- We shouldn't have parameters show up if we have nothing available under them. Like 'Neighborhood and environmental'
- Get rid of the option to search for pubs by type, it is confusing and the categories aren't clearly separate.

6.7.6.2   Measure Specific Pages

- The psychometric data might be more useful grouped by author than by type. This may be more helpful for those measures with many articles like the AUDIT.
- AUDIT: not all publications have versions.
- It would be more accurate to report male/female than men/women.
- AADIS downloads are wrong, wrong naming and links don't work.
- AUDIT, get the other versions from WHO (English, IV, 5, C).
- Under 'Get Questionnaire' Can we make the website links and the email links live?

6.7.6.3   Dashboard

- Seeing measures similar to the ones I'm interested in is great.

6.7.6.4   References

- Would want to export into something other than Endnote. Especially Zotero.

6.7.6.5   General Comments

- Emails or having a moderator will be necessary, otherwise no one will answer questions. But perhaps users could choose how often to get emails (as events happen, weekly, biweekly, monthly).