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Hawai'i State Epidemiological Outcomes Workgroup

**State Epidemiological Profile:
Selected Youth and Adult
Alcohol Indicators**

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ABSTRACT

Background: *The State of Hawai‘i Epidemiological Profile: Selected Youth and Adult Alcohol Indicators* was developed as one of the services provided by the Alcohol and Drug Abuse Division (ADAD) Epidemiology Team. The ADAD Epidemiology Team is a partner of the Strategic Prevention Framework Partnerships for Success (SPF-PFS), which is funded through a federal grant provided by the Substance Abuse and Mental Health Services Administration (SAMHSA). The purposes of this profile are identifying Hawai‘i’s status of alcohol use by youth and adults, detecting trends of alcohol use, and providing information in a user-friendly format for planning and implementation of alcohol use prevention and treatment programs.

Methods: The alcohol-related indicators in this profile were selected based on SAMHSA’s National Outcome Measures (NOMs). In order to report those selected indicators, Hawai‘i Youth Risk Behavior Survey (Hawai‘i YRBS), Hawai‘i Behavioral Risk Factor Surveillance System (Hawai‘i BRFSS), and National Survey on Drug Use and Health (NSDUH) were utilized as primary data sources in this profile.

Results and Findings: The overall prevalence rates of each alcohol-related indicator among high school students in 2013 were: 52.5% for ever having at least one drink of alcohol; 25.2% for 30-day alcohol use; 12.7% for 30-day binge drinking; and 17.5% for having a first drink of alcohol before age 13 years.

The findings indicated that there were no significant changes in alcohol indicators for youth (high school students or individuals aged from 12 to 17) in Hawai‘i since 2007. There were also no sex differences for any youth alcohol indicator. Although not all differences were statistically significant, high school students in higher grades tended to have higher alcohol usage rates than students in lower grades. Native Hawaiian high school students usually had the highest rates, followed by Caucasians. Japanese and “other Asians” were the categories with the lowest rates for most indicators.

The overall prevalence rates of each alcohol-related indicator among adults (age 18 and older) in 2013 were: 49.3% for 30-day alcohol use; and 18.3% for 30-day binge drinking.

There were no significant differences in adult alcohol indicators for Hawai‘i since 2007. Adult males had significantly higher alcohol usage rates (e.g., 30-day alcohol use and binge drinking) than adult females across years. Adult Caucasians and Native Hawaiians had the highest rates of alcohol usage amongst the ethnic group categories.

Program Recommendations: Continuous effort and enhancement of underage drinking prevention and treatment programs that are targeted to both boys and girls are crucial for improving underage drinking rates among adolescents in the state. Because older high school students usually had higher alcohol usage rates, it is recommended that prevention programs be started at earlier stages of adolescence. To reduce health disparities among ethnic groups in Hawai‘i, culturally appropriate and evidence-based programs are strongly recommended, especially for the groups with the highest rates, such as Native Hawaiians and Caucasians. Among Asian ethnic groups, Filipino adolescents had rates as high as Caucasians or Native Hawaiians for some of the indicators, signaling a growing need for prevention efforts targeting this population in particular.

Since adult males had higher rates of binge drinking than did adult females, this gap between sexes should be addressed in prevention program planning. Just as with programs for youth, culturally appropriate

interventions for the adults of ethnic groups with higher rates of alcohol use, such as Caucasians and Native Hawaiians, are highly recommended.

Data Recommendations: Currently alcohol or substance use data specifically among college students are not available in Hawai‘i and this gap should be filled by establishing a statewide health survey for college students in which multiple campuses representing Hawai‘i participate. Alcohol indicators are limited in the current Hawai‘i BRFSS, and it is recommended that other important items be added, such as age at first use, perceived risk of harm of use, disapproval of substance use, and driving while under the influence of alcohol. It is also important that data be collected from a larger sample size and that reported data be broken into detailed ethnic groups instead of using aggregated categories such as “Asian” or “Native Hawaiian and Pacific Islanders.” This is especially crucial for communities in Hawai‘i that are ethnically and culturally diverse.

ACKNOWLEDGEMENTS

The contents of the *State Epidemiological Profile: Selected Youth and Adult Alcohol Indicators* are a collaborative effort on the part of numerous individuals and agencies throughout the State of Hawai‘i. It is because of the knowledge and dedication of these entities that Hawai‘i’s SPF-PFS partners are able to provide the leadership necessary for the development and delivery of quality substance abuse prevention, intervention, and treatment services for the youth and adults of the State of Hawai‘i.

The Alcohol and Drug Abuse Division (ADAD) of the Hawai‘i State Department of Health (HIDOH)

ADAD of HIDOH is the primary source of public funds for many substance abuse treatment and prevention services in Hawai‘i. This profile would not have been possible without funding and support from ADAD. ADAD is supported by the SPF-PFS 2013 of SAMHSA, under grant number 1U79SP020167-01.

Evaluation Team at Center on the Family (COF) of the University of Hawai‘i

The University of Hawai‘i, COF has research and evaluation expertise with substance use prevention programs and has collaborated with ADAD. COF was the evaluator for the Strategic Prevention Framework – State Incentive Grant (SPF-SIG) from 2007 to 2012 and continues their services for the current project SPF-PFS 2013 as one of our partners. The ADAD Epidemiology Team would like to express our gratitude to the Evaluation Team at COF who works collaboratively with the ADAD Epidemiology Team and ADAD at HIDOH.

State Epidemiological Outcomes Workgroup (SEOW) Members

SEOW membership is comprised of directors, epidemiologists and data managers from the government, community stakeholders, and individuals from educational institutions in Hawai‘i (the list of members is available in Appendix E). The ADAD Epidemiology Team appreciates the support and help from these members, and their feedback and suggestions were reflected throughout this profile.

Hawai‘i School Health Survey (HSHS) and Hawai‘i Health Data Warehouse (HHDW)

The HSHS is a joint effort between HIDOH and the Hawai‘i Department of Education (HIDOE) to monitor the health status and needs of students in 6th through 12th grade. Data for a large portion of this profile have been collected and provided by Hawai‘i YRBS, which is one of two survey modules (the other one is Youth Tobacco Survey) that are coordinated by HSHS committee members. HHDW analyzes those datasets and provides detailed reports of results. This profile is designed to provide an overview of alcohol use in Hawai‘i and it would not have been possible without invaluable assistance from HSHS committee members and epidemiologists at HHDW.



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INTRODUCTION

Background

The SAMHSA Center for Substance Abuse Prevention (CSAP), has granted funding to the ADAD Epidemiology Team since fiscal year 2013 through the SPF-PFS. Hawai‘i’s SPF-PFS is designed to address one of the nation’s top substance abuse prevention priorities: underage drinking among persons aged 12 to 20. To facilitate this, the Hawai‘i ADAD Epidemiology Team, guided by the State Epidemiological Outcomes Workgroup (SEOW), selected the following indicators to be highlighted in this State of Hawai‘i Epidemiological Profile: Selected Youth and Adult Alcohol Indicators.

Indicators (from SAMHSA’s National Outcome Measures)

Youth (grades 9-12^{*1} or aged 12-17^{*2}) trends from 2007 to most current year

- 30 day alcohol use
- 30 day binge drinking rate
- Age at first use
- Perceived risk/harm of consuming alcoholic beverages
- Disapproval of alcohol use
- Driving while under the influence of alcohol
- Alcohol-related traffic fatalities
- Alcohol and drug-related arrests
- Family communication around substance use
- Percentage of youth seeing a prevention message

^{*1} Data from Hawai‘i YRBS

^{*2} Data from NSDUH

Adults (18 years or older) trends from 2007 to most current year

- 30 day alcohol use
- 30 day binge drinking rate
- Perceived risk/harm of consuming alcoholic beverages
- Driving while under the influence of alcohol

SPF Program Model

The purpose of Hawai‘i’s SPF-PFS Project is to improve the quality of life for the residents of Hawai‘i by continuing to implement the five steps of SAMHSA’s SPF process. This will aid in the development of more effective prevention strategies and sustainable prevention infrastructures statewide to reduce and prevent underage drinking. The five steps included in the SPF process are as follows:

1. Assess Needs
2. Build Capacity
3. Plan
4. Implement
5. Evaluate

These five steps are informed and made relevant by sustainability and cultural competency considerations throughout the project (Figure A).

Figure A. SPF Program Model



The SPF-PFS builds upon the accomplishments of the SPF-SIG and Substance Abuse Block Grants (SABG) to achieve the project goals. The purpose of this profile is to summarize and characterize behavioral health indicators related to youth and adult alcohol use area in Hawai‘i, while incorporating SAMHSA’s National Outcome Measures (NOMs).

About the Authors

The ADAD Epidemiology Team has been providing epidemiological services to and works with the ADAD of HDOH from 2006 to present as a SPF partner. The past three profiles and this current one have been put together by the ADAD Epidemiology Team with guidance from SEOW. SEOW was established in March 2006 with grant funds from the SAMHSA CSAP to HDOH, ADAD. The ADAD Epidemiology Team also provides technical assistance and training for state and community level stakeholders and sub-recipients in evidence-based programs, data usage, program evaluation, grant writing, needs assessment, and addresses other identified-training needs.

Demographic Profile of the State of Hawai‘i

The State of Hawai‘i is comprised of eight main islands divided into five counties with a total population of approximately 1.4 million. Division of islands by counties is depicted in Table 1. According to the 2013 US Census, this population is composed of the following race/ethnicities: 26.6% Caucasian alone^(a); 2.3% Black or African American alone^(a); 0.4% American Indian and Alaska Native alone^(a); 37.7% Asian alone^(a); 10.0% Native Hawaiian and Other Pacific Islander alone^(a); 23.1% two or more races; 9.8% Hispanic or Latino^(b); and 23.0% Caucasian alone but not Hispanic or Latino^(b). Percentages total to be greater than 100% due to overlap of ethnicities.

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

Table 1. Division of counties in the State of Hawai‘i

County	Island(s)
Hawai‘i	Big Island
Honolulu	O‘ahu
Kalawao	Kalaupapa Peninsula of Moloka‘i
Kaua‘i	Kaua‘i, Ni‘ihau
Maui	Maui, Lana‘i, Kaho‘olawe, Rest of Moloka‘i

The City and County of Honolulu is the largest of the five counties in terms of population with 987,019 persons as of 2013, whereas the Kalawao County is the smallest with 89 persons. The percentage of persons below poverty level in the State of Hawai‘i was 11.2% (five year estimate of 2009 – 2013) – with Hawai‘i County having the highest rate of 18.3% (five year estimate of 2009 – 2013). Additional individual county information is located in Table 2.

Table 2. State of Hawai‘i social and economic characteristics by county in 2013.

County	Population (estimate)	Persons below poverty level (% , 2009-2013)^{*1}	Native Hawaiian and Other Pacific Islander alone^{*2} population (%)
Hawai‘i	191,409	18.3%	12.7%
Honolulu	987,019	9.8%	9.4%
Kalawao	89	14.7%	47.8%
Kaua‘i	69,679	11.2%	9.1%
Maui	160,791	10.6%	10.6%
Overall (State of Hawai‘i)	1,408,987	11.2%	10.0%

Source: U.S. Census Bureau

^{*1} Five-year estimates are “period” (not “point-in-time”) estimates that represent data collected over a 60-months. The American Community Survey (ACS), which provides data on poverty, reports data with single-year, 3-year, and 5-year estimates. The primary benefit of using multiyear estimates is the increased statistical reliability of the data due to the larger sample size. The data from states and communities with populations of less than 65,000 is not collected for ACS’s single-year estimates.

^{*2} Includes persons reporting only one race.

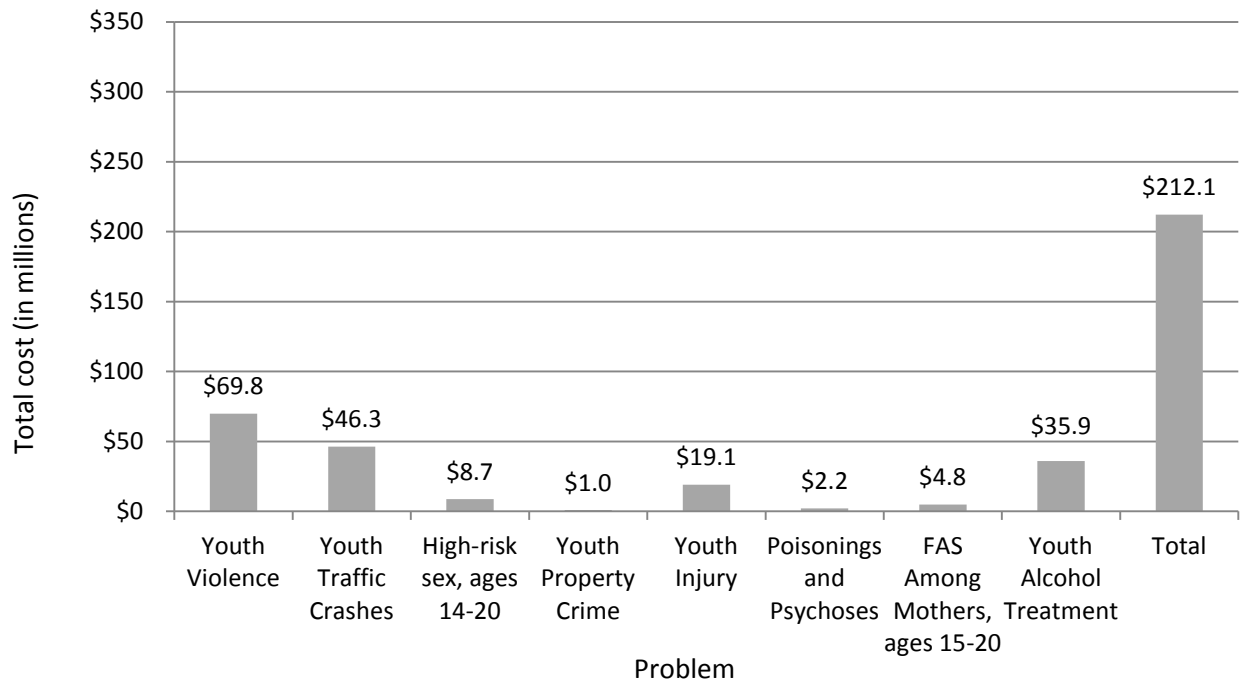
Costs of Underage Drinking in the State of Hawai‘i

Underage drinking is a causal factor for numerous problems in the United States. These issues include homicide, traumatic injury, fetal alcohol syndrome, alcohol poisoning, and crime. PIRE reported that underage drinking cost the citizens of Hawai‘i approximately \$0.2 billion in 2013, which included medical care, work loss, and pain/suffering associated with the problems induced from youth alcohol use. This total cost of \$0.2 billion amounts to \$1,939 per year for each youth in Hawai‘i, or \$5.49 per drink consumed by underage persons.

The total cost of underage drinking in the state (approximately \$0.2 billion) consists of tangible costs of \$106.3 million (including medical care, criminal justice, property damage, and loss of work) and pain and suffering costs of \$113.2 million.

Figure B shows the cost of underage drinking by problem in 2013. Youth violence (homicide, suicide, and aggravated assault) and youth traffic crashes costs the state the most.

Figure B. Cost of underage drinking in Hawai‘i as reported by the PIRE in 2013.



*FAS=fetal alcohol syndrome

Source: PIRE, 2013

Costs of Adult Binge Drinking in the State of Hawai‘i

Excessive alcohol consumption of adults who are age 21 and older causes approximately 88,000 deaths in the U.S. each year, and its cost to the nation is estimated to be \$223.5 billion in 2006 (CDC, 2014).

Binge drinking is defined as consuming five or more alcohol drinks on a single occasion for men, or four or more drinks on a single occasion for women. In Hawai‘i, the total cost of binge drinking was approximately \$821.5 million, and this breaks down to \$639 per capita or \$1.42 per drink in 2006 (Sacks et al., 2013). Hawai‘i’s per-capita cost (\$639) and cost per drink (\$1.42) are below the state medians of \$703 and \$1.91, respectively. Of Hawai‘i’s total cost (\$821.5 million), \$334.5 million (40.7%) was paid by the government through federal and state funds for alcohol-related expenses, such as treatment costs for alcohol dependence (Sacks et al., 2013).

The state cost of excessive alcohol consumption was computed based on several cost components, such as healthcare costs, costs of productivity losses, and other costs derived from alcohol-related effects. Costs from intangible factors such as pain and suffering are excluded from this estimate. Table 3 compares health care, productivity, and other costs of excessive drinking in Hawai‘i to US state medians.

The components included in healthcare costs are: treatment costs for health conditions where alcohol use was fully or partially responsible for; research and prevention costs; health insurance costs; and costs for training health professionals. Costs related to productivity losses are: premature mortality; impaired

productivity (at work, home, and institution); work-related absenteeism; crime (work day loss among victims and from incarcerations); and productivity loss from fetal alcohol syndrome (FAS). Other costs were property damage from crimes; criminal justice system costs; motor vehicle crashes; fire damage; and special education about FAS (Sacks et al., 2013). More details about the methods can be found at http://www.lewin.com/~media/Lewin/Site_Sections/Publications/Economic%20Cost%20of%20Excessive%20Alcohol%20Consumption.pdf

Table 3. Estimated health care, productivity, and other costs of excessive drinking in Hawai‘i and US state medians, 2006

	Healthcare		Productivity		Other	
	Cost (millions)	% of total cost	Cost (millions)	% of total cost	Cost (millions)	% of total cost
State of Hawai‘i	73.3	8.9	600.7	73.1	147.6	18.0
US state median	316.0	11.6	2053.5	70.5	488.4	17.0

Source: Sacks et al., 2013

Risk and Protective Factors for Substance Use Prevention

Over the past few decades, research has been aimed at identifying patterns and factors that commonly exist among youth and adults who initiate risky behaviors. Risk and protective factors affect individuals’ decisions and behaviors at multiple levels. Figure C shows these levels as the social ecological model: individual or self; family, school/workplace or community; and society.

When community planners, prevention and treatment providers, and policymakers design substance use prevention interventions, it is crucial to look across these different contexts because targeting multiple levels of factors is often more effective than targeting just one level. For example, alcohol and substance use prevention interventions that focus on the risk and harm of substance use for adolescents will have less impact if there is easy access to alcohol in the community or there is no parental supervision.

Figure C. Risk and protective factors by social ecological model levels



Source: SAMHSA Center for the Application of Prevention Technologies (CAPT)

Youth

Family factors can act as both risk and protective factors for substance use for adolescents. Parental approval or favorable attitudes towards alcohol or substance use are reliable predictors of a youth's substance use. Adolescents who perceive that their parents would strongly disapprove if they use alcohol are less likely to initiate alcohol use (SAMHSA, 2014; Brook et al., 1985). Several studies have shown that substance use by a close family member may increase the risk of a youth's initiation of underage drinking (Ewing et al., 2014; Kuntsche & Kuendig, 2006; Latendresse et al., 2008). On the other hand, monitoring or supervision from parents was found to work as a protective factor that reduces substance use among teenagers (Cleveland et al., 2010; Lac et al., 2009; Schinke et al., 2009). Also, youth with low school commitment seems to be associated with more risk of substance use-related problems (Rhodes & Jason, 1990; Ellickson & Hays, 1992).

Table 4 displays a list of risk and protective factors for youth at four levels: peer and individual; family, school/work, and community. Data on risk and protective factors among youth in this report can be found in the sections of age at first use, disapproval of substance use, and family communication around substance use.

Table 4. Risk and protective factors for substance use among youth

Domain	Risk Factors	Protective Factors
Peer and Individual	<ul style="list-style-type: none"> • Early onset of risky behaviors • Psychological distress • Lower quality of life • Impulsiveness • Favorable attitudes toward substance use • Low perceived risk of substance use • Antisocial behaviors • Friends' substance use • Interaction with antisocial peers • Rebelliousness • Sensation seeking 	<ul style="list-style-type: none"> • Peer disapproval of substance use • High perceived risk of substance use • Belief in the moral order • Education aspirations • Religiosity • Social or refusal skills • Use of health care services for mental health
Family	<ul style="list-style-type: none"> • Poor family supervision • Lack of parental sanctions for antisocial behaviors • Parental attitudes favorable toward substance use • Parental attitudes favorable toward antisocial behavior • Substance use by a close family member • Close family member history of antisocial behaviors 	<ul style="list-style-type: none"> • Family attachment • Family opportunities for positive involvement • Family rewards for positive involvement • Balance of autonomy and relatedness to family • Behavioral and emotional autonomy
School/Work	<ul style="list-style-type: none"> • Low school/work commitment • Poor academic/work performance • Attending college 	<ul style="list-style-type: none"> • School/work opportunities for positive involvement • School rewards for positive involvement • Attending/completing college
Community	<ul style="list-style-type: none"> • Community disorganization • Transition and mobility • Exposure to community substance use • Laws and norms favorable to substance use • Perceived availability of drugs and handguns • Ability to purchase alcohol or tobacco 	<ul style="list-style-type: none"> • Community opportunities for positive involvement • Community rewards for positive involvement • Connectedness to adults outside of family

Sources: Fleury et al. (2014), Guo et al. (2001), Mason and Windle (2001), Pearson (2004), and Tam et al. (2000).

Adults

Although many studies on risk and protective factors have focused on adolescents or early adulthood, risk and protective factors can affect individuals' initiation to substance use or development of other mental health disorders over a lifetime. For example, several studies (Alati et al., 2005; King & Chassin, 2007) have shown that children of alcoholics have increased risk of developing alcohol problems in their adult years.

Even though risk and protective factors such as age of onset, family history of alcohol or drug problems, high sensation-seeking, and anti-social attitude are common among adults and not just among adolescents, there are several factors that uniquely affect adults' substance use behaviors. For example, in retirement communities, socializing with friends and family members in the community was found to be associated with increased alcohol consumption (Institute of Medicine, 2012; Atkinson, 1990).

Other social factors, such as marriage and divorce, also seem to be associated with increases and decreases in drinking (Perreira, & Sloan, 2001). Negative health status could be a protective factor as a few studies have shown that adult participants with negative health conditions had developed fewer alcohol-related problems several years later compared with those who were relatively healthy (Moos et al., 1991; Schutte et al., 1994). This could be because people with negative health conditions might be more careful and aware of harm and dangerous effects from using substances. On the other hand, mental health conditions, such as depression and anxiety disorders, are risk factors for self-medication with alcohol and other substances (Oslin et al., 2006).

Finally, studies on adults' (older than 26 years) risk and protective factors for alcohol and drug use are scarce as most behavioral research on substance use focused on adolescents and emerging adulthood (typically age 18 – 26). Thus future studies are needed to explain how and what factors predict and are associated with adults' behaviors surrounding substances. Moreover, those studies should examine adults in several age groups, such as adults aged 26 – 40, adults aged 40 – 59 (midlife), and senior adults aged 60 and older (retirement age) as factors may affect individuals differently in different stages of adulthood.

Risk and protective factors for adults are summarized in Table 5. In this profile, adult indicators related to risk and protective factors can be found in the section on perceived risk of harm of use in the adult section.

Table 5. Risk and protective factors for substance use among adults

Domain	Risk Factors	Protective Factors
Peer and Individual	<ul style="list-style-type: none"> • Early onset of risky behaviors • Psychological distress • Lower quality of life • Impulsiveness • Favorable attitudes toward substance use • Low perceived risk of substance use • Antisocial behaviors • Friends' substance use • Interaction with antisocial peers • Rebelliousness • Sensation seeking • Lack of commitment to conventional adult roles • Personal history of past problem with substance use • Poor health status, particularly chronic and disabling disorders • Low physical activity • Physical impairments • Untreated depression • Perceived autonomy, well-being, and control over life events 	<ul style="list-style-type: none"> • Peer disapproval of substance use • High perceived risk of substance use • Belief in the moral order • Education aspirations • Social or refusal skills • Use of health care services for mental health • Identity exploration in love and work • Developing a world view • Subjective sense of adult status • Subjective sense of self-sufficiency • Making independent decisions • Becoming financially independent • Future orientation • Achievement motivation • Physical activity • Religiosity and attitudes toward spiritual/religious affiliations • Coping skills and personal resilience
Family	<ul style="list-style-type: none"> • Substance use by a close family member • Close family member history of antisocial behaviors • Leaving parents' home • Loss of spouse through death or divorce • Transitional life events (e.g., death in the family, children leaving home, menopause, and relocation) • Relationship strains, such as stress with a spouse or family member and the stress of caring for a sick family member or the sick • Low quality of caregivers, whether family members or professionals • Presence or threat of physical, sexual, or emotional abuse • Family's favorable attitudes toward substance use 	<ul style="list-style-type: none"> • Family attachment • Family opportunities for positive involvement • Family rewards for positive involvement • Balance of autonomy and relatedness to family • Behavioral and emotional autonomy
Workplace	<ul style="list-style-type: none"> • Low school/work commitment • Poor academic/work performance • Attending college • Actual or perceived loss of status through retirement or job loss 	<ul style="list-style-type: none"> • School/work opportunities for positive involvement • School rewards for positive involvement • Attending/completing college • Presence of protective workplace structure, policies, and programs, such as drug-free workplace programs or medication workshops • Access to healthcare benefits

Community/ Environment	<ul style="list-style-type: none"> • Community disorganization • Having no mobility and ability to access community services • Having no physical and financial access to quality healthcare services • Exposure to community substance use • Laws and norms favorable to substance use • Polypharmacy, including concurrent use of multiple drugs and substandard prescribing practices by healthcare providers, such as inattention to potential drug interactions and side effects, inadequate pain control, and subtherapeutic prescribing 	<ul style="list-style-type: none"> • Community opportunities for positive involvement • Having mobility and ability to access community services • Having physical and financial access to quality healthcare services • Community rewards for positive involvement • Sense of attachment or inclusion in larger community • Sense of safety from risk of physical or emotional harm • Nature of community norms related to substance use • Availability of specialized care from gerontologists and other specialists familiar with needs of older adults
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Sources: O’Connell et al. (2009), Oslin et al (2006), and Substance Abuse and Mental Health Services Administration (SAMHSA) Center for the Application of Prevention Technologies (CAPT). (n. d.).

About This Profile

A brief description is provided for each graph in this profile. Descriptions are generally structured in the following order: overall result summary (comparison between the state and overall US rate), comparison between males and females, comparison among different grade levels, and comparison among different ethnic groups.

Hawai’i YRBS data in 2007 and 2009 for some of the ethnic groups was not reported due to insufficient sample sizes. In later years, the 2011 and 2013 Hawai’i YRBS had larger samples and therefore better ethnicity data. The purpose of the graphs by ethnic group is to identify differences between ethnic groups rather than differences between years. Thus, the rates of alcohol indicators for youth that are broken down by ethnic groups are displayed only for 2011 and 2013 in this profile.

For the adult alcohol indicators broken down by ethnic groups, the top five ethnic groups (Caucasian, Native Hawaiian, Chinese, Filipino, and Japanese) with sufficient sample size were included in the graphs in this profile.

METHODS

Section Overview

Indicators were selected from SAMHSA's list of NOMs based on data source availability. The purpose of this section is to provide a brief description of primary and secondary data sources used for this State Epidemiological Profile. Primary data sources are entities of data collected and analyzed by the same organization whereas secondary data sources are entities of available data that were aggregated into an accessible format by someone/place other than the origin. Limitations of each source were evaluated based on the following criteria: data availability, methodology of the data collection, frequency of data collection, and population sampled. Data were analyzed and structured into an easy-to-read format by the ADAD Epidemiology Team. All descriptions below were obtained from the official sites of each database.

Primary Data Sources

Hawai'i Youth Risk Behavior Survey (Hawai'i YRBS)

Description: The YRBS is a national health survey conducted by the Centers for Disease Control and Prevention (CDC). The YRBS monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth, and also prevalence of obesity and asthma among youth and young adults. Data are collected regarding health-risk behaviors among 9th through 12th grade students in the US. These behaviors include behaviors that contribute to injuries and violence, alcohol or other drug use, tobacco use, sexual risk behaviors, unhealthy dietary behaviors, and physical inactivity. Hawai'i YRBS is administered by HIDOE in partnership with HODOH, and HHDW provides detailed reports for the state YRBS data.

Limitations: Although quality of the data are demonstrated as acceptable, there might be potential underreporting or over-reporting of behaviors from the participants since data are self-reported and includes sensitive topics such as underage drinking and other substance use. Also, the YRBS is a school-based survey that is only generalizable to students of public high schools. Counties that have a response rate less than 60% are not analyzed, which may lower the representativeness across geographic areas. Although Hawai'i YRBS includes middle school data, there are fewer alcohol-related items compared to high school data. Other than core questions that are standardized by CDC, comparable national data are not available for some of the indicators in Hawai'i YRBS. The most recent data available is 2013.

Website: <http://www.hhdw.org/cms/index.php?page=yrbss-reports>

Hawai'i Behavioral Risk Factor Surveillance System (Hawai'i BRFSS)

Description: The BRFSS is coordinated by CDC and it is the largest telephone survey in the world with over 500,000 interviews conducted in 2011. Data are collected monthly, targeting all 50 states, the District of Columbia, American Samoa, Palau, Puerto Rico, the US Virgin Islands, and Guam. Survey questions include alcohol and marijuana usage, and demographics of age,

gender, ethnicity/race, education attainment, marital status, tenure, and telephone ownership. In addition to landlines, the BRFSS has also started to incorporate cellphone based surveys in 2011. Hawai'i BRFSS is administered by HDOH and HHDW provides detailed reports for the state BRFSS data.

Limitations: The BRFSS data are all self-reported and this may cause some reporter bias including underreporting and over-reporting, especially the survey ask about sensitive topics such as alcohol consumption and other health behaviors. Surveys are only distributed to those who are in possession of landlines or cellphones, which may not necessarily be representative of the entire population. Survey methodology may also lead respondents to answer questions based upon their perception of their interviewer's desired response. Currently there are only a few alcohol-related questions in Hawai'i BRFSS. Although Hawai'i BRFSS collects data from adults aged 18 and older, it doesn't provide data specifically for college students and sample size would be too small when the data are broken down by college-age group (typically 18 – 24). The most recent data available is 2013.

Website: <http://health.hawaii.gov/brfss/>

National Survey on Drug Use and Health (NSDUH)

Description: The NSDUH is an annual nationwide survey that involves interviews with roughly 70,000 randomly selected individuals aged 12 and older. The collected data are used to provide state-level estimates on mental health and the use of tobacco products, alcohol, illicit drugs, in the United States. Participants are given cash incentives and interviewed in their home by a professional interviewer of the Research Triangle Institute (RTI).

Limitations: The survey is all self-reported and the survey methodology may cause respondents to answer questions based upon their perception of their interviewer's desired response. Incentives provided from survey completion may lead to certain populations being more willing to participate in the survey than other populations. Data collected are only reported as state-specific, and county-level data are not provided with publically available data. The NSDUH is designed for national data, thus state-level data are limited. For example, due to small sample sizes, state-level data are only available for combined years (e.g, 2006-2007, and 2008-2009) instead of as annual data. The most current combined year available for this profile was 2010-2011. Although the NSDUH collects data from individuals aged 12 and older, it doesn't provide data specifically for college students and sample size would be too small when the data are broken down by state and college-age group (typically 18 – 24). The most recent data available for national data are 2013.

Website: <http://www.samhsa.gov/data/population-data-nsduh>

Secondary Data Sources

Hawai'i Health Data Warehouse (HHDW)

Description: HHDW was created through the partnership between HIDOH and the University of Hawai'i's John A. Burns School of Medicine (JABSOM). The database is one of the five components under the Healthy Hawai'i Initiative (HHI), which was created to address and monitor the Healthy People 2010 goals. The five interrelated components are the following: schools, communities, public and professional education, research and evaluation, and nutrition education network.

Limitations: Compiled data are specific to each included data source.

Website: <http://www.hhdw.org/>

Substance Abuse Prevention Planning and Epidemiology Tool (SAPPET)

Description: SAPPET, formerly named the Behavioral Health Indicators System (BHIS), is an interactive, web-based data and monitoring system sponsored by SAMHSA's Center for the Application of Prevention Technologies. The goal of this database is to create a comprehensive national and state-level interactive substance abuse monitoring system that includes mental/behavioral health indicators and shared risk/protective factors as they relate to substance abuse. The website is designed for guiding prevention planning and epidemiological analysis. Currently SAPPET contains 151 behavioral health key indicators from 11 national data sources, and these data are available by state.

Limitations: Only state-level data are included and county-level data are not available. Data sets are missing from certain indicators. The site is also updating at an unknown rate.

Website: <https://www.sappet-epi.com/>

National Outcome Measures (NOMs)

Overview

The SAMHSA NOMs are an effort to develop a reporting system that will create an accurate and current national picture of substance abuse and mental health services. This system was developed jointly by SAMHSA, the states, and the District of Columbia. Ten domains below were identified in an effort to limit the number of outcomes to measure, which allowed for an increase in focus on those particular areas to see if the outcomes were met.

- Reduced Morbidity: Abstinence from Drug Use/Alcohol Use
- Employment/Education
- Crime and Criminal Justice

- Stability in Housing
- Access/Capacity
- Retention
- Social Connectedness
- Perception of Care
- Cost Effectiveness
- Use of Evidence-based Practices

The matrix for the NOMs can be found in the Appendix C. For the epidemiological purposes of this profile and due to data availability, this profile will only contain four domains of reduced morbidity: abstinence from drug use/alcohol use, crime and criminal justice, retention, and social connectedness.

How to Read Graphs

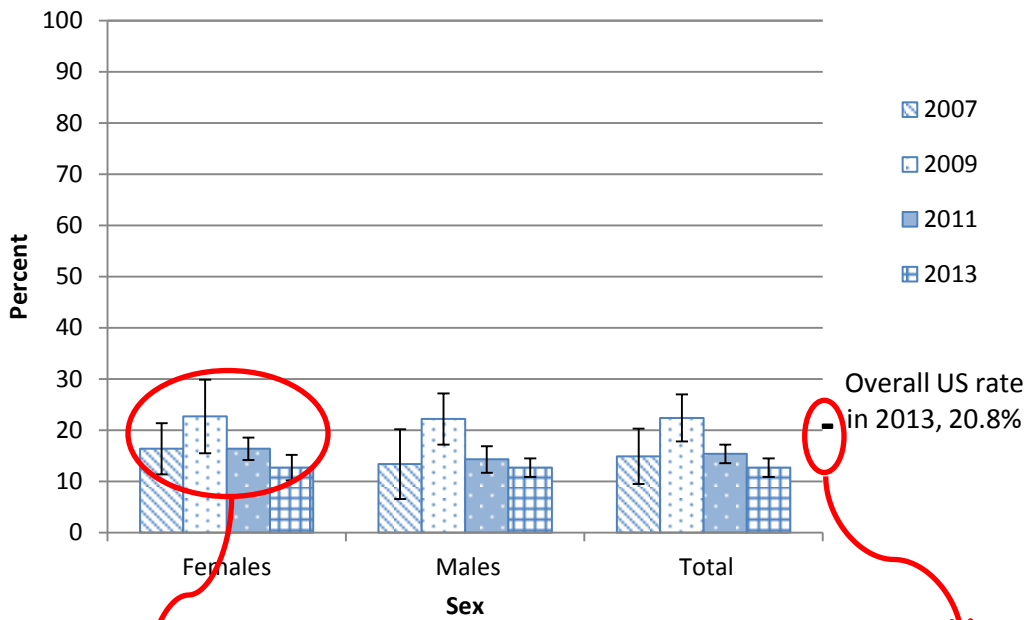
Data Assistance: Understanding a Graph

Section Overview

Data of select indicators are presented as bar graphs that are intended to assist in utilizing the data to further efforts in substance abuse prevention. The following two sections illustrate how to read and interpret the graphs in this profile.

Tells you the substance and indicator represented in the graph. The age group represented in the graph is specified in parentheses.

Figure 7. 30-day binge drinking by sex (high school students)



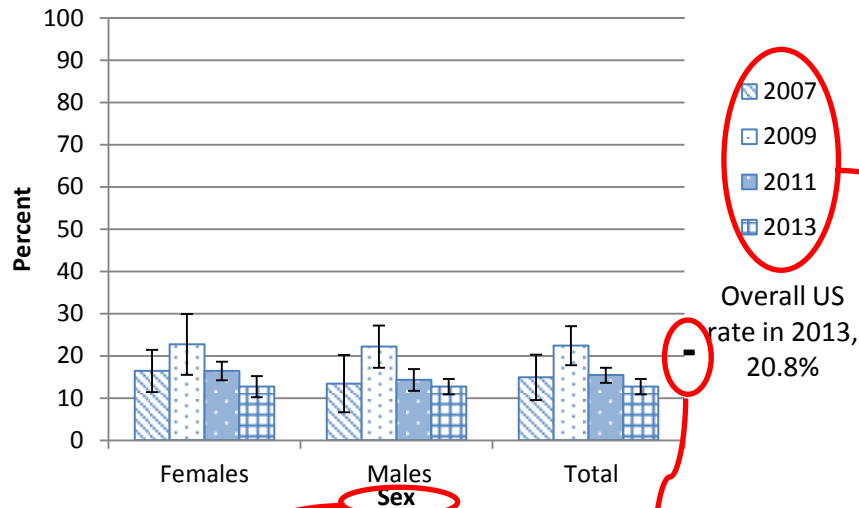
Whiskers indicate 95% confidence intervals of individual bars. The true values of the data have 95% probability of falling within the whiskers.

The dash shows the 2013 rate for the United States.

How to Interpret Graphs

Step 1: Pick a substance, indicator, and age group

Figure 7. 30-day binge drinking by sex (high school students)



Step 4: Compare trends over time

Ex: From 2007 to 2013, binge drinking was highest in 2009 then declined in 2011 and 2013, although not all differences were significant.

Step 2: Pick a variable of interest.

Ex: sex, ethnicity, or age group (youth)

Step 3: Determine US overall rate in 2013.

Ex: The Hawai'i average in 2013 is lower than the overall US rate of 2013

Step 5: Put it all together.

Ex: Trends in binge drinking between males and females in high school peaked at 2009, but was lower from 2011 onwards.

Step 6: Set goals

Ex: We recommend that the outcome of a 10-year goal for lowering substance abuse indicator rates should be 10% lower than the most current average. HP 2020 goals for Hawai'i are also suggested and can be found at:

<http://www.hawaiihealthmatters.org/index.php?module=Trackers&func=display&tid=1003>

YOUTH ALCOHOL INDICATORS

Domain 1: Prevalence

Note: This section addresses indicators that are included in SAMHSA’s NOMs domain labelled “Reduced Morbidity: Abstinence from Drug Use/Alcohol Use.”

Measure: Lifetime Use

Youth Who Ever Had At Least One Drink of Alcohol by Sex, Grade, and Ethnicity

Figures 1, 2, and 3 show the percentage of high school students in Hawai‘i who have ever had at least one drink of alcohol on at least one day during their life, by sex, grade, and ethnicity.

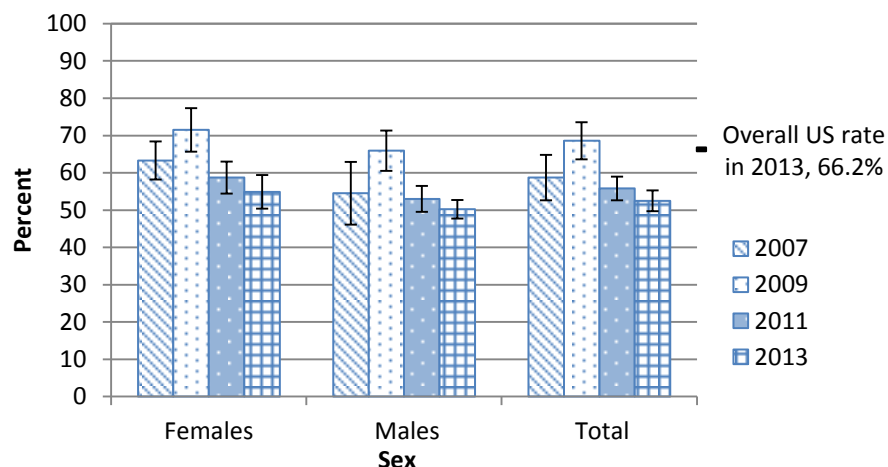
The highest prevalence of ever having at least one drink of alcohol was in 2009, with significantly lower rates in 2011 and 2013. In 2013, Hawai‘i had a lower rate (52.5%) than the overall US rate for the same year (66.2%).

There were no significant sex differences within any year (Figure 1).

Although not every subsequent year by-grade comparison was significant, in general lower rates of ever having at least one drink of alcohol were observed in lower grades. In general this trend was true across years (Figure 2).

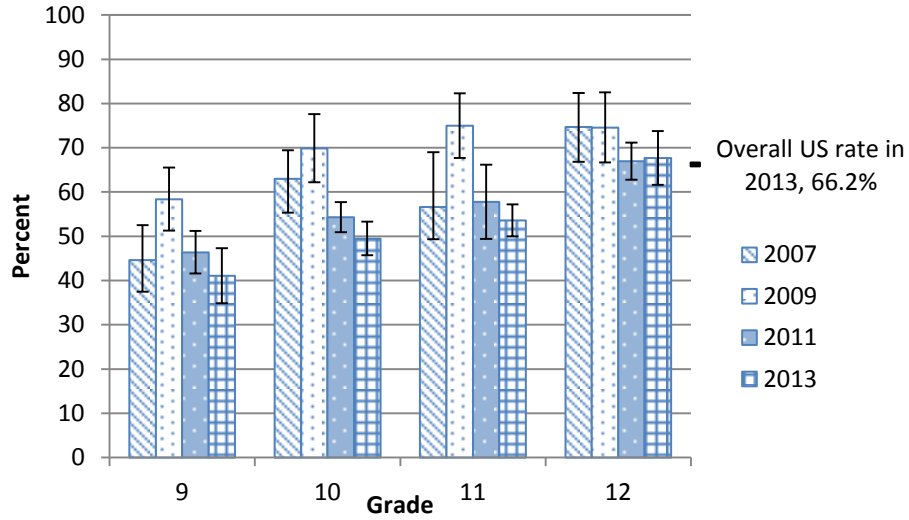
Across years, Caucasian, Native Hawaiian and Other Pacific Islander high school students generally had the highest rate of ever having at least one drink of alcohol among all ethnicity groups. Japanese or Other Asian youth usually had the lowest percentage (Figure 3).

Figure 1. Ever had at least one drink of alcohol, by sex (high school students)



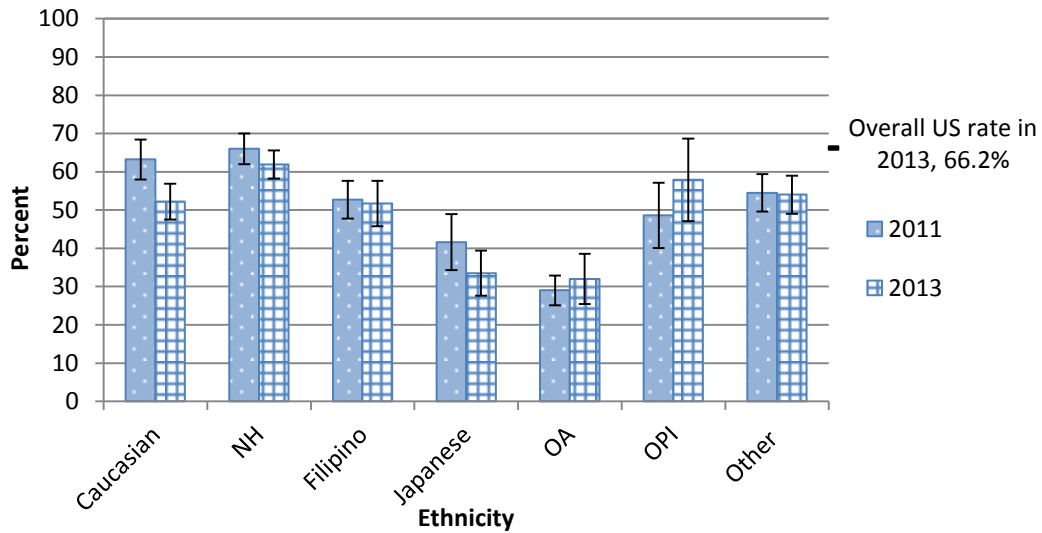
Source: HHDW 2007, 2009, 2011, and 2013

Figure 2. Ever had at least one drink of alcohol, by grade (high school students)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 3. Ever had at least one drink of alcohol, by ethnicity (high school students)



Source: HHDW 2011 and 2013

NH= Native Hawaiians; OA = Other Asians; OPI = Other Pacific Islanders

Measure: 30-Day Use (Alcohol and Binge Drinking)

Youth 30-Day Alcohol Use by Sex, Grade, and Ethnicity

30-day alcohol use indicates youth's current alcohol use, measured as whether someone has consumed a drink of alcohol in the 30 days preceding the survey date. Figures 4, 5, and 6 show the percentages of 30-day alcohol use among high school students in Hawai'i, by sex, grade, and ethnicity.

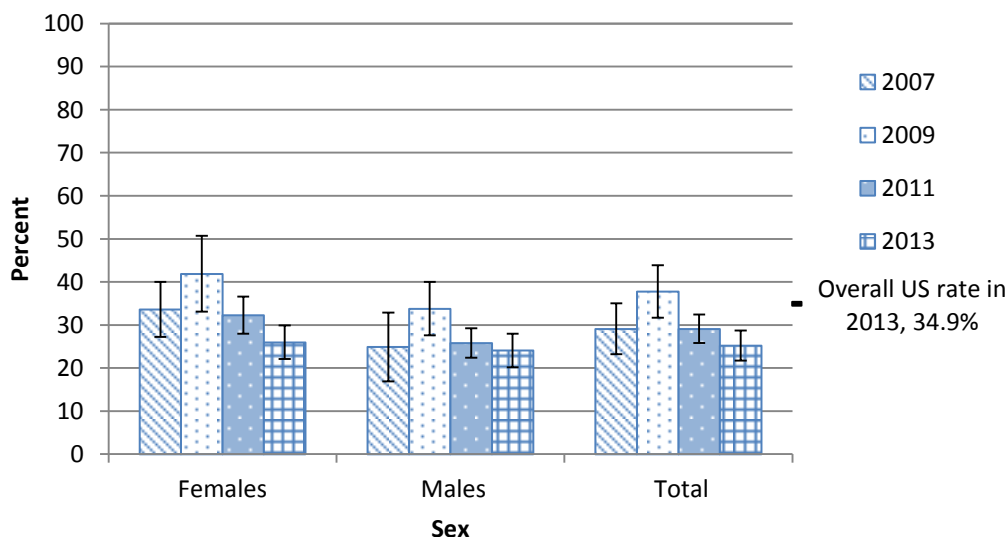
The highest prevalence of 30-day alcohol use was in 2009, and the rate in 2013 was significantly lower than in 2009 (Figure 4). Hawai'i's 30-day alcohol use rate in 2013 of 25.2% was lower than the overall US rate of 34.9% in the same year.

There were no significant differences in 30-day alcohol use between males and females for any year (Figure 4).

Differences between grade levels were not significant in most survey years (Figure 5). However, 30-day alcohol use rates among 12th graders in 2007 and 2013 were significantly higher than 30-day alcohol use rates for any lower grade level.

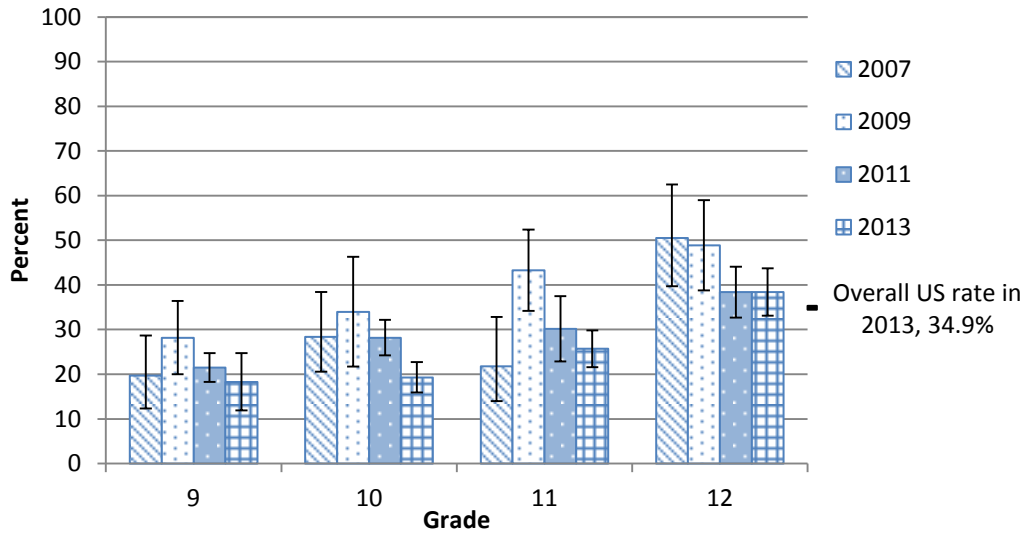
Caucasian, Native Hawaiian, and Other Pacific Islander high school students had higher percentages of 30-day alcohol use than other ethnic groups in both 2011 and 2013 but differences among those ethnic groups were not significant. Japanese and Other Asian high school students had the lowest rates in both 2011 and 2013 (Figure 6).

Figure 4. 30-day alcohol use by sex (high school students)



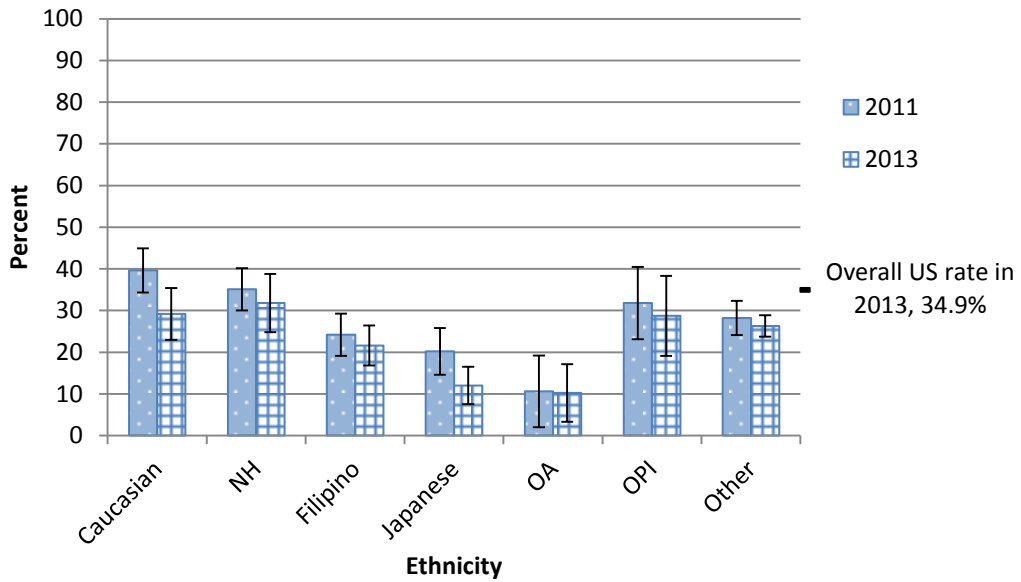
Source: HHDW 2007, 2009, 2011, and 2013

Figure 5. 30-day alcohol use by grade (high school students)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 6. 30-day alcohol use by ethnicity (high school students)



Source: HHDW 2011 and 2013

NH= Native Hawaiians; OA = Other Asians; OPI = Other Pacific Islanders

Youth 30-Day Binge Drinking by Sex, Grade, and Ethnicity

Binge drinking of youth is having five or more drinks of alcohol in a row within a couple of hours on one occasion. 30-day binge drinking indicates current binge drinkers, measured as whether someone binge drank in the 30 days preceding the survey date. Figures 7, 8, and 9 show 30-day binge drinking rates among high school students in Hawai‘i by sex, grade, and ethnicity.

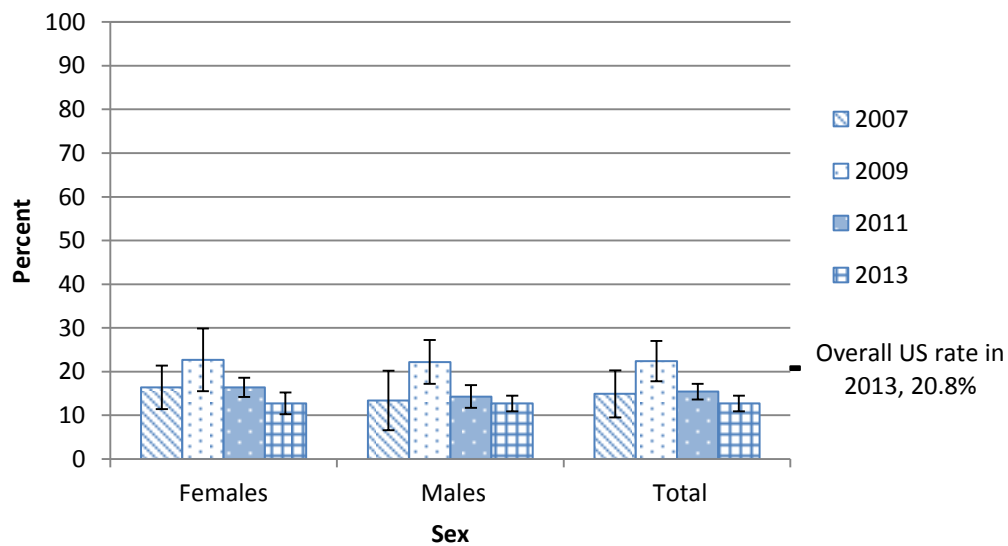
In 2013, Hawai‘i had a lower rate (12.7%) than the overall U.S. rate in the same year (20.8%).

There were no significant differences across years or by sex (Figure 7) in 30-day binge drinking rates among high school students.

Twelfth graders had significantly higher percentages of 30-day binge drinking than 9th graders for all years. In 2013, 12th graders had significantly higher rate of 30-day binge drinking than all lower grades (Figure 8).

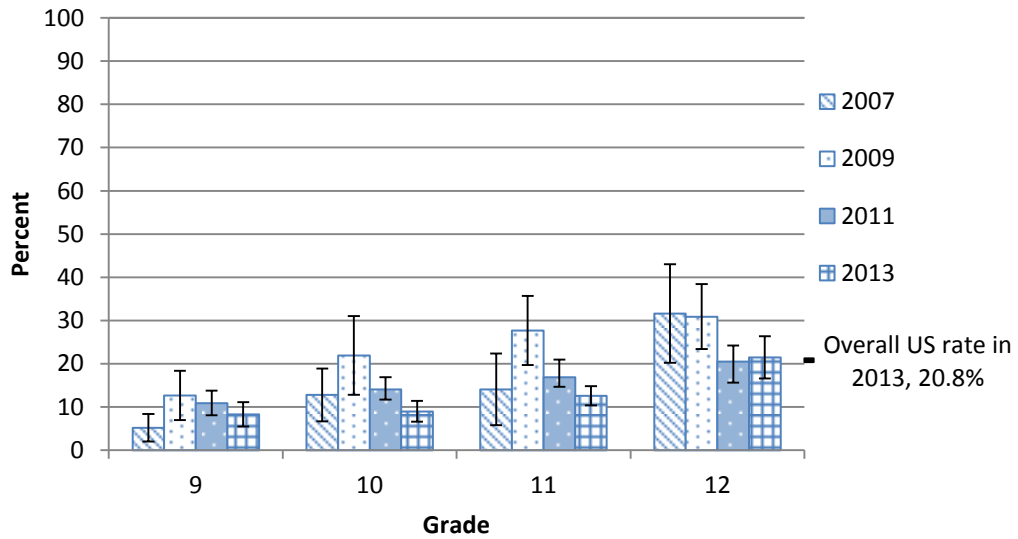
Other Pacific Islander high school students had significantly higher percentages of 30-day binge drinking compared to Asian ethnic groups including Filipino, Japanese, and Other Asian in both 2011 and 2013, however, not significantly different from rates of Caucasian, Native Hawaiian, and Other. Filipino, Japanese and Other Asian high school students usually had the lowest rates in both 2011 and 2013 (Figure 9).

Figure 7. 30-day binge drinking by sex (high school students)



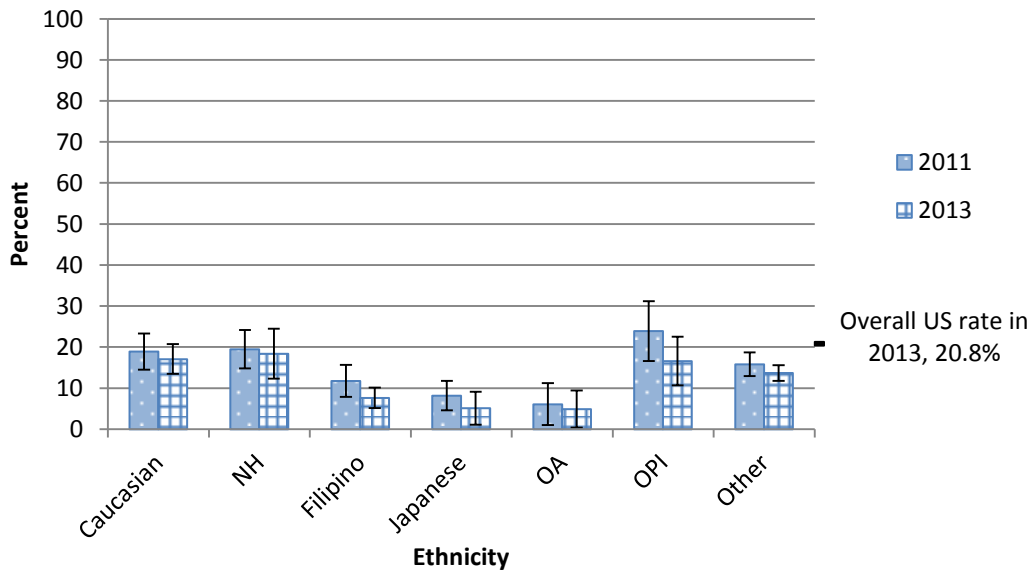
Source: HHDW 2007, 2009, 2011, and 2013

Figure 8. 30-day binge drinking by grade (high school students)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 9. 30-day binge drinking by ethnicity (high school students)



Source: HHDW 2011 and 2013

NH= Native Hawaiians; OA = Other Asians; OPI = Other Pacific Islanders

Measure: Age at First Use

Had a First Drink of Alcohol before Age 13 Years (for the first time other than a few sips) by Sex, Grade, and Ethnicity

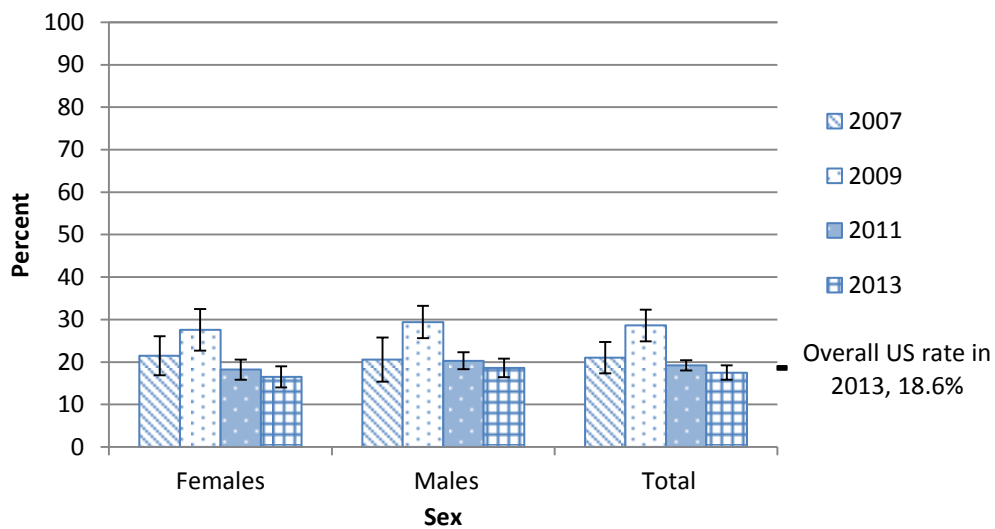
Had a first drink of alcohol before age 13 years indicates early onset alcohol use, measured as whether someone had a drink of alcohol, other than a few sips, for the first time before age 13 years. Figures 10, 11, and 12 indicate percentages of high school students in Hawai‘i who had a drink of alcohol before age 13 years.

In 2013, the total rate of had a first drink of alcohol before age 13 years in Hawai‘i (17.5%) was approximately the same as the overall US rate (18.6%) for the same year (Figure 10).

There were no significant differences by sex (Figure 10) or grade (Figure 11) across years.

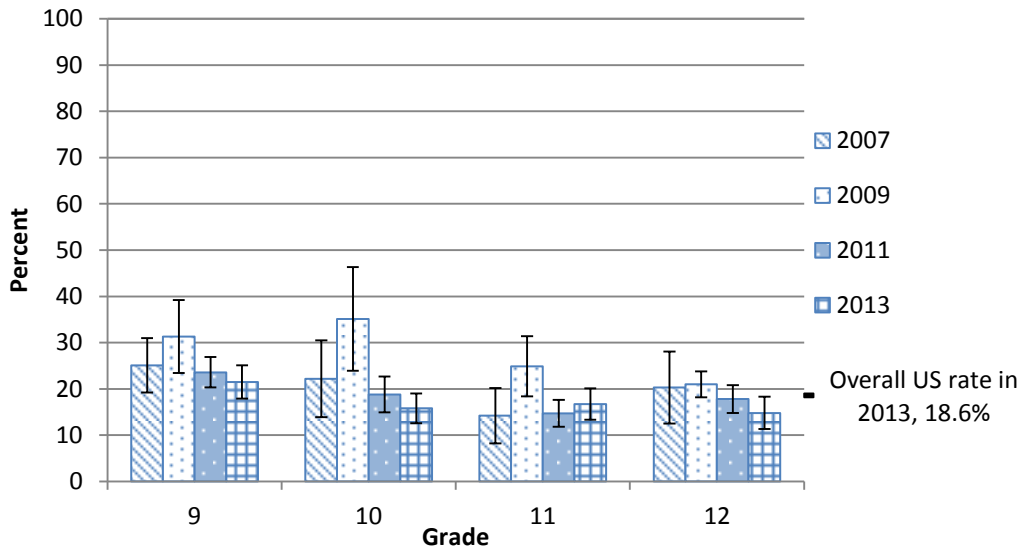
In 2013, Native Hawaiians had significantly higher rates of had a first drink of alcohol before age 13 years than every other ethnic group except for Other Pacific Islanders.

Figure 10. Had a first drink of alcohol before age 13 years by sex (high school students)



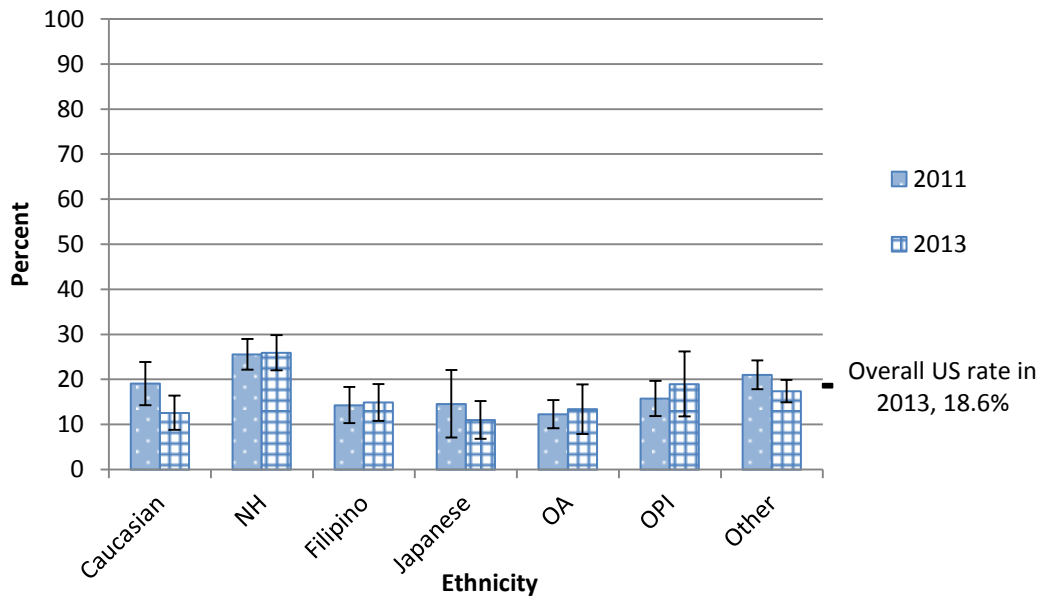
Source: HHDW 2007, 2009, 2011, and 2013

Figure 11. Had a first drink of alcohol before age 13 years by grade (high school students)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 12. Had a first drink of alcohol before age 13 years by ethnicity (high school students)



Source: HHDW 2011 and 2013

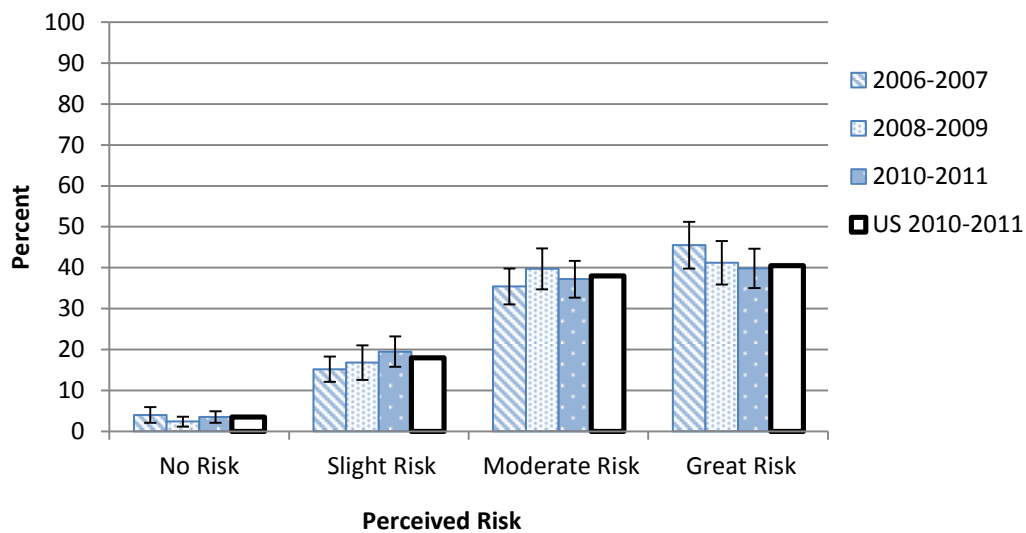
NH= Native Hawaiians; OA = Other Asians; OPI = Other Pacific Islanders

Measure: Perceived Risk of Harm of Use

Perceived risk from five or more drinks of an alcoholic beverage once or twice a week indicates how risky people perceive heavy drinking to be. Figure 13 shows the perceived risk from five or more drinks of an alcoholic beverage once or twice a week for youth aged 12 to 17 years in Hawai'i.

Significantly more youth perceived the risk of having five or more drinks of an alcoholic beverage once or twice a week as being moderate or great compared to none or slight risk. The distribution of risk perception did not change significantly across years and closely paralleled the overall US distribution in 2010-2011. In 2010-2011, the percentage of Hawai'i's youth perceiving the risk of having five or more drinks of an alcoholic beverage once or twice a week as being great (39.8%) and did not differ significantly from the overall US rate for the same year (40.5%).

Figure 13. Perceived risk from five or more drinks of an alcoholic beverage once or twice a week by age group (12 – 17 years old)



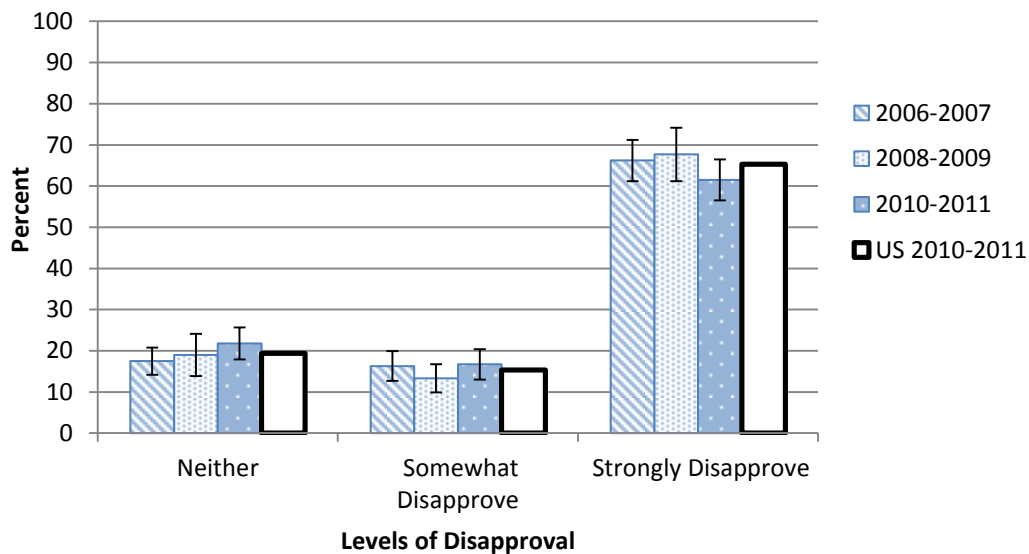
Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

Measure: Disapproval of Substance Use

Disapproval of substance use measures peer disapproval with the question “How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day?” Figure 14 shows how youth aged 12 to 17 years old feel about someone their age having one or two drinks of an alcoholic beverage nearly every day.

In any given year, significantly more youth strongly disapproved of someone their age having one or two drinks of an alcoholic beverage nearly every day compared to somewhat disapprove or neither. The distribution of disapproval level did not change significantly across years and closely paralleled the overall US distribution in 2010-2011. In 2010-2011, the percentage of Hawai‘i’s youth that strongly disapproving of someone their age having one or two drinks of an alcoholic beverage nearly every day (67.4%) did not differ significantly from the overall US rate for the same year (72.3%).

Figure 14. How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day? (12 – 17 years old)



Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

Domain 2: Alcohol-related Crime and Fatalities

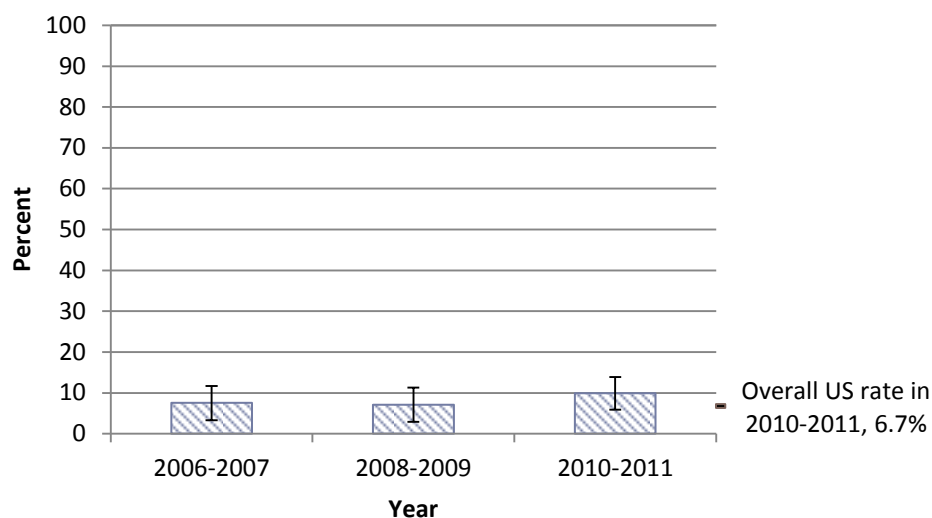
Note: This section addresses indicators that are included in SAMHSA’s NOMs domain labelled “Crime and Criminal Justice.”

Measure: Driving While Under the Influence of Alcohol

Driving while under the influence of alcohol indicates rates of drunk driving, measured by people self-reporting whether they drove a vehicle while under the influence of alcohol in the past 12 months. Figure 15 shows the percentage of youth aged 12 to 17 years in Hawai‘i who drove a vehicle while they were under the influence of alcohol in the 12 months preceding the survey.

There were no significant differences in the percentage of youth who drove a vehicle while they were under the influence of alcohol in the past 12 months amongst year groups. In the year group 2010-2011, the percentage of youth aged 12 to 17 years in Hawai‘i who reported having driven a vehicle while they were under the influence of alcohol in the 12 months (9.9%) was not significantly different from the overall US percentage for the same year (6.7%).

Figure 15. Drove a vehicle while under the influence of alcohol in the past 12 months.



Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

Hawai‘i YRBS has similar indicators for driving while under the influence of alcohol. While the NSDUH asks if respondents were under the influence of alcohol when they themselves were driving a vehicle in the past 12 months (Figure 15), Hawai‘i YRBS asks if they have ridden in a car driven by someone, including themselves, who had been “high” or had been using alcohol or drugs. Both of these indicators are self-reported.

In 2013, the percentage of high school students who rode in a car driven by someone, including themselves, who had been “high” or had been using alcohol or drugs was 23%. The overall US percentage is not available because this was part of an opt-in module on state questionnaires.

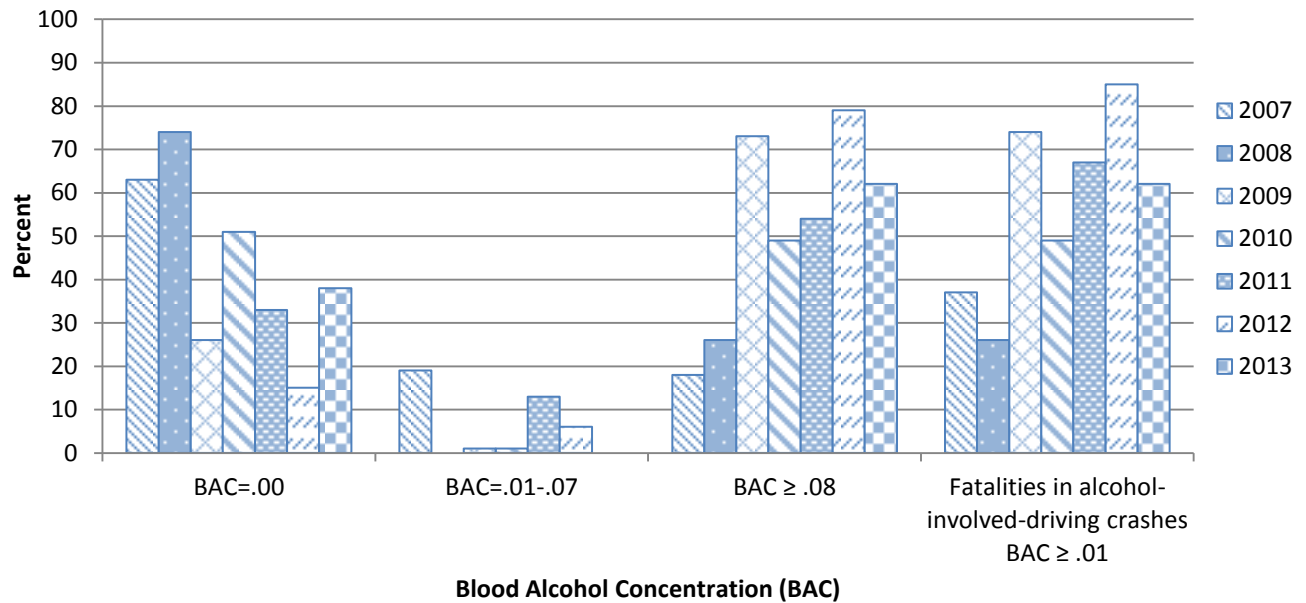
Measure: Alcohol-involved Traffic Fatalities

Figure 16 indicates the percentage of total number of traffic fatalities among youth aged 12 to 20 in Hawai'i that were alcohol-involved, by blood alcohol concentration (BAC). Driving with a BAC equal to or higher than 0.08% is illegal in Hawai'i (DrunkDrivingLaws.org, n.d.).

The percentage of alcohol-involved traffic fatalities (BAC \geq 0.01%) was highest in 2012 (85%).

Overall, the percentages of alcohol-involved traffic fatalities with BAC equal to or greater than 0.08% were larger than the percentages of the fatalities with BAC between 0.01% and 0.07% in any given year. This suggests that most intoxicated drivers in alcohol-involved traffic fatalities had a BAC equal to or exceeding 0.08%.

Figure 16. Fatalities (age 12-20) in motor vehicle traffic crashes in Hawai'i by BAC



Source: Fatality Analysis Reporting System (FARS) from 2007 to 2013; 2007 – 2012 (Final), 2013 (Annual Report File). The data was generated by National Center for Statistics and Analysis's (NCSA) Information Services Team.

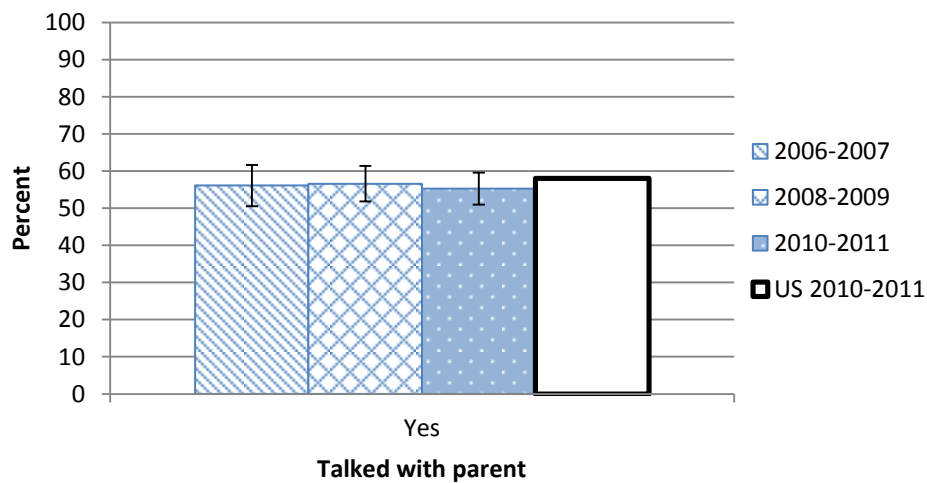
Domain 3: Social Support/Social Connectedness

Measure: Family Communication around Substance Use

Family communication around substance use indicates exposure to information about alcohol and other substances, and is measured with the question “Have you talked with a parent about the dangers of tobacco, alcohol, or drugs in the past 12 months?” Figure 17 shows the percentage of youth aged 12-17 years in Hawai‘i who talked with a parent about the dangers of tobacco, alcohol, or drugs in the 12 months preceding the survey.

More than 50% of youth had talked with a parent about the dangers of tobacco, alcohol, or drugs in the past 12 months for every year group. There were no significant differences amongst year groups in Hawai‘i, and the percentage of youth who had talked with a parent about the dangers of tobacco, alcohol, or drugs in the past 12 months in Hawai‘i in 2010-2011 (55.3%) did not differ significantly from the overall US percentage for the same year group (58.0%).

Figure 17. Talked with parent about dangers of tobacco, alcohol, or drugs in the past 12 months



Source: NSDUH 2006-2007, 2008-2009, and 2010-2011

Domain 4: Retention

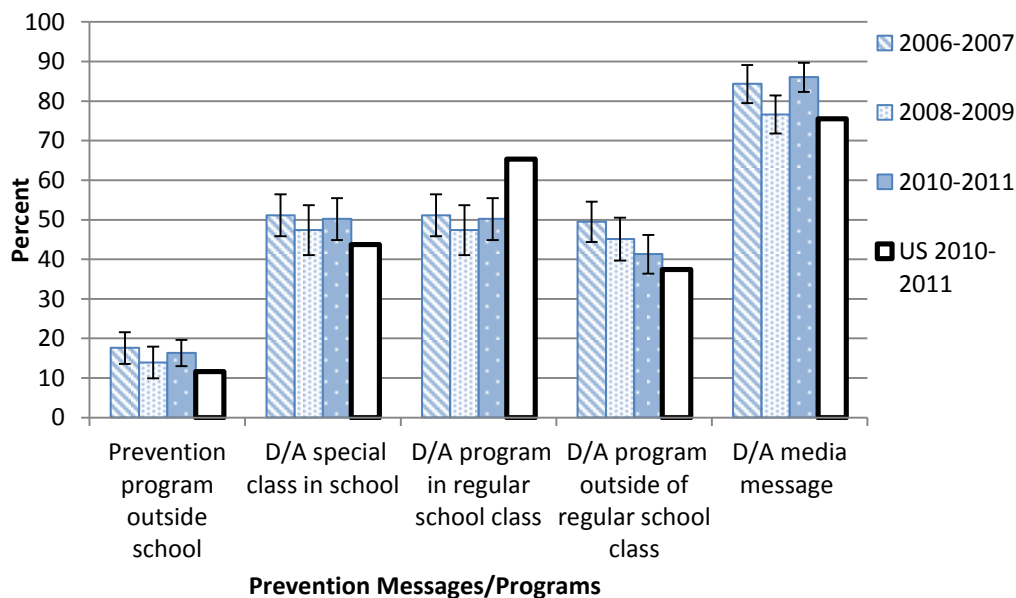
Measure: Percentage of Youth Seeing (Reading, Watching, Listening) a Prevention Message

Retention is measured by asking people whether they have seen, including read, watched, or listened to, a message about preventing tobacco, alcohol, and drug use. Figure 18 shows the percentage of youth aged 12-17 in Hawai‘i who were exposed to (saw, read, watched, or listened to) a substance use prevention message in the 12 months preceding the survey.

There were no significant differences in the distribution of exposure to prevention messages amongst years (Figure 18). Youth in Hawai‘i and in the US have higher rates of being exposed to prevention messages in school than outside of school. In 2010-2011 Hawai‘i had a higher rate of youth exposure to prevention messages outside of school (16.3%), in special classes in school (50.2%), and through media messages (86.0%) than the overall US (11.6%, 43.7%, 75.5%, respectively).

In 2010-2011, 86% of youth in Hawai‘i had been exposed to any alcohol or drug prevention messages. This is higher than the previous 2008-2009 rate of 76.6%.

Figure 18. Seeing (reading, watching, or listening) a prevention message in the past 12 months



Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

*D/A = Drugs or Alcohol

ADULT ALCOHOL INDICATORS

Domain 1: Prevalence

Note: This section addresses indicators that are included in SAMHSA’s NOMs domain labelled “Reduced Morbidity: Abstinence from Drug Use/Alcohol Use.”

Measure: 30-Day Use (Alcohol and Binge Drinking)

Adult 30-day Alcohol Use by Sex and Ethnicity

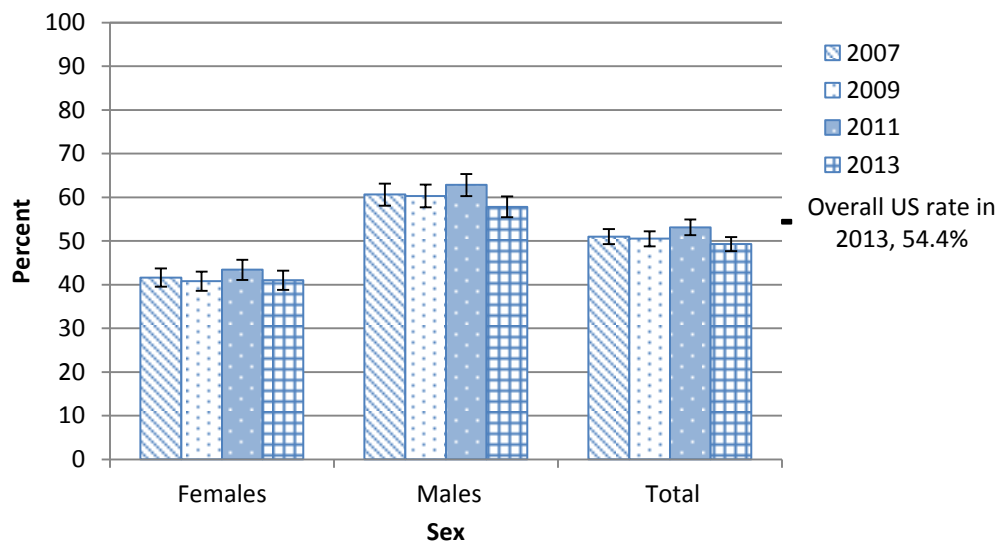
30-day alcohol use indicates adults’ current alcohol use, measured as whether someone has consumed a drink of alcohol in the 30 days preceding the survey date. Figures 19 and 20 show the percentage of adults aged 18 years and older in Hawai‘i who are 30-day alcohol users.

In 2013, the rate of 30-day alcohol use in Hawai‘i (49.3%) was lower than the overall US rate (54.4%) for the same year (Figure 19).

Males had significantly higher percentages of 30-day alcohol use than compared to females for all years (Figure 19).

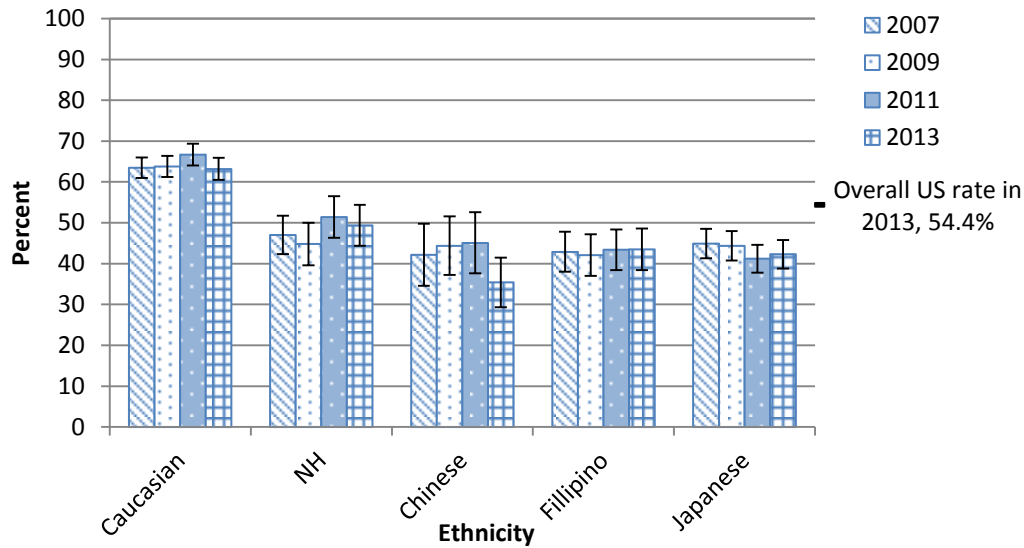
Caucasians had significantly higher percentages of 30-day alcohol use than Native Hawaiian, Chinese, Filipino, and Japanese for all years (Figure 20).

Figure 19. Adult 30-day alcohol use in Hawai‘i by sex (age 18 and older)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 20. Adult 30-day alcohol use by ethnicity (age 18 and older)



Source: HHDW 2007, 2009, 2011, and 2013

NH= Native Hawaiians

Data for Other Asians, Other Pacific Islanders, and Other ethnic groups are excluded from these graphs because the sample sizes were too small.

Adult 30-day Binge Drinking by Sex and Ethnicity

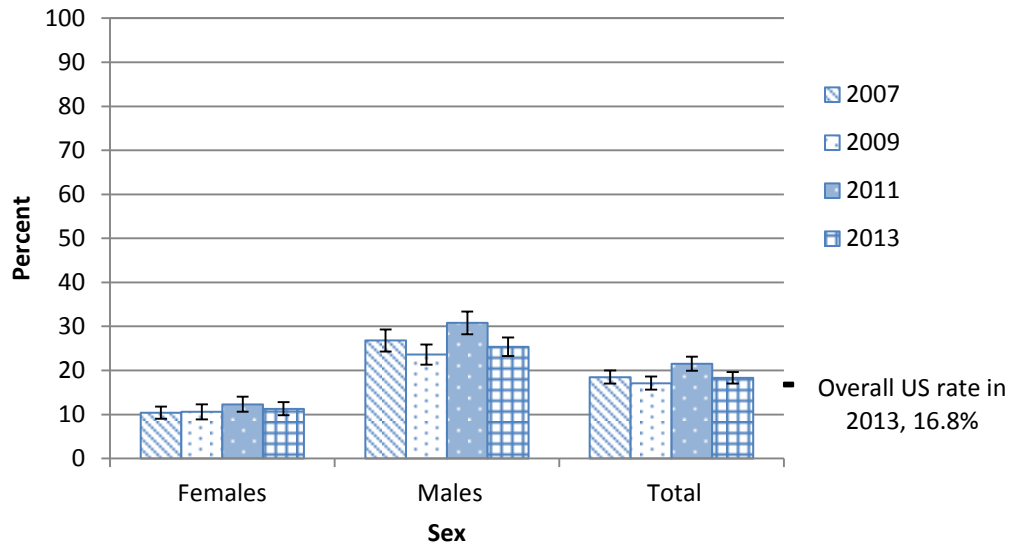
Binge drinking of adults is males having five or more drinks of alcohol in a row within a couple of hours on one occasion and females having four or more drinks of alcohol in a row within a couple of hours on one occasion (definition by the BRFSS). 30-day binge drinking indicates current binge drinkers, measured as whether someone binge drank in the 30 days preceding the survey date. Figures 21 and 22 show the percentage of adults aged 18 and older in Hawai‘i who are 30-day binge drinkers, by sex and ethnicity.

The overall Hawai‘i prevalence of 30-day binge drinking was highest in 2011 at 21.5%. In 2013, the 30-day binge drinking rate in Hawai‘i (18.3%) was similar to the overall US rate (16.8%) for the same year (Figure 21).

Males exhibited significantly higher 30-day binge drinking rates than females for all years (Figure 21).

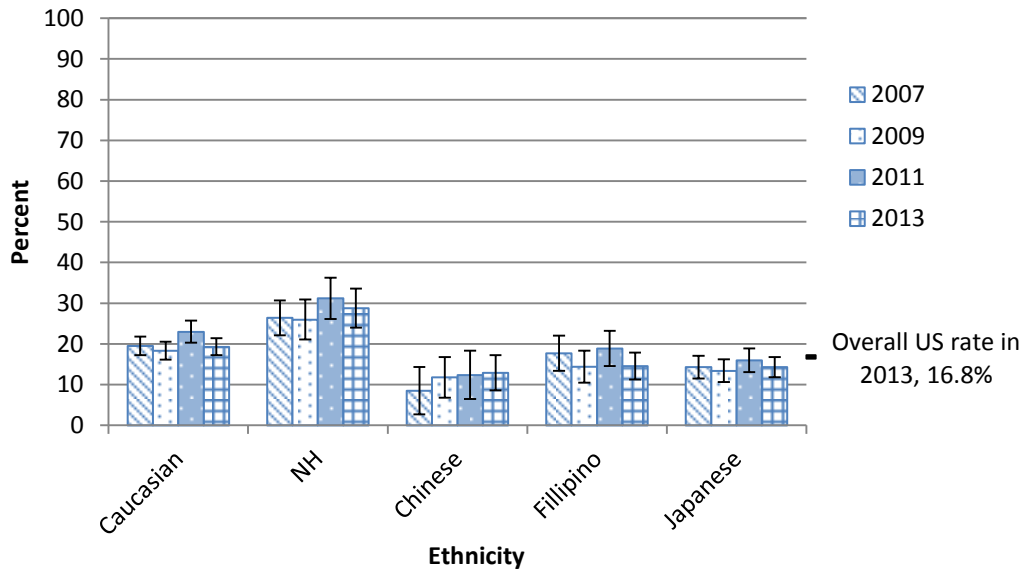
Native Hawaiian adults had significantly higher 30-day binge drinking rates than Caucasians, Chinese, Filipinos, and Japanese across year (Figure 22).

Figure 21. Adult 30-day binge drinking, by sex (age 18 and older)



Source: HHDW 2007, 2009, 2011, and 2013

Figure 22. Adult 30-day binge drinking, by ethnicity (age 18 and older)



Source: HHDW 2007, 2009, 2011, and 2013

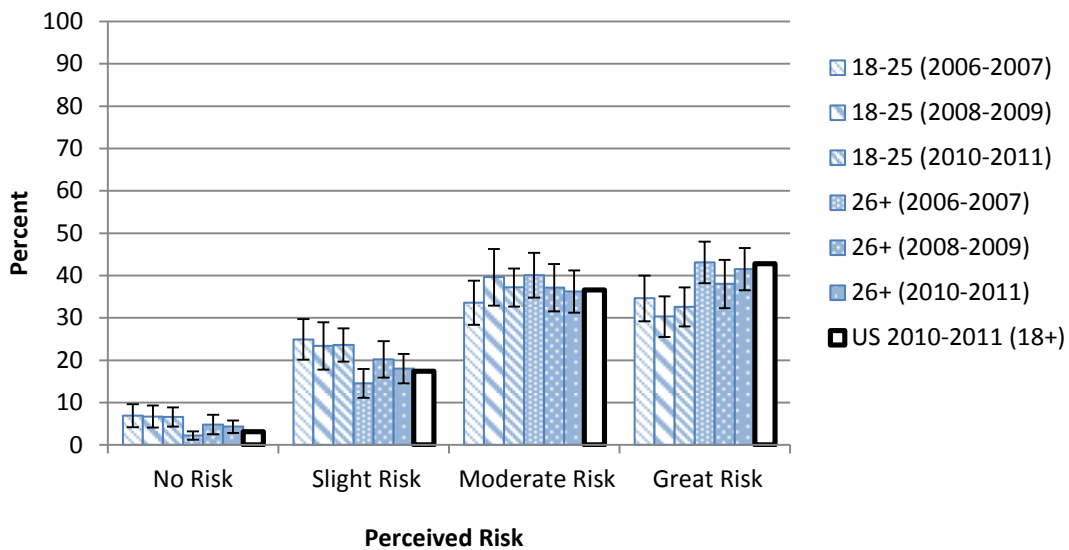
NH= Native Hawaiians

Data for Other Asians, Other Pacific Islanders, and Other ethnic groups are excluded from these graphs because the sample sizes were too small.

Measure: Perceived Risk of Harm of Use

Perceived risk from five or more drinks of an alcoholic beverage once or twice a week indicates how risky people perceive heavy drinking to be. Figure 23 shows the perceived risk from 5 or more alcoholic beverages one or twice a week among adults aged 18 and over in Hawai‘i, by adult age groups. Approximately 30 to 50 percent of adults aged 18 or over in both Hawai‘i and the US overall perceived there to be a moderate or greater risk in having five or more drinks once or twice a week. There were no significant differences by age group and no significant differences between years.

Figure 23. Perceived risk from five or more drinks of an alcoholic beverage once or twice a week by age groups



Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

Domain 2: Alcohol-related Crime and Fatalities

Note: This section addresses indicators that are included in SAMHSA’s NOMs domain labelled “Crime and Criminal Justice.”

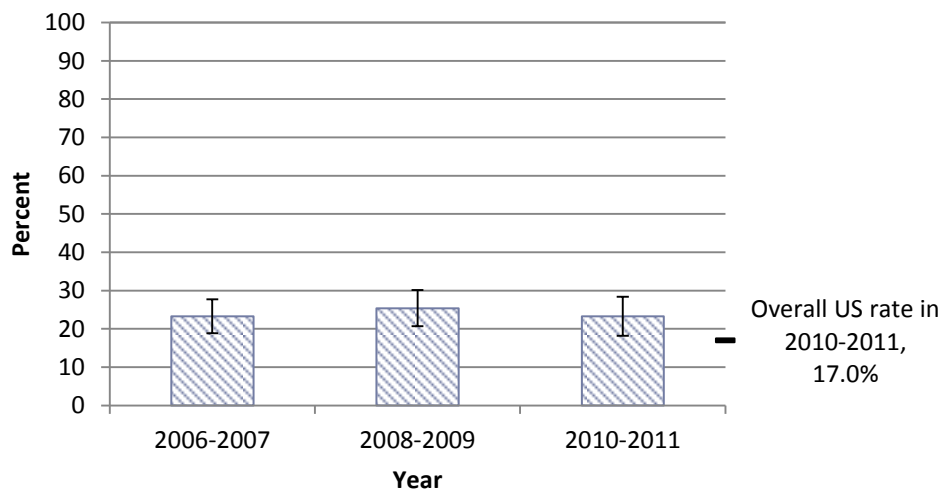
Measure: Driving While Under the Influence of Alcohol

Driven a vehicle while under the influence of alcohol in the past 12 months

Figure 24 shows the percentage of adults aged 18 and over in Hawai‘i who reported they had driven a vehicle while under the influence of alcohol in the past 12 months.

There were no significant differences between year groups. Every year group, however, had a significantly higher percentage of adults who had driven a vehicle while under the influence of alcohol than the overall US rate of 17% for 2010-2011.

Figure 24. Driven a vehicle while under the influence of alcohol in the past 12 months (age 18 and older)



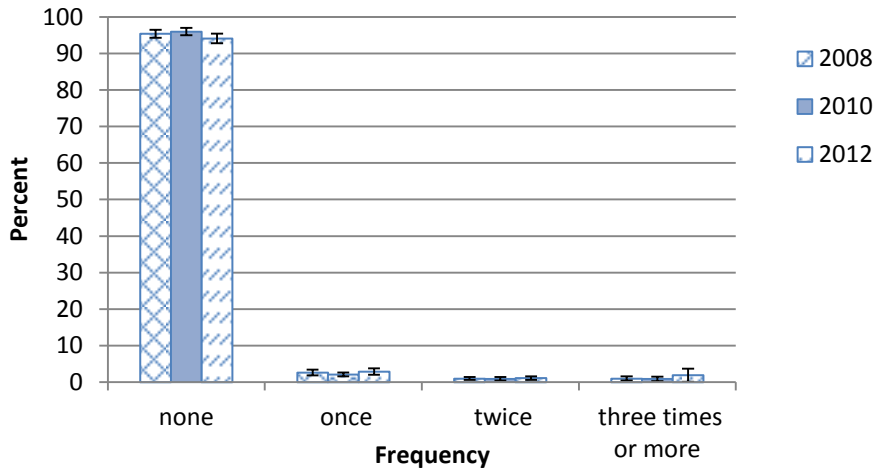
Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

Frequency in the past 30 days of driving after having too much to drink

Figure 25 shows the frequency with which adults aged 18 and over in Hawai‘i have driven after having too much to drink.

Most adults in Hawai‘i have never or have rarely driven after having too much to drink. 2.6% drive after having too much to drink once per month, while 1% each drive after having too much to drink twice per month or three or more times per month. The percentage of people who drive after having too much to drink once per month was significantly less than the percentage of people who have never or have rarely driven after having too much to drink, but significantly more than the percentage of people who drive after having too much to drink twice or three or more times per month (Figure 25).

Figure 25. Frequency in the past 30 days of driving after having too much to drink (age 18 and older)



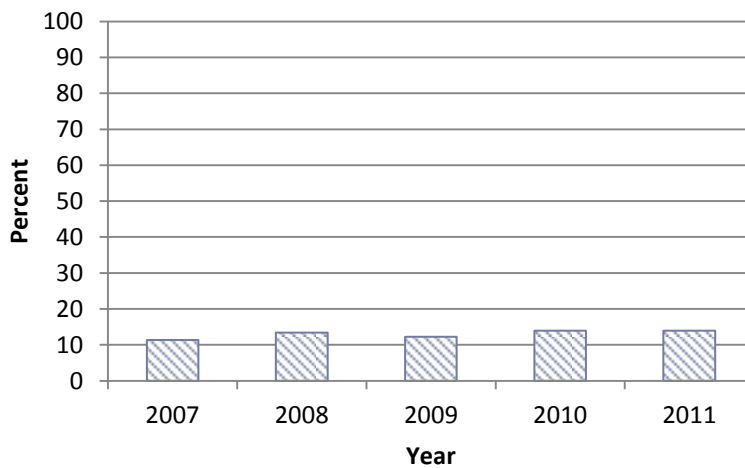
Source: HHDW 2008, 2010, 2012

Measure: Alcohol-related Arrests

Figure 26 shows the percentage of total arrests that were for driving under the influence of alcohol or drugs amongst people aged 18 and over in Hawai‘i.

The percentage of total arrests that were for driving under the influence of alcohol or drugs varied by a very little amount across years with the lowest value of 11.3% in 2007 and the highest value of 13.9% in 2011 (Figure 26).

Figure 26. Percentage of total arrests that were for driving under the influence of alcohol or drugs (age 18 and older)

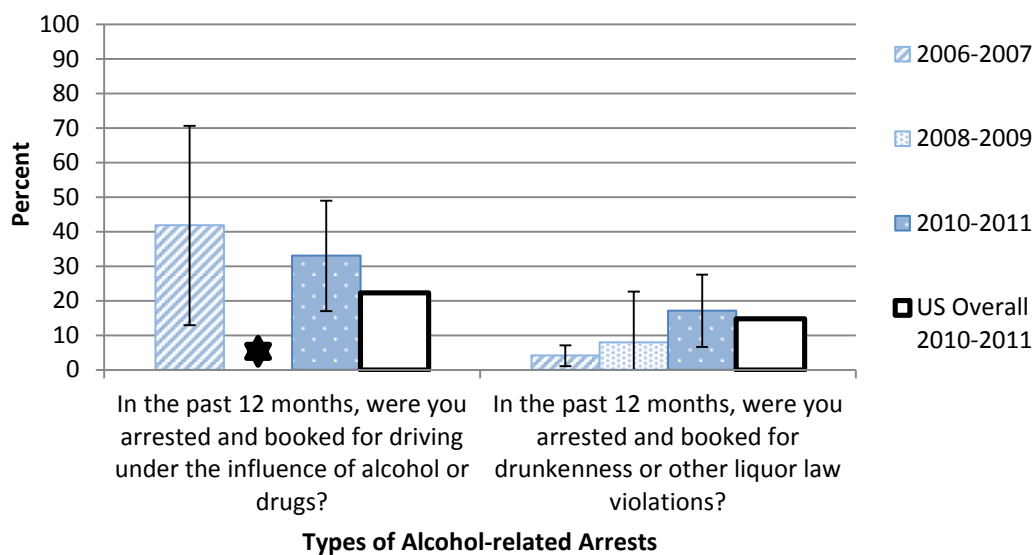


*Confidence intervals for population fatal crash percentages are negligible
Source: UCR 2007-2011

Figure 27 shows the percentages adults aged 18 and over in Hawai‘i who reported being arrested and booked for driving under the influence of alcohol or drugs or for drunkenness or other liquor law violations.

There were no significant differences in the percentage of people reporting being arrested and booked for driving under the influence of alcohol or drugs compared to the percentage of people reporting being arrested for drunkenness or other liquor law violations. There were also no significant differences in these variables by year group (Figure 27).

Figure 27. Percentage of adults reported being arrested and booked for driving under the influence of alcohol or drugs, or for drunkenness or other liquor law violations in the past 12 months (age 18 or older)



Source: NSDUH 2007-2008, 2008-2009, and 2010-2011

* Data are unavailable for 2008-2009

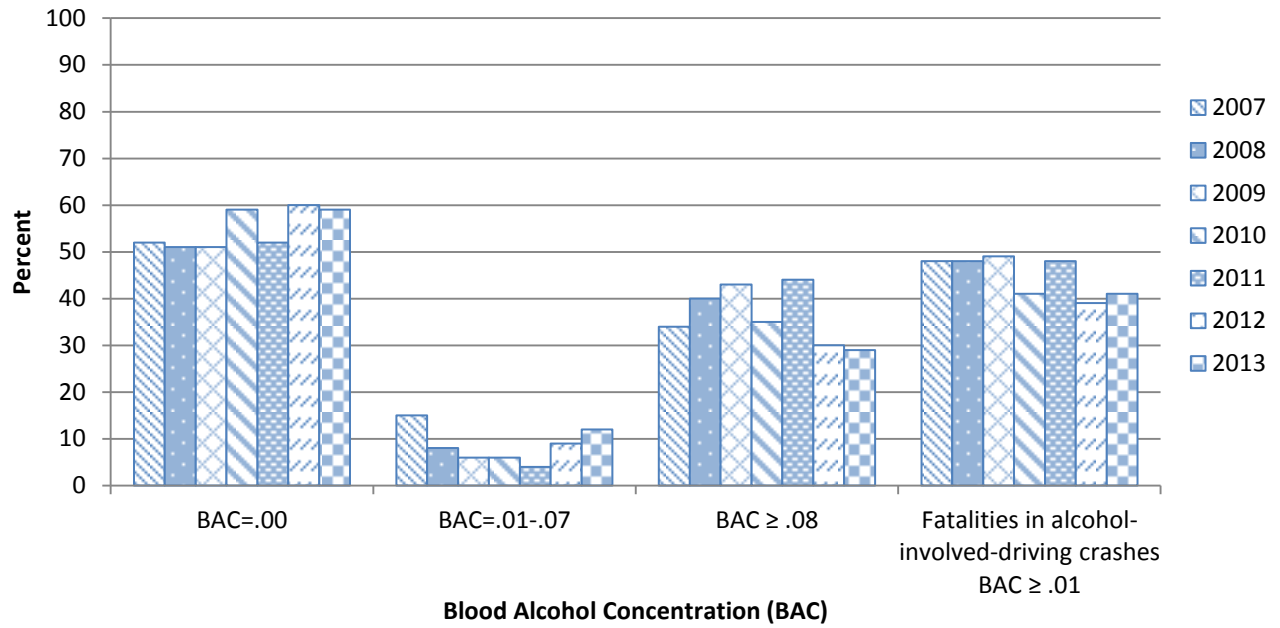
Measure: Alcohol-involved Traffic Fatalities

Figure 28 shows the percentage of the total number of traffic fatalities among adults aged 21 and older in Hawai‘i that were alcohol-involved, by BAC.

Overall, about half or slightly less than half of the fatalities were alcohol-involved (BAC \geq 0.01%) from 2007 to 2013. The percentage of alcohol-involved traffic fatalities (BAC \geq 0.01%) was highest in 2009 (49%).

Overall, the percentages of alcohol-involved traffic fatalities with BAC greater than or equal to 0.08% were larger than the percentages of fatalities with BAC between 0.01% and 0.07% in any given year. This suggests that most intoxicated drivers in alcohol-involved traffic fatalities had a BAC equal to or exceeding 0.08%.

Figure 28. Fatalities (age 21 and older) in motor vehicle traffic crashes in Hawai'i by BAC



Source: FARS from 2007 to 2013; 2007 – 2012 (Final), 2013 (Annual Report File). The data was generated by NCSA's Information Services Team.

SUMMARY

Youth

Rates for alcohol usage indicators, including ever had at least one drink, 30-day use, binge drinking, and age at first use, for youth in Hawai‘i showed a trend of peaking in 2009 and returning to pre-2009 levels or decreasing in 2011, although differences were not always significant. Indicators for risk perception and disapproval of substance use showed no significant changes overtime. Exposure to prevention messages and family communication also have not significantly changed from 2006-2007 to the most current data available (2010-2011).

Comparing Hawai‘i’s and U.S. youth averages in 2013, Hawai‘i had significantly lower percentages for most alcohol-related indicators (e.g., ever had at least one drink of alcohol, 30-day alcohol use, 30-day binge drinking, etc.).

There were no differences by sex for any indicator.

There was a trend towards students in higher grades having higher rates of alcohol usage than students in lower grades, although not all differences were significant.

For alcohol indicators broken down by ethnicity in Hawai‘i, Native Hawaiian and Caucasian high school students usually had the highest rates. For many indicators, Japanese or Other Asians had the lowest rates.

Adults

Overall, there were no significant differences across years in any alcohol-related indicator for adults in Hawai‘i.

Males had significantly higher alcohol usage rates (30-day alcohol use and binge drinking) than females across years.

In general, Caucasians and Native Hawaiians had higher rates of alcohol usage than Chinese, Filipino, or Japanese.

Recommendations for Prevention Programs

Youth

- Since alcohol use rates were almost equally prevalent among both sexes in the past few years, prevention programs for substance use among youth in Hawai‘i should focus on boys and girls.
- Since older grade students usually have worse rates of alcohol use compared to younger grades, it is recommended to start prevention programs at earlier stages of adolescence to decline alcohol prevalence among higher graders. It is especially important to delay the first initiation of alcohol use for youth.

- Based on the findings regarding ethnic differences, culturally appropriate and evidenced-based programs are strongly recommended especially for the highest rate groups such as Native Hawaiians and Caucasians. Among Asian ethnicity groups, Filipino adolescents have rates as high as Caucasians or Native Hawaiians for some of the indicators, signaling a growing need for prevention efforts targeting this population in particular.

Adults

- Unlike youth, current alcohol use and binge drinking are more common among adult males than adult females. It is recommended to address this difference in prevention and treatment programs.
- Ethnicity groups with higher risk and higher rates of alcohol use, such as Caucasians and Native Hawaiians should be addressed with culturally appropriate interventions.
- Since most of the indicators include people older than age 18 in “adult” groups, alcohol and substance use prevalence and behaviors particularly among college students are unclear. State-level data specifically among college students would be in demand in order to see prevention program needs for this population in particular.

Data Recommendations

- In this profile, Hawai‘i High School YRBS was primarily used for the section on youth and Hawai‘i BRFSS was the primary data source for adult data. The NSDUH was used for both youth and adult sections. There is a data gap in those data sources, the college-age population (typically 18 to 24 years). Although the Hawai‘i BRFSS and the NSDUH collect data from people aged 18 and older or 12 or older respectively, they do not collect data specifically from college students. While NSDUH data can be analyzed by college-aged individuals (for example, aged from 18 to 24), the population includes all individuals in this age range, including individuals who are currently not enrolled in a college. This data gap should be filled by establishing a statewide health survey for college students in which multiple campuses representing Hawai‘i participate in order to understand and monitor behaviors surrounding alcohol and substance use in this unique population. The University of Hawai‘i at Mānoa campus has participated in the National College Health Assessment (NCHA) and it was administered by the Mānoa Alcohol Project (MAP) in 2012; however, the data was not representative of all college students in Hawai‘i because only one of eighteen college and university campuses in the state of Hawai‘i participated. Therefore, participating in the National College Health Assessment (NCHA) would be recommended for all college and university campuses in the state of Hawai‘i in order to gain alcohol or substance use data with good quality that is representative of college students in the state. Please see Methods section “Primary Data Sources” for more details of the Hawai‘i YRBS, Hawai‘i BRFSS, and the NSDUH.
- We recommend that Hawai‘i BRFSS include more alcohol-related indicators. Currently (in 2013 data) Hawai‘i BRFSS has only a few indicators about alcohol consumption: alcohol use in the past 30 days, heavy drinking (having more than two drinks per day) in the past 30 days, and binge drinking (having 5 or more drinks for men or 4 or more drinks for women on an occasion) in the past 30 days.

Alcohol indicators from NOMs, such as age at first use, perceived risk of harm of use, disapproval of substance use, and driving while under the influence of alcohol, would be especially important additions to the survey.

- For any data source that has alcohol use indicators, it is important to collect data from a larger sample size in order to be able to report data broken up to detailed ethnic groups instead of using aggregated ethnicity categories such as “Asian” or “Native Hawaiian and Pacific Islanders.” This is especially crucial for communities in Hawai‘i which are ethnically and culturally diverse, as detailed ethnicity data will help us to design and implement better policies and intervention programs that are addressing health disparities and health needs for specific ethnic groups.

Setting 10-Year Goals

The ADAD Epidemiology Team recommends that a 10-year goal for each objective or indicator be 10% improvement from the baseline measure or the most current year data. For example, in 2013 the 30-day binge drinking among high school girls was 12.7% (in 2013); therefore reducing this rate to 11.4% (10% improvement) by 2023 would be suggested. For the perceived risk from five or more drinks of an alcoholic beverage once or twice a week among high school students, the goal for 2020 would be increasing the rate of “great risk” to 43.8%, where the rate in 2010-2011 was 39.8%. Hawai‘i’s Healthy People 2020 Progress Tracker website (<http://www.hawaiihealthmatters.org/index.php?module=Trackers&func=display&tid=1003>) also has goals for some of the alcohol and substance use indicators.

Appendix A: Data Tables for Youth Alcohol Indicators

Table A-1. YOUTH Ever had at least one drink of alcohol by sex, grade, and ethnicity, in 2007, 2009, 2011, and 2013

		Year											
		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	58.7	52.6	64.8	68.6	63.6	73.6	55.8	52.6	59.1	52.5	49.7	55.3
Sex	Female	63.3	58.2	68.4	71.5	65.7	77.3	58.7	54.4	63.0	54.9	50.4	59.4
	Male	54.5	46.1	62.9	65.9	60.5	71.2	53.0	49.5	56.6	50.2	47.7	52.7
Grade	9	44.6	36.7	52.6	58.4	51.3	65.4	46.4	41.6	51.1	41.1	34.9	47.2
	10	63.0	56.6	69.5	69.9	62.2	77.7	54.3	50.9	57.6	49.5	45.7	53.3
	11	56.6	44.2	68.9	75.0	67.7	82.3	57.8	49.4	66.2	53.6	50.0	57.2
	12	74.7	67.0	82.4	74.6	66.7	82.5	67.0	62.8	71.2	67.7	61.6	73.8
Ethnicity	Caucasian	-	-	-	-	-	-	63.2	58.0	68.4	52.2	47.5	56.9
	Native Hawaiian	-	-	-	-	-	-	66.0	62.0	69.9	61.9	58.2	65.5
	Filipino	-	-	-	-	-	-	52.7	47.8	57.7	51.7	45.8	57.5
	Japanese	-	-	-	-	-	-	41.6	34.3	49.0	33.5	27.6	39.4
	Other Asian	-	-	-	-	-	-	29.0	25.1	32.8	32.0	25.4	38.6

	Other Pacific Islander	-	-	-	-	-	-	48.6	40.1	57.0	57.9	47.1	68.6
	Other	-	-	-	-	-	-	54.5	49.6	59.3	54.0	49.0	58.9

Source: Hawai'i Youth Risk Behavior Survey (Hawai'i YRBS) via Hawai'i Health Data Warehouse (HHDW)

Data not available for ethnic groups in 2007 and 2009

Table A-2. YOUTH 30-day alcohol use by sex, grade, and ethnicity, in 2007, 2009, 2011, and 2013

		Year											
		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	29.1	23.2	35.1	37.8	31.7	44.0	29.1	25.8	32.3	25.2	21.7	28.6
Sex	Female	33.6	27.2	40.1	41.9	33.1	50.7	32.3	28.0	36.5	26.0	22.1	29.9
	Male	24.9	16.9	32.9	33.8	27.6	39.9	25.8	22.4	29.1	24.1	20.2	28.1
Grade	9	19.7	12.3	27.2	28.2	20.0	36.5	21.5	18.3	24.7	18.3	11.9	24.7
	10	28.4	20.6	36.2	34.0	21.7	46.4	28.2	24.2	32.2	19.3	15.9	22.7
	11	21.8	14.0	29.6	43.3	34.2	52.4	30.2	22.9	37.6	25.7	21.6	29.8
	12	50.5	39.7	61.2	48.9	38.8	58.9	38.4	32.7	44.1	38.4	33.1	43.7
Ethnicity	Caucasian	-	-	-	-	-	-	39.6	34.3	44.8	29.2	23.0	35.4
	Native Hawaiian	-	-	-	-	-	-	35.1	30.0	40.3	31.8	24.8	38.8

	Filipino	-	-	-	-	-	-	24.2	19.1	29.3	21.6	16.8	26.5
	Japanese	-	-	-	-	-	-	20.2	14.6	25.9	12.0	7.5	16.4
	Other Asian	-	-	-	-	-	-	10.6	2.0	19.1	10.2	3.3	17.1
	Other Pacific Islander	-	-	-	-	-	-	31.8	23.1	40.4	28.7	19.1	38.4
	Other	-	-	-	-	-	-	28.2	24.1	32.4	26.3	23.7	28.9

Source: Hawai'i YRBS via HHDW

Data not available for ethnic groups in 2007 and 2009

Table A-3. YOUTH 30-day binge drinking by sex, grade, and ethnicity, in 2007, 2009, 2011, and 2013

		Year											
		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	14.9	9.5	20.2	22.4	17.8	27.1	15.4	13.6	17.1	12.7	10.9	14.6
Sex	Female	16.4	11.4	21.3	22.7	15.5	29.9	16.4	14.2	18.5	12.7	10.2	15.2
	Male	13.4	6.6	20.3	22.2	17.2	27.1	14.3	11.7	16.9	12.7	10.9	14.5
Grade	9	5.2	2.0	8.4	12.7	7.0	18.4	10.9	8.0	13.8	8.3	5.5	11.1
	10	12.8	6.7	18.9	21.9	12.8	31.1	14.1	11.3	16.9	9.0	6.6	11.3
	11	14.1	5.8	22.3	27.7	19.7	35.6	16.9	12.8	21	12.6	10.4	14.8

	12	31.6	20.2	43.0	30.9	23.4	38.4	20.5	16.8	24.2	21.5	16.6	26.4
Ethnicity	Caucasian	-	-	-	-	-	-	18.9	14.5	23.3	17.1	13.5	20.8
	Native Hawaiian	-	-	-	-	-	-	19.5	14.8	24.2	18.4	12.3	24.6
	Filipino	-	-	-	-	-	-	11.8	7.9	15.7	7.6	5.1	10.2
	Japanese	-	-	-	-	-	-	8.2	4.6	11.8	5.1	1.1	9.0
	Other Asian	-	-	-	-	-	-	6.1	1.0	11.1	4.9	0.4	9.4
	Other Pacific Islander	-	-	-	-	-	-	23.9	16.6	31.1	16.6	10.7	22.5
	Other	-	-	-	-	-	-	15.8	12.9	18.7	13.7	11.8	15.5

Source: Hawai'i YRBS via HHDW

Data not available for ethnic groups in 2007 and 2009

Table A-4. YOUTH Had a first drink of alcohol before age 13 years by sex, grade, and ethnicity, in 2007, 2009, 2011, and 2013

		Year											
		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	21.0	17.3	24.7	28.6	24.9	32.4	19.2	18.0	20.5	17.5	15.8	19.2
Sex	Female	21.5	16.9	26.1	27.6	22.7	32.5	18.2	15.8	20.6	16.5	14.0	18.9
	Male	20.6	15.4	25.7	29.4	25.6	33.2	20.3	18.3	22.3	18.6	16.4	20.9
Grade	9	25.1	19.2	31.0	31.3	23.4	39.3	23.6	20.3	26.8	21.5	17.9	25.1
	10	22.2	13.9	30.5	35.1	23.9	46.2	18.8	14.9	22.7	15.8	12.6	18.9
	11	14.2	8.2	20.2	24.9	18.4	31.4	14.7	11.8	17.6	16.7	13.3	20.0
	12	20.3	12.5	28.1	21.0	18.2	23.8	17.8	14.8	20.8	14.8	11.3	18.3
Ethnicity	Caucasian	-	-	-	-	-	-	19.1	14.3	23.8	12.6	8.8	16.5
	Native Hawaiian	-	-	-	-	-	-	25.6	22.2	29.1	25.9	22.0	29.7
	Filipino	-	-	-	-	-	-	14.3	10.3	18.3	14.9	10.8	18.9
	Japanese	-	-	-	-	-	-	14.6	7.1	22.1	11	6.8	15.1
	Other Asian	-	-	-	-	-	-	12.3	9.2	15.5	13.4	7.9	18.9
	Other Pacific Islander	-	-	-	-	-	-	15.8	11.9	19.7	19.0	11.8	26.2

	Other	-	-	-	-	-	-	21.0	17.8	24.2	17.4	14.9	19.8
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Source: Hawai'i YRBS via HHDW

Data not available for ethnic groups in 2007 and 2009

Table A-5. YOUTH Perceived risk from five or more drinks of an alcoholic beverage once or twice a week by age group (12-17 years old) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
No risk	4.0	2.1	7.3	2.4	1.2	4.6	3.5	2.1	6.0
Slight risk	15.2	12.1	19.0	16.8	12.6	21.9	19.5	15.8	23.9
Moderate risk	35.4	31.0	40.0	39.7	34.7	44.9	37.2	32.7	41.9
Great risk	45.5	39.8	51.2	41.2	35.9	46.7	39.8	35.0	44.7

Source: National Survey on Drug Use and Health (NSDUH)

Table A-6. YOUTH How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day? (12 – 17 years old) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
Neither	14.7	11.4	18.7	11.0	7.9	15.0	13.4	10.4	17.1
Somewhat disapprove	17.3	13.5	21.8	15.6	11.6	20.8	19.2	15.4	23.6
Strongly disapprove	68.0	63.0	72.7	73.4	67.5	78.6	67.4	62.8	71.6

Source: NSDUH

Table A-7. YOUTH Drove a vehicle while under the influence of alcohol in the past 12 months (12-17 years old) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
Yes	7.5	3.3	16.4	7.1	2.9	16.5	9.9	5.9	16.0

Source: NSDUH

Table A-8. YOUTH Talked with parent about dangers of tobacco, alcohol, or drugs in the past 12 months (12-17 years old) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
Yes	56.1	50.5	61.6	56.6	51.8	61.3	55.3	51.0	59.4

Source: NSDUH

Table A-9. YOUTH Talked with at least one parent or another adult in family about the dangers of tobacco, alcohol, or drug use during the past 12 months (high school students) by sex in 2011, and 2013

		Year					
		2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI
State	Total	45.3	43.0	47.5	39.1	36.5	41.8
Sex	Female	42.5	41.0	44.0	37.4	34.2	40.5
	Male	47.3	44.3	50.3	40.7	37.7	43.8

Source: Hawai'i YRBS via HHDW

Table A-10. YOUTH Seeing (reading, watching, or listening) a prevention message in the past 12 months (12-17 years old) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	% yes	lower CI	upper CI	% yes	lower CI	upper CI	% yes	lower CI	upper CI
During the past 12 months, have you participated in an alcohol, tobacco, or drug prevention program outside of school	17.6	13.6	22.4	13.9	9.9	19.1	16.3	13.0	20.1
During the past 12 months, have you had a special class about drugs or alcohol in school	51.1	45.8	56.4	47.4	41.1	53.8	50.2	44.9	55.6
During the past 12 months, have you had films lectures, discussions, or printed information about drugs or alcohol in one of your regular school classes such as health or physical education	51.1	45.8	56.4	47.4	41.1	53.8	50.2	44.9	55.6
During the past 12 months, have you had films lectures, discussions, or printed information about drugs or alcohol outside of one of your regular school classes such as health or physical education	49.5	44.4	54.7	45.1	39.7	50.7	41.3	36.4	46.4
During the past 12 months, have you seen or heard any alcohol or drug prevention messages from sources such as posters, pamphlets, radio, or TV	84.3	79.5	88.2	76.6	71.8	80.9	86.0	82.3	89.0

Source: NSDUH

Table A-11. YOUTH Fatalities in motor vehicle traffic crashes in Hawai'i by year, age, and highest driver BAC in the crash

			2007	2008	2009	2010	2011	2012	2013
Age	Total fatality *	Number	11	12	17	15	15	18	11
12-20 years old	BAC = .00	Number	7	9	4	8	5	3	4
		Percent (%)	63	74	26	51	33	15	38
	BAC = .01-.07	Number	2	0	0	0	2	1	0
		Percent (%)	19	0	1	1	13	6	0
BAC ≥ .08	Number	2	3	12	7	8	14	7	
	Percent (%)	18	26	73	49	54	79	62	
Fatalities in alcohol- involved- driving crashes (BAC ≥ .01)	Number	4	3	13	7	10	15	7	
	Percent (%)	37	26	74	49	67	85	62	

Source: Fatality Analysis Reporting System (FARS); 2007 – 2012 (Final), 2013 (Annual Report File); this report was generated by NCSA's Information Services Team.

* Includes fatalities in crashes in which there was no driver or motorcycle rider (operator) present.

Numbers in the various Alcohol (BAC) categories are estimates derived from a sophisticated statistical procedure. The estimates are rounded to the nearest whole number, however, percentages as displayed are calculated from the unrounded estimates and may not equal those calculated from the rounded estimates. Totals may not equal the sum of components due to independent rounding.

Appendix B: Data Tables for Adult Alcohol Indicators

Table B-1. ADULT 30-day alcohol use by sex, and ethnicity, in 2007, 2009, 2011, and 2013

		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	51.0	49.3	52.7	50.5	48.8	52.3	53.1	51.3	54.9	49.3	47.7	51.0
Sex	Female	41.6	39.5	43.7	40.8	38.6	43.1	43.4	41.1	45.7	41.0	38.8	43.2
	Male	60.6	58.1	63.1	60.3	57.7	62.9	62.8	60.3	65.4	57.8	55.4	60.2
Ethnicity	Caucasian	63.5	61.0	66.0	63.8	61.2	66.3	66.7	64.0	69.5	63.2	60.5	65.9
	Native Hawaiian	47.0	42.3	51.6	44.8	39.6	50.0	51.4	46.3	56.4	49.4	44.4	54.4
	Chinese	42.2	34.6	49.7	44.4	37.2	51.6	45.1	37.6	52.6	35.4	29.3	41.6
	Filipino	42.9	38.0	47.9	42.1	37.0	47.1	43.4	38.4	48.3	43.5	38.4	49.6
	Japanese	44.9	41.3	48.4	44.4	40.8	48.0	41.2	37.8	44.7	42.3	38.8	45.7

Source: Hawai'i Behavioral Risk Factor Surveillance System (Hawai'i BRFSS) via HHDW

Table B-2. ADULT 30-day binge drinking by sex, and ethnicity, in 2007, 2009, 2011, and 2013

		2007			2009			2011			2013		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	18.5	17.0	19.9	17.1	15.6	18.5	21.5	19.9	23.1	18.3	17.0	19.6
Sex	Female	10.4	9.0	11.9	10.6	8.9	12.3	12.3	10.6	13.9	11.3	9.8	12.7
	Male	26.8	24.3	29.3	23.6	21.3	26.0	30.8	28.2	33.4	25.4	23.3	27.6
Ethnicity	Caucasian	19.5	17.2	21.7	18.3	16.1	20.5	23.0	20.3	25.7	19.3	17.2	21.4
	Native Hawaiian	26.4	22.1	30.7	26.0	21.1	30.9	31.2	26.1	36.3	28.8	24.0	33.6
	Chinese	8.5	2.7	14.2	11.8	6.8	16.9	12.4	6.5	18.3	12.9	8.6	17.2
	Filipino	17.7	13.4	22.0	14.4	10.5	17.6	18.9	14.6	23.2	14.6	11.3	17.9
	Japanese	14.3	11.5	17.1	13.4	10.6	16.3	16.0	13.1	18.9	14.3	11.8	16.8

Source: Hawai'i BRFSS via HHDW

Table B-3. ADULT Perceived risk from 5 or more drinks of an alcoholic beverage once or twice a week by age groups in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

		Year (merged blocks of two years)								
		2006-2007			2008-2009			2010-2011		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
18-25 years old	No risk	6.9	4.2	11.2	6.7	4.1	10.9	6.6	4.3	10.0
	Slight risk	24.9	20.1	30.5	23.4	17.8	30.0	23.6	19.7	28.0
	Moderate risk	33.6	28.4	39.2	39.6	32.9	46.8	37.2	32.7	41.9
	Great risk	34.6	29.2	40.3	30.3	25.5	35.5	32.6	28.0	37.6
26 and older	No risk	2.2	1.2	4.1	4.8	2.5	8.8	4.3	2.8	6.6
	Slight risk	14.5	11.1	18.9	20.2	15.9	25.3	18.0	14.5	22.1
	Moderate risk	40.1	34.8	45.6	37.1	31.5	43.0	36.2	31.2	41.5
	Great risk	43.1	38.2	48.2	38.0	32.3	44.0	41.5	36.5	46.6

Source: NSDUH

Table B-4. ADULT Drove a vehicle while under the influence of alcohol in the past 12 months (age 18 and older) in merged blocks of two (2) years (2006-2007, 2008-2009, and 2010-2011)

	Year (merged blocks of two years)								
	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
Yes	23.3	18.9	28.3	25.4	20.7	30.8	23.3	18.2	29.4

Source: NSDUH

Table B-5. ADULT Frequency in the past 30 days of driving after having too much to drink (age 18 and older)

	2008			2010			2012		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
None	95.4	94.3	96.5	96.0	95.0	97.1	94.1	92.8	95.4
Once	2.6	1.8	3.5	2.1	1.4	2.9	2.9	2.0	3.8
Twice	1.0	0.6	1.4	0.9	0.4	1.3	1.1	0.6	1.7
Three times or more	1.0	0.4	1.6	0.9	0.3	1.6	1.9	1.1	2.6

Source: Hawai'i BRFS via HHDW

Table B-6. ADULT Percentage and numbers of total arrests that were for driving under the influence of alcohol or drugs (age 18 and older)

	2007		2008		2009		2010		2011	
	n	% of total arrest	n	% of total arrest	n	% of total arrest	n	% of total arrest	n	% of total arrest
DUI	6410	11.4	6622	13.4	6237	12.2	6593	13.9	6429	13.9
Total arrests	56410	100	49454	100	51066	100	47339	100	46147	100

Source: The Uniform Crime Reporting (UCR)

DUI = driving under the influence

Table B-7. ADULT Percentage of adults reported being arrested and booked for driving under the influence of alcohol or drugs, or for drunkenness or other liquor law violations in the past 12 months (age 18 or older)

	2006-2007			2008-2009			2010-2011		
	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
In the past 12 months, were you arrested and booked for driving under the influence of alcohol or drugs?	41.8	12.9	77.7	too few entries	too few entries	too few entries	33.0	17.0	54.1
In the past 12 months, were you arrested and booked for drunkenness or other liquor law violations?	4.1	1.1	14.5	7.9	2.4	22.7	17.1	6.6	37.5

Source: NSDUH

Table B-8. ADULT Fatalities in motor vehicle traffic crashes in Hawai'i by year, age, and highest driver BAC in the crash

			2007	2008	2009	2010	2011	2012	2013
Age	Total fatality	Number	125	94	89	97	84	105	88
21 and older	BAC = .00	Number	65	48	45	57	44	63	52
		Percent (%)	52	51	51	59	52	60	59
	BAC = .01-.07	Number	18	7	6	6	3	10	11
		Percent (%)	15	8	6	6	4	9	12
	BAC ≥ .08	Number	42	38	38	34	37	32	26
		Percent (%)	34	40	43	35	44	30	29
	Fatalities in alcohol-involved-driving crashes (BAC ≥ .01)	Number	60	45	44	40	40	41	36
		Percent (%)	48	48	49	41	48	39	41

Source: Fatality FARS; 2007 – 2012 (Final), 2013 (Annual Report File); this report was generated by NCSA's Information Services Team.

* Includes fatalities in crashes in which there was no driver or motorcycle rider (operator) present.

Numbers in the various Alcohol (BAC) categories are estimates derived from a sophisticated statistical procedure. The estimates are rounded to the nearest whole number, however, percentages as displayed are calculated from the unrounded estimates and may not equal those calculated from the rounded estimates. Totals may not equal the sum of components due to independent rounding.

Appendix C: SAMHSA’s Substance Abuse Prevention National Outcome Measures (NOMs)

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
Reduced Morbidity: Abstinence from Drug Use/Alcohol Use					
30-Day Use	<p><i>“During the past 30 days, that is, since [DATEFILL], on how many days did you smoke part or all of a cigarette?”</i> [Response option: Write in a number between 0 and 30.]</p> <p>Outcome Reported: Percent who reported having smoked a cigarette during the past 30 days.</p>	NSDUH	CG07	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“During the past 30 days, that is, since [DATEFILL], on how many days did you use [other tobacco products]”</i> [Response option: Write in a number between 0 and 30.]</p> <p>Outcome Reported: Percent who reported having used a tobacco product other than cigarettes during the past 30 days, calculated by combining responses to questions about individual tobacco products (snuff, chewing tobacco, pipe tobacco).</p>	NSDUH	Multiple Items	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p><i>“Think specifically about the past 30 days, that is from [DATEFILL] through today. During the past 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?”</i></p> <p>[Response option: Write in a number between 0 and 30.]</p> <p>Outcome Reported: Percent who reported having used alcohol during the past 30 days.</p>	NSDUH	ALCC29a	Underage, Legal Age	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“Think specifically about the past 30 days, from [DATEFILL] up to and including today. During the past 30 days, on how many days did you use marijuana or hashish?”</i></p> <p>[Response option: Write in a number between 0 and 30.]</p> <p>Outcome Reported: Percent who reported having used marijuana or hashish during the past 30 days.</p>	NSDUH	MJ06	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“Think specifically about the past 30 days, from [DATEFILL] up to and including today. During the past 30 days, on how many days did you use [any other illegal drug]?”</i></p> <p>Outcome Reported: Percent who reported having used illegal drugs other than marijuana or hashish during the past 30 days, calculated by combining responses to questions about individual drugs (heroin, cocaine, stimulants, hallucinogens, inhalants, prescription drugs used without doctors’ orders).</p>	NSDUH	Multiple Items	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
Age at First Use	<p><i>“How old were you the first time you smoked part or all of a cigarette?”</i> [Response option: Write in age at first use.]</p> <p>Outcome Reported: Average age at first use of cigarettes.</p>	NSDUH	CG04	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“How old were you the first time you used [any other tobacco product] †?”</i> [Response option: Write in age at first use.]</p> <p>Outcome Reported: Average age at first use of tobacco products other than cigarettes.</p>	NSDUH	Multiple Items	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“Think about the first time you had a drink of an alcoholic beverage. How old were you the first time you had a drink of an alcoholic beverage? Please do not include any time when you only had a sip or two from a drink.”</i> [Response option: Write in age at first use.]</p> <p>Outcome Reported: Average age at first use of alcohol.</p>	NSDUH	AL02	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p><i>“How old were you the first time you used marijuana or hashish?”</i> [Response option: Write in age at first use.]</p> <p>Outcome Reported: Average age at first use of marijuana or hashish.</p>	NSDUH	MJ02	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“How old were you the first time you used [other illegal drugs] ‡?”</i> [Response option: Write in age at first use.]</p> <p>Outcome Reported: Average age at first use of other illegal drugs.</p>	NSDUH	Multiple Items	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
Perceived Risk of Harm of Use	<p><i>“How much do people risk harming themselves physically and in other ways when they smoke one or more packs of cigarettes per day?”</i> [Response options: No risk, slight risk, moderate risk, great risk, “don’t know”]</p> <p>Outcome Reported: Percent reporting moderate or great risk.</p>	NSDUH	RK01a	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p><i>“How much do people risk harming themselves physically and in other ways when they smoke marijuana once or twice a week?”</i></p> <p>[Response options: No risk, slight risk, moderate risk, great risk, “don’t know”]</p> <p>Outcome Reported: Percent reporting moderate or great risk.</p>	NSDUH	RK01c	Adult, Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
	<p><i>“How much do people risk harming themselves physically and in other ways when they have five or more drinks of an alcoholic beverage once or twice a week?”</i></p> <p>[Response options: No risk, slight risk, moderate risk, great risk, “don’t know”]</p> <p>Outcome Reported: Percent reporting moderate or great risk.</p>	NSDUH	RK01k	Underage, Legal Age	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
Disapproval of Substance Use	<p><i>“How do you feel about someone your age smoking one or more packs of cigarettes a day?”</i></p> <p>[Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove]</p> <p>Outcome Reported: Percent somewhat or strongly disapproving.</p>	NSDUH	YE19a	Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p><i>“How do you think your close friends would feel about you smoking one or more packs of cigarettes a day?”</i> [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove]</p> <p>Outcome Reported: Percent reporting that their friends would somewhat or strongly disapprove.</p>	NSDUH	YE20a	Youth	State (NSDUH), Community (Community Survey), Program (Program NOMs Instrument)
	<p><i>“How do you feel about someone your age trying marijuana or hashish once or twice?”</i> [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove]</p> <p>Outcome Reported: Percent somewhat or strongly disapproving.</p>	NSDUH	YE19b	Youth	State (NSDUH), Community (Community Survey), Program (Program NOMs Instrument)
	<p><i>“How do you feel about someone your age using marijuana once a month or more?”</i> [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove]</p> <p>Outcome Reported: Percent somewhat or strongly disapproving.</p>	NSDUH	YE19b1	Youth	State (NSDUH), Community (Community Survey), Program (Program NOMs Instrument)

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p><i>“How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day?”</i></p> <p>[Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove]</p> <p>Outcome Reported: Percent somewhat or strongly disapproving.</p>	NSDUH	YE19c	Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
Employment/Education					
Perception of Workplace Policy	<p><i>“Would you be more or less likely to want to work for an employer that tests its employees for drug or alcohol use on a random basis? Would you say more likely, less likely, or would it make no difference to you?”</i></p> <p>[Response options: More likely, less likely, would make no difference]</p> <p>Outcome Reported: Percent reporting that they would be more likely to work for an employer conducting random drug and alcohol tests.</p>	NSDUH	QD53	Adult, Youth 15 years or older	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>
ATOD-Related Suspensions and Expulsions	– MEASURE UNDER DEVELOPMENT –				
Daily School Attendance	<p>Measure calculation: Average daily attendance (NCES defined) divided by total enrollment and multiplied by 100.</p>	National Center for Education Statistics, Common Core of Data: The National Public Education Finance Survey available for download at http://nces.ed.gov/ccd/stfis.asp		Not collected from individuals	<p>State (NCES)</p> <p>Community (State Dept. of Ed., Local School)</p>

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
					District)
Crime and Criminal Justice					
Driving While Under the Influence of Alcohol	<p><i>“During the past 12 months, have you driven a vehicle while you were under the influence of alcohol?”</i></p> <p>[Response Options: Yes, No, “don’t know”]</p> <p>Outcome Reported: Percent reporting “Yes.”</p>	NSDUH	SP06b	Underage, Legal Age - 16 years or older	Program (Program NOMs Instrument)
Alcohol-Related Traffic Fatalities	<p>Measure calculation: The number of alcohol-related traffic fatalities divided by the total number of traffic fatalities and multiplied by 100.</p>	National Highway Traffic Safety Administration Fatality Analysis Reporting System		Not collected from individuals	State (NHTSA-FARS)
Alcohol and Drug-Related Arrests	<p>Measure calculation: The number of alcohol and drug-related arrests divided by the total number of arrests and multiplied by 100.</p>	Arrest data by state obtainable from the report Crime in the United States, issued annually by FBI’s Uniform Crime Reporting Program. Obtainable at http://www.fbi.gov/ucr/05cius/index.html		Not collected from individuals	State (UCR-FBI) Community (State and/or Local Law Enforcement Agencies)
Social Support/Social Connectedness					
Family Communication Around Drug Use	<p><i>“During the past 12 months, how many times have you talked with your child about the dangers or problems associated with the use of tobacco, alcohol, or other drugs?”*</i></p> <p>[Response options: 0 times, 1 to 2 times, A few times, Many times]</p> <p>Outcome Reported: Percent of parents reporting that they have</p>	NSDUH	PE03	Adult	State (NSDUH), Community (Community Survey), Program (Program NOMs)

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
	<p>talked to their child at least once.</p> <p><i>“Now think about the past 12 months, that is, from [DATEFILL] through today. During the past 12 months, have you talked with at least one of your parents about the dangers of tobacco, alcohol, or drug use? By parents, we mean either your biological parents, adoptive parents, stepparents, or adult guardians, whether or not they live with you.”</i> [Response options: Yes, No]</p> <p>Outcome Reported: Percent reporting having talked with a parent.</p>	NSDUH	YE08	Youth	Instrument) State (NSDUH), Community (Community Survey), Program (Program NOMs Instrument)
Access/Service Capacity					

Measure	Source Item and Measure Calculation				Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
Number of Persons Served by Age, Gender, Race, Ethnicity	Age 0-4 5-11 12-14 15-17 18-20 21-24 25-44 45-64 65+ Total	Race <ul style="list-style-type: none"> • Am. Indian / AK Native • Asian • Black / African American • Native Hawaiian / Other Pacific Islander • White • More than one race • Unknown • Other • Total 	Ethnicity <ul style="list-style-type: none"> • Not Hispanic / Latino • Hispanic / Latino • Total 	Gender <ul style="list-style-type: none"> • Female • Male • Total 	MDS, Prevention Database Builder, Program Outcome Data		Not collected from individuals	State (MDS, Prevention Database Builder), Program (Program Outcome Data)

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
Retention					
Percentage of Youth Seeing (Reading, Watching, Listening) a Prevention Message	<p><i>During the past 12 months, do you recall [hearing, reading, or watching an advertisement about the prevention of substance use]**?”</i></p> <p>[Response options: Yes, No, “don’t know”]</p> <p>Outcome Reported: Percent reporting having been exposed to prevention message.</p>	NSDUH		Multiple Items Youth	<p>State (NSDUH),</p> <p>Community (Community Survey),</p> <p>Program (Program NOMs Instrument)</p>

† The question was asked about each tobacco product separately and the youngest age at first use was taken as the measure.

‡ The question was asked about each drug in this category separately and the youngest age at first use was taken as the measure.

*NSDUH does not ask this question of all sampled parents. It is a validation question posed to parents of 12-year-old through 17-year-old survey respondents. Therefore, the responses are not representative of the population of parents in a state. The sample sizes are often too small for valid reporting.

** This is a summary of four separate NSDUH questions each asking about a specific type of prevention message delivered within a specific context.

Appendix D: References

- Alati, R., Najman, J. M., Kinner, S. A., Williams, G. M., O'Callaghan, M., & Bor, W. (2005). Early predictors of adult drinking: a birth cohort study. *American Journal of Epidemiology*, *162*(11), 1098-1107.
- Arthur, M. W., Hawkins, D. J., Pollard, J. A., Catalano, R. F., & Baglioni, A. J., Jr. (2002). Measuring risk and protective factors for use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, *26*(2), 575-601.
- Atkinson R. M. (1990). Aging and alcohol use disorders: diagnostic issues in the elderly. *International Psychogeriatrics*, *2*(1), 55-72.
- Beyers, J. M., Toumbourou, J. W., Catalano, R. F., Arthur, M. W., & Hawkins, J. D. A cross-national comparison of risk and protective factors for adolescent substance use: The United States and Australia. *Journal of Adolescent Health*, *35*(1), 3-16.
- Bouchery, E. E., Harwood, H. J., Sacks, J. J., Simon, C. J., & Brewer, R. D. (2011). Economic costs of excessive alcohol consumption in the U.S., 2006. *American Journal of Preventive Health*, *41*(5), 516 – 524.
- Brook, J.S., Whiteman, M., Gordon A.S., Nomura, C., & Briik, D. W. (1986). Onset of adolescent drinking: A longitudinal study of intrapersonal and interpersonal antecedents. *Advance in Alcohol & Substance Abuse*, *5*(3), 91–110
- Center for Disease Control and Prevention (CDC), (2014). Excessive Drinking Costs U.S. \$223.5 Billion. Retrieved from <http://www.cdc.gov/features/alcoholconsumption/>
- Cleveland, M.J., Feinberg, M.E., & Greenberg M.T. (2010). Protective families in high- and low-risk environments: Implications for adolescent substance use. *Journal of Youth and Adolescence*, *39*(2), 114–126
- DiNardo, J., & Lemieux, T. (1992). Alcohol, marijuana, and American youth: The unintended effects of government regulation. *National Bureau of Economic Research*, *20*(6), 991-1010.
- DrunkDrivingLaws.org. (n.d.). Hawai'i drunk driving laws. Retrieved from <http://www.drunkdrivinglaws.org/hawaiidrunkdrivinglaws.html>
- Ellickson, P. L., & Hays, R. D. (1992). On becoming involved with drugs: Modeling adolescent drug use over time. *Health Psychology* *11*(6), 377-385.
- Ewing, B. A, Osilla, K. C., Pedersen, E. R., Hunter, S. B., Miles, J. N.V., & D'Amico, E. J. (2015). Longitudinal family effects on substance use among an at-risk adolescent sample. *Addictive Behaviors* *41*, 185-191
- Fleury, M.J., Grenier, G., Bamvita, J.M., Perreault, M., & Caron, J. (2014). Predictors of alcohol and drug dependence. *Canadian Journal of Psychiatry*, *59*(4), 203-212.
- Guo, J., Hawkins, J. D., Hill, K. G., & Abbott, R. D. (2001). Childhood and adolescent predictors of alcohol abuse and dependence in young adulthood. *Journal of Studies on Alcohol*, *62*(6), 754–762.

- Hawai'i Health Data Warehouse (HHDW). (2014). *Alcohol Consumption in Hawaii, by School Type, State, Gender, Grade Level, and DOH Race-Ethnicity,* for the Years 2003 – 2013*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20YRBSS/YRBS_Substance%20Abuse_IND_00001.pdf
- Hawai'i Health Data Warehouse (HHDW). (2014). *Binge Drinking in Hawaii, by School Type, State, Gender, Grade Level, and DOH Race-Ethnicity,* for the Years 2001 – 2013*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20YRBSS/YRBS_Substance%20Abuse_IND_00001b.pdf
- Hawai'i Health Data Warehouse (HHDW). (2014). *Usual Source of Alcohol for High School Students in Hawaii, by School Type, Indicator, State, Gender, Grade Level, and DOH Race-Ethnicity,* for the Years 2007 – 2013*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20YRBSS/YRBS_Substance%20Abuse_IND_00008.pdf
- Hawai'i Health Data Warehouse (HHDW). (2012). *Alcohol - current drinker (Adult) by State, County, Island, Community, Adult Age Group, DOH Race-Ethnicity, Gender, Education Level, Employment Status (Grouped), Household Income, Poverty Level, Marital Status (Grouped), Married, Health Care Coverage, for the Year(s) - 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20BRFSS/Alcohol/BRFSS_Alcohol_Consumption_IND_00007.pdf
- Hawai'i Health Data Warehouse (HHDW). (2011). *Alcohol - binge drinking (2006+) by State, County, Island, Community, BRFSS Age Group, DOH Race-Ethnicity, Gender, Education Level, Employment Status (Grouped), Household Income, Poverty Level, Marital Status (Grouped), Married, Health Care Coverage, for the Year(s) - 2006, 2007, 2008, 2009, 2010*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20BRFSS/Alcohol/BRFSS_Alcohol_Consumption_IND_00002a.pdf
- Hawai'i Health Data Warehouse (HHDW). (2015). *Alcohol - current drinker (Adult), by State, County, Island, Community, BRFSS Age Group, DOH Race-Ethnicity, Gender, Education Level, Employment Status (Grouped), Household Income, Poverty Level, Marital Status (Grouped), Married, Health Care Coverage, for the Year(s) - 2011, 2012, 2013*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20BRFSS/Alcohol/BRFSS_Alcohol_Consumption_IND_00007_2011.pdf
- Hawai'i Health Data Warehouse (HHDW). (2015). *Alcohol - binge drinking (2011+), by State, County, Island, Community, BRFSS Age Group, DOH Race-Ethnicity, Gender, Education Level, Employment Status (Grouped), Household Income, Poverty Level, Marital Status (Grouped), Married, Health Care Coverage, for the Year(s) - 2011, 2012, 2013*. Retrieved from http://www.hhdw.org/cms/uploads/Data%20Source_%20BRFSS/Alcohol/BRFSS_Alcohol_Consumption_IND_00002a_2011.pdf
- Institute of Medicine of the National Academics. (2012) *The mental health and substance use workforce for older adults: in whose hands?* Washington, DC: The National Academies Press.

- King, K. M., & Chassin, L. (2007). A prospective study of the effects of age of initiation of alcohol and drug use on young adult substance dependence. *Journal of Studies on Alcohol and Drugs*, 68(2), 256-265.
- Kuntsche, E.N., & Kuendig, H. (2006). What is worse? A hierarchy of family-related risk factors predicting alcohol use in adolescence. *Substance Use & Misuse*, 41(1), 71–86
- Lac, A., Alvaro, E.M., Crano W.D., & Siegel J.T. (2009). Pathways from parental knowledge and warmth to adolescent marijuana use: An extension to the theory of planned behavior. *Prevention Science*, 10 (1), 22–32
- Latendresse, S.J., Rose, R.J., Viken, R.J., Pulkkinen, L., Kaprio, J., & Dick, D.M.. (2008). Parenting mechanisms in links between parents' and adolescents' alcohol use behaviors. *Alcoholism: Clinical and Experimental Research*, 32 (2), 322–330
- Mason, W. A., & Windle, M. (2001). Family, religious, school and peer influences on adolescent alcohol use: a longitudinal study. *Journal of Studies on Alcohol*, 62(1), 44–53.
- Moos, R. H., Brennan, P. L. & Moos, B. S. (1991). Short-term processes of remission and nonremission among late-life problem drinkers. *Alcoholism: Clinical and Experimental Research* 15(6), 948-955.
- O'Connell, M. E., Boat, T., & Warner, K. E. (2009). *Washington preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC: National Academies Press.
- National Center for Statistics and Analysis's (NCSA) Information Services Team. *Fatalities in Motor Vehicle Traffic Crashes in Hawai'i by Year, Age and the Highest Driver BAC in the Crash Fatality Analysis Reporting System (FARS) 2007-2012 Final & 2013 ARF*.
- Nguyen, DH., & Salvail, F. R. (2013). *The Hawai'i Behavioral Risk Factor Surveillance System (BRFSS): 2013 Results*. Honolulu, HI: Hawai'i Department of Health.
- O'Connell, M. E., Boat, T., & Warner, K. E. (Eds.). (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. National Research Council and Institute of Medicine of the National Academies. Washington, D.C.: The National Academies Press.
- Oslin, D. W., Schonfeld, L., Wilford, B. B., & MacArthur, L. C. (2006). *Improving chronic disease outcomes for older adults: The link to substance use*. Silver Spring, MD: JBS International, Inc.
- Pacific Institute for Research and Evaluation. (2013). Underage drinking in Hawai'i: The facts. Retrieved from <http://www.udetc.org/factsheets/HI.pdf>
- Pearson, R. S. (2004). The 2003 Hawai'i student alcohol, tobacco, and other drug use study (1987-2003); Hawai'i adolescent prevention and treatment needs assessment. Honolulu: Hawai'i Department of Health, Alcohol and Drug Abuse Division.
- Perreira, K. M., & Sloan, F. A. (2001). Life events and alcohol consumption among mature adults: A longitudinal analysis. *Journal of Alcohol Studies* 62(4), 501-508.
- Rhodes, J. E., & Jason, L. A. (1990). A social stress model of substance abuse. *Journal of Consulting and Clinical Psychology*, 58(4), 395-401.

- Sacks, J. J., Roeber, J., Bouchery, E. E., Gonzales, K., Chaloupka, F. J., & Brewer, R. D. (2013). State costs of excessive alcohol consumption, 2006. *American Journal of Preventive Medicine*, 45(4), 474-485.
- Schinke, S.P., Fang, L., & Cole, K.C. (2009). Preventing substance use among adolescent girls: 1-year outcomes of a computerized, mother–daughter program. *Addictive Behaviors*, 34(12), 1060–1064
- Schutte, K. K., Brennan, P. L., & Moos, R. H. (1994). Remission of late-life drinking problems: A 4-year follow-up. *Alcoholism: Clinical and Experimental Research* 18(4), 835-844.
- Substance Abuse and Mental Health Services Administration (SAMHSA). *National Survey on Drug Use and Health (NSDUH): 2-Year R-DAS (2002 to 2003, 2004 to 2005, 2006 to 2007, 2008 to 2009, 2010 to 2011, and 2012 to 2013)*. Retrieved from <http://www.icpsr.umich.edu/icpsrweb/SAMHDA/studies/34482/datasets/1/sda>
- Substance Abuse and Mental Health Services Administration (SAMHSA). (2014). *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings* (NSDUH Series H-48, HHS Publication No. SMA 14-4863). Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved from <http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf>
- Substance Abuse and Mental Health Services Administration (SAMHSA) Center for the Application of Prevention Technologies (CAPT). (n. d.). Information sheet 5: Developmental competencies and associated risk & protective factors by context [Fact sheet]. Retrieved from http://captus.samhsa.gov/sites/default/files/capt_resource/capt_behavioral_health_fact_sheets_20122.pdf_-_adobe_acrobat_pro.pdf
- Tam, T.W., Weisner, C., & Mertens, J. (2000). Demographic characteristics, life context, and patterns of substance use among alcohol-dependent treatment clients in a health maintenance organization. *Alcoholism: Clinical and Experimental Research*, 24(12), 1803-1810.
- U. S. Census Bureau. (2013). *State & County QuickFacts: Hawaii*. Retrieved June 25, 2015, from <http://quickfacts.census.gov/qfd/states/15000.html>
- U. S. Census Bureau. (2013). *State & County QuickFacts: Hawai‘i County, Hawaii*. Retrieved June 25, 2015 from <http://quickfacts.census.gov/qfd/states/15/15001.html>
- U. S. Census Bureau. (2013). *State & County QuickFacts: Honolulu County, Hawaii*. Retrieved June 25, 2015 from <http://quickfacts.census.gov/qfd/states/15/15003.html>
- U. S. Census Bureau. (2013). *State & County QuickFacts: Kalawao County, Hawaii*. Retrieved June 25, 2015 from <http://quickfacts.census.gov/qfd/states/15/15005.html>
- U. S. Census Bureau. (2013). *State & County QuickFacts: Kaua‘i County, Hawaii*. Retrieved June 25, 2015 from <http://quickfacts.census.gov/qfd/states/15/15007.html>
- U. S. Census Bureau. (2013). *State & County QuickFacts: Maui County, Hawaii*. Retrieved June 25, 2015 from <http://quickfacts.census.gov/qfd/states/15/15009.html>

* Race-ethnicity data from 2011 forward may not be comparable to data from previous years

Appendix E: List of SEOW Members

As of April 2015 (listed by organization)

SEOW Members	
Name	Organization
Meredith Hersh	Drug Enforcement Administration
Dixie Thompson	Hawai'i Department of Health, Alcohol and Drug Abuse Division
Ebru Yilmaz-Pedro	Hawai'i Department of Health, Alcohol and Drug Abuse Division
Wendy Nihoa	Hawai'i Department of Health, Alcohol and Drug Abuse Division
Scott Keir	Hawai'i Department of Health, Child and Adolescent Mental Health Division
Ranjani Starr	Hawai'i Department of Health, Communicable Disease and Public Health Nursing Division
Tonya Lowery St. John	Hawai'i Department of Health, Epidemiology and Evaluation Office
Dan Galanis	Hawai'i Department of Health, Injury Prevention and Control Section
Therese Argoud	Hawai'i Department of Health, Injury Prevention and Control Section, Poisoning Prevention
Florentina (Tina) Salvail	Hawai'i Department of Health, Office of Health Status Monitoring
Kathleen Baker	Hawai'i Department of Health, Office of Health Status Monitoring
Julia Chosy	Hawai'i Health Data Warehouse (HHDW)
Gary Yabuta	Hawai'i High Intensity Drug Trafficking Areas (HIDTA)
Cynthia Okazaki	Parents And Children Together
Sachin Ruikar	University of Hawai'i, Center on the Family
Sarah Yuan	University of Hawai'i, Center on the Family
Eileen Sabino	University of Hawai'i, Center on the Family
Deborah Goebert	University of Hawai'i, Department of Psychiatry
Jane Onoye	University of Hawai'i, Department of Psychiatry
Susana Helm	University of Hawai'i, Department of Psychiatry
Rebecca Williams	University of Hawai'i, Department of Public Health Sciences
Claudio Nigg	University of Hawai'i, Department of Public Health Sciences
Minami Konishi	University of Hawai'i, Department of Public Health Sciences
Zoe Durand	University of Hawai'i, Department of Public Health Sciences
Angelie Cook	University of Hawai'i, Department of Public Health Sciences
Stephanie Nishimura	University of Hawai'i, John A. Burns School of Medicine