


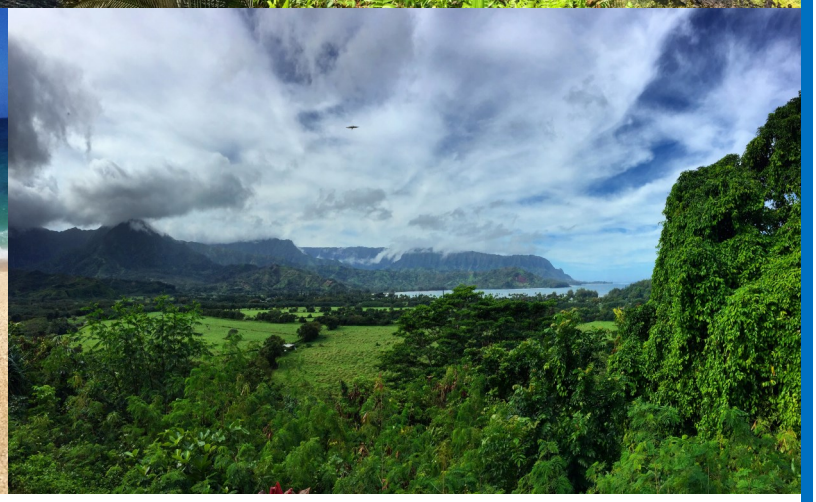

2017 Hawai'i State Epidemiological Outcomes Workgroup

STATE EPIDEMIOLOGICAL PROFILE 2011—2015

Selected Youth and Adult Alcohol Indicators

Claudio R. Nigg, Ph.D.
Allison Wagner, M.A.
Codie M. Garza, M.S.
Danilyn Goya, M.P.H.

Office of Public Health Studies
University of Hawai'i at Mānoa
1960 East-West Road, Biomed #C105A
Honolulu, HI 96822

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ABSTRACT

Background: The *Hawai'i County 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) Center for Substance Abuse Prevention (CSAP). The purpose of this profile is to identify current usage rates in Hawai'i, understand overall trends with respect to youth and adult alcohol use in Hawai'i, and provide information in a user-friendly format for planning and implementation of alcohol use prevention and treatment programs in Hawai'i.

Methods: The drug-related indicators in this profile were selected based on SAMHSA's National Outcome Measures (NOMs). Hawai'i Youth Risk Behavior Survey (Hawai'i YRBS), the National Survey on Drug Use and Health (NSDUH), the Behavioral Risk Factor Surveillance System (BRFSS), Uniform Crime Reporting (UCR) data, Fatality Analysis Reporting System (FARS) data, and the Pregnancy Risk Assessment Monitoring System (PRAMS) were the primary data sources in this profile.

Results and Findings: Youth alcohol use remained largely stable between 2011 and 2015. Rates of lifetime alcohol use decreased between these four years, but current use, current binge drinking, and early alcohol use showed no changes in overall youth endorsement. There were no sex differences across indicators. There was a general pattern of increased use during the progression through high school, such that 12th graders consistently reported significantly higher percentages of youth endorsing use than did 9th graders. Additionally, Native Hawaiian and Caucasian students reported the highest rates of use across the majority of indicators

Adult use in Hawai'i also remained stable overall, though current use and binge drinking evidenced a slight U-shape such that the rates decreased from 2011 to 2013 and then increased in 2014. Men consistently reported significantly higher usage rates than women, and Caucasian, Native Hawaiian, and Black adults had higher rates of endorsing use on at least one of the two indicators reporting ethnicity. The vast majority of adults reported that they had not driven after drinking too much in the past 30-days, and there was a decrease in the percentage of alcohol-related traffic fatalities (BAC≥0.08%) between 2011 (40%) and 2015 (27%). Finally, rates of binge drinking before pregnancy decreased between 2011 (24%) and 2014 (16.6%), while rates of alcohol consumption during the last three months of pregnancy remained stable across the years sampled.

Program Recommendations: Given the research substantiating early alcohol use and binge drinking as particularly risky behaviors and predictors of later problematic alcohol use, evidence-based prevention practices should be optimized to target these indicators. Additionally, the overall pattern of increased use during the progression through high school should inform age-specific prevention and intervention efforts. Among adults, additional research should attempt to understand how to incorporate differences based on sex and age (i.e., ages 18-25, ages 26+) into prevention and intervention efforts.

Data Recommendations: Data should continue to be collected consistently to allow for better cross-year comparison. Additionally, new efforts should be devoted to collect data specifically for college students in Hawai'i, given the findings about young adults. Finally, it is important to collect data from a larger sample size to decrease margins of error.

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.

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 grant. Hawai‘i SPF-PFS is designed to address one of the nation’s top substance abuse prevention priorities: underage drinking among persons aged 12 to 20 years old. 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 2011 to most current year

- Ever consumed alcohol
- 30 day alcohol use
- 30 day binge drinking rate
- Age at first use
- Perceived risk/harm of consuming alcoholic beverages
- Alcohol-involved traffic fatalities

[*1] Data from Hawai‘i YRBS
[*2] Data from NSDUH

Adults (18 years or older) trends from 2011 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
- Alcohol-related arrests
- Alcohol-involved traffic fatalities
- Alcohol use 3 months before pregnancy
- Alcohol use during the last 3 months of pregnancy
- Binge drinking during the last 3 months of pregnancy

Note that previous reports also included youth data reflecting disapproval of alcohol use, driving while under the influence of alcohol, family communication around substance use, and percentage of youth seeing a prevention message. These measures could not be included in the current report as they are not currently available at the state-level. For a summary of this information for the years 2007-2008, 2008-2009, and 2010-2011, see: Hawai‘i State Epidemiological Outcomes Workgroup (2014). State Epidemiological Profiles: Selected Youth and Adult Indicators. Honolulu, HI: Nigg, Konishi, Durand, & Cook.

SPF Program Model

The purpose of Hawai‘i’s SPF-PFS Project is to improve the quality of life for residents of Hawai‘i by continuing to implement the five steps of SAMHSA’s SPF process. A goal of the SPF process aims to 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 alcohol use 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 working with the ADAD of HIDOH 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 HIDOH, 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 2016 US Census, this population is composed of the following race/ethnicities: 25.8% Caucasian alone[(a)]; 2.2% Black or African American alone[(a)]; 0.4% American Indian and Alaska Native alone[(a)]; 37.7% Asian alone[(a)]; 10.2% Native Hawaiian and Other Pacific Islander alone[(a)]; 23.7% two or more races; 10.4% Hispanic or Latino[(b)]; and 22.1% Caucasian alone but not Hispanic or Latino[(b)]. Percentages total more 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	Hawai‘i Island
Honolulu	O‘ahu
Kalawao	Kalaupapa Peninsula of Moloka‘i
Kaua‘i	Kaua‘i, Ni‘ihau
Maui	Maui, Lāna‘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 992,605 persons as of 2016, whereas the Kalawao County is a smallest with 88 persons. The percentage of persons below poverty level in the State of Hawai‘i was 10.6% (five year estimate of 2010 – 2015) – with Hawai‘i County having the highest rate of 18.3% (five year estimate of 2010 – 2015). Additional individual county information is located in Table 2.

Table 2. State of Hawai‘i social and economic characteristics by county in 2016.

County	Population (estimate, 2016)	Persons below poverty level (%, 2010-2015)[*1]	Native Hawaiian and Pacific Islander alone[*2] population (%, 2016)
Hawai‘i Island	198,449	18.3%	13.0%
Honolulu	992,605	9.2%	9.5%
Kalawao	88	N/A	50%
Kaua‘i	72,029	11.2%	9.1%
Maui	165,386	10.7%	11.0%
Overall (State of Hawai‘i)	1,428,557	10.6%	10.2%

Source: U.S. Census Bureau

[*1] Five-year estimates are “period” (not “point-in-time”) estimates that represent data collected over 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[1]

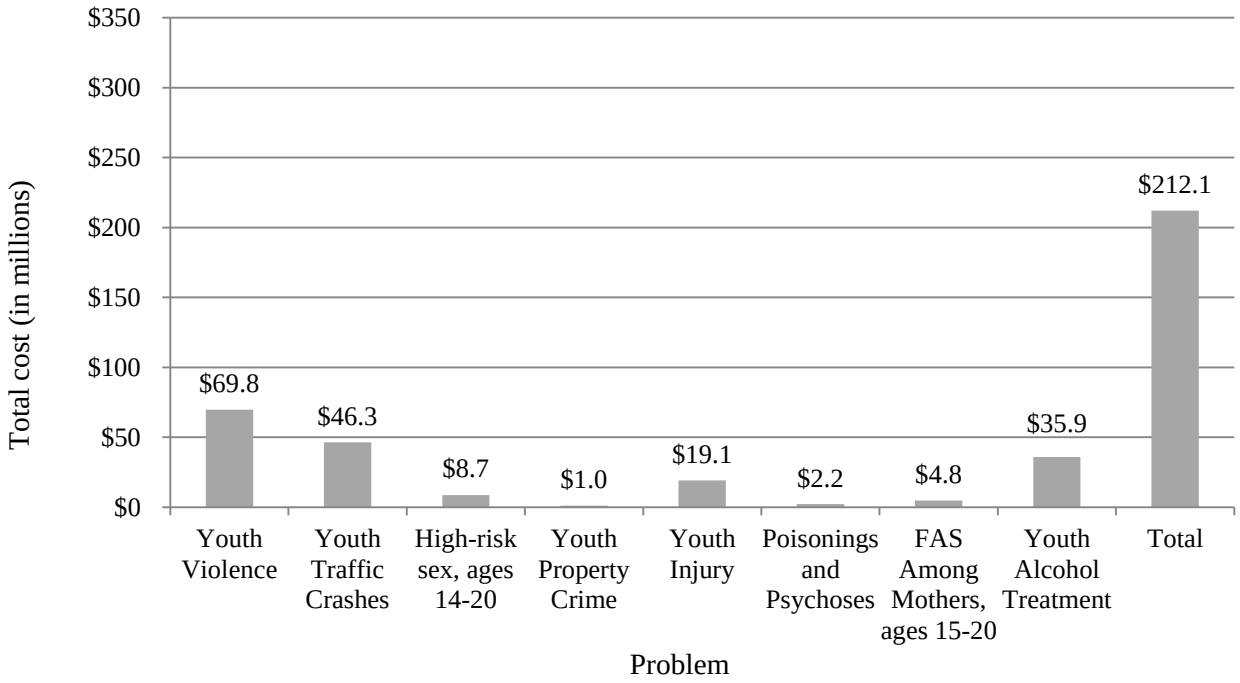
Underage drinking is a causal factor related to numerous problems, including homicide, traumatic injury, fetal alcohol syndrome, alcohol poisoning, and crime. The Pacific Institute for Research and Evaluation (PIRE) estimated costs associated with underage drinking in Hawai‘i totaled to $200 million in 2013. This included costs associated with medical care, work loss, and pain/suffering associated with the problems induced from youth alcohol use, amounting 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 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.

As seen in Figure B, youth violence (homicide, suicide, and aggravated assault) and youth traffic crashes cost the state the most.

[1] Note that this information is from the most recent report available with state-level data focusing on costs of underage drinking. This information was previously included in the report: Hawai‘i State Epidemiological Outcomes Workgroup. (2014). *State Epidemiological Profiles: Selected Youth and Adult Indicators*. Honolulu, HI: Nigg, Konishi, Durand, & Cook.

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 Excessive Alcohol Consumption in the State of Hawai‘i

Excessive alcohol consumption by 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 have risen to $249 billion in 2010 (Sacks et al., 2015). Excessive alcohol consumption is defined as binge drinking (four or more drinks on a single occasion for women, five or more for men), heavy drinking (eight drinks per week for women and 15 or more drinks per week for men), any underage alcohol consumption, and any alcohol consumption by pregnant women (Sacks et al., 2015).

In 2010 in Hawai‘i, the total cost of excessive alcohol consumption was approximately $937.4 million. This translates to $689 per capita or $1.52 per drink (Sacks et al., 2015). This figure has risen by more than $100 million since 2006 (Sacks et al., 2013). The federal and state government in Hawai‘i bore approximately 39% of that burden ($369.2 million) to cover alcohol-related expenses, such as treatment costs (Sacks et al., 2015). Binge drinking represents 74.9% of this cost at $702 million. Hawai‘i’s per-capita cost ($689) and cost per drink ($1.52) are below the national cost of $807 and $2.05, respectively.

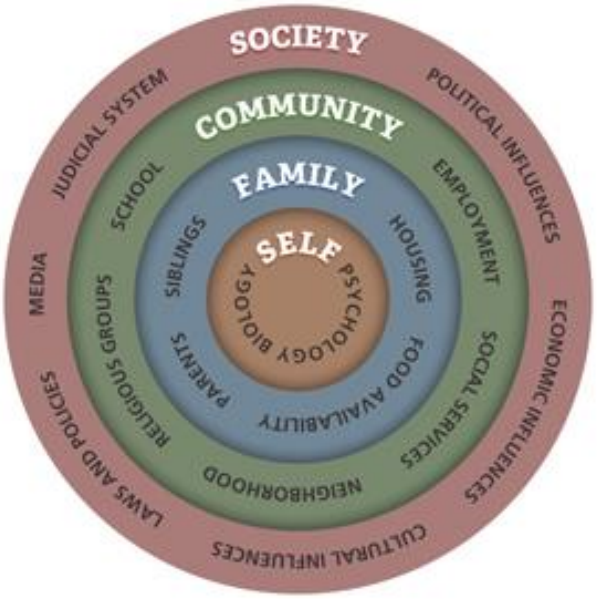
Such excessive alcohol consumption causes greater healthcare costs, increased crime and associated criminal justice costs, and a loss of productivity through absenteeism, reduced performance when working, and reduced earnings potential (Sacks et al., 2013). Estimates of the healthcare cost of excessive alcohol consumption in Hawai‘i were $73.3 million in 2006, while productivity bore the brunt of the burden at $600.7 million, or 73.1% of the total cost in the state (Sacks et al, 2013).

Risk and Protective Factors for Substance Use Prevention

Given the high social, community-level, and personal cost associated with excessive alcohol consumption, research efforts have focused on identifying factors that can be targeted in prevention and treatment to reduce the frequency of such use. These factors can be broadly classified as those that increase the likelihood of using substances, or risk factors, and those that decrease this likelihood, or protective factors.

The organization of these factors is often understood through models that integrate multiple ecological levels (Cleveland et al., 2008). Figure C shows these levels as a social ecological model: individual or self, family, school/workplace or community, and society. These risk and protective factors can also be classified into fixed and variable factors (Stone, Becker, Huber, & Catalano, 2012). Static life events or demographics (e.g., biological indicators) are considered fixed, while variable factors are changeable (e.g., attitudes). Examination of both, along with their interaction, should be used to guide both prevention and intervention practices.

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



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

Youth

Individual factors, such as self-esteem, perceived risk, self-efficacy, and coping skills, all relate to youth alcohol use (Handren, Donaldson, & Crano, 2016; Schwinn, Schinke, Hopkins, & Thom, 2016). Those youth with higher self-esteem, greater perceptions of ability to succeed, stronger adaptive coping skills, and higher perceptions of risk from alcohol use are less likely to use alcohol. Further, any alcohol use is predictive of heavy episodic alcohol use in youth (Handren et al., 2016).

Peers' alcohol use and normative beliefs are robust predictors of youth alcohol use (Handren et al., 2016; Nargiso, Friend, & Florin, 2013). Parental involvement, including helping with homework, monitoring, warmth, and family bonding, can serve as a protective factor, while lack of such involvement is considered a risk factor (Handren et al., 2016; Mason, Hawkins, Kosterman, & Catalano, 2010). Multiple

dimensions of religious involvement, including religious importance and attending services, have also been identified as associated with less regular and heavy alcohol use (Haber et al., 2012).

Recent research has also focused on understanding how these factors' significance may change when considering different groups, as well as how risk and protective factors relate to each other. For instance, parental involvement appears to be most strongly influential for self-esteem and peer group influence in younger adolescents, highlighting early adolescence as a time when parental intervention may have more substantial impact (Handren et al., 2016). Further, social motives appear to become more important to young men in late adolescence (Kuntsche, Knibbe, Gmel, & Engels, 2006).

Table 3 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 and perceived risk of alcohol use (pages 27 and 29, respectively).

Table 3. Risk and protective factors for substance use among youth

Domain	Risk Factors	Protective Factors
Peer and Individual	• Any alcohol use • Early onset of risky behaviors • 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 • Low inhibitory control • Gang membership • Internalizing disorders • High stress • Low self-esteem • High neuroticism	• Peer disapproval of substance use • High perceived risk of substance use • Belief in the moral order • Education aspirations • Religiosity • Spirituality • Social or refusal skills • Use of health care services for mental health • High self-esteem • Ethnic identity
Family	• 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 • Family conflict	• Family attachment/bonding • Family opportunities for positive involvement • Family rewards for positive involvement • Balance of autonomy and relatedness to family • Behavioral and emotional autonomy • Parental support

School/Work	• Low school/work commitment • Poor academic/work performance • Attending college	• School/work opportunities for positive involvement • School rewards for positive involvement • Attending/completing college
Community	• 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	• Community opportunities for positive involvement • Community rewards for positive involvement • Connectedness to adults outside of family

Sources: Beyers et al., (2004); Britancourt et al., (2016); Cleveland et al. (2008); Debnam et al., (2016); Fleury et al. (2014); Fisher et al., (2015); Guo et al., (2001); Mason & Windle (2001); Pearson (2004); Tam et al., (2000); Stone et al., (2012)

Adults

Similarly to general substance use, young adulthood (ages 18 – 26) often includes a peak of alcohol use and misuse (Abadi et al., 2011). This has resulted in research focused on this developmental time and on understanding the differences between alcohol consumption in youth and young adults. For instance, perceived risk and number of friends using alcohol remained important predictors of alcohol consumption in young adults, however, the number of friends using alcohol was more influential on binge drinking in young adults than it was for youth (Abadi et al., 2011). Additionally, adolescents who show high levels of sensation seeking, adventure seeking, experience seeking, disinhibition, and boredom susceptibility tend to have higher rates of drinking in young adulthood (Ayer et al., 2011).

Unique to young adulthood is the navigation of a new social context with increased freedom and decreased social control (Stone et al., 2012). Moving out of the parental home and attending college may increase the risk for substance and alcohol use, while employment, marriage, cohabitation, and graduation from college protect against overuse (Stone et al., 2012). Further, the Overload Model suggests that young adults transitioning to college may experience multiple development changes that overwhelm their coping capacities, which then results in increased health risk behaviors (Schulenberg & Maggs, 2002), such as heavy drinking.

Across adulthood, the presence of mental health conditions, particularly anxiety and behavioral disorders, was associated with the transition to dependence, as opposed to onset of use or abuse (Swendsen et al., 2010). Research has also pointed toward the role of self-medication and coping in the link between mental health conditions and substance use (Mauro et al., 2015; Oslin et al., 2006), highlighting the potential for treatment of the mental health condition to serve as prevention against the transition to alcohol dependence.

Though the majority of research has continued to focus on young adults, recent recognition of the potential impact of older adult misuse of alcohol has resulted in multiple studies attempting to understand motives associated with older adult alcohol use. Retirement in particular has been posited as a transition period requiring more research to understand its influence on alcohol consumption. Theoretically, it may decrease alcohol consumption if one is cut off from social networks that encourage drinking, but it may also increase consumption due to greater leisure time and lesser demands for workplace functioning

(Kuerbis & Sacco, 2012). Further, the stress and coping perspective would suggest that retirement may be seen as a stressful time due to reduced income, loss of work identity, and a smaller social network, and that those with limited coping mechanisms may turn to alcohol to cope with this stress (Kuerbis & Sacco, 2012). Research on the actual impact of retirement on drinking has been mixed, and future research should attempt to determine factors that mediate the association between alcohol use and retirement, such as pre-retirement job satisfaction, involuntary retirement, and positive alcohol expectancies (Kuerbis & Sacco, 2012).

Risk and protective factors for adults are summarized in Table 4. In this profile, adult indicators related to risk and protective factors can be found in the section on perceived risk of harm of alcohol use in the adult section (page 34).

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

Domain	Risk Factors	Protective Factors
Peer and Individual	• 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	• 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	• 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	• Family attachment • Family opportunities for positive involvement • Family rewards for positive involvement • Balance of autonomy and relatedness to family • Behavioral and emotional autonomy

	• Presence or threat of physical, sexual, or emotional abuse • Family's favorable attitudes toward substance use	
Workplace	• Low school/work commitment • Poor academic/work performance • Attending college • Actual or perceived loss of status through retirement or job loss	• 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	• 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	• 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

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 U.S. rate), comparison between males and females, comparison among different grade levels, and comparison among different ethnic groups.

METHODS

Section Overview

Indicators were selected from SAMHSA's list of National Outcome Measures (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 United States (U.S.). These behaviors 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 HIDOH, 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 2015.

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 HIDOH and HHDW provides detailed reports for the state BRFSS data.

Limitations: The BRFSS is a self-report form, allowing for the possibility of under- or over-reporting. This may be particularly salient for the BRFSS because of the sensitive nature of the topics covered, including alcohol consumption and 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 years old). The most recent data available is 2015.

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 U.S. 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 data collected at the county level 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 annually. 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 years old). The most recent data available for national data are 2013.

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

Pregnancy Risk Assessment Monitoring System (PRAMS)

Description: PRAMS is a project sponsored by the CDC to collect state-specific, population-based data on maternal attitudes and experiences before, during, and after pregnancy. A questionnaire is mailed to approximately 200 new mothers per month on all islands of Hawai‘i. Questions were intended to address critical maternal and child health issues. Relevant to this report are their questions about use of alcohol before and during pregnancy.

Limitations: As is true of all self-report and survey methodology, accuracy is limited by the respondent's ability to correctly report their behaviors. This may be especially impacted in high-stigma topics such as alcohol use during pregnancy. Additionally, the absence of national level statistics and differences in methodology between states makes cross-state comparison difficult. The most recent data available is from 2014.

Uniform Crime Reporting (UCR)

Description: The UCR program is maintained by the Federal Bureau of Investigation (FBI) and its purpose is to have a reliable set of crime statistics for use in a variety of settings and functions. This data is meant to inform policies and staffing internally, as well as allow the American public to monitor yearly fluctuations in crime. The FBI provides local law enforcement agencies with standardized definitions for classifying offenses, and local law enforcement agencies then report these statistics to the FBI.

Limitations: Despite best efforts across local law enforcement agencies, some agencies cannot provide data for publication each year. Further, arrest data is only available at the national and agency levels, and not at the state level.

Website: https://ucr.fbi.gov/

Fatality Analysis Reporting System (FARS)

Description: FARS data is compiled and managed by the National Highway Traffic Safety Administration (NHTSA). It provides the American public and national agencies with yearly data regarding fatal injuries suffered in motor vehicle traffic crashes. To qualify for inclusion in FARS data, a crash must involve a motor vehicle traveling on a road typically open to the public and must result in the death of at least one person within 30 days of the crash. The data is provided to NHTSA directly from the state.

Limitations: FARS data reports overall percentage of fatalities at varying levels of blood alcohol content (BAC), as well as the percentage of untested cases. Results may be significantly skewed in samples with large percentages of untested or unknown BAC levels. Further, the definition used to determine inclusion in the FARS data set may exclude some cases with injuries resulting in death after 30 days following the crash.

Website: https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars

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/

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 the domain of reduced morbidity: abstinence from drug use/alcohol use.

How to Read Graphs

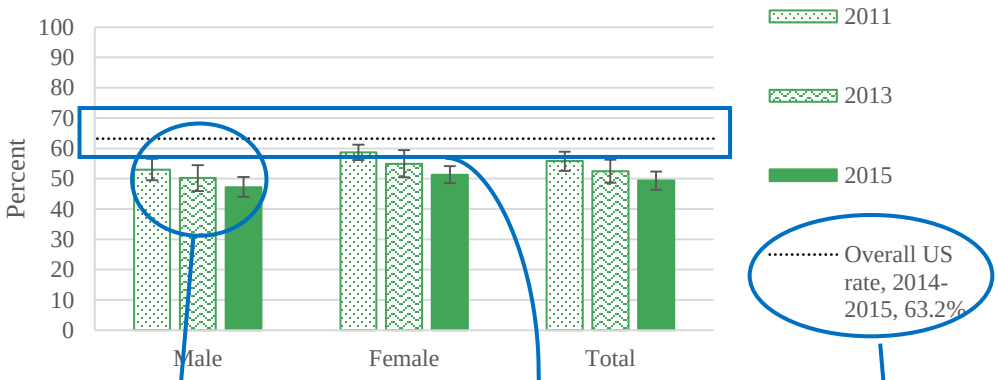
Data Assistance: Understanding a Graph

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 indicator represented in the graph. The age group represented in the graph is specified in parentheses.

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



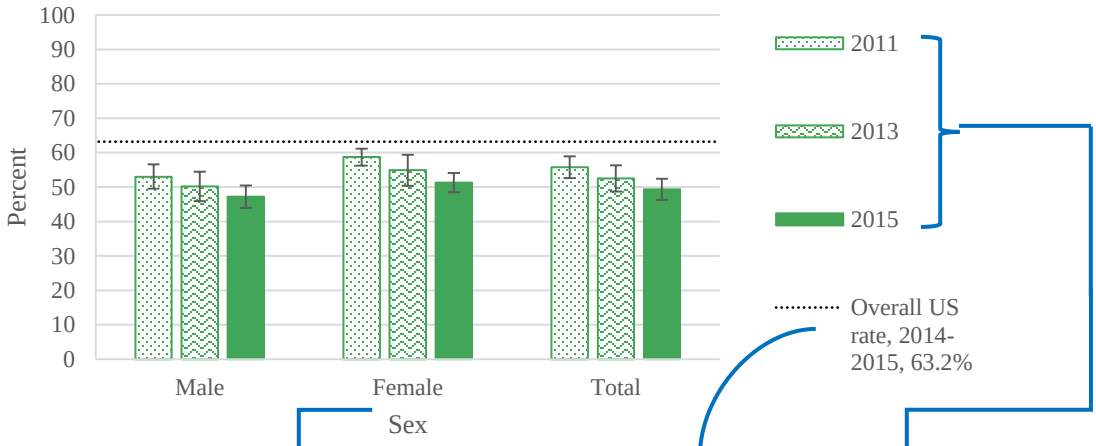
Whiskers indicate 95% confidence intervals of individual bars. The true values of the data have 95% probability of falling within the whiskers.

The dashed line shows the United States rate for the last year sampled in Hawai‘i.

How to Interpret Graphs

Step 1: Pick an indicator and age group.

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



Step 2: Pick a variable of interest.

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

Step 3: Determine US overall rate in 2015.

Ex: The Hawai‘i total in 2015 was lower than the overall US rate of 2015.

Step 4: Compare trends over time.

Ex: From 2011 to 2015, there was a significant decrease in the number of students endorsing ever having had alcohol.

Step 5: Put it all together.

Ex: There were no significant differences across years between males and females having ever consumed alcohol, but the total number of students having consumed alcohol decreased between 2011 and 2015 and remained below the national rate in 2015.

Step 6: Set goals

Ex: We recommend that the outcome of a 10-year goal for lowering alcohol 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[2]

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

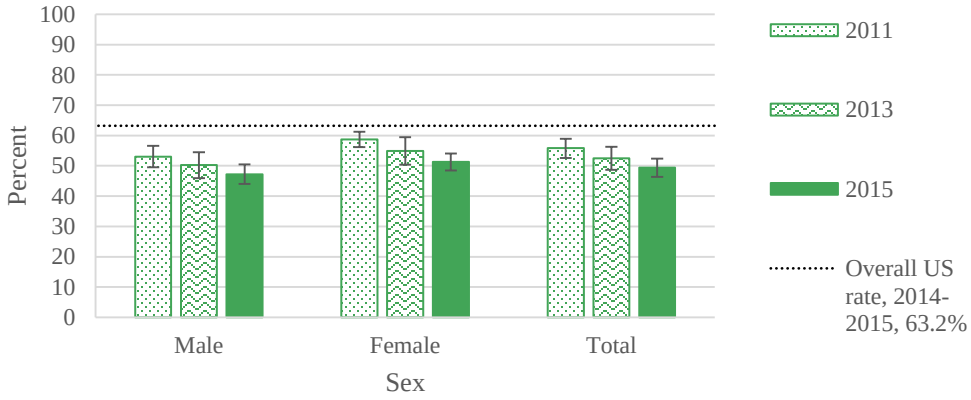
Figures 1, 2, and 3 show the percentage of high school students in Hawai‘i who have ever had at least one drink of alcohol on at least one day during their life, by sex, grade, and ethnicity.

The percentage of high school students in Hawai‘i who endorsed ever having consumed alcohol in 2015 (49.4%) was significantly less than the percentage reporting so in 2011 (55.8%; Figure 1). The prevalence in Hawai‘i was also consistently smaller than the 2015 national rate (63.2%, Figure 1). There were no significant sex differences within any of the years, nor were there differences between years when examining males and females separately (Figure 1).

Figure 2 indicates that the percentage of students in Hawai‘i who reported having ever consumed alcohol increased as students progressed through high school, such that the rate for 9th and 10th graders was significantly smaller than that for 12th graders across the years sampled (Figure 2). Additionally, the percentage of 9th graders endorsing use significantly decreased from 2011 (46.4%) to 2015 (32.1%).

There were no differences in use within ethnic groups across years. In 2015, there were significantly fewer Japanese (35.8%) and Other Asian (28.1%) students endorsing use when compared to Caucasian (53.3%), Native Hawaiian (59.4%), and Other (52.1%) students.

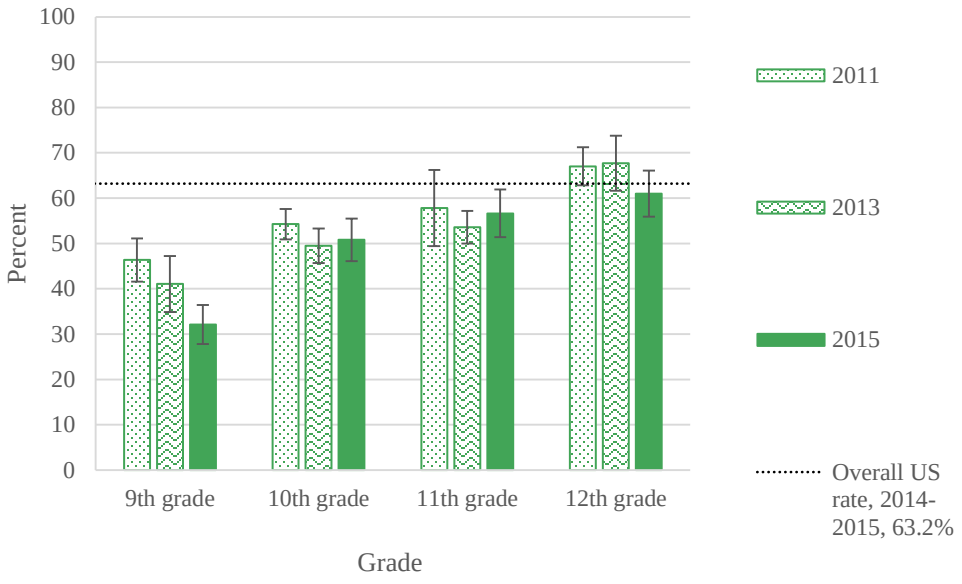
Figure 1. Ever had at least one drink of alcohol, by sex (high school students)



Source: HHDW 2011, 2013, and 2015

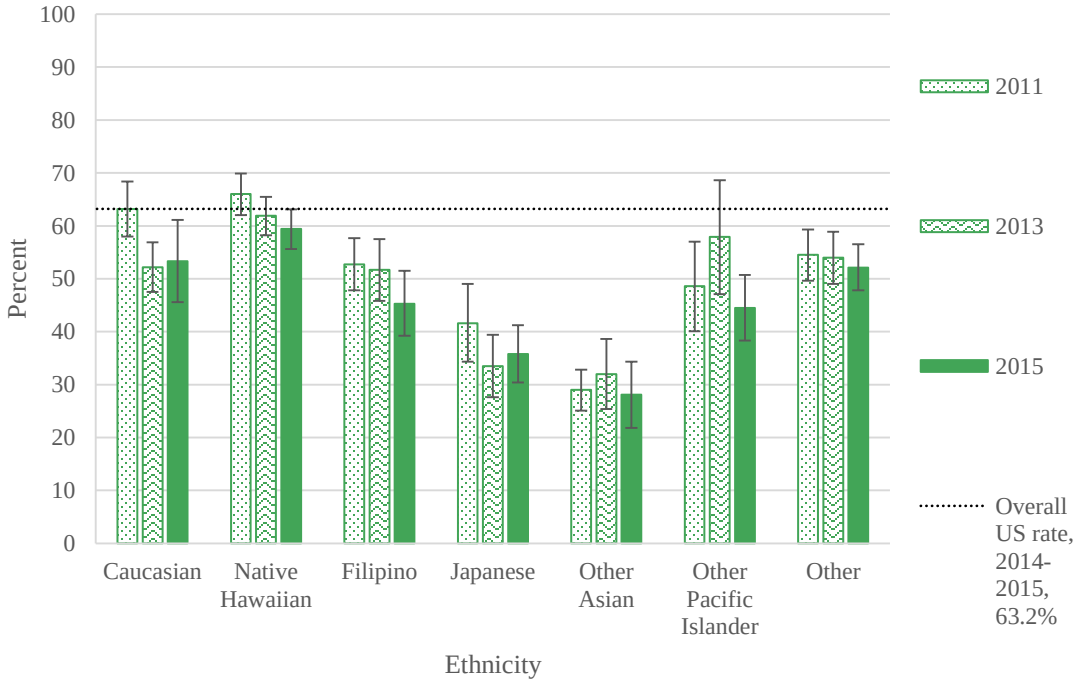
[2] Note that an additional YRBS indicator asks whether the respondent has ridden in a car drive by someone, including themselves, who was high or had been using alcohol or drugs during the past 30 days, thereby combining alcohol and drug use in one question. Consequently, data from this indicator can be found in the following report: Hawai‘i State Epidemiological Outcomes Workgroup. (2017). *State Epidemiological Profiles: Selected Youth and Adult Drug Indicators*. Honolulu, HI: Nigg, Wagner, Garza, & Goya.

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



Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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

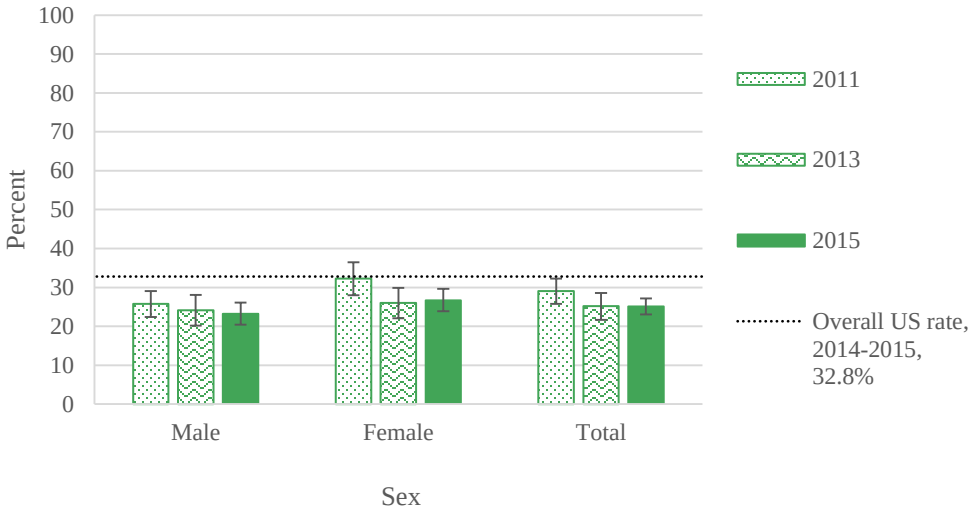
Current alcohol use is represented by endorsement of drinking within the 30 days prior to the survey. Figures 4, 5, and 6 display the percentages of high school students in Hawai‘i who reported drinking within the previous 30-days by sex, grade, and ethnicity.

There were no significant differences across years in the overall percentage of students consuming alcohol within the prior 30 days, nor were there differences between males and females for any year (Figure 4).

Similarly to lifetime use, current alcohol use differed across grade level such that rates for students in 12th grade were consistently greater than those for 9th and 10th graders (Figure 5).

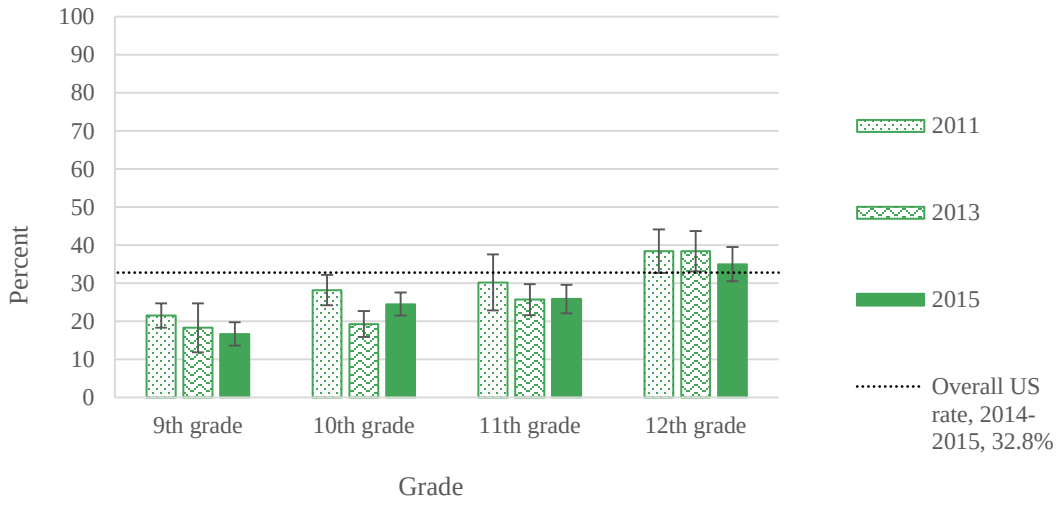
The percentage of Other Pacific Islander students reporting current use decreased significantly between 2011 (31.8%) and 2015 (14.7%; Figure 6). Further, in 2015, a smaller percentage of Other Asian (10.1%) and Other Pacific Islander (14.7%) students endorsed current use when compared to Caucasian (30.4%), Native Hawaiian (30.1%), Filipino (20.6%), and Other (27.3%) students.

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



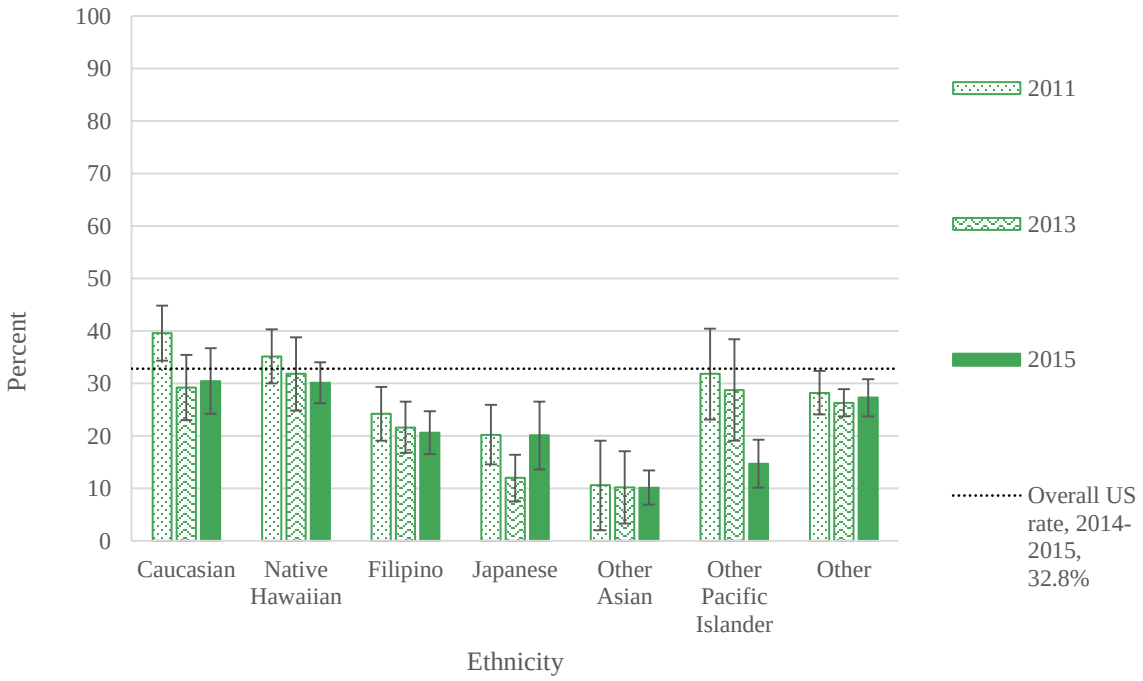
Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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

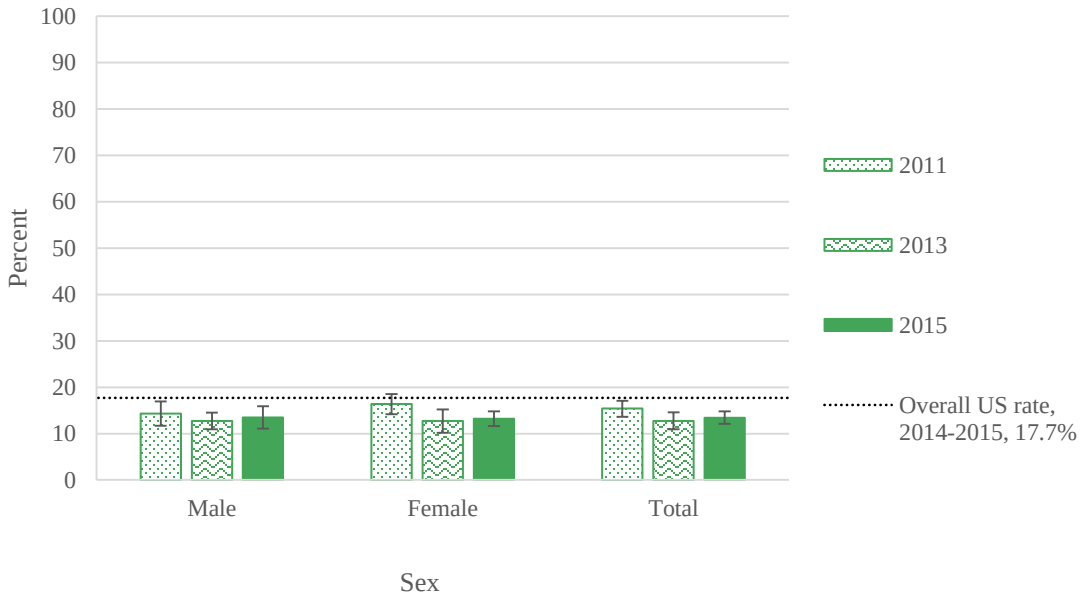
Binge drinking is measured as having five or more drinks of alcohol in a row within a couple of hours on one occasion. Figures 7, 8, and 9 show the percentages of high school students in Hawai‘i who endorsed binge drinking during the 30-days prior to the survey by sex, grade, and ethnicity.

Overall, rates of binge drinking remained stable during the time period sampled, and were less than the overall U.S. rate in 2015 (13.4%; Figure 7). There were no significant differences by sex (Figure 7).

Again, there was an increase in rates of students who reported binge drinking as they progressed through high school, such that 12th grade students had a higher percentage of such responses than did 9th grade students across each year sampled. In 2013, 12th graders had significantly higher rates of binge drinking in the 30 days prior to the survey than all lower grades (Figure 8).

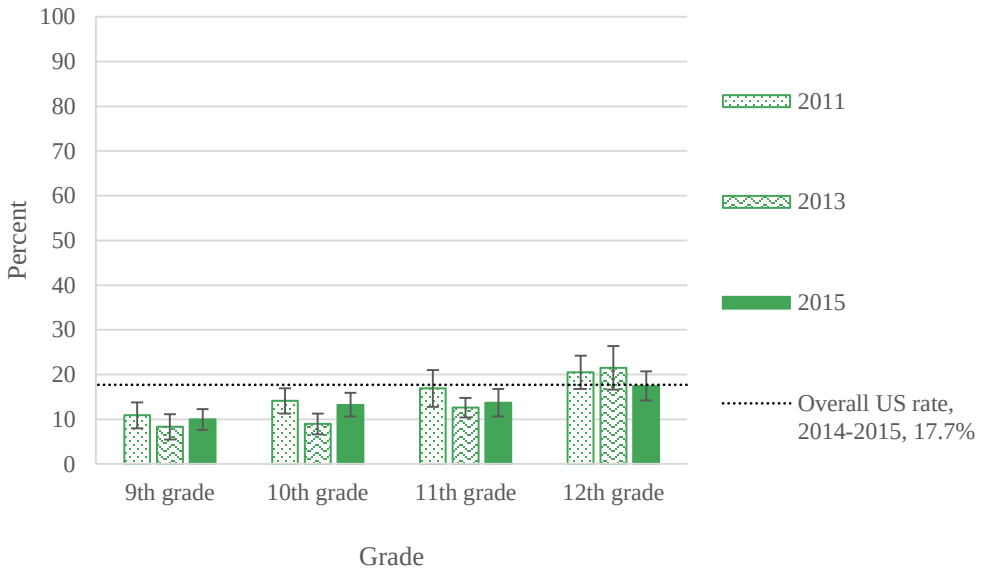
The percentage of students who identified as other Pacific Islander and reported binge drinking decreased significantly between 2011 (23.9%) and 2015 (9.3%; Figure 9). In 2015, the percentage of Other Asian students (4.8%) reporting binge drinking was significantly less than that for Caucasian (13.3%), Native Hawaiian (19.2%), and Other (15.4%) students.

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



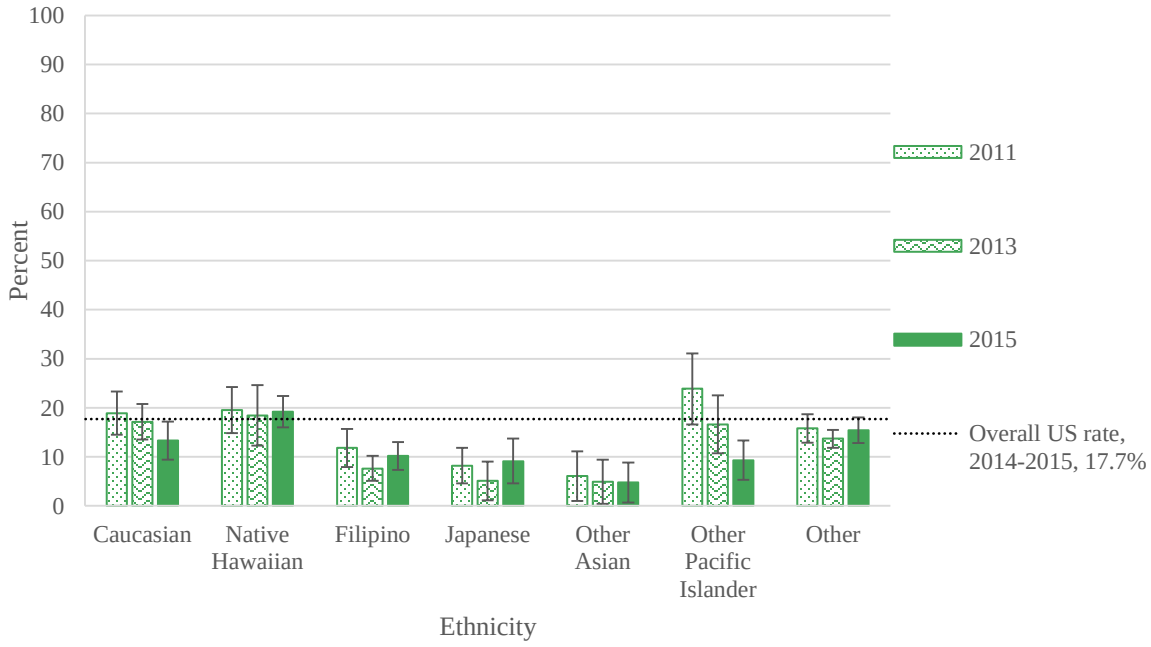
Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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

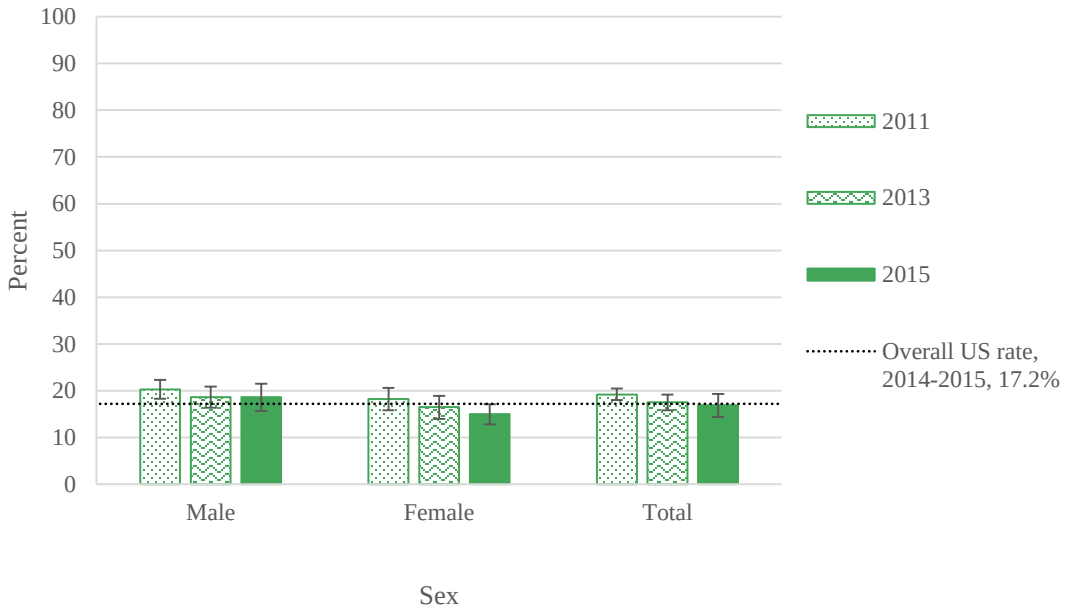
Early alcohol use is represented by the percentage of high school students in Hawai‘i who consumed their first drink of alcohol, other than a few sips, before the age of 13. Figures 10, 11, and 12 indicate these percentages by sex, grade, and ethnicity.

The overall rate showed no significant trends across the years sampled. Additionally, there were no differences by sex across years (Figure 10).

The percentage of 9th graders who reported early alcohol use decreased significantly between 2011 (23.6%) and 2015 (15.6%; Figure 10). There were otherwise no differences between or within grades.

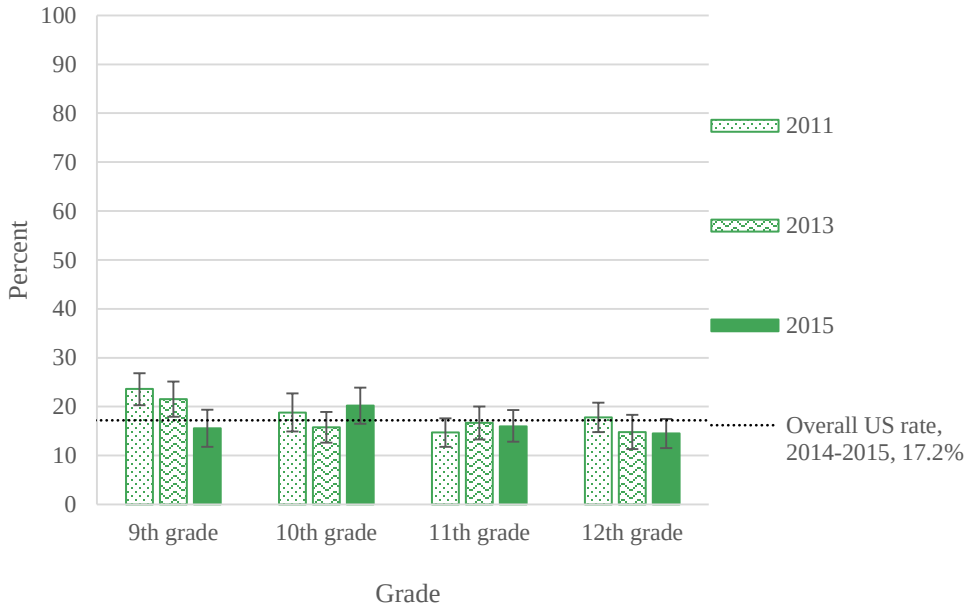
There were no significant differences within ethnic groups across the years sampled. In 2015, Native Hawaiians had significantly higher rates of early use (26%) than any other ethnic group (Figure 11).

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



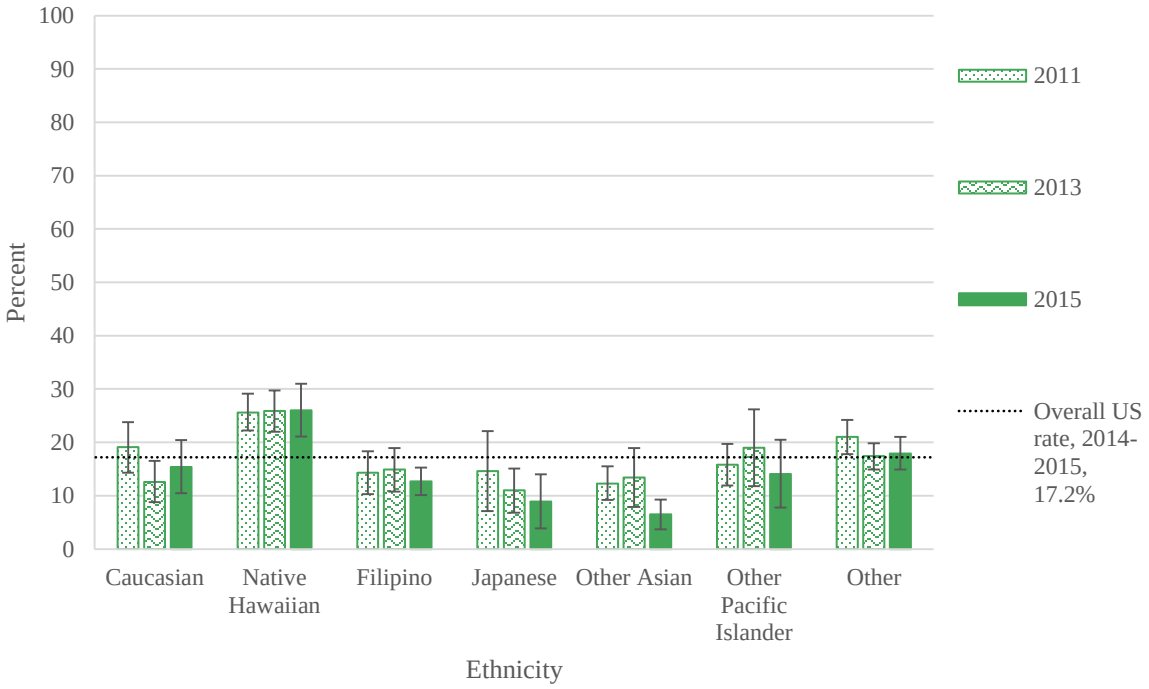
Source: HHDW 2011, 2013, and 2015

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



Source: HHDW 2011, 2013, and 2015

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



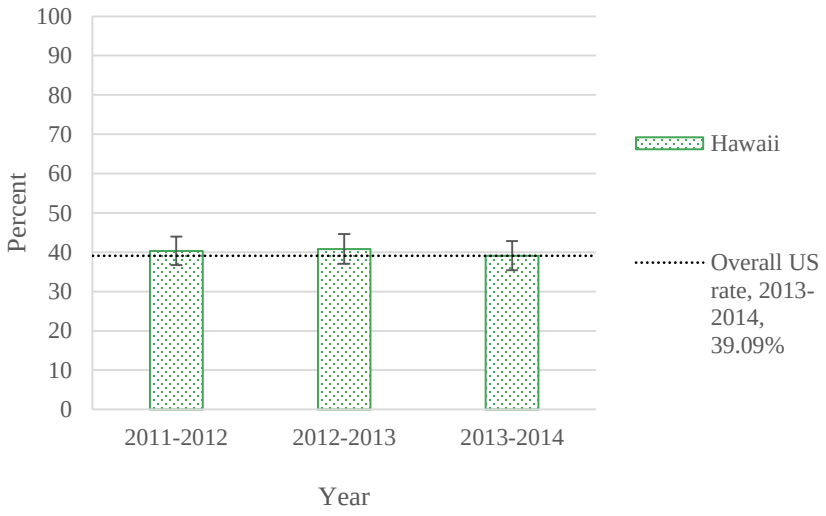
Source: HHDW 2011, 2013, and 2015

Youth: Perceived Risk of Harm of Use

Whether a respondent views consuming five or more drinks of an alcoholic beverage once or twice a week as great risk is used to measure perceived risk of harm. Figure 13 shows the perceptions of great 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.

There were no significant differences in perceptions of great risk from drinking five or more alcoholic beverages once or twice a week across years, and risk perception in Hawai‘i was approximately equivalent to overall U.S. rates of great risk in 2013-2014 (39.09%).

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



Source: NSDUH 2011-2012, 2012-2013, and 2013-2014
*Data were unavailable for 2014-2015

ADULT ALCOHOL INDICATORS

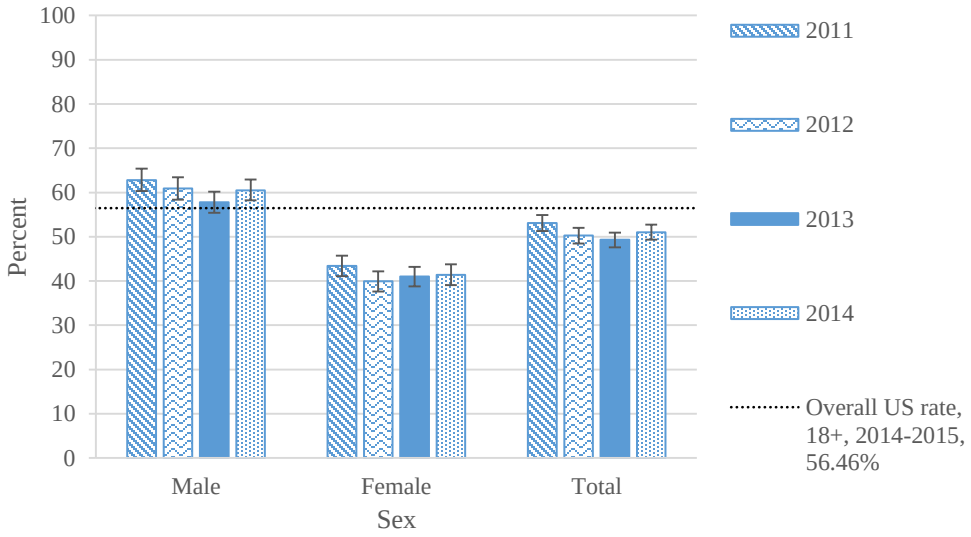
Adult: 30-day Alcohol Use by Sex and Ethnicity

Current alcohol use is measured as whether someone has consumed a drink of alcohol in the 30 days preceding the survey. Figures 14 and 15 show the percentages of adults aged 18 years and older in Hawai‘i who reported consuming alcohol in the 30 days prior to the survey.

The total percentage of alcohol users in 2013 (49.3%) was significantly less than that in 2011 (53.1%), though this did not hold true in 2014 (51%; Figure 14). The percentage of current alcohol users among men was consistently significantly higher than that for women and the overall rate.

The percentage of Caucasian adults who reported current drinking (65.1%) in 2014 was significantly higher than all other ethnic groups except Black adults (64.6%; Figure 15). The rates for Black adults in 2015 (64.6%) were also significantly greater than those for Filipino (42%), Japanese (40.9%), and Other Pacific Island (34.2%) adults. There was also a decrease in the percentage of current drinkers who identify as Native Alaskan or American Indian between 2012 (73.5%) and 2014 (34.7%).

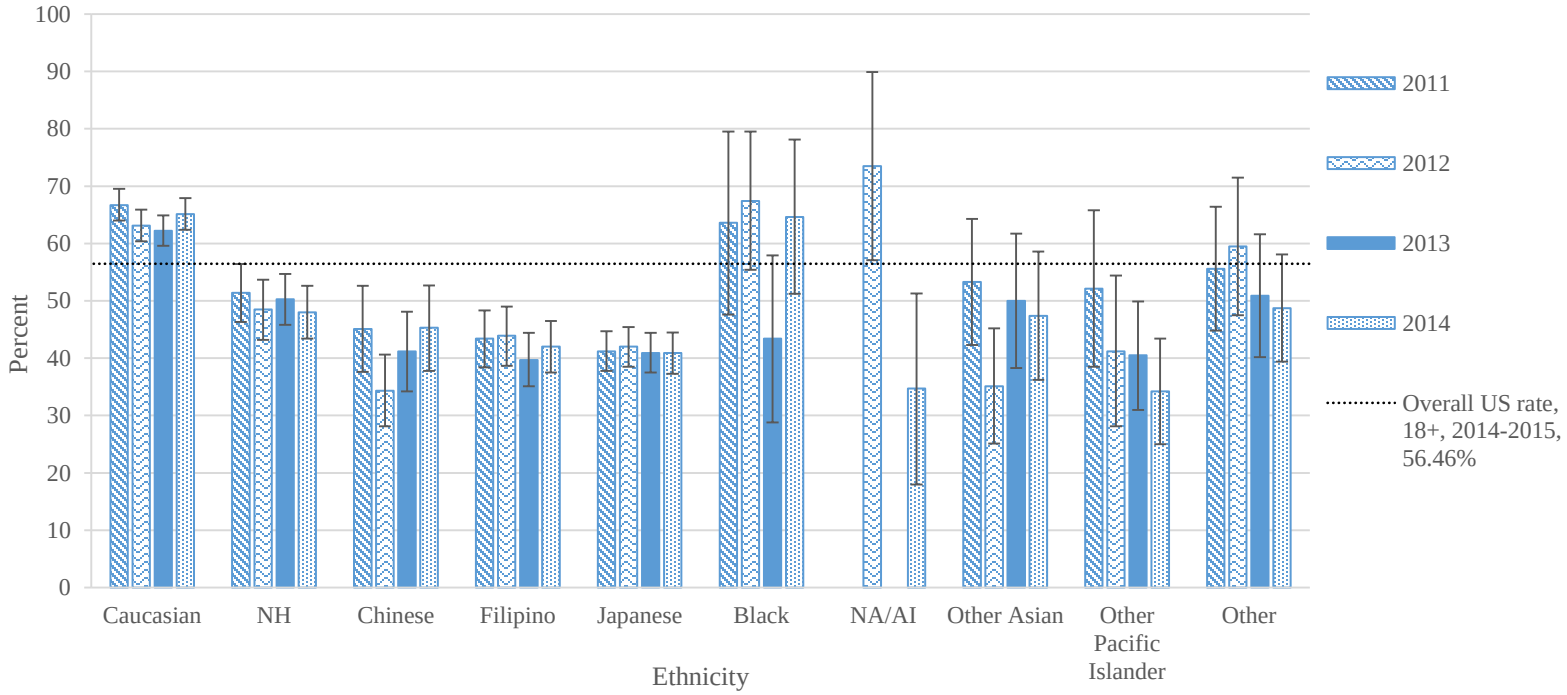
Figure 14. Adult 30-day alcohol use in Hawai‘i by sex (age 18 and older)



Source: BRFSS 2011, 2012, 2013, 2014

*Data available for overall rates of current alcohol use from the NSDUH dataset were similar to those obtained from the BRFSS.

Figure 15. Adult 30-day alcohol use by ethnicity (age 18 and older)



Source: BRFSS 2011, 2012, 2013, 2014

*NH indicates Native Hawaiian; NA/AI, Native Alaskan/American Indian

**Data on Native American/American Indian individuals was not available in 2011 or 2013 due to small sample sizes

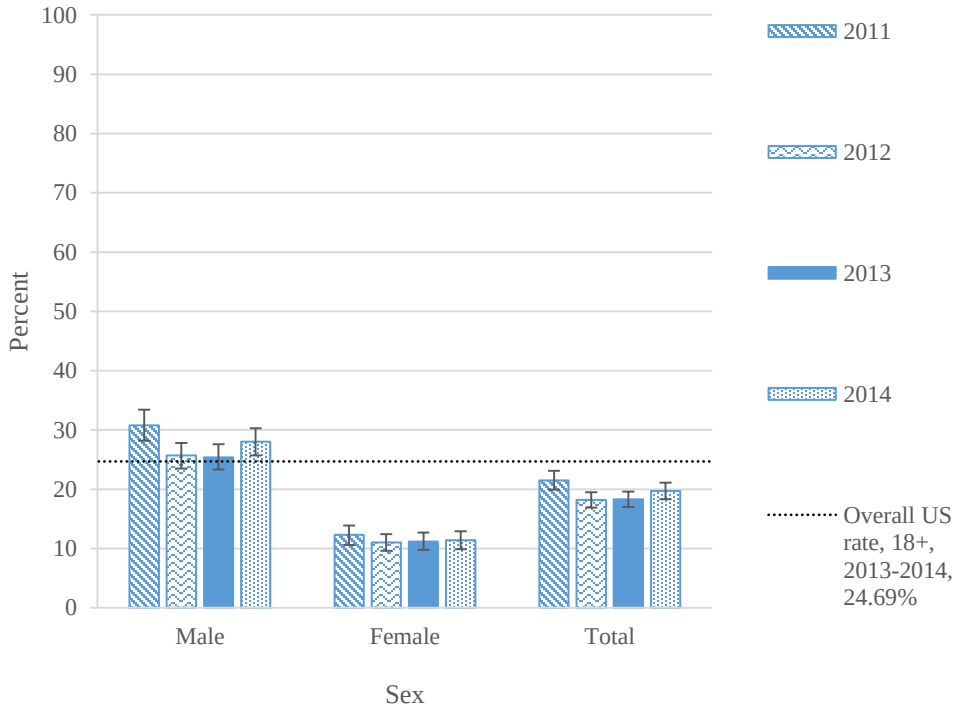
Adult: 30-day Binge Drinking by Sex and Ethnicity

Binge drinking is defined as having five or more drinks of alcohol in a row within a couple of hours on one occasion for males, and four or more drinks of alcohol in a row within a couple of hours on one occasion for women (definition by the BRFSS). Figures 16 and 17 show the percentage of adults aged 18 and older in Hawai‘i who reported binge drinking during the 30 days preceding the survey, by sex and ethnicity.

The overall Hawai‘i prevalence of 30-day binge drinking decreased significantly between 2011 (21.5%) and 2012 (18.2%; Figure 16), though the rate in 2014 (19.7%) did not differ significantly from that in 2011. The percentage of males who reported binge drinking in the previous 30 days was consistently at least double that for women (Figure 16).

In 2014, a significantly greater percentage individuals identifying as Native Hawaiian reported 30-day binge drinking (30.2%) than did Caucasian (22.3%), Chinese (14.8%), Filipino (15.1%), and Japanese (13.2%) adults (Figure 17).

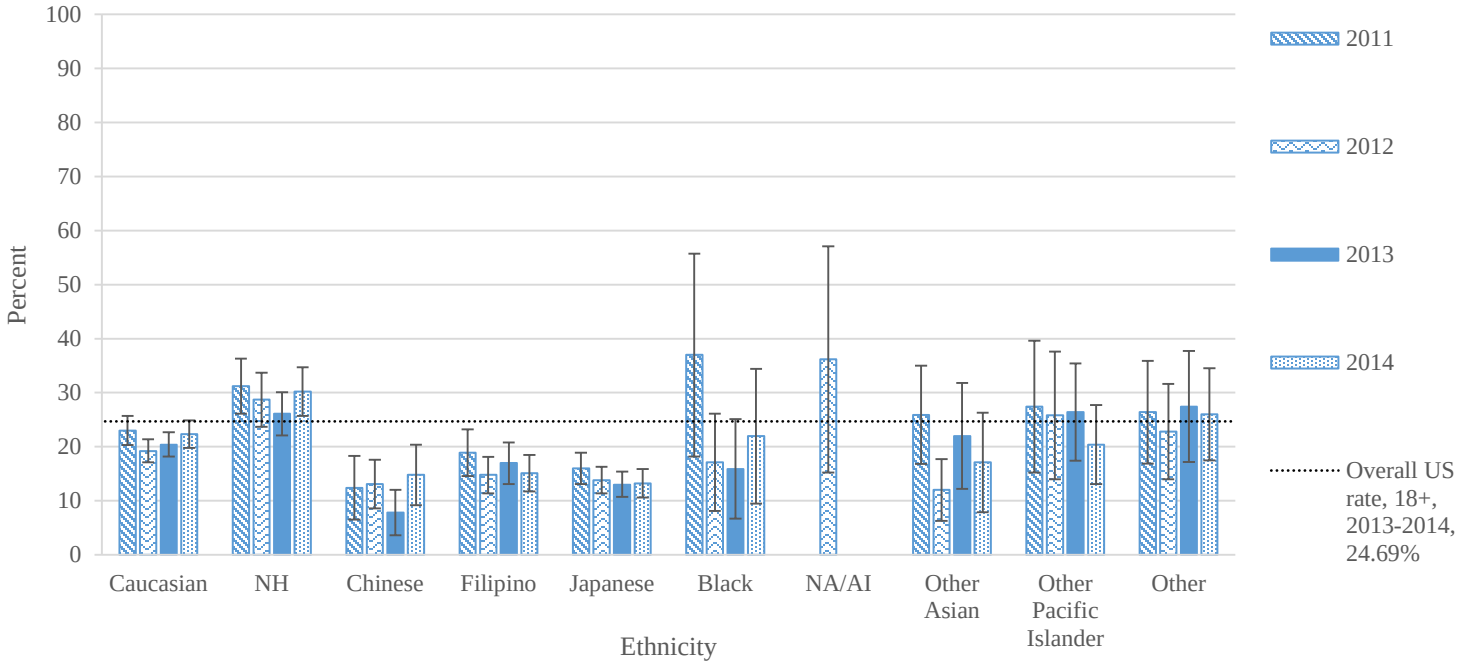
Figure 16. Adult 30-day binge drinking, by sex (age 18 and older)



Source: BRFSS 2011, 2012, 2013, 2014

*Data available for overall rates of 30-day binge drinking from the NSDUH dataset were slightly higher than those obtained from the BRFSS (18+: 26.15%, Confidence Interval: 23.53 – 28.95).

Figure 17. Adult 30-day binge drinking, by ethnicity (age 18 and older)

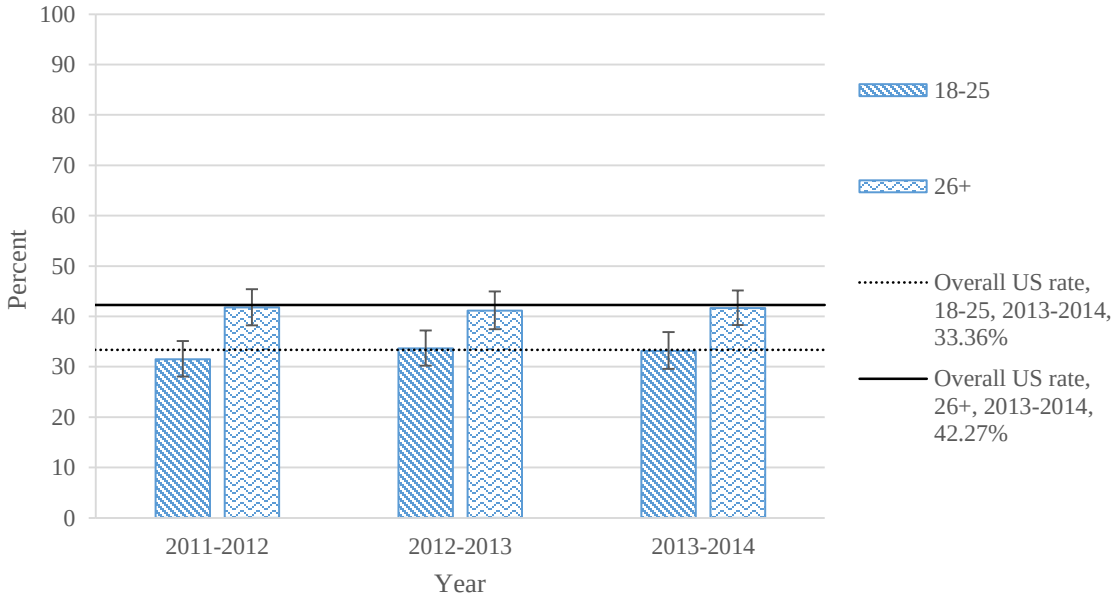


Source: BRFSS 2011, 2012, 2013, 2014
*NH indicates Native Hawaiian; NA/AI, Native Alaskan/American Indian
**Data on Native American/American Indian individuals was not available in 2011, 2013, or 2014 due to small sample sizes

Adult: Perceived Risk of Harm of Use

Perceptions of great risk of harm from consuming five or more drinks of an alcoholic beverage once or twice a week is shown in Figure 18. There were no significant differences across year, but there was a consistent significant difference in perceptions of great harm between age groups, such that respondents ages 18-25 persistently rated such risk as lower than did those respondents ages 26 and older (Figure 18).

Figure 18. Perceptions of great risk of harm from five or more drinks of an alcoholic beverage once or twice a week by age groups.



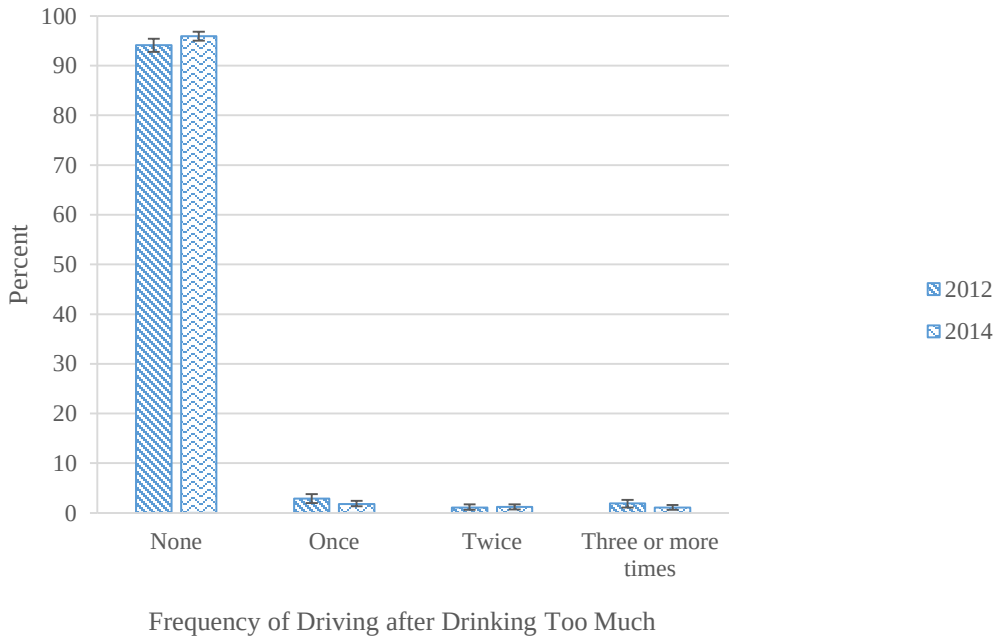
Source: NSDUH 2011-2012, 2012-2013, and 2013-2014

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

The percentages of individuals who reported having driven after having too much to drink once, twice, three or more times, and never having done so within the previous 30-days is shown in Figure 19.

Most adults (ages 18 and older) did not report having driven after drinking too much in the past 30 days (2014: 95.9%; 2012: 94.1%; Figure 19).

Figure 19. Frequency in the past 30 days of driving after having too much to drink (age 18 and older)



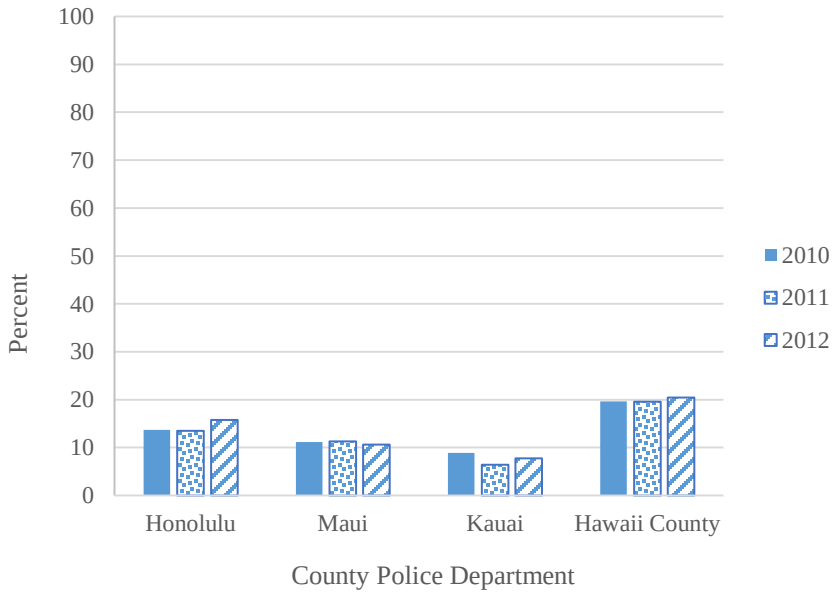
Source: BRFSS 2012, 2014

Adult: Alcohol-Related Arrests

Figure 20 shows the percentage of total arrests of people aged 18 and over in Hawai‘i (by county) that were due to driving under the influence of alcohol, as reported by the respective county police department.

The percentage of total arrests that were resulted from driving under the influence of alcohol or drugs did not vary across years in any given county (Figure 20).

Figure 20. Percentage of total arrests reported by the county police department that were for driving under the influence of alcohol or drugs (age 18 and older)



Source: UCR 2010, 2011, and 2012
*Confidence intervals for population fatal crash percentages are unavailable.
**Data is unavailable for 2013, 2014, and 2015

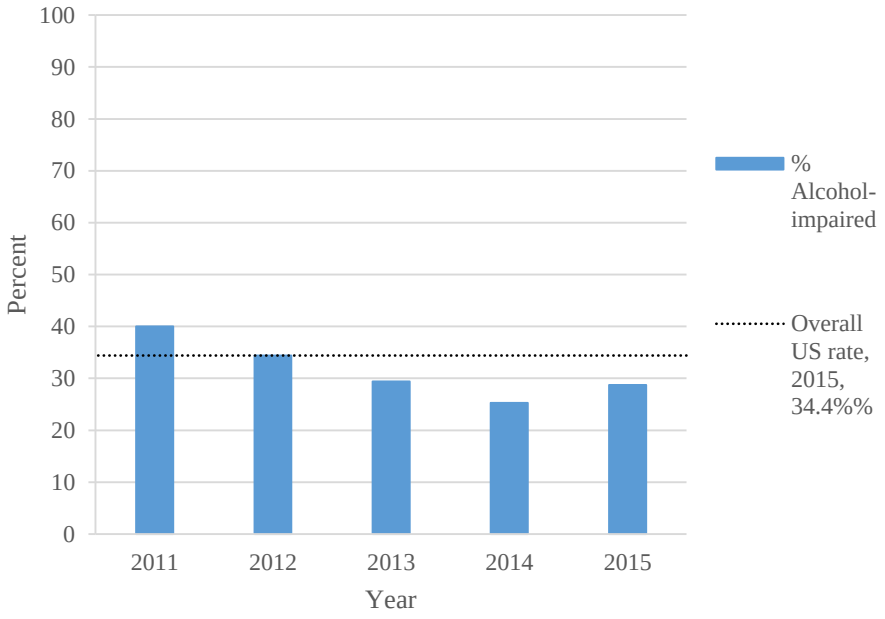
Adult: Alcohol-Related Traffic Fatalities

Figure 21 shows the percentage of the total number of traffic fatalities (including all ages) in Hawai‘i that involved a BAC ≥ 0.08%.

The percentage of fatalities in motor vehicle traffic crashes involving BAC ≥ 0.08% decreased from 2011 (40%) to 2015 (27%; Figure 21). In 2015, the percentage of such traffic fatalities in Hawai‘i (27%) was less than that for the U.S. rate (34.4%; Figure 21).

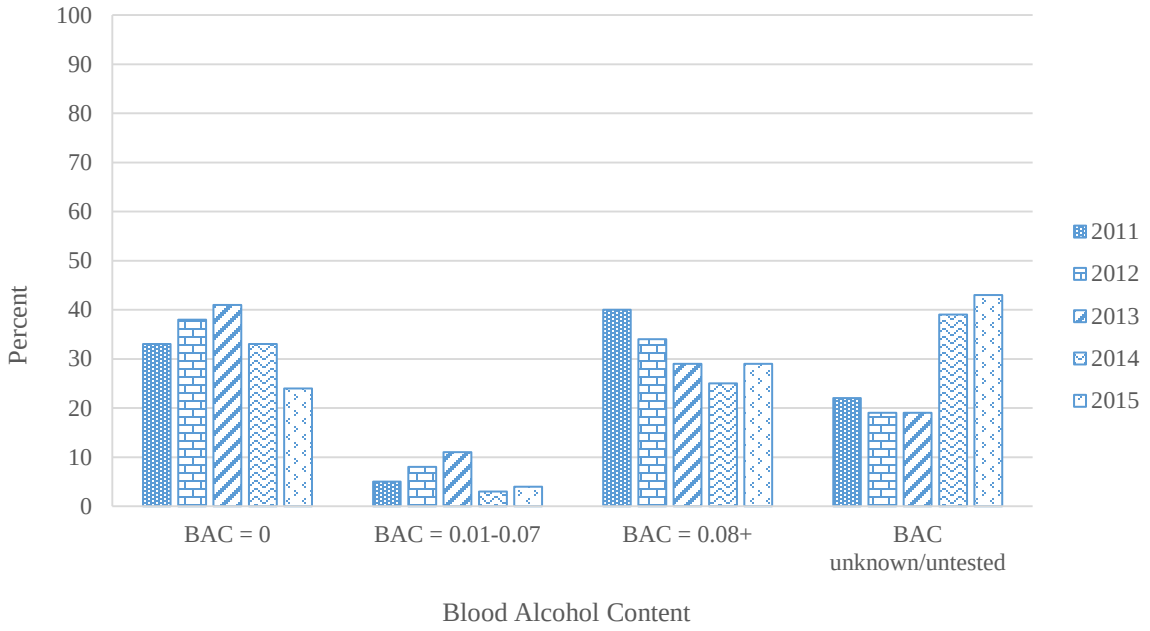
Figure 22 shows the percentage of traffic fatalities involving varying levels of BAC, as well as the percentage of unknown/untested cases. It is important to note that a sizable percentage of fatalities had BAC unknown or untested (19 – 43% across years sampled). All conclusions should be made with the understanding that, had these cases been tested, the results could differ substantially.

Figure 21. Fatalities (all ages) in motor vehicle traffic crashes in Hawai‘i involving BAC ≥ 0.08%.



Source: FARS from 2011 – 2015.
*Confidence intervals for population fatal crash percentages are unavailable.

Figure 22. Fatalities (all ages) in motor vehicle crashes in Hawai‘i by BAC.



Source: FARS from 2010 – 2015. Data was compiled by DOH with assistance from FARS analyst from HDOT.
*Confidence intervals for population fatal crash percentages are unavailable.

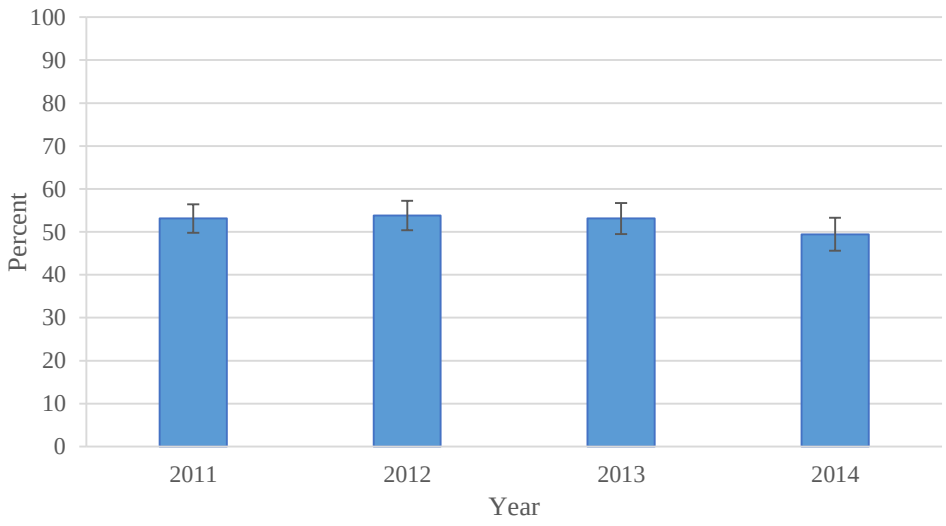
Adult: Drank Alcohol 3 Months before Pregnancy

Figures 23, 24, and 25 display the percentages of women in Hawai‘i who endorsed drinking alcohol at least once during the three months immediately prior to becoming pregnant.

As seen in Figure 23, the overall percentage of women who reported using alcohol during the three months immediately preceding their pregnancy did not vary across years. From 2011 to 2013, the age group with the smallest prevalence rate for drinking during the three months prior to pregnancy was women younger than age 20 (Figure 24).

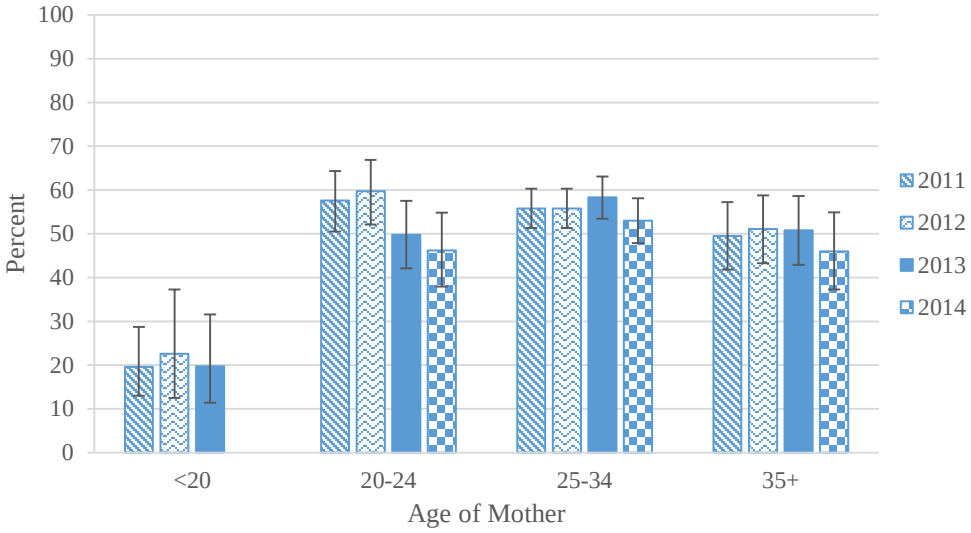
Significantly greater percentages of Caucasian women reported drinking during the 3 months prior to pregnancy when compared to Filipino women (Figure 25). In 2014, rates were also higher for Caucasian women (65.2%) than for Native Hawaiian women (49.2%).

Figure 23. Use of alcohol during the 3 months before pregnancy.



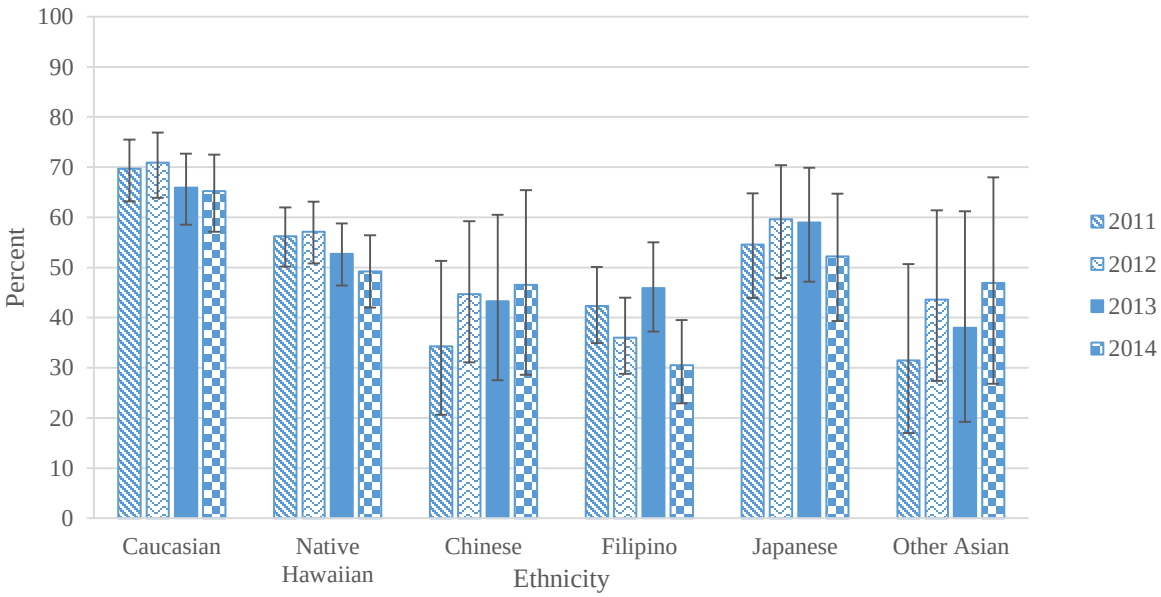
Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015

Figure 24. Use of alcohol during the 3 months before pregnancy by age group.



Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015
**Sample size in 2014 for mothers under the age of 20 was too small to yield reportable data.

Figure 25. Use of alcohol during the 3 months before pregnancy by ethnicity.



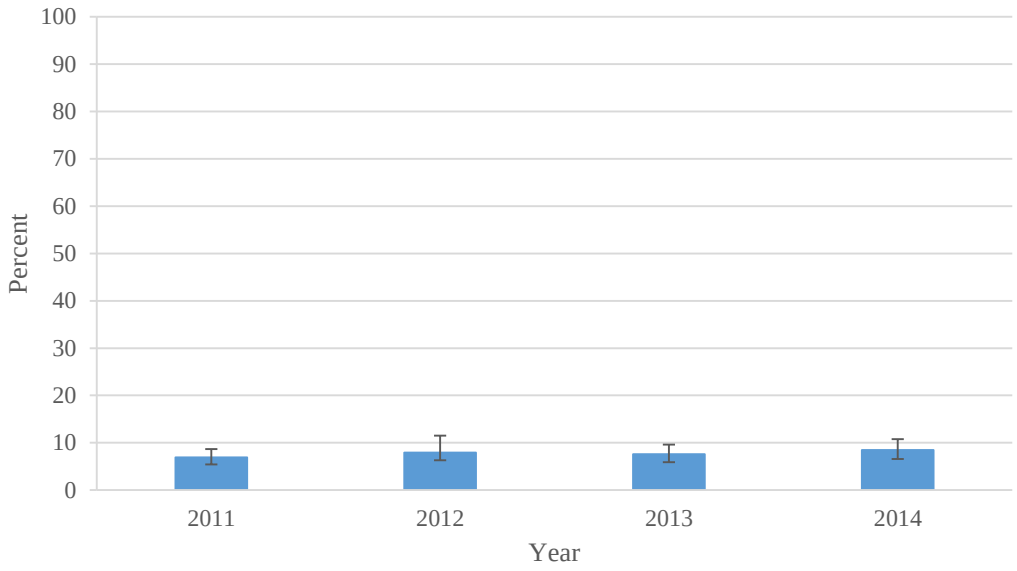
Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015

Adult: Drank Alcohol during the Last 3 Months of Pregnancy

Figures 26, 27, and 28 display the percentages of women in Hawai‘i who endorsed consuming alcohol at least once during the final three months of pregnancy.

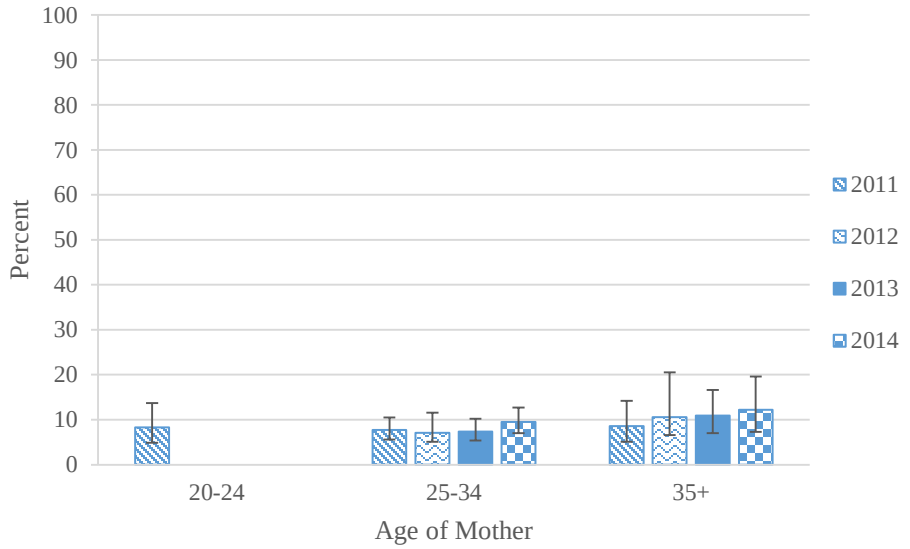
The percentage of women who reported drinking alcohol during this portion of pregnancy did not vary meaningfully across years (Figure 26), nor were there significant differences between age groups (Figure 27) or across ethnic groups (Figure 28).

Figure 26. Use of alcohol during the last 3 months of pregnancy.



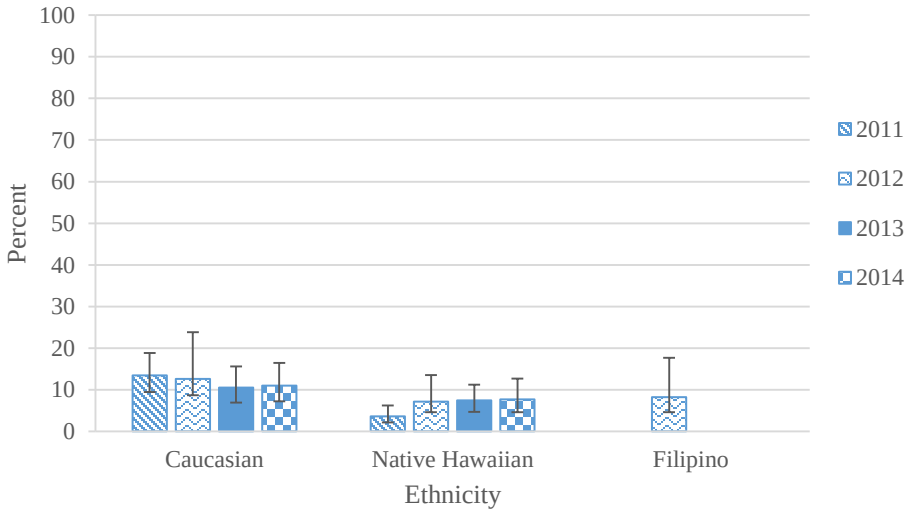
Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015

Figure 27. Use of alcohol during the last 3 months of pregnancy by age group.



Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015
**Sample sizes in 2012 - 2014 for mothers under the age of 20 were too small to yield reportable data.

Figure 28. Use of alcohol during the last 3 months of pregnancy by ethnicity.



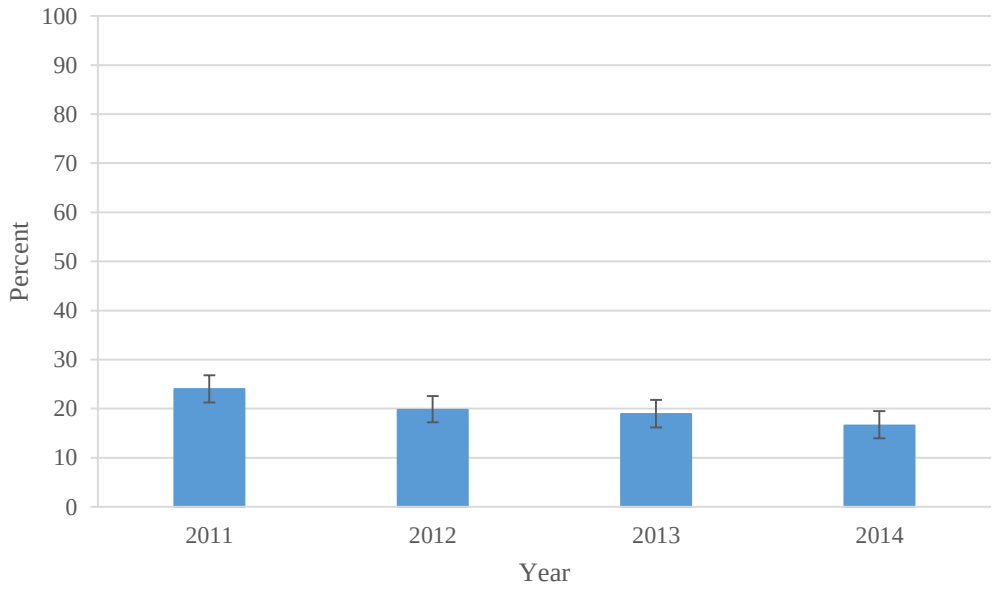
Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015
**Sample sizes were only sufficient to report data for Caucasian and Native Hawaiian participants in 2011-2014, and for Filipino participants in 2012.

Adult: Binge Drinking 3 Months before Pregnancy

Figures 29, 30, and 31 display the percentages of women in Hawai‘i who endorsed binge drinking alcohol at least once during the three months before pregnancy.

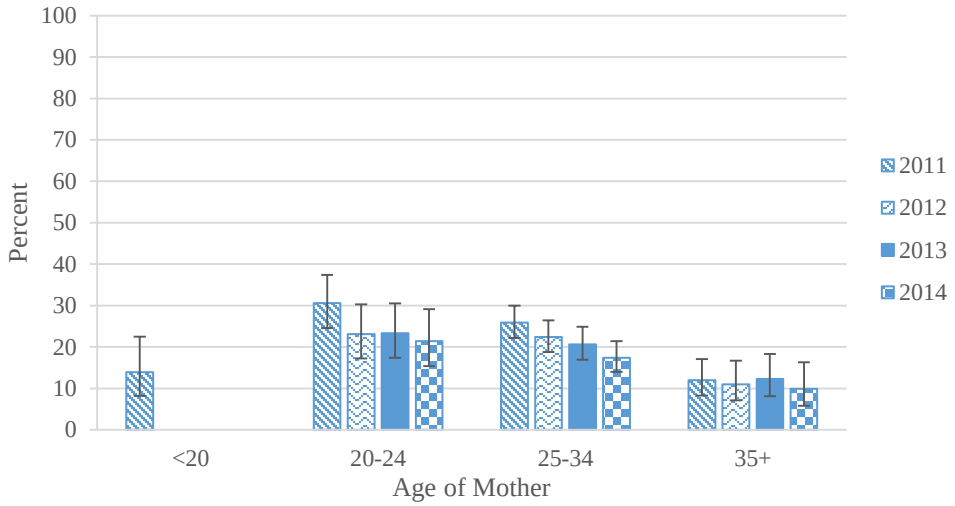
The percentage of women who reported binge drinking alcohol in the three months leading up to pregnancy decreased significantly between 2011 (24%) and 2014 (16.6%; Figure 29). Further, the percentage of women in the 25-34 age category who reported binge drinking in the months prior to pregnancy decreased significantly between 2011 (25.9%) and 2014 (17.4%; Figure 30). There were no changes between years for specific ethnic groups (Figure 31).

Figure 29. Binge drinking during the 3 months prior to pregnancy.



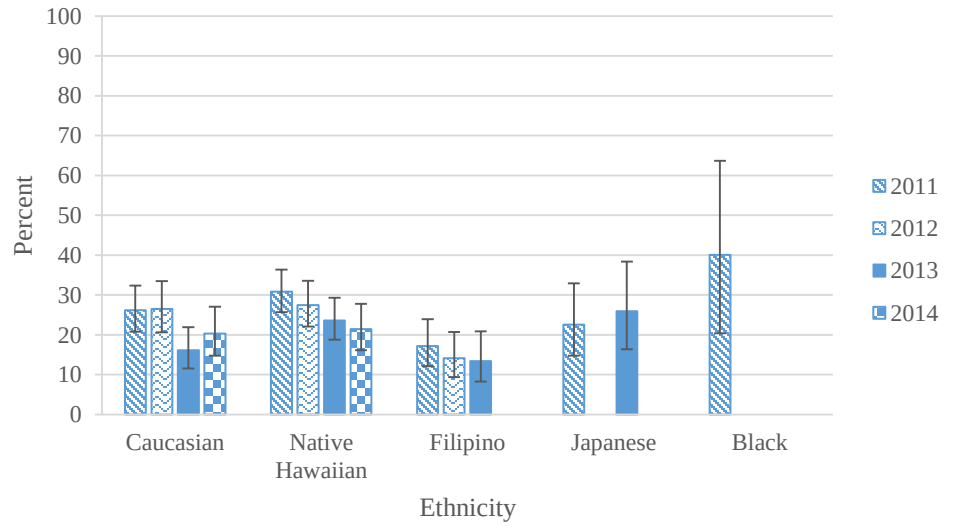
Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015

Figure 30. Binge drinking during the 3 months prior to pregnancy by age group.



Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015
**Sample sizes in 2012 - 2014 for mothers under the age of 20 were too small to yield reportable data.

Figure 31. Binge drinking during the 3 months prior to pregnancy by ethnicity.



Source: PRAMS 2011, 2012, 2013, and 2014
*Data unavailable for 2015
**Sample sizes were not sufficient to report data for Filipino women in 2014, Japanese women in 2012 and 2014, and Black women in 2012 - 2014.

SUMMARY

Youth

Rates of youth alcohol use in Hawai‘i showed variable patterns across the sampled years, depending upon the indicator of interest. Overall rates of lifetime alcohol use decreased between 2011 (55.8%) and 2015 (49.4%), and this was less than the national rate of youth lifetime alcohol use (63.2%). Current alcohol use, current binge drinking, and early alcohol use, however, showed no changes in overall youth endorsement.

Across indicators, there were no differences between sexes. There was a general pattern such that there was an increased prevalence during the progression through high school for most indicators, such that 12th graders consistently reported higher rates than 9th graders. This was true of lifetime use, current use, and binge drinking. There was also a decrease in early alcohol use amongst 9th graders between 2011 (23.6%) and 2015 (15.6%).

Interpreting the differences between ethnic groups was difficult across indicators due to wide margins of error, thus conclusions should be made with caution. It appeared that, despite these wide margins of error, Native Hawaiian and Caucasian students tended to report the highest rates of use across the majority of indicators.

Adults

Current alcohol use among adults in Hawai‘i as measured by the BRFSS saw a slight but significant drop between 2011 (53.1%) and 2013 (49.3%), followed by a return to 51% in 2014. Thirty-day binge drinking rates showed a similar U-shaped pattern of decrease and then increase between 2011 and 2014.

Men consistently reported higher rates of current alcohol use and binge drinking, with rates more than double those for women for the binge drinking indicator. Across the two indicators with ethnicity reported, Caucasian, Native Hawaiian, and Black adults had higher usage rates when compared to Filipino, Japanese, Other Pacific Island, and Chinese adults.

Perceptions of risk of harm from alcohol use evidenced an age difference, such that 18-25 year-olds consistently rated consuming five or more alcoholic drinks of an alcoholic beverage once or twice a week as less harmful than did adults ages 26 and older.

The vast majority of respondents reported that they had not driven after drinking too much in the past thirty days, and the number of alcohol-related arrests remained stable across the sampled years. There was a decrease in the number of alcohol-related traffic fatalities (BAC≥0.08%) between 2011 (40%) and 2015 (27%).

The rates of alcohol use three months before pregnancy remained stable, with the lowest prevalence among those women younger than age 20. Rates of binge drinking before pregnancy decreased between 2011 (24%) and 2014 (16.6%), and specifically those rates for women ages 25-34 decreased during that time frame (25.9% in 2011, 17.4% in 2014). Rates of alcohol consumption during the last three months of pregnancy remained stable during the years sampled.

Recommendations for Prevention Programs

Youth

- Current alcohol use, binge drinking, and early use remained stable. Given the risky nature of binge drinking and early use in particular, evidence-based prevention practices should be utilized to target these behaviors.
- There were no differences between sexes across indicators, signifying that prevention services should be targeted to both boys and girls.
- There was a pattern such that older high school grades showed greater alcohol use across multiple indicators when compared to younger grades. Thus, prevention programs should be age-specific, targeting younger youth to prevent initiating alcohol use and then using evidence-based practices to understand whether and how those programs should be altered for older youth.
- Based on the few findings regarding ethnic differences, culturally appropriate and evidence-based programs are recommended for groups with consistently higher use, specifically Native Hawaiian and Caucasian youth. This represents the same pattern seen in the previous report, underscoring the need for additional research on these groups.

Adults

- Unlike youth, adult current alcohol use and 30-day binge drinking was much more common in men than in women. This pattern is consistent with previous findings regarding alcohol use in Hawai‘i, and should be further researched to determine how to target prevention programs with this difference in mind.
- Prevention and interventions should tailor their strategies towards the higher risk age group, given that adults ages 18-25 reported significantly less perceptions of great risk from alcohol overuse than did those ages 26 and older.
- Though the majority of participants reported that they had not driven after drinking too much, the high stakes of doing so means that prevention efforts should continue to target this domain.
- Rates of alcohol consumption during the last three months of pregnancy remained stable, indicating a high-risk group towards which prevention efforts should be targeted.

Data Recommendations

- The primary data sources used for this profile – Hawai‘i YBRS for youth data, BRFSS and NSDUH for both youth and adults, and PRAMS for pregnancy – do not provide data specifically for college students in Hawai‘i. As was recommended in the 2014 report, this data gap should be filled by establishing a statewide health survey for college students in which multiple campuses in Hawai‘i participate. It may be useful to better understand if and how college students differ from their peers who choose not to attend college at that age.
- Questions about sexual and gender identity should be included in demographics for questionnaires related to substance use. The few indicators for which this data was available for youth drug use indicate that sexual minority youth may be using certain substances at higher rates than their heterosexual peers. Consequently, greater research effort should be made to understand whether such a difference also appears for alcohol use.
- Indicators that are available at a state-level are inconsistent across years. For instance, data reflecting youth disapproval of alcohol use, youth driving while under the influence of alcohol,

family communication around substance use, and percentage of youth seeing a prevention message were previously available but no longer are. Having consistent indicators across years allows for better analysis of a broad range of domains.

- It is important to continue to increase the sample size, particularly when considering ethnic groups. Large margins of error make cross-group comparison extremely difficult at best, but having the ability to do so would mean a better understanding of group vulnerability towards problematic alcohol use.
- For indicators that utilize conglomerated county-level data, such as arrests for driving under the influence, county-level procedures should be reviewed and when possible made uniform across counties.

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 2014 the current drinking among adult men rate was 60.5%; therefore reducing this rate to 54.4% (10% improvement) by 2024 would be suggested. Hawai‘i’s Healthy People 2020 Progress Tracker website (http://www.hawaiihealthmatters.org/index.php?module=Indicators&controller=index&action=dashboard&id=83016762138781208) 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 2011, 2013, and 2015.

		2011			2013			2015		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	55.8	52.6	59.1	52.5	49.7	55.3	49.4	46.3	52.4
Sex	Female	58.7	54.4	63	54.9	50.4	59.4	51.3	47.5	55.1
	Male	53	49.5	56.6	50.2	47.7	52.7	47.2	44	50.3
Grade	9	46.4	41.6	51.1	41.1	34.9	47.2	32.1	27.8	36.4
	10	54.3	50.9	57.6	49.5	45.7	53.3	50.8	46.1	55.5
	11	57.8	49.4	66.2	53.6	50	57.2	56.6	51.4	61.9
	12	67	62.8	71.2	67.7	61.6	73.8	61	55.9	66.1
Ethnicity	Caucasian	63.2	58	68.4	52.2	47.5	56.9	53.3	45.6	61.1
	Native Hawaiian	66	62	69.9	61.9	58.2	65.5	59.4	55.6	63.1
	Filipino	52.7	47.8	57.7	51.7	45.8	57.5	45.3	39.2	51.5
	Japanese	41.6	34.3	49	33.5	27.6	39.4	35.8	30.4	41.2
	Other Asian	29	25.1	32.8	32	25.4	38.6	28.1	21.8	34.3
	Other Pacific Islander	48.6	40.1	57	57.9	47.1	68.6	44.5	38.3	50.7
	Other	54.5	49.6	59.3	54	49	58.9	52.1	47.8	56.5

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

Table A-2. YOUTH 30-day alcohol use by sex, grade, and ethnicity, in 2011, 2013, and 2015.

		2011			2013			2015		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	29.1	25.8	32.3	25.2	21.7	28.6	25.1	23.1	27.2
Sex	Female	32.3	28	36.5	26	22.1	29.9	26.7	23.9	29.6
	Male	25.8	22.4	29.1	24.1	20.2	28.1	23.2	20.4	26.1
Grade	9	21.5	18.3	24.7	18.3	11.9	24.7	16.7	13.6	19.8
	10	28.2	24.2	32.2	19.3	15.9	22.7	24.5	21.5	27.6
	11	30.2	22.9	37.6	25.7	21.6	29.8	25.9	22.1	29.6
	12	38.4	32.7	44.1	38.4	33.1	43.7	35	30.5	39.5
Ethnicity	Caucasian	39.6	34.3	44.8	29.2	23	35.4	30.4	24.2	36.7
	Native Hawaiian	35.1	30	40.3	31.8	24.8	38.8	30.1	26.2	34
	Filipino	24.2	19.1	29.3	21.6	16.8	26.5	20.6	16.5	24.7
	Japanese	20.2	14.6	25.9	12	7.5	16.4	20.1	13.6	26.5
	Other Asian	10.6	2	19.1	10.2	3.3	17.1	10.1	6.9	13.4
	Other Pacific Islander	31.8	23.1	40.4	28.7	19.1	38.4	14.7	10.1	19.3
	Other	28.2	24.1	32.4	26.3	23.7	28.9	27.3	23.7	30.8

Source: Hawai‘i YRBS via HHDW

Table A-3. YOUTH 30-day binge drinking by sex, grade, and ethnicity, in 2011, 2013, and 2015.

		2011			2013			2015		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	15.4	13.6	17.1	12.7	10.9	14.6	13.4	12.1	14.8
Sex	Female	16.4	14.2	18.5	12.7	10.2	15.2	13.2	11.6	14.8
	Male	14.3	11.7	16.9	12.7	10.9	14.5	13.5	11.1	15.9
Grade	9	10.9	8	13.8	8.3	5.5	11.1	10	7.6	12.3
	10	14.1	11.3	16.9	9	6.6	11.3	13.2	10.6	15.9
	11	16.9	12.8	21	12.6	10.4	14.8	13.7	10.6	16.8
	12	20.5	16.8	24.2	21.5	16.6	26.4	17.4	14.2	20.7
Ethnicity	Caucasian	18.9	14.5	23.3	17.1	13.5	20.8	13.3	9.4	17.2
	Native Hawaiian	19.5	14.8	24.2	18.4	12.3	24.6	19.2	16	22.4
	Filipino	11.8	7.9	15.7	7.6	5.1	10.2	10.2	7.3	13
	Japanese	8.2	4.6	11.8	5.1	1.1	9	9.1	4.6	13.7
	Other Asian	6.1	1	11.1	4.9	0.4	9.4	4.8	0.7	8.8
	Other Pacific Islander	23.9	16.6	31.1	16.6	10.7	22.5	9.3	5.3	13.3
	Other	15.8	12.9	18.7	13.7	11.8	15.5	15.4	12.8	18

Source: Hawai‘i YRBS via HHDW

Table A-4. YOUTH Had a first drink of alcohol before age 13 years by sex, grade, and ethnicity, in 2011, 2013, and 2015.

		2011			2013			2015		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	19.2	18	20.5	17.5	15.8	19.2	16.9	14.4	19.3
Sex	Female	18.2	15.8	20.6	16.5	14	18.9	15	12.8	17.1
	Male	20.3	18.3	22.3	18.6	16.4	20.9	18.6	15.7	21.5
Grade	9	23.6	20.3	26.8	21.5	17.9	25.1	15.6	11.8	19.4
	10	18.8	14.9	22.7	15.8	12.6	18.9	20.2	16.5	23.9
	11	14.7	11.8	17.6	16.7	13.3	20	16	12.8	19.3
	12	17.8	14.8	20.8	14.8	11.3	18.3	14.5	11.5	17.5
Ethnicity	Caucasian	19.1	14.3	23.8	12.6	8.8	16.5	15.4	10.5	20.4
	Native Hawaiian	25.6	22.2	29.1	25.9	22	29.7	26	21.1	31
	Filipino	14.3	10.3	18.3	14.9	10.8	18.9	12.7	10.1	15.3
	Japanese	14.6	7.1	22.1	11	6.8	15.1	8.9	3.9	14
	Other Asian	12.3	9.2	15.5	13.4	7.9	18.9	6.5	3.7	9.3
	Other Pacific Islander	15.8	11.9	19.7	19	11.8	26.2	14.1	7.8	20.5
	Other	21	17.8	24.2	17.4	14.9	19.8	17.9	14.9	21

Source: Hawai‘i YRBS via HHDW

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 (2011-2012, 2012-2013, and 2013-2014)

	2011-2012			2012-2013			2013-2014		
	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Hawaii	40.3	36.7	44.0	40.8	37.1	44.6	39.1	35.4	42.9
Total US	40.2	39.6	40.9	39.4	38.7	39.9	39.1	38.5	39.7

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

Appendix B: Data Tables for Adult Alcohol Indicators

Table B-1. ADULT 30-day alcohol use by sex, and ethnicity, in 2011, 2012, 2013, and 2014

		2011			2012			2013			2014		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	53.1	51.3	54.9	50.3	48.5	52	49.3	47.6	50.9	51	49.3	52.7
Sex	Female	43.4	41.1	45.7	39.9	37.6	42.2	41	38.8	43.2	41.4	39.1	43.8
	Male	62.8	60.3	65.4	60.9	58.4	63.4	57.8	55.4	60.2	60.5	58.2	62.9
Ethnicity	Caucasian	66.7	64	69.5	63.1	60.4	65.9	62.2	59.6	64.9	65.1	62.4	67.9
	Native Hawaiian	51.4	46.3	56.4	48.5	43.2	53.7	50.3	45.8	54.7	48	43.4	52.6
	Chinese	45.1	37.6	52.6	34.3	28.1	40.6	41.2	34.2	48.1	45.3	37.8	52.7
	Filipino	43.4	38.4	48.3	43.9	38.7	49	39.7	35.1	44.4	42	37.5	46.5
	Japanese	41.2	37.8	44.7	42	38.5	45.4	40.9	37.5	44.4	40.9	37.3	44.5
	Black	63.6	47.6	79.5	67.4	55.4	79.5	43.4	28.8	57.9	64.6	51.2	78.1
	Native Alaskan/American Indian	-	-	-	73.5	57.1	89.9	-	-	-	34.7	18	51.3
	Other Asian	53.3	42.3	64.3	35.1	25.1	45.2	50	38.3	61.7	47.4	36.2	58.6
	Other Pacific Islander	52.1	38.5	65.8	41.2	28.1	54.4	40.5	31	49.9	34.2	25	43.4
	Other	55.6	44.8	66.4	59.5	47.5	71.5	50.9	40.2	61.6	48.7	39.4	58.1

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

“-“ indicates that data was not available due to small sample sizes

Table B-2. ADULT 30-day binge drinking by sex, and ethnicity, in 2011, 2012, 2013, and 2014

		2011			2012			2013			2014		
		%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI	%	lower CI	upper CI
State	Total	21.5	19.9	23.1	18.2	16.9	19.5	18.3	17	19.6	19.7	18.3	21.1
Sex	Female	12.3	10.6	13.9	11	9.6	12.4	11.2	9.8	12.7	11.4	9.9	12.9
	Male	30.8	28.2	33.4	25.7	23.5	27.8	25.4	23.3	27.6	28	25.7	30.3
Ethnicity	Caucasian	23	20.3	25.7	19.2	17.1	21.4	20.4	18.2	22.7	22.3	19.8	24.9
	Native Hawaiian	31.2	26.1	36.3	28.7	23.7	33.7	26.1	22.1	30.1	30.2	25.7	34.7
	Chinese	12.4	6.5	18.3	13.1	8.6	17.6	7.8	3.6	12	14.8	9.2	20.4
	Filipino	18.9	14.6	23.2	14.8	11.4	18.1	17	13.1	20.8	15.1	11.7	18.5
	Japanese	16	13.1	18.9	13.8	11.4	16.3	13	10.7	15.4	13.2	10.6	15.9
	Black	37	18.2	55.7	17.1	8.1	26.1	15.9	6.7	25.1	22	9.5	34.4
	Native Alaskan/American Indian	-	-	-	36.2	15.2	57.1	-	-	-	-	-	-
	Other Asian	25.9	16.8	35	12	6.3	17.7	22	12.2	31.8	17.1	7.9	26.3
	Other Pacific Islander	27.4	15.2	39.6	25.8	14	37.6	26.4	17.4	35.4	20.4	13.1	27.7
	Other	26.4	16.9	35.9	22.8	14	31.6	27.4	17.2	37.7	26	17.5	34.5

Source: Hawai‘i BRFSS via HHDW

“-“ indicates that data was not available due to small sample sizes

Table B-3. ADULT Perceived great risk of harm from 5 or more drinks of an alcoholic beverage once or twice a week by age groups in merged blocks of two (2) years (2011-2012, 2012-2013, and 2013-2014).

	2011-2012			2012-2013			2013-2014			Overall US rate for 2013-2014
Population	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%
Age 18-25	31.5	28.1	35.1	33.6	30.2	37.2	33.1	29.6	36.9	33.4
Age 26+ years	41.8	38.2	45.4	41.2	37.5	44.9	41.7	38.3	45.1	42.3

Source: NSDUH

Table B-4. ADULT Frequency in the past 30 days of driving after having too much to drink (age 18 and older)

	2012			2014		
	%	lower CI	upper CI	%	lower CI	upper CI
None	94.1	92.8	95.4	95.9	95	96.8
Once	2.9	2	3.8	1.8	1.3	2.4
Twice	1.1	0.6	1.7	1.2	0.7	1.7
Three times or more	1.9	1.1	2.6	1.1	0.6	1.6

Source: Hawai‘i BRFSS via HHDW

*Data was unavailable for 2011 and 2013

Table B-5. ADULT Percentage and numbers of total arrests that were for driving under the influence of alcohol or drugs (age 18 and older)

	2010		2011		2012	
	n	% of total arrest	n	% of total arrest	n	% of total arrest
DUI	6593	14.0	6429	13.7	7305	15.1
Total arrests	46954	100	47074	100	48363	100

Source: The Uniform Crime Reporting (UCR)

DUI = driving under the influence

*Data not available for 2013, 2014, or 2015

Table B-6. ADULT Fatalities in motor vehicle traffic crashes in Hawai‘i by year, age, and highest driver BAC in the crash

			2010	2011	2012	2013	2014	2015
Age	Total fatality	Number	97	84	105	88	87	80
21 and older	BAC = .00	Number	48	29	46	39	30	16
		Percent (%)	49	35	44	44	34	20
	BAC = .01-.07	Number	5	3	9	10	3	1
		Percent (%)	5	4	9	11	3	1
	BAC ≥ .08	Number	33	33	28	23	21	24
		Percent (%)	34	39	27	26	24	30
	BAC unknown/untested	Number	11	19	22	16	33	39
		Percent (%)	11	23	21	18	38	49

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.

Table B-7. ADULT Use of alcohol 3 months before pregnancy, 2011 – 2014.

	2011			2012			2013			2014		
Population	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Overall	53.1	49.8	56.4	53.8	50.4	57.2	53.1	49.5	56.7	49.4	45.6	53.3
<20 years old	19.6	13	28.7	22.6	12.5	37.3	19.7	11.4	31.6	n/r	n/r	n/r
20-24 years old	57.6	50.5	64.3	59.7	52.1	66.9	49.8	42.1	57.5	46.2	37.9	54.8
25-34 years old	55.8	51.3	60.3	55.8	51.3	60.3	58.3	53.4	63.1	53	47.9	58.1
35+ years old	49.5	41.8	57.2	51.1	43.3	58.8	50.8	42.9	58.6	46	37.3	54.9
Caucasian	69.7	63.2	75.5	70.9	63.9	76.9	65.9	58.5	72.7	65.2	57.1	72.5
Native Hawaiian	56.2	50.2	62	57.1	50.8	63.1	52.7	46.4	58.8	49.2	42	56.4
Chinese	34.3	20.6	51.3	44.7	31.1	59.2	43.3	27.5	60.5	46.5	28.6	65.4
Filipino	42.3	34.9	50.1	36	28.8	44	45.9	37.2	55	30.5	22.9	39.5
Japanese	54.6	43.9	64.8	59.6	47.9	70.4	59	47.2	69.9	52.2	39.3	64.7
Other	31.5	17	50.7	43.6	27.4	61.4	38	19.2	61.2	46.9	26.8	68

Source: PRAMS

*Data unavailable for 2015.

Table B-8. ADULT Use of alcohol during last 3 months of pregnancy, 2011 – 2014.

	2011			2012			2013			2014		
Population	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Overall	6.9	5.4	8.7	7.9	6.3	9.9	7.6	5.9	9.6	8.5	6.6	10.8
<20 years old	-	-	-	-	-	-	-	-	-	-	-	-
20-24 years old	8.3	4.9	13.7	-	-	-	-	-	-	-	-	-
25-34 years old	7.7	5.6	10.5	7.1	5.1	9.6	7.4	5.4	10.2	9.5	7	12.7
35+ years old	8.6	5.1	14.2	10.6	6.6	16.5	10.9	7	16.6	12.2	7.3	19.6
Caucasian	13.4	9.4	18.8	12.6	8.7	19.9	10.5	6.9	15.6	11	7.2	16.4
Native Hawaiian	3.6	2.1	6.2	7.1	4.6	11	7.4	4.7	11.2	7.7	4.6	12.7
Chinese	-	-	-	-	-	-	-	-	-	-	-	-
Filipino	-	-	-	8.2	4.6	14.1	-	-	-	-	-	-
Japanese	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-

Source: PRAMS

"-" indicates that the data is not available for the indicated population.

*Data unavailable for 2015.

Table B-9. ADULT Binge drinking during 3 months before pregnancy, 2011 – 2014.

	2011			2012			2013			2014		
Population	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Overall	24	21.3	26.8	19.8	17.2	22.6	18.9	16.2	21.8	16.6	14	19.5
<20 years old	13.9	8.2	22.5	-	-	-	-	-	-	-	-	-
20-24 years old	30.6	24.6	37.4	23.1	17.2	30.3	23.3	17.4	30.5	21.4	15.4	29.1
25-34 years old	25.9	22.2	30	22.4	18.8	26.4	20.6	16.9	24.9	17.4	14	21.4
35+ years old	12	8.3	17.1	11	7.1	16.7	12.3	8.1	18.3	9.9	5.8	16.3
Caucasian	26.2	20.8	32.4	26.5	20.6	33.5	16.1	11.6	21.9	20.3	14.8	27.1
Native Hawaiian	30.8	25.7	36.4	27.5	22.1	33.6	23.6	18.8	29.3	21.4	16.1	27.8
Chinese	-	-	-	-	-	-	-	-	-	-	-	-
Filipino	17.2	12.1	23.9	14.1	9.4	20.7	13.4	8.3	20.9	-	-	-
Japanese	22.6	14.8	32.9	-	-	-	25.9	16.4	38.4	-	-	-
Other	40.1	20.4	63.7	-	-	-	-	-	-	-	-	-

Source: PRAMS

"-" indicates that the data is not available for the indicated population.

*Data unavailable for 2015.

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	*"During the past 30 days, that is, since **[DATEFILL]**, on how many days did you smoke part or all of a cigarette?"* [Response option: Write in a number between 0 and 30.] **Outcome Reported:** Percent who reported having smoked a cigarette during the past 30 days.	NSDUH	CG07	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	*"During the past 30 days, that is, since **[DATEFILL]**, on how many days did you use [other tobacco products]"* [Response option: Write in a number between 0 and 30.] **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).	NSDUH	Multiple Items	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	*"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?"* [Response option: Write in a number between 0 and 30.] **Outcome Reported:** Percent who reported having used alcohol during the past 30 days.	NSDUH	ALCC29a	Underage, Legal Age	**State** (NSDUH), **Community** (Community Survey), **Program** (Program

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
					NOMs Instrument)
	*"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?"* [Response option: Write in a number between 0 and 30.] **Outcome Reported:** Percent who reported having used marijuana or hashish during the past 30 days.	NSDUH	MJ06	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"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]?" **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).	NSDUH	Multiple Items	Adult, 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
Age at First Use	*"How old were you the first time you smoked part or all of a cigarette?"* [Response option: Write in age at first use.] **Outcome Reported:** Average age at first use of cigarettes.	NSDUH	CG04	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"How old were you the first time you used [any other tobacco product] †?" [Response option: Write in age at first use.] **Outcome Reported:** Average age at first use of tobacco products other than cigarettes.	NSDUH	Multiple Items	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"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." [Response option: Write in age at first use.] **Outcome Reported:** Average age at first use of alcohol.	NSDUH	AL02	Adult, 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
	"How old were you the first time you used marijuana or hashish?" [Response option: Write in age at first use.] **Outcome Reported:** Average age at first use of marijuana or hashish.	NSDUH	MJ02	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"How old were you the first time you used [other illegal drugs] ‡?" [Response option: Write in age at first use.] **Outcome Reported:** Average age at first use of other illegal drugs.	NSDUH	Multiple Items	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
Perceived Risk of Harm of Use	*"How much do people risk harming themselves physically and in other ways when they smoke one or more packs of cigarettes per day?"* [Response options: No risk, slight risk, moderate risk, great risk, "don't know"] **Outcome Reported:** Percent reporting moderate or great risk.	NSDUH	RK01a	Adult, 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
	"How much do people risk harming themselves physically and in other ways when they smoke marijuana once or twice a week?" [Response options: No risk, slight risk, moderate risk, great risk, "don't know"] **Outcome Reported:** Percent reporting moderate or great risk.	NSDUH	RK01c	Adult, Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"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?" [Response options: No risk, slight risk, moderate risk, great risk, "don't know"] **Outcome Reported:** Percent reporting moderate or great risk.	NSDUH	RK01k	Underage, Legal Age	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
Disapproval of Substance Use	*"How do you feel about someone your age smoking one or more packs of cigarettes a day?"* [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know] **Outcome Reported:** Percent somewhat or strongly disapproving.	NSDUH	YE19a	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
	"How do you think your close friends would feel about you smoking one or more packs of cigarettes a day?" [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know] **Outcome Reported:** Percent reporting that their friends would somewhat or strongly disapprove.	NSDUH	YE20a	Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"How do you feel about someone your age trying marijuana or hashish once or twice?" [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know] **Outcome Reported:** Percent somewhat or strongly disapproving.	NSDUH	YE19b	Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
	"How do you feel about someone your age using marijuana once a month or more?" [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know] **Outcome Reported:** Percent somewhat or strongly disapproving.	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
	"How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day?" [Response options: Neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know] **Outcome Reported:** Percent somewhat or strongly disapproving.	NSDUH	YE19c	Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
Employment/Education					
Perception of Workplace Policy	*"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?"* [Response options: More likely, less likely, would make no difference] **Outcome Reported:** Percent reporting that they would be more likely to work for an employer conducting random drug and alcohol tests.	NSDUH	QD53	Adult, Youth 15 years or older	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
ATOD-Related Suspensions and Expulsions	– MEASURE UNDER DEVELOPMENT –				
Daily School Attendance	**Measure calculation:** Average daily attendance (NCES defined) divided by total enrollment and multiplied by 100.	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	**State** (NCES) **Community** (State Dept. of Ed., Local School District)

Measure	Source Item and Measure Calculation	Source of Data	Item Code (If survey based)	Respondent Age Group	Level of Aggregation and Data Source
Crime and Criminal Justice					
Driving While Under the Influence of Alcohol	*"During the past 12 months, have you driven a vehicle while you were under the influence of alcohol only?"* [Response Options: Yes, No, "don't know"] **Outcome Reported:** Percent reporting "Yes."	NSDUH	SP06b	Underage, Legal Age - 16 years or older	**Program** (Program NOMs Instrument)
Alcohol-Related Traffic Fatalities	**Measure calculation:** The number of alcohol-related traffic fatalities divided by the total number of traffic fatalities and multiplied by 100.	National Highway Traffic Safety Administration Fatality Analysis Reporting System		Not collected from individuals	**State** (NHTSA-FARS)
Alcohol and Drug-Related Arrests	**Measure calculation:** The number of alcohol and drug-related arrests divided by the total number of arrests and multiplied by 100.	Arrest data by state obtainable from the report Crime in the United States, issued annually by FBI's Uniform Crime Reporting Program. Obtainable at https://www.ucrdatatool.gov/		Not collected from individuals	**State** (UCR-FBI) **Community** (State and/or Local Law Enforcement Agencies)
Social Support/Social Connectedness					
Family Communication Around Drug Use	*"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?"** [Response options: 0 times, 1 to 2 times, A few times, Many times, don't know] **Outcome Reported:** Percent of parents reporting that they have talked to their child at least once.	NSDUH	PE03	Adult	**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
	"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." [Response options: Yes, No, don't know] **Outcome Reported:** Percent reporting having talked with a parent.				NSDUH	YE08	Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)
Access/Service Capacity								
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** • Am. Indian / AK Native • Asian • Black / African American • Native Hawaiian / Other Pacific Islander • White • More than one race • Unknown • Other • Total	**Ethnicity** • Not Hispanic / Latino • Hispanic / Latino • Total	**Gender** • 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	*"During the past 12 months, have you seen or heard any alcohol or drug prevention messages from sources [outside school], such as posters, pamphlets, radio, or TV?" [Response options: yes, no, don't know]* **Outcome Reported:** Percent reporting having been exposed to prevention message.	NSDUH		YE25	Youth	**State** (NSDUH), **Community** (Community Survey), **Program** (Program NOMs Instrument)

† 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

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

Appendix E: List of SEOW Members

As of July 2017 (listed by organization)

SEOW Member Name	Organization
Tania Lowery St. John	Department of Health, Western States Information Network Research Group
Heather Lusk	The Community Health Outreach Work to Prevent AIDS Project (CHOW Project)
Pam Lichty	The Community Health Outreach Work to Prevent AIDS Project (CHOW Project)
Valerie Mariano	Hawai‘i Department of the Attorney General, Community and Crime Prevention Branch and Crime Prevention and Justice Assistance Division
Paul Perrone	Hawai‘i Department of the Attorney General, Crime Prevention and Justice Assistance Devision
Alan Yamamoto	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Allen Ramelb	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Andrew Robles	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Cheryl Labuguen	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Dixie Jo Thompson	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Joshua Philip	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Karla Filibeck	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
John Valera	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
Mardelle Gustilo	Hawai‘i Department of Health, Alcohol and Drug Abuse Division
David Jackson	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
Wendy Nihoa	Hawai‘i Department of Health, Family Health Services Division
Thaddeus Pham	Hawai‘i Department of Health, Harm Reduction Services Branch
Kari Benes	Hawai‘i Department of Health, Injury Prevention and Control Section
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 Salvail	Hawai‘i Department of Health, Office of Health Status Monitoring
Kathleen Baker	Hawai‘i Department of Health, Office of Health Status Monitoring
Joshua Holmes	Hawai‘i Department of Health, Surveillance, Evaluation, & Epidemiology Office, Chronic Disease Prevention & Health Promotion Division
Gary Yabuta	Hawai‘i High Intensity Drug Trafficking Areas (HIDTA)
Darlyn McFatridge	Hawai‘i National Guard Counterdrug Support Program, Joint Domestic Operations
Reoni Ornellas	Hawai‘i National Guard Counterdrug Support Program, Joint Domestic Operations
Robert McFatridge	Hawai‘i National Guard Counterdrug Support Program, Joint Domestic Operations
Harvey Lee	The Institute for Family Enrichment (TIFFE)
Krystal Baba	The Institute for Family Enrichment (TIFFE)
Kristen Scholly	Manoa Alcohol Project
Cynthia Okazaki	Parents And Children Together
Javzan Azuma	University of Hawai‘i, Center on the Family
Katalina McGlone	University of Hawai‘i, Center on the Family
Sachin Ruikar	University of Hawai‘i, Center on the Family
Sandé Nitta	University of Hawai‘i, Center on the Family
Sarah Yuan	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
Susanna Helm	University of Hawai‘i, Department of Psychiatry
Rebecca Schweitzer	University of Hawai‘i, Office of Public Health Studies
Claudio Nigg	University of Hawai‘i, Office of Public Health Studies
Allison Wagner	University of Hawai‘i, Office of Public Health Studies
Michelle Tong	University of Hawai‘i, Office of Public Health Studies
Emilee Turner	University of Hawai‘i, Office of Public Health Studies
Stephanie Nishimura	University of Hawai‘i, John A. Burns School of Medicine
Michael Peacock	Vet 2 Vet