

STRATEGIC PREVENTION FRAMEWORK - STATE INCENTIVE GRANT (SPF-SIG)

Guam Substance Abuse Epidemiological Profile

**Guam State Epidemiological Workgroup
1st Quarter, 2006**



This Profile was undertaken as part of Guam's SPF-SIG/PEACE Project for substance abuse prevention and control, under a grant from the Center for Substance Abuse Prevention (CSAP), Substance Abuse and Mental Health Administration (SAMHSA), as administered by Guam's Department of Mental Health and Substance Abuse (DMHSA).

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ACKNOWLEDGEMENTS

This profile resulted from the collaborative efforts of the various agencies and institutions that comprise Guam's State Epidemiological Workgroup. The data contained in this profile were contributed by the members of the SEW from primary sources within each institution.

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SECTION 1

Introduction

Methodology

Summary



INTRODUCTION

In 2003, Guam competed and was subsequently awarded a Strategic Prevention

State Epidemiological Workgroup (SEW), which would oversee the strategic use of data to inform and guide substance abuse prevention policy and program development on Guam. Guam's SEW was subsequently established, and this Profile is the first major product from the group's early endeavors.

Guam's SPF-SIG is premised on understanding the nature and extent of alcohol, tobacco and other drug consumption patterns and consequences at the outset to determine prevention priorities and to align strategies for addressing them. The Profile is intended to serve as a planning guide for the PEACE/SPF-SIG project. It also serves as the first ever island-wide effort to integrate various data sources to delineate a comprehensive and accurate 'snapshot' of the local alcohol, tobacco and illicit drug situation. As such, this Profile is a landmark document that raises the bar for strategic prevention efforts on Guam.

METHODOLOGY

Guam's SEW members began by identifying a set of indicators specific to Guam that tobacco and other drug consumption patterns and the consequences related to these substances. The criteria for selection of indicators included the following:

- Availability of data
- Accuracy of data
- Frequency/regularity of data collection
- Consistency in measurement
- If possible, existence of data disaggregated geographically, by age, sex and/or ethnicity/race

The selected indicators included:

ALCOHOL		Consumption	Consequences
Indicators	Current use of alcohol by Middle School students		Chronic liver disease death rate
	Current use of alcohol by High School students		Suicide death rate
	Current use of alcohol by 18 and older		Homicide death rate
	Current binge drinking by Middle School students		% Fatal motor vehicle crashes that are alcohol-related
	Current binge drinking by High School students		Alcohol-related vehicle death rate
	Current binge drinking by 18 and older		% Alcohol-involved drivers among all drivers in fatal crashes
	Current heavy use of alcohol by Middle School students		Violent crime rate
	Current heavy use of alcohol by High School students		Alcohol abuse or dependence
	Current heavy use of alcohol by 18 and older		% Live births with fetal alcohol syndrome
	Early initiation of alcohol use		Alcohol-related confinement
	Drinking and driving among 18 and older		% Alcohol-related participation in treatment programs
	Drinking and driving among High School students		
	Riding in a car with drinking driver among Middle School students		
	Riding in a car with drinking driver among High School students		
		Total sales of ethanol per year per capita	
		Consumption patterns among court-involved youth	
TOBACCO		Consumption	Consequences
Indicators	Current smoking by Middle School students		Deaths from lung cancer
	Current smoking by High School students		Deaths from chronic obstructive pulmonary disease (COPD) and emphysema
	Current smoking by 18 and older		Deaths from cardiovascular diseases
	Current smoking by health professionals		
	Current smokeless tobacco use by Middle School students		
	Current smokeless tobacco use by High School students		
	Current daily cigarette use by Middle School students		
	Current daily cigarette use by High School students		
	Current daily cigarette use, 18 and older		
	Early initiation of tobacco use		
	% vendors selling to minors		
	Quit attempts in the past year		

DRUGS	Consumption	Consequences
	Lifetime and current use of inhalants by High School students Lifetime use of "ice" by Middle School students Lifetime use of "ice" by High School students Other drug use patterns among court-involved youth % US Probation Office drug testing positive for any drug Drug seizures per year by type and amount of drug	

The SEW members also compiled a list of existing datasets from which to extract the data for the selected indicators. Data taken from well-established surveillance systems---such as the Behavior Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Surveillance System (YRBS)---were given the greatest weight. There are serious data gaps for Guam, however, and when necessary, data derived from smaller surveys were utilized. The limitations of these data sets were acknowledged in the text accompanying data tables and charts. The data sources utilized for this profile included:

- Bureau of Statistics and Plans, 2004 Guam Statistical Yearbook
- Guam Department of Public Health and Social Services, Behavioral Risk Factor Surveillance System, 2001-2003 Surveys
- Guam Public School System, Youth Risk Behavior Surveillance System, 1995-2003 Surveys
- Guam Department of Public Health and Social Services, Vital Statistics, 1998-2004
- Guam Department of Mental Health and Substance Abuse, SYNAR Tobacco Vendors Compliance Surveillance, 1999-2005
- Guam Police Department, Uniform Crime Reports, 2003 and 2004
- Office of National Drug Control Policy-Drug Policy Information Clearinghouse, Guam Profile of Drug Indicators, May 2004
- US Department of Justice-National Drug Intelligence Center, Guam Drug Threat Assessment, August 2003
- Guam Department of Youth Affairs, Intake Assessment Data, 2000-2005
- Guam Police Department, Minors Taken Into Custody Data, 2002-2005
- Guam's U.S. Probation Office Client Statistics, 2000-2004
- Guam Department of Mental Health and Substance Abuse, Drug and Alcohol Branch Intake Data, 1999-2004
- Superior Court of Guam, Juvenile Drug Court Intake Assessment Data, 2003
- Guam Health Professionals' Survey on Tobacco, University of Guam Tobacco Control Research Advisory Group and Department of Mental Health and Substance Abuse, 2005

Data from the sources above were compared and cross-checked against data reported in the following publications/information systems:

t of the Pacific Community, Pacific Youth Bureau, *Pacific Youth Strategy*
2005

t of the Pacific Community, *Pacific Regional Information System*

Health Organization, Western Pacific Regional Office, *Tobacco Control Profiles 2000*

Health Organization, Western Pacific Regional Office, *Country Health
on Profiles*

tions International Drug Control Programme, *Pacific Islands Regional*

Profile

The Profile is divided into an introductory section with background information on the island, and separate sections on consumption patterns, and on outcome indicators. The last two sections are further divided into chapters on alcohol, tobacco and illicit drugs. Each chapter addresses the issues within the general population, and among court-involved youth and adults, as these are the identified target populations for the SPF-SIG. Key highlights are summarized in problem statements that appear at the beginning of each chapter. A text description of the essential findings for every indicator is supplemented with tables and charts.

In general, summary statistics for Guam are compared with nationwide averages. Whenever possible, detailed information is provided, disaggregated by sex, age group and ethnicity/racial group. For several indicators, the numbers of observations are small (e.g. suicide deaths, numbers of babies born with fetal alcohol syndrome, etc.); in these cases, a footnote alerting the reader is provided.

One question that is frequently asked is: "How can Guam's statistics be compared to the mainland when Guam's population is so much smaller than that of the United States?" For this reason, the statistics describing tobacco, alcohol and illicit drug consumption are in percentages, to allow comparisons across populations. That is, the consumption of these substances is reported as a percentage of the total population. Thus, even if the absolute numbers of individuals reporting the use of these substances are much smaller than the US numbers, the magnitude of the problem in relation to the total population can be compared.

EXECUTIVE SUMMARY

Guam faces a triple burden from tobacco, alcohol and illicit drug use. The following is a summary of the key findings from the work of Guam's SEW.

CONSUMPTION

Smoking among Guam's youth parallels the high rates of smoking among adults. According to the 2003 Youth Risk Behavior Survey (YRBS), 75.6% of Guam's High School students have tried smoking compared to 58% of youth nationally. In 2003, 31.6% of High School students on Guam smoked in the past 30 days, in contrast to only 21.9% of all US youth. While smoking prevalence among young people nationally is decreasing, on Guam, middle school smoking rates continue to rise. This is despite improved compliance rates with the Synar law. Unlike adults, male and female youth are smoking at approximately the same rate. Chamorro youth have the highest rates while Filipinos have the lowest. Rates for other Asian/Pacific Islander groups are increasing rapidly. The use of chewing tobacco, particularly mixed with betel nut, is increasing among middle school youth.

Tobacco use among the court involved population:

From January 2004 to August 2005, 77.4% of youth assessed at the Department of Youth Affairs were ever smokers. 75.8% of these smokers started between the ages of 10-14. Sixteen percent of the Superior Court of Guam's Juvenile Drug Court clients report tobacco as their first substance abused. An additional 3.1% report alcohol and tobacco as their first substances abused. Data on tobacco use among court-involved adults is not currently available. This gap will be addressed in the future work of Guam's Epidemiological Workgroup.

Alcohol

Alcohol use among the general population

The prevalence of alcohol use, heavy drinking and binge drinking among adults on Guam is similar or lower than national averages. According to the 2003 BRFSS, 45.7% of adults on Guam are current drinkers – 61.5% of adult males and 29.5% of adult females. Almost 6% of adults are heavy drinkers while 18.7% are binge drinkers. Current and heavy drinking among adult females on Guam is significantly lower than for adult Guam males. The prevalence of alcohol consumption among Guam females is also lower than the U.S. average. Alcohol use on Guam appears to be equally prevalent across the different age groups, and is more prevalent among those with the highest incomes and higher educational attainment, mirroring the national picture. Heavy drinking appears to be more prevalent among the younger adults, both on Guam and in the US.

Among youth, in 2003, 71.3% of high school students have had at least one drink of alcohol, with 8.5% of all high school students having their first drink at 8 years old or younger. Of concern, over 17% of these students have gone binge drinking, 10% have driven a car after drinking alcohol and 37.6% have ridden in a vehicle driven by someone who had consumed alcohol in the past month. While prevalence rates of alcohol consumption among youth on Guam are lower than national averages, since 1995, rates of current drinking and binge drinking among high school students have been decreasing nationwide. This trend has not been seen on Guam. Thus the gap between prevalence rates of binge drinking among Guam youth and US youth has been narrowing.

Guam's youth may be at greater risk for developing alcohol-related problems given that the legal age to purchase and consume alcohol beverages is 18 years. Male and female youth

are consuming alcohol at similar rates, unlike adults. Filipino youth have the lowest rates for current and binge drinking, while Chamorro, other Asian and Micronesian youth have the highest. Current drinking appears to be increasing for Micronesian and other Asian youth.

Alcohol use among the court involved population:

Sixty-five percent of youth assessed at intake at the Department of Youth Affairs in 2005 reported alcohol use. Alcohol use was associated with other criminal behavior in majority of youth screened at the Juvenile Drug Court reported alcohol as their current abuse. The ethnic disparity for alcohol consumption noted among the general population appears to hold for court-involved youth. Data on alcohol consumption among court-involved adults was unavailable and will be addressed in the future work of Guam's Epidemiological Workgroup.

Illicit Drugs

Illicit drug use among the general population:

Data on adult drug use within the general population is currently not available. Among youth, consumption rates for marijuana and inhalants are significant.

The prevalence of lifetime and current marijuana use among high school students on Guam are higher than national averages. Marijuana consumption is higher among young Guam males, but both male and female youth use rates are above nationwide rates. More Guam youth have tried marijuana prior to the age of 13 than US youth in general. The percentage of Guam males who used marijuana before 13 is almost double the percentage for Guam females. Nonetheless, both male and female rates for Guam youth surpass national averages.

Inhalant use appears to be decreasing among US youth, but not among Guam youth. In fact, rates of lifetime and current inhalant use among Guam youth surpassed the nationwide rates in 2001 and 2003. Easy access may partly explain the higher use rates, as 44.1% of Guam's high school students report that these substances have been offered/given/sold on school property as compared to only 28.7% of youth nationally.

Methamphetamine ("ice") and cocaine lifetime use are lower than national averages. Lifetime use of methamphetamine among high school students appears to be decreasing both in Guam and the US. The rate of decline appears faster among Guam youth.

In general, among Guam's high school youth, more males are using drugs than females. A reversal is seen in middle school, with a higher percentage of females reporting having used inhalants and cocaine. Chamorro youth have the highest rates of drug use while Filipinos have the lowest. Overall, marijuana is the predominant type of illicit drug use reported by Guam youth, followed by inhalants.

Illicit drug use among the court involved population:

Among court-involved adults served by the US Probation Office, 1.6% tested positive for drugs in 2004. Over half of the positive tests were for methamphetamines, either singly or in combination with other drugs. In addition to methamphetamine use, amphetamine and opiate abuse are prevalent. Less than 5% of the tests were positive for cannabis. These very likely underestimate the real prevalence of illicit drug use among court-involved adults.

Among court-involved youth, marijuana and inhalants were reported as the illicit drugs most frequently used. Fifty-five percent of youth screened at Guam's Juvenile Drug Court report marijuana as their primary substance of abuse while 3% report inhalants as their primary substance of abuse. At the Department of Youth Affairs, 64% of youth assessed in 2005 experimented with marijuana, 25% with inhalants, and 2% with "ice".

CONSEQUENCES

Tobacco

Guam's 3 leading causes of mortality – heart disease, cancer, and stroke – are all tobacco-related. The crude death rate from cardiovascular diseases has increased from 145/100,000 in 1998 to 153/100,000 in 2003. The crude death rate from lung cancer has also increased from 16/100,000 in 1998 to 19/100,000 in 2003. Not only is tobacco use affecting

Alcohol

Guam has witnessed an increase in the death rate from alcoholic liver disease from 2.63/200,000 in 1999 to 3.06/100,000 in 2003. Overall, however, homicide, suicide and chronic liver cirrhosis death rates have decreased since 1998. Data on the numbers and costs of off-island medical treatment for alcohol-related diseases are unavailable.

Although Guam's alcohol consumption rates are not significantly higher than national averages, and health-related consequences (other than alcoholic liver disease death rates) are diminishing, data from the Uniform Crime Report indicate that the social costs are high. Alcohol use impacts on violent crime, traffic fatalities and other criminal behavior. In 2003, Guam had a total of 25 fatal injuries resulting from motor vehicle crashes. Alcohol was a factor in 8, or 32%, of these fatal crashes. More recent data from the Guam Police Department indicates that in 2004, 7 (50%) of the 14 fatalities from motor vehicle crashes were alcohol-related.

In 2003, 5 of the 8 (62.5%) murder cases were alcohol-related. In this same year, 27% of all arrests were alcohol-related. Alcohol dependence is the predominant reason for referral to the Drug and Alcohol branch of the DMHSA, accounting for 53.3% of cases in 2005.

Illicit Drugs

Among clients seen at the Department of Mental Health and Substance Abuse, the proportion with drug dependence as the primary diagnosis is increasing. This is primarily due to the rising percentage of clients presenting for "ice" or methamphetamine dependence. However, the percentage with a primary diagnosis of cannabis or inhalants abuse is also increasing. Overall, about one-third, or 32.5% of all clients seen at the DMHSA presented with dependency problems involving illicit drugs.

Forty-five percent of minors taken into custody by the Guam Police Department in 2005 were for marijuana use and/or possession. Ice, other amphetamines, cocaine, heroin and other "hard" drugs formed an insignificant proportion of youth drug-related arrests.

Among court involved adults using illicit drugs, methamphetamine is the most frequently reported, followed by marijuana. Methamphetamine accounts for a majority of drug-related federal sentences on Guam, constituting over 90% of all drug-related federal sentences on the island from 1997-2001. This is markedly higher than U.S. averages, which range from 10-14%.

Property crime is also a consequence of illicit drug use. In 2003, 1126 burglaries were reported to Guam Police Department, representing a 23.3% increase from the previous year.

SECTION 2

Background Information



BACKGROUND INFORMATION



Guam is the largest and southernmost island in the Mariana Islands archipelago. Located in the western North Pacific Ocean, it houses one of the most strategically important US military installations in the Pacific. Guam also serves as a



The island has a land area of 549 sq. km., roughly three times the size of Washington, DC. The terrain is of volcanic origin, surrounded by coral reefs. The climate is tropical marine, with little seasonal temperature variation. There are frequent squalls during the rainy season and, occasionally, potentially very destructive typhoons from June to December. The last major typhoon,

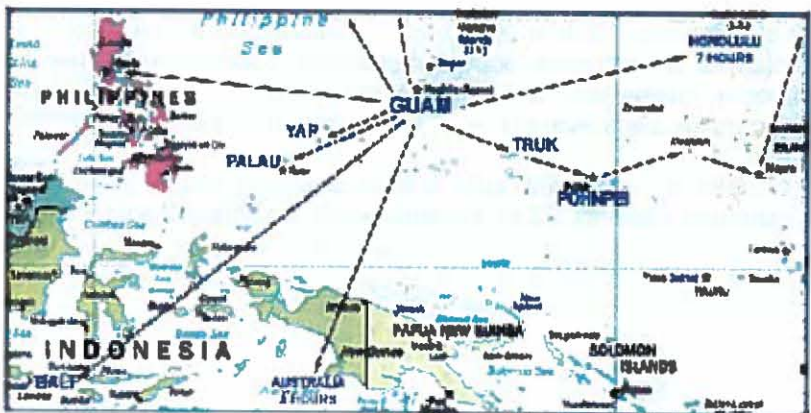
Pongsona, in December of 2002, had a major adverse impact on the island's economy and infrastructure.

Guam is an organized, unincorporated territory of the US with policy relations under the jurisdiction of the Office of Insular Affairs, US Department of the Interior. The island's Governor and Lieutenant Governor are elected on the same ticket by popular vote, and serve a term of four years.

The legislative branch is served by a unicameral Legislature with 15 seats; the members are elected by popular vote to serve two-year terms. Currently, the Democratic Party holds 6 seats while the Republican Party holds 9. Guam also elects one nonvoting delegate to the US House of Representatives to serve a two-year term. The current representative, Congresswoman Madeleine Bordallo, belongs to the Democratic Party. The next elections for the executive and legislative branches of government are scheduled for November 2006.

The judicial branch was recently revamped to create the unified judiciary of Guam, consistent with the Organic Act. Guam has the District Court of Guam (federal) and the Supreme Court of Guam and the Superior Court of Guam (local).

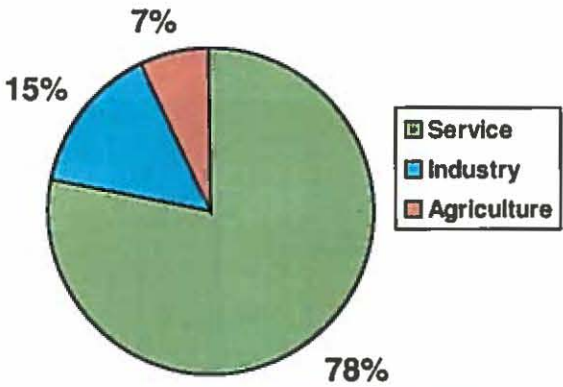
Figure 1. Regional Map Showing Guam's Proximity to Key Countries



Source: CIA Factbook at <http://www.cia.gov/cia/publications/factbook/geos/gg.html>, last accessed 13 March 2006

Guam's economy relies heavily upon military spending, tourism and the export of fish and handicrafts. In 2002, it was estimated that 78% of the Gross Domestic Product (GDP) was comprised of the service sector, with industry comprising 15% and agriculture, 7% (Figure 2).

Figure 2. Gross Domestic Product by Sector, 2002



Source: CIA Factbook at <http://www.cia.gov/cia/publications/factbook/geos/gg.html>, last accessed 13 February 2006

There are approximately 61,000 people in the civilian labor force: 74% in the private sector (industry 10%, trade 24%, other services 40%) and 26% in federal and territorial government. In the 1st quarter of 2004, 7.7% were unemployed, as compared to 15% in 2000 (Table 1).

Table 1. Highlights of employment and unemployment, Guam, 1998-2004

Categories	March 2004	March 2002	March 2001	July 2000	March 1999	March 1998
Civilian Labor Force	61,520	62,050	69,560	70,800	72,460	48,060
Total Employment	56,810	54,980	60,520	59,950	62,350	44,340
Total Unemployment	4,710	7,070	9,040	10,850	10,110	3,720
Unemployment Rate	7.7	11.4	13.0	15.3	14.0	7.7

Source: Bureau of Labor Statistics, Guam Department of Labor, Guam Statistical Yearbook, 2004

Tourism is Guam's major industry. There were over 1.12 million tourist arrivals in 2004, a significant increase from the previous year. Japan is currently Guam's major tourist market, accounting for over 80% of visitors. Korea accounts for 8% of the market, and the US mainland for about 4% (Table 2). Because much of the economy depends on tourism, the policy and program environment, especially in relation to tobacco and alcohol, is influenced by perceptions of acceptability by the tourist market.

Table 2. Air visitor arrivals by country of residence, Guam, 2000-2004

Country	2004	2003	2002	2001	2000
Total	1,120,676	857,432	1,031,161	1,124,438	1,279,243
Japan	906,106	659,593	786,947	901,539	1,048,813
United States	46,159	41,225	41,521	41,877	41,664
CNMI/Micronesia	32,435	31,927	30,658	36,565	38,032
Taiwan	24,157	18,673	19,500	31,540	39,451
Philippines	7,066	6,470	6,530	5,697	6,000
Korea	89,924	87,341	128,307	89,882	87,070
Hong Kong	5,156	4,620	8,444	9,174	9,050
Other	9,673	7,583	9,254	8,164	9,163

Source: Guam Visitors Bureau, Government of Guam

Note: This includes military and civilian air arrivals.

CNMI/Micronesia = Commonwealth of the Northern Mariana Islands/Micronesia

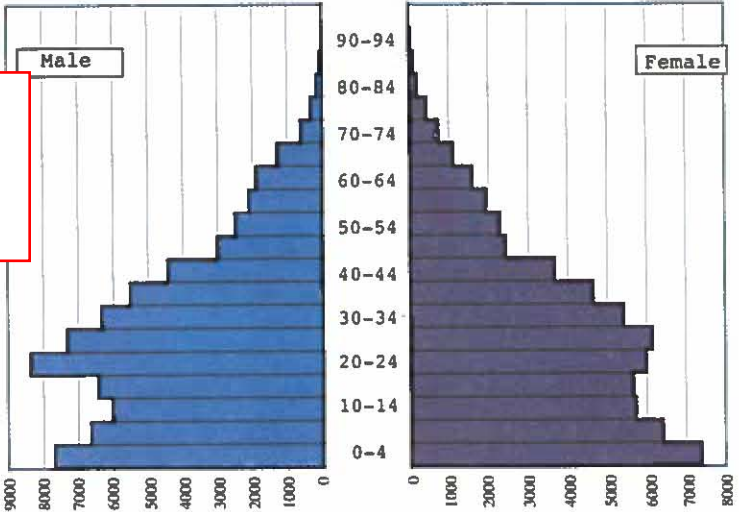
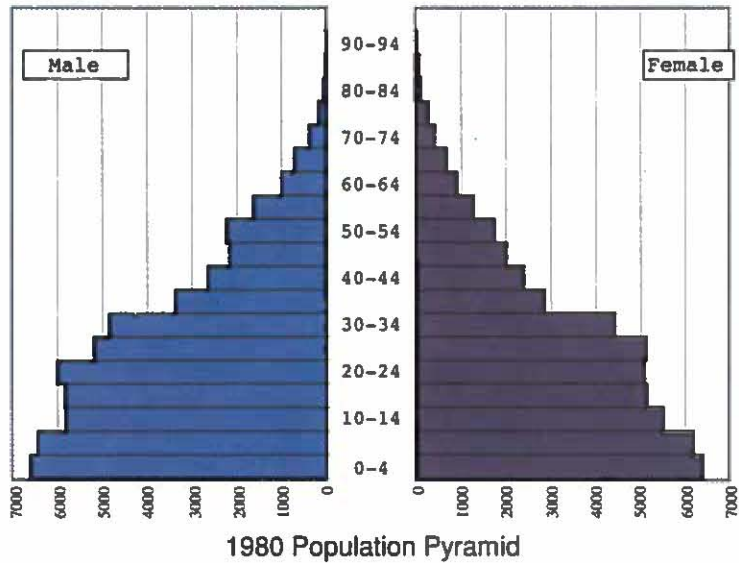
POPULATION DEMOGRAPHICS

The total population, based on 2005 estimates, is 168,564. 30.4% of the total population are below the age of 15, while 5.3% are 65 years and older. The median age of the population is 27.4 years. Males slightly outnumber females, with a sex ratio of 1.06 males per female. The population growth rate is estimated at 1.46% (Table 3).

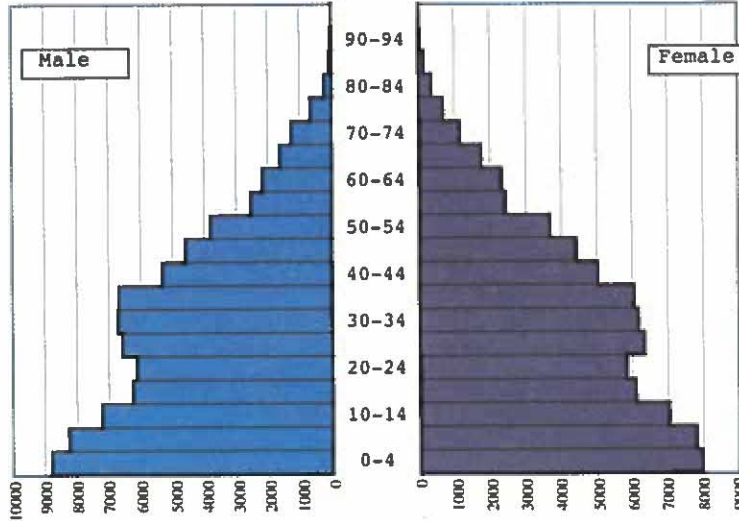
	Female	75,624	48.9	62,207	46.7	50,658	47.8
Under 5 years		16,785	10.8	15,097	11.3	13,002	12.3
5 to 9 years		16,090	10.4	13,078	9.6	12,632	11.9
10 to 14 years		14,281	9.2	11,777	8.8	11,338	10.7
15 to 19 years		12,379	8.0	12,121	9.1	10,993	10.4
20 to 24 years		11,989	7.7	14,379	10.8	11,108	10.5
25 to 34 years		25,850	16.7	25,276	19.0	19,613	18.5
35 to 44 years		23,141	14.9	18,329	13.8	11,295	10.7
45 to 54 years		16,548	10.7	10,279	7.7	8,172	7.7
55 to 59 years		4,993	3.2	4,059	3.0	2,914	2.7
60 to 64 years		4,534	2.9	3,527	2.6	1,927	1.8
65 to 74 years		5,860	3.8	3,801	2.9	2,227	2.1
75 to 84 years		2,000	1.3	1,170	0.9	636	0.6
85 years and over		355	0.2	259	0.2	122	0.1
Median age (years)		27.4	---	25.0	---	22.3	---
18 years and older		99,951	64.6	86,258	64.8	62,375	58.9
	Male	50,932	32.9	47,016	35.3	33,002	31.1
	Female	49,019	31.7	39,242	29.5	29,373	27.7
21 years and older		92,802	59.9	77,800	58.4	55,692	52.6
62 years and older		10,789	7.0	7,395	5.6	4,037	3.8
64 years and over		8,215	5.3	5,230	3.9	2,985	2.8
	Male	3,953	2.6	2,530	1.9	1,405	1.3
	Female	4,262	2.8	2,700	2.0	1,580	1.5

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
Note: "----" indicates not applicable

Figure 3. Guam population pyramids, by age and sex, 1980-2000



1990 Population Pyramid



2000 Population Pyramid

Source: 2004 Guam Statistical Yearbook

The population pyramids (Figure 3) demonstrate a wide base and a "bulge" between the ages of 20 to 39. These two groups---infants and children, as well as young adults---form a significant proportion of the overall population.

Guam's population is multi-ethnic/multi-racial. The following table lists the ethnic/racial composition of the island's population across three decades. Currently, Chamorros comprise the largest ethnic group, accounting for 37% of the total population. Filipinos make up 26.3%, and Whites make up 6.8%. 13.9% of Guam's people identify themselves as belonging to two or more ethnic groups.

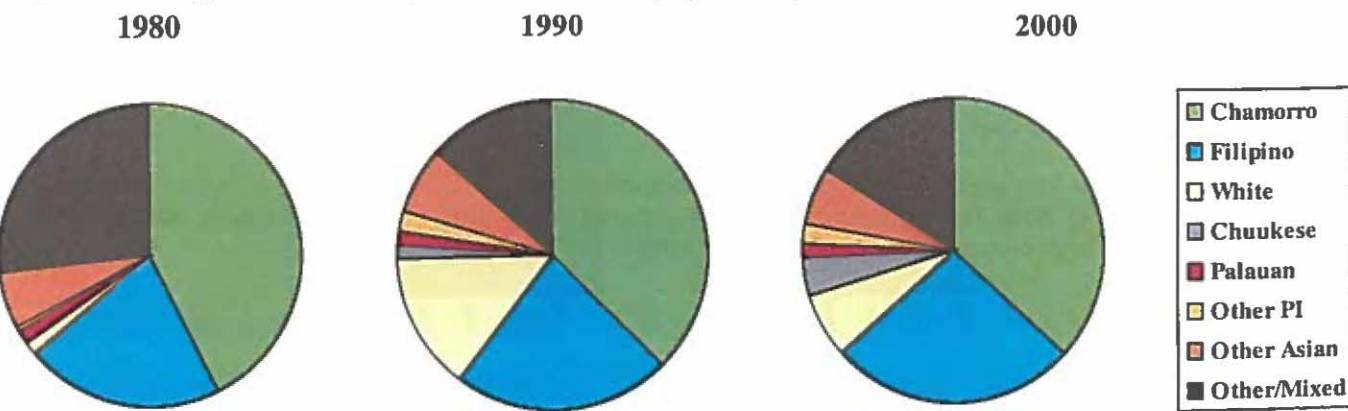
Table 4. Ethnic origin or race, Guam, 1980-2000

Characteristics	1980	1980	1990	1990	2000	2000
Chamorro	37,237	37.0	43,933	37.0	43,123	37.0
Chuukese	6,229	4.0	1,919	1.4	97	0.1
Kosraean	292	0.2	101	0.1	40	0.0
Marshalese	257	0.2	71	0.1	33	0.0
Palauan	2,141	1.4	1,858	1.4	1,335	1.3
Pohnpeian	1,366	0.9	589	0.4	69	0.1
Yapese	686	0.4	199	0.1	47	0.0
Other Pacific Islander	648	0.5	1,637	1.2	513	0.5
Asian	50,329	32.5	39,281	29.5	28,647	27.0
Chinese	2,707	1.7	1,959	1.5	---	---
Filipino	40,729	26.3	30,043	22.6	22,447	21.2
Japanese	2,086	1.3	2,244	1.7	1,855	1.8
Korean	3,816	2.7	3,931	3.0	1,873	1.8
Other Asian	991	0.4	1,104	0.8	---	---
White	10,509	6.8	19,160	14.4	1,514	1.4
Black or African American	1,568	1.0	3,158	2.4	---	---
Some other race or ethnic group	1,807	1.1	2,160	1.6	10,395	9.8
Two or more races or ethnic groups	21,553	13.9	12,877	9.7	3,990	3.8
Chamorro and other(s)	7,946	5.1	7,713	5.8	3,545	3.3
Asian and other(s)	10,853	7.0	7,449	5.6	914	0.9

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
NOTE: "----" indicates not applicable

The ethnic/racial composition of Guam's population has been shifting over time (Figure 4). The proportion of the population comprised of Chamorros has been declining, from 44.6% of the total population in 1980, to 37% in 2000. On the other hand, Filipinos comprised only 21.2% of the population in 1980 but currently make up 26.3% of the island's people. The ethnic group with the fastest rate of increase is the Chuukese population; from only 0.1% in 1980, Chuukese currently make up 4% of the population, a 40-fold increase.

Figure 4. Change in ethnic composition of Guam's population, 1980-2000

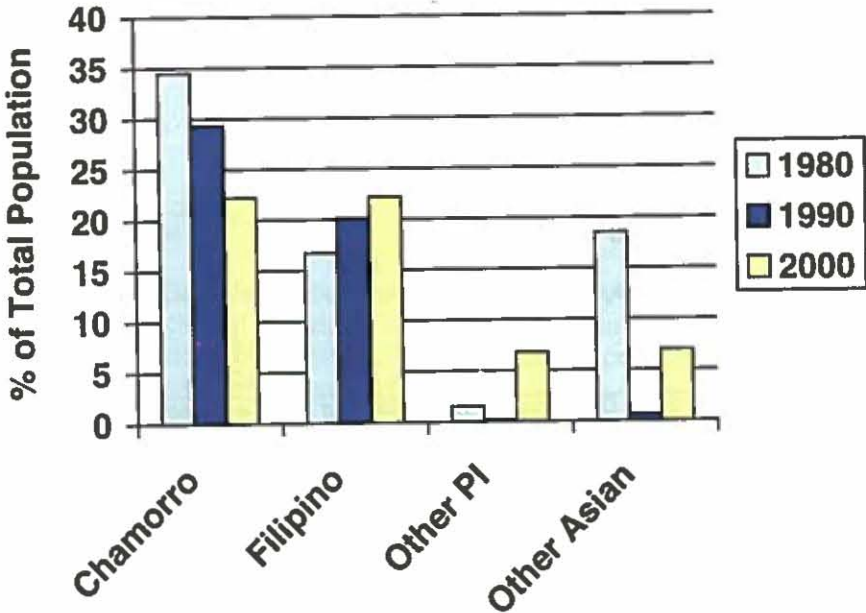


Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing

The ethnic composition of the population in large part determines the languages spoken at home. At present, 38.3% of Guam's households speak English exclusively. Of the remainder, 45.7% speak another language either as frequently as or more frequently than English, and another 0.7% speak no English at all. This has a significant implication for effective service delivery, highlighting the need for culturally competent communications and services for close to half of the island's population.

The pattern of change in languages spoken at home (Figure 5) parallels that of ethnic households speaking Chamorro showing a relative decline over time, while Asian languages are on the increase.

Figure 5. Changing pattern of languages spoken at home, Guam, 1980-2000



Source: 2004 Guam Statistical Yearbook

In 2000, there were 38,769 households on Guam. 83.5% were family households, while 16.5% were non-family households. Over three-fifths (60.2%) of all households have individuals under the age of 18. Less than one-fifth (16.1%) have individuals over 65 years of age. The average household size in 2000 is 3.89 persons, down from 4.07 persons in 1980 (Table 5). Of the households with families, 58.5 % were married couple families. A female householder (with no husband present) heads 16.2% of households on Guam with 9.7% having their own children

	2000		1990		1980	
	Number	Percent	Number	Percent	Number	Percent
Total households	38,789	100.0	31,373	100.0	28,394	100.0
Family Households (families)	32,367	83.5	27,313	87.1	21,780	76.7
With own children under 18 years	19,678	50.8	17,911	57.1	15,913	56.0
Married-couple families	22,693	58.5	21,342	68.0	18,473	65.1
With own children under 18 years	13,964	36.0	14,325	45.7	13,770	48.5
Female householder, no husband present	6,284	16.2	3,824	12.2	2,415	8.5
With own children under 18 years	3,753	9.7	2,438	7.8	1,727	6.1
Non-family households	6,402	16.5	4,060	12.9	6,614	23.3
Householder living alone	5,082	13.1	464	1.5	...	...
Householder 65 years and over	659	1.7	...	...	...	...
Households with individuals under 18 years	23,346	60.2	...	...	...	...
Households with individuals 65 years and over	6,247	16.1	...	...	...	...
Average household size	3.89	...	3.97	...	4.07	...
Average family size	4.27	...	4.26	...	4.4	...

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
Symbol"..." Indicates not applicable

Educational attainment appears to have improved slightly from 1990, with small increases in the percentage of the population who have attained a bachelor's, graduate or professional degree. Almost one-third (31.9%) of the population has a high school diploma or its equivalent (Table 6).

Table 6. School attendance and educational attainment, Guam, 1980-1990

Characteristics	2000		1990		1980	
	Number	Percent	Number	Percent	Number	Percent
SCHOOL ENROLLMENT						
Population 3+ years enrolled in school	48,826	100.0	37,131	100.0	36,002	100.0
Nursery school, preschool, kindergarten	4,916	10.5	2,180	5.9	3,575	9.9
Elementary school (grades 1-8)	23,969	51.2	19,573	52.7	19,728	54.8
High school (grades 9-12)	10,664	22.8	9,429	25.4	8,562	23.8
College or graduate school	7,279	15.5	5,949	16.0	4,137	11.5
EDUCATIONAL ATTAINMENT						
Population 25 years and over	83,281	100.0	66,700	100.0	...	...
Less than 9th grade	7,843	9.4	9,238	13.9	...	...
9th to 12th grade, no diploma	11,862	14.2	8,602	12.9	...	...
High school graduate (includes equivalency)	26,544	31.9	22,220	33.3	...	...
Some college, no degree	16,611	19.9	11,318	17.0	...	...
Associate degree	3,787	4.5	3,666	5.5	...	...
Bachelor's degree	12,774	15.30	8,792	13.2	...	...
Graduate or professional degree	3,860	4.60	2,864	4.3	...	...

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
Symbol"..." Indicates not applicable

Median family income has increased since 1980. However, close to 20% of Guam's families live on \$14,999 or less per year. The poorest of the poor comprise 6% of all families on Guam, and live on \$2500 or less per year. In contrast, 11%, or 1 in 10 families, make more than \$100,000 per year (Table 7).

Table 7. Family income in the year before the census by type, Guam, 1980-2000

Characteristic	2000		1990		1980	
	Number	Percent	Number	Percent	Number	Percent
	32,367	100.0	27,313	100.0	21780	100.0
	1,982	6.1	...	...	827	3.8
	512	1.6	...	...	796	3.7
	1,461	4.5	1,297	4.7	3570	16.4
	1,734	5.4	2,274	8.3	4605	21.1
\$10,000 to \$14,999	3,923	12.1	5,754	21.2	6186	28.4
\$15,000 to \$24,999	4,082	12.6	4,967	18.2	5796	26.6
\$25,000 to \$34,999	5,400	16.7	4,949	18.1	...	...
\$35,000 to \$49,999	6,267	19.4	4,371	16.0	...	...
\$50,000 to \$74,999	3,536	10.9	1,512	5.5	...	...
\$75,000 to \$99,999	3,470	10.7	1,104	4.0	...	...
\$100,000 or more						
Median family income (dollars)	41,229	...	31,176	...	16203	...
Mean family income (dollars)	51,674	...	39,378	...	19485	...

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
Symbol"..." Indicates not applicable

Twenty percent of Guam's families fall under the poverty line. Households headed by a single female appear to be closely associated with impoverishment; close to 40% of impoverished families are households headed by a female, with no husband present. Of these impoverished families, 23% have children under the age of 18 (Table 8).

Table 8. Poverty status in the year before the census, Guam, 1980-2000

Characteristics	2000		1990		1980	
	Number	Percent	Number	Percent	Number	Percent
POVERTY STATUS						
Families	6,466	20.0	3,429	...	3010	...
With related children under 18 years	5,420	23.4	2,948	...	2643	...
With related children under 5 years	3,180	27.7	...	...	...	...
Families with female householder, no husband present						
With related children under 18 years	2,434	38.7	1,304	...	1063	...
With related children under 5 years	2,189	44.2	1,200	...	968	...
	1,287	52.4	...	...	...	...
Individuals						
18 years and over	34,792	23.0	...	...	...	...
65 years and over	19,143	19.7	...	...	...	...
Related children under 18 years	1,302	16.0	...	...	...	...
Related children 5 to 17 years	15,509	28.6	...	...	...	...
Unrelated individuals 15 years and over	10,247	27.3	...	...	...	...
	3,202	46.6	...	...	...	...

Source: US Census Bureau, 2000 Guam Demographic Profile, 1980 and 1990 Censuses of Population and Housing
Symbol"..." Indicates not applicable

In 2000, there were 14,544 recipients on public assistance. In 2004, this number was reduced to 4,763 (Table 9).

Table 9. Average number of recipients on public assistance, Guam, 2000-2004

Type of Assistance	2004	2003	2002	2001	2000
Total	4,763	6,059	11,199	18,054	14,544

islanders. Of the Pacific Island groups, Chuukese have the lowest incomes (Tables 10 and 11).

Table 10. Household and family income by ethnicity/race, Guam, 2000

Characteristic	Total	Single Ethnic Origin or Race									Multiple	
		Total	Cham	Chuuk	Palau	Other Islander	Filipino	Other Asian	White	Other	Total	Cham
Households	38,770	34,210	13,200	960	485	540	10,105	3,160	4,410	1,350	4,560	1,010
Less than \$2,500	3,110	2,195	965	95	50	50	440	330	200	80	915	55
\$2,500 to \$4,999	700	615	310	40	10	10	155	55	30	4	85	25
\$5,000 to \$9,999	1,770	1,580	735	120	50	45	385	125	70	30	205	60
\$10,000 to \$14,999	2,180	1,880	715	150	35	85	555	190	95	55	245	50
\$15,000 to \$24,999	4,760	4,250	1,435	215	70	105	1,340	430	445	210	505	115
\$25,000 to \$34,999	4,840	4,285	1,360	125	65	95	1,375	410	625	240	555	115
\$35,000 to \$49,999	6,355	5,725	1,945	90	85	70	1,935	535	810	255	630	165
\$50,000 to \$74,999	7,175	6,480	2,540	80	70	55	2,060	515	900	255	695	205
\$75,000 or more	7,935	7,215	3,215	40	50	20	1,865	575	1,245	215	715	215
Median (Dollars)	39,317	40,487	43,019	18,099	28,618	21,850	40,666	35,694	47,933	37,453	30,763	41,174
Mean (Dollars)	49,615	50,841	52,816	24,524	39,024	26,582	48,774	48,984	62,113	47,200	40,418	49,600
Families	32,365	29,060	11,660	915	425	490	9,170	2,215	3,180	1,005	3,305	865
Less than \$2,500	1,980	1,600	790	95	45	50	340	160	70	40	385	40
\$2,500 to \$4,999	510	480	240	45	4	15	105	30	15	4	55	20
\$5,000 to \$9,999	1,480	1,290	660	125	50	45	295	70	40	20	170	50
\$10,000 to \$14,999	1,735	1,560	640	145	30	75	470	110	55	35	175	45
\$15,000 to \$24,999	3,925	3,555	1,275	200	70	95	1,195	270	300	145	370	100
\$25,000 to \$34,999	4,080	3,655	1,190	115	60	85	1,292	295	445	175	430	100
\$35,000 to \$49,999	5,400	4,895	1,695	85	70	60	1,785	400	595	205	505	145
\$50,000 to \$74,999	6,285	5,675	2,285	65	55	45	1,955	400	665	200	595	175
\$75,000 or more	7,500	6,375	2,900	35	45	15	1,740	475	990	180	630	190
Median (Dollars)	41,229	41,687	44,151	17,123	27,425	20,132	41,761	40,536	51,544	40,000	36,801	41,830
Mean (Dollars)	51,677	52,193	53,607	23,335	39,433	25,112	49,999	54,893	66,433	49,664	47,146	50,185
Median earnings (Dollars)												
Male, full-time year-round workers	28,934	29,816	28,669	12,331	20,990	15,188	23,318	30,710	33,563	27,304	28,083	28,750
Female, full-time year-round workers	23,249	23,044	28,028	11,288	19,583	12,263	20,392	24,598	27,212	22,500	25,350	27,017
Per capita income (Dollars)	12,722	13,310	12,193	3,901	9,605	5,281	12,378	17,635	25,886	18,150	9,081	7,486

Source: Guam Statistical Yearbook, 2004

Table 11. Poverty levels and ethnicity/race, Guam, 2000

Characteristic	Total	Single Ethnic Origin or Race									Multiple	
		Total	Cham	Chuuk	Palau	Other Islander	Filipino	Other Asian	White	Other	Total	Cham
Below 50 percent of poverty level	19,615	15,915	8,000	1,940	415	835	2,895	1,110	480	245	3,700	865
		36,250	16,710	4,335	900	1,795	8,760	2,155	1,040	550	6,665	2,085
		54,690	23,930	5,225	1,240	2,355	15,330	3,370	2,150	1,100	9,585	3,120
		22,775	11,710	2,440	495	1,010	5,330	730	675	385	4,925	2,040
		15,355	7,940	1,485	340	830	3,805	520	400	235	3,210	1,330
		15,915	8,000	1,940	415	835	2,895	1,110	480	245	3,700	865

Source: Guam Statistical Yearbook, 2004

The composite picture from the previous data fails to accurately portray the distinct and diverse characteristics of each of Guam's 19 "villages," which are the basic units of analysis for the Strategic Prevention Framework-State Incentive Grant (SPF-SIG) substance abuse prevention program. Population demographics, ethnic/racial composition and socio-economic characteristics vary widely across each of the villages.

Table 12 depicts the variation in population size and gender composition. The largest village, Dededo, has a population of 42,980, while the smallest village, Umatac, has only 887 people. The village of Mongmong/Toto/Maite has 96.1 males per 100 females, while Hagatna has 157.0 males per 100 females.

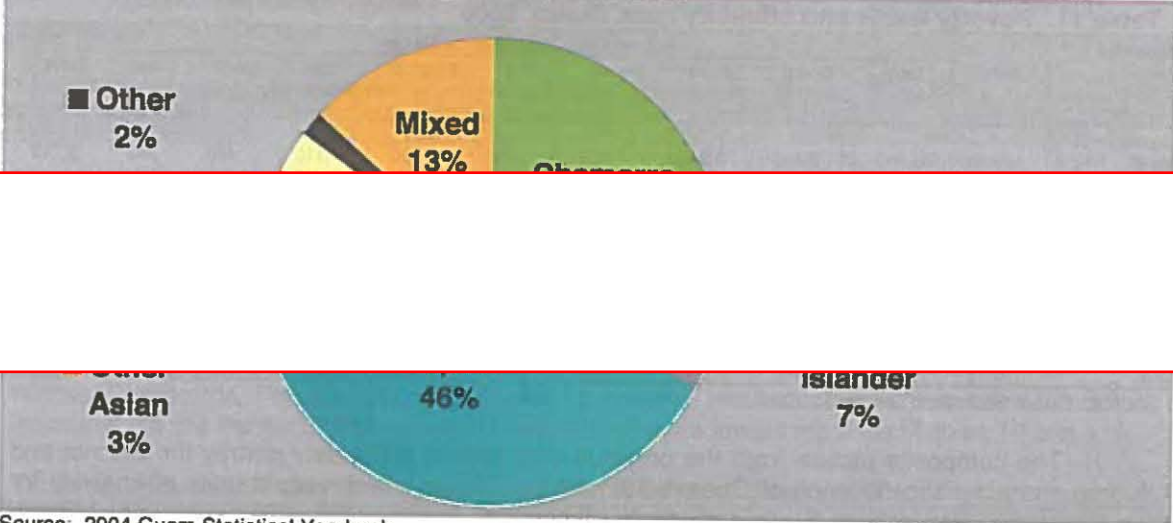
Table 12. Election district by sex, Guam, 2000

Election District	Number			Percent			Males per 100 Females
	Total	Males	Females	Total	Males	Females	
Guam	154,805	79,181	75,624	100.0	100.0	100.0	104.7
Agana Heights	3,940	1,946	1,994	2.5	2.5	2.6	97.6
Agat	5,656	2,910	2,746	3.7	3.7	3.6	106.0
Asan - Maina	2,090	1,078	1,012	1.4	1.4	1.3	106.5
Barrigada	8,652	4,320	4,332	5.6	5.5	5.7	99.7
Chalan Pago/Ordot	5,923	3,011	2,912	3.8	3.8	3.9	103.4
Dededo	42,980	21,645	21,335	27.8	27.3	28.2	101.5
Hagatna	1,100	672	428	0.7	0.8	0.6	157.0
Inarajan	3,052	1,546	1,506	2.0	2.0	2.0	102.7
Mangilao	13,313	6,958	6,355	8.6	8.8	8.4	109.5
Merizo	2,163	1,090	1,073	1.4	1.4	1.4	101.6
Mongmong/Toto/Maite	5,845	2,895	2,950	3.8	3.7	3.9	98.1
Piti	1,666	882	784	1.1	1.1	1.0	112.5
Santa Rita	7,500	4,028	3,472	4.8	5.1	4.6	116.0
Sinajana	2,853	1,433	1,420	1.8	1.8	1.9	100.9
Talofofo	3,215	1,641	1,574	2.1	2.1	2.1	104.3
Tamuning	18,012	9,420	8,592	11.6	11.9	11.4	109.6
Umatac	887	465	422	0.6	0.6	0.6	110.2
Yigo	19,474	9,999	9,475	12.6	12.6	12.5	105.5
Yona	6,484	3,242	3,242	4.2	4.1	4.3	100.0

Source: U.S. Census Bureau, 2000 Guam Census Profile

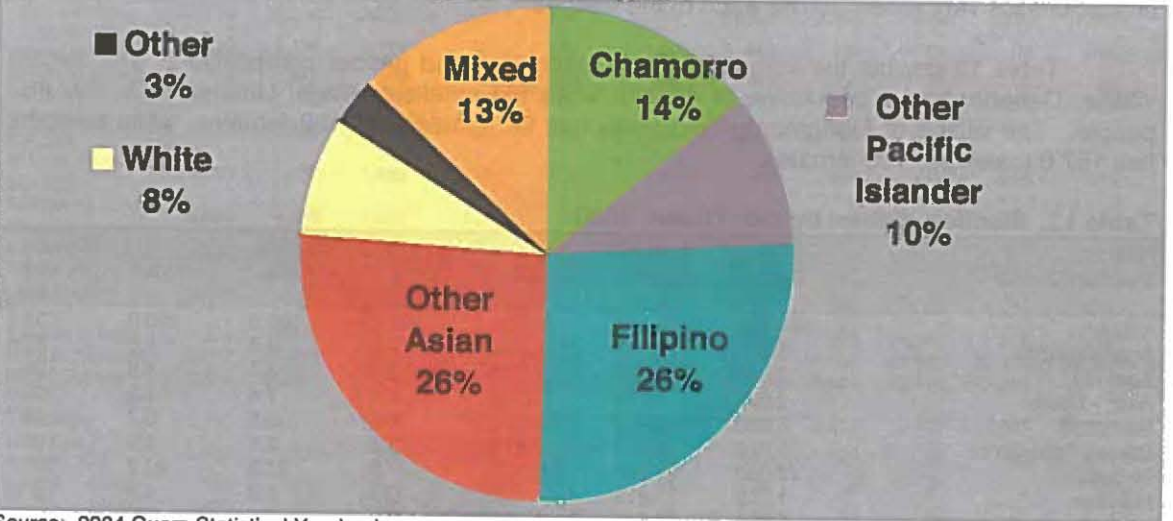
The villages' ethnic/racial composition also varies widely (Figures 6-8, Table 13). For example, Chamorros form the bulk of the entire island's population, but they comprise only one-quarter of the population of the village of Dededo. In contrast, Filipinos, who comprise 26% of the island's population, make up 46% of Dededo. Asian groups other than Filipinos comprise less than 5% of the total island population, but they make up 26% of the population of Tamuning. The village of Inarajan is almost entirely made up of Chamorros. Each village is described in detail in the "Village Profiles," which are available online at www.peaceguam.org

Figure 6. Ethnic composition, village of Dededo, 2000



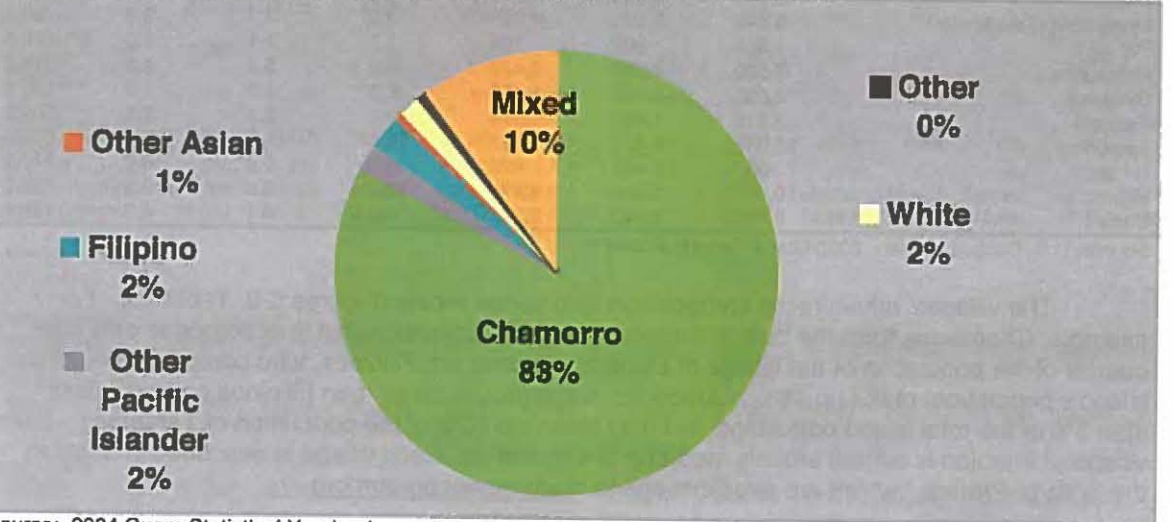
Source: 2004 Guam Statistical Yearbook

Figure 7. Ethnic composition, village of Tamuning, 2000



Source: 2004 Guam Statistical Yearbook

Figure 8. Ethnic composition, village of Inarajan, 2000



Source: 2004 Guam Statistical Yearbook

Table 13. Villages by ethnic/racial composition, Guam, 2000

Ethnic Origin or Race	Single Ethnic Origin or Race										Multiple		
	Total	Total	Cham	FAS	Total	Asian	Other	White	Black	Other	Total	Cham	Asian
Total	154,805	133,252	57,297	10,971	50,329	40,729	9,600	10,509	1,568	2,578	21,553	7,946	10,853
Agana Heights	3,940	3,443	2,374	244	494	411	83	228	24	58	497	321	230
	356	5,001	3,269	128	1,362	1,324	38	168	10	50	655	500	381
	990	1,852	1,328	64	208	164	44	175	5	48	238	163	117
	552	7,739	4,383	523	2,249	1,622	627	392	21	126	913	483	499
	923	4,281	2,803	322	825	637	188	285	14	40	1,642	308	730
	960	37,274	11,068	3,058	20,778	19,322	1,456	1,356	255	438	5,706	1,977	3,081
	100	969	455	178	275	171	104	41	5	13	131	88	48
	552	2,736	2,515	64	91	71	20	50	1	14	316	112	144
	313	11,637	5,565	974	3,971	2,948	1,023	526	46	178	1,676	736	891
	163	1,972	1,804	41	49	31	18	72	2	17	191	115	93
Mongmong/Toto/Maite	5,845	5,136	2,769	674	1,330	934	396	214	25	124	709	338	347
Piti	1,666	1,401	841	50	202	113	89	272	12	24	265	160	130
Santa Rita	7,500	6,118	2,051	60	1,595	1,497	98	1,783	362	267	1,382	263	615
Sinajana	2,853	2,521	1,854	168	321	194	127	112	9	57	332	242	167
Talofofo	3,215	2,977	2,408	142	143	101	42	218	7	59	238	122	89
Tamuning	18,012	15,670	2,556	1,783	9,382	4,723	4,659	1,396	114	439	2,342	710	1,232
Umatac	887	835	801	6	11	7	4	10	2	5	52	44	22
Yigo	19,474	16,358	4,278	1,500	8,579	6,124	455	2,835	629	537	3,116	900	1,515
Yona	6,484	5,332	4,175	208	464	335	129	376	25	84	1,152	366	522

Source: U.S. Census Bureau, Census 2000 Demographic Profile for Guam
FAS = Freely Associated States

The variation in ethnic composition accounts for the differences in frequency of English use at home across the villages (Table 14). Variations in employment status and ethnicity/race are associated with differences in income and poverty status (Tables 15-18). The interrelationship of education, employment, income and ethnicity/race is critical when examining tobacco, alcohol and other drug consumption patterns.

Table 14. Frequency of English use at home, Guam, 2000

Election District	Total 5 years and older	English only	Other language	Speak other language			Does not speak English
				Less freq than English	Equally often as English	More freq than English	
Guam	138,020	52,931	85,189	21,114	31,503	31,654	918
Agana Heights	3,546	1,572	1,974	761	693	519	1
Agat	4,986	2,050	2,936	911	1,207	816	2
Asan - Maina	1,884	929	955	327	371	253	4
Barrigada	7,782	2,976	4,806	1,416	1,759	1,592	39
Chalan Pago/Ordot	5,310	2,221	3,089	964	1,242	869	14
Dededo	38,152	12,505	25,647	5,191	9,389	10,926	141
Hagatna	1,023	318	705	167	234	282	22
Inarajan	2,709	874	1,835	651	739	437	8
Mangilao	11,958	4,340	7,618	1,874	2,596	2,860	288
Merizo	1,890	690	1,200	482	465	251	2
Mongmong/Toto/Maite	5,185	2,021	3,164	815	1,263	1,074	12
Piti	1,536	804	732	299	253	167	13
Santa Rita	6,724	3,848	2,876	954	1,091	828	3
Sinajana	2,572	1,107	1,465	497	528	436	4
Talofofo	2,838	1,362	1,476	549	580	344	3
Tamuning	16,301	4,491	11,810	1,872	3,545	6,102	291
Umatac	767	291	476	196	207	73	0
Yigo	17,093	7,817	9,276	2,083	3,982	3,162	49
Yona	5,764	2,615	3,149	1,105	1,359	663	22

Source: U.S. Census Bureau, 2000 Guam Census Profile

Table 15. Employment status by village, Guam, 2000

Election District	Total 16+ years	In labor force							Not in labor force	
		Civilian labor force								
		Total	Total	Total	W/ subsist.	Unemployed	Percent	Armed Forces	Total	Subsistence only
Guam	105,014	68,894	64,452	57,053	4,480	7,399	11.5	4,442	36,120	2,382
Agana Heights	2,762	1,848	1,747	1,575	101	172	9.8	101	914	68
Hagatna	884	451	449	378	27	71	15.8	2	433	17
Inarajan	1,918	1,091	1,060	902	100	178	16.5	11	827	68
Mangilao	9,239	5,550	5,466	4,847	335	619	11.3	84	3,689	257
Merizo	1,332	729	720	607	77	113	15.7	9	603	49
Mongmong/Toto/Maite	3,853	2,474	2,438	2,135	184	303	12.4	36	1,379	86
Piti	1,214	852	803	746	53	57	7.1	49	362	35
Santa Rita	5,339	3,838	2,527	2,293	183	234	9.3	1,311	1,501	99
Sinajana	1,965	1,235	1,206	1,073	86	133	11.0	29	730	42
Talofofo	2,053	1,270	1,256	1,072	108	184	14.6	14	793	82
Tamuning	13,368	9,513	9,233	8,495	641	738	8.0	280	3,855	219
Umatac	552	360	358	259	27	99	27.7	2	192	13
Yigo	12,633	8,671	6,995	6,181	532	815	11.6	1,675	3,952	255
Yona	4,137	2,524	2,490	2,137	209	353	14.2	34	1,613	97

Source: U.S. Census Bureau, 2000 Guam Census Profile

Table 16. Election district by household income in 1999, Guam, 2000

Election District	House holds	Less than \$2,500	\$2,500 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$24,999	\$25,000 to \$34,999	\$35,000 to \$49,999	\$50,000 to \$74,999	\$75,000 to \$99,999	\$100,000 and more	Median Hhold income (\$)	Mean Hhold income (\$)
Guam	38,769	3,110	698	1,768	2,128	4,758	4,842	6,357	7,175	3,982	3,951	29,317	49,6
Agana Heights	1,058	31	13	45	49	122	126	171	204	139	158	47,396	57,7
Agat	1,298	65	35	78	110	174	140	223	252	117	104	37,398	45,3
Asan - Maina	552	37	8	31	18	51	63	73	102	74	95	48,611	62,4
Barrigada	2,097	121	24	77	93	186	209	339	412	275	361	49,974	62,2
Chalan Pago/Ordot	1,573	267	38	80	77	155	145	205	259	174	172	36,505	46,9
Dededo	10,016	679	185	472	608	1,350	1,330	1,737	1,904	1,005	746	37,654	45,8
Hagatna	268	31	9	11	19	48	27	43	39	17	24	31,136	42,1
Inarajan	644	53	15	26	38	77	64	108	126	69	68	42,361	51,8
Mangilao	3,190	311	70	167	158	360	360	495	597	358	314	39,754	48,2
Merizo	471	35	8	20	34	49	48	81	106	51	39	39,940	48,2
Mongmong/Toto/Maite	1,633	241	34	105	118	210	161	221	248	137	158	31,134	46,2
Piti	474	17	9	18	17	50	51	57	89	60	106	54,167	71,2
Santa Rita	1,780	56	1	33	56	219	320	371	370	177	167	41,928	51,2
Sinajana	742	48	21	32	31	67	67	114	146	93	123	48,750	59,2
Talofofo	738	50	18	34	31	74	81	92	149	98	111	47,885	56,2
Tamuning	5,953	650	110	291	358	761	754	949	948	486	626	35,347	48,2
Umatac	162	9	6	10	12	23	23	16	24	17	22	34,286	51,2
Yigo	4,634	316	66	172	229	634	729	883	892	422	291	37,415	44,2
Yona	1,486	93	18	66	72	128	143	179	308	213	266	52,955	62,2

Source: U.S. Census Bureau, 2000 Guam Census Profile

Hhold = Household

Table 17. Election district by family income in 1999, Guam, 2000

Election District	Families	Less than \$2,500	\$2,500 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$24,999	\$25,000 to \$34,999	\$35,000 to \$49,999	\$50,000 to \$74,999	\$75,000 to \$99,999	\$100,000 and more	Median family income (\$)	Mean family income (\$)
Guam	32,367	1,982	512	1,461	1,734	3,923	4,082	5,400	6,267	3,536	3,470	41,229	51,674
Agana Heights	858	22	12	35	40	92	92	139	169	118	139	49,625	60,034
Agat	1,119	50	21	68	94	152	114	192	227	107	94	39,107	46,716
Asan - Maina	454	23	5	27	17	35	55	70	87	62	83	50,000	64,164
			22	62	71	159	179	295	370	254	329	51,991	64,065
			29	73	55	125	119	172	225	150	149	40,583	51,000
			139	421	530	1,185	1,217	1,561	1,758	930	693	39,336	47,443
			6	7	10	28	22	32	31	13	20	36,111	47,701
			15	22	29	70	62	95	124	63	61	43,355	52,605
			57	149	134	296	299	405	502	316	275	40,839	49,667
Merizo	417	26	8	14	27	47	44	75	100	39	37	41,477	49,187
Mongmong/Toto/Maite	1,248	129	26	83	86	167	126	165	204	126	136	35,473	51,959
Piti	366	14	6	15	17	30	32	40	66	51	95	61,500	76,588
Santa Rita	1,557	39	9	22	44	178	277	331	339	161	157	43,794	53,450
Sinajana	612	33	12	24	26	58	50	94	128	84	103	51,500	61,608
Talofofo	653	50	11	31	35	63	67	79	124	93	100	48,304	56,247
Tamuning	4,031	314	63	185	233	537	510	667	679	365	478	38,011	52,937
Umatac	150	8	6	11	13	19	17	16	25	18	17	36,250	50,722
Yigo	4,202	248	50	149	203	567	683	812	829	392	269	38,190	45,542
Yona	1,324	75	15	63	70	115	117	160	280	194	235	53,704	62,605

Source: U.S. Census Bureau, 2000 Guam Census Profile

Table 18. Election district by poverty status, Guam, 2000

Election District	Families	With related children under 18	With related children under 5	Families with female householder, no husband present	With related children under 18	With related children under 5	Individuals	18 years and over	65 years and over	Related children 0-17 years	Related Children 5-17 years	Unrelated Individuals 15+ years
Guam	6,466	5,420	3,180	2,434	2,189	1,287	34,792	19,143	1,302	15,509	10,247	3,203
Agana Heights	113	97	61	59	48	29	599	332	29	266	177	76
Agat	254	224	140	133	123	81	1,400	682	51	711	463	135
Asan - Maina	79	67	36	27	25	12	423	216	23	203	151	38
Barrigada	260	213	124	96	87	53	1,525	884	65	633	427	220
Chalan Pago/Ordot	320	265	144	134	115	61	1,644	957	52	676	456	158
Dededo	1,802	1,528	894	640	584	349	9,745	5,158	392	4,545	3,002	705
Hagatna	44	32	17	15	12	4	294	207	16	87	54	76
Inarajan	134	110	65	48	42	26	715	392	29	320	224	81
Mangilao	637	540	322	260	238	148	3,301	1,831	89	1,459	945	300
Merizo	90	81	51	37	35	20	477	221	18	253	162	36
Mongmong/Toto/Maite	357	312	178	162	145	76	1,915	983	63	930	633	110
Piti	48	37	17	16	14	6	255	179	10	85	58	74
Santa Rita	124	104	62	48	43	26	618	348	29	264	174	66
Sinajana	116	96	58	57	50	32	620	332	25	283	198	60
Talofofo	144	127	81	64	61	38	790	396	36	384	249	84
Tamuning	872	664	388	285	240	134	4,666	3,078	191	1,575	968	621
Umatac	49	45	33	20	19	13	280	144	8	135	83	19
Yigo	762	644	379	221	201	122	4,092	2,151	141	1,933	1,295	255
Yona	261	234	130	112	107	57	1,423	662	35	767	528	89

Source: U.S. Census Bureau, 2000 Guam Census Profile

SECTION 3

Consumption



SECTION 3

Chapter 1

PROBLEM STATEMENT:

Guam faces a major public health challenge with tobacco. Adult smoking rates are the highest among all US States and Territories. Youth smoking rates parallel the high adult rates. Moreover, while smoking among youth nationally is on the decline, smoking rates among Guam's middle school youth continue to climb.

Chewing tobacco with betel nut is prevalent among Micronesian youth. This particular form of tobacco consumption is increasing among middle school students.

Tobacco consumption among court-involved youth mirrors the high rates seen in youth within the general population. One in five court-involved youth report tobacco as the gateway substance of abuse.

TOBACCO CONSUMPTION: ADULTS IN THE GENERAL POPULATION

Tobacco consumption is highly prevalent on Guam. Data on adult smoking is largely provided through the Behavioral Risk Factor Surveillance System (BRFSS), for which information is available for the years 2001-2003. Additional sources of information include smaller scale surveys and regional databases maintained by the World Health Organization (WHO) and the

sub-groups. Despite these limitations, the data paints a sufficiently detailed picture of cigarette consumption on Guam.

Table 19 compares prevalence of current smoking between Guam and the US national average for the years 2001 to 2003. Current smokers were defined as persons who had smoked at least 100 cigarettes and who reported being a smoker at the time of the interview.

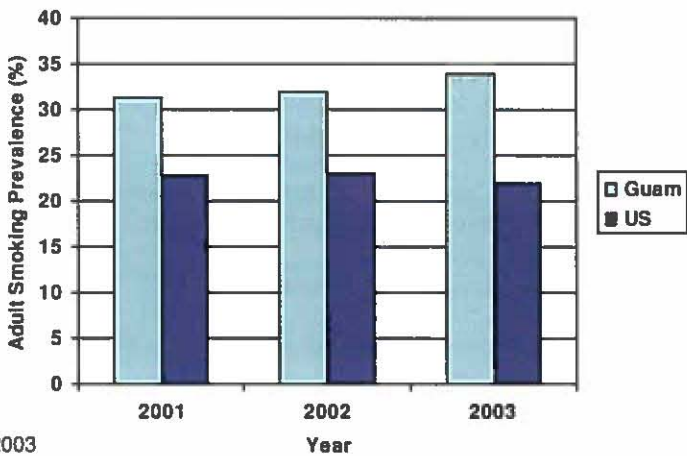
Table 19. Trends in prevalence of current smoking, Guam vs. US, 2001-2003

Year	Guam % (CI) n	US Median % # of States
2001	31.2 (27.4-34.9) 252	22.8 54
2002	31.9 (27.9-35.8) 249	23.0 54
2003	34.0 (30.1-37.8) 254	22.0 54

Source: Behavior Risk Factor Surveillance System at <http://www.cdc.gov/brfss/index.htm>
Last accessed 19 January 2006

The data reveals that one in three adults on Guam is a smoker. Current smoking among adults on Guam is significantly higher than the nation. In fact, in 2003, Guam ranked 1st among all US States and Territories for smoking prevalence (Figure 9).

Figure 9. Adult smoking prevalence, Guam vs. US, 2001-2003



Source: BRFSS, 2001-2003

Table 20. Current smoking by gender, Guam, US and Western Pacific Region

Area	Year/Source	Male (%)	Female (%)
Guam	2003/BRFSS	42.0 (CI: 36.1-47.8)	25.9 (CI: 21.1-30.5)
United States	2003/BRFSS	24.7	20.2
Western Pacific Region	2002/WHO-WPRO	60.0	6.0

higher among males. Male smoking rates on Guam are significantly higher than the regional average, but lower than the Western Pacific regional average. Smoking prevalence, however, is higher on Guam than on the US mainland and within the Western Pacific Region. Male smoking on Guam is more than four times the regional average (Table 20).

Table 21. Smoking status and age, Guam, 2003

Age	Smoke everyday (%)	Smoke some days (%)	Former Smoker (%)	Never smoked (%)
18-24	20.8	12.8	7.6	N/A
25-34	26.9	7.7	11.5	54.0
35-44	35.4	10.5	10.4	43.7
45-54	29.4	3.6	20.5	46.5
55-64	16.6	5.6	N/A	N/A
65+	16.5	2.1	N/A	N/A

Source: Behavior Risk Factor Surveillance System at <http://www.cdc.gov/brfss/index.htm> Last accessed 19 Jan 2006

Smoking is highest among adults aged 25-54, and is reported less frequently by those over 55. This probably represents the survival advantage of non-smokers, which becomes manifest after the 4th and 5th decades of life (Table 21).

Smoking is more prevalent among those with lower incomes and less education. Conversely, the percentage of adults who have never smoked in their lives increases with higher incomes and higher educational attainment (Tables 22-23). This is consistent with findings from similar surveys across the world, highlighting the social inequity associated with smoking.

Table 22. Smoking status and income level, Guam, 2003

Income per year	Smoke everyday (%)	Smoke some days (%)	Former smoker (%)	Never smoked (%)
<\$15,000	N/A*	8.2 (CI: 1.8-14.5)	7.6 (CI: 2.5-12.6)	N/A*
\$15,000-24,999	30.8 (CI: 22.3-39.2)	9.9 (CI: 4.4-15.3)	17.2 (CI: 10.0-24.3)	42.2 (CI: 33.3-51.0)
\$25,000-34,999	31.6 (CI: 22.1-41.0)	5.0 (CI: 1.5-8.4)	11.9 (CI: 5.1-18.6)	51.5 (CI: 41.5-66.8)
\$35,000-49,999	18.0 (CI: 10.3-25.6)	8.7 (CI: 3.3-14.0)	15.9 (CI: 9.3-22.4)	57.4 (CI: 47.9-66.8)
\$50,000+	22.1 (CI: 15.6-28.5)	6.1 (CI: 2.1-10.0)	20.6 (CI: 14.5-26.6)	51.2 (CI: 43.5-58.8)

Source: Behavior Risk Factor Surveillance System at <http://www.cdc.gov/brfss/index.htm> Last accessed 19 Jan 2006
Note: * N/A=Not available if the unweighted sample size for the denominator was less than 50 or the CI half width was >10 for any cell

Table 23. Smoking status and educational attainment, Guam, 2003

Education	Smoke everyday (%)	Smoke some days (%)	Former smoker (%)	Never smoked (%)
Less than H.S.	N/A	13.8	7.8	N/A
H.S. or G.E.D.	33.2	9.1	13.8	43.9

About one in five current smokers tried to quit for at least one day in the past year. This highlights the need for cessation services to support those who desire to quit using tobacco (Table 24).

Table 24. Percent current smokers with a quit attempt in the past year, Guam, 2003

Year	Percent who attempted to quit for at least one day in the past year
2001	17.0
2002	19.4
2003	19.6

Source: Behavior Risk factor Surveillance System, Department of Public Health and Social Services

Among health professionals, preliminary results of an ongoing survey indicate that smoking is less prevalent than the general population. However, despite the overwhelming medical evidence of the adverse health impact of smoking, 8% of all health professionals on Guam still smoke (Table 25).

Table 25. Smoking status, general population vs. health professionals, Guam

	Smoke everyday (%)	Smoke some days (%)	Former smoker (%)	Never smoked (%)
Guam overall	26.3%	7.8%	14.3%	51.7%
Guam Health professionals	6%	2%	27%	61%

Source: Guam Health Professionals Survey, University of Guam Tobacco Control Research Advisory Group and Department of Mental Health and Substance Abuse

TOBACCO CONSUMPTION: YOUTH IN THE GENERAL POPULATION

Tobacco use is also prevalent among Guam's youth. Data on youth smoking is largely provided through the Youth Risk Behavior Study (YRBS), for which biennial information is available for the years 1995-2003. Additional sources of information include smaller scale surveys conducted by the Department of Mental Health and Substance Abuse (DMHSA) and the Youth Organization (Y4Y), as well as the 2002 Global Youth Tobacco Survey (GYTS) and the Tobacco Free Initiative (TFI) of the World Health Organization Western Pacific Region (WPRO) provided data from the GYTS.

The YRBS for the years 1999, 2001 and 2003 have not been reported in national databases because the data were not weighted. The withdrawal of several private schools from the survey, after sampling was already carried out, resulted in low overall response rates. This profile uses the unweighted data from those years. Therefore, care must be taken when comparing the results from 1999 – 2003 with US national averages.

An additional challenge is the variable system of coding for ethnicity/race over the different survey years. Table 26 shows how data for ethnicity/race was coded for the years of the survey. For this profile, categories were collapsed to: Filipino, Other Asian, Chamorro, Micronesian Islanders, White and Others for the 1999-2003 databases.

Table 26. Codes for ethnicity/race across time, Guam YRBS, 1995-2003

	1995	1997	1999	2001	2003
Middle School	NA	NA	1. Chinese 2. Korean 3. Other Asian 4. Filipino 5. Chamorro 6. Micronesian Islanders 7. Other PI Group 8. Other Ethnicity 9. Multiple	1. Asian 2. Filipino 3. Chamorro 4. Micronesian Islander 5. Black or African American 6. Hispanic or Latino 7. Native Hawaiian, Am Indian, PI 8. White	1. Asian 2. Filipino 3. Chamorro 4. Micronesian Islander 5. Black or African American 6. Hispanic or Latino 7. Native Hawaiian, Am Indian, PI 8. White 9. Multiple-Hispanic 10. Multiple-nonhispanic
High School	1. White 2. Black 3. Hispanic 4. Other	1. White 2. Black 3. Hispanic 4. Other	1. Asian 2. Filipino 3. Chamorro 4. All Other Races 5. Multiple Races	1. Filipino 2. Asian 3. Chamorro 4. Micronesian Islander 5. Black or African American 6. Hispanic or Latino 7. Native Hawaiian, Am Indian, PI 8. White	1. Filipino 2. Asian 3. Chamorro 4. Micronesian Islander 5. Black or African American 6. Hispanic or Latino 7. Native Hawaiian, Am Indian, PI 8. White 9. Multiple-Hispanic 10. Multiple-Nonhispanic

Prevalence of cigarette use among youth has been declining in the US mainland. Nationwide, lifetime cigarette use, current cigarette use and current frequent cigarette use have been decreasing steadily since 1995.

Guam surpasses the US mainland in youth cigarette use prevalence. Smoking is higher among youth on Guam, and declines in lifetime, current and current frequent cigarette use are

Table 27. Trends in smoking prevalence, high school youth, US vs. Guam, 1995-2003

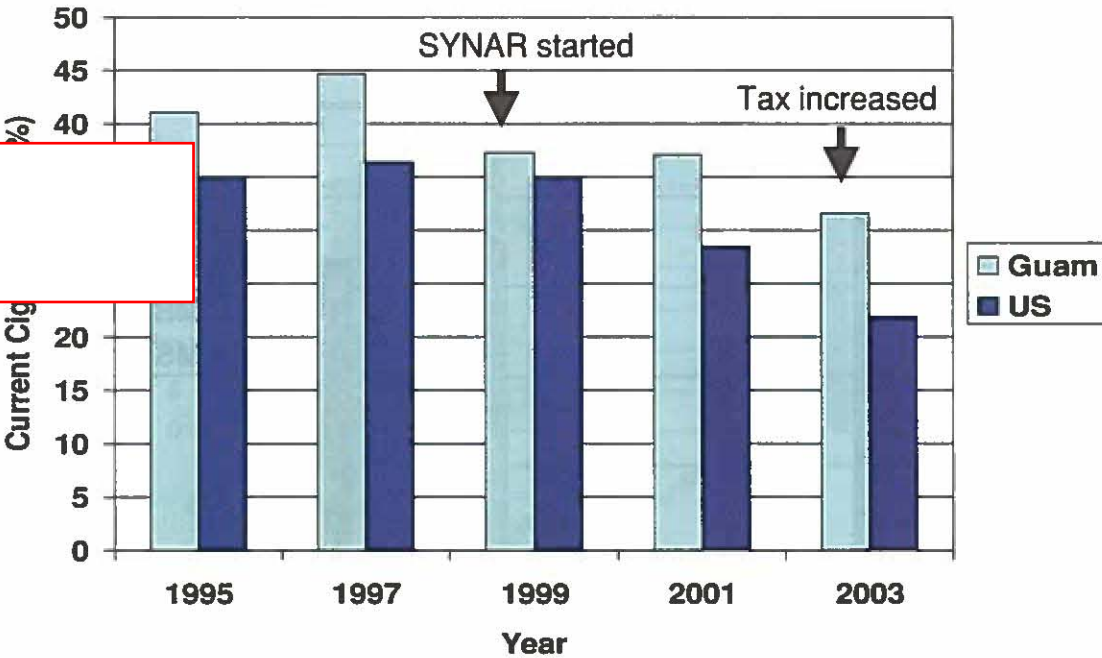
	1995	1997	1999	2001	2003
Lifetime cigarette use (Ever tried cigarette smoking, even one or two puffs)					
US National average	71.3	70.2	70.4	63.9	58.4
Guam	84.9	79.1	83.7	70.1	75.6
Current cigarette use (Smoked cigarettes on one or more of the 30 days preceding the survey)					
US national average	34.8	36.4	34.8	28.5	21.9
Guam	41.1	44.7	37.3	37.1	31.6
Current frequent cigarette use (Smoked cigarettes on 20 or more of the 30 days preceding the survey)					
US national average	16.1	16.7	16.8	13.8	9.7
Guam	17.5	23.5	17.7	18.5	17.4
Current heavy cigarette use (Smoked more than 10 cigarettes per day on the days that they smoked, 30 days preceding the survey)					
US national average	5.7	5.0	5.2	4.1	3.1
Guam	3.8	4.9	4.5	4.9	3.9
Percentage who smoked a whole cigarette for the first time before the age of 13					
US national average	24.9	24.8	24.7	22.1	18.3
Guam	31.5	37.9	39.1	34.3	30.7

Source: YRBS 1995-2003

In 2003, three-quarters of Guam's high school youth reported having tried smoking, and one in three was a current cigarette user (Table 27). More high school students reported ever trying cigarette smoking than alcohol or other drugs. About one in five high school students was a frequent smoker, smoking on 20 of the past 30 days preceding the survey.

Current smoking among youth on Guam parallels adult smoking rates. Of note, a greater percentage of Guam youth start smoking before the age of 13 as compared to the US average; this has not changed significantly from 1995 (Table 27).

Figure 10. Current cigarette use among youth, US Vs. Guam, 1995-2003



Sources: YRBS 1995-1997; SYNAR data from DMHSA; Guam Public Law 27-005

Unlike adults, current smoking rates are similar for young males and females (Table 28). This lack of gender difference is worrisome, and raises the potential for tobacco-induced poorer reproductive outcomes if smoking rates among young females are not decreased in the near future.

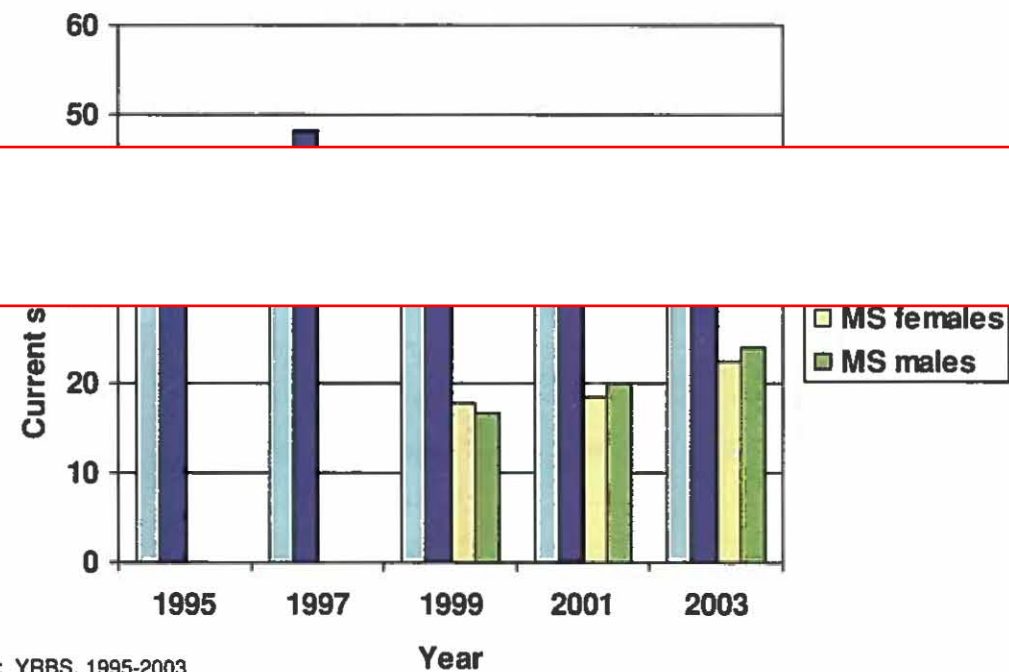
Table 28. Current cigarette use among youth by sex, Guam 1995-2003

Year	Total (%)	Female (%)	Male (%)
High School			
1995	41.1	43.3	39.0
1997	44.7	41.6	48.3
1999	37.3	37.6	36.7
2001	37.1	35.0	38.7
2003	31.6	30.0	33.1
Middle School			
1995	NA	NA	NA
1997	NA	NA	NA
1999	17.3	17.7	16.6
2001	19.2	18.5	20.0
2003	23.1	22.4	24.0

Source: YRBS 1995-2003

Current smoking appears to be decreasing for high school students, although not to the full extent of the decrease seen among US mainland youth. The largest decline occurred in 2003, when tobacco taxes were raised from \$0.07 per pack to \$1.00 per pack, a 1400% increase. Of concern is the lack of impact on middle school youth, who are demonstrating increasing current cigarette use. This trend applies for both males and females in middle school (Table 28 and Figure 11).

Figure 11. Current cigarette use among youth by sex, Guam, 1995-2003



Source: YRBS, 1995-2003

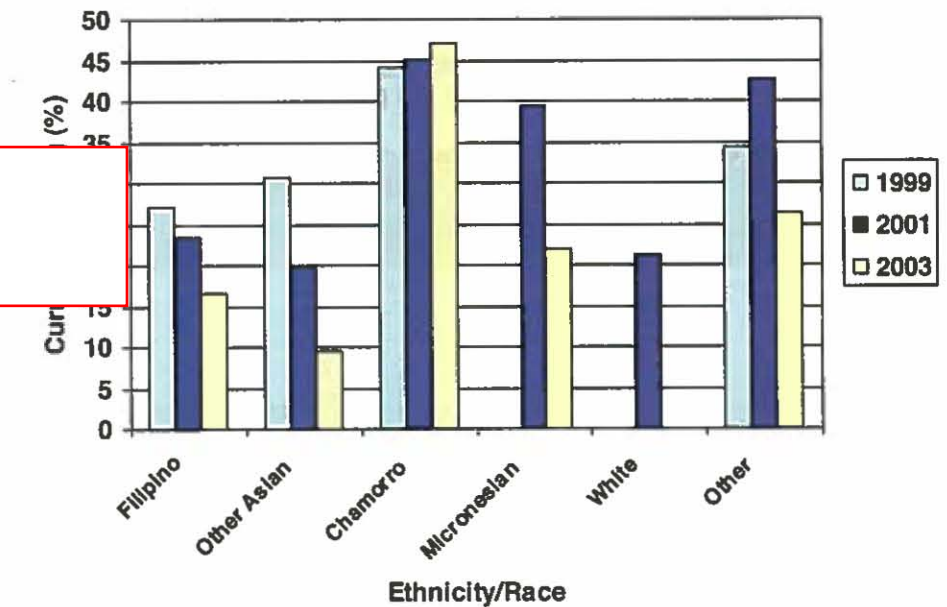
Current smoking among youth disaggregated by ethnicity/race is summarized in Table 29. Cells with counts under 50 are denoted by (*). Among high school students, Chamorros have the highest rates for current smoking; rates have increased since 1999 (Figure 12). Filipinos have the lowest rates, with appreciable decreases since 1999. Among middle school youth, Chamorros and Micronesian Islanders have the highest rates for current tobacco use, with significant increases since 1999. Filipino youth have the lowest rates, but smoking has increased since 1999. In general, current smoking is increasing among middle school youth regardless of ethnicity/race (Figure 13).

Table 29. Current smoking among youth by ethnicity/race, Guam, 1999-2003

Year	Filipino	Other Asian	Chamorro	Micronesian Islander	White	Others
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
High School						
1999	27.1 (170)	30.8* (26)	44.2 (292)	NA	NA	34.3 (67)
2001	23.3 (343)	19.7 (76)	45.2 (693)	39.6 (91)	21.1* (38)	42.8 (63)
2003	16.7 (209)	9.5* (21)	47.0 (313)	22.0* (41)	0* (5)	26.3 (118)
Middle School						
1999	7.7 (196)	10.3* (29)	25.6 (309)	6.7* (15)	NA	14.5 (55)
2001	9.8 (490)	3.9 (51)	24.9 (858)	24.8 (121)	14.8* (27)	21.8 (55)
2003	11.5 (243)	9.5* (21)	31.5 (391)	32.7 (52)	42.9* (7)	19.9 (161)

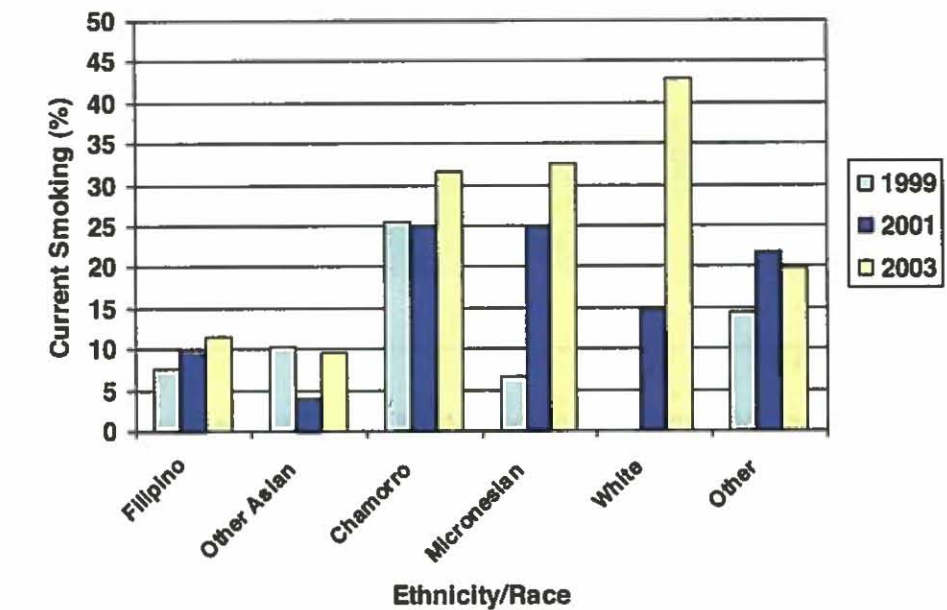
*Denotes cells where n < 50.
Source: YRBS, 1999-2003

Figure 12. Current cigarette use among High School youth, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Figure 13. Current cigarette use among Middle School youth, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Tables 30 and 31 show the lifetime and current prevalence of daily cigarette use among Guam's youth. The next table demonstrates the high percentage of youth smokers who want to quit. Taken together, these figures are indicative of the addictiveness of nicotine among adolescents. The percentage of youth smokers wanting to quit in the past year is also increasing, signaling the need to provide cessation services for this population (Table 32).

	(303)	(132)	(170)
2003	20.2	17.5	22.9
	(154)	(66)	(88)
Middle School			
1999	9.4	9.3	9.1
	(60)	(34)	(24)
2001	7.2	7.3	7.1
	(120)	(63)	(57)
2003	13.0	12.6	14.4
	(124)	(64)	(59)

Source: YRBS, 1999-2003

Table 31. Current daily cigarette use among youth, Guam, 1999-2003

Year	Total (%) n	Female (%) n	Male (%) n
High School			
1999	13.9 (78)	11.2 (33)	17.0 (45)
2001	14.5 (190)	11.5 (77)	17.8 (113)
2003	20.2 (154)	17.5 (66)	22.9 (88)
Middle School			
1999	3.3 (20)	2.5 (9)	4.5 (11)
2001	3.4 (54)	3.2 (27)	3.5 (27)
2003	13.5 (124)	12.6 (64)	14.4 (59)

Source: YRBS, 1999-2003

Table 32. Percentage of youth smokers who tried to quit in the past year, Guam, 1999-2003

Year	Total (%) N	Female (%) N	Male (%) N
High School			
1999	58.7 (277)	61.2 (150)	55.9 (127)
2001	77.1 (442)	76.9 (206)	77.2 (234)
2003	81.5 (216)	80.4 (102)	82.5 (114)

Source: YRBS, 1999-2003

The use of chewing tobacco is less prevalent than cigarette smoking among Guam's youth. However, other tobacco use, particularly chewing tobacco mixed with betel nut, is increasing among middle school youth. As of 2003, middle school rates were similar to high school rates. Overall, males have a higher prevalence of chewing tobacco than females (Table 33).

Table 33. Current use of other tobacco products among youth, by sex, Guam, 1999-2003

	Total (%) N	Female (%) n	Male (%) n
	4.0 (581)	3.2 (310)	4.8 (270)
2001	6.3 (1367)	2.9 (700)	8.9 (663)
2003	5.6% (791)	3.6 (384)	7.4 (407)
Middle School			
1999	3.2 (630)	1.6 (365)	5.0 (260)
2001	5.0 (1692)	4.4 (869)	5.5 (821)
2003	6.3% (939)	5.0 (522)	7.7 (414)

Source: YRBS, 1999-2003

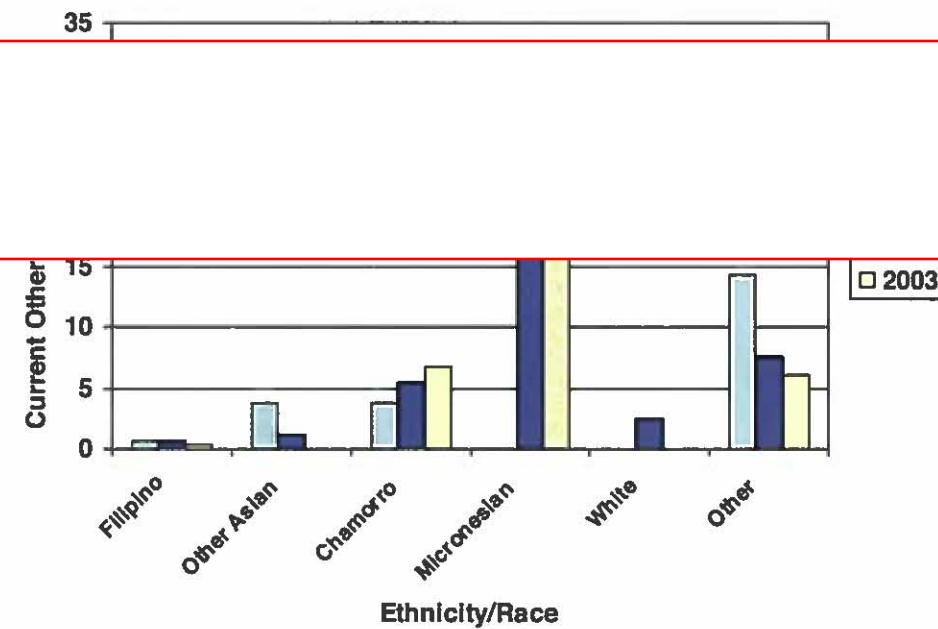
Chewing tobacco is highest among Micronesian Islanders. Filipinos and Other Asians have the lowest rates. Prevalence of chewing tobacco appears to be increasing among Chamorro youth, whether in high school or middle school, and among Filipino and Micronesian middle school youth (Table 34, Figures 14 and 15).

Table 34. Current use of other tobacco products among youth by ethnicity/race, Guam, 1999-2003

Year	Filipino % (n)	Other Asian % (n)	Chamorro % (n)	Micronesian Islander % (n)	White % (n)	Others % (n)
High School						
1999	0.6 (178)	3.7* (27)	3.7 (301)	NA	NA	14.3 (70)
2001	0.6 (353)	1.2 (81)	5.5 (723)	31.6 (98)	2.5* (40)	7.6 (66)
2003	0.4 (225)	0* (22)	6.8 (365)	21.7* (46)	0* (5)	6.0 (126)
Middle School						
1999	0.5 (199)	0* (30)	3.7 (321)	20.0* (15)	NA	5.4 (56)
2001	0.8 (517)	0 (53)	4.5 (896)	27.6 (127)	3.3* (30)	6.6 (61)
2003	1.2 (250)	0* (21)	6.4 (420)	31.7 (63)	12.5* (8)	4.7 (171)

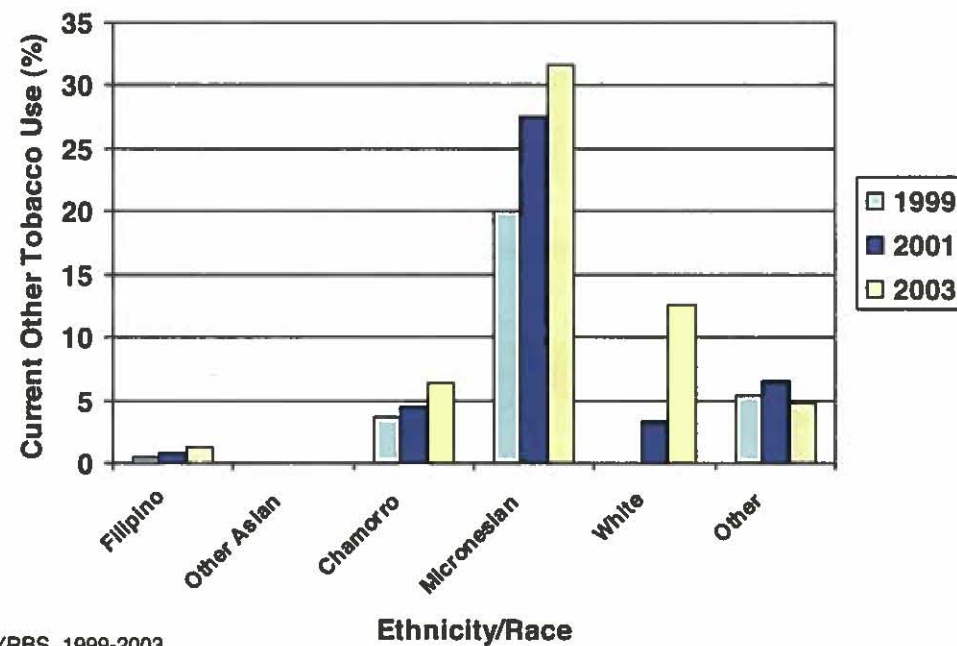
*Denotes cells where n < 50.
Source: YRBS, 1999-2003

Figure 14. Current use of other tobacco products among High School youth by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Figure 15. Current use of other tobacco products among Middle School youth by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

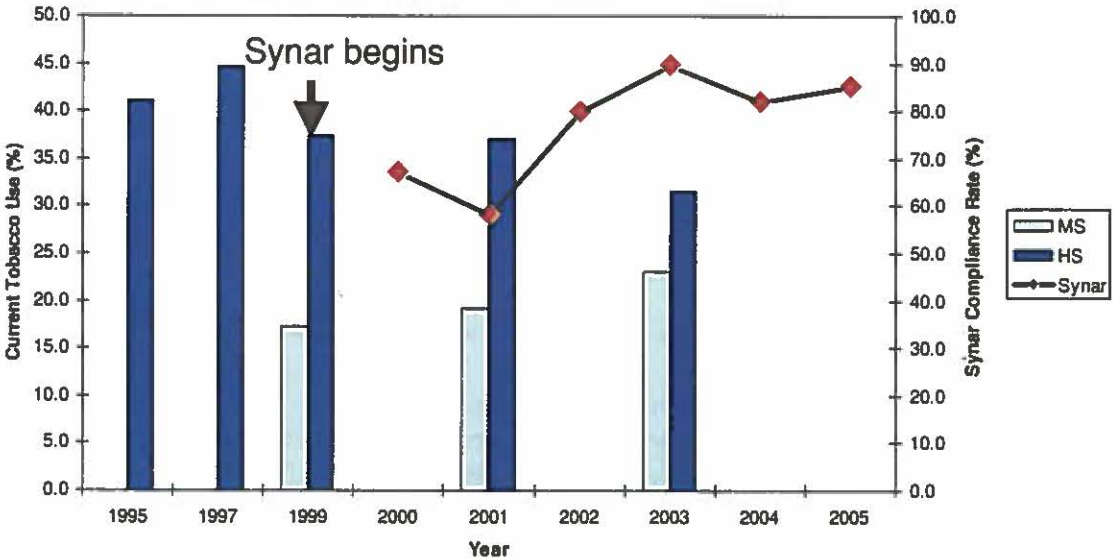
Guam initiated its annual unannounced tobacco vendors' inspections in 1999, in compliance with the Synar law. Compliance rates reached federal targets in 2003, and have remained above target since. A comparison of compliance rates with youth cigarette use indicate that a significant decrease in cigarette smoking among high school students occurred in 1999, and then in 2003. The drop in 1999 could be attributed to the heightened publicity about the law prohibiting sale of tobacco products to minors. However, smoking rates stabilized over the period. The next drop in high school smoking occurred in 2003, when taxes on cigarettes increased by 1400% and the Department of Mental Health and Substance Abuse launched a tobacco control media campaign. Middle school smoking rates have been stable since 1999, and appear unaffected by compliance rates (Table 35 and Figure 16). These findings highlight the need for a comprehensive approach to tobacco use prevention among youth, including price and non-price measures to reduce demand for tobacco products, as well as restricting youth access to tobacco, to reduce supply.

Table 35. Synar compliance rates and current cigarette use among youth, Guam, 1999-2003

Year	Synar Compliance Rate	MS Cigarette Use*	HS Cigarette Use*
1995	---	---	41.1%
1997	---	---	44.7%
1999	---	17.3%	37.3%
2000	67%	---	---
2001	58%	19.2%	37.1%
2002	79.8%	---	---
2003	89.6%	23.1%	31.6%
2004	81.7%	---	---
2005	85.1%	---	---

Sources: Synar data, Department of Mental Health and Substance Abuse, 1999-2005
YRBS, 1995-2003

Figure 16. Synar compliance rates and youth current cigarette use, Guam, 1995-2005



Sources: Synar data, Department of Mental Health and Substance Abuse, 1999-2005; YRBS, 1995-2003

TOBACCO CONSUMPTION: COURT-INVOLVED ADULTS AND YOUTH

Presently, there is no systematic surveillance system using standardized instruments to determine tobacco use prevalence among court-involved adults and youth on Guam. The Department of Youth Affairs (DYA), the Juvenile Drug Court and the Guam Police Department use their own data collection instruments to survey the youth who are screened within their respective systems. Of these, the DYA routinely collects data on tobacco use patterns. The

Department from January to August 2005, only 1 was for possession and use of cigarettes. This was a 12-year old female. Given the high prevalence of self-reported tobacco use among Guam youth (YRBS), the low apprehension rate indicates that enforcement of P.L. 24-278 is minimal.

The Juvenile Drug Court recently began collecting data from their clients, using a form consisting of 29 data fields: 2 categorical and 27 open-ended questions. Data collection was done upon entry, as part of the screening intake. A total of 162 records were available for review; 134 were from male clients (82.7%) and 28 (17.3%) were from female clients. Not all the data fields were completed in some of the records. The clients ranged in age from 13 to 18; the mean age was 15.5 years. Sixteen percent reported tobacco as the substance first used; an additional 3.1% reported a combination of alcohol, marijuana and tobacco as the substances first used. 21.9% reported current use of tobacco, which is lower than the prevalence of cigarette smoking reported in the 2003 YRBS.

The DYA began collecting data on smoking in 2003 as part of their screening/intake interview. Table 36 summarizes their findings:

Table 36. DYA data on smoking behavior, 2003-2005

Year	Total Admissions (N)	Ever Smoked % (n)	Preferred Brand % (n)	Age When Started Smoking % (n)
2003	378	21.9 (83)	Marlboro - 28.9 (24) Doral - 16.9 (14) Kool - 9.6 (8) Any - 10.8 (9)	<10: 7.2 (6) 10-14: 77.1 (64) >14: 16.9% (14)
2004	463	76.0 (352)	Marlboro - 37.2 (131) Doral - 15.3 (54) Kool - 10.8 (38) Any - 9.1 (32)	<10: 7.9 (28) 10-14: 73.5 (259) >14: 12.1 (56)
2005	341	77.4 (264)	Marlboro - 40.5 (107) Doral - 20.5 (54) Kool - 8.3 (22) Any - 15.9 (42)	<10: 7.6 (21) 10-14: 75.8 (200) >14: 15.5 (41)

Source: DYA Statistics, 2003-2005

The data are striking for the consistency across the years in:

- The high prevalence of ever smoking among DYA-involved youth
- The preference for Marlboro (highly advertised) and Doral (lowest priced) brands
- The age distribution for starting tobacco use, with approximately three-quarters of youth clients starting between the ages of 10 and 14.

SECTION 3

Chapter 2
Consumption

PROBLEM STATEMENT:

The prevalence of alcohol use, heavy drinking and binge drinking among adults and youth on Guam is similar or lower than national averages. However, while alcohol use rates among youth on Guam are lower than national averages, since 1995, rates of current drinking and binge drinking among high school students have been declining nationwide. This trend had not been seen on Guam. Thus the gaps between prevalence rates of current and binge drinking among Guam and US youth have been narrowing.

Alcohol use rates among court-involved youth mirror that of youth in the general population. One-third of youth screened at the Juvenile Drug Court reported alcohol as their primary substance of abuse. Alcohol use was associated with other criminal behavior in majority of the cases. Data on alcohol consumption among court-involved adults is not available.

ALCOHOL CONSUMPTION: ADULTS IN THE GENERAL POPULATION

Data on adult alcohol consumption is largely provided through the Behavioral Risk Factor Surveillance System (BRFSS), for which information is available for the years 2001-2003. Guam did not participate in the BRFSS for the years 2004 and 2005. The BRFSS uses the federal

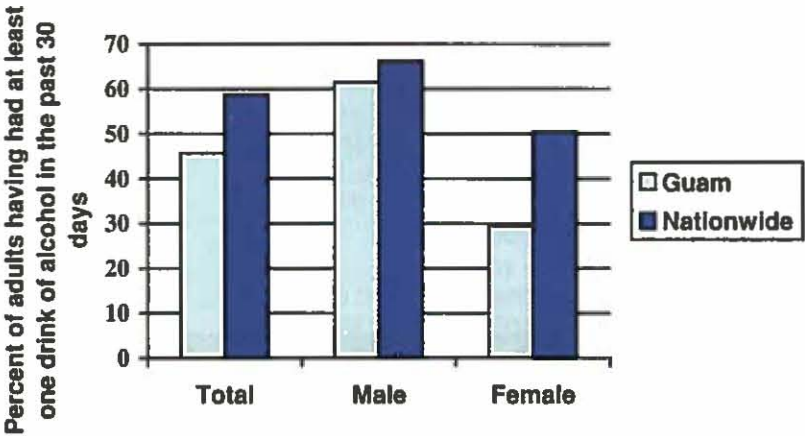
likely to report recent consumption of alcohol as females on Guam. The percentage of adult females reporting recent alcoholic consumption was lower than the national average, while the male prevalence rate was similar to the nation (Table 37 and Figure 17).

Table 37. Recent alcohol consumption (within the past 30 days), Guam vs. US Average, 2003

State	Total	Male	Female
Guam			
%	45.7	61.5	29.5
CI	(41.7-49.6)	(55.7-67.2)	(24.8-34.1)
N	376	226	150
Nationwide			
Median %	58.8	66.2	50.4
# States	54	54	54

Source: BRFSS, 2003

Figure 17. Comparison of Guam and nationwide prevalence of current alcohol use*



*Defined as having had at least one drink of alcohol within the past 30 days
Source: BRFSS, 2003

Recent alcohol consumption appeared to be equally prevalent across the different age groups surveyed. Current alcohol consumption appears most prevalent among those with the highest incomes, and those with higher educational attainment. This pattern holds true for both Guam and the nation as a whole (Tables 38-40).

Table 38. Recent alcohol consumption by age, Guam vs. US, 2003

Age Group	24-34	35-44	45-54	55-64	65+
Guam	49.6	46.8	47.1	N/A	N/A
CI	(41.4-57.7)	(39.4-54.1)	(38.1-56.0)		
n	97	105	73		
Nationwide	64.0	63.2	60.3	54.7	41.5
n	54	54	54	54	54

Source: BRFSS, 2003

Table 39. Recent alcohol consumption by income category, Guam vs. US, 2003

State	<\$15,000	\$15,000-24,999	\$25,000-34,999	\$35,000-49,999	\$50,000+
Guam	N/A	40.5	49.9	48.3	61.4
CI		(31.5-49.4)	(39.9-59.8)	(38.8-57.7)	(54.0-68.7)
n		58	62	66	123
Nationwide					
Median %	41.5	48.1	54.4	59.3	70.7
n	54	54	54	54	54

Source: BRFSS, 2003

Table 40. Recent alcohol consumption by education, Guam vs. US, 2003

State	Less than H.S.	H.S. or G.E.D.	Some post-H.S.	College graduate
Guam	N/A	43.7	53.8	46.3
CI		(37.2-50.1)	(45.4-62.1)	(38.9-53.6)
n		126	97	113
Nationwide				
Median %	38.2	52.5	60.5	68.8
n	54	54	54	54

Source: BRFSS, 2003

Heavy drinking is defined in the BRFSS as adult men having more than two drinks per day and adult women having more than one drink per day. In 2003, the prevalence of heavy drinking on Guam was similar to the US average. Like the national average, males were more likely to report heavy drinking than females. Heavy drinking among females on Guam was significantly lower than the US average (Table 41).

Table 41. Heavy drinking, Guam vs. US, 2003*

State	Total	Male	Female
Guam			
%	5.7	9.8	1.5
CI	(3.8-7.5)	(6.3-13.2)	(0.4-2.5)
n	44	35	9
Nationwide			
Median %	5.7	6.9	4.5
# States	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Heavy drinking appeared to be more prevalent among the younger adults, both on Guam and the US. Rates of heavy drinking were not significantly different across income categories. Nationally, educational attainment did not make a difference in heavy drinking. However, on Guam, those with lower educational attainment appeared more likely to report heavy drinking (Tables 42-44).

Median %	10.5	5.9	5.4	5.2	4.6	2.9
n	54	54	54	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Table 43. Heavy alcohol consumption by income category, Guam vs. US, 2003

State	<\$15,000	\$15,000-24,999	\$25,000-34,999	\$35,000-49,999	\$50,000+
Guam* %	7.6	7.2	4.9	3.9	5.1
CI	(1.5-13.6)	(2.8-11.5)	(1.0-8.7)	(0.0-7.7)	(1.2-8.9)
n	9	11	7	4	8
Nationwide					
Median %	5.6	6.0	5.8	5.9	5.9
n	54	54	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Table 44. Heavy alcohol consumption by education, Guam vs. US, 2003

State	Less than H.S.	H.S. or G.E.D.	Some post-H.S.	College graduate
Guam %	9.2	5.3	7.8	2.9
CI	(1.8-16.5)	(2.5-8.0)	(3.8-11.7)	(0.0-5.7)
n	7	15	16	6
Nationwide				
Median %	5.1	6.3	6.5	4.8
n	54	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Binge drinking, defined as having five or more drinks on one occasion, was reported by 18.7% of adults on Guam in 2003. This is not significantly different from the US national average. Males were more likely to report binge drinking than females. Adults aged 25-44 had the highest rates of binge drinking. Educational attainment and income did not appear to affect the likelihood for indulging in this behavior (Tables 45-48).

Table 45. Binge drinking, Guam vs. US, 2003

State	Total	Male	Female
Guam*			
%	18.7	29.6	7.7*
CI	(15.4-21.9)	(24.1-35.0)	(4.9-10.4)
n	137	100	37
Nationwide			
Median %	16.4	24.9	8.4
# States	54	54	54

*Because some cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Table 46. Binge drinking by age, Guam vs. US, 2003

State	18-24	25-34	35-44	45-54	55-64	65+
Guam* %	N/A	25.2	20.0	13.8	4.9	5.6
CI		(18.0-32.3)	(13.9-26.0)	(7.2-20.3)	(0.0-10.8)	(0.0-11.8)
n		48	42	18	3	3
Nationwide						
Median %	31.8	24.1	18.2	12.6	8.3	3.0
n		54	54	54	54	54

Guam are less than 50, care must be used when interpreting these data.

Binge drinking by income category, Guam vs. US, 2003

State	<\$15,000	\$15,000-24,999	\$25,000-34,999	\$35,000-49,999	\$50,000+
Guam* %	17.4	19.7	23.9	22.0	16.8
CI	(8.2-26.5)	(12.4-26.9)	(14.7-33.0)	(13.8-30.1)	(10.5-23.0)
n	16	27	28	27	28
Nationwide					
Median %	14.9	16.3	15.7	17.6	17.0
n	54	54	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Table 48. Binge drinking by education, Guam vs. US, 2003

State	Less than H.S.	H.S. or G.E.D.	Some post-H.S.	College graduate
Guam %	15.9	21.7	22.4	12.5
CI	(7.7-24.0)	(16.1-27.2)	(14.8-29.9)	(7.5-17.4)
n	18	57	33	28
Nationwide				
Median %	14.4	17.3	17.3	14.0
n	54	54	54	54

*Because cell sizes for Guam are less than 50, care must be used when interpreting these data.
Source: BRFSS, 2003

Table 49 compares trends for Guam and the US with regards to heavy drinking and binge drinking. There does not appear to be any significant change over time in either heavy drinking or binge drinking amongst adults on Guam.

Table 49. Trends, heavy and binge drinking, Guam vs. US, 2001-2003

Year	Guam % (CI) n	Nationwide Median % # of States		
	Heavy Drinking	Binge Drinking	Heavy Drinking	Binge Drinking
2001	5.3 (3.5-7.0) 47	18.1 (14.9-21.2) 143	5.1 54	14.7 54
2002	8.3 (5.9-10.6) 61	17.7 (14.5-20.8) 140	5.9 54	16.1 54
2003	5.7 (3.8-7.5) 44	18.7 (15.4-21.9) 137	5.7 54	16.4 54

Source: BRFSS, 2001-2003

ALCOHOL CONSUMPTION: YOUTH IN THE GENERAL POPULATION

Data on alcohol consumption among youth is available through the Youth Risk Behavior Survey. The limitations associated with this surveillance system were discussed previously.

Close to three-quarters of high school youth and 42% of middle school youth on Guam

Guam H.S.			
%	71.3	71.1	71.6
N	701	353	348
Guam M.S.			
%	42.0	43.8	40.6
N	891	395	493
Nationwide H.S.			
Median %	74.9	73.7	76.1
(95% CI)	(+/- 2.7)	(+/- 3.0)	(+/- 2.8)

Source: YRBS, 2003

Table 51. Current alcohol use, High School, Guam vs. US, 2003

State	Total	Male	Female
Guam			
%	37.9	39.2	36.6
N	721	360	361
Nationwide			
Median %	44.9	43.8	45.8
(CI)	(+/- 2.4)	(+/- 2.5)	(+/- 2.6)

Source: YRBS, 2003

Binge drinking among youth is lower on Guam than on the US. Males have a higher prevalence of binge drinking than females (Table 52).

Table 52. Current binge drinking, High School, Guam vs. US, 2003

State	Total	Male	Female
Guam			
%	17.3	20.7	13.8
N	759	382	377
Nationwide			
Median %	28.3	29.0	27.5
(CI)	(+/- 2.0)	(+/- 2.1)	(+/- 2.1)

Source: YRBS, 2003

Over one-quarter of Guam high school students had their first alcoholic drink before the age of 13, similar to the national average (Table 53). Among middle school youth on the island, 17% reported having had their first alcoholic drink before the age of 11.

Table 53. High School youth who had their first alcoholic drink before the age of 13, Guam vs. US, 2003

	Total	Male	Female
	27.0	28.4	25.5
	715	366	349
	27.8	32.0	23.3
	(+/- 2.1)	(+/- 2.5)	(+/- 2.4)

Source: YRBS, 2003

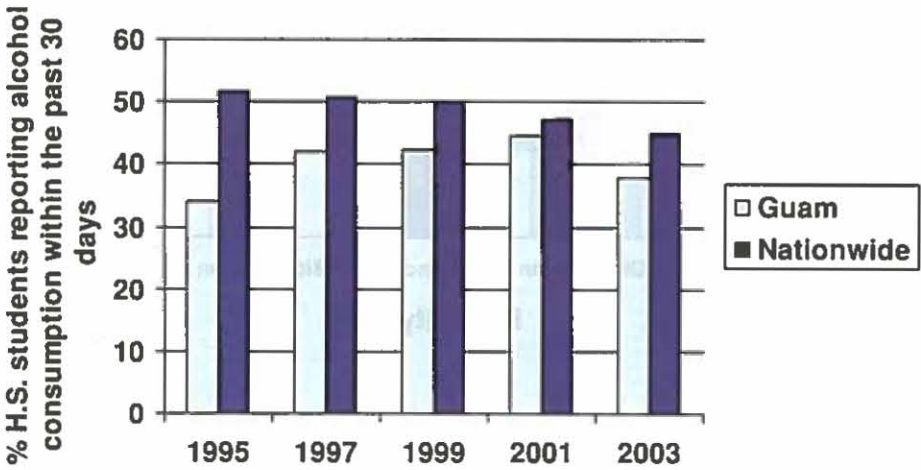
Since 1995, rates of current drinking and binge drinking among high school students have been decreasing nationwide. This trend has not been seen on Guam. As a result, the gap between prevalence rates for current and binge drinking among Guam vs. US youth have been narrowing (Table 54 and Figures 18-19).

Table 54. Trends, current and binge drinking, youth, Guam vs. US, 1995-2003

Year	Guam		Nationwide	
	Current Drinking %	Binge Drinking %	Current Drinking Median %	Binge Drinking Median %
	n	n	(CI)	(CI)
1995	34.1	14.7	51.6	32.6
			(+/- 2.3)	(+/- 3.0)
1997	42.0	22.9	50.8	33.4
			(+/- 2.8)	(+/- 2.1)
1999	42.5	21.1	50.0	31.5
	234	121	(+/- 2.5)	(+/- 1.9)
2001	44.5	24.9	47.1	29.9
	601	346	(+/- 2.2)	(+/- 2.0)
2003	37.9	17.3	44.9	28.3
	721	759	(+/- 2.4)	(+/- 2.0)

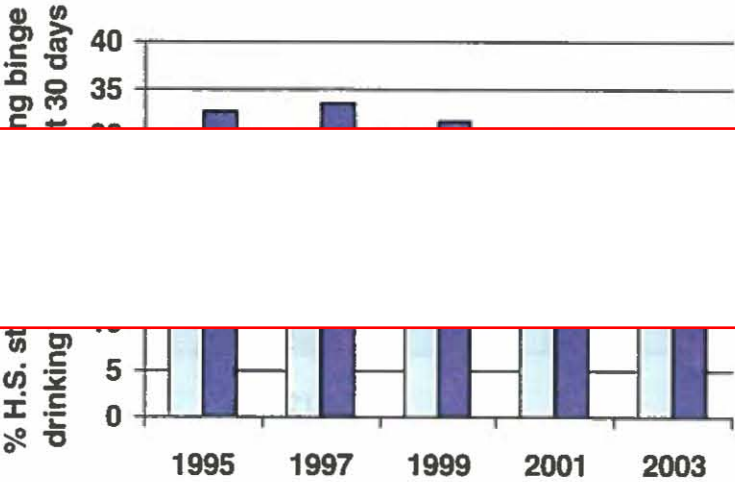
Source: YRBS, 1995-2003

Figure 18. Trends in current drinking, High School, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

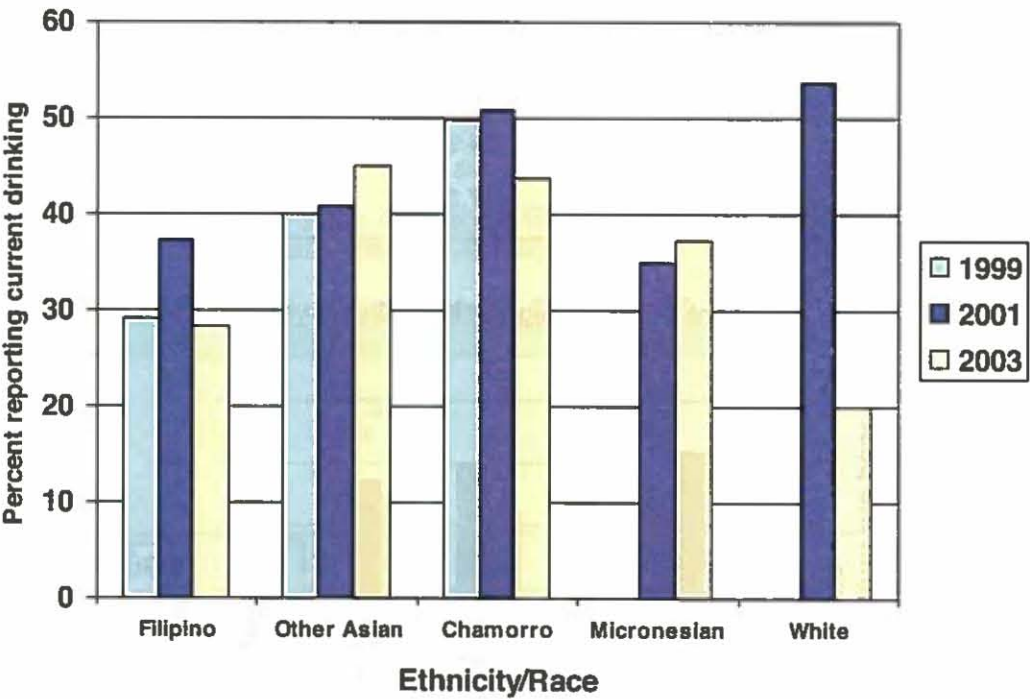
Figure 19. Trends in binge drinking, High School, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

When disaggregated by ethnicity/race, Filipino youth have the lowest rates for current and binge drinking, while Chamorro, Other Asian and Micronesian youth have the highest. Current drinking appears to be increasing for Micronesian and Other Asian youth, and decreasing for Chamorro youth (Figures 20-21).

Figure 20. Current drinking, High School, by ethnicity/race, Guam, 1999-2003

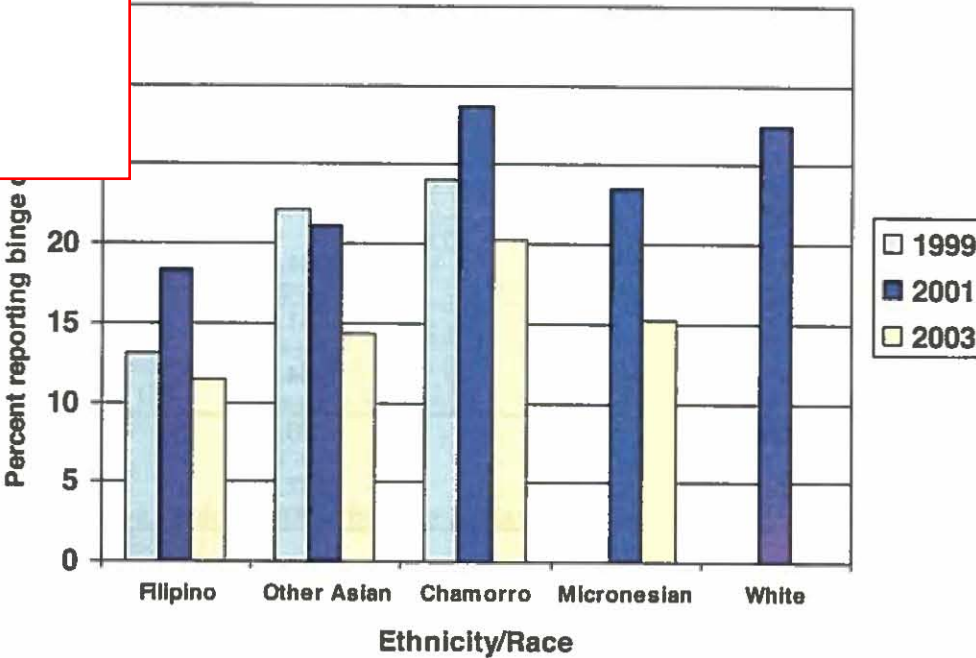


Source: YRBS, 1995-2003

*Reported percentages for White youth need to be interpreted with caution, as n < 50 for this category.

Binge drinking appears to be decreasing over time for all ethnic groups. Chamorro, Micronesian and Other Asian youth have the highest rates of binge drinking (Figure 21).

Figure 21. Binge drinking, High School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1995-2003

*Reported percentages for White youth need to be interpreted with caution, as n < 50 for this category.

In relation to drinking and driving, the following tables compare Guam and US statistics regarding (1) the percentage of students who during the past 30 days, rode one or more times in a car or other vehicle driven by someone who had been drinking alcohol and (2) the percentage of students who during the past 30 days drive a car or other vehicle one or more times when they had been drinking alcohol.

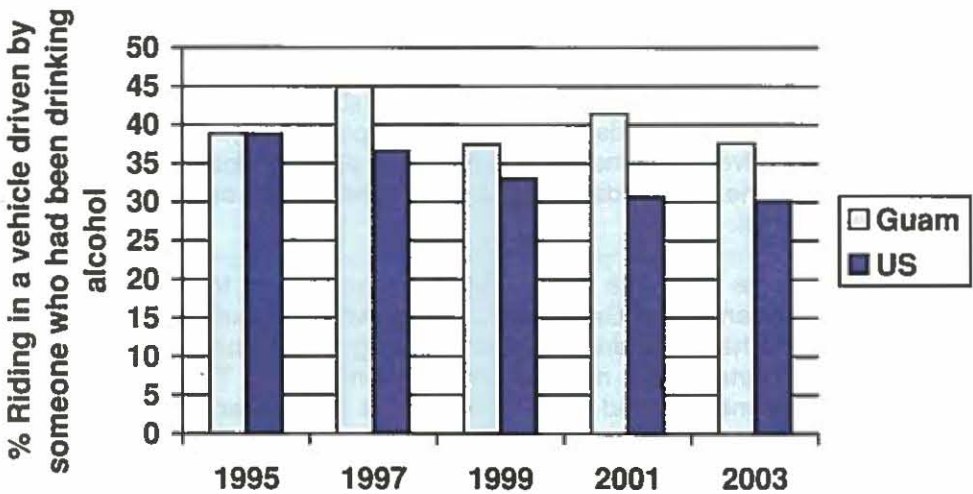
The data indicate that while these risky behaviors appear to be on the decline for US youth, they remain unchanged for Guam youth. Thus, while the likelihood of riding in a vehicle driven by someone who had been drinking alcohol among Guam youth was equal to the US rate in 1995, Guam has overtaken the national averages since 1997. The likelihood of riding in a vehicle driven by someone who had been drinking does not appear to be significantly different between males and females, on Guam and in the US (Table 55 and Figure 22).

Table 55. Riding in a vehicle during the past 30 days driven by someone who had been drinking alcohol, High School, Guam vs. US, 1995-2003

Year	Site	Total % (+/- CI)	Female % (+/- CI)	Male % (+/- CI)
2003	Guam	37.6	36.3	38.7
1999	Guam	37.5 (+/- 2.1)	34.3	41.3
	US	33.1 (+/- 2.2)	31.7 (+/- 2.8)	34.4 (+/- 2.5)
1997	Guam	45.0 (+/- 5.7)	41.7 (+/- 6.9)	48.6 (+/- 6.4)
	US	36.6 (+/- 2.1)	34.5 (+/- 2.2)	38.3 (+/- 2.5)
1995	Guam	38.8 (+/- 5.2)	38.1 (+/- 7.1)	39.3 (+/- 7.0)
	US	38.8 (+/- 3.7)	37.8 (+/- 4.3)	39.5 (+/- 4.4)

Source: YRBS, 1995-2003

Figure 22. Riding in a vehicle during the past 30 days driven by someone who had been drinking alcohol, High School, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

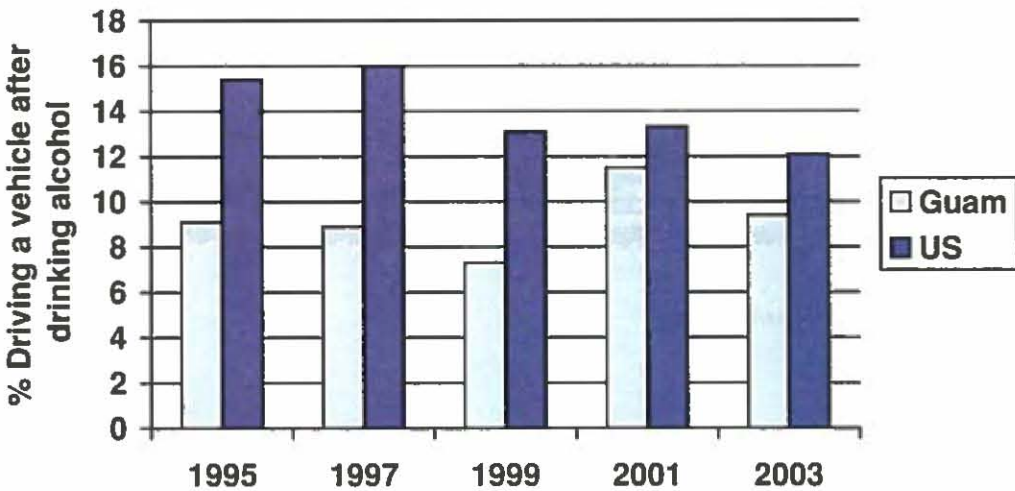
With regards to driving a vehicle after having been drinking alcoholic beverages, the data indicates that the likelihood of engaging in this risky behavior is higher among males, for Guam and nationwide. The nationwide prevalence for this behavior appears to be declining; this trend is not evident for Guam (Table 56 and Figure 23).

Table 56. Driving a vehicle during the past 30 days when they had been drinking alcohol, High School, Guam vs. US, 1995-2003

	Site	Total % (+/- CI)	Female %	Male %
	Guam	9.4 (+/- 1.9)	6.4	12.2
	US	12.1 (+/- 1.2)	8.9 (+/- 1.1)	15.0 (+/- 1.6)
	Guam	11.5 (+/- 1.6)	---	---
	US	13.3 (+/- 1.5)	9.5 (+/- 1.4)	17.2 (+/- 2.1)
1999	Guam	7.3 (+/- 2.0)	9.1	12.7
	US	13.1 (+/- 1.2)	8.7 (+/- 1.8)	17.4 (+/- 1.6)
1997	Guam	8.9 (+/- 1.9)	2.6 (+/- 1.9)	16.1 (+/- 3.3)
	US	16.9 (+/- 2.8)	12.0 (+/- 2.5)	21.0 (+/- 3.2)
1995	Guam	9.1 (+/- 4.9)	4.4 (+/- 4.0)	13.2 (+/- 7.7)
	US	15.4 (+/- 3.3)	11.9 (+/- 3.7)	18.5 (+/- 3.2)

Source: YRBS, 1995-2003

Figure 23. Driving a vehicle within the past 30 days after drinking alcohol, High School, Guam vs. US, 1995-2003.



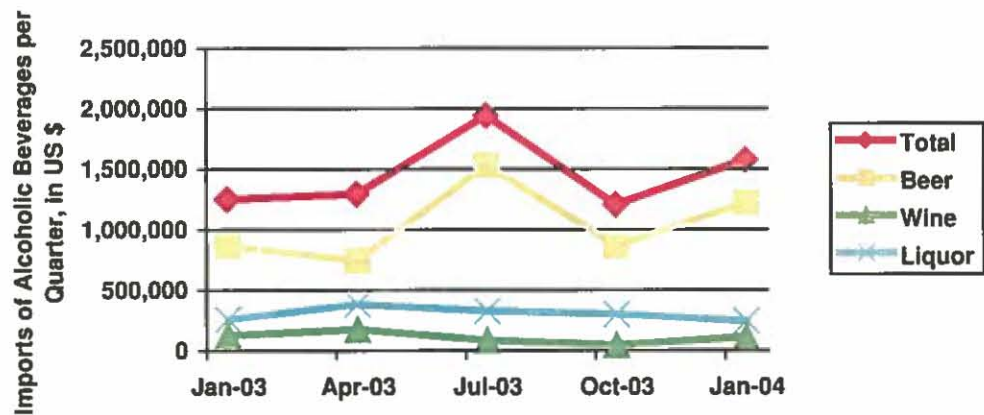
Source: YRBS, 1995-2003

Guam imported a total of \$ 7,302,589.00 worth of alcoholic beverages from January 2003 to January 2004. The breakdown by type of alcoholic beverage imported is shown in Table 57. Beer is the most heavily imported type of alcoholic beverage, and accounts for almost all increases in alcoholic imports (Figure 24). It is also the most heavily advertised alcoholic product on island.

Total	1,580,379	1,214,323	1,948,176	1,301,503	1,258,208
Beer	1,228,596	869,882	1,536,988	748,055	873,398
Wine	111,994	45,884	85,656	173,490	127,929
Liquor	239,789	298,557	325,532	379,958	256,881

Source: Guam Statistical Yearbook, 2004

Figure 24. Alcoholic imports in US \$ into Guam, by type of beverage, January 2003-January 2004



Source: Guam Statistical Yearbook 2004

ALCOHOL CONSUMPTION: COURT-INVOLVED ADULTS AND YOUTH

At present, data on the general prevalence of alcohol consumption among court-involved adults is not available. Data on court-involved youth is limited to the information collected by the DYA and the Juvenile Drug Court.

The DYA statistics on lifetime alcohol consumption appear to more closely mirror the trends from the YRBS. This may be indicative of the greater percentage of (middle school-aged) teens screened at the DYA. The prevalence of ever tried alcohol beverages appears to be increasing among the DYA population (Table 58).

Table 58. DYA data on alcohol consumption, 2000-2005

Year	Total Admissions (N)	Experimented with Alcohol % (n)	Ever Tried Alcohol, H.S. YRBS %	Ever Tried Alcohol, M.S. YRBS %
2000	430	51.8 (223)		
2001	427	45 (194)	75.6 (1022)	43.6 (732)
2002	333	33.6 (112)		
2003	378	43.9 (166)	71.3 (500)	42.0 (891)
2004	463	63.7 (295)		
2005	341	64.3 (191)		

Source: DYA Statistics, 2003-2005

Twenty-seven percent of Juvenile Drug Court clients report alcohol as the 1st substance abused. An additional 3.1% report alcohol and tobacco as the 1st substances abused, while 1.2% report alcohol, tobacco and marijuana as the 1st substances abused. Thirty percent of youth screened at the Juvenile Drug Court report alcohol as the primary substance currently abused.

SECTION 3

Chapter 3



PROBLEM STATEMENT:

Data on adult drug use on Guam is currently not available. Among Guam youth, the prevalence rates of lifetime and current marijuana use are higher than national averages. More Guam youth have tried marijuana before the age of 13 than US youth in general. Inhalant use appears to be decreasing among US youth, but not among Guam youth. Rates of lifetime and current inhalant use among Guam youth surpassed the national rates in 2001 and 2008. Methamphetamine ("ice") and cocaine lifetime use are lower on Guam than across the US.

Among court-involved adults undergoing mandatory drug testing by the US Probation Office, 1.6% tested positive for drugs in 2004. Over half of the positive tests were for methamphetamines, either singly or in combination with other drugs. Amphetamine and opiate abuse are also prevalent. Less than 5% of the tests were positive for cannabis. These likely underestimate the prevalence of illicit drug use within this population.

Among court-involved youth, marijuana and inhalants were reported as the illicit drugs most frequently used.

ILLCIT DRUGS: ADULTS IN THE GENERAL POPULATION

Guam does not participate in SAMHSA's National Survey on Drug Use and Health (NSDUH), formerly called the National Household Survey on Drug Abuse. Neither does it have any State-level surveillance system in place to monitor illicit drug use among adults in the general population. This is an area where surveillance capacity needs to be established in the near future.

ILLCIT DRUGS: YOUTH IN THE GENERAL POPULATION

Data on illicit drug use among youth in the general population on Guam is available from the YRBS. Guam does not currently participate in the National Institute of Drug Abuse's (NIDA) Monitoring the Future, an ongoing study of the drug-related behaviors, attitudes, and values of American secondary school students, college students, and young adults.

Marijuana among Guam youth vs. the US national average in 2003. Lifetime and current marijuana use among Guam youth are higher than national averages. The prevalence rates are higher among males, but both male and female rates on Guam are above nationwide rates; the differences are statistically significant (Tables 59-60).

Table 59. Lifetime marijuana use, youth, Guam vs. US, 2003

State	Total	Male	Female
Guam H.S.			
%	46.9	52.0	41.8
n	761	381	380
Guam M.S.			
%	20.6	24.9	17.1
n	891	389	502
Nationwide H.S.			
Median %	40.2	42.7	37.6
(95% CI)	(+/- 2.7)	(+/- 2.9)	(+/- 3.1)

Source: YRBS, 2003

Table 60. Current marijuana use, High School, Guam vs. US, 2003

State	Total	Male	Female
Guam			
%	27.1	31.4	22.8
n	754	373	381
Nationwide			
Median %	22.4	25.1	19.3
(CI)	(+/- 2.1)	(+/- 2.5)	(+/- 1.9)

Source: YRBS, 2003

More Guam youth have tried marijuana prior to the age of 13 than US youth in general. The percentage of Guam males who used marijuana before 13 is almost double the percentage for Guam females. Nonetheless, both male and female rates for Guam youth surpass national averages (Table 61).

Table 61. High School students who tried marijuana for the first time before the age of 13, Guam vs. US, 2003

State	Total	Male	Female
Guam			
%	14.9	19.7	9.9
n	779	395	384
Nationwide			
Median %	9.9	12.6	6.9
(CI)	(+/- 1.3)	(+/- 1.6)	(+/- 1.3)

Source: YRBS, 2003

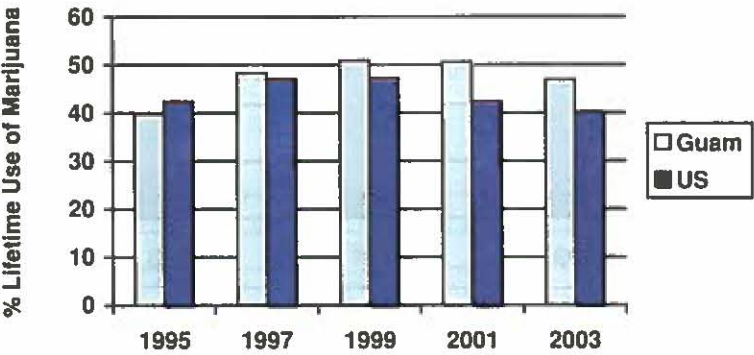
Table 62 and Figures 25-26 highlight the trends in lifetime and current marijuana use among youth on Guam as compared to the US.

Table 62. Trends, lifetime and current marijuana use, High School, Guam vs. US, 1995-2003

Year	Guam		Nationwide	
	Lifetime Marijuana Use % (CI)/ n	Current Marijuana Use % n	Lifetime Marijuana Use Median % (CI)	Current Marijuana Use Median % (CI)
	39.8 (+/- 4.2)	14.7	42.4 (+/- 3.0)	25.3 (+/- 1.8)
1997	48.3 (+/- 2.6)	22.9	47.1 (+/- 2.9)	26.2 (+/- 2.2)
1999	50.9 318	25.1 142	47.2 (+/- 2.5)	26.7 (+/- 2.5)
2001	50.6 695	26.6 369	42.4 (+/- 1.9)	23.9 (+/- 1.5)
2003	46.9 761	27.1 754	40.2 (+/-2.8)	22.4 (+/- 2.1)

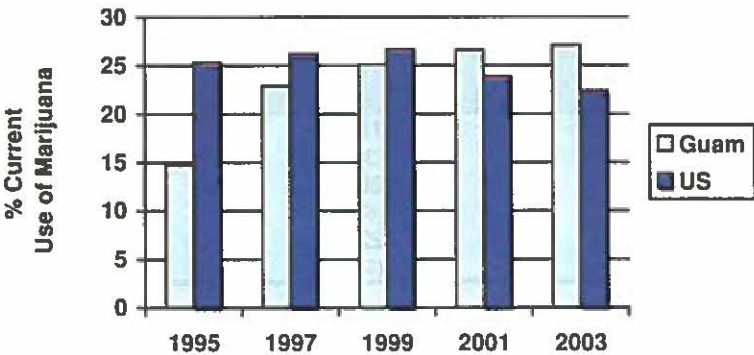
Source: YRBS, 1995-2003

Figure 25. Percent youth reporting lifetime marijuana use, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

Figure 26. Percent youth reporting current marijuana use, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

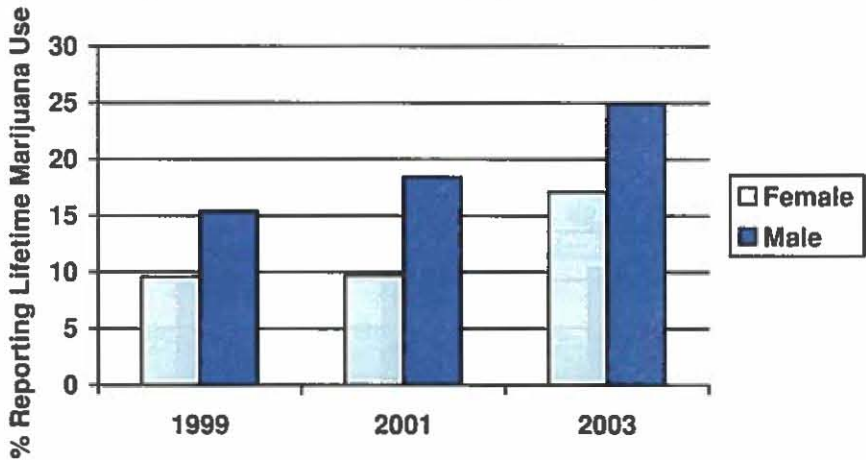
Lifetime use of marijuana among high school youth on Guam has surpassed nationwide rates since 1997. The difference between Guam and US rates has been widening. This is in part due to the more rapid decline in reported lifetime use of marijuana among US youth since 1999 (Table 62 and Figure 25). Among middle school students on Guam, the reported lifetime use of marijuana has been increasing (Table 63 and Figure 27).

Table 63. Lifetime marijuana use, Middle School, Guam, 1999-2003

Year	Females	Males
	% (N)	% (N)
2001	9.7 (365)	18.4 (260)
2003	17.1 (863)	24.9 (816)
	(502)	(389)

Source: YRBS, 1999-2003

Figure 27. Lifetime marijuana use, Middle School, by sex, Guam, 1999-2003



Source: YRBS, 1999-2003

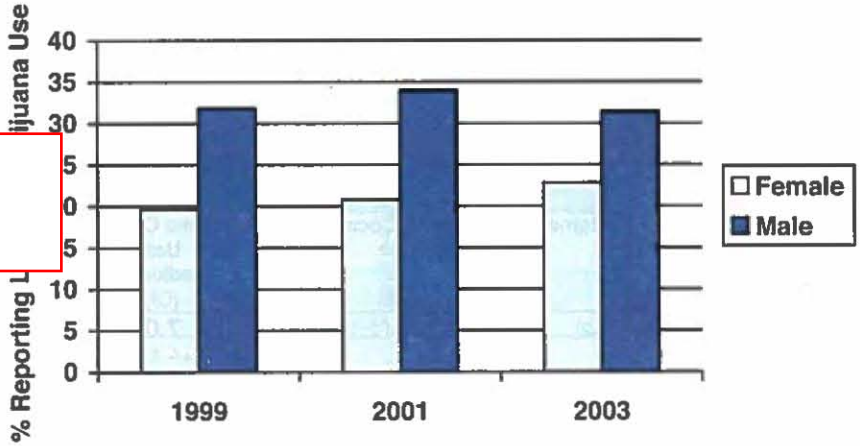
Current use of marijuana has been declining among US youth since 1999. However, current marijuana use is increasing among Guam students. This trend is largely due to increases in current marijuana use among female students. Thus, while current use rates are higher among males, the difference between male and female rates is diminishing (Table 64 and Figure 28).

Table 64. Current marijuana use, High School, by sex, Guam, 1999-2003

Year	Females	Males
	% (N)	% (N)
1999	19.6 (306)	31.8 (258)
2001	20.8 (696)	34.0 (653)
2003	22.8 (381)	31.4 (373)

Source: YRBS, 1999-2003

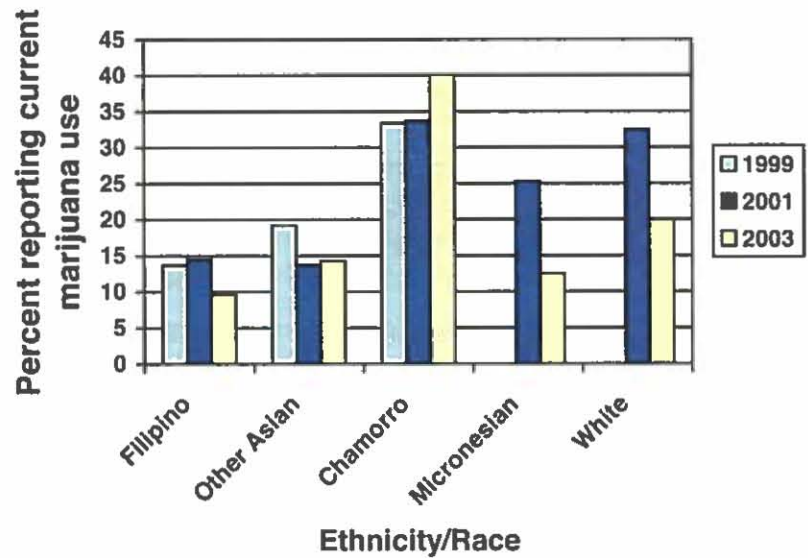
Figure 28. Current marijuana use, High School, by sex, Guam, 1999-2003



Source: YRBS, 1999-2003

The differential rates of current marijuana use among high school students of varying ethnicities are worth noting. Filipinos and Other Asians have the lowest rates of reported current use, while Chamorros have the highest. Rates appear to be declining for Filipinos, Other Asians and Micronesians, but appear to be on the increase for Chamorros. The data for Whites needs to be considered with caution, given the small numbers represented in the survey (Figure 29).

Figure 29. Current marijuana use, High School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Cocaine

Table 65 compares rates of reported lifetime and current use of cocaine among Guam high school students and the US national averages. Guam trails the nation with regards to this drug, with rates for lifetime and current cocaine use that are lower than the nation.

Table 65. Trends, lifetime and current cocaine use, High School, Guam vs. US, 1995-2003

	N	N	(CI)	(CI)
1995	4.5 (+/- 2.2)	2.4 (+/-2.1)	7.0 (+/- 1.2)	3.1 (+/- 0.8)
1997	6.5 (+/- 2.4)	4.9 (+/-1.3)	8.2 (+/- 1.1)	3.3 (+/- 0.5)
1999	4.4 572	1.4 580	9.5 (+/- 1.4))	4.0 (+/- 0.7)
2001	5.0 1367	2.7 1368	9.4 (+/- 1.2)	4.2 (+/- 0.7)
2003	5.8 782	2.8 779	8.7 (+/-1.1)	4.1 (+/- 0.9)

Source: YRBS, 1995-2003

Guam males report cocaine use more frequently than females. Trends over time for both male and female youth are indeterminate for Guam; nationwide, current cocaine use is increasing for females (Table 66).

Table 66. Trends, current cocaine use, High School, by sex, Guam vs. US, 1995-2003

Year	Guam		Nationwide	
	Females % (CI)	Males % (CI)	Females % (CI)	Males % (CI)
1995	2.8 (+/- 3.0)	1.9 (+/-2.1)	1.8 (+/- 0.8)	4.3 (+/- 1.0)
1997	4.5 (+/- 3.7)	5.3 (+/-4.8)	2.4 (+/- 0.7)	4.0 (+/- 0.8)
1999	1.3	1.5	2.9 (+/- 0.8)	5.2 (+/- 1.1)
2001	1.4	3.8	3.7 (+/- 1.0)	4.7 (+/- 0.7)
2003	2.4	3.3	3.5 (+/-0.9)	4.6 (+/- 0.9)

Source: YRBS, 1995-2003

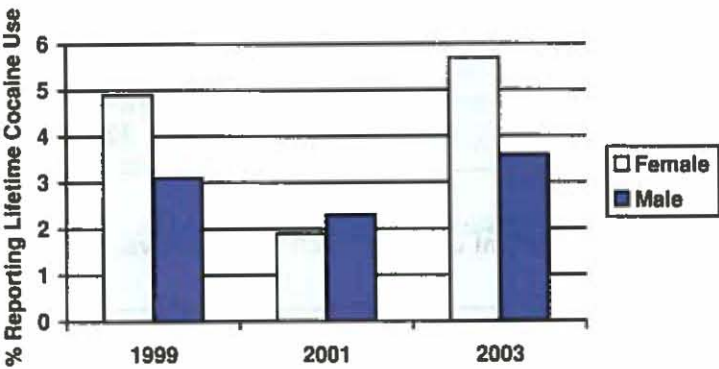
Guam's YRBS also tracks lifetime cocaine use among middle school students. In 2 out of the 3 years surveyed, middle school girls had higher rates of lifetime cocaine use than boys (Table 67 and Figure 30).

Table 67. Lifetime cocaine use, Middle School, Guam, 1999-2003

Year	Females	Males
	% (N)	% (N)
1999	4.9 (366)	3.1 (262)
2001	1.9 (872)	2.3 (822)
2003	5.7 (524)	3.6 (413)

Source: YRBS, 1999-2003

Figure 30. Lifetime cocaine use, Middle School, by sex, Guam, 1999-2003

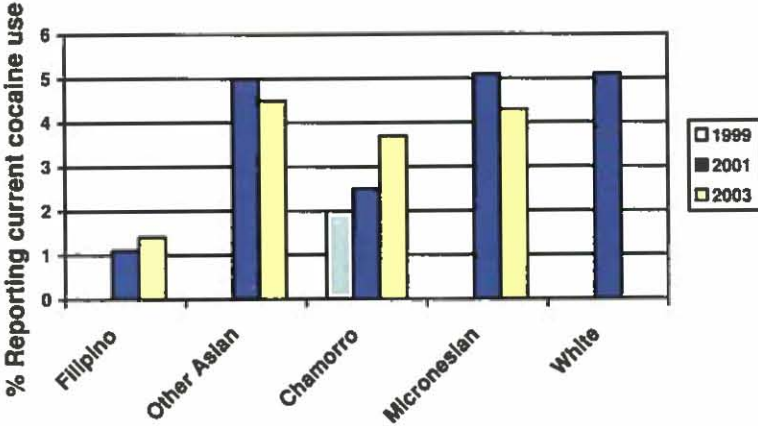


Source: YRBS, 1999-2003

Note: Because of the small percentages reporting current use, the scale for this graph is based on single percentage points, unlike other graphs in this document, which use a 5-percentage point scale.

In relation to ethnicity/race, the numbers reporting current cocaine use are small; hence caution is needed in interpreting the data. Other Asians, Micronesians and Whites appear to have the highest rates of reported current use, while Filipinos have the lowest. Chamorros have an intermediate rate, but prevalence appears to be increasing within this subgroup (Figure 31).

Figure 31. Current cocaine use, High School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Note: Because of the small percentages reporting current use, the scale for this graph is based on single percentage points, unlike other graphs in this document, which use a 5-percentage point scale.

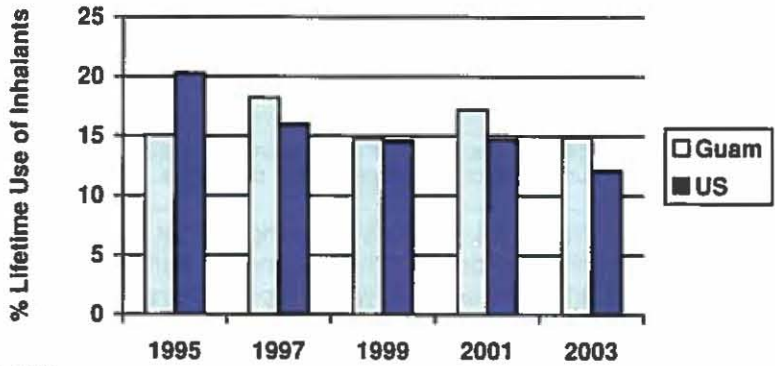
Inhalants

Table 68 displays rates of reported lifetime use of inhalants among high school students on Guam and in the US. Inhalant use appears to be decreasing among US youth in general, but not among Guam youth. In fact, rates of lifetime and current inhalant use among Guam youth surpassed the nationwide rates in 2001 and 2003 (Figures 32-33).

	(CI)	(CI)	(CI)	(CI)
1995	15.1 (+/- 3.6)	---	20.3 (+/- 2.0)	---
1997	18.2 (+/- 2.2)	---	16.0 (+/- 1.3)	---
1999	14.8 (+/- 2.8)	3.8 (+/-1.6)	14.6 (+/- 1.7)	4.2 (+/- 0.8)
2001	17.2 (+/-1.8)	6.3 (+/-1.0)	14.7 (+/- 1.7)	4.7 (+/- 0.8)
2003	14.9 (+/-2.4)	6.3 (+/- 1.6)	12.1 (+/-1.2)	3.9 (+/- 0.6)

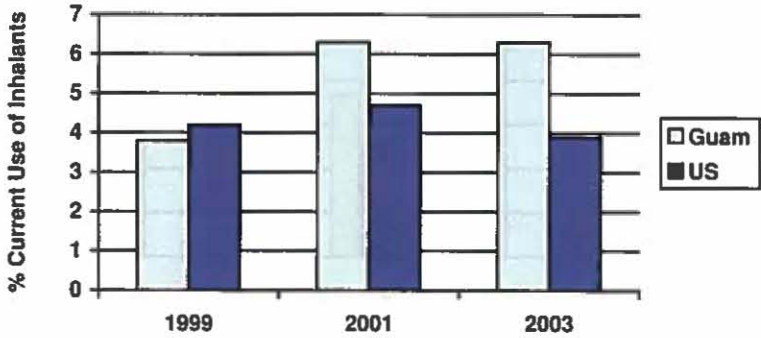
Source: YRBS, 1995-2003

Figure 32. Trends, lifetime inhalant use, High School, Guam vs. US, 1995-2003



Source: YRBS, 1995-2003

Figure 33. Trends, current inhalant use, High School, Guam Vs. US, 1999-2003



Source: YRBS 1999-2003

Note: Because of the small percentages reporting current use, the scale for this graph is based on single percentage points, unlike other graphs in this document, which use a 5-percentage point scale.

The reported rates of lifetime inhalant use among middle school students are comparable to the rates among high school students (Table 69). Lifetime inhalant use is increasing for middle school females.

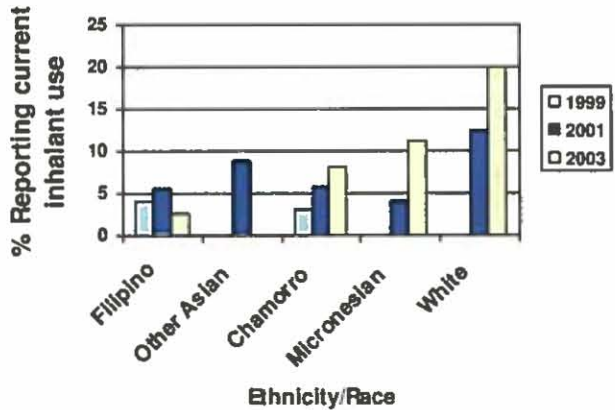
Table 69. Lifetime inhalant use, High School vs. Middle School, by sex, Guam, 1999-2003

Year	Middle School		High School	
	Female %	Male %	Female %	Male %
1999	15.1 (372)	15.9 (264)	14.3	15.4
	17.2 (871)	16.5 (825)	18.1 (697)	17.7 (662)
	20.1 (522)	14.1 (411)	12.3 (381)	17.4 (397)

Source: YRBS, 1999-2003

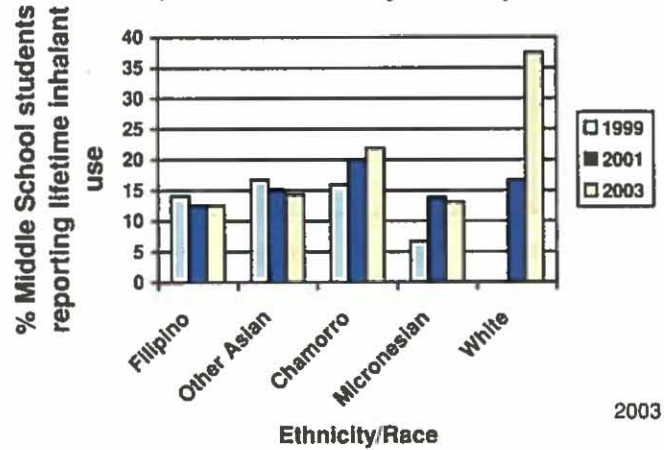
Data on current inhalant use among youth broken down by ethnicity/race is presented in Figures 34 and 35. The numbers of students under some of these categories is small, so caution is needed in interpreting the data. Current inhalant use among high school students appears to be increasing among Chamorros, Micronesians and Whites. Lifetime inhalant use among middle school students seems to be increasing for Chamorro and Micronesian youth. There does not appear to be a marked difference between youth of varying ethnicities/races for inhalant use (Figures 34-35).

Figure 34. Current inhalant use, High School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

Figure 35. Lifetime inhalant use, Middle School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-

2003

Methamphetamines ("Ice")

The YRBS started tracking methamphetamine ("ice") use among students beginning in 1999. Total and female reported lifetime use are lower for Guam than for the US; lifetime use rates among male high school students are at the same levels as the US. Guam middle school students have a slightly lower rate of lifetime methamphetamine use than high school students (Table 70).

n	(786)	(401)	(385)
Guam M.S. %	3.9	4.0	3.9
n	(937)	(522)	(415)
Nationwide H.S. %	7.6	8.3	6.8
(95% CI)	(+/- 0.9)	(+/- 1.3)	(+/- 0.9)

Source: YRBS, 2003

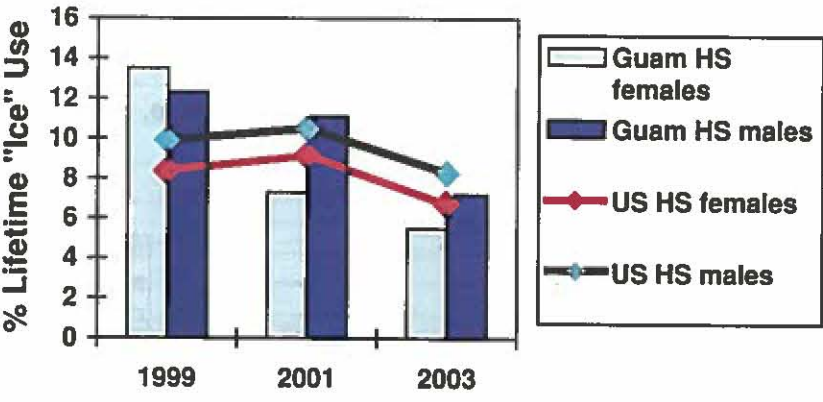
Lifetime use of methamphetamine among high school students appears to be decreasing both in Guam and the US. The rate of decline appears faster among Guam youth (Table 71 and Figure 36). Data on middle school students has been collected only since 2001, with an increase noted in 2003. This indicator will need to be carefully tracked in the near future.

Table 71. Trends, lifetime methamphetamine use, High School , Guam vs. US, 1995-2003

Year	Guam		Nationwide	
	Female % (CI)	Male % (CI)	Female % (CI)	Male % (CI)
1999	13.5 (+/- 3.7)	12.3 (+/- 3.8)	8.4 (+/- 1.4)	9.9 (+/- 1.7)
2001	7.3 (+/- 1.8)	11.1 (+/- 2.2)	9.2 (+/- 1.8)	10.5 (+/- 1.5)
2003	5.5 (+/- 2.2)	7.2 (+/- 2.4)	6.8 (+/- 0.9)	8.3 (+/- 1.3)

Source: YRBS, 1995-2003

Figure 36. Trends, lifetime methamphetamine use, High School, by Sex, Guam vs. US, 1999-2003



Source: YRBS, 1999-2003

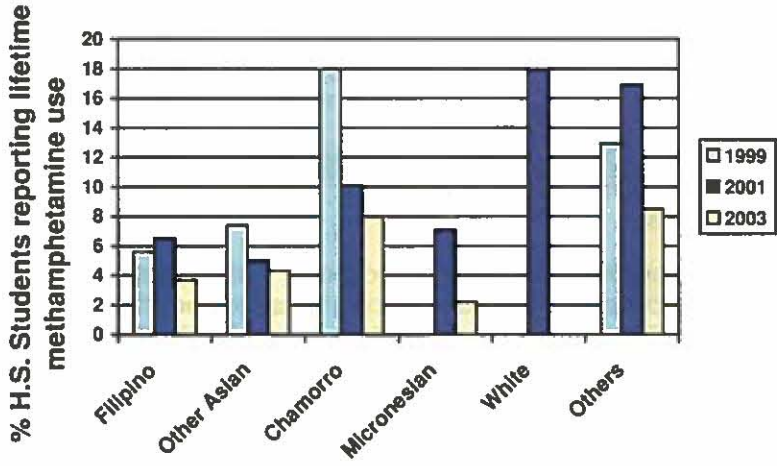
Data disaggregated by ethnicity/race is depicted in Table 72 and Figure 37. Chamorro youth have the highest rate of lifetime methamphetamine use, while Filipino youth have the lowest. Methamphetamine use appears to be decreasing across all ethnic/race categories.

Table 72. Lifetime methamphetamine use, Youth, by ethnicity/race, Guam, 1999-2003

Year	Filipino	Other Asian	Chamorro	Micronesian Islander	White	Others
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
1999	6.5 (179)	7.4* (27)	18.0 (303)	NA	NA	12.9 (62)
2001	6.5 (355)	5.0 (80)	10.1 (729)	7.1 (99)	17.9* (39)	16.9 (65)
2003	3.7 (219)	4.3* (23)	8.0 (361)	2.2* (46)	0* (5)	8.5 (130)
Middle School						
1999	NA	NA	NA	NA	NA	NA
2001	1.0 (519)	0 (53)	2.5 (897)	0.8 (128)	0* (30)	3.3 (61)
2003	2.4 (248)	4.5* (22)	4.7 (426)	1.6 (62)	12.5* (8)	4.2 (168)

*Denotes cells where n < 50.
Source: YRBS, 1999-2003

Figure 37. Lifetime methamphetamine use, High School, by ethnicity/race, Guam, 1999-2003



Source: YRBS, 1999-2003

ILLICIT DRUGS: COURT-INVOLVED ADULTS AND YOUTH

At present, there is no systematic surveillance of illicit drug use for all court-involved adults and youth on Guam. Different agencies maintain their own databases; the information presented in this section is taken from these limited data sources.

Table 73. Population characteristics, US Probation Office clients, 2000-2004

Characteristic	2000	2001	2002	2003	2004
	%	%	%	%	%
	n	n	n	n	n
Gender					
Male	79.2	78.5	77.3	73.1	75.8
	(126)	(146)	(157)	(136)	(135)
Female	20.8	21.5	22.7	26.9	24.2
	(20.8)	(40)	(46)	(50)	(43)
Age Group					
18-19	0	0.5	0.5	0	1.1
	(0)	(1)	(1)	(0)	(2)
20-29	25.8	21.0	21.2	16.1	18.5
	(41)	(39)	(43)	(30)	(33)
30-39	34.0	39.8	40.4	36.6	35.4
	(54)	(74)	(82)	(68)	(63)
40-49	31.4	30.6	29.1	34.9	33.7
	(50)	(57)	(59)	(65)	(60)
50-59	8.2	7.0	6.9	10.2	9.6
	(13)	(13)	(14)	(19)	(17)
60+	0.6	1.1	2.0	2.2	1.7
	(1)	(2)	(4)	(4)	(3)
TOTAL Clients	159	186	203	186	178

Source: US Probation Office Drug Test Results, 2000-2004

The US Probation Office performs periodic drug tests on their clients. Because the tests are scheduled in advance, and the consequences for testing positive are serious, this group is unlikely to be representative of the larger population of court-involved adults.

Table 74 details the numbers and results of drug testing for the years 2000-2004. Among court-involved adults served by this office, 1.6% tested positive for drugs in 2004. Over half of the positive tests were for methamphetamines, either singly or in combination with other drugs. In addition to methamphetamine use, amphetamine and opiate abuse are prevalent. Less than 5% of the tests were positive for cannabis. These very likely underestimate the real prevalence of illicit drug use among court-involved adults.

Table 74. Summary of drug test findings, US Probation Office, 2000-2004

	2000	2001	2002	2003	2004
Total # of scheduled tests	3128	3321	3424	3849	3883
Results %					
	85.2	84.3	87.4	86.4	88.9
	(2666)	(2799)	(2993)	(3326)	(3453)
	2.1	2.5	1.6	2.4	1.6
	(65)	(83)	(56)	(91)	(61)
No show	12.6	13.2	10.7	11.1	9.4
	(393)	(437)	(368)	(428)	(366)
Stall	0.1	0.1	0.2	0.1	0.1
	(4)	(2)	(7)	(4)	(3)
Types of Tests					
Sweat Patch	2.2	2.7	4.7	2.8	0.1
	(61)	(79)	(142)	(96)	(5)
Laboratory	9.8	10.2	7.9	7.3	3.2
	(267)	(295)	(242)	(248)	(111)
Hand held device	88	87.0	87.4	89.9	96.7
	(2403)	(2508)	(2665)	(3073)	(3398)
Test Results					
% of positives (n)					
Methamphetamine	44.6	33.7	33.9	19.8	39.3
	(29)	(28)	(19)	(18)	(24)
Methamphetamine + Amphetamine	33.8	34.9	37.5	39.6	21.3
	(22)	(29)	(21)	(36)	(13)
Amphetamine	7.7	12.0	16.1	24.2	14.8
	(5)	(10)	(9)	(22)	(9)
Opiates	7.7	18.1	1.8	6.6	19.7
	(5)	(15)	(1)	(6)	(12)
Amphetamines + Opiate	1.5	---	3.6	2.2	---
	(1)		(2)	(2)	
Cannabis	1.5	---	1.8	5.5	3.3
	(1)		(1)	(5)	(2)
Methamphetamine + Amphetamine + Opiate	1.5	---	---	---	---
	(1)				
Methamphetamine + Opiate	1.5	---	---	---	---
	(1)				
Methamphetamine + Cannabis	---	1.2	---	---	1.6
		(1)			(1)
Methamphetamine + Amphetamine + Cannabis	---	---	1.8	2.2	---
			(1)	(2)	
Amphetamine + Cannabis	---	---	1.8	---	---
			(1)		
Opiate + Cannabis	---	---	1.8	---	---
			(1)		

Source: US Probation Office

Limited data on court-involved youth is available from several sources: the Guam Police Department (GPD), the Department of Youth Affairs (DYA) and the Juvenile Drug Court.

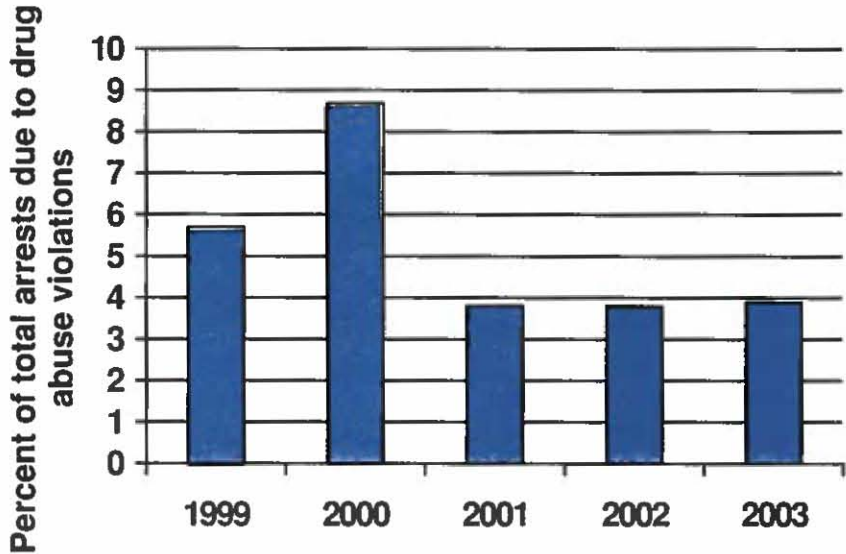
According to the GPD, in 2003, 3.9% of all juvenile offenders were arrested for drug violations. This represents a decrease from previous years (Table 75).

Table 75. Percent of juvenile offenders arrested for drug violations, Guam, 1999-2003

Drug abuse violations % of total (n)	5.7 (45)	8.7 (38)	3.8 (15)	3.8 (7)	3.9 (23)
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Source: Guam Police Department, 1999-2003

Figure 38. Percent of juvenile offenders arrested for drug violations, Guam, 1999-2003



Source: Guam Police Department, 1999-2003

For January-August, 2005, according to GPD, of minors taken into custody for drug and alcohol violations, 45% were for possession/use of marijuana and 5.5% were for possession/use of other illicit drugs.

Forty percent of Juvenile Drug Court clients report marijuana as the 1st substance ever abused. An additional 3.1% report that they began experimenting with alcohol/tobacco/marijuana, while 1.2% report alcohol/marijuana as the 1st substances ever abused. Fifty-five percent of youth screened at the Juvenile Drug Court report marijuana as their current primary substance of abuse. Three percent report inhalants as their current primary substance of abuse.

The Department of Youth Affairs records the following patterns of substance abuse among their clients (Table 76). The data indicates that among court-involved youth under DYA's care, marijuana and inhalants are the prevalent illicit drugs of abuse.

Table 76. Patterns of drug abuse among DYA clients, Guam, 2000-2005

	2000	2001	2002	2003	2004	2005
	430	427	333	378	463	297
	51.6 (222)	44.3 (189)	30.0 (100)	48.7 (184)	62.8 (291)	64.0 (190)
Experimented with "ice" % (n)	6.0 (26)	8.0 (34)	4.2 (14)	3.7 (14)	6.5 (30)	2.0 (6)
Experimented with inhalants % (n)	18.1 (78)	19.4 (83)	14.4 (48)	17.7 (67)	25.3 (117)	24.9 (74)
Experimented with "acid" % (n)	0	(0)	(0)	(0)	(0)	(0)
Experimented with "speed" % (n)	0	(0)	(0)	(0)	(0)	(0)
Experimented with alcohol % (n)	51.8 (223)	45.0 (194)	33.6 (112)	43.9 (166)	63.7 (295)	64.3 (191)

Note: For 2005, data was recorded from January-July. For the other years, data was recorded from January - December.

Source: Department of Youth Affairs, 2000-2005.

SECTION 4

Consequences



SECTION 4

Chapter 4

Preventable Death

PROBLEM STATEMENT:

The three leading causes of death on Guam--diseases of the heart, malignant neoplasm, and cerebrovascular disease--are all tobacco-related. In 2002, these 3 causes of mortality accounted for 58% of all deaths.

Three additional causes of death on the list are either precipitated or exacerbated by tobacco use, namely diabetes mellitus, pneumonia and chronic obstructive pulmonary disease. Alcohol and other drug use contribute to suicide, motor vehicle accidents, bacterial diseases (septicemia), pneumonia, chronic liver disease and cirrhosis.

ALL CAUSE DEATH

Table 77 lists the leading causes of death for Guam for the years 1998-2002. Because of the island's small population size, the corresponding number of deaths under each cause of death is small. Hence the table reports actual numbers of deaths per diagnostic category. Table 77 shows the crude death rates from the leading causes of death.

Malignant Neoplasm	124	104	123	107	89
Cerebrovascular Disease	52	64	58	68	54
Suicide	22	23	29	36	34
Motor Vehicle Accidents	13	21	23	31	32
Diabetes Mellitus	18	19	21	25	35
Bacterial diseases (Septicemia)	18	21	20	0	0
Nephritis	0	0	19	21	0
Pneumonia	22	18	0	21	24
Chronic liver disease and cirrhosis	0	0	0	19	18
Chronic obstructive pulmonary disease	20	16	16	0	23
All other accidents	23	38	24	25	26
All other causes	136	156	151	166	160

Source: Office of Vital Statistics, Department of Public Health and Social Services, Government of Guam.

Table 78. Crude death rates*, leading causes of death, Guam, 1998-2002

Leading Causes of Death	2002	2001	2000	1999	1998
Total deaths**	4.2	4.5	4.3	4.7	4.2
Diseases of the Heart	130.4	133.3	116.9	134.9	104.6
Malignant Neoplasm	77.5	65.7	80.7	70.4	59.7
Cerebrovascular Disease	32.5	40.4	37.5	44.7	36.2
Suicide	13.7	14.5	18.7	23.7	22.8
Motor Vehicle Accidents	8.1	13.3	14.9	20.4	21.4
Diabetes mellitus	11.2	12.0	13.6	16.4	23.5
Bacterial diseases (septicemia)	11.2	13.3	12.9	0	0
Nephritis	0	0	12.3	13.8	0
Pneumonia	13.7	11.4	0	13.8	16.1
Chronic liver disease and cirrhosis	0	0	0	12.5	12.1
Chronic obstructive pulmonary disease	12.4	10.1	10.3	0	15.4
All other accidents	14.3	24.0	15.5	16.4	16.8
All others	84.4	98.5	97.5	109.2	107.2
Mid-year Population	161,057	158,330	154,805	151,965	149,178

*per 100,000 population **per 1000 population

Note: Because of the small numbers of deaths per category, care should be taken when interpreting trends using CDRs.
Source: Calculated from data provided by the Office of Vital Statistics, Dept. of Public Health and Social Services

Three leading causes of death---diseases of the heart, malignant neoplasm, and cerebrovascular disease---have remained consistently at the top of the list across time. In 2002, these 3 causes of mortality accounted for 58% of all deaths.

The 3 leading causes of death on Guam mirror that of the United States in 2002. Of note, all 3 are tobacco-related. Three additional causes of death on the list are either precipitated or exacerbated by tobacco use, namely diabetes mellitus, pneumonia and chronic obstructive pulmonary disease. Alcohol and other drug use contribute to suicide, motor vehicle accidents, bacterial diseases (septicemia), pneumonia, chronic liver disease and cirrhosis (Table 79).

Table 79. Leading causes of death, Guam and U.S., 2002

Ten Leading Causes of Death, Guam 2002	Ten Leading Causes of Death, USA, 2002
Diseases of the heart	Diseases of the heart
Malignant neoplasm	Malignant neoplasm
Cerebrovascular diseases	Cerebrovascular diseases
All other accidents	Chronic lower respiratory diseases
Pneumonia (5)	Unintentional injuries
	Diabetes mellitus
	Influenza and pneumonia
	Alzheimer's disease
	Nephritis, nephritic syndrome, nephrosis
	Septicemia

Source: Office of Vital Statistics, Department of Public Health and Social Services, Government of Guam

Table 80 shows the distribution of deaths by sex, age and race on Guam. In general, the death burden increases with age, across sex and ethnic/racial groups, with the exception of Chuukese, where half of deaths occurred between the ages of 15-59. Males have more deaths across all age groups. For those causes of death related to tobacco, alcohol and other drug use, these differences reflect increased use of these substances among males, and among specific ethnic/racial groups.

Table 80. Deaths by age, sex and race, Guam, 2004

Sex and Age	Total	Chamorro Guam	Chamorro CNMI	White	Filipino	Other Asian	Chuuk ese	Yapese	Pohnpei an	Palauan	Other	Not Reported
Total	691	388	10	40	148	22	46	4	4	13	13	
Less than 1 year	42	21	0	1	8	0	8	1	1	2	0	
1 to 14 years	12	9	0	0	1	0	2	0	0	0	0	
15 to 29 years	41	16	0	2	6	2	11	1	0	1	2	
30 to 44 years	78	44	2	7	8	5	6	0	1	2	3	
45 to 59 years	149	97	1	13	19	5	6	1	2	3	2	
60 to 74 years	180	101	3	7	47	4	9	0	0	3	3	
75 years and over	189	100	4	10	59	6	4	1	0	2	3	
Males	426	219	7	33	98	16	27	3	3	11	8	
Less than 1 year	25	14	0	0	3	0	4	1	1	2	0	
1 to 14 years	7	5	0	0	0	0	2	0	0	0	0	
15 to 29 years	28	11	0	1	5	0	8	1	0	1	1	
30 to 44 years	63	32	2	7	6	5	5	0	1	2	3	
45 to 59 years	100	62	0	11	15	3	5	0	1	2	1	
60 to 74 years	101	57	2	6	26	3	2	0	0	3	1	
75 years and over	102	38	3	8	43	5	1	1	0	1	2	
Females	265	169	3	7	50	6	19	1	1	2	5	
Less than 1 year	17	7	0	1	5	0	4	0	0	0	0	
1 to 14 years	5	4	0	0	1	0	0	0	0	0	0	
15 to 29 years	13	5	0	1	1	2	3	0	0	0	1	
30 to 44 years	15	12	0	0	2	0	1	0	0	0	0	
45 to 59 years	49	35	1	2	4	2	1	1	1	1	1	
60 to 74 years	79	44	1	1	21	1	7	0	0	0	2	

Source: Office of Vital Statistics, Department of Public Health and Social Services, Government of Guam

SECTION 4

Chapter 5

PROBLEM STATEMENT:

The top three causes of mortality on Guam—heart disease, cancer and stroke—are all caused by tobacco. The crude death rate from cardiovascular diseases has increased from 145 per 100,000 persons in 1998 to 153/100,000 in 2003. This is not surprising, given the high prevalence of tobacco consumption on the island.

Information on the prevalence and incidence of these chronic tobacco-related diseases are not consistently available. Also, data on the more acute effects of tobacco use, and exposure to second hand smoke—such as ear and respiratory infections in children, and wheezing among adults—is unavailable.

Data on the costs of medical care for these tobacco-related diseases is not currently available, but it is generally believed to be considerable. Data on years of productive life lost, disability adjusted life years, and costs related to diminished productivity are likewise not available.

Twenty-five percent of litter collected on Guam's beaches and public land consists of tobacco-related debris.

TOBACCO RELATED CONSEQUENCES

Health Consequences

Every report from the US Surgeon General that has examined the health consequences of tobacco use, from the first landmark 1964 publication to the latest published in 2004, has concluded that tobacco use is "...the single greatest cause of avoidable morbidity and mortality in the United States" (US DHHS, 2004). Smoking has been established to cause at least 29 diseases, and over 40 diseases and conditions are related to tobacco use (Table

and conditions caused by tobacco use

Disease Category	Specific Disease/Condition
Cancer*	Bladder cancer Cervical cancer Esophageal cancer Kidney cancer Laryngeal cancer Leukemia Lung cancer Oral cancer Pancreatic cancer Stomach cancer
Cardiovascular Diseases	Abdominal aortic aneurysm Atherosclerosis Cerebrovascular disease* Coronary heart disease*
Respiratory Diseases	Chronic obstructive pulmonary disease* Pneumonia* Respiratory effects in utero Respiratory effects in infancy, childhood and adolescence Respiratory effects in adulthood Other respiratory effects: cough, sputum production, wheezing, respiratory infections (bronchitis and pneumonia)
Reproductive Effects	Fetal deaths and stillbirth Low birth weight Infertility Pregnancy complications
Other Effects	Cataracts Diminished health status/increased morbidity Hip fractures Low bone density Peptic ulcer disease

Source: Department of Health and Human Services, *The Health Consequences of Smoking: A Report of the Surgeon General*, 2004

*These conditions are among Guam's top 10 causes of mortality.

Table 82 provides information on selected tobacco-related causes of death on Guam. Notably, the top three causes of mortality—heart disease, cancer and stroke—are all caused by tobacco. The crude death rate from cardiovascular diseases has increased from 145 per 100,000 persons in 1998 to 153 per 100,000 persons in 2003. This is not surprising, given the high prevalence of tobacco consumption on the island. As expected, the mortality rate for cardiovascular diseases on Guam exceeds that for cancer and stroke, mirroring the predominance of mortality from cardiovascular diseases among tobacco users worldwide. The crude death rate from lung cancer has increased from 16 per 100,000 persons in 1998 to 19 per 100,000 persons in 2003.

Table 82. Crude death rates (CDR) from selected tobacco-caused diseases, Guam, 1998-2003

	1998	1999	2000	2001	2002	2003
Total Deaths	651	724	667	691	658	
Population	149,178	151,965	154,805	158,330	161,057	163,593
CDR per 1000	4.4	4.8	4.3	4.4	4.1	
Lung Cancer	24	27	36	25	31	31
Lung Cancer CDR	16.1	17.8	23.3	15.8	19.2	19.0
COPD	23	23	16	16	20	16
COPD CDR	15.4	15.1	10.3	10.1	12.4	9.8

Source: Department of Public Health and Social Services, Vital Statistics, 1998-2003

Guam at present does not have facilities for diagnostic and therapeutic cardiac procedures such as angiography, angioplasty and coronary artery bypass grafting. It also lacks the full implement of oncologic and neurologic/neurosurgical services. Therefore, the crude death rates on Guam may underestimate the true mortality rate attributable to tobacco, because a significant number of cardiac, cancer and stroke cases are brought to medical centers in the Philippines, Hawaii or the mainland for diagnosis and treatment. In addition, it is reported that numerous cases of chronic cardiac and pulmonary disease are taken to off-island treatment and rehabilitation centers, which may partially explain the decreasing crude death rate from chronic pulmonary disease.

Information on the prevalence and incidence of these chronic tobacco-related diseases are not consistently available. Also, data on the more acute effects of tobacco use, and exposure to second hand smoke---such as ear and respiratory infections in children, and wheezing among adults---is unavailable.

Socio-economic Consequences

Data on the costs of medical care for these tobacco-related diseases is not currently available, but it is generally believed to be considerable. Data on years of productive life lost, disability adjusted life years, and costs related to diminished productivity are likewise not available.

Other Consequences

The Guam Environmental Protection Agency regularly sponsors "clean-up days" at various sites on the island. Data collected from these events reveals that 25% of litter collected on Guam's beaches and public land consists of tobacco-related debris.

Information on tobacco-related fires is not available.

SECTION 4

Chapter 6

Tobacco-Related Consequences

PROBLEM STATEMENT:

The death rate from alcoholic liver disease has increased slightly, from 2.6 per 100,000 persons in 1999 to 3.1 per 100,000 persons in 2003.

Alcohol dependence is the predominant reason for referral to the Drug and Alcohol branch of the DMHSA.

The social costs of alcohol use on Guam are significant. Alcohol use has been implicated in criminal arrests, motor vehicle crashes and violent crime. Violent and property crimes increased on the island from 2002 to 2003. Of the 8 murders reported in 2003, 5 (62.5%) involved alcohol.

In 2003, Guam had a total of 25 fatal injuries resulting from motor vehicle crashes. Alcohol was a factor in 8, or 32%, of these fatal crashes. More recent data from the Guam Police Department indicates that in 2004, 7 (50%) of the 14 fatalities from motor vehicle crashes were alcohol-related.

ALCOHOL-RELATED CONSEQUENCES

Health Consequences

Chronic heavy alcohol consumption is the major factor for the development of chronic liver disease and liver cirrhosis. Alcohol is also recognized as a factor in suicide, homicide and other violent crimes. Table 83 lists the crude death rates from chronic liver disease, alcoholic

Total Deaths	651	724	667	691	658	
Mid-year Population	149,178	151,965	154,805	158,330	161,057	163,593
Chronic Liver Cirrhosis	18	19	11	8	11	14
Cirrhosis CDR	12.1	12.5	7.11	5.1	6.8	8.6
Alcoholic Liver Disease	---	4	2	2	1	5
Alcoholic Liver Disease CDR	---	2.6	1.3	1.3	0.6	3.1
Suicide	34	36	29	23	22	25
Suicide CDR	22.8	23.7	18.7	14.5	13.7	15.3
Homicide	12	10	4	9	1	7
Homicide CDR	8.0	6.6	2.6	5.7	0.6	4.3

Source: Department of Public Health and Social Services, Office of Vital Statistics

The small numbers of cases imply the need for caution in interpreting these statistics. Homicide, suicide and chronic liver cirrhosis death rates have decreased since 1998. The death rate from alcoholic liver disease has increased slightly, from 2.6 per 100,000 persons in 1999 to 3.1 per 100,000 persons in 2003.

Guam has collected information on alcohol use during pregnancy, and Fetal Alcohol Syndrome (FAS), since 1994. Alcohol use was present in 0.25% of total births on Guam in 2004. There was 1 case of Fetal Alcohol Syndrome in that year, accounting for 0.03% of all total births. No cases of Fetal Alcohol Syndrome were reported in 1999-2003. Because the number of cases is small, it is difficult to draw conclusions about the trends over time in alcohol use during pregnancy and Fetal Alcohol Syndrome rates on Guam (Table 84).

Table 84. Fetal Alcohol Syndrome and alcohol use during pregnancy. Guam, 1994-2003

Year	FAS	Alcohol Use during Pregnancy	Total Births	FAS as % of Total Births	Alcohol Use as % of Total Births
1994	0	5	4427	0.00	0.11
1995	0	16	4189	0.00	0.38
1996	0	6	4265	0.00	0.14
1997	3	15	4318	0.07	0.35
1998	1	24	4322	0.02	0.56
1999	0	8	4037	0.00	0.20
2000	0	3	3787	0.00	0.08
2001	0	12	3583	0.00	0.33
2002	0	3	3222	0.00	0.09
2003	0	6	3298	0.00	0.18
2004	1	9	3427	0.03	0.26

Source: Department of Public Health and Social Services, Office of Vital Statistics, Birth Certificate data

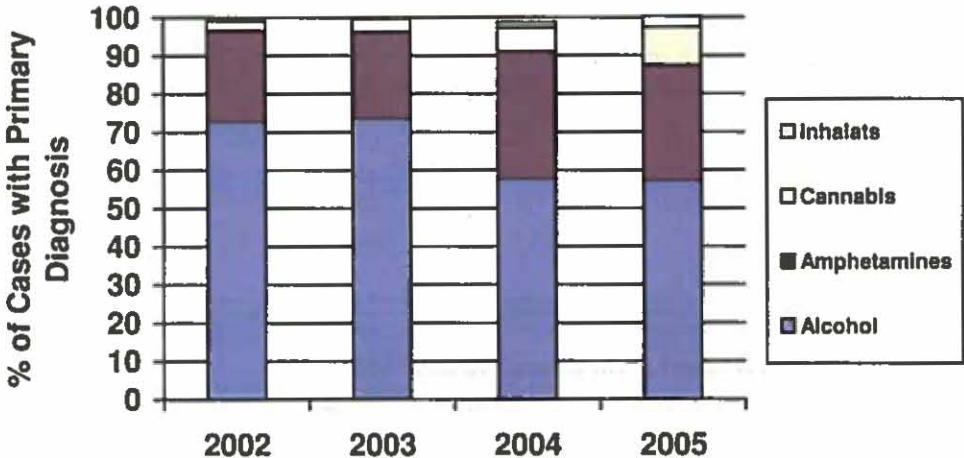
The Drug and Alcohol branch of the Department of Mental Health and Substance Abuse reports the following statistics for their treatment programs (Table 85).

Table 85. Primary diagnosis, drug and alcohol treatment programs, DMHSA, Guam, 2002-2005

Year	Total Cases	Alcohol % (n)	Cannabis % (n)	Amphetamines (Including "Ice") % (n)	Opiates % (n)	Inhalants % (n)	Others % (n)
2002	1928	72.7	2.6	23.9	0.1	.0	0.7
2003	668	73.6	3.5	22.6	---	---	0.3
2004	339	57.7	6.2	33.4	---	1.5	0.9
2005	1542	57.3	9.9	30.3	---	2.8	0.06

Source: Department of Mental Health and Substance Abuse, Clinical Services Division, Drug and Alcohol Branch

Figure 39. Primary diagnosis, drug and alcohol treatment programs, DMHSA, Guam, 2002-2005



Source: Department of Mental Health and Substance Abuse, Clinical Services Division, Drug and Alcohol Branch

Alcohol dependence is the predominant reason for referral to the Drug and Alcohol branch of the DMHSA. The proportion of cases presenting with alcohol dependence has decreased from 72.7% of cases in 2002 to 53.3% of cases in 2005. This is largely due to the increase in the proportion of cases presenting primarily because of amphetamine (including "ice") abuse (Figure 39).

Socio-economic Consequences

Alcohol use has been implicated in criminal arrests, motor vehicle crashes and violent crime. The following statistics were provided by the Guam Police Department through the Uniform Crime Report (UCR) and the Minors Taken into Custody Report.

Table 86 shows the percentage of arrests of minors for alcohol-related offenses. Alcohol-related offenses accounted for 2.4% of all juvenile arrests in 2005. This represents a decrease from the previous years.

Table 86. Alcohol-related arrests, juvenile offenders, Guam, 1998-2003

Year	Total Arrests	DUI (n)	Liquor Laws (n)	Drunkenness (n)	Alcohol-related arrests, % of arrests (n)
1998	927	3	13	17	3.5 (32)
2002	188	2	7	2	5.8 (11)
2003	591	1	4	9	2.3 (14)

Source: Guam Police Department, Minors Taken into Custody Report

The 2003 Uniform Crime Report (UCR) provides the following information on the percent change of violent crime and property crime on Guam for the years 1999-2003 (Tables 87-88). Violent and property crimes increased from 2002 to 2003. Of the 8 murders reported in 2003, 5 (62.5%) involved alcohol.

Table 87. Percent change in violent and property crime, Guam, 1999-2003

Year	Number	Percent Change from Previous Year
1999	6274	-9.70
2000	5451	-13.12
2001	4978	-8.68
2002	3938	-20.89
2003	4273	+8.51

Source: Guam Police Department, Uniform Crime Report, 2003

Table 88. Violent and property crime rate, Guam, 1999-2003

	1999 Rate per 1000 (n)	2000 Rate per 1000 (n)	2001 Rate per 1000 (n)	2002 Rate per 1000 (n)	2003 Rate per 1000 (n)
Violent Crime					
Murder/Manslaughter	0.06 (9)	0.02 (3)	0.05 (8)	0.01 (2)	0.05 (8)
Forcible Rape	1.20 (197)	1.14 (190)	1.05 (166)	1.07 (172)	1.4 (219)
Robbery	0.53 (86)	0.44 (74)	0.45 (71)	0.47 (75)	0.38 (60)
Aggravated Assault	1.22 (199)	0.66 (110)	0.84 (133)	0.97 (156)	1.05 (162)
Sub-total	3.01	2.26	2.39	2.52	2.88
Property Crime					
Burglary	8.88 (1453)	6.92 (1157)	6.32 (996)	5.68 (913)	7.3 (1126)
Larceny-theft	23.7 (3875)	21.30 (3563)	21.13 (3329)	14.87 (2391)	15.9 (2459)
Motor Vehicle Theft	2.70 (441)	2.05 (343)	2.05 (343)	1.37 (221)	1.5 (231)
Sub-total	35.20	30.27	29.50	21.92	24.7

Source: Guam Police Department, Uniform Crime Report, 2003

In 2003, Guam had a total of 25 fatal injuries resulting from motor vehicle crashes. Alcohol was a factor in 8, or 32%, of these fatal crashes. More recent data from the Guam Police Department indicates that in 2004, 7 (50%) of the 14 fatalities from motor vehicle crashes were alcohol-related.

There were 538 arrests for "Driving under the Influence" (DUI) in 2004. This represents a the previous year (Table 89). Alcohol was a factor in 61 (34%) DUI arrests (Table 90).

Table 89. Driving under the influence (DUI), Guam, 1999-2004

	Number of Arrests	Percent Change from Previous Year
1999	581	-27.0
2000	620	6.7
2001	900	45.2
2002	972	8.0
2003	743	-23.6
2004	538	-27.6

Source: Guam Police Department, Uniform Crime Report, 2003; partial data, Uniform Crime Report, 2004

Table 90. Details on DUI arrests, 2000-2004

Detail	2000	2001	2002	2003	2004
Arrests for DUI	620	900	972	694	538
Juvenile Offenders	2	3	9	0	3
Involving Crash	125	203	163	188	179
Alcohol-related crash	---	---	---	85	61
Involving Injuries	65	79	67	83	61
Number of Persons Injured	110	134	103	171	112
Involving Fatalities	12	11	6	7	7

Source: Guam Police Department, Uniform Crime Report, 2003; partial data, Uniform Crime Report, 2004

Tables 91-92 provide the breakdown by age and ethnicity/race for DUI arrests.

Table 91. DUI arrests by age, Guam, 2000-2004

Age Group	Number of Arrests				
	2000	2001	2002	2003	2004
<18	2	3	9	0	3
18-19	20	36	52	43	28
20-24	125	191	134	129	109
25-29	101	138	174	107	86
30-34	95	140	146	121	94
35-39	86	150	148	92	63
40-44	72	99	138	86	76
45-49	59	63	83	53	23
50-54	26	46	42	29	36
55-59	18	14	20	21	10
60-64	16	20	22	4	7
65-69	0	0	4	9	0
Unknown	0	0	0	0	3
Total	620	900	972	694	538

Source: Guam Police Department, Uniform Crime Report, 2003; partial data, Uniform Crime Report, 2004

Table 92. DUI arrests by ethnicity/race, Guam, 2000-2004

Race	Number of Arrests				
	2000	2001	2002	2003	2004
Chamorro	163	288	364	195	139
White	61	89	89	59	52
Filipino	106	125	116	86	51
Other Asian	67	81	69	66	48

Source: Guam Police Department, Uniform Crime Report, 2005
 *FAS: Palauan, Chuukese, Yapese, Kosraen, Pohnpeian, Marshallese

One hundred and forty DUI arrests in 2004 involved individuals under the age of 25. Under Guam's current law, alcohol consumption is legally permitted for those 18 and above. Based on this age cut-off, only 3 individuals with a DUI arrest were underage in 2004. If the predominant legal age for alcoholic consumption were raised to 21, consistent with most US States and Territories, theoretically, an additional 55 underage DUI arrests would have resulted (Table 91).

The large numbers of arrests among young and middle-aged adults highlight the need for complementary interventions that target these adult groups, while addressing the need to prevent underage drinking.

Micronesians are significantly over-represented in DUI arrests, given the very small proportion of the total population that is comprised of Micronesians (Table 92).

Tables 93-95 and Figure 40 profile all alcohol-related arrests among adults by age, gender and ethnicity/race. There were 903 alcohol-related arrests out of 3296 total arrests for all offenses combined in 2003, which makes alcohol-related arrests account for 27% of all adult arrests. Adult arrests for alcohol-related offenses predominate among males, those aged 20-34, and among Micronesians and Chamorros. Interventions to reduce the deleterious effects of alcohol consumption will need to target these high-risk groups.

Table 93. Alcohol-related arrests by sex, adults, Guam, 2003

Offense	Female n (%)	Male n (%)	Total Alcohol-related Arrests N
Driving Under the Influence	52 (7.5%)	642 (92.5%)	694
Liquor Laws	1 (1.7%)	57 (98.3%)	58
Drunkenness	23 (15.2%)	128 (84.8%)	151
Total	76 (8.4%)	827 (91.6%)	903

Source: Guam Police Department, Uniform Crime Report 2003

Table 94. Alcohol-related arrests by age, adults, Guam, 2003

Age Group	DUI n (%)	Liquor Laws n (%)	Drunkenness n (%)
18-19	43 (6.2%)	9 (15.5%)	22 (14.6%)
20-24	129 (18.6%)	16 (27.6%)	41 (27.2%)
	107 (15.4%)	11 (19.0%)	27 (17.9%)
	121 (17.4%)	9 (15.5%)	21 (13.9%)
35-39	92 (13.2%)	7 (12.1%)	12 (7.9%)
40-44	86 (12.4%)	2 (3.4%)	13 (8.6%)
45-49	53 (7.6%)	2 (3.4%)	9 (6.0%)
50-54	29 (4.2%)	2 (3.4%)	4 (2.6%)
55-59	21 (3.0%)	0	2 (1.3%)
60-64	4 (0.6%)	0	0
65-69	9 (1.3%)	0	0
Total	694	58	151

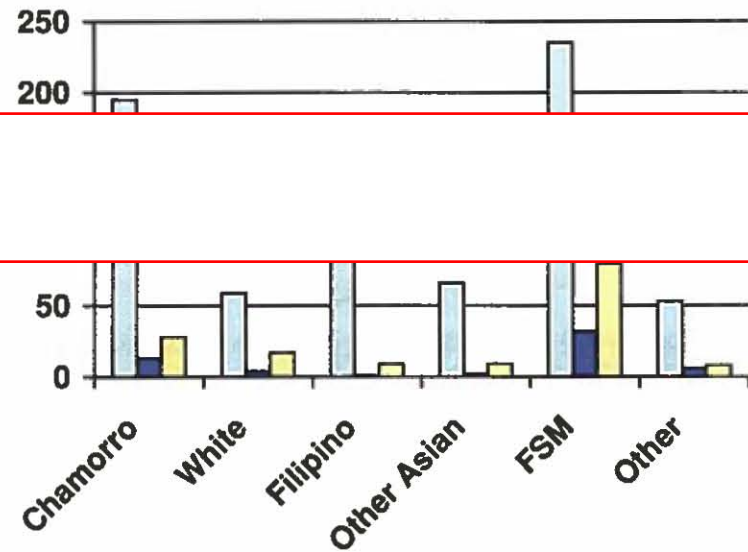
Source: Guam Police Department, Uniform Crime Report 2003

Table 95. Alcohol-related arrests by ethnicity/race, Guam, 2003

Race	Driving Under the Influence n (%)	Liquor Laws n (%)	Drunkenness n (%)
Chamorro	195 (28.1%)	13 (22.4%)	28 (18.5%)
White	59 (8.5%)	4 (6.9%)	17 (11.2%)
Filipino	86 (12.4%)	1 (1.7%)	9 (6.0%)
Other Asian	66 (9.5%)	2 (3.4%)	9 (6.0%)
FSM	235 (33.9%)	32 (55.2%)	80 (53.0%)
Other	53 (7.6%)	6 (10.3%)	8 (5.3%)
Total	694	58	151

Source: Guam Police Department, Uniform Crime Report, 2003

Figure 40. Alcohol-related arrests by ethnicity/race, Guam, 2003



Source: Guam Police Department, Uniform Crime Report, 2003

There were 591 juvenile offenders arrested for all offense categories in 2003. Fourteen (2.4%) of these arrests were alcohol-related (Table 96).

Table 96. Alcohol-related arrests, juvenile offenders, Guam, 1999-2003

Offense	1999	2000	2001	2002	2003
DUI	3	5	3	2	1
Liquor Laws	7	0	14	7	4
Drunkenness	0	0	0	2	9
Subtotal	10	5	17	11	14
	(1.3%)	(1.1%)	(4.3%)	(5.8%)	(2.4%)
Total Arrests, All offenses	768	437	398	188	591

Source: Guam Police Department, Uniform Crime Report, 2003

SECTION 4

Chapter 7

Drug Use Consequences

PROBLEM STATEMENT:

The proportion of clients admitted to the Department of Mental Health and Substance Abuse with drug dependence as the primary diagnosis is increasing. Overall, about one-third of DMHSDA clients presented with dependency problems involving illicit drugs.

The association between illicit drug use and criminal behavior remains highly significant. Illicit drug use within a community is often associated with property crime. In 2003, 1126 burglaries were reported to the Guam Police Department, representing a 23.3% increase from the previous year.

Methamphetamines play a major role in criminal behavior linked to illicit drug use on Guam. Methamphetamines ("ice") accounted for 68.0% of local arrests for drug violations, while marijuana accounted for another 27%. With regards to federal arrests, in 2003, methamphetamine accounted for majority (>90%) of cases on Guam, unlike the US mainland, where methamphetamine was involved in less than 20% of drug-related federal sentences.

ILLICIT DRUG USE: CONSEQUENCES

Health Consequences

The crude death rate from drug use on Guam appears to have decreased from 1.29 per 100,000 persons in 2000 to 1.22 per 100,000 persons in 2003. However, the small numbers of

Deaths						
Mid-year Population	149,178	151,965	154,805	158,330	161,057	163,593
Deaths due to Drug Use	0	0	2	0	2	2
Crude Death Rate from Drug Use (per 100,000)	0.00	0.00	1.29	0.00	1.24	1.22

Source: Department of Public Health and Social Services, Office of Vital Statistics

Drug use by the mother was reported for 8 births on Guam in 2004, comprising 0.23% of all births. This is unchanged from the previous year (Table 98).

Table 98. Illicit drug use during pregnancy, Guam, 1994-2003

Year	Illicit Drug Use during Pregnancy	Total Births	Illicit Drug Use as % of Total Births
2000	37	3787	0.98
2001	8	3583	0.22
2002	4	3222	0.12
2003	7	3298	0.21
2004	8	3427	0.23

Source: Department of Public Health and Social Services, Office of Vital Statistics, Birth Certificate data

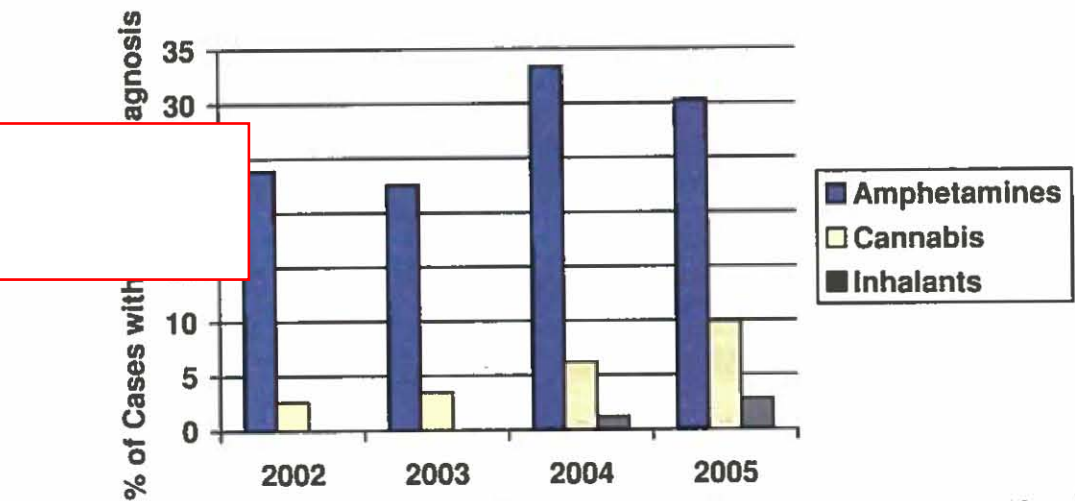
Among clients seen at the Department of Mental Health and Substance Abuse, the proportion with drug dependence as the primary diagnosis is increasing. This is primarily due to the rising percentage of clients presenting for "ice" or methamphetamine dependence. However, the percentage with a primary diagnosis of cannabis or inhalants abuse is also increasing. Overall, about one-third, or 32.5% of all clients seen at the DMHSA presented with dependency problems involving illicit drugs (Table 99 and Figure 41).

Table 99. Primary diagnosis, drug and alcohol treatment programs, DMHSA, Guam, 2002-2005

Year	Total Cases	Alcohol % (n)	Cannabis % (n)	Amphetamines (including "ice") % (n)	Opiates % (n)	Inhalants % (n)	Others % (n)	Subtotal Drug Cases % (n)
2002	2652	72.7 (1928)	2.6 (70)	23.9 (633)	0.1 (2)	.0 (1)	0.7 (18)	27.3 (724)
2003	908	73.6 (668)	3.5 (32)	22.6 (205)	---	---	0.3 (3)	26.4 (240)
2004	339	57.7 (195)	6.2 (21)	33.4 (114)	---	1.5 (5)	0.9 (3)	42.2 (143)
2005	1542	57.3 (883)	9.9 (153)	30.3 (462)	---	2.8 (43)	0.06 (1)	42.7 (659)
Totals	5441	67.5 (3674)	5.1 (276)	26.0 (1414)	0.1 (2)	0.9 (49)	0.5 (25)	32.4 (1766)

Source: Department of Mental Health and Substance Abuse, Clinical Services Division, Drug and Alcohol Branch

Figure 41. Percentage of DMHSA clients by primary drug of abuse, Guam, 2003-2005



Source: Department of Mental Health and Substance Abuse, Clinical Services Division, Drug and Alcohol Branch

Illicit drug use within a community is often associated with property crime. In 2003, 1126 burglaries were reported to the Guam Police Department, representing a 23.3% increase from the previous year. Sixty-three percent of all burglaries were carried out in residential properties. The villages with the most reported number of residential burglaries were Dededo, Yigo and Mangilao (Tables 100-101).

Table 100. Burglaries, Guam, 1999-2003

Year	Number Reported	Percent Change from Previous Year
1999	1453	9.7
2000	1157	-20.4
2001	996	-14.1
2002	913	8.3
2003	1126	23.3

Source: Guam Police Department, Uniform Crime Report, 2003

Table 101. Burglaries by village and property type, Guam, 2003

Village	Residential Property		Non-residential Property	
	Number Reported	Percent	Number Reported	Percent
Agana Heights	16	2.3	12	2.9
Agat	23	3.2	20	5.0
Asan/Maina	8	1.1	6	1.4
Barrigada	29	4.1	20	4.8
Chalan Pago/Ordot	23	3.2	6	1.4
Dededo	152	21.4	51	12.2
Hagatna	9	1.3	35	8.4
Harmon	9	1.3	49	11.8
Inarajan	16	2.3	4	1.0
Mangilao	73	10.3	27	6.5
Merizo	18	2.5	0	0
Mongmong/Toto/Maite	35	5.0	18	4.3
Piti/Nimitz Hill	15	2.1	2	0.5
Santa Rita	24	3.4	9	2.2
Sinajana	36	5.1	10	2.4
Talofafo	17	2.4	0	0
Tamuning	57	8.0	70	16.8
Tumon	27	3.8	34	8.2
Umatac	7	1.0	6	1.4
Yigo	79	11.1	25	6.0
Yona	37	5.2	12	2.9

Source: Guam Police Department, Uniform Crime Report, 2003

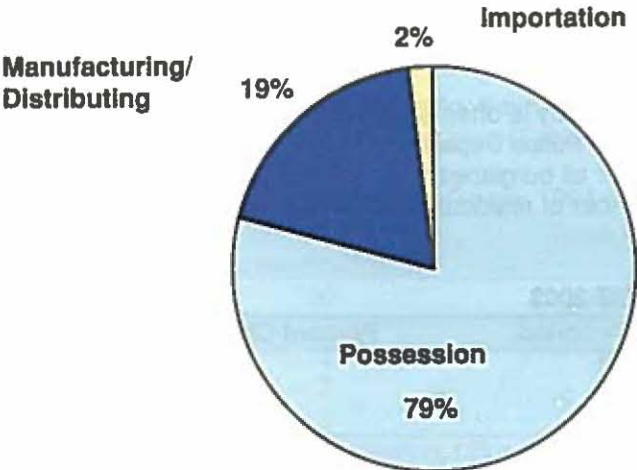
In 2003, 300 drug abuse violations were reported to the Guam Police Department, representing a 42.1% increase from the previous year. In that year, 206 arrests were made for drug violations. Most of the arrests (79.1%) were for possession of a controlled substance; 18.9% were for manufacturing/distributing and 2.0% for importation. Methamphetamines ("ice") accounted for 68.0% of arrests for drug violations, while marijuana accounted for another 27%. The remaining 5.0% were for other drugs (Table 102 and Figures 42-43).

Table 102. Drug abuse violations by type, Guam, 1999-2003

Possession	342	401	300	206	163
Manufacturing	90	82	69	41	39
Importation	15	14	7	6	4

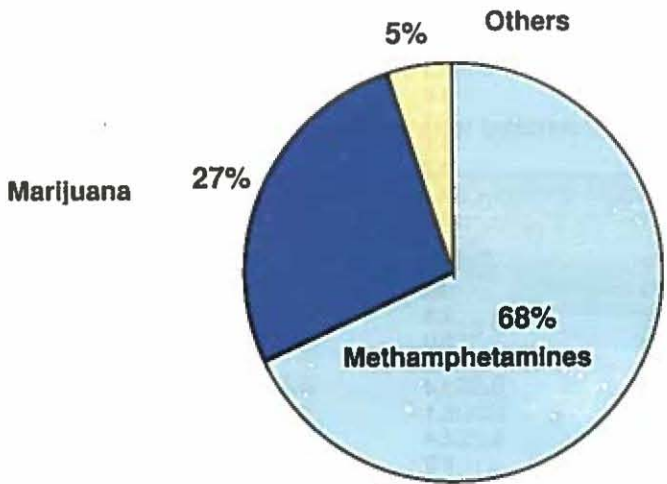
Source: Guam Police Department, Uniform Crime Report, 2003

Figure 42. Drug abuse arrests by type of offense, 2003



Source: Guam Police Department, Uniform Crime Report, 2003

Figure 43. Drug abuse arrests, by type of drug involved, Guam, 2003



Source: Guam Police Department, Uniform Crime Report, 2003

Out of 3296 adult arrests for all types of offenses in 2003, 206 (6.25%) were for drug abuse violations. Those arrested were more likely to be male, Chamorro, aged 20-44. Of the 591 juvenile offenders arrested for all types of offenses in 2003, 23 (3.9%) were for drug abuse violations (Tables 103-105).

Table 103. Drug-related arrests by sex, adults, Guam, 2003

Female	Male	Total Drug-related Arrests
n (%)	n (%)	N
49 (23.8)	157 (76.2)	206

Source: Guam Police Department, Uniform Crime Report 2003

Table 104. Drug-related arrests by age, adults, Guam, 2003

Age Group	Number of Arrests
18-19	4
20-24	30
25-29	31
30-34	36
35-39	34
40-44	36
45-49	22
50-54	6
55-59	4
60-64	2
65-69	1
Total	

Source: Guam Police Department, Uniform Crime Report 2003

Table 105. Drug-related arrests by ethnicity/race, Guam, 2003

Race	Number of Arrests	Percent of Total
Chamorro	150	72.8
White	8	3.9
Filipino	25	12.1
Other Asian	4	1.9
FSM	14	6.8
Other	5	2.4
Total	206	100.0

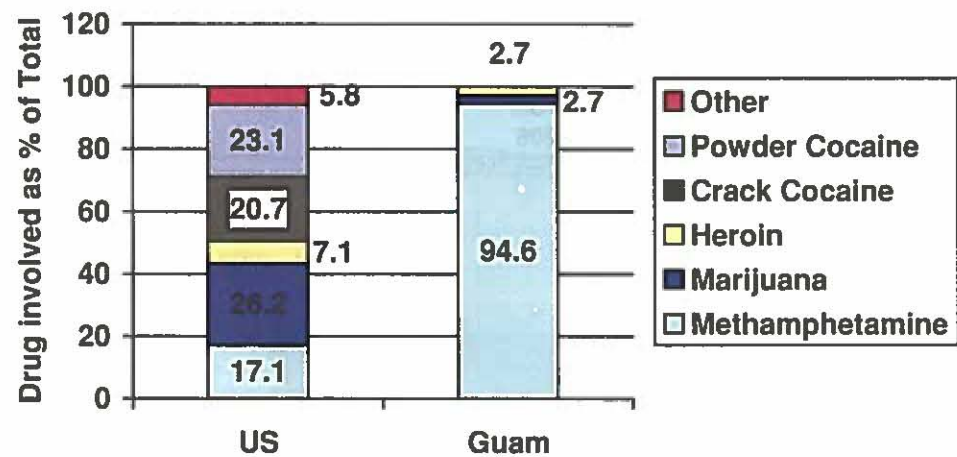
Source: Guam Police Department, Uniform Crime Report, 2003

A comparison of federal sentences for drug-related offenses of Guam and the US reveals that drug-related offenses make up ~ 39% of all federal sentences on the US mainland compared to ~ 31% on Guam. Methamphetamine accounts for majority of cases on Guam, unlike the US mainland, where methamphetamine is involved in less than 20% of drug-related federal sentences. Crack and powder cocaine make up almost 45% of all federal sentences in the US, but were not reported on Guam (Table 106 and Figure 44).

US						
TOTAL, All Offenses	50,605	55,408	59,589	59,691	63,973	69,680
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Trafficking	19,615	21,995	23,229	24,031	25,376	24,882
	(38.8)	(39.7)	(39.0)	(40.3)	(39.7)	(35.7)
Communication Facility	402	397	411	473	459	393
	(0.8)	(0.7)	(0.7)	(0.8)	(0.7)	(0.6)
Simple Possession	601	690	539	584	592	1,222
	(1.2)	(1.2)	(0.9)	(1.0)	(0.9)	(1.8)
Subtotal, US	20,618	23,082	24,179	25,088	26,427	26,497
	(40.7)	(41.6)	(40.6)	(42.0)	(41.3)	(38.0)
Guam						
TOTAL, All Offenses	241	91	133	82	138	95
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Trafficking	71	24	42	21	47	36
	(29.5)	(26.4)	(31.6)	(25.6)	(34.1)	(37.9)
Communication Facility	0	0	1	0	0	1
	(0.0)	(0.0)	(0.8)	(0.0)	(0.0)	(1.1)
Simple Possession	0	0	0	0	0	0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Subtotal, Guam	71	24	42	21	47	36
	(29.5)	(26.4)	(32.3)	(25.6)	(34.1)	(37.9)

Source: United States Sentencing Commission, Office of Policy Analysis, 2003

Figure 44. Federal drug-related sentences by drug type, Guam vs. US, 2003



Source: United States Sentencing Commission, Office of Policy Analysis, 2003

Table 107 provides details on drug seizures on Guam from July 1, 1999 to June 30, 2002. Methamphetamine and marijuana comprise the entire amount of drugs seized on the island. Heroin and cocaine were not involved in any drug seizures during this period. Interestingly, the Maritime Task Force seized no drugs in 1999-2001, but the amounts seized in 2001-2002 were considerable, indicating an increase in the entry of drugs via sea routes.

Table 107. Drug seizures on Guam, 1999-2002

Year 2000				
Drug Type	DEA Task Force	US Customs Task Force	Maritime Task Force	Total Drug Seizures
Marijuana	19,858.0 gms.	9,811.8 gms.	0 gms.	29,669.80 gms.
Heroin	727 plants	462.7 plants	0 plants	1,189.7 plants
Cocaine	0 gms.	0 gms.	0 gms.	0 gms.
	0 gms.	0 gms.	0 gms.	0 gms.
1 July 2000 – 30 June 2001				
Drug Type	DEA Task Force	US Customs Task Force	Maritime Task Force	Total Drug Seizures
Methamphetamine	24,000.0 gms.	16,845.8 gms.	0 gms.	40,845.8 gms.
Marijuana	10,000 plants	32 plants	0 plants	10,032 plants
Heroin	0 gms.	0 gms.	0 gms.	0 gms.
Cocaine	0 gms.	0 gms.	0 gms.	0 gms.
1 July 2001 – 30 June 2002				
Drug Type	DEA Task Force	US Customs Task Force	Maritime Task Force	Total Drug Seizures
Methamphetamine	16,852.0 gms.	644.1 gms.	8,383.0 gms.	25,879.1 gms.
Marijuana	6,100 plants	0 plants	887.9 plants	6,987.9 plants
Heroin	0 gms.	0 gms.	0 gms.	0 gms.
Cocaine	0 gms.	0 gms.	0 gms.	0 gms.

Source: Office of National Drug Control Policy, Drug Policy Information Clearinghouse, Guam Profile of Drug Indicators, May 2004

SECTION 5
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Annexes



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43	Drug abuse arrests by type of drug involved, Guam 2003	90
44	Federal drug-related sentences by drug type, Guam vs. US, 2003	92

ANNEX 3: ILLUSTRATIVE EXAMPLE

In a hypothetical Guam village with 100 adults and 100 youth:

- Sixty-one people will be under the age of 15, and 129 will be between the ages of 15-64 (working age).

English, and 1 will speak no English at all.

- One in three (64 people) will have a high school diploma. Thirty-one will have a bachelor's degree. Nineteen will not have finished 9th grade.
- Thirty-four adults (21 men and 13 women) and 32 youth (17 boys and 15 girls) will be current smokers. The adult smokers will likely belong to the poorest families and have the least amount of education. One in five adult smokers would have tried to quit smoking in the past year. Four out of 5 young smokers would have tried to quit in the past year.
- Of the 32 youth smokers, about 10 would have smoked a whole cigarette before the age of 13. Half of the youth smokers will be Chamorro youth.
- Six youth will be users of chewing tobacco; these youth will be predominantly Micronesian.
- Six adults-5 males, 1 female-will be heavy drinkers. These 6 heavy drinkers will span the entire spectrum of income and educational attainment. 19 will be binge drinkers-15 male, 4 female. Among adults, males are 6 times more likely to be heavy drinkers and 4 times more likely to binge drink, than females.
- 38 youth will be current drinkers-20 males, 18 females. 17 will be binge drinkers-10 males, 7 females. Females will be just as likely as males to use alcohol among youth. 27 would have had their first alcoholic drink before the age of 13. The drinkers are more likely to be Chamorro, Asian other than Filipino or Micronesian. Filipino youth are least likely to drink.
- 10 youth will drive after having had an alcoholic drink. 38 youth are likely to ride in a vehicle driven by someone who has been drinking alcohol.
- We do not know how many adults in this hypothetical village are using illicit drugs. But among the youth:
 - 27 will be current users of marijuana; 15 would have used marijuana for the first time before the age of 13. These youth are more likely to be Chamorro and least likely to be Filipino or Other Asian. Marijuana use is declining among US youth since 1999 but it is increasing among Guam students.
 - 1 female and 2 males will be current users of cocaine.
 - 5 MS girls and 3 HS girls will have tried inhalants. 4 MS boys and 4 HS boys will have tried inhalants. Using inhalants will be highest among middle school girls. There is no ethnic disparity among youth in relation to inhalant use. Inhalant use is decreasing among US youth but not among Guam youth.
 - 1 HS girl and 2 HS boys will have tried ice. Lifetime use of ice is declining faster among Guam youth than among US youth in general.

ANNEX 4: DATA SUMMARY SHEETS

TOBACCO		Consumption	Consequences	Recommendations
Indicators				
General population	Current smoking by MS students	Current smoking by MS students	Deaths from lung cancer	Data on the costs of off-island medical treatment for tobacco-related diseases is not available. Health consequences for tobacco have long lead times. Data on more acute health consequences, such as asthma and chronic ear infections from SHS exposure, are not currently available. Data on smoking-related fires not currently available. Further exploration of ethnic disparity is needed. Data on tobacco use among court-involved adults is not currently available.
	Current smoking by HS students	Current smoking by HS students	Deaths from COPD and emphysema	
Court-involved population	Current smoking by 18 and older	Current smoking by health professionals	Deaths from cardiovascular diseases	The health and environmental costs of tobacco use are significant. Tobacco control is clearly a priority for the PEACE project. Environmental interventions and population-based programs must form a cornerstone of Guam's plan.
	Current smokeless tobacco use by MS students	Current smokeless tobacco use by HS students		
Conclusions	Current daily cigarette use by MS students	Current daily cigarette use by MS students		
	Current daily cigarette use by HS students	Current daily cigarette use by HS students		

ALCOHOL	Consumption	Consequences	Considerations Comments
Indicators	Current Use of alcohol by MS students Current use of alcohol by HS students Current use of alcohol by 18 and older Current binge drinking by MS students Current binge drinking by HS students Current binge drinking by 18 and older Current heavy use of alcohol by 18 and older Early initiation of alcohol use Drinking and driving among 18 and older Drinking and driving among HS students Riding in a car with drinking driver among MS students Riding in a car with drinking driver among HS students Total sales of ethanol per year per capita Consumption patterns among court-involved youth	Chronic liver disease death rate Suicide death rate Homicide death rate % Fatal MV crashes that are alcohol-related Alcohol-related Vehicle Death rate % Alcohol-involved drivers among all drivers in fatal crashes Violent Crime Rate Alcohol abuse or dependence % Live births with fetal alcohol syndrome Alcohol-related confinement Hospitalization for alcohol detoxification % Alcohol-related mandatory participation in treatment programs	
General population	YOUTH: 71.3% of all HS students have had at least 1 alcoholic drink; 38% are current drinkers. Current drinking rates are similar for young men and women. 8.5% had 1st drink at age 8 or younger 17% have gone binge drinking 10% have driven a car after drinking alcohol These statistics are similar or lower than national averages. ADULTS: 45.7% of adults on Guam are current drinkers; 61.5% of adult males and 29.5% of adult females. 5.7% are heavy drinkers. 18.7% are binge drinkers. These statistics are similar or lower than national averages. - Current drinking and heavy drinking among females on Guam is significantly lower than Guam males, and is also lower than US averages for females.	- Homicide, suicide and chronic liver cirrhosis death rates have decreased since 1998. - Death rate from alcoholic liver disease increased from 2.63/200,000 in 1999 to 3.06/100,000 in 2003. - Alcohol use was present in 0.25% of live births on Guam in 2004. There was 1 case of FAS in that year, accounting for 0.03% of all live births. No cases of FAS were reported in 1999-2003. 57.3% of clients of the Drug and Alcohol branch of DMHSA in 2005 had alcohol as their reported substance of primary use.	Data on the numbers and costs of off-island medical treatment for alcohol-related diseases is not available. The gender disparity for current and heavy drinking that is evident among adults (higher alcohol consumption among males) is not seen among youth. Alcohol consumption among Chamorros and Chuukese youth appear to be higher than for other ethnic groups. Filipino youth appear to have a lower than expected rate of alcohol consumption.
Court ² -involved population	- In 2005, 64.3% of youth assessed at DYA experimented with alcohol. This represents an increase from previous years. Alcohol use was associated with other criminal behavior in majority of the cases. 27.2% of Juvenile Drug court clients report alcohol as the 1st substance abused. An	- In 2003, 27% of all arrests were alcohol-related. - Alcohol-related arrests made up 5.8% of all juvenile offenses in 2002, up from 3.5% in 1998. - Of the 8 murder cases in 2003, 5 (62.5%) were alcohol related. - There were 695 arrests for DUI in 2003, representing a 28.5% decrease from the previous	Data on alcohol consumption among court-involved adults is not currently available. The ethnic disparity for alcohol consumption noted among youth in the general population appears to

	additional 3.1% report alcohol and tobacco as the 1 st substances abused, and 1.2% report alcohol, tobacco and marijuana as the 1 st substances of abuse. 30.3% of youth screened at the Juvenile Drug Court report alcohol as the primary substance of current abuse. - GPD reports that in 2002, 5.8% of minors taken into custody were for alcohol-related offenses. This is an increase from the previous years. - According to GPD, of minors taken into custody for alcohol and drug violations in 2005, 49% were for alcohol-related offenses.	year. Over 50% of the arrests were among people aged 20 – 34. Only 1 arrest was of a minor. In 2000, 45% of fatal crashes involved alcohol-impaired drivers.	hold for court-involved youth.
Conclusions	- Alcohol consumption is within the US average for the general population of Guam. Heavy and binge drinking are highest among younger adults. - Among youth, rates of current and binge drinking have been decreasing nationwide, but not on Guam. As a result, the gap between prevalence rates for current and binge drinking among Guam vs. US youth have been narrowing. - Alcohol consumption is high among court-involved youth. About a third of DYA youth report alcohol as the 1st substance of abuse. - Alcohol use is often accompanied by other criminal behavior among court-involved youth.	- Alcohol use figures prominently in traffic accidents with fatalities, and in murders. - The great majority of those arrested fro DUI are young adults.	While alcohol consumption on Guam is not significantly higher than national averages, alcohol use impacts on violent crime, traffic fatalities and other criminal behavior. Thus the social costs are high. Environmental interventions (such as raising the drinking age to 21 and promoting alcohol-free adult role models) are needed on a population basis. Political support for this measure appears to be rising. Programs and messages on preventing alcohol-related traffic accidents need to focus on young adults aged 20-34. Causes for the ethnic disparities in alcohol consumption need to be further explored to delineate specific risk and protective factors.

DRUGS	Consumption	Consequences	Considerations Comments
Indicators	Current use of marijuana by MS students Current use of marijuana by HS students Early initiation of marijuana use Lifetime use of cocaine by MS students Current use of cocaine by HS students Current use of inhalants by MS students Current use of inhalants by HS students Lifetime use of ice by HS students Other drug use patterns among court-involved youth % drug testing positive for any drug for US Probation clients Drug seizures per year by type and amount of drug	Deaths from drug use Property crime rate Drug abuse or dependence Drug-related birth outcomes Drug-related arrests	
General population	46.9% of HS students and 20.6% of MS students report having tried marijuana. The proportion of HS students trying marijuana is significantly higher on Guam than in the US. 15% of HS students tried marijuana before the age of 13. 4.1% of MS students tried marijuana before the age of 11. 5.8% of high school youth and 4.8% of MS students have tried cocaine. This is lower than the US average of 8.7%. 2.8% of HS youth are current cocaine users. (US average: 4.1%) 14.9% of HS youth and 17.5% of MS youth report having used inhalants. This is much higher than the US average of 3.9%. 6.4% of HS students report using ice, as compared to 7.6% of US youth. - More HS males are using drugs than HS females. In MS, this trend is reversed for lifetime inhalant and cocaine use. - In general, Chamorro youth have the highest rates of drug use, while Filipinos have the lowest.	- The crude death rate from drug use on Guam has decreased from 1.29/100,000 in 2000 to 1.22/100,000 in 2003. - Drug use by the mother was reported for 8 live births on Guam in 2004, comprising 0.23% of live births. This is unchanged from the previous year. - In 2004, 24% of case visits at the DMHSA were for amphetamine use; 2.6% were for cannabis/marijuana use. 39.5% of clients of the Drug and Alcohol branch of DMHSA in 2005 had drugs as their reported primary substance of abuse.	Data on adult drug use within the general population is currently not available. Further exploration of ethnic disparity is needed. The reversal of male-predominant drug use among MS students is cause for concern. Marijuana is the predominant type of illicit drug use reported by youth in the general population. Inhalants are the 2nd most common type of drug use reported in this population.
Court-Involved population	YOUTH - In 2005, 64% of youth assessed at DYA experimented with marijuana, 25% with inhalants, and 2% with ice - In 2003, 3.9% of all juvenile offenders were arrested for drug violations. - According to GPD, of minors taken into custody for alcohol and drug violations in 2005, 45% were for marijuana. - Ice, other amphetamines, cocaine, heroin and other "hard" drugs form an insignificant proportion of youth drug-related arrests. 40% of Juvenile Drug Court clients report marijuana as the 1st substance abused. An additional 3.1% report alcohol/tobacco/marijuana as the 1st substances abused, while 1.2% report alcohol + marijuana as the 1st substances abused.	- In 2003, 1126 burglaries were reported to GPD, representing a 23.3% increase from the previous year. - In 2003, 300 drug abuse violations were reported to GPD, representing a 42.1% increase from 2002. 206 arrests were made for drug abuse violations in 2003, representing 6.25% of all arrests. 79.1% were for possession of a controlled substance; 18.9% were for manufacturing/distributing and	Data on drug use among court-involved adults is not currently available. Marijuana, alcohol and tobacco are the drugs of 1st use most frequently reported by clients in the Juvenile Drug Court. Among court-involved youth, illicit drugs most frequently used involve marijuana and inhalants. Among court-involved adults using

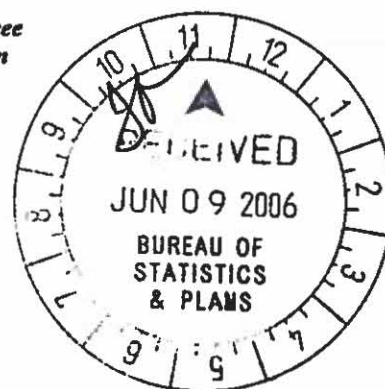
	55% of youth screened at the Juvenile Drug Court report marijuana as their primary substance of abuse. 3% report inhalants as their current primary substance of abuse. ADULTS: - Among court-involved adults undergoing drug testing by the US Probation Office, 1.6% had positive test in 2004. 39.3% tested positive for methamphetamines, 21.3% tested positive for methamphetamines + amphetamines, 19.7% tested positive for opiates, 14.8% tested positive for amphetamines, 3.3% tested positive for cannabis, and 1.6% tested positive for methamphetamines + cannabis.	2% were for importation. In 68% of the cases, methamphetamines were involved. 27% involved marijuana, while 5% involved other substances. - Methamphetamine accounts for majority of drug-related federal sentences on Guam, constituting over 90% of all drug-related federal sentences on island from 1997-2001. This is markedly higher than US averages, which range from 10-14%. - From July 2000 – June 2001, 40,845.80 gms. of methamphetamines and 10, 032 marijuana plants were seized on Guam.	illicit drugs, methamphetamine is the drug most frequently reported, followed by marijuana.
Conclusions	- Marijuana is the predominant type of illicit drug use reported by youth in the general population. Inhalants are the 2nd most common type of illicit drug use reported in this population. - Marijuana, alcohol and tobacco are the drugs of 1st use most frequently reported by clients in the Juvenile Drug Court. - Among court-involved youth, illicit drugs most frequently used involve marijuana and inhalants. - Among court-involved adults using illicit drugs, methamphetamine is the drug most frequently reported, followed by marijuana. - Most drug-related crime is associated with methamphetamine use.	The social costs of drug-related crime are considerable.	Among both youth and adults, population-based strategies to reduce marijuana use are needed. Among youth, additional strategies focusing on the control of inhalant use are needed. Among adults, additional interventions to control methamphetamine use are needed. Guam's plan must also address the need for treatment of those addicted to these substances.



**Prevention and Early Intervention Advisory Committee Empowerment
(PEACE)**

*Drug Free, Alcohol Free, Tobacco Free
Towards a Healthy Future for Guam*

May 22, 2006



Alberto A. Lamorena
Acting Director
Bureau of Statistics & Plans
P.O. Box 2950
Hagatna, Guam 96932

Dear Director Lamorena:

On behalf of the Governor's PEACE Council, we are pleased to share with you the Guam Substance Abuse Epidemiological Profile, which contains a comprehensive "snapshot" of the current situation of tobacco, alcohol and illicit drug use on Guam.

This Profile marks the completion of the first step in the Strategic Prevention Framework process and is a result of the work of Guam's State Epidemiological Workgroup, which is federally funded by the Strategic Prevention Framework-State Incentive Grant (SPF-SIG) under the Office of the Governor.

PEACE was established under Executive Order 2003-29 and was charged with laying the foundation for implementing science-based prevention and early intervention programs on Guam. This Profile sets the baseline data from which subsequent substance abuse prevention efforts will be evaluated. This Profile also will serve as the basis for developing Guam's Comprehensive and Strategic PEACE Plan for working collaboratively with community stakeholders in their implementation of relevant prevention and early intervention program priorities in the villages.

The community is encouraged to use this information and to work in collaboration with agencies and organizations involved in prevention to better base their programs on true data provided in this Profile. In doing so, Guam can make greater progress in effective use of program planning tools, resource allocation and service delivery.

Sincerely,


J. PETER ROBERTO, ACSW
Co-Chair, PEACE
Director, Department of Mental
Health and Substance Abuse


CHRISTOPHER DUENAS
Chair, PEACE
Director, Department of Youth Affairs

Enclosures



Do you have what it takes to make a
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substance use and abuse on
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develop effective prevention
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Prevention & Early Intervention Advisory Committee Empowerment (PEACE)

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