FEDERATED STATES OF MICRONESIA

Substance Abuse Epidemiological Profile
Community Profile: POHNPEI
March 2009 Update

ACKNOWLEDGEMENTS

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NEW INFORMATION IN THIS PROFILE UPDATE

This version of the Pohnpei Community Substance Abuse Epidemiological Profile contains updated information covering the period September 2008 – February 2009. This is because FSM was awarded the full Strategic Prevention Framework-State Incentive Grant (SPF-SIG) funding as part of Cohort IV for 2009, and consequently, the SEOW grant period was ended prematurely.

Recently released data from the FSM Statistical Office on demographic projections and socio-economic indicators are included in the background section of this update.

The SEOW anticipated that during this period, a second iteration of the Youth Risk Behavior Survey (YRBS) would have been completed in Pohnpei, and the data would have been the major source for updated information on substance abuse consumption for this report. Unfortunately, the YRBS was not conducted as anticipated. ***No other major surveys covering tobacco, alcohol and illicit drug use have been conducted in Pohnpei during this period. Hence there are no major updates for tobacco and alcohol consumption prevalence and patterns.***

The FSM SEOW epidemiologist conducted a search for corollary data through both online and other sources, following up on suggestions made by colleagues working at the regional WHO and Secretariat of the Pacific Community (SPC) networks and also through CDC and SAMHSA. ***A few data sources were uncovered, and relevant data are reported in this update for youth sakau and illicit drug use.*** However, most of the secondary data were outdated and were not utilized.

Data on alcohol and drug-related arrests and school incidents were provided by the SEOW members of Pohnpei. However, these were not reported in a standardized format, and most excluded denominators. Hence, these data were not used. ***Alcohol-related arrests were reported from 2000-2007 in the 2008 FSM Statistical Yearbook; these are presented under the subsections delineating substance abuse consequences.***

Thus, this profile contains very limited updated information, highlighting the need for greater technical support and capacity building to enable FSM to develop a fully functional substance abuse surveillance system.

INTRODUCTION

The FSM SEOW developed this community profile as one of its "deliverables" under Year 2 of the CSAP SEOW grant. The State of Pohnpei was chosen as the community of interest after discussions among members of the SEOW. The reasons for this selection include the following:

1. The State of Pohnpei is geographically, politically, culturally and linguistically distinct from the other three states of Chuuk, Yap and Kosrae. The State of Pohnpei is made up of the island of Pohnpei-the largest island in the FSM- and eight smaller outer islands with a total land mass of about 262 square miles. Pohnpei serves as the national capital of the Federated States of Micronesia.

2. Pohnpei contains about one-third of the entire population of the Federated States, with over 34,000 people. Thus the population is large enough to allow for rigorous survey methodologies to ensure randomization and sufficiently large sample sizes.

3. Because the capital of FSM is within the State of Pohnpei, many of the government agencies are located in the State, making access to existing data within these agencies easier. In addition, majority of surveys are piloted in Pohnpei. Given the paucity of data overall within the FSM, selecting Pohnpei was the logical choice because it currently has the greatest amount of available data on consumption and consequences of alcohol, tobacco and other drugs (ATOD).

4. Communications facilities are most concentrated within Pohnpei. The reliability of the communications infrastructure is critical because the FSM SEOW Epidemiologist resides on Guam, and data transfer needs to be conducted through the Internet or facsimile.

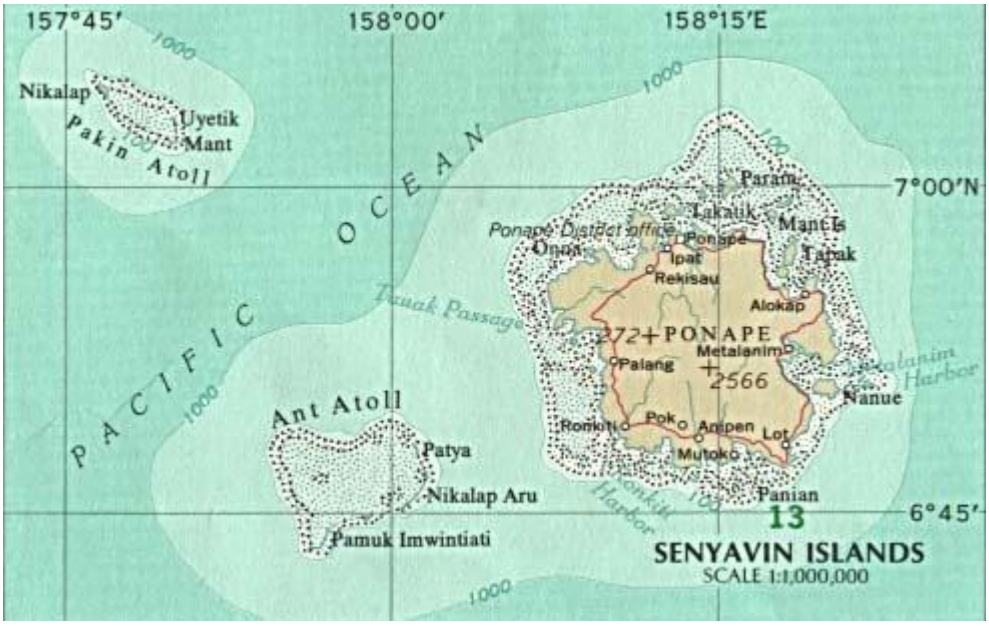

Figure 1. Map of the main island of Pohnpei within the State of Pohnpei.
Source: http://space.mit.edu/home/kenton/Micronesia_2004/images/pohnpei-map-topo.jpg

METHODOLOGY

After the selection of the State of Pohnpei as the community to be profiled, members of the SEOW based in Pohnpei sought out existing data to augment the data already presented in the first FSM State Epidemiological Profile. Colleagues in other government agencies at the national (Department of Health, Education and Social Affairs; Department of Public Safety), federal (US Centers for Disease Control and Prevention) and regional (World Health Organization Western Pacific Regional Office) levels were contacted to assist in identifying potential data sources.

While reviewing the available data, a list of indicators was developed to delineate the consumption patterns and consequences of ATOD use within Pohnpei. These indicators include the following:

Table 1. Indicators for ATOD consumption and consequences, Pohnpei

Substance	Consequences		Consumption	
Alcohol	***Indicator***	***Data Source***	***Indicator***	***Data Source***
	Chronic liver disease death rate	State DOH	Current use of alcohol by youth	YRBS
	Liver cancer death rate	State DOH	Current use of alcohol by adults	WHO-STEPS
	Suicide death rate	State DOH	Current binge drinking by youth	YRBS
	Arrests related to alcohol	State Public Safety data	Current binge drinking by adults	WHO-STEPS
	% alcohol-related traffic accidents	State Public Safety data	Number of days binge drinking in past year, adults	WHO-STEPS
	% alcohol-related traffic deaths	State Public Safety data	Early initiation of alcohol use, youth	YRBS
	Alcohol-related confinement	Hospital data	Early initiation of alcohol use, adults	WHO-STEPS
	Alcohol-related SAMH encounters	SAMH data	Drinking and driving among youth	YRBS
			Riding in a car with drinking driver among youth	YRBS

Substance	Consequences		Consumption	
Tobacco	***Indicator***	***Data Source***	***Indicator***	***Data Source***
	Deaths from lung cancer	State DOH	Current smoking by youth	YRBS
	Deaths from COPD and emphysema	State DOH	Current smoking by adults	WHO-STEPS
	Deaths from cardiovascular diseases	State DOH	Current daily use of cigarettes by youth	YRBS
			Current daily use of cigarettes by adults	WHO-STEPS
			Current use of smokeless tobacco by HS students	YRBS
			Frequency of adding tobacco to betel nut chew among adults	WHO-STEPS
			Early initiation of tobacco use, youth	YRBS
			Early initiation of tobacco use, adults	WHO-STEPS
			Percent of ex-smokers, adults	WHO-STEPS
			Quit attempts by current smokers, youth	YRBS
Substance	**Consequences**		**Consumption**	
Other Drugs	***Indicator***	***Data Source***	***Indicator***	***Data Source***
	Deaths from drug use	Public Safety data	Lifetime use of marijuana by youth	YRBS
	Drug-related arrests	Public Safety data	Current marijuana use by youth	YRBS
	Drug-related domestic violence	Public Safety data	Early initiation of marijuana use	YRBS
	Drug-related SAMH encounters	SAMH data	Current use of cocaine by MS students	YRBS
			Current use of inhalants by youth	YRBS
			% students offered drugs on school property	YRBS
			Lifetime sakau consumption, adults	WHO-STEPS
			Current marijuana consumption, adults	Micronesian Seminar data

DATA LIMITATIONS

Pohnpei State and the Federated States of Micronesia face a series of major challenges in substance abuse and public health data collection and analysis. First, local capacity for data collection, data management and data analysis is still in the early developmental stage. To ensure the sustainability of the SEOW, it will be critical to identify, support and mentor local personnel to acquire the capacity and expertise to oversee surveillance efforts. Second, available data is scant, and surveillance efforts are often done as "one-off" efforts that fail to go beyond the pilot study stage. This makes it nearly impossible to follow trends over time. Additionally, surveillance instruments are not coordinated to ensure consistency in target group definitions, constructs and questions. Thus, it is often methodologically not feasible to compare results across surveys. A number of existing surveys have unweighted data, because of poor response rates and other methodological issues. Therefore, capacity building and technical support are needed to enhance both the quantity and quality of current data in the FSM.

A previous report submitted to CSAP outlines options for enhancing the data capacity of the SEOW in FSM. In this community profile, existing data (already reported in the previous FSM State Epidemiological Profile) is augmented with some newly identified data sources. The nature and limitations of each data set is described briefly in the relevant sections of the profile.

EXECUTIVE SUMMARY/FACT SHEET

Community: *State of Pohnpei, Federated States of Micronesia*

Demographics and Vital Statistics

	Data Source and Year	Total	Male	Female
Population – 2008 Projections	2008 FSM Statistical Yearbook	34,886	17,908	16,978
Median age	2005 FSM Statistical Yearbook	18.9 years		
GDP	2008 FSM Statistical Yearbook	$95.1 million		
Life expectancy	WHO, 2004	70 years	68 years	71 years
Adult mortality rate (per 1000)			202	169

Key Substance Abuse Indicators

Substance	Consequences		Consumption	
Alcohol	***Indicator***	***Data***	***Indicator***	***Data***
	Chronic liver disease death rate (1998-2002)	CDR=5.8/100000 1.3% of deaths	Current use of alcohol by youth (2003)	34.4%
	Liver cancer death rate (1998-2002)	CDR=3.5/100000 8.8% of cancer deaths	Current use of alcohol by adults (2003)	27.9%
	Suicide death rate (1998-2002)	CDR=5.8/100000 1.3%of deaths	Current binge drinking by youth (2003)	23.8%
	Arrests related to alcohol (2007)	34.4% of all arrests	Current binge drinking by adults	---
	% alcohol-related traffic accidents (2004-2005)	52% of all traffic accidents	Number of days binge drinking in past year, adults (2002)	33.4 +/- 7.4 days
	% alcohol-related traffic deaths	---	Early initiation of alcohol use, youth (2003)	18.3% before 13
	Alcohol-related confinement (2006)	42 admissions in 2006	Early initiation of alcohol use, adults	---
	Alcohol-related SAMH encounters (2006)	28.8% of all SAMH drug and alcohol encounters	Drinking and driving among youth (2003)	16.1%
			Riding in a car with drinking driver among youth (2003)	50.8%

Substance	Consequences		Consumption	
Tobacco	***Indicator***	***Data***	***Indicator***	***Data***
	Deaths from lung cancer (1998-2002)	CDR=5.2/100000 13.2% of all cancer deaths	Current smoking by youth (2003)	30.7%
	Deaths from COPD and emphysema (1998-2002)	CDR=35.9/100000 8.4% of deaths	Current smoking by adults (2002)	31.1%
	Deaths from cardiovascular diseases (1998-2002)	CDR=87.5/100000 20.4% of deaths	Current daily use of cigarettes by youth (2003)	22.3%
			Current daily use of cigarettes by adults (2002)	25.0%
			Current use of smokeless tobacco by HS students (2003)	50.1%
			Frequency of adding tobacco to betel nut chew among adult chewers (2002)	90.2%
			Early initiation of tobacco use, youth (2003)	18.5% before 13
			Early initiation of tobacco use, adults (2002)	Average age of onset = 17.9 years
			Percent of ex-smokers, adults (2002)	13.2%
			Quit attempts by current smokers, youth (2003)	60.6%
Substance	**Consequences**		**Consumption**	
Other Drugs	***Indicator***	***Data***	***Indicator***	***Data***
	Deaths from drug use	---	Lifetime use of marijuana by youth (2003)	24.0%
	Drug-related arrests (2007)	10 arrests for possession of marijuana	Current marijuana use by youth (2003)	14.6%
	Drug-related domestic violence	---	Early initiation of marijuana use (2003)	10.4% before 13
	Drug-related SAMH encounters	33.1%	Current use of cocaine by youth	5.5%
			Current use of inhalants by youth (2003)	10.3%
			% students offered drugs on school property (2003)	27.3%
			Lifetime sakau consumption, adults (2002)	66.1%
			Current marijuana consumption, adults (1997)	8.9%

Note: "---" means data not available for Pohnpei State

Consumption

There is no updated information in this section of the profile.

Youth

For this community profile, the SEOW obtained a copy of the Youth Risk Behavioral Survey (YRBS), which had been conducted by the Department of Health, Education and Social Affairs (HESA) in Pohnpei in 2003. This data was not available during the writing of the FSM State Epidemiological Profile; hence the following information on youth alcohol consumption is new.

Because of a number of methodological issues, the YRBS data was not weighted. Therefore, care is needed when comparing it with YRBS data from the US mainland. Also, the YRBS uses the federal system for classifying race, with Pacific Islanders falling under the category "All other races." (In Pohnpei, the various subcategories of Pacific Islanders make up the overwhelming majority of the population, with Asians and Whites comprising 1.2% and 0.4% of the total population, respectively.) Thus, for this community, the YRBS essentially presents data that cannot be disaggregated into the racial categories relevant for the community.

The following table depicts lifetime and current alcohol consumption, binge drinking, and age at first use, disaggregated by age and sex.

Table2. Alcohol use, HS students, Pohnpei, 2003

	Total (%)	Male (%)	Female (%)	15 or under (%)	16-17 (%)	18 or older (%)
Lifetime alcohol use	50.5	72.1	31.1	42.3	50.3	57.4
Current alcohol use*	34.4	50.4	20.8	27.7	32.8	41.9
Age at first use before 13 years	18.3	25.2	11.0	22.1	15.5	18.6
Binge drinking**	23.8	34.7	14.1	17.5	22.6	30.4

Source: Youth Risk Behavior Survey. Pohnpei, HESA, 2003
*Current alcohol use = at least one drink of alcohol in the past 30 days
**Binge drinking = 5 or more drinks in a row, within a couple of hours, in the past 30 days

Overall, half of high school students in Pohnpei have tried drinking alcohol, and about one in five first tried alcohol before the age of 13. About one-third have consumed alcohol in the past month. One in four has gone binge drinking within the past 30 days.

Boys are more likely to have tried alcohol, to be current users of alcohol, to have gone binge drinking and to have first used alcohol before the age of 13. Older students are more likely to have tried alcohol, gone binge drinking and to be current drinkers, but younger students are more likely to have tried alcohol at an earlier age.

Table 3. Drinking, driving and riding in a motor vehicle driven by someone who had been drinking, HS students, Pohnpei, 2003

	Total (%)	Male (%)	Female (%)	15 or under (%)	16-17 (%)	18 or older (%)
Riding in a motor vehicle driven by someone who had been drinking alcohol	50.8	58.4	42.7	47.6	49.2	55.3
Drinking and driving	16.1	22.4	9.5	15.7	15.2	17.8

Source: Youth Risk Behavior Survey. Pohnpei, HESA, 2003

Roughly half of all students surveyed have ridden in a motor vehicle driven by someone who had been drinking alcohol. Boys were slightly more likely than girls to have done this. However, boys were more than twice as likely as girls to drive after drinking. Both risky behaviors increased with age.

Table 4. Alcohol use, HS students, Pohnpei vs. US, 2003

	Pohnpei (%)	US (%)
Lifetime alcohol use	50.5	**74.9** (+/- 2.7)
Current alcohol use	34.4	**44.9** (+/-2.4)
Age at first use before 13 years	18.3	**27.8** (+/- 2.1)
Binge drinking*	23.8	**28.3** (+/- 2.0)
Riding in a motor vehicle driven by someone who had been drinking alcohol	50.8	**30.2** (+/- 2.1)
Drinking and driving	16.1	**12.1** (+/- 1.2)

Source: Youth Risk Behavior Survey, Pohnpei, HESA, 2003; Youth Risk Behavior Survey, US average, CDC, 2003

Compared to data from the US in 2003, youth in Pohnpei are less likely to have tried alcohol, to be current and/or binge drinkers, to have first tried alcohol before the age of 13. In contrast, Pohnpeian students are significantly more likely to engage in risky behaviors, specifically riding in a vehicle driven by someone who had been drinking, and drinking and driving. These comparisons need to be interpreted cautiously because the Pohnpeian data is unweighted.

The Health Behavior and Lifestyle of Pacific Youth survey was conducted in Pohnpei in 2001 through a collaborative effort headed by the World Health Organization. The survey found that 76.3% of students had used alcohol at least once in the past. Among 15 year old youth respondents, 51% of boys (CI: 44.5-59.0) and 18% of girls (CI: 13.5-19.7) had been drunk two or more times in their life. These figures are consistent with the YRBS data on current alcohol use. (Note: Because the actual numbers of subjects per cell are rather small, caution is required when interpreting these data.)

Because each of these surveys has been conducted once only, no trend data is available for alcohol consumption among youth in Pohnpei.

Adults

The major source of recent data on adult alcohol consumption in Pohnpei comes from the WHO STEPs survey conducted in 2002. To our knowledge, there is no comparable recent survey data on adult alcohol consumption in the other three FSM States, although the WHO-STEPS survey is being planned for these States.

The WHO STEPwise approach to non-communicable disease (NCD) surveillance (STEPs) is a cross-sectional survey of the point prevalence of NCD risk factors in a population. The survey is a standardized one developed by the World Health Organization in conjunction with its Member States. It utilizes a simple methodology that can be adapted for use in low-resource settings, and surveillance instruments that use three levels, or "steps", to assess NCD risk burden: questionnaires, physical measurements and biochemical measurements. The common methodology and instruments allow for within-country and cross-country comparisons.

A pilot STEPs survey was conducted in Pohnpei in 2002, with results reported at the Health Policy Symposium in January 2006. The pilot survey aimed for a randomized sample of 2100 people aged 26-64. Confidence intervals are provided for most of the data tables. While confidence intervals are useful in commenting about comparisons, some of the confidence intervals for age/sex breakdown are large and thus should be treated with caution.

Table 5 presents data from the Pohnpei STEPs survey on lifetime alcohol consumption among adults, disaggregated by sex and age. Adult men are almost three times more likely than adult women to have ever consumed alcohol. In general, the likelihood of having tried alcohol decreases with increasing age. Younger adults are more likely to have tried alcohol than their older counterparts, perhaps because of a combination of increased access and affordability of alcoholic beverages and greater exposure to alcohol advertising in modern media.

Table 5. Lifetime alcohol consumption status by sex and age, Pohnpei, 2002

Age	Total population				Male				Female			
	N	Ever Consumed			N	Ever Consumed			N	Ever Consumed		
		%	95%CI	n		%	95%CI	n		%	95%CI	n
25-34	502	45.8	±5.8	201	177	70.5	±8.4	127	325	22.1	±6.0	74
35-44	499	36.9	±4.8	156	187	57.9	±7.3	112	312	14.8	±5.3	44
45-54	433	32.2	±5.7	124	182	49.8	±8.3	89	251	13.0	±4.6	35
55-64	212	22.2	±5.1	44	97	30.9	±11.0	28	115	13.8	±5.5	16
Total	**1646**	**37.9**	**±3.2**	**525**	**643**	**58.3**	**±4.4**	**356**	**1003**	**17.2**	**±2.9**	**169**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002.

Current alcohol intake, defined as alcohol consumption within the past 12 months, is depicted in Table 6. Adult men are much more likely to have imbibed alcoholic beverages in the past year than adult females. For both sexes, the probability of current alcohol intake is highest among the youngest age group.

Table 6. Alcohol consumption in the past 12 months, by sex and age, Pohnpei, 2002

Age	Total population				Men				Women			
	N	Current Consumers			N	Current Consumers			N	Current Consumers		
		%	95%CI	n		%	95%CI	n		%	95%CI	n
25-34	492	35.3	±5.1	143	171	59.4	±7.4	102	321	12.8	±5.2	41
35-44	497	29.0	±5.1	117	186	47.3	±7.6	90	311	9.6	±4.7	27
45-54	429	20.8	±6.0	78	179	33.4	±10.2	59	250	7.1	±3.2	19
55-64	208	11.1	±4.3	24	96	18.2	±7.5	19	112	4.3	±3.5	5
Total	**1626**	**27.9**	**±3.3**	**362**	**632**	**45.9**	**±4.8**	**270**	**994**	**9.8**	**±2.7**	**92**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

For current alcohol drinkers, the number of drinks consumed per drinking day in the past year is shown in Table 7. The gender difference in the amount of alcohol consumed per drinking day is notable, with over half of female recent drinkers reporting one drink per day, but close to one-third of male drinkers reporting 8 or more drinks consumed per drinking day. For some of the cells, the actual number of subjects is small; caution is needed when interpreting these data.

Table 7. Alcohol consumption per drinking day during the past 12 months, for current consumers of Alcohol, by age and sex, Pohnpei, 2002

Age	N	1			2-3			4-5			6-7			8+		
		%	CI	n	%	CI	n	%	CI	n	%	CI	n	%	CI	n
Total Population																
		Standard Drinks per Day														
25-34	140	25.6	±7.2	44	21.2	±7.0	30	10.4	±5.0	14	15.0	±6.8	19	27.8	±8.6	33
35-44	114	22.8	±8.4	33	26.8	±9.5	28	7.5	±4.0	9	16.7	±6.6	19	26.3	±9.6	25
45-54	71	27.7	±11.6	23	21.3	±11.6	14	5.8	±4.5	5	15.3	±9.5	10	30.0	±10.1	19
55-64	23	43.1	±19.2	10	17.7	±19.0	5	-	-	0	27.4	±20.8	6	11.7	±15.8	2
Total	**348**	**25.6**	**±5.3**	**110**	**22.9**	**±4.8**	**77**	**8.4**	**±3.2**	**28**	**16.1**	**±5.1**	**54**	**27.0**	**±5.3**	**79**
Men																
25-34	100	19.0	±7.1	21	20.9	±8.3	22	11.1	±5.9	11	16.7	±7.6	16	32.3	±10.1	30
35-44	88	17.5	±8.3	17	29.5	±11.0	25	8.9	±4.7	9	16.4	±7.0	16	27.7	±11.2	21
45-54	54	22.8	±13.2	13	24.1	±12.8	13	3.5	±4.5	2	16.5	±11.4	9	33.2	±12.7	17
55-64	19	31.5	±18.8	6	21.4	±21.7	5	-	-	0	33.0	±25.8	6	14.1	±18.6	2
Total	**261**	**19.5**	**±5.9**	**57**	**24.3**	**±5.7**	**65**	**8.8**	**±3.5**	**22**	**17.2**	**±5.6**	**47**	**30.1**	**±6.3**	**70**
Women																
25-34	40	54.2	±18.7	23	22.2	±16.7	8	7.5	±7.8	3	7.8	±9.1	3	8.4	±8.2	3
35-44	26	50.4	±29.4	16	12.4	±15.0	3	-	-	0	18.3	±18.3	3	18.9	±18.0	4
45-54	17	53.4	±22.2	10	6.9	±14.0	1	17.7	20.1	3	8.9	±17.6	1	13.2	±15.7	2
55-64	4	100	±0.0	4	-	-	0	-	-	0	-	-	0	-	-	0
Total	**87**	**54.7**	**±14.7**	**53**	**16.3**	**±11.2**	**12**	**6.2**	**±4.9**	**6**	**10.9**	**±8.3**	**7**	**12.0**	**7.4**	**9**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002
(-): no subjects for that cell

Table 8 depicts the amount of alcoholic drinks consumed within the past 7days, for current alcohol users, disaggregated by age and sex. Adult men report having consumed about 3 drinks in the past week, which is double the amount reported by adult women. Together with the data from the previous table, it would appear that adult men in Pohnpei who consume alcohol tend to have a pattern of episodic binge drinking rather than regular heavy drinking.

Table 8. Number of standard drinks consumed during past 7 days, for current consumers of alcohol, by age and sex, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	3.5	±1.5	42	3.8	±1.6	34	1	-	8
35-44	2.1	±0.4	43	2.1	±0.4	37	1.8	±0.7	6
45-54	2.4	±0.5	30	2.4	±0.6	26	3.2	±2.8	4
55-64	3.8	±3.8	7	3.8	±3.8	7	-	-	-
Total	**2.8**	**±0.6**	**122**	**2.9**	**±0.7**	**104**	**1.6**	**±0.5**	**18**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002
(-): no subjects for that cell

Table 9. Number of days of binge drinking* during past 12 months, for current consumers of alcohol, by age and sex, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	31.8	±11.9	102	31.4	±13.3	82	34.7	±34.1	20
35-44	36.4	±15.2	79	39.8	±16.6	70	4.5	±1.5	9
45-54	35.8	±22.6	44	39.8	±24.0	35	13.0	±16.4	9
55-64	13.1	±16.1	12	14.0	±17.2	11	1.0	-	1
Total	**33.4**	**±7.4**	**237**	**34.8**	**±8.3**	**198**	**21.9**	**±20.2**	**39**

* Men: ≥5 standard drinks/day; Women: ≥4 standard drinks/day
Source: WHO STEPs Pilot Survey, Pohnpei State, 2002
(-): cell size too small to derive confidence interval

Table 9 demonstrates that in general, current drinkers in Pohnpei spend an average of 33.4 days (approximately 1 month) per year binge drinking. Adult men are much more likely than adult women to binge drink, except for the youngest age category, where both sexes report the same number of days spent binge drinker annually. Thus, while older adult men have the highest likelihood of binge drinking, young women aged 25-34 are as likely to binge drink as men.

Adult men report consuming almost three times as much alcohol as adult women, with an average of twenty-one drinks as the largest number of drinks consumed on a single occasion. Adults of both sexes aged 25-44 have the highest reported average number of drinks consumed in a single occasion.

Table 10. Largest number of drinks consumed on single occasion, for current consumers of alcohol, by age and sex, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	17.8	±5.0	117	19.8	±5.5	89	6.6	±4.6	28
35-44	22.4	±10.6	88	24.6	±12.0	72	7.6	±4.6	16
45-54	15.2	±5.7	50	17.8	±6.9	37	3.1	±1.4	13
55-64	8.4	±3.9	15	8.6	±4.1	14	5.0	-	1
Total	**18.8**	**±5.0**	**270**	**20.8**	**±5.6**	**212**	**6.4**	**±3.1**	**58**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002
(-): cell size too small to derive confidence interval

In 1997, the non-governmental organization (NGO) Micronesian Seminar produced a report on *Alcohol and Drug Use in the Federated States of Micronesia: An Assessment of the Problem with Implications for Prevention and Treatment.* This report was based not on surveillance data, but rather on key informant interviews. Key informants from a non-random selection of "representative" communities from each state provided information related to alcohol and illicit drug use on all residents of the selected communities. This approach is more typical of social science research rather than epidemiological research; caution is required in interpreting the data.

Table 11 reveals estimates of the prevalence of current alcohol use (within the past 12 months) of individuals 15 years and older in each of the FSM States, based on key informant reports. The estimates for Pohnpei are similar to the data obtained from the 2002 STEPs survey.

Table 11. Current alcohol consumption, 15 years and older, by State, 1997

	Males		Females		Total	
	N	%	N	%	N	%
FSM	**1223**	**54.9**	**195**	**9.1**	**1418**	**32.4**
Pohnpei	477	61.4	108	14.4	585	38.2
Kosrae	52	34.9	2	1.2	54	17.3
Chuuk	520	50.5	10	1.1	530	27.0
Yap	174	63.1	75	26.7	249	44.6

Source: Micronesian Seminar, 1997

The Micronesian Seminar study provides estimates on alcohol consumption among youth aged 10-19 (Table 12). Current alcohol use is highest among youth in Pohnpei. As with adults, consumption rates are markedly higher among males. Alcohol use increases markedly after the age of 14 for both males and females.

Table 12. Current alcohol consumption within the past year among youth by State, 1997

	Males %		Females %		Total %	
Age range	10-14	15-19	10-14	15-19	10-14	15-19
FSM	2.6	32.4	0.8	5.5	1.8	19.0
Pohnpei	6.4	44.4	2.1	9.9	4.3	27.6
Kosrae	0	0	0	0	0	0
Chuuk	1.7	27.9	0	1.1	0.9	14.9
Yap	0	22.2	0	11.1	0	16.7

Source: Micronesian Seminar, 1997

The 1997 assessment explored the effect of being in school on current alcohol use among youth aged 10-19. Being out of school markedly increased the likelihood of current alcohol consumption (Table 13). In Pohnpei, out-of-school youth were almost 3 times as likely to be current alcohol users as in-school youth. The actual numbers of subjects for Kosrae, Chuuk and Yap are small; hence caution is needed when making comparisons across States.

Table 13. Current users of alcohol, 10-19 years, and educational status by State, 1997

	Males		Females		Total	
	N	%	N	%	N	%
FSM						
In-school	55	10.6	11	2.1	66	6.3
Out of school	100	42.7	16	9.6	116	28.9
Pohnpei						
In-school	29	18.8	7	4.3	36	11.3
Out of school	56	56.0	12	13.8	68	36.4
Kosrae						
In-school	0	0	0	0	0	0
Out of school	0	0	0	0	0	0
Chuuk						
In-school	21	8.4	1	0.4	22	4.3
Out of school	37	31.1	1	1.5	38	20.3
Yap						
In-school	5	4.4	3	2.9	8	3.7
Out of school	7	46.7	3	25.0	10	37.0

Source: Micronesian Seminar, 1997

Consequences

The 2008 FSM Statistical Yearbook provides updated information on alcohol-related arrests in each of the States of FSM (see Table 16 below). The rest of the section is unchanged, as no new data was provided or available.

Pohnpei State, which has the highest rate of alcohol consumption among both adults and youth, has liver cirrhosis as the 8th leading cause of death, comprising 1.3% of all deaths from 1998-2002. Suicide, which is closely correlated to alcohol and drug abuse, ranks together with liver cirrhosis as the 8th most common cause of mortality (Table 14).

Table 14. Leading causes of death, Pohnpei State, 1998-2002

	Number	Percent of all deaths
Total deaths	741	100.0
Heart disease*	151	20.4
Stroke*	73	9.9
Cancer*	68	9.2
Chronic obstructive pulmonary disease (COPD)	62	8.4
Sepsis	59	8.0
Pneumonia	31	4.2
Accidents*	31	4.2
Diabetes mellitus	13	1.8
Cirrhosis*	10	1.3
Suicide*	10	1.3
All other deaths	233	31.4

**Alcohol-related*
Source: Office of Health Statistics, Department of Health, Pohnpei State

Cancer is the 3rd leading cause of death in Pohnpei State. Liver cancer ranked 3rd among all cancer deaths in the State from 1998-2002 (Table 15), accounting for almost 9% of all deaths from cancer.

Table 15. Cancer deaths in Pohnpei State, 1998-2002

Site	Number	Percent of all deaths
Cervical	10	14.7
Lung	9	13.2
Liver	6	8.8
Gastric	5	7.4
Prostate	4	5.9
Total Cancer Deaths	**68**	**100**

Source: Office of Health Statistics, Department of Health, Pohnpei State

Within the Federated States of Micronesia, suicide consistently ranks in the top causes of mortality. The national SAMH program reported 27 clinical encounters for suicide in 2003, 7 encounters in 2004, 6 encounters in 2005, and 29 encounters in 2006. Pohnpei accounted for 100% of the cases in 2005 and 55% of the cases in 2006. Most of these were alcohol-related (Table 16).

Table 16. Attempted suicides by State, 2003-2006.

	2003	2004	2005	2006
	Number	Number	Number	Number
FSM	27	7	6	29
Pohnpei	-	-	6	16

Source: FSM SAMH, 2003-2005, as reported by Ms. Arlene Roby and Ms. MaryAnn Eperiam

Table 17 contains information about alcohol and non-alcohol related offenses in Pohnpei from the years 2000-2007. Alcohol contributed to over half of all reported offenses. The proportion of alcohol-related offenses appears to be increasing over time.

Table 17. Alcohol and non-alcohol related offenses by State, 2000-2005

Year	Total	Alcohol related N (%)	Non-alcohol related N (%)
POHNPEI			
2000	1992	558 (28%)	1434 (72%)
2001	2247	1065 (47%)	1182 (53%)
2002	1930	720 (37%)	1210 (63%)
2003	2321	914 (39%)	1407 (61%)
2004	2875	1583 (55%)	1292 (45%)
2005	1276	873 (68%)	403 (32%)
2006	1862	732 (39.3%)	1130 (69.7%)
2007	2865	986 (34.4%)	1897 (65.6%)

Source: 2008 FSM Statistical Yearbook

Data from the FSM Department of Public Safety indicates that for the year 2004-2005, 421 traffic accidents were reported in the entire federation, of which 219 (52%) were alcohol related. Ninety-six of these traffic accidents resulted in minor injuries and two resulted in fatalities. Eighty-one (19.2%) involved youth aged 12-19. In 2006, 577 alcohol-related traffic accidents were recorded, 29 (5.0%) involving minor injury but no deaths. However, these represent aggregate data for the entire nation. Data for Pohnpei was not available.

Table 18 shows the number of hospital admissions in Pohnpei related to alcohol. Unfortunately, the total number of hospital admissions for all causes was not provided. From January to September 2008, 31 alcohol-related admissions to the hospital were noted by the SEOW staff. However, no data on 2007 admissions was provided.

Table 18. Alcohol-related hospital admissions

Year	Alcohol-related hospital admissions
2004	30
2005	50
2006	42
2007	No data
2008 (January – September)	31

Source: Reported by FSM SAMH

Table 19 chronicles the number of SAMH encounters for alcohol-related reasons for the years 2003-2006 in Pohnpei and FSM. Given the prevalence of binge drinking, and the significant percentage of alcohol-related offenses reported, the number of encounters for treatment of alcohol abuse appears small.

Table 19. Alcohol and drug-related SAMH encounters by State, 2003-2006

State and Year	Alcohol Abuse (% encounters)	Alcohol/Drug Abuse (% encounters)	Drug abuse (% encounters)	Dual Addiction (% encounters)	Total Encounters
POHNPEI					
2003	-	64 (7.2%)	85 (9.5%)	-	891
2004	4 (0.37%)	27 (2.51%)	51 (4.74%)	20 (1.86%)	1076
2005	-	-	14 (2.33%)	59 (9.82%)	601
2006	7 (0.44%)	1 (0.06%)	77 (4.8%)	455 (28.3%)	1606
FSM					
2003	7 (0.21%)	75 (2.24%)	90 (2.68%)	1 (0.03%)	3354
2004	15 (0.51%)	30 (1.01%)	54 (1.82%)	20 (0.67%)	2966
2005	-	1 (0.03%)	14 (0.41%)	64 (1.87%)	3427
2006	199 (5.4%)	10 (0.27%)	86 (2.3%)	455 (12.3%)	3699

Source: FSM SAMH, 2003-2005, as reported by Ms. Arlynn Roby and Ms. MaryAnn Eperiam

Consumption

There is no updated information for this section of the profile.

Youth

Data on tobacco use among youth in the FSM is derived from a pilot of the Global Youth Tobacco Survey (GYTS), conducted in Pohnpei among youth aged 13-15 from 2000-2001, and the Youth Risk Behavior Survey (YRBS), conducted among high school students in Pohnpei in 2003. The limitations of the YRBS data were discussed previously.

The GYTS permits comparisons among Territories and countries in the Asia-Pacific region. The table below compares results from the Pohnpei sample to other Micronesian countries and territories. The actual data tables were not available for review, and results disaggregated by age and sex were not reported to the SEOW.

Table 20. Youth tobacco consumption, Micronesian region, 2000-2002

Country	Year	Current Use of Any Tobacco (%)	Current Smoking	Smoking before age 10 (%)	Other tobacco products used (%)	Want to Quit (%)
CNMI	2000	62.4	39.2	31.0	52.7	80.7
Guam	2002	27.8	22.6	13.4	-	75.7
Pohnpei	2001	**36.8**	**19.3**	**-**	**30.8**	**88.5**
Palau	2000	58.5	21.6	31.9	53.5	76.8

Source: GYTS, 2000-2002, as provided by Ms. Brenda Hadley, FSM SAMH

Pohnpei youth have a tobacco consumption rate midway between the other Micronesian areas surveyed, and the lowest reported rate of smoking. The use of other tobacco products is lower among Pohnpei youth than among youth from CNMI or Palau. However, in all areas surveyed, the percentage reporting the desire to quit is consistently high. This highlights the need for cessation services tailored towards youth.

Just recently, FSM completed the initial analysis of data from the second iteration of the GYTS, conducted in 2006-2007. In this round, all four states participated. The 2007 GYTS represents the first national survey on youth tobacco use in FSM. Aggregate summary national data was provided to the SEOW. Unfortunately, the data sets were not available for review for this community profile, and it was not possible to disaggregate the data specifically for Pohnpei.

The 2003 YRBS provides additional information on tobacco use among youth in Pohnpei.

Table 21. Smoking, HS students, Pohnpei, 2003

	Total (%)	Male (%)	Female (%)	15 or under (%)	16-17 (%)	18 or older (%)
Lifetime smoking	37.7	24.7	50.4	41.6	40.1	32.7
Lifetime daily smoking	15.0	21.1	8.3	9.7	14.0	19.0
Current smoking*	30.6	44.1	18.6	26.1	29.9	34.5
Current daily smoking	22.3	35.3	11.2	18.3	21.3	25.8
Current smokeless tobacco use	50.1	65.9	34.7	40.9	48.1	58.4
Age at first use < 13 years	18.5	26.6	9.9	22.9	17.6	15.8
Quit attempt, past 12 months	60.6	70.8	48.6	54.5	60.6	63.9

Source: Youth Risk Behavior Survey, Pohnpei, 2003

The YRBS data indicates that a little over one-third of Pohnpei high school students have tried smoking and about one-third are current smokers. Current smokeless tobacco use is higher, with half of the students reporting current use. Unfortunately, the YRBS did not specifically ask about chewing betel nut with tobacco, which is highly prevalence in Micronesia.

Girls are more likely to have tried smoking and to report lifetime daily smoking, but boys are more likely to be current smokers, current smokeless tobacco users and to report current daily smoking. About one in five started smoking before 13 years, with the younger cohorts reporting a higher likelihood of starting smoking early. Over 60 percent tried to quit in the past year, confirming the need for cessation programs for these youth.

In 2005, FSM conducted a survey of tobacco vendors' compliance with the law prohibiting sales of tobacco and tobacco products to minors. The results of the survey, disaggregated by State, are shown below (Table 22). Compliance rates were uniformly high for the outlets inspected, and highest for Pohnpei. However, coverage of outlets was low except in the State of Chuuk.

Table 22. Compliance rates, tobacco vendors, by State, 2005

State	Total number of Outlets	Number Inspected	% Inspected	Number in compliance	% Compliance
Chuuk	333	333	100%	297	**89%**
Pohnpei	234	96	41%	92	**96%**
Yap	119	41	35%	35	**85%**
Kosrae	56	22	39%	20	**91%**
Total	**742**	**492**	**66%**	**444**	**90%**

Source: FSM Tobacco Control Program, SAMH

The findings above are not consistent with data from the 2003 YRBS, which indicated that one in four Pohnpei youth smokers buy their cigarettes from stores (Table 23). In addition, one in five youth reported having someone else buy cigarettes for them. Consistent enforcement of youth tobacco access prohibitions may minimize the supply of cigarettes from commercial sources, but demand reduction interventions are needed to address social sources of tobacco.

Table 23. Source of cigarettes, by age, Pohnpei, 2003

Source of cigarettes	Total	15 or younger	16-17	18 or older
Store or gas station	27.7	15.6	30.4	34.0
Vending machine	4.4	12.5	0.89	2.8
Someone else bought them	20.2	29.7	17.5	16.0
Borrowed/bummed them	14.7	67.2	17.5	14.2
A person 18 or older	11.3	9.4	14.3	8.5
Took them from store/family	9.2	4.7	8.0	13.2
Some other way	12.3	15.6	10.7	11.3

Source: Youth Risk Behavior Survey, Pohnpei, 2003

Adults

Data on adult tobacco use in Pohnpei comes from a number of sub-national, national and regional surveys:

- The WHO STEPs pilot survey in Pohnpei (2002) conducted by the Pohnpei State Primary Health Care in partnership with the FSM HESA, the Fiji School of Medicine and WHO;
- The Adult Tobacco Use (ATS) Survey conducted in Pohnpei (2004) by the FSM Tobacco Control Program, SAMH;
- The Tobacco Use among Health Professionals by State and Gender (2003) conducted by the FSM Tobacco Control Program, SAMH;

Additional data comes from the FSM Maternal and Child Health Services title V Block Grant 2005 Annual Report.

The summary of the WHO STEPS pilot study results in relation to smoking among adults in Pohnpei is shown in Table 24. The caveats with regards to confidence intervals and small cell numbers were listed in the previous section.

Table 24. Summary of adult tobacco use, Pohnpei, 2002

Findings	Total (95% CI)	Male (95% CI)	Female (95% CI)
Percentage who currently smoke tobacco daily	**25.0** (+/-2.6)	**33.6** (+/-4.6)	**16.3** (+/-3.0)
For those who smoke daily			
Average age started smoking (years)	**17.9** (+/-0.6)	**16.8** (+/-0.7)	**20.2** (+/-0.8)
Average years smoking	**22.0** (+/-0.9)	**22.9** (+/-1.4)	**20.1** (+/-1.7)
Percentage smoking manufactured cigarettes	**90.5** (+/-5.8)	**92.9** (+/-5.5)	**85.4** (+/-7.9)
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	**17.4** (+/-1.7)	**18.1** (+/-1.9)	**15.8** (+/-1.9)

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

About one in four adults in Pohnpei aged 25-64 currently smokes tobacco. Overall, adult males have double the smoking rate of adult females. They have longer overall exposures to tobacco smoke, having started smoking earlier, smoked for more years and smoke more cigarettes per day than adult female smokers. Female smokers are more likely to smoke hand-rolled cigarettes versus manufactured cigarettes.

Table 25 shows data on adult smoking status disaggregated by age.

Table 25. Smoking status disaggregated by age and sex, Pohnpei, 2002

Total Population												
Age	**N**	**Current Daily**			**Current Non-daily**			**Ex-daily**			**Never**	
		%	CI	n	%	CI	n	%	CI	n	%	CI	n
25-34	495	20.2	±3.3	92	7.1	±3.4	29	12.4	±3.8	53	60.2	±5.3	321
35-44	494	31.5	±4.3	141	5.4	±1.9	27	10.9	±3.6	48	52.3	±4.5	278
45-54	430	28.2	±5.0	113	5.9	±3.1	24	15.1	±4.0	60	50.8	±6.4	233
55-64	210	16.0	±5.3	35	4.7	±4.0	12	20.0	±13.2	32	59.4	±13.7	131
Total	**1629**	**25.0**	**±2.6**	**381**	**6.1**	**±1.4**	**92**	**13.2**	**±2.3**	**193**	**55.7**	**±2.5**	**963**
Men													
25-34	176	26.8	±7.8	49	11.4	±6.0	19	17.6	±6.3	30	44.2	±10.9	78
35-44	183	44.5	±7.1	85	5.9	±3.1	11	14.1	±7.1	22	35.5	±7.2	65
45-54	181	38.0	±6.8	69	4.0	±2.9	7	18.5	±6.7	33	39.5	±8.7	72
55-64	96	13.7	±8.6	15	3.5	±3.5	4	29.7	±16.6	25	53.1	±16.5	52
Total	**636**	**33.6**	**±4.6**	**218**	**7.3**	**±2.7**	**41**	**17.8**	**±3.7**	**110**	**41.3**	**±4.4**	**267**
Women													
25-34	319	13.8	±4.6	43	3.0	±2.7	10	7.4	±3.1	23	75.8	±5.3	243
35-44	311	17.9	±3.7	56	4.8	±2.4	16	7.6	±3.6	26	69.7	±5.9	213
45-54	249	17.5	±4.7	44	7.9	±5.7	17	11.4	±4.1	27	63.2	±8.1	161
55-64	114	18.3	±6.3	20	5.8	±5.4	8	10.5	±11.0	7	65.5	±13.9	79
Total	**993**	**16.3**	**±3.0**	**163**	**4.8**	**±1.5**	**51**	**8.6**	**±2.6**	**83**	**70.3**	**±4.2**	**696**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

Among males, the percentage of adult daily smokers is highest among those aged 35-44, and lowest among those aged 55-64. This reduction in prevalence in the older age group probably reflects the increased mortality from tobacco-related diseases in this group. Among women, however, smoking rates continue to increase with age, with the highest rate reported among those aged 55-64.

For both sexes, the percentage of ex-smokers increases with age, probably indicative of the impact of tobacco-related illnesses on smoking cessation. Interestingly, the percentage of never smokers appears highest among young adults. If this trend holds in subsequent iterations of this survey, it may reflect the positive effect of current tobacco control interventions in the FSM in preventing smoking uptake among the young.

Table 26 provides data on the number of years ex-smokers have been tobacco-free. As expected, older ex-smokers have been tobacco-free the longest.

Table 26. Years since quitting smoking, ex-smokers, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	5.9	±1.3	24	6.8	±2.0	11	4.5	±2.2	13
35-44	9.3	±3.2	37	9.5	±4.8	15	8.9	±2.7	22
45-54	13.3	±3.8	51	14.5	±4.3	31	10.5	±6.9	20
55-64	12.0	±3.5	31	13.1	±2.9	24	9.2	±8.3	7
Total	**10.3**	**±1.7**	**143**	**11.3**	**±2.6**	**81**	**8.2**	**±2.3**	**62**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

Table 27 reflects data on the age of onset of smoking disaggregated by age and sex. On average, male smokers started smoking about 3 years earlier than female smokers. Among the younger adults, the difference in age of onset between the sexes is reduced, while the opposite is true for the oldest age group. This is because among men, age at onset of smoking is about the same regardless of age, while younger women started smoking at an earlier age than older women.

Table 27. Age of onset of smoking, current smokers, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	17.3	±1.0	90	16.9	±1.3	48	18.1	±1.4	42
35-44	17.9	±0.7	138	17.0	±0.7	83	20.0	±1.3	55
45-54	17.9	±1.3	107	16.4	±1.4	66	21.7	±1.9	41
55-64	21.1	±3.0	35	16.5	±1.8	15	24.5	±3.7	20
Total	**17.9**	**±0.6**	**370**	**16.8**	**±0.7**	**212**	**20.2**	**±0.8**	**158**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

Table 28 shows the percentage of adult smokers who consume manufactured cigarettes (versus hand-rolled varieties) by age and sex. In general, the percentage of smokers using commercially produced cigarettes decreases with age. This is primarily due to older women who are less likely to smoke manufactured cigarettes, and more likely to consume hand rolled cigarettes, reflecting an age and sex-specific traditional preference for home-grown cigarettes.

Table 28. Percentage of current smokers consuming manufactured cigarettes by age and sex, Pohnpei, 2002

Age	Total Population			Male			Female		
	%	CI	n	%	CI	n	%	CI	n
25-34	90.5	±10.3	83	89.9	±11.0	44	91.6	±10.5	39
35-44	94.1	±3.5	130	96.5	±3.3	81	88.0	±8.1	49
45-54	86.2	±10.8	98	89.9	±11.1	63	77.4	±13.7	35
55-64	83.0	±18.3	31	95.5	±9.6	14	74.0	±27.7	17
25-64	**90.5**	**±5.8**	**342**	**92.9**	**±5.5**	**202**	**85.4**	**±7.9**	**140**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002

Table 29 presents data on the daily cigarette consumption by current smokers of manufactured cigarettes, disaggregated by age and gender. Among men, daily cigarette smoking increases with age. In contrast, younger women are smoking more cigarettes per day than older women.

Table 29. Daily cigarette consumption by current smokers of manufactured cigarettes, by age and sex, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	15.6	±2.3	83	15.7	±3.2	44	15.5	±2.8	39
35-44	16.8	±2.4	130	17.4	±2.8	81	15.1	±2.7	49
45-54	21.2	±2.7	98	22.0	±2.6	63	19.2	±4.8	35
55-64	16.9	±5.0	31	21.1	±5.9	14	13.0	±6.0	17
Total	**17.4**	**±1.7**	**342**	**18.1**	**±1.9**	**202**	**15.8**	**±1.9**	**140**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002.

Young adult women start smoking at a younger age, prefer manufactured cigarettes and smoke more cigarettes per day than older women. The difference in consumption patterns between males and females, and between younger women versus older women, may indicate the need for age and gender-specific interventions to reduce smoking among adults.

Table 30 contains information on the addition to tobacco to betel nut chew. This practice is common throughout the Micronesian region, and, in some areas, it is the most prevalent form of tobacco consumption. Over three-quarters of the survey participants chew tobacco with betel nut, and the percentages are similar across age groups and sexes. ***Thus, surveys on tobacco use need to include questions regarding this practice, in addition to questions on smoking. Likewise, tobacco control interventions in FSM need to address this alternate form of tobacco consumption.***

Table 30. Frequency of adding tobacco to betel nut chew, daily chewers, Pohnpei, 2004

Total Population										
Age	N	All the time			Not all the time			Never		
		%	CI	n	%	CI	n	%	CI	n
25-34	187	79.4	±7.2	146	13.8	±6.0	26	6.8	±3.5	15
35-44	85	73.8	±12.2	63	11.7	±9.0	9	14.5	±11.2	13
45-54	52	71.4	±16.7	37	11.7	±11.3	6	16.9	±8.6	9
55-64	6	100.0	±0.0	6	-	-	0	-	-	0
Total	**330**	**77.3**	**±6.9**	**252**	**12.9**	**5.2**	**41**	**9.7**	**±4.6**	**37**
Men										
25-34	106	80.9	±9.4	85	14.1	±7.3	15	5.0	±4.5	6
35-44	59	72.7	±13.4	43	12.9	±11.0	7	14.4	±11.4	9
45-54	38	69.8	±19.4	26	11.2	±12.7	4	18.9	±10.1	8
55-64	6	100.0	±0.0	6	-	-	0	-	-	0
Total	**209**	**77.6**	**±9.0**	**160**	**13.2**	**±6.4**	**26**	**9.2**	**±5.5**	**23**
Women										
25-34	81	75.9	±9.6	61	13.1	±7.7	11	10.9	±6.9	9
35-44	26	78.5	±18.6	20	6.5	±8.6	2	15.0	±16.9	4
45-54	14	78.5	±22.0	11	13.7	±17.3	2	7.8	±16.0	1
55-64	0	-	-	0	-	-	0	-	-	0
Total	**121**	**76.6**	**±8.3**	**92**	**11.9**	**±6.4**	**15**	**11.5**	**±6.5**	**14**

Source: WHO STEPs Pilot Survey, Pohnpei State, 2002
(-): cell size = 0

The FSM Tobacco Control Program conducted Adult Tobacco Use surveys in Pohnpei (2004) using a questionnaire directed to adults aged 19 to over 65 years (Table 31). There were 600 participants from Pohnpei. Most of the respondents were aged 19-25 years. The actual data tables were not available for review, and results disaggregated by age and sex were not reported.

Table 31. Summary findings from adult tobacco use survey, Pohnpei, 2004

Findings	Pohnpei
Ever-smokers (%)	43.4%
Chew tobacco with betel nut (%)	42.1%
Want to quit smoking (%)	na
Support a tobacco tax increase (%)	33.2%
Desire a quit line service (%)	49.6%
Support a ban on chewing tobacco with betel nut in public transport	70.1%

Source: Adult tobacco use surveys, Pohnpei and Kosrae, 2004-2005, as provided by Mr. Midion Iohp and Ms. Brenda Hadley, FSM Tobacco Control Program

A small survey conducted among physicians in the four States revealed that overall, 31.6% of physicians in Pohnpei use tobacco (Table 32). Female physicians in Pohnpei and Yap have higher tobacco use rates than their male counterparts; this likely represents chewing tobacco with betel nut. These figures, while based on a small number of respondents, indicates an urgent need to target health professionals and to provide them with cessation support.

Table 32. Tobacco use among physicians in FSM, 2003

State	Total % (n)	Male % (n)	Female % (n)
Chuuk	**24.0** (25)	**27.8** (18)	**14.3** (7)
Pohnpei	**31.6** (19)	**28.6** (14)	**40.0** (5)
Yap	**46.2** (13)	**44.4** (9)	**50.0** (4)
Kosrae	**33.3** (9)	**42.9** (7)	**0** (2)
Total	**31.8** (66)	**33.3** (48)	**27.8** (18)

Source: Tobacco use survey among FSM physicians by State and gender, 2003, as provided by Mr. Midion Iohp Tobacco Control Program

Consequences

There is no updated information for this section of the profile.

In the State of Pohnpei, 6 out of the top 10 causes of mortality from 1998-2002 were tobacco related, accounting for 53.9% of all deaths (Table 33).

Table 33. Leading causes of death, Pohnpei State, 1998-2002

	Number	Percent of all deaths
Total deaths	741	100.0
Heart disease*	151	20.4
Stroke*	73	9.9
Cancer*	68	9.2
Chronic obstructive pulmonary disease (COPD)*	62	8.4
Sepsis	59	8.0
Pneumonia*	31	4.2
Accidents	31	4.2
Diabetes mellitus*	13	1.8
Cirrhosis	10	1.3
Suicide	10	1.3
All other deaths	233	31.4

**tobacco-related*
Source: Office of Health Statistics, Department of health, Pohnpei State

Table 34 compares the cancer prevalence by site across the four FSM States in 1999. Table 35 presents cancer mortality by site across the four States from 2000-2002. Majority of these site-specific cancers are tobacco-related. Overall, lung cancer is the most common form of cancer in the FSM, with a prevalence rate of 46/100,000 (Source: Dept. of Health, Education and Social Affairs).

Table 34. Cancer prevalence by site, FSM States, 1999

Chuuk	Kosrae	Pohnpei	Yap
Lung*	Cervical*	Cervical*	Lung*
Unknown	Stomach*	Lung*	Liver
Breast	Breast	Liver	Oral*
Cervical*	Lung*	Breast	Breast

*Note: * - tobacco-related*
Source: Dr. Neil Palafox, "The Death Toll of Cancer in the Pacific," FSM Health Policy Symposium, January 2006

Table 35. Cancer prevalence by site, FSM States, 2000-2002

Chuuk	Kosrae	Pohnpei	Yap
Lung*	Cervical*	Cervical*	Liver
Cervical*	Colon*	Lung*	Lung*
Stomach*	Lung*	Liver	Oral*
Uterus*	Breast	Stomach*	Breast

*Note: * - tobacco-related*
Source: Dr. Neil Palafox, "The Death Toll of Cancer in the Pacific," FSM Health Policy Symposium, January 2006

Consumption

Sakau (*Piper methysticum*), or kava, is a drink made from the roots of the pepper shrub, a plant native to the Micronesian region. Long used in traditional ceremonies for resolution of political and social disputes, sakau is documented to have anxiolytic, analgesic, anesthetic and muscle relaxant properties. The potential for abuse exists.

Newly uncovered data on youth sakau use in this profile version comes from the HBLPY survey (Table 36), published in a journal article that was released in 2008.

Table 36. Weekly use of kava among students aged 15, Pohnpei, 2001

Weekly kava use (95% Confidence Intervals) N=507	Boys (%)	Girls (%)
	18.3 (13.0, 23.5)	**13.0** (10.6, 15.4)

Source: HBLPY survey, Pohnpei, 2001

The rest of this section remains unchanged from the previous version.

The WHO STEPs pilot study in Pohnpei included questions on the use of sakau. Table 37 contains information on lifetime sakau consumption status disaggregated by age and sex. Two-thirds of the adult population in Pohnpei report having consumed sakau, with males reporting higher consumption rates than females, overall. The likelihood of ever having consumed sakau is least among the oldest age groups, which is surprising given the prominent role sakau plays in traditional Micronesian culture.

Table 37. Sakau consumption status by age and sex, Pohnpei, 2002

Age	Total population				Male				Female			
	N	Ever Consumed			N	Ever Consumed			N	Ever Consumed		
		%	95%CI	n		%	95%CI	n		%	95%CI	n
25-34	502	69.7	±7.3	352	177	78.6	±8.0	144	325	61.2	±9.0	208
35-44	499	66.5	±8.7	330	187	79.8	±9.7	155	312	52.5	±9.6	175
45-54	433	67.0	±9.0	290	182	78.9	±8.5	146	251	54.0	±11.4	144
55-64	212	48.5	±13.3	115	97	51.9	±15.3	57	115	45.3	±14.8	58
Total	**1646**	**66.1**	**±7.4**	**1087**	**643**	**76.5**	**±6.6**	**502**	**1003**	**55.5**	**±8.3**	**585**

Source: WHO STEPs Survey, Pohnpei, 2002

Among sakau ever-drinkers, the age at which sakau drinking started is quite late, with a mean age of 22.6 years (Table 38). Men start consuming sakau at a slightly younger age than women, but in both sexes, age of onset is after 20 years. There appears to be a trend of later age of onset for older adults, regardless of sex.

Table 38. Age of onset of sakau consumption, ever-drinkers, by age and sex, Pohnpei, 2002

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	20.4	±0.7	347	19.01	±1.0	142	22.0	±0.7	205
35-44	23.0	±0.8	327	21.5	±1.2	155	25.5	±1.1	172
45-54	24.4	±1.6	281	22.3	±1.9	144	27.9	±1.8	137
55-64	27.8	±2.6	114	27.0	±3.8	57	28.7	±3.4	57
Total	22.6	±0.7	1069	21.1	±1.0	498	24.7	±0.8	571

Source: WHO STEPs Survey, Pohnpei, 2002

On average, sakau drinkers consume sakau on one out of three days/nights in the past 30 days. No significant difference was noted across age groups and between the sexes (Table 39).

Table 39. Number of days/nights sakau was drank in the past 30 days, for ever sakau drinkers

Age	Total population			Men			Women		
	Mean	CI	N	Mean	CI	N	Mean	CI	N
25-34	10.9	±1.9	317	11.9	±2.4	136	9.6	±2.1	181
35-44	11.1	±2.2	292	10.9	±2.4	147	11.4	±2.6	145
45-54	11.8	±2.6	255	12.7	±3.1	129	10.3	±2.8	126
55-64	9.8	±2.5	97	11.0	±2.9	51	8.3	±3.0	46
Total	**11.1**	**±1.9**	**961**	**11.7**	**±2.1**	**463**	**10.1**	**±1.7**	**498**

Source: WHO STEPs Survey, Pohnpei, 2002

Tables 40 and 41 reveal that close to half of sakau drinkers are also likely to smoke tobacco and/or drink alcoholic beverages either during or after drinking sakau. Engaging in sakau consumption can, therefore, serve as a "trigger" for concomitant tobacco and/or alcohol use.

Table 40. Smoke tobacco during and/or after drinking sakau, for ever sakau drinkers

Age	Total population				Male				Female			
	N	Yes			N	Yes			N	Yes		
		%	95%CI	n		%	95%CI	n		%	95%CI	n
25-34	341	54.7	±5.1	168	142	71.9	±7.7	103	199	32.9	±9.6	65
35-44	323	48.0	±7.1	142	154	61.4	±7.8	97	169	26.1	±8.8	45
45-54	282	39.0	±6.3	100	144	49.3	±8.6	71	138	21.7	±5.8	29
55-64	114	34.3	±11.2	36	57	49.0	±14.7	27	57	18.0	±15.8	9
Total	**1060**	**47.8**	**±3.8**	**446**	**497**	**61.9**	**±5.2**	**298**	**563**	**27.5**	**±5.0**	**148**

Source: WHO STEPs Survey, Pohnpei, 2002

Table 41. Consume alcohol during and/or after drinking sakau, for ever sakau drinkers

Age	Total population				Male				Female			
	N	Yes			N	Yes			N	Yes		
		%	95%CI	n		%	95%CI	n		%	95%CI	n
25-34	347	38.3	±4.9	126	143	42.4	±8.9	61	204	33.3	±7.0	65
35-44	326	47.4	±8.0	143	155	55.9	±9.7	88	171	33.5	±8.5	55
45-54	284	44.8	±6.6	123	145	47.1	±7.3	68	139	40.9	±8.9	55
55-64	114	34.3	±7.3	40	57	29.2	±12.1	17	57	40.1	±11.4	23
Total	**1071**	**42.3**	**±4.1**	**432**	**500**	**47.2**	**±5.5**	**234**	**571**	**35.4**	**±5.2**	**198**

Source: WHO STEPs Survey, Pohnpei, 2002

Consequences

There is no updated information for this section of the profile.

Sakau can cause liver damage with heavy, frequent use. It is possible that some of the deaths from liver cirrhosis in FSM are partly due to sakau consumption. From 2000-2003, the number of hepatitis cases recorded in the FSM ranged from 55-163 cases per year. However, it is difficult to determine what proportion of these cases, if any, can be attributed to sakau use.

Sakau is well-known in Micronesia as part of a mediating ceremony to resolve social disputes, likely due to its calming properties. Data examining the impact of sakau on crime and accident rates is not available at this time.

On a population basis, perhaps the greatest consequences from sakau consumption are related to the concomitant use of tobacco or alcohol, rather than directly to the sakau itself.

Consumption

Youth

Newly uncovered data on illicit drug use in this version of the profile comes from the HBLPY survey, published in a journal article in 2008.

Table 42. Weekly marijuana consumption among students aged 15 years, Pohnpei, 2001

Percent reporting weekly marijuana consumption (95% Confidence Intervals) N=507	Boys (%)	Girls (%)
	10.9 (7.4, 14.4)	9.4 (6.8, 11.9)

Source: HBLPY, Pohnpei, 2001

The data (Table 42) indicate that in the HBLPY study, about 10% of youth aged 15 were weekly users of marijuana. This was higher than the reported prevalence in Tonga and Vanuatu.

The HBLPY survey asked about glue sniffing on a weekly basis. Less than 3% of students aged 15 reported this type of inhalant use (table 43).

Table 43. Weekly glue sniffing use among Pohnpei students aged 15 years, 2001

Percent reporting weekly glue sniffing (95% Confidence Intervals) N=507	Boys (%)	Girls (%)
	2.6 (0.0, 7.1)	2.2 (0.7, 3.7)

Source: HBLPY, Pohnpei, 2001

The subsequent portion of this subsection is unchanged from the previous edition of the profile. The following table summarizes youth illicit drug consumption within Pohnpei, as ascertained through the 2003 YRBS.

Table 44. Illicit drug consumption, HS students, Pohnpei, 2003

	Total (%)	Male (%)	Female (%)	15 or under (%)	16-17 (%)	18 or older (%)
Lifetime marijuana use	24.0	34.6	14.5	15.6	24.7	31.0
Current marijuana use	14.6	20.5	8.7	9.6	12.9	21.1
Age at first use < 13 years	10.4	12.5	7.2	10.5	7.9	12.8
Lifetime cocaine use	10.1	10.5	8.8	8.9	7.8	13.4
Current cocaine use	5.5	5.1	5.6	4.8	4.7	7.3
Lifetime inhalant use	15.4	17.5	12.5	17.0	14.9	14.9
Current inhalant use	10.3	11.6	8.5	12.3	10.0	9.4
Lifetime heroin use	13.7	15.2	11.8	14.5	9.8	17.8
Lifetime methamphetamine use	13.7	14.8	11.8	15.0	10.8	16.5
Lifetime MMDA use	13.7	14.7	11.2	15.9	96	16.5
Offered, sold or given drugs on school property in past 12 months	27.3	32.9	21.7	26.0	22.8	33.5

Source: Youth Risk Behavior Survey, Pohnpei, 2003

The data indicates that about a quarter of Pohnpei youth have tried marijuana, and about one in seven is a current marijuana user. Ten percent started marijuana use before the age of 13. One in ten currently uses inhalants. The sizable percentages reporting lifetime cocaine, heroin, methamphetamine and MMDA use are puzzling, given the difficulty in obtaining these drugs in a remote island and their high cost. Over one-quarter report having been given, offered or sold drugs in school within the past 12 months, emphasizing the importance of school-based enforcement interventions. Future iterations of this survey will need to ensure that the young respondents fully understand the survey questions and recognize the drugs of interest.

Adults

Data on adult marijuana consumption in FSM is limited to the 1997 Micronesian Seminar key informant study, police data and several small-scale anthropological reports. Because the Micronesian Seminar data is now almost 10 years old, it may no longer accurately delineate current marijuana consumption patterns in FSM. FSM does not participate in the SAMHSA National Survey of Drug Use in Households (NSDUH).

Among individuals 15 years and older in 1997, about 8% had smoked marijuana in the past 12 months. Table 45 shows the prevalence of marijuana use over the past year by State and sex. Males are much more likely to smoke marijuana than females in all States.

Table 45. Marijuana consumption within the past 12 months, persons 15 years and older, by State and sex, 1997

	Males		Females		Total	
	N	%	N	%	N	%
FSM	**337**	**15.1**	**16**	**0.8**	**353**	**8.1**
Pohnpei	118	15.3	13	1.8	**131**	8.9
Kosrae	23	15.4	0	0	23	7.4
Chuuk	177	17.2	2	0.2	179	9.1
Yap	19	6.9	1	0.4	20	3.6

Source: Micronesian Seminar, 1997

Consequences

Data provided by SEOW staff indicates that 7 arrests were made in Pohnpei for possession of marijuana in 2006, 10 arrests in 2007 and 2 in 2008. No other new data were provided for this section.

Data on consequences related to illicit drug use is scant for Pohnpei. Data on drug-related offenses and arrests are available as a national aggregate, but specific data for Pohnpei is lacking.

Table 46 chronicles the number of SAMH encounters for alcohol and drug-related reasons for the years 2003-2006 in Pohnpei and FSM. In general, encounters are more likely for drug abuse rather than alcohol abuse. The sudden increase in encounters within Pohnpei for drug-related and dual addiction encounters in 2006 is noteworthy, and deserves scrutiny.

Table 46. Alcohol and drug-related SAMH encounters by State, 2003-2006

State and Year	Alcohol Abuse (% encounters)	Alcohol/Drug Abuse (% encounters)	Drug abuse (% encounters)	Dual Addiction (% encounters)	Total Encounters
POHNPEI					
2003	-	64 (7.2%)	85 (9.5%)	-	891
2004	4 (0.37%)	27 (2.51%)	51 (4.74%)	20 (1.86%)	1076
2005	-	-	14 (2.33%)	59 (9.82%)	601
2006	7 (0.44%)	1 (0.06%)	77 (4.8%)	455 (28.3%)	1606
FSM					
2003	7 (0.21%)	75 (2.24%)	90 (2.68%)	1 (0.03%)	3354
2004	15 (0.51%)	30 (1.01%)	54 (1.82%)	20 (0.67%)	2966
2005	-	1 (0.03%)	14 (0.41%)	64 (1.87%)	3427
2006	199 (5.4%)	10 (0.27%)	86 (2.3%)	455 (12.3%)	3699

Source: FSM SAMH, 2003-2006, as reported by Ms. Arlynn Roby and Ms. MaryAnn Eperiam

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