department of
MENTAL HEALTH &
SUBSTANCE ABUSE

A PROFILE OF SUICIDE ON GUAM

January 2009

Baseline data for the **Focus on Life –Guam Youth Suicide Prevention** grant
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Prepared for DMHSA by Health Partners, L.L.C.

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This profile is the result of the collaborative efforts of several agencies and individuals, under the leadership of Guam Department of Mental Health and Substance Abuse (DMHSA) Prevention and Training Branch.

Data were provided by the following:

- **Department of Public Health and Social Services (DPHSS)**, Vital Statistics branch, through Ms. Cindy Naval

- **Guam Police Department (GPD)**, with permission from GPD Police Captain Paul Suba

- **Guam Public School System (GPSS)** Youth Risk Behavior Survey (YRBS), through Mr. Paul Nededog

- **World Health Organization (WHO)**, through Dr. Wang Xiangdong, Regional Adviser for Mental Health at the WHO Western Pacific Regional Office (WPRO)

Local data collection was undertaken by the following DMHSA staff under the supervision of Branch Supervisor Ms. Barbara S.N. Benavente: Matt Blaz, Grace Lapid-Rosadino, Logan Reyes, Michelle Sasamoto, and Audrey Topasna.

Ms. Grace Rosadino was responsible for data management and creation and maintenance of the grant suicide database.

Dr. Annette M. David, representing Health Partners, L.L.C., obtained comparative suicide data from other countries, conducted the data analysis, and authored this profile.

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INTRODUCTION AND BACKGROUND

Suicide is the fifth leading cause of death on Guam, and is widely recognized as a significant public health issue by the Guam community. However, prior to the *Focus on Life-Guam Youth Suicide Prevention* grant, comprehensive data on suicide did not exist. Hence, it was difficult to assess the magnitude and ascertain the characteristics of suicide to guide suicide prevention policy development, program planning and resource allocation.

In 2008, the Guam DMHSA successfully applied for a youth suicide prevention grant offered by the Substance Abuse and Mental Health Services Administration (SAMHSA). The three-year grant, entitled *Focus on Life-Guam Youth Suicide Prevention,* will run from September 2008 to September 2011. The grant has five goals:

- Data collection, surveillance and analysis
- Workforce capacity building
- Comprehensive intervention plan
- Evidence based policies, programs and practices
- Evaluation and monitoring

This Profile represents the initial effort to strengthen data collection, surveillance and analysis of the prevalence and attributes of suicide on Guam. The information contained in this document is meant to guide the development of policy and program initiatives and resource allocation under the *Focus on Life-Guam Youth Suicide Prevention* grant. It is also intended to serve as a baseline against which progress attained under the grant will be measured.

METHODOLOGY AND DATA SOURCES

Methodology

Following the Strategic Prevention Framework (SPF) model, DMHSA undertook a baseline assessment of the current situation, identifying various potential data sources on suicide, and collating available local data for review. Data were obtained from the Vital Statistics office of DPHSS and police reports from GPD. Under a contract with DMHSA, Health Partners, L.L.C. (represented by Dr. Annette M. David) reviewed the gathered data, calculated total annual and sex- and age-specific suicide rates and recommended additional statistical analyses using a third data source, the 2007 Youth Risk Behavior Survey (YRBS). Health Partners, L.L.C. also independently obtained suicide information from WHO for other countries within Asia-Pacific, for comparison with Guam. The data from all of these sources were utilized to derive a more comprehensive overview of suicide on Guam. Preliminary results were presented to prevention and mental health stakeholders and the community-at-large, including families personally affected by suicide, to obtain their feedback. This Profile represents the end result of these collaborative efforts to develop an enhanced understanding of suicide on Guam.

Data Sources and Issues

Local data used in this Profile derives from 3 sources (see Table 1). Each data source, its advantages and disadvantages and related methodological issues are discussed below.

Table 1. Sources of local data utilized in this Profile

Data Source	Data Type	Advantages	Disadvantages
DPHSS Vital Statistics	Deaths from suicide	• Data from death certificates • Data available from 1996	• No information on suicide attempts • Can miss suicide deaths if not identified at time of death
GPD Statistics	Suicide-related incidents as reported to police	• Captures suicide attempts and association with alcohol and drug use	• Data reliability • Final outcomes uncertain • Subjective classification
GPSS Youth Risk Behavior Survey (YRBS)	• Suicide ideation • Suicide attempts • Correlates of	• Data from 1995 • Data reliability • 2007 data is weighted	• Does not cover out-of-school youth, who may be at higher risk for

	suicidal ideation		suicide

Suicide mortality data is taken from the DPHSS Vital Statistics records. These data derive from death certificate information and are considered reliable. The data provide information on annual deaths from suicide on Guam, although the figures may represent an underestimate of actual deaths if not all deaths by suicide are recognized as such at the time of death. Also, mortality data does not provide any information on the magnitude of suicide attempts, as those attempts that do not lead to demise are not included. Furthermore, the data obtained by DMHSA consist of a summative description, and not the actual database. Hence further statistical manipulation of the data was not possible.

Data on suicide attempts and correlated factors are contained in GPD records. These records consist of the reports filed by the responding police officer at the time suicide-related incidents are brought to the police's attention. Thus, the information provides a basis for estimating the magnitude and relevant factors related to suicide attempts, including the involvement of alcohol and/or drug use. Because the data are captured initially through written reports (with numerous fields requiring qualitative or narrative responses), and in the absence of a standardized electronic data reporting template, subsequent data entry can be challenging, and reliability may be an issue. The data also reflect the situation as subjectively judged by the responding officer at the time a suicide-related incident is reported, and may not reflect final, but delayed, outcomes, of an incident. For example, a suicide attempt that was not immediately fatal would have been classified as a "suicide attempt" and not a "completed suicide" in the GPD data base, even if it eventually culminated in a death. Information that is withheld from the responding officer, such as domestic violence or drug use related to the suicide attempt, would be overlooked. Finally, suicide attempts that are not reported to the police would be excluded. Thus, the GPD may represent an underestimate of actual suicide attempts.

The YRBS provides a rich source of information about suicidal ideation, suicide attempts and relevant correlates of suicidal ideation and attempts among middle and high school youth. The surveillance system, managed by GPSS, represents the best existing local model of consistent surveillance of behavioral risk factors, having been conducted every other year since 1995. Methodological limitations prevented the weighting of data collected from 1999, 2003 and 2005. However, the 2007 data was weighted, and can be compared to US averages. Because GPSS provided the actual database, it was possible to do chi-square analysis on a number of potentially correlated factors, such as tobacco, alcohol and drug use, violent behavior, sexual history and reported depressive symptoms. The YRBS does not cover out-of-school youth, who may have a higher risk for suicidal ideation and attempts.

RESULTS AND DISCUSSION

Suicide Deaths

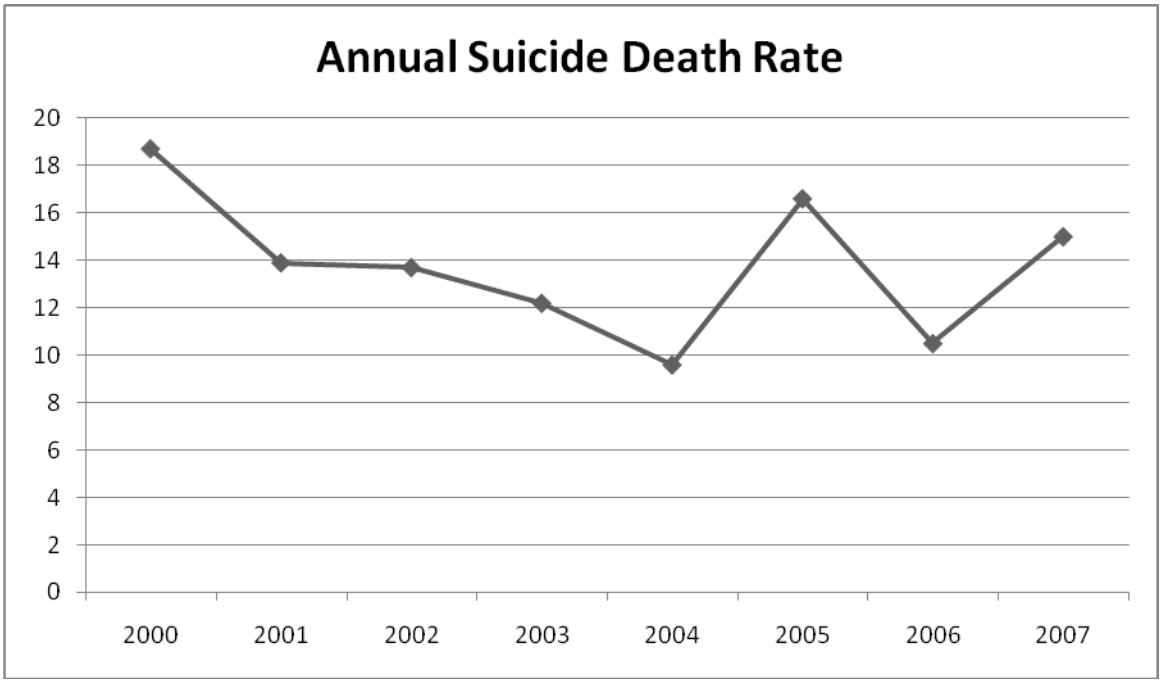
Table 2 represents the numbers and rates of suicide per year from 2000 to 2007. Annual suicide death rates were calculated using the estimated mid-year population counts as reported in the Guam Statistical Yearbook. Figure 1 depicts the yearly trend in suicide rates for the island.

Table 2. Suicide deaths and annual suicide death rates, Guam, 2000-2007

	2000	2001	2002	2003	2004	2005	2006	2007
Deaths	29	22	22	20	16	28	18	26
Suicide death rate (per 100,000)	18.7	13.9	13.7	12.2	9.6	16.6	10.5	15.0

Source: DPHSS Vital Statistics

Figure 1. Annual trend in suicide death rates, Guam, 2000-2007

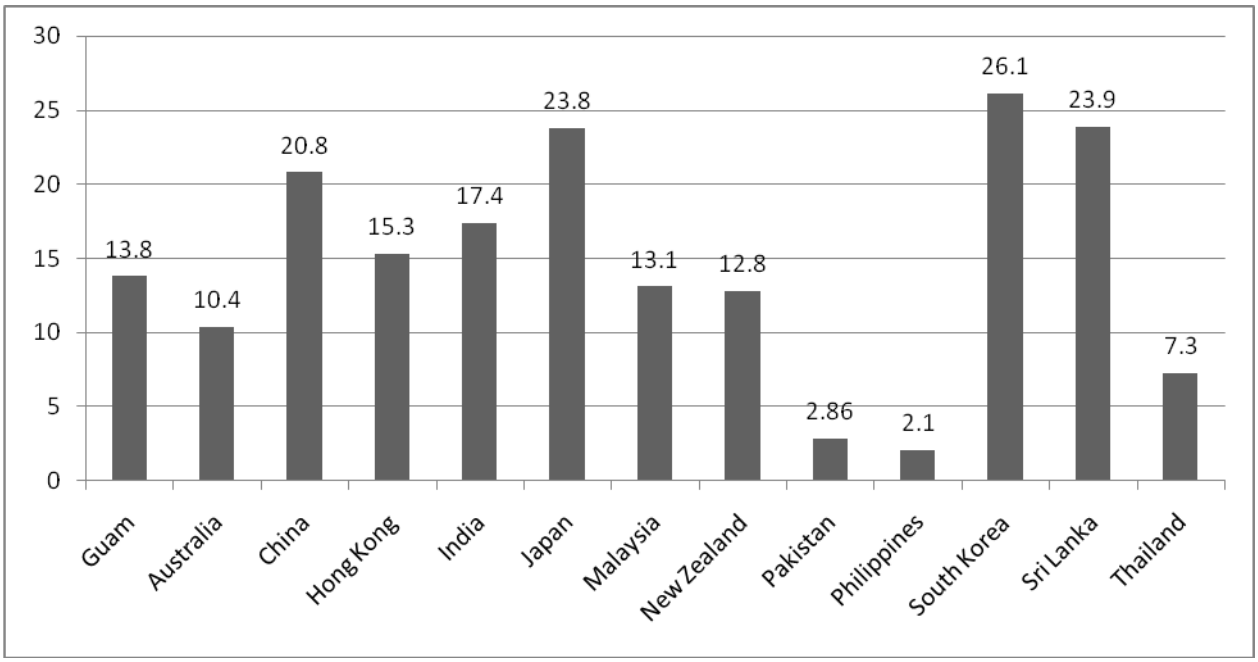


Source: Calculated based on data taken from DPHSS Vital Statistics and Guam Statistical Yearbook

Because overall, the numbers are small, it is difficult to make conclusions about suicide trends over time. On average, from 2000 to 2007, there were 23 suicide deaths per year, approximately one suicide death every 2 weeks. The annual suicide death rate ranged from 9.6 to 18.7 per 100,000 population during this period, with a mean annual rate of 13.8 per 100,000.

Figure 2 compares the average annual suicide rate on Guam with other countries in the Asia-Pacific region. Guam's rate is significantly higher than countries such as the Philippines, with a suicide rate of under 3 per 100,000, but it is considerably lower that the rates in countries such as Japan and South Korea. Individuals from these three countries comprise close to 30% of the local population on Guam.

Figure 2. Comparison of Guam suicide rate with other Asia-Pacific countries

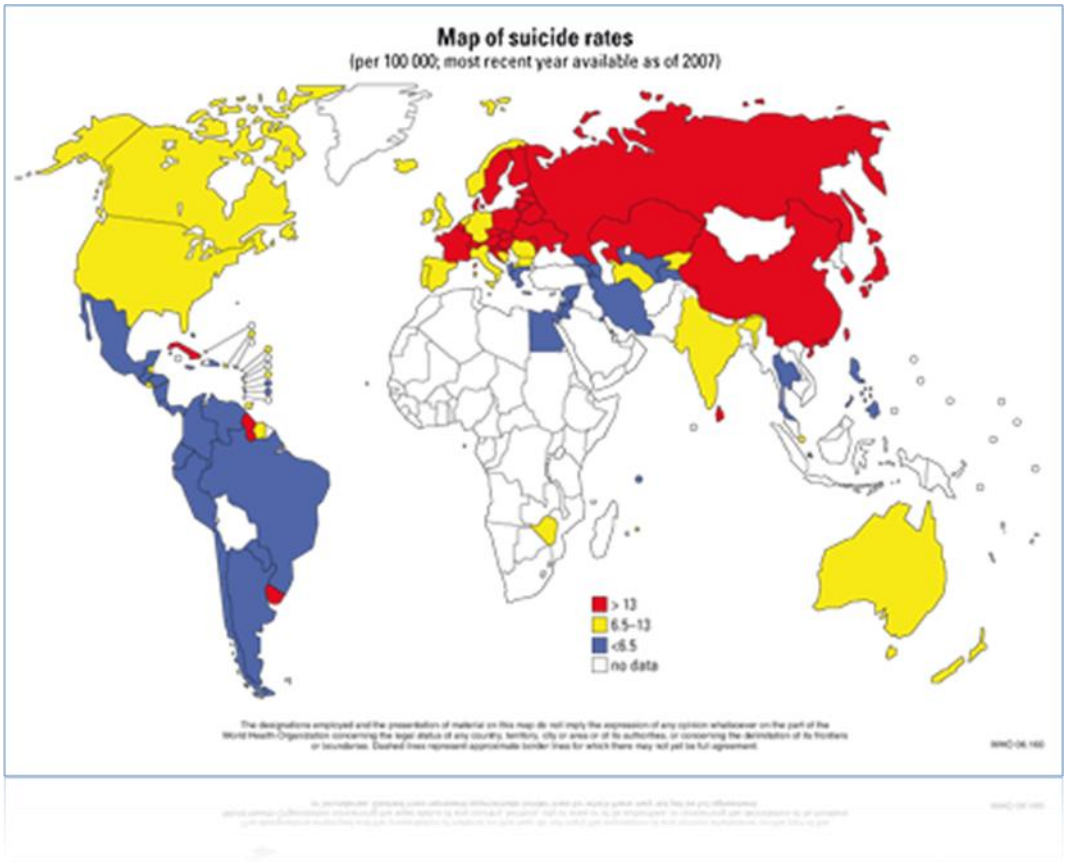


Note: Rates are per 100,000

Sources: Guam rate calculated from DPHSS data; other rates from Suicide and Suicide Prevention in Asia, WHO, 2008 (Hendin et al, editors)

Figure 3 shows a WHO map of suicide rates globally, with high suicide rate countries and territories, defined as those with suicide rates higher than 13.0 per 100,000, shaded in red. Based on this criterion, Guam would be considered a high suicide rate territory. Data was not available for other Pacific Island countries and territories.

Figure 3. A global map of suicide rates

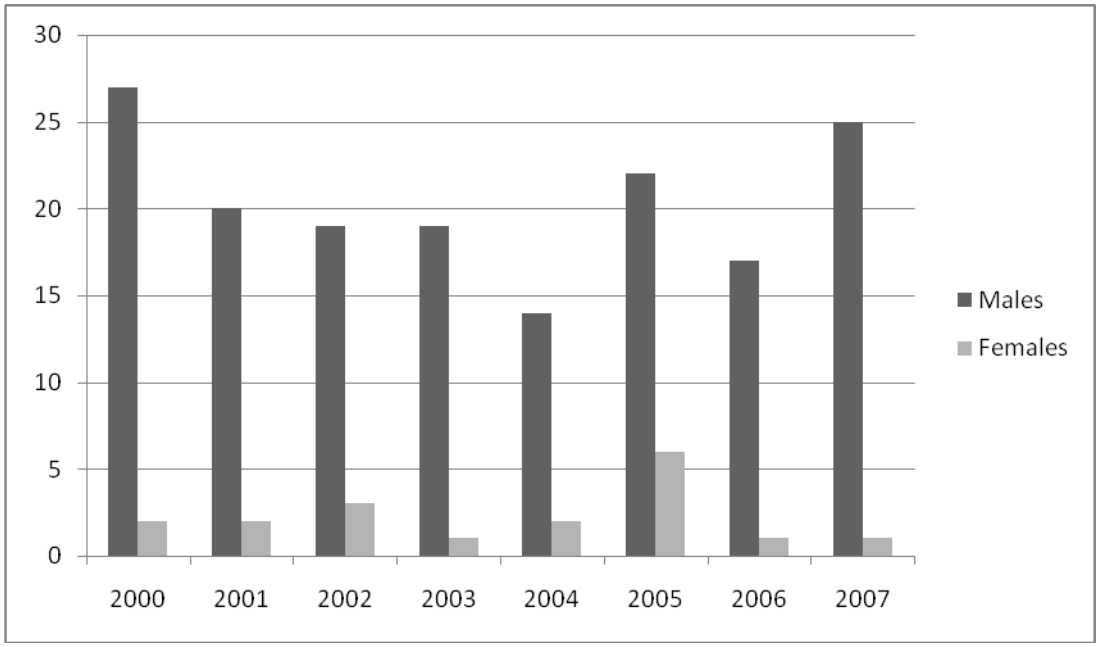


Source: WHO at http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/

Figures 4 and 5 show respectively, the total numbers of suicide deaths and suicide rates per year from 2000 to 2007, disaggregated by sex. The data clearly show that suicide deaths on Guam occur predominantly among males, who outnumber suicide deaths among females with a ratio of 9:1. That is, 90% of deaths by suicide on Guam happen among males.

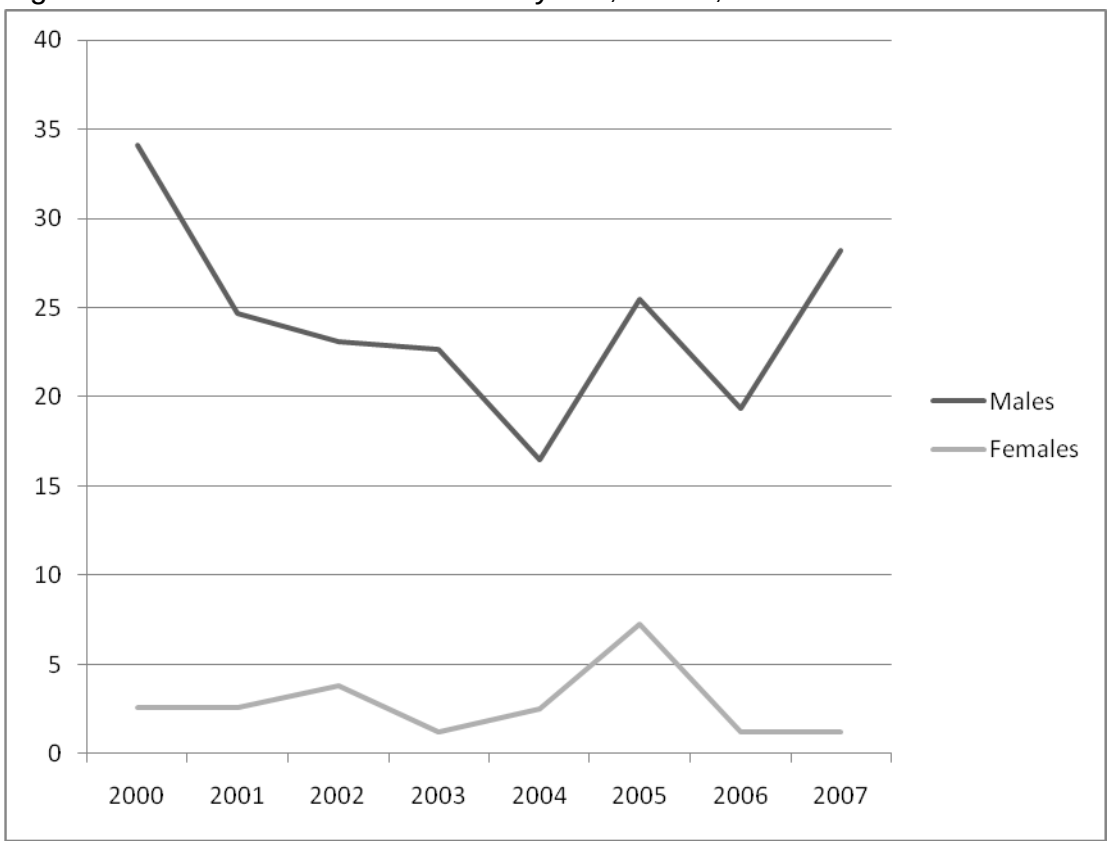
Figure 6 compares annual suicide rates disaggregated by sex for China, Japan and South Korea. Suicide rates for both sexes are similar in China, unlike Guam. Guam's situation more closely resembles Japan and South Korea, with male suicide rates higher than female rates, but the sex difference is much more marked on Guam.

Figure 4. Suicide deaths by sex, Guam, 2000-2007



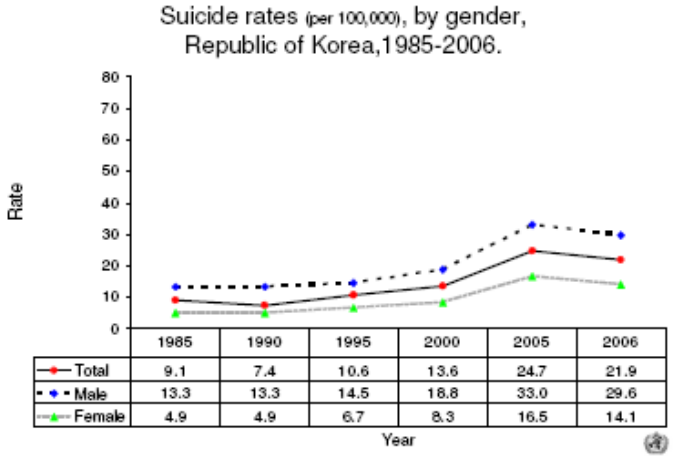
Source: DPHSS Vital Statistics

Figure 5. Annual suicide death rate by sex, Guam, 2000-2007

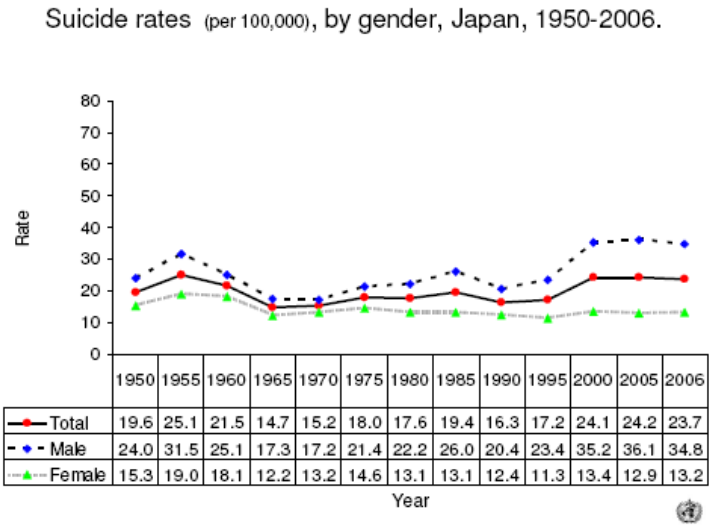


Source: DPHSS Vital Statistics

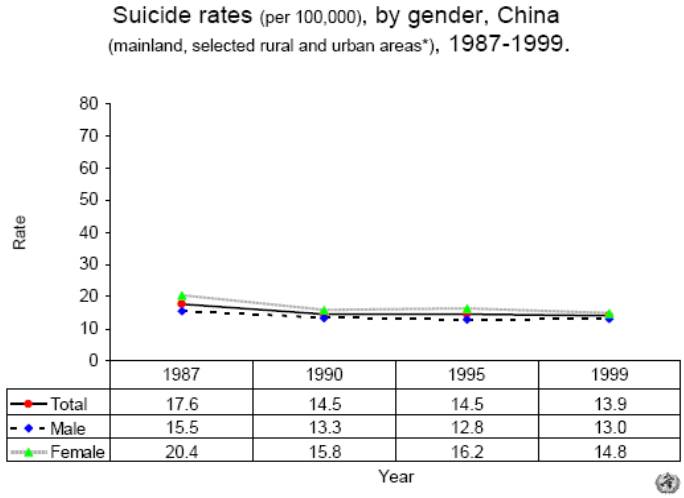
Figure 6. Annual suicide rates for China, Japan and South Korea, by sex



	1985	1990	1995	2000	2005	2006
Total	9.1	7.4	10.6	13.6	24.7	21.9
Male	13.3	13.3	14.5	18.8	33.0	29.6
Female	4.9	4.9	6.7	8.3	16.5	14.1



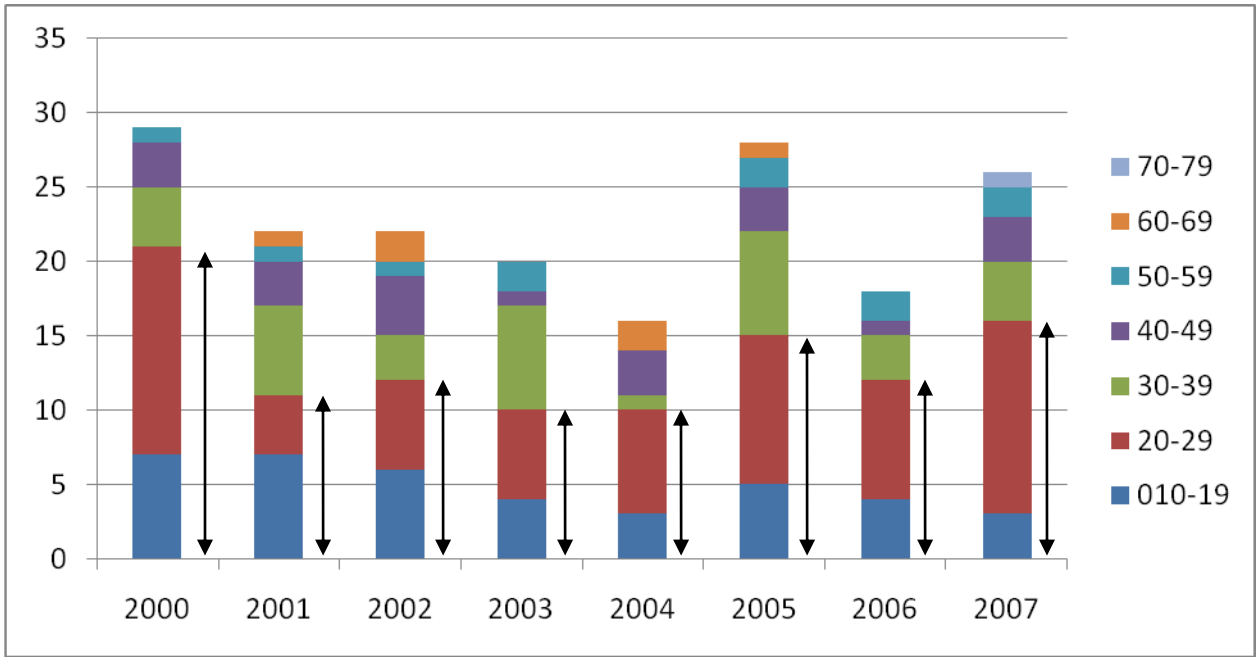
	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2006
Total	19.6	25.1	21.5	14.7	15.2	18.0	17.6	19.4	16.3	17.2	24.1	24.2	23.7
Male	24.0	31.5	25.1	17.3	17.2	21.4	22.2	26.0	20.4	23.4	35.2	36.1	34.8
Female	15.3	19.0	18.1	12.2	13.2	14.6	13.1	13.1	12.4	11.3	13.4	12.9	13.2



	1987	1990	1995	1999
Total	17.6	14.5	14.5	13.9
Male	15.5	13.3	12.8	13.0
Female	20.4	15.8	16.2	14.8

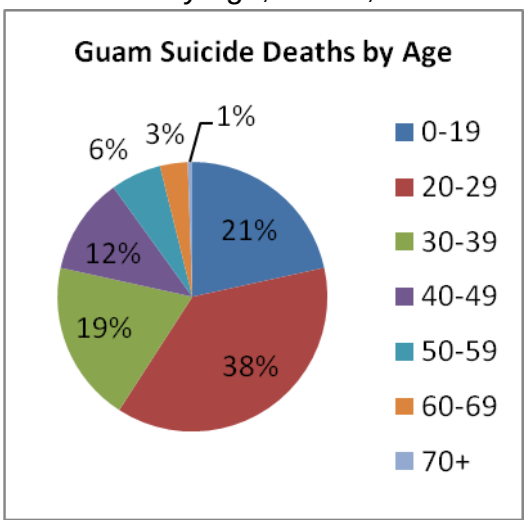
Suicide deaths disaggregated by age predominate among youth and young adults aged 10-29 on Guam (Figures 7 and 8). Cumulatively from 2000 to 2007, 21% of suicide deaths occurred in those aged 10-19, and 38% of deaths happened among those aged 20-29 years. Altogether, close to 60% of all suicide deaths on Guam from 2000-2007 occurred in those younger than 30 years. Thus, deaths by suicide on Guam occur predominantly among young people.

Figure 7. Annual suicide deaths by age, Guam, 2000-2007



Source: DPHSS Vital Statistics

Figure 8. Cumulative suicide deaths by age, Guam, 2000-2007



This is in contrast to China, Japan and South Korea, where death by suicide is a phenomenon that predominates among older adults (Table 3). Close to half of all suicides in these countries occur in those over 55. Less than 20% of suicide deaths in Japan and less than 30% in China occur in those younger than 35 years.

Table 3. Suicide deaths by age, China (1999) and Japan (2006)

Age group	**China**		**Japan**	
	Number of deaths	% of suicide deaths	Number of deaths	% of suicide deaths
0-14	147	1%	77	0%
15-24	1541	9%	1892	6%
25-34	3294	20%	3800	13%
35-44	2638	16%	4397	15%
45-54	2382	14%	5230	18%
55-64	2182	13%	6652	22%
65-74	2598	15%	4135	14%
75+	2054	12%	3584	12%

Source: WHO at http://www.who.int/mental_health/prevention/suicide/country_reports/en/index.html

Table 4 depicts the cumulative number and percentage of suicide deaths by ethnicity on Guam for the period 2000 to 2007. Death by suicide occurs most frequently among Chamorros, followed by Chuukese and those of "Other" ethnicity.

Table 4. Cumulative suicide deaths by ethnicity, Guam, 2000-2007

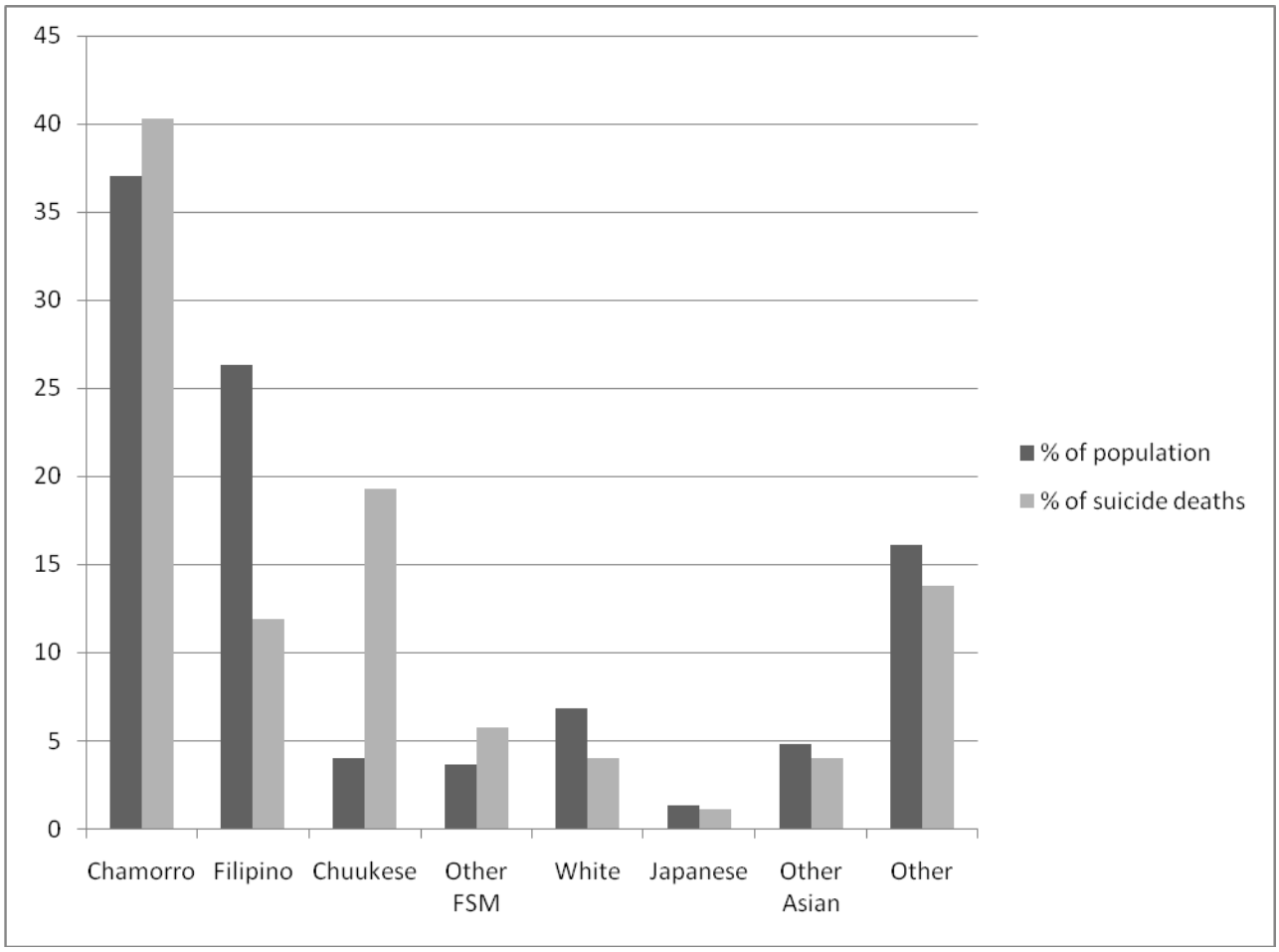
Ethnicity	**Number**	**Percentage**
Chamorro	71	40.3%
Filipino	21	11.9%
Chuukese	34	19.3%
Other FSM	10	5.7%
White	7	4.0%
Japanese	2	1.1%
Other Asian	7	4.0%
Other	24	13.6%

Source: DPHSS Vital Statistics

However, when assessing ethnic breakdown, it is important to consider the relative contribution of each ethnic group to the total population. Figure 9 depicts the proportional contribution of each ethnic group to the total population as compared to

overall suicide deaths. While Chamorros and other Micronesians have a slightly higher percentage contribution to suicide deaths as compared to the percentage they each comprise of the total population, Chuukese have a disproportionately high contribution to overall suicide deaths given that they make up a very small segment of the total population. In contrast, Filipinos, and to a lesser extent, Whites, Japanese and other Asians, make up a smaller than expected contribution to overall suicide rate given their relative contributions to the overall population. Based on this information, it would appear that suicide death risk is highest among Chuukese.

Figure 9. Relative contribution of ethnic groups to overall population and overall suicide deaths, Guam, 2000-2007



Source: DPHSS Vital Statistics

Suicide-related Incidents as reported to GPD

The GPD uses 4 categories to classify suicide-related attempts:

- Person in need of service
- Attempt
- Suicide
- Injured person

The assignment to a category is based on the subjective judgment of the responding officer at the time the incident is investigated. For this profile, we concentrated on the first three categories.

Table 5 lists the number of incidents reported to GPD for 2006 and 2007, and compares the numbers of completed suicides recorded by GPD with the numbers reported by DPHSS through death certificates. Suicide deaths reported by DPHSS are higher for both years that the numbers recorded by GPD. This is likely due to death as a delayed outcome from a suicide attempt---in this case, the GPD data would capture the incident as an "attempt," even if death eventually resulted, while DPHSS would capture the final outcome.

Table 5. Numbers of suicide-related incidents reported to GPD, 2006-2007, and comparison of recorded completed suicides with DPHSS Vital Statistics data

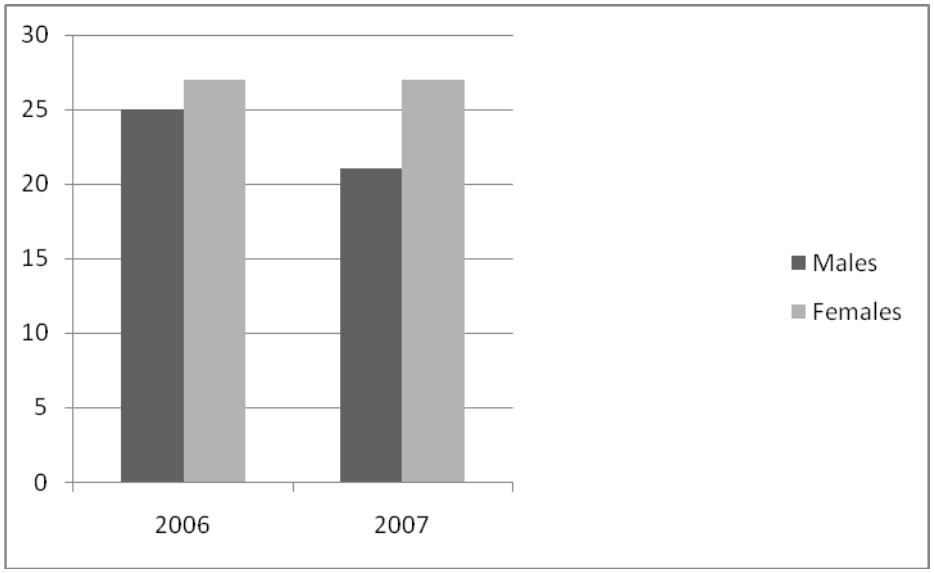
Category	**2006**	**2007**
Person in need of service	10	13
Suicide attempt	52	48
Suicides	13	18
Suicide deaths (DPHSS data)	18	26

Source: GPD statistics

Table 5 also shows that suicide attempts during these 2 years are about 1.5 to 2.5 times greater than the number of recorded deaths, providing an estimate of the magnitude of overall suicide attempts on Guam.

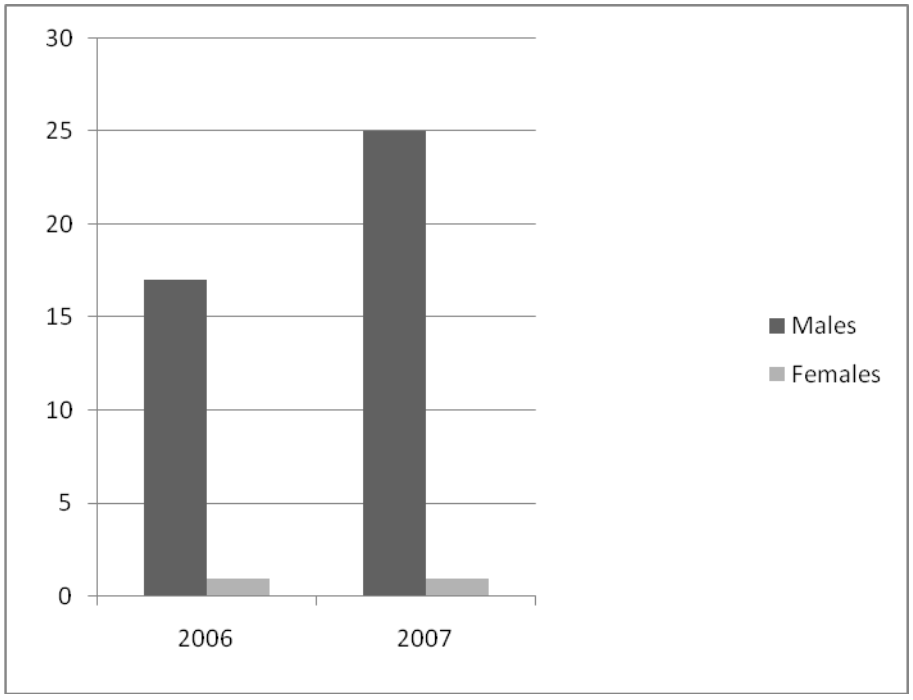
When disaggregated by sex, the data demonstrate similar numbers of suicide *attempts* for both sexes, with females having slightly higher numbers of attempts. However, suicide *deaths* occur predominantly among males. (Figures 10 and 11).

Figure 10. Numbers of suicide attempts by sex, 2006-2007



Source: GPD statistics

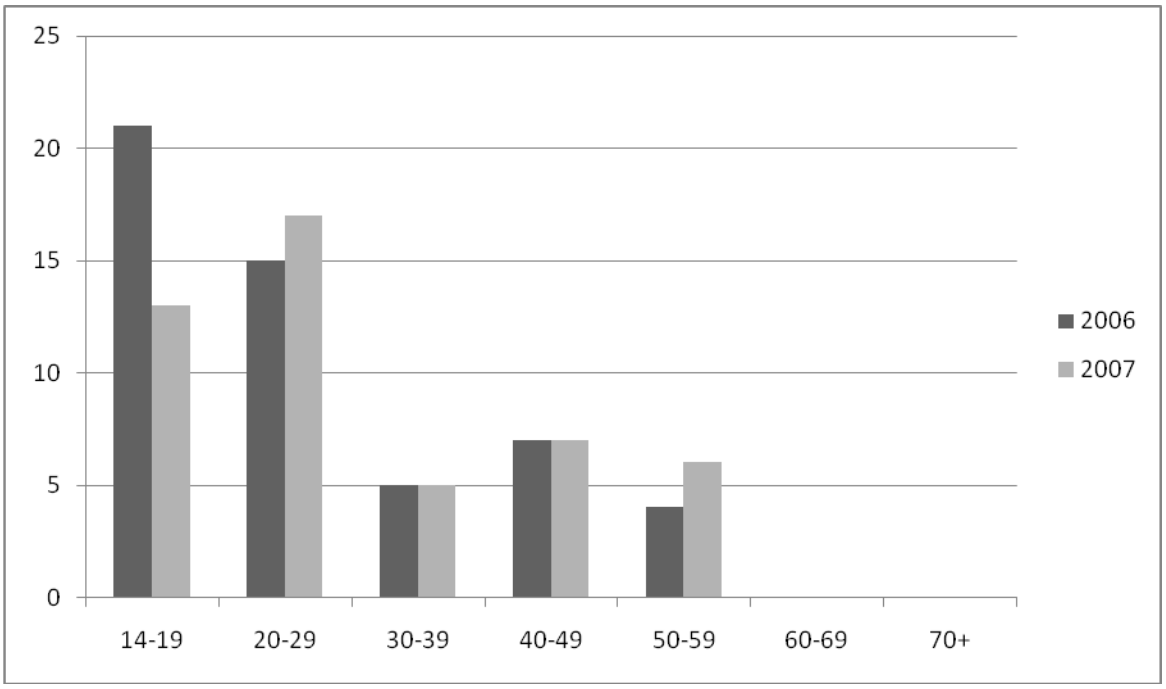
Figure 11. Numbers of suicide deaths by sex, 2006-2007



Source: DPHSS vital statistics

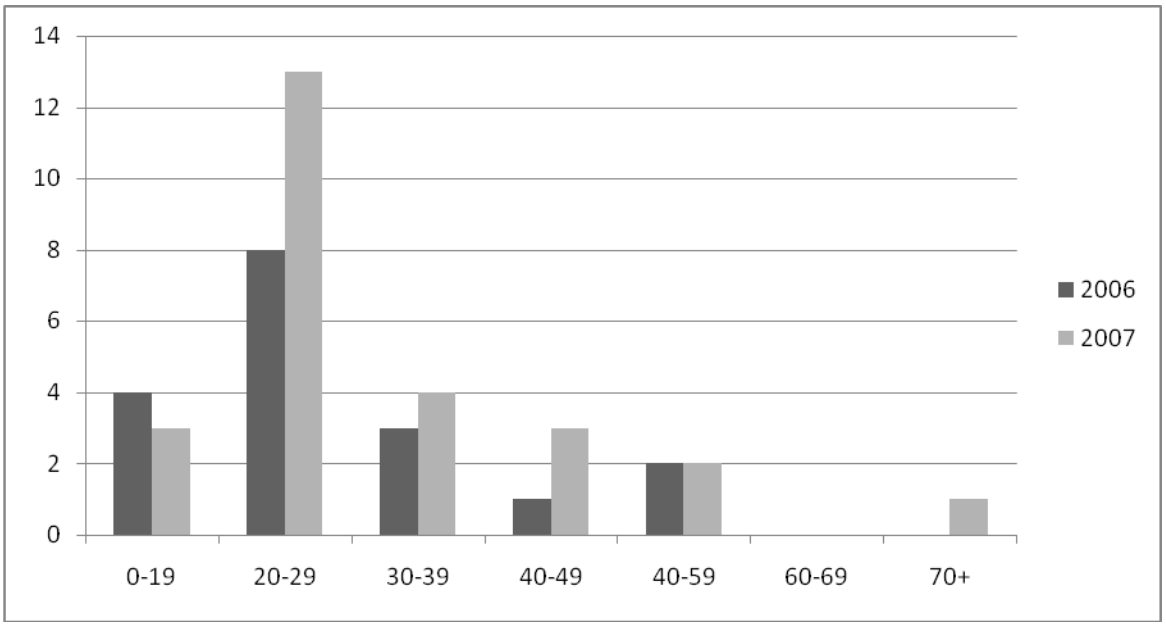
Suicide attempts disaggregated by age confirm that the greatest numbers of attempts occur among youth and young adults, while suicide deaths are highest among those aged 20-29 years (Figures 12 and 13). This finding reinforces the need to target preventive services and interventions towards these younger age groups.

Figure 12. Numbers of suicide attempts by age, 2006-2007



Source: GPD statistics

Figure 13. Numbers of suicide deaths by age, 2006-2007

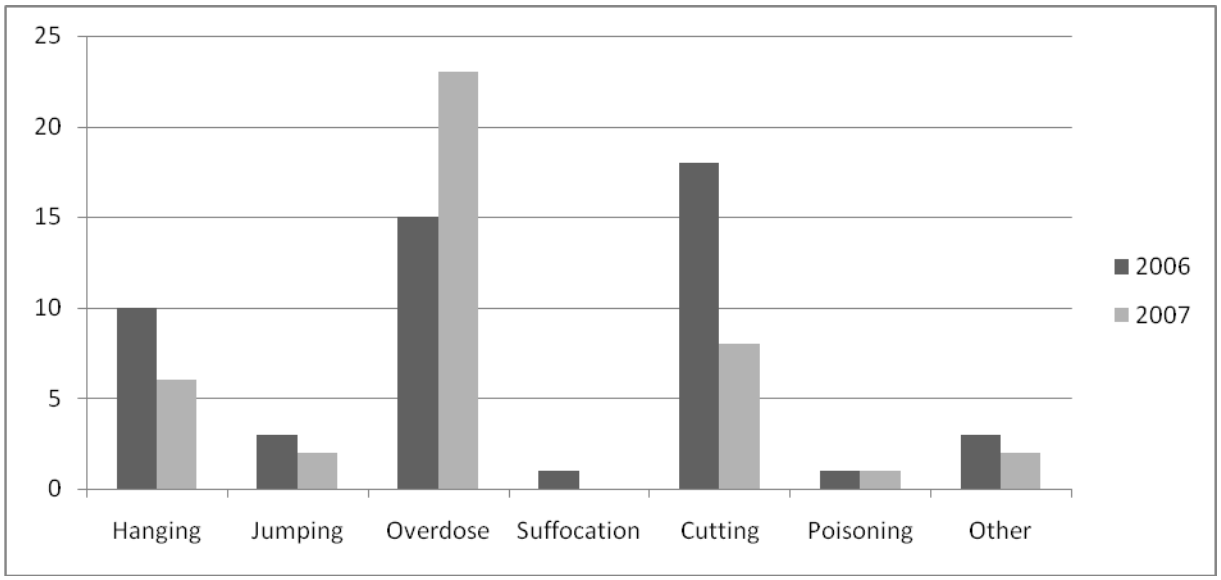


Source: DPHSS vital statistics

In 2007, there was 1 suicide death reported by DPHSS in an elderly person. However, for that same year, there were no recorded suicide attempts for that age group (70+) in the GPD data (Figure 13). This reflects the fact that not all suicide-related incidents may be reported to GPD; unreported incidents would not be captured by the GPD data. Hence, the GPD data may underestimate the true magnitude of suicide and suicide attempts on Guam.

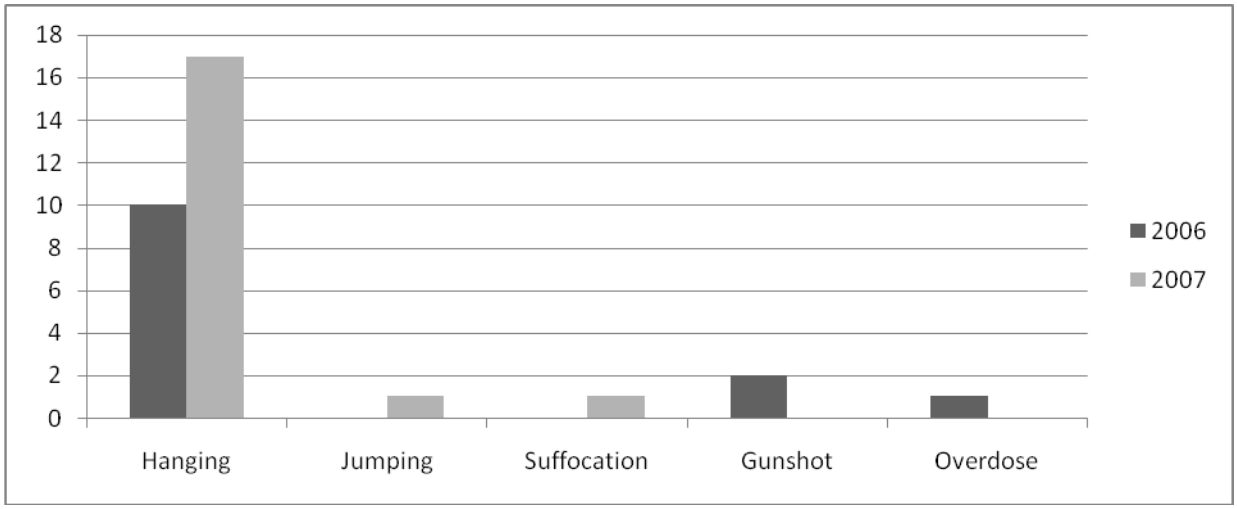
The GPD data record the method/s of suicide for each incident. Figures 14 and 15 depict the methods used for suicide attempts and suicide deaths, respectively, while Figures 16 and 17 illustrate the choice of methods disaggregated by sex. This would explain the seeming paradox of similar numbers of suicide attempts among males and females but a predominance of death among males. Hanging is the method that most often leads to death by suicide, and this is the method that is most often selected by males. Females tend to favor overdose and cutting; both methods are less likely to result in death and allow sufficient lead time for discovery and intervention by others.

Figure 14. Numbers of suicide attempts by method, 2006-2007



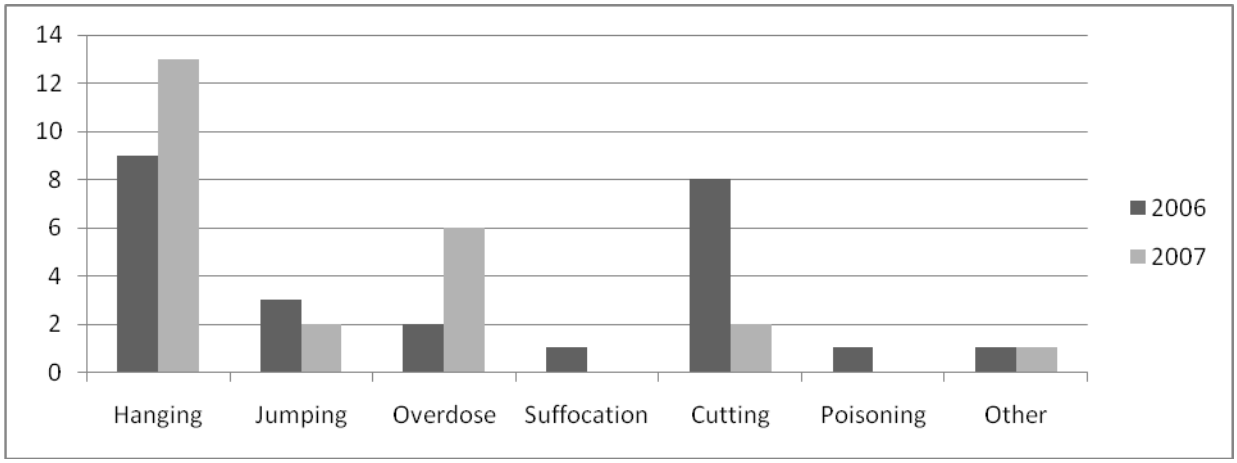
Source: GPD statistics

Figure 15. Numbers of suicide deaths by method, 2006-2007



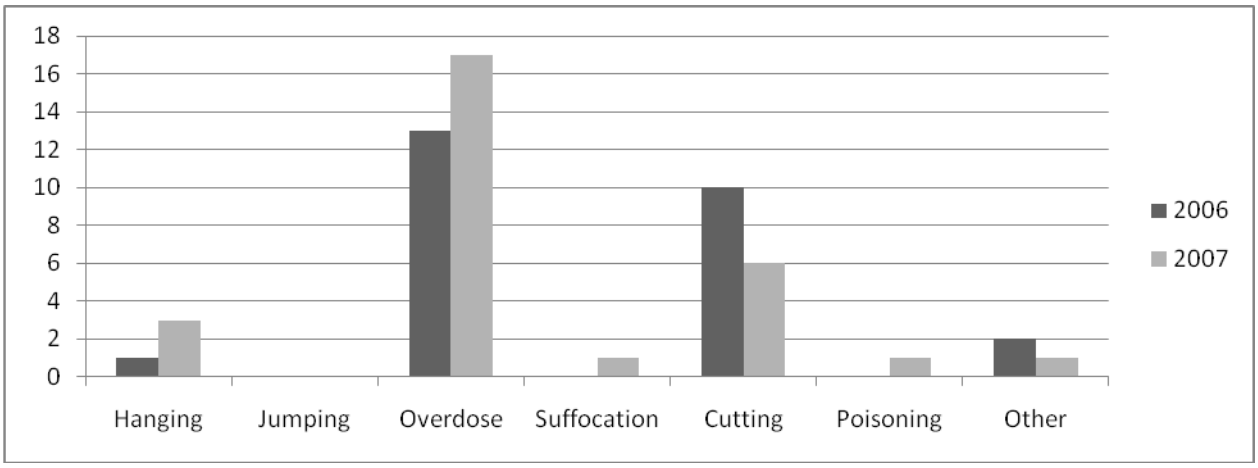
Source: GPD statistics

Figure 16. Numbers of suicide attempts among males by method, 2006-2007



Source: GPD statistics

Figure 17. Numbers of suicide attempts among females by method, 2006-2007



Source: GPD statistics

Table 6 demonstrates the circumstance/s associated with each suicide-related incident reported to GPD. Family disputes are the most commonly associated circumstance in suicide attempts by females while relationship problems are most often cited in suicide attempts by males. The data highlight the need to address the root causes of family discord and empower young people to have healthy relationships as suicide prevention interventions. Interestingly, economic difficulties, which figure prominently in suicides in Japan and other Asian countries, are much less likely to be associated with suicide attempts on Guam.

Table 6. Circumstances associated with suicide-related incidents, Guam, 2006-2007

Circumstance	**Male (n)**	**Female (n)**	**Total n (%)**
Family Dispute	18	29	47 (41.2%)
Personal relationship problem	29	11	40 (35.1%)
Financial Difficulty	1	4	5 (4.4%)
Military-related	0	1	1 (0.9%)
Mental Condition	2	1	3 (2.6%)
School Failure	0	1	1 (0.9%)
Suicide in family	1	0	1 (0.9%)
Grieving loss of significant other	1	0	1 (0.9%)
Problems with the law	1	0	1 (0.9%)
Other	7	7	14

			(12.3%)

Source: GPD statistics

Table 7 illustrates other correlates of suicide and suicide attempts. Almost 1 in 6 (16%) had a recorded history of mental illness, and about 1 in 3 (31%) involved alcohol use. About 1 in 5 (18%) reported previous suicide attempts. Because of the social stigma of mental illness, the percentage reflected in GPD data may underestimate the extent of its correlation to suicide. The data also highlight the importance of effective interventions to prevent repeat attempts. This information would be strengthened by improved reporting, given that in the majority of cases, these potential correlates are not recorded.

Table 7. Other correlates of suicide and suicide-attempts, Guam, 2006-2007

	YES	NO	Unrecorded
History of Mental Illness	22 (16%)	2	113
Alcohol Use	40 (31%)	---	89
Other Drug Use	1 (1%)	---	89
Previous suicide attempt	30 (18%)	15	120

Source: GPD statistics

Correlates of suicidal ideation and suicide attempts among youth: Data from the Guam Youth Risk Behavior Survey (YRBS)

The 2007 Guam YRBS asked 4 questions on suicide:

1. During the past 12 months, did you ever seriously consider attempting suicide?
2. During the past 12 months, did you make a plan about how you would attempt suicide?
3. During the past 12 months, how many times did you actually attempt suicide?
4. If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?

The responses to these questions provide insights into the extent of suicidal ideation and suicide attempts among youth in school. Because the survey is conducted nationally, and data is weighted for each survey site, it is possible to compare Guam data with US averages.

Table 8 compares Guam data with US averages for each of these 4 questions on suicide. Guam surpasses the US average in all four indicators, signifying an elevated likelihood of suicidal ideation and suicide attempts among youth on Guam. This reaffirms the appropriateness of the identified target population (those between 10-24 years of age) of the suicide prevention grant.

Figures 18 and 19 illustrate the prevalence of suicidal ideation and suicide attempts among high school youth disaggregated by sex and race. For this age group, females are almost twice as likely as males to think about suicide, make a plan to commit suicide and attempt suicide. Chamorros and Micronesian Islanders are most likely to think about suicide and make a plan to commit suicide, but Micronesian Islanders exhibit the highest likelihood to actually attempt suicide. This finding is

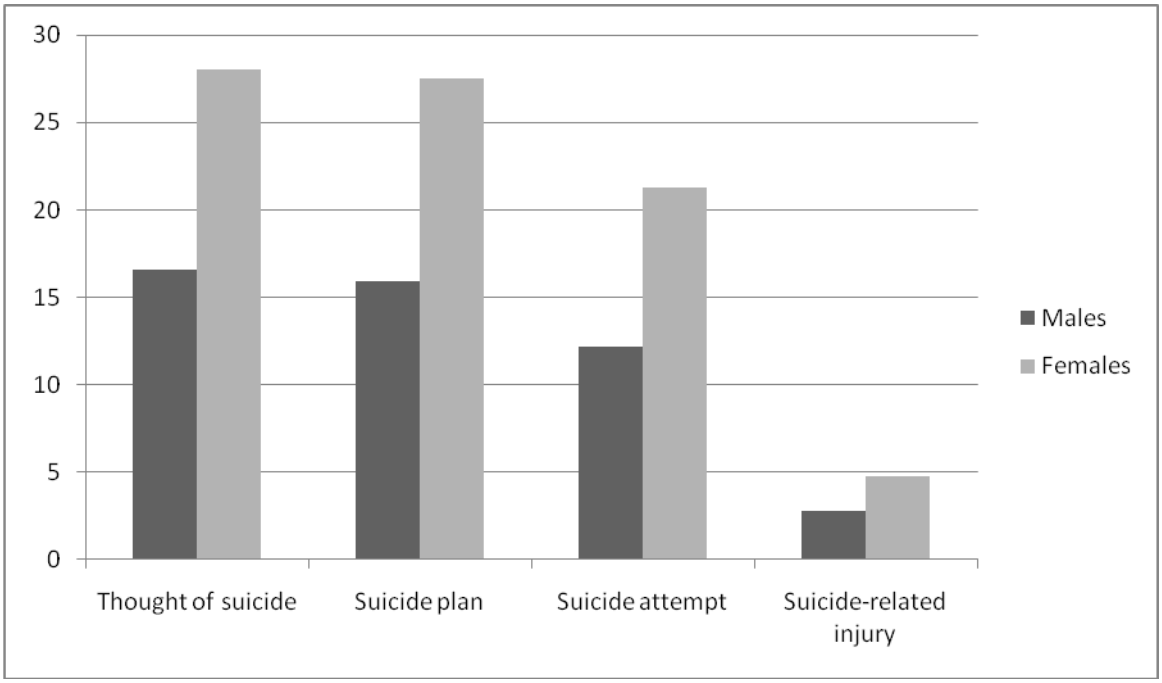
consistent with data from DPHSS that identifies Micronesian Islanders, particularly Chuukese, at the highest risk for death by suicide.

Table 8. Prevalence of suicidal ideation and suicide attempts among high school youth, Guam vs. US average, 2007

Indicator (within the past 12 months preceding the survey)	Total USA (%)	Total Guam (%)	Statistically significant difference?
Percentage of students who seriously thought about killing themselves	14.5	22.0	YES
Percentage of students who made a plan about killing themselves	11.3	21.4	YES
Percentage of students who tried to kill themselves	6.9	16.9	YES
Percentage of students who made a suicide attempt that resulted in an injury, poisoning or overdose that had to be treated by a doctor or nurse	2.0	3.8	YES

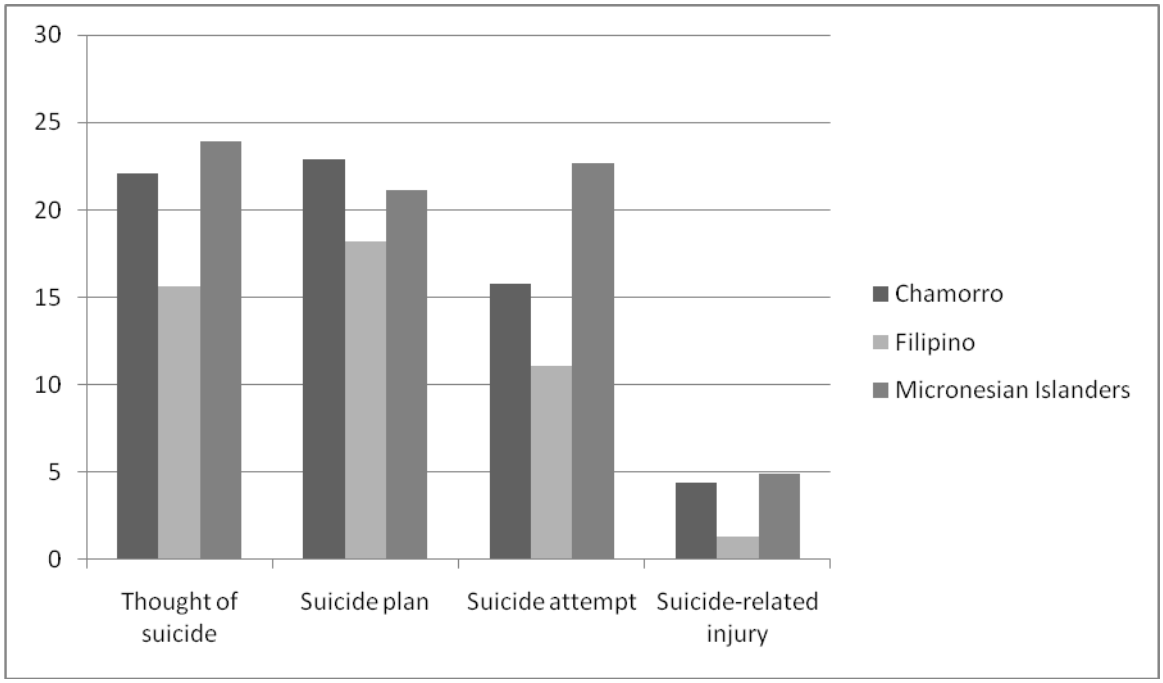
Source: GPSS, 2007 YRBS

Figure 18. Suicidal ideation and suicide attempts by sex, high school, Guam, 2007



Source: GPSS, 2007 YRBS

Figure 19. Suicidal ideation and suicide attempts by ethnicity, high school, Guam, 2007



Source: GPSS, 2007 YRBS

Because GPSS made the 2007 database available to us, we were able to conduct tests for correlation using chi-square analysis on a number of relevant factors that include body image, sexual history, violent behavior and the use of tobacco, alcohol and illegal drugs. Table 9 summarizes the results of this statistical analysis. Of the 11 potential attributes, 10 were significantly correlated with suicidal ideation and suicide attempts. The single uncorrelated factor was describing oneself as overweight (body image). This information provides insights into the types of behaviors to target when developing suicide prevention interventions.

Table 10 shows the prevalence of these attributes on Guam as compared to the US averages. Five of the attributes---(1) hit by a boyfriend/girlfriend in the past year, (2) forced to have sex, (3) felt sad for at least 2 weeks over the past year, (4) current daily smoker and (5) current marijuana use---have prevalence rates that are statistically significantly higher on Guam than the US. This indicates the need for integrated suicide prevention approaches that also address skills in developing healthy relationships, physical and sexual violence prevention, tobacco and substance abuse prevention and control and aggressive screening and treatment for depressive symptoms.

Table 9. Potential correlates of suicidal ideation and suicide attempts, high school, Guam, 2007

Factor	Thought about suicide	Made a plan to commit suicide	Attempted suicide
Hit by a BF/GF within the past year	YES	YES	YES
Forced to have sex	YES	YES	YES
Sad for at least 2 weeks over the past 12 mos.	YES	YES	YES
Describe self as gay, lesbian, bisexual	YES	YES	YES
Current smoker	YES	YES	YES
Daily smoker	YES	YES	YES
Current alcohol use	YES	YES	YES
Binge drinking	YES	YES	YES
Current Marijuana use	YES	YES	YES
Lifetime ice use	YES	YES	YES
Overweight	NO	NO	NO

Source: GPSS, 2007 YRBS

Table 10. Comparison of prevalence of potential correlates, Guam vs. US averages, 2007

Factor	US (average) (%)	Guam (%)	Statistically higher on Guam
Hit by a BF/GF within the past year	9.9	13.3	**YES**
Forced to have sex	7.8	12.9	**YES**
Sad for at least 2 weeks over the past 12 mos.	28.5	41.5	**YES**
Describe self as gay, lesbian, bisexual	---	7.4	---
Current smoker	20.0	23.1	NO
Daily smoker	12.4	17.0	**YES**
Current alcohol use	44.7	34.9	NO
Binge drinking	26.0	19.2	NO
Current Marijuana use	38.1	45.5	**YES**
Lifetime ice use	4.4	5.9	NO
Overweight	15.8	15.3	NO

Note: "---"= data not available; this question was not asked in all States and Territories, hence no US average is available
Source: GPSS, 2007 YRBS

CONCLUSIONS AND RECOMMENDATIONS

Using multiple data sources, this Profile provides a sound initial overview of suicide on Guam. The key findings are:

- Suicide is prevalent on Guam, with an average of 1 suicide death occurring every 2 weeks. Guam's suicide rate is significantly higher than countries like the Philippines, but lower than the rates seen in China, Japan and South Korea.

- Suicide is the 5th leading cause of death on the island.

- Suicide deaths are highest among youth and young adults, with about 60% of all suicide deaths occurring in those under the age of 30 years. This pattern is unlike that seen in Japan and South Korea, where suicide deaths occur predominantly among older adults.

- Micronesian Islanders, particularly Chuukese, are significantly over-represented in suicide deaths and constitute a critical target group for suicide prevention.

- Suicide attempts are at least 1.5 to 2.5 times higher than suicide deaths.

- While suicide attempts are similar for males and females, suicide deaths occur predominantly among males. This reflects the difference in choice of suicide method, with males preferring hanging while females more often choosing drug overdose or cutting.

- Family disputes and interpersonal relationship conflicts are most often implicated as the immediate circumstance surrounding a suicide attempt or death.

- Alcohol is implicated in close to one-third of all suicide-related incidents.

- A history of mental illness is implicated in 16% of suicide-related incidents.

- About 18% of suicide-related incidents are repeat attempts.

- Among high school youth, the risks of suicidal ideation and suicide attempts are significantly higher than US averages. For this age group, females are almost twice as likely as males to think about suicide, make a plan to commit suicide and attempt suicide. Chamorros and Micronesian Islanders are most likely to think about suicide and make a plan to commit suicide, but Micronesian Islanders exhibit the highest likelihood to actually attempt suicide.

- Physical and sexual violence, sexual orientation, sadness, and tobacco and illicit drug use are correlated with suicidal ideation and suicide attempts among youth.

The data have implications for suicide prevention approaches, such as:

- Youth and young adults are a valid target for prevention efforts.

- Micronesian Islanders, especially Chuukese, constitute a critical target group for prevention intervention.

- Strategies that may be important for suicide prevention include:

    - Empowering young people to develop and nurture healthy relationships
    - Providing conflict management skills
    - Assisting young people to come to terms with their sexual orientation
    - Preventing physical and sexual violence
    - Preventing and controlling tobacco, alcohol and illicit drug use
    - Aggressively screening to recognize and treat mental illness and depression

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ANNEX: List of tables and figures