

**Second Generation HIV Surveillance Survey of  
Women at the Majuro Hospital Prenatal Clinic,  
Republic of the Marshall Islands – 2006**

Report prepared by the Marshall Islands SGS Management Team



***Ajmuur Ej Adwōj Jimor Eddo***  
**(Health is a Shared Responsibility)**

SGS Management team members are: Lina Hills, Dr. Zachraias Zachraias, Wilbur Heine, Dr. Hassan Balachandra, Dr. Kevin Basili, Dr. Godfrey Waidubu, Sala Elbourne, Hellen Jetnil-David, Emi Chutaro, Irene Paul, Oling de Brum.

These data were presented in part at the XVII International AIDS Conference in Mexico City, Mexico by Dr. Zachraias. The abstract (#TUPE0267) is available online at <http://www.aids2008.org/mainpage.aspx?pageld=174>

### **Acknowledgement**

The SGS management team would like to acknowledge the staff nurses at Majuro Hospital for assisting with this survey, the Secretariat for the Pacific Community (Kamma Blair and Tim Sladden) for providing funding and technical assistance, the U.S. Centers for Disease Control and Prevention (Drew Voetsch and Victoria Rayle) for technical assistance, and the 346 women pregnant who graciously completed this survey.

## **List of Abbreviations**

CDC	Centers for Disease Control and Prevention
HIV	Human Immunodeficiency Virus
RMI	Republic of the Marshall Islands
SGS	Second Generation HIV Surveillance
SPC	Secretariat of the Pacific Community
STD	Sexually transmitted disease

## Table of Contents

Acknowledgement.....	2
Executive summary.....	5
Introduction.....	7
Republic of the Marshall Islands background.....	7
SGS background.....	7
Methods.....	7
Sampling methods.....	7
Eligibility criteria.....	7
Survey.....	7
Specimen collection and testing.....	8
Database.....	8
Data analysis.....	8
Results.....	9
Demographic characteristics.....	9
Pregnancy Characteristics.....	9
Sexual behaviors and STD symptoms.....	9
Substance use and tattooing.....	9
HIV and AIDS knowledge and attitudes.....	10
HIV prevention activities and access to testing.....	10
Stigma and Discrimination.....	10
Laboratory results.....	10
Discussion.....	11
Conclusion.....	11
References.....	24

## Executive summary

The Republic of the Marshall Islands (RMI) is an independent nation located in the North Pacific Ocean midway between Hawaii and Australia. The 2006 population of RMI is approximately 52,163 persons, most of whom live on Majuro Atoll, the national capital, and Ebeye on Kwajalein Atoll.

There is limited understanding of knowledge and behaviors related to HIV and other sexually transmitted diseases (STD) in RMI. The RMI Ministry of Health, in collaboration with the Secretariat of the Pacific Community and with technical assistance from the U.S. Centers for Disease Control and Prevention, conducted a Second Generation HIV Surveillance (SGS) survey. This report summarizes the results of the SGS survey of pregnant women at the Majuro Hospital Antenatal Clinic.

A total of 346 pregnant women were surveyed from May through September 2006. Health staff at Majuro Hospital administered the questionnaire to assess sexual history and HIV knowledge and attitudes. Blood and urine specimens were collected from participants for STD testing.

The key findings of the survey were:

- 30% received prenatal care in the first trimester
- 28% planned the current pregnancy
- 19% had 5 or more lifetime sex partners
- 20% reported 2 or more sex partners in the last 12 months
- 32% had ever used a male condom
- 12% had previously been diagnosed with an STD
- None of the women tested for HIV were positive
- 25% were positive for Chlamydia
- Prior to the SGS survey, 29% had been tested for HIV
- Current and lifetime drug and alcohol use was low
- There were opportunities to increase knowledge related to HIV transmission and prevention
- Beliefs that create stigma for persons living with HIV were widespread

The survey was limited to women in the capital, Majuro, and may not be representative of women in Ebeye or the Outer Islands. The results of this survey can inform ongoing HIV/STD education campaigns. Screening pregnant women for STDs, including HIV, is an essential component of disease control and prevention of maternal to child transmission.

## List of tables

Table 1. Summary of methods for SGS prenatal survey.....	8
Table 2. Demographic characteristics of respondents to the SGS prenatal survey.....	13
Table 3. Reproductive characteristics of respondents to the SGS prenatal survey.....	14
Table 4. Sexual history of respondents to the SGS prenatal survey.....	15
Table 5. Use of drugs or alcohol among respondents to the SGS prenatal survey.....	16
Table 6. Knowledge of HIV prevention among respondents to the SGS prenatal survey (n=346).....	17
Table 7. HIV prevention activities among respondents to the SGS prenatal survey (n=346).....	18
Table 8. United Nations General Assembly Special Session on HIV and AIDS (UNGASS) and Millennium Development Goal (MDG) indicators for pregnant women.....	19

## List of Figures

Figure 1. Degree of agreement with the statement, “I would be willing to share a meal with a person whom I knew had HIV or AIDS”.....	20
Figure 2. Degree of agreement with the statement, “If I knew a shopkeeper or food seller had HIV, I would still buy food from them”.....	20
Figure 3. Degree of agreement with the statement, “If a relative of mine became ill with HIV, the virus that causes AIDS, I would be willing to care for them in my household.”.....	21
Figure 4. Degree of agreement with the statement, “If a member of my family became ill with HIV, the virus that causes AIDS, I would want it to remain secret.”.....	21
Figure 5 Degree of agreement with the statement, “All newcomers to the Marshall Islands should be tested for HIV.”.....	22
Figure 6. Degree of agreement with the statement, “The names of all persons infected with HIV should be displayed in a public place for everyone to see.”.....	22
Figure 7. Degree of agreement with the statement, “All persons infected with HIV should live apart from the general community.”.....	23
Figure 8. Degree of agreement with the statement, “Knowingly passing HIV onto someone else should be a criminal offence.”.....	23

## **Introduction**

### ***Republic of the Marshall Islands background***

The Republic of the Marshall Islands (RMI) is an independent nation located in the North Pacific Ocean midway between Hawaii and Australia. RMI is comprised of 1225 islands and islets that constitute the twenty-nine atolls in the Eastern Ratak (Sunrise) and the Western Ralik (Sunset) chains. The land area is less than 180 square kilometers scattered over two million square kilometers of ocean. The 2006 population of RMI is approximately 52,163 persons. The two main population centers are Majuro, the national capital, where approximately half of the population resides and Ebeye on Kwajalein Atoll, where approximately 20% of the population resides.

### ***SGS background***

There is limited information in the Pacific regarding sexual behavior, and the prevalence of HIV and other STDs. This information is necessary to effectively respond to the challenges of HIV and other STDs by ensuring responses are evidence-based and appropriately targeted. The Secretariat of the Pacific Community (SPC) has supported Second Generation Surveillance (SGS) surveys across the region to provide baseline data on the prevalence of HIV, STDs and related risk behaviors in various population groups. The collected data will be used to assist development of prevention programs and for later monitoring of trends of infection and risk behavior in selected populations.<sup>1</sup> In RMI, SGS surveys were conducted among pregnant women, youth (15-24 years), and commercial sex workers. This report summarizes the results of the survey of pregnant women.

## **Methods**

The survey methods are summarized in table 1.

### ***Sampling methods***

The SGS-Prenatal Survey was conducted on Tuesdays from May through September, 2006 among pregnant women at first booking to the Majuro Hospital prenatal clinic (PNC). Sample size was calculated using 1999 RMI population data. There were approximately 6200 women of childbearing age (15-44 years) with approximately 90 live births per month in Majuro. A target sample size of 350 women was established based on power to detect 1% or less error of the observed sample HIV prevalence, that is a 1 in 100 chance of failing to detect the presence of HIV in the sample if it is truly present in the antenatal population. All women who attended the weekly Majuro Hospital prenatal clinic (PNC) were asked to participate.

### ***Eligibility criteria***

All pregnant women presenting to the PNC for their first prenatal visit were eligible to participate.

### ***Survey***

Participation in the survey was voluntary. After obtaining informed consent, participants were interviewed by trained staff using a standard 24 page questionnaire (Appendix A). The questionnaire is based on the Family Health International 2000 HIV/AIDS/STD Behavioral Survey for Adults and the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System Phase 5 core questionnaire. It was modified for use in the Pacific by the University of New South Wales in association with WHO & SPC and further adapted for use in RMI by SPC. The survey includes questions regarding demographic information, sexual history, STD history and current symptoms, alcohol and drug use, and HIV knowledge and attitudes.

### **Specimen collection and testing**

- Blood samples were collected and tested for HIV and STD testing (*Treponema Pallidum* (syphilis), hepatitis B (HBV). All blood tests will be performed onsite at the laboratory according to standard Marshall Islands testing algorithms. For syphilis, women were considered to be a positive case if both the rapid plasma reagin (RPR) and *Treponema pallidum* particle agglutination tests were reactive.
- Urine samples were collected and frozen at -5° and sent in batches of approximately 120 samples to the Department of Microbiology, Royal Women's Hospital, Melbourne, Australia for *Chlamydia Trachomatis* (chlamydia) and *Neisseria Gonorrhoea* (gonorrhoea) testing using polymerase chain reaction (PCR).
- Laboratory test results were provided to the participants. Participants received a survey identification code number recorded on all forms and specimen containers (linked confidential testing). Women returning for their second prenatal visit who were diagnosed with HIV or STDs received appropriate follow-up, treatment and management according to local treatment protocols.

### **Database**

Survey data and laboratory results were entered into an Epi-Info version 3.4.3 database. Data were entered by three persons trained by the MOH. To ensure data quality, a 10% random sample of interview forms were double entered and checked for errors.

### **Data analysis**

Data were analyzed using Epi-Info version 3.4.3. Graphs were created using Microsoft Excel.

Table 1. Summary of methods for SGS prenatal survey

Population	Women presenting to the Majuro Hospital Prenatal Clinic (PNC) for the first appointment for the current pregnancy
Survey type	HIV and STD Prevalence Survey
Target sample size	350 participants in Majuro
Final sample size	346 participants in Majuro
Sampling method	Consecutive recruitment of all women attending PNC until the target sample size (350) was reached
Site locations	Majuro Prenatal Clinic
Type of consent	Oral
Administration of questionnaire	Interviewer administered by nurses from the Majuro Clinic
Information collected	Behavioral information – demographics, pregnancy characteristics, sexual behaviors, STD history, alcohol, other drug use and tattooing, HIV knowledge and attitudes, and stigma and discrimination
Laboratory testing	Biological specimens – Blood sample (to test for HIV, HBV and syphilis) Urine sample (to test for Chlamydia and gonorrhoea)
Data collection period	May 30, 2006 – September 26, 2006



## **Results**

### ***Demographic characteristics***

Of the 347 women who were invited to take part in the survey, one woman refused to participate. The median age of participants was 23 years (range: 14–41 years) with 59.5% of participants aged 24 years or younger. The majority of respondents were born in the Marshall Islands (340). The remaining six women were born on Kirabati (3), Philippines (1), Hawaii (1), and Saipan (1) and had lived in the Marshall Islands for an average of 14.5 years (range 5-24 years). By ethnicity, 334 (96.5%) identified as Marshallese, 10 (2.9%) identified as Micronesian, 1 (0.3%) identified as Filipina, and 1 (0.3%) identified as other but did not specify her ethnicity (Table 2). Although 78% of women surveyed had completed high school or higher education, more than half were not employed (52.3%).

A total of 68 (19.7%) women reported having ever been married. Among married women, the median age at marriage was 22 years (range 16-40 years). Over half of the women surveyed (56.8%) were unmarried and living with their male sex partner at the time of the survey.

### ***Pregnancy Characteristics***

Of the women surveyed who responded to the pregnancy questions, 244 (71.9%) were previously pregnant for more than 20 weeks, 55 (16%) had at least one miscarriage, and 60 (17.5%) had at least one preterm birth; the prevalence of these characteristics increasing with maternal age (Table 3).

For the current pregnancy, nearly all women (99%) were interviewed at their first prenatal visit. Approximately 30% of women were in their first trimester, 41% in their second trimester, and 29% were in their third trimester at the time of interview. Overall, 28% of women reported that the current pregnancy was planned, although only 18% of women less than 20 years old reported a planned pregnancy.

### ***Sexual behaviors and STD symptoms***

The median age at first sexual intercourse was 17 years (range 3-31). Of the 317 women who could recall their lifetime number of sexual partners, the median number of partners was three (Table 4). Nearly one in five women (19.7%) reported they had two or more partners in the last 12 months.

Among the 316 (92%) of women who had heard of a male condom, approximately one-third had ever used a male condom. In contrast, of the 52 (15%) of women who had heard of the female condom, none had used a female condom. In the 12 months before interview, 263 (76%) women reported one male sex partner and 68 (20%) reported two or more male sex partners. Most women (82%) were still in a relationship with the father of their unborn child.

A total of 40 (12%) women reported ever having been diagnosed with an STD, with syphilis being the most commonly reported. The two most commonly reported symptoms by women for the previous 12 months were vaginal discharge (10.4%) and burning or sharp pain on urination (13.3%).

### ***Substance use and tattooing***

Of the 302 women who responded to the question on alcohol consumption, 232 (76.8%) reported never consuming alcohol in the 12 months before becoming pregnant (Table 5). Among the 70 women who reported any alcohol consumption in the 12 months before becoming pregnant, 22 (31.9%) reported 5 or more drinks on a typical day and 21 (30.4%) had 5 or more drinks on one occasion either daily or weekly. Lifetime tobacco use, including chewing tobacco, was reported by 64 (19%) women, lifetime betel nut use was reported by 22 (6%) women, and lifetime marijuana use was reported by 9 (3%) women.

Overall 139 (40.2%) women had a permanent tattoo. Of these, 107 (78.7%) were received the permanent tattoo from a friend or relative.

### ***HIV and AIDS knowledge and attitudes***

A total of 308 (89.5%) of women had heard of HIV. Overall, 163 (47.1%) correctly identified that HIV is the virus that causes AIDS. Nineteen women reported that they knew someone who is infected with HIV, or who has AIDS or has died of an AIDS-related condition. Of these, 2 women reported that this person was a close relative and 15 reported that this was a close friend.

Knowledge of HIV was highest for sexual transmission of HIV. More than 80% of women who had heard of HIV correctly responded to questions on condom use, mutual monogamy and abstaining from sexual intercourse (Table 6). An exception was knowledge of increased risk of transmission through anal sex where less than 60% agreed that the risk of transmission could be reduced by avoiding anal sex. Knowledge was lowest for misconceptions related to HIV transmission. Nearly half of women believed only gay men can get HIV and that a healthy looking person could have HIV, one-third believed HIV could be transmitted by mosquito bites and one quarter thought HIV could be contracted by sharing a meal with someone who has HIV.

Overall, 279 (81%) knew that a pregnant woman with HIV could pass the virus to her unborn child and 260 (75%) knew that a pregnant woman with HIV could pass the virus to her unborn child through her breast milk. More than half of the women believed that only gay men could be infected with HIV.

### ***HIV prevention activities and access to testing***

The most commonly reported method of receiving HIV prevention and education messages was by radio (79%), newspapers or magazines (65%), billboards/signs/posters (59%), brochures/leaflets (59%), and television (45%). Fewer than 15% of women had participated in an education program.

Overall, 243 (70%) believed they could get a confidential HIV test and of these women, 80 (23%) had been tested for HIV. Among the 80 women who had been tested for HIV, 20 (25%) had been tested in the past year, 23 (29%) took the test voluntarily, 43 (54%) received information about HIV before their test, 40 (51%) received the results of their HIV test, and 32 (41%) received information about HIV after their test.

### ***Stigma and Discrimination***

Most women surveyed reported they would be unwilling to share a meal with someone with HIV (82%) or buy food from a shopkeeper with HIV (88%). More than half of the women surveyed reported they would care for a relative with HIV in their household, but nearly 60% would want it to remain a secret. Nearly all women believed that newcomers to RMI should be tested for HIV. Nearly half of women believed that the names of HIV-positive persons should be made public, nearly 80% believed that HIV-positive persons should live apart from the community, and nearly 90% believed that knowingly passing HIV to someone should be a crime.

### ***Laboratory results***

Blood was collected for 342 women. Of the 339 specimens tested for HIV and hepatitis B, none were positive for HIV and 17 (5%) were positive for hepatitis B. Of the 338 women tested for syphilis by RPR, 44 (13%) were positive. Of these, 42 were confirmed by TPPA test.

Urine was collected for 342 women. Of the 323 specimens tested for Chlamydia and gonorrhea, 81 (25.1%) were positive for Chlamydia and 8 (2.5%) were positive for gonorrhea.

## Discussion

The SGS survey among pregnant women provides important data for HIV and STD prevention and control in RMI. RMI has a high total fertility rate (4.4) and general fertility rate (135/1000). Pregnant women represent an important group for testing and treatment of STDs to reduce the risk of complications to the unborn child. Monitoring the prevalence of STDs in this group is important because pregnant women are generally representative of the sexually active general population. A previous STD survey among pregnant women in Pacific Island Countries and Territories has shown a high prevalence of Chlamydia and other STDs.<sup>2</sup> In 2004, none of the 3089 women tested for HIV in RMI had positive results.<sup>3</sup> Similarly, none of the pregnant women who were tested for HIV as part of the SGS survey had positive results. From 1984, when the first case of HIV was diagnosed in RMI, through 2007, there were 14 cases of HIV identified in RMI. These data suggest that the HIV prevalence in the general Marshallese population is very low.

In contrast, 25.1% of women were diagnosed with Chlamydia, 5.6% with syphilis and 2.5% with gonorrhea. Similarly, 71 (6%) of the 1144 pregnant women screened for syphilis were positive by RPR in 2004.<sup>3</sup> Because of the risk of congenital syphilis, early diagnosis and treatment of syphilis is critical.<sup>4</sup> However, only 30% of women surveyed had prenatal care in the first trimester. At least 13% of women surveyed reported an STD symptom in the 12 months before interview and 12% reported having ever been diagnosed with an STD. Although syphilis was the most commonly reported STD to have been previously diagnosed, it should be noted that there has been no testing in RMI for Chlamydia and gonorrhea.

Respondents reported several high risk behavior for STD infection, particularly in the absence of condom use. More specifically, nearly one fifth of women of women reported having two or more partners, 11% of women reported they had casual sex partners, 2% reported commercial sex partners and 2% reported a concurrent sexual relationship in the 12 months prior to being surveyed. In addition, only one-third of women who had heard of male condoms had ever used one and only 15% of women had heard of the female condom. In Majuro, free condoms are available through several non-governmental organizations.

The high proportion of unplanned pregnancies and late attendance for antenatal care are two other areas of concern. Overall, 70% of pregnancies were unplanned, and 83% of pregnancies among teenagers were unplanned. Over 70% of women delayed seeking antenatal care until the second or third trimester of pregnancy. This raises a concern about the effectiveness of current family planning strategies for women of childbearing age in Majuro. In addition, new strategies may needed to encourage women seek antenatal care earlier in their pregnancy to enable screening for complications of pregnancy and facilitation of appropriate interventions if required.

While the majority of women had heard of HIV and AIDS, 11% of women had never heard of this infectious disease. Among those who had heard of HIV, only 53% knew it was the virus that causes AIDS, 36% believed that HIV could be transmitted by mosquitoes, 45% did not believe a healthy looking person could be infected with HIV, and 54% believed that only gay men got HIV. These and other misconceptions could be highlighted in ongoing educational campaigns conducted by the MOH. Most women heard messages about HIV through the radio (89%) or newspapers (76%). Less than 20% had participated in an education program such as peer education or a workshop. Women surveyed, in

general, agreed with statements that indicated widespread stigma towards persons with HIV. For example, nearly half strongly agreed that HIV-positive persons should live apart from the community, and 29% strongly disagreed that they care for an HIV-positive relative in their household. Among women who heard of HIV, 80% believed they could get confidential HIV testing, and of these, 29% had been tested.

## **Conclusion**

A limitation of the SGS Prenatal Survey is that it was only conducted in Majuro and results of prenatal surveys in Ebeye or the Outer Islands may differ. However, the SGS Prenatal Survey is the first comprehensive evaluation of HIV and STI prevalence, HIV behavioral risk, and HIV knowledge and attitudes among pregnant women in RMI. This survey provides valuable data to inform prevention activities and clinical practice for prenatal care in Majuro, Ebeye, and the Outer Islands. Future SGS surveys can measure the effectiveness of interventions conducted in response to these survey data.

Table 2. Demographic characteristics of respondents to the SGS prenatal survey

	Number	(Percent)
Age group		
14-19	82	(23.7)
20-24	124	(35.8)
25-29	82	(23.7)
30-34	39	(11.3)
35-39	16	(4.6)
40-44	3	(0.9)
Ethnicity		
Marshallese	334	(96.5)
Micronesian	10	(2.9)
Other	2	(0.6)
Village		
Delap	91	(26.7)
Uliga	26	(7.6)
Rita	67	(19.6)
Long Island	20	(5.9)
Ajeltake	26	(7.6)
Laura	35	(10.3)
Jenrok	34	(10.0)
Small Islands	17	(5.0)
Rairok	25	(7.3)
Highest level of education completed		
Elementary school or less	49	(14.2)
Middle school	28	(8.1)
High school	220	(63.6)
Higher (e.g., college or technical school)	49	(14.2)
Occupation		
Clerical/Office work	9	(2.6)
Farmer	1	(0.3)
Foodhandler/Cook	7	(2.0)
Health care worker	3	(0.9)
Hospitality/Tourism	2	(0.6)
Professional	11	(3.2)
Student	33	(9.5)
Retail/Sales	12	(3.5)
Housewife/Domestic help/Maid/Nanny/	81	(23.4)
Not employed	181	(52.3)
Other	6	(1.7)
Religion		
Catholic	20	5.8%
Protestant	154	44.6%
Ba'hai	1	0.3%
Assembly of God	75	21.7%
Other	95	27.5%
Current living situation		
Currently married, living with male spouse	66	(19.1)
Currently married, living with other male sex partner	4	(1.2)
Currently married, not living with any sex partner	5	(1.4)
Not married, living with male sex partner	196	(56.8)
Not married living with female sex partner	8	(2.3)
Not married not living with any sex partner	66	(19.1)

Table 3. Reproductive characteristics of respondents to the SGS prenatal survey

Pregnancy characteristics	Maternal age						Total	
	<20 years		20-<30 years		≥30 years		n	(%)
	n	(%)	n	(%)	n	(%)		
<b>Number of previous pregnancies</b>								
0	54	(66.7)	43	(20.9)	3	(5.3)	100	(29.1)
1	18	(22.9)	65	(31.6)	2	(3.5)	85	(24.7)
2	8	(9.9)	38	(18.4)	7	(12.3)	53	(15.4)
3	0	(0)	32	(15.5)	5	(8.8)	37	(10.8)
4 or more	1	(1.2)	28	(13.7)	40	(70.2)	69	(20.0)
<b>Miscarriage</b>								
0	75	(92.6)	174	(84.5)	40	(70.2)	289	(84.0)
1	5	(6.2)	27	(13.1)	13	(22.8)	45	(13.1)
2 or more	1	(1.2)	5	(2.4)	4	(7.1)	10	(2.9)
<b>Preterm births</b>								
0	76	(93.8)	162	(79.0)	44	(78.6)	282	(82.5)
1	4	(4.9)	28	(13.7)	9	(16.1)	41	(12.0)
2 or more	1	(1.2)	15	(7.4)	3	(5.4)	19	(5.5)
<b>Live births</b>								
0	59	(72.8)	44	(21.4)	6	(10.5)	109	(31.7)
1	19	(23.5)	73	(35.4)	2	(3.5)	94	(27.3)
2 or more	3	(3.7)	89	(43.2)	49	(86.0)	141	(41.0)
<b>Trimester of current pregnancy</b>								
1	26	(31.7)	53	(25.7)	12	(20.7)	91	(29.6)
2	36	(43.9)	70	(34.0)	21	(36.2)	127	(41.4)
3	20	(24.4)	83	(40.3)	25	(43.1)	89	(29.0)
<b>First prenatal visit at interview</b>								
Yes	81	(98.8)	204	(99.0)	56	(98.2)	341	(98.8)
No	1	(1.2)	2	(1.0)	1	(1.8)	4	(1.2)
<b>Planned pregnancy</b>								
Yes	14	(17.5)	61	(29.6)	21	(36.2)	96	(27.9)
No	66	(82.5)	140	(68.0)	36	(62.1)	242	(70.3)
Don't know/refused	0	(0)	5	(2.5)	1	(1.7)	6	(1.8)

Table 4. Sexual history of respondents to the SGS prenatal survey

	Number	(Percent)
Lifetime male sex partners		
1	71	(20.9)
2	53	(15.3)
3	48	(13.9)
4	45	(13.0)
5	33	(9.5)
6-9	40	(11.6)
10+	26	(7.5)
Don't remember/refused	30	(8.7)
Heard of male condom	316	(91.6)
Ever used a male condom	109	(31.5)
Heard of female condom	52	(15.2)
Ever used a female condom	0	(0)
Number of male sex partners in past 12 months		
1	263	(76.2)
2 or more	68	(19.7)
Don't remember/refused	6	(1.7)
Still in a relationship with the father of unborn child	285	(82.4)
Any live-in partners	97	(28.1)
Any commercial sex partners in past 12 months	6	(1.7)
Any casual sex partners in past 12 months	39	(11.3)
≥2 partners during the same time period in past 12 months	7	(2.0)
Forced sex by any partner	23	(6.6)
Heard of sexually transmitted diseases	323	(93.4)
Ever been diagnosed with a sexually transmitted disease	40	(11.6)
Chlamydia	9	(2.6)
Gonorrhea	5	(1.4)
Syphilis	26	(7.5)
Genital herpes	0	(0)
Genital warts	0	(0)
HIV	0	(0)
Trichomonas	2	(0.6)
Any STD symptoms in past 12 months		
Genital discharge from the vagina	36	(10.4)
Genital ulcer or sore in or near the vagina	7	(2.0)
Burning or sharp pain on urination?	46	(13.3)
Rash or itching in genital area?	29	(8.4)

Table 5. Use of drugs or alcohol among respondents to the SGS prenatal survey

	Number	(Percent)
Alcohol use in the 12 months before pregnancy		
4 or more times a week	5	(1.7)
2 to 3 times a week	26	(8.6)
2 to 4 times a month	11	(3.6)
Monthly or less	25	(8.3)
Never	232	(76.8)
Don't know/no answer/refused	3	(1.0)
Lifetime use		
Tobacco (including chewing)	64	(18.5)
Betel Nut	22	(6.4)
Marijuana	9	(2.6)
Kava/Sakau	6	(1.7)
Speed/Base/Other amphetamines	1	(0.3)
Ice/ Crystal meth amphetamines	1	(0.3)
Ecstasy	1	(0.3)
Inhalants inc. gas	1	(0.6)
LSD/Acid/Hallucinogens	1	(0.3)
Cocaine/Crack	1	(0.3)
Heroin	1	(0.3)
Steroids (non-medical use)	1	(0.3)
Other drugs	4	(1.2)



Table 6. Knowledge of HIV prevention among respondents to the SGS prenatal survey (n=346)

	Number who believed the statement was true	(Percent)
A person can reduce their chances of getting HIV, the virus that causes AIDS, by using a condom correctly every time they have sex.	282	(81.5)
A person can reduce their chance of getting HIV, the virus that causes AIDS, by avoiding anal sex.	203	(58.7)
A person can get HIV, the virus that causes AIDS, by sharing a meal with someone who is infected with HIV or AIDS.	87	(25.1)
A person can get HIV, the virus that causes AIDS, from mosquito bites.	111	(32.1)
A person can reduce their chance of getting HIV by having only one, uninfected, faithful sex partner.	283	(81.8)
A person can reduce their chance of getting HIV by abstaining from sexual intercourse.	290	(83.8)
A healthy looking person can be infected with HIV.	172	(49.7)
A person can get HIV by having injections with a needle or syringe that has already been used by someone else.	266	(76.9)
A pregnant woman who has HIV or AIDS can pass HIV on to her unborn baby.	279	(80.6)
A woman who has HIV or AIDS can pass HIV on to her newborn baby through breastfeeding.	260	(75.1)
A person can get HIV from the saliva of someone who has HIV or AIDS.	108	(31.2)
Only gay men get HIV.	164	(47.4)

Table 7. HIV prevention activities among respondents to the SGS prenatal survey (n=346)

	Number	(Percent) *
Participated in an HIV peer education program	51	(14.7)
Received STD screening	171	(49.4)
Heard messages about HIV or AIDS on radio	274	(79.2)
Seen messages about HIV or AIDS on TV	155	(44.8)
Read messages about HIV or AIDS in newspapers or magazines	223	(64.5)
Seen messages about HIV or AIDS on billboards, posters/signs	204	(59.0)
Seen messages about HIV or AIDS in movie theatres	100	(28.9)
Obtained information from leaflets/brochures/printed booklets	203	(58.7)
Obtained information on HIV or AIDS from the internet	43	(12.4)
Seen the "Mr. Right Guy" film or CD?	29	(8.4)
Participated in an HIV education program (e.g., workshop, school program)	61	(17.6)
Attended an HIV community event (e.g., World AIDS Day, public meeting, drama production)	84	(24.3)
Discussed HIV or AIDS with others such as friends, family members and work colleagues	127	(36.7)

Table 8. United Nations General Assembly Special Session on HIV and AIDS (UNGASS) and Millennium Development Goal (MDG) indicators for pregnant women

	15 to 24 yrs (n=205)		25 yrs and older (n=140)	
	n	(%)	n	(%)
UNGASS 7. Percentage of women aged 15-49 who received an HIV test in the last 12 months and who know their results	11	(5.4)	4	(2.9)
UNGASS 13. Percentage of antenatal women aged 15-24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission*	79	(38.5)		
UNGASS 15. Percentage of antenatal women aged 15-24 who have had sexual intercourse before the age of 15	20	(9.8)		
UNGASS 16. Percentage of antenatal women aged 15-49 who have had sexual intercourse with more than one sexual partner in the past 12 months	55	(26.8)	13	(9.3)
UNGASS 22. Percentage of young women aged 15-24 who are HIV infected*	0	(0)		

\*Millennium Development Goal (MDG)

Figure 1. Degree of agreement with the statement, "I would be willing to share a meal with a person whom I knew had HIV or AIDS".

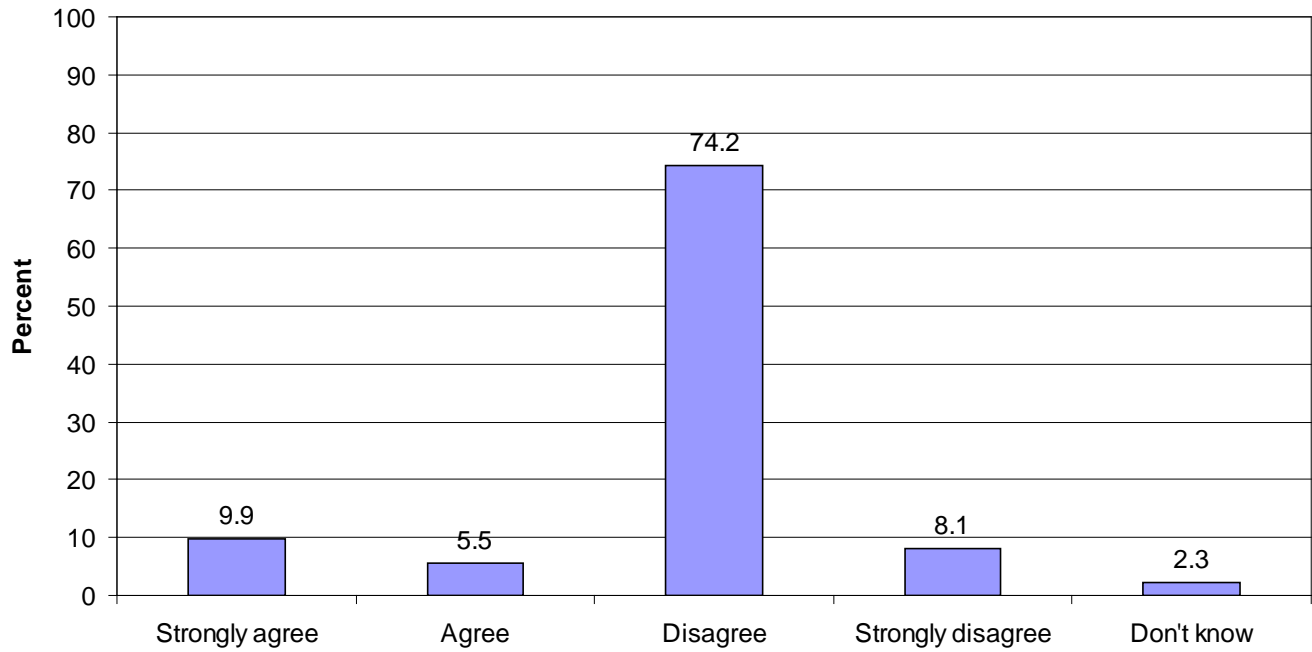


Figure 2. Degree of agreement with the statement, "If I knew a shopkeeper or food seller had HIV, I would still buy food from them".

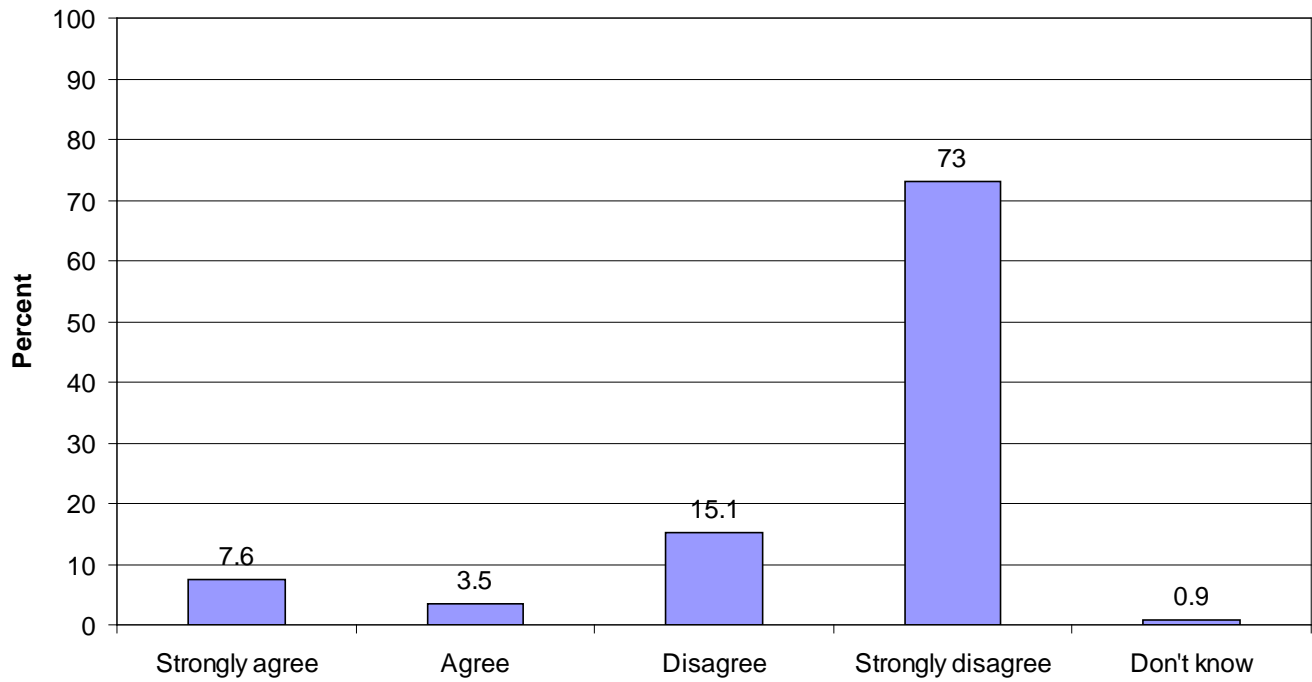


Figure 3. Degree of agreement with the statement, "If a relative of mine became ill with HIV, the virus that causes AIDS, I would be willing to care for them in my household."

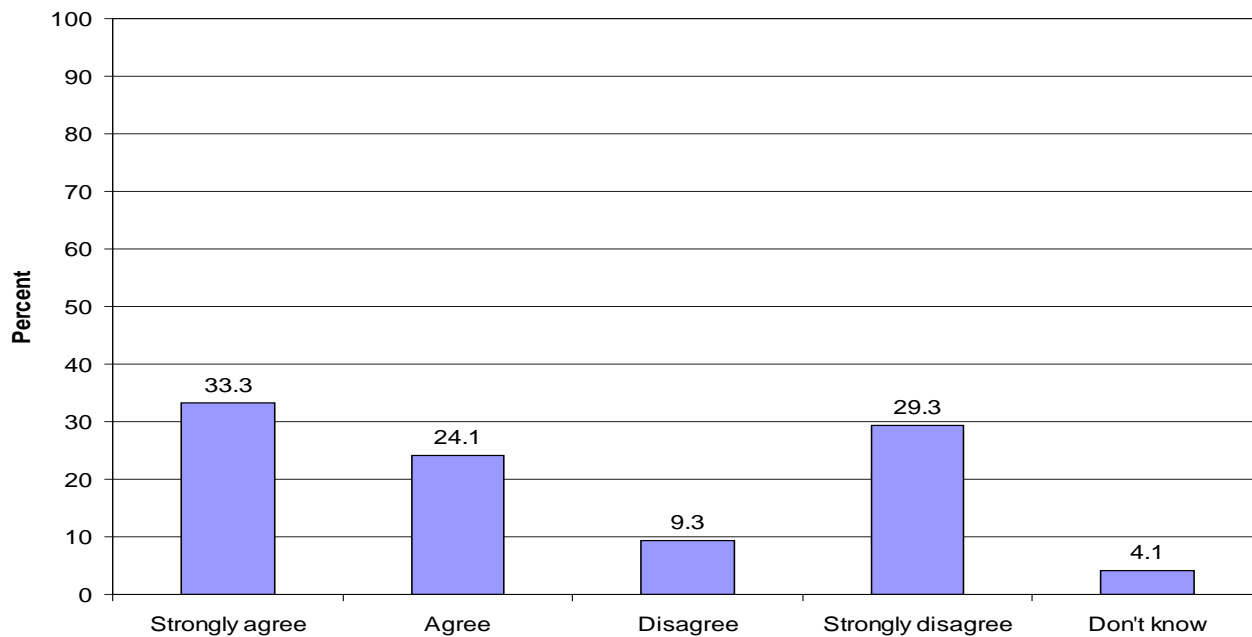


Figure 4. Degree of agreement with the statement, "If a member of my family became ill with HIV, the virus that causes AIDS, I would want it to remain secret."

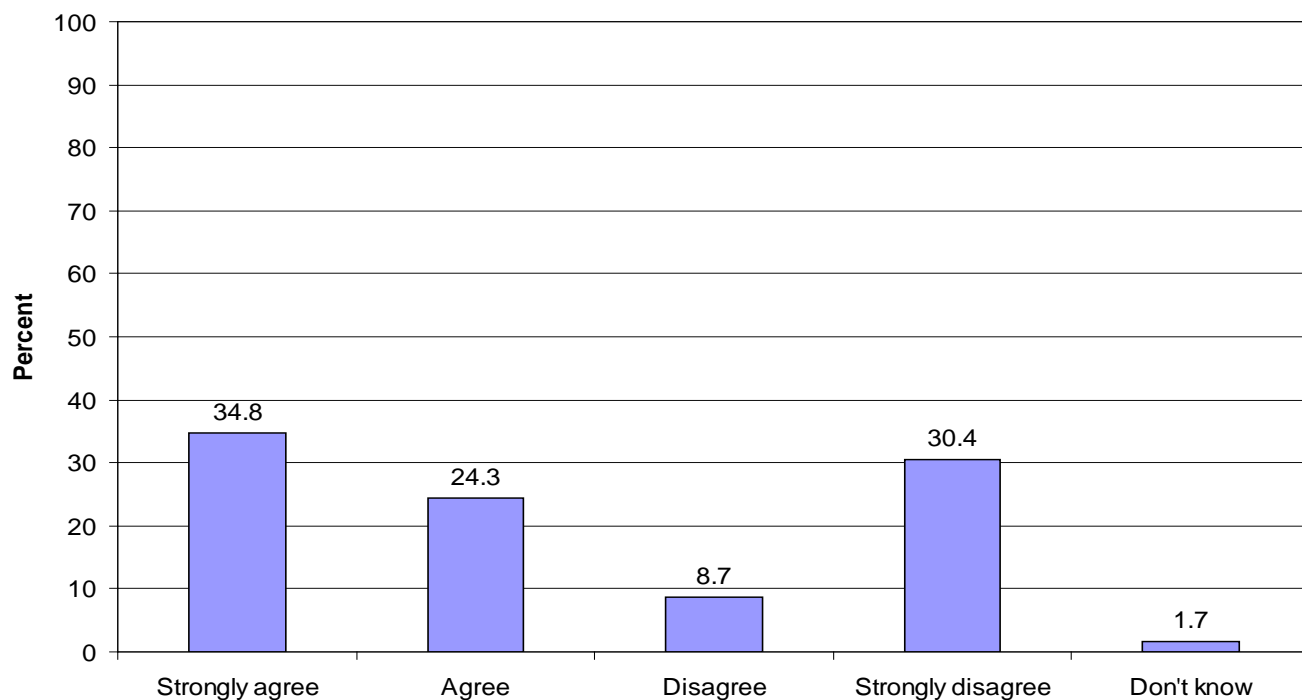


Figure 5 Degree of agreement with the statement, “All newcomers to the Marshall Islands should be tested for HIV.”

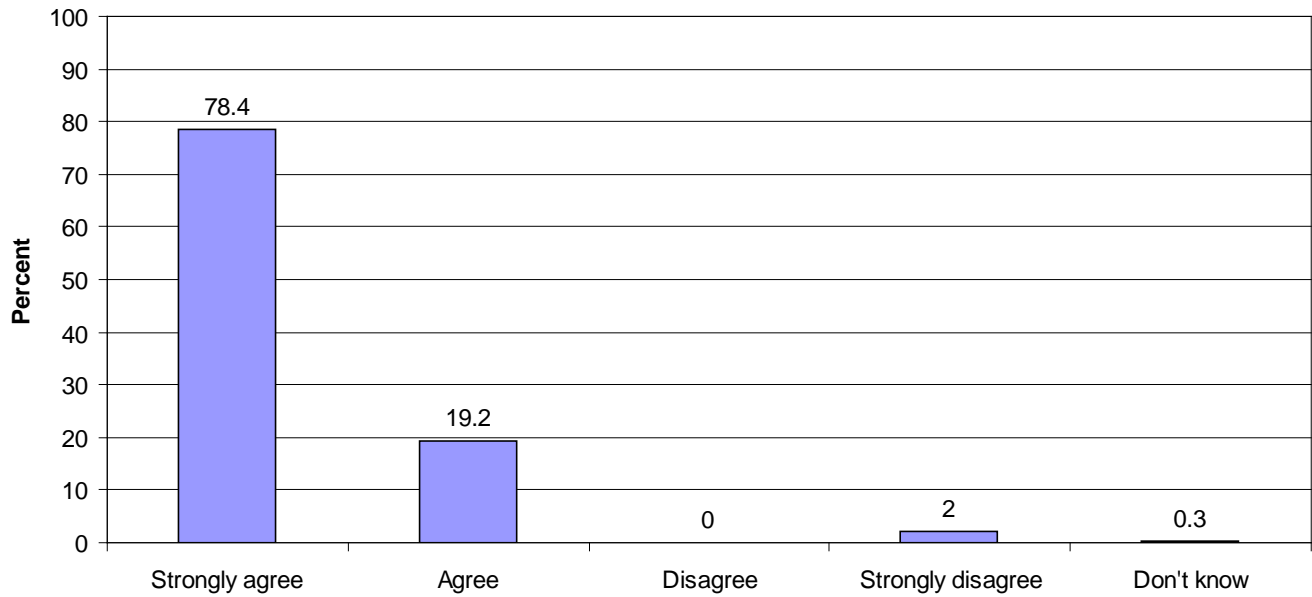


Figure 6. Degree of agreement with the statement, “The names of all persons infected with HIV should be displayed in a public place for everyone to see.”

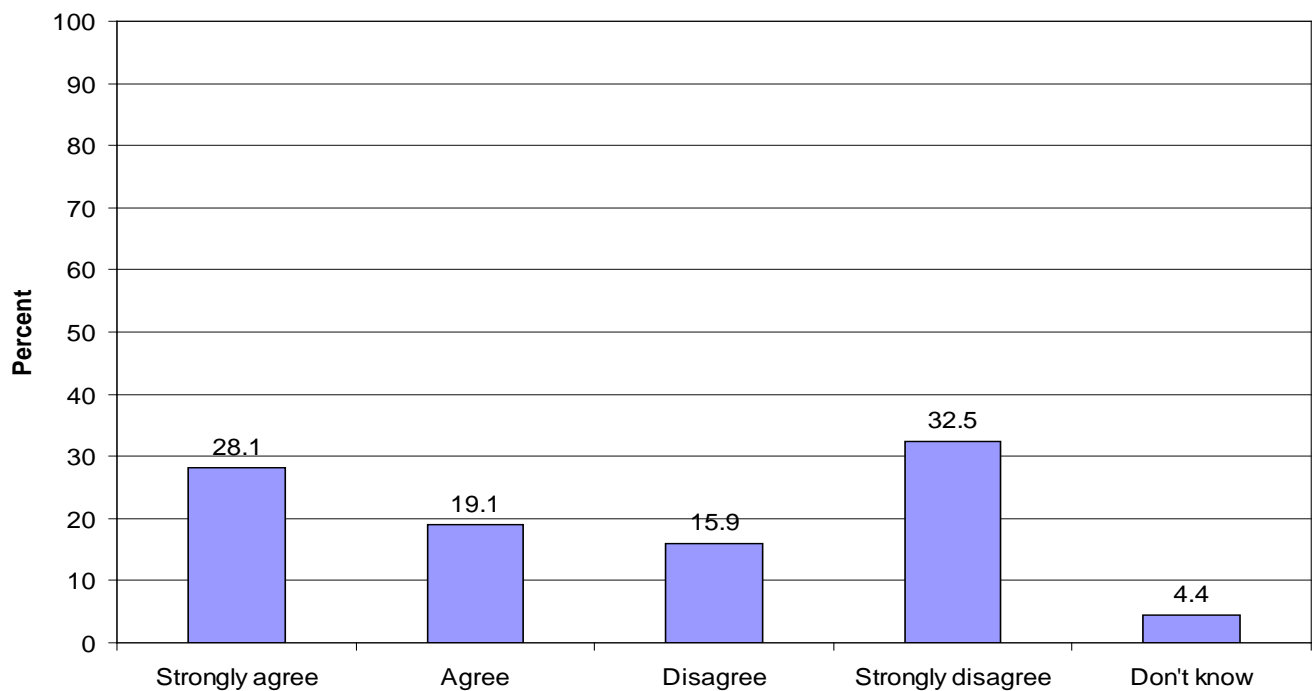


Figure 7. Degree of agreement with the statement, "All persons infected with HIV should live apart from the general community."

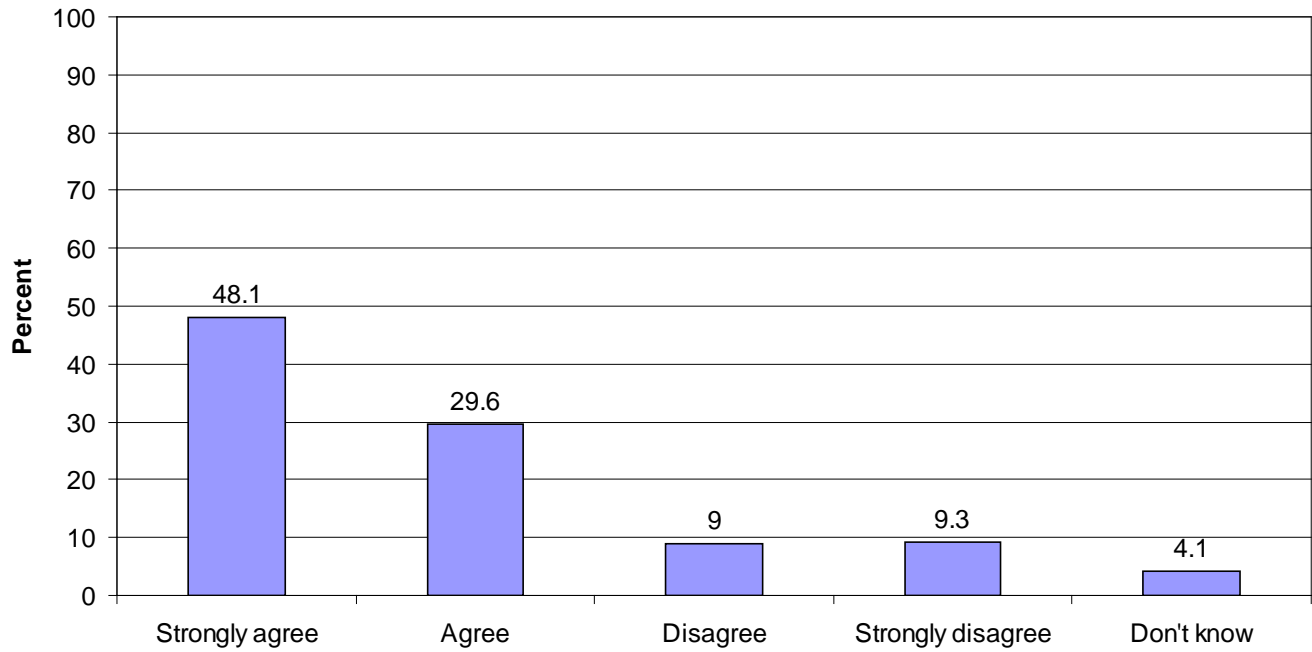
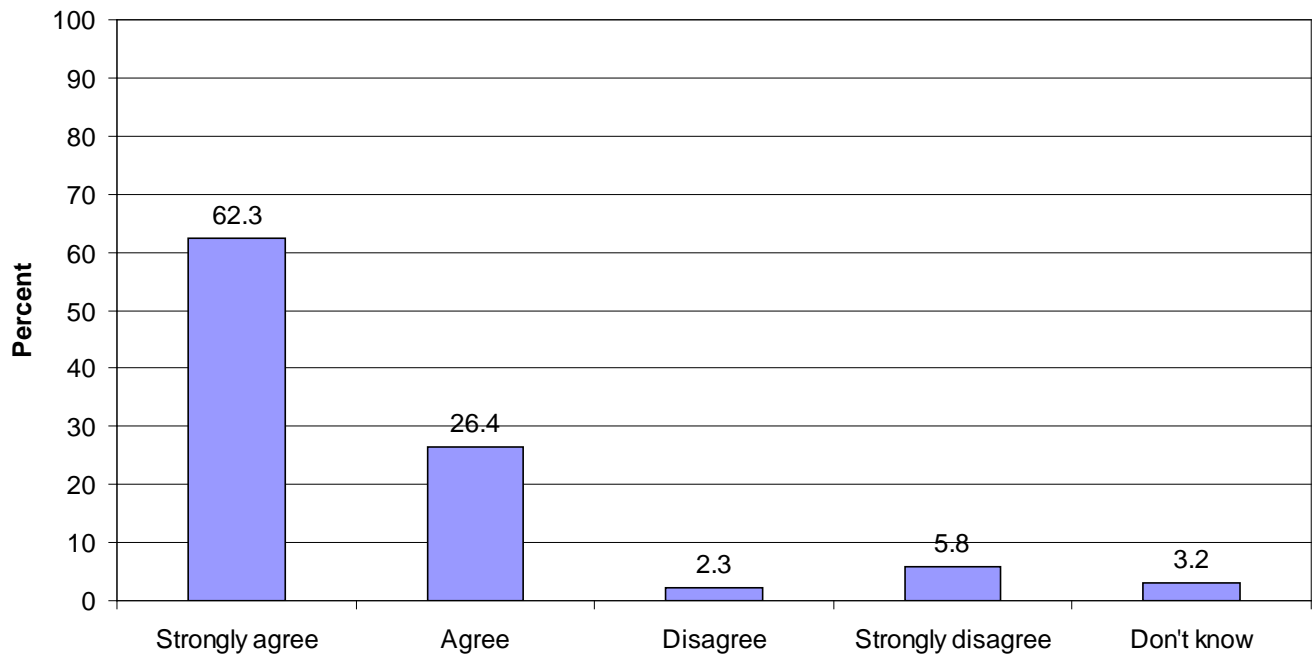


Figure 8. Degree of agreement with the statement, "Knowingly passing HIV onto someone else should be a criminal offence."



## References

1. Rehle T, Lazzari S, Dallabetta G, Asamoah-Odei E. Second-generation HIV surveillance: better data for decision-making. *Bull World Health Organ.* 2004 Feb;82(2):121-7.
2. Cliffe SJ, Tabrizi S, Sullivan EA. Chlamydia in the Pacific region, the silent epidemic. *Sex Transm Dis.* 2008 Sep;35(9):801-6.
3. Republic of the Marshall Islands Ministry of Health. Ministry of Health Annual Report. 2004 [cited 2007 5/31/2007]; Available from:  
<http://www.rmiembassyus.org/Health/RMI%20MOH%20Annual%20Report%20FY%202004.pdf>
4. McFarlin BL, Bottoms SF, Dock BS, Isada NB. Epidemic syphilis: maternal factors associated with congenital infection. *Am J Obstet Gynecol.* 1994 Feb;170(2):535-40.