Second generation surveillance surveys of antenatal women and youth,

Cook Islands

2005–2006

TE MARAE ORA
Ministry of Health
COOK ISLANDS

Secretariat of the
Pacific Community

Acknowledgements

Special acknowledgement goes to all the following personnel involved in the implementation of the survey:

Dr Roro Daniel – Secretary of Health

Ngapoko Short – Director, Public Health

Dr May Zaw Aung - Obstetrics & Gynaecology

Kathy Koteka – Obstetrics & Gynaecology (O & G) Nurse

Teokotai Areai – Nurse In Charge, O & G Clinic

Tevaerangi Tatuava – Chief Executive, Cook Islands Family Welfare Association

Maryanne Pakitoa – Student Nurse

Maina Tairi – Health Promotion Officer

Edwina Tangaroa – Health Promotion Manager

Douglas Tou – Laboratory Manager

Theresa Tatuava – Laboratory

Peia Ben – Laboratory

Geoffrey Wuatai – Laboratory

Ana File – Red Cross Peer Educator

Nukutau Pokura – Red Cross Peer Educator

Melinda Pierre - Red Cross Peer Educator

Nga Turua - Red Cross Peer Educator

John Strickland Jnr - Red Cross Peer Educator

Makiuti Tongia Jnr - Red Cross Peer Educator

Zoe – Bake Paterson - Red Cross Peer Educator

Mata Taramai – Project Officer, Ministry of Health

We would also like to acknowledge the Secretariat for the Pacific Community for providing technical assistance and the Pacific Regional HIV Project for providing financial assistance to implement this survey.

Last, but not least, we would like to express our sincere gratitude to all who participated in the two surveys. Without your consent and participation, we would not have been able to complete this study.

Table of contents

Tables

Figures

List of abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal clinic
BSS	Behavioural surveillance survey
CCM	Country Coordinating Mechanism
CIFWA	Cook Island Family Welfare Association
C.trachomatis	Chlamydia trachomatis
ED	Executive Director
FHI	Family Health International
FTA-AB	Fluorescent treponemal antigen antibody
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GDP	Gross domestic product
HIV	Human Immunodeficiency Virus
HSS	HIV surveillance survey
MDG	Millennium Development Goals
MOH	Ministry of Health
N. gonorrhoeae	Neisseria gonorrhoea
NACA	National Advisory Committee on AIDS
NGO	Non-government organization
NRL	National reference laboratory
PCR	Polymerase chain reaction
PICTs	Pacific Island countries and territories
PLWHA	People living with HIV or AIDS
SGS	Second generation HIV surveillance
SPC	Secretariat of the Pacific Community
SPS	STI prevalence surveillance
STI	Sexually transmitted infection
TAC	Technical Advisory Committee
TPPA	Treponema pallidum particle agglutination test
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
VCT	Voluntary confidential testing
VDRL	Venereal Diseases Research Laboratory test

Executive summary

Cook Islands are located between French Polynesia and Fiji Islands in the South Pacific Ocean. In 2006, the resident population of Cook Islands was estimated at 11,800 persons. The residential population has been decreasing since 1996, and there has been a population shift from the outer islands to the main population centres in Rarotonga and Aitutaki.

In 2005 and 2006 the Cook Islands Ministry of Health, with technical assistance from the Secretariat of the Pacific Community, conducted second generation surveillance (SGS) surveys of antenatal women and youth. This report summarizes the results of the SGS surveys in the two population groups.

Surveys were administered to a total of 100 antenatal women between May 2005 and June 2006, and 94 surveys were eligible for final reporting. The Executive Director (ED) of Cook Islands Family Welfare Association (CIFWA) and Health Promotion Officers of Public Health Department administered the questionnaires to obtain baseline data on pregnancy characteristics, sexual behaviours, risk behaviours and HIV knowledge and attitudes. Blood and urine specimens were collected from participants for sexually transmitted infection (STI) and HIV testing.

The key findings of the antenatal clinic (ANC) STI prevalence survey include the following:

- Sixteen per cent of women reported that their age at first sex was less than 15 years.
- Ten per cent of women had more than one partner in the last 12 months.
- Less than half of women had ever used a condom in their lifetime.
- Only one third of pregnancies were planned (36 per cent).
- Nearly half of the women aged 25 to 44 years were pregnant for their fourth time or more (48 per cent).
- Less than half of women who were not trying to get pregnant used any form of contraceptive in the three months prior to getting pregnant (46 per cent).
- One third of women consumed alcohol during their pregnancy.
- Of those who consumed alcohol, 40 per cent reported they normally consumed more than five standard drinks.
- One quarter of women used tobacco in the last 12 months (27 per cent).
- Nearly half of women aged 16 to 24 years (46 per cent) and one sixth of women aged 25 to 44 years were found to have an STI or blood borne infection.
- None of the women tested positive for HIV.
- There are opportunities to increase knowledge related to HIV transmission and prevention among antenatal women.

300 youth were recruited from 20 villages on Rarotonga and two off-island villages. No youth refused to take part in the survey. Twenty three questionnaires were excluded from the analysis because essential data were missing (age or sex) or the surveys were incomplete.

Key findings from the youth behavioural surveillance survey (BSS) include the following:

- One third of youth (31 per cent) reported having sex before the age of 15 years.

- One third of sexually active youth reported having two partners (36 per cent) and half reported having three partners (49 per cent) in the last 12 months.
- Only one quarter of youth (26 per cent) reported using a condom at last sex with any partner they did not live with, in the last 12 months.
- One third of sexually active youth who had been off-island in the previous 12 months had sex with someone who was not their partner while off-island.
- Eighty percent of youth who drank alcohol reported consuming five or more standard drinks in a session.
- Reported illicit drug use was generally very low.
- Two thirds of youth agreed that it was possible for someone to get a confidential HIV test in Cook Islands. The most common reason for reporting it wasn't possible was a belief that results would not be kept confidential (53 per cent).
- There are opportunities to increase knowledge related to HIV transmission and prevention among youth.

The results of this survey provide baseline information on behavioural risk factors and prevalence of STIs and can inform ongoing HIV/STD education campaigns and strategic health direction in Cook Islands.

Introduction

Cook Islands background

Cook Islands are located between French Polynesia and Fiji Islands in the South Pacific Ocean. Although widely dispersed, the islands can be categorized into two main clusters: the northern and southern groups. The southern group comprises nine islands and includes approximately 90 per cent of the total land mass. Most islands of the southern group have fertile soils and tropical vegetation, and this group includes Rarotonga, the largest and most populated island. The north group consists of six islands, primarily low lying coral atolls.

The 2006 Census of Population and Dwellings estimated the resident population of Cook Islands at 11,800 persons. The residential population has been decreasing since 1996, and there has been a population shift from the outer islands to the main population centres in Rarotonga and Aitutaki. In 2006, the crude birth rate was 2.36 per cent, with an average of one birth per day.

The four leading sources of income in Cook Islands are tourism (comprises 54 per cent of the gross domestic product), fishing, agriculture and financial services.

In 2004, it was estimated that 94 per cent of the population had access to a clean, safe water supply and adequate sewage disposal facilities were available to the entire population. [i] ,[ii]

HIV epidemiology in the Pacific region

In 2007, there were an estimated 75,000 people living with HIV in the Oceania region, an increase of 14,000 from 2006. Papua New Guinea (PNG) has the highest prevalence of HIV in the Pacific, and the rate is steadily increasing, with the reported number of new cases doubling between 2002 and 2006. It has been estimated that 1.3 per cent of adults in PNG have acquired HIV. The majority of cases have occurred in rural areas (84 per cent) where most of the population resides (80 per cent). PNG is considered to have a generalised epidemic and unprotected heterosexual contact is thought to be the main mode of transmission. Community based studies in PNG have found a very high prevalence of untreated sexually transmitted infections (STIs) in some communities, which also increases the risk of acquiring HIV.[iii]

In other Pacific Island countries and territories (PICTS), information to date has indicated a low prevalence of HIV. However, biological and behavioural surveillance have also shown a high prevalence of untreated STIs and low prevalence of condom use, indicating high levels of vulnerability in general communities.[iv]

In 2007, there were no reported cases of HIV, however, there is one known case living in Cook Islands. [v]

Methods

SGS background

Second generation surveillance

Second generation surveillance (SGS) involves strengthening existing surveillance systems to help focus HIV prevention activities more accurately and maximize use of available HIV resources.

SGS aims to:

- increase understanding of trends over time;
- increase knowledge of risk behaviours driving trends;
- focus on those most at risk of HIV;
- use flexible tools that can change according to needs; and
- make better use of surveillance data to understand and plan prevention and care services.

The methodology used for the periodic data collection is guided by the level of epidemic in the country. Joint United Nations Programme on HIV/AIDS (UNAIDS)/World Health Organization (WHO) guidelines classify levels of HIV epidemics as follows:

Low—HIV is present in high-risk population subgroups (e.g., sex workers, injecting drug users, and men who have sex with men). The epidemic may have been present for many years, but the prevalence is low and stable.

Concentrated—There has been a rapid increase of HIV in high-risk population subgroups, but HIV is not yet prevalent within the general community.

Generalised—While high-risk groups have a disproportionately high prevalence, HIV is also established within the general population.

SGS in low prevalence settings

SGS uses information obtained from ongoing data collection systems *and* periodic collection of behavioural and biological data.

Comprehensive SGS activities in low-level epidemics include:

- cross-sectional behaviour surveys;
- surveillance of STIs;
- HIV serosurveillance;
- HIV and AIDS case reporting; and
- screening donated blood.

Cook Islands conducted SGS surveys in two population groups: antenatal women and youth. All participants completed a questionnaire that provides information on demographic characteristics; sexual risk behaviours; alcohol and other drug use; HIV knowledge, attitudes and access to testing; and STI history.

The questionnaires used for these surveys were based on surveys developed by the Family Health International organisation, and modified for use in the Pacific by the University of New South Wales (NSW) in Australia, WHO and the Secretariat of the Pacific Community (SPC).

The behavioural questionnaires are very similar for all population groups. The surveys were adjusted to make them relevant to the population of interest and enable reporting of population-specific indicators.

Surveys conducted in country

An STI prevalence survey (SPS) was administered to pregnant women and a behavioural surveillance survey was administered to youth.

As well as providing information on the prevalence of STIs for the antenatal women, this report provides preliminary information on risk behaviours, links with high-risk sub-populations (for example, youth who partake in transactional sex), knowledge and attitudes, prevalence of symptoms of STIs, and access to STI treatment and HIV testing.

Ethics approval

Approval to undertake the SGS surveys was given by the Minister for Health and Secretary of Health, as the ethics committee was not in place in 2006.

Specimen collection and testing

The SPS involved the collection of urine samples to test for the presence of chlamydia and gonorrhoea, and collection of blood samples to test for syphilis, hepatitis B and HIV antigen. HIV prevalence surveys involved the collection of blood for syphilis, hepatitis B and HIV antigen testing.

Participants who took part in the SPS were asked to provide a 10–15 ml first catch urine sample. Specimens were transferred to the central laboratory in country and frozen at -20 degrees Celsius until subsequent shipment. Frozen urine specimens were sent to the Molecular Microbiology Laboratory at the Royal Women's Hospital in Melbourne, Australia to test for chlamydia and gonorrhoea.

Laboratory testing involved amplification of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* sequences using the ROCHE COBAS Amplicor (Roche Diagnostics, Branchburg, New Jersey, United States of America). All positive *N. gonorrhoeae* specimens were confirmed by an alternate polymerase chain reaction (PCR) assay using primers and probes directed at a 90 base pair region of opa gene.[vi]

For participants involved in the SPS a 10 ml blood sample was taken for testing. Preliminary screening for syphilis (rapid plasma reagin [RPR]), hepatitis B (Determine and Serodia) and HIV (Determine and Serodia) were conducted at the Rarotonga hospital laboratory. Confirmatory tests for syphilis, hepatitis B and HIV were sent to LabPlus in Auckland, New Zealand.

Table 1. Laboratory testing conducted for the antenatal SPS

Infection	Specimen	Tests
Chlamydia	Urine	PCR assay
Gonorrhoea	Urine	PCR assay
Syphilis	Blood	*Treponema pallidum* haemagglutination assay (TPHA)
		Rapid Plasma Reagin RPP
		RPR titre (if RPR was reactive). Cases were recorded as positive if titres were greater than or equal to 1:8.
Hepatitis B	Blood	
HIV antibodies	Blood	Enzyme-linked immunosorbant assay (ELISA): Determine and Serodia
HIV confirmatory	Blood	Confirmed according to the regional algorithm
Trichomonas	High vaginal swab	

Data analysis

Initial data screening involved cross-checking information from 10 per cent of questionnaires against the data entered onto the database.

Data from the survey has been analysed using Epi Info V3.4.2 and Excel 2003.

Surveys

STI Prevalence Survey of Antenatal Clinic Attendees

Survey Methodology

Table 2 shows an overview of the methodology used to survey antenatal women in Cook Islands.

Table 2. Summary of survey methodology, antenatal women aged 16–44 years, Cook Islands, 2005–2006

Methodology	Survey details
Population	*Antenatal women*
Survey type	*STI prevalence survey (SPS)*
Sampling method	*Consecutive recruitment*
Inclusion criteria	*Women visiting the ANC for the first time for the pregnancy*
Target sample size	*100*
Final sample size	*94 (only one woman refused)*
Interview location(s)	*Public Health Office and CIFWA Office, Tupapa*
Administration of the survey	*Interview administered by ED and Health Promotion Officers*
Type of consent	*Verbal. Interviewers signed a declaration not to release any information without the participants' approval.*
Time required for interview	*20-25 minutes*
Data collection period	May 2005 to June 2006

Pregnant women attending for their first ANC visit were invited to take part in the survey. On arrival at the clinic, women were given information on the purpose of the survey, the questionnaire and STI testing.

Survey questionnaires were completed by ED of CIFWA and Health Promotion Officers working in Public Health. Verbal informed consent was obtained, and nurse interviewers signed a declaration not to disclose any information without the respondents' consent. Six of 100 questionnaires from women who were interviewed did not provide information on age, so were excluded from the analysis.

Eligibility criteria

Women were eligible to take part in the antenatal survey if they were attending an ANC for the first time for their pregnancy.

Demographic characteristics

Table 3 shows the key demographic characteristics of the women who took part in the survey.

Table 3. Demographic characteristics, antenatal women aged 16–44 years, Cook Islands, 2005-2006

	Number	%
Age Group		
16 to 24 yrs	44	46.8
25 to 44 yrs	50	53.2
Country of Birth		
Cook Islands	71	75.5
Other	23	24.5
Education Level		
Primary school	1	1.1
Secondary school	83	88.3
Tertiary	10	10.6
Ethnic Group		
Polynesian	86	92.5
Melanesian	2	2.2
Micronesian	2	2.2
Caucasian	2	2.2
Mixed ethnicity	1	1.1
Marital status		
Married, living with spouse	24	25.8
Married, not living with spouse or partner	1	1.1
Not married, living with sex partner	50	53.8
Not married, not living with sex partner	18	19.4
Refused	1	1.1
Total	94	100

Just under half of the women were aged 16 to 24 years (46 per cent) and 53 per cent were aged 25 to 44 years.

Approximately three quarters of the women reported they were born in Cook Islands. Although information on 'other country' is not available, the vast majority of respondents were Polynesian, indicating most participants were from the South Pacific region.

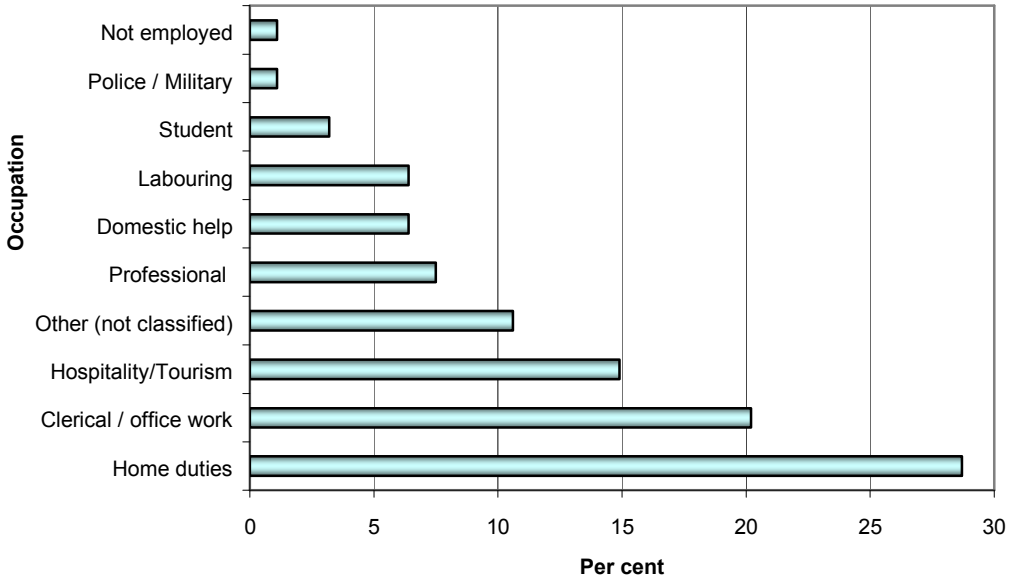
The majority of women had completed secondary school education or higher (98.6 per cent); only one participant had not completed secondary school.

Over half of respondents were not married, but living with a sex partner (54 per cent), and a further quarter were married and living with their spouse (26 per cent). Marital status differed by age group:

- A higher proportion of women aged 25 to 44 years were *married* and living with a spouse (46 per cent) compared with women aged 16 to 24 years (2 per cent).
- A higher proportion of women aged 16 to 24 years reported they were *not married* and living with a spouse (36 per cent) compared with women aged 25 to 44 years (4 per cent).

Home duties, clerical/office work, and hospitality/tourism were the most common occupations reported by participants (Figure 1).

Figure 1. Reported occupations, antenatal women aged 16–44 years, Cook Islands, 2005–2006



The most commonly reported occupations for partners of participants involved skilled labour, followed by clerical/administrative work, construction workers and labourers (38 per cent), factory and machine operators (15 per cent), and government and clerical workers (10 per cent).

Pregnancy characteristics

Most women first presented to the antenatal clinic in the second trimester of pregnancy. The gestation of pregnancy ranged from 8 to 38 weeks, with an average (mean) of 19 weeks.

Although almost two thirds of women reported their pregnancy was not planned (63 per cent), the majority of women reported they were accepting of their pregnancy (81 per cent).

Table 4. Pregnancy characteristics, antenatal women aged 16-44 years, Cook Islands, 2005-2006

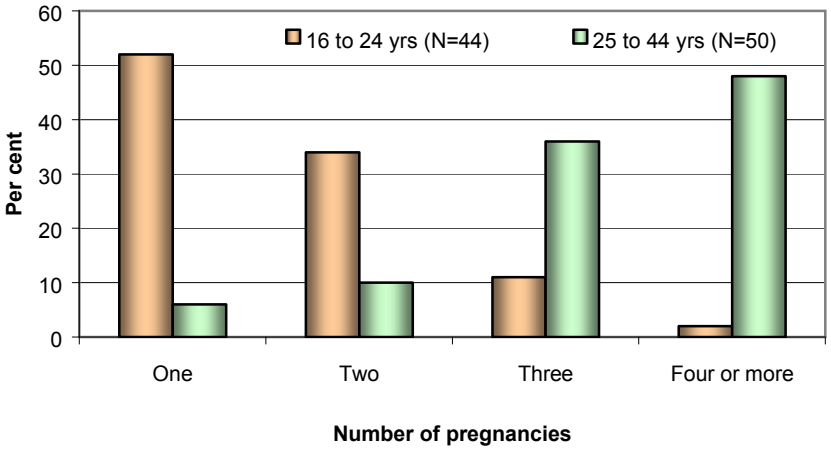
	16-24 yrs		25-44 yrs		Total	
	N	%	N	%	N	%
Number of pregnancies (gravidity)						
1	23	52.3	3	6.5	26	27.7
2	15	34.1	5	10.0	20	21.3
3	5	11.4	18	36.0	23	24.5
4 or more	1	2.3	24	48.0	25	26.6
Total	44	100.0	50	100.0	94	100.0
Trimester of current pregnancy						
1	5	11.4	11	23.9	16	17.8
2	35	79.5	31	67.4	66	73.3
3	4	9.1	4	8.7	8	8.9
Total	44	100.0	46	100.0	90	100.0
Planned pregnancy						
Yes	15	34.1	19	38.8	34	36.6
No	29	65.9	30	61.2	59	63.4
Total	44	100.0	49	100.0	93	100.0
Accepting of pregnancy						
Yes	38	86.4	43	87.8	81	87.1
No	6	13.6	6	12.2	12	12.9
Total	44	100.0	49	100.0	93	100.0

Figure 2 shows the total number of pregnancies (gravidity) reported by women by age group.

For women aged 16 to 24 years, just over half reported the current pregnancy was their first (52 per cent) and another third were having their second baby (34 per cent). The number of pregnancies ranged from one to four.

For women aged 25 to 44 years, just under half reported the current pregnancy was their fourth or higher (48 per cent) and a further third were having their third child (36 per cent). The number of pregnancies ranged from one to eight.

Figure 2. Gravidity, antenatal women aged 16–44 years, Cook Islands, 2005–2006



Forty six per cent of women reported they had used some form of contraceptive in the three-month period prior to their pregnancy. However, proportions of women using contraceptives were similar among those trying to get pregnant and those who were not (46 per cent).

One in four women (23 per cent) reported using the contraceptive pill and one in ten (13 per cent) reported using injectable contraceptives. The male condom (6 per cent) and withdrawal (6 per cent) were the next most commonly used contraceptives.

Sexual behaviours

Table 3 shows reported sexual behaviours for the antenatal women.

One tenth of women reported they either 'didn't know' or 'refused' to say how many male sex partners they had in their lifetime. Of those who answered, the majority reported more than one male sex partner (90 per cent). The most common number of partners was two or three.

In contrast, the majority of women reported having only one partner in the last 12 months (90 per cent). Four women reported having two partners (4 per cent), two women reported three partners (2 per cent) and three women reported four or more partners (3 per cent).

Just under half of the women reported that they had ever used a condom in their lifetime (46 per cent), and one in six women reported that they had ever been forced to have sex when they did not want to.

Table 5. Sexual behaviours, antenatal women aged 16–44 years, Cook Islands, 2005–2006

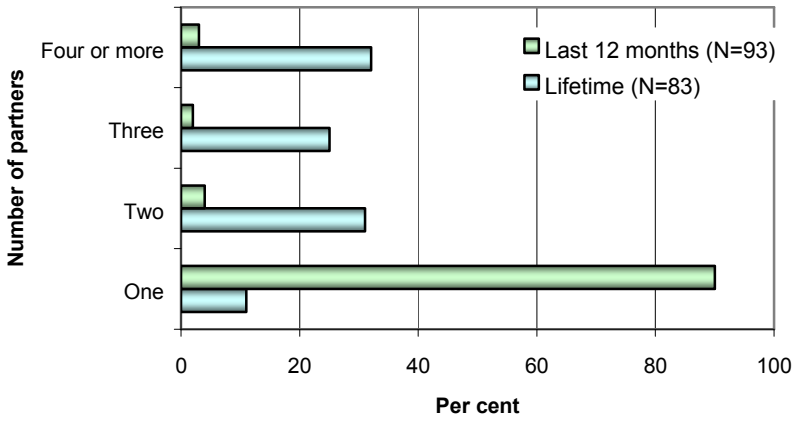
	Mean	Range
Age at when first had sex	17.4	12–21
Number of sex partners in lifetime	3.3	1–14
Number of sex partners in the last 12 months	1.4	1–14
	N	%
Age at first sex less than 15 years	14	15.7
Ever used a male condom	43	46.2
Ever been forced to have sex	14	15.1

Figure 3 shows the age distribution of reported age of first sex. One in 16 women reported first sex at less than 15 years (6 per cent), and one in four reported sex at 15 to 16 years (26 per cent).

Figure 3. Reported age at first sex, antenatal women aged 16–44 years, Cook Islands, 2005–2006

Figure 4 shows a comparative distribution of the reported number of lifetime sex partners and number of partners in the last 12 months.

Figure 4. Number of reported partners in lifetime and the last 12 months, antenatal women aged 16–44 years, Cook Islands, 2005–2006



Ninety three per cent of women reported that they were in a continuing relationship with the father of their unborn child.

Alcohol and drug use

Table 6 shows reported alcohol consumption in the last four weeks for antenatal women:

- Two thirds reported not consuming alcohol (67 per cent).
- One in eight reported consuming alcohol less than weekly (12 per cent).
- One in five reported consuming alcohol at least weekly (21 per cent).

Alcohol use was similar for women in both age groups. The average number of drinks consumed was five (standard deviation [SD]=3) for the 34 women who provided information on their alcohol intake.

Table 6. Reported alcohol consumption in the previous 4 weeks, antenatal women aged 16-44 years, Cook Islands, 2005-2006

	N	%
None in the last 4 weeks	63	67.0
Less than once a week	11	11.7
At least once a week	20	21.3
Total	94	100.0
	Mean	Range
Amount of alcohol consumed	5.0	1-14

Table 7 shows reported drug use by antenatal women over their lifetime and for the 12 months prior to the survey. Tobacco was the most commonly used drug, with one quarter of women (27 per cent) reporting they used tobacco *in the last 12 months*.

Four per cent of women reported *ever using* marijuana, but none in the last 12 months.

Two per cent of women reported using kava, ecstasy and heroin (two women), and 1 per cent of women reported using cocaine (one woman) *in the last 12 months*.

Table 7. Reported prevalence of ever trying drugs and use in the last 12 months, antenatal women aged 16-44 years, Cook Islands, 2005-2006

	Ever tried		Used last 12 months		
	N	%	N	% ever used	% all respondents
Tobacco	25	26.6	25	100	26.6
Marijuana	4	4.3	1	25	1.1
Kava	3	3.2	2	66.7	2.1
Ecstasy	2	2.1	2	100	2.1
Heroin	2	2.1	2	100	2.1
Cocaine	1	1.1	1	100	1.1
Speed	0	0	0	0	0.0

Prevalence of STIs

Table 8 shows the prevalence, number of positive cases and number of women tested for STIs and blood borne infections.

Overall, nearly one third of respondents tested positive for at least one of the STIs and blood borne infections that were investigated (30 per cent).

Table 8. Prevalence of STI and blood borne infections, antenatal women aged 16-44 years, Cook Islands, 2005-2006

	Prevalence	N positive	N tested
Chlamydia	19.8%	18	91
Trichomoniasis	8.0%	7	88
Hepatitis B Virus	3.4%	3	89
Gonorrhoea	2.2%	2	91
Syphilis	1.2%	1	83
HIV	0.0%	0	94
STI or blood borne infection	29.8%	28	94

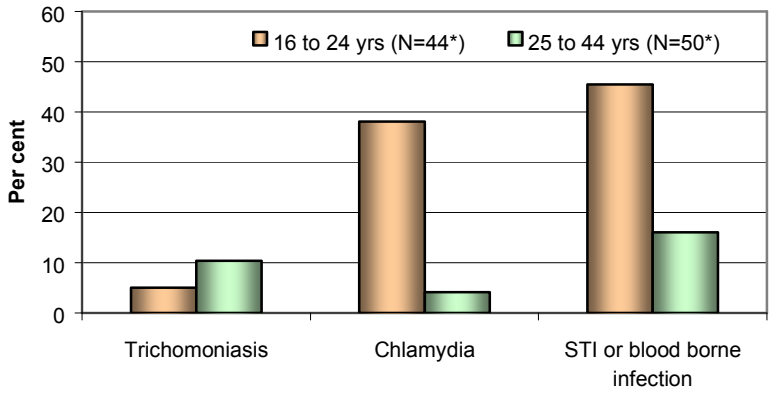
The prevalence of testing positive for an STI or blood borne infection was higher for women aged 16 to 24 years (46 per cent) compared with those aged 25 to 44 years (16 per cent) (Figure 5).

Chlamydia was the most commonly detected STI. The prevalence of chlamydia was nearly ten times higher for women aged 16 to 24 years (38 per cent) compared with those aged 25 to 44 years (4 per cent).

Trichomoniasis was the second most commonly detected STI, with 8 per cent of women testing positive; 5 per cent for women aged 16 to 24 years and 10 per cent for those aged 25 to 44 years.

None of the antenatal women had HIV detected.

Figure 5. Prevalence of chlamydia, trichomoniasis, and at least one STI or blood borne infection, antenatal women, Cook Islands, 2005-2006



Pregnant women who were diagnosed with STIs as a result of testing during SGS were either contacted directly or seen at their next antenatal visit and treated as per local treatment protocols.

Symptoms of STIs

One in six women (17 per cent) reported that they had not heard of diseases that could be transmitted through sexual intercourse.

None of 93 respondents reported having an abnormal genital discharge, or genital ulcer or sore, during the last 12 months.

HIV knowledge

Only one participant had not heard of HIV or the disease called AIDS, this woman was not asked further questions on knowledge or prevention.

Table 9 shows the number of women who answered each question and the proportions who had correct knowledge of mother-to-child transmission and methods for preventing sexual transmission, and who rejected common misconceptions for transmission.

Table 9. Knowledge of mother-to-child transmission and prevention of sexual transmission, and rejection of common misconceptions for HIV transmission, antenatal women aged 16-44 years, Cook Islands, 2005-2006

	N	%
Correct knowledge of mother-to-child transmission		
A pregnant women who has HIV can pass it on to her unborn child	78	83.0
A women who has HIV can pass it on to her newborn child through breast feeding	68	72.3
Correct knowledge of prevention strategies		
A person can reduce their chance of getting HIV, the virus that causes AIDS, by using a condom correctly every time they have sex	82	87.2
A person can reduce their chance of getting HIV by having only one uninfected, faithful sex partner	80	85.1
Correct response to common misconceptions		
A person can get HIV by sharing a meal with someone who is infected with HIV	72	76.6
A person get HIV from mosquito bites	75	80.6
A healthy looking person can be infected with HIV	76	80.9
Overall knowledge		
Correctly answered all mother-to-child transmission and prevention strategy questions	53	56.4
Correctly response to all three misconceptions	54	57.4
Correctly answered all four knowledge questions and all three misconceptions	38	40.4

Knowledge of was highest for the two 'prevention strategy' questions.

While high proportions of the women correctly answered individual questions, knowledge was not consistent within and throughout sections.

Less than two thirds of women correctly answered all four transmission/prevention questions and all three misconception questions correctly.

Overall, only 40 per cent of women answered all seven questions correctly.

Access to testing

Table 10 shows outcomes associated with confidential HIV testing in the community.

Table 10. Reported access to HIV testing, antenatal women aged 16–44 years, Cook Islands, 2005–2006

	N	%
Believe it is possible to get a confidential HIV test in the community	80	90.9
Ever had an HIV test	29	32.6
Had an HIV test in the last 12 months	10	19.4
Reason for testing		
Voluntary	18	66.7
Required	9	33.3
Found out result of most recent HIV test	20	74.1

The majority of women (91 per cent) reported that they believed that they could have an HIV test in their community and that the result would be confidential.

One in five women (19 per cent) had been tested for HIV in the last 12 months.

One third of women reported they had ever had an HIV test (33 per cent), and of these, two thirds indicated that they took the test voluntarily.

One quarter of women who had been tested for HIV reported that they had not received the results of their test (26 per cent).

UNGASS indicators

Table 11 shows results for United Nations General Assembly Special Session on HIV/AIDS (UNGASS) indicators measured by the ANC survey. The results indicate there are opportunities for increasing the proportion of women who receive an HIV test and know the results, and the proportion who have knowledge of sexual transmission of HIV and reject major misconceptions.

Table 11. UNGASS Indicators, antenatal women aged 16–44 years, Cook Islands, 2005–2006

	15–24 yrs		25–44 yrs	
	N	%	N	%
7. Percentage of women aged 15–49 who received an HIV test in the last 12 months and who know their results	2	4.5	3	6.0
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	20	45.5		
15. Percentage of antenatal women aged 15–24 who have had sexual intercourse before the age of 15	2	4.5		
16. Percentage of antenatal women aged 15–49 who have had sexual intercourse with more than one sexual partner in the past 12 months	5	11.6	4	8.0

Behavioural risk factor surveillance survey of youth

Survey methodology

Table 12 shows an overview of the methodology used to survey youth in Cook Islands.

Table 12. Overview of the survey methodology, youth, Cook Islands, 2006

Methodology	Survey details
Population	*Unmarried youth*
Survey type	*BSS*
Sampling method	*Convenience sample*
Inclusion criteria	*Youth aged 15 to 24 years, unmarried and not living with a sexual partner for 12 months or more*
Target sample size	300
Final sample size	258
Interview location(s)	*Opportunistic sampling from community sports and recreational sites, town area and local shopping areas on Rarotonga*
Administration of the survey	*Interviewer administered*
Type of consent	*Verbal*
Time required for interview	*20-25 minutes*
Data collection period	*January to December 2006*

Eligibility criteria

Youth were eligible to participate in the survey if they were aged 15 to 24 years, unmarried and had not lived with a sexual partner in the last 12 months or more.

Participants were recruited from 20 villages on Rarotonga, plus two off island sites (Aitutuaki and Mangaia).

No youth refused to take part in the survey. Fifty two questionnaires were excluded from the analysis because essential data were missing (age or sex) or the surveys were incomplete.

Demographic characteristics

Table 13 shows that there were a higher proportion of female (58 per cent) compared to male respondents (42 per cent), and a higher proportion were aged 15 to 19 years (57 per cent) compared to 20 to 24 years (43 per cent).

Two thirds of respondents were born in Cook Islands (64 per cent) and one quarter in New Zealand (27 per cent), and the vast majority of respondents were Polynesian (96 per cent).

Most respondents were living with family/relatives (84 per cent) or friends/peers (10 per cent). Just under half of the respondents had completed secondary education (45 per cent) and 8.5 per cent had completed Higher education.

Table 13. Demographic characteristics of youth, Cook Islands, 2006

	N	%		N	%
Sex			**Age group**		
Female	150	58.1	15 to 19 yrs	146	56.6
Male	108	41.9	20 to 24 yrs	112	43.4
Total	258	100.0	*Total*	258	100.0
Ethnic group			**Country of birth**		
Polynesian	248	96.1	Cook Islands	164	63.6
Mixed ethnicity	5	1.9	New Zealand	69	26.7
Melanesian	3	1.2	Other	25	9.7
Asian	1	0.4	*Total*	258	100.0
Caucasian	1	0.4			
Total	258	100.0	**Highest level of education**		
			Some primary school	4	1.6
Living arrangements			Completed primary	105	40.7
With family/relatives	216	83.7	Completed secondary	116	45.0
With peers/friends	26	10.1	Completed higher	22	8.5
Alone	12	4.7	No answer/refused	11	4.3
With co-workers/students	1	0.4	*Total*	258	100.0
Other	3	1.2			
Total	258	100.0			

Sexual behaviours

Table 14 shows that nearly three quarters of respondents (72 per cent) reported ever having sex. Nearly half of respondents who had ever had sex reported that the first person they had sex with was either younger/same age (48 per cent) or less than five years older (39 per cent) than them.

Overall, one third of female respondents (35.4 per cent) and over half of male respondents (59 per cent) reported having non-commercial sex in the last 12 months.

Table 14. Reported sexual behaviours of youth by sex, Cook Islands, 2006

	Females		Males		Persons	
	N	%	N	%	N	%
Ever had sexual intercourse						
No	45	30.6	25	23.8	70	27.8
Yes	102	69.4	80	76.2	182	72.2
Total	147	100.0	105	100.0	252	100.0
Age of person respondent first had sex with younger/same age	41	43.2	40	54.8	81	48.2
< 5 years older	42	44.2	23	31.5	65	38.7
> 5 years older	12	12.6	10	13.7	22	13.1
Total	95	100.0	73	100.0	168	100.0
Non-commercial sex in the last 12 months						
No	93	63.3	43	41.0	136	54.0
Yes	52	35.4	62	59.0	114	45.2
Refused	2	1.4	0	0.0	2	0.8
Total	147	100.0	105	100.0	252	100.0

One in four male and one in eight female respondents who reported ever having sex did not provide information on age of first sex. Table 15 shows that, of those who reported age, the mean (average) age of first sex was 15 years (SD=2.2 years), and the range was 8 to 21 years.

One third of respondents (31 per cent) reported having sex before the age of 15 years. This finding was higher for male respondents (48 per cent) compared with female respondents (19 per cent).

The number of sexual partners in the last 12 months helps provide information on levels of higher-risk sex.[vii] For respondents who reported having sex with a non-commercial/non-live-in partner in the last 12 months, only 18 per cent had only one partner in the last 12 months, a further 36 per cent had two partners and 49 per cent had three partners.

Table 15. Reported age at first sex and number of non-commercial partners in the last 12 months, youth, Cook Islands, 2006

	Females	Males	Persons
Age at first sex in years			
Mean	16.0	14.6	15.4
Range	12–21	8–21	8–21
Number of non-commercial sex partners in the last 12 months			
Mean	3.0	5.3	4.3
Range	1–10	1–8	1–10

Nearly all respondents had *heard of a male condom* (97 per cent), and two thirds had heard of a female condom (68 per cent).

Table 16 shows that three quarters of respondents reported *ever using a condom* (75 per cent) and one third of respondents reported *using a condom the first time they ever had sex* (35 per cent). Just over one quarter of youth reported using a condom at last sex with any partner they did not live with, in the last 12 months.

Table 16. Reported condom use, youth aged 15–24 years, Cook Islands, 2006

	N	%
Ever used a condom		
No	44	24.4
Yes, male condom	134	74.4
Yes, female condom	2	1.1
Total	180	100.0
Used a condom at first sex		
No	112	75.2
Yes, male condom	60	34.7
Yes, female condom	1	0.6
Total	173	100.0
Used a condom at last sex, in the last 12 months		
No	109	63.0
Yes	40	26.8
Total	149	86.1

Very few respondents reported ever *giving money, goods or resources* (1.2 per cent), or *receiving money, goods or resources* (0.4 per cent) in exchange for sex (Table 17). Because of these small numbers, no further analysis was undertaken.

Table 17. Reported transactional sex, youth aged 15–24 years, Cook Islands, 2006

	N	**%**
Reported paying money or giving goods or resources in exchange for sex		
No	248	98.4
Yes	3	1.2
Refused	1	0.4
Total	252	100.0
Reported receiving money or giving goods or resources in exchange for sex		
No	247	98.0
Yes	1	0.4
Refused	4	1.6
Total	252	100.0

Table 18 shows other reported sexual behaviours for youth aged 15 to 24 years from Cook Islands. Nearly one third of respondents who had ever had sex (30 per cent) reported having two sexual relationships during the same time period in the last 12 months. This

behaviour was more common among young males (47 percent) compared with females (17 per cent).

Over half of respondents who had ever had sex (58 per cent) had been off-island in the last 12 months, and of these, over one third had had sex with someone who was not their partner while off-island. Nearly three quarters of the respondents who had had sex with someone who was not their partner while off-island reported that they only used a condom sometimes or never.

Over one quarter of respondents who had ever had sex (27 per cent) reported that they had been forced to have sex against their will. The most common types of relationships where this occurred were with partners (19 per cent) and ex-partners (26 per cent).

Table 19 shows responses for male to male sexual contact for 82 youth who provided responses to these questions. While some respondents were reluctant to answer these questions, four men reported having oral sex and one male reported having anal sex with another man in the last 12 months. Numbers were too small to conduct further analysis.

Table 18. Other reported sexual behaviours, youth aged 15–24 years, Cook Islands, 2006

	N	%
Two or more sexual relationships during the same time period, in the last 12 months		
No	122	69.7
Yes	53	30.3
Total	175	100.0
Was off-island in the last 12 months		
No	73	42.0
Yes	101	58.0
Total	174	100.0
Had sex with someone (other than partner) while off-island		
No	62	62.0
Yes	38	38.0
Total	100	100.0
Frequency of condom use with sex partners outside Cook Islands		
Every time	5	15.6
Almost every time	4	12.5
Sometimes	11	34.4
Never	12	37.5
Total	32	100.0
Ever forced to have sex		
No	130	73.0
Yes	48	27.0
Total	178	100.0

Table 19. Reported male to male sexual contact, youth aged 15-24 years, Cook Islands, 2006

	N	%
Ever had sexual contact with another man		
No	74	90.2
Yes	2	2.4
Refused/no answer	6	7.3
Total	82	100.0
Had oral sex with another man in the last 12 months		
No	74	90.2
Yes	4	4.9
Refused/no answer	4	4.9
Total	82	100.0
Had anal sex with another man in the last 12 months		
No	75	91.5
Yes	1	1.2
Refused/no answer	6	7.3
Total	82	100.0

Alcohol and substance use, and tattooing

Table 20 shows the reported frequency of alcohol consumption and the number of standard drinks normally consumed for youth who took part in the survey. Approximately one third of youth reported that they did not drink alcohol, one third drank weekly or less, and the remaining third drank two or more times per week.

Eighty percent of youth who drank alcohol reported that they normally consumed five or more standard drinks in a session.

Table 20. Reported alcohol consumption, youth aged 15-24 years, Cook Islands, 2006

	N	%
Frequency of alcohol use		
Never	77	30.7
Monthly or less	31	12.4
2-4 times per month	56	22.3
2-3 times per week	68	27.1
4+ times per week	19	7.6
Total	251	100.0
Number of standard drinks usually consumed		
1-4	32	19.6
5-9	66	40.5
10 or more	65	39.9
Total	163	100.0

Table 21. Reported substance use, youth aged 15–24 years, Cook Islands, 2006

	Ever used		Used in last 30 days		
Drug	N	%	N	% of all respondents	% of ever users
Tobacco	129	49.8	29	11.2	22.5
Marijuana/cannabis	123	46.8	17	6.5	13.8
Kava	58	22.9	4	1.6	6.9
LSD/acid/magic mushrooms	28	11.1	1	0.4	3.6
Speed/amphetamines	17	6.7	1	0.4	5.9
Ecstasy	17	6.7	0	0	0
Inhalants	16	6.3	0	0	0
Betel nut	12	4.7	0	0	0
Ice/crystal meth	11	4.3	0	0	0
Cocaine/crack	8	3.1	0	0	0
Sex enhancers	7	2.8	0	0	0
Heroin	6	2.4	0	0	0
Any other drug	5	2.4	0	0	0
Steroids	4	1.6	1	0.4	25.0

Tobacco was the most commonly reported drug ever used by youth, with half of the respondents reporting ever using tobacco and just over one in them reporting using tobacco in the last month (Table 21).

Marijuana was the most commonly used illicit drug, with just under half of all respondents reporting ever using (47 per cent) and one in fifteen using marijuana in the last 30 days (6.5 per cent).

While nearly one quarter of respondents had ever used Kava (23 per cent), very few had used in the last 30 days (1.6 percent).

There was a low level of reported use of a range of other drugs including LSD/acid/magic mushrooms (11 per cent), speed (7 per cent), ecstasy (7 per cent) and inhalants (6 per cent). However, reported use of these types of drugs in the last 30 days was very low or not apparent.

Table 22 shows that 45 (17.2%) of respondents had had a permanent tattoo, a potential risk factor for the spread of blood borne infections if equipment is not adequately sterilised. Nine respondents reported that tattooing was performed by a traditional practitioner and eight by a friend or relative.

Table 22. Reported tattooing, youth aged 15–24 years, Cook Islands, 2006

	N	%
Ever had a permanent tattoo	45	17.2
Last permanent tattoo was performed at or by		
Tattoo parlour	20	44.4
Traditional practitioner	8	17.8
Friend/relative	9	20.0
Other tattooist	2	4.4
No answer/refused	6	13.3
Total	45	100.0

HIV knowledge and attitudes

Youth were asked a number of questions to assess knowledge of HIV/AIDS transmission and prevention and common misconceptions relating to HIV/AIDS.

Overall, 93 per cent of youth had heard of HIV or the disease called AIDS.

All 264 youth who answered the question on whether they had heard of HIV or the disease called AIDS were included in the denominators for the proportions presented in Table 23 below.

Table 23. Knowledge of mother-to-child transmission, prevention strategies and common misconceptions of HIV/AIDS, youth aged 15–24 years, Cook Islands, 2006

	N	%
Knowledge of mother-to-child transmission		
A pregnant woman who has HIV or AIDS can pass HIV on to her unborn baby	215	81.4
A pregnant woman who has HIV or AIDS can pass HIV on to her unborn baby	145	54.9
Knowledge of prevention strategies		
A person can reduce the chance of getting HIV by using a condom correctly during sex every time	220	83.3
A person can reduce the chance of getting HIV by avoiding anal sex	122	46.2
A person can reduce the chance of getting HIV by having only one, uninfected, faithful sex partner	191	72.3
A person can reduce the chance of getting HIV by abstaining from sexual intercourse	177	67.0
A person can get HIV by having injections with a needle or syringe that has already been used by someone else	223	84.5
Correct response to common misconceptions		
A healthy looking person can have HIV	206	78.0
A person can get HIV by sharing a meal with someone who has HIV or AIDS	204	77.3
A person can get HIV from saliva of someone who has HIV or AIDS	140	53.0
A person can get HIV from mosquito bites	180	68.2
Only gay men get HIV or AIDS	221	83.7
Overall knowledge		
Knowledge of both mother-to-child transmission questions	123	46.6
Correct response to all five prevention strategies	72	27.3
Correct response to all five misconceptions	95	36.0

While four in five youth knew that a pregnant woman who has HIV/AIDS can pass HIV onto her unborn child, only just over half knew that HIV can be transmitted by breast feeding (55 per cent).

Overall, only 46 per cent of youth knew that they could reduce the chance of getting HIV by avoiding anal sex, and just over half correctly acknowledged that a person cannot acquire HIV from the saliva of someone who has HIV/AIDS (53 per cent).

Knowledge was high for some prevention strategies including ‘using a condom during sex every time’ (83 per cent) and acknowledgement that HIV can be transmitted through used needles and syringes (85 per cent).

However when overall knowledge was assessed, very few respondents had consistent knowledge within each of the three knowledge categories in Table 15.

Table 24 shows the proportions of youth with accepting responses for questions used to assess HIV/AIDS.

The vast majority of respondents reported they would be willing to care for a relative with HIV in their own household (95 per cent) and disagreed that people with HIV should live apart from the general community.

Table 24. Accepting attitudes toward persons living with HIV/AIDS, youth aged 15–24 years, Cook Islands, 2006

	N	%
Would be willing to share a meal with a person who has HIV or AIDS		
Agree/strongly agree	157	76.2
Would buy food from a shopkeeper or food seller with HIV/AIDS		
Agree/strongly agree	160	77.7
Would be willing to care for a relative with HIV in own household		
Agree/strongly agree	207	94.5
If a member of family became ill with HIV would want it to remain a secret		
Disagree/strongly disagree	87	43.9
The names of all persons infected with HIV should be displayed publicly		
Disagree/strongly disagree	180	84.5
All persons infected with HIV should live apart from the general community		
Disagree/strongly disagree	193	93.2

Some respondents were less certain about sharing a meal with a person who has HIV or AIDS and buying from a shopkeeper or food seller with HIV/AIDS.

Only 44 per cent of respondents disagreed/disagreed strongly that if a member of their family became ill with HIV, they would want it to remain a secret.

Access to HIV testing

Approximately two thirds of youth agreed that it was possible for someone to get a confidential HIV test in Cook Islands (Table 25).

The most common reason for not reporting that it was possible was the belief that results would not be kept confidential (53 per cent), followed by the belief that HIV testing was not available (23 per cent) and the belief that the testing site is too public (19 per cent).

Of 36 people who reported that they had ever had an HIV test, just over half had been tested within the last 12 months. Four fifths of eligible youth reported they received the result of their last test.

Table 25. Access to HIV testing, youth aged 15–24 years, Cook Islands, 2006

	N	%
Believe it is possible for someone in the community to get a confidential test	156	64.2
Reasons why you can't get a confidential test		
HIV testing site not available	12	22.6
Testing site too public	10	18.9
Results not kept confidential	28	52.8
Opening hours not convenient	1	1.9
Other	2	3.8
Total	53	100.0
Ever been tested for HIV	37	15.6
When did you have you last HIV test		
In the last 3 months	5	13.9
In the last year	14	38.9
Over a year ago	17	47.2
Total	36	100.0
Received result of HIV test	30	81.1

Symptoms of Sexually Transmitted Infections (STI's)

Only 3.5 per cent of youth reported ever being diagnosed with an STI. The most commonly reported STI was chlamydia.

Overall, one in six youth reported having had at least one symptom in the last 12 months (16 per cent). Less than one quarter of youth who reported having a symptom also reported that they had sought treatment.

Table 26. Prevalence of symptoms of STIs in the last 12 months, youth aged 15–24 years, Cook Islands, 2006

	N	%
Ever been diagnosed with a sexually transmitted disease or infection by a doctor or health worker?	9	3.5
Infection(s) respondents were diagnosed with		
Chlamydia	4	1.5
Gonorrhoea	2	0.8
Syphilis	2	0.8
Trichomonas	2	0.8
Symptoms in the last 12 months		
Unusual genital or anal discharge	18	7.8
Rash, ulcer or sore around genitals	3	1.3
Stinging burning or pain when passing urine (males only)	7	7.1
Rash or itching in genital area	18	7.7
At least one symptom	35	15.6
Has sought treatment for symptoms	7	21.9

Table 27 shows results for UNGASS indicators measured by the youth survey. The results indicate there are opportunities for increasing the proportions of youth who receive an HIV test and know the results, and those who have knowledge of sexual transmission of HIV and reject major misconceptions, and for increasing the proportions of youth who use condoms consistently.

Table 27. UNGASS Indicators, youth aged 15–24 years, Cook Islands, 2006

	Females		Males	
	N	**%**	**N**	**%**
7. Percentage of women and men aged 15–24 who received an HIV test in the last 12 months and who know their results	14	9.7	2	2.0
13. Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission*	63	40.9	51	46.4
15. Percentage of young women and men aged 15–24 who have had sexual intercourse before the age of 15	17	11.3	30	27.8
16. Percentage of women and men aged 15–24 who have had sexual intercourse with more than one sexual partner in the past 12 months	31	20.7	45	41.7
17. Percentage of women and men aged 15–24 who have had sexual intercourse with more than one sexual partner in the past 12 months reporting the use of a condom during their last sexual intercourse*	14	9.3	27	25.0

Discussion

The SGS surveys of antenatal women and youth provide important information for strategic direction of STI and HIV prevention programmes in Cook Islands. Previous STI prevalence surveys in PICTs have shown a high prevalence of these STIs and risk behaviours in both antenatal women and youth.

STI testing conducted as part of the SGS has indicated that STIs and blood borne infections were relatively common among antenatal women from Rarotonga, where nearly half of all antenatal women aged 16 to 24 years and one sixth of antenatal women aged 25 to 44 years were diagnosed with an STI or blood born infection. Overall, 10 per cent of antenatal women reporting having more than one partner in the last 12 months and less than half of women reported ever using a condom in their lifetime.

Although youth were not tested, risk behaviours for these infections were high, with nearly one third of youth having sex before 15 years of age, a high prevalence of two or more partners in the previous 12 months and low prevalence of regular condom use.

In addition, one third of sexually active youth who had been off-island in the previous 12 months had had sex with someone who was not their partner while off-island, and condom use in these situations was irregular.

One in six youth also reported at least one symptom for STIs in the 12 months prior to the survey, but only one fifth indicated they had sought medical advice.

These findings highlight the importance of developing and promoting STI prevention strategies and encouraging sexually active people to seek medical assistance if symptoms are apparent. One strategy already implemented on Rarotonga is a chlamydia and gonorrhoea screening program that specifically targets antenatal women and youth.

Family planning was another issue that was highlighted by the ANC survey, which found that only one third of pregnancies were planned and that nearly half of the women aged 25 to 44 years were pregnant for at least the fourth time. Lack of reliable contraception was identified as an important factor, with less than half of women who were not trying to get pregnant reporting they had used any contraception in the three months prior to getting pregnant.

Antenatal women on Rarotonga may benefit from increased awareness of the potential harm associated with alcohol consumption during pregnancy. One third of women consumed alcohol in the previous four weeks and of those who consumed alcohol, 40 per cent reported they normally consumed more than five standard drinks. One quarter of antenatal women also reported using tobacco in the previous 12 months, but the survey did not determine whether this was during the current pregnancy.

Two thirds of youth also indicated that they consume alcohol and four fifths reported they normally consume five or more standard drinks in a session. While illicit drug use was low, one in ten youth also reported using tobacco in the last 30 days.

Both surveys also indicated that there are opportunities to increase knowledge related to HIV transmission and prevention and voluntary testing among antenatal women and youth. As it was not possible to use a probabilistic sampling strategy to recruit youth, it is not possible to determine whether the sample is representative of the general unmarried youth population on Rarotonga.

While the consecutive sampling strategy used for antenatal women enabled recruitment of the majority of women who attended for antenatal care on Rarotonga over the twelve-month period, the final sample size was small (94) and may not represent the broader population of women in this age group from the Rarotonga community.

In addition, the findings from both surveys are restricted primary to Rarotonga and may differ from those that would be obtained from outer islands.

UNGASS and MDG indicators

Indicators		
National commitment and action		
National programmes: blood safety, antiretroviral therapy coverage, prevention of mother-to-child transmission, co-management of tuberculosis (TB) and HIV treatment, HIV testing, prevention programmes, services for orphans and vulnerable children, and education		
7. Percentage of women and men aged 15–49 who received an HIV test in the last 12 months and who know the results		Population-based survey
8. Percentage of most-at-risk populations that have received an HIV test in the last 12 months and who know the results		Behavioural surveys
9. Percentage of most-at-risk populations reached with HIV/AIDS prevention programmes		Behavioural surveys
10. Percentage of orphans and vulnerable children whose households received free basic external support in caring for the child		Population-based survey
11. Percentage of schools that provided life-skills based HIV/AIDS education within the last academic year		School-based survey
Knowledge and behaviour		
12. Current school attendance among orphans and among non-orphans aged 10–14*****		Population-based survey
13. Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission*		Population-based survey
14. Percentage of most-at-risk populations who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission		Behavioural surveys
15. Percentage of young women and men who have had sexual intercourse before the age of 15		Population-based survey
16. Percentage of adults aged 15–49 who have had sexual intercourse with more than one partner in the last 12 months		Population-based survey
17. Percentage of adults aged 15–49 who had more than one sexual partner in the past 12 months who report the use of a condom during their last intercourse*****		Population-based survey
18. Percentage of female and male sex workers reporting the use of a condom with their most recent client		Behavioural surveys
19. Percentage of men reporting the use of a condom the last time they had anal sex with a male partner		Behavioural surveys
20. Percentage of injecting drug users who reported using sterile injecting equipment the last time they injected		Special survey
21. Percentage of injecting drug users who report the use of a condom at last sexual intercourse		Special survey
Impact		
22. Percentage of young women and men aged 15–24 who are HIV infected*		HIV sentinel surveillance and population-based survey
23. Percentage of most-at-risk populations who are HIV infected		HIV sentinel surveillance

*Millennium Development Goals indicator

Bibliography

Annual Statistical Bulletin (ASB). 2007. Chapter2—Population, growth rates, population estimates and vital statistics. Cook Islands Statistics Office. http://www.stats.gov.ck/Resources/Publications/Annual/Chapters/chap1.pdf. Retrieved from the Internet 29 May 2008.

AIDS epidemic update: December 2007. UNAIDS.

---

[i] Proportions were derived from 2006 census table 'Total number of persons Region, Sex and Five year age groups' http://www.stats.gov.ck/Statistics/CensusSurveys/census06/Cen06-Tab1.pdf.

[ii] Country context, Cook Islands, WHO Regional Office for the South Pacific. http://www.wpro.who.int/countries/cok/ Retrieved from the Internet 14 May 2008.

[iii] Fact sheet, Oceania, UNAIDS and WHO sourced from 2007 AIDS epidemic update-regional summary.

[iv] Second Generation Surveillance Surveys of HIV, other STIs and Risk Behaviours in 6 Pacific Island Countries (2004-2005), WHO, 2006.

[v] Cook Island, MOH Annual Health Bulletin, 2007.

[vi] Tabrizi S, Chen S, Tapsall J, Garland S. Evaluation of opa-based real-time PCR for detection of Neisseria gonorrhoea. Sexually Transmitted Diseases.

[vii] Monitoring the declaration of commitment on HIV/AIDS: guidelines on construction of core indicators: 2008 reporting. UNAIDS/07.12E/JC1318E.