

# Status and Trends of HIV/AIDS in the Philippines



## The 1999 Technical Report

of the

## National HIV/AIDS Sentinel Surveillance System



United States Agency for  
International Development

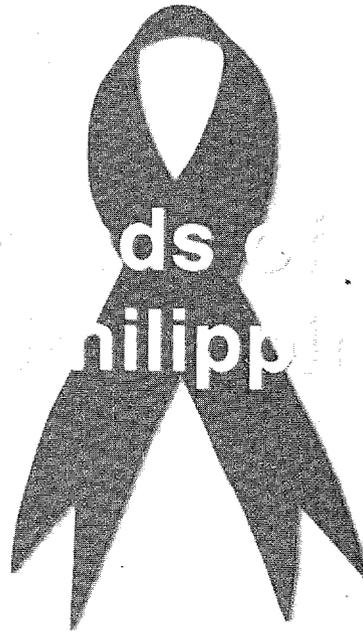


Department  
of Health



World Health  
Organization

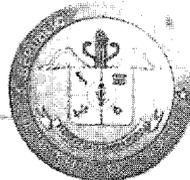
Worlds of  
HIV/AIDS in the Philippines



**The 1999 Technical Report  
of the  
National HIV/AIDS Sentinel  
Surveillance System**



United States Agency for  
International Development



Department  
of Health



World Health  
Organization

B

# TABLE OF CONTENTS

FOREWORD .....	i
EXECUTIVE SUMMARY .....	ii
ACKNOWLEDGEMENT .....	iv
INTRODUCTION: MONITORING HIV / AIDS IN THE PHILIPPINES .....	1
<i>I. PASSIVE SURVEILLANCE – HIV / AIDS REGISTRY.....</i>	<i>3</i>
<i>II. ACTIVE SURVEILLANCE – HIV SEROLOGIC SENTINEL SURVEILLANCE.....</i>	<i>4</i>
<i>III. ACTIVE SURVEILLANCE – BEHAVIORAL SENTINEL SURVEILLANCE.....</i>	<i>17</i>
<i>IV. SUMMARY AND CONCLUSIONS.....</i>	<i>51</i>
<i>V. RECOMMENDATIONS .....</i>	<i>52</i>
REFERENCES .....	53
APPENDICES	
A. HIV / AIDS CASE REPORTING FORM .....	54
B. NUMBER OF SUBJECTS AND HIV SEROPOSITIVES BY SITE AND SURVEILLANCE ROUND (1993-99) .....	55
C. 95% CONFIDENCE INTERVALS FOR HIV SEROPREVALENCE BY SITE AND SURVEILLANCE ROUND (1993-99) .....	57
D. SYPHILIS SEROPOSITIVITY RATES BY SITE AND SURVEILLANCE ROUND (1994-99) .....	59

## FOREWORD

As health systems advance in sophistication and capability, information has become one of the most powerful weapons we have in attending to disease situations. This reality is even more pronounced in situations such as ours in which resources are limited and need to be allocated rationally.

At the beginning of the 21st century, the global community is faced with a disease that requires the utmost in health intelligence to deal with. Unlike most other pathogens, HIV works insidiously against the public health infrastructure, lulling authorities into complacency, and only rearing its deadly head when the damage has already been done.

In this light, efforts to combat HIV/AIDS rely heavily on procurement, analysis and utilization of information on the current state of the pandemic in our country and the probable future scenario based on phenomena perceivable at the present. Although the number of persons found to be living with HIV in the Philippines remains small in comparison to those in other countries, the number is slowly rising. Each new infection fuels the epidemic and poses a major health problem as there is no definitive cure for the disease.

We, in the government health sector have, therefore, taken on the cudgels of closely monitoring the HIV/AIDS situation with the aim of forestalling or averting a disease explosion among Filipinos. As such, we keep tabs on the number of persons found to be infected with HIV. At the same time, we observe the behaviors of persons who are at risks of acquiring the virus.

I commend the tireless efforts of the National HIV Sentinel Surveillance System (NHSSS) in equipping our people with an invaluable weapon in our battle against HIV/AIDS-intelligent and useful information. It is my fervent hope that national and local managers and policymakers throughout the nation will benefit from the results of the NHSSS's work, as we in the Department of Health, have and will continue to in the years to come.



**ALBERTO G. ROMUALDEZ, JR., MD**  
Secretary of Health

## Executive Summary

In 1987 the Department of Health (DOH) established the HIV/AIDS Registry, a passive form of reporting system, to help monitor the HIV epidemic in the country. From 1984, when the first AIDS case was diagnosed to December 1999, there were 1,325 HIV positive individuals reported. Of these, 441 had AIDS and 203 deaths had been recorded. Sexual transmission has been the main mode of transmission reported.

In 1993 the National HIV Sentinel Surveillance System (NHSSS) was established through the AIDS Surveillance and Education Project (ASEP), funded by the United States Agency for International Development (USAID). From two sentinel cities in 1993, NHSSS gradually expanded to include 10 cities by 1996. These are the cities of Angeles, Baguio, Cagayan de Oro, Cebu, Davao, General Santos, Iloilo, Quezon, Pasay, and Zamboanga.

The NHSSS has two components, serologic and behavioral. HIV serologic surveillance (HSS) was started in 1993 to provide periodic estimates and monitor the prevalence of HIV infection among vulnerable groups in the sentinel sites. The system was designed to detect an HIV seroprevalence of  $\geq 1\%$ . Behavioral sentinel surveillance (BSS) was added to NHSSS in 1997 to monitor trends in knowledge and behaviors of the vulnerable groups. Information from both the HSS and BSS could be used to focus appropriate interventions.

This technical report summarizes the results of the HSS from 1993 to 1999, as well as the results of the BSS done from 1997 to 1999.

HIV serosurveillance (HSS) methodology entailed the collection of blood samples from 300 individuals belonging to the following high risk groups: registered female sex workers (RFSW) and freelance female sex workers (FFSW) in all sites, men having sex with men (MSM) in Quezon and Cebu Cities, and injecting drug users (IDUs) in Cebu. In addition, new military recruits of the Armed Forces of the Philippines were included as a surrogate group for the general population. Blood samples were tested for HIV and syphilis antibodies.

Results showed that infections rates in general, even among the high risk groups remained at low levels. HIV was circulating at low levels ( $\geq 1\%$ ) among RFSWs in Angeles, Cagayan de Oro, Davao, General Santos, Iloilo, Quezon, and Pasay cities and at much lower levels ( $<1\%$ ) in the other sites. Likewise, HIV prevalence has remained low among FLSWs in Angeles and Iloilo and very low in the other cities. Although HIV infection has been documented among MSMs in Quezon and Cebu cities, there has been no rapid increase in prevalence. The same is true for HIV prevalence among IDUs in Cebu. No HIV positive has been detected among AFP recruits.

While HIV prevalence has remained low among the risk groups, high ( $>5\%$ ) syphilis rates have been detected especially among FLSWs.

BSS consistently monitored the same groups as those included in the HSS. In addition, deep sea fishermen were monitored in General Santos City. The surveys were carried out by local research institutions in all sites except for those in Baguio and

Cagayan de Oro which were conducted by the city surveillance teams. One hundred twenty (120) respondents per group per site were interviewed during each round.

The BSS revealed that most respondents were aware of correct methods to prevent HIV transmission. However, consistent condom use rates remained low (<50%) among all groups. Respondents were more likely to use a condom during sex with a non-regular partner than with their regular partners (spouse, boy/girl friend). Condom use rates with non-regular customers have been gradually increasing among female sex workers. Most IDUs still share injecting equipment but the proportion has significantly decreased from 77% in 1997 to 53% in 1999. Of those who share injecting equipment, less than 50% clean their equipment with bleach prior to use.

Over the past two years, the most common source of HIV/AIDS information across groups was television and newspapers. For direct information, the most common sources were the SHC and the volunteer workers.

HIV surveillance data indicate that HIV prevalence remains low but is slowly rising. This is probably because the numbers of encounters between HIV positives and vulnerable persons haven't reached a critical level that can trigger a rapid increase or explosion. However, we should not be complacent. Behavioural data show that most high risk individuals fail to take proper protective measures. This means that the window of opportunity for preventing a major HIV epidemic is narrowing. The Philippines remains vulnerable to an HIV epidemic. All HIV/AIDS stakeholders must review their strategies and cooperate to prevent the rapid transmission of HIV/AIDS in the Philippines.

## Acknowledgement

We thank the following for their invaluable support to the Philippine HIV surveillance activities.

Mayors, City Health Officers, and HIV Surveillance Teams of Angeles, Baguio, Cagayan de Oro, Cebu, Davao, General Santos, Iloilo, Pasay, Quezon, and Zamboanga

Center for Education Research and Development in Health, Davao Medical School Foundation

ICOM Health Foundation

Kabalaka Reproductive Health Center

PLOMS Consultancies, Inc.

Social Health Environment and Development Foundation, Inc.

Tri-Dev Specialists Foundation, Inc.

Rudolf Rahmann Research Center, University of San Carlos

Armed Forces of the Philippines

United States Agency for International Development (USAID)

Japanese International Cooperation Agency (JICA)

World Health Organization (WHO)

Program for Appropriate Technology in Health (PATH)

Bureau of Research and Laboratories (BRL), Dept. of Health

Research Institute for Tropical Medicine (RITM), Dept. of Health

National AIDS/STD Prevention and Control Program, Dept. of Health

Michael L. Tan, Executive Director, Health Action Information Network

## Introduction: Monitoring HIV/AIDS in the Philippines

When the first AIDS case in the Philippines was diagnosed in 1984, the Department of Health (DOH) knew that HIV had reached the country. Swift action was needed to prevent the rapid spread of the virus among the population. In the early 80's the Research Institute for Tropical Medicine (RITM), Bureau of Research and Laboratories (BRL) and the US Naval Medical Research Unit (NAMRU) in the Philippines conducted serologic surveys among selected groups. In 1986, HIV/AIDS was classified as a notifiable disease. In 1987, the HIV/AIDS registry, a passive surveillance system, was set-up by the DOH. Diagnosed HIV positive individuals were reported to the registry. From two cases in 1984, the number of cases reported increased to a cumulative total of 1,325 by the end of 1999.

HIV infected persons may be asymptomatic and could unknowingly pass on the virus to unsuspecting victims. Hence, a system was adopted to monitor the prevalence of asymptomatic infections. Establishment of an active surveillance system has been a key component of HIV/AIDS prevention and control programs worldwide. Such systems are instrumental in monitoring the spread of the virus, anticipating its transmission to particular segments of the population, and planning public information and behavioral modification campaigns to slow the rate of infection in the population.

In 1993 the National HIV Sentinel Surveillance System (NHSSS) was established by the DOH through the AIDS Surveillance and Education Project (ASEP) with funding from the United States Agency for International Development (USAID). The surveillance component is implemented by local government units in selected cities nationwide under the technical supervision of the Field Epidemiology Training Program (FETP) in partnership with the World Health Organization (WHO). The Program for Appropriate Technology in Health (PATH) carries out the education component of ASEP through local non-government organizations (NGOs).

From two sites in 1993, the NHSSS was gradually expanded to cover 10 cities by 1996 (Figure 1).

The NHSSS has two components, serologic and behavioral surveillance. HIV serologic surveillance (HSS) is conducted to provide periodic estimates and monitor the prevalence of HIV infection among vulnerable groups in the sentinel sites. The system is designed to detect an HIV seroprevalence of  $\geq 1\%$ . More aggressive measures need to be undertaken in cities where the level of HIV infection has exceeded this threshold.

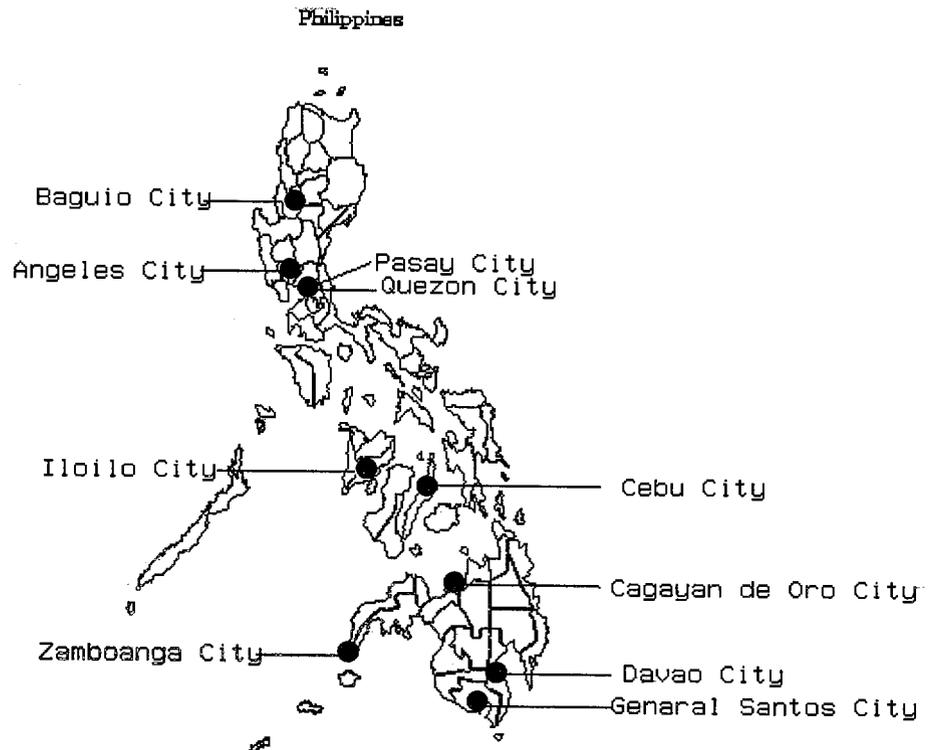
Behavioral sentinel surveillance (BSS) was added to the NHSSS in 1997 to monitor high risk behaviors among the sentinel groups. Surveys are conducted by local research institutions among selected population groups in the sentinel sites.

Data from the HSS and BSS, in triangulation with data from other sources, can give LGUs a picture of the HIV situation in their areas. Information from both surveillance systems can guide intervention measures and is useful in evaluating the impact of such measures.

This technical report will present data available as of December 1999 from the HIV/AIDS registry and both the serologic and behavioral surveillance systems of the

NHSS. Data from each system will be presented separately. The epidemiologic implications of the data from both the passive and active systems will be discussed in the last section. Recommendations concerning surveillance methodology and HIV prevention measures will likewise be presented.

Figure 1. HIV Sentinel Surveillance Sites



## I. Passive Surveillance - HIV/AIDS Registry

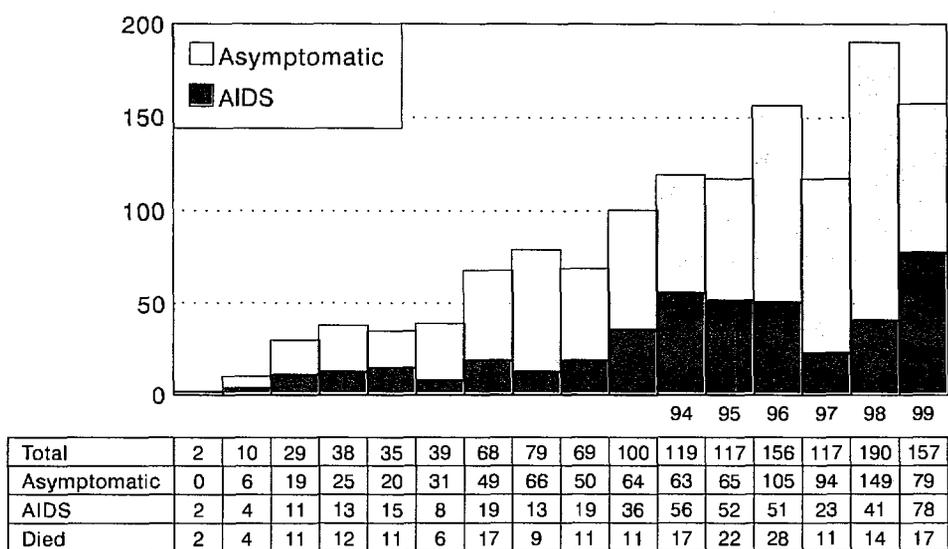
The HIV/AIDS Registry was established in 1987. HIV/AIDS cases diagnosed in hospitals, clinics, laboratories and blood banks accredited for HIV screening are reported to the Department of Health. These cases are included in the registry after serologic test results are confirmed by either the Bureau of Research and Laboratories (BRL) or the Research Institute for Tropical Medicine (RITM).

Anonymous linked reporting is done. Cases are identified by codes using initials, birth dates, and gender. Attempts are made to obtain the following information: address, nationality, occupation, history of travel abroad, and probable mode of transmission. Attending physicians are encouraged to report cases at the time of diagnosis, conversion to AIDS and death. See Case Reporting Form in Appendix A.

The system only captures those cases who submit themselves for testing in the Philippines. Many times reports are incomplete and delayed. Little information is obtained on current modes of transmission as reports reflect past infections.

From January 1984 to December 1999, there were 1,325 reported HIV positive cases (Figure 2). Of these, 441 developed AIDS and 203 have already died. The number of reported cases has slowly been rising. Prior to 1990, less than 50 cases were reported each year. Since 1993, more than a hundred cases are reported each year.

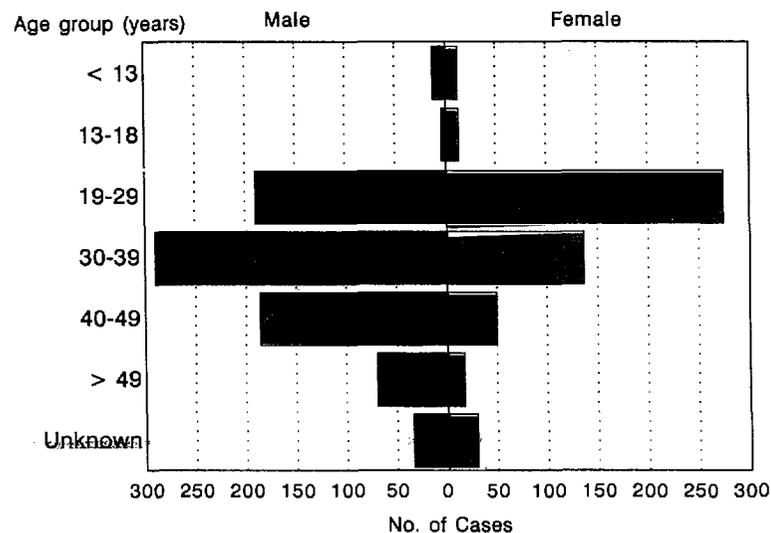
Figure 2. HIV Seropositives\* by Year of Report  
January 1984 - December 1999 (N=1,325)



\* includes asymptomatic and symptomatic (AIDS) whether living or dead

Most of the cases were male with a male to female ratio of 3:2. Majority (68%) of cases were in the 19-39 years age group when initially reported. Only 2% were children aged 12 years and below. Female cases tended to be younger than male cases (Figure 3).

**Figure 3. HIV Seropositives by Age and Gender**  
January 1984 - December 1999 (N=1,325)



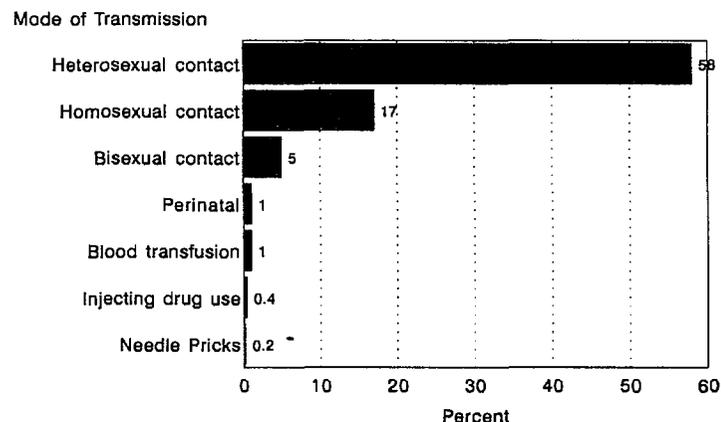
3).

Most (80%) cases acquired HIV through sexual intercourse; of which 72% were through heterosexual contact, 21% through homosexual contact and 6% through bisexual contacts. Bloodborne transmission (transfusion, needle prick injuries, or injecting drug use) was reported in 2% of the cases. Nineteen cases of perinatal transmission were reported, accounting for 1% of the cases. In 17% of cases, no probable mode of transmission was reported.

## II. Active Surveillance - HIV Serologic Sentinel Surveillance

In 1993, the HSS was set up to detect emergence of HIV infection and to monitor trends among high risk groups which included female and male sex workers, men who have sex with men, male STD patients, and injecting drug users. This was started in two cities (Quezon City and Cebu City) and expanded annually to finally include the cities of

**Figure 4. Reported Modes of Transmission**  
HIV Cases (N=1,325\*) Jan 1984 - Dec 1999



\* 219 cases had no reported mode of transmission

Pasay, Davao, Angeles, Iloilo, General Santos, Zamboanga, Cagayan de Oro and Baguio. Initially surveillance rounds were conducted every six months. However, since 1997 the frequency was reduced to once a year. In 1998 and 1999, the number of sentinel groups monitored was also reduced to four, i.e. registered and freelance female commercial sex workers, men who have sex with men, and injecting drug users.

Aside from monitoring high risk groups in sentinel cities, since 1995 serologic tests were also conducted among Armed Forces of the Philippines (AFP) recruits.

This section summarizes the results of the surveillance rounds from March 1993 to March 1999.

## HSS Methodology

### Sentinel Sites

The primary purpose of serologic surveillance is to track the spread of HIV infection in highly vulnerable population groups so that appropriate public health interventions can be instituted. Sites were chosen according to degree of urbanization, presence of known commercial sex trade and geographical representativeness. In particular, large, rapidly urbanizing or highly urbanized cities that serve as centers for education, business or entertainment were targeted. Cities were selected from each of the three major island groups, i.e. Luzon, Visayas and Mindanao (Figure 1).

### Sentinel groups

The HIV sentinel serosurveillance groups are registered female sex workers (RFSW), freelance female sex workers (FLSW), men who have sex with men (MSM), injecting drug users (IDU), men who consult at STD clinics (MSTD) and male commercial sex workers (MCSW).

**RFSWs** are those working in establishments who exchange sex for money and have health cards/permits *and* who had sex with a partner (regular or non-regular) during the past week.

**FLSWs** are those who do not work in establishments and exchange sex favors for money (streetwalkers, *akyat-barko*) *and* who had sex with a partner (regular or non-regular) during the past week.

**MSMs** are men who had sex with men during the past month, regardless of sexual orientation.

**IDUs** are those who use or have used injectable drugs, for recreational purposes, during the past five years.

**MCSWs** are men who exchange sex for money and work in establishments for this purpose. They must have engaged in sex with a partner (regular or non-regular) during the past month.

**MSTDs** are men who consult private and/or government STD clinics for treatment of STDs.

Blood collection method was voluntary anonymous for all groups except for MSTDs as blood samples from clinics were tested without the knowledge of subjects after all identifiers were removed (anonymous unlinked).

From 1998 to 1999, RFSWs and FLSWs were monitored in all sites, MSMs were monitored in Quezon, Cebu and Baguio City and IDUs were monitored only in Cebu City.

## **Sample Size**

The Lot Quality Assurance Sampling (LQAS) method is commonly used in industry for quality assurance and control and has been broadly adopted in public health estimation of prevalence. In HIV serosurveillance, the lot is the sentinel group considered at high risk for HIV infection. Using a modified LQAS method, a sample size of 300 for each sentinel group was calculated. This would allow us to detect with 95% confidence, a rate of  $\geq 1\%$ . If only 100 subjects were gathered, we would be able to detect a prevalence of  $\geq 5\%$ .

## **Blood Collection**

Blood samples are collected by local surveillance teams composed of Social Hygiene Clinic (SHC) and NGO personnel. Initially, Particle Agglutination (PA) screening tests are performed. Specimens that turn out positive during the PA tests are then submitted to the Research Institute for Tropical Medicine for confirmation using the Western Blot (WB) method.

A portion of the blood samples are also tested for syphilis using the Rapid Protein Reagin (RPR) test. *Treponema pallidum* Hemagglutination Assay (TPHA) is used as a confirmatory test for all those found positive using the RPR test.

Pre and post-test counseling are done. Trained counselors from participating NGOs and/or city health department staff provided the counseling.

## **Data presentation**

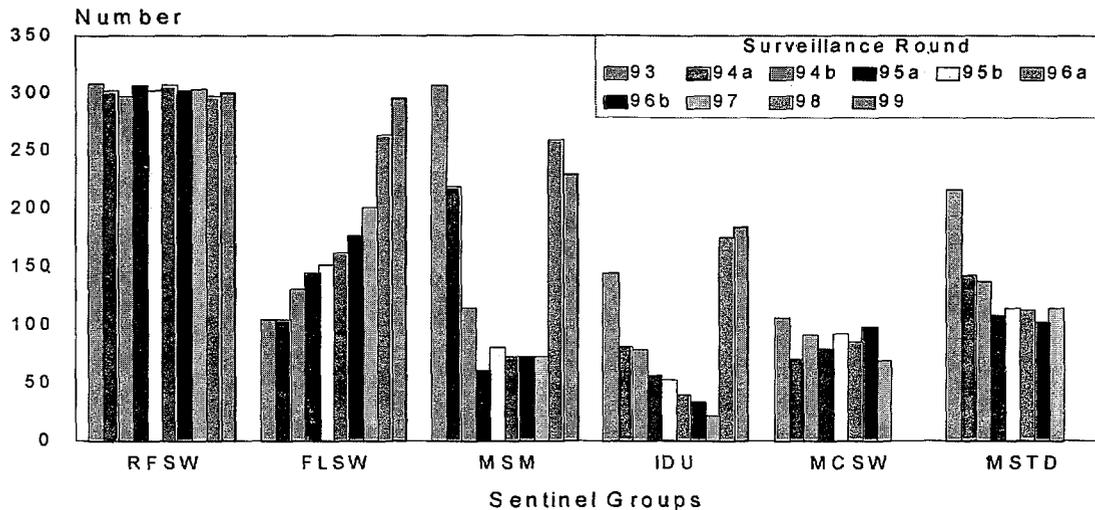
Results of all surveillance rounds (1993 - 98) are presented in frequency tables by sentinel sites and groups. When appropriate, bar charts are used to portray trends. Detailed data on sample sizes and numbers testing positive for each group in each site are also available as appendices (Appendices B and D). In addition to the numbers of HIV positives found, for groups with  $>100$  sample size, we have computed for 95% confidence intervals for HIV prevalence using the formula for simple random sample (appendix C). This is in response to requests from concerned sectors for them to have a better estimate of the actual prevalence among vulnerable groups in the sentinel sites.

## HSS Results

### Access to sentinel groups

Over the years, access to the different risk groups have ranged from easy to difficult. Figure 5 shows the average number of subjects recruited during each of the surveillance rounds. Of the groups, RFSWs were easiest to access most often fulfilling and at times exceeding the sample size of 300. Increasing success has been experienced with FLSWs. Surveillance team members have often reported that it has been difficult to persuade MSMs to have their blood extracted. The increase noted among MSMs and IDUs in 1998 was probably due to delimitation of sites that sample these groups, i.e., Quezon City and Cebu City for MSMs and Cebu City for IDUs.

Figure 5. Mean Number of Subjects Per Round  
HIV Serologic Surveillance, 1993-99



### HIV seropositivity - national picture

By risk group, RFSWs have been found positive for HIV antibody in 7 out of 10 sentinel sites; MSMs were positive for HIV in 3 of 10 sites, MSTD in 2 out of 10 sites and one site each for FLSWs, MCSWs, and IDUs (Table 1). These results indicate that HIV seroprevalence is  $\geq 1\%$  among these groups in the cities where HIV positives were detected.

HIV positives were detected in at least one site every surveillance round. More sites are detecting HIV positives through the years. By sentinel site, Quezon City has the most number of rounds (7/10) where HIV positives were found. Likewise, Angeles City has found HIV positives during 6 of 8 surveillance rounds it conducted. Cagayan de Oro found its first HIV positive case in 1999. In contrast, Baguio and Zamboanga have not yet found any HIV positive person (Table 1).

**Table 1. Sentinel Groups with HIV Positives by Site and Round  
Mar 1993 - Mar 1999**

Sentinel Site	1993	1994a	1994b	1995a	1995b	1996a	1996b	1997	1998	1999
Quezon City	RFSW	RFSW	RFSW	MSM		MSTD	RFSW	RFSW MCSW		
Cebu City							IDU	MSM MSTD		
Davao City				RFSW					RFSW	
Angeles City				RFSW	RFSW MSM	RFSW	RFSW	RFSW	RFSW FLSW	
Pasay City			RFSW		RFSW		RFSW			
Iloilo City					RFSW				RFSW	FLSW
Cagayan de Oro City										RFSW
Gen. Santos City								RFSW	RFSW	RFSW
Baguio City										
Zamboanga City										

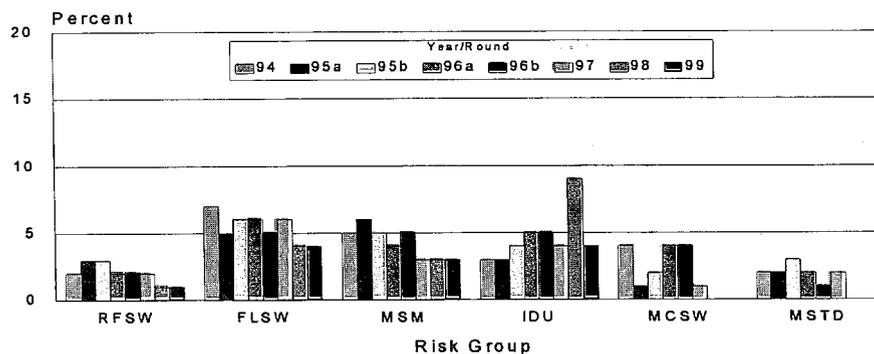
Appendix B shows the number of HIV positives by risk group and by sentinel site from 1993 to 1999. Appendix C shows the 95% Confidence Intervals for HIV seroprevalence by risk group and site.

Since 1995, no HIV positive has been detected among AFP recruits.

### Syphilis Prevalence rates - national picture

Syphilis rates are highest among FLSWs and IDUs. Rates above 5% have been detected among these groups. The syphilis rates have decreased during the past years (Figure 6). Appendix D shows syphilis seropositivity rates by risk group and sentinel site from 1994 to 1999.

**Figure 6. Syphilis seroprevalence\* by risk  
Philippines, 1994 -**



## Quezon City

The target sample size (300) has only been achieved for RFSWs. HIV positives have been detected among RFSWs, MSMs, MCSWs, and MSTDs. Using the modified LQAS technique, HIV prevalence of  $\geq 1\%$  have been detected in these groups. On the other hand, no HIV positives have been detected yet among FLSWs and IDUs.

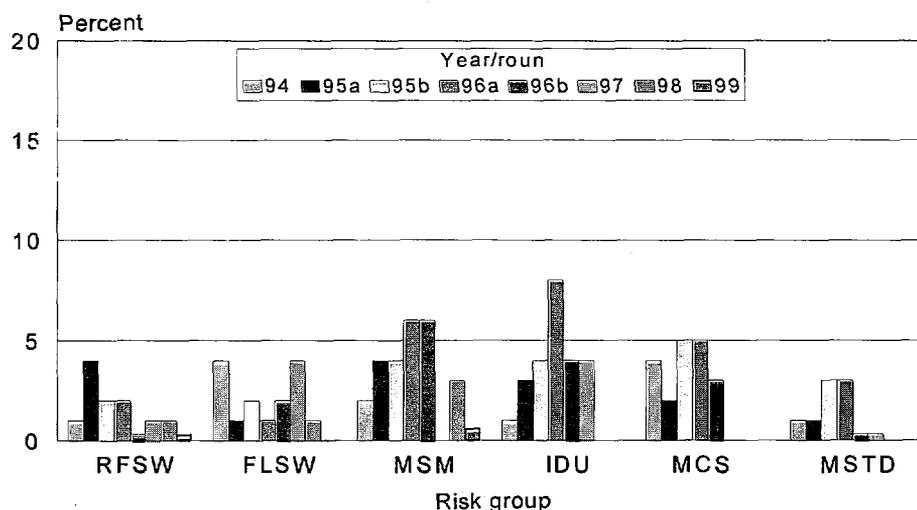
**Table 2. Risk groups with HIV Seropositives Detected by Surveillance Round**

Risk group	1993	1994a	1994b	1995a	1995b	1996a	1996b	1997	1998	1999
RFSW	shaded	shaded	shaded				shaded	shaded		
FLSW										
MSM				shaded						
IDUs									trellis	trellis
MCSW								shaded		
MSTD						shaded			trellis	trellis

shaded blocks indicate round with HIV (+)  
blocks with trellis indicate risk groups not sampled

Syphilis rates above 5% were seen among IDUs and MSMs in 1996. However, these have declined during the past three years. In 1999, syphilis rates were below 5% among all groups monitored, i.e. RFSWs, FLSWs and MSMs.

**Figure 7. Syphilis seroprevalence by risk group  
Quezon City, 1994 - 99**





## Davao City

HIV has been detected only among RFSWs in Davao City. All other risk groups monitored have remained negative for HIV antibody.

Syphilis prevalence rates were highest among FLSWs although a decreasing trend has been observed through the rounds. Rates have increased among MSMs while remaining low among RFSWs.

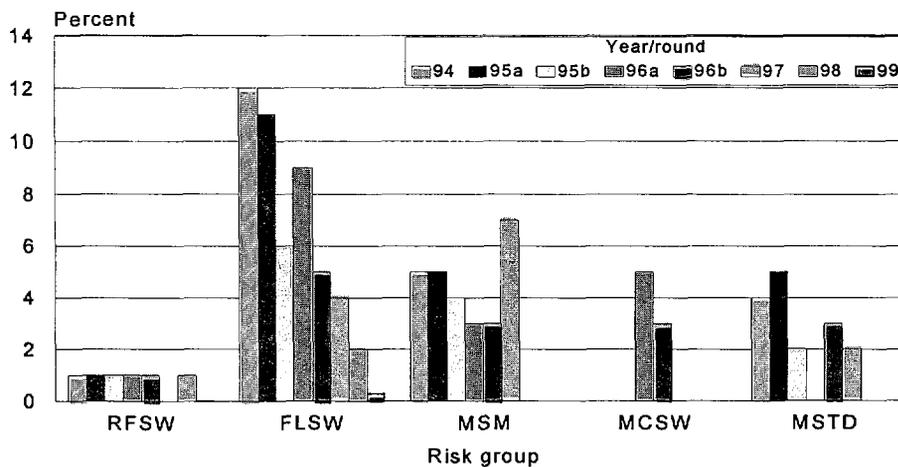
**Table 4. Risk groups with HIV positives by surveillance round**

Risk group	1994a	1994b	1995a	1995b	1996a	1996b	1997	1998	1999
RFSW									
FLSW									
MSM									
IDUs									
MCSW									
MSTD									

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

**Figure 9. Syphilis seroprevalence by risk group  
Davao City, 1994 - 99**



## Angeles City

Since 1995, HIV positives have consistently been found among RFSWs. In most rounds, more than 1 seropositive individual were found (see Appendix B). In 1998, an HIV positive FLSW was found. These indicate HIV prevalence rates  $\geq 1\%$  among female

commercial sex workers in the city. Although less than a hundred MSMs were included in the surveillance rounds in 1994-6, an HIV positive individual was detected in 1995. The rate may even be higher among MSMs than female CSWs. Hence, further serosurveys among MSMs is recommended to better assess the trend of HIV infection in this group.

**Table 5. Risk groups with HIV positives by surveillance round**

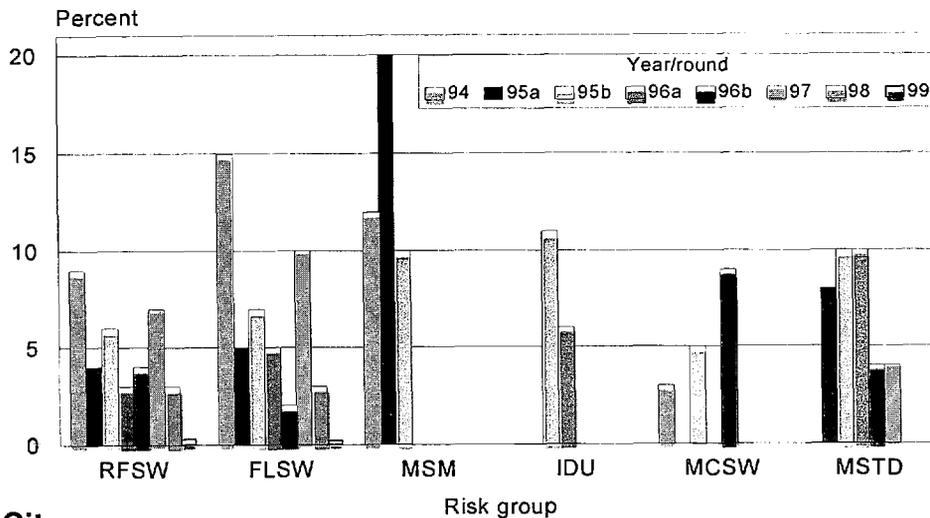
Risk group	1994b	1995a	1995b	1996a	1996b	1997	1998	1999
RFSW		■	■	■	■	■	■	■
FLSW							■	■
MSM			■			■	■	■
IDUs							■	■
MCSW							■	■
MSTD							■	■

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

MSMs had the highest syphilis rates among the groups monitored in Angeles City, even higher than FLSWs. Syphilis rates > 5% have been detected among all risk groups monitored. However, rates for both RFSWs and FLSWs in 1998 and 1999 were below 5%.

**Figure 10. Syphilis seroprevalence by risk group  
Angeles City, 1994 - 99**



**Pasay City**

Since HIV positives were detected in 3 of the 8 rounds conducted, HIV seroprevalence among RFSWs in Pasay City is  $\geq 1\%$ . HIV positives were not found among other risk groups monitored.

Syphilis rates were highest among MSMs during the first few rounds, but these have since gone down. In 1998 and 1999, syphilis rates among RFSWs and FLSWs were below 2%.

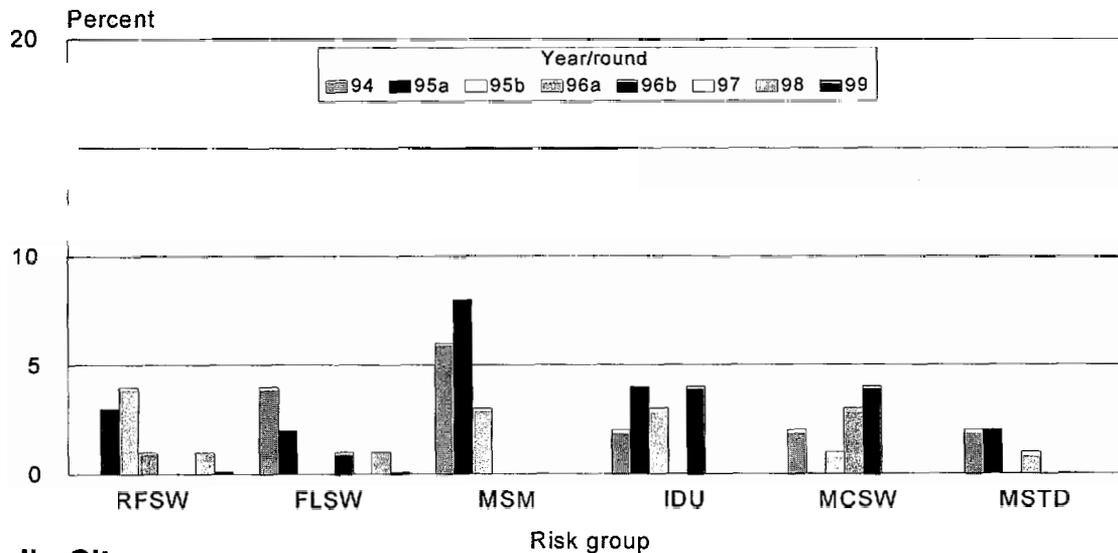
**Table 6. Risk groups with HIV positives by surveillance round**

Risk group	1994b	1995a	1995b	1996a	1996b	1997a	1998	1999
RFSW								
FLSW								
MSM								
IDUs								
MCSW								
MSTD								

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

**Figure 11. Syphilis seroprevalence by risk group  
Pasay City, 1994 - 99**



### Iloilo City

In Iloilo City, HIV seropositives have been reported only among RFSWs. No HIV positives were found among the other risk groups. It should be noted that the target sample size of 300 was reached for FLSWs and RFSWs in this city in 1999 (see Appendix B).

**Table 7. Risk groups with HIV positives by surveillance round**

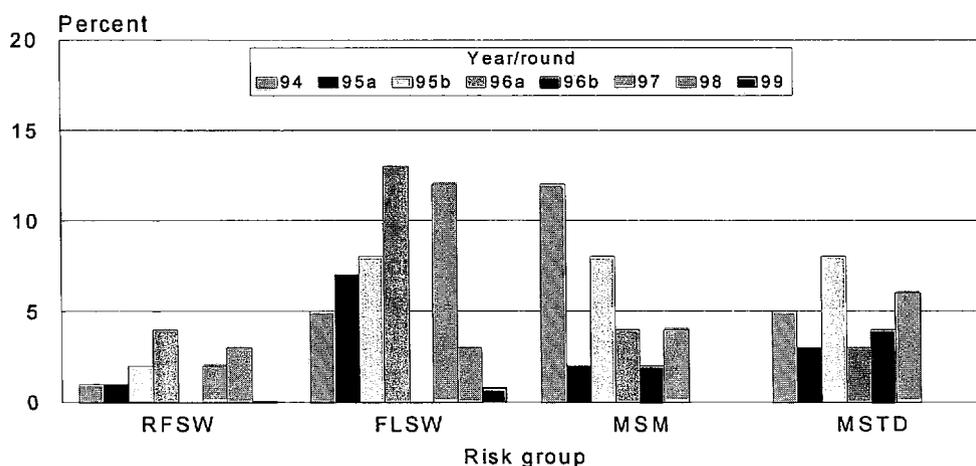
Risk group	1994b	1995a	1995b	1996a	1996b	1997	1998	1999
RFSW								
FLSW								
MSM								
IDUs								
MCSW								
MSTD								

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

Syphilis rates above 10% have been reported among FLSWs and MSMs in Iloilo City. For IDUs, prevalence rates for syphilis are distorted by the small sample size: 1 positive for syphilis out of 3 IDUs in 1996 and 1 out of 1 in 1997. These give prevalence rates of 33% and 100%, respectively for the said rounds. These values are not reflected in the chart below. Syphilis rates have remained <5% among RFSWs and have decreased to <5% among FLSWs in 1998 and 1999.

Figure 12. Syphilis seroprevalence by risk group  
Iloilo City, 1994 - 99



### Cagayan de Oro City

The first HIV positive person was detected among RFSWS in Cagayan de Oro City in 1999. For syphilis, prevalence rates are highest among FLSWs and MSMs although a decreasing trend has been noted over the surveillance rounds. Syphilis rates have remained less than 3% among RFSWs.

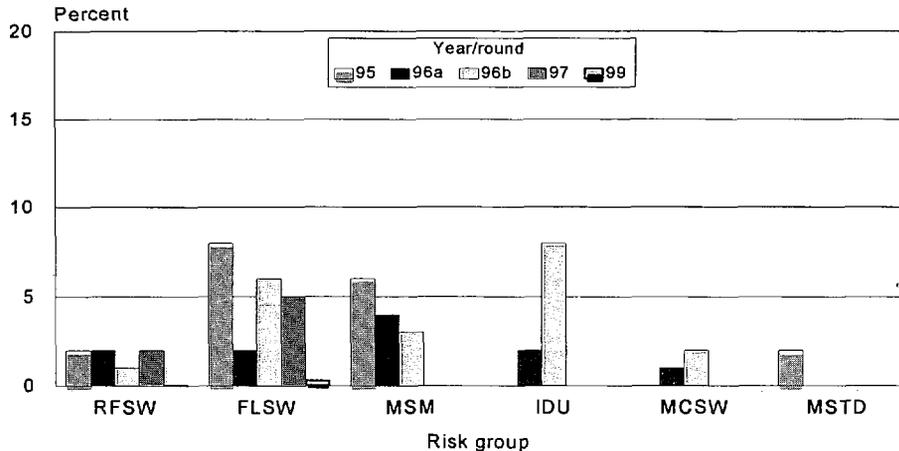
Table 8. Risk groups with HIV positives by surveillance round

Risk group	1995b	1996a	1996b	1997	1999
RFSW					■
FLSW					■
MSM					■
IDUs					■
MCSW					■
MSTD					■

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

Figure 13. Syphilis seroprevalence by risk group  
Cagayan de Oro City, 1995 - 99



\*no serosurveillance done in 1998

### General Santos City

HIV seroprevalence is  $\geq 1\%$  among RFSWs in General Santos City. No HIV positives have been found among other risk groups in the city.

Table 8. Risk groups with HIV positives by surveillance round

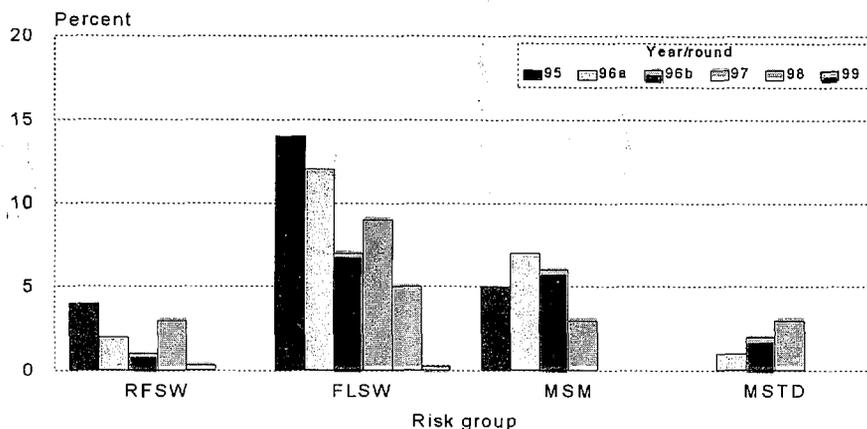
Risk group	1995b	1996a	1996b	1997	1998	1999
RFSW						
FLSW						
MSM						
IDUs						
MCSW						
MSTD						

solid blocks indicate round with HIV (+)

blocks with light trellis pattern indicate risk groups not sampled

FLSWs have the highest syphilis rates of the risk groups monitored in General Santos although a downward trend is noted. MSMs also reported high syphilis rates but this has decreased through the years.

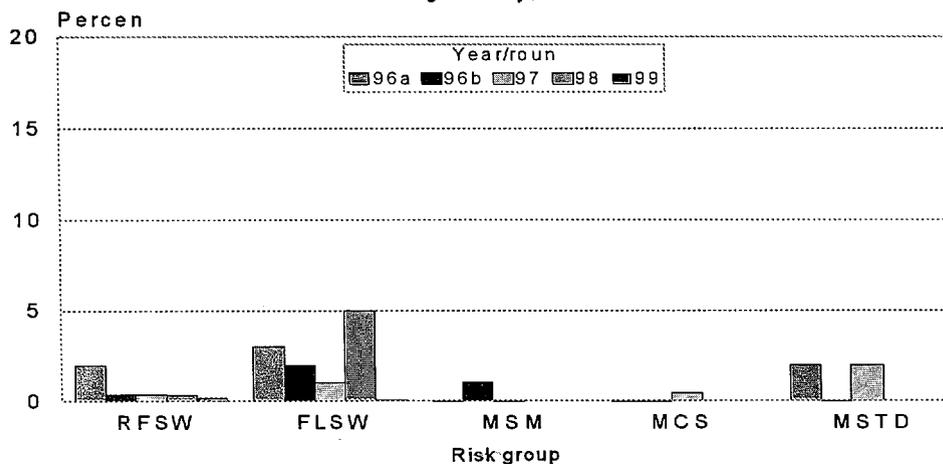
Figure 14. Syphilis seroprevalence by risk group  
General Santos City, 1995 - 99



## Baguio City

No HIV positive has been detected in Baguio City since 1996. Low (<5%) syphilis rates have been detected among the risk groups monitored. However, syphilis rates increased among FLSWs in 1998 but decreased in 1999.

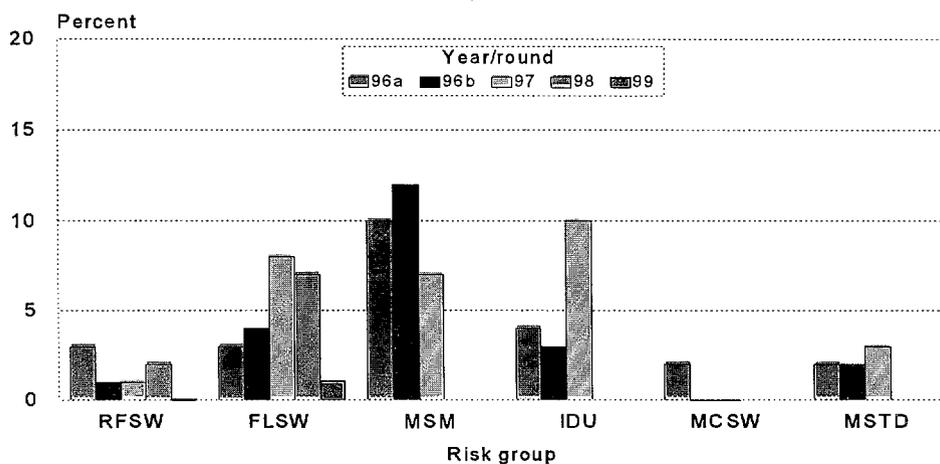
Figure 15. Syphilis seroprevalence by risk group  
Baguio City, 1996 - 98



## Zamboanga City

For four surveillance rounds, no HIV positive has been detected in Zamboanga City. For syphilis, rates are high among MSMs and FLSWs although the rates for both groups are decreasing.

Figure 16. Syphilis seroprevalence by risk group  
Zamboanga City, 1996 - 99



### III. Active Surveillance – Behavioral Sentinel Surveillance

The slow changes seen in HIV serologic surveillance (HSS), coupled with the fact that the desired outcome of most prevention programs is behavior change, has led to an increasing emphasis on the use of trends in self-reported behaviors as a more responsive indicator of change. Tracking the changes in risk behaviors can be used to direct, monitor, and evaluate the community impact of HIV prevention programs.

Behavioral Sentinel Surveillance (BSS) was added to the HSS in 1997. Based on classical HIV and STD serologic surveillance methods, BSS consisted of repeated cross-sectional surveys of sub-populations who are more vulnerable to HIV. Changes in HIV/STD risk behaviors can thus be systematically monitored over time. In the absence of a vaccine for HIV, behavioural changes in terms of reducing the number of sexual partners and increasing consistent and proper condom use are critical to reduce the spread of HIV. It is, therefore, imperative to measure and understand whether these changes are occurring in population groups at high risk for HIV.

Ten cities conducted BSS from 1997 to 1999 (N.B. These are the same sites for HSS, see Figure 1). This section presents the results of the 1997 to 1999 BSS rounds. Data are aggregated to give the national average of the indicators being monitored. The results per sentinel site are also presented. On a national level, particular attention is given to the following indicators: knowledge of at least three correct ways to prevent HIV transmission, median number of sex partners, consistent condom use, condom use during the last sex act with a non-regular partner, and sharing of injecting equipment among injecting drug users.

BSS was implemented by a local research institute (RI) recommended by the City Health Office. This was to minimize possible bias on both the respondent's and the interviewer's side. The same RIs implemented the BSS for the past 3 years.

#### BSS Methodology

##### Sentinel groups

The Behavioral Sentinel Surveillance Groups are registered female sex workers (RFSW), freelance female sex workers (FLSW), men who have sex with men (MSM), injecting drug users (IDU), and deep sea fishermen (DSF).

**RFSWs** are those who exchange sex for money and work in establishments such as *karaoke* bars, beer gardens, massage parlors, and night clubs, and who had sex with a partner during the past seven days.

**FLSWs** are those sex workers who exchange sex for money and do not work in establishments (e.g. street walkers and those working in *casas* or brothels), and have had sex with a partner within the past seven days.

**MSMs** are men who had sex with men in the past month, regardless of sexual orientation.

**IDUs** are those who have used injectable drugs for recreational purposes in the past six months.

**DSF** are fishermen based in General Santos City who had sex with female sex workers in the past month.

Not all the above groups are monitored by all sites. Each city has its own sentinel groups (Table 9) which it monitors yearly.

**Table 9. Sentinel groups monitored in each city, BSS 1997 – 1999**

City	RFSW	FLSW	MSM	IDU	DSF
Angeles					
Baguio					
Cag. De Oro					
Cebu					
Davao					
Gen. Santos					
Iloilo					
Pasay					
Quezon					
Zamboanga					

\* shading indicates group monitored

**Regular sex partner** is a sex partner that the person has had sex with for the past 6 months, or her husband/his wife, or a live-in partner. A **non-regular partner** is a person who has been a sex partner for less than 6 months.

### Sample size

The sample size needed in order to detect a 20% change in behavior between rounds was 120 per group per site.

### Sampling methodology

For RFSWs, establishments were chosen at random. No more than 50% of RFSWs in a given establishment were included as respondents. Purposive or convenience sampling was done for the other groups.

### Interview

Respondents were interviewed using a standard questionnaire. Information was obtained on the following:

- Demographic data** (age, gender, marital status, and educational attainment)
- Knowledge** of three correct ways to prevent HIV transmission

**Risk behaviors** (number of sexual partners, consistent condom use, condom use the last time they had sex with a regular and non-regular partner, sharing and cleaning of injecting equipment among IDUs).

**Consistent condom use** was defined as always using a condom for all sex partners during the past 7 days for female sex workers and the last month for MSMs, IDUs, and DSF.

Information about signs and symptoms of sexually transmitted diseases, health seeking behavior, and sources of HIV/AIDS information were also gathered.

## Analysis

Data were aggregated to give the national average for the indicators. Chi square tests were done to determine if a difference between rounds is statistically significant ( $p < .05$ ).

## BSS Results

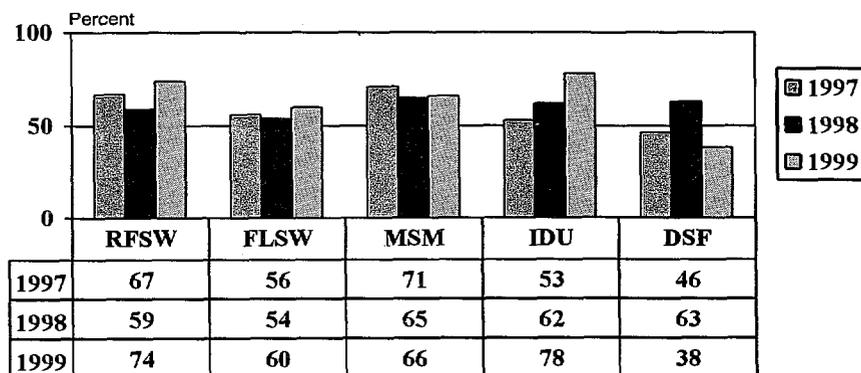
### Demographic Characteristics

The median ages of respondents from the five sentinel groups ranged from 20-30 years. Female sex workers were slightly younger than male respondents. More than half of female sex workers and DSF have reached at least high school level of education while majority of MSMs and IDUs have reached up to college level. Majority of female sex workers and MSMs were single or had live-in partners. Less than 10% said that they were married.

### Knowledge

Although most respondents knew three correct ways to prevent HIV transmission, the proportion was less than 80% for all sentinel groups. Statistical analysis showed significant increases in knowledge among RFSWs, FLSWs and IDUs (all  $p < .01$ ).

**Figure 17. Proportion of Respondents who Know of 3 ways of Preventing HIV transmission, 1997-99**



## Source of Information on HIV/AIDS

Across sentinel sites and groups, the most common source of HIV/AIDS information were television and newspapers for mass media. For direct information, the most common sources were the Social Hygiene Clinic (SHC) and volunteer health workers.

A limitation of the BSS questionnaire was that it could not identify whom the respondents referred to as volunteer workers. They may be the city volunteer health workers of the City Health Offices or the peer educators of the different NGOs working in the sentinel sites.

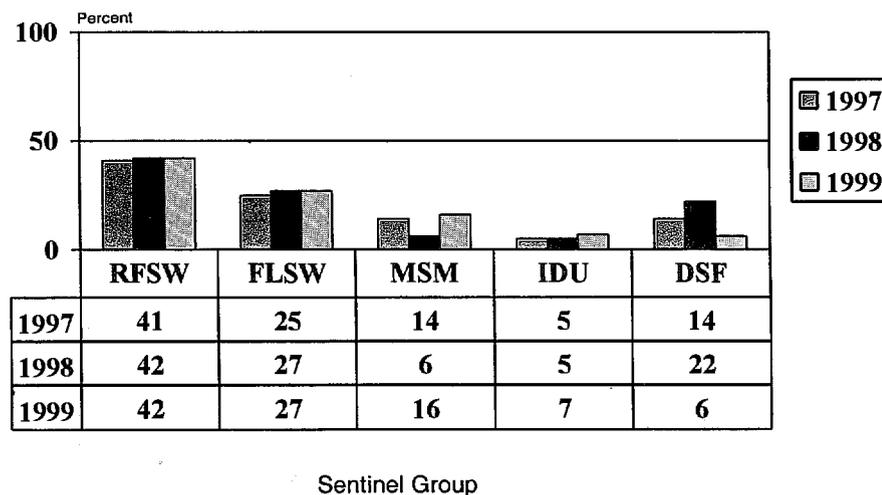
## Number of Sexual Partners

There was no change in the median number of sex partners across sentinel groups for the past 3 years. FLSWs had more sex partners per week (median 3-4) than RFSWs (median 1-2). MSMs had a median of 1-2 sex partners per week while IDUs had a median of only 1 per month.

## Condom Use

The proportion of respondents who reported consistent condom use remained low (less than 50%) (Fig. 18). Relatively speaking, RFSWs continued to have the highest proportion and were 2 times (95% CI 1.6-2.2,  $p < .001$ ) more likely to consistently use condoms than FLSWs.

**Figure 18. Consistent Condom Use among Sentinel Group BSS, 1997-1999**



When asked about condom use with regular and non-regular partners, a greater proportion of respondents from all risk groups were more likely to report using a condom during sex with a non-regular than with a regular partner (Figure 19).

**Figure 19. Condom Use vs. Non-regular Partners  
1999 Behavioral Surveillance Round**

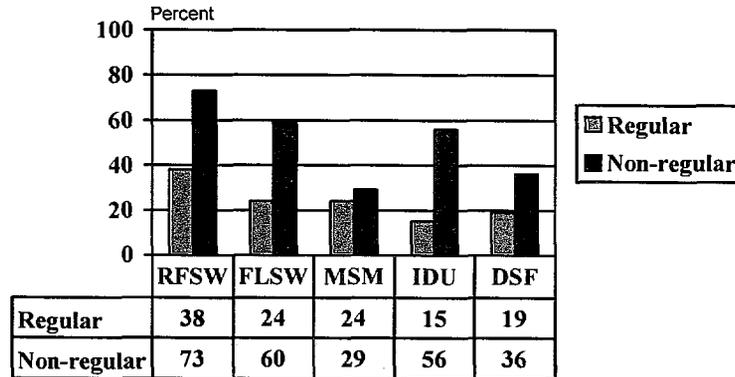
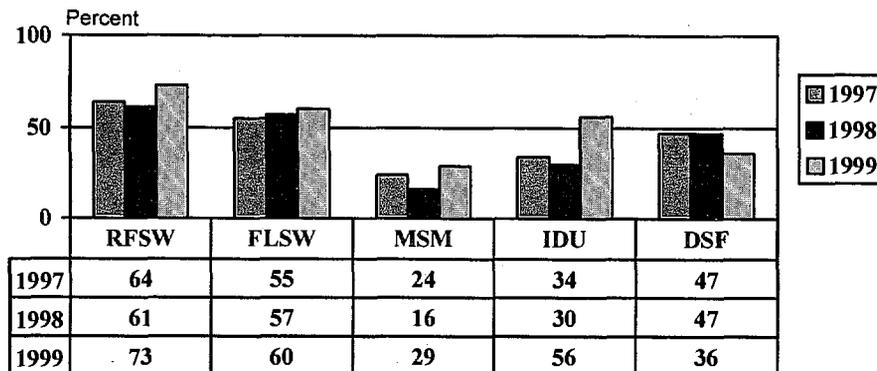


Figure 20 shows the proportion of respondents reporting condom use the last time they had sex with a non-regular partner. Female sex workers were more likely to use a condom than other risk groups with RFSWs more likely to use a condom than FLSWs (RR 1.16, 95% CI 1.05-1.28, p=0.002). Increases in the proportion of respondents reporting condom use with non-regular partners were noted in all groups except for deep sea fishermen.

**Figure 20. Reported Condom Use with a Non-regular Partner  
BSS, 1997-1999**



## Injecting Drug Use

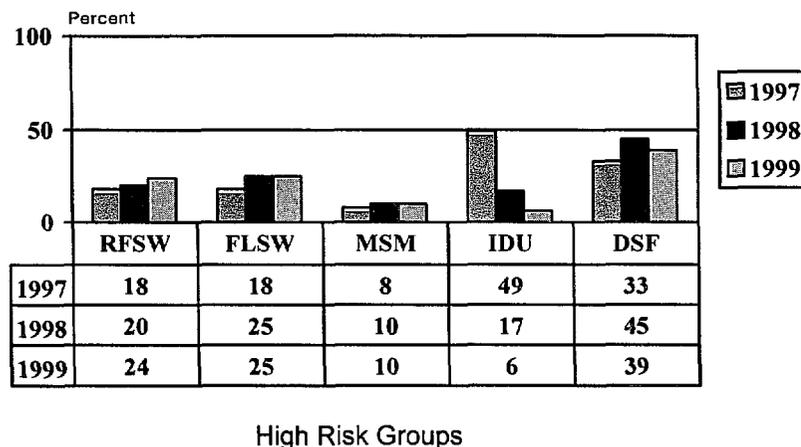
In 1999, there was a significant ( $p < .01$ ) decline (from 77 to 53%) in the proportion of injecting drug users who shared injecting equipment. However, among those who shared injecting equipment, there was a decrease from 50% to 25% in the proportion of those who cleaned their equipment with bleach prior to use (N.B. cleaning with bleach is the method recommended).

## Sexually Transmitted Diseases

Figure 21 shows the proportion of respondents who reported experiencing signs and/or symptoms of STDs (e.g. dysuria, abnormal discharges, genital sores/ulcers) during the past six months prior to interview. A continued decline in the proportion of IDUs reporting signs and/or symptoms of STDs was seen while no significant changes were seen in the other groups.

Table 10 lists the persons or places consulted by those with STD signs and/or symptoms. Most sex workers would consult at the Social Hygiene Clinic. A significant proportion (23%) of MSMs would just self-medicate or ignore the signs/symptoms.

**Figure 21. Proportion of Respondents Reporting Signs &/or Symptoms of STDs during past six months, 1997 to 99**



**Table 10. Persons/Centers consulted by Respondents when they experienced signs and/or symptoms of STDs, 1999**

	<b>RFSW N=287</b>	<b>FLSW N=291</b>	<b>MSM N=91</b>	<b>IDU N=7</b>	<b>DSF N=47</b>
Social Hygiene Clinic	<b>81%</b>	<b>47%</b>	14%	14%	<b>49%</b>
Private Physician	12%	17%	16%	14%	<b>49%</b>
Hospital	2%	2%	15%	-	36%
Friend or Relative	11%	14%	<b>43%</b>	29%	43%
Co-worker	7%	10%	5%	-	23%
Pharmacy	8%	14%	3%	<b>43%</b>	4%
Self-medicate/Ignore	1%	6%	23%	-	-
Others	10%	14%	9%	-	8%

\*respondent may have more than one answer

### BSS Results by Sentinel Site

#### Angeles City

TRI- DEV Specialists Foundation, Inc. (TRI-DEV) implemented the BSS in this city. From 1997 to 1999, three risk groups were monitored, i.e. registered female sex workers, freelance female sex workers and men who have sex with men. There were no significant changes across time in the demographic characteristics of each group monitored. Table 11 shows the demographic characteristics of the respondents included in the latest survey. A look at the age range of the respondents reveals the presence of child prostitution in the city. As a group, MSMs appear to be better educated compared to the female sex workers.

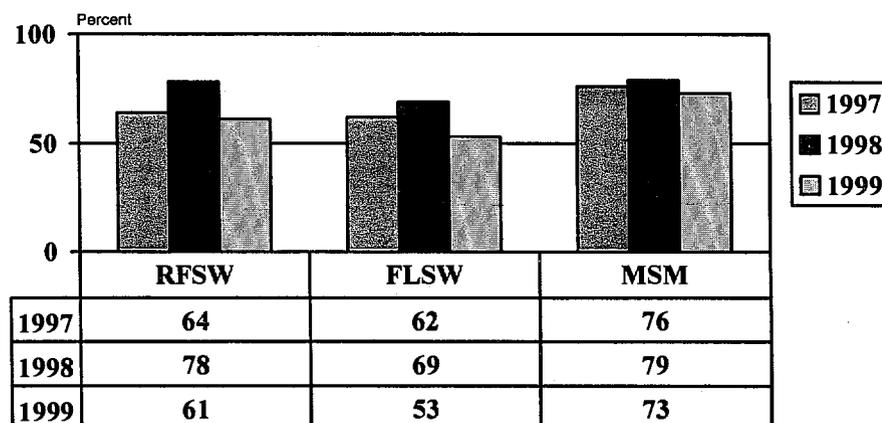
**Table 11. Demographic Characteristics of Sentinel Groups  
Angeles City, 1999**

Characteristics	High Risk Groups		
	RFSW	FLSW	MSM
Age (Years)			
Range	17-36	15-37	13-45
Median	24	21	23
Highest Educational Attainment			
Elementary	22%	33%	11%
High School	65%	60%	63%
Vocational	6%	1%	8%
College	7%	7%	18%
Civil Status			
Single	62%	45%	83%
Live-in	17%	38%	12%
Married	8%	12%	4%
Separated	13%	4%	2%
Widow/widower	1%	1%	-

There were no significant changes in the number of sex partners across time. Freelance sex workers had more sex partners per week than registered sex workers (FLSW: 1-50, median 4; RFSW: 1-10, median 2). MSMs had 1 to 30 sex partners per month (median 3).

Knowledge on HIV prevention of all the risk groups improved (Fig.22)

**Figure 22. Proportion of Respondents Who Know of Three Correct Ways of Preventing HIV Transmission Angeles City, BSS, 1997-1999**



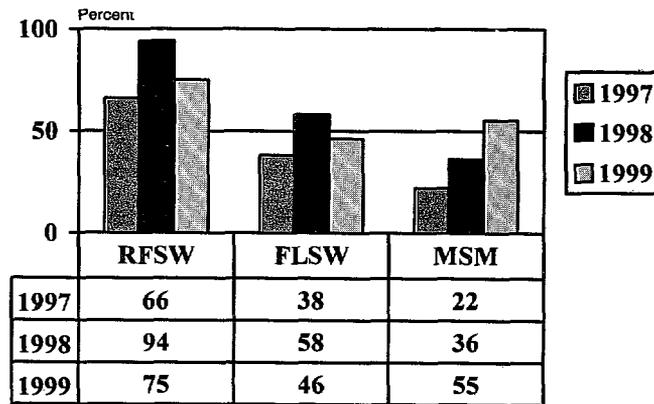
The Social Hygiene Clinic was the most common source of information on HIV/AIDS of registered sex workers. FLSWs and MSMs more often got their information from tri-media. See Table 12.

**Table 12. Sources of Information of High Risk Groups on HIV/AIDS Angeles City, BSS, 1999**

Information Source	RFSW	FLSW	MSM
Television	-	-	53%
Radio	17%	20%	36%
Newspaper/Magazine	17%	14%	23%
Social Hygiene Clinic	48%	7%	14%
NGO/Peer Educator	17%	8%	19%
Poster/pamphlet	13%	18%	11%
Private Doctor	18%	-	3%
Friends/Relative	13%	14%	-
Others	13%	10%	12%

Condom use rates of female sex workers with their non-regular partners declined in 1999. However the proportion of MSMs who used condoms continued to increase. See Figure 23.

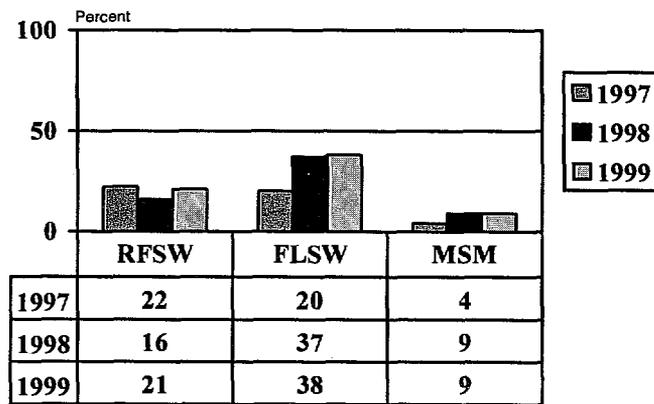
**Figure 23. Proportion of Respondents Who Used a Condom During Their Last Sex with a Non-Regular Partner  
Angeles City, BSS, 1997-1999**



High Risk Group

Figure 24 shows the proportion of respondents who reported experiencing signs and/or symptoms of STD during the six months prior to interview. A greater proportion of female sex workers experienced STD signs and symptoms compared to MSMs.

**Figure 24. Proportion of Respondents who Reported Signs and/or Symptoms of STDs, Angeles City, BSS, 1997-1999**



High Risk Group

Table 13 shows the health-seeking behavior of those who experienced signs and/or symptoms of STDs. Self-medication is common among freelancers. RFSWs and MSMs are more likely to seek consultation with a private physician.

**Table 13. Health-seeking Behavior of those with Signs and/or Symptoms of STDs Angeles City, BSS, 1999**

	RFSW (N=25)	FLSW (N=45)	MSM (N=11)
Hospital	-	4%	45%
Private Doctor	36%	13%	-
Self-medicate/Ignore	8%	35%	18%
Friends/Relatives	28%	11%	-
Co-workers	20%	13%	-
Manager or "Bugaw"	-	20%	-
NGO worker/Peer Educator	4%	2%	18%
Social Hygiene Clinic	12%	-	9%
Others	-	2%	9%

\*respondents may give more than one answer

**Comments:** Freelancers appear to be the most vulnerable group (more sex partners, lower condom use rates). More efforts should be exerted to reach out to this group and empower them to protect themselves from HIV/AIDS. Self-medication for STDs should be discouraged as this could lead to drug resistance.

### Baguio City

The HIV surveillance team of the City Health Office conducted the surveys from 1997 to 1999. Four sentinel groups were monitored: registered and freelance female sex workers, MSMs and waiters. Waiters in night establishments were included since the city health office believes that some of them are male commercial sex workers. There have been no significant changes across time in the demographic characteristics of the sentinel groups. Table 14 shows the characteristics of each group surveyed in 1999.

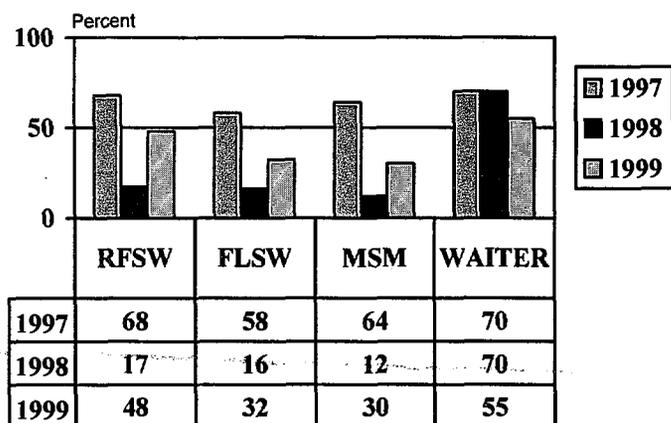
**Table 14. Demographic Characteristics of Sentinel Groups Baguio City, BSS, 1999**

Characteristics	RFSW	FLSW	MSM	Waiters
Age (years)				
Range	18-44	15-56	15-52	17-45
Median	21	20	25	26
Highest Educational Attainment				
Elementary	16%	10%	2%	4%
High School	73%	54%	35%	50%
Vocational	1%	5%	5%	15%
College	10%	31%	58%	31%
Civil Status				
Single	64%	71%	88%	46%
Live-in	19%	7%	4%	10%
Married	11%	20%	7%	42%
Separated	5%	2%	1%	2%
Widow/widower	1%	1%	-	-

Female sex workers had a median of one partner a week while MSMs and waiters had a median of one partner a month.

Figure 25 shows the proportion of respondents with correct knowledge of three ways of preventing HIV transmission. Waiters appeared to have better knowledge compared to female sex workers and MSMs. Tri-media was the main source of information for all groups.

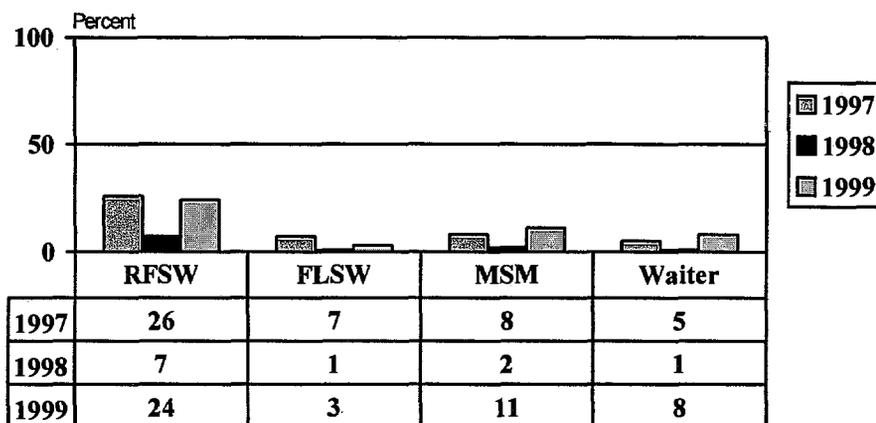
**Figure 25. Proportion of Respondents who Know of Three Ways Of Preventing HIV Transmission Baguio City, BSS, 1997-1999**



Sentinel Groups

Condom use rates with non-regular partners were low in all groups monitored. See Figure 26.

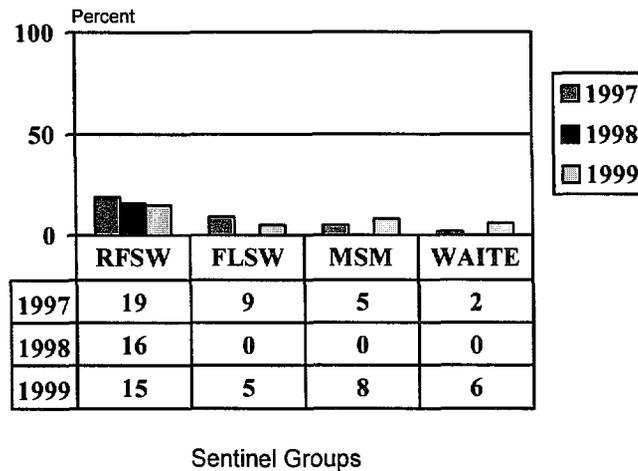
**Figure 26. Reported Condom Use with a Non-Regular Partner Baguio City, BSS, 1997 to 1999**



Sentinel Group

A greater proportion of registered sex workers reported signs and/or symptoms of STD than the other groups. See Figure 27.

**Figure 27. Proportion of Respondents Who Reported Signs and/or Symptoms of STDs, Baguio City, BSS, 1997-1999**



Most respondents would seek consultation at the Social Hygiene Clinic if they had signs or symptoms of STDs. Others would go to a private physician or hospital. None would self-medicate.

**Comments:** The HIV/AIDS information campaign in the city needs to be improved in order to raise the level of knowledge of the risk groups. Tri-media should be used as these are the main sources of information of the target groups. Condom use should be more actively promoted among sex workers and their clients. The SHC may consider dropping the waiters as a sentinel group and instead focus on the female sex workers and MSMs.

### **Cagayan de Oro City**

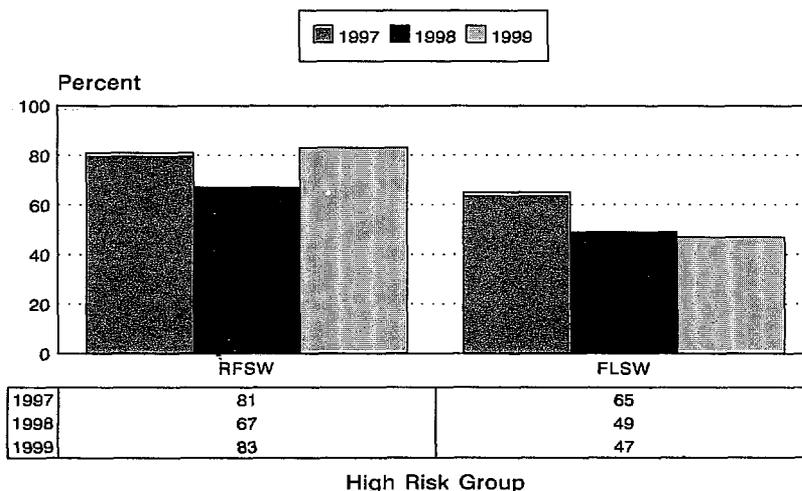
Since 1997, the City Health Office's HIV Surveillance team conducted annual behavioral surveys among registered and freelance female sex workers. Table 15 shows the demographic characteristics of the two groups in 1999. Freelance sex workers had more sex partners per week than registered sex workers (FLSW: 1-23, median 4; RFSW: 1-15, median 1).

**Table 15. Demographic Characteristics of Female Sex Workers  
Cagayan de Oro, 1999 BSS**

Characteristics	RFSW	FLSW
Age (Years)		
Range	18-43	15-46
Median	23	20
Highest Educational Attainment		
Elementary	10%	30%
High School	70%	60%
Vocational	3%	-
College	17%	9%
Civil Status		
Single	48%	57%
Live-in	31%	28%
Married	8%	4%
Separated	12%	10%

Registered sex workers had better knowledge regarding HIV transmission than freelancers (Fig. 28). These could be because more registered workers had health workers as their source of information compared to freelancers (RFSW 98%; FLSW 48%).

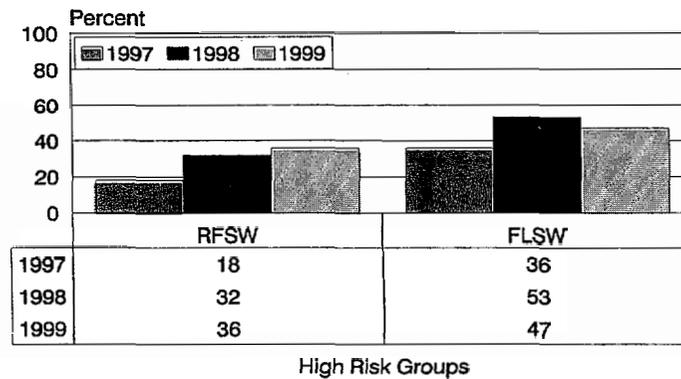
**Fig. 28. Proportion of Respondents Who Know of Three Correct Ways of Preventing HIV Transmission  
Cagayan de Oro, BSS, 1997-99**



The female sex workers used a condom more often with their non-regular partners than with their regular partners. Figure 29 shows condom use rates with non-regular partners. There was a significant increase in condom use rates among

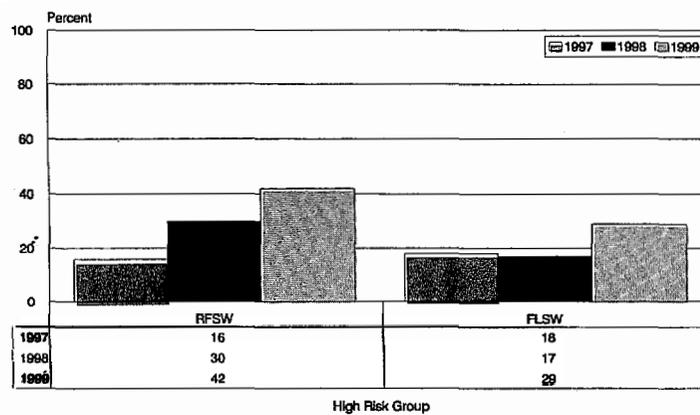
registered sex workers ( $p < .01$ ). However, freelancers continued to have higher condom use rates with their non-regular partners than registered sex workers.

**Figure 29. Condom Use Rates with Non-regular Partners  
Female Sex Workers, Cagayan de Oro, 1997-1999**



More registered sex workers reported experiencing signs or symptoms of STD than freelancers (Figure 30). This could be due to lower condom use rates among RFSWs. Table 16 shows the health-seeking behavior of those with STD signs/symptoms.

**Figure 30. Proportion of Respondents who has  
Signs and Symptoms of STDs  
Cagayan de Oro, BSS, 1997-1999**



**Table 16. Persons or Places Consulted by those with STD signs or symptoms  
Cagayan de Oro, BSS, 1999**

	<b>RFSW (N=50%)</b>	<b>FLSW (N=35)</b>
Social Hygiene Clinic	98%	54%
Pharmacy	4%	54%
Hospital	12%	6%
Friend	-	11%
Private Doctor	4%	9%

\*respondent may have more than one answer

**Comments:** IEC on HIV/AIDS and STDs needs to be strengthened. Condom use should be promoted.

### Cebu City

The Rudolf Rahmann Research Center (RRRC) conducted the BSS. Four groups were continuously monitored, i.e. registered and freelance female sex workers, men who have sex with men and injecting drug users. Table 17 shows the demographic characteristics of the groups in 1999.

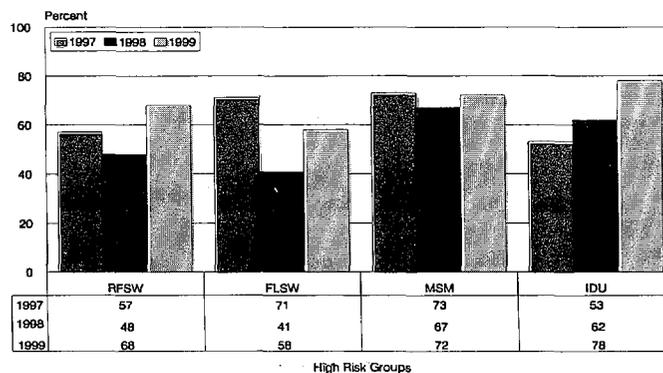
**Table 17. Demographic Characteristics of High Risk Groups  
Cebu City, BSS, 1999**

<b>Characteristics</b>	<b>RFSW</b>	<b>FLSW</b>	<b>MSM</b>	<b>IDU</b>
Age (Years)				
Range	17-50	13-45	16-46	18-47
Median	24	22	23	28
Highest Educational Attainment				
No formal education	-	1%		1%
Elementary	19%	43%	2%	11%
High School	63%	51%	32%	46%
Vocational	1%	-	8%	-
College	18%	5%	58%	43%
Civil Status				
Single	58%	52%	95%	58%
Live-in	26%	34%	1%	18%
Married	6%	5%	3%	21%
Separated	8%	8%	2%	4%
Widow/widower	3%	2%	-	-

Registered sex workers had fewer partners per week than freelancers (RFSW: 1-10, median 2; FLSW: 1-21, median 4). MSMs had an average of 6 partners a month (range 1-45) while IDUs had an average of 1 partner a month (range 0-4).

Repeated surveys show an increase in the knowledge level of IDUs regarding HIV transmission (Fig. 31). Health workers and the media were the most common sources of information on HIV/AIDS (Table 18).

**Fig. 31. Proportion of Respondents who Knew of Three Ways of Preventing HIV Transmission Cebu City, BSS, 1997-1999**



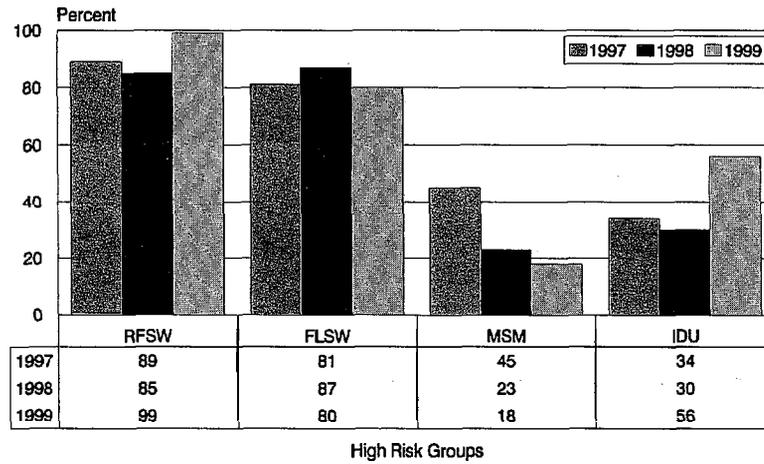
**Table 18. Sources of Information on HIV/AIDS of Respondents Cebu City, BSS, 1999**

Source	RFSW	FLSW	MSM	IDU
Health workers	92%	61%	27%	35%
Television	74%	56%	79%	83%
Newspaper/Magazine	27%	15%	64%	50%
Radio	29%	16%	43%	37%
Friends/Relatives	17%	32%	68%	27%
Workplace	38%	11%	8%	3%
Pamphlet/Poster	9%	19%	20%	22%
School/Teacher	8%	3%	25%	18%
Others	7%	25%	22%	17%

\*respondent may have more than one answer

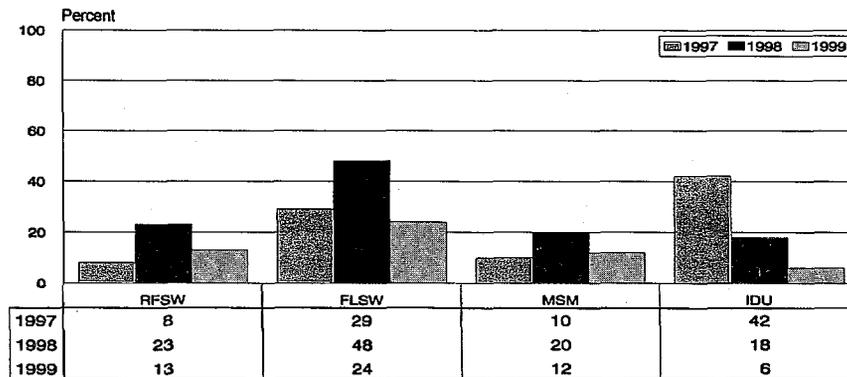
Like those from other cities, respondents used condoms more frequently with their non-regular partners than with their regular partners. Figure 32 shows condom use rates with non-regular partners. Condom use was common among the female sex workers but much lower among MSMs and IDUs.

**Fig. 32. Condom Use Rates with Non-regular Partners**  
High Risk Groups, Cebu City, 1997-99



The proportion of respondents who reported signs or symptoms of STDs decreased in all groups in 1999 (Figure 33). Table 19 shows the health-seeking behaviors of those with signs or symptoms of STD.

**Fig. 33. Proportion of Respondents Who Reported Experiencing Signs and/or Symptoms of STDs, Cebu City, BSS, 1997-1999**



**Table 19. Persons or Places Consulted by those with Signs or Symptoms of STDs  
Cebu City, BSS, 1999**

	<b>RFSW (n=16)</b>	<b>FLSW (n=29)</b>	<b>MSM (n=14)</b>	<b>IDU (n=7)</b>
Social Hygiene Clinic	88%	41%	-	14%
Friends/Relatives	-	14%	79%	29%
Pharmacy	19%	31%	-	43%
Private Physician	13%	3%	29%	14%
Hospital	-	-	14%	-
Co-worker	-	7%	7%	-
Others	-	34%	-	29%

\*respondent may have more than one answer

Among injecting drug users, the proportion of those sharing injecting equipment significantly decreased from 77% in 1997 and 1998 to 53% in 1999 ( $p < .01$ ). However, among those who shared injecting equipment, there was a decrease in the proportion of those who cleaned their equipment with bleach prior to use (N.B. cleaning with bleach is the method recommended) from 50% in 1998 to 25% in 1999. Other methods used to clean injecting equipment were washing with soap and water, boiling, or wiping with alcohol.

**Comments:** The Social Hygiene Clinic staff have had relatively good access to female commercial sex workers. This must be continued. There appears to be increasing success in dealing with injecting drug users. The changes in knowledge of HIV transmission and decrease in sharing of injecting equipment could be the results of efforts of NGOs working with this group. On the other hand, access to MSMs should be improved. This could be done by NGOs.

## **Davao City**

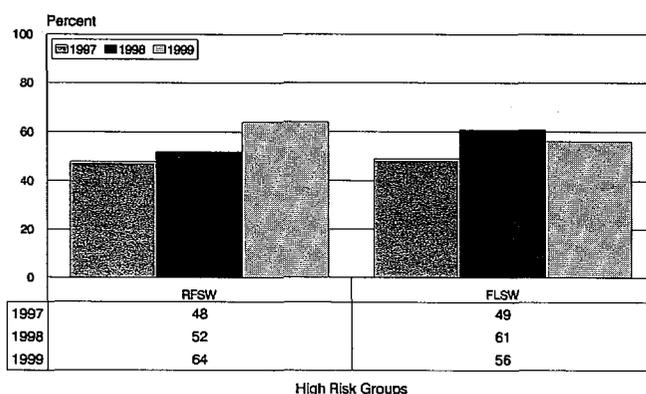
The Davao Medical School Foundation - Center for Education Research and Development in Health conducted the BSS. Two groups were consistently monitored, registered and freelance female sex workers. Demographic characteristics of these groups were similar during the three surveys. RFSWs tended to be older and more educated than freelancers. Table 20 shows the characteristics of those interviewed in 1999. Freelancers had more sex partners per week than registered sex workers (FLSW: 1-24, median 4; RFSW: 1-9, median 2).

**Table 20. Demographic Characteristics of High Risk Groups  
Davao City, 1999**

Characteristics	RFSW	FLSW
Age (Years)		
Range	18-45	13-36
Median	23	20
Highest Educational Attainment		
Elementary	10%	35%
High School	71%	56%
Vocational	-	1%
College	19%	8%
Civil Status		
Single	58%	49%
Live-in	12%	38%
Married	6%	8%
Separated	23%	6%
Widow	1%	-

Knowledge of RFSWs on HIV transmission continued to improve (Figure 34). Media, friends and health workers were the most common sources of information on HIV/AIDS of sex workers (Table 21).

**Fig.34. Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission, Davao City, BSS, 1997-1999**



**Table 21. Sources of Information on HIV/AIDS of Female Sex Workers  
Davao City, 1999**

Source	RFSW	FLSW
Television	95%	98%
Radio	90%	85%
Newspaper/Magazine	88%	96%
Friends/relatives	91%	97%
Health workers	90%	88%
Pamphlet/poster	81%	93%
Workplace	87%	81%
Schools/Teachers	75%	82%
Churches	57%	72%
Community Meetings	57%	62%
Others	16%	12%

\*respondent may have more than one answer

Like those in other cities, sex workers were more likely to use a condom when they had sex with a non-regular partner compared to when they engaged in sex with a regular partner. Condom use rates with non-regular partners are shown in Figure 35. A significant increase in reported condom use among freelancers was seen ( $p < .01$ ).

**Fig. 35. Condom Use Rates with Non-regular Partners  
Female Sex Workers, Davao City, 1997-99**

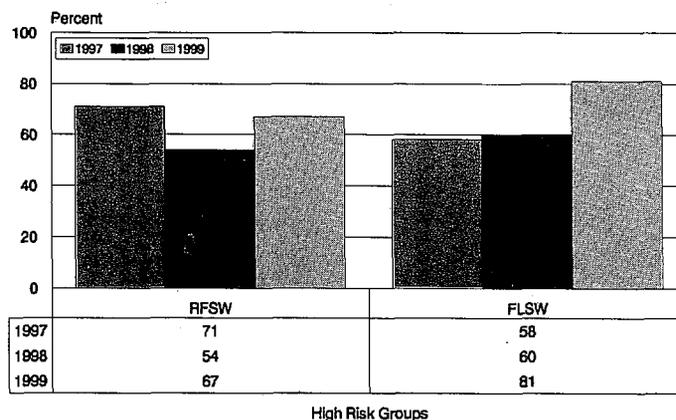
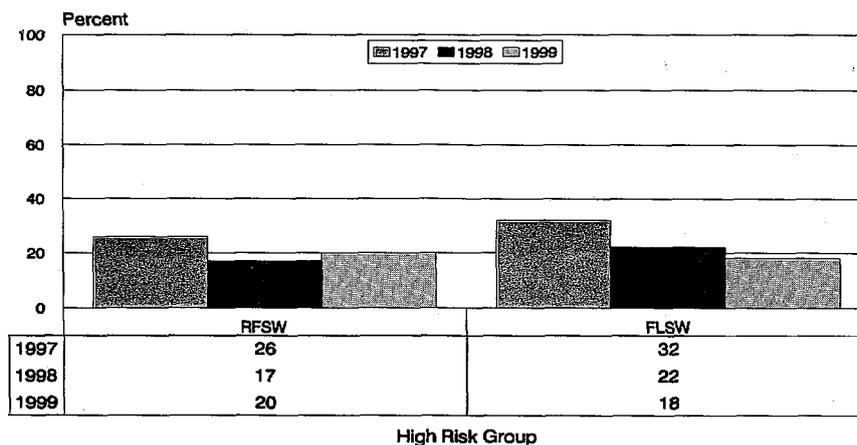


Figure 36 shows the proportion of respondents who experienced signs or symptoms of STD. A continued decline was seen among freelancers. This could be due to gradually increasing condom use rates with non-regular partners. Majority of sex workers who experienced signs/symptoms of STDs would consult at the social hygiene clinic.

**Fig. 36. Proportion of Respondents Who Reported Experiencing Signs and/or Symptoms of STDs  
Davao City, BSS, 1997-1999**



**Comments:** Efforts to reach out to female sex workers and their clients should continue. A strict “no condom, no sex” policy with non-regular partners should be encouraged to protect these vulnerable groups.

### General Santos City

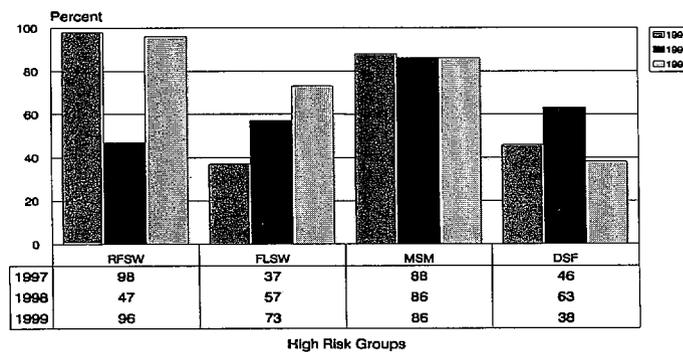
The Social Health Environment and Development Foundation (SHED) conducted the BSS from 1997 to 1999. They monitored four groups, i.e. Registered Female Sex Workers, Freelance Female Sex Workers, Men who have Sex with Men, and deep sea fishing workers (DSF). Table 22 shows the demographic characteristics of those interviewed in 1999. Registered sex workers and freelancers both had a median of three partners a week (range RFSW: 1-8; FLSW: 1-12). MSMs had 1-10 partners a month (median 3). Deep sea fishermen had 1-9 partners a month (median 3).

**Table 22. Demographic Characteristics of High Risk Groups  
General Santos City, 1999**

Characteristics	RFSW	FLSW	MSM	DSF
Age (Years)				
Range	16-42	15-38	13-40	19-50
Median	22	21	21	30
Highest Educational Attainment				
No Formal Education	1%	3%	-	-
Elementary	23%	49%	3%	33%
High School	69%	43%	49%	38%
Vocational	6%	3%	33%	13%
College	1%	2%	14%	15%
Civil Status				
Single	66%	43%	84%	40%
Live-in	23%	36%	12%	4%
Married	2%	8%	3%	46%
Separated	9%	12%	1%	9%
Widow/widower	-	2%	1%	1%

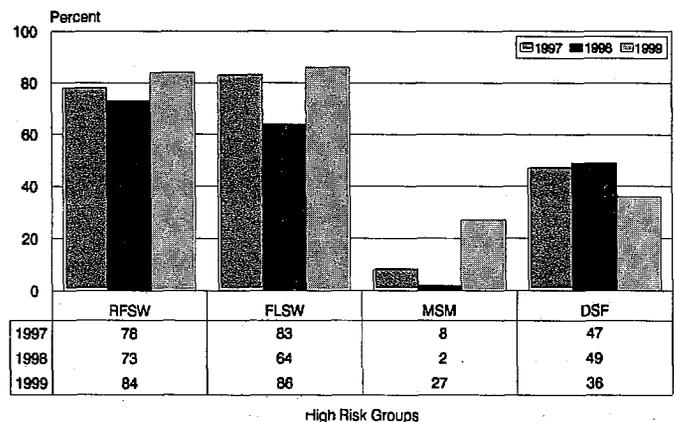
Figure 37 shows the proportion of respondents who knew of three correct ways of preventing HIV transmission. Knowledge levels of freelancers have significantly improved through the years ( $p < .01$ ). Deep sea fishermen lack correct knowledge of HIV transmission.

**Fig. 37 Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission  
General Santos City, BSS, 1997-1999**



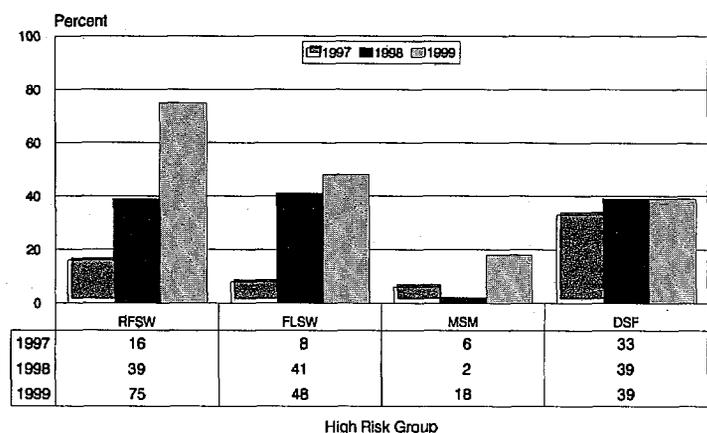
Except for MSMs, most respondents were more likely to use a condom with a non-regular partner than with a regular sex partner. Figure 38 shows condom use rates of the various groups with their non-regular sex partners. Condom use rates were low among MSMs and deep sea fishermen.

**Fig. 38. Condom Use Rates with Non-regular Partners  
High Risk Groups, Gen. Santos City, 1997-99**



An alarming increase in the proportion of registered sex workers reporting signs or symptoms of STD was noted in 1999. The rates were lower in the other groups but still higher than those reported in other sites. See Figure 39.

**Fig. 39. Proportion of Respondents Who Reported Experiencing  
Signs and Symptoms of STDs  
General Santos City, BSS, 1997-1999**



Most female sex workers with signs or symptoms of STD would consult at the Social Hygiene Clinic. MSMs were more likely to seek advise from friends while deep sea fishermen would go to a private doctor or consult at the Social Hygiene Clinic. Table 23 shows the health-seeking behavior of those with STD symptomatology.

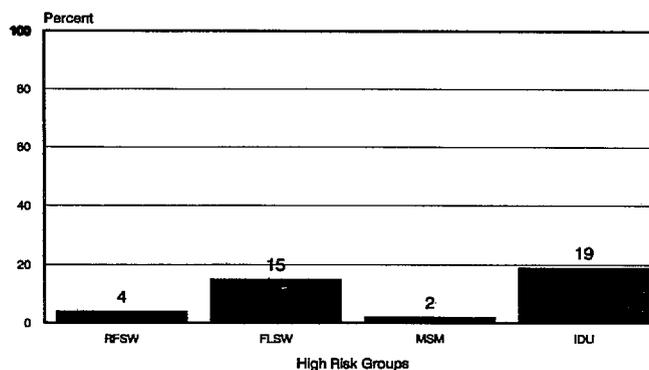
**Table 23. Persons or Places consulted by those with Signs/Symptoms of STD  
Gen. Santos City, 1999**

	RFSW (n=90)	FLSW (n=58)	MSM (n=21)	DSF (n=47)
Social Hygiene Clinic	84%	81%	33%	49%
Friend	19%	22%	62%	43%
Private doctor	9%	5%	19%	49%
Hospital	-	-	10%	36%
Co-worker	16%	28%	19%	23%
Pharmacy	16%	24%	5%	4%
Others	21%	19%	15%	8%

\*respondent may have more than one answer

A higher than expected rate of injecting drug use was found among respondents during the 1999 survey. Ten percent (48/480) of respondents admitted to injecting drug use during the past six months prior to interview. The rates were highest among deep sea fishermen and freelance sex workers (Figure 40). Majority of those who admitted injecting drug use shared injecting equipment with others.

**Fig. 40. Proportion of Respondents who Admitted Injecting Drug Use, Gen. Santos City, 1999**



**Comments:** Deep sea fishermen are a highly vulnerable group for HIV and other STDs. This group needs to be targeted in order to improve their knowledge and encourage them to take preventive measures. The extent of injecting drug use in the city needs to be looked into especially as sharing of injecting equipment is very common among IDUs.

This places the groups at a higher risk since they may acquire HIV either through sexual intercourse or by bloodborne transmission. Syndromic treatment for STD is recommended for those with signs and symptoms.

## Iloilo City

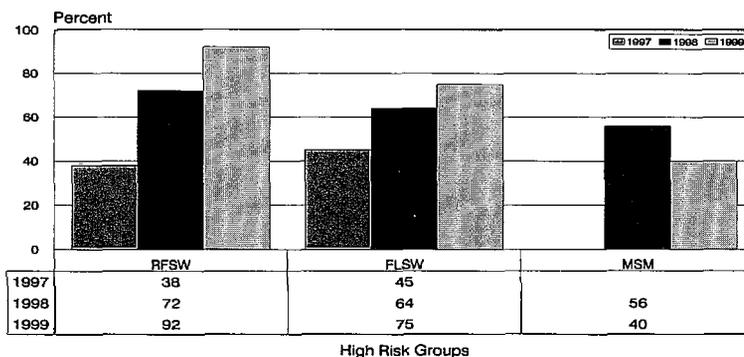
The Kabalaka Reproductive Health Center implemented the BSS in Iloilo City. Three groups were monitored, i.e. registered and freelance sex workers from 1997 to 99 and men who have sex with men from 1998 to 1999. The demographic characteristics of each group are shown in Table 24. Registered sex workers had 1 to 15 sex partners a week (median 3) while freelancers had 1-30 partners a week (median 4). MSMs had 1-30 partners a month (median 2).

**Table 24. Demographic Characteristics of High Risk Groups  
Iloilo City, 1999**

Characteristics	RFSW	FLSW	MSM
Age (Years)			
Range	17-45	16-48	14-56
Median	20	22	19
Highest Educational Attainment			
Elementary	23%	28%	7%
High School	68%	62%	53%
Vocational	4%	2%	6%
College	4%	8%	34%
Civil Status			
Single	72%	63%	88%
Live-in	10%	22%	7%
Married	9%	5%	4%
Separated	6%	9%	1%
Widow/widower	3%	1%	-

Female sex workers had better knowledge than MSMs regarding HIV prevention. There has been continuous improvement in the level of knowledge of sex workers (Figure 41). The media (TV, radio, print) were the most common sources of information on HIV/AIDS (Table 25).

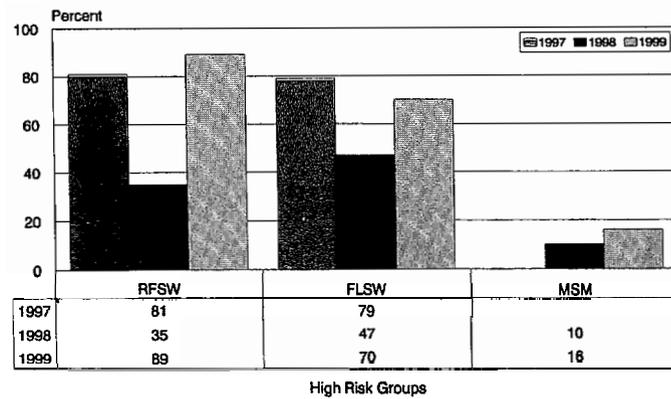
**Fig.41. Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission  
Iloilo City, BSS, 1997-1999**



High Risk Groups

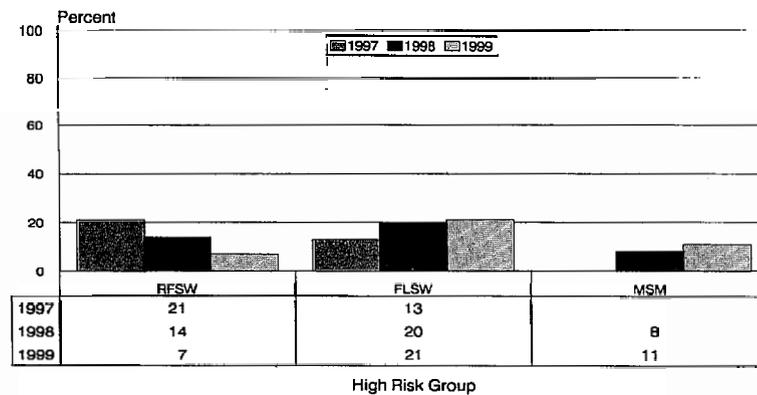
Condom use rates among MSMs are very low. Female sex workers are more likely to use condoms with their non-regular partners than with their regular partners. Figure 42 shows condom use rates with non-regular partners.

**Fig. 42. Condom Use Rates with Non-regular Partners**  
High Risk Groups, Iloilo City, 1997-99



There has been a significant decline in the proportion of registered sex workers who experienced signs or symptoms of STD ( $p < .01$ ). On the other hand, more FLSWs are reporting signs and symptoms of STD. See Figure 43. Sex workers were more likely to consult at the Social Hygiene Clinic if they had signs or symptoms of STDs while MSMs would rather consult their friends (Table 25).

**Fig. 43. Proportion of Respondents Who Reported Experiencing Signs and/or Symptoms of STDs**  
Iloilo City, BSS, 1997-1999



**Table 25. Persons or Places consulted by those with Signs or Symptoms of STD/High Risk Groups, Iloilo City, 1999**

	RFSW (n=8)	FLSW (n=25)	MSM (n=13)
Social Hygiene Clinic	88%	92%	8%
Friends	-	-	62%
Self-medication	-	4%	46%
Private doctor	25%	-	-
Hospitals	-	-	23%
No one/Ignore S&Sx	-	-	15%
Kabalaka (NGO)	13%	-	8%
Others	26%	8%	23%

\*respondent may give more than one answer

**Comments:** The IEC campaign on HIV/AIDS and STDs should be continued and strengthened especially among MSMs and freelancers. NGOs could be tapped for this.

### Pasay City

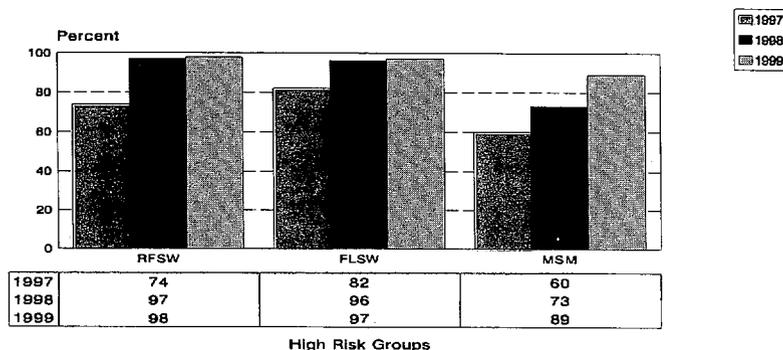
TRI-DEV Specialists Foundation, Inc. implemented the BSS in Pasay City. Three groups were consistently monitored, i.e. registered and freelance female sex workers and MSMs. Their demographic characteristics are shown in Table 26. MSMs had more formal education than female sex workers. Freelancers had more sex partners per week than registered workers (FLSW: 1-30, median 4; RFSW: 1-8, median 2). MSMs had 1-34 partners a month (median 2).

**Table 26. Demographic Characteristics of High Risk Groups Pasay City, BSS, 1999**

Characteristics	RFSW	FLSW	MSM
Age (Years)			
Range	18-35	15-43	14-56
Median	23	24	24
Highest Educational Attainment			
Elementary	33%	33%	1%
High School	61%	61%	29%
Vocational	2%	2%	5%
College	3%	3%	65%
Civil Status			
Single	70%	52%	75%
Live-in	10%	33%	15%
Married	10%	11%	7%
Separated	10%	2%	3%
Widow/widower	-	2%	-

Knowledge levels regarding HIV prevention among the risk groups monitored are high (Figure 44). Respondents got their information from many sources (Table 27). NGOs were a major source of information for freelancers and MSMs.

**Fig. 44. Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission  
Pasay City, BSS, 1997-1999**

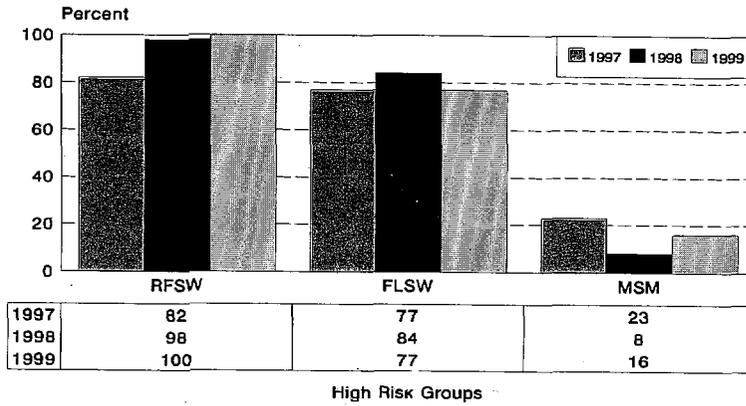


**Table 27. Sources of Information on HIV/AIDS  
High Risk Groups, Pasay City, 1999**

Source	RFSW	FLSW	MSM
Pamphlet/poster	96%	21%	21%
Television	13%	41%	48%
Radio	44%	13%	12%
Newspaper/magazine	28%	26%	38%
NGO/Peer Educator	-	40%	42%
Social Hygiene Clinic	-	38%	26%
Private doctor	-	15%	12%
Friends/relatives	-	5%	31%
Others	1%	1%	19%

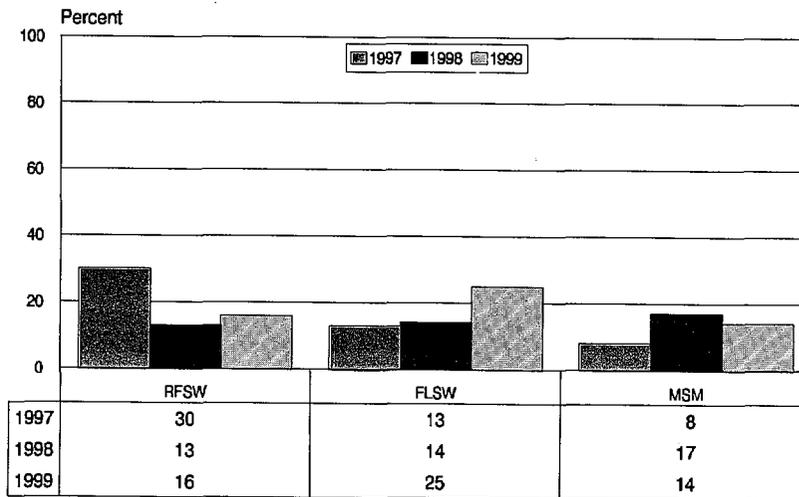
Like their counterparts in other cities, the risk groups in Pasay were more likely to use a condom with their non-regular sex partners than with their regular partners. Figure 45 shows condom use rates with non-regular sex partners. They are very high among female sex workers but very low among MSMs.

**Fig. 45. Condom Use Rates with Non-regular Partners  
High Risk Groups, Pasay City, 1997-1999**



High Risk Groups

**Fig. 46. Proportion of Respondents Who Reported Experiencing  
Signs and/or Symptoms of STDs  
Pasay City, BSS, 1997-99**



High Risk Group

## Quezon City

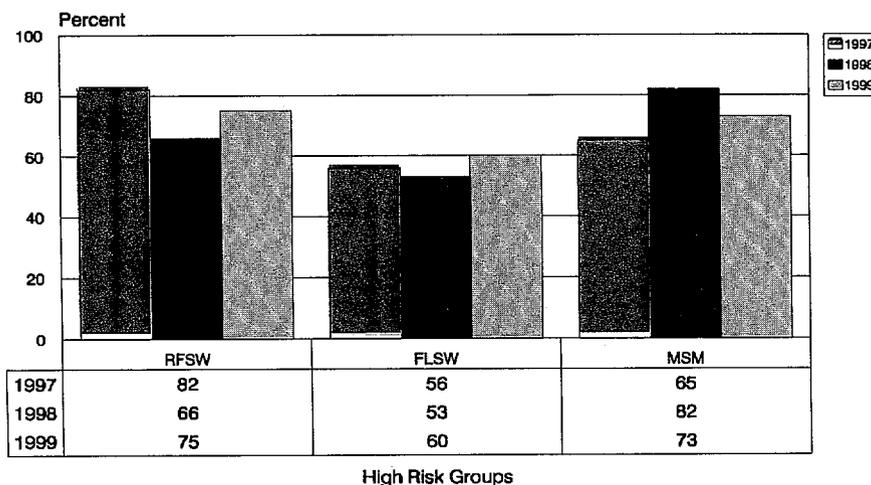
PLOMS Consultancies Inc. conducted the BSS in Quezon City. The number of groups monitored was down to three after IDUs were dropped due to poor accessibility. The demographic characteristics are shown in Table 28. The median number of sex partners for both RFSW and FLSW is 5 per week. Unlike the other sentinel sites where FLSWs had a wider range of sex partners compared to RFSW, in Quezon City, FLSWs had a range of 1-30 partners per week whereas RFSWs had 2-50. MSMs had a range of 1-25 partners per month with a median of 4.

**Table 28. Demographic Characteristics of High Risk Groups  
Quezon City, BSS, 1999**

Characteristics	RFSW	FLSW	MSM
Age (Years)			
Range	18-42	16-43	16-49
Median	25	22	20
Highest Educational Attainment			
Elementary	23%	25%	2%
High School	64%	62%	30%
Vocational	0%	3%	7%
College	11%	8%	62%
Civil Status			
Single	57%	57%	87%
Live-in	11%	24%	4%
Married	14%	7%	7%
Separated	17%	11%	2%
Widow/widower	-	1%	-

Majority of RFSWs and MSMs know of correct ways to prevent HIV transmission (>75%), whereas comparatively less FLSWs had this knowledge (Fig. 47).

**Fig. 47. Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission  
Quezon City, BSS, 1997-1999**



Tri-media was the most common source of HIV/AIDS information but health workers enjoyed a huge popularity (94%) among RFSWs. It is only among the FLSWs that peer educators were acknowledged as sources.

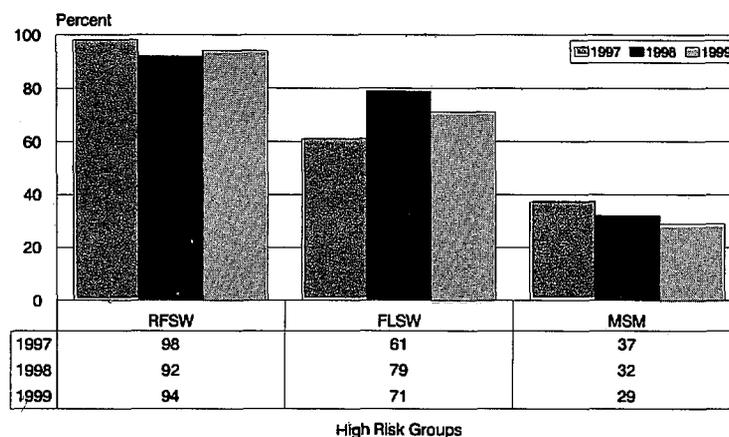
**Table 29. Sources of Information on HIV/AIDS in Quezon City, 1999**

Sources of Information	RFSW	FLSW	MSM
	1999	1999	1999
Radio	76 %	42 %	53 %
TV	92 %	88 %	84 %
Newspaper/magazine	88 %	32 %	77 %
Pamphlet/poster	87 %	28 %	68 %
Health workers	94 %	31 %	54 %
Churches	32 %	12 %	25 %
Schools/Teachers	61 %	22 %	62 %
Community meetings	77 %	6 %	26 %
Friends/relatives	71 %	63 %	68 %
Workplace	87 %	39 %	41 %

\*respondent may have more than one answer

Almost all RFSWs reported condom use the last time they had sex with their non-regular partners. MSMs reported condom use show a decreasing trend (fig. 48)

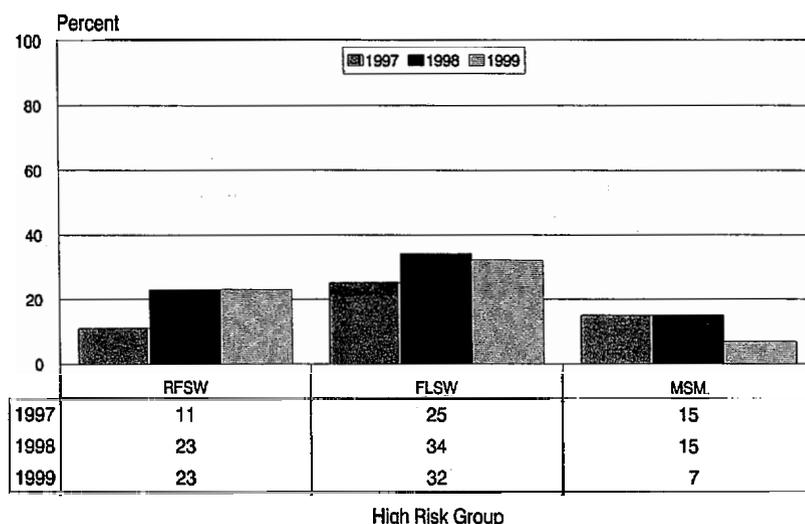
**Fig. 48. Condom Use Rates with Non-regular Partners  
High Risk Groups, Quezon City, 1997-99**



For 1999, FISWs reported the most number of STD signs and symptoms (32%), followed by RFSWs (23%), then MSMs (7%). Almost all RFSWs consulted the SHC while FISWs tended to consult their friends, coworkers, or the pharmacy although some

also consult the SHC and private clinics. Most MSMS consulted their friends or just self-medicated.

**Fig. 49. Proportion of Respondents Who Reported Experiencing Signs and/or Symptoms of STDs Quezon City, BSS, 1997-1999**



### Zamboanga City

ICOM implemented the BSS. The demographic characteristics are shown in Table 30. As was reported by all the other sentinel sites, more MSMs reach college level of education compared to the female sex workers, and most of the MSMs are single.

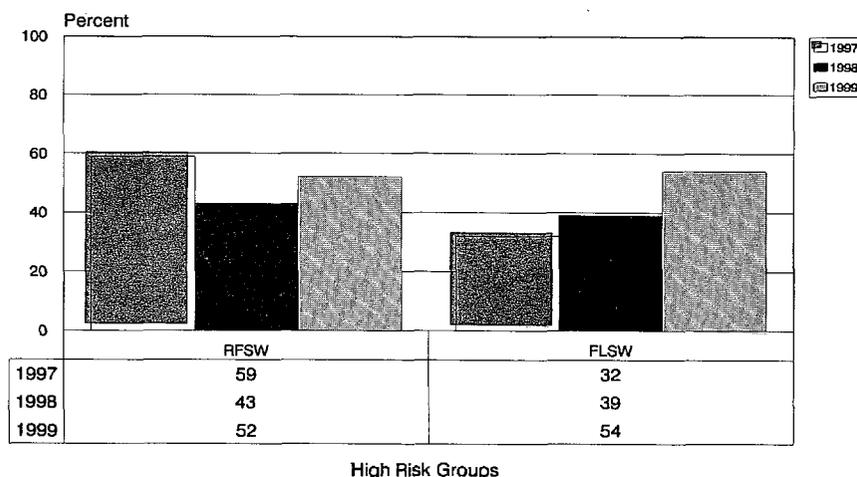
**Table 30. Demographic Characteristics of High Risk Groups Zamboanga City, BSS, 1999**

Characteristics	RFSW	FLSW	MSM
Age (Years)			
Range	17-42	16-38	15-55
Median	21	22	25
Highest Educational Attainment			
Elementary	9%	16%	5%
High School	75%	69%	53%
Vocational	1%	10%	36%
College	15%	4%	6%
Civil Status			
Single	58%	54%	89%
Live-in	25%	17%	7%
Married	11%	9%	1%
Separated	5%	16%	2%
Widow/widower	1%	4%	

The risk groups in Zamboanga had fewer sex partners than the other sentinel sites. RFSWs had a range of 1-15 sex partners per week with a median of one (1); the FLSWs had a range of 1-20 with a median of 2; and the MSMs had a range of 1-9 partners per month with a median of 1.

About half of the female sex workers reported using condom the last time they had sex with a non-regular partner. This good practice seems to be increasing among FLSWs (fig. 50).

**Fig. 50. Proportion of Respondents Who Knew of Three Correct Ways of Preventing HIV Transmission Zamboanga City, BSS, 1997-1999**



The most common source of HIV/AIDS information continued to be Tri-media (table 31)

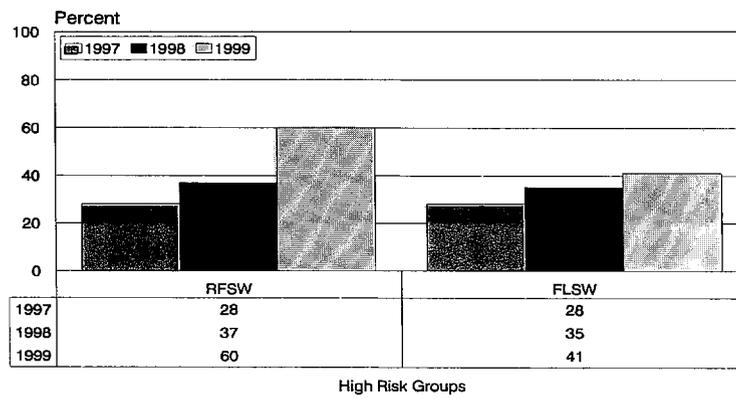
**Table 31. Sources of Information on HIV/AIDS in Zamboanga City, 1999**

Information Source	RFSW	FLSW	MSM
	1999	1999	1999
Radio	67 %	67 %	69 %
TV	92 %	87 %	92 %
Newspaper/magazine	75 %	57 %	89 %
Pamphlet/poster	49 %	30 %	58 %
Friends/relatives	48 %	35 %	57 %
Health worker	74 %	32 %	49 %
Workplace	52 %	17 %	45 %
School/teacher	4 %	2 %	14 %
Church	7 %	5 %	7 %
Community Meetings	2 %	2 %	7 %
Others	100 %	100 %	100 %

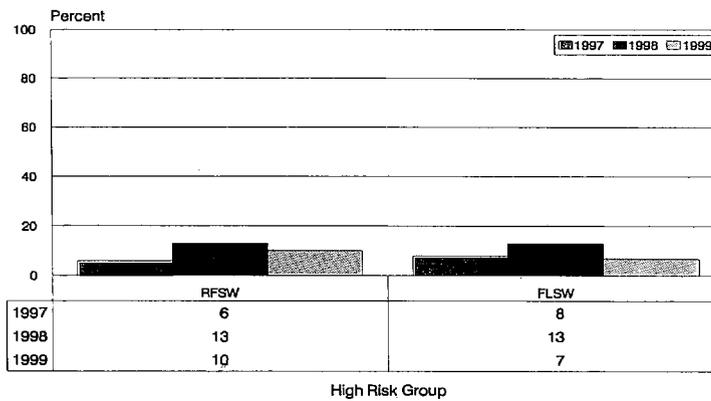
\*respondent may have more than one answer

Condom use among female sex workers in Zamboanga City seem to show an increasing trend (fig. 51). The next figure shows that less than 10% of them reported signs and symptoms of STD.

**Fig. 51. Condom Use Rates with Non-regular Partners**  
 Female Sex Workers, Zamboanga City, 1997-99



**Fig. 52. Proportion of Respondents Who Reported Experiencing Signs and/or Symptoms of STDs**  
 Zamboanga City, BSS, 1997-1999



#### **IV. Summary and Conclusions**

Sexual intercourse remains to be the main mode of transmission in the Philippines. Based on results of the serologic surveys, the following conclusions can be made.

- HIV seroprevalence is  $\geq 1\%$  among registered female sex workers in Quezon City, Pasay City, Davao City, Angeles City, Iloilo City and Gen. Santos City. Based on the sample size and number of HIV positives found, the prevalence is probably between 1 to 3% in all these sites. The prevalence is  $< 1\%$  among RFSWs in Cebu, Baguio, and Zamboanga cities.
- HIV seroprevalence is probably between 1-2% among freelance female sex workers in Angeles and Iloilo cities. It is less than 1% among FLSWs in Baguio, Cagayan de Oro, Cebu, Davao, Pasay, Quezon, Gen. Santos and Zamboanga cities.
- HIV seroprevalence is still less than 1% among MSMs in Cebu City and less than 5% in Quezon and Angeles cities. It is difficult to estimate the prevalence among MSMs due to the small sample size and the discontinuance of serologic surveys in these groups in most of the cities.
- HIV seroprevalence is probably between 1-2% among IDUs in Cebu City.

Although HIV is present among commercial sex workers in most sites, there has been no explosive increase in prevalence. Likewise, syphilis rates among all risk groups have remained the same or slightly decreased. However, they tend to be higher among freelance sex workers and MSMs.

**Behavioral surveillance data show that the low HIV prevalence does not appear to be due to significant changes in behavior.**

Although most respondents knew of at least three correct ways to prevent HIV transmission, the proportion was less than 90% among all groups in all sites except for Pasay City.

Condom use rates remain low especially among MSMs and IDUs. Registered sex workers tend to have higher consistent condom use rates compared to freelancers. The respondents were more likely to use condoms with their non-regular partners than with regular sex partners.

Most injecting drug users still share injecting equipment but there has been a significant decline. Of those who share, only 25% clean their equipment with bleach.

Behavioral data from deep-sea fishermen in Gen. Santos is alarming especially the high proportion of injecting drug use. This group deserves closer scrutiny.

The above factors render FSWs, MSMs, IDUs, and deep-sea fishermen in Gen. Santos and their contacts at risk of HIV infection. Yet an HIV epidemic hasn't taken off probably because the number of high risk encounters between HIV infected persons and vulnerable individuals hasn't yet reached critical levels. Also other facilitative factors for

HIV transmission are not very common in the country, e.g. ulcerative types of STD (non-ulcerative STDS are more often seen), anal sex (MSMs tend to engage in oral rather than anal) and the number of sex partners of sex workers are less than those of other countries. We are also fortunate that bloodborne transmission is rare due to blood screening and injecting drug use is confined to small segments of the population.

Although HIV prevalence remains low, we should not be complacent. The HIV/AIDS registry reflects an increasing numbers of HIV positives. Behavioural data show that most high risk individuals fail to take protective measures. Hence the Philippines remains vulnerable to an HIV epidemic. This means that the window of opportunity for preventing a major HIV epidemic is rapidly narrowing. Sectors working to prevent an HIV epidemic must review their strategies and work towards those who need help, i.e. persons engaged in high-risk behaviors. It is critical at this stage that we target these individuals, as they can be the bridges through which HIV is spread in the general population:

## V. Recommendations

1. Surveillance teams should try their best to attain a sample size of 300 per risk group during the HSS rounds. This will allow detection of the presence of HIV at a level of 1%. Unless this sample size is reached, it cannot be assumed that HIV prevalence is less than 1% for the freelance sex workers, MSMs and IDUs. Since it is difficult to get consent for blood extraction, the use of saliva tests should be considered in future rounds (at least for surveillance purposes).
2. Case definitions and inclusion criteria should be the same for both HSS and BSS. These should be consistently used during the various surveys.
3. STD treatment should be offered to symptomatic persons found during the surveillance rounds. They should be counseled and encouraged to follow-up at the social hygiene clinics.
4. Focus group discussions should be conducted among high-risk groups in the various sites to better understand the reasons for low condom use. LGUs and NGOs can use this information in refining their intervention strategies so that positive behavioral changes can be initiated and sustained.
5. Special studies should be conducted among deep-sea fishermen in General Santos City (including serologic surveys) to validate the BSS findings. Special interventions should target this group.

## References

1. Manual of Operations for Behavioural Sentinel Surveillance (BSS). FETP-DOH September 1997.
2. Assessment Report of the External Assessment Team (ASEP). February, 1997
3. HIV/AIDS Sentinel Surveillance in the Philippines 1997 Technical Report. DOH, December 1998.
4. 1998 BSS Report in Angeles City. Tri-Dev Specialists, January 1999.
5. 1998 BSS Report in Cebu City.
6. 1998 BSS Report in Davao City
7. 1998 BSS Report in General Santos City.
8. 1998 BSS Report in Iloilo City
9. 1998 BSS Report in Pasay City. Tri-Dev Specialists, January 1999.
10. 1998 BSS Report in Quezon City.
11. 1998 BSS Report in Zamboanga City.
12. Preventive Medicine for the Doctor in His Community, 3<sup>rd</sup> ed. New York, Mcgraw-Hill Book Company, 1995
13. US Public Health Service, Department of Health and Human Services. Strategic Plan to Combat HIV/AIDS in the United States, D.C. Government Printing, 1992
14. Epidemiology, Biostatistics, and Preventive Medicine. W.B Saunders Company, 1996.
15. 1999 BSS Report in Angeles City. Tri-Dev Specialists
16. 1999 BSS Report in Cebu City
17. 1999 BSS Report in Davao City
18. 1999 BSS Report in General Santos City
19. 1999 BSS Report in Iloilo City
20. 1999 BSS Report in Pasay City. Tri-Dev Specialists
21. 1999 BSS report in Quezon City
22. 1999 BSS Report in Zamboanga City



Appendix B. No. of Subjects and HIV Seropositives by Site and Surveillance Round ( 1993 - 99 )

Sentinel Sites & Risk Groups	1993		1994				1995				1996				1997		1998		1999	
	Jun - Aug		Apr - May		Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Mar - Apr		Mar - Apr	
	No. tested	No. HIV+	No. teste	No. HIV+	No. tested	No. HIV+														
<b>Quezon City</b>																				
RFSW	305	1	302	1	303	1	339	0	311	0	300	0	293	1	306	1	300	0	300	0
FLSW	100	0	101	0	101	0	161	0	258	0	209	0	124	0	105	0	120	0	127	0
MSM	309	0	316	0	198	0	134	1	83	0	79	0	104	0	56	0	186	0	41	0
IDUs	65	0	82	0	152	0	102	0	57	0	61	0	80	0	23	0	-	-	-	-
MCSW	108	0	72	0	94	0	50	0	58	0	106	0	118	0	42	1	-	-	-	-
MSTD	328	0	340	0	327	0	302	0	255	0	300	1	300	0	310	0	-	-	-	-
<b>Cebu City</b>																				
RFSW	310	0	303	0	309	0	306	0	332	0	306	0	302	0	348	0	327	0	300	0
FLSW	109	0	109	0	175	0	121	0	184	0	192	0	203	0	227	0	302	0	300	0
MSM	302	0	192	0	216	0	103	0	128	0	133	0	165	0	168	1	332	0	300	0
IDUs	223	0	162	0	224	0	142	0	188	0	122	0	168	1	131	0	175	0	184	0
MCSW	105	0	106	0	105	0	186	0	281	0	266	0	286	0	197	0	-	-	-	-
MSTD	105	0	79	0	97	0	69	0	125	0	93	0	84	0	82	1	-	-	-	-
<b>Davao City</b>																				
RFSW			300	0	317	0	313	1	311	0	320	0	319	0	301	0	303	1	300	0
FLSW			103	0	110	0	104	0	121	0	114	0	171	0	273	0	301	0	300	0
MSM			145	0	39	0	19	0	69	0	31	0	64	0	118	0	-	-	-	-
IDUs			-	-	3	0	18	0	7	0	27	0	-	-	-	-	-	-	-	-
MCSW			33	0	31	0	12	0	31	0	11	0	30	0	15	0	-	-	-	-
MSTD			6	0	271	0	41	0	228	0	261	0	98	0	137	0	-	-	-	-
<b>Angeles City</b>																				
RFSW					299	0	321	2	339	2	300	2	300	4	300	1	300	2	300	0
FLSW					62	0	103	0	58	0	98	0	65	0	95	0	269	1	300	0
MSM					61	0	5	0	20	1	4	0	6	0	-	-	-	-	-	-
IDUs					5	0	13	0	18	0	17	0	3	0	-	-	-	-	-	-
MCSW					69	0	25	0	44	0	24	0	34	0	69	0	-	-	-	-
MSTD					0	0	65	0	81	0	30	0	50	0	56	0	-	-	-	-
<b>Pasay City</b>																				
RFSW					311	1	316	0	307	2	298	0	295	1	301	0	302	0	300	0
FLSW					210	0	200	0	223	0	257	0	240	0	238	0	300	0	279	0
MSM					95	0	40	0	36	0	64	0	78	0	81	0	-	-	-	-
IDUs					63	0	52	0	116	0	12	0	28	0	32	0	-	-	-	-
MCSW					63	0	93	0	93	0	74	0	81	0	64	0	-	-	-	-
MSTD					246	0	188	0	201	0	265	0	258	0	204	0	-	-	-	-



Appendix C. 95% Confidence Intervals \* for HIV Seroprevalence by Site and Surveillance Round ( 1993 - 99 )

Sentinel Sites & Risk Groups	1993	1994		1995		1996		1997	1998	1999
	Jun - Aug	Apr - May	Sept - Oct	Mar - Apr	Sept - Oct	Mar - Apr	Sept - Oct	Mar - Apr	Mar - Apr	Mar - Apr
<b>Quezon City</b>										
RFSW	<0.1-1.81	<0.1-1.83	<0.1-1.83	0 - 1.08	0 - 1.18	0 -1.22	<0.1-1.89	<0.1-1.81	0 - 1.22	0-1.2
FLSW	0 - 3.62	0 - 3.59	0 - 3.59	0 - 2.27	0 - 1.42	0 - 1.75	0 - 2.93	0 - 3.45	0 - 3.02	0-2.9
MSM	0 - 1.19	0 - 1.16	0 - 1.85	0.02 - 4.09	0 - 4.35	0 - 4.56	0 - 3.48	0 - 6.38	0 - 1.96	0-8.6
IDUs	0 - 5.52	0 - 4.40	0 - 2.40	0 - 3.55	0 - 6.27	0 - 5.87	0 - 4.51	0 - 14.82		
MCSW	0 - 3.36	0 - 5.00	0 - 3.85	0 - 7.11	0 - 0.62	0 - 3.42	0 - 3.08	0.03 - 7.11		
MSTD	0 - 1.12	0 - 1.08	0 - 1.12	0 - 1.21	0 - 1.44	<0.1-1.84	0 - 1.22	0 - 1.18		
<b>Cebu City</b>										
RFSW	0 - 1.18	0 - 1.21	0 - 1.19	0 - 1.20	0 - 1.11	0 - 1.20	0 - 1.21	0 - 1.05	0 - 1.12	0-1.2
FLSW	0 - 0.33	0 - 3.33	0 - 2.09	0 - 3.00	0 - 1.98	0 - 1.90	0 - 1.80	0 - 1.61	0 - 1.21	0-1.2
MSM	0 - 1.21	0 - 1.90	0 - 1.69	0 - 3.52	0 - 2.84	0 - 2.73	0 - 2.21	<0.1-2.17	0 - 1.11	0-1.2
IDUs	0 - 1.64	0 - 2.25	0 - 1.63	0 - 2.56	0 - 1.94	0 - 2.98	<0.1-3.27	0 - 2.78	0 - 2.09	0-1.9
MCSW	0 - 3.45	0 - 3.42	0 - 3.45	0 - 1.96	0 - 1.30	0 - 1.38	0 - 1.28	0 - 1.86		
MSTD	0 - 3.45	0 - 4.56	0 - 3.73	0 - 5.21	0 - 2.91	0 - 3.89	0 - 4.39	0.03 - 5.87		
<b>Davao City</b>										
RFSW		0 - 1.22	0 - 1.15	<0.1-1.77	0 - 1.18	0 - 1.15	0 - 1.15	0 - 1.21	<0.1-1.82	0-1.2
FLSW		0 - 3.52	0 - 3.30	0 - 3.48	0 - 3.00	0 - 3.18	0 - 2.13	0 - 1.34	0 - 1.22	0-1.2
MSM		0 - 2.51	0 - 9.03	0 - 17.65	0 - 5.21	0 - 11.21	0 - 5.60	0 - 3.08		
IDUs		0	0 - 70.76	0 - 18.53	0 - 40.96	0 - 12.77	0	0		
MCSW		0 - 10.58	0 - 11.21	0 - 26.46	0 - 11.21	0 - 28.49	0 - 11.57	0 - 21.80		
MSTD		0 - 45.93	0 - 1.35	0 - 8.60	0 - 1.60	0 - 1.14	0 - 3.69	0 - 2.66		
<b>Angeles City</b>										
RFSW			0 - 1.23	0.76 - 2.23	0.72 - 2.11	0.08 - 2.39	0.36 - 3.39	<0.1 - 1.84	0.81 - 2.39	0-1.2
FLSW			0 - 5.78	0 - 3.52	0 - 6.16	0 - 3.69	0 - 5.52	0 - 3.81	<0.1 - 2.05	0-1.2
MSM			0 - 5.87	0 - 52.18	0.13 - 24.87	0 - 60.24	0 - 45.93	0		
IDUs			0 - 52.18	0 - 24.71	0 - 18.53	0 - 19.51	0 - 70.76	0		
MCSW			0 - 5.21	0 - 13.72	0 - 8.04	0 - 14.25	0 - 10.28	0 - 5.21		
MSTD			0	0 - 5.52	0 - 4.45	0 - 11.57	0 - 7.11	0 - 6.37		
<b>Pasay City</b>										
RFSW			.006 - 1.78	0 - 1.16	.0793 - 2.34	<0.1-1.23	.006 - 1.87	0 - 1.20	0 - 1.22	0-1.2
FLSW			0 - 1.74	0 - 1.83	0 - 1.64	0 - 1.43	0 - 1.53	0 - 1.54	0 - 1.31	0-1.2
MSM			0 - 3.81	0 - 8.81	0 - 9.74	0 - 5.60	0 - 4.62	0 - 4.45		
IDUs			0 - 4.25	0 - 6.85	0 - 3.13	0 - 2.65	0 - 12.3	0 - 10.90		
MCSW			0 - 1.49	0 - 1.94	0 - 1.82	0 - 1.38	0 - 1.42	0 - 1.79		
MSTD			0 - 5.78	0 - 3.89	0 - 3.89	0 - 4.86	0 - 4.45	0 - 5.60		

Appendix C. 95% Confidence Intervals \* for HIV Seroprevalence by Site and Surveillance Round (1993 - 99)

Sentinel Sites & Risk Groups	1993	1994		1995		1996		1997	1998	1999
	Jun - Aug	Apr - May	Sept - Oct	Mar - Apr	Sept - Oct	Mar - Apr	Sept - Oct	Mar - Apr	Mar - Apr	Mar - Apr
<b>Iloilo City</b>										
RFSW			0 - 1.49	0 - 1.53	<0.1-2.15	0 - 1.41	0 - 1.48	0 - 1.32	<0.1-2.38	0-1.2
FLSW			0 - 2.98	0 - 2.11	0 - 2.03	0 - 2.17	0 - 2.41	0 - 2.50	0 - 2.16	0-1.2
MSM			0 - 4.62	0 - 6.16	0 - 6.98	0 - 6.98	0 - 6.60	0 - 14.25		
IDUs			0	0 - 45.93	0 - 84.19	0 - 70.76	0 - 84.19	0 - 97.50		
MCSW			0	0 - 28.49	0 - 33.63	0 - 30.85	0 - 45.93	0 - 60.24		
MSTD			0 - 5.69	0 - 4.68	0 - 5.52	0 - 5.78	0 - 4.74	0 - 3.16		
<b>Cagayan de Oro City</b>										
RFSW					0 - 1.19	0 - 1.21	0 - 0.87	0 - 1.23		<0.1-1.8
FLSW					0 - 3.62	0 - 1.60	0 - 1.58	0 - 1.24		0 - 2.7
MSM					0 - 2.29	0 - 6.27	0 - 9.03	0 - 30.85		
IDUs					0 - 11.94	0 - 5.96	0 - 26.46	0 - 97.50		
MCSW					0 - 3.24	0 - 4.86	0 - 3.52	0 - 5.28		
MSTD					0 - 7.70	0 - 26.46	0 - 11.94	0 - 30.85		
<b>Gen. Santos City</b>										
RFSW					0 - 1.46	0 - 1.49	0 - 1.66	0.08 - 2.35	<0.1-1.80	<0.1-1.8
FLSW					0 - 4.20	0 - 3.30	0 - 2.62	0 - 3.24	0 - 1.19	0 - 1.22
MSM					0 - 3.93	0 - 5.13	0 - 9.74	0 - 5.69		
IDUs					0 - 97.50	0	0	0		
MCSW					0	0	0	0 - 45.93		
MSTD					0 - 17.07	0 - 1.92	0 - 2.15	0 - 2.48		
<b>Baguio City</b>										
RFSW						0 - 0.84	0 - 1.11	0 - 1.22	0 - 1.22	0 - 1.22
FLSW						0 - 2.82	0 - 1.66	0 - 1.35	0 - 1.22	0 - 1.3
MSM						0 - 2.24	0 - 3.33	0 - 3.85		
IDUs						0 - 97.5	0 - 84.19			
MCSW						0 - 4.93	0 - 2.91	0 - 1.73		
MSTD						0 - 6.85	0 - 4.11	0 - 6.60		
<b>Zamboanga City</b>										
RFSW						0 - 1.22	0 - 1.26	0 - 1.22	0 - 1.22	0 - 1.2
FLSW						0 - 3.48	0 - 1.69	0 - 1.54	0 - 1.22	0 - 1.2
MSM						0 - 5.28	0 - 5.28	0 - 3.33		
IDUs						0 - 4.30	0 - 10.00	0 - 16.84		
MCSW						0 - 16.11	0 - 21.80	0 - 28.49		
MSTD						0 - 7.87	0 - 8.60	0 - 11.94		

\* Obtained using formula for simple random sampling.

Appendix D. Syphilis Seropositivity Rates by Site and Surveillance Round (1994 - 99)

Sentinel Sites & Risk Groups	1994		1995				1996				1997		1998		1999	
	Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Mar - Apr		Mar - Apr	
	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent
<b>Quezon City</b>																
RFSW	3	1	13	4.3	6	2	5	2	1	0.33	2	0.66	3	1	1	0.3
FLSW	4	4	2	1.2	5	2	3	1.4	2	2	4	4	1	0.83	0	0
MSM	4	2	5	4	3	4	5	6	6	6	0	0	6	3.22	3	1.9
IDUs	2	1.3	3	3	6	4	5	8	3	4	1	4.3				
MCSW	4	4	1	2	3	5	5	5	3	3	0	0				
MSTD	3	1	3	1	5	3	9	3	1	0.33	1	0.33				
<b>Cebu City</b>																
RFSW	3	1	5	2	15	5	3	1	2	1	5	1	5	2	2	0.7
FLSW	16	9	12	10	21	12	27	14	32	16	27	12	22	7	29	10
MSM	9	4	10	10	5	4	4	3	12	7	5	3	9	3	12	4
IDUs	9	4	4	3	9	5	6	5	11	6	5	4	16	9	7	4
MCSW	6	6	1	1	2	2	6	6	5	6	4	5				
MSTD	1	1	1	0.5	2	1	2	1	4	1	2	1				
<b>Davao City</b>																
RFSW	4	1.26	2	0.6	2	0.6	4	1.25	2	0.62	0	0	2	0.66	0	0
FLSW	13	11.8	11	11	7	6	10	9	9	5	11	4	6	2	8	2.6
MSM	2	5.1	1	5	3	4.3	1	3.2	2	3	8	13.1				
IDUs	0	0	0	0	0	0	0	0	0	0	0	0				
MCSW	0	0	0	0	0	0	12	5	1	3.3	0	0				
MSTD	1	4	2	5	4	2	0	0	3	3	3	2				
<b>Angeles City</b>																
RFSW	27	9	14	4.3	21	6	10	3.3	11	4	20	7	10	3.3	10	3.3
FLSW	9	15	5	5	4	7	5	5.1	8	12.3	9	9.5	8	3	8	2.6
MSM	7	12	1	20	2	10	0	0	0	0	0	0				
IDUs	0	0	0	0	2	11	1	6	0	0	0	0				
MCSW	2	3	0	0	2	4.5	0	0	3	9	0	0				
MSTD	0	0	5	8	8	10	3	10	2	4	2	4				
<b>Pasay City</b>																
RFSW	0	0	10	3	12	4	3	1	0	0	2	1	2	1	4	1.3
FLSW	8	4	4	2	0	0	0	0	2	1	1	0.4	2	1	2	0.7
MSM	6	6	3	8	1	3	0	0	0	0	1	1				
IDUs	1	2	2	4	4	3	0	0	1	4?	0	0				
MCSW	1	2	0	0	1	1	2	3	3	4	0	0				
MSTD	5	2	4	2	0	0	3	1	0	0	2	1				

Appendix D. Syphilis Seropositivity Rates by Site and Surveillance Round ( 1994 - 99 )

Sentinel Sites & Risk Groups	1994		1995				1996				1997		1998		1999	
	Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Sept - Oct		Mar - Apr		Mar - Apr		Mar - Apr	
	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent	No. +	Percent
<b>Iloilo City</b>																
RFSW	3	1	2	1	5	2	9	4	0	0	6	2	3	1.2	1	0.33
FLSW	6	5	12	7	14	8	22	13	0	0	18	12	10	6	25	8.3
MSM	9	12	1	2	4	8	2	4	1	2	1	4				
IDUs	0	0	0	0	0	0	1	33	0	0	1	100				
MCSW	0	0	0	0	2	22	0	0	0	0	0	0				
MSTD	3	5	2	3	5	8	2	3	3	4	7	6				
<b>Cagayan de Oro City</b>																
RFSW					6	2	7	2	3	0.7	7	2				
FLSW					8	8	5	2	13	6	14	5				
MSM					9	6	2	4	1	3	0	0				
IDUs					0	0	1	2	1	8	0	0				
MCSW					0	0	1	1.35	2	2	0	0				
MSTD					1	2	0	0	0	0	0	0				
<b>Gen. Santos City</b>																
RFSW					11	4.4	6	2.44	2	1	9	3	1	0.32	0	0
FLSW					12	14	13	12	10	7	10	9	16	5.2	8	2.6
MSM					5	5.4	5	7	2	5.5	1	3				
IDUs					0	0	0	0	0	0	0	0				
MCSW					0	0	0	0	0	0	0	0				
MSTD							1	0.52	4	2	4	3				
<b>Baguio</b>																
RFSW							5	2	1	0.33	1	0.33	3	1	6	2
FLSW							4	3	5	2.2	3	1	3	1	1	0.4
MSM							0	0	1	1	0	0				
IDUs							-	-	-	-	-	-				
MCSW							0	0	0	0	1	0.41				
MSTD							1	2	0	0	1	1.6				
<b>Zamboanga City</b>																
RFSW							8	3	4	1.4	2	0.7	7	2.3	2	0.7
FLSW							3	3	9	4	19	8	21	7	33	11
MSM							7	10	8	12	8	7.3				
IDUs							3	4	1	3	2	10				
MCSW							1	2.2	0	0	0	0				
MSTD							1	2	1	2.4	1	3.4				