THE 2007 STI, HIV AND AIDS ANNUAL SURVEILLANCE REPORT

National Department of Health

STI, HIV and AIDS Surveillance Unit

Table of Content i

List of Tables:

List of Figures:

Foreword

It is my pleasure to introduce the 2007 STI, HIV and AIDS Annual Surveillance Report. The compilation of this report will assist the National Department of Health and all the other stakeholders in the provision of strategic information for planning and implementation of policies and programs by all stakeholders for the national response to the HIV epidemic.

This document provides updated information on the HIV situation in the country to the end of 2007. These data will form the cornerstone for planning, funding, and HIV policy formulation in addition to the design of prevention, behaviour change, treatment, care and support programs in Papua New Guinea. The compilation of this report satisfies one of the key objectives of the government through the National AIDS Council and the National Department of Health to provide up to date information on the STI and HIV epidemic so that all stakeholders can access and use to plan and implement their response to HIV. The data used in this report were collected from STI, HIV, ANC and TB clinics and VCT sites, excluding behavioural sites. It is anticipated that the next annual report will have data from behavioural surveillance sites.

It is encouraging to note that HIV testing as well as highly active antiretroviral therapy (HAART) coverage rates have continued to increase over successive years. In 2007, 60 HIV testing facilities reported data to NDoH compared to only 35 sites in 2006. A total of 32,564 persons were tested at the 60 sites with 1,782 confirmed positive. In addition, there were 38 health facilities offering HAART. Out of the patients on HAART, there were 2,065 adults (940 males and 1,125 females) and 185 children (97 males and 88 females). The percentage of adults and children who actually received ART out of those who needed treatment in 2007 was 35% compared to 23% in 2006.

Data obtained from HIV ANC sentinel sites suggests that HIV prevalence is higher in rural than urban areas. A big challenge for the government and all stakeholders is how to control the spread of HIV in the rural areas and to ensure that the impact is minimized where it matters most - at the family and the household level.

I am confident that this 2007 STI, HIV and AIDS Surveillance Report provides the most up to date data for all stakeholders to plan their response and assist in ensuring that the scale up strategies for the response to HIV are accessible and equitable for all, are gender sensitive, and include measures to ensure that there is no stigma and discrimination or barriers for people living with HIV or for those from other more vulnerable populations. Understanding trends in HIV infections and HIV risk related behaviours allows us to create a more evidence-based response to HIV.

I recommend that these official data and information be disseminated to all sectors and stakeholders for everyone's use.

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Hon. Sasa Zibe, MP
Minister for Health, HIV and AIDS

Acknowledgements

The National Department of Health would like to express its sincere gratitude to all who have actively contributed towards the production of this 2007 Annual STI, HIV and AIDS Report.

We thank data collectors and those who provided technical assistance and guidance in the analysis of the surveillance data, and in the development and preparation of this document. Special appreciation is noted to the STI, HIV and AIDS Unit under the leadership of Dr. Daoni Esorom and in particular the Surveillance Team who coordinated and developed the earlier drafts together with the coordinators of the unit and technical specialists from partners for their invaluable contributions and insights.

This report was compiled with data collected and gathered from all the surveillance sites in the country. Data was collected through routine reporting from provincial hospitals and health facilities. In addition, data was collected from 26 sentinel ANC, and STI sites in 7 selected provinces over three months.

The information provided in this surveillance report is to guide planners, policy makers and all stakeholders to plan HIV interventions that will minimize the impact and the further growth in HIV infection rate.

Finally, I look forward to the implementation of the recommendations of this surveillance report and to develop HIV interventions that will be implemented for the benefit of our people, the majority of whom live in the rural areas.

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Dr. Clement Malau

Secretary for Health

Abbreviations and Acronyms

ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care Clinic
ART	Anti-Retroviral Therapy
AusAID	Australian Agency for International Development
BAHA	Business Coalition Against HIV and AIDS
BSS	Behavioural Surveillance Surveys
DMS	Director of Medical Services
EPP	Estimation and Projection Package
FBO	Faith Based Organization
FHI	Family Health International
GFATM	Global Fund for AIDS, TB and Malaria
HAMP	HIV/AIDS Management and Prevention Act
HEO	Health Extension Officer
HIV	Human Immunodeficiency Virus
HRC	HIV Response Coordinator
IMAI	Integrated Management of Adults and Adolescent Illnesses
IMR	Institute of Medical Research
MLT	Medical Laboratory Technician
MSW	Male Sex Workers
NAC	National AIDS Council
NACS	National AIDS Council Secretariat
NCD	National Capital District
NDOH	National Department of Health
NGO	Non Government Organization
NHASP	National HIV/AIDS Support Project
NHIS	National Health Information System
NRI	National Research Institute
NSO	National Statistical Office
PAC	Provincial AIDS Committee
PICT	Provider Initiated Counselling and Testing
PLO	Provincial Liaison Officer
PLWHA	People Living with HIV/AIDS
PMGH	Port Moresby General Hospital
PPTCT	Prevention of Parent to Child Transmission
PNG	Papua New Guinea
PNGDF	Papua New Guinea Defence Force
RDS	Respondent Driven Sampling
SPC	South Pacific Commission
STI	Sexually Transmitted Infection
TB	Tuberculosis
UNAIDS	Joint United Nations Program on HIV/AIDS
UNDP	United Nations Development Program
UNICEF	United Nations Children Fund
UPNG	University of Papua New Guinea
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

EXECUTIVE SUMMARY

The National Department of Health (NDoH) STI, HIV and AIDS surveillance unit is responsible for providing the National AIDS Council (NAC) with strategic information on the HIV epidemic in PNG. This report provides information compiled from five different databases at the NDOH in 2007; (1) Routine HIV Case Reporting database, (2) Routine Monthly HIV Testing database, (3) Routine Monthly NHIS database (including STI data), (4) Routine Monthly HIV Patient (ART) database, and (5) Periodic HIV Sentinel Surveillance database. These are actual data collected from surveillance sites. There were no estimations and projections carried out on data in this report. Following is a summary of key findings under each surveillance component.

(1) Routine HIV Case Reporting:

HIV case reporting data were routinely collected from all 20 provinces, with a total of **5,038** newly diagnosed HIV infections reported in 2007. By the end of December 2007, a cumulative total of **23,210** HIV infections had been reported since the first case was detected in 1987. The number of reported cases has been increasing every year with annual increases between 25% and 40% since 2001. These increases may be attributed to the fact that the numbers of HIV tests performed have also increased over the years. The reported cases represent only a fraction of the actual number of HIV positive people because; (1) Many people living with HIV and AIDS (PLWHA) are unaware that they are infected since they have not been tested, (2) Not all HIV testing facilities are reporting confirmed HIV cases to NDoH.

Sex: More female infections (n=2868, 60%) compared to males (n=2027, 40%) in 2007.

Age: The median age of HIV positive females was 27 years compared to 32 years in males. In the ages of 15-24 years, 33% of reported cases were in females compared to 14% in males.

Province of detection: Most of the reported cases in 2007 were from NCD (38%), 28% from Western Highland Province [WHP], 13% from Eastern Highland Province [EHP], Morobe 5%, 4% Southern Highland Province [SHP] and Enga, 2% from Simbu. Together, NCD, Morobe and the Highlands provinces account for 94% of all reported HIV infections in 2007.

Mode of Transmission: Heterosexual sex was the main mode of HIV transmission in the reported cases where mode of transmission was recorded.

(2) Routine Monthly HIV Testing

In 2007, 60 HIV testing facilities reported data to NDoH compared to 35 sites in 2006. In 2007, a total of **32,564** persons were tested with **1,782** confirmed positive with a prevalence rate of 5.46%. The results from the monthly HIV testing database were consistent with those from routine HIV case reporting database in the geographical distribution of HIV positive cases.

HIV prevalence was greater in NCD, the Highlands region, Morobe and the Autonomous Region of Bougainville (ARB). For example, HIV prevalence was highest at testing sites in ARB and WHP (12%), Morobe (8.8%), Milne Bay (7.8%), and EHP (7.8%) in 2007. The trend of HIV prevalence in each HIV testing facility is difficult to interpret, since the prevalence go up and down at most facilities in an irregular fashion. However, where data has been consistently collected on large enough samples, HIV prevalence at these VCT sites is increasing.

(3) Routine STI Data through Monthly NHIS Reporting

This report focuses on syndromically diagnosed STI cases from health centres and hospital outpatient departments but not from the aid posts. A total of 10,389 genital ulcer cases were reported in 2007. The number of genital ulcers has been stable since 2000 when 10,606 cases were reported. On the other hand the number of genital discharges cases has gradually been increasing since 2002 (28,688 cases in 2002 vs 39,633 cases in 2007). In all the provinces [except Chimbu and West New Britain Province (WNBP)], the number of genital ulcer cases was greater among males than females. In contrast, the number of genital discharge cases was much greater among females than males in most provinces (except Central, Milne Bay, and Northern). For both genital ulcers and discharges, the majority of cases (86%) were reported from EHP (32%), WHP (18%), SHP (9%), Enga and Chimbu (8%), Morobe (6%), and NCD (5%). During 2007, the provincial STI clinical facilities were reporting separately to the STI unit in the disease control branch and most were not reporting through National Health Information System (NHIS). However, from August 2008, all facilities will be reporting using the same syndromic diagnostic criteria, through the NHIS.

(4) Routine Monthly Highly Active Anti-Retroviral Therapy (HAART) database

In 2007, there were 38 health facilities offering HAART. Of the cases on HAART, there were **2,065 adults** (940 males and 1,125 females) and **185 children** (97 males and 88 females). The unmet need for HAART in 2007 was estimated to be 6,348, the percentage of adults and children who actually received ART (among those who needed treatment) was 35% in 2007, compared to 23% in 2006. The survival rates in cohort analysis showed that 67% of those who started HAART in 2004 (considered as the baseline and Year 1) survived beyond 12 months. The survival rate increased to 83% in 2005 (Year 2) and 89% in 2006 (Year 3).

(5) Periodic HIV Sentinel Surveillance database

The HIV sentinel surveillance was implemented at 21 ANC sites (10 urban and 11 rural sites) and 5 STI sites in 7 provinces between October and December 2007. Among urban ANC sites, Mt. Hagen General Hospital showed the highest HIV prevalence (2.0%) followed by Wabag Hospital (1.2%). Among rural ANC sites, the HIV prevalence was 3.2% at Mambisanda Hospital (Enga) and 1.8% at Togoba Health Center (WHP). A comparative analysis of the urban/rural prevalence showed that HIV prevalence were generally higher in rural ANC sentinel sites (1.04%) than in urban ANC sentinel sites (0.9%).

At STI sentinel sites, HIV prevalence was much higher and wider in the range (0-18%) than those in ANC sites (0-3.2%). Tininga Clinic in WHP had the highest HIV prevalence of 17.8%, followed by Friends Clinic in Morobe (4.1%), and Nina Clinic in SHP (2.6%).

SECTION 1: INTRODUCTION

The STI, HIV and AIDS Surveillance Unit at NDoH assumed the responsibility of surveillance relating to STI, HIV and AIDS in June 2006 from the National AIDS Council Secretariat (NACS). Given its role as the provider of strategic information on the HIV epidemic in PNG, the unit has compiled this report using different databases to give a clearer picture of the HIV epidemic. This is the first annual STI, HIV and AIDS surveillance report based on data generated from the different surveillance components in PNG. The data presented here were organized and analyzed to show trends and the characteristics of the epidemic. It is anticipated that this report will provide partial evidence necessary for tracking the HIV prevalence and trends over time, to guide the development of HIV normative policies and intervention programs and monitoring of STI, VCT and ART programs in the country.

Included in this report are routinely collected data from (1) HIV Case Reporting (2) Monthly HIV Testing (3) Routine blood donor screening (4) Monthly STI Reporting and (5) Monthly ART Reporting. HIV confirmed cases are supposed to be reported to NDoH as soon they are confirmed. However, this is often not practical and HIV case notifications are sent to NDoH together with other reports (routine data 2-5) on a monthly basis, using forms presented in Appendix 1. In addition, data collected from periodic surveys at selected ANC and STI clinics are also presented. No behavioural surveillance data is included since there was no behavioral surveillance survey conducted in 2007. This will be included in the 2008 annual report.

More data is presented in this report than any other previous annual reports, which reflects the hard work by the National AIDS Council Secretariat (NACS) and NDoH in setting up the surveillance system prior to the birth of the NDoH STI, HIV and AIDS surveillance unit in 2007. The hardworking staff from facilities should also be commended for their hard work in gathering the data that is being analysed and presented in this report. In addition, NDoH surveillance staff have been out to provinces to physically collect unreported data from sites. Generally, there have been improvements in both quantity and quality of data collection and reporting. For example, our collaborative efforts with key stakeholders have resulted in a 58% increase in the number of HIV testing sites reporting from 35 in 2006 to 60 in 2007. There is still plenty of room for improvement in the area of data quality. This is being systematically addressed through the development and implementation of proper data collection policies and guidelines.

This report is divided into five sections:

- **Section 1** provides an introduction on the country's current surveillance system;
- **Section 2** shows information from routine surveillance data subdivided into four sections:
    - (2.1) routine HIV case reporting,
    - (2.2) monthly HIV testing summary report,
    - (2.3) STI monthly NHIS report,
    - (2.4) Blood donor screening data and
    - (2.5) monthly ART data.
- **Section 3** covers HIV and STI data generated through sentinel surveillance activities
- **Section 4** acknowledge some limitations of data and findings in the report
- **Section 5** provides a summary of key findings and appropriate recommendations for action based on the findings.

It is anticipated that this report will provide the evidence necessary for tracking the HIV prevalence and trends over time and guide the development of HIV normative policies and intervention programs in the country.

SECTION 2: ROUTINE HIV AND STI SURVEILLANCE

Data captured through routine surveillance and reports include (1) routine HIV case reporting, (2) routine HIV testing at HIV testing sites, (3) routine STI reporting through NHIS, (4) routine blood donor screening through St Johns Blood Services and (5) routine ART reporting at ART sites. Routine HIV cases are reported as soon as HIV infections are confirmed while the latter four are reported monthly to NDoH.

2.1: Routine HIV Case Reporting

The HIV database on newly confirmed and reported HIV infections in Papua New Guinea is managed by a data manager in the STI and HIV Surveillance Unit at NDoH. The routine HIV case reporting data includes the number of HIV positive cases confirmed at laboratories but does not include the number of HIV test performed.

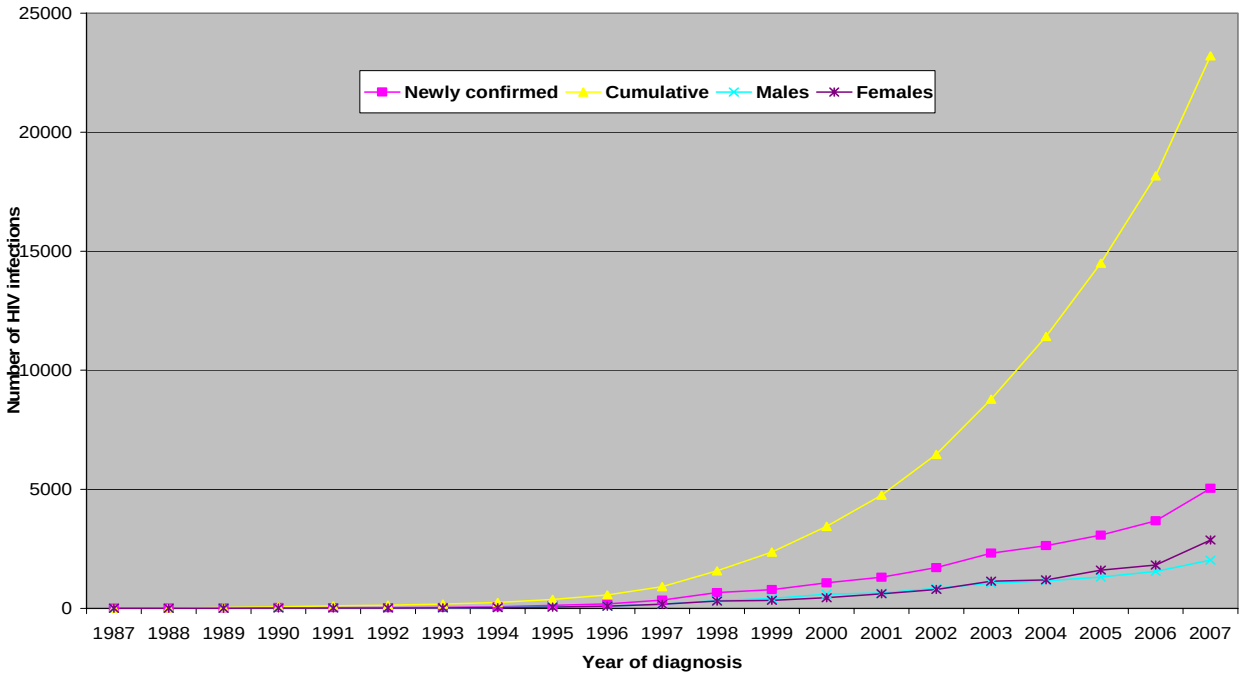
2.1.1 Sex distribution of reported cases

Table 1: New and Cumulative HIV Infection Reported in PNG, 1987 - 2007

Year of detection	Male	Female	Sex not stated	Total Annual HIV infections	Cumulative cases	Annual % increase on Cumulative cases
1987	2	4	0	6	6	0
1988	8	5	0	13	19	217
1989	11	7	0	18	37	95
1990	24	12	0	36	73	97
1991	17	16	2	35	108	48
1992	12	18	0	30	138	28
1993	19	21	0	40	178	29
1994	42	31	1	74	252	42
1995	68	57	1	126	378	50
1996	94	96	2	192	570	51
1997	173	174	1	348	918	61
1998	331	307	23	661	1,579	72
1999	421	336	34	791	2,370	50
2000	601	448	25	1,074	3,444	45
2001	649	618	46	1,313	4,757	38
2002	841	797	76	1,714	6,471	36
2003	1,058	1,142	117	2,317	8,788	36
2004	1,157	1,197	282	2,636	11,424	30
2005	1,321	1,607	147	3,075	14,499	27
2006	1,553	1,824	296	3,673	18,172	25
2007	2,027	2,868	143	5,038	23,210	28
Total	**10,429**	**11,585**	**1,196**	**23,210**		

Table 1 shows that a total of **5,038** newly confirmed HIV cases were reported in 2007. This is 37% more than the 3,673 cases reported in 2006. Out of the cases in 2007, 2,868 (57%) were females, 2,027 (40%) males and 143 (3%) where the sex was not recorded. The ratio of newly confirmed HIV infections in 2007 was almost 3 females to 2 males. This could be attributed to more females (n=19,909, 62%) than males (n=12,410, 38%) being tested for HIV in 2007.

Graph 1: Number of annual and cumulative HIV infections by gender in PNG, 1987 to 2007



There were **23,210** cumulative HIV positive cases reported by the end of December 2007. Of these 11,585 (50%) were females and 10,429 (45%) were males; and 1,196 (5%) whose gender was not recorded. Where gender was known, 53% (11,585/22,014) of those infected are females compared to 47% (10,429/22,014) males.

Graph 1 shows that from 2003 onwards the number of female HIV positive cases has been greater than those of males. During this period there were 8,638 (55%) HIV positive females reported compared to 7,116 (45%) males. The number of HIV positive female cases has been rising annually, with a notable 57% increase between 2006 and 2007.

2.1.2 Age distribution of HIV Infections

Table 2: Number of Newly Reported HIV Infections by Gender and Age Group in 2007

Age group	Male	Female	Unknown	Total
0 - 4	124	72	1	**197**
5--9	30	20	1	**51**
10--14	4	15	0	**19**
15 - 19	29	210	0	**239**
20 - 24	191	521	2	**714**
25 - 29	311	531	1	**843**
30 - 34	257	376	1	**634**
35 - 39	221	237	0	**458**
40 - 44	266	161	2	**429**
45 - 49	49	40	0	**89**
50 - 54	47	20	0	**67**
55 - 59	21	8	0	**29**
Over 60	10	11	0	**21**
Unknown	467	646	135	**1,248**
TOTAL	**2,027**	**2,868**	**143**	**5,038**

Table 2 shows that 3,790 (75%) out of 5,038 had their ages reported, compared to 1,248 (25%) in 2007. Of those with known age, 3,406 (90%) of the HIV cases were in the reproductive ages of 15 to 49 years. More reported cases were in the age group of 25-29 years than any other groups. The median age was 28.2 years.

Table 2 also shows that there were more females in the younger age groups of 15-24 years old, compared to male cases. There were 731 (33%) females between the ages of 15-24 years compared to 220 (14%) males.

A total of 197 children under the age of 5 years were reported to be HIV positive in 2007. This represents 5 percent of all cases where age is known.

Table 3: Cumulative Number of HIV Positive Cases by Gender and Age Group, 1987 to 2007

Age Group	Male	Female	Unknown	Total
0 - 4	389	297	3	**689**
5--9	152	157	12	**321**
10--14	40	81	0	**121**
15 - 19	205	825	2	**1,032**
20 - 24	841	2,112	7	**2,960**
25 - 29	1,284	1,956	7	**3,247**
30 – 34	1,381	1,470	11	**2,862**
35 – 39	1,024	873	10	**1,907**
40 – 44	866	565	7	**1,438**
45 – 49	432	187	2	**621**
50 – 54	327	129	5	**461**
55 – 59	123	34	0	**157**
Over 60	126	30	0	**156**
Unknown	3,239	2,869	1,130	**7,238**
TOTAL	**10,429**	**11,585**	**1,196**	**23,210**

Table 3 shows that only 15,972 (69%) of the total cumulative HIV cases had their ages reported. Between 1987 and 2007, 34% (2,937/8,717) of reported HIV infected females were between the ages of 15-24, compared to 15% (1,046/7,190) of males. The female median age was 27.3 years compared to 32.5 years in males for all reported infections between 1987 and 2007. These results indicate that women are being infected with HIV at an earlier age than men.

Table 3 also shows that a cumulative total of 689 HIV positive children under the age of 5 years were reported between 1987 and 2007, representing 4.3% of all HIV infections with known ages.

Graph 2 shows that the number of reported HIV infections is greater in NCD, WHP, EHP, Enga, and SHP, Simbu and Morobe provinces. In 2007, 1,920 (38%) of the total HIV cases were reported in NCD followed by 1428 (28%) from WHP, 639 (13%) in EHP, 268 (5%) in Morobe, 214 (4.2%) in SHP 209 (4.1%) in Enga and 85 (1.7%) in Simbu. These provinces account for 94% of all reported HIV infections in 2007. There were less than 10 cases reported from NIP (5), and Manus (9) provinces.

2.1.3 Number of Reported HIV Infections by Province of Detection

Graph 2: Number of Reported HIV Infections by Gender and Province of Detection in 2007

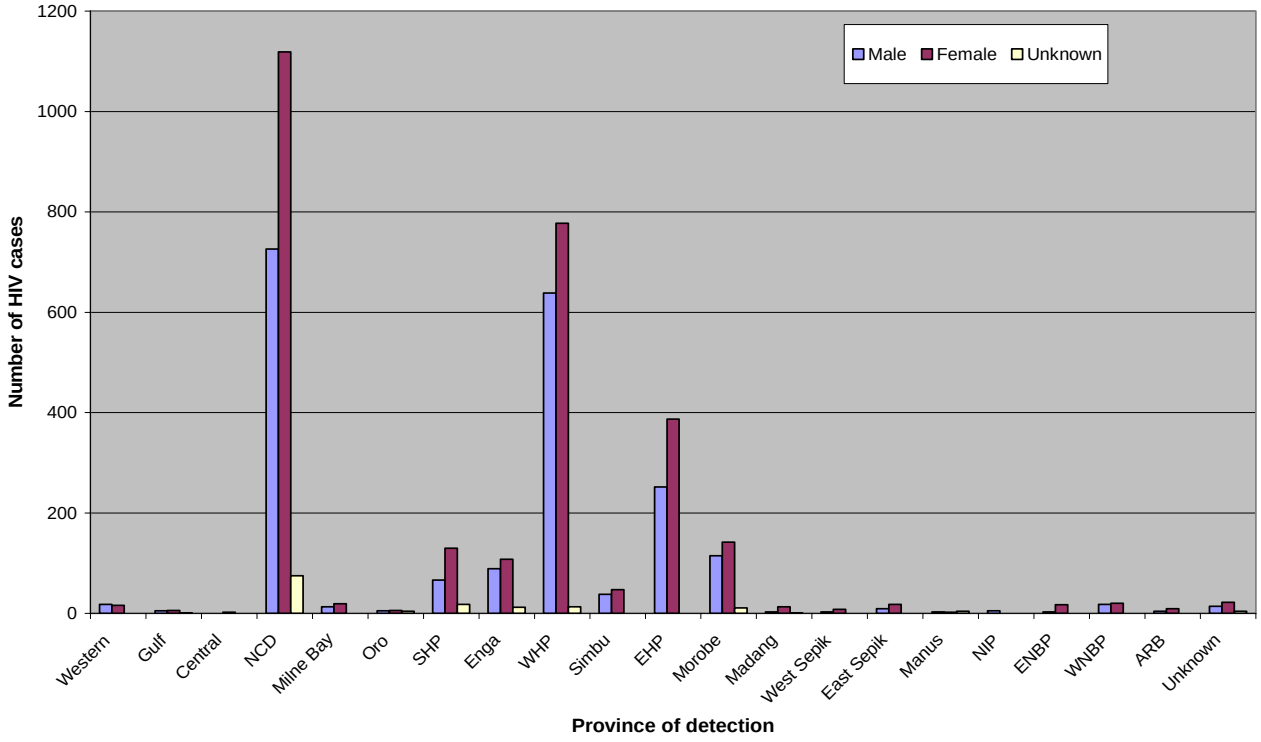


Table 4: Cumulative Number of HIV Infections by Gender and Province of Detection, 1987- 2007

Province of Detection	Male	Female	Unknown	Total
Western	150	123	1	**274**
Gulf	25	31	2	**58**
Central	5	9	0	**14**
NCD	5,293	5,649	350	**11,292**
Milne Bay	41	62	11	**114**
Oro	50	63	7	**120**
SHP	197	269	39	**505**
Enga	451	539	34	**1,024**
WHP	2,179	2,413	176	**4,768**
Simbu	195	247	43	**485**
EHP	641	885	92	**1,618**
Morobe	787	833	247	**1,867**
Madang	82	114	28	**224**
West Sepik	45	62	12	**119**
East Sepik	22	41	4	**67**
Manus	34	21	6	**61**
NIP	37	18	0	**55**
ENBP	84	89	14	**187**
WNBP	46	45	3	**94**
NSP	12	21	3	**36**
Expatriate	0	0	15	**15**
Unknown	53	51	109	**213**
TOTAL	**10,429**	**11,585**	**1,196**	**23,210**

Table 4 shows that nearly half (49%) of the cumulative HIV cases were reported from NCD (11,292 cases), followed by WHP with 4,768 cases (21%), Morobe with 1,867 cases (8%), EHP with 1,618 cases (7%), Enga with 1,024 cases (4.4%), SHP with 505 cases (2.2%) and Simbu with 485 cases (2.1%). Western and Madang provinces account for 274 cases (1.2%) and 224 cases (1%) of the total cumulative HIV infections respectively. The province of detection was not reported in 213 cases (0.9%) between 1987 and 2007.

There were only 36 cases in ARB, and 55 cases in NIP. However, based on these results, it is difficult to conclude that HIV infection rate is high in NCD, Highlands, and Morobe, and low in Central, ARB, NIP, and other small islands, because HIV testing services are more widely available, accessible, and performed in NCD, Highlands, and Morobe than Central, ARB, and NIP. These data represent ***reported*** infections and it is possible that there are a number of unreported HIV positive infections from these high burden as well as other provinces.

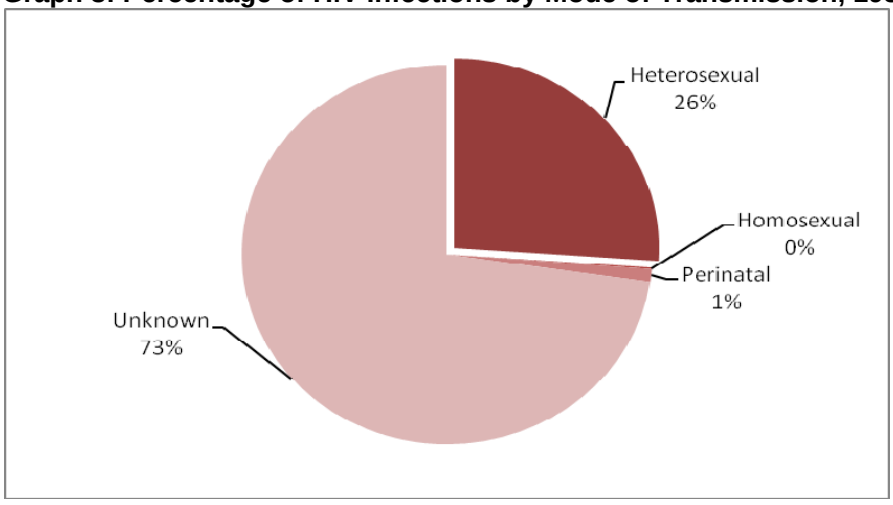
2.1.4 Number of HIV Infections by Gender and Mode of Transmission

Table 5: Number of HIV Infections by Gender and Mode of Transmissions in 2007

Mode of transmissions	Male	Female	Sex not stated	Total	%
Heterosexual	253	349	8	**610**	**12.1**
Homosexual	1	5	0	**6**	**0.1**
Perinatal	23	18	1	**42**	**0.8**
Mode not stated or recorded	1,750	2,496	134	**4,380**	**87.0**
TOTAL	**2,027**	**2,868**	**143**	**5,038**	**100.0**

Table 5 shows that the main mode of transmission was not reported in 87% (4,380/5,308) of HIV cases in 2007. Of those where mode of transmission is reported, 12.1% of the cases were transmitted through the heterosexual mode.

Graph 3: Percentage of HIV Infections by Mode of Transmission, 1987- 2007



Graph 3 shows that 26% of the infections reported were transmitted through heterosexual mode of the transmission. The mode of transmission was not recorded in 73% of the reported HIV infections.

2.2: Routine Monthly HIV Testing

Section 2.2 summarizes data collected through the Monthly HIV Testing Summary Form. This form includes both numbers of HIV positives cases and HIV screening tests conducted. Thus, it is possible to generate HIV prevalence from this data source. There were 60 HIV testing sites in PNG who submitted their reports to the HIV Surveillance Unit in 2007. These 60 HIV testing sites include not only VCT sites, but also STI, ANC, and other clinical sites. A total of **32,653** persons had HIV screening test at these HIV testing sites, with **1,782 (5.46%)** confirmed positive.

2.2.1 HIV Prevalence among those who tested by HIV Testing Site in 2007

Appendix 2 illustrates that the greatest number of HIV screening test was performed at Michael Alper's STI clinic, EHP 11% (3,690), followed by Epeanda Care Center with 9% (2,844), St. Mary's Hospital (Vunapope), ENBP 7% (2,315), and Mingende Rural Hospital, Simbu 7% (2,238). The highest HIV prevalence was found among those who tested at Arawa hospital, ARB (21%), Tininga Clinic, WHP (18%), Lawes Road Clinic, NCD (17%), and Anua Moriri Day Care Centre, Madang (15%).

Table 6 shows that NCD conducted the most HIV tests in 2007 with 6,391 (20%) followed by EHP 4,670 (14%), SHP 3,935 (12%), WHP 3746 (11%), ENBP 3,280 (10%), Simbu 2,432 (7%), Western 2,114 (6%) and Morobe 1,863 (6%). HIV prevalence was highest in ARB (12%), followed by WHP (12%), Morobe (8.8%), Milne Bay (7.8%) and EHP, (7.8%). It is noteworthy that there are pockets of concentrated epidemics in ARB especially in Arawa where 40 out of the 188 people tested were confirmed positive. ARB apart from NCD and the Highlands provinces should be considered a priority province given its current prevalence and it being strategically located as a border province. Efforts should be made to ensure those tested positive receive adequate treatment, care and support in Arawa and ARB overall.

Table 6: HIV prevalence among those who tested at HIV testing sites by province in PNG 2007

Province	Total # of HIV tests	Total # of HIV+ cases	HIV prevalence
1. Western	2114	20	0.95
2. Gulf	687	12	1.75
3. Central	561	5	0.89
4. NCD	6391	364	5.70
5. Milne Bay	102	8	7.84
6. Northern	202	2	0.99
7. SHP	3935	147	3.74
8. Enga	272	8	2.94
9. WHP	3746	441	11.77
10. Simbu	2432	128	5.26
11. EHP	4670	366	7.84
12. Morobe	1863	163	8.75
13. Madang	866	43	4.97
14. WSP	15	2	13.33
15. ESP	622	8	1.29
16. ENBP	3280	18	0.55
17. WNBP	562	6	1.07
18. ARB	334	41	12.28
Total	**32654**	**1782**	**5.46**

Graph 4: HIV Prevalence among those who tested at HIV testing sites by province in PNG, 2007

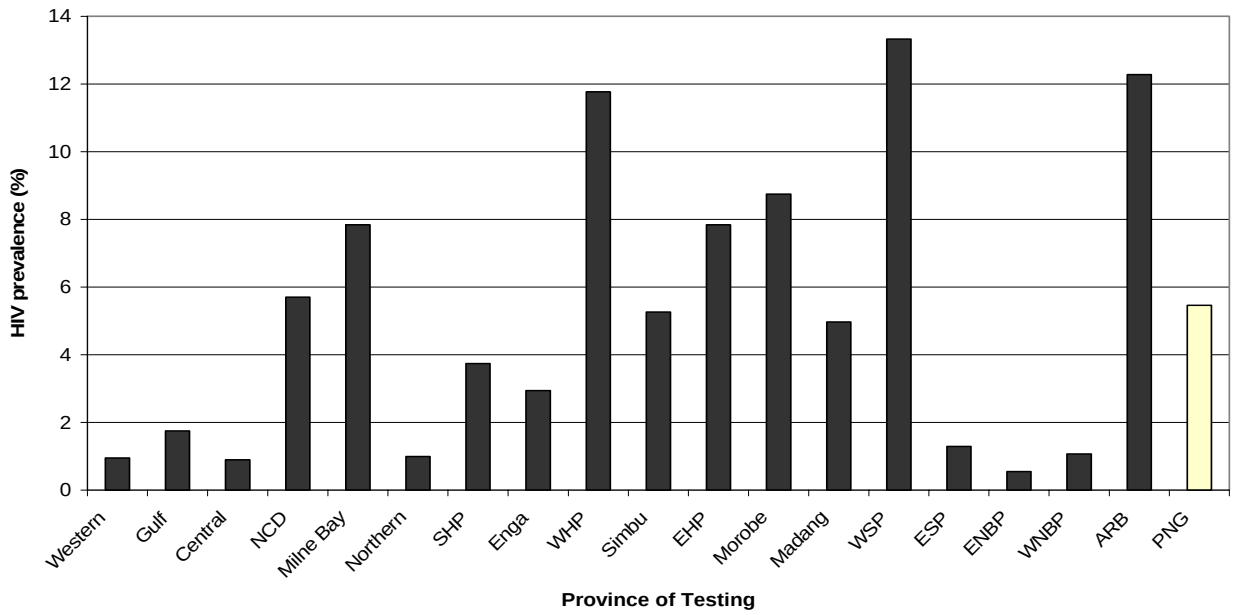
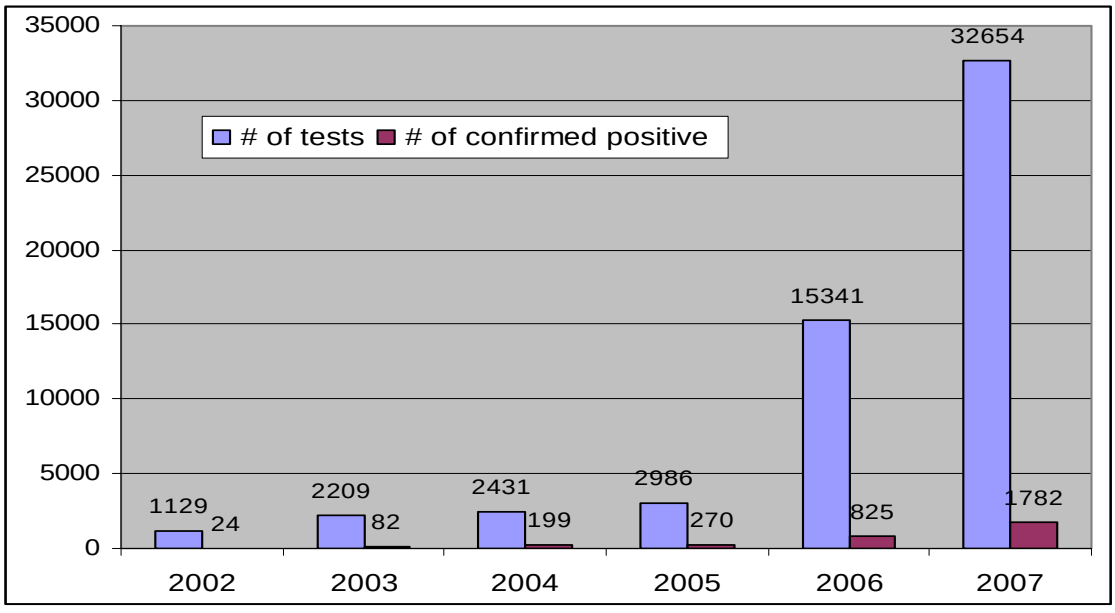


Table 6 and Graph 4 show the number of HIV tests conducted and prevalence by province in 2007. The HIV prevalence in each province was calculated by dividing aggregated number of HIV positive infections by aggregated number of HIV tests conducted. In 2007, there is record of testing being done in all provinces except in Manus and New Ireland Province.

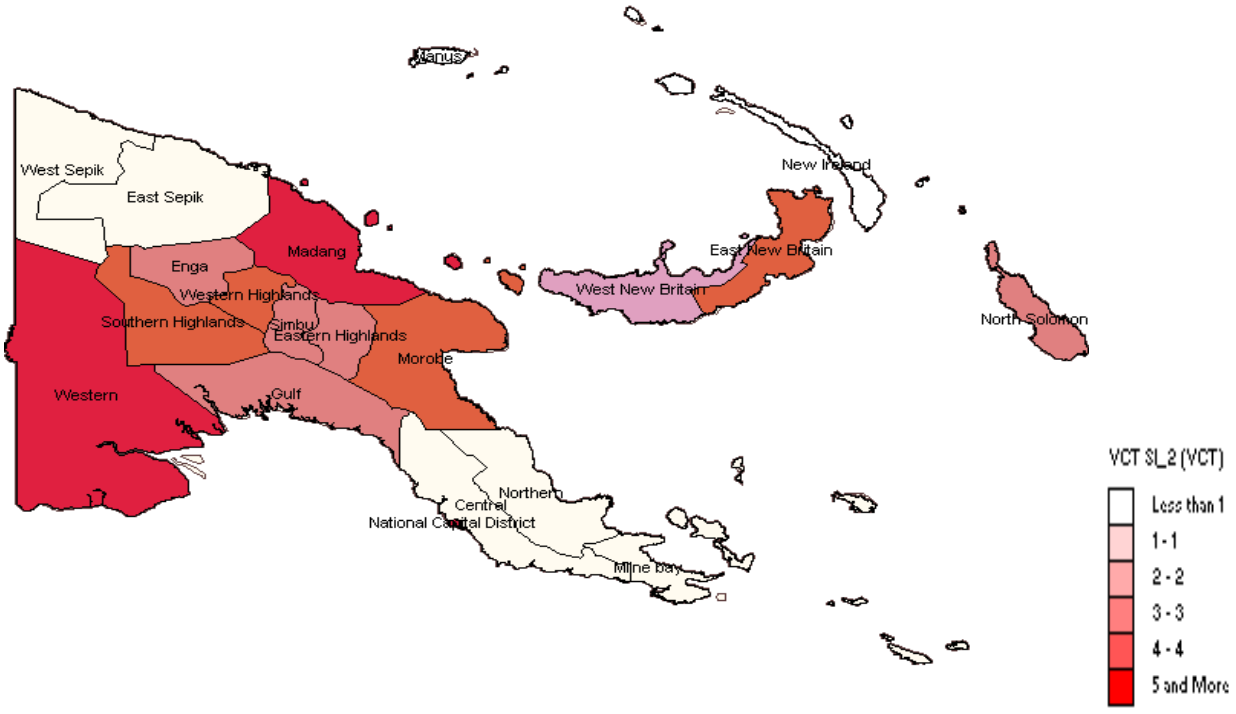
Appendix 3 shows trend HIV prevalence by all reported HV testing facilities from 2004 to 2007. In 2004, only 3 facilities (Anglicare, NCD, Bethany, Madang, and Shalom, WHP) reported. The number of reporting facilities increased to 11 in 2005, up to 35 in 2006, and then further increased to 60 in 2007. The trend of HIV prevalence in each facility is difficult to interpret, since the prevalence go up and down at most facilities in an irregular fashion.

Graph 5: Summary of HIV Testing at Reported HIV Testing Sites in PNG, 2002-2007



Graph 5 shows that HIV testing in Papua New Guinea has increased considerably since 2002. In 2002 there were 1129 people tested. This number increased to 2209 in 2003 and then marginally to 2431 and 2986 in 2004 and 2005 respectively. The number tested rose five fold to 15,341 in 2006 and then more than doubled to reach 32,653 in 2007. The prevalence has been fluctuating during this period, increasing from 2.1% to 3.7% between 2002 and 2003; then further increased to 8.2% and 9.0% in 2004 and 2005 respectively before falling to 5.4% in 2006. In 2007 the prevalence slightly increased to 5.5%. It is difficult to determine whether the prevalence is rising, decreasing or steady given the fluctuations of the prevalence over the past 6 years. HIV testing was reported in all provinces except Manus and NIP.

Graph 6: Number of HIV testing sites by province in PNG as of December 2007



2.3: Routine STI Data through Monthly NHIS Reporting

Data on STI is routinely collected by the NHIS using vague syndromic categories, which includes only genital ulcers and genital discharges. A new comprehensive version of syndrome management has been incorporated into the revised NHIS that include genital ulcers, genital discharges, lower abdominal pain, and latent syphilis. This more rigorous STI classification reporting system will be used in future surveillance update reports.

Table 7: Number of Reported Genital Ulcer and Genital Discharge Cases by Province in 2007

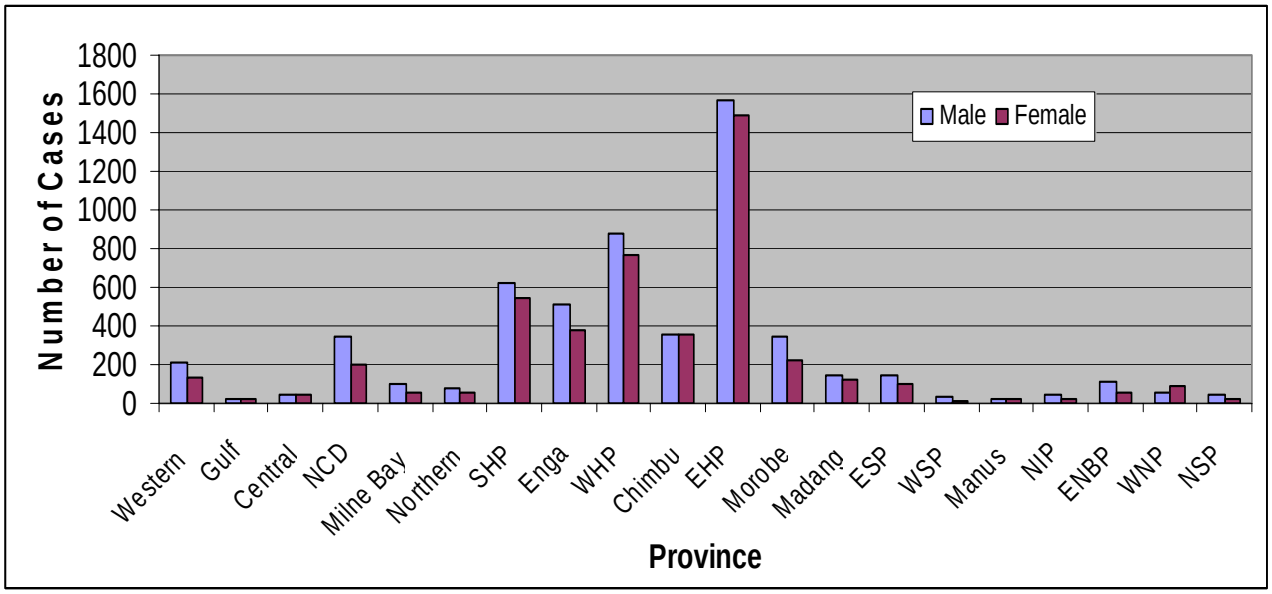
Province	Genital Ulcers				Genital Discharge				Total	
	Male		Female		Male		Female			
	Number	%	Number	%	Number	%	Number	%	Number	%
Western	208	3.7	138	2.9	197	1.4	270	1.1	813	1.6
Gulf	27	0.5	25	0.5	51	0.4	58	0.2	161	0.3
Central	45	0.8	41	0.9	86	0.6	75	0.3	247	0.5
NCD	347	6.1	204	4.3	713	4.9	1061	4.2	2325	4.6
Milne Bay	105	1.9	53	1.1	452	3.1	301	1.2	911	1.8
Northern	76	1.3	54	1.1	165	1.1	138	0.5	433	0.9
SHP	627	11.0	547	11.6	1302	9.0	2180	8.7	4656	9.3
Enga	513	9.0	375	8.0	1418	9.8	1919	7.6	4225	8.4
WHP	876	15.4	767	16.3	2336	16.2	4848	19.2	8827	17.6
Chimbu	353	6.2	357	7.6	1110	7.7	2211	8.8	4031	8.1
EHP	1564	27.6	1486	31.5	4721	32.7	8025	31.9	15796	31.6
Morobe	346	6.1	219	4.6	993	6.9	1526	6.1	3084	6.2
Madang	145	2.6	118	2.5	222	1.5	603	2.4	1088	2.2
ESP	147	2.6	102	2.2	192	1.3	527	2.1	968	1.9
WSP	33	0.6	13	0.3	113	0.8	149	0.6	308	0.6
Manus	17	0.3	17	0.4	34	0.2	73	0.3	141	0.3
NIP	40	0.7	27	0.6	74	0.5	115	0.5	256	0.5
ENBP	106	1.9	57	1.2	132	0.9	735	2.9	1030	2.1
WNP	56	1.0	88	1.9	105	0.7	313	1.2	562	1.1
ARB	44	0.8	26	0.6	24	0.2	66	0.3	160	0.3
Total	**5675**	**100**	**4714**	**100**	**14440**	**100**	**25193**	**100**	**50022**	**100**

Table 7 shows that a total of 10,389 genital ulcer cases were reported in PNG of which 5,675 (55%) were males and 4,714 (45%) females in 2007. The number of genital discharge cases (39,633) was much greater than those of genital ulcer cases in 2007 with 14,440 (36%) males and 25,193 (64%) females reported.

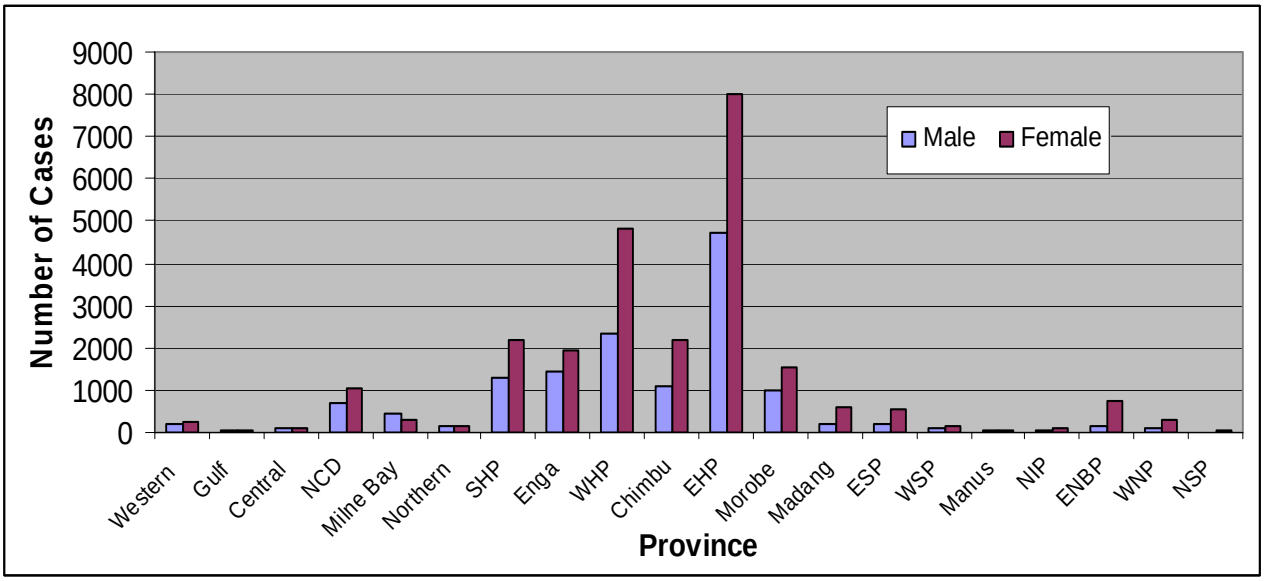
Graph 7 shows that in most provinces (except Chimbu and WNBP), the number of genital ulcer cases was greater among males than females. In contrast, Graph 8 shows that number of genital discharge cases was much greater among females than males in most provinces (except Central, Milne Bay, and Northern). For both genital ulcers and discharges, the majority of cases (86%) were reported from the highlands region (32% from EHP, 18% from WHP, 9% from SHP, 8% from Enga and Chimbu), Morobe (6%), and NCD (5%).

These trends are consistent with the data from (1) routine HIV case reporting, (2) HIV sentinel surveillance, and (3) monthly HIV testing summary report. The association between HIV and STI infections needs further investigations in PNG. More emphasis needs to be placed on other STIs apart from HIV as they may be an important marker for an impending HIV epidemic in provinces with currently high levels of STI and low HIV prevalence. The association between STI and HIV infection in PNG needs to be investigated more in the future.

Graph 7: Number of Reported Male and Female Genital Ulcer Cases by Province in 2007

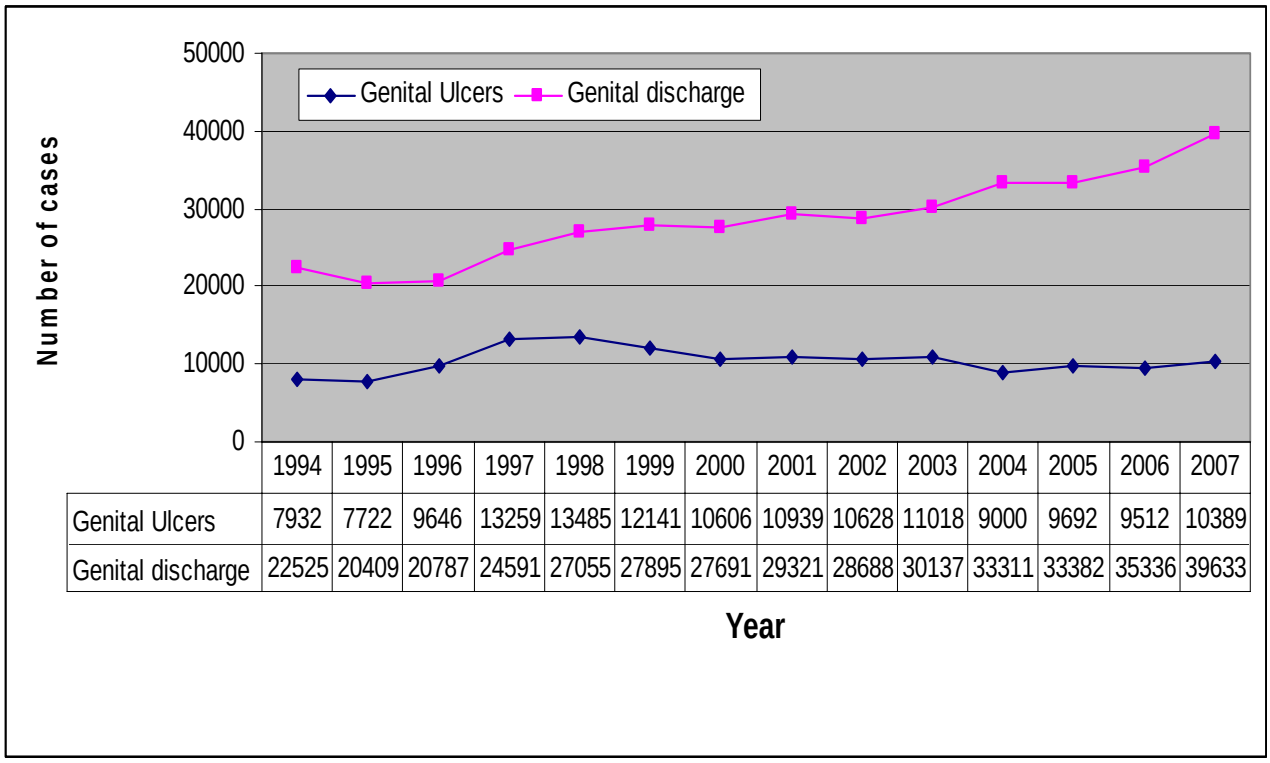


Graph 8: Number of Reported Male and Female Genital Discharge Cases by Province in 2007



Graph 9 shows trend data from 1994 to 2007 with the number of genital discharge gradually increasing since 2002 (28,688 cases in 2002 and 39,633 cases in 2007). The number of genital ulcers has been stabilizing since 2000 (10,606 cases in 2000 and 10,389 in 2007)

Graph 9: Number of Genital Ulcers and Genital Discharge Cases from 1994 to 2007



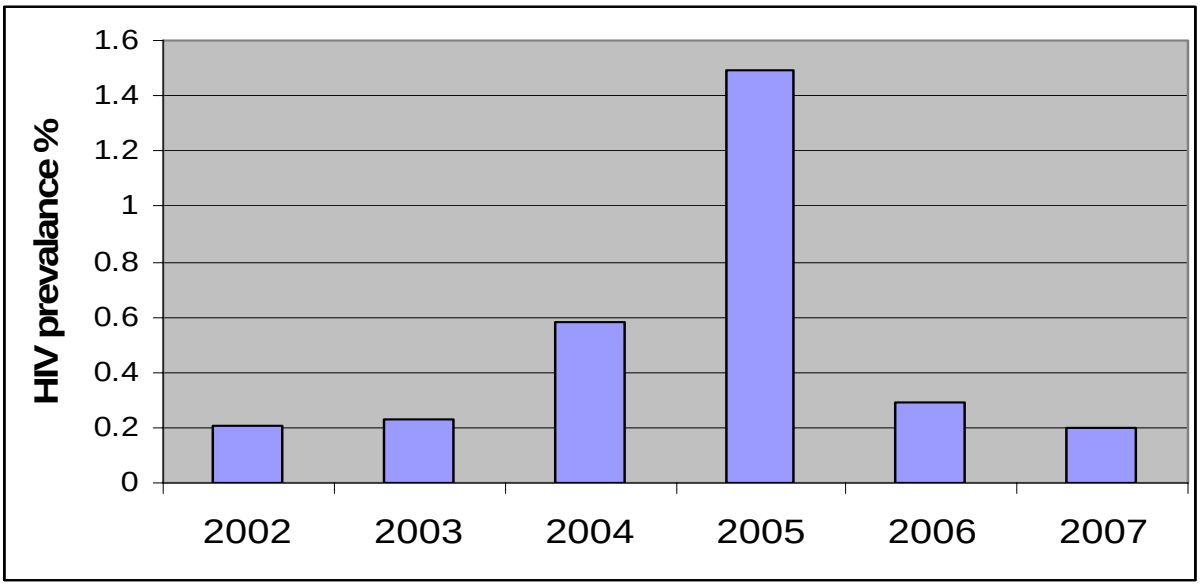
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Genital Ulcers	7932	7722	9646	13259	13485	12141	10606	10939	10628	11018	9000	9692	9512	10389
Genital discharge	22525	20409	20787	24591	27055	27895	27691	29321	28688	30137	33311	33382	35336	39633

It is important to note that during 2007 the provincial STI clinical facilities were reporting separately to the NDoH and most were not reporting through NHIS, so this will need to be considered when reviewing national figures. From August 2008, all facilities will be reporting using the same syndromic diagnostic criteria, through the NHIS for the first time.

2.4: Routine Blood Donor Testing

Screening of donated blood throughout the country was the first form of HIV monitoring that started in 1987. The extent of blood donor testing has varied considerably by year and location. Similarly, there have been variations in HIV prevalence detected among blood donors. HIV testing among blood donors has been fluctuating since 2002. In 2002, there were 29,134 blood donors tested followed by declines to 1,886 in 2003 and 15,105 in 2004. These declines were followed by increases between 2005 and 2007. The number of blood donors screened increased to 19,195 in 2005 followed by further increases to 21,916 in 2006 and 27,088 in 2007.

Graph 10: HIV Prevalence among Blood Donors in Papua New Guinea, 2002-2007



Graph 10 illustrates a steady increase in blood donors tested to be HIV positive between 2002 and 2004, with a sharp increase in 2005 and declines in 2006 and 2007. The highest prevalence of HIV infection detected among blood donors was reported in 2005, at 1.49%, and the lowest in 2007, at 0.2%. The highest HIV prevalence was found in Mendi at 1.5% (11/757) followed by Mt Hagen 0.8% (12/1619), Popondetta 0.32% (4/1268), Buka 0.22% (2/896), PMGH 0.21% (14/6582) and Rabaul 0.18% (4/2254).

All (100%) donated blood are screened in a quality assured manner. Although there are no paid blood donors in PNG, there is a problem with family and replacement donor given the risk of HIV transmission during the window period. It is therefore critical that replacement donors are discouraged from donating blood with more emphasis placed on voluntary blood donations. One of the major aims for St John Blood Service in 2007 was to increase awareness to the public about regular voluntary blood donation.

2.5: Routine Monthly ART Summary Data

2.5.1: Overview of ART Programme

Since the start of the Anti-Retroviral Therapy (ART) pilot program at Heduru Clinic (PMGH) in 2004 under the 3x5 initiative, ART services have been scaled up in all regional and almost all provincial hospitals. In 2007, there were 38 (14%) health facilities offering ART out of 279 functioning health facilities in PNG with 6 CD4 machines available. The level of services in health facilities is variable and should be assessed before scaling up of ART. A total of 360 health care workers had been trained in Integrated Management of Adult and Adolescent Illnesses (IMAI). The roll out of ART has been supported by the Global Fund. A total of 2,250 individuals including 185 children were on ART with slightly greater numbers of females (1,213) receiving ART than males (1,037) in 2007.

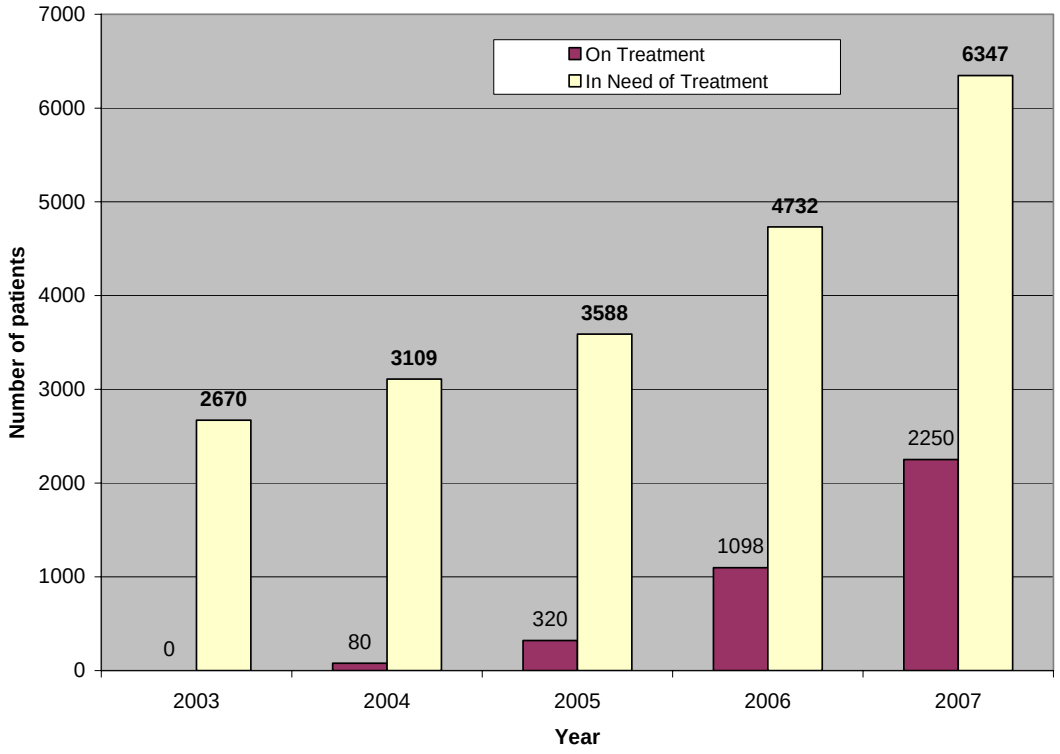
2.5.2 ART Coverage in PNG

Table 8: Summary of ART Coverage in PNG, 2006 and 2007

Indicators	2006	2007
Number of children (<15 yrs) currently receiving ART (Male)	-	97
Number of children (<15 yrs) currently receiving ART (Female)	-	88
Number of Children (<15 yrs) currently receiving ART (Total)	35	185
Number of adults (>15 yrs) currently receiving ART (Male)	-	940
Number of adults (>15 yrs) currently receiving ART (Female)	-	1,125
Number of adults (>15 yrs) currently receiving ART (Total)	1,063	2,065
Number of HIV infected pregnant women who received ART to reduce MTCT	-	84
Number of children and adults currently receiving ART	1,098	2,250
Estimated number of children and adults who need ART	4,732	6,348
Percentage of children and adults actually receiving ART among those who need ART (ART Coverage Rate)	23% (1,098/4,732)	35% (2,250/6,348)

At these 38 ART facilities, there were 2,065 adults (940 males and 1,125 females) and 185 children (97 males and 88 females) were receiving ART in PNG at the end of 2007. Since the number of adults and children who need ART was estimated to be 6,348, the percentage of adults and children who actually received ART among those who needed ART was 35% in 2007, which increased from 23% in 2006.

Graph 11: ART Treatment Coverage in PNG, 2003-2007

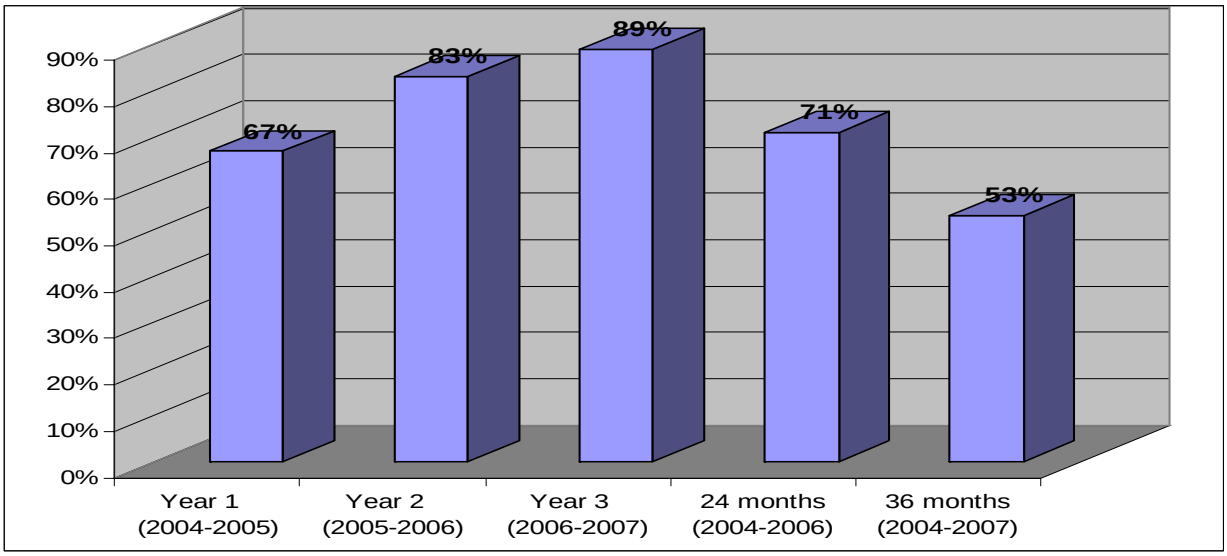


Graph 11 shows that in 2003 there were 2670 people in need of treatment with none (0%) put on ART because treatment was not yet available in PNG. With the introduction of the 3X5 initiative a year later, 80 out of the 3109 (2.5%) in need were on treatment. The number of PLWHA on treatment increased to 320 (9%) and so did the number in need (3588) of ART in 2005. In 2006 a total of 1098 (23%) were put on treatment out of the 4732 requiring ART. Similarly, in 2007, 2250 (35%) people initiated ART out of the 6347 in need of treatment. From zero coverage in 2003, ART coverage rose to 35% in 2007 indicating that more eligible people are being put on treatment. However, more efforts are needed to immediately scale up coverage rates**.**

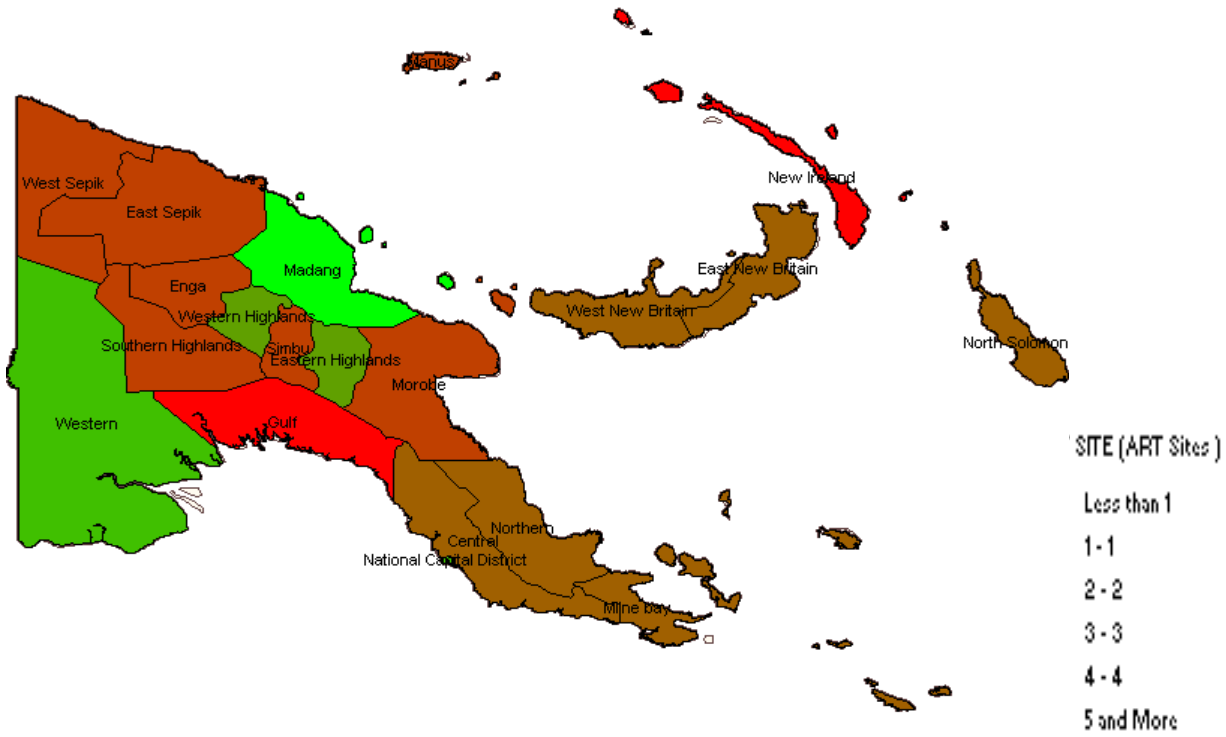
2.5.3 Cohort Analysis of ART patients at 12, 24 and 36 months

Graph 12 shows that at the end of Year 1, 67% of those who initiated ART at Heduru (PMGH) and Anua Moriri (Angau) were still alive and on treatment. The proportion of PLWHA who started ART and survived 12 months increased to 83% and 89% after Year 2 (2005) and Year 3 (2006) respectively. This trend shows that after subsequent years the number of survivors increased indicating an improvement in the quality of services provided. At 24 months, 71% of the people who started treatment were still alive. This rate dropped to 53% after another year (36 months).

Graph 12: Survival Rates at 12, 24 and 36 months for ART patients in Heduru (PMGH, NCD) and Anua Moriri (Anagau, Morobe)



Graph 13: Map of ART sites at the provincial level in PNG, 2007



Despite having increased coverage between 2004 and 2007 there is still room for improvement in terms of making ART accessible to the majority of the population. Graph 13 shows that New Ireland and Gulf are the only remaining provinces without ART. It is anticipated that ART will be available in these provinces by August, 2008. All 38 ART sites in 2007 are listed in Appendix 6. Initiating ART is easy however, once initiated it requires life time commitments from patients and staff since patients will be on treatment for the rest of their lives.

SECTION 3: PERIODIC HIV SENTINEL SEROSURVEILLANCE

HIV sentinel surveillance entails measuring the presence of HIV infection in a selected sentinel population in serial cross-sectional surveys. It involves the collection and testing of blood for HIV and in most settings, demographic characteristics and limited data on risk behavior are collected. The populations selected for HIV sentinel surveillance include persons at risk for HIV infection who are regularly and routinely seen in defined locations, e.g., ANC, STI and TB attendees.

In 2007 HIV sentinel surveillance was conducted at 26 sentinel sites in 7 provinces during the period between October and December 2007 (See Appendix 4). These sites included 10 urban and 11 rural ANC sites in 7 provinces and 5 STI sites in 4 provinces. Sites were selected based on HIV prevalence and past involvement in previous rounds of sentinel surveillance activities

3.1. Data from sentinel ANC sites

Table 9: HIV Prevalence at Urban ANC Sentinel Sites, 2002-2007

Province	Urban ANC Sites	2002	2003	2004	2005	2006	2007
		HIV Prevalence % (Denominator)					
Western	Daru Hospital	0 (492)	0 (204)				
Gulf	Kerema Hospital	0 (232)	0 (44)	3.0 (99)		0 (34)	
NCD	PMGH	0.7 (5171)	1.1 (4539)	1.2 (4052)	1.3 (4057)	1 (3514)	
	St. Mary's Hospital			12.1 (66)	8.8 (171)	5.2 (443)	
	9 Milne Hospital					2 (300)	
	St. Theresa			7.1 (14)	0 (32)	3.1 (382)	
Milne Bay	Alotau Hospital				0.5 (600)	1.3 (1245)	
Northern	Popondetta Hospital	0 (101)	0 (90)				
Enga	Wabag Hospital	0 (443)	0.4 (473)	0.2 (489)	0 (68)	2 (594)	1.2 (328)
WHP	Mt. Hagen Hospital	0 (2691)			3.7 (267)		2 (251)
	Mt. Hagen Urban Clinic						0.7 (1021)
Simbu	Kundiawa Hospital		0 (51)		2.2 (184)		
EHP	Goroka Hospital	0.4 (1614)	1.8 (678)		2.1 (2233)	1.3 (3496)	1.02 (487)
Morobe	Angau Hospital (ANC)		2.5 (480)				
	Malaghang HC						0 (60)
	Haikost HC						0 (41)
	Buimo HC						0.5 (199)
	Tent HC						0 (31)
	Taraka HC						0 (26)
Madang	Madang Hospital	0 (59)					
ESP	Wewak Hospital	-			1 (850)	0 (1553)	
WSP	Vanimo Hospital	0 (326)				0.2 (465)	
Manus	Lorengau Hospital				0.2 (605)	0.4 (713)	
ENBP	Vunapope Hospital				0 (774)	1.5 (751)	0.45 (221)
NSP	Buka		0.2 (516)		0.4 (537)	0.9 (699)	
Total	All Urban ANC Sites	0.4 (42/11,129)	1.1 (77/7,075)	1.5 (71/4720)	1.4 (10,378)	1.2 (14,189)	0.9 (23/2665)

* Grey areas indicate that data was not collected.

Table 9 shows that among urban ANC sites, the HIV prevalence was highest at Mt. Hagen General Hospital Labour Ward (2%), followed by Wabag Hospital (1.2%) and then Mt. Hagen Urban Clinic (0.7%). HIV prevalence in ENBP (Vunapope) has been relatively low over the last three years. From these results the HIV prevalence in urban areas is around 1% but varies between different provinces and regions. It is obvious from Table 9 that HIV prevalence rates among urban ANC attendees are highest in the Highlands (WHP and Enga) and lowest in the coastal (ENBP) and Morobe. However, most centres in Morobe province had very low numbers of mothers tested during the 3 months period, which could have affected the results.

Table 10: HIV Prevalence at Rural ANC Sentinel Sites, 2002-2007

Province	Rural ANC Sites	Year					
		HIV prevalence % (Total number of women tested)					
		2002	2003	2004	2005	2006	2007
Western	Tabubil Hospital	0 (631)	0.3 (646)	0.2 (538)	0.7 (431)	0.2 (591)	
Enga	Yampu HC	0 (235)	0.6 (310)	0.3 (331)	0 (33)	16.3 (43)	0 (268)
	Mambisanda Hospital						3.2 (93)
Simbu	Mingende HC			0.7 (612)	0.7 (704)	1.2 (658)	
Central	Veifa'a HC					1.5 (200)	1.4 (426)
	Kwikilla HC						0 (96)
EHP	Kainantu HC	0 (207)			2 (100)		0.8 (132)
WHP	Kudjip HC	0 (100)	0 (356)	0.4 (699)	1.4 (1019)	0.9 (2097)	1.2 (420)
	Banz Clinic				1.5 (133)	0.5 (209)	
	Togoba HC						1.8 (280)
	Minz HC						0.3 (383)
	Rebiamul						3.16 (316)
SHP	Kumin Braun HC				15 (40)	3.0 (438)	
	Epeanda HC						0.2 (423)
Morobe	Braun HC	0 (52)				0 (57)	
ESP	Maprik HC				0.5 (202)		
ENBP	Napapar HC						0 (155)
	Paparatava HC						0 (82)
Total	All Rural ANC Sites	0 (0/1,225)	0.3 (4/1,312)	0.4 (9/2,180)	0.9 (23/2,662)	1.2 (52/4,293)	1.04 (31/2,758)

* Grey areas indicate that data was not collected.

Table 10 shows that among the rural ANC sites, HIV prevalence was highest at Mambisanda Hospital (3.2%) in Enga province followed by Rebiamul in WHP (3.16%), Togoba Health Center in WHP (1.8%) and Veifa's Health Center in Central (1.4%) and Kudjip in WHP (1.2%). From the results it shows that HIV prevalence is highest in the highlands provinces (WHP and Enga), followed by Central province. ENBP has the lowest with 0 out of the 237 mothers tested being positive.

The calculated HIV prevalence (1.04%) is lower than the projected rate of 1.65% for rural ANC women in 2007. This could have been affected by the limitations of our limited data. Our analysis on the ANC data is limited given that most of the information on age, place of residence and other socio-behavioural questions were not complete.

3.2. Data from Sentinel STI Sites

Table11: HIV Prevalence at Urban STI Sentinel Sites, 2002-2007

Province	Urban STI Sites	Year					
		2002	2003	2004	2005	2006	2007
EHP	Michael Alpers	12.4 (2004)	5.9 (775)	6.0 (529)	7.2 (555)	13.1 (876)	0 (392)
Morobe	Lae (Friends Clinic)	5.1 (671)	7.1 (903)	8.3 (529)	6.9 (628)	7.3 (232)	4.1 (121)
WHP	Mt. Hagen (Tininga)	6.5 (2480)	7.4 (2851)	7.2 (1867)	10.5 (1896)	16.9 (1350)	17.8 (365)
NCD	PMGH	7.3 (41)	7.8 (64)	15.8 (730)	12.7 (519)	14.8 (431)	
Western	Daru	20 (10)	0 (4)	25 (12)	20 (10)	5 (20)	
Gulf	Kerema	0 (19)	10 (10)	0 (4)		30.8 (13)	
SHP	Mendi (Nina Clinic)				10.2 (391)	9.6 (502)	2.6 (231)
Simbu	Kundiawa	7.6 (223)	9.0 (223)	9.5 (199)	7.8 (285)	16.2 (204)	
Total	All Urban STI Sites	4.9 (265/5,448)	7.2 (348/4830)	9.0 (348/3870)	9.8 (421/4,284)	14.1 (511/3,628)	6.9 (76/1,109)

Table 11 shows that in 2007, the highest HIV prevalence among urban STI clients was reported at the Tininga STI clinic (17.8%). Lae's Friends clinic recorded a prevalence of 4.1% followed by Mendi's Nina clinic with 2.1%. In samples of adequate sizes, the HIV prevalence among urban STI clients ranges from 2.6% to 17.8% from 2002 to 2007. The trend of HIV prevalence varies by sites during the period between 2002 and 2007. For example, Tininga clinic, WHP shows

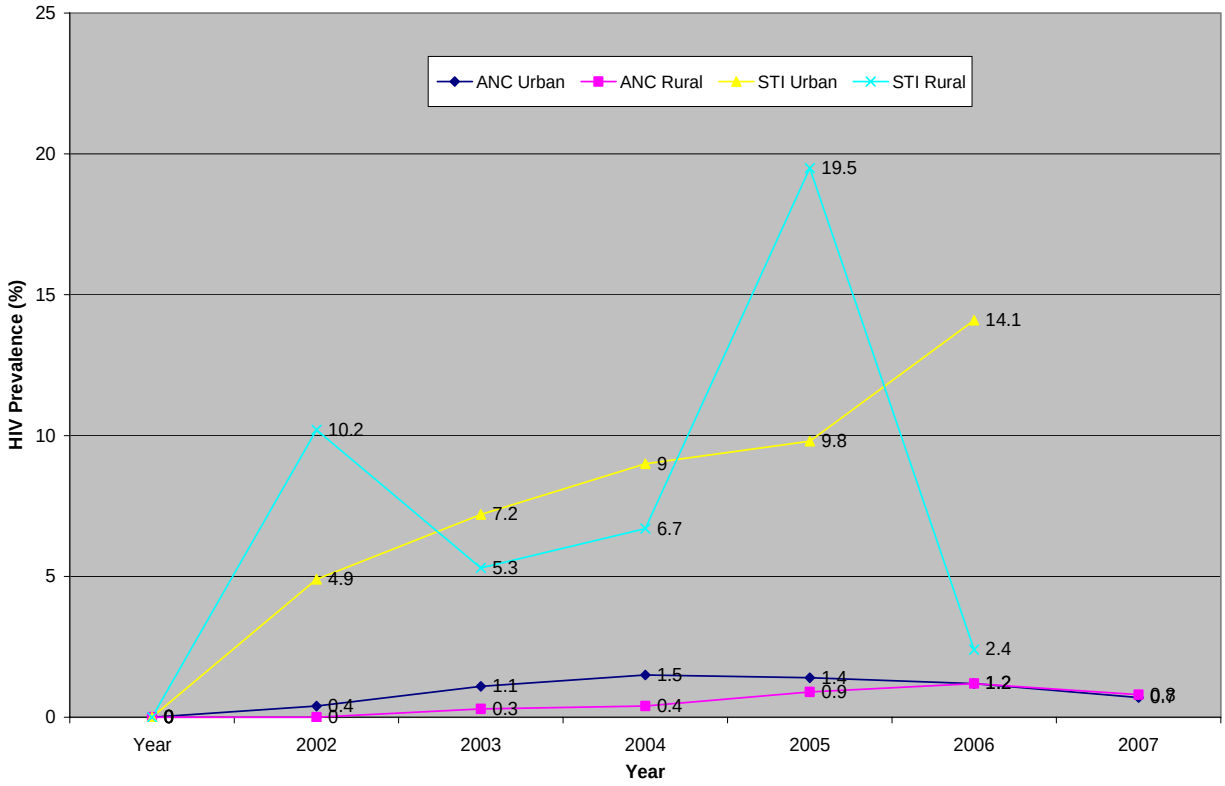
steady increase in PNG prevalence since 2002, while Friends clinic, Morobe shows inconsistent HIV prevalence since 2002.

Table 12: HIV Prevalence at Rural STI Sentinel Sites, 2002-2007

Province	STI Sites	Year					
		2002	2003	2004	2005	2006	2007
EHP	Kainantu STI		2.0 (n=303)	7.4 (n=255)	19 (n=290)		0 (n=196)
Morobe	Finschafen	0 (n=3)	100 (n=1)	8.3 (n=24)	6.9 (n=628)	7.3 (n=232)	
WHP	Kudjip	30.8 (n=104)	0 (n=29)	6.0 (n=67)	41.3 (n=63)	11.4 (n=2290)	
Western	Tabubil	0 (n=129)	0 (n=71)	7.7 (n=65)	2.9 (n=34)	0 (n=48)	
SHP	Yalibu	9.1 (n=11)			25 (n=12)	8.6 (n=162)	
	Tari	4.0 (n=101)	20.8 (n=120)	10.5 (n=57)	26.4 (n=72)	10.3 (n=145)	
Enga	Yampu	4.3 (n=23)	0 (n=81)	2.7 (n=113)	6.6 (n=76)	3.3 (n=61)	
Simbu	Kundiawa	7.6 (n=223)	9.0 (n=223)	9.5 (n=199)	7.8 (n=285)	16.2 (n=204)	
Total	All Rural STI Sites	10.2 (38/371)	5.3 (32/605)	6.7 (39/581)	19.5 (109/559)	2.4 (65/2,724)	0 (0/196)

Table 12 shows that the HIV prevalence among rural STI clients ranges from 0 to 30.8% from 2002 to 2007. The trend of HIV prevalence varies by sites during the period between 2002 and 2007. Most of rural STI sites show up and down trend in HIV prevalence during this period.

Graph 14: HIV prevalence among pregnant women and STI clients from 2002 to 2007



SECTION 4: LIMITATIONS OF DATA

Limitations of HIV Case Reporting Data

This database suffers from a large number of unreported HIV infections, incomplete and unrecorded important demographic factors such as gender, age, province of detection, and mode of transmission. In 2007, only 30% of medical notifications were received by NDoH. Non-reporting of medical notifications has been an ongoing problem going back to the time of NACS where in 2005, only 14% of confirmed HIV infections had been reported since 1987. This makes it difficult to draw conclusions about a number of key demographic features, including the province of origin, education level and occupation, and probable mode of transmission.

As shown in Table 1, there were 143 infections (3%) with unknown gender and 1,248 (25%) infections whose ages were never recorded in 2007. Cumulatively, there were 1,196 (5%) unknown infections in gender and 7,238 (31%) unknown infections in age group between 1987 and 2007. The mode of transmission was not recorded for 4380 (87%) HIV infections in 2007, 16,866 (73%) cumulative infections between 1987 and 2007.

Given the weaknesses in data quality the STI, HIV and AIDS surveillance unit at NDoH is working on policy guidelines to train and support data collectors on how to fill out the forms correctly and regularly submit medical case notifications to the surveillance unit. In addition, providing regular supervisions and feedbacks on data to health facilities may also be able to improve the quality of data recording. Furthermore, a workable policy should be put in place to enforce the mandatory notification of newly diagnosed HIV infections in the country.

Limitations of Monthly HIV Testing Summary Data

The reported HIV testing summary data has a number of major limitations. Firstly, the HIV prevalence cannot be generalized to PNG general populations because persons using HIV testing facilities such as VCT, STI, ANC, and blood bank sites are more likely to (1) have been involved in some HIV-related risk behaviors (e.g., sex without condoms or unsafe sex with multiple partners), (2) have clinical signs or symptoms, (3) came to seek ANC services, and/or (4) seek to donate blood. Secondly, these data are from only 60 HIV testing sites that reported to NDoH at least once in 2007. In addition, these HIV testing sites were not stratified by type of HIV testing facilities such as VCT center, ANC, STI clinic, TB clinic, and blood bank. Thus, comparison of HIV prevalence by type of HIV testing facilities was not possible. Thirdly, most of these 60 VCT sites do not report consistently and regularly. The HIV Testing Summary Forms are supposed to be sent to NDoH on a monthly basis but this is rarely actually done. Finally, the incompleteness of reporting information on socio-demographic variables such as sex, age groups and reason for testing, makes more in-depth analysis impossible.

Limitations of Sentinel Sero-surveillance Data

Analyses of key demographic and behavioural indicators are limited because these data had not been collected systematically. Gender, age and place of residence are some of the critical variables not completed or not collected at all for survey participants. A major improvement is planned for 2008 with emphasis on training and supervision on surveillance and data collection at sentinel sites.

SECTION 5: IMPLICATIONS OF FINDINGS AND CONCLUSIONS

This report utilized all available NDoH databases including trend data on HIV and STI from sentinel surveillance activities in PNG to provide an update on the status of the epidemic in the country. These data were analyzed and triangulated in order to make useful implication for actions. Table 13 shows the summary of key findings and implications.

Table 13: Summary of Key Findings, Actions to be Taken and Level of Responsibility

No	Key Findings	Actions To Take	Responsible
1	Reported HIV infections have been increasing among both men and women since 1987.	HIV and STI prevention, care, treatment programs must be expanded and strengthened in PNG.	National/Provincial/District/Hospitals
2	There has been greater number of reported HIV infections among females than males since 2003.	HIV testing should be encouraged and promoted not only for pregnant women but also for their husbands. More targeted interventions on females vulnerability	National/Provincial/District/Hospitals
3	14% of male HIV infections were between 15 and 24 years compared to 33% among females. Female median age is 27 years, Male median age is 32 years	HIV education and prevention programs should be targeted on youths. HIV care, support, and treatment program should be strengthened and targeted at age groups 15-24 years old. Targeted interventions for females of younger ages	National/Provincial/District/Hospitals
4	Most of the newly diagnosed and cumulative HIV positive cases (94%) have been reported from NCD, WHP, EHP, Enga, SHP, Chimbu, and Morobe.	HIV prevention, care, and treatment programs should be focused on NCD, WHP, EHP, Enga, SHP, Chimbu and Morobe. VCT, Care and Treatment and Support Services should be scaled up quickly in the rural areas of these affected provinces	National/Provincial/District/Hospitals
6	HIV prevalence from HIV sentinel surveillance is much higher among STI clients than ANC clients in PNG.	Scale up on STI syndromic management in PNG because of the need to treat both symptomatic and assymptomatic STIs Further studies/research may be needed to better understand both bio and behavioral characteristics of ANC and STI clients.	National/Provincial/District/Hospitals National/Research Institutes
7	Number of reporting HIV testing facilities in PNG has been increasing since 2004 (3 in 2004, 11 in 2005, 35 in 2006, and 60 in 2007).	Number of reporting HIV testing facilities should be increased.	National/Provincial/District
8	No HIV testing facilities in Manus and New Ireland Provinces reported in 2007. Central, Northern, Milne Bay, WSP, and ESP had only one facility reported in 2007.	Strengthen reporting from existing testing sites through training and supervision of reporting and data collection Relevant assistance and trainings should be provided to HIV testing facilities in Manus, New Ireland, Central, Northern, Milne Bay, WSP, and ESP for reporting HIV monthly testing summary forms.	National National
9	In 2007, following 14 HIV testing facilities (out of 60 facilities) showed more than 10% of HIV prevalence; 21% at Arawa Hospital, 17% at	Monitoring system for quality assurance of HIV/STI data and testing at facilities and laboratories (e.g., data collection, data entry, management, specimen collection, storage, transport) should be developed and implemented.	National

	Lawes Road Clinic, NCD. 15% at Anua Moriri Day Care Center, Morobe, 16% at Inidad, Madang.	Focus more attention on ARB where there is identified concentrated epidemic in Arawa.	National/Provincial/District
10	Number of genital discharge cases (n=39,633) was nearly four time greater than genital ulcers cases (n=10,389) in 2007.	More prevention and treatment efforts should be done for genital discharges in both males and females.	
11	Number of genital discharge cases were greater among females (n=25,193) than males (n=14,440), while number of genital ulcers cases were greater among male (n=5675) than females (n=4714) in 2007	More gender specific treatment and counseling should be done. There is an urgent need to treat partners of female clients that do not present to STI clinics.	National/provincial/District/Hospitals
12	For both genital ulcers and discharges, majority of cases were reported from EHP, WHP, EHP, SHP, Enga, Chimbu, NCD and, Morobe,	HIV prevention, care, and treatment programs should focus on NCD, the Highland region and Morobe. Particular. attention should be paid to EHP which account for nearly 50% of all reported STI cases.	National/provincial/District/Hospitals
13	Number of genital discharge has gradually been increasing since 2002 while number of genital ulcers has been stabilizing since 2000.	Genital discharge cases should be monitored carefully and be prevented.	National/provincial/District/Hospitals
14	14% of all functioning health facilities in PNG (38/279) offered ART in 2007. The percentage of HIV patients who received ART among those who need ART increased from 23% in 2006 to 35% in 2007.	The roll out of ART should be done in a phased manner after careful assessment of the infrastructure and capacity at each health facility ART should become available and accessible at more health facilities in PNG, particularly in rural areas with adequate facilities.	National/Provincial/District/Hospitals
15	Missing key sociodemographic variables like gender, age, province of origin, mode of transmission VCT data suffers from limitations including prevalence by gender, prevalence by reason for testing Missing key Sentinel Serosurveillance data	Training on how to fill out HIV case notification forms, where to send completed forms and regular feedback from National level is needed. Training on new monthly HIV testing summary that captures all key variables Development of protocols, standard operating procedures (SOPs) and Training Manuals is needed. Proper trainings before each round of surveillance is required with maximum supervision at sentinel site to improve quality of data.	National National National

Conclusion

This report has attempted to triangulate and show results that were generated from five different HIV, STI, and AIDS related databases; (1) HIV case notification database, (2) HIV testing database, (3) NHIS database (STI data), (4) ART database, and (5) HIV sentinel sero-surveillance database. In general the report has provided a lot of information for all stakeholders involved in the fight against HIV. The data shows that HIV and STI infections continue to increase through the annual increases in reported HIV and STI cases. Increases in HIV and STI reported cases are highest in NCD, WHP, EHP, Morobe, Southern Highlands, Simbu and Enga. STI and HIV prevalence are generally low in the New Guinea Islands region.

On a positive note it is worth noting that HIV testing and HAART coverage rates have increased dramatically in the last 5 years. More HIV testing are being conducted and more people are being put on treatment. ART is now available in all provincial hospitals. The challenge then is how to roll out treatment into the districts and rural communities where they are needed most.

Due to the number of limitations in these HIV and STI related data in PNG it is worth noting that caution should be taken when interpreting data relating to the trend of HIV prevalence in PNG. To understand the trend among specific target groups or general populations, more systematic surveillance and reporting system is needed. More HIV testing facilities should fill out the standardized reporting forms correctly and report these to NDoH, HIV and STI surveillance unit regularly.

The quality of surveillance in the country must be improved in order to provide the relevant data needed to better inform policy and program development, monitoring of prevention, treatment and care programmes and for resource mobilization and more targeted interventions among specific populations.

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APPENDIX 1:
Sources of Data, PNG HIV and STI Surveillance and Reporting Forms Used in 2007

Name of forms	Type of forms	Person in charge of collecting forms	Person reporting these forms to NDoH
NHIS Monthly Report (Including syndromic STI data)	Monthly (Routine Report)	Ms. Anna Irumai, NDoH, NHIS 301-3660	All health facilities
HIV Monthly Testing Summary	Monthly (Routine Report)	Ms. Heni Meke, VCT Coordinator, Mr. John Moni 301-3724 (3753), or (3733)	All health facilities offering HIV testing
ART Monthly Data Collection Sheet	Monthly (Routine Report)	Ms. Apa Purunga, Ms. Cathy Kemben, Logistic Coordinator 301-3731 (3753)	All health facilities offering ARV treatment to patients
Notification Form For HIV and AIDS Cases	Routine Case Report	HIV Surveillance Unit (Dr. Urarang Kitur, Mr. Melchior Taminza) 301-3748 (3753)	All laboratory confirmed HIV/AIDS cases
HIV Sentinel-Surveillance Form for ANC Clinic	Periodic Surveillance	HIV Surveillance Unit (Dr. Urarang Kitur) 301-3748 (3753)	Selected sentinel ANC sites
HIV Sentinel-Surveillance Form for STI Clinic	Periodic Surveillance	HIV Surveillance Unit (Dr. Urarang Kitur) 301-3748 (3753)	Selected sentinel STI sites

APPENDIX 2: Number of HIV Tests and Prevalence by Testing Sites in PNG 2007

VCT Sites	Province*	Total # Tests	Total # HIV+	HIV prevalence
1.Anglicare	NCD	1832	107	5.84
2.PNGDF Taurama		112	1	0.89
3. Poro Saport Project		1171	72	6.15
4. Simon of Cyrene		210	23	10.95
5. Salvation Army (Ela Beach)		113	9	7.96
6. St. Mary's Medical Centre		1072	72	6.72
7. World Vision Drop In Centre		46	8	17.39
8. Gerehu Urban Clinic		258	9	3.49
9. Lawes Road Clinic		305	51	16.72
10. Kila Kila Clinic		39	0	0.00
11. 6 Mile Clinic		321	8	2.49
12. St. Therese		901	4	0.44
13. CIS BOMANA		11	0	0.00
14. Louis Vangeke Care Centre (Veifa'a)	Central	561	5	0.89
15. Consolata Care & Counselling	Gulf	53	0	0.00
16. Kerema General Hospital		127	6	4.72
17. Kanabea Health Centre		507	6	1.18
18. Home of Peace Care & Counselling Centre	Western	222	7	3.15
19. Good Samaritan		1711	2	0.12
20. Tepmin Ambip STI Clinic		6	0	0.00
21. Tabubil Hospital		120	9	7.50
22. OTML Health Services		55	2	3.64
23. Higaturu	Northern	202	2	0.99
24. Hagu Disease Control Clinic	Milne Bay	102	8	7.84
25. ADRA	Morobe	520	11	2.12
26. Anua Moriri Day Care Centre		915	136	14.86
27. Friends Clinic		284	8	2.82
28. Centre of Mercy		144	8	5.56
29. Bethany Care & Counselling	Madang	667	29	4.35
30. Inidad		67	11	16.42
31. Gaubin Hospital		96	1	1.04
32. Madang Family Health clinic		10	1	10.00
33. Ramu Sugar Clinic		26	1	3.85
34. Raihu	WSP	15	2	13.33
35. Sepik Centre of Hope	ESP	622	8	1.29
36. Yampu Health Centre	Enga	65	8	12.31
37. Pogera day Care Centre		207	0	0.00
38. Shalom	WHP	256	26	10.16
39. Rebiamul Care & Counselling Centre		1645	197	11.98
40. Tininga Clinic		1052	184	17.49
41. Kudjip Nazarene		793	34	4.29
42. Mendi General Hospital (Nina Clinic)	SHP	171	13	7.60
43. St. Francis Care Centre		858	23	2.68
44. Epeanda Care Centre		2844	105	3.69
45. Oil Search (Moro)		62	6	9.68

46. St. Joseph's Care Centre	EHP	941	37	3.93
47. Salvation Army (Kainantu)		25	6	24.00
48. Michael Alper's Clinic		3690	321	8.70
49. Mingende Rural Hospital	Simbu	2238	126	5.63
50. Goglme Health Centre		194	2	1.03
51. Kundiawa Hospital		14	2	14.29
52. St. Mary's Hospital- Vunapope	ENBP	2315	9	0.39
53. Paparatava Health Centre		289	0	0.00
54. Napapar Health Centre		379	1	0.26
55. Nonga Hospital (Maravut)		297	8	2.69
56. Hahela Health Centre	ARB	94	0	0.00
57. Arawa Hospital		188	40	21.28
58. Buka Hospital		52	1	1.92
59. Valoka Health Centre	WNBP	518	6	1.16
60. Bitokara Health Centre		44	0	0
Total		**32654**	**1782**	**5.46**

Appendix 3: HIV prevalence by HIV Testing Sites in PNG, 2004-2007

VCT Sites	Province	2004		2005		2006		2007	
		Prevalence	N*	Prevalence	N*	Prevalence	N*	Prevalence	N*
1.Anglicare	NCD	3.34	419	9.33	761	7.64	1204	5.84	1832
2.PNGDF Taurama						3.90	77	0.89	112
3. Poro Saport Project				14.81	54	7.73	750	6.15	1171
4. Simon of Cyrene						1.74	115	10.95	210
5. Salvation Army (Ela Beach)								7.96	113
6. St. Mary's Medical Centre				7.07	368	4.26	916	6.72	1072
7. World Vision Dropin Centre						6.79	280	17.39	46
8. Gerehu Urban Clinic								3.49	258
9. Lawes Road Clinic								16.72	305
10. Kila Kila Clinic								0.00	39
11. 6 Mile Clinic								2.49	321
12. St. Therese						2.24	760	0.44	901
13. CIS BOMANA								0.00	11
14. Heduru Clinic						25.34	884		
15. Louis Vangeke Care Centre, Veifa'a	Central					1.01	297	0.89	561
16. Consolata Care & Counselling	Gulf			0	27	11.29	62	0.00	53
17. Kerema General Hospital								4.72	127
18. Kanabea Health Centre								1.18	507
19. Home of Peace	Western					0	19	3.15	222
20. Good Samaritan						3.70	108	0.12	1711
21. Tepmin Ambip STI Clinic						0	10	0.00	6
22. Tabubil Hospital						3.95	430	7.50	120
23. OTML Health Services								3.64	55
24. Higaturu	Northern							0.99	202
25. Hagu Disease Control Clinic	Milne Bay							7.84	102
26. Adra	Morobe					5.07	138	2.12	520
27. Anua Moriri Day Care Centre								14.86	915
28. Friends Clinic								2.82	284
29. Centre of Mercy								5.56	144
30. Bethany Care & Counselling	Madang	13.04	69	4.49	178	5.60	393	4.35	667
31. Inidad								16.42	67
32. Gaubin Hospital						0	35	1.04	96
33. Madang Family Health clinic								10.00	10
34. Ramu Sugar Clinic								3.85	26
35. Raihu	WSP							13.33	15
36. Sepik Centre of Hope	ESP			1.18	85	3.91	435	1.29	622
37. Yampu Health Centre	Enga			14.91	114	0.43	235	12.31	65
38. Pogera day Care Centre						0.80	125	0.00	207
39. Wabag General Hospital		7.75	710	7.60	1105	9.39	1662	10.66	1961
40. Shalom	WHP	11.96	209	9.56	408	8.98	590	10.16	256
41. Rebiamul Care & Counselling Centre				19.16	261	7.7	1234	11.98	1645
42. Tininga Clinic								17.49	1052
43. Kudjip Nazarene								4.29	793

44. Mendi General Hospital (Nina Clinic)	SHP							7.60	171
45. St. Francis Care Centre						12.98	131	2.68	858
46. Epeanda Care Centre				3.31	393	1.11	1079	3.69	2844
47. Oil Search (Moro)								9.68	62
48. St. Joseph's Care Centre	EHP					7.28	302	3.93	941
49. Salvation Army (Kainantu)						50.00	34	24.00	25
50. Michael Alper's Clinic								8.70	3690
51. Mingende Rural Hospital	Simbu			12.12	264	3.21	1339	5.63	2238
52. Goglme Health Centre						0	34	1.03	194
53. Kundiawa Hospital								14.29	14
54. St. Mary's Hospital- Vunapope	ENBP					0.27	2912	0.39	2315
55. Paparatava Health Centre								0.00	289
56. Napapar Health Centre								0.26	379
57. Nonga Hospital (Maravut)								2.69	297
58. Hahela Health Centre	ARB					6.67	15	0.00	94
59. Arawa Hospital								21.28	188
60. Buka Hospital								1.92	52
61.Buin Health Center						0	13		
62. Valoka Health Centre	WNBP							1.16	518
63. Bitokara Health Centre								0.00	44
64. Manus STI Clinic	Manus					2.27	44		
65. Horan Aid Post						0	3		
66. Lorengau, East Clinic						0	26		

(* N=total number of people tested for HIV)

APPENDIX 4: Locations of Sentinel Provinces and Sites 2007

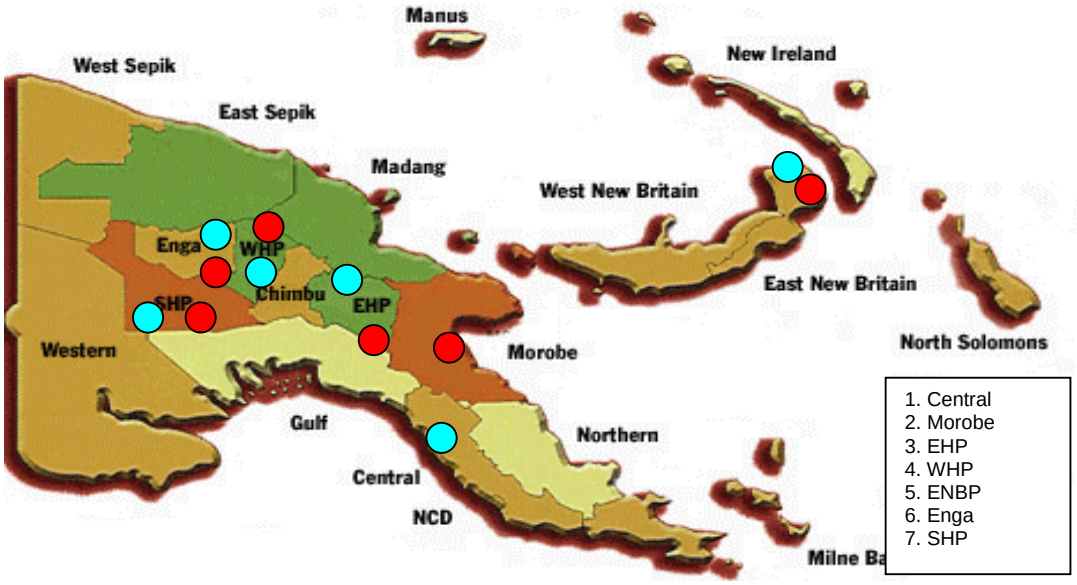

Table of Sentinel Sites by Province and Region, 2007

Province/District	Type of Regions	Site Name	Type of Clinic
Central	Rural	1. Veifa Health Center 2. Kwikilla Health Center	ANC ANC
EHP	Urban	3. Goroka General Hospital 4. Michael Alpers STI Clinic)	ANC STI
	Rural	5. Kainantu Hospital 6. Kainantu Hospital (STI)	ANC STI
Morobe	Urban	7. Malahang Urban Clinic 8. Haikost Urban Clinic 9. Buimo Urban Clinic 10. Tent Health Center 11. Taraka Health Center 12. Friends STI Clinic	ANC ANC ANC ANC ANC STI
WHP	Urban	13. Mt. Hagen Hospital LW 14.Mt. Hagen Urban Hospital 15. Mt Hagen Hospital Tinginga Clinic	ANC ANC STI
	Rural	16. Togoba Health Center 17. Kudjip Hospital 18. Minz Health Center	ANC ANC ANC
ENBP	Urban	19. Vunapope Hospital	ANC
	Rural	20. Napapar Health Center 21. Paparatava Health Center	ANC ANC
Enga	Urban	22. Wabag Hospital	ANC
	Rural	23. Yampu Health Center 24. Mambisanda Hospital	ANC ANC
SHP	Urban	25. Nina STI Clinic (Mendi)Hospital)	STI
	Rural	26. Epeanda Care Center	ANC

Appendix 5: List of All HIV Testing Sites in PNG June, 2008

	Site Name	Province	Type
1	Anglicare STOP AIDS VCT Clinic	NCD	NGO
2	Port Moresby General Hospital	NCD	Public
3	PNGDF Taurama	NCD	Govt
4	Poro Saport Project VCT & STI Clinic	NCD	NGO
5	Simon of Cyrene	NCD	Catholic
6	Salvation Army (Ela Beach)	NCD	Church
7	St. Mary's Medical Center	NCD	Catholic
8	Heduru Clinic	NCD	Public
9	World Vision Dropin Center	NCD	NGO
10	Gerehu Urban Clinics	NCD	Public
11	Lawes Road Clinic	NCD	Urban Clinic
12	Gordon Clinic	NCD	Urban Clinic
13	Kila Kila Clinic	NCD	Urban Clinic
14	6 Mile Clnic	NCD	Urban Clinic
15	St. Therese	NCD	Catholic
16	CIS Bomana	NCD	Public
17	9 Mile Clinic	NCD	Public
18	Paradise Private Clinic	NCD	Private
19	Oil Search Port Moresby	NCD	Private
20	Murry Barracks	NCD	Defence
21	ATS Clinic	NCD	Defence
22	PTC Clinic	NCD	Public
23	Louis Vangeke, Viefa'a Health Center	Central	Catholic
24	Kwikilla Health Center	Central	Public
25	Moreguina Health Center	Central	Public
26	Higaturu	Oro	Private
27	Ururu VCT	Oro	Anglican
28	Sangara Health Center	Oro	Public
29	Siroga Clinic (Oil Palm)	Oro	Private
30	Popendeta Hospital	Oro	Public
31	Oro Bay Health Center	Oro	Anglican
32	Saiho Health Center	Oro	Public
33	Kokoda Memorial Hospital	Oro	Public
34	Consolata Care & Counselling Kerema General Hospital	Gulf	Public
35	Kanabea Health Center	Gulf	Catholic
36	Kikori Hospital	Gulf	Church
37	Consolata Care Center	Gulf	Catholic
38	Home of Peace Care & Counseling Center	Western	Catholic
39	Good Samaritan	Western	Catholic
40	Tepmin Ambip STI Clinic	Western	Catholic
41	Kiunga Hospital	Western	Public
42	Tabubil Hospital	Western	Public
43	OTML Health Services	Western	Private
44	Daru Hospital	Western	Public
45	Hagu Clinic/Alotau Hospital	Milne Bay	Public
46	Misima Hospital	Milne Bay	Public
47	Star of hope center	Milne Bay	Catholic
48	Garuahi	Milne Bay	Anglican
49	PAC Alotau	Milne Bay	Public
50	Watuluma	Milne Bay	
51	Bydoya Clinic	Milne Bay	
52	ADRA	Morobe	SDA
53	Anua Moriri Day Care Center	Morobe	Public
54	Friends Clinic	Morobe	Public
55	Center of Mercy	Morobe	Catholic
56	Buimo Health Center	Morobe	Public

57	Butibum Health Center	Morobe	Public
58	Malahang Health Center	Morobe	Public
59	Haikost Health Center	Morobe	Public
60	Milford Health Center	Morobe	Public
61	West Taraka	Morobe	Public
62	Igam Barrak	Morobe	Defence
63	Braun Hospital	Morobe	Luthern
64	Wau Health Center	Morobe	Public
65	Unitech Clinic	Morobe	University
66	Bulolo Health Center	Morobe	Public
67	Tent City Clinic	Morobe	Luthern
68	Mutzing Health Center	Morobe	Public
69	Bethany Care & Counseling	Madang	Catholic
70	Madang Hospital, ID-INAD Clinic	Madang	Sr. Daing
71	Gaubin Hospital	Madang	Luthern
72	Yaeaum	Madang	Luthern
73	Jomba Urban Clinic	Madang	Public
74	Gusap Health Center	Madang	Public
75	Ramu Sugar	Madang	Private
76	Alexishafin Health Center	Madang	Catholic
77	Sepik Center of Hope	ESP	Catholic
78	Boram Hospital	ESP	Public
79	Boram MCH Clinic	ESP	Public
80	Maprik Hospital	ESP	Public
82	Dagua Health Center	ESP	Catholic
83	CIS Wewak	ESP	CIS com
84	Moem Barrack	ESP	Defense Com
85	Vanimo General Hospital	WSP	Public
86	Sandaun Raihu	WSP	Catholic
87	Dapu Urban Clinic	WSP	Public
88	Vanimo diocese	WSP	Catholic
89	Raihu hospital	WSP	Public
90	Yampu Health Center	Enga	Catholic
91	Pogera Day Care Center	Enga	Mine
92	Pogera Hospital	Enga	Public
93	Wabag Hospital	Enga	Public
94	Kompiam	Enga	Baptist
95	Mambisanda Hospital	Enga	Lutheran
96	Anawe PJV clinic	Enga	PJV
97	Shalom Banz Care Center	WHP	Catholic
98	Rabiamaul Care & Counseling Center	WHP	Catholic
99	Tininga Clinic	WHP	Public
100	Togoba Health Center	WHP	SDA
101	Kudjip Nazarene rural hospital	WHP	Nazarene
102	Tinsley	WHP	Baptist
103	Kiripia	WHP	Catholic
104	Tambul	WHP	Public
105	Bukapena	WHP	Public
106	Kuruk Health Center	WHP	Catholic
107	Mendi General Hospital (Nina Clinic)	SHP	Public
108	Epeanda Care Center	SHP	Catholic
109	Oil Search (Moro)	SHP	Private
110	St. Francis Care Centre	SHP	Catholic
111	Lalibu Hospital	SHP	Public
112	Lalibu Snasana Care Center	SHP	Community Base
113	Tari Hospital	SHP	Public
114	St. Joseph's Care Center	EHP	Catholic
115	Salvation Army (Kainantu)	EHP	Salvation Army
116	Michael Alper's Clinic	EHP	Public

117	Kainantu STI Clinic	EHP	Public
118	University of Goroka	EHP	Public
119	Goroka Hospital	EHP	Public
120	Ukarumpa	EHP	SIL
121	Asaro Health Center	EHP	Public
122	Okapa Hospital	EHP	Public
123	Lufa Hospital	EHP	Public
124	Mingende Hospital & Care Center	Simbu	Catholic
125	Goglme Health Center	Simbu	Catholic
126	Kundiawa Hospital	Simbu	Public
127	Dirima	Simbu	Catholic
128	Vunapope Hospital, Peter Torot's VCT center	ENBP	Catholic
129	Paparatava Health Center	ENBP	Catholic
130	Napapar Healht Center	ENBP	Catholic
131	Nonga Hospital (Maravut)	ENBP	Public
132	Rabaul Town Clinic	ENBP	Public
133	Butiwin	ENBP	Public
134	Vudal University Clinic	ENBP	Private
135	Molot Health Center	ENBP	Public
136	Hahela Health Center	ARB	Catholic
137	Buin Health Center	ARB	Catholic
138	Arawa Hospital	ARB	Catholic
149	Buka Hospital	ARB	Public
140	Buka Care Center	ARB	Catholic
141	Manus Hospital	Manus	Public
142	Lombrum Health Center	Manus	Defence
143	Bundranlis Health Center	Manus	Public
144	Lorengau East Clinic	Manus	Public
145	Horan Aid Post	Manus	Public
146	Volaka Health Ceter	WNBP	Catholic
147	Bitokara Health Center	WNBP	Public
148	Kimbe Hospital	WNBP	Public
149	Kavieng Hospital	NIP	Public
150	Poliamba	NIP	Private
151	Lihir accommodation	NIP	Private

Appendix 6: List of All ART Sites in PNG, 2007

#	ART Sites	Provinces
1	Heduru NCD	NCD
2	St Mary's medical Centre NCD	
3	Paradise Private Clinic NCD	
4	Port Moresby Private Hospital NCD	
5	Tininga Clinic WHP	Western Highlands Province (WHP)
6	Rebiamul WHP	
7	Nazarene (Kudjip) WHP	
8	Michael Alpers Clinic EHP	Eastern Highlands Province (EHP)
9	Kainantu Rural hospital EHP	
10	Goroka Saramenda EHP	
11	Id Inad Hospital, Madang	Madang Province
12	Ramu sugar clinic Madang	
13	Madang Family Clinic Madang	
14	Betany hospic	
15	Nato Clinic Madang	
16	Telefomin, Western	Western Province
17	Good Samaritain Kiunga, Western	
18	Ok Tedi Mining Western	
19	Iowara,	
20	Popondetta Hospital Oro	Northern (Oro) Province
21	Siroga Oro	
22	St Mary's Hospital ENBP	East New Britain Province (ENBP)
23	Maravut Nonga Base Hospital ENBP	
24	Hagu Clinic Milne Bay	Milne Bay
25	Watuluma HC Milne Bay	
26	Buka hospital ARB	North Solomons Province (NSP)
27	Arawa Hospital Bouganville ARG	
28	Valoka WNBP	West New Britain Province (WNBP)
29	Kimbe General Hospital WNBP	
30	St Gerald Veifa'a HC Central	Central Province
31	Iruna HC Abau Central	
32	Kumin Epeanda	Southern Highland Province (SHP)
33	Vanimo Catholic Diocese	West Sepic Province (WSP)
34	Wewak Hospital	East Sepik Province (ESP)
35	Manus General Hospital Manus	Manus Province
36	Mingende District Hospital Simbu	Simbu Province
37	Anua Moriri Clinic Morobe	Morobe Province
38	Yampu Clinic Enga	Enga Province