HIV/RPR SENTINEL SERO-SURVEILLANCE REPORT
2006

HIV/AIDS and STI program

Department of Public Health

Ministry of Health

Thimphu, Bhutan

1.Executive Summary

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is undoubtedly an unprecedented global public health challenge of all times. Despite strong political pledge and commitment from all sectors of Bhutanese society to combat HIV/AIDS long before the detection of 1st HIV case in 1993. Bhutan continues to experience a slow but unstoppable rise in the number of new HIV infections. At the end of 2006, 105 cases of HIV infection were detected in the kingdom. Since 2000, the Ministry of Health continues to play a vital leading role; the Government of Bhutan has adopted a multi-sector approach involving all sectors of society in the fight against HIV/AIDS. By 2001, Multi-sectoral Task Forces (MSTFs) were established in all 20 dzongkhags.

The prevention and control of HIV/AIDS activities were carried out in Bhutan under the umbrella of general health services in 20 districts. Then, since 1988, the STI & HIV/AIDS Control Program established and has conducted sentinel surveillance among the various sentinel groups. The number of sites has increased from 15 in 2004 to 26 in 2006. The 2006 sentinel surveillance survey covered all 26 hospitals in 20 districts.

The general objectives of the 2006 survey were to provide data on geographical distribution of HIV/AIDS, monitor the trend of the epidemic, and to provide planning data for HIV prevention and control activities.

The third biennial 2006 HIV sentinel surveillance survey report highlights the findings of the survey and shows trends among the various groups as well as geographical distribution of HIV/AIDS in the kingdom.

The survey involved HIV screening of pregnant women, Commercial Sex Workers (CSWs), Uniformed servicemen, Sexually Transmitted Infection Patients (STI), Tuberculosis patients (TB), Migrant workers and others includes Clinically suspected patients, Drivers, businessmen and mobile population such as drivers, migrant workers, businessmen. The total collected samples size in the survey was projected to 6850 blood samples and collected total blood samples from surveillance 2006 around 11,775. An unlinked anonymous testing procedure was used for the HIV testing. The survey period lasted from 15th March, 2006 to 15th August 2006. A total of 11,775 Samples were collected from 26 sentinel sites between the periods 15th March 2006 to 15th August 2006. Among the collected samples, 6 Tested positive to HIV antibodies. The percentage prevalence of HIV in 2006 sentinel survey was found to be 0.05%

A total of 11,245 samples were tested for RPR from 26 sites in 2006 and around 338 were found to be positive. The overall prevalence rate of RPR was 3.00%. Out of 11,245 RPR samples, 109 were from Antenatal Clinic (ANC) with prevalence rate as 2.3%, 2515 from Armed forces with prevalence rate as 3.06%, 840 from STI patients with prevalence rate as 4.16%, 170 from TB pts with prevalence rate as 4%, 586 from Migrant workers with prevalence rate as 5%, 1 from CSW with prevalence rate as 100% and 2,547 from others category with prevalence rate as 3.2%.

Among the 11,245 samples tested for TPHA from the 26 sites in 2006, around 157 were found to be TPHA positive. The overall prevalence rate of TPHA was 1.3%. Out of 11,245 samples tested for TPHA, 44 samples were from ANC with prevalence rate as 1%, 58 from Armed forces with prevalence rate as 2.3%, 15 from STI pts with prevalence rate as 2%, 3 from TB pts with prevalence rate as 2%, 37 from others category with prevalence rate as 1.4%.

Site selection was based on infrastructure, STI prevalence, and proximity to bordering towns. All blood samples were collected from risk groups and tested in the district by using Rapid methods and reactive blood samples sent to the PHL for confirmatory testing. Each sample was tested for HIV antibodies using ELISA. Any serum sample found to be reactive were tested again with ELISA of different antigenic preparation. Positive test was confirmed by ELISA test. Strict quality assurance procedures were adhered to ensure reliable results.

2.Introduction:

Bhutan Government realizing the seriousness of Global HIV/AIDS pandemic acted early on to combat HIV/AIDS with strong commitment from the highest Government bodies and leaders. The National HIV/AIDS and STI Control Program were instituted under the then Public Health division, Ministry of Social Service long time before the first case was even reported in the country. After more than a decade since the official declaration of first detected case of HIV infection in the kingdom in 1993, Bhutan, by the mid of the year 2006, has witnessed 105 reported cases of HIV infection an alarming figure given its small population size. A worrying fact for Bhutan is that HIV infection, though in small numbers, has touched the lives of people from all sectors of society, which strongly indicates a generalized pattern of HIV distributions among the Bhutanese population. While the available data collected from those infected strongly suggest that the primary modes of HIV transmission in Bhutan is through heterosexual contacts, the emerging problem of substances abuse and strong stigma and taboo associated with homosexuality makes it difficult to rule out these major modes of HIV transmission in the kingdom.

However, with an unceasing commitment from the highest level and dedication of young and old Bhutanese from all sectors of society in the battle against this scourge, there is a strong hope that Bhutan can bring the epidemic under control.

Collection and use of accurate data helps in effective prevention, control of HIV/AIDS and care of those infected. The data will assist to show the magnitude, distribution and demographic variations in the levels of HIV infection. Furthermore, knowledge on risk factors can assist in designing cost effective interventions, monitoring and evaluating effectiveness and impact of the interventions. HIV sentinel surveillance is one the systems of data collection that many countries world wide are utilizing to map the epidemic and monitor HIV infection level and trends.

HIV sentinel sero-surveillance means carrying out cross sectional studies (also known as prevalence studies) at regular intervals among selected groups in the population known as "sentinel groups". In other words, with sentinel surveillance tends in HIV infection are monitored over time by group, and by place.

HIV sentinel surveillance was initiated for the first time in Bhutan in the year 1989 with the objective of studying and monitoring the trend of HIV infection in the country. Till 1996, HIV sentinel surveillance was conducted once a year among the population groups deemed at higher risk of HIV infection. Following World Health organization's recommendation, HIV surveillance was halted from 1996-1999 as the survey costs far outweighed benefits since HIV prevalence was significantly low in the Bhutan at that period of time. However, the rising cases of HIV in the recent years have highlighted the need to reactivate HIV surveillance activity and so the program was resumed once again in the year 2000. Since 2000, HIV survey at selected sentinel sites was carried out biennially. So far, a total of 108,953 samples were tested starting from 1989-2004 sentinel surveillance surveys, and out of these only 4 samples tested positive to HIV antibodies

For the 2006 survey, as necessitated by disturbingly increasing number of HIV infections, 11 more sentinel surveillance sites were added taking the number of sentinel sites to 26. Besides the traditional collection of biological samples and occupational data of the respondents in the past surveys, demographic data including age, marital status and educational level of trend and distribution pattern in the country. A total of 11,775 Samples were collected from 26 sentinel sites between the periods 15th March 2006 to 15th August 2006. Among the collected samples, 6 Tested positive to HIV antibodies. The percentage prevalence of HIV in 2006 sentinel survey was found to be 0.05%

This report presents the findings, conclusions of the 2006 sentinel sero-surveillance and recommendations.

3. Objectives:

The main objectives of the HIV/AIDS sentinel surveillance were:

- Determine the geographical spread of HIV infection
- Monitor the trend of HIV epidemic in the country
- Provide information for estimates and future projections of HIV/AIDS in the country.
- Provide useful data for planning and implementation of HIV/AIDS prevention and control program activities.

4. Specific Objective:

- Find prevalence of HIV and syphilis in ANC, Armed forces, and prisoners
- Find out TB/HIV co-infection
- Explore HIV and syphilis in other group of population.

5. Methodology:

Given the generalized HIV distribution pattern in Bhutan, sentinel groups were not restricted to few and some of the sentinel groups are not reachable through the normal site based sampling method due to geographical location of these groups from the identified sites. The groups for 2006 sentinel surveillance included:

6. Out reach targets

Sl.no.	District	Groups	Coordinating stakeholders	Sample size	Sampling sites
1	Thimphu	STI patients	Imtrat Hospital DechencholingBHU Satellite clinic in Motithang and Hejo	*	JDWNRH
		TB Patients	Gidakom Hospital	*	Gidakom Hospital
2	Chukha	Migrant workers	C.wang	500-700	P/LingHospital
		Sex Workers	P/ling Hospital	*	Outreach
3	Selected sites	Armed Forces	Focal Person RBG Focal Person RBA Focal Person RBP	2000-2500	To be decided by CMO, RBA

Sentinel groups requiring outreach sampling method

* Indicates as many samples as possible

7. Sentinel sites

A total of 26 sentinel sites are identified for the 2006 survey covering all the twenty dzongkhags. The details of the sample size for each sentinel site against sentinel groups are given in the table 5.3

Site-based sentinel groups and Sentinel sites for 2006 survey

Site code	Site	District	Groups	Sample Size
01	JDWNRH	Thimphu	ANC, STI Patients, TB Patients	ANC**- 500-800 Others: *
02	Lungtenphu RBA Hospital	Thimphu	ANC, TB Patients, STI patients	ANC**- 150-200 Others:*
03	Paro Hospital	Paro	ANC, STI Patients, TB patients,	ANC**- 250-500 Others-*
04	Bali BHU	Haa	ANC, STI, TB,	ANC**- 250-500 Others: *
05	Tsimalakha Hospital	Chukha	ANC, STI, TB,	ANC**- 250-500 Others: *
06	Tala Hospital	Chukha	ANC, STI, TB	ANC- 250-500 Others: *
07	Phuentsholing Hospital	Chukha	ANC, STI, TB,	ANC**: 400-800 Others:*
08	Samtse Hospital	Samtse	ANC, STI, TB,	ANC**- 250-500 Others*
09	Punakha Hospital	Punakha	ANC, STI, TB,	ANC**-300-600 Others*
10	Bajo, BHU-I/TencholingHospital	Wangdue	ANC, STI, TB,	ANC**-300-600 Others*
11	Damphu Hospital	Damphu	ANC, STI, TB,	ANC**-300-600 Others*
12	Sarbang Hospital	Sarbang	ANC, STI, TB,	ANC-250-500 Others*
13	Gelephu Hospital	Sarbang	ANC, STI, TB,	ANC**-350-700 Others*
14	Yabilaptsa hospital	Zhemgang	ANC. STI, TB	ANC**-200-250
15	Trongsa Hospital	Trongsa	ANC, STI, TB,	ANC**-300-600 Others*
16	Bumthang Hospital	Bumthang	ANC, STI, TB,	ANC**-300-600 Others*
17	Mongar Hospital	Mongar	ANC, STI, TB,	ANC**-300-600 Others*
18	Lhuentsi Hospital	Lhuentsi	ANC,STI, TB,	ANC**-250-500 Others*
19	Trashigang Hospital	Trashigang	ANC, STI, TB,	ANC**-300-600 Others*
20	Tashio Yangtse	Trashi Yangtse	ANC, STI, TB,	ANC**-300-600 Others*
21	Riserboo	Trashigang	ANC, STI, TB,	ANC**-300-600 Others*
22	Pemagatshel	Pemagatshel	ANC, STI, TB,	ANC**-300-600 Others*
23	Dewathang Hospital	Samdrupjongkhar	ANC, STI, TB,	ANC**-200-400 Others*
24	Samdrupjongkhar	Samdrupjongkhar	ANC, STI, TB,	ANC**-300-600 Others*
25	Gasa BHU=I	Gasa	ANC, STI, TB,	ANC**-150-300 Others*
26	Dagana BHU-I	Dagana	ANC, STI, TB	ANC** 250-300 Other*

8. Others:

The following groups are included under "Others" category:

- Clinically suspected patients
- Drivers
- Businessmen
- Mobile population such as drivers, migrant workers, businessmen

These groups are to be included in all the sentinel sites. The sample size for these groups cannot be determined due to uneven distribution among sites and therefore as many samples as possible should be collected. (Refer table 4.2)

9. Estimated total sample size for 2006 survey:

	Samples projected.	Total samples collected
ANC:	2500	4831
Armed forces:	2500	2616
STI:	300	868
TB:	250	188
Foreign laborers:	500	586
CSWs		1
Others:	800	2685
TOTAL	**6,850**	**11,775**

All the sentinel groups aged 15-49 years attending sentinel sites were recruited into the sentinel samples using the unlinked anonymous procedures. The minimize potential selection biases and double counting; only people on their first visit were included till the end of surveillance period.

10. Sampling procedures and sampling period:

Consecutive sampling of all the sentinel groups aged 15-49 years attending sentinel sites for the first time were carried out until the end of survey period. For example, sample inclusion criteria for ANCs will be "all women attending an ANC clinic for the first time and who have blood drawn for syphilis screening. Sample collection in all the sites started from 15th March 2006 to 15th August 2006. The sampling lasted for a period of 5 months.

Individuals were trained to answer questions on the surveillance Identification Form (SID). Syphilis and other routine laboratory tests were used as an entry point for HIV testing using anonymous unlinked procedure. 8ml of blood from each individual was collected which was then divided into two equal parts in two different tubes-one for HIV and other linked named test. At the close of each day, the forms and laboratory register were checked alongside the blood specimens. The samples for HIV test, together with the questionnaire were transported in the cooler box to the PHL.

Two identification number systems were used, one for the named, linked tests (Lab Number etc) and one for the anonymous unlinked HIV test, surveillance identification code (SID). The SID number has a five digit number format (XX-YYY). XX defines the sentinel site, and remain unchanged for all specimens originating from the corresponding site. YYY is a running number starting with 001 and is unique for every individual sampled at the site. Collected data includes sex, age, marital status, and educational level and risk group.

11. HIV Laboratory Test:

Each sample was tested using Rapid HIV test method at the district levels. Any sample found reactive was sent to PHL and was tested again using different ELISA methods. Samples that were not reactive on the first ELISA test were considered HIV antibodies negative.

12. Sentinel sites 2006:

13. HIV and syphilis prevalence among by sentinel Population groups:

Groups	HIV			RPR		TPHA	% Prevalence rate	
	No. Test done	Total HIV Positive	Prevalence rate	Total Test done	Total Positive	Total Positive	RPR	TPHA
ANC	4831	1	0.02%	4586	109	44	2.3%	1%
Armed Force	2616	3	0.11%	2515	77	58	3.06%	2.3%
STI Pts	868	0	0%	840	35	15	4.1%	2%
TB Pts	188	0	0%	170	6	3	3.5%	2%
Migrant workers	586	0	0%	586	28	0	4.7%	0%
CSWs	1	0	0%	1	1	0	100%	0%
Others	2,685	2	0.07%	2547	82	37	3.2%	1.45%
Total	**11,775**	**6**	**0.05%**	**11,245**	**338**	**157**	**3.0%**	**1.4%**

The total sample size of the survey was projected to be 6850 blood samples involving Pregnant mother, CSWs, Uniformed personnel, STI patients, TB patients, Migrant Workers and others including clinical suspected case, drivers, businessmen and mobile populations. The actual sample collected was around 11,775 from 26 sentinel surveillance sites between the periods of 5 months in 2006. Among the samples collected a total of 6 HIV positive cases were detected**.** The prevalence rate of HIV in 2006 sentinel survey was found to be 0.05%. Out of the 11,775 samples collected, 4831 samples were from ANC with prevalence rate of 0.02%, 2616 from Armed forces with prevalence rate of 0.11%, 868 from STI patients with prevalence rate of 0%, 188 from TB patients with prevalence rate of 0%, 586 from Migrant workers with 0% prevalence rate, 1 from CSW with prevalence rate as 0% and 2,685 from others including drivers, businessmen, mobile population etc with 0.07% as its prevalence rate.

A total of 11,245 samples were tested for RPR from 26 sites in 2006 and around 338 were found to be positive. The overall prevalence rate of RPR was 3.00%. Out of 11,245 RPR samples, 109 were from ANC with prevalence rate as 2.3%, 2515 from Armed forces with prevalence rate as 3.06%, 840 from STI patients with prevalence rate as 4.16%, 170 from TB pts with prevalence rate as 4%, 586 from Migrant workers with prevalence rate as 5%, 1 from CSW with prevalence rate as 100% and 2,547 from others category with prevalence rate as 3.2%.

Among the 11,245 samples tested for TPHA from the 26 sites in 2006, around 157 were found to be TPHA positive. The overall prevalence rate of TPHA was 1.3%. Out of 11,245 samples tested for TPHA, 44 samples were from ANC with prevalence rate as 1%, 58 from Armed forces with prevalence rate as 2.3%, 15 from STI pts with prevalence rate as 2%, 3 from TB pts with prevalence rate as 2%, 37 from others category with prevalence rate as 1.4%.

Site wise distribution of respondents and HIV Prevalence

Sites	**Total tested**	**HIV Positive**	**% prevalence**	**Total tested**	**RPR +ve**	**%**	**TPHA Positive**	**%**
01	1773	1	0.05%	1500	69	5%	35	2.3%
02	2401	3	0.1%	2401	72	3%	58	2.41%
03	370	0	0%	370	14	4%	5	1.35%
04	125	0	0%	125	0	0%	0	0%
05	196	0	0%	196	5	3%	5	3%
06	309	0	0%	309	0	0%	0	0%
07	933	0	0%	933	45	5%	0	0%
08	331	0	0%	331	6	2%	0	0%
09	164	0	0%	133	2	2%	0	0%
10	140	0	0%	0	0	0%	0	0%
11	350	0	0%	350	7	2%	1	0.3%
12	113	0	0%	113	1	1%	1	1%
13	389	0	0%	389	10	3%	2	1%
14	139	0	0%	139	0	0%	0	0%
15	159	0	0%	159	16	10%	9	6%
16	508	0	0%	508	4	1%	0	0%
17	277	0	0%	277	34	12%	2	1%
18	441	0	0%	441	20	5%	20	5%
19	556	0	0%	556	21	4%	19	16%
20	278	0	0%	278	6	2%	0	0%
21	395	0	0%	395	0	0%	0	0%
22	447	1	0.2%	447	16	4%	0	0%
23		0	0	0	0	0	0	0
24	602	1	0.1%	602	1	0.2%	0	0%
25		0	0	0	0	0	0	0
26	379	0	0%	379	4	1.05%	0	0%
Total	**11,775**	**6**	**0.05%**	**11679**	**353**	**3%**	**157**	**1.3%**

Achievements sites-wise:

Sites	Blood samples projected	Blood samples collected	Achievement	Remarks
01	500-800	1773	221.6%	
02	150-200	2401	64% only 1152.5.5%?	1152 5% Armed forces only
03	250-500	370	74%	Divided by 500
04	250-500	**125**	50%	Divided by 250
05	250-500	**196**	78.4%	Divided by 250
06	250-500	309	61.9%	Divided by 500
07	400-800	933	116.6%	Divided by 800
08	250-500	331	66.2%	Divided by 500
09	300-600	**164**	54.65	Divided by 300
10	300-600	**140**	46.6%	Divided by 300
11	300-600	350	58.3%	Divided by 600
12	250-500	**113**	45.2%	Divided by 250
13	350-700	389	77.8%	Divided by 700
14	200-250	**139**	69.5%	Divided by 200
15	300-600	**159**	53%	Divided by 300
16	300-600	508	84.6%	Divided by 600
17	300-600	**277**	92.3%	Divided by 600
18	250-500	441	88.1%	Divided by 500
19	300-600	556	92.6%	Divided by 600
20	300-600	**278**	92.6%	Divided by 300
21	300-600	395	79%	Divided by 600
22	300-600	447	79.5%	Divided by 600
23	200-400	**0**	0%	Not collected
24	300-600	602	100.3%	Divided by 600
25	150-300	**0**	0%	Not done
26	250-300	379	126.3%	Divided by 300
Total	**6,850**	**11679**	**170.4%**	

14. Shortcomings:

- Clients not screened by the treating physician for the surveillance purposes.
- Not screening as per the protocol
- Change of staff frequently
- Reagents not adequate for the test
- Not reporting on time

15. Recommendations/Comments:

- Need training and briefing on sentinel surveillance for staff
- Monitoring and supervision need time to time from program
- To include prisoners in sentinel survey
- Outreach for satellite clinics and other outreach where not feasible