

**Report of the  
HIV sentinel surveillance survey  
2002**

**National STD/AIDS Control Programme**

## **Introduction**

Estimates of the prevalence of HIV are essential for monitoring the epidemiological scope and patterns of the HIV/AIDS epidemic. In addition, future cases of HIV-related diseases, including AIDS, will depend on the number of persons infected with the virus.

HIV sentinel surveillance involves the routine study of well-defined and accessible population groups. In low prevalence settings, population groups who are at increased risk for HIV are selected for sentinel surveillance and a pre-determined number of individuals are consistently sampled. Therefore, HIV sentinel surveillance is characterized by repeated cross-sectional serosurveys to monitor trends in the levels of infections in the selected population groups. HIV testing is carried out anonymously on blood samples taken for other reasons. An important advantage of this method is usually high validity of data, as participation bias is minimized.

HIV sentinel surveillance is an on-going activity carried out annually by the National STD/AIDS Control Programme (NSACP). This is based on cross sectional studies of HIV sero prevalence carried out at regular intervals among selected population groups known as "Sentinel Groups" at selected sentinel sites. The NSACP has been conducting this activity since 1993 annually according to the guidelines of the World Health Organization (WHO).

## **Duration**

The 2002 sentinel survey (SS) was to be conducted over a period of six months from 15<sup>th</sup> June 2002 - 15<sup>th</sup> December 2002. However, in July 2002 the Central Laboratory was shifted to the new STD complex and routine laboratory work could not be resumed for nearly a month. This resulted in a delay in testing blood samples from the sentinel sites in the Western, Southern, Sabaragamuwa and the North East provinces as serological testing for above sentinel sites were carried out at the central laboratory. Trade union action for more than 2 weeks by the medical laboratory technicians (MLTs) further delayed laboratory testing of blood samples. To overcome these constraints the survey period was extended up to 15<sup>th</sup> January 2002.

Serological testing of samples from Southern, Sabaragamuwa, and North East provinces were carried out at the central laboratory in Colombo due to non-availability of the MLTs at these sites.

## **Sentinel sites**

<b>Sentinel sites</b>		<b>Sample collection centers</b>
Western Province	(WP)	Colombo, Colombo South & Colombo North
Central Province	(CP)	Katugastota, Matale, Nuwara Eliya
Southern Province	(SP)	Karapitiya, Matara, Balapitiya
Sabaragamuwa Province	(Sab.P)	Ratnapura, Kegalle
North Western Province	(NP)	Kurunegala, Chilaw
North Central Province	(NCP)	Anuradhapura, Polonnaruwa
Uva Province	(UP)	Badulla, Mahiyangana, Kataragama
North East	(NP)	Trincomalee, Batticalo, Vavuniya

**Sentinel groups :** Three sentinel population groups were included in the 2002 survey,

1. STD clinic attendees (STD)
2. Female sex workers (FSW)
3. Patients diagnosed with Tuberculosis (TB)

### **Method of Testing**

HIV testing was done on unlinked anonymous basis.

### **Sample size**

WHO recommends a minimum sample size of 250 for high-risk groups and 400 for low-risk groups. Following minimum sample sizes were decided in advance but sample collection continued till the end of the survey period even after the required number had been collected.

### **Sample sizes according to the sentinel sites and the sentinel groups**

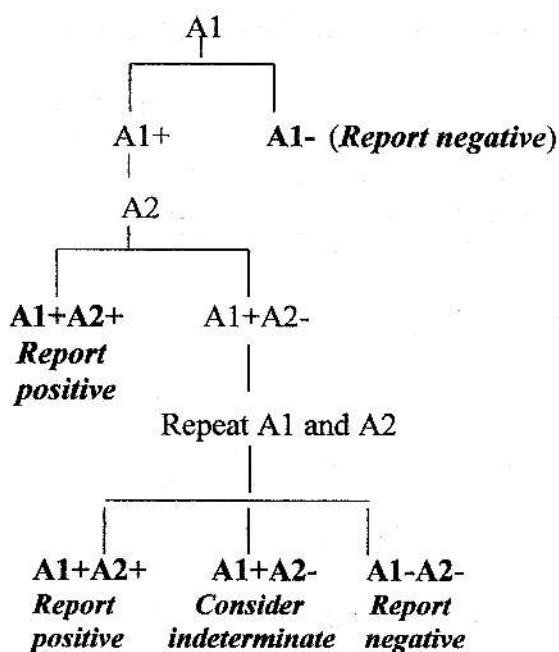
	<b>WP</b>	<b>CP</b>	<b>SP</b>	<b>Sab. P</b>	<b>NWP</b>	<b>Uva P</b>
FSW	400+	250+	250	250	250	250
STD	500+	250+	250	250	250	250
TB	250+	250+	250	250	250	250

### **Laboratory testing strategy: -**

HIV testing of the blood samples was carried out as follows:

Serum was first tested with Elisa or particle agglutination assay. All samples tested positive with one test were tested with another type of screening test. If both tests were positive it was considered as positive. If the 2nd test was negative, then both screening tests were repeated (1st and 2nd test) and if both were positive it was considered as positive. If one test was positive and the other test was negative it was considered as indeterminate and no further testing was recommended.

### Schematic representation of the HIV testing strategy followed



Assay A1, A2 represents 2 different assays

### Supervision

This survey was carried out at four sites in different provinces. Hence it was important to ensure uniformity at all sites. A consultative workshop was held at the center, prior to the survey to train all the staff at these sites. The 2002 survey protocol was discussed in detail at the workshop.

All the supervisory visits to the sites could not be carried out as planned due to various reasons. The distant sites could not be visited as funds for overnight stay for the supervisory team were not approved by the Ministry of Health. The accessibility to the North East was also limited due to logistics and the ground situation prevailing at the time.

### Results

A total of 8590 blood samples were tested. Of these, 82 (0.95%) were from subjects under the age of 14 years and these were excluded from the analyses. However, no HIV positive sera were found among these.

Among the 8508 samples considered for analysis, 8 HIV positives( 6 among STD clinic attendees and 2 from female sex workers) were detected. There were no HIV positives detected in patients diagnosed with tuberculosis.

**Table 1 - HIV test results by sentinel sites and sentinel groups**

Sentinel sites	Sentinel Groups					
	STD		FSW		TB	
	No. tested	No. (%) +	No. tested	No. % +	No. tested	No. % +
Western Province	1577	3 (0.2)	424	0	287	0
Central Province	775	0	147	1 (0.7)	324	0
Sabaragamuwa Province	372	0	118	0	242	0
Southern Province	668	1 (0.1)	242	0	289	0
North Western Province	951	1 (0.1)	320	1 (0.3)	199	0
North Central Province	488	0	192	0	194	0
Uva Province	326	1 (0.3)	105	0	187	0
North & East Province	79	0	-	-	02	-

Table 1 describes the number of samples tested and number of HIV positives by sentinel site and sentinel group.

- All sites except the North & East were able to enroll more than the minimum required sample size for STD clinic attendees. Six HIV positives were found in this group from 4 sentinel sites.
- Only 2 sites (Western and North Western provinces) were able to recruit the minimum required sample size from the FSWs. In all other provinces the recruitment of FSW were unsatisfactory. Two HIV positives were detected among sex workers from North Western (0.31%) and Central Provinces (0.68%). North East provinces were unable to recruit any FSWs.

Frequent Police raids on brothels, massage parlours, and hotels had an adverse effect on the enrolment of FSWs in Western, Central and North Central Provinces.

- Enrolment of TB patients for the 2002 survey was satisfactory only in 3 sentinel sites, Western, Southern & Central Provinces. Only two samples were collected from North East. There were no HIV positives among TB patients.

**Table 2 - STD Clinic attendees by age group and sentinel site**

Sentinel site	Age group in years				Total
	15-49		50+		
	No.	%	No.	%	
Western Province	1498	95	79	5	1577
Central Province	775	100	-	-	775
Southern Province	638	95.5	30	4.5	668
Sabaragamuwa Province	332	89.2	40	10.8	372
North Western Province	933	98.1	18	1.9	951
North-Central Province	473	96.9	15	3.1	488
Uva Province	302	92.6	24	7.4	326
North-East Province	77	97.5	02	2.5	79

**Table 2 shows** STD clinic attendees by age and sentinel site. According to the protocol STD clinic attendees within the 15-49 year age group were to be enrolled for the survey. However, all sites except Central Province had recruited subjects above 50 years. Nearly 11% of the STD clinic attendees from Sabaragamuwa were >50 years old. However, all 6 HIV positives detected among STD clinic attendees were between 15-49 years of age.

**Table 3 - STD Clinic attendees by age group and sex**

Sex	Age group				Total	
	15-49		50+		No.	%
	No.	%	No.	%		
Male	3141 (62.5)	95.8	139 (66.8)	4.2	3280 (62.6)	100
Female	1887 (37.5)	96.5	69 (33.2)	3.5	1956 (37.4)	100

Table 3 shows that overall nearly two thirds of STD patients were males and most (96% ) males and females were in the 15-49 year age group.

**Table 4 - Female sex workers by age group and sentinel sites**

Sentinel site	Age Group in years				Total
	15-49		50+		
	No.	%	No.	%	
Western Province	422	99.5	2	0.5	424
Central Province	147	100	-	-	147
Southern Province	241	99.6	1	0.4	242
Sabaragamuwa Province	117	99.2	1	0.8	118
North-Western Province	320	100	-	-	320
North-Central Province	188	97.9	4	2.1	192
Uva Province	105	100	-	-	105

Table 4 shows female sex workers enrolled in the survey by age group and sentinel site. Eight FSW over 50 years had been enrolled from Western, Southern, Sabaragamuwa and the North-Central provinces. However, there were no HIV positives among these few FSWs similar to the STD clinic attendees over 50 years of age

**Table 5 - TB patients by age group and sentinel sites**

Sentinel site	Age group				Total	
	15-49		50+		No.	%
	No.	%	No.	%		
Western Province	172	59.9	115	40.1	287	100
Central Province	236	72.8	88	27.2	324	100
Southern Province	184	63.7	105	36.3	289	100
Sabaragamuwa Province	168	69.4	74	30.6	242	100
North Western Province	100	50.3	99	49.7	119	100
North Central Province	122	62.9	72	37.1	194	100
Uva Province	133	71.1	54	28.9	187	100
North East Province	2	100	-	-	2	-

Table 5 describes the distribution of the TB patients by age group and sentinel site. HIV positives were not detected among patients with TB during the 2002 survey. The North-East province has fared very poorly in terms of enrolling patients with TB for the survey. All sites (other than the NE) had recruited many TB patients over 50 years (27-50% of the total sample of TB patients). Even during the planning stage, the staff of the Respiratory Diseases Control Programme were of the view that it would be difficult to collect the required sample size from patients with TB who were 15-49 years of age as a significant proportion of TB is still being diagnosed in persons more than 50 years in Sri Lanka. This issue will have to be reviewed in the 2003 survey.

**Table 6 - TB patients by age group and sex**

Sex	Age group in years				Total	
	15-49		50+			
	No.	%	No.	%	No.	%
Male	688 (61.6)	61.0	439 (72.3)	39.0	1127 (65.4)	100
Female	429 (38.4)	71.9	168 (27.7)	28.1	597 (34.6)	100

Table 6 shows distribution of the TB patients who were enrolled in the survey by age and sex. The male to female ratio of TB patients enrolled was 1.9:1. Most males (61%) and females (72%) were in the 15-49 year old.

**Table 7 - Description of the HIV positives found in the sentinel survey 2002.**

Sentinel site	Sentinel group	Age	Sex	Sero positivity rate
Western Province	STD	25	Male	0.2%
		47	Female	
		48	Female	
Uva Province	STD	31	Male	0.3%
North-Western Province	STD	44	Female	0.1%
Southern Province	STD	42	Male	0.1%
Central Province	FSW	30	Female	0.7%
North-Western Province	FSW	34	Female	0.3%

Table 7 gives a summary of the HIV positives detected during the 2002 sentinel survey. There were 8 HIV positives of which 5 were women and 3 were men. Six HIV positives were detected among STD clinic attendees (i.e., 3 from Western Province, 1 from Southern Province, 1 from



North Western Province and 1 from Uva Province), and 2 from female sex workers (one each from North Western Province and Central Province).

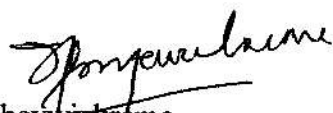
### **Comments**

- During the 2002 sentinel surveillance survey, 6 STD clinic attendees and 2 female sex workers were detected as HIV positive. No HIV positives were detected among TB patients although one positive TB patient was detected during the last survey.
- When compared to the previous year where seven positives were detected no significant increase was noted.
- The same trend was noted to continue.
- In year 2002, all the sentinel sites were instructed to enroll 3 sentinel groups (i.e. STD clinic attendees, female sex workers, and patients with Tuberculosis) Feasibility of collecting the required samples from the North and Eastern provinces separately as two sites was doubtful at the planning stage. Therefore the two provinces were combined and made into a single sentinel site. Despite that, enrollment to all sentinel groups was very unsatisfactory in the North and East.
- The central laboratory took over the testing of Samples from Sabaragamuwa, Southern, and North - East in addition to the Western province as these Sentinel sites were unable to do the testing due to lack of medical laboratory technicians in the STD laboratories.
- Due to the shifting of the Central laboratory to a new complex in July , resuming of work was delayed for a period of approximately one month .As a result of the trade union action by the Medical laboratory technicians from 28<sup>th</sup> November -17<sup>th</sup> few samples had to be discarded as they were decomposed.
- Arrangements were made to refrigerate the samples received from other sites by installing a refrigerator out side the corridor of the central STD complex .Samples received after working hours were put in to the refrigerator by the security staff who received the samples after entering the details in a register kept for this purpose.
- Currently Sri Lanka is classified as a low prevalent country for HIV infection. Findings of this survey are compatible with the above classification. While the HIV sentinel surveys could be continued at the present sites, an attempt should be made to establish new sites in the North and Eastern provinces in Year 2003 to over come the problems of collecting the required number of samples.
- In addition Behavioral Surveillance surveys will be carried out in the near future to compliment sero- surveys.

### **Acknowledgements**

- The NSACP wishes to thank the World Health Organization for funding the activity.
- The staff at the Chest clinics who participated in the sentinel surveillance are thanked for their cooperation to carryout the survey successfully.
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The NSACP appreciate the support given by the MO/STDs and the other staff in the central and peripheral clinics.

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Ratnapura, Kurunegala, Chilaw , Polonnaruwa,  
Vavuniya, Badulla, Anuradapura, Trincomalee, and  
Batticalo.
8. MOIC/Chest clinics - Welisara, Kandy , Galle, Matara, Ratnapura,  
Anuradapura., Polonnaruwa Batticalo  
Kurunegala, Chilaw ,Trincomalle, and Badulla.
9. Pathologists - Kandy , Galle, Ratnapura , Anuradapura.  
Kurunegala and Badulla
10. Medical staff, PHI, PHNS / NSACP
11. Laboratory and Surveillance Sub Committee of the National AIDS Committee