

## **Report on HIV Sentinel Surveillance – 1999**

HIV sentinel surveillance is carried out annually by the National STD/AIDS Control Programme to monitor the magnitude and trends of the HIV epidemic in Sri Lanka. This survey has been conducted annually since 1993.

### **Sentinel Sites**

In 1999, the survey was conducted in 6 sentinel sites i.e. Colombo, Galle, Kandy, Ratnapura, Kurunegala and Anuradhapura.

### **Duration**

The sentinel survey was carried out for a period of 6 months from 1<sup>st</sup> May to 30<sup>th</sup> October 1999.

### **Sentinel Population Groups**

1. Female Sex Workers
2. STD Clinic attendees
3. Patients diagnosed with Tuberculosis
4. Blood donors

Female sex workers, STD Clinic attendees and blood donors were enrolled at all sites but patients with Tuberculosis were enrolled only in Colombo Kandy and Galle. TB patients were omitted from Kurunegala, Ratnapura and Anuradhapura as these sites repeatedly failed to enrol the minimum sample size.

Female sex workers and STD clinic attendees represented population groups with high-risk behaviour for HIV transmission and acquisition. Patients with Tuberculosis were included in the survey as there is a well established interaction between HIV and TB infection. Blood donors are more likely to represent general population.

### **Survey Methodology**

The WHO recommended unlinked anonymous method was used in all sentinel groups except in blood donors. In unlinked anonymous method, a part of blood sample that is originally collected for some other purpose was used for HIV testing after removing its identifying labels so that HIV result cannot be linked to a particular individual. The two main advantages of this method are its ability to minimise participation bias and ethical implications related to HIV testing. HIV testing for blood donors was mandatory.

### **Sample Size**

WHO recommends a minimum sample size of 250 for "high risk" and 400 for "low risk" population groups. For the 1999 sentinel survey, following minimum sample sizes were given but instructions were given to continue the survey until end of the study period (i.e. 30<sup>th</sup> October 1999). In case of blood donors, sample size was limited to 600 in all sentinel sites.

**Minimum sample size by population group and by sentinel site for sentinel survey- 1999**

Population group	Colombo	Kandy	Galle	Rathnapura	Kurunegala	Anuradhapura
Female Sex Workers	400	250	250	250	250	250
STD clinic attendees	500	250	250	250	250	250
New TB Patients	250	250	250	-	-	-
Blood donors	600	600	600	600	600	600

These amendments to the WHO recommended sample sizes were done in order to enhance the probability of getting HIV positives as all previous sentinel surveys continued to show either zero or very low prevalence rates.

**HIV testing strategy**

HIV prevalence continues to be much less than 10% in all sentinel groups. Therefore following testing strategy was used. Serum was first tested with one ELISA or Particle Agglutination Assay. Any serum found to be positive on the first assay was re-tested with the ELISA, Particle Agglutination and rapid Sample Assay. Serum that was non-reactive on the first assay was considered HIV antibody negative.

**Monitoring field visits 1999**

All sentinel sites except Colombo were scheduled for supervisory visits from the Center twice during the survey period. However, only Anuradhapura and Rathnapura were visited as scheduled while all other sites were visited once. Main reasons for this was is a lack of a suitable vehicle and excessive involvement of supervising officers with other Programme activities.

**Summary of finding of Sentinel Surveillance supervisory field visits – 1999**

**Anuradhapura** Protocol of the survey was followed as instructed.

Poor record keeping was noted.

During 2<sup>nd</sup> Visit improvement of record keeping was observed.

**Ratnapura** Transport problem was highlighted as the vehicle has been taken over by the PD office. Some of the subsequent STD clinic attendees were not enrolled as instructed. Poor STD patients turn over rate was observed.

**Kandy** Adherence to survey protocol was satisfactory. Frequent Police raids of brothels seems to be affecting FSW enrolment. Discussion of supervising team with Chest Clinic staff was successful in enrolling more TB patients.

**Kurunegala** Lack of disposable items and poor laboratory support was noted. Lack of experience of clinic staff was observed as a constraint.

**Galle** Adherence to the protocol was satisfactory. Lack of co-operation from the laboratory and scarcity of disinfectants and gloves was observed. Blood samples collected from chest clinic (TB patients) were often found to be in a status of decomposition.

**Colombo** Monitoring and supervision of the survey was possible as the survey was mainly conducted at the Central STD clinic Colombo. A special meeting was held with the staff of the chest hospital Welisara and as a result a higher number of TB patients could be enrolled during 1999 survey.

## **Results**

A total of 9806 blood samples have been tested for HIV sentinel surveillance in 1999. Except two STD clinic attendees, from Kurunegala all other samples were tested negative for HIV. These two positive samples belonged to a 29 year old male and 32 year old female. The HIV sero-prevalence rate for STD clinic attendees at Kurunegala was 0.8%.

**Table I**

**Number of blood samples tested by Sentinel site and Sentinel population group -1999**

Sentinel pop. group	Sentinel site					
	Colombo	Kandy	Galle	Rathnapura	Kurunegala	Anuradhapura
STD clinic attendees	1849	556	494	288	251	313
Female sex workers	654	105	291	245	40	290
TB patients	413	242	177			
Blood donors	600	600	600	600	600	600

Table 1 indicates the number of HIV tests done by various sentinel sites and sentinel population groups. Enrolment of sample sizes for STD clinic attendees and blood donors was completed in all sites. However, the number of FSW enrolled in Kandy & Kurunegala were much less than the required sample of 250. TB patients were not included in Ratnapura, Kurunegala & Anuradhapura.

**Table 2**  
**STD clinic attendees by age groups and sentinel sites-1999**

Sentinel site		Age groups (years)			Total
		0-14	15-49	50+	
Colombo	No.	8	1745	95	1848
	%	.4	94.4	5.1	100.0
Kandy	No.	4	526	26	556
	%	.7	94.6	4.7	100.0
Galle	No.	26	444	24	494
	%	5.3	89.9	4.9	100.0
Rathnapura	No.	3	258	25	286
	%	1.0	90.2	8.7	100.0
Kurunegala	No.	1	242	8	251
	%	.4	96.4	3.2	100.0
Anuradhapura	No.	4	302	7	313
	%	1.3	96.5	2.2	100.0

Table 2 indicates the distribution of STD clinic attendees in various sentinel sites by age group. As expected the largest proportion of STD clinic attendees in all sites were in the reproductive age group i.e. 15-49 years. The mean age for STD clinic attendees was 30.9 years (SD =9.8 years).

**Table 3**  
**STD patients by age groups and sex**

Sex	Age groups (years)						Total	
	0-14		15-49		50+			
	No.	%	No.	%	No.	%	No.	%
Male	15	32.6	2403	68.3	153	82.7	2571	68.6
Female	31	67.4	1114	31.7	32	17.3	1177	31.4
Total	46	100.0	3517	100.0	185	100.0	3748	100.0

Table 3 indicates age and sex distribution of STD clinic attendees surveyed in 1999. Majority (68.6%) of STD clinic attendees were males. Proportion of females in the under 15 year age group was higher, while the proportion of males were higher in over 15 year age groups.

**Table 4**  
**Female sex workers by age groups and sentinel sites-1999**

Sentinel site		Age groups (years)			Total
		0-14	15-49	50+	
Colombo	No.	2	644	8	654
	%	.3	98.5	1.2	100.0
Kandy	No.		102	3	105
	%		97.1	2.9	100.0
Galle	No.	1	283	7	291
	%	.3	97.3	2.4	100.0
Rathnapura	No.	1	243	1	245
	%	.4	99.2	.4	100.0
Kurunegala	No.		39	1	40
	%		97.5	2.5	100.0
Anuradhapura	No.		287	3	290
	%		99.0	1.0	100.0

Table 4 indicates the number of FSW enrolled for the survey in various sentinel sites by age groups. Except Kandy and Kurunegala, other sentinel sites were able to enrol adequate number of FSW. Similar to STD clinic attendees almost all (over 97%) of FSW were in 15-49 age group. Mean age of FSW was 28.6 years (SD =8.4 years).

Figure 1

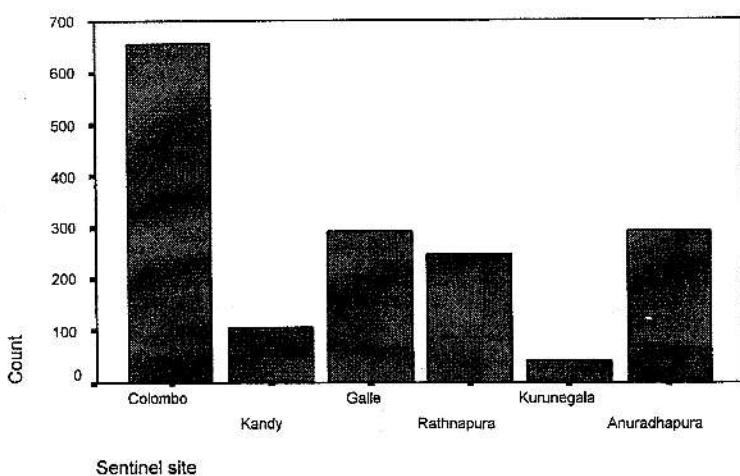


Figure 1 diagrammatically shows the number of FSW enrolled by sentinel sites. Colombo was able to enrol the highest number of FSW during 1999.

**Table 5**  
**Patients with TB by age groups and sentinel sites-1999**

Sentinel site	Age groups (years)			Total	
	0-14	15-49	50+		
Colombo	No.	1	240	172	413
	%	.2	58.1	41.6	100.0
Kandy	No.	2	180	60	242
	%	.8	74.4	24.8	100.0
Galle	No.		117	60	177
	%		66.1	33.9	100.0

Table 5 indicates number of TB patients enrolled during 1999 survey by sentinel sites and age group. Only Colombo was able to complete the required minimum sample size of 250. When analysed by age about 25% to 42% of all patients enrolled were 50 years and over.

**Table 6**  
**Patients with TB by age groups and sex**

Sex	Age groups (years)						Total	
	0-14		15-49		50+			
	No.	%	No.	%	No.	%	No.	%
Male	3	100.0	363	67.6	243	83.2	609	73.2
Female			174	32.4	49	16.8	223	26.8
Total	3	100.0	537	100.0	292	100.0	832	100.0

Table 6 shows patients with TB by age group. It is interesting to note that almost three quarters (73%) of TB patients were males. In all age groups, the proportion of males were more than females. Mean age of TB patients was 43 years(SD =15.7 years) and this was significantly higher than the mean age of FSW and STD patients ( F value=571.97, P<0.001).

**Table 7**  
**Blood donors by age groups and sentinel sites -1999**

Sentinel site		Age groups (years)			Total
		15-49	50+		
Colombo	No.	588	12	600	
	%	98.0	2.0	100.0	
Kandy	No.	591	9	600	
	%	98.5	1.5	100.0	
Galle	No.	592	8	600	
	%	98.7	1.3	100.0	
Rathnapura	No.	594	6	600	
	%	99.0	1.0	100.0	
Kurunegala	No.	597	3	600	
	%	99.5	.5	100.0	
Anuradhapura	No.	596	4	600	
	%	99.3	.7	100.0	

Table 7 shows blood donors by sentinel sites and age groups. All sentinel sites were able to enrol the required sample size (600). Over 90% blood donors in all sites were in 15-49 year age group. The mean age of blood donors was 29.8 years (SD= 15.7 years).

**Table 8**  
**Blood donors by age groups and sex**

Sex	Age groups (years)					
	15-49		50+		Total	
	No.	%	No.	%	No.	%
Male	3513	98.7	40	95.2	3553	98.7
Female	45	1.3	2	4.8	47	1.3
Total	3558	100.0	42	100.0	3600	100.0

Table 8 shows age and sex distribution of blood donors at all sites. Females represented only 1% of the total blood donors.

#### Comments

Total of 9806 blood samples were tested during the sentinel surveillance 1999. Of these only 2 samples belonging to STD clinic attendees in Kurunegala were found to be positive for HIV. The largest number of samples were tested in Colombo (3516). This include 1849 STD clinic

attendees and 654 FSW. Surprisingly all these were found to be negative for HIV. However, it should be noted that majority of HIV patients reported during 1998 and 1999 were from Colombo district. Though the enrolment of STD clinic attendees was successful in all sites, number of FSW enrolled was not satisfactory in Kandy and Kurunegala. Kurunegala has enrolled only 40 FSW out of the minimum sample size 250. Enrolment of TB patients in Colombo could be improved in 1999 due to better communications with the staff of the Chest Hospital Welisara.

Results of the sentinel surveillance 1999 are in favour of a low prevalent HIV epidemic in Sri Lanka. No definite trends of HIV sero-prevalence was observed from the sentinel surveys conducted annually since 1993.

However, the conduction of HIV Sentinel surveillance should be continued with more emphasis on the correct methodology to detect any unexpected changes in HIV sero-prevalence rates. Also more emphasis should be given to other indicators of HIV epidemic such as behavioural sentinel surveillance and STI surveillance as these methods are more sensitive in low HIV sero-prevalence situations.

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