

**SURVEILLANCE OF HUMAN IMMUNODEFICIENCY
VIRUS INFECTION IN ETHIOPIA**
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INTRODUCTION

Surveillance is an important component of any public health program. Data collection on the occurrence of a disease, consolidation of the data, analysis, interpretation and regular dissemination of the information to the staff involved in disease control programmes are important functions of surveillance. The ultimate objective of disease surveillance is to determine the extent of infections and the risk of disease transmission so that control measures can be applied effectively and efficiently. Surveillance data must, therefore, be current and complete in order to disclose the occurrence and distribution of disease. Various sources of data may be used for surveillance. Both passive and active surveillance are important in an epidemiological system as one can supplement the other .

Surveillance of HIV I AIDS is also considered in the above perspective. The HIV surveillance is an important instrument for determining the geographic spread of the virus among various population groups, identification of the risk factors, monitoring HIV progression trends over time, gaining the commitment of political leaders and designing control and intervention strategies.

Because of the long incubation period of AIDS, AIDS-case surveillance tracks only a final stage of HIV infection and is, therefore, a measure of infection in the remote past. In addition, AIDS patients comprise just a fraction of all persons infected with HIV and that fraction is different in various communities. The surveillance systems for AIDS are usually incomplete and irregular in many developing countries, which makes the data received unreliable. Therefore, the surveillance needs to be supplemented by other efforts in order to get an accurate picture of the epidemic i.e. by the surveillance of HIV infection. This paper outlines the HIV surveillance system initiated since the beginning of the implementation of the AIDS Control Programme in Ethiopia. It includes the system's structure, approaches for obtaining baseline data, monitoring the epidemic trends, its role in motivating senior government officials, health care workers, and the public at large.

BACKGROUND

The surveillance unit of the Ministry of Health under the Department of Epidemiology is usually dealing with control of communicable diseases. The National Task Force (NTF) on AIDS, during the time of its operation (between 1985 and early 1987) used this established surveillance system for the initial assessment of HIV/AIDS in the country. The surveillance unit was responsible for compiling data pertaining to the studies on HIV/AIDS which had been initiated earlier by various investigators. Although most of

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these studies had their limitations in terms of sample size and sampling methodology, the data received determined that HIV prevailed in some population groups in Addis Ababa. These data were then used to develop short and medium term plans of action for AIDS control.

ESTABLISHING THE SURVEILLANCE DIVISION

The Ministry of Health formed the AIDS control coordinating body at a department level in September 1987 calling it the Department of AIDS Control (DAC). The surveillance division of DAC was made responsible for: designing protocols and operational guidelines, data collection and compilation, data analysis, coordination of all surveillance and research activities pertaining to HIV I AIDS, identifying research topics and establishing priorities, and encouraging individual researchers and investigators to carry out research on various aspects of HIV/AIDS (epidemiological, biomedical, behavioral etc.). A computer unit was established in the Department to facilitate data entry and management. During the first six months of the Programme operation, the necessary technical staff was recruited, surveillance guidelines and protocols were designed and a coordination network was formed that allowed regular implementation of surveillance of HIV infection in different areas.

As seen in the terms of references of the division, it is mainly responsible for the surveillance and operational research run within the framework of the medium term plan for AIDS control in Ethiopia. At the same time the Division coordinates and cooperates with various research groups not covered by the plan. Major projects among them included:

-Pilot study on the Sill/HIV school health education, run by the Ministry of Education; survey on the knowledge, attitude behavior and practices, conducted by the Social Science Department of the University of Addis Ababa; population based survey on Sill prevalence in Addis Ababa -a joint study of DAC and STD control division of the Ministry of Health, and a number of other projects. Valuable information for the assessment of the progression of the epidemic is also received and analyzed from the Ethiopian Red Cross Society which runs blood screening for HIV in its six blood banks.

This cooperation allows building up a comprehensive information package on the subjects related to AIDS control, epidemiology, sociology, education, etc. The Global Programme on AIDS (WHO/GPA) has made a great contribution to the surveillance by providing technical and financial assistance for strengthening the national HIV/AIDS surveillance system in the country.

EXPANDING THE SURVEILLANCE

All data obtained earlier, between 1984 and 1987 were from Addis Ababa except one study on 5265 military recruits which covered most geographic areas. In 1988 the HIV surveillance on sex workers was expanded to 23 urban settlements. The surveillance system also included long distance truck drivers who are frequent travelers along the major surface routes of population migration from Addis Ababa. The activities were centrally coordinated. The Project proposals on these two groups of high risk behavior were designed and pretested in Addis Ababa. Testing of individuals was voluntary, confidential with a pre- and post test counselling component. These two studies have given an opportunity to determine the geographic spread and the magnitude of HIV infection among female sex workers and long distance truck drivers in the urban settings.

Baseline information on the social status, sexual practices and on various health related subjects was also obtained from the study.

The administrative arrangements for various surveillance components are not uniform and depended on specific objectives and the scale of sampling. The interval sero-prevalence survey in female sex workers, for example, was planned and implemented by the national AIDS since it requires uniform sampling procedures in all sites over several years. The sentinel surveillance on the other hand, is delegated to the local medical institutions.

CHOICE OF SURVEILLANCE METHOD

Tests made for HIV between 1984-1987 were mainly on stored sera primarily collected for other disease surveillance. Research on high risk groups in 1988, 1989 and 1990 were based on voluntary testing, with pre- and post-test counselling. Following the WHO/GP A recommendation for sentinel surveillance, the study on attendants of antenatal clinics and other sexually active females has for a number of reasons been designed as unlinked anonymous testing. The unlinked testing allows to avoid selection and participation bias. Such an approach minimizes the likelihood of adverse individual or community consequences. Existing health infrastructures could be used as sentinel sites reducing the cost of the exercise since certain facilities such as basic equipment, manpower, and some logistics are readily available. Depending on the availability of resources (both human and material) linked testing of this group is also being considered within the strategy of prevention of transmission from mother to child. The advantages and disadvantages will have to be considered when designing the survey protocol.

I. OPERATIONAL DETAILS

.At various times three to four mobile teams were formed under the surveillance division. Each team consisted of a team leader, a social worker, 4-5 interviewers who were rehabilitated sex workers specially trained for this purpose, a laboratory technician, and a driver. Many health workers both from the Ministry of Health, the National Research Institute of Health (NRIH) and other health institutions have also been involved in these activities.

The staff members selected for this purpose were trained initially on the objectives of the study and on the details of the protocol which included :

- establishing the cooperation with the regional health departments, and city councils of the towns involved; updating the lists of the target populations or carrying out a census wherever needed;

- identifying the persons to be tested within the study group;

- arranging the sites for the survey;

- pretest counselling;

- individual interview and filling in questionnaires;

- drawing blood for HIV testing and separating serum;

- transporting serum to the National HIV Referral Laboratory , and the surveillance records to DAC;

- testing of sera samples for HIV ;

- post-test counselling of both HIV negative and positive individuals and condom distribution;

The blood samples, (from 300-350 individuals in each area) were collected in about ten days in each town, except Addis Ababa which took six weeks to organize and collect a sample of 2700.

APPROACHES TO AND RELATIONS WITH THE TARGET GROUPS

The information on HIV I AIDS has been systematically transmitted to the public at large through radio, television, and newspapers since the National Task Force on AIDS was formed in 1985. Nevertheless, false rumors and misinformation frequently circulated among the people. So, when the department started surveillance activities among high risk groups at the beginning of 1988 a series of steps were undertaken in order to gain the acceptance of the target population. Extensive repeated pre-test counselling was one of them, and it proved to be a very efficient instrument to gain confidence of the population. Procedures that would create fear and panic, such as involving Kebele or working through district administrative channels were avoided. Although STD clinics existed in most areas where the studies were conducted, the lists of the target groups required updates in each area since the female sex workers were highly mobile and did not stay long in the same towns. The census or update of lists of sex workers was successfully accomplished in cooperation with city councils or urban dwellers associations and health institutions. Systematic sampling techniques were used in all areas except Addis Ababa, where a multistage sampling technique was used to select individuals for testing. Persons included in the sample were advised to visit the health centers. Pre-test counselling that lasted 30-45 minutes for each group of 15-25 persons was offered to the target population by the specially trained social workers. Pre-test counselling included education on AIDS, modes of HIV transmission, protective means, and what would be offered after the test results were ready (post-test counselling component). Questions were initiated by both the target population and department staff about the consequences of the testing, including issues of administrative action or stigmatization of seropositive persons. After the discussions, females were highly motivated and expressed their appreciation. to the Ministry of Health for the priority given to them. Their consent to be included was asked and about 98% of the females agreed to voluntary testing.

During this visit local nurses were trained as counsellors to carry out post-test counselling. Test results for both HIV seropositive and negative persons were disclosed during the second visit to each town by the same team of social workers and by local counsellors. Visits made periodically to the surveillance sites and distribution of condoms by the social workers and local nurse counsellors built up high confidence among the target population. This confidence along with the good will of the medical staff running the surveys resulted in highly effective continuous surveillance activities.

MONITORING PROGRESSION OF THE HIV EPIDEMIC

The HIV surveillance conducted in 1988 in urban areas among various population groups indicated that the virus had spread all over the country though its prevalence varied from place to place. A system for interval serosurvey was established in order to accurately monitor progression of the epidemic in subsequent years and provide a basis for targeted intervention and adjustment of control strategies. Seven representative towns were selected for this purpose from the low, medium and high HIV prevalence areas surveyed in 1988. Areas with similar magnitudes of HIV infection in the previous year were represented by one or two towns.

Population groups selected for monitoring progression of the epidemic were female sex

workers, long distance drivers, and outpatients of general hospitals. Data on blood donors received from the blood banks and selected health institutions, and data on scholarship winners going abroad were also added to the surveillance system to monitor epidemic development.

SENTINEL SURVEILLANCE

This type of surveillance is aimed at detecting the changes in prevalence of the infection, or monitoring its progression and providing basis for evaluation of preventive strategies and activities. Sites, facilities, and populations chosen remain similar while the test is repeated periodically.

Studies on female sex workers and long distance truck drivers allow monitoring of the epidemic in the groups practicing an identified risk behaviour. The results are supplementary to the sentinel surveillance which deals mainly with the general population represented, in our studies, by antenatal clinic attendants. These sexually active females are being studied at five selected health institutions in different parts of the country. The selection of these sites was based on the prevalence of HIV infection among high risk group females in the area, availability of an HIV screening facilities, the number of antenatal clinic attendants each month, availability of staff and the accessibility of the area for supervision.

The sentinel surveillance is being carried out by local physicians, nurses and laboratory technicians. The testing by ELISA is done in the local screening laboratories, and double ELISA positive samples are confirmed at the National AIDS Reference laboratory .

THE ROLE OF SURVEILLANCE DATA

Surveillance data on HIV have played an important role in the development of the National AIDS Control Programme. Data available from the initial surveys had certain sampling limitations in terms of geographic representativeness, sample size and sampling methodology. However, these data have identified the existence of HIV in the country. The initial figures available on HIV prevalence were quite low as compared to the reports from some other east and central African countries. The rates were lower than 5% in most studies done on high risk population groups between 1984 -I 1987. The comprehensive nation-wide surveillance in the urban areas on different population groups run in 1988 showed, however, that the actual problem was much greater than what everybody initially thought: the country average prevalence in female sex workers was found to be 17%, ranging from 1.3% -38.1 %.

Interval serosurveys conducted in the following years, (in 1989 and 1990) showed an alarming progression of the epidemic. Based on the surveillance results, estimates have been made on the possible number of HIV infected individuals and AIDS cases. Projections on the number of AIDS cases and infected individuals for the years to come have been calculated.

Surveillance has contributed greatly in motivating senior government officials, health workers and the public at large to pay more attention to this problem. It has assisted in boosting intersectoral collaboration of government, nongovernment and international organizations. Donor agencies have been stimulated to enhance their support in order to meet the growing challenge.

The surveillance results have played a big role in redesigning the intervention policies as well. One example is the project on the social mobilization of the females involved in MPSC. Having been identified as a major risk group for HIV infection they were targeted for a nation wide project aimed at organization for peer education on safe sex behaviour, community support to AIDS victims, and condom promotion. The project which provided counselling for a limited portion of this risk group , within the surveillance component has now been expanded for the whole group under the intervention strategy .

CONCLUSION

The ongoing HIV surveillance component of the AIDS control programme is of vital importance. Surveillance data are being used for reinforcing or increasing the commitment of political leaders and the health sector. The data are necessary for targeting interventions, monitoring, estimating case load, and resource planning.

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