MAP 2

Main Sentinel Surveillance Sites and Regional Labs, 2005

- Rural
- Urban
- Testing Labs
2.1. HIV SENTINEL SURVEILLANCE

Site selection, sampling, data/specimen collection, transportation, and testing

The ANC-based HIV Sentinel Surveillance System is based on the National HIV sentinel surveillance guidelines that were last revised in December of 2004. All regional health bureaus (RHB) and site staff were trained prior to sampling, using a training manual developed by the MOH. Data were collected from 38 urban (including one Federal Police and one Federal Armed Forces hospitals) and 44 rural sites (including one site totally serving refugees and two sites serving both refugees and local residents) in 2005. The sites were selected by both the MOH and the respective region. Criteria was developed in the selection of each site based on the ability to fulfill the minimum sample size, provide continuous ANC services, regularly draw blood for routine antenatal care, and maintain staff commitment.

For rural areas, CSA’s definition was applied to the extent possible; sites were selected that were at least 25 kms away from main roads and highways and those located in non-commercial centers and/or 100 kms away from regional or zonal towns. Sites were required to collect a minimum of 250 and 400 specimens if they were in urban and rural setting respectively. The maximum sampling period for urban sites was 12 weeks and 20 weeks for rural sites. Sentinel sites that were unlikely to achieve the target sample size cooperated with one or more health facilities (satellite sites) nearby to increase the sample size. There were 16 urban and 56 rural satellite sites. The satellite sites were health centers, clinics, or health posts, located near the principal site. Data from all satellite sites were combined with those from the main sites for analysis. The satellite sites also allowed or the surveillance system to penetrate deeper into rural areas.
Rapid plasma reagin (RPR) testing for syphilis was done on all pregnant women attending ANC as part of routine antenatal care and all who tested positive for syphilis were treated. Left-over blood after syphilis testing was labelled with a surveillance code number and tested for HIV in unlinked and anonymous fashion. Blood from all eligible ANC clients was sampled consecutively during the surveillance period. Confidentiality was maintained throughout the process. At no time were the names or other personal identifiers of the ANC clients recorded or linked to the HIV test results. ANC clients were either offered HIV testing through existing PMTCT services or were encouraged to receive VCT for HIV where services were available nearby. Transcribed data included routine demographics and syphilis test results.

Specimens were transported to 26 regional testing laboratories maintaining standard cold chain procedures for HIV testing. All specimens were tested with Vironostika® EIA and the test results were recorded on provided data collection sheets. First tests from some sites were also performed at National Reference Laboratory for AIDS (NRLA)-EHNRI. 10% of randomly selected HIV negative and all HIV-positive specimens were re-tested using Enzygnost EIA at NRLA-EHNRI for quality control purposes; Murex Antibody test was used as a tie breaker. HIV reactive specimens were re-tested at EHNRI. If confirmed, they were classified HIV positive; all other specimens were classified as HIV negative.
Data management

Data collection sheets were forwarded to the MOH for processing using EpiInfo. Data were double-entered and cleaned.

HIV prevalence estimates

HIV prevalence estimates were made for 82 sites and data from 79 (43 rural and 36 urban) sites were used to make regional, urban/rural, and national HIV prevalence estimates. Results for Chifra and Abala, both rural sites in Afar, were dropped from analysis because of non-adherence to protocol guidelines detected during supervision visit. Data from the refugee site (Dima) as well as from the Federal Police and Armed Forces General Hospital were not included in the national and regional analysis due to the special populations they serve. However, the two other sites (Pygindo and Menge) were included for analysis as rural sites because most of their clients were local rural inhabitants even though refugees are also served at these sites. The results from Estie (an urban site) were not adequate enough for analysis because the majority of the ANC clients were rural residents. However, data on rural ANC clients attending Jaragedo (a satellite center for Estie) were used for analysis by considering the site as a rural site in consultation with the region.

The sentinel site HIV prevalence values from all available years (1989-2005) were fed into the Epidemic Projection Package (EPP) version 2.39 Beta and HIV prevalence curves that best fit all available data points were obtained for every region, including rural, urban, and Ethiopia (three curves for each region), as well as for the nation (rural, urban, and Ethiopia). For all regions (urban and rural combined), prevalence curves were weighted by the urban/rural regional population sizes. For national prevalence curves, estimates were weighted by urban/rural regional population sizes. The beginning year of the epidemic in urban Ethiopia was assumed to be 1982, and 1984 for rural Ethiopia. Data from 25 urban and 7 rural sites that had been involved in the recent three consecutive rounds of ANC based sentinel HIV surveillance were used for analyzing trends of HIV prevalence for the sites and rural/urban areas. Statistical tests were made using Chi-square for trend to look at significant changes in HIV prevalence.

HIV/AIDS impact and HIV incidence estimates

The SPECTRUM software package was used to estimate the various impacts of HIV/AIDS. For this purpose, demographic SPECTRUM files containing data on population size, age and sex distribution, life expectancy, fertility, and other parameters were created for every region (urban, rural, and total). The data were obtained from the 1994 census and projected for each year between 1982 and 2010 (the last year for which estimates were obtained) using the official assumptions of the Central Statistics Agency (CSA) for population growth, fertility, migration, and other parameters. The EPP-based prevalence estimates were fed into the demographic SPECTRUM files. SPECTRUM then provided estimates for parameters such as AIDS cases and deaths, HIV-positive births, and number of orphans using SPECTRUM default age patterns. National estimates (absolute numbers) were obtained by the addition of the figures of all eleven regions; for rates, combined estimates weighted by population size were obtained.
2.2. OTHER DATA SOURCES

Service-related HIV data

HIV/AIDS data from all other available sources, including blood donors, and VCT, PMTCT, and ART service sites were compiled and analyzed. Summary from the final results of DHS 2005 and preliminary results from BSS 2005 were incorporated as provided. Full reports from these two surveys will be published separately.