Review of the National HIV Surveillance System:

Strengthening the HIV Second Generation Surveillance in Nepal

Report of a Joint review carried out by NCASC, WHO, UNAIDS & FHI

Kathmandu, January 2007

Review of the National HIV Surveillance System:

Strengthening the HIV Second Generation Surveillance in Nepal

Report of a Joint review carried out by NCASC, WHO, UNAIDS & FHI

Kathmandu, January 2007

Table of Contents

List of Tables

List of Figures

Foreword

A joint review of national HIV surveillance was conducted in January 2007, by NCASC, WHO, UNAIDS, FHI, and IOM. A team of national and international experts reviewed planning and implementation of current HIV surveillance activities in Nepal and provided recommendations to strengthen the existing system with a view to Second Generation Surveillance. Key findings and issues were reviewed by the team and shared with stakeholders, leading to a revised comprehensive plan for national Second Generation Surveillance (SGS). The outcomes of the national review are described in the following pages.

This joint review was made possible through the collaboration and commitment of a number of organisations and individuals. The NCASC took a lead role in the review process and several specialists must be acknowledged for providing expertise and technical advice to strengthen the HIV surveillance system in Nepal. They include the Core Group Chair, Dr. Rajendra Pant (NCASC), and experts who traveled to Nepal for the review: Dr Jesus Maria Garcia Calleja (WHO Geneva) and Dr Dimitri Prybylski (FHI Bangkok).. The core team members included Dr Dinesh Binod Pokhrel (NCASC/WHO/IOM), team leader; Dr Laxmi Bilas Acharya (Team Leader, M&E, Surveillance and Research, FHI Nepal), Dr Ramesh Kharel (Senior Medical Officer NCASC), Dr Amaya Maw-Naing (Medical Officer, STI and HIV, WHO Nepal), Isabel Tavitian-Exley (Adviser, Monitoring and Evaluation, UNAIDS Nepal), Sharon Arscott-Mills (Senior Technical Advisor, HIV/AIDS, USAID-Nepal).

Special recognition is extended to all those who cooperated at central, regional, district and local levels, granted access to teams in the field, participated in interviews and contributed their ideas and suggestions. The District Public Health Offices, hospitals, clinics and a large number of organisations, programmes and NGOs provided guidance and valuable insights to this assessment.They are listed in Annex 3.

This document, drafted by the review team, provides an opportunity to take stock of lessons learned and take steps to strengthen and improve the National HIV surveillance system and program, with enhanced leadership, coordination, decision-making, implementation and resource allocation. The collaborative efforts of stakeholders and providers at all levels and in all sectors involved in this review confirm the commitment to HIV prevention and control in Nepal.

Acronyms and Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Clinic
ART	Antiretroviral Therapy
BSS	Behavioural Surveillance Survey
CSW	Commercial Sex Workers
DACC	District AIDS Coordination Committee
DHO	District Health Office
DHS	Demographic Health Survey
DPHO	District Public Health Office
EDP	External Development Partners
EU	European Union
FCHV	Female Community Health Volunteers
FHI	Family Health International
FSW	Female Sex Workers
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IBBS	Integrated Biological and Behavioural Surveys
IDU	Injecting Drug Users
IOM	Institute of Medicine (Tribhuvan University)
INGO	International Non-Governmental Organizations
MARP	Most At Risk Populations
MCH	Maternal and Child Health
MNE	Monitaring and Evaluation
MOHP	Ministry of Health and Population
MSM	Men who have Sex with Men
MSW	Male Sex Workers

NHRC	National Health Research Council
NPHL	National Public Health Laboratory
NCASC	National Centre for AIDS and STD Control
NGO	Non-Governmental Organizations
PHCC	Primary Health Care Centre
PSI	Population Services International
RDS	Respondent-Driven Sampling
RHD	Regional Health Directorate
SACTS	STD/AIDS Counselling and Training Service
SEARO	South East Asia Regional Office (of WHO)
SGS	Second Generation Surveillance
SOP	Standard Operating Procedures
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
TB	Tuberculosis
TLS	Time-Location Sampling
UoH	University of Heidelberg
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNFPA	United Nations Population Fund
UNDP	United Nations Development Fund
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

Executive Summary

It has been documented that Nepal has a concentrated epidemic where most at risk populations presented HIV prevalence above 5%. Data generated through the systematic, ongoing collection of data through National HIV surveillance systems is necessary to understand the dynamics of the epidemic and enable appropriate responses. Surveillance activities need to be adapted as the HIV epidemic evolves. Based on these facts and the principles of HIV Second Generation Surveillance a team of both national and international experts undertook a review of the HIV surveillance system in Nepal. The main objective of the review was to identify the strengths and the gaps of the surveillance system in order to provide recommendations to improve the HIV surveillance system in Nepal.

Using standard tools, document review and interview with key informants, the experts undertook the review of the HIV surveillance system between Feb 20th and March 9th. The main findings and recommendations were presented to civil society, stakeholders and NGOs and recommendations have been incorporated within this report.

Due to the constraints of travelling to the Districts in the far West and East, only two districts (Chitwan and Pokhara) and Kathmandu Valley were visited during the review.

Taking into consideration the Second Generation Surveillance strategies, the review team goal was to maximize what is working, to identify the gaps and to keep the balance between routine surveillance and special surveys. The establishment of a legal framework to set up a routine surveillance system for HIV and STI reporting was considered as one of the cornerstones for improving regular data collection in the country. In order to strengthen HIV surveillance activities and increase the leadership role that National Centre for AIDS and STD Control (NCASC) should play, this entity should be reinforced with some additional technical staff (at least one epidemiologist and data manager). This reinforcement of technical capacity will empower the NCASC to lead the technical working group that will provide the NCASC with the technical advice on surveillance issues, establishing priorities, reviewing surveillance plans and protocols for the collection and management of all information regarding HIV SGS.

The review team felt that it was necessary to reinforce HIV case reporting based on the new HIV advanced disease definition adopted by international consensus in 2006. It also recommended re-instating STI case surveillance reporting.

It was recognized that Nepal has achieved good results collecting information among most at risk populations, both in behavioural and biological data. The review team encouraged the NCASC to support conducting regular surveys among specific populations, but noted that ownership of this information was limited. Therefore the review

team recommended that a database be created with all available information, to be a depository of datasets of surveys conducted in Nepal. Although there is already a significant amount of information the limited use and lack of comprehensive analysis was identified as one of the weaknesses of the NCASC. An annual technical meeting should take place to review available data and update with new findings related to HIV. Finally recognizing the limited availability of funds for HIV surveillance and monitoring and evaluation activities, the review team recommended considering that the budget allocated for strategic information (SGS and M&E) should represent at least 10% of the overall budget of the national HIV control programme.

1 Background

Second Generation Surveillance Principles

Effective public health action for HIV prevention and control requires a comprehensive and accurate understanding of how the virus is being spread. Data generated through the systematic, ongoing collection by the National HIV surveillance systems is necessary to understand the dynamics of the epidemic and enable appropriate responses. However, the task of identifying which data are needed, among which populations, and in which geographic locations in a given country is not always obvious.

As a result, WHO and UNAIDS launched the strategy of Second Generation Surveillance in the year 2000. This initiative has been widely accepted internationally. In recent years, some countries have adopted new terms such as third generation and fourth generation surveillance as National AIDS Programmes have incorporated HIV drug resistance, the monitoring of continuum of care or other additional elements into surveillance. But in any case the principles of a flexible system adapted to specific country situations, the use of multiple data collection sources, and the analysis and use of these data for public health action remain paramount. Countries whose surveillance systems do not monitor relevant and appropriately defined populations are at risk of failing to understand the dynamics of evolving epidemics in time to respond appropriately.

Surveillance activities need to be adapted as the HIV epidemic evolves. No country has such a static epidemic that it is not necessary to reconsider and adjust to the changing nature of the epidemic. Therefore planning for surveillance should be a cyclical process where data needs and data gaps are assessed on an ongoing, regular basis.

Surveillance should be thought of as more than just a series of repeated behavioural and biological surveys. It should be thought of as a system for monitoring HIV and risk behavioural trends over time in populations that influence the spread of HIV infection, in addition to morbidity and mortality. The overall purpose of the various components of HIV surveillance systems should be to provide information about the magnitude and dynamics of the current epidemic and the potential for its further spread in order to generate evidence for prioritizing interventions and evaluating the sum total of their impact.

Taking into account the different levels and categories of the HIV epidemic, WHO/ UNAIDS provided a set of recommendations for surveillance presented in Table 1. This however should not be taken as rigid recommendations and each country should adapt them according to its situation and resources.

Surveillance systems provide the basis for understanding current HIV epidemics, their potential for spread across populations and geographic areas, and the implications for prioritization and implementation of

TABLE 1:	Recommendations for essential surveillance in different epidemic settings		
	HIV surveillance	STI surveillance	Behavioural surveillance
Low-level	• HIV sero-surveillance in identified groups at high risk • Analysis of available blood donor screening data	• Analysis of available STI surveillance data	• Risk behaviour surveys in groups considered at high risk
Concentrated	• HIV sero-surveillance in identified groups at high risk • Annual HIV sero-surveillance in pregnant women in a limited number of urban areas and in bridging populations • nalysis of available blood donor screening data	• Analysis of STI data in groups with risk behaviour and bridging populations	• Repeated surveys in groups with risk behaviour, in bridging populations and in the general population in urban/high exposure areas
Generalized	• Annual HIV sero-surveillance in pregnant women in urban and rural areas • Increase sample size in high volume sites to allow for analysis by age groups	• Analysis of STI surveillance data in groups considered at high risk of HIV infection • Analysis of STI surveillance data in the general population	• Repeated behavioural surveys in groups considered at high risk of HIV infection • Repeated risk behaviour surveys in the general population with a focus on young people

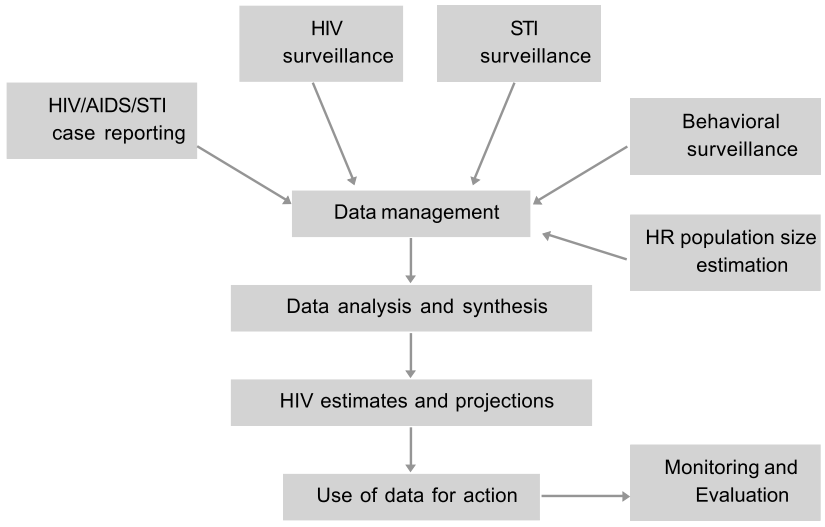
prevention and care interventions that will best mitigate the impact of the epidemic.

The use of surveillance to understand trends and patterns in HIV epidemics is especially important among South Asian countries such as Nepal that are characterized by heterogeneity in terms of the sub-populations affected, the geographical distribution, and their evolution over time. The principle of second-generation surveillance (SGS) recognizes this epidemic diversity and stresses that the design of surveillance systems need to be flexible and adaptive. In this context, focusing surveillance on sub-populations which are at highest risk for infection is critical and behavioural surveillance is a critical 'early warning' system in this regard. Other important components of SGS include HIV/AIDS and STI case reporting, biological surveillance (HIV and STI), and population size estimation (Figure 1).

The multiple objectives and uses of surveillance include:

- To gain an understanding of how HIV is spreading within countries:
  Who is infected with HIV and where? (HIV surveillance)
  Who is being exposed to HIV and where? (behavioural surveillance)
  What is the size of high-risk sub-populations in different areas? (population size estimation)
  What is the source of new infections and how is it changing over time? (case reports, surveillance, models)
- To help prioritize the need for interventions in terms of risk populations and geographic locations - an understanding of the behavioural linkages between high-risk groups and link with qualitative studies is critical.
- To provide information to advocate for interventions and guide resource allocation.

FIGURE 1: Components of Second Generation Surveillance Systems



- To provide data that is useful to monitor and evaluate the national response.

Figure 1 schematically shows the idealized flow of data in a national HIV surveillance system that includes systematized and integrated data management and analysis with resulting estimates and projections used to get a comprehensive picture of the epidemic and 'data for action'.

It is important that national surveillance systems are developed and integrated within a comprehensive monitoring and evaluation framework. Population-based surveillance surveys provide outcome and impact level indicators that are vital to help show the effectiveness of the collective response to the epidemic (Figure 2). It is important that surveillance activities are aligned with the national M&E plan and framework in this respect.

HIV Epidemic in Nepal

Several documents, national and international, have described the AIDS epidemic in Nepal. Based on available data, there is a consensus that Nepal has experienced a concentrated epidemic over the last years based on the numerical proxy and HIV prevalence consistently above 5% in some populations with high risk behaviours and below 1% in the general population (typically measured in the proxy population of ANC attendees). In low-level and concentrated epidemics in Asia that are typified by the focus of HIV infections in most-at-risk populations, there are three key factors that will determine the spread of HIV infection in the general population. First the prevalence rate of HIV among populations with high-risk behaviours, second the size of these populations and third the nature and levels of high-risk sexual and injecting behaviours among these MARP and their inter-relationships between each other and with lower risk populations (Figure 2). STIs are also important co-factors that enhance HIV transmission and need to be considered as well.

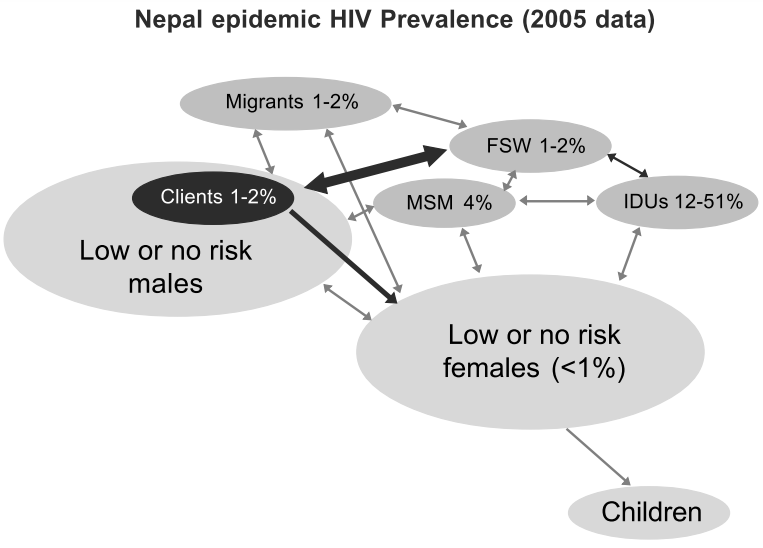
Data on HIV prevalence in different population groups reveal a common pattern. All the studies among ANC attendees and the recent data from PMTCT programmes and blood

donors indicate that HIV prevalence in the general population is well below 1%. On the other hand, a few studies of patients at STI sentinel clinics showed that HIV prevalence was well established in the 1990's with values up to 8% in Mahendranagar in 2001, while the prevalence in female sex workers has been around 2% in the last two surveys 2004 and 2006. A single HIV prevalence survey conducted among MSM found a 4% infection rate in 2004 in Kathmandu. On the other hand, the highest HIV prevalence rates have consistently been found in IDUs in Kathmandu (52%), Pokhara (22%) and across the Terai (12-35%). The high infection rates found among IDU is common through much of Asia and is not surprising given the efficiency of spread through the sharing of contaminated needles/syringes.

The diagram below describes HIV transmission pattern in Nepal (in 2005), using the key factors above. Surveys show very different prevalence rates among different populations, although there is no reliable data for populations with lower risk of HIV infection. Caution should be used in the interpretation of this data, especially among MARP, given that they are based on IBBS conducted in areas where interventions are more focused. Given the heterogeneity of epidemics that typify Asia, these may not be representative of populations in the whole country.

There is sometimes a misconception that the evolution of HIV epidemics from low to concentrated and then to generalized epidemics is an automatic progression. This is not necessarily the case as the categorization of epidemics are made in order to facilitate the understanding of different HIV dynamics and setting up a common glossary among different countries. Thus even if the epidemic in Nepal maybe categorised as concentrated, it does not mean that it will inevitably evolve to be generalized in the future. It is nevertheless possible that more females get infected because there is greater interaction between population groups with higher prevalence and the general population with lower risk for HIV infection.

FIGURE 2: **HIV prevalence rates among different population groups**



2 Objectives

The goal of this joint assessment was to review key issues related to current HIV surveillance system in Nepal and provide recommendations for system strengthening activities.

Specifically, the objectives were:

1. To assess the implementation of the different elements of HIV second generation surveillance in Nepal and identify strengths and gaps in data and information sources within the second generation surveillance strategy.
2. i) to support the centralization of key functions such as the management of different sources of information for a better use of strategic information in relation to HIV and STI surveillance
   ii) to provide recommendations for improving strategic information on HIV infection.
3. To draft the national guidelines for HIV second generation surveillance.

3 Methodology

The findings, issues and recommendations in this report are the result of the following activities:

1. Desk review of available documents and reports.
2. Framework for the evaluation and tool for data collection that were developed by the review team.
3. Feedback from the NCASC teams who carried out field assessments outside Kathmandu (Pokhara and Chitwan Districts) using the standardized assessment tool above.[1]
4. Meetings and discussions -- by the surveillance review team [with key representatives from government departments, international organizations and donors, local NGOs, health care facilities and laboratories in Kathmandu.]
5. Interviews with key informants.

The schedule of visits conducted, people contacted, key informants and documents reviewed are attached in Annex 2,3 and 4. The main limitation of the review has the restrictions of travelling to other areas of the country, mainly selected border areas.

[1] The international surveillance review team could not travel out of the Kathmandu valley due to security concerns.

4 National AIDS Programme: Planning & Coordination

Policy Issues and Resource Allocation

Nepal set up a National AIDS Programme in the mid-1980s and significant progress on surveillance has been made since that time. The National Centre for AIDS and STD Control (NCASC) is the body in the Ministry of Health and Population designated to coordinate the HIV response develop national strategic plans, policies and guidelines, and implement some strategic activities. HIV surveillance activities are fully under the responsibility of the NCASC.

As a result of the complexity of the HIV epidemic in Nepal and socio-behavioural underpinnings, a multi-sector approach has been developed. The complexity of the issues and diverse multi-sector partners, both national and international, involved in HIV control, required strong leadership and high political commitment in order to coordinate an appropriate national response. In order to create strong programmes, national policies, regulations and clear guidelines are needed in all the relevant sectors. Moreover, strong leadership is required to reinforce the implementation of these policies and coordinate a wide-range of activities. The high turnover of senior officers in the NCASC in recent years does hinder the development and implementation of evidence-based strategies, adequate policies and clear guidelines for implementing HIV surveillance activities. Neither does it help co-ordinate activities with multiple organizations involved in collecting, managing analysing and using key HIV-related information. The NCASC has also been working with a very limited budget and staff. Clearly, the NCASC needs to be adequately resourced in order to play stronger leadership and coordination roles in HIV surveillance

According to the information provided to the interviewers, there are no clear national policies or guidelines specific to HIV surveillance. Neither HIV nor AIDS are mandatory notifiable diseases (even though HIV cases are part of the HMIS system). This is believed to be a major reason why the majority of government and non-governmental health units do not report. Only a handful of third-tier hospitals report these events to the NCASC. Most of the cases have been reported by Teku hospital in Kathmandu. On the other hand, VCT centres that have tested several thousand people a year report directly to their donors, but not always (or consistently) to the NCASC.

The situation is similar with STIs. According to key informants STI data are not requested by the NCASC and there is no clearly designated central reporting unit. Thus, etiologically-based STI data not routinely reported by relevant facilities and most available data on STI comes from the Integrated Biological and Behavioural Surveys (IBBS), among specific MARP in limited geographical areas or syndrome diagnoses through the Health Management Information System (HMIS).

The existing public health officer posts and the new recruitment of staff supported by

GFATM funding to the NCASC have been good initiatives which should improve the performance of the NCASC. However these human resources are not sufficient and are dependant on project funding questions the sustainability of its actions in the future. Information systems, for any infectious disease cannot be built standing alone. Clear policies, regulations and guidelines for data collection and flow of information need to be established. A legal framework that clearly establishes the obligations and responsibilities regarding the reporting notification of HIV infections will contribute to better systems.

Coordination

The Regional and Provincial Health Directorates (DRHO), (DPHO), and District Health Offices (DHO) are only involved in HIV surveillance during the collection of data using the HMIS system. The limited budget allocated to the DHO and DPHO is to raising awareness of HIV. In about 10 districts a District AIDS Coordination Committee (DACC) has been established in collaboration with the District Development Committee to coordinate HIV activities. However according to some key informants there seems to be confusion and overlap of activities in certain districts. Nevertheless, there is a clear responsibility for DPHO to report HIV cases via the national HMIS.

The flow of information in the HMIS has not yet been clearly established. The HMIS collected regularly by health services, is channelled to the Epidemiological Directorate. The data collected on HIV infection is very basic as most of the health centres and district level hospitals do not have HIV diagnosis capacities and only report the aggregate number of cases on a periodic basis. The HMIS is under revision and five additional variables related to HIV infection have been suggested for inclusion. However, this is still work in progress and no timetable for implementation in all 75 districts needs to be developed.

The information generated by Second Generation Surveillance Systems is more complex and varied than HIV or AIDS cases. Good technical understanding of data and management of key information is essential to guide prevention activities and understanding the dynamics of HIV in Nepal. Moreover, disseminated feedback of key results from the central level back to the regions, districts, NGOs, and partners in general is important and will continue motivation for data collection. Currently, the data dissemination feedback system in place focuses on central level partner agencies but not on the districts. There is also a website that presents basic information on HIV/AIDS cases reported to the NCASC and other documents (http://www.ncasc.gov.np/). However, the website is outdated regarding HIV epidemiological information

A national M&E technical working group was established in 2006 under the leadership of the NCASC with the participation of the major stakeholder, development partner, and national NGO in Nepal. This technical group developed technical M&E guidelines, which were published in December 2006. These guidelines introduce a list of core indicators and some of the tools to collect data to monitor the National Strategic and Action Plan. These guidelines have yet to be implemented at the local level.

Although the National AIDS Programme must clearly plan and direct all surveillance activities outlined in the Second Generation Surveillance, it is usual and recommended that other partners will be involved in data collection as the system expands. Consolidating these partnerships, the roles and responsibilities of participating bodies, and the funding mechanisms that will underpin them is an urgent task in planning for better coordination of Second Generation Surveillance Systems in Nepal. However the ownership of data over time needs to be emphasized and should remain within the NCASC regardless of which donor or other international organization contributed to the data collection.

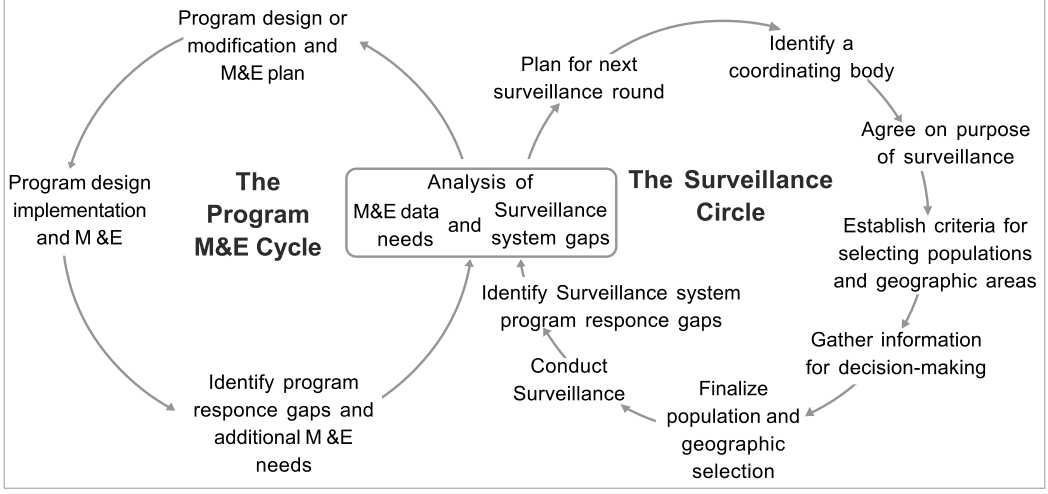
Even though many HIV-related data have been collected in Nepal, the NCASC have only been involved in the direct collection and management of data in a limited way. Currently, the only data available at the NCASC is that of reported HIV and AIDS cases submitted by some implementing partners. This presents several problems with subjective notification, possibility of double reporting, delays and the lack of individual-level reporting forms for HIV and AIDS. While these have started to be addressed, significant work remains.

National HIV surveillance is a cyclical process that always includes a planning phase involving the major surveillance partners before each round of surveillance (Figure 3). These steps outlined below may not necessarily occur in the order listed but they are essential to establish coordination under guidance of technical working group that reviews surveillance activities regularly in the country. Although Figure 3 was developed with reference to community-based repeated cross-sectional surveys of comparable populations over time, a critical part of the surveillance cycle for any data collection activity is to reassess and adjust the surveillance system based on the information released from previous rounds and on the evolving dynamics of the epidemic. It is also critical to monitor the implementation and evaluate the efficacy of the surveillance system itself. Other passive surveillance systems like case reporting also need to be evaluated on a regular basis

HIV Surveillance aims to collect data to monitor the HIV epidemic, but also contributes to measuring the impact of interventions. Both HIV surveillance and M&E activities are directly interrelated as shown in Figure 3. Thus close collaboration and coordination is essential to succeed in both activities and has been initiated in Nepal.

The political conflict over the last few years has contributed its challenges to the current situation and partially explains why the NCASC has not been more directly involved in surveillance-related data collection, management, ownership and analysis. This may also explain why the surveillance system has only been partially implemented. With peace and stability, the NCASC should play a stronger leadership role in the planning and coordination of HIV surveillance activities based on the SGS principles. This reinforcement of surveillance systems should be done building in the existing system in the country and filling the gaps found in this review.

FIGURE 3: The surveillance cycle and its connection with the programme M&E cycle (source: FHI).



Recommendations

- To establish a legal framework making HIV a notifiable disease by the health system facility and Voluntary Counselling and Testing (VCT) centres. These regulations should clearly state reporting obligations, forms and channels of communications between NGOs, private organizations and the public sector.

- The NCASC should play a leading role in planning and coordinating surveillance activities in partnership with technical organizations. A full-time 'national surveillance officer' should be appointed as a point-person for this role within the NCASC. Having dedicated staff members with strong technical capacity will greatly help improve the NCASC's ability to carry out these functions in a coordinated manner.

- The NCASC surveillance officer should closely work with the recently appointed the NCASC M&E officer as these two functions and roles are closely related (see Figure 3). Population-based surveillance data are vital to the monitoring & evaluation of outcomes and impact of the national response and provide data that should be used on an ongoing cyclical basis for programme M&E.

- To strengthen the surveillance technical working group that provides technical advice on surveillance issues to the NCASC, outline surveillance priorities, needs for training, review surveillance protocols etc for the collection and management of all information regarding HIV SGS. The NCASC should chair the national surveillance working group.

- The composition of the surveillance working group should include (a) national and international institutions/bodies who support surveillance and whose interests will be served by the surveillance system, (b) researchers who can advise on surveillance methodology and (c) technical advisers from international agencies such as UNAIDS and WHO, INGOs and/or key donors.

- The role of the surveillance working group should be to (a) serve as a coordinating committee for the various agencies involved in funding and/or implementing surveillance, (b) make decisions about population selection and geographic coverage, (c) ensure quality of the overall system, (d) maintain institutional memory of surveillance activities and databases and (e) maximize data dissemination and use, (f) review appropriateness of system over time.

- To increase and plan capacity building on HIV SGS by training of key health officers responsible for implementing key activities.

- To proceed with an external review of the Strategic Information component every two-to-three years

5 HIV and AIDS Case Reporting

Findings

The HIV case reporting was initiated in 1988, and by the end of 2006 close to 9 000 HIV+ individuals had been reported to the NCASC. This information was obtained mostly from hospitals and VCT centres over the last years. However there is no clear difference made between HIV and AIDS cases. AIDS case reports are mostly obtained from a major hospital in Kathmandu (Teku hospital) via registers. There is no individual-level HIV case report form currently in use.

All VCT centres are supposed to report new HIV cases to the NCASC but the reality is that only some of them are reporting regularly. During interviews with NGOs facilities, it was clearly stated that VCT centres report to their donors but some do not see any added value or benefit in reporting to the NCASC (Interview with the Director of SACTS *"where is my benefit*" was the question raised by the NGO). Coordination between the NGOs and public sector in the reporting system seems to vary depending on the district.

The HIV case line-listing report forms currently being used were designed over ten years ago and are currently being revised to allow for standardized codified completion. The anonymous information collected from these HIV positive cases are age, sex, and profession, address and risk group. Registers do not have standard codes for the mode of transmission or other characteristics and therefore data collection varies across the registers and the reference hospitals because there is no standard procedure to collect these variables. A new format was developed in 2006 and consists of a monthly line listing of new HIV cases attached to the monthly VCT monitoring format. The advantages and disadvantages to using an individual format versus a line listing have to be considered to facilitate reporting and the flow of data in the context of Nepal. While individual-level reports are typically preferable to line-listing because of the tendency for reporting facilities to wait until line-listing reports are full before reporting, the added paperwork and training required may or may not be feasible in Nepal,

Both routine HIV and AIDS case reporting require significant improvement. Currently, only selected VCT centres and the NPHL report HIV cases. PMTCT services have not yet been included nor have other potential reporting sources e.g. VCT services linked to ART services. The NCASC policy stating which institutions (government, NGO and private sector) should be reporting HIV cases needs to be clarified and done with practical Issues and feasibility in mind.

WHO-recommended variables (and associated pre-coding) should be used for HIV case reporting, It is crucial that a standardized 'mode of transmission' variable be added (and not mixed with occupational categories or risk groups). WHO guidelines related to the hierarchal manner on how this 'mode of transmission' variable should be assigned needs to be made clear in the SGS guidelines. The current available modes of transmission information are very limited and difficult to interpret.

Double counting is also an issue being dealt with as individuals testing HIV-positive often attend different services for confirmation of test results or to access prevention, care and treatment services. There is currently no standard system of unique identification to avoid this potential multiple reporting of the same people but the national level Monitoring and Evaluation Technical Working Group (M&ETWG) in identifying options that could be used for Nepal.

Although passive reporting is of limited use, and VCT data have their own inherent limitations, a passive reporting system that is timely and complete and has high coverage, can provide useful additional information related to trends in HIV-positive rates. Stratifying or adjusting the data in the analysis by gender, age and mode of transmission can help eliminate some biases associated with potential changes in the characteristics of VCT clients over time. With the expansion of VCT services, HIV case reporting will become a local source of HIV information easily available at district and provincial levels and will need to be made available for district level use. Nepal has been increasing the number of VCT, ART and MTCT centres, and this will increase the number of people aware of their HIV status.

Over the past two years a consultative process for the revision of HIV and AIDS case definition has been carried out by WHO in all regions. The final consensus was that a new HIV advanced disease should be reported by countries[2] . Advanced HIV infection (including AIDS) should be reported for all cases not previously reported,when the infection is first confirmed in any child or adult, according to a standard case definition. The diagnosis of advanced HIV infection is based upon clinical or immunological (CD4) criteria. The summary of recommended reporting criteria for diagnosis is as follows:

TABLE 2: WHO case definition for HIV infection.

Adults and adolescents and children > 18 months
HIV infection is diagnosed based on: • a positive HIV antibody testing (rapid or laboratory-based enzyme immunoassay). This is usually confirmed using a second HIV antibody test (rapid or laboratory-based enzyme immunoassay) relying on different antigens or different operating characteristics than the initial test And / or • a positive virologic test for HIV or its components (HIV-RNA or HIV-DNA or ultra-sensitive HIV p24 antigen) confirmed by a second virologic test obtained from a separate determination
Children younger than 18 months
HIV infection is diagnosed based on: • a positive virologic test for HIV or its components (HIV-RNA or HIV-DNA or ultra-sensitive HIV p24 antigen) confirmed by a second virologic test obtained from a separate determination taken more than four weeks after birth

2 WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related disease in adults and children. Geneva, World Health Organization, 2006 (www.who.int/entity/hiv/pub/guidelines/WHO%20HIV%20Staging.pdf accessed 13 February 2007).

TABLE 3:	Criteria for diagnosis of advanced HIV disease (including AIDS[a]) for reporting for adults and children.
Clinical criteria for a diagnosis of advanced HIV in adults and children with confirmed HIV infection	
Presumptive or definitive diagnosis of any one stage 3 or 4 condition	
Immunological criteria for diagnosing advanced HIV disease in adults and children five years or older with confirmed HIV infection	
CD4 count less than 350 per mm^3 in an adult or child	
Immunological criteria for diagnosis in a child younger than five years with confirmed HIV infection	
%CD4 < 30 among those younger than 12 months of age %CD4 < 25 among those aged 12-35 months %CD4 < 20 among those aged 35-59 months	

[a] AIDS in adults and children of any age is defined as: clinical diagnosis (presumptive or definitive) of any stage 4 condition with confirmed HIV infection; OR immunologic criteria in adults and children with confirmed HIV infection and = 5 years of age; first-ever documented % CD4 count < 200 per mm^3 or % CD4 + < 15; or among children aged 12-35 months first-ever documented % CD4 + < 20; or among infants < 12 months of age first-ever documented % CD4 + < 25.

Recommendations

- Pilot HIV advanced infection and repeating on a limited scale initially before expanding HIV advanced infection reporting. This recommendation is based on the practical constraints of Nepal, including feasibility. This could be done as a prelude to an eventual national scale-up if the pilot is successful.
- Introduce the HIV case reporting form to the main referral hospitals offering VCT in the country, establishing hand communicating mechanisms for reporting and transmission of information. A form is already proposed within the M&E national guidelines and being used.
- Establish mechanisms to limit double counting (such as unique national identifier number, reporting only from places of testing).
- To make aggregate data available on HIV case reporting at district DPHO and PHD levels. The mechanisms for communication should be specified e.g. [whether information should be transmitted to the DPHO and PHD directly by the VCT services or by the central level after compilation.]

6 STI Case Reporting

Findings

A national STI programme review was conducted in November 2006. The review was comprehensive and provides clear recommendations to improve STI management and reporting.

The STI programme is under the responsibility of the NCASC. It received support from the University of Heidelberg from 1993 to 2001. Since then, most of the clinical services reporting mechanisms established then have collapsed. The 2006 external review highlighted the need to revitalize all components of the STI programme.

No routine data on STI is available at the NCASC. Even if a syndrome reporting format is still available (with additional etiologic reporting when available), they are seldom completed or compiled or analysed at the central level. At the NCASC, the responsibility for STI reporting with one person in charge of data is not clearly established. The revitalization of STI routine case reporting should be envisaged in the centre of overall revitalization of the STI programme.

At the field level, a number of specialized units (dermatology departments, reference MCH hospitals, NGOs services for sex workers and clients, etc. have services for STI dedicated management and have data available. This represents an invaluable source of information regarding the risk of sexual transmission in the country and for early warning purposes. The capacity for etiologic diagnosis is limited, which makes syndrome reporting preferable.

Additional sources of data on STI could also be made available. There is a national policy for routine screening of syphilis among pregnant women. However its application appears to be limited by the cost of the test, charged to women in most of the places. Data on syphilis screening for pregnant women are not collected complied nor reported to the NCASC. Links with the MCH programme need to be developed to strengthen this routine reporting to the NCASC. Similarly, blood donors are screened for HIV, syphilis, hepatitis B and C, and data is centralized at the Nepal Red Cross Society. This information is not automatically or regularly transmitted to the NCASC.

The review undertaken in 2006 contains more detailed recommendations to improve the STI control programme and STI-related information systems. These recommendations provide an outline that will need to be refined and detailed before implementation.

Recommendations

- STI syndrome routine reporting needs to be established in parallel with the revitalization of the STI programme with proper training on syndromic approach, drug supplies and accurate management of STI cases.
- STI syndrome routine reporting (and/or etiological reporting if diagnosis tests are performed) should be limited for now to the services where accurate management is provided and data available (dermatology departments, referral MCH hospitals, NGOs service, etc.).
- Additional sources of information should be made available to the NCASC on a regular basis (e.g. 6 months). This includes the results of syphilis screening among pregnant women and of syphilis and hepatitis testing among blood donors.

7 Sentinel Surveillance

Findings

Early in the global HIV epidemic when HIV testing became available, WHO recommended establishing sentinel sites to detect HIV infections. Facility-based surveillance was the standard used by most countries due to its accessibility, feasibility and cost. UNAIDS/WHO publication on strategies for second generation surveillance have maintained, sentinel surveillance remains as a core strategy for countries but has to be adapted to specific epidemic stages. Even though facility-based ANC sentinel surveillance does not represent the whole population with a potential bias due to access and use of health services, it is still useful to monitor trends. These systems are facility-based 'first generation' surveillance data sources with well recognized biases, but they remain useful to monitor trends in HIV prevalence if used strategically in suspected 'hot spot' geographic areas. "Hot spots" are areas with high HIV prevalence among populations with high risk behaviours that are likely to lead to high rates of HIV transmission.

ANC surveillance has been used as a proxy data source for the adult general population, especially in the case of generalized epidemics, as it is a source of low cost data for the general population. There are 3 major caveats involved in using ANC sentinel data and they are more useful for monitoring trends in the general population than providing conclusive data. One of the most important factors related to how representative the ANC sentinel data is the ANC attendance rate among pregnant women. Considerations involved in using ANC data for trend analysis relate to the consistency of data collection methods and the characteristics of ANC attendees over time. Biases that are consistent over time can still make data useful to monitoring trends. One of the main issues for ANC surveillance in Nepal is the coverage of ANC services. According to different sources, ANC coverage varies between 20 and 40% although in Kathmandu it is much higher according to key informants.

The Maternity Hospital in Kathmandu conducts HIV testing as a general policy for all pregnant women making their first ANC visit. A key issue that requires further evaluation is determining the current practice regarding routine syphilis testing among ANC attendees. A national policy is said to be in place for this but interviews suggest that, in reality, this does not typically occur due in part to the cost of HIV testing. If anonymous routine syphilis testing is being conducted and the blood samples are being stored then they could be used for subsequent unlinked HIV testing.

Sentinel surveillance was conducted in Nepal for some years in the 1990s among ANC and STI patients. The last surveys conducted among ANC were in 1999 in Katmandu (Bir Hospital, HIV-positive rate = 0.3% N: 300) and Pokhara in 2002 (HIV-positivity rate = 0.2% N: 420).

Clients of Female Sex Workers (FSW) are a crucial 'bridging' population and areas where

the commercial sex industry is particularly active and there are large numbers of FSWs and clients deserve particular attention. STI patients are an important bridge group and useful as early warning to detect any increase in HIV rates in countries. Clients of FSW have higher exposure to STIs which are a co-factor that facilitates the transmission of HIV. Unfortunately, STI patients are not representative of any one single population and are typically a heterogeneous population. For example, individuals attending STI clinics may be migrants, sex-workers, the clients of sex workers, IDU and/or MSM. Nevertheless, in Nepal STI patients had the highest HIV prevalence besides the IDU population group.

With regard to STI clinic sentinel data, the latest results are available from 6 sites in 2001. HIV prevalence rates were found to range from 0% in Kathmandu to 5.1% in Nepalgunj and 8.3% in Mahendranagar. Reports were not available to review the methods used to collect information or the HIV testing strategies used.

Recommendations

- Set up limited sentinel surveillance sites for STI patients (one or two) in areas showing highest prevalence rates among MARP or in districts with high levels of sexual networking or high migration. Taking into account the high HIV levels in the high migration areas of Nepalgunj and Mahendranagar, it will make sense to include these areas as STI sentinel sites as it was done previously

- Monitor HIV trends among ANC attendees at the Maternity hospital in Kathmandu disaggregated by residence and age.

8 Community-based HIV, STI and Behavioural Surveillance (BBS and IBBS)

Findings

Repeated rounds of behavioural surveillance surveys (BSS) and integrated bio-behavioural surveys (IBBS) have been conducted among key Most at Risk Population Groups (MARP) (i.e., IDUs, FSWs, client proxy groups, MSM, and migrants – the latter since 2003 in Nepaljung) using rigorous sampling methodologies. These have mostly been done by FHI using Time Location Sampling (TLS) or Respondent-Driven Sampling (RDS) which are both recommended for hard-to-reach populations. These surveys were supported by FHI/New ERA (USAID) for programme M&E purposes and to inform the evolution of the epidemic in specific population groups (table of results in Annex 4). Recently BSS has also been conducted among prisoners (CREPHA), the police (New ERA/FHI/PSI) and armed forces (New ERA/FHI), and even youth (UNAIDS, UNICEF and UNDP) in some districts.

The quality of these surveys and the information collected among MARP is very robust and useful in concentrated epidemics in Nepal. Moreover, reports based on the detailed analysis of the survey results are available. These surveys need to be maintained and expanded over time but it is important that FHI/New ERA are not the only organizations to conduct these surveys. This may not be sustainable in the future and other options for conducting these surveys should be explored.

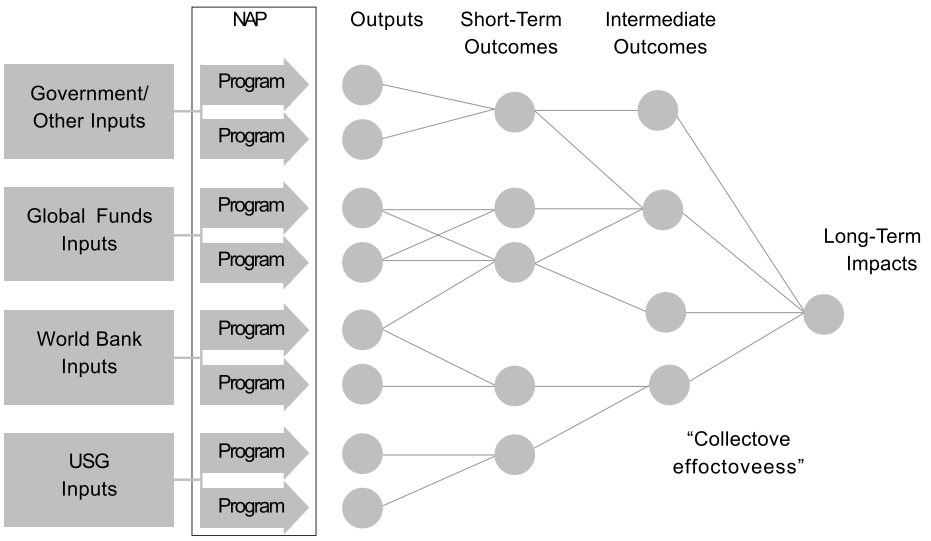
Using IBBS and BSS as a tool to get standardized 'exposure to intervention' data systematically over time has been important in getting conclusive data from MARP on prevention programme we coverage, behavioural outcomes and impact data (i.e. HIV and STI prevalence) to help measure 'collective effectiveness' via the national M&E system and inform the progress of the national response (Figure 4).

Financial resources and human capacity are always limited even in high income countries and strategic resource allocation decision need to be made. It is not possible to conduct IBSS in all districts of the country and in all key populations. The consistency of population groups, locations and methods and tools used are crucial for a high-quality surveillance system.

Limited data strongly suggests that migration seems to play an important role in HIV epidemic in Nepal but this has been difficult to quantify. Rigorous studies have been sparsely reported although some surveys among migrants have been recently conducted and constitute a big step forward.

In the last few years Men who have Sex with Men (MSM) has been recognized as an important high-risk population in Nepal. As in many parts of Asia, MSM are a key MARP given the high-levels of sexual risk behaviour practiced, reflected in higher HIV prevalence rates, low condom use figures and diverse sexual networks with both male and female sexual partners. An IBBS study, conducted among MSM in Kathmandu in 2004 documented a HIV prevalence of 4% and high-levels of risky sexual partnerships with

FIGURE 4: Multi-agency M&E Logic Model



Adapted from Deborah Rugg, CDC/GAP - Adapted from Milstein & Kreuter. A Summary Outline of Logic Models: What are They and What Can They Do for Planning and Evaluation? CDC 2000.

regular, non-regular and commercial partners of both genders. Another IBBS study is planned for 2007. Qualitative studies are also planned to better document sexual networking and risk behaviour among MSM and better guide interventions.

The Demographic Health Survey (DHS) is conducted every 5 years among both men and women in household samples. The DHS has an HIV/AIDS module for both women and men which can provide useful surveillance information on key indicators among the general population. This is an important data source for indication patterns on socio-demographics, sexual risk behaviours and migration status. How much these data can be disaggregated by age, sex and geographic sampling location to give provincial or regional estimates should be explored as well consideration of the loss of statistical precision that occurs in the process. However it is unlikely that no such data will be available at district level. The preliminary report only was available to the review team, and only the knowledge section on HIV/AIDS. The results and breakdown by age and location on key sexual behaviour indicators would provide useful information. It needs to be confirmed that questions of migration status and visits to sex workers were included in the Nepal DHS. It is also important to keep in mind that for low-level and concentrated epidemics focused on MARP , household-based data will likely miss non-household based segments of these populations which has been found to be a substantial source of bias in Asian countries with epidemics among sub-populations practicing high-risk behaviours (i.e. FSW, IDU, MSM, and even proxy male client groups such as the armed forces and police). Thus the DHS is not a tool for monitoring behaviours on hard-to-reach populations.

Recommendations

- The IBBS of key MARP should be continued in pre-existing sites every two years and expanded in suspected emerging 'hot-spot' areas to the extent possible with the resources available.
- The NCASC should be a central repository for surveillance-related datasets conducted in the country including IBBS and BSS and other population-based surveys such as DHS.
- The NCASC should play a more direct and active role in the data management, analysis, and dissemination of population-based biological and behavioural surveillance-related activities.
- Coordinate surveillance activities aligned with the national M&E plan and framework..
- It is important that the capacity of additional local research organizations and/or universities be strengthened to diversify the number of organizations that have the technical capacity to conduct BSS/IBBS surveys using probability-based sampling with developed and standardized protocols, operational procedures and tight monitoring and supervision of field-based data collection and data processing/analysis. The NCASC can then contract out to these organizations able to conduct the surveys.
- More pronounced effort is needed to disseminate the results to (1) a range of organizations (both government and NGO) to inform programme design and (2) to the communities of affected populations so that they can benefit from the results. (3) to the district level.
- *Develop standardized protocols for HIV surveillance activities that should be followed by partners and stakeholders. All surveillance protocols should be reviewed and signed off for technical and ethical review purposes by the National Health Research Council (NHRC).*
- Continue studying migration and to include districts with high migration in the IBSS surveys. Qualitative studies will contribute to understand several networking and mobility patterns to inform surveillance and interventions.
- Include questions on migration, use of injecting drug use and visiting sex workers in the next round of DHS, if this has not been done previously.
- Conduct national epidemiological synthesis of all available data (IBBS, BSS, DHS and other data sources), led by the NCASC on an annual basis.

9 Population Size Estimation and National HIV Estimations, Impact

Findings

Two rounds of national estimates of HIV infection have been chaired and coordinated by the NCASC with broad involvement of key partner organizations and community representative groups. This is a crucial data source to understand the evolution of the epidemic and its magnitude in Nepal. It is also a crucial input for the UNAIDS/WHO estimation and projections process. Population size estimation should be seen as an ongoing and systematic process. The process should not be seen simply as a 'point-in-time' special study or exercise and the methods and data sources used should be repeatable over time. As with behavioural and biological surveillance, it is important that population size estimation activities are systematically and routinely conducted to provide updated data that can be monitored over time.

Civil society has been involved in this process of estimating the burden of HIV in the country. This involvement should be continued in future estimations. Knowledge of the burden of HIV infection at national and regional levels is important information for the planning of interventions and the allocation of resources to mitigate HIV infection. Estimating levels of HIV infection in different sub-populations and regions is hardly a perfect science and is heavily based on crude assumptions in the absence of rigorous data. However UNAIDS and WHO Global HIV surveillance working group on HIV/AIDS and STI have published recommended methods and tools for HIV/AIDS estimations according to the level of HIV infection. Moreover UNAIDS and WHO jointly with main global partners such as FHI, USAID, CDC , UNICEF and other organizations have conducted country specific training to transfer knowledge and increase capacity at country level.

Several participants from the NCASC have took part in this process in 2003 and 2005 training rounds in Bangkok and have used these methods and tools to conduct national estimates and projections with technical support from FHI. The report issued by the NCASC in 2005 used the internationally-recommended methods and tools promoted by UNAIDS/WHO with technical assistance from FHI, USAID and CREPHA. The obvious limitations of this national exercise are the available data for the population size estimates and HIV prevalence among key populations at the regional-level. The report describes migrants as the main population group from the overall HIV/AIDS estimates in Nepal (46%). However this population group also has the most limited available data and the most imprecise information for both population size and HIV prevalence.

The report only presents the number of HIV infections in the country with high and low level estimates. Given the uncertainty around the data available for the HIV estimates process it is recommended to present the possible ranges of uncertainty for at-risk population sizes.

A chapter should be added to the report on the impact of the epidemic on the country, including the number of estimated deaths, new HIV infections, ART needs in both children and adults and other key variables.

Because the methods and tools for HIV estimates are under constant review it will be useful to update these impact estimates as new information becomes available.

Recommendations

- It is important that population size estimates are based on data-driven methods such as multiplier methods, enumeration, capture-recapture and nomination methods to the extent possible. In areas where data are not available for this, the Delphi method should be used to ascertain estimates based on expert opinions from a diverse range of key informants.

- Multiplier methods are the best option as they can be made into routines in parallel with IBBS/BSS surveys purposes by linking 'exposure to intervention' survey data with appropriate service delivery data where these data are available. Special studies using expensive but rigorous methodologies can supplement these data.

- Standardize case definitions for MARP that are used in BSS/IBBS for population size estimation processes. This will allow for greater comparability between population size and HIV prevalence data sources when estimating the number of PLHIV by risk population

- It is very important that a national plan and framework for population size estimation continues to be developed with consensus and buy-in from relevant government and non-governmental agencies and bodies and representation from community groups. Involving representatives from the MARP communities themselves (especially PLHIV) is also important in order to get their support for the size estimation activities and enlist their help and support in the conduct of the size estimation activities to understand social network dynamics, mapping of key venues and sites, etc. In order to get this necessary buy-in and cooperation it will also be important to ensure that the data collected will not be used negatively to harm the MARP communities.

- Triangulating results of size estimations by using multiple methods based on different data sources is highly recommended for corroborating and helping validate estimates.

- Update the 2005 HIV estimates with the updated tools proposed by UNAIDS/WHO after the Bangkok training workshop organized by UNAIDS/WHO through a national consensus meeting.

- Add impact level indicators on the HIV estimates with outputs of Spectrum and key variables on mortality, new infections and ART needs.

- Increase capacity of the country for HIV estimates with the participation of country national representatives in the regional training organized by UNAIDS/WHO.

10 Other Data Sources

Blood Donors

Blood donors are screened routinely for HIV infection and information should be available by age and sex. Blood safety programs are by definition designed to avoid the collection of blood from populations with high risk behaviours. On the other hand, most of the donors are men (89%) and the overall the prevalence is quite low (0.3%). Nevertheless the analysis of HIV prevalence trends over time as well as sex and geographical distribution will help monitor the blood safety programme and serve as a potentially useful secondary data source to monitor changes in HIV prevalence in the general population.

Tuberculosis Patients

The interaction between HIV and tuberculosis (TB) is well documented, with HIV infection the strongest known risk factor for TB disease. HIV fuels the tuberculosis epidemic, increasing both the risk of reactivation of latent mycobacterium TB infection and the risk of rapidly progressive TB developing soon after infection or re-infection. TB rates may not increase, and HIV prevalence may not be elevated, among TB patients early in an HIV epidemic or in low-level HIV epidemics. This may also be the situation in countries where HIV infection is concentrated in high-risk populations.

However HIV prevalence rates among TB patients are an indicator of the level and maturity of the HIV epidemic, as well as an indicator of the effect of HIV on health-care services. Moreover, with the access to better care and ART, the HIV/TB strategy proposed by WHO has been to test TB patients for HIV infection. HIV surveillance among TB patients may help a country assess the impact of HIV on the TB epidemic and this information can inform the targeting of resources and the planning of health-care services for people who are infected with HIV and TB. This information also allows countries to monitor the effectiveness of joint strategies aimed at reducing TB and HIV infections.

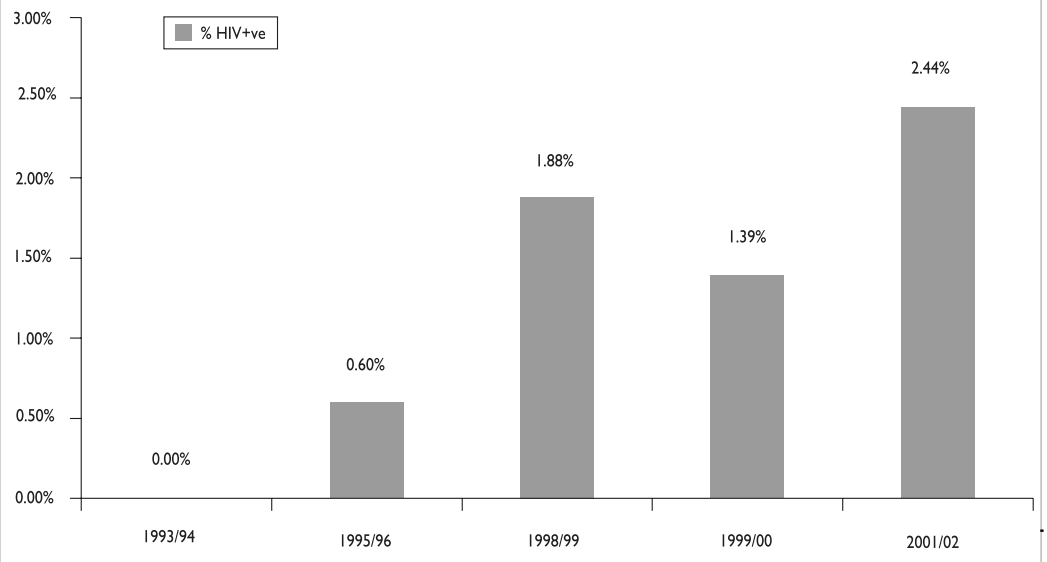
The National Tuberculosis Centre has seen conducting HIV surveillance among new TB cases in five regions. The first surveys conducted on TB patients in Nepal were in 1993-94 and no HIV was detected. However in 2001-02, HIV prevalence had risen to 2.44% among over 1000 patients tested (see Figure 5). No geographical distribution was reported although it was acknowledged that there are regional differences.

PMTCT patients

A national policy to currently offers HIV testing to all pregnant women at at existing ANC sites implementing PMTCT ANC sites. However ANC sites conducting systematic routine HIV testing among pregnant women are limited to six established PMTCT sites across Nepal. The low coverage rates for ANC services and the referral patterns for PMTCT patients (women may come from out of the typical catchments area as there only

a few centres) plus the migration patterns and other factors make this information biased for HIV surveillance. Nevertheless this programmatic data should be monitored to understand where these women get infected and to monitor the success of the programme.

FIGURE 5: HIV prevalence among new TB patients



Recommendations

- Monitor HIV prevalence among blood donors including sex and geographical distribution and ensure availability of blood donor data at the NCASC.
- Continue HIV surveillance among new cases of TB and report by sex and geographical distribution. All positive cases need to be reported to the NCASC.
- Monitor 'prevalence rate' in the PMTCT programme and collect additional information from women attending these services.

11 Roles & Responsabilities: Data Management, Analysis and Use

Findings

There is a good amount of information available in the country, but data is dispersed among NGOs, donors, the NCASC and local research institutions. There is no central repository for data collected. Once data are centralized within the NCASC, the volume and complexity of data generated by this well-functioning Second Generation Surveillance System will increase. The management, analysis and interpretation of these data will require greater national centralization, coordination and direction from the NCASC with clear guidelines for coordination and integration.

The national M&E and Surveillance Technical Working Groups (M&ETWG) are catalysing this effort and attempting to integrate data at national level. However there is no synthesis of information at the central level, neither does the NCASC have data sets of all studies and surveillance activities implemented in the country. The few DPHO and DACC interviewed confirmed that there is no feed back loop with information from the central level. This is important, and is essential that providers and generators of information receive feed back.

Apart from the programmes and interventions that directly collect and benefit from information, there is little evidence on how the information collected within the HIV surveillance system is used for planning. However, M&ETWG has recently developed a consolidated framework currently including all data for use in strategic planning, target-setting and proposal developments.

It is important that surveillance is seen as a process or cycle and not a product (Figure 3). Moreover, the strategic planning of surveillance can take as much or more time as implementing field activities. The budgeting, time, technical assistance must be considered for all steps, not just the data collection itself. The back-end activities of the surveillance cycle (i.e. data analysis and interpretation) have been neglected within the NCASC and also need strengthening.

Recommendations

- Clear policies and procedures should guide the centralized data management from the various surveillance data sources (shown in Figure 2)
- Set up a database to collect all the relevant information for HIV surveillance and surveys to allow further analysis.
- Gather and synthesize other relevant information. Conduct an annual desk review and synthesis of newly released or conducted behavioural and sero-prevalence studies. This review should include a discussion of programmatic implications of the findings. Maintain an updated bibliography of such data sources and their origins. An annual report compiling all the information available and highlighting the gaps should be made available.
- Annual data use workshop. Conduct an annual data use workshop, building on the findings of the desk review. This workshop should focus on the uses of the data at national programme, prevention programme and local levels, with an emphasis on ensuring advocacy and implementation of appropriate policies and programmes.
- Annual technical review meeting. To continue an annual technical meeting to review and adopt the surveillance systems to the epidemic. The meeting will examine existing HIV surveillance data collection methods, instruments, and reporting systems for both low-risk and high-risk groups and suggest changes to improve the usefulness of the information for national programme evaluation and to allow for better interpretation of the data collected.

12 Laboratory

Findings

The HIV strategy used for surveillance in Nepal is based on a two-test strategy as recommended by WHO/UNAIDS. Capillus and Determine are commonly used. Hospitals and VCT centres seems to follow this strategy according to the information received.

The National Public Health Laboratory (NPHL) acts as national reference laboratory and provides international quality assurance with an international laboratory based in Bangkok. In principle all the HIV positive cases, for HIV diagnosis, and 10% of HIV negatives should be retested by the NPHL for quality assurance purposes. In spite of having in place this quality assurance programme, the reviewers were told that many of the HIV positive samples sent to the NPHL have not been retested because of lack of reagents. The samples are kept in a freezer at the NPHL.

Taking into account the regular power cuts in the country, the quality assurance of the laboratory testing is a critical component. There was confirmation that all VCT centres and laboratories use the same HIV tests kits in the country but the reviewers could not verify this because of travel restrictions. However it is important that if new HIV test kits are introduced in the country or new algorithms are used for HIV surveillance or diagnosis, these new algorithms be validated.

Recommendations

- Ensure that the Quality Assurance Programme for HIV testing is implemented in the country
- Evaluate the testing algorithms and validate then if new HIV tests are introduced in the country.
- Ensure that planning, forecasting and resource mobilization cover appropriate HIV diagnostics for quality assurance purposes.

13 Funding HIV Second Generation Surveillance

Findings

HIV second generation surveillance data are a cornerstone of the national response to provide information to estimate the magnitude and dynamics of the epidemic in the country and on information impact indicators that feed into the national M&E system. However in many countries, (and Nepal is no exception), funding for HIV surveillance activities is inadequate given the importance of the epidemic and the scope of activities required to monitor the epidemic in an appropriate manner. On the other hand, stakeholders and partners expect that the NCASC to provide good information.

In Nepal most of the activities performed under the national AIDS strategy are funded by external partners. There is a need for greater advocacy to mobilize national and international resources to strengthen the NCASC's capacity in HIV second generation surveillance.

Recommendations

- Review budget allocations to second generation surveillance in Nepal and ensure that the budget allocated for strategic information (2GS and M&E) represents at least 10% of the overall budget of the national HIV control programme.
- Secure from the national budget, the staff positions necessary for strategic information in the NCASC.
- Sanction an additional appropriate post in the MOH to support strategic information activities including HIV surveillance.

14 Summary of Key Recommendations

Policy, Planning and Coordination

- Establish a legal framework to make HIV a notifiable disease to be reported by the public health system and VCT centres. These regulations should clearly state reporting obligations as well as the forms and channels of communications between NGOs, private organizations and public sector.
- The NCASC should play a leading role in planning and coordinating surveillance activities in coordination with its technical partner organizations.
- Strengthen the surveillance technical working group that will provide the NCASC the technical advice on surveillance issues, help outline and establish surveillance priorities, reviewing surveillance plans protocols for the collection and management of all information regarding HIV SGS needs for training
- Sanction a full-time 'national surveillance officer', and a data manager position to be appointed as a point-person for this role within the NCASC.

HIV and STI case reporting

- Strengthen and expand HIV and STI advanced infection reporting on a pilot basis to begin with – this is a recommendation based on the practical constraints in Nepal with feasibility a major consideration. This could be done as a prelude to eventual national scale-up if the pilot is successful.
- Introduce STI syndromic routine reporting and/or etiological reporting if diagnosis tests are performed. This should be limited to the services where accurate management is provided and data is available (dermatology departments, referral MCH hospitals, NGOs service).

Sentinel Surveillance

- Set up limited sentinel sites for STI patients (one or two) in areas showing highest prevalence rates among MARP or in districts with high migration. Taking into account the high levels of HIV in early surveys in Nepalgunj and Mahendragar, these two sites would be recommended.

Community Based Surveillance (IBSS)

- Conduct a synthesis with the revision and publication of data available of key IBSS: a general overview and specific for key population groups.
- Maintain the surveys among MARP , every two years. A priority will be to obtain representative biological and behavioural surveillance data from migrants - a well-recognized vulnerable population particularly in the West and Far-West.

Estimation of population sizes and HIV National Estimates

- Update the 2005 HIV estimates with the tools proposed by UNAIDS/WHO Bangkok after the training workshop organized by UNAIDS/WHO [through a national consensus meeting].
- Add impact level indicators on the HIV estimates with the outputs of Spectrum with the key variables on mortality, new infections and ART needs.
- Standardize case definitions for MARP used in BSS/IBBS for population size estimation processes. This will allow for greater comparability between population size and HIV prevalence data sources when estimating the number of PLHIV by risk population

Other data sources

- Continue HIV surveillance among new cases of TB and report by sex and geographical distribution. All positive cases need to be reported to the NCASC.
- Blood donor data to be made available to the NCASC on regular basis.

Data Management and Use

- Undertake an annual data use workshop. Conduct annual workshop, using findings from the desk review and focus on the uses of the data at national programme, prevention programme and local levels, with an emphasis on ensuring advocacy and implementation of appropriate policies and programmes.
- Organize an annual technical review meeting to review surveillance systems. The meeting would examine the existing HIV surveillance data collection methods, instruments, and reporting systems for both low-risk and high-risk groups and suggest changes to improve the availability and usefulness of information for national programme evaluation and to allow for better interpretation of the data collected.

Resource Allocation

- Review budget allocations to second generation surveillance in Nepal and ensure that the budget allocated for strategic information (2GS and M&E) represent at least 10% of the overall budget of the national HIV control programme.

15 References

1. Nepal Red Cross Society Central Blood Bank, Kathmandu
2. National Estimates of Adult HIV Infections 2005, National Centre for AIDS and STI Control and Family Health International, Kathmandu.
3. STD and HIV Prevalence Survey among Female Sex Workers and Truckers on Highway Routes in the Terai, Nepal, New ERA in collaboration with STD/AIDS Counselling and Training Services (SACTS), May 2000
4. Integrated Bio-behavioural Survey (IBBS) among Female Sex Workers and Truckers along the Terai Highway Routes covering 22 Districts of Nepal, New ERA in collaboration with SACTS, July 2004
5. Integrated Bio-behavioural Survey (IBBS) among Female Sex Workers and Behavioural Surveillance Survey (BSS) among clients in Pokhara Valley -2004, New ERA in collaboration with SACTS, April 2005
6. Integrated Bio-behavioural Survey (IBBS) among Female Sex Workers and Behavioural Surveillance Survey (BSS) among clients in Kathmandu Valley -2004, New ERA in collaboration with SACTS, April 2005
7. Integrated Bio-behavioural Survey (IBBS) among MSM in Kathmandu Valley, Centre for Research on Environment Health and Population Activities (CREHPA), December 2005
8. Family Health International, Integrated Bio-behavioural Survey among Female Sex Workers in East West Highways covering 22 Districts of Nepal: Round III, March – June 2006
9. Family Health International, Integrated Bio-behavioural Survey among Female Sex Workers in Pokhara Valley: Round II, January – February 2006
10. Family Health International, Integrated Bio-behavioural Survey among Female Sex Workers in Kathmandu Valley: Round II, January – March 2006
11. Family Health International, Integrated Bio-behavioural Survey among Truckers in East West Highways: Round III, January – March 2006
12. Family Health International, Integrated Bio-behavioural Survey among Male Labour Migrants 11 Districts of Western and Mid-Far Western Regions of Nepal: Round I, March – June 2006
13. Report on the Joint Review of the national STI programme. NCASC/WHO/…. November 2006
14. Monitoring and Evaluation guidelines for Nepal (including Core Indicator definitions). December 2006. NCASC/M&E TWG.
15. Assessment of Strategic Information systems in Nepal. December 2006. National Technical Working Group for HIV Monitoring and Evaluation/ NCASC
16. Monitoring and Evaluation Framework and Consolidated Data for Strategic Planning for HIV Nepal. January 2007. National Technical Working Group for HIV Monitoring and Evaluation
17. HIV/STD prevalence among pregnant women in four urban areas of Nepal (MoH/University of Heidelberg) - Final report on STI Surveillance. 1997
18. Reports of Surveillance meetings and outcomes in 2004 and 2005. NCASC/National Technical Working Group for HIV Surveillance

16 Annexes

Annex 1: TOR Review of HIV/AIDS Surveillance Systems in Nepal

Joint Review of Second Generation Surveillance System in Nepal Terms of Reference

Rationale

Nepal faces a concentrated HIV epidemic, in particular IDUs with higher risk sexual behaviours. The National Centre for AIDS and STI Control (NCASC) has been implementing surveillance activities in Nepal since 1992, with the support of development partners such as Family Health International. Since 2001 serological and behavioural surveillance activities have been carried out among population groups at highest risk, such as IDUs, Sex Workers, MSM and migrant workers/ truck drivers. Since 2003, Integrated Bio-Behavioural Surveillance has been expanded to include different population groups.

Although surveillance activities have been supported by different partners over the years, national guidelines have not been developed, detailing the different sources of information within the national level Second Generation Surveillance System, roles and responsibilities in gathering data and information at the national and sub-national levels, and ways of effectively using and disseminating the information.

The current surveillance system includes some strong elements but has never benefited from a full evaluation with respect to Second Generation Surveillance. STI data for example is lacking and surveillance has been irregular; there is currently incomplete reporting of HIV cases and little reporting of AIDS cases and deaths. This limits the availability of data on the epidemic and its evolution and hampers the efforts of the national response at a time when the epidemic is evolving rapidly.

The management capacity to centralize and effectively use different sources of information also needs to be reinforced. A review of the SGS system is proposed and will support the development of National Guidelines for Second Generation Surveillance in Nepal following the review of surveillance activities in Nepal across sectors.

Objectives

- To assess the implementation of the different elements of Second Generation Surveillance in Nepal and identify strengths and gaps in data and information sources
- To provide recommendations to 1) address the above and 2) support the decentralization of key functions such as the management of different sources of information for a better use of strategic information in relation to HIV and STI surveillance

- To draft a National Plan to Strengthen Guidelines for Second Generation Surveillance

Methodology
The Review will be coordinated by a Working Committee under the chairmanship of the NCASC Director and will be composed of representatives of WHO Nepal, as well as appropriate regional specialists and other technical sector(s) or agencies.

Upon arrival in the country and after discussion, the committee will finalize the methodology to be followed for the Review. This will involve the participation of relevant stakeholders and implementers supporting surveillance activities in Nepal. The Review team will carry out technical consultations and field visits to observe the implementation of a range of surveillance activities in selected facilities, sites and districts.

The main output of the Review will be a review of the Second Generation Surveillance in the Nepal context, including specific recommendations in the strategic information needed to monitor HIV infection in Nepal and how strengthen the current system different aspects of the system and ensure it is able 1) to track trends in the HIV epidemic(s) among different groups in the country and over time and 2) to assess the collective impact of interventions on risk behaviours and HIV prevalence.

Team member's tasks
Surveillance specialists will take part in the review committee to finalize scope and approach of the Review. Specifically they will focus on developing strategies for national-level SGS and stakeholder participation.

Their specific tasks will be to:
i) Provide inputs in the following areas:
   - Identify key, substantive issues in relation to surveillance data and strategic information included in second generation surveillance that need to be considered by the review
   - Define appropriate standards/ minimum requirements for data and information
   - Adapt 'Gold Standards' or best practice appropriate to the Nepal context
   - Adapt methodologies and tools to examine activities in light of objectives
   - Identify training and capacity-building requirements for organizations implementing surveillance activities to improve quality
   - Identify policy and technical support needed for implementation

ii) Formulate recommendations to improve national-level SGS system, direction and strategies
iii) Prepare a report outlining findings and recommendations from the review
iv) Draft a national plan for Second Generation Surveillance, integrating all surveillance data sources
v) Participate in the presentation and dissemination of Review results to appropriate policy makers stakeholder and implementers

Outputs
1. Initial (technical) meeting for key stakeholders to share issues and status of SGS
2. Review report detailing recommendations to further strengthen SGS in Nepal based on review of data sources, their contribution to the system and quality of data provided
3. Draft a national plan to for SGS in Nepal including roles and responsibilities and proposed timeframes

Review Team composition (tentative)
- NCASC (2 persons)
- HMIS (1 person)
- Local Research organization (1 person)
- Epidemiologists with good knowledge of Asian epidemics (WHO - Dr Jesus-Maria Calleja; FHI – Dimitri Prybylski, UNAIDS & World Bank)

Duration:
3 weeks and approximately 3 visits to different types of districts

Annex 2: Composition of Technical Working Group

The Technical Review Group was formed under the chairmanship of Director, the NCASC on the basis of the competences and skills that include: HIV surveillance, monitoring and evaluation laboratory in a public health approach that promotes integration with other diseases/services and representatives from the NCASC.

Review of HIV Surveillance System: Strengthening the HIV Second Generation in Nepal

List of Core Members

1. Dr. Rajendra Pant, Acting Director, NCASC: **Chair**
2. Dr. Ramesh Kharel, Senior Medical Officer, NCASC
3. Ms. Shreejana Shrestha, Senior Public Health Officer, NCASC
4. Dr. Shankar Bahadur Shrestha, Consultant, EDDC
5. Mr. Dharanidhar Gautam, Director, HMIS
6. Mr. Jay Bahadur Karki, Public Health Administrator, DPHO, Bhaktapur
7. Dr. Amaya Maw-Naing, Medical Officer, STI & HIV, WHO
8. Ms. Isabel Tavitian-Exley, Adviser, Monitoring & Evaluation, UNAIDS – Nepal
9. Ms. Sharon Arscott–Mills, Senior Technical Advisor for HIV/AIDS, USAID/ Nepal
10. Dr. Laxmi Bilas Acharya, Team Leader, M & E, Surveillance and Research, FHI
11. Dr. Dinesh Binod Pokhrel, STI Consultant NCASC & Head, Department of Dermato-Venereology, TU Teaching Hospital, IOM
12. Mr. Deepak Kumar Karki, Programme Officer (Monitoring, Evaluation, Surveillance and Research), NCASC
13. Mr. Tara Banjade, Public Health Officer – HIV/AIDS, WHO

External experts

1. Dr. Jesus Maria Garcia Calleja – WHO, Geneva
2. Dr. Dimitri Prybylski – FHI, Bangkok
3. Dr. Jean-Michel Tassie – WHO, SEARO

Annex 3: List of Sites and People Visited

List of team members by sites

Chitwan
Dr. Dinesh Binod Pokherel, IOM
Mr. Pursottam Poudel, NPHL
Mr. Hemanta Poudel, NCASC
Mr. Deepak Kumar Karki, NCASC

Pokhara
Ms. Shreejana Shrestha, NCASC
Ms. Usha Bhatta, NCASC
Mr. Jay Bahadur Karki, DPHO Bhaktapur
Mr. Manoj Bhatta, NCASC

Kathmandu
Dr. Ramesh Kharel, NCASC
Dr. Jesus Maria Calleja – WHO, Geneva
Dr. Dimitri Pribyilski – FHI, Bangkok
Dr. Jean Michel Tassie – WHO, SEARO
Dr. Amaya Maw-Naing, WHO
Ms. Isabel Tavitian-Exley, UNAIDS – Nepal
Dr. Laxmi Bilas Acharya, FHI
Mr. Tara Banjade, WHO

Sites Visited in Kathmandu

SN	Organization	Name	Position
1	Nava Kiran Plus	Dr. Ujiwal Baral and team	Project Coordinator Kritimala Ashram
2	Nepal Red Cross Society	Dr. Manita Rajkarnikar	Director
3	Tribhuvan University Teaching Hospital	Dr. Mahesh Khakurel	Director
		Dr. Sashi Sharma and ART and PMTCT team	Chairman, HIV/ AIDS Committee, TUTH
4	Bir Hospital	Dr. Kamala Budhathoki	Chief Consultant, Department of Skin
		Dr. Vaskar Mohan Kayasta	Consultant
5	Maternity Hospital	Dr. Kasturi Malla	Director
		Dr. Lata Bajracharya	Coordinator, PMTCT
6	Nepal Health Research Council (NHRC)	Dr. Sharad Raj Onta	Member Secretary
7	STD/AIDS Counselling and Training Service (SACTS)	Dr. Vijaya Lal uruwacharya	Chairman
8	National Tuberculosis Center	Dr. Pushpa Malla	Director
		Mr. Dhruba Kumar Khadka	Senior Medical, Technologist
		Mr. Sita Ram Ghimire	Statistical Officer
9	District Public Health Office, Bhaktapur	Mr. Jay Bahadur Karki	Public Health, Administrator
		Mr. Dambar Bdr Thapa	Senior AHW
		Mr. Hari Om Pokharel	Statistical Assistant
10	Teku Hospital	Dr. Devi Bhusal	Senior Medical Officer

Annex 4: HIV Prevalence Data in Specific Populations

	1999			2003			2004			2006			Next rounds of IBBS	
HIV surveillance data available	**n**	**HIV cases**	**HIV %**	**n**	**HIV cases**	**HIV %**	**n**	**HIV cases**	**HIV %**	**n**	**HIV cases**	**HIV %**	**2007**	**2008**
Female Sex Workers (FSWs)													NO	YES
Kathmandu														
Street							200	4	2.00	200	4	2.00		
Establishment							300	6	2.00	300	3	1.00		
Street+Est Average							**500**	**10**	**2.00**	**500**	**7**	**1.40**		
Pokhara							200	4	2.00	200	4	2.00		
Terai Highway Districts														
16 districts (Eastern Terai)	410	16	3.90	400	12	3.00				400	6	1.50		
6 districts (Western Terai)				200	0	0.00				200	3	1.50		
22 Terai Districts Average				**600**	**12**	**2.00**				**600**	**9**	**1.50**		
Truckers													NO	YES
Terai Highway Districts	400	6	1.50	400	7	1.75				400	4	1.00		
Labour Migrants													NO	YES
Achham	242	9	3.72											
Kailali	308	2	0.65											
Acham+Kailali Average	**550**	**11**	**2.00**											
5 Western districts*										360	4	1.11		
6 Far Western Districts**										360	10	2.77		
5 + 6 districts Average										720	14	1.94		
Note:														
5 Western districts*	Includes Kaski, Syanja, Gulmi, Palpa and Kapilvastu													
6 Far Western Districts*	Includes Achham, Doti, Kailali, Kanchanpur, Banke and Surkhet													
Injecting Drug Users (IDUs)													YES	NO

	2002			2004			2005			2006			Next rounds of IBBS	
HIV surveillance data available	n	HIV cases	HIV %	n	HIV cases	HIV %	n	HIV cases	HIV %	n	HIV cases	HIV %	2007	2008
Kathmandu														
Pokhara	303	206	68				300	155	51.7					
Eastern Terai	300	66	22				300	65	21.7					
Western Far Western Terai	345	121	35				345	109	31.6					
							300	35	11.7					
MSM														
													YES	NO
Kathmandu														
MSWs														
MSM				83	4	4.8								
Total				275	10	3.6								
				358	14	3.9								

Annex 5: Strengthening the HIV Second Generation Surveillance System in Nepal: National SGS workplan (costed)

(A)

Key outputs/activities		2007-8 (Year 1)				2008-9 (Year 2)				Lead	Funds needed	Funds committed	Shortfall
		1st Quarter (16 Apr - 15 Jul 2007)	2nd Quarter (16 Jul - 15 Oct 2007)	3rd Quarter (16 Oct - 15 Jan 2008)	4th Quarter (16 Jan - 15 Apr 2008)	1st Quarter (16 Apr - 15 Jul 2008)	2nd Quarter (16 Jul - 15 Oct 2008)	3rd Quarter (16 Oct - 15 Jan 2008)	4th Quarter (16 Jan - 15 Apr 2008)				
		Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned				
National AIDS Programme: Coordination & Planning	Establish legal framework making HIV notifiable disease (for health system and VCT centres).									NCASC/ MOHP	2000		2,000
	Co-ordinate surveillance activities aligned with the national M&E plan and framework.									NCASC/ TWG	1000		1,000
	Continue & Strengthen Surveillance/Strategic Information/M&E TWG									NCASC/ TWG	2000		2,000
	Bi-annual independent review of Strategic Information component conducted									NCASC/ EDPs	5000		5,000
Dara management, coordination and use	Databank established at the NCASC to centralise all HIV datasets conducted in Nepal (sentinel, BSS, IBBS).									NCASC/WHO	8000	8000	
	Appoint "national surveillance officer" and data manager. (in long-term MOHP post should be sanctioned)									NCASC/ MOHP	8000		8,000
	NCASC actively manages, analyses and disseminates data (all snetinel, IBBS, BBS activities)									NCASC/ TWG	1000	1000	
	Develop SOPs on policies and procedures for guiding the centralized data management.									NCASC	2000	2000	
	---Maintain updated bibliography of data sources and their origins.									NCASC	1000		1,000
	Annual report compilation of info available and highlight gaps >> Conduct data use workshop to review surveillance in Nepal (annually)									NCASC	500		500
	Conduct technical annual review meeting									NCASC	2000	2000	
	Establish mechanisms to limit double reporting.									NCASC/FHI	5000	5000	
Routine HIV, AIDS and STI Case reporting	Introduce HIV advanced infection reporting on a limited scale before scale up.									NCASC	2000	2000	
	Ensure M & E system makes HIV case reporting data available at district level- at DPHO and PHOs									NCASC/DPHOs	500		500
	Strengthen STI syndromic routine reporting (ref: Review doc for training and scope).									NCASC/DPHOs	500	500	
Sentinel Surveillance	Set up limited sentinel sites for STI patients (1 or 2) (Nepalgunj and Mahendragar?).									NCSC	30000	15000	15,000
	Develop standardized protocols for HIV surveillance activities (to be reviewed and signed off by the NHRC).									NCASC/WHO	4000	4000	

(A)

	Key outputs/activities	2007-8 (Year 1)				2008-9 (Year 2)				Lead	Funds needed	Funds committed	Shortfall
		1st Quarter (16 Apr - 15 Jul 2007)	2nd Quarter (16 Jul - 15 Oct 2007)	3rd Quarter (16 Oct - 15 Jan 2008)	4th Quarter (16 Jan - 15 Apr 2008)	1st Quarter (16 Apr - 15 Jul 2008)	2nd Quarter (16 Jul - 15 Oct 2008)	3rd Quarter (16 Oct - 15 Jan 2008)	4th Quarter (16 Jan - 15 Apr 2008)				
		Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned	Progress Planned				
Community-based, Behavioural & IBBS Surveillance (BSS, IBBS, DHS).	Continue IBBS among key MARPs at pre-existing sites & expand in suspected emerging "hot-spot" areas.									NCASC/FHI	725,000.00	588,277.00	136,723
	Standardize case definitions for MARPs.									NCASC/UNAIDS	1000	1000	
	Disseminate results to (1) org's and (2) communities of affected populations.									NCASC/TWG	5000		5,000
	Include questions on migration, use of injecting drug use and visiting sex workers in DHS.									NCASC/USAID	5000		5,000
Laboratory	Implement Quality Assurance program for HIV testing.									NCASC/ WHO	5000	5000	
	Evaluate testing algorithms (where new HIV tests introduced).									NCASC/ WHO	10000	10000	
	Quality assurance: planning, forecasting and resource mobilization cover appropriate HIV diagnostics.									NCASC/ USAID/ WHO	5000		5,000
	Monitor HIV prevalence among blood donors.									NCASC/ NRCS	500	500	
	Continue HIV surveillance among new cases of TB (with all positive cases reported to NCASC).									NCASC	500	500	
Other data sources	Monitor HIV trends among ANC attendees at the Maternity hospital in Kathmandu.									NCASC	200	200	
	Make available additional sources of information in NCASC (results of syphilis screening among pregnant women and of syphilis and hepatitis among blood donors).									NCASC	1000		1,000
	Monitor prevalence rate of PMTCT programme (+ collect additional information from the women).									NCASC	500		500
Capacity Building	Strengthen capacity of local research org's and/or universities (ref: Review doc for specifics).									NCASC/WHO/USAID	5000		5,000
	Increase capacity building on HIV SGS training of health officers.									NCASC/WHO	10000	10000	
HIV estimations & projections	Develop national plan and update framework for population size estimation >Base population size estimates on data-driven methods									NCASC/UNAIDS/WHO/FHI	5000		5,000
	Update 2007 HIV estimates (with tools proposed by UNAIDS/WHO).									NCASC/UNAIDS/FHI	12000	12000	
	Triangulate results of size estimations.									NCASC/UNAIDS	2000		2,000
	Total										869200	666977	202,223
	Grand Total												0

Annex 6: National HIV Surveillance System and Actitivties (2006-2011)

National Centre of AIDS and STD Control (NCASC), Ministry of Health and Population, Nepal

Activities	Lead	Responsibility	Status
HIV Case reporting			
Nationwide	NCASC	NCASC/IP	
HIV Advance infection reporting			
Nationwide	NCASC	NCASC/IP	
HIV Death Reporting			
Nationwide	NCASC	NCASC/IP	**New**
STI Case reporting			
Nationwide	NCASC	NCASC/IP	**New**
HSS among STI patients			
STI patients (two regular sites: Nepalgunj and Mahendranagar)	NCASC	?? ??	
HSS among ANC Attendee Women			
ANC attendees (in three PMTCT sites: Kathmandu, Dharan and Nepalgunj)	NCASC	NCASC/IP	**New**
Community-Based HIV, STI and Behavioural Surveillance (BSS and IBBS)			
Injecting Drug Users (IDUs)	NCASC	FHI/USAID	
IBBS among Male IDUs in Pokhara Valley	NCASC	FHI/USAID	
IBBS among Male IDUs in Eastern Terai (Jhapa, Morang and Sunsari) Districts	NCASC	FHI/USAID	
IBBS among INDUs in Kathmandu Valley	NCASC	FHI/USAID	
IBBS among IDUs in Mid to Far Western Terai district (Four sites: Butawal/Bhairahawa, Nepalgunj, Dhangadhi and Mahendranagar)	NCASC	FHI/USAID	
Men Having Sex with Men (MSM)	NCASC	FHI/USAID	
IBBS among MSMs in Kathmandu	NCASC	FHI/USAID	
Female Sex Workers	NCASC	FHI/USAID	
IBBS among FSWs in 22 Terai highway districts			
IBBS among FSWs in Kathmandu Valley			
IBBS among FSWs in Pokhara Valley			
Male Sub-population			
IBBS among Truckers in 22 Terai highway districts	NCASC	FHI/USAID	
BSS among other than Truckers male sub-population in 22 Terai highway districts	NCASC	?? ??	
BSS with Clients in Kathmandu Valley	NCASC	?? ??	
BSS with Clients in Pokhara Valley	NCASC	?? ??	
Migrants	NCASC	FHI/USAID	
IBBS among male migrants in Western and Mid- Far Western sectors of Nepal			
Other data source	NCASC		
Blood donors		WHO/NRCS ?	**New**
TB patients		NTC ?	**New**
PMTCT patients		NCASC/IP	**New**

Revised by Surveillance Working Group based on:

1. Concensus Meeting in June 2005

2. Follow up meetings of SWG in 2005-2007

3. Reviw of SGS in Nepal 2007

BSS = Behavioral Surveillance Survey

IBBS = Integrated Bio-Behavioral Survey

HSS = HIV Sentinel Surveillance

BSS = Behavioral Surveillance Survey

IBBS = Integrated Bio-Behavioral Survey

HSS = HIV Sentinel Surveillance

Note: *Work plan for 2008- 2010 is proposed and is to be reviewed and approved by NCASC after discussion in M&E and SWG*

Studies	2008												2009												2010											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Injecting Drug Users (IDUs)																																				
IBBS among Male IDUs in Pokhara Valley	ROUND II																								ROUND III											
	F	F						TR			FR														F	F						TR			FR	
IBBS among Male IDUs in Eastern Terai (Jhapa, Morang and Sunsari) Districts		ROUND II																								ROUND III										
		F	F					TR			FR															F	F					TR			FR	
		ROUND II																								ROUND III										
IBBS among INDUs in Kathmandu Valley			F	F				TR			FR																F	F				TR			FR	
		ROUND I																								ROUND II										
IBBS among IDUs in Mid to Far Western Terai district (Four sites: Butawal/Bhairahawa, Nepalgunj, Dhangadhi and Mahendranagar)				F	F			TR			FR																	F	F			TR			FR	
Possibility of IBBS among IDUs in Central to Western Terai Districts (Siraha to Nawalparasi)				F	F			TR			FR																	F	F			TR			FR	
Possibility of IBBS among MSMs in Kathmandu(second round))																																				
HSS among STI patients																																				
STI patients (six regular sites + possibility of adding three more sites)										F	F	F			FR																			F	F	F
HSS among ANC Attendee Women																																				
ANC attendees (in three PMTCT sites: Kathmandu, Dharan and Nepalgunj)																	F	F	F			FR														
Female Sex Workers + Male Sub-population																																				
IBBS among FSWs and Truckers and BSS among other male sub-population in 22 Terai																				ROUND III																
														F	F	F	F			TR			FR														
IBBS among FSWs and BSS with Clients in Kathmandu Valley:																ROUND II																				
													F	F				TR					FR														
																	Round II																				
IBBS among FSWs and BSS with Clients in Pokhara Valley																F	F			TR			FR														
		F	=	Field Work				TR	=	Test Results				FR	=	Final Report																						

Revised by Surveillance Working Group through Concensus Meeting in June 2005

BSS = Behavioral Surveillance Survey
IBBS = Integrated Bio-Behavioral Survey
HSS = HIV Sentinel Surveillance

blank