Assessing the Impact of HIV and AIDS Prevention and Care Programmes in South Africa

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ARV	Anti-retroviral
ASSA	Actuarial Society of South Africa
BSS	Behavioral Surveillance Surveys
CARE	Centre for Actuarial Research
CRIS	Country Response Information System
FHI	Family Health International
FSW	Female Sex Worker
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HEARD	Health Economics and AIDS Research Division
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
HST	Health Systems Trust
IDU	Injecting Drug Use
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
NGO	Non Governmental Organisation
NSP	National Strategic Plan (for HIV/AIDS)
OVC	Orphans and Vulnerable Children
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PLHA	People Living with HIV/AIDS
PSI	Population Services International
RHRU	Reproductive Health and HIV Research Unit
RISDP	Regional Indicative Strategic Development Plan
STI	Sexually Transmitted Infections
TB	Tuberculosis
UNAIDS	United Nations AIDS Program
UNDP	United Nations Development Program
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WB	World Bank
WHO	World Health Organisation

1. INTRODUCTION

1.1. Background

There are eight goals, 18 targets and 48 indicators to measure the Millennium Development Goals (MDGs). The MDGs are addressing some of the most important outcomes that development should achieve: fewer women dying in childbirth, more children surviving the early years of life, dealing with the pandemic of HIV/AIDS, making sure people have access to clean water and sanitation, life-saving drugs, better health, and finally, making a major contribution to the reduction of poverty. The MDGs provide an analysis of development in which health is squarely at the centre. Three out of the eight goals and eight of the 18 targets relate directly to health.

The three most commonly used indicators for measuring the extent of the HIV epidemic at a national or local level are:

1. HIV prevalence
2. HIV incidence
3. AIDS mortality.

HIV prevalence

HIV prevalence is the proportion of the population infected with HIV at a specified point in time. It is the most widely-available and the most widely-used measure of the magnitude and impact of the HIV epidemic in South Africa. National estimates of HIV prevalence, including trends in HIV prevalence over time, are available from surveys conducted by the National Department of Health (NDOH) in public-sector antenatal clinics (ANCs) annually since 1990 (Department of Health South Africa, 2006), and from national household surveys conducted by the Human Sciences Research Council (HSRC) and partners in 2002 (Shisana & Simbayi, 2002) and 2005 (Shisana *et al.,* 2005). (A third national household survey will be conducted in 2008.) In addition, the Reproductive Health and HIV Research Unit (RHRU) of the University of the Witwatersrand conducted a national survey of HIV among youth aged 15-24 years in 2003

(Pettifor *et al*., 2004). The Actuarial Society of South Africa (ASSA) uses HIV prevalence measures from the ANC surveys combined with HIV prevalence measures from the HSRC's household surveys as a basis for forecasting future trends in HIV prevalence in South Africa.

HIV prevalence is determined by the rate at which new HIV infections occur (HIV incidence rate), **and** by the length of time that people survive after becoming infected with HIV, or conversely the rate at which people with HIV die (mortality rate).

The strengths and weaknesses of using HIV prevalence as a measure of HIV impact is summarized below (Tables 1.1 to 1.3):

Table 1.1 HIV Prevalence as a Measure of HIV Impact

STRENGTHS	WEAKNESSES
▪ Most widely-used and most widely-available measure in South Africa and globally, so useful for geographic comparisons and for studying changes in the HIV epidemic over time.	▪ Survival following HIV infection about 10 years on average, so HIV prevalence is not a good measure of the impact of current or recently-introduced programmes.
▪ Quick and relatively simple to measure.	▪ Difficult to assess the extent to which **decreases in HIV prevalence** are attributable to effective HIV prevention programmes (resulting in a decreased HIV incidence) versus failure of HIV treatment programmes (resulting in high AIDS mortality)
	▪ Similarly, difficult to assess the extent to which **increases in HIV prevalence** are attributable to failure of HIV prevention programmes (resulting in an increased HIV incidence) versus effective HIV treatment programmes (resulting in improved survival among people with HIV infection).

Table 1.2 HIV Prevalence Measured in Antenatal Clinic Surveys

STRENGTHS	WEAKNESSES
▪ Measured annually over a long period of time.	▪ Sample does not include men, children, women outside the reproductive age range, women who are not sexually active, infertile women, and women who are using effective contraception.
▪ Covers all provinces and both urban and rural areas.	▪ Sample only includes pregnant women attending public sector ANCs, resulting in a predominance of poorer, black women being surveyed. Pregnant women of higher socio-economic status and those who do not use ANC services are excluded.
▪ Large sample size over a limited age range allows for statistically-stable estimates (narrow confidence intervals).	▪ Lack of detailed demographic information on survey participants (limited to age, and site/province).
▪ Uses routinely collected information, so is efficient in terms of cost and resources required for measurement.	▪ Women who have tested HIV-positive previously less likely to be tested, so HIV-positive women, may be under-represented (among pregnant women attending public ANCs).
▪ Informed consent not required and all women who are tested for HIV during the survey period are included, so less potential for selection bias (among pregnant women who test for HIV at	

public ANCs).	
▪ Most widely available HIV surveillance measure, so may be used for comparisons with other countries.	

Table 1.3 HIV Prevalence Measured in Household surveys

STRENGTHS	WEAKNESSES
▪ Provides the most representative estimates of HIV prevalence in the South African population.	▪ Expensive and logistically-complex, so impractical to conduct more often than once every 3 years.
▪ Covers all provinces and both urban and rural areas.	▪ Only 2 surveys conducted to date, so information on time trends limited.
▪ Includes males and females of all ages (except babies under 2 years) and all race and socio-economic groups.	▪ Relatively high levels of non-participation among certain age groups (especially young children) and certain race groups (whites and Indians), so some HIV prevalence estimates may be biased.
▪ HIV prevalence reported according to detailed demographic characteristics (province, sex, age, race, geographic settlement type).	▪ Method of HIV testing used in the 2002 survey (using oral fluid specimens) may be less accurate than currently recommended method used in the 2005 survey (using dried blood spot specimens).
▪ Includes information on sexual and other risk behaviours linked to HIV test results, enabling monitoring of changes in behaviour over time (behavioural surveillance) and the assessment of the relationship between HIV prevalence and behaviour.	
▪ New methods for identifying HIV infections of recent onset (e.g. the BED assay), enables HIV incidence to be estimated, in addition to HIV prevalence.	

HIV incidence

HIV incidence is a measure of the number of new infections that occur in a population over a defined time period. It is the most useful measure of the **impact of HIV prevention programmes**. Until 2007 national measures of HIV incidence (other than indirect estimates obtained by mathematical modeling) were not available for the South African population. This is because HIV infection is rarely diagnosed within the first year after infection, and because the traditional method of measuring HIV incidence through cohort studies is very expensive and time-consuming and is not feasible to use other than in geographically-localised and discrete

populations. Recent advances in methods of measuring HIV incidence enabled the publication of the first national measures of HIV incidence earlier this year (Rehle *et al.*, 2007). HIV incidence and methods of measuring HIV incidence is discussed in detail in section 2 and 3.

AIDS mortality

AIDS mortality is a measure of the number of deaths attributable to AIDS in a population over a defined time period. It is the most useful measure of the **impact of HIV treatment and care programmes**. Although deaths registration in South Africa is relatively complete, except in deep rural areas and deaths among children, the underlying cause of death recorded on the death certificate is often inaccurate, and AIDS-related deaths are grossly under-reported due largely to the stigma attached to being diagnosed HIV-positive which causes many people to avoid or refuse HIV testing, and many clinicians completing the death certificate to fail to record the true underlying cause of death.

1.2. Objectives of the study

Millennium Development Goal (MDG) 6 addresses HIV/AIDS with the specific target: "Have halted by 2015 and begun to reverse the spread of HIV/AIDS" (Target 7). The following indicators have been identified by the United Nations Development Group (2003) to monitor progress in combating HIV/AIDS:

- HIV prevalence among pregnant women aged 15–24 years
- Contraceptive prevalence rate
- Condom use rate of the contraceptive prevalence rate
- Condom use at last high-risk sex
- Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS
- Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years.

However, MDG 6 does not cover all aspects involved in the assessment of the impact of national

programme efforts to reduce HIV infections and AIDS-related mortality. Therefore, our comprehensive assessment of HIV/AIDS prevention and care programmes in South Africa is not limited to the indicators assigned to this MDG and will include other programme outcome and impact measures appropriate for the assessment of the transmission dynamics of HIV in South Africa. In addition, it is necessary to position our review in the context of other national and regional strategic plans including the Department of Health's HIV & AIDS and STI Strategic Plan for South Africa, 2007 – 2011 (currently in development) (Department of Health South Africa, 2007), and the Southern African Development Community (SADC) Regional Indicative Strategic Development Plan (RISDP) priority intervention area Combating the HIV and AIDS Pandemic (Southern African Development Community, 2006).

Also, our review is not limited to government programmes because many non-governmental organisations (NGOs), private sector enterprises, foreign donors, and multilateral agencies are making important contributions to funding and implementing HIV and AIDS prevention and care programmes in South Africa. It would not be possible to do a comprehensive review of HIV and AIDS programmes in South Africa without including the important contributions of agencies outside the government.

Project activities fall into 4 main focus areas:

- Developing a profile of HIV/AIDS and HIV/AIDS programme activities in South Africa;
- Reviewing the framework for HIV and AIDS strategic plans for South Africa in the light of the Millenium Development Goals;
- Assessing the impact of HIV and AIDS in South Africa and a programme evaluation using epidemiological studies and mathematical modeling;
- Developing a monitoring and evaluation framework.

2. METHODOLOGY

2.1 Developing a profile of HIV and AIDS interventions in South Africa

A detailed literature review was conducted in order to obtain a comprehensive overview of the current status of HIV and AIDS interventions in South Africa. The information used for developing a profile of HIV/AIDS interventions was derived primarily, but not exclusively, from documents published by government agencies as well as independent research institutions such as Health Systems Trust (HST) and the HSRC. Relevant documents were identified through targeted searches on the World Wide Web and in selected social science research databases. The objectives of the literature review were three-fold to:

- establish a comprehensive list of, and describe, all HIV/AIDS prevention and control programmes that have been implemented in South Africa during the time period 1994-2006;
- assess the extent to which each programme/policy has been implemented across government levels and sectors of society as well as identify barriers to implementation of specific initiatives; and
- identify and list relevant data sources for assessing the impact of South Africa's response to HIV/AIDS.

A draft timeline of HIV and AIDS programme activities in South Africa is included (Appendix 1). This review also included information contained in reports and relevant information accessed by the internet, e.g. the Department of Social Development HIV/AIDS Project Database (http://population.pwv.gov.za/ResearchReports/PopulationData.htm).

Impact assessments of various HIV/AIDS interventions are available and also inform the assessment of the impact of the national response to HIV/AIDS.

2.2 Reviewing the framework for HIV and AIDS strategic plans for South Africa in the light of the Millennium Development Goals

We reviewed the *HIV & AIDS and STI National Strategic Plan for South Africa, 2007 – 2011*, approved by cabinet in April 2007 (Department of Health South Africa, 2007), as well as the *SADC Regional Indicative Strategic Development Plan* (RISDP) priority intervention area Combating the HIV and AIDS Pandemic (Southern African Development Community, 2006).

The HSRC submitted written comments to the Department of Health (Appendix 2), urging the Department to reconsider several aspects of the draft Strategic Plan. As a result of submissions by the HSRC and other concerned experts and interest groups (available at http://www.alp.org.za/modules.php?op=modload&name=News&file=article&sid=326&DC100SID=bb2a7f7482da02dfd6cdf709623632a3), the Department of Health deferred the release of the Strategic Plan in order to allow time for broader consultation with stakeholders and input by relevant experts.

The HSRC offered to assist the Department of Health with revisions to the draft Strategic Plan, specifically in the definition of indicators and targets, and were invited to participate in a meeting to revise the draft Strategic Plan in March 2007.

2.3 MDG indicators calculations

The following indicators have been identified by the United Nations Development Group (2003) and have been captured by Measure Evaluation as HIV/AIDS Survey Indicators Database to monitor progress in combating HIV/AIDS:

HIV prevalence among pregnant women aged 15–24 years

The percent of blood samples taken from pregnant women aged 15-24 that test positive for HIV during routine sentinel surveillance at selected antenatal clinics.
Numerator: The number of HIV-positive blood samples from unlinked anonymous testing of

pregnant women aged 15-24 from selected antenatal clinics.
Denominator: Total number of blood samples from pregnant women from selected antenatal clinics submitting to unlinked, anonymous HIV blood testing.

Contraceptive prevalence rate

Contraceptive prevalence rate is the proportion of women of reproductive age who are either married or in consensual unions and using (or whose partner is using) a contraceptive method at a given point in time. It is an indicator of health, population, development and women's empowerment. It also serves as a proxy measure of access to reproductive health services that are essential for meeting many of the Millennium Development Goals (MDG)s, especially the child mortality, maternal health HIV/AIDS, and gender related goals.

Condom use rate of the contraceptive prevalence rate

Condom use rate of the contraceptive prevalence rate is number of women 15-49 years of age who are either married or in consensual unions who are practicing contraception by using condoms as a proportion of all women in the same age group in consensual unions who are practicing any form of contraception.

Condom use at last high-risk sex

Definition: The percent of respondents 15-24 years who reported the use of a condom during last sexual intercourse with a non-regular sex partner
Numerator: The number of respondents 15-24 years who reported using a condom the last time they had sex with a non-regular partner.
Denominator: Total number of respondents 15-24 years who report that they had sex with a non-regular sexual partner.

Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS

Definition: The percent of respondents who reported correct knowledge and/or misconceptions about HIV transmission in response to the following question / statements:

1. Is it possible to transmit HIV from a mother to her unborn child?
2. There is a curve for HIV-AIDS
3. HIV causes AIDS
4. HIV infection is prevented by using condoms
5. You can reduced the risk of HIV by having fewer sexual partners

Numerator: The number of respondents who, in response to prompting,

a) answered **yes** / **no** or **don't know** to question 1

b) either **agreed** / **disagreed** or was **unsure** about statements 2 to 5.

Denominator: Total number of respondents.

Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years.

Definition: The ratio of orphaned children aged 10-14 (whom both biological parents have died) who are currently attending school to non-orphaned children the same age who are attending school.

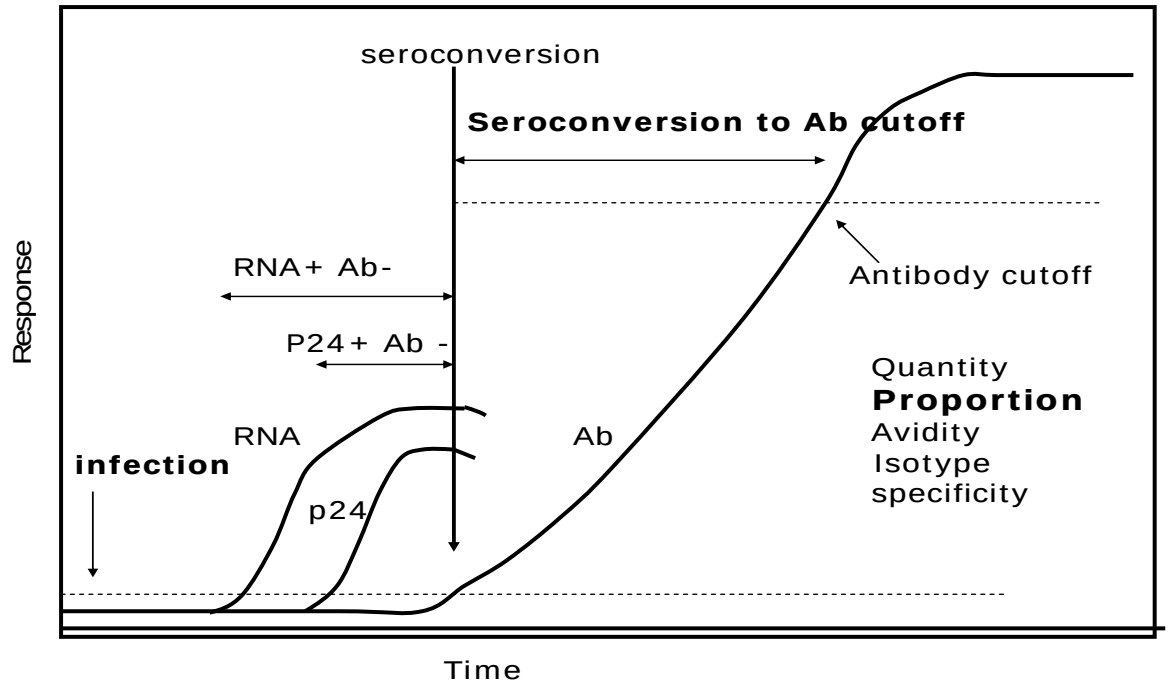
Numerator: Percentage of orphans 10-14 (whom both biological parents have died) who are in school.

Denominator: Percentage of non-orphans 10-14 whose parents are both still alive.

2.4 National HIV incidence estimates

HIV incidence estimates reflect the underlying transmission dynamics that are currently at work in a population. HIV incidence is a point estimate of recent HIV infections, while HIV prevalence is the result of cumulative new infections over time (i.e. including all people with past and recent infections), minus the cumulative deaths among HIV infected persons. Thus incidence is the key indicator of the rate of HIV transmission and provides the most direct means of assessing the impact of HIV prevention programmes.

Due to the limitations of the epidemiological approaches to measure HIV incidence, there was always a strong argument for a direct, laboratory-based method. The 2005 South African national survey on HIV, Behavior and Communication *(*Shisana *et al.,* 2005) included laboratory-based HIV incidence testing of blood specimens in its survey protocol which allowed for the first time a joint analysis of HIV prevalence, HIV incidence and HIV associated risk factors. 15 851 specimens tested for HIV provided an unparalleled large sample to estimate HIV incidence on a national scale for South Africa. The detection of recent infections was performed on confirmed HIV positive samples, using the BED capture enzyme immunoassay optimised for dried blood spot (DBS) specimens. The BED assay measures the increasing proportion of HIV- 1 specific IgG after seroconversion (Figure 2.1). BED HIV incidence calculations applied adjustment procedures that were recently revised and approved by Centers for Disease Control (CDC) for subtype C blood specimens.



Adapted from Parekh B *et al*. 2002

Figure 2.1 Detection of early HIV infection

Adjustment procedures for BED HIV incidence calculation have been reviewed at a recent expert meeting at CDC/USA (CDC, Atlanta, 2006). The method described by McDougal *et al*. (2006) uses an adjustment formula that corrects for both false long-term infections (sensitivity) and false recent infections (specificity). Annualized BED HIV incidence calculation applied a window period of 180 days for HIV subtype C specimens.

Sensitivity/specificity adjusted BED HIV incidence formula:

$$I = \frac{(F) * (365/w) * R}{N + [(F) * (365/w) * (R/2)]} \times 100$$

BED HIV incidence is calculated as incidence percent per year (% / year). In order to provide national estimates, the HIV incidence calculation took into account the complex sampling design

and used weighted numbers in the above formula. The expression in the numerator of the formula was used to estimate the annual number of new HIV infections.

Calculation of the Adjustment Factor F:

$$F = \frac{(R/P) + \gamma - 1}{(R/P)(\alpha - \beta + 2\gamma - 1)}$$

95% Confidence bounds were calculated as follows:

$$I \pm 1.96 * Deft * \frac{I(2-I)}{2} * \sqrt{(1/R) + (1/N)}$$

Symbols:
I = Incidence (number of new infections per year per 100 at risk)
F = Adjustment Factor for sensitivity/specificity adjustment.
P = total testing HIV positive
N = total testing HIV negative
R = total testing recent in the BED-CEIA
Deft = Design effect

Imputed values:
w = 180 (window in days)
α = 0.7682 (sensitivity of BED test for detecting recent (< w) infection)
β = 0.7231 (specificity of the BED test over the period > w to < 2w)
γ = 0.9443 (specificity of the BED test over the period > 2 w).

3. RESULTS

3.1. Profile of HIV/AIDS interventions in South Africa, 1990-2006

This section presents a profile of HIV and AIDS interventions in South Africa during the 1994-2006 time period. The section is organized into three sector-specific sections, namely, the public, not-for- profit, and for-profit sectors. Within each sector-specific section, the report groups interventions according to specific categories of interventions (e.g., policy development, health system change, health communication and health behaviour modification). For each category of interventions, the report outlines the objectives of individual interventions, describes progress toward their full implementation, and, where applicable, highlights barriers to successful implementation of selected interventions. Where knowledge gaps exist, or where published reports could not be accessed, suggestions are made for categories of potential key informant interviewees.

3.1.1 HIV and AIDS interventions in the public sector

Coordination of South Africa's Response to HIV and AIDS

Beginning in the early-1990s, several national or Cabinet level structures have been established to coordinate South Africa's response to HIV and AIDS within the public sector and among the public, not-for-profit, and for-profit sectors. These structures include the National AIDS Co-ordinating Committee of South Africa (circa 1992), the Ministerial Taskforce (circa 1998), and the South African National AIDS Council (circa 2000). The latter structure (i.e., the South African National AIDS Council (SANAC), appears to have been subsequently established for the purpose of consolidating the functions of the other structures and for subsequently serving as a vehicle for the 'Declaration of the Partnership Against AIDS', a declaration made by the President of South Africa challenging all sectors of society to be involved in the response to HIV and AIDS. In 2000 and partly in response to this declaration, the national Department of Health (DoH) released the HIV/AIDS/STI Strategic Plan for South Africa, 2000 – 2005. According to the DoH, the strategic plan was 'designed to guide the country's response as a whole to the

epidemic' and was not intended only for the health sector.

To date various partnerships have been coordinated among government, civil society and business in response to the HIV and AIDS epidemic, particularly in the areas of funding and delivery of HIV/AIDS education campaigns and treatment programmes. The exact role of SANAC in the coordination of various inter-sectoral interventions, as well as progress in the implementation of the national HIV/AIDS strategic plan, is difficult to assess. Nonetheless, at the policy level, it is clear that considerable progress has been made towards the achievement of the stated goal(s) of coordinating interdepartmental and inter-sectoral responses to the HIV/AIDS epidemic. Notwithstanding this apparent progress at the national policy level, however, available evidence suggests that HIV and AIDS activities at the municipal level are still characterized by a lack of coordination between government agencies (i.e., Departments of Health [DoH], Social Development [DoSD] and Education [(DoE]), civil society and business. This is in spite of the fact that the proportion of the national health budget that is devoted to HIV/AIDS has been increasing over the last several years.

Health System Change

In the health policy arena, the earliest and most prominent legislation that had the potential to positively contribute to the prevention and control of HIV and AIDS in South Africa was the 'Rendering of Free Healthcare Services Notice' of 1994. The Notice authorized the provision of free healthcare services to children under the age of 6 and to pregnant or breastfeeding women. The relevance of this policy to HIV/AIDS prevention and control is that it is likely to have brought many poor women of childbearing age into the healthcare system, thus ensuring early establishment of HIV sero-prevalence, and hence, early initiation of prevention of mother-to-child transmission of HIV, where adequate resources existed. Additionally, this policy should have contributed to the improved tracking of the HIV epidemic through the annual antenatal sero-prevalence surveys conducted by the national Department of Health (DoH). Available evidence suggests that the overall impact of this policy has been an increase in the utilization of antenatal healthcare services but not necessarily a reduction of disparities in quality of care (e.g., immunizations and STI screening and testing).

The next major development in the healthcare arena was the 'Clinic Upgrading and Building' programme that began in the late 1990s. This programme sought to expand access to primary healthcare (PHC) services in South Africa. According a to a recent progress report for the social cluster of the Government's Programme of Action, new clinics have been built throughout the country, and plans are apparently underway to employ large numbers of new health professionals to strengthen their capacity. It is estimated that approximately 35% of facilities that were operational in 2003 had been built in the previous 10 years and that 4,350 PHC access points were available throughout South Africa by 2003. However, the full benefits of the expansion of the primary healthcare system are less likely to be realized in the fight against HIV and AIDS given the well- documented lack of adequate numbers of key healthcare personnel at the national level and the inequitable distribution of available healthcare personnel among South Africa's provinces.

In an effort to address the inequitable distribution of healthcare personnel between urban and rural areas, the national DoH has developed and implemented a community service requirement for medical doctors (circa 1998). The main objective of the compulsory community service was 'to ensure improved provision of health services to all citizens of South Africa.' During the first year of implementation (1999), an estimated 1088 medical doctors were apparently distributed amongst community health centres, health district hospitals, regional hospitals and tertiary or specialized hospitals across all of South Africa's 9 provinces. By and large, health facilities that had received community doctors are said to have reported positive effects, with surprisingly beneficial results for the health district system as a whole.

Logically, the rendering of free health care services for women and children, the upgrading and building of clinics along with the deployment of medical doctors and interns to rural and other underserved areas of South Africa should have expanded access to primary care services for HIV and AIDS. Thus, it appears that in an effort to build on the gains that were anticipated in the expansion of access to primary care, the government has also sought to standardize HIV and AIDS care, management and treatment across the country through a series of laws and policies, namely, the 'National Policy for HIV Testing' (1999), 'The Primary Health Care Package for South Africa: A Set of Standards and Norms' (2000), the National Health Laboratory Service

Act (2000), the Essential Drug List (1998 and 2003), National Health Act (2003), and the Operational Plan for Comprehensive Care, Management, and Treatment of HIV/AIDS for South Africa (2003). Currently, there is no evidence that a systematic assessment of the impact of these various policies on the quality of HIV/AIDS care has been undertaken or is underway.

Antiretroviral treatment programme

The most widely acknowledged shortcoming in South Africa's response to the HIV/AIDS epidemic has been the country's delay in availing treatment for prevention of mother-to-child transmission (PMTCT) of HIV as well as antiretroviral therapy (ARV) for those with advanced HIV infection. Following a Constitutional Court ruling mandating the government to provide PMTCT treatment to all pregnant South African women who need it, the government began implementing the expanded PMTCT programme towards the end of 2002. It is estimated that by August 2005, PMTCT services were available to HIV-positive pregnant mothers at 2 525 sites nationwide. A widely-cited challenge has been the integration of PMTCT into general maternal and child health services.

The next development in the area of treatment was the national ARV roll-out programme, a key component of the Operational Plan for Comprehensive Care, Management, and Treatment of HIV/AIDS for South Africa (2003). Implementation of the ARV roll-out programme began in June 2004 and is largely the responsibility of the nine provincial departments of health with support in key areas from the national DoH. Thus, progress in the implementation of the plan is likely to vary across provinces. At the national level, it is estimated that by April 2006, 231 public heath facilities had been accredited with Comprehensive HIV and AIDS Care, Management and Treatment, 70% of hospitals were offering CMT services, 100% of districts and 63% of sub-districts were offering the services, with 138 336 patients on ARV treatment. There are currently calls for the government to set targets for ARV treatment so actual progress can be assessed in this regard.

Additional programmes that may improve the uptake of PMTCT and ARV services in South Africa exist at present, namely, the programme for integrated tuberculosis (TB) and HIV/AIDS

care, the home-based and community-based care programme, and the programme for the integration of traditional healers into HIV/AIDS care. According to government reports plans are underway to assist health districts to develop supervision and monitoring systems for the implementation of the TB and HIV package of care during 2006-2007. With regard to the home-based and community-based care programme, it is estimated that the home- and community-based care sector has about 2 500 full-time caregivers and 20 000 volunteers, with only a quarter of these volunteers receiving stipends of any kind. It is envisaged that trained community health workers participating in the programme will work closely with health care professional teams at local primary care facilities in an effort to ensure improved access to treatment by persons living with HIV/AIDS in the community. Finally, a training manual for integrating traditional healers and community health workers and nurses has been developed based on the results of a pilot study conducted in KwaZulu-Natal and plans for national implementation of the trainings are currently underway at the national DoH.

Health Communications

Prevention has figured prominently in South Africa's overall response to HIV and AIDS. As a consequence, many resources have been devoted to educating all South Africans about HIV and AIDS as well as providing information for those at risk or with the disease. One of the earliest interventions in this regard was the National AIDS Helpline, which was initiated in 1991 by the national DoH. The Helpline had relied on volunteers from a non-governmental organization known as Lifeline until 2001, when it was modernized and re-launched to handle up to 200,000 calls per month with financial assistance from the United States Agency for International Development (USAID). It has been estimated that calls to the Helpline had increased from 5,000 per month in 1998 to 20,000 per month in 2001. (No data were readily available on the number of calls per month nor on the breakdown of characteristics of callers to the Helpline).

The most prominent health communication interventions in South Africa include Soul City (1994), loveLife (1999), and Khomanani (2002). The three are multi-media social campaigns that seek to reduce the spread of HIV infection through increasing knowledge about HIV/AIDS and high-risk behaviours as well as through influencing the social environment to be more

tolerant of, and supportive towards, persons with HIV and AIDS.

Estimates of the individual and combined reach of the three interventions suggest that they are reaching the vast majority of South African residents. Thus far, positive trends have apparently been observed in the areas of HIV infection knowledge, attitudes and safe-sex behaviours as well as in the acceptance and support of persons living with HIV/AIDS (i.e., anti-stigmatization of persons living with HIV/AIDS). However, a review of available impact studies suggests that these health communication interventions have not been able to significantly reduce the spread of the HIV infection.

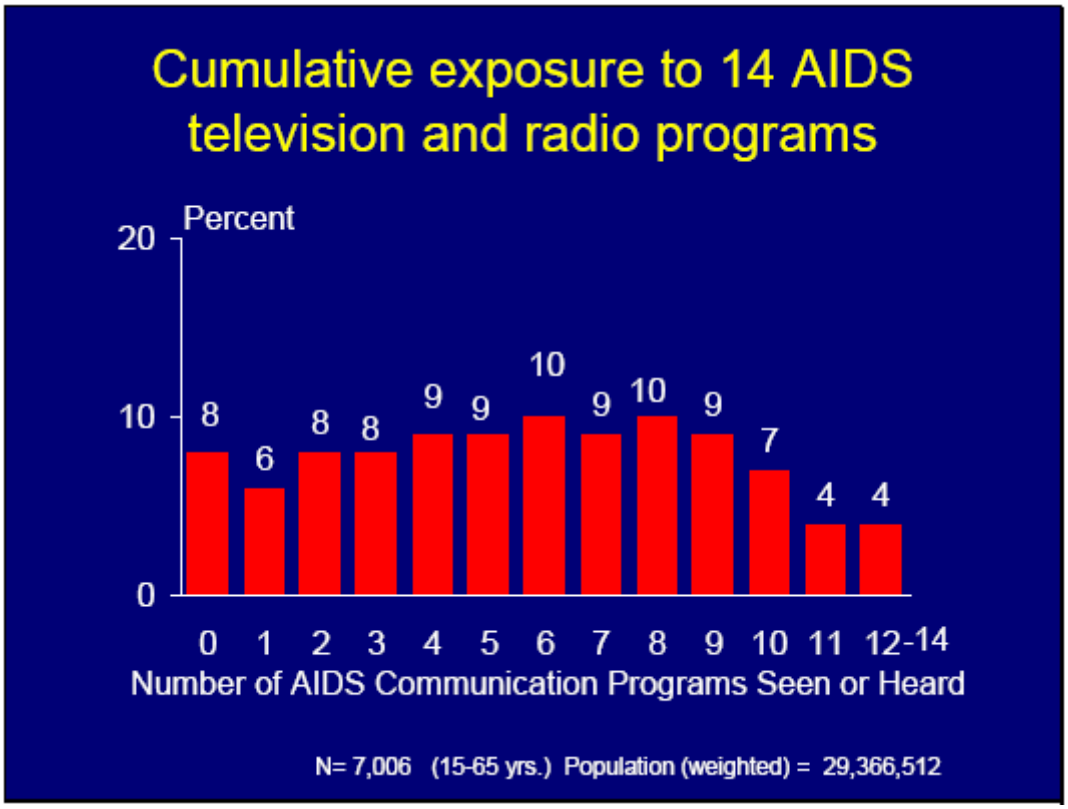
HIV/AIDS has also featured in various television entertainment programmes developed out of inter-sectoral collaborations (e.g., government, foreign donor organizations, and academic research institutions). They include *Takalani Sesame* (2000), *Tsha Tsha* (2003), *Gazlam* (2003), and *Phamokate* (2006). Takalani Sesame aims to improve life skills and HIV/AIDS knowledge among preschoolers while Tsha Tsha seeks to influence youth behaviour by presenting HIV/IDS-related issues in young people's lives. Gazlam educates through experiences of HIV-positive characters while Phamokate tackles stigmatization in an effort to promote an accepting and supportive environment for individuals living with HIV/AIDS. Results of published impact assessments suggest that Takalani Sesame contributed to improved life skills among children under age 5 and that Tsha Tsha viewers have experienced improved attitudes towards HIV/AIDS and commitment to safe-sex behaviour.

In addition to these various health communication interventions, the government's strategic plan for HIV and AIDS for the years 2000-2005 had also called for the implementation of a 'Life Skills and HIV/AIDS Programme' to improve knowledge about HIV and AIDS and safe-sex behaviours among South Africa's youth. Accordingly, HIV/AIDS was supposed to be integrated into the high school curriculum. Information on the extent to which this programme has been implemented was not readily available. Another related intervention is the 'Health Promoting Schools Initiative' which had reportedly reached a total of 1 250 primary schools and 9 835 crèches by April 2006, with a communication strategy for the programme still under development. The goals and objectives of the programme are not widely known.

A survey, conducted by four organizations - Johns Hopkins Bloomberg School of Public Health's Centre for Communication Programs (CCP), Health Development Africa representing Khomanani, CADRE, and Soul City - including more than 8,000 respondents across South Africa examined how exposure to more than 20 AIDS communication interventions shaped people's knowledge and behaviour, found that the combined efforts of many AIDS communication campaigns in South Africa showed positive impacts on HIV prevention behaviours, increased positive attitudes towards people living with HIV and AIDS, and increased community involvement in response to the epidemic (Center for Communication Program, (2006).

While the HSRC survey measured exposure to television a few days a week or more, the South African AIDS Communication survey specifically measured exposure to AIDS programmes on television. On average 67.3% of respondents in the HSRC 2005 national household survey (Shisana *et al.,* 2005) were exposed to television a few days a week or more – about 70% of them were in the 12-24 year age group, about 68% in the 25-49 year age-group and 62% were 50 years and older.

Figure 3.1 below indicates that less than 10% of respondents in the South African AIDS Communication survey 2006, had exposure to AIDS television programmes. Although the HSRC 2005 national household survey indicates that 67.3% of respondents were exposed to television, the South African AIDS Communication 2006 survey indicates that fewer South Africans are exposed to the most popular HIV/AIDS programmes on television.



Source: Parker W *et al.*, 2006

Figure 3.1 Exposure to AIDS television and radio programmes in South Africa

Behaviour change interventions

The key HIV/AIDS behaviour change interventions in South have involved the promotion of condom use as well as voluntary counselling and testing (VCT) for HIV. The national DoH introduced female condoms in 1998 at selected family planning service points and later expanded their distribution beyond the pilot sites to include sites that provide services to various high-risk groups. By 2001, free condoms were apparently available at public health facilities across South Africa. However, existing evidence at the time suggested that various high-risk groups were still experiencing difficulty in accessing condoms through the public sector. With sustained informal distribution of condoms in the ensuing years, it is conceivable that accessibility of condoms has improved significantly across South Africa. Limited information was readily available on the current implementation status of interventions aimed at continuing to promote condom use.

In 2002, VCT was still regarded as being in its infancy in South Africa and was reportedly being used primarily for diagnostic purposes [among probable cases of HIV/AIDS]. It is estimated that by 2003, 53 percent of public PHC facilities were voluntary counselling and testing (VCT) sites. Information on the implementation strategy for VCT is also not readily available.

Social Assistance

In an effort to lessen the negative effects of poverty on HIV/AIDS care, management and treatment, the South Africa government has in recent years increased funding for social assistance interventions such as social grants and food parcels to adults and children affected by HIV/AIDS. In addition to ensuring food security, social assistance programmes aim to provide psychosocial support, life skills and HIV/AIDS training, and expanded treatment for orphans and children infected or affected by HIV. It is estimated that by February 2004, some 26 900 additional children who were vulnerable owing to HIV and AIDS had been identified. The number of such children identified since the inception of the programme in 2000 stood at more than 75 000.

The national Department of Social Development (DoSD) recently organized a conference to discuss the national policy framework for addressing the needs of orphans and other vulnerable children (OVC) affected by HIV/AIDS. Reports from the conference suggest that there are still major challenges to the successful implementation of OVC services, chief among which are the lack of capacity and coordination for the various social assistance interventions aimed at assisting OVCs. Detailed information on the status of implementation as well as how specific challenges figure in individual social assistance interventions was not readily available.

3.1.2 HIV and AIDS interventions in the not-for-profit sector

Policy Development

Efforts to establish a favourable socio-political environment for HIV/AIDS prevention and treatment programmes in South Africa have not been limited to the work of the national or

Cabinet level structures described earlier. The South African not-for profit sector consists of a large number of HIV and AIDS organizations whose activities range from advocacy and programme planning to research and evaluation.

These organizations include, but are not limited to, the AIDS Consortium, the AIDS Foundation of South Africa, the Centre for AIDS Development Research and Evaluation (CADRE), the Centre for the Study of AIDS (University of Pretoria), the Centre for HIV/AIDS Networking (University of Natal), the Institute for Democracy of South Africa (IDASA), the South African Red Cross Society and the Health Systems Trust. Together, these not-for-profit organizations have played a critical role in discussions of national HIV/AIDS policy alternatives and specifically contributed to the processes that led to the expansion of the PMTCT programme as well as the implementation of the national ARV roll-out programme.

Other Interventions

As is typical of most not-for-profit organizations, the scope of the HIV/AIDS interventions conducted in the not-for-profit sector in South Africa tend to be localized, with the reach of interventions targeted to residents of defined geographic locations. However, in a country like South Africa, best practices from successful local/regional HIV/AIDS interventions should be able to inform national strategies and policies in certain areas. Therefore, an impact assessment of South Africa's overall response to HIV and AIDS should seek to thoroughly examine the contributions of HIV/AIDS organizations with a focus on those that have influenced national strategies and policies or have achieved significant results in their catchment areas, particularly if they are high-risk areas.

3.1.3 HIV and AIDS interventions in the for-profit sector

Relevant Laws and Policies for HIV and AIDS

The South African government has passed several laws that have the potential to positively

influence the role of the private sector in national efforts for the prevention and treatment of HIV and AIDS. Such laws include, but are not limited to, the Mine Health Safety Act (1996), the Medicines and Related Substances Control Amendment Act (1997), the Medical Schemes Act (1998), the Employment Equity Act (1998), Policy Guidelines for HIV/AIDS and Sexually Transmitted Disease at the Workplace (2000), and the National Health Act (2003). Taken together, these laws do indeed go a long way toward establishing a non-discriminatory workplace environment for persons with HIV and AIDS as well as toward ensuring that persons with HIV and AIDS would realize their constitutional right to have access to affordable and timely medical services. In addition to the government efforts, the private sector has also produced workplace policies for HIV and AIDS.

The mining industry began discussing the development of internal workplace programmes for HIV and AIDS as early as 1993. The resulting workplace policies tended to not only set guidelines for how employees with HIV/AIDS should be treated in the context of work, but also included guidelines for the prevention and control of HIV/AIDS among employees. To date, interventions in the mining industry include training programmes for nurse counselors and peer educators, free condom distribution, awareness and education campaigns, prevention of mother-to-child transmission for pregnant employees, free STI treatment, and treatment of opportunistic infections, particularly TB; HIV and AIDS interventions are also availed to surrounding communities in partnership with the State.

More recently, the South African Business Coalition on HIV/AIDS (SABCOHA) has launched a toolkit that is aimed at assisting small and medium-sized businesses to formulate and implement workplace programmes for HIV/AIDS. The toolkit is based on best practices from Unilever and Standard Bank. Other equivalent companies that have workplace policies for HIV and AIDS include Metropolitan Life, Daimler Chrysler of South Africa, Heineken International, Eskom, Illovo Sugar of South Africa, Woolworths, and SAB-Miller. (No information was readily available on the strategy for promoting the uptake of the toolkit by the target companies or on progress that has been made thus far).

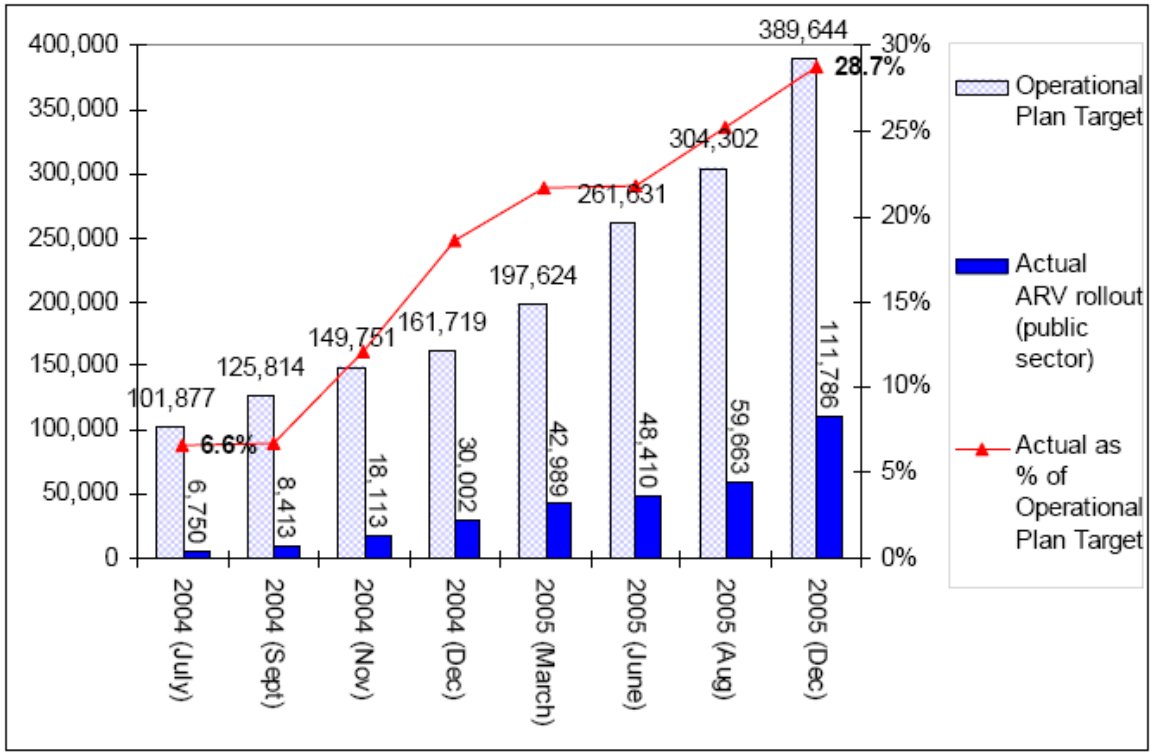
3.1.4 Provision of ARVs in South Africa, 2004 and 2005

Having emerged a little later than most other HIV epidemics in sub-Saharan Africa, South Africa's epidemic has now reached the stage where increasing numbers of people are dying of AIDS. The latest official mortality data show total deaths (from all causes) in South Africa increased by 79% from 1997 to 2004 (from 316 505 to 567 488) (Statistics South Africa, 2006). Death rates from natural causes for women aged 25–34 years increased fivefold between 1997 and 2004, and for males aged 30–44 they more than doubled over that period. A large proportion of the rising trend in death rates is attributable to the AIDS epidemic (Anderson and Phillips, 2006; Actuarial Society of South Africa, 2005; Bradshaw et al., 2004), and the increasing death toll has driven average life expectancy below 50 years in four provinces (Eastern Cape, Free State, Mpumalanga and KwaZulu-Natal) (Actuarial Society of South Africa, 2006).

The demographic impact of HIV/AIDS on the South African population is also apparent in statistics such as the under-5 mortality rate, which has increased from 65 deaths per 1000 births in 1990 to 75 deaths per 1000 births in 2006. Mortality rates in 1990 suggested that a 15-year old had a 29% chance of dying before the age of 60, but mortality rates in 2006 suggest that 15-year olds have a 56% chance of dying before they reach 60. Other estimates provided by the Actuarial Society of South Africa for 2006 include:

- 1.8 million AIDS deaths had occurred in South Africa, since the start of the epidemic.
- Around 740 000 deaths occurred in 2006, of which 350 000 were due to AIDS (approximately 950 AIDS-related deaths per day).
- 71% of all deaths in the 15–49 age group were due to AIDS.
- Approximately 230 000 HIV-infected individuals were receiving antiretroviral treatment, and a further 540 000 were sick with AIDS but not receiving antiretroviral treatment.
- 300 000 children under the age of 18 experienced the death of their mother.
- 1.5 million children under the age of 18 were maternal or double orphans (i.e. had lost a mother or both parents), and 66% of these children had been orphaned as a result of HIV/AIDS.

Figure 3.2 shows trends in the provision of antiretroviral treatment for people who are sick with AIDS in South Africa in 2004 and 2005. The target of the operational plan for 2005 was to get 389,644 people on ARVs but only 111,786 (28.7%) of those people were on the programme by the end of 2005. When the operational plan was approved in 2004, only 6.6% of the targeted people who needed ARVs could get them in the public sector. Of the total number of public sector patients on Highly Active Antiretroviral Treatment - HAART, 54% were part funded by external donors (the largest being President's Emergency Plan for AIDS Relief [PEPFAR]) working in partnership with the public sector.



Source: Natrass N (2006)

Figure 3.2 Trends in the provision of ARVs in South Africa, 2004 and 2005

3.2. Progress towards attaining MGD indicators in South Africa

3.2.1. HIV prevalence among pregnant women aged 15–24 years

Prevalence data from the 15-24 year age group in antenatal surveys may serve as a proxy marker for recently acquired infection. The approach has practical appeal in South Africa since the annual HIV survey among antenatal clinic attendees provide a large enough sample in the youngest age groups. But the interpretation is necessarily limited to a small age band in pregnant women.

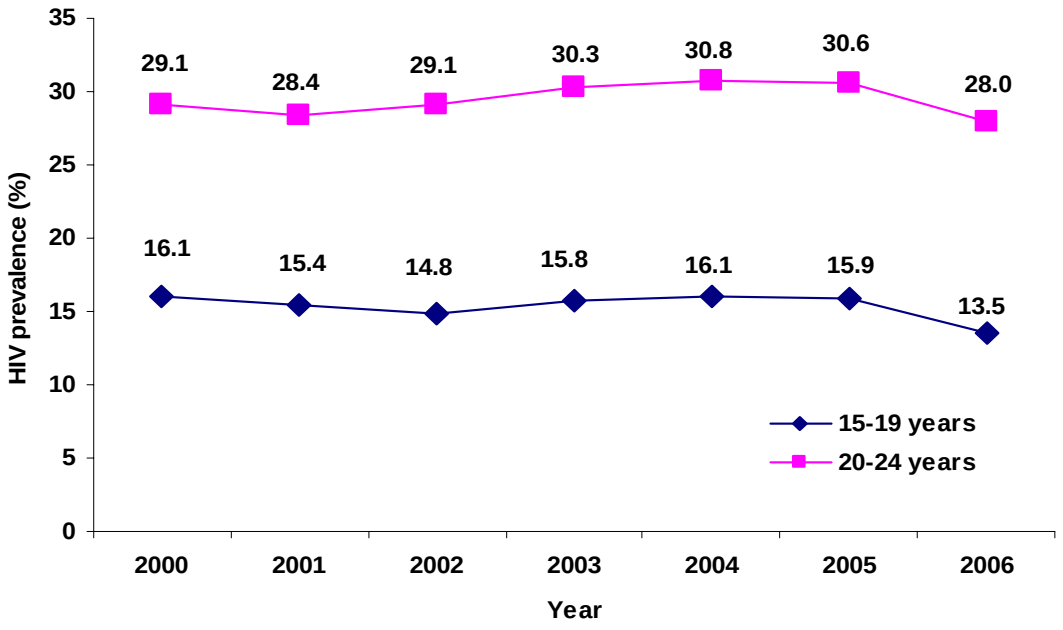


Figure 3.3 Antenatal HIV prevalence among youth, South Africa, 2000 - 2006

Figure 3.3 shows the HIV prevalence trends among young pregnant women since the year 2000. After years of relative stability, prevalence among 15-19 year olds and among 20-24 years olds showed for the first time a significant decline in 2006 (Department of Health South Africa, 2007a). Is this the beginning of the long-awaited downward trend among pregnant youth in South Africa? At least two more survey rounds are necessary to draw such a conclusion.

Antenatal data from 15-24 years olds in the 2004 national antenatal survey (Department of Health South Africa, 2005) were subjected to a single year age cohort analysis using smoothed prevalence data (Figure 3.4). This method allows an indirect HIV incidence calculation for each single year of age in the 15 - 24 year age cohort by taking the difference in prevalence from year to year and dividing this value by the population at risk for new infection (Table 3.1):

Numerator: % difference in prevalence from year to year

Denominator: population at risk = 1-percentage of smoothed HIV prevalence in the previous year.

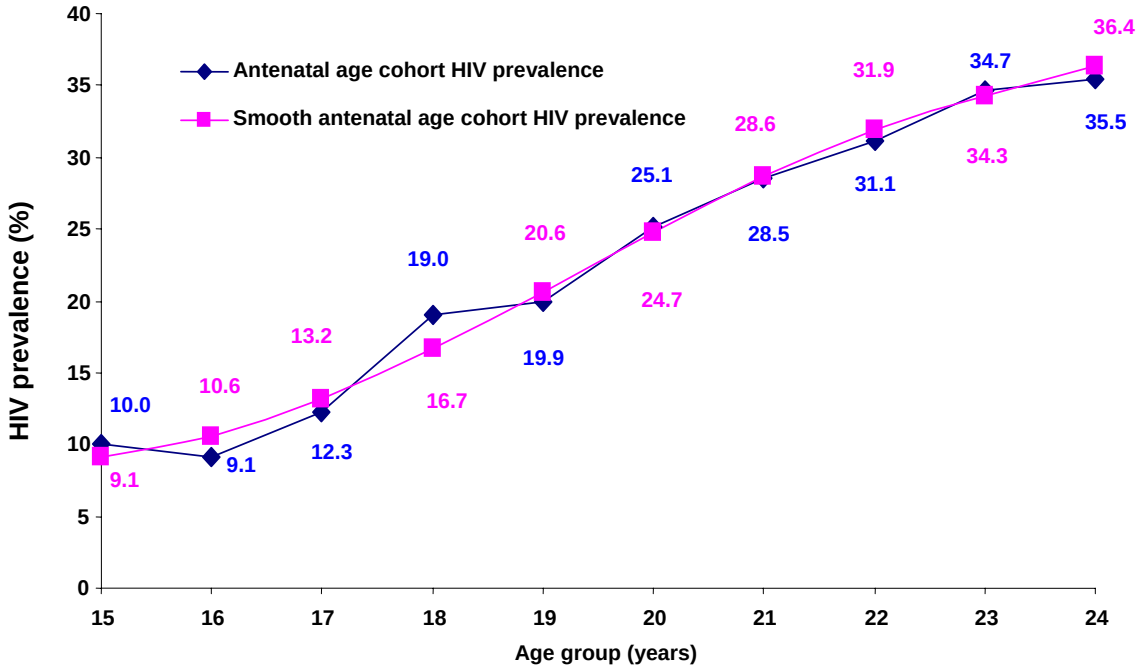


Figure 3.4 Original and smoothed HIV prevalence by single year of age 15-24 year olds, Antenatal survey, South Africa 2004

Table 3.1 Calculation of incidence from single year age cohort prevalence in 15 to 24 year old antenatal attendees

Age (years)	Smooth age cohort prevalence (%)	Difference in prevalence (%)	Proportion population at risk	Incidence (%)
15	9.130			
16	10.568	1.438	0.909 (90.9%)	1.6
17	13.200	2.632	0.894 (89.4%)	2.9
18	16.673	3.473	0.868 (86.8%)	4.0
19	20.634	3.961	0.833 (83.3%)	4.8
20	24.732	4.098	0.794 (79.4%)	5.2
21	28.615	3.883	0.753 (75.3%)	5.2
22	31.930	3.315	0.714 (71.4%)	4.6
23	34.324	2.394	0.681 (68.1%)	3.5
24	36.400	2.076	0.657 (65.7%)	3.2

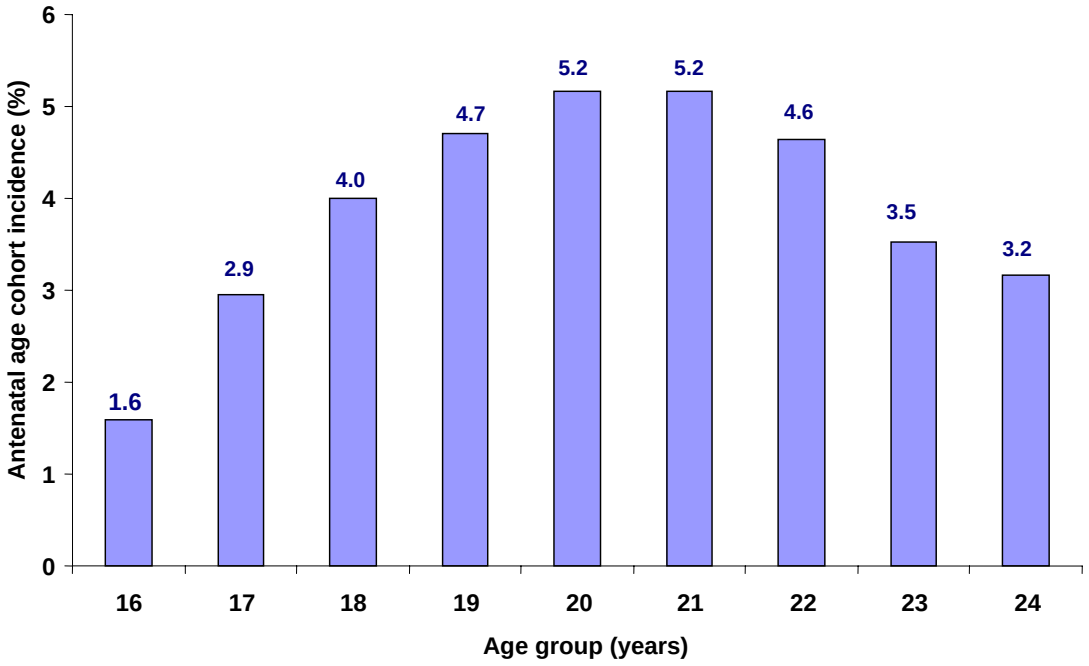


Figure 3.5 Incidence from single year age cohort prevalence analysis in 15 to 24 year olds, Antenatal survey, South Africa 2004

Figure 3.5 shows the HIV incidence profile calculated from the antenatal HIV age cohort prevalence analysis in pregnant women aged 15-24 years. HIV incidence increases rapidly with age and peaks at 5.2% in the 20 and 21 year olds.

This incidence calculation model assumes that the difference in prevalence from year to year is entirely due to new HIV infections. However, this method is less applicable in older age groups when AIDS-related mortality has already an impact on HIV prevalence levels. Therefore, the apparent decline in incidence after 22 years of age is most likely due to AIDS-related mortality.

3.2.2. Contraceptive prevalence rate

The South African Demographic Health Survey [SADHS] (2003) found generally low contraceptive prevalence rates. Among currently sexually active women aged 15-19 years, 51% used injectables as contraception, 33.6% used no method and 4% reported using a condom.

Less than half (49.2%) of women aged 15 -49 years of age who were either married or cohabiting reported using some method of contraception in the HSRC 2005 national household survey. Of these 13.7% reported that they were currently using either a male of female condom.

3.2.3. Condom use as a contraceptive prevalence rate

The HSRC 2005 national household survey found that 13.7% of women aged 15-49 years, who were either married of cohabiting, were currently using either a male of female condom as a form of contraception.

3.2.4. Condom use at last high-risk sex

Consistent correct use of condoms within non-regular sexual partnerships substantially reduces the risk of sexual HIV transmission. This is especially important for young people who often experience the highest rates of HIV infection. Condom use is one measure of protection against

sexual transmission of HIV; others include delaying age at first sex, reducing the number of non-regular sexual partners, being faithful to one uninfected partner, avoidance of concurrent sexual partnerships and high -risk sexual practices such as unprotected anal sex (WHO, 2006).

SADHS (2003) asked about the use of condoms and found that almost 40 percent of women who had sexual intercourse in the 12 months prior to the survey, said they had ever used a condom. One-third of women said they had used a condom the last time they had sex, though the proportion varies by type of partner. Only 15 percent of women said they used condoms with their husbands or live-in partners, while 47 percent said they used a condom the last time they had sex with a non-cohabiting partner.

The UNGASS country report for South Africa in 2003 (UNAIDS, 2006), indicates that 20% percent of young women (aged 15–24) had used a condom the last time they had sex with a non-regular partner. The finding in the UNGASS report is less than half the findings from the SADHS of the same year. This is not surprising as UNAIDS/UNGASS statistics are mainly extrapolated from the antenatal sero-prevalence survey results.

The SADHS of 2003 presented findings about female sexual behaviour. It reported that among women aged 15-19 years, 8.5% have had sex by the age of 15, and of those who have ever had sex, 21.2% report using a condom when they last had sex with an unmarried partner. Similar figures for males were not presented in the report (SADHS, 2003).

In the HSRC 2002 study of 15-24-year-olds, 57.1% of men and 46.1% of women reported using a condom at last sexual intercourse (Shisana & Simbayi, 2002). In the HSRC 2005 study of 15-24-year-olds, 72.8% of men and 55.7% of women reported using a condom at last sexual intercourse (Shisana *et al.,* 2005).

The proportion of young people (15-24 years old) using condoms during last sex act with a non-regular partner is reported in Table 3.2. Similar proportions were reported for condom use with a non-regular partner among people living in urban and rural areas when analyzed separately for males, females and both sexes. A higher proportion of urban males (64.4%) reported condom use

with a non regular partner than all young people living in urban areas (55.1%). A similar pattern was observed for rural males (62.9%) when compared to all young people living in rural areas (52.8%). The converse was seen for females where the proportion of females living in urban areas (42.7%) that used a condom during sex with a non –regular partner was lower than all young people living in urban areas (55.1%). A similar pattern of condom use was observed when comparisons were made between males (63.7%), females (41.8%) and all young people (52.7%).

Table 3.2 Young people's condom use with non-regular partner

	Males		**Females**		**Both sexes**	
	Urban	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**
Indicator score by sex and residence	64.4 %	62.9 %	42.7%	40.7%	55.1%	52.8%
Indicator score by sex (National)	63.7%		41.8%		52.7%	

Table 3.3 shows that on average condom use among young people aged 15-24 in the SA Communication survey 2006 (Parker *et al.,* 2006) and the HSRC 2005 national household survey (Shisana *et al.,* 2005) is comparable, 67.8% and 64.3% respectively.

Table 3.3 Comparison of condom use among young people aged 15-24 in the SA Communication survey 2006 and the HSRC 2005 survey

Ages 15-24	**SA AIDS Communication survey**	**HSRC 2005 survey**
Urban formal	72.7%	-
Urban informal	67.1%	-
Rural	63.5%	-
Males	-	72,8%
Female	-	55,7%
Average	**67.8%**	**64.3%**

3.2.5. Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS

The UNGASS country report for South Africa in 2003 (UNAIDS, 2006) indicates the 20% percent of young women (aged 15–24) had comprehensive HIV and AIDS knowledge. Of these, 26.0% were in urban areas and 13.0% were in rural areas.

HSRC's 2005 national household survey did not ask verbatim the same questions as the UNGASS indicator thus it was not possible to compose a score. However, the survey has addressed the areas related to correct knowledge and/or misconceptions about HIV transmission and these questions are reported below in Table 3.4.

Table 3.4 Knowledge of HIV among respondents aged 15 – 24, South Africa 2005

1 .Is it possible to transmit HIV from a mother to her unborn child?											
		MALES				FEMALES				BOTH SEXES	
		urban	rural	Total		urban	rural	Total		urban	rural	Total
Yes	N	1365	662	2027		1790	921	2711		3155	1583	4738
	%	*83.4*	*73.5*	78.7		89.1	80.1	84.9		*86.1*	*76.9*	*81.6*
No	N	109	63	172		107	79	186		216	142	358
	%	*7.4*	*8.5*	7.9		5.7	9.0	7.4		*6.6*	*8.8*	*7.7*
Don't know	N	146	139	285		107	123	230		253	262	515
	%	*9.2*	*18.0*	13.4		5.2	10.4	7.8		*7.3*	*14.3*	*10.7*
Total	N	1620	864	2484		2004	1123	3127		3624	1987	5611
2. There is a curve for HIV-AIDS												
Agree	N	116	50	166		120	69	189		236	119	355
	%	*6.8*	*5.5*	*6.2*		*6.2*	*6.1*	*6.1*		*6.5*	*5.8*	*6.2*
Disagree	N	1312	729	2041		1651	919	2570		2963	1648	4611
	%	*80.8*	*84.7*	*82.7*		*82.9*	*81.8*	*82.3*		*81.8*	*83.3*	*82.5*
Not sure	N	195	90	285		238	140	378		433	230	663
	%	*12.4*	*9.9*	*11.1*		*11.0*	*12.2*	*11.6*		*11.7*	*11.0*	*11.4*
Total	N	1623	869	2492		2009	1128	3137		3632	1997	5629
3. HIV causes AIDS												
Agree	n	1469	782	2251		1817	993	2810		3286	1775	5061
	%	*92.2*	*90.7*	*91.5*		*91.0*	*89.8*	*90.4*		*91.6*	*90.2*	*90.9*
Disagree	n	60	27	87		75	29	104		135	56	191
	%	*2.8*	*2.7*	*2.8*		*3.7*	*2.1*	*2.9*		*3.2*	*2.8*	*2.4*
Not sure	n	90	57	147		108	103	211		198	160	358
	%	*5.0*	*6.7*	*5.8*		*5.4*	*8.1*	*6.7*		*5.2*	*7.4*	*6.3*

Total	n	1619	866	2485		2000	1125	3125		3619	1991	5610
	%											
4. HIV infection is prevented by using condoms												
Agree	n	1388	798	2186		1717	1005	2722		3105	1803	4908
	%	*86.1*	*93.5*	*89.6*		*86.3*	*90.3*	*88.3*		*86.2*	*91.9*	*89.0*
Disagree	n	162	38	200		175	45	220		337	83	420
	%	*9.5*	*3.3*	*6.5*		*8.1*	*3.2*	*5.6*		*8.8*	*3.3*	*6.1*
Not sure	n	70	33	103		114	74	188		184	107	291
	%	*4.5*	*3.2*	*3.9*		*5.7*	*6.6*	*6.1*		*5.0*	*4.8*	*4.9*
Total	n	1620	869	2489		2006	1124	3130		3626	1993	5619
5. You can reduced the risk of HIV by having fewer sexual partners												
Agree	n	1206	581	1787		1427	747	2174		2633	1328	3961
	%	*71.4*	*66.1*	*68.9*		*65.4*	*65.6*	*65.5*		*68.6*	*65.8*	*67.3*
Disagree	n	314	192	506		434	253	687		748	445	1193
	%	*22.7*	*23.9*	*23.2*		*26.3*	*24.5*	*25.9*		*24.3*	*24.2*	*24.3*
Not sure	n	104	95	199		142	126	268		246	221	467
	%	*6.0*	*10.0*	*7.9*		*8.3*	*10.0*	*9.1*		*7.1*	*10.0*	*8.5*
Total	n	1624	868	2492		2003	1126	3129		3627	1994	5621

Interpretation of findings shown in Table 3.4:

1. Is it possible to transmit HIV from a mother to her unborn child?

Knowledge pertaining to this mode of transmission was higher among youth from urban (86%) as compared to those from rural (77%) areas. Greater level of uncertain exists, especially among rural males (18%). Females in general had a better understanding about this mode of transmission.

2. There is a curve for HIV-AIDS

The overwhelming majority of youth (83%) believed that there is no a cure for HIV-AIDS. Males from urban areas held the highest belief (6.8%) that there is a cure and also had the highest levels of uncertainty (12%).

3. HIV causes AIDS

The majority of youth (91%) believed that HIV causes AIDS. Higher proportion of rural youth (7%) was unsure, especially among females (8%) from these areas.

4. HIV infection is prevented by using condoms

Although the majority of youth (89%) agreed that HIV infection is prevented by using condoms, youth from urban areas expressed higher levels of disagreement. One tenth (10%) of youth from urban males and eight percent of urban females disagreed with the statement.

5. You can reduced the risk of HIV by having fewer sexual partners

The highest gap in knowledge among youth pertains to this statement. Only a third (67%) of youth agreed that one could reduce the risk of HIV by having fewer sexual partners. There was no major difference in levels of knowledge among youth by sex of area where they reside.

3.2.6. Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years.

The information provide in Table 3.5 was extracted from the HSRC 2005 national household survey (Shisana *et al.,* 2005). Ratio was determined by dividing the proportion of orphans attending school by the proportion of non-orphans attending school.

Forty-three children aged 10 to 14 reported that both their mother and father were dead (Table 3.5). Of this group, two did not currently attend school, resulting in a school attendance rate of 94.5% among orphaned children.

There were 2197 children aged 10 to 14 who reported that both their mother and father were alive. Of this group, 43 did not currently attend school, resulting in a school attendance rate of 97.7% among non-orphaned children.

Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years: 94.5% / 97.7% = 0.97.

These results suggest that school attendance was quite similar in the two groups.

Table 3.5 Proportion of school attendance among double orphaned vs. non-orphaned children aged 10 to 14

Do you attend school	Mother and father died	Mother and father alive
	n (%)	n (%)
Yes	43 (94.5%)	2154 (97.7%)
No	2 (5.5%)	43 (2.3%)
Total	45 (100%)	2197 (100%)

3.3 National HIV incidence estimates: key indicator for assessing programme impact

The following Tables 3.6 and 3.7 present HIV incidence estimates for South Africa in both relative terms (% per year) and absolute terms (number of new infections per year) (Rehle *et al*. 2007). HIV incidence amongst persons aged two years and older is calculated at 1.4% (95% CI: 1.0-1.8), with 571 000 new HIV infections estimated for 2005 (Table 3.6). Our analysis indicates that 500 000 new HIV infections occurred in the 15-49-year age group. 34% of all new HIV infections in the population 2 years and older occurred in young people aged 15-24 years. Among youth aged 15-24 years, females account for 90% of the recent HIV infections in this age group. The data also underscore the disproportionate impact of the HIV epidemic on women in this country. The incidence of HIV in the children population aged 2-14 years is of concern, a relative incidence of 0.5% (95% CI: 0.0-1.2) translates to 69 000 estimated new infections in this age group. The incidence data show that new non-vertical infections have occurred among children in South Africa. These infections in children 2years and older are most likely not linked to mother to child transmission, and thus infection would have occurred through other modes of transmission, potentially including child sexual abuse – a research topic that needs urgent attention.

Table 3.6 HIV incidence % and number of new infections by age group, South Africa 2005

Age group (years)	Weighted sample (n)	HIV incidence % per year [95%CI]	Estimated number of new infections per year (n)
≥ 2	44 513 000	1.4 [1.0 - 1.8]	571 000
2-14	13 253 000	0.5 [0.0 - 1.2]	69 000
15-24	9 616 000	2.2 [1.3 - 3.1]	192 000
≥25	21 645 000	1.7 [1.1 – 2.3]	310 000
15-49	24 572 000	2.4 [1.7 – 3.1]	500 000

Numbers rounded off to the nearest thousand

Table 3.7 shows the calculated HIV incidence by race, province and locality type for the population 2 years and older. HIV incidence in the African race group is nine times higher than the incidence found in the other race groups, 1.8% (95% CI: 1.3-2.3) and 0.2% (95% CI: 0.0-0.3) respectively. Mpumalanga (2.4%, 95% CI: 0.9-3.8), Free State (1.9%, 95% CI: 0.4-3.4), Gauteng (1.9%, 95% CI: 0.8-3.0), KwaZulu-Natal (1.7%, 95% CI: 0.7-2.7), and Limpopo (1.6%, 95% CI: 0.3-2.8) recorded the highest incidence, while North West (1.0%, 95% CI: 0.2-1.8), Western Cape (0.8%, 95% CI: 0.2-1.5), Eastern Cape (0.7%, 95% CI: 0.1-1.2) and Northern Cape (0.2%, 95% CI: 0.0-0.4) showed incidence rates of one percent and lower. In absolute terms, however, most new HIV infections occurred in the populous provinces Gauteng and KwaZulu-Natal, 144 000 and 134 000 respectively.

Table 3.7 HIV incidence % and number of new infections by race, province and locality type (age ≥2 years), South Africa 2005

Variable	Weighted sample (n)	HIV incidence % per year[95%CI]	Estimated number of new infections per year (n)
Race			
African	35 113 000	1.8 [1.3- 2.3]	557 000
Other	9 337 000	0.2 [0.0 – 0.3]	14 000

Province			
Mpumalanga	3 083 000	2.4 [0.9 – 3.8]	63 000
Free State	2 827 000	1.9 [0.4 – 3.4]	47 000
Gauteng	8 512 000	1.9 [0.8 – 3.0]	144 000
KwaZulu-Natal	9 213 000	1.7 [0.7 – 2.7]	134 000
Limpopo	5 207 000	1.6 [0.3 – 2.8]	76 000
North West	3 642 000	1.0 [0.2 – 1.8]	33 000
Western Cape	4 382 000	0.8 [0.2 – 1.5]	33 000
Eastern Cape	6 777 000	0.7 [0.1 – 1.2]	40 000
Northern Cape	871 000	0.2 [0.0 – 0.4]	1 000
Locality type			
Urban informal	3 878 000	5.1 [3.2 – 7.0]	166 000
Rural formal	3 577 000	1.6 [0.7 – 2.5]	52 000
Rural informal	16 495 000	1.4 [0.1 – 2.8]	211000
Urban formal	20 563 000	0.8 [0.3 – 1.2]	142 000

HIV incidence by place of residence illustrates the disproportionate risk for HIV infection in South Africa. Persons living in urban informal settlements have by far the highest incidence rates, 5.1%, compared to those living in rural formal areas (1.6%, 95% CI: 0.7-2.5), rural informal areas (1.4%, 95% CI: 0.1-2.8), and urban formal areas (0.8%, 95% CI: 0.3-1.2).

Place of residence is an important epidemiological variable because it embodies socio-economic contexts that influence risk of HIV infection. In South Africa, some Africans live in contexts that increase vulnerability to many illnesses - and HIV is no exception. Although only 8.7% of the total South African population 2 years and above lives in urban informal settlements, 29.1% (166 000 / 571 000) of the total estimated number of new HIV infection in South Africa are found in this residence genotype (Table 3.7 and Figure 3.6).

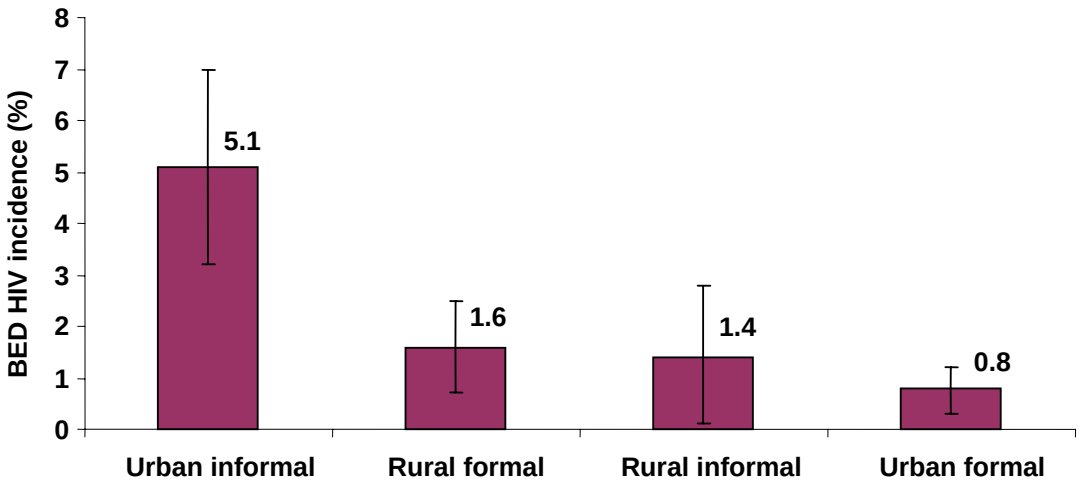


Figure 3.6 HIV incidence by locality type South Africa 2005

Figure 3.7 compares the HIV incidence and HIV prevalence profile in the South African population by age and sex. The differences in HIV incidence between males and females are especially large in the younger age groups under 30 years of age. HIV incidence among females rises fast and peaks in the 20-29 age band at 5.6% (95% CI: 2.8-8.4), more than six times the incidence found in males in this age group (0.9%, 95% CI: 0.0-1.9). HIV incidence among males increases much slower than in females and peaks at a lower level in the 30-39 age group at 2.7% (95% CI: 0.0-5.7).

These differential HIV transmission dynamics between males and females are reflected in the HIV prevalence profiles. HIV prevalence increases dramatically among young females and peaks at 28.2% (95% CI: 24.5-32.1) in the 20-29 age group. In males, the increase in HIV prevalence is more progressive, and peaks at 23.3% (95% CI: 18.9-28.3) 10 years later in the age group 30-39.

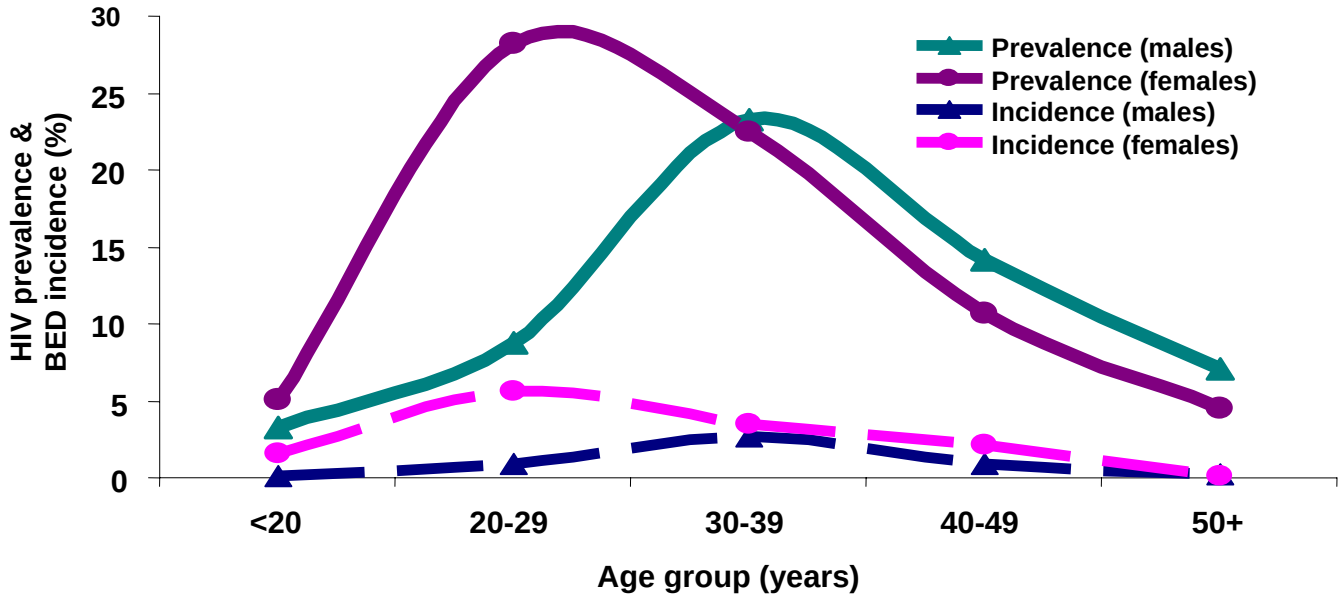


Figure 3.7 HIV prevalence and HIV incidence by age and sex, South Africa 2005

Finally, Table 3.8 illustrates a major advantage of including HIV incidence testing in national HIV surveys. Incidence data provide critical new insights into the dynamics of the HIV epidemic and is a more appropriate measure to correlate biological data with recent behaviours or recent behavioural changes. The analysis identified high levels of disproportionate risk among widowed persons, pregnant women and among young people engaged in unprotected sex.

A surprising finding was the observed high incidence among some older sub-populations. Widowed individuals had a remarkably high HIV incidence of 5.8%, pointing to a lack of perceived risk of HIV infection among older people in South Africa. The analysis also supports recent findings from Uganda by Gray *et al.* (2005) that suggest an increased risk of HIV acquisition during pregnancy. Females aged 15-49 years who reported a current pregnancy in the survey were found to have an HIV incidence of 5.2%, compared to 4.6% incidence in the total female population 15-49 years of age.

Table 3.8 HIV incidence and behaviour, South Africa 2005

Variable	HIV incidence (% per year)
Marital status	
Single	3.0
Married	1.3
Widowed	5.8
Sexual history	
Sexually active in the past 12 months	2.4
Current pregnancy	5.2
Condom use at last sex (15-24 yrs)	
Yes	2.9
No	6.1

Comparison of HIV-1 BED CEIA incidence estimates and the ASSA model

To examine the plausibility of directly measured BED HIV incidence estimates we compared the laboratory-based estimates of HIV incidence to estimates derived from mathematical modeling [ASSA2003 model] (Johnson & Dorrington, 2006).

Overall, the estimates by the two methods were similar. BED HIV incidence in the study population aged two years and older was 1.4%, compared to 1.3% estimated by the ASSA model. A BED HIV incidence rate of 2.4% was found among individuals aged 15-49 years. The modeled HIV incidence was 2.2% for this age group. Among youth in the age group 15-24 years, the differences were more prominent (Figure 3.8).

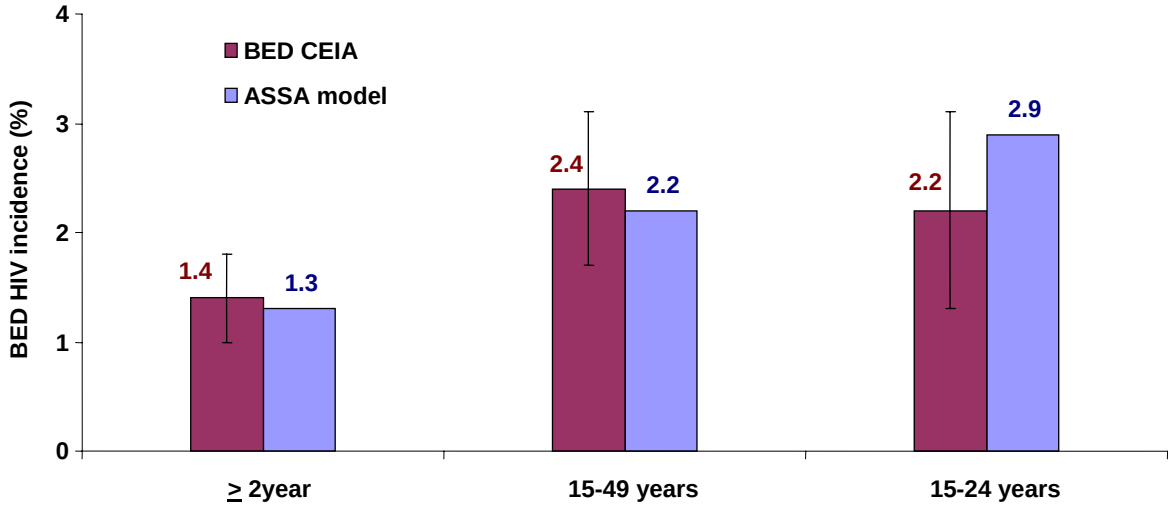


Figure 3.8 BED HIV incidence versus ASSA model (estimates for 2005)

The differences in the estimates for youth aged 15-24 years are more substantial. While the confidence intervals around the BED estimates for the total age group and females include the model estimates, this is not the case for young males where the model appears to overestimate HIV incidence compared to the population-based estimate (Figure 3.9). This is further corroborated by the analysis of HIV prevalence in youth by single year of age (Figure 3.10), which illustrates the extraordinary difference in infection levels between young males and females in South Africa. Based on the BED incidence estimates, females account for 90% of the recent HIV infections among youth aged 15-24 years.

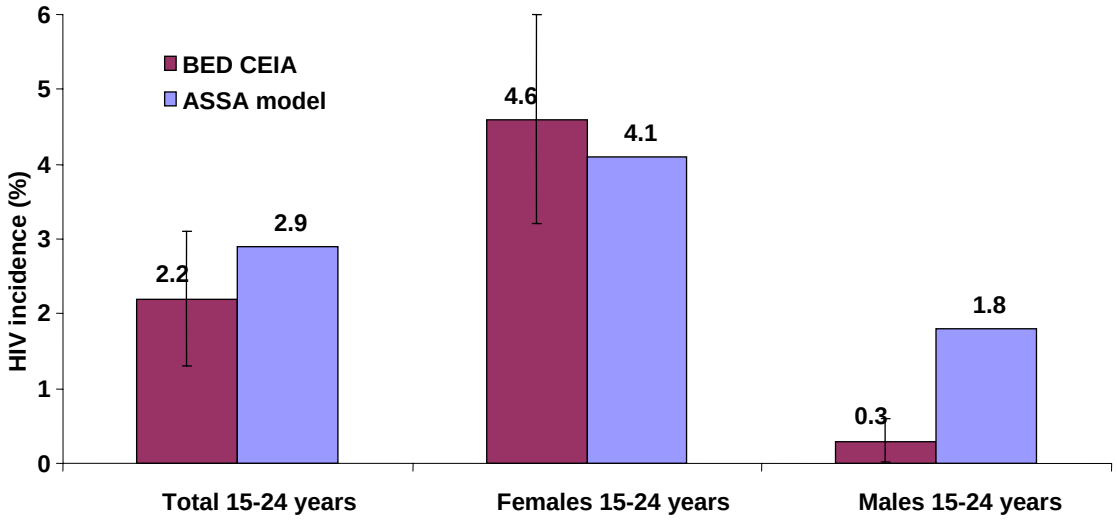


Figure 3.9 BED HIV incidence versus ASSA model: male and female youth 15-24 years

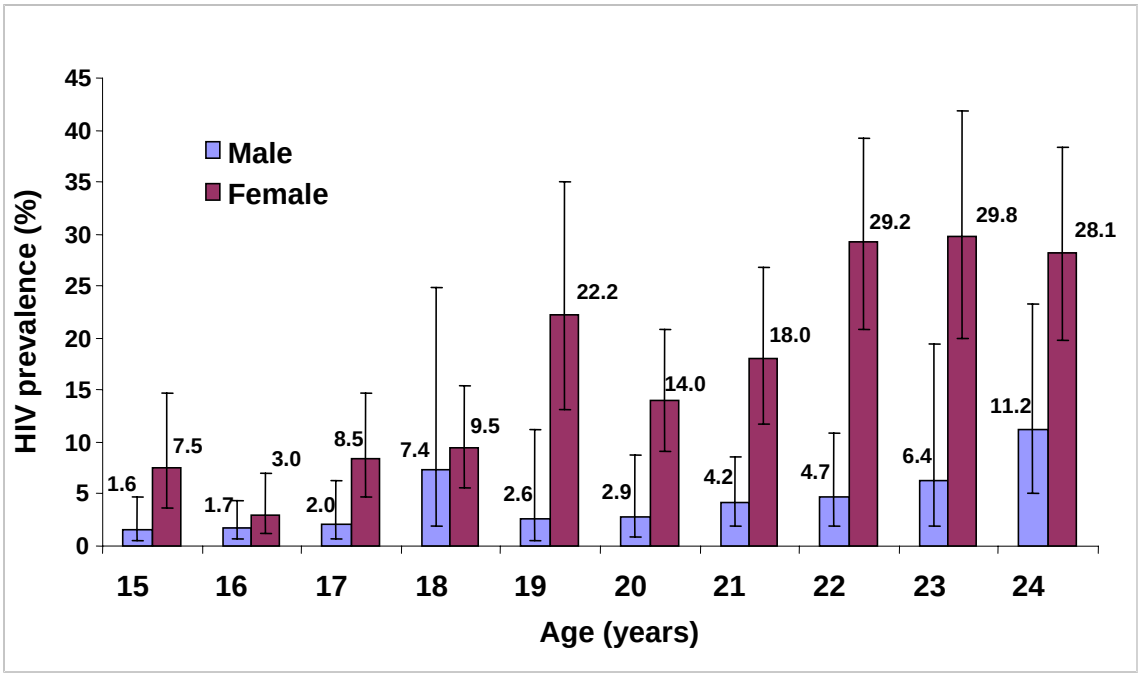


Figure 3.10 HIV prevalence in youth by single year of age (HSRC 2005)

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Lack of political will or commitment has often been cited as a key explanatory factor for the limited progress that has been made in the prevention and control of HIV/AIDS in South Africa. This review focused largely on assessing concrete actions that have been taken within South Africa's government, civil society and business sectors to address the HIV/AIDS epidemic.

A genuine assessment of political commitment would have to go beyond the documents reviewed herein and would have to include examinations of how political leaders and public heath officials (i.e., opinion makers) have publicly identified with the epidemic or have shown a willingness to mobilize resources and expedite implementation of HIV/AIDS interventions.

On paper, it appears as if a lot of resources have been devoted to fighting HIV/AIDS in South Africa; however, the extent to which what is on paper reflects what is taking place on the ground is difficult to assess without a detailed analysis of budgetary expenditures related to HIV and AIDS. In addition to commitment, the next element in assessing a country's response to HIV/AIDS is capacity. This review suggests that lack of capacity in various areas may actually be limiting the impact of the multitude of interventions that have been implemented in South Africa to date. Thus, secondary data analyses should be conducted with the goal of ascertaining the extent to which capacity for realizing the objectives of HIV/AIDS prevention and control programmes exists in South Africa.

The HIV incidence estimates reflect the underlying transmission dynamics that are currently at work in South Africa. Our analysis indicates that 500 000 new HIV infections occurred in the adult population aged 15-49 years during the year 2005 in South Africa. 34% of all new HIV infections occurred in young people aged 15-24 years. The incidence rates among young females in their prime childbearing age are especially alarming. HIV incidence among females in the 20-29 age group was 5.6%, more than six times the incidence found in males of the same age (0.9%). Among youth aged 15-24 years, females account for 90% of the recent HIV infections in this age group.

The incidence data show that a substantial number of new HIV infections occurred among children in South Africa. These infections in children between 2 and 14 years are most likely not linked to mother to child transmission, and thus infection would have occurred through other modes of transmission, potentially including child sexual abuse – a research topic that needs urgent attention.

The relationship between HIV incidence and prevalence grows increasingly complex as the epidemic matures and prevention efforts try to mitigate it at the same time. The interpretation of HIV trends will be even more challenging in the coming years when antiretroviral (ARV) treatment becomes more widely available for infected individuals. Increased access to antiretroviral treatment will increase the survival time of HIV infected persons and, as a consequence, may have multiple, potentially altering effects on HIV transmission by increasing the pool of HIV infected persons (HIV prevalence), dis-inhibiting prevention behaviors and by decreasing infectiousness through reduction in viral loads.

Incidence data provide critical new insights into the dynamics of the HIV epidemic and is a more appropriate measure to correlate biological data with recent behaviours or recent behavioural changes. The availability of laboratory based tests for recent HIV infection also provides insights into the limits of self-reported sexual behaviour in cross-sectional surveys. The 2005 national HIV incidence estimates presented in this study will serve as benchmark figures for future assessments of the dynamics and trends of the South African HIV epidemic, and provides a mechanism for tracking the impacts of prevention interventions.

4.2 Recommendations

- **Implementation of a national multi-sectoral response**

The National Strategic Plan 2007-2011 is not a plan for the health sector alone. Instead, it seeks to be relevant to all agencies working on HIV and AIDS in South Africa, within and outside government. As HIV/AIDS is a matter of extreme national importance, active and visible leadership is essential to ensure the full and active participation of civil society and the private sector.

While the severity of the HIV and AIDS epidemic is well recognized, the epidemiological profile and sectoral impact overview shows that there is no scope for complacency and programme implementation must be geared for achievement of maximum impact. The complexity of the epidemic necessitates a multi-sectoral approach that is contained the New Strategic Plan. In this regard, a key focus of the NSP must be mainstreaming the comprehensive response in all sectors. In this regard, education sector interventions present a major opportunity for disease prevention and impact mitigation. Although evidence about the connection between level of education and HIV prevalence is not straight forward, there is generally an inverse relationship between the level of education and the disease burden for most infectious diseases. Education levels are strongly predictive of better knowledge, safer behaviour and reduced HIV infection rates, and it has been described as 'the single most effective preventive weapon against HIV and AIDS'.

- **Provide an enabling environment**

A successful response to the epidemic will depend largely on changing the social norms, attitudes and behaviours that contribute to the spread of HIV in South Africa. Acknowledging the value of social capital for health as a mediating mechanism for lowering risk for HIV infection in our communities will facilitate collective action and provide the social context for support and prevention programmes.

As HIV continues to spread, and neither a vaccine nor cure exists, prevention remains the key strategy for curbing the epidemic in the country. However, effective prevention programmes must address the social, economic, and cultural factors that influence people's behavior and must include interventions that promote safe sex, delaying the onset of sexual activity, staying with one mutually faithful partner, limiting the number of sexual partners, consistently and correctly using condoms, and counseling and testing for HIV.

While preventing HIV transmission from mothers to their infants is key to saving lives, women who are HIV positive need contraceptive choices and counselling to help them decide whether to have a pregnancy. Other key strategies include improving the health infrastructure and the capacity to provide services; reducing poverty, illiteracy and other social, economic, and political

factors that increase people's vulnerability to HIV infection; and reducing the stigma and discrimination against those living with HIV.

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APPENDICES

Appendix 1: Historical Timeline of HIV and AIDS programme activities in South Africa, 1990 - 2007

Year	Intervention, Legislation, Policy or Declaration
1990	First annual Antenatal Clinic HIV Sero-Prevalence Survey
1991	National AIDS Helpline
1992	National AIDS Co-ordinating Committee of South Africa
1994	Rendering of Free Health Services Notice
1994	Soul City
1996	Constitution of the Republic of South Africa (Bill of Rights)
1998	Compulsory Community Service for Medical Doctors and Interns
1998	Ministerial Taskforce on HIV/AIDS
1998	Partnership Against AIDS Declaration
1998	Essential Drug List (Revised or Second Edition)
1998	Introduction of Female Condom at Family Planning Service Points
1999	National Policy for HIV Testing
1999	LoveLife
2000	Establishment of the South African National AIDS Council
2000	HIV/AIDS/STI Strategic Plan for South Africa (2000 – 2005)
2000	The Primary Healthcare Package for South Africa: A Set of Standards and Norms
2000	Takalani Sesame
2002	Khomanani
2003	Expanded Prevention of Mother-to-Child Transmission of HIV
2003	Plan for Comprehensive HIV and AIDS Care, Management & Treatment for South Africa
2003	Essential Drug List (Revised or Second Edition)
2003	Tsha Tsha; Gazlam
2004	Implementation of ARV Roll-out Programme
2006	Reconfiguration of the South African National AIDS Council under the leadership of Deputy President Phumzile Mlambo-Ncuka Preparation and consultations on the National Strategic Plan 2007-2011
2007	Cabinet approves the National Strategic Plan 2007-2011

Appendix 2: HSRC submission to the Department of Health on the National Strategic Plan

20 November 2006

Dr N. Xundu
Chief Director
National Department of Health

COMMENTS ON THE NATIONAL STRATEGIC PLAN 2007-2011

Thank you for giving the Human Sciences Research Council (HSRC) the opportunity to comment on the HIV and AIDS, STI Strategic Plan for South Africa, 2007-2011, due for release on December 1, 2006.

Overall, we support the development of a strategic plan and with structuring it according to the 4 priority areas identified. We also support the goals listed in Section 8.

The current draft of the plan is substantively similar to the previous plan in terms of format and goals. Although it is broad in scope, we believe that the plan in its current form has some important gaps in terms of the sectors involved, priorities identified, and strategies for addressing the HIV epidemic. It appears to have a major health focus, and the sections dealing with social and other dimensions of the epidemic are not as comprehensive or as detailed as a complex epidemic such as ours would require. The section dealing on research priorities is also not comprehensive or detailed.

SAHA has expertise in social aspects of HIV/AIDS and in research, including social and behavioural science research, epidemiological research, health systems research, and monitoring and evaluation. We are committed to working with government, other research and service organizations, and civil society in addressing the challenges of the HIV epidemic. We would have liked to have been engaged more substantively and at an earlier stage in the conceptualisation and development of the Strategic Plan. We hope that we will be given an opportunity to provide more substantive input, and that the draft that is released on 1 December 2006 is not the final product. In particular, we would like to contribute to summarizing available data and evidence, the identification of research priorities, and the development of indicators.

The following selected comments relate to the draft of the plan dated October 2006:

Section 4 (Situation analysis) needs to be more specific and concrete, including quantitative information and referencing key studies and data/reports (in addition to the ANC survey data cited). The HSRC and partners have done a number of surveys of HIV in South Africa, including a survey in 2005 that provides population-based HIV incidence and prevalence estimates for persons 2 years of age and older by age, gender, province, race, location type (urban/rural) and housing type (formal/informal). We recommend that you include key findings from the 2005 national household survey, as well as findings from sector-specific studies (e.g. health sector, education sector).

Sections 4.2 and 4.3: We recommend that the sections on TB and STIs receive the same attention, as well as how interventions and programmes would be integrated.

Section 5 (Response analysis) is lacking in detail and specifics and has some important gaps. We recommend that HIV testing to be featured in a subsection of its own, rather than as a component of Section 5.1 (Prevention), because HIV testing is critical for accessing and planning treatment and care services as well as for prevention.

Section 5.1 We suggest that the section on prevention is separated into known prevention interventions, and how these will be strengthened as well as the new forms and opportunities for prevention. There is also no mention of whether the current PMTCT protocol would be revised (i.e. from mono to dual therapy) in line with WHO guidelines.

Section 5.3 (Research, Monitoring and Evaluation) needs to be expanded beyond HIV vaccine research and to include social and behavioural research on HIV prevention in addition to new prevention technologies, as well as treatment research priorities.

Section 5.5 (Civil Society Sectors Response) is lacking in specific detail and has some important gaps. Some vulnerable groups such as women and children are identified, but other groups such as sex workers and men who have sex with men (MSM) that need targeted interventions are not specifically covered.

Section 5.5.5 (Academic sector) is mentioned, but the response of the broader education sector, including schools, is not addressed. The education sector is critical to HIV prevention because all learners pass through the education sector during their formative years, and because a good education is an important foundation for later employment. The social and economic disadvantages associated with poor educational attainment makes people particularly vulnerable to acquiring HIV infection.

Section 8: In terms of the goals of the National Strategic Plan, we are concerned that the aim of preventing new infections is focused on too narrow an age range, and strongly recommend that the target age group be changed to 15 to 39 year olds. (The need to include people younger than 20 years is supported by HIV incidence estimates studies done by the HSRC, the Medical Research Council, and other university-based researchers that show a high incidence of HIV infection in the 15 to 20 year age group, particularly among young women.) We support the goal of increasing VCT uptake, but believe that this goal needs to go further and recommend that a national “Know your status” initiative be included as a specific goal of the NSP. Knowing one's HIV status and that of one's partners is critical to reducing HIV incidence, and has been key in controlling the epidemic other African countries with generalised HIV epidemics (e.g. Uganda, Kenya, Zimbabwe). In the 2005 national household survey of HIV, more than 50% of those who tested HIV positive reported that they did not consider themselves to be at risk of HIV, so clearly knowing one's status is a problem in South Africa.

Section 9: We request to be given the opportunity to give substantive input into the National M & E framework, including the national indicators and surveillance data. We believe that the

current objectives, interventions and targets associated with each goal need refinement. In general, the current targets need to be made more specific and measurable in practical terms, and need to be more comprehensive in terms of agencies involved and coverage of all sectors of the population. We would like to assist with this process, but will not provide detailed comments on the current draft.

We recommend that Goal 7 (Reduce the Risk of Transmission from Sexual Assault) and Goal 16 (Programmes focusing on Women) be reframed into a goal of addressing gender issues associated with HIV acquisition/transmission. In order to address these problems, interventions need to target men as well as women.

We would appreciate it if the HSRC be given the opportunity to be actively and substantively involved in addressing Goal 14 (Develop and Implement a Monitoring and Evaluation Framework for Process and Outcome Indicators) and Goal 19 (Conduct Regular Surveillance for HIV Incidence and Prevalence). In order to monitor the general trend, SA needs national population-based surveys of HIV incidence, prevalence, and behaviour to complement the information from annual ANC surveys. In addition to monitoring HIV incidence and prevalence, there also needs to be ongoing monitoring of mortality and life expectancy among people with HIV (or at a minimum, surveillance of AIDS-related mortality). HIV prevalence depends both on HIV incidence and mortality. As a result of increased access to ART, people living with HIV are surviving longer. It is thus important to implement ongoing surveillance of HIV-related mortality in order to interpret trends in HIV prevalence and to assess the impact of interventions.

Thank you once again for the opportunity to comment.

Best regards

……..
Dr Laetitia Rispel
Executive director: SAHA

Appendix 3: Proposed monitoring and evaluation framework

1. INTRODUCTION

HIV/AIDS and STI prevention and care programme evaluation is applied socio-epidemiological research whose main purpose is to identify and solve practical problems and guide programme managers and planners in improving the design and implementation of prevention and care activities. This perspective not only determines the role of programme evaluation but also how an evaluation should be conducted, including the choice of indicators and levels of efforts in a given setting.

By applying different methods from several disciplines to many types of problems, programme evaluation is a comprehensive research approach committed to meeting the needs of stakeholder groups as well as the requirements of the scientific community.
Although programme evaluation is context specific, a comprehensive framework as outlined in the following is helpful in defining the questions that are to be answered by the different types of evaluation during the programme cycle. A utilization-focused evaluation approach is recommended that emphasizes the interests of stakeholders as the primary intended information users. To achieve the delicate balance between practical needs and methodological desirability, it is, therefore, essential that programme evaluations are planned in a participatory fashion with key stakeholders.

Decision-making is a political process and programme evaluators can play a major role in this process when evaluation efforts are expected to provide information of policymaking significance and relevance. Although evaluation researchers should be neutral scientific observers, there is also a need for them to assume a more active role and, if necessary, mediate between stakeholders with different and sometimes conflicting interests, perspectives, and information needs.

Incorporating evaluation at the programme design stage is an essential element of ensuring that evaluation activities will produce useful results. Planning an intervention and designing an evaluation strategy should be inseparable activities. To ensure the relevance and sustainability of

evaluation activities, project designers, in collaboration with national and local stakeholder and collaborating donors, must work in a participatory manner to develop an integrated and comprehensive evaluation plan. It is often helpful in the beginning stages to review with national stakeholders the reasons for developing a comprehensive monitoring and evaluation system. Some of the benefits that can be derived from the evaluation planning process are:

- Evaluation planning will provide programme managers and stakeholders alike with the opportunity to assess the evaluation needs, resources, capabilities, and priorities in their area.

- Having a comprehensive M&E system with an implementation plan will show stakeholders how the programme plans to be accountable for the resources they have received.

- Having a long-term evaluation plan can clarify future decision-making regarding evaluation priorities.

- Finally, having a comprehensive M&E system in place may also favorably influence donor decision-making.

2. OUTLINE OF A COMPREHENSIVE NATIONAL M&E SYSTEM

2.1 Evaluation framework

HIV/AIDS and STI prevention and care programmes need to be evaluated at different phases of the programme cycle. Table 1 outlines a framework for comprehensive programme monitoring and evaluation. All stages of evaluation have to be considered together to provide an overall picture of the programme because no single data collection approach can supply all the information necessary to improve programme performance or affect policy change. Multiple complementary evaluation approaches and multiple methodologies (qualitative and quantitative) have to be applied to address different evaluation needs.

Table 1: Comprehensive Monitoring and Evaluation Framework

Types of Evaluation:			
Formative Evaluation Research (Concept and Design)	**Process Evaluation** (Monitoring of Inputs and Outputs; Assessment of Service Quality)	**Effectiveness Evaluation** (Assessment of Outcome and Impact)	**Cost-Effectiveness Analysis** (including Sustainability Issues)
Questions Answered by the Different Types of Evaluation:			
Is an intervention needed? Who needs the intervention? How should the intervention be carried out?	To what extent are planned activities actually realized? How well are the services provided?	What outcomes are observed? What do the outcomes mean? Does the programme make a difference?	Should programme priorities be changed or expanded? To what extent should resources be reallocated?

Formative Evaluation

Formative evaluation should be conducted during the planning (or re-planning) stage of a prevention and care programme to identify and resolve intervention and evaluation issues before the programme is widely implemented. This is the time when flexibility is greatest and programme sponsors are freer to make decisions about how to proceed.

Formative evaluation explores the need for interventions, provides the information necessary to define realistic goals and objectives for the programme interventions, and helps programme planners make tentative decisions about effective, feasible intervention strategies and how to carry them out. Formative evaluation can also be used as an exploratory tool as the project is being carried out to provide feedback to project managers to help them adjust programme objectives to changing situations. Formative evaluation research can identify unacceptable or ineffective intervention approaches, designs and concepts.

Formative evaluations use a mix of research methods that can rapidly provide relevant information to programme designers. These methods include:

- reviews of existing information;

- focus group discussions;
- individual in-depth interviews;
- participant observations; and
- short quantitative surveys with structured questionnaires.

The most frequently cited methodological criticism of formative evaluation is its lack of external validity or generalisability. Because the results of the evaluation derive from small-scale rapid assessment procedures and/or pilot studies, one cannot generalize from them to a larger population. Despite this limitation, formative evaluation research can usually identify unacceptable or ineffective intervention approaches, designs, and concepts. However, even with adequate formative evaluation at the programme planning stage, there is no guarantee that a prevention programme will be effective when finally implemented; it may not be implemented adequately enough to be effective.

Process Evaluation

Once activities are underway, there is a need to examine whether they are being carried out correctly, on time, and within budget. Process evaluation addresses such basic questions as, "To what extent are planned intervention activities actually realized?" and "What services are provided, to whom, when, how often, for how long, and in what context?" Both input – the basic resources required in terms of manpower, money, material, and time – and output – the immediate service improvement expressed as distributed commodities, trained staff, and service units delivered – are two key elements of process evaluation. These questions are often answered in quantitative terms. Qualitative evidence of how and why a prevention programme works or fails to work is equally important in answering process evaluation questions. Process evaluation requires getting close to data, becoming intimately acquainted with the details of the programme, and observing not only anticipated effects but also unanticipated consequences. An understanding of the processes through which intervention activities achieve effects can help to explain the outcome of the intervention. Process evaluation, however, does not demonstrate whether interventions are effective.

Process evaluation can also play an important role in improving or modifying interventions by providing the information necessary to adjust delivery strategies or programme objectives in a changing epidemic. Process-oriented evaluation is carried out throughout the course of the programme implementation and should use different methodological approaches for the assessment of service delivery, ranging from reviews of service records and regular reporting systems, key informant interviews, exit interviews of service users, direct observations by 'mystery clients' (e.g. in STI and VCT services) to quantitative population-based surveys for assessing programme coverage and barriers to service use. Different qualitative and quantitative study designs that are complementary to one another provide together the most comprehensive information.

Effectiveness Evaluation: Assessing Outcome and Impact

Evaluating the effectiveness of AIDS prevention programmes will almost always require quantitative measurements. These measurements will assess the extent to which the objectives of the programme were achieved. Effectiveness evaluation is used to answer the questions, "What outcomes were observed?," "What do the outcomes mean?," and "Does the programme make a difference?"

Taking into account the various implementation stages of HIV/AIDS and STI prevention and care programmes and the inherent time frame for progress towards the achievement of the overall programme goal, is advisable to stratify effectiveness evaluation by ***short-term and intermediate programme effects (programme outcome)*** and ***long-term programme effects (programme impact)***. Table 2 provides examples of programme outcome and impact measures for these different stages. Changes in HIV/AIDS-related attitudes, the reduction of risk behaviors and adoption of protective behaviors, and changes in STI rates are considered to be the most appropriate short-term or intermediate (also called proximate) outcome indicators for interventions designed to reduce sexual transmission of HIV. Long-term effects include impact on HIV/AIDS trends, sustainability issues, and improved societal response.

Table 2: Potential Programme Outcome/Impact Measures

Programme Outcome (short-term and intermediate effects)	Programme Impact (long-term effects)
• changes in HIV/AIDS-related attitudes • HIV/STI-related risk behaviors • trends in STI rates (e.g., gonorrhea) • increase in social support/community response	• sustained changes in HIV/STI-related risk behaviors • trends in HIV/AIDS rates • AIDS-related mortality rates • reduced individual and societal vulnerability to HIV/AIDS • sustained changes in societal norms

Outcome and impact evaluation is intimately connected with process evaluation. Process information can help the evaluator to understand how and why interventions have achieved their effects and, perhaps, what is actually making the difference. Examining outcome/impact indicators without assessing the process of programme implementation could potentially lead to erroneous conclusions regarding the effectiveness of the intervention. Effectiveness evaluation is generally based on indicators that provide quantitative value by which the outcome and impact of interventions can be measured.

Cost-effectiveness analysis

Cost-effectiveness analysis also measures programme effectiveness, but expands the analysis by adding a measure of programme cost per unit of effect (for example, per number of HIV infections averted). By comparing the costs and consequences of various interventions, cost analyses and cost effectiveness estimates can assist in priority setting, resource allocation decisions, and programme design.

Given the difficulties and high costs associated with directly measuring the impact of HIV prevention programmes through large-scale incidence studies, more emphasis has now been placed on applying other methods of assessing impacts, for example through modeling.

2.2 The role of triangulation

In the absence of rigorous controlled evaluation trials, triangulation procedures have to be applied to substantiate a link between interventions and observed programme outcomes, in particular behavior changes. Multiple-method triangulation is probably the most common triangulation technique.

For example, process evaluation data on condom sales, the intensity of peer education, or the quality and coverage of media campaigns can be combined with an analysis of behavioral outcome data to provide an understanding of the process through which an intervention has achieved its effects. Results from behavioral surveys should be analyzed together with findings from qualitative evaluation research, such as focus group discussions, key informant interviews, and rapid ethnographic studies that are carried out in sub-samples of surveyed target populations. This type of analysis will allow a more appropriate interpretation of observed outcome data because they are the likely results of the aggregate effects of multiple interventions as well as environmental and personal factors.

2.3 Second generation HIV surveillance and programme evaluation – a strategic partnership

Interpretation of epidemic trends is made more difficult by our poor understanding of how different social, behavioral and epidemiological factors influence the dynamics of the epidemic in different settings. When reductions in HIV prevalence and HIV incidence are observed at the population level, the following key questions arise:

- *Are the observed changes a reflection of the natural progression (natural history) of the epidemic?*
- *Are the observed changes a product of "spontaneous" behavior change?*
- *Are the observed changes a result of prevention interventions?*

The relationship between HIV incidence and prevalence grows increasingly complex as the epidemic matures and prevention efforts try to mitigate it at the same time. Changes in HIV prevalence may be suggestive of the long-term impact of multiple HIV/AIDS prevention interventions, but it is very difficult to prove a causal relationship with one or more specific interventions. In fact, many other factors could also account for such changes (Table 3). The difficulties in establishing evidence of a relationship between behavior change and epidemic decline is further compounded if we add the claim that the documented behavioral change is caused by intervention effects. This may not necessarily be the case. Especially when evaluating the impact of behavior change interventions in the face of growing numbers of people with AIDS-related illnesses, there is evidence that secular trends toward risk reduction will occur.

Table 3: Factors contributing to observed declines in HIV incidence and / or prevalence

- *Saturation of the epidemic among susceptible individuals*
- ***Increasing AIDS-associated mortality, especially in mature epidemics***
- ***Decrease in new HIV infections as a result of behavior change:***
    - ***Effect of interventions***
    - ***Spontaneous (e.g. having a friend or relative with HIV/AIDS);***
- ***Decrease in the prevalence of biological cofactors which can facilitate HIV transmission e.g. STIs:***
    - ***Effect of interventions***
    - ***AIDS – related mortality in groups with high STI levels***
- ***Population differentials related to in- and out-migration patterns***
- *Sampling bias and/or errors in data collection*

The interpretation of HIV trends will be even more challenging in the coming years when antiretroviral (ARV) treatment becomes more widely available for infected individuals. Increased access to antiretroviral treatment will increase the survival time of HIV infected persons and, at the same time, may have multiple, potentially altering effects on HIV transmission by increasing the pool of HIV infected persons, dis-inhibiting prevention behaviors and by perhaps decreasing infectiousness through reduction in viral loads.

In response to these expanded data collection needs, WHO and UNAIDS, in collaboration with other international partners, are promoting the improvement of surveillance systems based on the "second generation" approach. This approach considers biological surveillance (i.e. HIV surveillance, AIDS surveillance and surveillance of Sexually Transmitted Infections [STI]) and behavioral surveillance as integral and essential components. Second generation systems focus on strengthening and improving existing surveillance methods and combine them in ways that have the greatest explanatory power. Surveillance efforts are targeted at segments of the population where most new infections are concentrated, which might differ depending on the stage and type of the epidemic.

There is now consensus among evaluation and surveillance experts that national AIDS control programmes need to collect HIV data in conjunction with behavioral, socioeconomic, and socio-demographic data (Figure 1). In fact, some of these data are often already routinely collected by other programmes or institutions (e.g., National Demographic and Health Surveys, National Census, TB programmes, etc.). A joint planning and coordination process with these programmes is crucial to ensuring resources and expertise are used as efficiently as possible.

Figure 1: Data for Improved Analysis and Decision Making

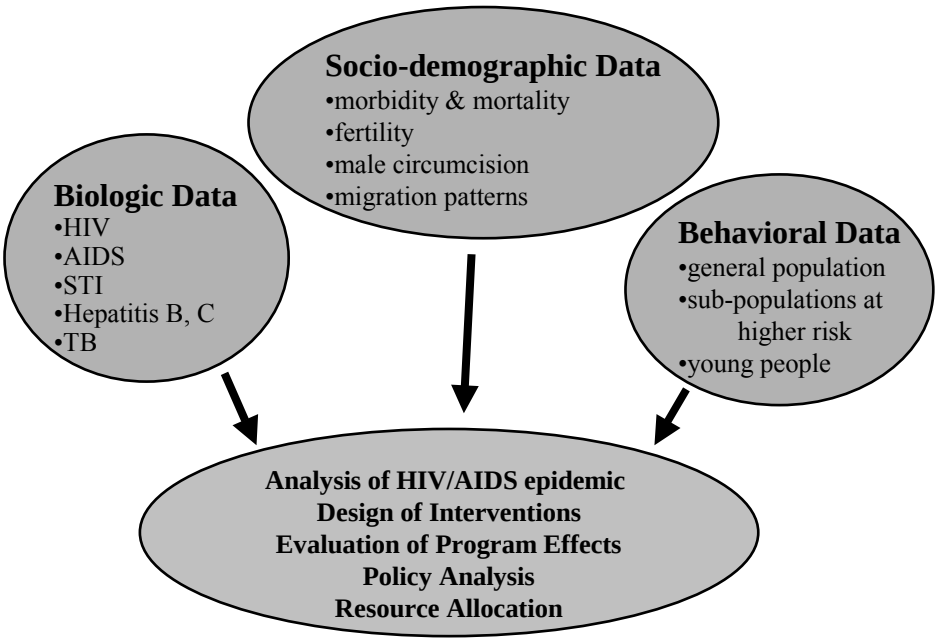
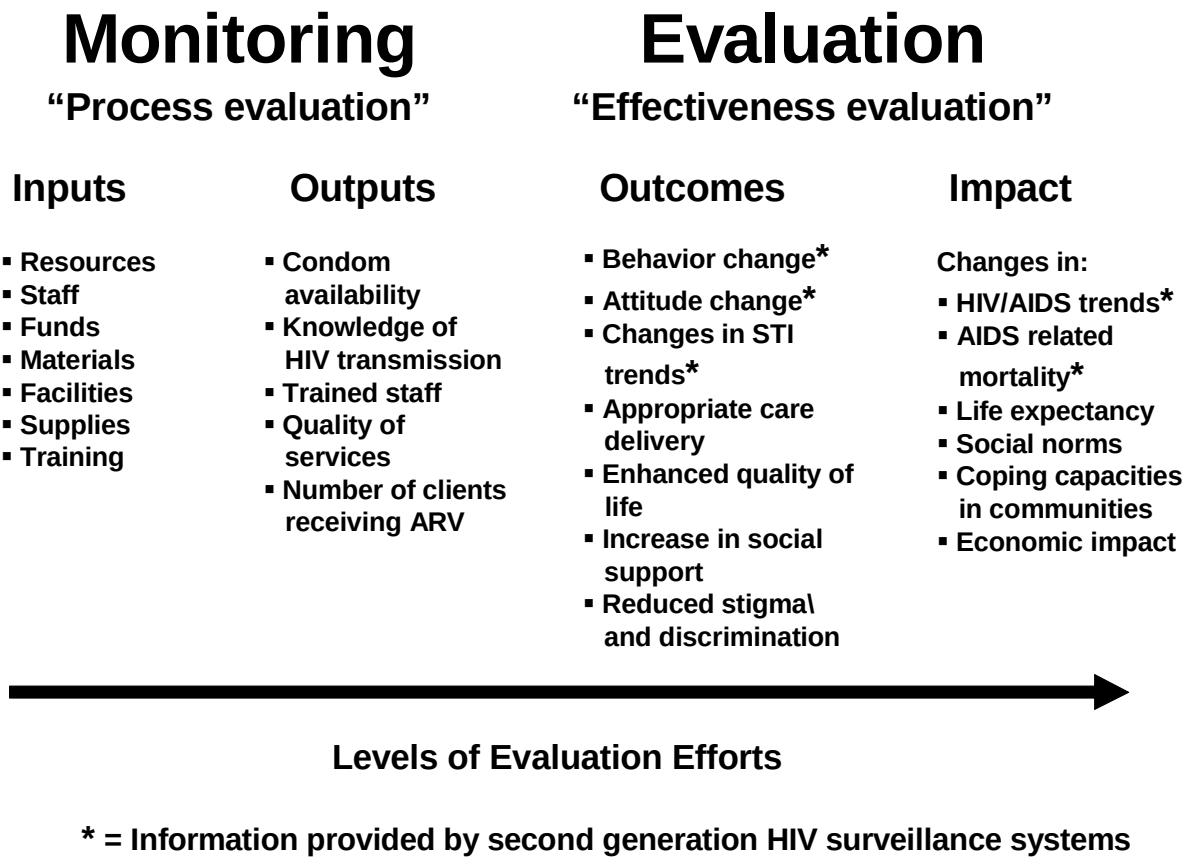


Figure 2: Framework of Monitoring and Evaluation Efforts



While programme evaluation and surveillance activities do overlap, they are not the same and they serve different purposes. However, programme evaluation and second generation surveillance systems play essential, complementary roles in determining whether prevention and care programmes have been successful or not. The combined analysis of these data sets serves a dual purpose: It provides information for better interpretation and explanation of the epidemiological data and it will allow a more valid assessment of programme effects on the course of the epidemic in a given setting. Figure 2 illustrates the different levels of programme monitoring and evaluation efforts and shows that behavioral and biological surveillance systems provide essential data for assessing programme outcomes and programme impact.

Surveillance, monitoring and evaluation are essential components of national AIDS programmes and should be adequately funded. However, it is crucial that national programmes seek to strike a sensible balance between the resources allocated for surveillance and funding of prevention and care programmes. In general, it is recommended that at least 10-15 percent of the HIV/AIDS budget be committed to programme evaluation and second generation HIV surveillance activities.

3. SELECTION OF KEY PERFORMANCE INDICATORS

In collaboration with national and international partners, the United Nations AIDS Programme (UNAIDS) and the World Health Organization (WHO) have developed a standard set of indicators for country programmes that reflect the needs of both national programme managers and international stakeholders. The selection of the key performance indicators in Table 4 was guided by the goals and objectives of the HIV/AIDS and STI prevention and care programme in the SADC countries as well as the national reporting needs (e.g., Millennium Development Goals and UNGASS Declaration of Commitment on HIV/AIDS).

By specifying the goals and objectives of the programme, a logical framework can be developed that integrates and correlates the inputs, activities, outputs, outcomes, and impact, and establishes realistic expectations for what the evaluation will provide or show. Each component of the programme should have objectives and sub-objectives specified, and each objective and sub-objective should designate programme area-specific indicators that need to be collected in order to determine progress. The logical framework provides the platform for preparing a detailed implementation plan for the identified M&E activities.

Table 5 shows a proposed logical framework of a national HIV/AIDS and STI prevention and care programme that outlines goals, objectives, programme areas, indicators, and methods to obtain the selected indicators. This matrix needs to be expanded to include specified activities by programme area and related indicators at the project level. Once completed, the logical framework will also illustrate the different roles in planning and conducting the various M&E activities at the national and local levels. For example, individual projects at the local level do

not conduct impact evaluation because their contributions to reducing the transmission of HIV/STI are typically seen in tandem with those of other projects that work synergistically at multiple levels toward the same goals.

Table 4: Key Performance Indicators

PROGRAMME AREA	INDICATOR	MEANS OF VERIFICATION/SOURCE	FREQUENCY
National Policy and Commitment			
	National composite policy index: (a) strategic plan; (b) prevention; (c) human rights; and (d) care and support (*see Module 5 in UNAIDS M&E Modules*)	Country assessment questionnaire	Biannual
	Amount of national funds spent by governments on HIV/AIDS	Survey of national financial resource flows.	Biannual
	Schools with teachers who have been trained in life-skills based HIV/AIDS education and who taught it during the last academic year	School based survey and education programme review	Biannual
PREVENTION			
Condom availability and quality	Total number of condoms available for distribution nationwide	MEASURE evaluation/WHO/PSI Compiled condom availability and quality protocol	Biannual
	Condoms that meet quality control	MEASURE evaluation/WHO/PSI Compiled condom availability and quality protocol	Biannual
Stigma and discrimination	Accepting attitudes towards those living with HIV	UNAIDS general population survey and FHI BSS	Biannual
	Large enterprises/companies that have HIV/AIDS workplace policies and programmes to ensure no discrimination against people with HIV/AIDS	Workplace survey	Biannual
Knowledge	Knowledge of HIV prevention methods and no incorrect beliefs about HIV/AIDS *(for all population groups*)	Surveys (UNAIDS, FHI BSS)	Every 2-4 years
Risk behavior			
• *Youth*	Median age at first sex	Surveys (UNAIDS, FHI BSS)	Biannual
	Young people (15-24) reporting use of condom	Surveys (UNAIDS, FHI BSS)	Biannual

PROGRAMME AREA	INDICATOR	MEANS OF VERIFICATION/SOURCE	FREQUENCY
	during sexual intercourse with a non-regular sexual partner		
	Age-mixing in sexual relationships	Surveys (UNAIDS, FHI BSS)	Biannual
• *Adults*	Higher risk sex in the last year	Surveys (UNAIDS, FHI BSS)	Every 2-4 years
	Condom use at last higher risk sex	Surveys (UNAIDS, FHI BSS)	Every 2-4 years
	Commercial sex in last year	Surveys (UNAIDS, FHI BSS)	Every 2-4 years
	Condom use by clients at last paid sex	Surveys (UNAIDS, FHI BSS)	Every 2-4 years
• *Female Sex Workers (FSM)*	Condom use by sex workers with last client	Surveys (UNAIDS, FHI BSS)	Biannual
• *IDU*	Injecting drugs users sharing equipment	Surveys (UNAIDS, FHI BSS)	Biannual
	Injecting drugs users never sharing equipment	Surveys (UNAIDS, FHI BSS)	Biannual
	Drug injectors using condom at last sex	Surveys (UNAIDS, FHI BSS)	Biannual
• *MSM*	Condom use at last anal sex between men	Surveys (UNAIDS, FHI BSS)	Biannual
Blood Safety/Nosocomial transmission	Transfused blood units screened for HIV	MEASURE blood safety protocol	Annual
	Number of blood units transfused	MEASURE blood safety protocol	Annual
	Blood banks using safe recruitment policies	MEASURE blood safety protocol	Annual
	Health care settings with guidelines and practices for prevention of accidental HIV transmission	MEASURE service provision assessment (SPA)	Biannual
VCT	Number of people receiving HIV testing and counseling	Service/lab reports	Annual
	VCT centers with minimum conditions to provide quality services	MEASURE service provision assessment (SPA)	Biannual

PROGRAMME AREA	INDICATOR	MEANS OF VERIFICATION/SOURCE	FREQUENCY
STI care and prevention	Appropriate diagnosis and treatment of STI	WHO/UNAIDS STI facility survey	Biannual
	Drug supply at STI care services	WHO/UNAIDS STI facility survey	Biannual
PMTCT	Pregnant women counseled and tested for HIV	ANC service reports	Annual
	HIV-infected pregnant women receiving a complete course of ARV to reduce MTCT	UNAIDS M&E Guide for PMTCT programmes	Annual
CARE AND SUPPORT			
Medical /Clinical/ARV	Proportion of people with advanced HIV infection receiving ARV combination therapy	WHO/UNAIDS guide protocol and epidemiological modeling[1]	Annual
	Health facilities with the capacity and conditions to provide advanced level HIV care and support services, including provision and monitoring of ARV therapy	Health facility survey	Biannually
	Laboratories with the capacity to monitor ARV therapy according to national/international guidelines	Laboratory facility survey	Annually *(proposed)*
	Health facilities with drugs for opportunistic infections and palliative care in stock	WHO/UNAIDS guide protocol and health facility survey	Biannual
Community/Home based care	Proportion of people aged 15-59 who have been chronically ill for 3 or more months in the last 12 months whose households received free basic external support in caring for the chronically ill person	Household survey	Every 2-4 years
Orphan care	Orphans and vulnerable children less than 18 years whose households received free basic external support in caring for the child	Household survey	Every 2-4 years
	School attendance among orphans in comparison with non-orphans aged 10-14	Population based survey	Every 2-4 years

[1] Epidemiological modelling will be required to provide estimates on the denominator population size (# of potential ARV therapy candidates).

PROGRAMME AREA	INDICATOR	MEANS OF VERIFICATION/SOURCE	FREQUENCY
BIOLOGICAL AND BEHAVIORAL SURVEILLANCE			
	Implementation of second generation surveillance methodologies	Programme reports	Annual
HEALTH OUTCOME AND IMPACT			
	Syphilis prevalence among pregnant women	Antenatal screening	Annual
	HIV prevalence and HIV incidence among pregnant women	Antenatal screening	Annual
	HIV prevalence and HIV incidence in the general population	National HIV surveys	Every 3 years
	Number of HIV-infected infants born to HIV-infected mothers	WHO/UNAIDS protocol	Annual
	AIDS mortality	AIDS case surveillance and Vital statistics	Annual

Table 5: Logical Framework of National Programme for HIV/AIDS and STI

NARRATIVE SUMMARY	INDICATOR	MEANS OF VERIFICATION/SOURCE
PROGRAMME GOAL		
Goal: To reduce the transmission of HIV/STI in the general population and sub-populations and to improve care and support for people living with HIV/AIDS	• Syphilis prevalence among pregnant women • HIV prevalence and HIV incidence among pregnant women aged 15-24 • HIV prevalence and HIV incidence in the general population • Number of HIV-infected infants born to HIV-infected mothers • AIDS mortality	• Antenatal Screening • Antenatal screening • HIV surveys • WHO/UNAIDS protocol • AIDS case surveillance and Vital statistics
PROGRAMME OBJECTIVES		
To strengthen National Policy and Commitment		
	National composite policy index: (a) strategic plan; (b) prevention; (c) human rights; and (d) care and support (*see module 5 in UNAIDS M&E Modules*)	Country assessment questionnaire
	Amount of national funds spent by governments on HIV/AIDS	Survey of national financial resource flows.
	Schools with teachers who have been trained in life-skills based HIV/AIDS education and who taught it during the last academic year	School based survey and education programme review
To improve and strengthen prevention activities for HIV/STI		
a. Condom availability and quality	Total number of condoms available for distribution nationwide	MEASURE evaluation/WHO/PSI Compiled condom availability and quality protocol
	Condoms that meet quality control	MEASURE evaluation/WHO/PSI Compiled condom availability and quality protocol
b. Stigma and discrimination	Accepting attitudes towards those living with HIV	UNAIDS general population survey and FHI BSS
	Large enterprises/companies that have HIV/AIDS workplace policies and programmes to ensure no discrimination against people with HIV/AIDS	Workplace survey
c. Knowledge	Knowledge of HIV prevention methods and No incorrect beliefs about HIV/AIDS *(for all population groups*)	Surveys (UNAIDS, FHI BSS)
d. Risk behavior		
• *Youth*	Median age at first sex	Surveys (UNAIDS, FHI BSS)
	Young people (15-24) reporting use of condom during sexual intercourse with a non-regular sexual partner	Surveys (UNAIDS, FHI BSS)
	Age-mixing in sexual relationships	Surveys (UNAIDS, FHI BSS)
• *Adults*	Higher risk sex in the last year	Surveys (UNAIDS, FHI BSS)
	Condom use at last higher risk sex	Surveys (UNAIDS, FHI BSS)

NARRATIVE SUMMARY	INDICATOR	MEANS OF VERIFICATION/SOURCE
	Commercial sex in last year	Surveys (UNAIDS, FHI BSS)
	Condom use by clients at last paid sex	Surveys (UNAIDS, FHI BSS)
• *Female Sex Workers (FSM)*	Condom use by sex workers with last client	Surveys (UNAIDS, FHI BSS)
• *IDU*	Injecting drugs users sharing equipment	Surveys (UNAIDS, FHI BSS)
	Injecting drugs users never sharing equipment	Surveys (UNAIDS, FHI BSS)
	Drug injectors using condom at last sex	Surveys (UNAIDS, FHI BSS)
• *MSM*	Condom use at last anal sex between men	Surveys (UNAIDS, FHI BSS)
e. Blood Safety/Nosocomial transmission	Transfused blood units screened for HIV	MEASURE blood safety protocol
	Number of blood units transfused	MEASURE blood safety protocol
	Blood banks using safe recruitment policies	MEASURE blood safety protocol
	Health care settings with guidelines and practices for prevention of accidental HIV transmission	MEASURE service provision assessment (SPA)
f. VCT	Number of people receiving HIV testing and counseling	Service/lab reports
	VCT centers with minimum conditions to provide quality services	MEASURE service provision assessment (SPA)
g. STI care and prevention	Appropriate diagnosis and treatment of STI	WHO/UNAIDS STI facility survey
	Drug supply at STI care services	WHO/UNAIDS STI facility survey
h. PMTCT	Pregnant women counseled and tested for HIV	ANC service reports
	HIV-infected pregnant women receiving a complete course of ARV to reduce MTCT	UNAIDS M&E Guide for PMTCT programmes
To improve care and support for people living with HIV/AIDS		
a. Medical /Clinical/ARV	Proportion of people with advanced HIV infection receiving ARV combination therapy	WHO/UNAIDS guide protocol and epidemiological modeling
	Health facilities with the capacity and conditions to provide advanced level HIV care and support services, including provision and monitoring of ARV therapy	Health facility survey
	Laboratories with the capacity to monitor ARV therapy according to national/international guidelines	Laboratory facility survey
	Health facilities with drugs for opportunistic infections and palliative care in stock	WHO/UNAIDS guide protocol and health facility survey
b. Community/Home based care	Proportion of people aged 15-59 who have been chronically ill for 3 or more months in the last 12 months whose households received free basic external support in caring for the	Household survey

NARRATIVE SUMMARY	INDICATOR	MEANS OF VERIFICATION/SOURCE
	chronically ill person.	
c. Orphan care	Orphans and vulnerable children less than 18 years whose households received free basic external support in caring for the child	Household survey
	School attendance among orphans in comparison with non-orphans aged 10-14	Population based survey
To strengthen epidemiological surveillance systems	Implementation of second generation surveillance methodologies	Programme reports

4. M&E Implementation

After a comprehensive monitoring and evaluation system has been developed including the essential elements and approaches described in the previous sections, then programme managers are faced with the question, "How are we really going to implement this plan?" Clearly, the success of the M&E system depends on the technical capacity of the programme and its associated staff to carry out the evaluation activities. This invariably requires evaluation technical assistance. Technical guidance is especially important in complex evaluation designs, especially in quantitative surveys such as national HIV surveys where sampling designs, sample sizes, and questionnaire design must be carefully determined.

Technical capacity at the field level to design, implement, and maintain data collection systems is important to ensure the uninterrupted flow of consistent data. Participation of local people with a vested interest in the results should occur throughout the process of planning, data collection, analysis, and feedback.

4.1 M&E coordination unit

The establishment of a national M&E Coordination Unit is crucial. The M&E unit should act as a 'clearinghouse' for both collecting and disseminating national M&E data. Its prime role is coordination, rather than implementation, of the M&E system. In view of efforts to decentralize the national health care system and establish a multi-sectoral approach to HIV/AIDS, it becomes even more important to have a strong centrally coordinated M&E system to which the peripheral level and other sectors can contribute information. The need for central coordination is especially evident in the compilation of the selected Key Performance Indicators, which contribute to the information needs of country programmes as well as international supporters of the national response to HIV/AIDS.

A centralized database of all HIV/AIDS/STI-related data collection activities also contributes greatly to the efficiency of the national M&E efforts. Biological and behavioural data generated by the Second Generation Surveillance system, baseline studies, facility based surveys, and project M&E reports should all be centrally filed and universally available. The database should list ongoing data collection activities

as well as those already completed, and keep a record of survey instruments, data collection protocols and reporting forms in order to maintain consistency over time.

4.2 Dissemination and using evaluation findings

Feedback of evaluation results is not always performed, but should be because it is extremely useful in ensuring that evaluation findings are used to inform programme improvement and decision-making. This step involves planning how evaluation results will be used, translated into programme policy language, and disseminated to all relevant stakeholders and decision makers. It should also involve a feedback loop to the planners of the next evaluation and a feedback mechanism should be built in so that past lessons learned can effectively inform new efforts.

It is important that evaluation findings be translated into language that is useful for programme designers in their efforts to improve programmes and that they contain implications and actions needed, if appropriate, at national and/or local levels. This activity, therefore, is often best conducted in collaboration with individuals or groups familiar with the intervention.

Dissemination of evaluation findings is often overlooked in the planning and implementation phase of the evaluation, and often only becomes an issue when there is a problem at the end of the evaluation and someone asks the question, "How has this evaluation plan been implemented and how have the results been used to improve HIV prevention programmes and policy?" If there has been no plan for disseminating results and using the findings, this question often cannot be answered because the people involved in the evaluation have forgotten the details or have moved on. The lack of such a plan can undermine the usefulness of the evaluation and future activities. Inadequate dissemination also commonly leads to redundancy in evaluation efforts because others are not aware of the findings of previous evaluation efforts. It also reinforces a negative stereotype about evaluations, which is that they are not really intended to help improve programmes. For all these reasons, programmes should include a plan for dissemination of evaluation findings in their overall evaluation plan.

UNAIDS has developed the Country Response Information System (CRIS), which may be used to facilitate the systematic collection, storage, retrieval and dissemination of information on a country's M&E activities and findings.