

2004
Update



Malawi

EPIDEMIOLOGICAL FACT SHEETS
ON HIV/AIDS AND SEXUALLY TRANSMITTED INFECTIONS



Joint United Nations Programme on HIV/AIDS

UNAIDS

UNHCR • UNICEF • WFP • UNDP • UNFPA
UNODC • ILO • UNESCO • WHO • WORLD BANK



World Health
Organization

HIV/AIDS estimates

In 2003 and during the first quarter of 2004, UNAIDS and WHO worked closely with national governments and research institutions to recalculate current estimates on people living with HIV/AIDS. These calculations are based on the previously published estimates for 1999 and 2001 and recent trends in HIV/AIDS surveillance in various populations. A methodology developed in collaboration with an international group of experts was used to calculate the new estimates on prevalence and incidence of HIV and AIDS deaths, as well as the number of children infected through mother-to-child transmission of HIV. Different approaches were used to estimate HIV prevalence in countries with low-level, concentrated or generalised epidemics. The current estimates do not claim to be an exact count of infections. Rather, they use a methodology that has thus far proved accurate in producing estimates that give a good indication of the magnitude of the epidemic in individual countries. However, these estimates are constantly being revised as countries improve their surveillance systems and collect more information.

Adults in this report are defined as women and men aged 15 to 49. This age range covers people in their most sexually active years. While the risk of HIV infection obviously continues beyond the age of 50, the vast majority of those who engage in substantial risk behaviours are likely to be infected by this age. The 15 to 49 range was used as the denominator in calculating adult HIV prevalence.

Estimated number of adults and children living with HIV/AIDS, end of 2003

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 2003:

Adults and children	900,000		
Low estimate	700,000		
High estimate	1,100,000		
Adults (15-49)	810,000	Adult rate (%)	14.2
Low estimate	650,000	Low estimate	11.3
High estimate	1,000,000	High estimate	17.7
Children (0-15)	83,000		
Low estimate	54,000		
High estimate	130,000		
Women (15-49)	460,000		
Low estimate	370,000		
High estimate	570,000		

Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS during 2003:

Adults and Children	84,000
Low estimate	58,000
High estimate	120,000

Estimated number of orphans

Estimated number of children who have lost their mother or father or both parents to AIDS and who were alive and under age 17 at the end of 2003:

Current living orphans	500,000
Low estimate	330,000
High estimate	710,000

Assessment of the epidemiological situation 2004

HIV seroprevalence information among antenatal clinic attendees is available since the mid-1980s from Malawi. In Malawi, Lilongwe, Blantyre and Mzuzu are the major urban areas. From 1985 to 1993, HIV seroprevalence among antenatal women increased from 2 percent to 30 percent. In 1998, 26 percent of antenatal clinic attendees tested HIV positive. By 2001, HIV prevalence had fallen to 20 percent and remained around 21 percent in 2003.

Outside of major urban areas, HIV prevalence among antenatal women tested increased from 6 percent in 1992 to 22 percent in 1999. HIV prevalence among antenatal women tested in 16 sites in 1999 ranged from 3 percent in Kasungu to 36 percent in Mulanje. In 2001, median HIV prevalence outside major urban areas fell to 16 percent and was 17.5 percent in 2003.

In 1999, 23 percent of the women less than 15-24 years of age were HIV positive. By 2001 prevalence in this age group had fallen to 17. In 2003, 18 percent of women aged 15-24 attending antenatal clinics tested HIV positive.

In 1986, 56 percent of sex workers tested in Blantyre were HIV positive. In 1994, 70 percent of sex workers tested in Lilongwe were HIV positive.

Over 50 percent of STD clinic patients tested in the major urban areas between 1989 and 1996 were HIV positive. In 1995, 46 percent of STD clinic patients tested at seven sites outside of the major urban areas were HIV positive.

UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance

Global Surveillance of HIV/AIDS and sexually transmitted infections (STIs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance, initiated in November 1996, guides respective activities. The primary objective of the Working Group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STIs. For this purpose, the Working Group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional, and global levels. The Epidemiological Fact Sheets are one of the products of this close and fruitful collaboration across the globe.

Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV.

Not unexpectedly, information on all of the agreed upon indicators was not available for many countries in 2003. However, these updated Fact Sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The Fact Sheets may also be instrumental in identifying potential partners when planning and implementing improved surveillance systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance. Therefore, the Working Group would like to encourage all programme managers as well as national and international experts to communicate additional information to them whenever such information becomes available. The Working Group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision-making and planning.

Basic indicators

For consistency reasons the data used in the table below are taken from official UN publications.

DEMOGRAPHIC DATA	YEAR	ESTIMATE	SOURCE
Total population (thousands)	2004	12,337	UN population division database
Female population aged 15-24 (thousands)	2004	1,212	UN population division database
Population aged 15-49 (thousands)	2004	5,356	UN population division database
Annual population growth rate (%)	1992-2002	1.9	UN population division database
% of population in urban areas	2003	16.1	UN population division database
Average annual growth rate of urban population	2000-2005	4.6	UN population division database
Crude birth rate (births per 1,000 pop.)	2004	43.6	UN population division database
Crude death rate (deaths per 1,000 pop.)	2004	24.2	UN population division database
Maternal mortality rate (per 100,000 live births)	2000	1800	WHO (WHR2004)/UNICEF
Life expectancy at birth (years)	2002	40	World Health Report 2004, WHO
Total fertility rate	2002	6.1	World Health Report 2004, WHO
Infant mortality rate (per 1,000 live births)	2000	117	World Health Report 2004, WHO
Under 5 mortality rate (per 1,000 live births)	2000	197	World Health Report 2004, WHO

SOCIO-ECONOMIC DATA	YEAR	ESTIMATE	SOURCE
Gross national income, ppp, per capita (Int.\$)	2002	570	World Bank
Gross domestic product, per capita % growth	2001-2002	-0.3	World Bank
Per capita total expenditure on health (Int.\$)	2001	39	World Health Report 2004, WHO
General government expenditure on health as % of total expenditure on health	2001	35	World Health Report 2004, WHO
Total adult illiteracy rate	2000	39.9	UNESCO
Adult male illiteracy rate	2000	25.5	UNESCO
Adult female illiteracy rate	2000	53.5	UNESCO
Gross primary school enrolment ratio, male	2000/2001	not available	UNESCO
Gross primary school enrolment ratio, female	2000/2001	not available	UNESCO
Gross secondary school enrolment ratio, male	2000/2001	40	UNESCO
Gross secondary school enrolment ratio, female	2000/2001	31	UNESCO

Contact address

UNAIDS/WHO Working Group on Global
HIV/AIDS and STI Surveillance
20, Avenue Appia
CH - 1211 Geneva 27
Switzerland
Fax: +41-22-791-4834

email: hivstrategicinfo@who.int
estimates@unaids.org

website: <http://www.who.int/hiv>
<http://www.unaids.org>

Extracts of the information contained in these fact sheets may be reviewed, reproduced or translated for research or private study but not for sale or for use in conjunction with commercial purposes. Any use of information in these fact sheets should be accompanied by the following acknowledgment "UNAIDS/WHO epidemiological fact sheets on HIV/AIDS and Sexually Transmitted Infections, 2004 Update".

HIV prevalence in different populations

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV database maintained by the United States Bureau of the Census where data from different sources, including national reports, scientific publications and international conferences are compiled. To provide a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give an overview of the diversity of HIV-prevalence results in a given population within the country. Data by sentinel site or specific study from which the medians were calculated are printed at the end of this fact sheet.

The differentiation between the two geographical areas Major Urban Areas and Outside Major Urban Areas is not based on strict criteria, such as the number of inhabitants. For most countries, Major Urban Areas were considered to be the capital city and - where applicable - other metropolitan areas with similar socio-economic patterns. The term Outside Major Urban Areas considers that most sentinel sites are not located in strictly rural areas, even if they are located in somewhat rural districts.

HIV sentinel surveillance*

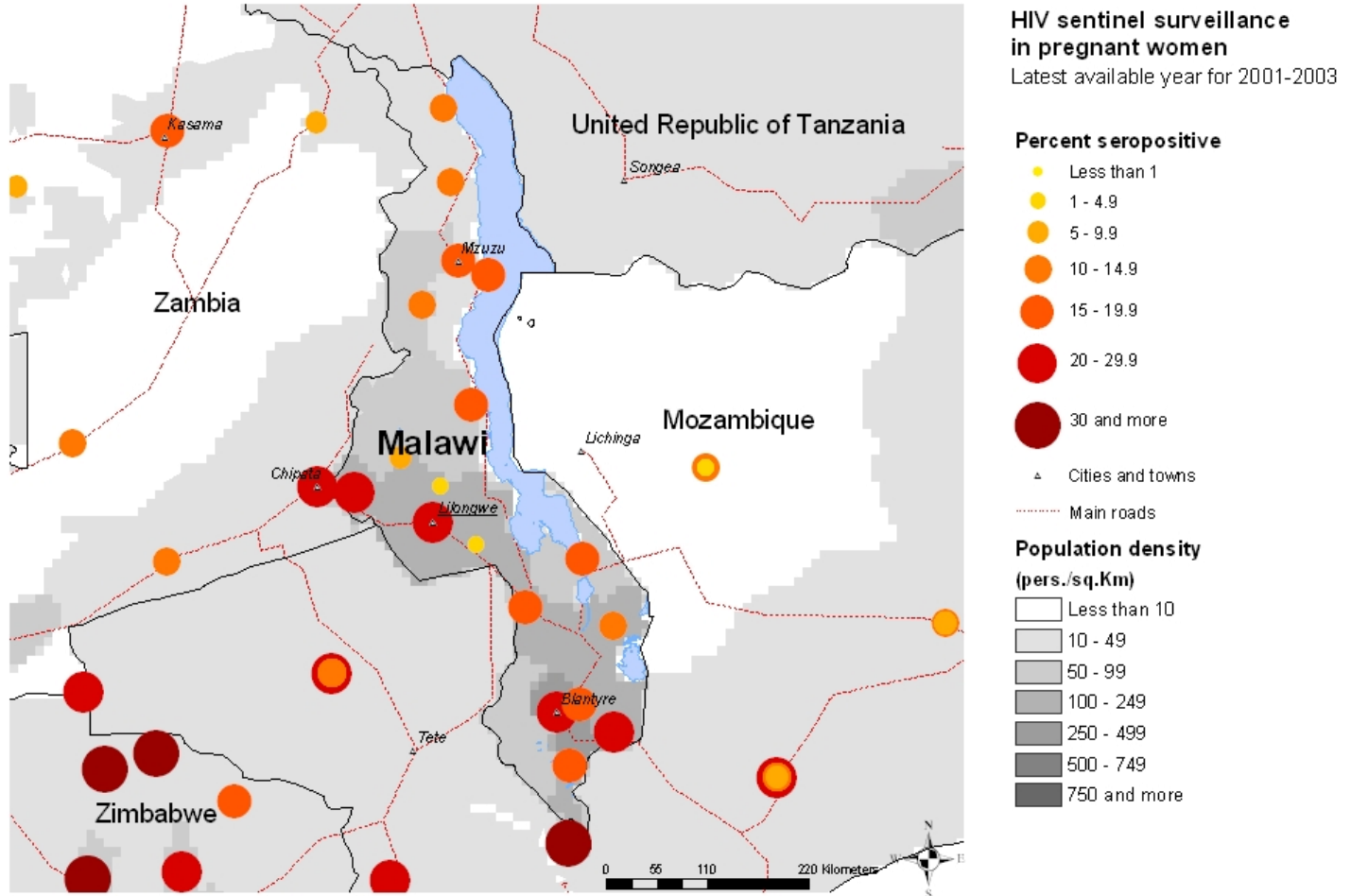
Group	Area		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Pregnant women	Major urban areas	N-Sites	3.00		3.00	2.00	2.00	1.00	1.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00			
		Minimum	3.10		16.36	17.90	17.90	27.20	30.10	16.50	18.50	21.41	17.00	18.49	23.28		18.59			
		Median	8.15		16.90	20.45	21.90	27.20	30.10	21.20	22.50	27.00	25.00	26.00	25.25		20.10			
		Maximum	8.24		18.62	23.00	25.90	27.20	30.10	30.20	32.75	34.00	30.79	30.43	27.90		28.46			
	Outside major urban areas	N-Sites						10.00	10.00	16.00	16.00	16.00	15.00	16.00	16.00		16.00			
		Minimum						1.96	2.75	3.00	4.67	2.30	5.45	3.28	2.92		4.49			
		Median						5.46	10.73	15.75	12.60	15.73	17.71	15.97	21.96		16.13			
		Maximum						14.40	28.73	28.00	28.80	28.40	26.13	25.24	35.49		35.77			
	Sex workers	Major urban areas	N-Sites									1.00								
			Minimum									70.00								
			Median									70.00								
			Maximum									70.00								
Outside major urban areas		N-Sites																		
		Minimum																		
Injecting drug users	STI patients	Major urban areas	N-Sites			1.00			1.00		3.00	1.00								
			Minimum			62.41				52.90		57.20	54.85							
			Median			62.41				52.90		60.80	54.85							
			Maximum			62.41				52.90		63.68	54.85							
		Outside major urban areas	N-Sites									7.00								
			Minimum									36.63								
Men having sex with men	Tuberculosis patients	Major urban areas	N-Sites				1.00	1.00		1.00	1.00									
			Minimum				67.00	66.84		74.59	77.00									
			Median				67.00	66.84		74.59	77.00									
			Maximum				67.00	66.84		74.59	77.00									
		Outside major urban areas	N-Sites		1.00	1.00			2.00			1.00				1.00				
			Minimum		25.60	21.35			38.38			77.18				77.00				
		Median		25.60	21.35			53.19			77.18			77.00						
		Maximum		25.60	21.35			68.00			77.18			77.00						

*Detailed data by site can be found in the Annex.

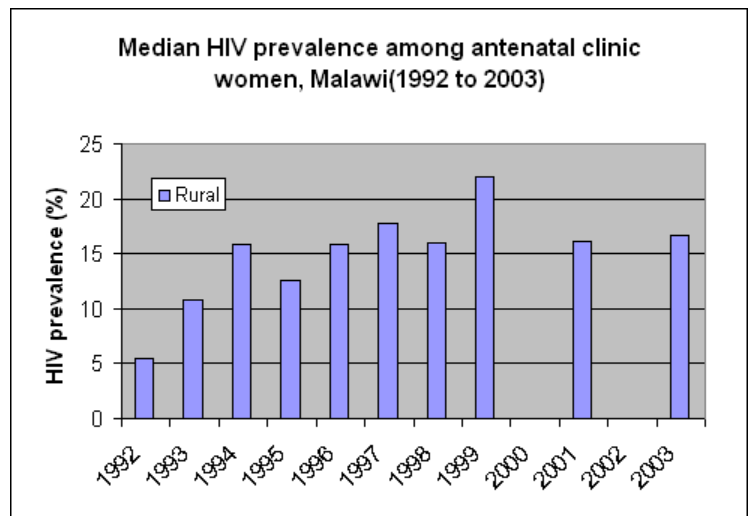
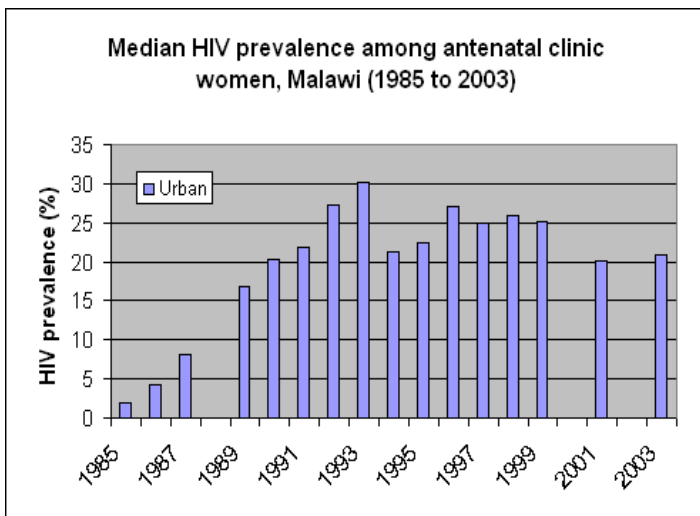
Maps & charts

Mapping the geographical distribution of HIV prevalence among different population groups may assist in interpreting both the national coverage of the HIV surveillance system as well in explaining differences in levels of prevalence. The UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance, in collaboration with the WHO Public Health Mapping Team, Communicable Diseases, is producing maps showing the location and HIV prevalence in relation to population density, major urban areas and communication routes. For generalized epidemics, these maps show the location of prevalence of antenatal surveillance sites.

Trends in antenatal sentinel surveillance for higher prevalence countries, or in prevalence among selected populations for countries with concentrated epidemics, are a new addition. These are presented for those countries where sufficient data exist.



Trends in HIV prevalence among antenatal clinic attendees



The boundaries and names shown and the designations used on the map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. WHO 2004, all rights reserved.

Reported AIDS cases

Following WHO and UNAIDS recommendations, AIDS case reporting is carried out in most countries. Data from individual AIDS cases are aggregated at the national level and sent to WHO. However, case reports come from surveillance systems of varying quality. Reporting rates vary substantially from country to country and low reporting rates are common in developing countries due to weaknesses in the health care and epidemiological systems. In addition, countries use different AIDS case definitions. A main disadvantage of AIDS case reporting is that it only provides information on transmission patterns and levels of infection approximately 5-10 years in the past, limiting its usefulness for monitoring recent HIV infections.

Despite these caveats, AIDS case reporting remains an important advocacy tool and is useful in estimating the burden of HIV-related morbidity as well as for short-term planning of health care services. AIDS case reports also provide information on the demographic and geographic characteristics of the affected population and on the relative importance of the various exposure risks. In some situations, AIDS reports can be used to estimate earlier HIV infection patterns using back-calculation. AIDS case reports and AIDS deaths have been dramatically reduced in industrialized countries with the introduction of Anti-Retroviral Therapy (ART).

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
0	0	0	0	0	0	17	127	858	3034	4966	5859	7439	4655	4916	4732	5209	5406	3705	1878
1999	2000	2001	2002	2003	Total		UNK		Date of last report										
1711					54512				11/22/2001										

Curable sexually transmitted infections (STIs)

The predominant mode of transmission of both HIV and other STIs is sexual intercourse. Measures for preventing sexual transmission of HIV and STIs are the same, as are the target audiences for interventions. In addition, strong evidence supports several biological mechanisms through which STIs facilitate HIV transmission by increasing both HIV infectiousness and HIV susceptibility. Thus, detection and treatment of individuals with STIs is an important part of an HIV control strategy. In summary, if the incidence/prevalence of STIs is high in a country, then there is the possibility of high rates of sexual transmission of HIV. Monitoring trends in STIs provides valuable insight into the likelihood of the importance of sexual transmission of HIV within a country, and is part of second generation surveillance. These trends also assist in assessing the impact of behavioural interventions, such as delaying sexual debut, reducing the number of sex partners and promoting condom use.

Clinical services offering STI care are an important access point for people at high risk for both STIs and HIV. Identifying people with STIs allows for not only the benefit of treating the STI, but for prevention education, HIV testing, identifying HIV-infected persons in need of care, and partner notification for STIs or HIV infection. Consequently, monitoring different components of STI prevention and control can also provide information on HIV prevention and control activities within a country.

STI syndromes

Reported cases	1996	1997	1998	1999	2000	2001	2002	2003	Incidence 2003
----------------	------	------	------	------	------	------	------	------	----------------

Comments:

Source:

Syphilis prevalence, women

Percent of blood samples taken from pregnant women aged 15-49 that test positive for syphilis - positive reaginic and treponemal test - during routine screening at selected antenatal clinics.

Year	Area	Rate	Range
1997-1999	Urban/Rural	3.5	0-10.4
2000-2001	Urban/Rural	3.9	0.6-12.4

Comments:

Source: National AIDS Control Programme. HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders. 1999.

Estimated prevalence of curable STIs among female sex workers

- Chlamydia

Year	Area	Rate	Range
------	------	------	-------

Comments:

Source:

- Gonorrhoea

Year	Area	Rate	Range
------	------	------	-------

Comments:

Source:

Estimated prevalence of curable STIs among female sex workers (continued)**- Syphilis**

Year	Area	Rate	Range
-------------	-------------	-------------	--------------

Comments:

Source:

- Trichomoniasis

Year	Area	Rate	Range
-------------	-------------	-------------	--------------

Comments:

Source:

Health service and care indicators

HIV prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS - related issues.

Access to health care

Indicators	Year	Estimate	Source
% of population with access to health services - total			
% of population with access to health services - urban			
% of population with access to health services - rural			
Contraceptive prevalence rate (%)	1996	21.9	UNICEF/UNPOP
Percentage of contraceptive users using condoms			
% of births attended by skilled health personnel	2000	55.6	WHO
% of 1-yr-old children fully immunized - DPT	2002	64	WHO/UNICEF
% of 1-yr-old children fully immunized - Measles	2001	82	WHO/UNICEF
% of ANC clinics where HIV testing is available			

Number of adults (15-49) with advanced HIV infection receiving ARV therapy as of June 2004

Adults on treatment

Number: 3,760

Source: WHO

Estimated number of adults (15-49) in need of treatment in 2003

Adults needing treatment

Number: 130,000

Source: WHO/UNAIDS

Coverage of HIV testing and counselling

Number of public and NGO services providing testing and counselling services.

Year	Area	N=
------	------	----

Comments:

Source:

Knowledge and behaviour

In most countries the HIV epidemic is driven by behaviours (e.g.: multiple sexual partners, injecting drug use) that expose individuals to the risk of infection. Information on knowledge and on the level and intensity of risk behaviour related to HIV/AIDS is essential in identifying populations most at risk for HIV infection and in better understanding the dynamics of the epidemic. It is also critical information in assessing changes over time as a result of prevention efforts. One of the main goals of the 2nd generation HIV surveillance systems is the promotion of a standard set of indicators defined in the National Guide (Source: National AIDS Programmes, A Guide to Monitoring and Evaluation, UNAIDS/00.17) and regular behavioural surveys in order to monitor trends in behaviours and to target interventions.

The indicators on knowledge and misconceptions are an important prerequisite for prevention programmes to focus on increasing people's knowledge about sexual transmission, and, to overcome the misconceptions that act as a disincentive to behaviour change. Indicators on sexual behaviour and the promotion of safer sexual behaviour are at the core of AIDS programmes, particularly with young people who are not yet sexually active or are embarking on their sexual lives, and who are more amenable to behavioural change than adults. Finally, higher risk male-male sex reports on unprotected anal intercourse, the highest risk behaviour for HIV among men who have sex with men.

Knowledge of HIV prevention methods

Prevention indicator: Percentage of young people 15-24 who both correctly identify two ways of preventing the sexual transmission of HIV and who reject three misconceptions about HIV transmission.

Year	Male	Female
2000	41	34

Comments:

Source: DHS

Reported condom use at last higher risk sex (young people 15-24)

Prevention indicator: Proportion of young people reporting the use of a condom during sex with a non-regular partner.

Year	Male	Female
2000	38	32

Comments:

Source: DHS

Age-mixing in sexual partnerships among young women

The proportion of young women who have had sex in the last 12 months with a partner who is 10 or more years older than themselves.

Year	Area	Age group	Male	Female	All
------	------	-----------	------	--------	-----

Comments:

Source:

Reported non-regular sexual partnerships

Prevention indicator: Proportion of young people 15-24 having at least one sex partner other than a regular partner in the last 12 months.

Year	Male	Female
2000	71	17

Comments:

Source: DHS

Knowledge and behaviour (continued)Ever used a condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
------	------	-----------	------	--------	-----

Comments:

Source:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Percentage
------	------------

Comments:

Source:

Age at first sexual experience

Proportion of 15-19 year olds who have had sex before age 15.

Year	Male	Female
2000	29	17

Comments:

Source: DHS

Prevention indicators

Male and female condoms are the only technology available that can prevent sexual transmission of HIV and other STIs. Persons exposing themselves to the risk of sexual transmission of HIV should have consistent access to high quality condoms. AIDS Programs implement activities to increase both availability of and access to condoms. These activities should be monitored and have resources directed to problem areas. The indicator below highlights the availability of condoms. However, even if condoms are widely available, this does not mean that individuals can or do access them.

Condom availability nationwide

Total number of condoms available for distribution nationwide during the preceding 12 months, divided by the total population aged 15-49.

Year	N	Rate
------	---	------

Comments:

Source:

Prevention of mother-to-child transmission (MTCT) nationwide

Percentage of women who were counselled during antenatal care for their most recent pregnancy, accepted an offer of testing and received their test results, of all women who were pregnant at any time in the preceding two years.

Year	N	Rate
------	---	------

Comments:

Source:

Blood safety programs aim to ensure that the majority of blood units are screened for HIV and other infectious agents. This indicator gives an idea of the overall percentage of blood units that have been screened to high enough standards that they can confidently be declared free of HIV.

Screening of blood transfusions nationwide

Percentage of blood units transfused in the last 12 months that have been adequately screened for HIV according to national or WHO guidelines.

Year	N	Rate
------	---	------

Comments:

Source:

Sources

Data presented in this Epidemiological Fact Sheet come from several sources, including global, regional and country reports, published documents and articles, posters and presentations at international conferences, and estimates produced by UNAIDS, WHO and other United Nations agencies. This section contains a list of the more relevant sources used for the preparation of the Fact Sheet. Where available, it also lists selected national Web sites where additional information on HIV/AIDS and STI are presented and regularly updated. However, UNAIDS and WHO do not warrant that the information in these sites is complete and correct and shall not be liable whatsoever for any damages incurred as a result of their use.

Behets, F. M. T., G. Liomba, G. Lule, et al. 1995 Sexually Transmitted Diseases and Human Immunodeficiency Virus Control in Malawi: A Field Study of Genital Ulcer Disease *Journal of Infectious Diseases*, vol. 171, no. 2, pp. 451-455.

Chiphagwi, J., G. Liomba, H. M. Ntaba, et al. 1987 Human Immunodeficiency Virus Infection is Prevalent in Malawi *Infection*, vol. 15, no. 5, p. 363.

Ciotti, M. 1994 Report on the Syphilis and HIV Seroprevalence Survey in Rural Antenatal Women Ministry of Health, AIDS Control Programme, Lilongwe, Malawi, report.

Cohen, M. S., I. F. Hoffman, R. A. Royce, et al. 1997 Reduction of Concentration of HIV-1 in Semen after Treatment of Urethritis: Implications for Prevention of Sexual ... *Lancet*, vol. 349, no. 9069, pp. 1868-1873.

Damisoni, H. S., O. L. Kaluwa, H. G. Feluzi, et al. 1997 HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders National AIDS Control Programme, Lilongwe, Malawi, report.

Gurtler, L., J. Eberle, F. Deinhardt, et al. 1987 Prevalence of HIV-1 in Selected Populations of Areas in Malawi II International Symposium: AIDS and Associated Cancers in Africa, Naples, Italy, 10/7-9, Abstract TH-44.

Harries, A. D., D. Maher, B. Mvula, et al. 1995 An Audit of HIV Testing and HIV Serostatus in Tuberculosis Patients, Blantyre, Malawi *Tubercle and Lung Disease*, vol. 76, no. 5, pp. 413-417.

Harries, A. D., D. S. Nyangulu, C. Kang'ombe, et al. 1998 Treatment Outcome of an Unselected Cohort of Tuberculosis Patients in Relation to Human Immunodeficiency Virus Serostatus in ... *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol. 92, pp. 343-347.

Kool, H. E. J., D. Bloemkolk, P. A. Reeve, et al. 1990 HIV Seropositivity and Tuberculosis in a Large General Hospital in Malawi *Tropical and Geographical Medicine*, vol. 42, no. 2, pp. 128-132.

Kristensen, J. K. 1990 The Prevalence of Symptomatic Sexually Transmitted Diseases and Human Immunodeficiency Virus Infection in Outpatients in ... *Genitourinary Medicine*, vol. 66, no. 4, pp. 244-246.

Kelly, P. M., R. G. Cumming, J. M. Kaldor 1996 HIV and Tuberculosis in Non-Urban Sub-Saharan Africa: A Cohort Study with Two Year Followup XI International Conference on AIDS, Vancouver, 7/7-14, Abstract Th.C.333.

Kaluwa, O. L., H. G. Feluzi, A. C. Songwe, et al. 1995 1995 Sentinel Surveillance Report National AIDS Control Programme, Lilongwe, Malawi, unpublished reports.

Kaluwa, O. L., H. J. Damisoni, H. G. Feluzi, et al. 1996 Sentinel Surveillance Report: HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders National AIDS Control Programme, Lilongwe, Malawi, unpublished report.

Kelly, P. M., R. G. Cumming, J. M. Kaldor, et al. 1999 A New, Clinically-Based Algorithm for the Diagnosis of HIV in African Tuberculosis Patients: Cross-Sectional Analysis from ... *International Journal of STD & AIDS*, vol. 10, no. 4, pp. 231-236.

Lule, G., F. M. T. Behets, I. F. Hoffman, et al. 1994 STD/HIV Control in Malawi and the Search for Affordable and Effective Urethritis Therapy: A First Field Evaluation *Genitourinary Medicine*, vol. 70, no. 6, pp. 384-388.

Miotti, P.G., G. Dallabetta, E. Ndovi, et al. 1990 HIV-1 and Pregnant Women: Associated Factors, Prevalence, Estimate of Incidence and Role in Fetal Wastage in Central Africa *AIDS*, vol. 4, no. 8, pp. 733-736.

Mughogho, O., N. G. Liomba, R. Chinyama, et al. 1995 Sexual Practices and HIV/STD Transmission among Female Commercial Sex Workers (FCSW) in Malawi IX International Conference on AIDS and STD in Africa, Kampala, Uganda, 12/10-14, Poster TuC624.

Mukadi, Y. D., D. Maher, A. Harries 2001 Tuberculosis Case Fatality Rates in High HIV Prevalence Populations in Sub-Saharan Africa *AIDS*, vol. 15, no. 2, pp. 143-152.

Namiko, Y., M. Mikito, O. Nobuhiko, et al. 1997 Seroprevalence of HIV and Other Blood Borne Disease Markers at the Queen Elizabeth Central Hospital, Malawi Xth International Conference on AIDS and STD in Africa Abidjan, Cote d' Ivoire, 12/7-11, Poster A.423.

National AIDS Control Programme 1998 HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders National AIDS Control Programme, Lilongwe, Malawi, report.

National AIDS Control Programme 1999 HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders National AIDS Control Programme, Lilongwe, Malawi, report.

National AIDS Control Programme 2001 HIV/Syphilis Seroprevalence in Antenatal Clinic Attenders National AIDS Control Programme, Lilongwe, Malawi, Preliminary report.

Sterne, J. A. C., A. C. Turner, P. E. M. Fine, et al. 1995 Testing for Antibody to Human Immunodeficiency Virus Type 1 in a Population in Which Mycobacterial Diseases are Endemic *Journal of Infectious Diseases*, vol. 172, no. 2, pp. 543-546.

Taha, T. E., G. A. Dallabetta, D. R. Hoover, et al. 1998 Trends of HIV-1 and Sexually Transmitted Diseases among Pregnant and Postpartum Women in Urban Malawi *AIDS*, vol. 12, no. 2, pp. 197-203.

Zachariah, R., A. D. Harries, M. P. Spielmann, et al. 2000 Cotrimoxazole Prophylaxis in HIV Positive TB Patients in a Rural District of Malawi XIII International AIDS Conference, Durban, South Africa, 7/9-14, Abstract TuOrB278.

Websites: www.aids.africa.com
 www.aidsmalawi.org

Annex: HIV surveillance by site

Group	Area	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003		
Pregnant women	Major urban areas	Kamuzu Central Hospital, Lilongwe	8.15		16.36															
		Lilongwe (Kamuzu) Central Hospital,				17.90	17.90													
		Lilongwe Central Hospital, Lilongwe							16.50	22.50	27.00	25.00	26.00	25.25			20.10			
		Queen Elizabeth Central Hospital, B	8.24		18.62	23.00	25.90	27.20	30.10	30.20	32.75	34.00	30.79	30.43	27.90			28.46		
		St. John's Mission Hospital, Mzuzu	3.10		16.90					21.20	18.50	21.41	17.00	18.49	23.28			18.59		
	Outside major urban areas	Chipwanya Rural Hospital, Dedza dis						4.76	6.86											
		Gawanani Health Centre, Machinga di													25.76			13.33		
		Gawanani Rural Hospital, Machinga d						2.12	9.47	16.00	6.76	15.86	12.69	14.91						
		Kamboni Rural Hospital, Kasungu dis						3.33	4.00	6.90	9.43	11.33	6.67	10.28	2.92			5.06		
		Kaporo Health Centre, Karonga distr													17.44			12.11		
		Kaporo Rural Hospital, Karonga dist													6.62					
		Kasina Rural Hospital, Dedza distri								7.00	11.76	7.14	5.45	6.58	4.55			4.97		
		Kasoba Rural Hospital, Karonga dist						1.96	12.00	8.30	7.45	2.30								
		Mangochi District Hospital, Mangoch								16.50	18.40	16.80	20.00	19.40	27.25			16.42		
		Mbalachanda Health Centre, Mzimba d													9.49			10.47		
		Mbalachanda Rural Hospital, Mzimba						11.57	7.75	7.00	7.26	5.88	8.21	3.28						
		Mchinji District Hospital, Mchinji						14.40	18.60	13.00	13.20	15.60	17.71	17.00	26.60			23.78		
		Mianga Health Centre, Thyolo distri													21.70			16.92		
		Mianga Rural Hospital, Thyolo distr						6.15	16.47	19.00	12.00	10.71	13.85	20.95						
		Milepa Health Centre, Chiradzulu di													14.14			15.84		
Milepa Rural Hospital, Chiradzulu d						7.69	20.51	18.00	18.37	16.67	23.42	14.94								
Mulanje District Hospital, Mulanje						13.25	28.73	28.00	28.80	28.40	26.13									
Mulanje Mission Hospital, Mulanje d													25.24	35.49		24.14				
Nkhata Bay District Hospital, Nkhata									20.50	22.00	16.00	20.52	25.00	21.64		18.63				
Nkhotakota District Hospital, Nkhot									15.50	18.00										
Nsanje District Hospital, Nsanje di									21.00	9.56	17.20	21.32	23.60	26.00		35.77				
Ntcheu District Hospital, Ntcheu di									18.00	16.80	24.00	22.50	20.80	33.00		18.64				
Rumphi District Hospital, Rumphi di									14.90	16.40	12.80	18.50	12.50	22.22		13.52				
St. Anne's Mission Hospital, Nkhota											16.80	16.34	22.80	22.77		18.18				
Thonje Rural Hospital, Dowa distric						2.40	2.75	3.00	4.67	4.67	8.40	6.36	9.42			4.49				
Sex workers	Major urban areas	Blantyre Lilongwe							70.00											
	Outside major urban areas	Southern region																		
Injecting drug users																				
STI patients	Major urban areas	Kamuzu Central Hospital, Lilongwe		62.41							54.85									

Group	Area	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
STI patients	Major urban areas	Lilongwe Central Hospital, Lilongwe								60.80									
		Queen Elizabeth Central Hospital, B						52.90			63.68								
		St. John's Mission Hospital, Mzuzu									57.20								
	Outside major urban areas	Mangochi District Hospital, Mangochi									55.00								
		Mchinji District Hospital, Mchinji									53.80								
		Mulanje District Hospital, Mulanje									45.50								
		Nkhata Bay District Hospital, Nkhata									43.55								
		Nsanje District Hospital, Nsanje di									47.00								
		Ntcheu District Hospital, Ntcheu di									40.80								
		Rumphi District Hospital, Rumphi di									36.63								
Men having sex with men																			
Tuberculosis patients	Major urban areas	National				67.00				77.00									
		Queen Elizabeth Central Hospital, B							74.59										
	Outside major urban areas	St. John's Mission Hospital, Mzuzu						66.84											
		Karonga district Northern			21.35			38.38											
		Thyolo district, Thyolo district (r						68.00							77.00				
Zomba General Hospital, Zomba		25.60							77.18										