Evidence For Action

on HIV treatment and care systems

Research Report

February 2009

Situation Assessment 2007

India, Malawi, Uganda, Ukraine and Zambia

Introduction and aim

The main aim of this situation assessment was for partners within the Evidence for Action consortium to understand better what is going on with respect to HIV care in the countries and settings where consortium members work. It comprises three parts: a national level overview of issues relevant to HIV programmes in the countries (outside the UK) represented within the consortium; and data concerning HIV care at both district and facility level. The data were provided by consortium partners based on their own experience and using data reported by staff in the field; there may be some variability in accuracy. The data are not intended to be representative, as that is beyond the scope of this exercise. The report is intended to illustrate HIV care in the different settings linked by the consortium.

Contents

Methods

Information on health care statistics relevant to HIV care were collated from publicly-available sources, using information available in February 2007.

The district manager responsible for HIV care (or their nominee) for each of 10 districts in India, Malawi, Uganda and Zambia completed a questionnaire concerning HIV care service provision at district level between January and March 2007. A district was defined as the smallest unit of health care administration including a hospital. The questionnaire was completed using readily-available data; district managers were not expected to undertake new data collection activities in order to complete the questionnaire.

The service manager (or nominee) of each of 34 HIV care facilities in India, Uganda, Ukraine and Zambia completed a survey using a standardised questionnaire, similarly based on readily-available data or personal knowledge of the local situation (new data were not expected to be collected), between January and March 2007. An HIV care facility was defined as a health care facility, either stand alone or part of a larger institution, providing any or all of the following services: HIV counselling with or without testing for HIV, prevention and treatment of HIV-related opportunistic infections, prevention of mother to child transmission and adult transmission, ART or palliative care. The data collected included: contextual information such as the setting and funder(s), provision of services in addition to HIV care, health care referral networks, and model of HIV care delivery; details regarding VCT, HIV prevention and laboratory services, the ART regimens provided and monitoring of treatment; staffing levels and staff training, and any health system constraints such as drug stock outs; the extent of collection of HIV/AIDS data within the facility.

Glossary

ANC	Antenatal care/clinic
ART	Antiretroviral therapy
BMGF	Bill and Melinda Gates Foundation
CSW	Commercial sex workers
FBO	Faith-based organisation
GFATM	The Global Fund to Fight AIDS, tuberculosis and malaria
HCF	Health care facility
HCW	Health care worker
HIV	Human immunodeficiency virus
IDU	Injecting (or intravenous) drug use
MSM	Men who have sex with men
NRTI	Nucleoside Reverse Transcriptase Inhibitor
NGO	Non-governmental organisation
OI	Opportunistic infection
PEPFAR	President's Emergency Plan For AIDS Relief
PLHA	People living with HIV and AIDS
PMTCT	Prevention of mother to child transmission
STI	Sexually transmitted infection
VCT	Voluntary counselling and testing for HIV

Summary table: national level overview

	India	Malawi	Uganda	Ukraine	Zambia
Total population 2005	1,103,371,000	12,884,000	28,816,000	46,481,000	11,668,000
% urban dwellers 2005	28.7	17.2	12.6	67.8	35
Average life expectancy at birth (yr)	62	41	49	67	40
Per capita total expenditure on health care at average exchange rate 2003 (US$)	26	13	18	60	21
2003 total expenditure on health as % of GDP	4.8	9.3	7.3	5.7	5.4
Physician density per thousand population	0.60 (2005)	0.02 (2004)	0.08 (2004)	2.95 (2003)	0.12 (2004)
Nurse density per thousand population	0.80 (2004)	0.59 (2004)	0.61 (2004)	7.62 (2003)	1.74 (2004)
Government expenditure on HIV/AIDS (US$)	93,780,000 (2004-2005)	22,880,000 (2004-2005)	64,454,352 (2004)	58,500,000 (2006)	32,000,000 (2005)
Type of HIV epidemic	Heterogeneous (generalised in 6 high prevalence states)	Generalised	Generalised	Concentrated	Generalised
Main routes of transmission	Heterosexual (85%), IDU(2.4%) main route in NEast Perinatal (3.6%)	Heterosexual Perinatal	Heterosexual (75-80%), Perinatal (15-25%)	IDU (60%) Heterosexual (25%) Perinatal (12%)	Heterosexual Perinatal
National adult (15-49y) HIV prevalence 2005 (%)	0.9 [0.91-1.5]	14.1 [6.9-21.4]	6.7 [5.7-7.6]	1.4 [0.8-4.3]	17 [15.9-18.1]
VCT services per 100,000 population (number of VCT services / total population)	0.08 (2005)	1 (2005)	1 (2004)	1 (2004)	3 (2005)
ART coverage 2005 % of people in need who are receiving ART	6	19	34	10	26
First line ART regimen	Stavudine + lamivudine + nevirapine (FDC)	Stavudine + lamivudine + nevirapine (FDC)	Stavudine or zidovudine + lamivudine + nevirapine or efavirenz	Stavudine or zidovudine + lamivudine + nevirapine or efavirenz or nelfinavir	Stavudine or zidovudine + lamivudine + nevirapine (FDC)
Estimated proportion of HIV infected pregnant women who get ART for PMTCT 2005 (%)	2	6	12	90	15
ART regimen for PMTCT	As per WHO recommendations	Nevirapine	Nevirapine or zidovudine	Nevirapine or zidovudine	Nevirapine or zidovudine

Republic of India

Government, economy and people

India is the largest democracy and second most populous country in the world [1]. It has a diverse economy which encompasses agriculture, modern industries and services; rapid economic growth is resulting in social change. India is partitioned into 28 states and 7 union territories, which are further subdivided into divisions, districts, and smaller administrative areas [2]. States have their own elected governments and health care systems. The total population, from 2005 data, is 1,103,371,000, and 28.7% of the population live in urban areas [3]. The average life expectancy at birth for an Indian is 62 years [4]. India has experienced a series of natural disasters in recent years in which tens of thousands of people have been killed including the Orissa cyclone, earthquakes affecting Gujarat and Kashmir, the tsunami affecting the south, and floods in Maharashtra [1].

Health care

In 2003, per capita total expenditure on health at average exchange rate was US$ 27. In 2005 there were 0.60 physicians per thousand population, and in 2004, 0.80 nurses per thousand population [4]. Health care services in India are provided by the public and private sectors, and not-for-profit organisations. The private sector, however, dominates and functions as an independent, autonomous body. It provides 81% of all outpatient and 46% of all inpatient care, employs over 75% of all health care workers (including most of the specialists), and runs 68% of all hospitals [5]. Most people do not access public health care services because of distance (a villager must travel on average 2.2km to get to a health post, and 20km for hospital care), lack of money, and lack of confidence in the system [5]. Government efforts to engage the private sector in providing services under the National Health Programmes have been unsuccessful.

The public health care system comprises large numbers of dispensaries, primary health care institutions, small hospitals providing some specialist services, and large hospitals providing tertiary care [5]. There is little continuity of care within the public sector, as separate bodies are responsible for provision and supervision of the different levels of care [5]. Inadequate financing of the public sector has resulted in lack of facilities and commodities (equipment and drugs), and failure to develop a public health cadre has impacted upon implementation of public health programmes [5]. Most doctors specialise and/or work in urban areas as there are few incentives for doctors to stay in rural areas, hence health service provision in rural areas is poor [5]. It is reported that the health care sector is the second most corrupt in India, and 25% of its budget is estimated to be siphoned off through corrupt practices which also extend into the private sector [5]. Although health care has been decentralised to state level, devolution of authority to local bodies within a state varies between states. Not for profit organisations are mainly faith-based or community-based organisations which mostly provide primary and secondary level care in semi-urban/urban areas [5].

Almost 70% of health expenditure in India comes from households, and only 25% is government funded, although this differs between states according to the strength of the public health system [5]. Large variations in user fees charged for similar services are reported between service providers within the private sector, where fees are generally three to four times greater than the public sector [5]. User fees are also charged in many public sector and not-for-profit health institutions [5].

HIV/AIDS-related healthcare

Total annual public expenditure on HIV/AIDS for 2004-05 was US$93,780,000 of which US$20,470,000 was external aid support [6]. The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is a key funder, and focuses on providing care to mothers living with HIV/AIDS and their families, scaling up ART provision [8]. The Bill and Melinda Gates Foundation is another important funder, particularly of HIV prevention activities. Key issues and challenges for HIV/AIDS treatment scale up in India include expanding coverage of ART and PMTCT services; ensuring safe prescribing of ART; strengthening the procurement, supply and management of medicines; training additional health care workers to deliver HIV treatment and care at lower levels of health care; engaging the private sector (which is largely unregulated) in scaling up access to ART; and stigma and discrimination (same sex acts and drug taking are criminalised) [6, 8, 12]. India has the huge advantage of domestic generic drug manufacturing capability, and its launch of generic ART in 2000 was partly responsible for driving down the global cost of ART [8, 14, 18].

Maternal and child health services [7]

The 1998-1999 National Family Health Survey (NHFS), reported that mothers in India in the three years preceding the survey received antenatal care from a health care professional for 60% of births, 34% of births were in a health care facility, and 42% of births were attended by a health care professional.

Epidemiology of HIV

India is estimated to have the second largest population of people living with HIV/AIDS (PLHA) in the world [8]. The HIV epidemic in India is heterogeneous, and is stabilising or diminishing in some states but growing in others [8]. The epidemic appears to have shifted from the most vulnerable groups to bridge populations and then to the general population, and is spreading from urban to rural areas [8]. Two-thirds of all reported HIV infections are in six high prevalence states of India (Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Manipur and Nagaland) where HIV prevalence is 4-5 times greater than in other states [10]. In 2004, for all six high prevalence states except for Tamil Nadu, the National AIDS Control Organisation (NACO) reported HIV prevalences amongst antenatal clinic attendees (ANC) ranging from 1.2% to 2.2% [17]. In Tamil Nadu, median ANC prevalence diminished from 1.1% in 2001 to 0.5% in 2004 [17]. South Goa is a high prevalence district, and 2004 mean HIV prevalence amongst ANC attendees within Goa was 1.1% [17, 18]. Amongst intravenous drug users (IDU), HIV prevalences in 2004 were 39.9% in Tamil Nadu, 22% in Manipur, 4.5% in Nagaland, and 17.6% in Delhi [17].

The main transmission route is heterosexual (85%) except in the North Eastern states where injecting drug use (IDU) is the main route [6]. Particularly in rural areas women account for an increasing proportion of PLHA [10]. Other routes of transmission are mother to child (3.6%), infected needles and syringes (2.4%), contaminated blood or blood products (2.0%), and unspecified (8%) [6]. Vulnerable groups are IDUs, female commercial sex workers (CSW), men who have sex with men (MSM), and mobile groups [8].

2005 UNAIDS estimates were: national adult HIV prevalence was 0.9% [0.91-1.5%]; 5.7 million people were living with HIV/AIDS in India, of whom 1.6 million were women; and between 270,000 and 680,00 people had died of AIDS [9]. By the end of 2005 there were an estimated 1.2 million AIDS orphans [9]. It is estimated that more than 170,000 children aged under 15 years are living with HIV/AIDS; prevalence data is not available for 15-24 year olds [8, 9]. Sentinel surveillance data from 2004 reports median HIV prevalence of 12.5% in tuberculosis patients in a site outside major urban areas [9]. Median HIV prevalence in IDUs in major urban areas was 4.3% in 2002, and 2.8% outside major urban areas in 2003 [9]. UNAIDS estimates for median HIV prevalence in ANC attendees in major urban areas were 0.3% in 2002, and 1.3% outside major urban areas in 2004 [9]. UNAIDS reports median HIV prevalences amongst CSWs of 52.3% in a major urban area in 2001, and 21.6% outside major urban areas in 2004 [9].

Response to the HIV epidemic

The National AIDS Control Programme (NACP), funded primarily by the World Bank, was launched in 1987, and initially focussed on preventing transmission through blood and blood products, and raising awareness about sexual transmission and needle exchange [6, 8, 14]. The 2003 Action Plan on Blood Safety introduced mandatory provision of HIV test results to the donor if requested, and accreditation of blood banks [18]. In its second phase, the NACP aims to reduce HIV transmission through raising awareness and changing behaviour, decentralising service delivery, encouraging voluntary counselling and testing (VCT), targeting vulnerable groups (CSWs and their clients, IDUs, MSM, truckers, migrant workers and street children) and conducting research [6,8]. Targets have been established for coverage of vulnerable groups through targeted interventions (80%), coverage of schools and colleges through education programmes (90%), awareness amongst the general population in rural areas (80%), reduction of HIV transmission through blood to <1%, and establishing at least one VCT centre in every district [8]. Phase 3 of the NACP (currently in consultative phase) is anticipated to have a greater focus on scaling-up care, aiming to provide ART to around 300,000 people by 2011 (personal communication, Maryam Shahmanesh), along with an integrated package of VCT, prevention of mother to child transmission (PMTCT), sexually transmitted infection (STI) and opportunistic infection (OI) treatment services in every district [8]. Over 800 non-governmental organisations (NGOs) are being used to deliver HIV prevention, care and support services [8].

NACO coordinates all HIV/AIDS activities and is supported by state level AIDS Control societies (SACS). National guidelines have been developed by NACO for implementation of ART, HIV testing, VCT, post exposure prophylaxis for occupational exposure, and PMTCT, and co-trimoxazole prophylaxis is recommended for PLHA. Armed forces have established their own programme for HIV prevention and care [8]. The railways have expanded PTMCT, STI and VCT services as well as providing free ART for their staff [8]. A NACO/national training package for HIV prevention, care and treatment is being developed for all levels of health care service [8]. A monitoring and evaluation system which is now computerised (Computerised Management Information System [CMIS]) has been instituted throughout India [6]. Programme data, collected in a predefined format, is submitted by SACS on a monthly basis to NACO and used to generate monthly, quarterly and annual programme reports [6].

New law on HIV infection is pending, expected to be tabled in 2007, which includes issues such as discrimination and access to treatment.

Republic of India

HIV voluntary counselling and testing services

NACO started setting up VCT services (based in medical colleges and hospitals) in 1997, which by 2004 had reached district level in the six high HIV prevalence states and by the end of 2005 there were a total of 873 VCT centres [6, 11]. VCT centres are being extended to every district in other states [6, 11]. Between October 2004 and September 2005, over 1 million people had received HIV counselling and testing, and 24% of people were tested and knew their results [6]. According to the national VCT guidelines testing must be voluntary and both pre- and post-test counselling should be provided [11]. Three rapid HIV test kits based on different antigens/ principles should be used (two tests are for confirmation of initial positive results), and confirmation by ELISA or Western Blot is indicated only for indeterminate results [11]. NACO provides financial support for services and sets training and supervision standards for VCT staff [11]. A user fee of 10 rupees is set for HIV testing which covers all initial and confirmatory tests [11]. The guidelines recommend linkages between VCT centres and:

- TB microscopy centres (counsellors are encouraged to refer clients with TB symptoms for evaluation)
- STI clinics, which should ideally be located within the same hospital setting.
- Organisations that provide treatment and care for HIV

A study conducted between 2002-2003 amongst private practitioners in Pune reported that HIV testing fell short of the national guidelines with respect to consent, confidentiality, counselling, and often only a single HIV test was used for diagnosis [19].

Antiretroviral therapy (ART)

Free ART has been provided within the public sector since 2004, initially at tertiary level hospitals in the six high prevalence states and Delhi [18]. 2005 UNAIDS estimates were that 970,000 (590,000-1,500,000) adults were in need of ART, and 53,784 people were receiving ART [9]. Estimated ART coverage increased from 2% in 2003 to 6% in 2005, with 74 sites (54 public sector) reported to be providing ART in 2005. India has set a target of providing free ART to 100,000 PLHA by 2007 [6].

ART provision was first prioritised for HIV-infected pregnant women accessing public sector ANCs, children up to 15 years old, and adults with AIDS accessing government hospitals [18]. ART delivery is being scaled-up in a phased manner in high prevalence states, firstly in tertiary level institutions, followed by other government hospitals, and then into district hospitals and primary care facilities [13]. Following this ART delivery will be scaled up in a similar manner in low prevalence states [13].

The recommended first line drug regimen for adults is stavudine + lamivudine + nevirapine taken as a twice daily fixed dose combination, at an average cost (from generic manufacturers) of US$146 per person per year [8,13]. Alternative first line regimens include zidovudine + lamivudine + nevirapine; stavudine + lamivudine + efavirenz; or zidovudine + lamivudine + efavirenz [8]. The recommended second line regimen is tenofovir or abacavir + didanosine + lopinavir-ritonavir or saquinavir-ritonavir [13], although in-country partners report that funding for second line treatment has not yet been secured. For children, the preferred first line regimen is stavudine or zidovudine + lamivudine + nevirapine or efavirenz, and second line therapy follows the same principles as for adults [13].

It has been reported that when generic ART was first launched in 2000 it was used in an unstructured way, i.e. not adhering to WHO or NACO guidelines, and that pharmaceutical companies were directly approaching patients [14, 16]. As a result, patients were interrupting treatment due to financial limitations and misinformation [14, 16]. A Mumbai study (which did not evaluate adherence levels or regimens) reported overall prevalence of resistance from 1997-2003 to reverse transcriptase inhibitors (RTIs) of 33.7% and to protease inhibitors (PIs) of 21.5%, and in isolates from treatment-naïve patients of 6.7% and 2.5% respectively [15].

Indian manufacturers have been the world's major suppliers of generic ART, but this is threatened by recent changes in patent law and ongoing legal proceedings by the drug company Novartis.

National ART implementation guidelines [13]

National ART implementation guidelines drafted in 2004 recommend ART provision with one first line fixed dose combination regimen provided by medical colleges and district hospitals, which should also have access to alternative first line regimens, and possibly to a second line regimen, and also to laboratory tests (liver enzymes, haemoglobin, full blood count and CD4). Difficult cases are to be referred to tertiary centres with more expertise in HIV management, viral load monitoring and community resistance monitoring facilities.

Criteria for ART initiation follow WHO recommendations:

1. In adults and adolescents:
    a. If CD4 count is available, any one of the following:
        i. WHO stage IV disease irrespective of CD4;

ii. WHO stage III with consideration of CD4<350/mm3;

iii. WHO stage I or II with CD4<=200/mm3

b. If CD4 count is not available, any one of the following:

i. WHO stage IV irrespective of total lymphocyte count;

i. WHO stage III irrespective of total lymphocyte count;

i. WHO stage II with total lymphocyte count=1200/mm3

2. For children over the age of 18 months, any one of the following:

a. WHO paediatric stage III, irrespective of CD4%

b. WHO paediatric stage II with consideration of using CD4 percentage <15% to assist decision making.

c. WHO paediatric stage I and CD4 percentage <15%.

3. For children under the age of 18 months:

a. If virologically proven infection:

i. WHO paediatric stage III, irrespective of CD4%

i. WHO paediatric stage II disease with consideration of using CD4 percentage <20% to assist decision making.

i. WHO paediatric stage I and CD4 percentage <20%.

b. If virological tests are not available, but CD4 counts are available:

i. WHO stage II or III and CD4 percentage <20%. HIV antibody testing must be repeated at 18 months, and therapy continued if infection is confirmed.

The recommended monitoring schedule includes a follow-up visit one month after initiation, followed by a minimum of three to four monthly visits. Basic laboratory monitoring recommended is as per WHO guidelines: for the first line regimen a CD4 count (if available) is to be performed before treatment and every 6-12 months; and if a zidovudine containing regimen is used haemoglobin should be monitored.

NACO is supporting training and capacity building for scaling up of ART, and accredits treatment centres which fulfil defined requirements. NACO is also working to develop a network of public-private laboratories, so that diagnostic services from existing labs can be used by facilities which do not have access to CD4 counts. The aim is for there to be at least one CD4/CD8 counter per two to three districts, and for specialised labs in Pune, Chennai and Kolkata to carry out HIV drug resistance surveillances.

Harm reduction projects

Safer sex programmes to empower CSWs are in place in some states of India, but overall awareness about HIV is low amongst CSWs, particularly amongst those who work in the streets [6]. Needle and syringe exchange programmes and limited opioid substitution programmes have been introduced in some states, in particular Manipur, but criminalisation of drug taking makes it difficult to reach IDUs [6]. India has an estimated 2 to 5 million long distance truck drivers and helpers, and targeted interventions have been conducted at key locations along India's national highways [6].

Prevention of mother to child transmission (PMTC)

The Program on Prevention of Parent-to-Child Transmission (PPTCT) of HIV was initiated in India in 2002 in five high prevalence states. It incorporates PMTCT through provision of ARV prophylaxis, safe delivery practices and infant feeding counselling [18]. By the end of 2005 the PPTCT programme had been scaled up to 488 PPTCT centres, of which over 90% were in the six high HIV prevalence states [6]. In 2005, 2% of HIV-infected pregnant women received ART for PMTCT, and in order to improve on this, PPTCT services are being scaled up to primary care facilities and the private sector [6, 9].

Screening of blood for HIV

In 2005, 100% of transfused blood units were screened for HIV [9].

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Republic of Malawi

Government, economy and people

Malawi is one of the world's poorest and least developed countries. The economy is predominantly agricultural with most of its population relying on subsistence farming. Malawi is prone to natural disasters and recent droughts have resulted in requirements for thousands of tonnes of food aid each year. In 2000 half of Malawi's foreign debt was cancelled as part of the Heavily Indebted Poor Countries (HIPC) debt relief programme [1,2]. By the end of 2004 Malawi's external debt was US$3.1 billion [13].

The total population of Malawi, from 2005 data, is 12,884,000, and 17.2% of the population live in urban areas. The average life expectancy at birth for a Malawian is 41 years [3,4]. Malawi is partitioned into 30 districts across three regions.

Healthcare

In 2003 per capita total expenditure on health at average exchange rate was US$ 13 [3]. Emigration and death have resulted in large scale loss of health care workers and in 2004 there were only 0.02 physicians and 0.59 nurses per thousand population [4]. A 6-year strategic plan is in place to build human resource capacity within the health sector where currently only 27% of staff are skilled [8]. Only 20 doctors are produced each year at Malawi's one medical college, hence other cadres of health care worker (nurses and clinical officers) must undertake some of the work of doctors [12]. Major challenges to HIV/AIDS treatment scale up are first and foremost the shortage of health care workers affecting delivery of all health services, particularly in rural areas, as well as stigma, and the continuing financial sustainability of the HIV/AIDS programme [11].

Organisation of healthcare

Health care services are mainly provided by the Ministry of Health and Population (MOHP), Christian Health Association of Malawi (CHAM), and Ministry of Local Government (MLG) which provide about 60%, 37% and 1% respectively of services [5]. There are three levels of service provision: primary level (rural hospitals, health centres and health posts) staffed by nurses and clinical officers and serving a population of about 30,000 people; secondary (district hospitals and CHAM hospitals) staffed also by a medical officer, and tertiary level hospitals which provide more specialised services [5, 6]. Amongst the government hospitals, four are central (tertiary level), 23 district (secondary level), and 19 are rural (primary level) [8]. There are 129 private/NGO (including CHAM) hospitals.

Public sector health services were previously largely free, but user fees were introduced as part of the Fourth National Health Plan [5].

The Essential Health Care Package (EHP) is the main health strategy which aims to provide a basic, cost-effective package of health services to the community [7]. Health care is being decentralised with authority devolved to district level, and two central hospitals have been given autonomous status [5, 7]. There are district level AIDS coordinators and coordination committees [11].

In 1999, although 84% of the population were reported to live within 5 to 8km of a health facility, the actual conditions at the facilities were poor [7]. Amongst government health facilities, only 44% had functioning water systems, less than a third had provision for electricity, and in many facilities lead protection for radiology and sterilisation equipment were inadequate [7]. In rural areas many roads are impassable during the rainy season and most districts have a shortage of vehicles to transport patients to health facilities [7].

In 2005 the Malawian National AIDS Council (NAC) received US$ 22,880,000 in funding [13].

Maternal and child health services

93% of women who had a live birth in the 5 years preceding the 2004 Malawi Demographic and Health Survey (MDHS) received antenatal care from a health professional at least once, 57% reported delivering in a health facility, and 57% of births were attended by a health professional [10].

Epidemiology of HIV

Malawi has a generalised epidemic which emerged in the mid 1980's (the first reported case of AIDS was in 1985), with one of the highest HIV prevalence rates in the world, although infection levels have stabilised overall. HIV/AIDS is the leading cause of death in the most productive age group (15-49 year olds) [11].

In urban areas median HIV prevalence from antenatal clinic (ANC) sentinel surveillance peaked at 30.1% in 1993, declining to 20.1% in 2001 [14]. Overall, between 2001-2005, HIV prevalence at ANC surveillance sites fluctuated between 15% and 17% (National AIDS Commission [NAC] data) [15]. HIV prevalence is higher in urban areas and amongst mobile populations, and there are also regional variations within Malawi with a higher prevalence in Southern regions [11,13]. The main route of transmission is heterosexual, and those aged 13-24 years, in particular girls are particularly vulnerable.

In 2005, the UNAIDS estimate of national adult HIV prevalence was 14.1% [6.9-21.4%], which has changed little from 2003 estimates, but is slightly higher than the 2004 MDHS prevalence of 12% [10,14]. UNAIDS estimates that 940,000 people were living with HIV/AIDS in Malawi in 2005, of whom 850,000 were adults [14]. Women were disproportionately affected, with estimated HIV prevalence among 15-24 year olds of 9.7% [3.9-16.8%] for women and 3.4% [1.4-5.9%] for men. In 2005 78,000 people died of AIDS and there were 550,000 children orphaned due to AIDS of whom just over one-third were dual orphans [14]. UNAIDS estimate for median HIV prevalence in antenatal clinic (ANC) attendees in a major urban area was 18% in 2004, and 16.1% outside major urban areas in 2001 [14].

Median HIV prevalence in TB patients in major urban areas was 77% in 1995 and outside major urban areas was 69% in 2003 [14].

Response to the HIV epidemic

In 1999 HIV/AIDS was declared a national emergency. The NAC, established in 2001 to replace the National AIDS Control Programme, leads and coordinates the national multisectoral response to HIV/AIDS. HIV/AIDS health policy is set by the Ministry of health (MOH), and the NAC is overseen by a board of commissioners consisting of representatives from government, non-governmental organisations (NGO), faith-based organisations and the private sector [13]. The National HIV and AIDS Policy together with the National Strategic Framework (NSF) guide implementation of activities [13]. Main themes of the 2000-2004 NSF included HIV prevention, advocacy, and behaviour change; treatment and care; and surveillance and monitoring [13]. The 2003 National HIV/AIDS Policy aimed to ensure: accessible voluntary counselling and testing (VCT) services country-wide; affordable condoms; increased access to prevention of mother to child transmission services (PMTCT) and affordable antiretroviral therapy (ART) for PMTCT; safe blood transfusions; all health care providers follow universal precautions; affordable post exposure prophylaxis for those exposed at work and for rape victims; affordable ART and opportunistic infection (OI) prophylaxis; and provision of community home-based care [16]. National monitoring and evaluation of the HIV/AIDS programme is performed using data collected from all sites which implement HIV/AIDS interventions using the NAC Activity Reporting System (NACARS), a paper-based monthly data collection tool [16].

Funding for ART provision is mainly from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and the World Bank [11]. Policies and guidelines for community- and home-based care, VCT, PMTCT, ART and treatment of sexually transmitted infections have been developed and implemented [11].

Republic of Malawi

HIV voluntary counselling and testing services

VCT services were first introduced in 1992 at two sites, and expanded in 1995 when the Malawi AIDS Counselling Resource Organisation (MACRO), an NGO, was formed to strengthen VCT [18]. Other NGOs and community- and faith-based organisations also provide VCT, psychosocial support services and home-based care in the community. Their activities are coordinated by the National AIDS Commission Secretariat [11]. All ART delivery facilities are required to be linked to a VCT service [23]. By the end of 2005, a total of 184 mainly public-sector facilities, covering all districts, were providing VCT services and over a quarter of a million people had been tested [11]. Increasing VCT sites in rural areas has been a challenge [13].

A 2004 country-wide survey reported that HIV testing was performed at all levels of health care: central, district, mission and rural hospitals, clinics and health centres, and stand alone sites. In this survey, of the people tested in 2004, 22% were blood donors, 15% pregnant women, 63% clients and patients. Of concern was the detailed analysis of 62 of the 146 sites which provided HIV testing, which demonstrated that one quarter of sites had experienced stock-outs of HIV test kits in 2004 [9]. In the 2004 MDHS, 13% of women and 15% of men reported having been tested for HIV and receiving the test results [10].

Antiretroviral therapy (ART)

ART has been offered in the public sector since 2001. MOHP, in close collaboration with CHAM implements ART delivery services, and Medecins Sans Frontieres (MSF) which has provided free ART in Malawi since 1997 delivers ART in two districts [17,23]. Treatment scale up, using a public-health approach, began in 2004 with 59 public sector hospitals and clinics throughout Malawi selected to provide ART free of charge in the public sector [19,23]. Treatment scale up, using a simplified approach based on the tuberculosis DOTS programme, has been successful. This approach incorporates a free-of-charge standardised ART treatment regimen, quarterly monitoring of standard treatment outcomes, and requires all ART delivery facilities in the country to provide exactly the same service. In addition, patients are advised to select a 'guardian' to support them with adherence [19].

As of September 2006, Malawi had 102 public sector and 36 private sector ART clinics. All public sector clinics report to the HIV unit of the MOH, and most are located in central, district or rural hospitals. A district health officer (DHO) is in charge of each clinic which is run by nurses and clinical officers who often work on an 'ART rota'. Public sector clinics are classified, for drug planning purposes, into low, low/medium, medium, medium/high, high and super-high burden based on the number of new patients that can be started on ART per month. Private sector clinics consist of private hospitals, company clinics and private practitioners, who obtain GFATM drugs free of charge from the MOH, but may charge a small fee per month for consultation. Private sector clinics voluntarily report, using the national monitoring and evaluation system, to the MOH. (Personal communication, Andreas Jahn)

UNAIDS estimates for 2005 are that 160,000 (79,000-230,000) adults and 24,000 (8,800-43,000) children were in need of ART, and 33,000 people were receiving ART [14]. Estimated ART coverage increased from 2% in 2003 to 19% in 2005, and in total 60 sites (covering all districts) were providing ART [14].

By the end of September 2006, in the public sector 49,487 patients were alive and on ART, and 69,547 patients had ever started on ART (of whom 39% were male and 7% were children). For the same period, in the private sector, 2268 patients were alive and on ART, and 2781 had ever started ART. Adherence levels of 93% and 99% were reported in the public and private sectors respectively. 1691 public and 400 private health care workers had been trained and accredited in HIV-disease management by end of September 2006 [24]. Stock counts as of July-September 2006 indicated that nationally there was a 4-6 month stock of drugs for the first line regimen (although some individual sites were short of drugs), but almost half of all ART sites had complete stock-outs of fluconazole, cotrimoxazole and vincristine, and almost 60% had a complete stock-out of morphine [24].

ART guidelines [23]

National ART guidelines were finalised in 2003. Prior to delivery of ART, all facilities are assessed by the HIV unit of the MOH as ready to deliver ART, and all facilities new to ART delivery are only to provide the first line ART regimen. All ART delivery facilities are required to be physically integrated into general outpatient services. Health care workers, including private practitioners (with whom the MOH works to ensure standardised delivery throughout the country) must undertake a formal training course and pass an exam in order to be certified as competent to prescribe ART, and also undergo three-yearly recertification. Recertification involves attending a course on ART and management of OIs and passing a further exam. Minimum staffing requirements at ART delivery facilities are one clinical officer, one nurse, one counsellor and

one clerk. Only medical and clinical officers can initiate and prescribe ART. After ART initiation patients are reviewed at 2 weeks, and then on a monthly basis. Monitoring can be done by nurse or medical assistant. Minimum laboratory requirements are HIV testing and, if zidovudine is prescribed, haemoglobin measurement.

ART eligibility criteria are:

1. For adults, the individual must be HIV-seropositive and understand the implications of ART as well as any one of the following:
   a. WHO clinical stage 3 or 4.
   b. CD4 count <200/µl. (However, CD4 count is used in less than 10% of cases to initiate ART and only 17% of facilities in Malawi have CD4 count capability) [19, 24].
   c. WHO clinical stage 2 with total lymphocyte count <1200/mm^3.
2. For children over the age of 18 months, the child must be HIV-seropositive and the relatives must understand the implications of ART as well as any one of the following:
   a. WHO clinical stage III.
   b. WHO clinical stage I and II with CD4 percentage <15%.
3. For children under the age of 18 months, the child must be HIV-seropositive by a virological test as well as any one of the following:
   a. WHO paediatric stage III disease.
   b. WHO clinical stage I or II and CD4 percentage <20%.

ART regimens are:

1. The first line regimen is stavudine + lamivudine + nevirapine, which is used in the form of a generic fixed-dose combination. This regimen is used by about 95% of patients and is available at all ART delivery facilities [19]. The average cost of this regimen is US$250 per person per year [11].

   Zidovudine + lamivudine + nevirapine and stavudine + lamivudine + efavirenz are alternative first line regimen substitutions in case of drug reactions, but are only available at a few selected hospitals [19,23].
2. The second line regimen of zidovudine, lamivudine, tenofovir, lopinavir-ritonavir is available only at two central hospitals [19].
3. Post exposure prophylaxis for occupational exposure and rape is zidovudine and lamivudine for 3 days.

The same regimens are used for children, for whom first line regimen tablets are divided according to body weight. In children under 3 years, efavirenz and therefore the alternative first line regimens cannot be given.

Tools for monitoring are based on those used in national TB control programmes. Each patient has an ARV patient master card, and each clinic has an ARV patient register. Standard primary (alive, dead, defaulted, stopped treatment, transferred out) and secondary outcomes are recorded monthly for quarterly cohort analysis [19,20]. There is poor laboratory capacity in Malawi, hence very little laboratory follow up is performed [19, 20].

Integration of HIV/AIDS services [21, 22]

HIV/AIDS services are being integrated into antenatal clinics and tuberculosis (TB) services. The three year plan for expanding joint HIV-TB activities aims to: increase access to VCT for TB patients and the general public; provide isoniazid preventive therapy (IPT) for HIV-infected patients without TB; give co-trimoxazole prophylaxis to HIV-infected persons with TB; give secondary IPT to HIV-positive TB patients who have completed TB treatment; provide ART to patients with AIDS including HIV-related TB; and improve care and support for HIV-related illnesses. National guidelines have been developed and implemented for VCT for TB patients and co-trimoxazole prophylaxis for HIV-infected TB patients. Funded by USAID and WHO, by 2005 all 44 hospitals providing TB treatment in Malawi were offering VCT routinely and co-trimoxazole prophylaxis.

Prevention of mother to child transmission

Although PMTCT sites have increased rapidly since the launch of the PMTCT strategy in 2003, by the end of 2004 only 7% of the 514 health facilities providing ANC services were delivering PMTCT services, and it is estimated that only 2.3% of HIV-infected pregnant women received a complete course of nevirapine prophylaxis to prevent MTCT [13]. UNAIDS estimates that in 2005, 6% of HIV-infected pregnant women received ARVs for PMTCT [14].

The NAC ensures that all pregnant women attending ANC are routinely offered VCT [11].

Screening of blood for HIV

In 2005 100% of transfused blood units were screened for HIV [8].

Republic of Malawi

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Government, economy and people

Uganda is partitioned into 80 districts across four administrative regions, which are further subdivided into sub-districts, counties, sub-counties, parishes and villages. President Museveni's government has, with support from international agencies and foreign countries, seen positive results from its programme of rebuilding Uganda's economy and infrastructure which had been destroyed by years of war and neglect. In 2000, Uganda qualified for enhanced Highly Indebted Poor Countries (HIPC) debt relief worth US$1.3 billion and Paris Club debt relief worth US$145 million, and when combined with the original HIPC debt relief these amounts total about US$2 billion [1].

The total population of Uganda, from 2005 data, is 28,816,000, and 12.6% of the population live in urban areas [2]. The average life expectancy at birth for a Ugandan is 49 years [3].

Healthcare

Currently, only one-quarter to one-third of those in need use government health facilities because of poor facilities, shortage of health care workers, frequent drug stock outs, and long waiting times [4, 5]. In northern Uganda, the longstanding conflict has resulted in many health care facilities closing down and lack of basic maternal health services [4, 5]. Health care has been decentralised, and local government at district level is responsible for delivering services while the ministry of health (MOH) retains responsibility for policy formulation and overall supervision and monitoring. All user fees in the health care sector were abolished in 2001 [4, 5]. In 2003 per capita total expenditure on health at average exchange rate was US$18 and total expenditure on health as % of gross domestic product was 7.3% [3]. In 2004, total national expenditure on HIV/AIDS was US$64,454,352 of which about 30% was from government sources and the remainder from donors [6].

Organisation of healthcare [7]

Amongst the 57 government hospitals, two in Kampala are national referral and teaching hospitals, 10 are regional referral and teaching hospitals, and the remainder are district or rural hospitals staffed by general doctors.

Health centres are categorised according to the area served and services provided as Health Centre II (HC II), Health Centre III (HC III) and Health Centre IV (HC IV). HC II serves a parish with a population of about 5000 and provides outpatient, antenatal, immunisation and outreach services and should be staffed by nurse, nursing assistants and a midwife. HC III serves a sub-county with a population of about 20,000, provides all the services of HCII as well as inpatient care and environmental health. HC III staff complement should also include clinical officer and laboratory assistant. HC IV serves a health sub-district with a population of about 100,000 and provides all the services of HC III as well surgery, supervision of the lower level health centres, data collection and health service planning. Additional staff at this HC IV level should include a medical officer, laboratory technician, health inspector and anaesthetic officer.

In 2004 there were 0.08 physicians and 0.61 nurses per thousand people [3].

Maternal and child health services

In the 2006 Ugandan demographic and health survey (UDHS) 94% of women who gave birth in the 5 years preceding the survey reported received antenatal care from a heath professional at least once, 41% reported delivering in a health facility, and 42% of births were attended by a health care professional [8]. In the 2000-2001 UDHS, 85% of women reported experiencing problems with accessing health care, the most common reasons being user fees, long distance or having to get transport to the health facility, and negative attitude of health care workers [9].

HIV/AIDS-related healthcare services [5]

The 2002 Uganda Health Facilities Survey (UHFS) was a national representative survey of government and non-government health facilities to evaluate HIV/AIDS-related services within the country. Key findings included:

- Poor infrastructure, less than 20% of facilities had electricity and only 66% had an on-site water source.
- Poor implementation of infection control procedures, sharps containers were not available in 51% of facilities.
- Few facilities offered voluntary counselling and testing (VCT) and prevention of mother to child transmission (PMTCT) services. Only 7% of government and 21% of non-government facilities reported offering VCT services. Less than 6% of all facilities reported offering PMTCT services.
- About two-thirds of government and a higher percentage of non-government facilities reported managing opportunistic infections (OI) and providing sexually transmitted infection (STI) services. In government facilities, 79% of district hospitals, 56% of HC IVs, and 0.6% of HC IIIs reported ability to test for HIV; the figures were higher in non-government health centres.

- Tuberculosis (TB) diagnosis was available in 23% of facilities, and treatment available in 31% of facilities.
- 20% of all facilities reported a stockout of condoms in the previous 6 months, and over 50% of government facilities a stockout of co-trimoxazole.

By December 2005, 72% of 25 private large companies and one of five government ministries had adopted HIV/AIDS workplace policies and programmes [6].

Epidemiology of HIV

Uganda has a severe generalised HIV epidemic which has stabilised overall since its onset in the late 1980's [10]. In total there have been over 2 million people infected with HIV and 900,000 deaths due to the disease [10]. The epidemic surfaced in Rakai district in the south-west, where the first case of AIDS, known locally as 'Slim', was reported in 1982 [10]. It was then reported countrywide, initially in the major urban areas and along major transportation routes [10]. The main route of transmission is heterosexual contact, and according to the 1997 HIV/AIDS surveillance report heterosexual transmission accounted for 75-80% of new infections, mother to child transmission including breast feeding for 15-25% of cases, and infected blood and blood products for 2-4% of cases.

In 2005 the UNAIDS estimate of national adult HIV prevalence was 6.7% (5.7-7.6%), which has changed little from 2003 data. Approximately 900,000 adults and 110,000 children, i.e. a total of one million people were living with HIV/AIDS in Uganda in 2005. Women were disproportionately affected, with estimated HIV prevalence among 15-24 year olds of 2.3% (1.9-2.6%) for men and 5.0% (4.2-5.7%) for women. In 2005, 91000 people died of AIDS and there were 1 million children orphaned due to AIDS of whom almost half were dual orphans [11]. UNAIDS estimate for median HIV prevalence in antenatal clinic attendees in major urban areas was 8.3% in 2002, and 11.3% outside major urban areas in 2003 [11]. Sentinel surveillance data from 1997, reports HIV prevalence of 43.2% in tuberculosis patients in a major urban area, and of 53% outside major urban areas [11].

Response to the HIV epidemic

The Revised National Strategic Framework for HIV/AIDS Activities in Uganda 2003/04-2005/06 has three goals [12]:

- Goal 1 is to reduce HIV prevalence by 25%. One objective of this goal is to reduce, by 30%, the 15-25% risk of MTCT of HIV.
- Goal 2 is to mitigate the effects of HIV/AIDS, with its first objective to ensure at least 50% access to ART, and 100% access to care for opportunistic infections.
- Goal 3 is to strengthen the national capacity to coordinate and manage the multi-sectoral response to HIV/AIDS.

HIV voluntary counselling and testing and counselling services

In 1987 The AIDS Support Organization (TASO) was set up to provide psychosocial support for HIV infected and affected people. It is currently the largest indigenous non-governmental organisation (NGO) providing HIV/AIDS services throughout Uganda. TASO provides HIV/AIDS counselling, home based care, complementary health care, social support, advocacy and mobilisation services, a wide range of HIV/AIDS related training programmes and medical care for OIs and ART [13].

In response to the increasing demand for HIV testing, the AIDS Information Centre (AIC), an NGO which is supervised by MOH, was set up in 1990 in Kampala to provide VCT services. AIC operates satellite sites to serve peri-urban and rural areas and has also put in place an expansion strategy to integrate VCT into existing health facilities, provide technical assistance, supervision and training at district level. AIC also provides mobile home-based VCT services, VCT training programmes, TB screening for HIV-infected patients, CD4 counts, cotrimoxazole prophylaxis, and diagnosis and treatment of STIs [14].

The 2003 Uganda National Policy Guidelines for HIV voluntary counselling and testing [15] aim to make high quality VCT with pre- and post-test counselling (during which test results are given) easily accessible to the entire population. These services are provided in clinical settings and for pregnant women. HIV testing is performed on specimens collected on two rapid kits of different antigenic specificity using the parallel method or series method. In 2004 there were an estimated 400 VCT sites in Uganda, and 700,000 people had been tested in total [10]. The goal is to set up VCT points at all HC IVs.

2004/05 HSBS data indicates that most Ugandans have never had an HIV test (13% of women, and 11% of men aged 15-49 years had been tested and received their results). The most common reasons given were not needing to test and not knowing where to go for testing. Only 2% of women who gave birth in the previous 2 years had been counselled, tested and received their results, and this varied greatly by region [16].

Antiretroviral therapy (ART)

ART has been available in Uganda since 1998, but was initially only provided on a small-scale by NGOs,

private sector, research institutions and pilot projects. In 1997, the HIV Drug Access Initiative was launched with the support of UNAIDS to improve access to ART. Initially ART was rationed to the following categories who were assigned "priority eligibility": HIV infected pregnant women and their infected relations, post-exposure prophylaxis, children, activists and participants in research projects who were already on ART. Other HIV-infected individuals were assigned "ordinary eligibility" to receive access to free ART in the future [17]. Free ART has been provided through the public sector since 2004, but shortage of health care workers and the difficulty of travel to health facilities by patients have been the major challenges to the ART rollout.

In the public sector ART is provided through regional referral hospitals, accredited district and mission hospitals and HC IVs. ART is also provided through research programmes, NGOs (including TASO), faith based organisations and the private sector through some workplace programmes e.g. Bank of Uganda. ART is provided free for most research subjects; TASO, faith-based organisations and probably a few others also provide ART free or at minimal cost. In 2005 an estimated 190,000 (120,000-230,000) adults were in need of ART, and 75000 people were receiving ART which exceeded both the WHO "3 by 5" treatment target of 55,000 by the end of 2005 (based up 110,000 people in need in 2003) and Uganda's national treatment target of 60,000 people by end 2005. Estimated coverage increased from 9% in 2003 to 34% in 2005, and in total 175 sites were providing ART. At the end of June 2005 63,896 patients were receiving ART, of whom 10600 were receiving free treatment via MOH [10, 11].

ART guidelines

Uganda's MOH developed national antiretroviral treatment and care guidelines for adults and children [18] in 2003 which are in accordance with WHO treatment guidelines. The first line regimen is zidovudine (or stavudine) + lamivudine + nevirapine (or efavirenz). The average cost of the first line regimen (including drugs, laboratory tests and training) was US$180 per person per year in 2004 [10]. Second line regimens detailed in the guidelines for children and adults are stavudine (or zidovudine) + didanosine + lopinavir-ritonavir. Additional second line regimens for infants and children are stavudine + didanosine + nelfinavir or zidovudine + lamivudine + nelfinavir.

National guidelines for implementation of ART [19] were developed in 2003, aimed at district level health managers to outline the planning and implementation of ART programmes, and provide guidance to ensure quality care and encourage scaling up to lower level health facilities. These guidelines indicate that patients may be required to pay for ART at a subsidised rate, but some categories as decided by MOH were eligible for free ART. Medical officers at ART sites and physicians at tertiary and regional hospitals (where second line drugs are prescribed) are responsible for initial assessment of patients for ART, prescribing and monitoring ART and switching therapy. Clinical officers can clinically monitor patients on ART, deputizing for the doctor.

Monitoring is recommended at first visit which should be at least two weeks after initiation, followed by monthly visits for three to six months, and thereafter a minimum of three to six monthly. As an absolute minimum, HIV antibody test and haemoglobin or haematocrit are required at all levels of facility for diagnosis and monitoring. The following data is required be collected at each facility: number of patients accessing ART, total number of patients screened for ART and those who qualify, number who attend follow-up clinics, number who default and reasons for defaulting, information on adherence, information on side and toxic effects, number of patients who develop treatment failure, information on drug procurement and distribution, information on laboratory services including number and nature of tests done.

Prevention of mother to child transmission

Uganda began to implement its PMTCT programme in 2000, providing free access to VCT, infant feeding counselling and ART to prevent transmission. By 2003, 38 out of 56 districts were covered. In 2003 the MOH developed a policy document for the reduction of mother to child HIV transmission in Uganda, which details the following key recommendations [20]:

1. VCT is to be provided for pregnant women within the antenatal clinic using a screening test and a confirmatory test.
2. Vaginal cleansing, delayed rupture of membranes in labour and limited use of episiotomy in HIV infected women.
3. HIV infected pregnant women are to be treated with either:
    a. Nevirapine at onset of labour and nevirapine syrup given to the newborn within 72 hours of delivery, or
    b. Zidovudine from 36 weeks of gestations until one week post delivery, and syrup for the baby for the first week.
4. HIV infected mothers should not breast feed, but if this is not possible for social or economic reasons, the infant should be exclusively breast fed for three months.

Republic of Uganda

Although ART coverage in Uganda has increased from 6.3% in 2003 to 56% in 2005, the service coverage for PTMCT had increased only from 4.6% to 12% [6, 21]. In 2005 only 12% of HIV-positive pregnant women had received a complete course of ART prophylaxis to reduce the risk of MTCT, and 23% of infants born to HIV infected mothers were infected (using an MTCT rate of 25%) [6].

Screening of blood for HIV

In 2005, 100% of blood units were reported to have been screened for HIV [6].

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Government, economy and people

Ukraine is the second most important economic component of the former Soviet Union, from which it gained independence in 1991. It forms part of the pipeline transit route for Russian gas exports to Europe, and relies heavily on Russia for energy supplies [1, 2]. Economic transition and decline after the dissolution of the Soviet Union have resulted in high levels of poverty and inequality [8]. The Chernobyl nuclear accident in 1986 contaminated large areas of Ukraine and neighbouring countries, and has affected over 3 million people [9].

Ukraine is partitioned into 27 administrative regions which comprise 24 oblasts, one autonomous republic, and two municipalities which have oblast status [1]. Oblasts (regions) are further subdivided into 490 rayons (districts). The total population of Ukraine, from 2005 data, is 46,481,000, and 67.8% of the population live in urban areas [3]. The average life expectancy at birth for an Ukrainian is 67 years [4].

Healthcare

In 2003, per capita total expenditure on health at average exchange rate was US$ 60, total expenditure on health as % of gross domestic product was 5.7%, and there were 2.95 physicians and 7.62 nurses per thousand population [4].

State funded and private health care services are available in Ukraine, but most health care is provided through the public sector. The health care system in the former Soviet Union was highly centralised and regarded as generally effective, but since independence poor investment has resulted in serious degrading of Ukrainian health care services and poor access to health care [8]. Health care services have been decentralised, with national policy set by the Ministry of health (MOH), but authority devolved to regional and sub-regional level [9]. Health care is organised at four levels: republic, oblast, rayon, and local (feldsher-midwife health posts and ambulatory clinics) [10].

The distinction between primary and secondary care services is not strictly maintained in Ukraine. Each primary and secondary level facility serves a defined catchment area. Primary care is delivered by [9]:

1. Freestanding polyclinics, rayon hospital outpatient departments, and pharmacies which serve a rayon;
2. Feldsher-midwife health posts, and rural ambulatories (clinics). Feldshers are para-medics who function independently of physicians and can perform a wide range of tasks including diagnosis and prescribing. Each Feldsher-midwife health post serves a village (300-3000 residents), is staffed by a feldsher and a midwife and is visited by specialist physicians from the rayon hospital. Rural ambulatories (clinics) serve about 1000 residents and are staffed by a physician [9].

Secondary care is provided at polyclinics (which serve about 25,000 residents), hospital outpatient departments and dispensaries. Tertiary care is provided at large multi-speciality oblast hospitals and dispensaries, and treatment at these facilities usually requires a referral from a secondary care physician. Inpatient care is provided at basic level by rural hospitals, secondary level by municipal and central rayon hospitals, and at tertiary level by oblast hospitals and dispensaries [9].

A basic package of health care is provided free of charge in the public sector, and fees charged for non-essential services, but there are exemptions for vulnerable groups particularly for medication charges. Unfortunately due to limited resources, charges are often applied. In a 1998-2001 household survey over half of Ukrainians surveyed reported that their health care expenses were 'back-breaking' [9].

HIV/AIDS-related healthcare services

It is reported that recently there have been huge increases in the number of intravenous drug users (IDU) [8]. There is stigma attached to IDUs, same sex relationships, immigrants and communicable diseases [8]. Challenges to HIV/AIDS treatment scale up include poor availability of opioid substitution therapy for, and discrimination against IDUs. Procurement of antiretroviral therapy (ART) depends mainly on the availability of donor funding, and the national monitoring and evaluation system requires further development. Human resources are also currently insufficient [5]. In recent years poor management and implementation of externally funded HIV/AIDS projects, together with serious concerns about the Ministry of Health's (MOH) commitment to condom use and harm reduction for intravenous drug users (IDUs), have resulted in suspension of loans and grants from both the World Bank and the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) [6, 7]. Administration of the GFATM grant and programme was subsequently handed over to an international non-governmental organisation (NGO) which was already involved in the programme, the International HIV/AIDS Alliance [6, 7].

The budget allocation for HIV/AIDS in 2006 was US$ 58,500,000 which consisted of US$ 11,500,000 from the state budget, US$ 21,500,000 from the Global Fund, and the remainder was from other sources [5].

In-country partners report that planning for AIDS is by each regional AIDS centre, with a vertically run service.

Republic of Ukraine

Some AIDS centres are integrated into the planning of health services, but structures differ between oblasts.

In-country partners report that at least one AIDS centre purchases medications from its own budget in addition to those supplied by the MOH or National centre, and that the whole spectrum of antibiotics is not available at all centres.

Maternal and child health services

In 1990, 90% of women received antenatal care from skilled health personnel at least once, and for the period 1997-2005, 100% of births were attended by a skilled attendant [16, 17].

Epidemiology of HIV

Ukraine has a concentrated HIV epidemic, mainly amongst IDUs and commercial sex workers (CSW) which has the potential to become generalised [5,11]. The epidemic emerged in the mid 1990's, driven by rapid transmission amongst IDUs, and since the late 1990's heterosexual transmission is significant with commercial sex work contributing to the growth of the epidemic [5,11].

HIV prevalence amongst antenatal clinic (ANC) attendees at the end of 2005 was 0.45%, but in five regions exceeded 0.8% [11]. UNAIDS 2005 estimate of national adult HIV prevalence was 1.4% [0.8-4.3%]. The modes of transmission amongst all reported cases between 1987-2005 were 60% IDU, 25% heterosexual, 12% mother to child, 0.08% men who have sex with men (MSM), and 0.02% contaminated blood or blood products (Ukranian AIDS Centre, 2006) [11]. HIV prevalence amongst IDUs is 49% in Kyiv, the capital, but ranges from 9.6% to 66.4% in other cities [11]. HIV prevalence in CSWs ranges from 8% (Kyiv) to 32%, and is higher in those who also report IDU (25%-86%) [11]. In addition to IDUs and CSWs, female sex partners of IDUs and children of female IDUs are particularly vulnerable groups [5]. HIV prevalence in prisoners is estimated to have increased considerably from 9% in 2003 to 14% in 2006 (Ukranian AIDS Centre, 2006) [13]. Southern and Eastern Ukraine are most affected by the epidemic [11].

UNAIDS estimates that 410,000 people were living with HIV/AIDS in Ukraine in 2005 of whom just under half were women, and 22,000 people died of AIDS [5]. UNAIDS estimates are not available for the numbers of children living with HIV/AIDS, prevalence amongst 15-24 year olds or numbers of orphans due to AIDS [5].

In 2000, 1.1% of tuberculosis patients in major urban areas were HIV-infected, and increasing numbers of TB cases are co-infected with HIV [12, 14].

Response to the HIV epidemic

The ministry of health (MOH) is responsible for national HIV/AIDS policy, programming and management, through the National AIDS Prevention Centre [5]. In 2005, the National Coordination Council for the Prevention of the Spread of HIV/AIDS was established to coordinate all HIV/AIDS activities [5]. The National Programme to Prevent HIV Infection, to Support and Treat people living with HIV/AIDS for 2004-2005, has two key priorities: to prevent the spread of HIV; and to expand access to treatment, support and care for people living with HIV/AIDS (PLWHA). National HIV/AIDS treatment and PTMCT guidelines have been developed [5]. In-country partners report that ART services are provided through regional AIDS centres, also at secondary level in district centres and cities, and that national guidelines are available for prevention and management of opportunistic infections.

There are a range of international and local NGOs and community-based organisations within Ukraine which are involved in community mobilisation activities and support for PLWHA and IDUs [5].

HIV voluntary counselling and testing services

VCT services were introduced nationwide and mandatory HIV testing abolished a few years ago. It is thought that this may have contributed to the reported decrease in IDU infections [5]. Prevention services are provided in each region by regional AIDS Centres, and as of 2004 there were 487 VCT sites in Ukraine. In 2004, 27% of IDUs, 32% of CSWs, 25% of MSMs, 18% of prisoners and 5% of adults aged 15-24 years had been tested for HIV in the previous 12 months and knew their test results [11].

42% of STI patients are offered VCT. (Personal communication, Daniel Jones, AIDS Alliance)

In-country partners report that counselling and social services are provided by psychosocial projects linked to ART centres, but have a very narrow scope and typically refer patients to NGOs.

There are seven Western blot centres in Ukraine. (Personal communication, Daniel Jones, AIDS Alliance)

Antiretroviral therapy

HIV/AIDS treatment should be provided free of charge, but access to ART has been poor due to limited resources [5] Implementation of large scale ART roll-out supported by GFATM began in 2004, and Ukraine has joined the Clinton HIV/AIDS Initiative Procurement Consortium to purchase ART at lower cost [5]. By the end of 2005, ART was provided in 15 of the 27 regions of Ukraine, ART coverage had increased from 2% in

2003 to 10%, and in total 28 sites were providing ART [5, 12].

Ukraine's UNGASS 2003-2005 progress report reports that 33.5% of people with advanced HIV infection received ART in 2005 [11]. UNAIDS estimates for 2005 were that 53,000 [32,000-79,000] adults were in need of ART, and 3500 people were receiving ART [12]. The National AIDS prevention centre reports that, as of October 2005, 381 children were receiving ART [5]. The International AIDS Alliance plans to provide ART to 6000 people by 2008 [5].

First line regimens are efavirenz + zidovudine + lamivudine, nevirapine + zidovudine + lamivudine, and nelfinavir + zidovudine + lamivudine. The second line regimens are nelfinavir + stavudine + lamivudine, efavirenz + stavudine + didanosine, and lopinavir-ritonavir + stavudine + lamivudine. Zidovudine and lamivudine are available as a fixed dose combination [5]. The average cost for a first line regimen containing a non-nucleoside reverse transcriptase inhibitor is US$250 per person per year [5].

Patients are monitored by 3-monthly clinical assessment and CD4 count, and 6 monthly viral load.

In-country partners report that some ART services have a tuberculosis (TB) specialist, otherwise HIV-infected patients who are diagnosed with TB are referred for treatment to TB services. Sputum microscopy is performed in TB clinics and not AIDS centres.

Harm reduction projects

Prevention and harm programmes have been expanded between 2003-2005, and in 2004, 38% of IDUs, 34% of CSWs and 83% of young adults (15-24 years) had been reached by a prevention programme [11]. In spite of expansion efforts, in a recent survey only one in five IDUs reported both avoiding sharing equipment and condom use at last sexual partner, and there were low levels of awareness about HIV and modes of transmission in this group [11]. Opioid substitution therapy, a key strategy to reduce HIV transmission amongst IDUs and an entry point for ART is not yet widely available in Ukraine [5]. In-country partners report that substitution therapy has been a major political and advocacy battle over the last couple of years. The first pilot project for 30 people, which used sublingual buprenorphine, started in 2004, and has been scaled up to eight projects supported by the GFATM. These projects are to be scaled up to reach 6000 people by 2008 [5]. In 2004 there were 45 centres providing needle exchange programmes [11, 12].

In-country partners report that condoms are distributed by NGOs, rather than by health services.

Prevention of mother to child transmission

In 2001 PMTCT was established as part of the National Programme and integrated into existing maternal and child health services. HIV testing (with an opt-out strategy) together with pre-and post-test counselling are offered free of charge as part of routine antenatal care. Initial and confirmatory testing are performed, and all women who present in labour without having had antenatal care are offered a rapid HIV test. The antiretroviral regimens used for PMTCT are zidovudine from 36 weeks gestation until delivery, and/or a single dose of nevirapine for mother and infant. In addition, free formula milk is supplied for infants born to HIV-infected mothers. Virological diagnosis for HIV infection in infants is not widely available, and diagnosis is based on testing at 18 months using ELISA. In 2004, new guidelines based on WHO recommendations were developed which enable pregnant women to obtain ART for their own health needs in addition to PMCT [15].

PMTCT services are increasingly available in Ukraine, and good progress has been made in reducing rates of MTCT from 28% to 8% since 2001 (MOH Ukraine) [13]. In 2004, 97.5% of all pregnant women were tested for HIV [12]. In 2005 417,610 pregnant women were counselled on PMTCT services, and 2400 pregnant women were estimated to have been found to have HIV infection, of whom 90% received ART for PMTCT [12]. In 2004, of the women referred to ART services, 96% had an HIV test, 86% of those found to be HIV positive stayed in the system. (Personal communication, Daniel Jones, AIDS Alliance) More than 90% of infants receive ART prophylaxis, and although registered to an AIDS centre, are followed up by paediatric hospital services. (Personal communication, Daniel Jones, AIDS Alliance)

Screening of blood for HIV

In 2004 100% of transfused blood units were screened for HIV [11].

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Republic of Zambia

Government, economy and people

Zambia is partitioned into 73 districts across nine provinces. Once one of the most prosperous countries in Africa, as a result of economic decline, poverty and the enormous impact of the HIV/AIDS epidemic, it is now one of the poorest countries in the world with external debt totalling US$5.4 billion in 2002. In 2005 the World Bank approved a $3.8 billion debt relief package as part of the HIPC debt relief programme [1]. The total population of Zambia, from 2005 data, is 11,668,000. 35% of the population live in urban areas, and the average life expectancy at birth for a Zambian is 40 years [2, 3]. Zambia provides shelter to tens of thousands of refugees who have fled from Angola, the Democratic Republic of Congo and Rwanda [1].

Health care

Health sector reform has included decentralisation and provision of a 'basic health care package' to all Zambians as close to the family as possible [6]. Central structures provide support and national guidance to local government at district level which is responsible for planning, implementation, monitoring and managing health services within the district. The Primary Health Care (PHC) programme has been restructured and focuses on high-risk and vulnerable groups, in particular rural and peri-urban areas and maternal and child care [4].

In 2003 per capita total expenditure on health at average exchange rate was US$ 21 [3]. In 2004 there were 0.12 physicians and 1.74 nurses per thousand population [3]. There are charges for health services, with key exemptions, namely pregnant mothers, children less than 5 years old, people aged 65 years and above, and ART-related services [5]. In 2001-2002, 21% of households reported that a household member had been denied care from a health facility because they were unable to pay, and in 23% of all households members could not get prescribed medicine because they could not afford to pay [4]. In 2005 the government allocated US$ 32 million to HIV/AIDS [8]. Low rate of disbursement of funding, critical shortages of health workers (due to HIV/AIDS and emigration) as well as much stigma associated with HIV/AIDS are major challenges to HIV/AIDS treatment scale up [9]. Losses of HIV/AIDS service delivery staff from 16 individual sites in a 2004 study in preparation for treatment scale up were 30% per annum [14].

In 2005 the Zambian government allocated US$ 32 million to HIV/AIDS [8].

Organisation of healthcare

The national health system is three tiered. The first tier is the Ministry of Health, responsible for national guidelines, priority setting and resource allocation. The second tier comprises provincial health authorities, responsible for guidelines and resource allocation at provincial level and logistical support for districts. The third tier is district level, responsible for implementation of health services via health centres (categorised as urban or rural) and health posts which provide primary

health care. Some urban health centres provide inpatient care similar to level one hospitals.

Level one hospitals are district hospitals in small towns or rural areas, staffed by medical generalists with access to basic diagnostic and therapeutic facilities and providing 24-hour in-patient care for common conditions. Level two hospitals are provincial or regional hospitals usually located in larger towns, staffed by general specialists providing specialist care for referred patients. These hospitals also inevitably function as level one hospitals for patients within their own catchment area. Level three hospitals are Teaching Hospitals. These are located in Lusaka, Kitwe and Ndola and are staffed by both general specialists and super-specialists. They provide sophisticated care for less common or more complex health problems. Amongst the 53 government hospitals, five are central (level 3), 12 provincial (level 2), and 36 are district (level 1). Health infrastructure is particularly limited in rural, remote areas [9].

Maternal and child health services

93% of women who had a live birth in the 5 years preceding the 2001-2002 Zambia Demographic and Health Survey (ZDHS) received antenatal care from a health professional at least once, 44% delivered in a health facility, and 43% of births were attended by a health care professional [4].

HIV/AIDS-related healthcare services

Services are provided by government clinics and hospitals, private clinics and hospitals and non-governmental organisations [14]. The 2005 Zambia HIV/AIDS Service Provision Assessment Survey (ZHSPA) [12], designed to evaluate the quality of HIV/AIDS services, found that almost 19% of health facilities offered prevention of mother to child transmission (PMTCT) services. PMTCT services were available mainly in hospitals and urban health centres, but only 12% of rural health centres offered these services. Treatment for opportunistic infections (OIs) and palliative care services was available in almost all health facilities [12]. Zambia was one of the first African countries to provide home-based care, mainly through faith-based organisations. Non-governmental organisations (NGOs) and community-based organisations also provide voluntary counselling and testing (VCT) and psychosocial support services [9].

Epidemiology of HIV

Zambia has a generalised HIV/AIDS epidemic, which began in 1984 when the first AIDS case was reported, and now appears to be stabilising. The main route of transmission is heterosexual, and mother-to-child transmission (MTCT) is also significant. In addition to women who are the major vulnerable group, orphans, military personnel, sex workers, truckers, fisheries workers and fishmongers are also vulnerable [9]. HIV prevalence is highest in urban areas along main transport routes (Ministry of Health, Zambia, 2005).

In 2005 the UNAIDS estimate of national adult HIV prevalence was 17% [15.9-18.1%], which has changed little from 2003 data. An estimated 1,100,000 people were living with HIV/AIDS in Zambia in 2005, of whom 1 million were adults. Women were disproportionately affected, with estimated HIV prevalence among 15-24 year olds of 12.7% (11.9-13.6%) for women and 3.8% (3.6-4%) for men. In 2005, 98,000 people died of AIDS and there were 710,000 children orphaned due to AIDS of whom just over half were dual orphans [10]. Median antenatal clinic (ANC) prevalence in major urban areas in 2004 was 25.9% (21.9-29.7%), and outside major urban areas was 14.4% (6-32.3%) [10]. ANC sentinel surveillance data from 1994-2002 demonstrate overall declining HIV prevalence in 15-24 years by 11% in rural areas and 26% in urban areas, but there were significant differences at individual site levels, with some demonstrating increasing epidemics [13].

Response to the HIV epidemic [8, 9]

HIV/AIDS was declared a national crisis with effect from 2004. The government has put in place national support structures including the National AIDS Council (NAC) which coordinates the national multisectoral response to HIV/AIDS. The Ministry of Health is responsible for delivering HIV/AIDS care and supervises government health facilities and district health services. The National HIV/AIDS/STI/TB policy was finalised in 2005, and in the same year provision of free ART to all in need of treatment commenced. The national HIV/AIDS Strategic Framework 2002-2005 aims to reduce HIV/STD transmission and the socio-economic impact of HIV/AIDS among Zambians. It has eight objectives which include: promoting behaviour change; reducing MTCT; making all blood and blood products safe; improving the quality of life of HIV-infected persons; providing care for those infected with, or affected by HIV, TB, sexually transmitted infections (STIs) and opportunistic infections (OIs); and providing improved support services for orphans and others at risk [8]. The goal of the 2006-2010 national HIV/AIDS/STI/TB strategic framework is to prevent, halt and begin to reverse the spread and impact of HIV/AIDS by 2010. The

provision of ART will therefore be guided by this strategic framework and will be implemented within the conceptual framework of Primary Health Care. The ART scale up plan will emphasise on HIV prevention and mitigation, equity in accessing ART services, multidisciplinary approach to care, community participation, universal acceptability of the program, right to good health and promote sustainability of ART services. Funding for Zambia's HIV/AIDS programme is mainly from the Global Fund, U.S. President's Emergency Plan for AIDS Relief (PEPFAR), and the World Bank [9].

HIV voluntary counselling and testing (VCT) services

Zambia has developed national policy and guidelines on HIV testing, and is considering an opt-out policy for testing [9]. Services were first established in 1999 and by 2005 there were 400 sites in Zambia providing VCT (70 out of 72 districts covered by 2003), and 13% of people reported having had VCT and knowing their result [8,14]. In the 2001-2002 ZDHS only 9% of women, and 14% of men reported having been tested for HIV [4].

VCT is provided either through private stand-alone sites or integrated sites in public health facilities [8]. Stand-alone VCT sites, where 50% of staff are lay counsellors and the focus is entirely on VCT appear to serve more clients than integrated sites [14]. Some districts have reported, at times, running out of HIV test kits [14]. Current policy requires full pre-test counselling, and testing and counselling to be offered to people living with HIV/AIDS as part of a comprehensive HIV/AIDS care package [9]. USAID, Society for Family Health (SFH) and 13 other agencies have implemented the "Zambia VCT Partnership" which has improved the quality of VCT services and run promotion campaigns to encourage Zambians to seek VCT services [11].

Antiretroviral therapy (ART)

Provision of ART, at subsidized rates through the public sector, began in 2002 at two pilot sites, following which it was rolled out nationally [8]. In 2004 (funded mainly by PEPFAR and GFTAM) ART became available free of charge in the public sector, and in 2005 all ART-related services (including ART and laboratory tests) were made free of charge, but there are concerns about adequate funding continuing to sustain this [8,9]. There are major shortages of physicians in Zambia, and most health care is delivered by clinical officers and nurses [15]. Government ARV sites initially experienced problems with the supply of ARVs [14]. ART is provided through the public sector in central, provincial and district hospitals, health centres and a designated MTCT-Plus site. The aim is for all hospitals and health centres in Zambia to provide ART by the end of 2009 [9]. ART is also provided in the private sector including some workplace programmes e.g. Konkola Copper Mines which provides ART at a subsidized rate to employees [9]. At the end of 2005, 51764 people were receiving ART through the public sector (Ministry of Health ART report, May 2006), and an additional 2000 were accessing treatment through the private sector [9]. UNAIDS estimates for 2005 are that 180,000 (150,000-200,000) adults and 40,000 (21,000-63,000) children were in need of ART, and 49,000 people were receiving ART [10]. Estimated ART coverage increased from 1% in 2003 to 26% in 2005, and in total over 110 sites were providing ART [10].

National guidelines have been developed for HIV/AIDS treatment and care. Co-trimoxazole should be administered to patients with CD4 counts <200/µl, or WHO stage IV [15]. First line ART regimens which are prescribed by doctors and clinical officers according to standard protocols are stavudine or zidovudine + lamivudine + nevirapine or efavirenz, and a fixed-dose combination containing stavudine/ lamivudine/ nevirapine is widely available [9]. The average cost of the first line regimen of stavudine + lamivudine + nevirapine as a fixed dose combination is US$160 per person per year [9]. A second line regimen available is didanosine or lamivudine + abacavir or tenofovir + lopinavir/ritonavir. Initial evaluation is to include a CD4 cell count with follow-up by 2 weeks to determine eligibility for ART. Criteria for commencing ART are: CD4<200/µl or WHO stage IV or III (excluding those with CD4>350/µl) [15]. The guidelines specify that patients on ART should have six visits during the first three months of ART, the first of which should be after two weeks on ART. Routine clinical follow up is 3 monthly, with 6 monthly CD4 counts. Haemoglobin is to be checked at weeks 2, 4, and 8 for those on zidovudine based regimens. Routine viral load is not part of Zambian guidelines and clinicians rely on clinical monitoring, as CD4 and viral loads are neither readily available nor affordable [14,15,16]. Record keeping is part of the guidelines; an electronic patient tracking and outcomes monitoring system has recently been adopted as a national standard for Zambia [14,15]. District wide programmes using community health workers for home-based adherence monitoring are available [15].

Prevention of mother to child transmission

A PMTCT pilot was launched in Zambia in 1999, following which Zambia rolled out services nationally, offering them as an integral part of maternal and child health services, provided by nurse midwives [14,17]. At first ANC visit, women receive group counselling on HIV/AIDS and PMTCT, and are offered individual pre-test counselling. Testing is done using a rapid test, with a follow up confirmatory test for all that test positive. HIV positive women are either given zidovudine from 32 weeks, or nevirapine to be taken at onset of labour, and told to bring their child back to clinic for nevirapine syrup within 72 hours of delivery [14]. Universal HIV counselling with optional testing is being promoted [17].

1999 data indicate that 39% of infants born to HIV infected mothers were infected. The number of PMTCT health facilities increased from 136 at the end of 2004 to 256 at the end of 2005, provided mostly through government facilities. The UNAIDS estimate for percentage of HIV-infected women receiving ARVs for PMTCT in 2005 is 15% [10].

Screening of blood for HIV

In 2005 100% of transfused blood units were screened for HIV [8].

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District level report

Introduction

This section of the report presents the major findings concerning district level issues on HIV treatment and care, using data provided from India, Malawi, Uganda and Zambia. A district was defined as "the smallest area of health administration containing a hospital".

In some tables, the symbol "-" represents a box not ticked, and so may represent either "no" or "no information".

We obtained information from 10 districts:

1 district in India (in Goa)

1 district in Malawi

1 district in Uganda

7 districts in Zambia

Table 2.1 below gives details of the number of sites per district providing PMTCT services and/or ART.

Table 2.1: Sites providing PMTCT services and/or ART per district

	India	Malawi	Uganda	Zambia						
	I1 urban	M1 urban	U1 urban / rural	Z1 rural	Z2 peri-urban	Z3 urban	Z4 urban	Z5 urban	Z6 rural	Z7 urban
Population	1.37m	1.3m	450,000	241,179	183,039	428,708	122,026	1,743,136	221,758	462,459
How many sites provide PMTCT	3	.	4	18	11	11	11	11	6	11
How many sites provide ART	1	.	5	2	3	7	4	11	2	4
Year ART provision started	2005	.	2004	2005	2005	2004	2003	2005	2004	2005
Donors supporting ART provision	Gov	.	Gov GFATM PEPFAR	Gov NGO FBO	NGO	Gov NGO FBO	NGO Res Org	NGO PEPFAR	Gov PEPFAR	Gov

FBO = faith-based organisation; Gov = government; GFATM = Global Fund; NGO= nongovernmental organisation; PEPFAR= President's Emergency Plan For AIDS Relief; Res Org = research organisation

HIV counselling and testing

Places where HIV testing is offered

Table 2.2 details the types of setting where HIV testing was offered in each district.

Table 2.2: Places where people can go for HIV testing

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Government hospital	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Government primary care facility	.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Private sector clinic	.	yes	yes	.	yes	yes	yes	yes	.	yes
Private sector laboratory	yes	.	yes	.	yes	yes	yes		.	yes
NGO clinic	yes	yes	yes	.	yes	yes	yes	yes	yes	yes
Community based VCT	yes	.	.	yes	yes	yes	yes	yes	yes	yes

HIV testing and care for pregnant women

For pregnant women, HIV tests were offered as standard of care in the public sector antenatal services of all districts except in Malawi where HIV tests were only sometimes offered. Table 2.3 (below) describes the services that were offered to pregnant women who tested positive for HIV.

Table 2.3: Services offered to pregnant women who test positive for HIV

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
ART to prevent transmission	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
ART for treatment of HIV	.	yes	.	.	yes	yes	yes	yes	yes	yes
Counselling and support	.	yes	yes	yes	yes	yes	yes	yes	yes	yes

The proportion of women attending public sector antenatal services who had an HIV test varied from one district to another, estimated between less than 25% to more than 75%. Among pregnant women who test positive for HIV in the public sector, the table below details the proportion of those attending PMTCT and/or ART services.

Table 2.4: Estimated proportion of women undergoing HIV testing in public antenatal services in 2006, and proportion of women tested positive for HIV in ANC who attend PMTCT and/or ART services

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Women HIV tested in ANC in 2006	> 75%	50-75%		< 25%	> 75%	> 75%	25-49%	25-49%	25-49%	50-75%
Women HIV + who attend PMTCT and/or ART service	50-75%	25-49%		< 25%	25-49%	> 75%	50-75%	< 25%	25-49%	25-49%

In Zambia, there were variations in how national guidelines on PMTCT were implemented. It could have been given at first ANC attendance (to be taken at delivery), or it could have been given in the third trimester, or during labour. It is not clear when is the optimum time to dispense nevirapine in order to ensure it is taken appropriately during labour. This could be an issue for study. ART eligibility criteria for pregnant women were under review at the time of this survey.

HIV testing in TB services and for people with sexually transmitted infections

For TB patients, HIV testing was offered as standard of care in some districts of Zambia. In the 3 other countries, HIV tests were offered sometimes, on request or not offered. The proportion of patients attending public sector TB services who had an HIV test varied from one district to another. For people with sexually transmitted infections (STI), HIV tests were offered as a standard only in some places in Zambia.

Table 2.5: proportion of patients with TB or STI who have an HIV test offered

	India	Malawi	Uganda	Zambia[1]						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
TB										
HIV test in TB clinic	n/o	some	on request	some	standard	some	standard	standard	standard	some
% of TB patients tested for HIV		> 75%		<25%	50-75%	< 25%	> 75%	< 25%	< 25%	< 25%
STI										
HIV test offered for patients with STI	some	some	on request	some	some	on request	standard	standard	some	standard

n/o = not offered; some = sometimes

[1]In Zambia, at the time of the survey, diagnostic HIV counselling and testing (DCT) had recently become national policy and was being rolled out by district – some were further ahead with this process than others.

HIV care

Community based organisations (CBOs) were active in providing HIV care in all 10 districts. The type of HIV care is detailed in the table below.

Table 2.6: Type of HIV care provided by CBOs

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
VCT	.	.	yes	yes	yes	yes	yes	yes	yes	yes
ART	.	.	yes	no	no	no	no	no	no	no
Follow-up	.	.	yes	yes	yes	yes	yes	yes	yes	yes
Adherence	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Nutritional	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Counselling	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Education	yes	yes	.	yes	yes	yes	yes	yes	yes	yes

ART provision started in the various districts between 2003 and 2005. Table 2.7 (below) shows the number of patients in each district who had ever started ART up till 31st December 2006 in the public sector and those who were currently on treatment at the time of the survey.

Table 2.7: Number of patients who ever started ARV and currently treated per district

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Number of patients who ever started ART (up to 31 December 2006)	431	12 600	DKN	1 573	2 458	DKN	909	26 818	1 750	2 899
Number of patients who were currently on ART	328	8 580	DKN	1 311	1 973	DKN	745	21 121	DKN	2 782
% of all patients who started ART who were still on treatment	76.1	68.1	.	83.3	80.3	.	82.0	78.5	.	96.0

ART was available for children in all 10 districts, detailed in table 2.8.

Table 2.8: Places where ARVs are available for children

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Public sector primary care facility	.	yes	yes	yes	yes	.	yes	yes	yes	.
Public sector secondary care facility	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Private sector (secondary or primary care facility)	.	yes	yes	.	yes	yes	.	yes	.	.

Charges for HIV care

There were no charges for HIV care in the public sector except in Zambia in three urban districts where a fee was charged for each laboratory test and for a chest x-ray.

Staff training for HIV care

In all districts, health care workers (doctors, clinical officers and nurses) were required to attend a training course before working in HIV care; however, in some districts, some categories of HCW worked in HIV care without having attended training.

Table 2.9: Category of health care worker who sometimes worked in HIV care without having attended a training course

	India	Malawi	Uganda	Zambia						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Doctor	no	no	yes	yes	yes	no	no	no	n/a	no
Clinical officer	n/a	no	yes	no	yes	no	no	no	no	no
Nurse	yes	no	yes	no	yes	no	no	no	no	no

Courses on ART, PMTCT, counselling, prevention and management of opportunistic infections (OI) were available almost everywhere. Table 2.10 details the length and place where the courses were available, by category of health care worker.

Table 2.10: Availability of HIV care training courses, length and place of delivery

	India	Malawi	Uganda	Zambia[1]						
	I1	M1	U1	Z1	Z2	Z3	Z4	Z5	Z6	Z7
Doctors										
ART (/duration in days)	yes	yes / 5	yes / 13	yes / 14	yes / 14	yes / 5	yes / 10	yes / 5	na	yes / 5
PMTCT	yes	yes / 5	yes / 3	yes / 14	yes / 14	yes /14	yes / 10	yes / 5	na	yes / 12
Counselling	no	yes / 25	yes / 3	yes / 56	yes / 44	yes /84	yes / 42	yes / 5	na	yes / 56
Prevention of OIs	yes/ukn	ukn	yes / 3	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	na	yes / 5
Management of OIs	yes/ 88	ukn	yes / 2	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	na	yes / 5
Nurses										
ART	ukn	yes / 5	yes/ukn	yes / 14	yes / 14	yes / 5	yes / 10	yes / 5	yes/14	yes / 5
PMTCT	ukn	yes / ukn	yes/ukn	yes / 14	yes / 14	yes/ 14	yes / 10	yes / 5	yes/14	yes / 12
Counselling	ukn	yes / 25	yes/ukn	yes / 56	yes / 44	yes/ 84	yes / 10	yes / 5	yes/14	yes / 56
Prevention of OIs	ukn	ukn	yes/ukn	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	yes/5	yes / 5
Management of OIs	ukn	ukn	yes/ukn	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	yes/5	yes / 5
Clinical officers										
ART	na	yes / 5	yes/ukn	yes / 14	yes / 14	yes / 5	yes / 10	yes / 5	yes/14	yes / 5
PMTCT	na	yes / ukn	yes/ukn	yes / 14	yes / 14	yes/ 14	yes / 10	yes / 5	yes/14	yes / 12
Counselling	na	yes / 25	yes/ukn	yes / 56	yes / 44	yes/ 84	yes / 10	yes / 5	yes/14	yes / 56
Prevention of OIs	na	ukn	yes/ukn	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	yes/5	yes / 5
Management of OIs	na	ukn	yes/ukn	yes / 7	yes / 14	yes / 5	yes / 5	yes / 5	yes/5	yes / 5
Location of course	GMC	Lilongwe	ukn	Choma	Kabwe	Kitwe	Living-stone	Lusaka	na	Ndola

[1]Colleagues from Zambia commented that there is a national guideline that all HCW should undergo training but in reality, people probably work without formal training in all districts. Managers may have estimated duration of training.

Part 3: Facility level report

Description of facilities

Information was collected from a convenience sample of 34 health care facilities (HCF) which provide HIV care:

- 6 facilities in Uganda
- 5 facilities in India
- 1 facility in Ukraine (note: data were provided based on a preliminary draft of the questionnaire, so some items which were not included in that draft are missing)
- 22 facilities in Zambia

Because in some cases data were not available, the denominator varies.

The characteristics of the facilities are detailed by country in Table 3.1. In summary, the majority of the facilities are primary health care facilities with 22 primary (64.7%), 7 secondary, 4 tertiary and one research health care facility.

Most of them (26/34; 76%) are in the public sector and are located in urban areas (27/34; 79%).

The majority of the facilities (28/33) were part of a larger health care facility.

Two facilities provided HIV care only: others were part of a larger health care facility. Other care provided included:

- Tuberculosis treatment: 31
- General medicine: 30
- Sexually transmitted disease care: 29
- Paediatric medicine: 29
- Antenatal and/or obstetric care: 28
- Family planning: 25
- Surgical services: 16

In most facilities, the government was the main funder for the buildings (26 facilities), staff salaries (n=28) and ART provision (n=22).

HIV counselling and testing

At most facilities (31/34, 91%), HIV testing for adults was based on a rapid HIV test with the result available immediately. Those tests were mostly performed on-site, within the facility (28/34, 82%).

For infants aged <18 months, HIV testing was not available within 9 facilities (8 in Zambia and 1 in India). In the 25 facilities where it was available, HIV testing was based on antibody detection alone in 14 (56%) facilities. PCR testing was available in 10 facilities either alone (8 facilities) or in addition to antibody detection (2 facilities).

Irrespective of age, confirmatory HIV tests using ELISA or Western Blot were rarely available (9 facilities performed ELISA as a confirmatory test and 3 performed Western Blot). In most facilities (22/34, 65 %), rapid HIV tests are used to confirm the HIV diagnosis.

Except in India, nurses have a central role in counselling and performing HIV tests. In some facilities of Zambia and Uganda, nurses conduct HIV testing alone, but in the majority of facilities (18/34, 55%), a team comprising a nurse and a counsellor conducts HIV testing. Doctors or clinical officers are rarely involved at this stage (15 % and 36% of the occasions for doctors and clinical officers respectively). See Figure 3.1.

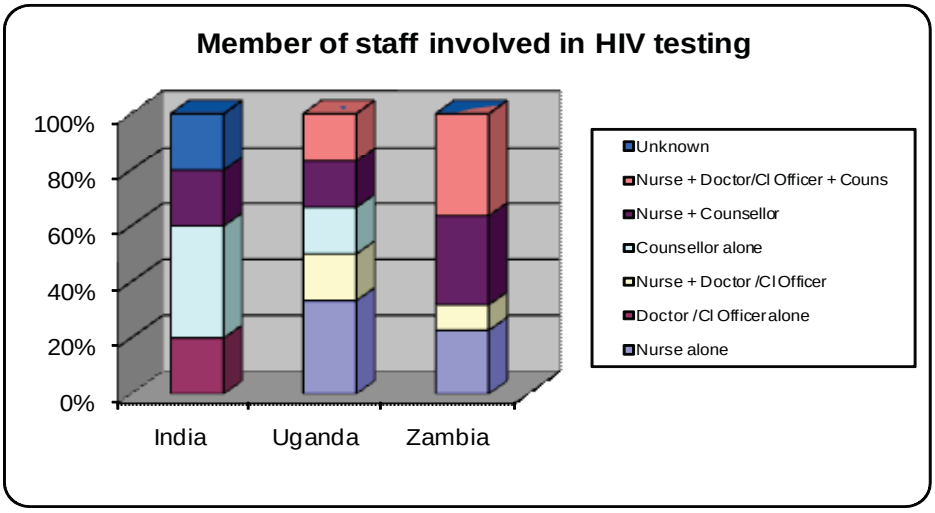
Table 3.1: Type of facility, HIV care service and location per country

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)
Type of facility				
primary	1	3	0	18
secondary	0	3	0	4
tertiary	3	0	0	0
Type of HIV care service				
public	2	2	1	21
NGO	1	2	0	0
private	1	1	0	0
research organisation	1	0	0	0
Location				
urban	5	2	1	19
peri-urban	0	3	0	1
rural	0	0	0	2

Table 3.2: HIV test strategy by country (n=34)

HIV test strategy	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)	TOTAL
Rapid HIV test only	0	5	0	16	21
Rapid HIV test + ELISA	0	0	0	1	1
ELISA only	2	1	0	2	6
ELISA and Western Blot	2	0	1	0	3
unknown	1	0	0	3	3

Figure 3.1: Member of staff involved in HIV testing



In terms of HIV-related counselling services, pre- and post-HIV test counselling are almost always offered within the facilities (in 94% and 91% respectively). Follow-up counselling is not systematically available within the facilities, reported in 17 (51%). When not available, patients are in half of the cases referred for follow-up counselling at an external facility.

Treatment and care

Some facilities (one in Uganda and one in India) do not provide ART, but provide support for HIV patients. Some parts of this section only refer to those facilities which do provide ART.

Treatment of adults

The number of adults currently on treatment varies widely from one facility to another one with a median of 564 patients currently on treatment (range from 6 to 3745 patients). Facilities appeared to fall into three groups:

- Those where less than 200 patients are currently on treatment (11 facilities),
- Those with between 200 and 1000 patients currently on treatment (6 facilities)
- Those where more than 1000 patients are on treatment (10 facilities).

National guidelines for HIV care were used more often than international guidelines (in three out of five facilities in India, in all facilities in Uganda and Ukraine, in 15 out of 21 facilities in Zambia).

At all facilities, the CD4 count was used to decide when to initiate antiretroviral therapy. The WHO stage is also taken into consideration in 26 facilities (90%).

The first line ART regimen is almost the same in all facilities. It follows WHO recommendations with a combination of two NRTI (zidovudine or stavudine + lamivudine) and one NNRTI (nevirapine or efavirenz). Some facilities use a fixed drug combination such as Triomune (six facilities: three in Zambia and three in Uganda).

After initiation of ART, clinical monitoring is scheduled every month in over half the facilities (n=17), every 3 months in six facilities and every two months in one. The CD4 count is checked every 6 months in 17 of the facilities, and every three months in others. The viral load is more rarely checked (51 %) and the interval varies from one structure to another from “every 3 months” to “when necessary”. Viral load can be checked in all facilities of India, Uganda and Ukraine but only in four of the Zambian facilities. The type, level or location (urban, rural) did not appear to explain this difference.

Except in two facilities in Zambia, cotrimoxazole prophylaxis is used for HIV patients in all facilities. The criteria for initiation of cotrimoxazole varies between facilities, and is not consistent within countries. Initiation of cotrimoxazole is guided by WHO staging alone in 24%, by CD4<200 in 44%, and CD4<350 in 32% of facilities.

Second line ART is available in less than half of the facilities (48%, n=14). Availability of second line ART is reported from all five countries, and does not seem to be associated with the level of the facility (primary, secondary or tertiary care) or with the type of facility (governmental, NGO, research organisation, private).

Table 3.3: number of patients currently on treatment by country

Number of patients currently on treatment	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=1)
Less than 200	1	3	0	7
Between 200 and 1000 patients	1	2	0	3
More than 1000 patients	2	1	1	6
Not known	1	0	0	5

Figure 3.2: Clinical monitoring of HIV patients in each facility by country

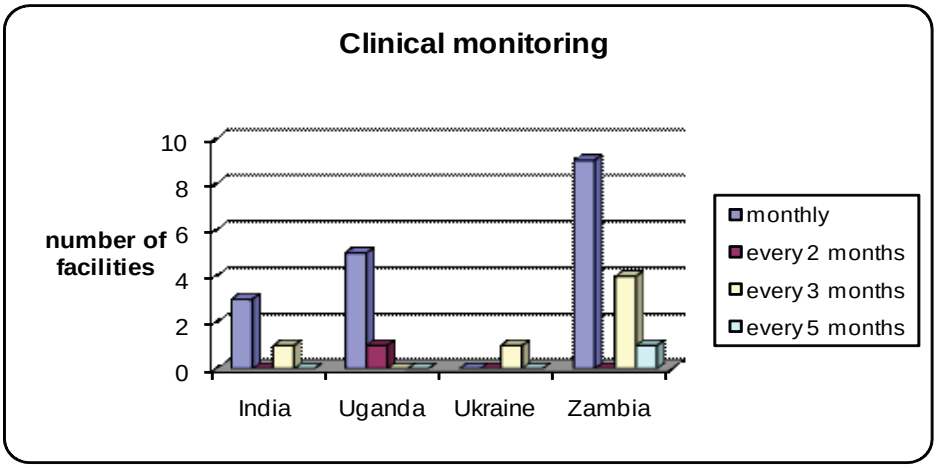


Figure 3.3: Monitoring of CD4 count for each facility by country

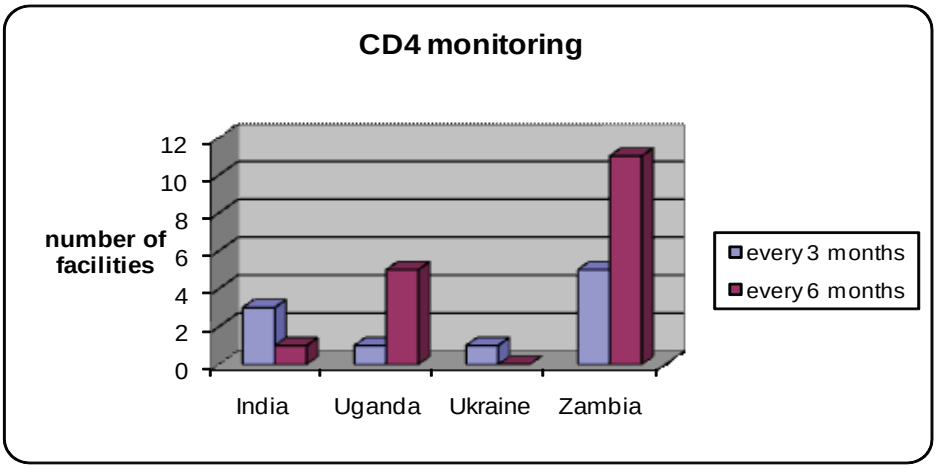
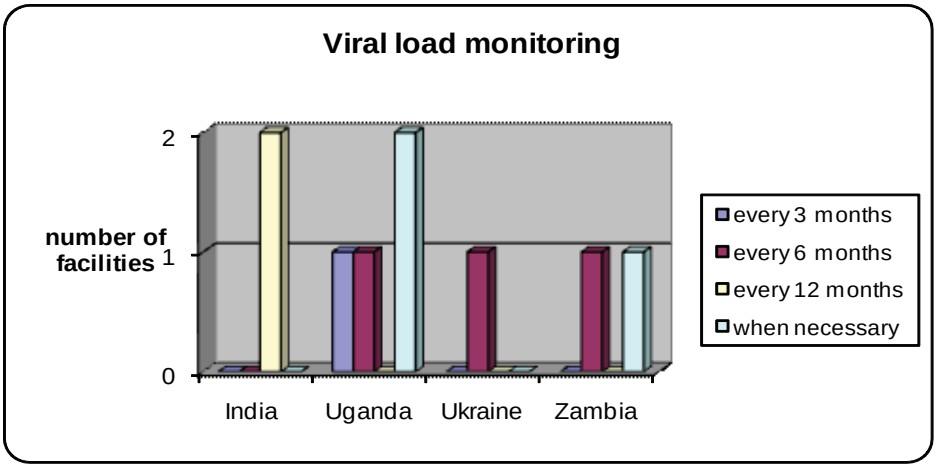


Figure 3.4: Monitoring of HIV viral load in each facility by country



Treatment for children

In all four countries for which data were provided, ART was available for children, in 23 facilities (13 in Zambia, four in Uganda, four in India and in the facility in Ukraine). The number of children currently on treatment ranged from 2 to 583, median 68.

National guidelines for antiretroviral therapy for infants and children were used as reference in Zambia, Uganda and Ukraine (respectively 8/11, 4/5 and 1/1 facilities), but not in India.

In all facilities, the most common first line regimen was similar: two NRTIs (zidovudine or stavudine + lamivudine) and one NNRTI (nevirapine or efavirenz). In all countries except Ukraine, fixed dose combination tablets were available in some facilities.

Second line treatment for children was available in 10/23 (43%) of the facilities. There were two type of regimens offered: three NRTIs (including abacavir) or two NRTIs and one protease inhibitor (lopinavir/ritonavir).

After initiation of ART, follow-up was almost the same as for adults, most often at monthly intervals for clinical monitoring (65% of the facilities, n=14) and at 6-monthly intervals for CD4 count monitoring (75% of the facilities, n=17). The viral load was rarely monitored, in only seven facilities, spread among the four countries, without apparent association between the type (governmental, NGO, research, private) or surprisingly the level (primary, secondary or tertiary) of facility and the availability of viral load monitoring.

Regarding primary chemoprophylaxis, cotrimoxazole was offered to children in all facilities. The criteria for initiating treatment varied from one facility to another. Cotrimoxazole was initiated for all HIV-exposed infants and children until cessation of risk of HIV transmission and exclusion of HIV infection in 17 facilities (62.5%).

If HIV infection was demonstrated, cotrimoxazole was offered to all infants aged less than 1 year in 11 facilities and to all children aged 1-4 with clinical stage 2,3 or 4 (irrespective of the CD4) in 10 facilities or any clinical stage if CD4 count was less than 25% in 9 facilities (37.5%). In Ukraine, the only indication for cotrimoxazole was CD4<25%; this criterion was not used in India. In Uganda and Zambia, indications for cotrimoxazole initiation varied from facility to another.

Treatment adherence

Patients were able to obtain antiretroviral medication from different places: directly from the HIV clinic (13 facilities) and/or from a pharmacy, most of the time attached to the HIV clinic (20 facilities). One facility in Uganda delivered treatment at home.

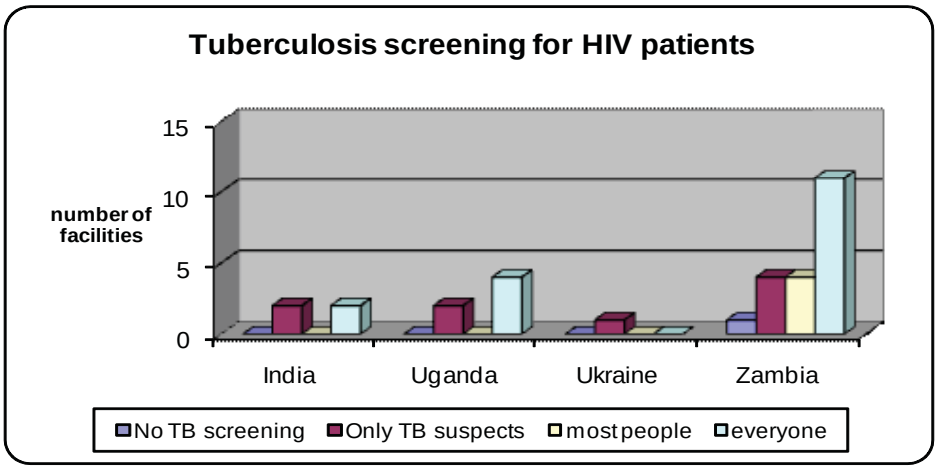
Except in Ukraine, adherence to antiretroviral therapy was routinely assessed. In 79% (n=23 facilities), adherence was assessed routinely at every visit. This assessment was based on self report and pill count in 77% of the cases (n=20 facilities).

When patients default, the main method of contacting patients was by phone call in India and Uganda (3 out of 4; 5 out of 6 facilities respectively). By contrast, home visits were the main method of contact in Zambia (16 facilities out of 18). Counselling was the major action taken to assist defaulters in all countries (90%, n=26 facilities).

Tuberculosis screening and preventive therapy

At first attendance, screening for TB was reported to be carried out routinely in 17 facilities (54%), only on TB suspects in 10, on "most" patients in 4 and not at all in one facility (figure 5). Symptoms (n=24), sputum microscopy (n=29) and chest X-ray (n=27) were the most common methods of screening performed. TST and sputum culture are rarely performed at this stage (in only 2 and 3 facilities respectively).

Figure 3.5: Screening for tuberculosis



For patients diagnosed with active TB, nine of the facilities (all facilities in Uganda, none in Ukraine, 1 in India and 2 in Zambia) reported that the facility would initiate TB treatment. The other facilities referred the patient to a TB clinic. TB preventive therapy was almost never offered; only four facilities (one per country) offered it to patients who had been in contact with TB.

Other support

Opioids for pain relief were rarely offered (five facilities: one in India, three in Uganda, one in Ukraine, none in Uganda). Counselling and emotional support were offered in almost all facilities (91%). Social services were offered in 20 facilities from all four countries (59%).

In 91% of the facilities (n=31), patients had access to home-based care services. These were:

- health education in 26/31 facilities
- nutritional support 24/31 facilities
- community nurses in 15/31 (48%) of the facilities (none in India).
- community ART in five facilities; 1 each in India, Zambia and Ukraine, 2 in Uganda

Regarding nutritional support, 21 health care facilities (62%) provided nutritional support to their patients with HIV infection, comprising nutritional and dietary assessment and advice (17 facilities), vitamin supplementation (15 facilities) and food assistance (19 facilities).

Staffing and training

In all countries, before delivering HIV care, doctors, nurses and clinical officers were required to attend specific HIV-related training. With a median of 14 days (range 5 to 90 days), the length of training was almost the same for all staff.

Table 3.5 shows reported changes in facility staffing since ART roll-out.

Table 3.4: Home based care services (n=34)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)
Community nurses	0	5	1	8
Community ART	1	2	1	1
Health Education	1	4	0	19
Nutritional support	2	4	0	16

Table 3.5 Reported changes in staffing levels in facilities since ART rollout began (n=34)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)	TOTAL
Doctors					
no change	2	4	0	12	18 (53%)
increased	0	2	0	4	6 (18%)
reduced	0	2	0	4	6 (18%)
unknown	3	0	1	0	4 (11%)
Clinical officers					
no change	1	3	0	10	14 (41%)
increased	0	2	0	5	7 (20%)
reduced	0	1	0	7	8 (24%)
unknown	4	0	1	0	5 (15%)
Nurses					
no change	0	2	0	9	11 (32%)
increased	0	3	0	4	7 (20%)
reduced	0	1	0	9	10 (30%)
unknown	5	0	1	0	6 (18%)

Staff did not always exclusively work within the HIV service. On average, only 44% of the HIV facilities (n=14) employed doctors for more than 75% of their time; the corresponding figures for clinical officers and nurses were 33% and 44% respectively. This varied from one country to another. In India and Ukraine, most staff (particularly doctors) worked exclusively in the HIV service. In Uganda and Zambia, this varied between facilities.

When focusing on the impact of the ART rollout on other health care services, no facilities reported worsening of other services. There were reported improvements in TB services (reported by 26/31 (84%) of facilities), antenatal and obstetric care (23/31, 74%), integrated management of childhood illness (20/31, 64%), management of malaria, 17/30 (57%) and to a lesser extent in childhood immunisation services (40 % of the facilities, n=12).

Model of delivery

There were no criteria reported which excluded patients from accessing HIV care facilities except citizenship for one facility in India and one in Uganda, and having no fixed abode in one facility in Zambia. Fees were charged in some facilities: these were for:

- consultation (in one facility in India, two in each of Uganda and Ukraine)
- ART (in one facility in each of India and Ukraine)
- laboratory tests (in one facility in each of India, and Uganda, two in each of Zambia and Ukraine)
- chest X-ray (in one facility in Zambia and Ukraine)

For the initiation of antiretroviral therapy, either a doctor or a clinical officer or both were responsible in all 4 countries.

The organisation of routine patient follow-up varied from one country to another:

- in Ukraine, nurses alone were responsible for the follow-up,
- in India, doctors alone were responsible, with the help of a nurse in one out of four facilities.

In Zambia and Uganda, organisation of follow up varied by facility:

- in Uganda, nurses were always involved in association with a doctor or a clinical officer except in one out of the six facilities where nurses were the only staff responsible.
- In Zambia, there were12 facilities where doctors or clinical officers are responsible for the follow-up with the help of nurses, four facilities where nurses along with a counsellor and a pharmacist were the only staff responsible for follow-up, and two facilities where doctors and clinical officers alone were responsible for follow up.

Pharmacists and social workers were rarely involved in follow-up.

HIV care services were delivered via dedicated HIV clinics which run

Table 3.6: Format of the HIV care service by country

	Patients seen within general clinic setting	Dedicated HIV care service which runs once a week	Dedicated HIV care service which runs every working day	Other
India	0	0	4	0
Uganda	0	3	2	1
Ukraine	0	0	1	0
Zambia	2	2	11	3
TOTAL	2	5	18	4

every working day in 18/29 (62%) of the facilities. Table 3.6 details the format of HIV care services offered by country.

Most of the time (73%, n=22) patients were required to attend the clinic once a month. Home-based care was available in all four countries (in all facilities in Zambia and only 2/4 in India). Home-based adherence support was reported at 24 facilities; home-based directly-observed ART was reported at 14 facilities (none in India, one in Ukraine, two in Uganda, and 11 in Zambia, though the question was not answered for all facilities). These activities were mainly performed by community lay workers (74%). Community members living with HIV/AIDS and nurses were also involved at 40 % of the facilities.

HIV prevention and harm reduction

PMTCT

Services to prevent mother to child transmission (PMCT), comprising antiretroviral therapy and infant feeding counselling, were available within all facilities, except one in Zambia. Elective caesarean section was reported as available in 27% of the facilities. Even when the service was theoretically available, in 32 % of the facilities (n=10), ART for PMCT was estimated to be received by less then half of HIV-infected women and/or their infants. Table 3.7 gives details by country.

The regimen most commonly given to the mother was a combination of AZT and nevirapine. For the infant, nevirapine was most often used. The median number of pregnant women who received ART for PMTC and delivered within the facilities and/or were followed up in the facilities in the last one year was respectively 19 in India (range 3 to 35), 80 in Uganda (range 7 to 888 [for Uganda, 888 was the figure given for both Entebbe Hospital and Nsambya., and 57 in Zambia (range 12 to 496).

Prevention for injecting drug users (IDU)

Services for IDU were rarely available within these facilities (n=6) (table 3.8). There were no IDU services in the Zambian facilities and only counselling in Uganda. By contrast in Ukraine, ART, needle exchange and drug dependence treatment were available for IDU, but counselling was not offered.

Table 3.7: Services offered to prevent mother to child transmission per country and results (n=33)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=21)	TOTAL
Services offered					
Antiretroviral therapy	3	6	1	21	31 (94%)
Infant feeding counselling	5	6	1	21	33 (100%)
Elective caesarean delivery	2	4	1	2	9 (27%)
Results					
Proportion of HIV women who received ART for PMTCT last year (n=25) *					
less than half	0	3	0	7	10 (32%) **
more than half	2	2	1	10	15 (48%) **
Proportion of infants of HIV women who received ART for PMTCT last year (n=21) *					
less than half	0	3	0	7	10 (32%) **
more than half	2	1	1	7	11 (35%) **

(*) number of responses to these 2 questions

(**) % calculated based on the 33 facilities offering PMTCT as the denominator

Table 3.8: Services for IDU per country (n=34)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)	TOTAL
IDU services available	3	2	1	0	6 (18%)
ART	1	0	1	0	2
Needle and syringe programe	1	0	1	0	2
Drug dependence treatment	0	0	1	0	1
Education and counselling service	3	2	0	0	5

Table 3.9: Infection control measures by country (n=34)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)	TOTAL
Nosocomial HIV prevention: number of facilities where some services were available less than half time					
Screening of blood	0	0	1	0	1 (3%)
Gloves	0	1	1	1	3 (9.1%)
Sharps bins	0	1	1	0	2 (6.1%)
Post exposure prophylaxis following needle injury	0	2	1	4	7 (21%)
TB prevention: number of facilities where service is reported to be NOT available					
adequate ventilation	0	1	1	3	5 (15%)
separate area for sputum production	3	3	1	5	12 (35%)

Table 3.11: partial and complete stock outs in facility by country

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)
ART drugs				
Partial stock out	1	1	0	2
Complete stock out	0	0	0	0
TB drugs				
Partial stock out	0	3	0	2
Complete stock out	0	0	0	0
Antibiotics				
Partial stock out	1	2	1	9
Complete stock out	0	0	0	2
Antimalarial drugs				
Partial stock out	0	2	0	14
Complete stock out	0	0	0	1
HIV test kits				
Partial stock out	1	1	.	8
Complete stock out	0	1	.	1

Infection control within facilities

Screening of blood for HIV was in most of the facilities performed more than 75% of the time except in Ukraine where it was available less than 25% of the time.

Concerning the safety of health care staff, gloves and sharps bins were available almost everywhere (n=28 facilities) more than 75 % of the time. This was not the case for post exposure prophylaxis. Table 3.9 gives, by country, the number of facilities where those services were available less than half the time.

Regarding tuberculosis, there were measures in place to reduce TB transmission in all facilities except one in Zambia. 85 % of the facilities were reported to have good ventilation and a separate area for sputum production was reported in 22 facilities (65%). Other methods used included bactericidal UV lamps in Ukraine.

Laboratory tests and diagnostics

31 facilities (91%) had a laboratory on site. For the three other sites, two in Zambia had access to a laboratory in the same district which is part of public sector, and one in India had no laboratory access.

Table 3.10 details, by country, laboratory investigations that were available in the local laboratory.

Health system constraints

In most countries except India, ART was supplied by the same supplier as all other drugs (62 facilities, n=20). The source of funding for ART varied from one facility to another, summarized by country in figure 3.6.

For ART and TB drugs, stock outs were rare. In the previous six months, partial stock outs were reported for ART in four centres and for TB drugs in five centres, and no complete stock outs were reported.

For antibiotics, antimalarials and HIV test kits, stock outs were more frequent (table 3.11).

HIV/AIDS data collection

Almost every facility collected data on enrolled patients. Details of HIV care were rarely recorded in patient's general health record (38% of the facilities, n=13). Table 3.12 gives details about data collection.

Table 3.10: Laboratory investigations available in the local laboratory (n=33)

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)	TOTAL
Haemoglobin	3	6	1	21	31 (94%)
Total white cell count (WCC)	3	6	1	14	24 (73%)
Differential WCC	3	5	1	10	19 (58%)
Liver enzymes	3	3	1	5	12 (37%)
Urea and creatinine	3	3	1	6	13 (39%)
Electrolytes	3	4	1	3	11 (33%)
Glucose	3	6	1	12	22 (67%)
Lipids	3	3	1	3	10 (30%)
Amylase	3	3	1	3	10 (30%)
Rapid test for malaria	2	3	0	11	16 (48%)
Blood microscopy for malaria	3	6	0	20	29 (88%)
Stools microscropy for parasites	3	6	0	18	27 (82%)
CSF microscopy	2	4	0	3	9 (27%)
Blood culture	2	3	0	1	6 (18%)
TB					
Sputum microscopy for TB	3	6	1	17	27 (82%)
Sputum culture	2	2	1	1*	6 (18%)
TB drug resistance testing	2	0*	0*	0*	2 (6.1%)
Chest X-Ray	3	4	0	4	11 (33%)
HIV					
CD4 counts	4	2	1	4**	11 (33%)
Viral loads	1	1	1	0*	3 (9%)
HIV drug resistance testing	1	0*	0*	0*	1 (3%)

(*) tests done in national reference laboratory
(**) CD4 counts generally not available on site

Figure 3.6: ART funding origin by country

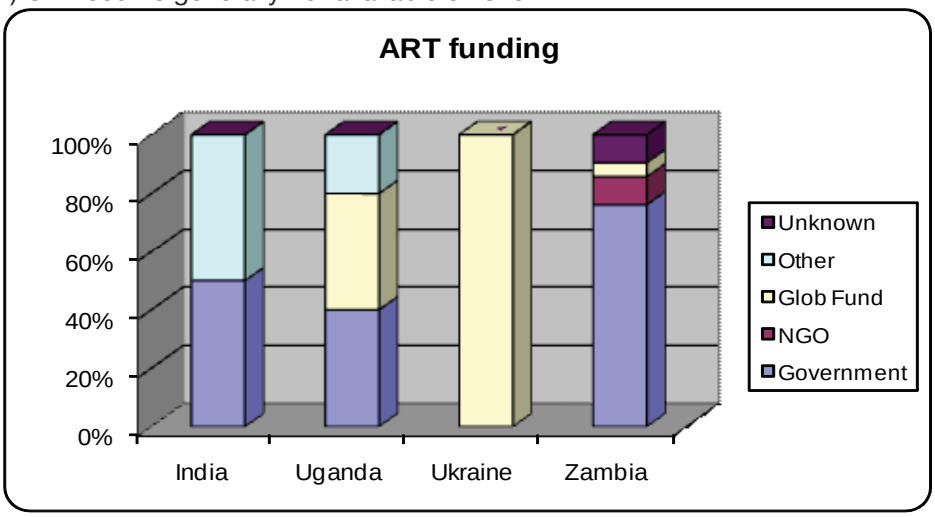


Table 3.12: data collected

	India (n=5)	Uganda (n=6)	Ukraine (n=1)	Zambia (n=22)
Format of record				
Register of all patients enrolled for HIV care	4	6	1	21
Register of all patients on ART	3	6	0	18
Standardised record for patients enrolled in care	5	5	1	15
Standardised record for patients on ART	3	6	0	15
All entries recorded in patient's general health record	2	1	0	10
Data recorded				
Identifying details	5	6	1	20
Details on any drug side effects experienced	5	6	1	16
CD4 count	5	6	1	17
Viral load	2	1	1	7
Weight	5	6	0	18
Death	5	5	1	16
Adherence to treatment (whether pill count or self report)	4	4	0	16
Data routinely monitored				
Number of patients ever enrolled	4	6	1	18
Number of patients currently enrolled	3	6	1	18
Number of patients ever started on ART	4	6	1	18
Number of patients currently on ART	4	6	1	18
Number of patients who have stopped ART	4	5	1	16
Number of patients who have defaulted from clinic	4	6	0	16
Mortality data	4	6	1	16
Adherence data	4	5	0	16

Commentary

These data provide a snapshot of HIV care in districts and facilities linked to Evidence for Action consortium partners. They must be interpreted with some caution, since the questionnaires were self-completed by district and facility managers; there may have been differences in interpretation of questions by different staff, and different data sources may have been used, and so the degree of accuracy of the answers may vary. In addition it must be emphasised that the districts and facilities participating were not intended to be a representative sample; indeed, given that these were generally settings linked to research groups, it is likely that they were better resourced than others in the same country.

However, the data do highlight some points of interest. The many similarities are probably less interesting than some of the differences. Some points of interest, which may merit further investigation, include:

- variability in frequency of clinical monitoring for patients receiving ART. In many facilities, monitoring is done monthly. Do patients need to attend monthly for monitoring? will outcomes be similar if they attend less frequently?
- variability in implementation of PMTCT – when should pregnant women be dispensed ART for this purpose, to maximise the possibility that it is taken at the appropriate time?
- lack of availability of second line ART at many facilities: under these circumstances, how should patients who fail first line ART be managed?
- how to improve the proportion of facilities that screen patients attending for HIV care routinely for TB. Facilities to screen for TB are frequently not available on site, and in some cases are only available if the client pays a fee
- how to increase the proportion of patients attending for treatment for an STI or TB who are offered an HIV test
- major variability in the duration of staff training for HIV care – for example, courses on opportunistic infection management for doctors are reported to range between 2 and 88 days. This suggests the need to define minimum standards of training, and to decentralise training to the local level where possible.
- variable changes in facility staffing levels were reported since ART roll-out. Perhaps surprisingly, staff reported no deterioration in the delivery of other health services since ART roll-out, and indeed reported improvements in other services. This deserves further study.
- partial stock outs of ART were reported from a minority of facilities. Stock-outs of other medications such as antibioitics and antimalarial drugs, as well as HIV test kits, were more frequently reported. Even partial stock-outs of ART have very serious implications for the development of viral resistance, and this deserves further investigation.

Contributors

The idea for this situation assessment arose at the first meeting of the Evidence for Action consortium in October 2006; further development was guided particularly by Peter Godfrey-Faussett, Alison Grant, Sam McPherson, Natasha Palmer and David Ross.

Yasmeen Hanifa prepared the national level overviews, with input from consortium partners; she also designed the district and facility level questionnaires and coordinated data collection.

Data collection in partner institutions was coordinated by Maryam Shahmanesh, Seema Sahay and Dr R Gangakhedkar (India), Andreas Jahn and Sam Phiri (Malawi), Ade Fakoya (Ukraine), Shabbar Jaffar and Heiner Grosskurth (Uganda) and Nathaniel Chishinga and Helen Ayles (Zambia).

Corinne Merle analysed the data from the district and facility level questionnaires and wrote the first draft of the reports.

Alison Grant coordinated data collection, analysis and report writing.

Partner organisations

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Evidence For Action on HIV treatment and care systems

About Evidence for Action

Evidence for Action is an international research consortium with partners in India, Malawi, Uganda, UK and Zambia, examining issues surrounding HIV treatment and care systems.

The research is organised in four key themes:

1. What "package" of HIV treatment and care services should be provided in different settings?
2. What delivery systems should be used in different contexts?
3. How best should HIV treatment and care be integrated into existing health and social systems?
4. How can new knowledge related to the first three questions be rapidly translated into improved policy and programming?

Partners:

International HIV/AIDS Alliance, UK

Lighthouse Trust, Malawi

London School of Hygiene and Tropical Medicine, UK

Medical Research Council Uganda Research Unit on AIDS, Uganda

Medical Research Council Clinical Trials Unit / University College London, UK

National AIDS Research Institute, India

ZAMBART, Zambia

www.evidence4action.org

info@evidence4action.org