Priority Interventions

HIV/AIDS prevention, treatment and care in the health sector

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World Health Organization

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Glossary

3TC	Lamivudine
ABC	Abacavir
AFASS	Acceptable, feasible, affordable, sustainable and safe
AFB	Acid fast bacilli
ALT	Alanine aminotransferase
ART	Antiretroviral therapy
ARV	Antiretroviral
AZT	Azidothymidine, Zidovudine
BCG	Bacille Calmette-Guerine (vaccine)
BMI	Body mass index
CCM	Country Coordinating Mechanism
CITC	Client-initiated testing and counselling
CPT	Cotrimoxazole prophylactic treatment
CTX	Cotrimoxazole
DBS	Dried blood spot
DNA	Deoxyribonucleic acid
DOTS	Directly observed treatment, short course; refers to the internationally recommended strategy for TB control
EFV	Efavirenz
EIA/ELISAs	Enzyme immunoassays
FTC	Emtricitabine
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HIVDR	HIV drug resistance
HPV	Human papillomavirus
IDU	Injecting drug users/use
IMAI	Integrated management of adult and adolescent illness
IMPAC	Integrated management of pregnancy and childbirth
LPV	Lopinavir
LPV/r	Lopinavir with a booster dose of ritonavir
M & E	Monitoring and evaluation
MARP	Most-at-risk population
MDR	Multidrug-resistant
MSM	Men who have sex with men

NAT	Nucleic acid testing
NGO	Nongovernmental organization
NNRTI	Non-nucleoside reverse transcriptase inhibitor
NRTI	Nucleoside reverse transcriptase inhibitor
NSP	Needle and syringe programmes
NVP	Nevirapine
OST	Opioid substitution therapy
PCP	Pneumocystis pneumonia
PEP	Post-exposure prophylaxis
PI	Protease inhibitor
PITC	Provider-initiated testing and counselling
PLHIV	People living with HIV
PMTCT	Prevention of mother-to-child transmission
RAR	Rapid assessment and response
RDA	Recommended daily allowance
RFB	Rifabutin
RMP	Rifampicin
RNA	Ribonucleic acid
RPR	Rapid plasma reagin
RTV	Ritonavir
sd-NVP	Single-dose Nevirapine
SIGN	Safe Injection Global Network
STI	Sexually transmitted infection
TB	Tuberculosis
TDF	Tenofovir
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
VCT	Voluntary counselling and testing, now referred to as client-initiated testing and counselling (CITC)
WHO	World Health Organization
XDR	Extensively drug-resistant

Foreword

Defining knowledge and knowledge gaps relevant to health, helping to establish health policy, issuing technical guidance and recommendations, and monitoring health trends are core functions of the World Health Organization (WHO). Since the early 1980s, WHO has been active in translating the evolving science of HIV/AIDS into practical advice for countries as they respond to this severe, heterogeneous and complex epidemic.

WHO coordinated the early global response to HIV/AIDS through its Special (later Global) Programme on AIDS. Working closely with ministries of health in low- and middle-income countries, WHO provided evidence-based programmes to combat this new disease. Following the establishment of the Joint United Nations Programme on HIV/AIDS (UNAIDS) in 1996 and the agreed division of labour between its cosponsoring organizations, WHO remained the lead agency for the health sector response to HIV/AIDS.

The rapidity of change in scientific understanding of HIV/AIDS, along with the breadth of the response, meant that technical advice on its prevention, diagnosis, treatment and care could quickly become obsolete. The range of technical guidance was diverse, and there was no single place where it could be easily accessed in a 'one-stop shopping' approach.

The years 2002 and 2003 saw the launch of three key initiatives in the global AIDS response: the Global Fund to Fight AIDS, Tuberculosis and Malaria, the United States President's Emergency Plan for AIDS Relief (more commonly known as PEPFAR) and the WHO/UNAIDS 3 by 5 initiative. The resulting programmatic scale-up highlighted a need for sound, evidence-based, impartial guidance for public health action.

In the years following the 3 by 5 initiative, WHO has been acutely aware of the increasing importance of the health sector in the quest for universal access to prevention, treatment and care, and in tracking the epidemic and monitoring the response. The original call by G8 leaders for a package of interventions – coupled with the need for ongoing and updated user-friendly technical guidance – led WHO to develop Priority interventions: HIV/AIDS prevention, treatment and care in the health sector, an umbrella document that brings together in one place key WHO guidance and references for the health sector response to HIV/AIDS. It is the intent to revise it periodically as new evidence becomes available. This is the 2010 update of the second edition, published online and as a CD-ROM. The next edition is planned for release in 2011. We hope this regularly updated resource will prove useful for all people who work in the health sector as they confront the realities of HIV and AIDS throughout the world.

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Introduction

With 33 million people living with HIV and 2.7 million new infections in 2007, the HIV epidemic continues to be a major challenge for global health. Although political and financial commitments and country efforts have resulted in increasing access to HIV services in recent years, the annual number of new infections remains high and continues to outpace the annual increase in the number of people receiving treatment. The availability and coverage of priority health sector interventions for HIV prevention, treatment and care continued to expand in low- and middle-income countries in 2008 but is still insufficient, and progress has been uneven across and within countries. Thus, the HIV pandemic remains the most serious infectious disease challenge to global public health,[1] and it continues to undermine six of the eight key areas covered by the Millennium Development Goals, namely reduced poverty and child mortality, increased access to education, gender equality, improved maternal health and increased efforts to combat major infectious diseases.[2] The impact of HIV and AIDS illustrates the interdependence of global efforts to foster development and provides a strong rationale for people working on HIV/AIDS to seek synergies between their actions and efforts to make progress in other development fields, in particular child and maternal health. Reaching and exceeding the Millennium Development Goals and achieving universal coverage of essential health interventions are part of WHO's primary health care and health system strengthening strategies.

Purpose of *Priority Interventions*

The priority interventions described in this document are the complete set of interventions recommended by WHO to mount an effective and comprehensive health sector response to HIV and AIDS.

This document aims to:

- describe the priority health sector interventions that are needed to achieve universal access to HIV prevention, treatment and care;

- summarize key policy and technical recommendations developed by WHO and its partners and related to each of the priority health sector interventions;

- guide the selection and prioritization of interventions for HIV prevention, treatment and care;

- direct readers to the key WHO resources and references containing the best available information on the overall health sector response to HIV/AIDS and on the priority health sector interventions with the aim of promoting and supporting rational decision-making in designing and delivering HIV-related services.

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1   WHO. Towards Universal Access: Scaling up priority HIV/AIDS interventions in the health sector. Progress report, September 2009. Geneva, WHO, 2009. Available at: http://www.who.int/hiv/pub/2009progressreport/en/
2   WHO. **Progress on global access to HIV antiretroviral therapy: A report on 3 by 5**. Geneva, WHO, 2005. Available at: http://www.who.int/3by5/publications/progressreport/en/

Target users

This document is intended for a broad readership of public health decision-makers, national AIDS programme managers, health providers and workers (governmental, nongovernmental and private), international, national and local donors, and civil society, including people living with and affected by HIV.

Structure of *Priority Interventions*

Chapter 1: The health sector response to HIV/AIDS

This chapter discusses the basic principles of strategic planning for HIV and its linkage with broader health sector planning. It also provides guidance on critical issues to consider when selecting and prioritizing interventions in different types of HIV epidemics.

Chapter 2: Priority interventions for HIV/AIDS prevention, treatment and care in the health sector

This chapter describes the priority health sector interventions for HIV/AIDS that are recommended by WHO. It summarizes relevant technical recommendations in each intervention area and provides references to the Key resources, with links to online versions if they are available.

Chapter 3: Operationalizing the priority interventions – strengthening health systems

This chapter discusses specific components of health system strengthening that need to be considered when scaling up the priority health sector interventions for HIV/AIDS. These components include integration and linkage of health services; infrastructure and logistics; human resource development; equitable access to medical products and technologies; health financing; advocacy and leadership; mobilizing partnerships including with people living with HIV; and addressing gender, stigma and discrimination.

Chapter 4: Investing in strategic information

This chapter highlights the importance of strategic information about the epidemic to guide planning, decision-making, implementation and accountability of the health sector response to HIV/AIDS.

Chapter 5: Key resources

This chapter is organized by intervention area and provides references to and descriptions of a wide range of tools and other resources to support the health sector response to HIV.

Chapter 1: The health sector response to HIV/AIDS

1.1 Key elements of the health sector response

As defined by WHO, the health sector is **"… wide ranging and encompasses organized public and private health services (including those for health promotion, disease prevention, diagnosis, treatment and care); health ministries, nongovernmental organizations; community groups; and professional associations; as well as institutions which directly input into the health care system (e.g. pharmaceutical industry and teaching institutions)."** [3]

WHO has established priorities in critical areas where the health sector in each country must invest if it is to make significant progress towards achieving the universal access goal and MDGs:[4]

1. enabling people to know their HIV status
2. maximizing the health sector's contribution to HIV prevention
3. accelerating the scale-up of HIV/AIDS treatment and care
4. strengthening and expanding health systems
5. investing in strategic information to guide a more effective response.

Health sector interventions for HIV prevention, treatment and care include:

- interventions based in health facilities, including information, education and supplies and services for preventing HIV transmission in health care settings; preventing sexual HIV transmission; managing sexually transmitted infections (STIs); preventing mother-to-child HIV transmission; providing harm reduction for injecting drug users (IDUs); HIV testing and counselling; preventing HIV transmission by people living with HIV; preventing the progression of HIV infection to AIDS; and the clinical management of treatment and care for people living with HIV;

- interventions based in communities, including community-based prevention; treatment preparedness and support for HIV and tuberculosis (TB); condom promotion; provision of clean injecting equipment; HIV testing and counselling; home-based care; and psychosocial support, including peer support;

- interventions delivered through outreach to most-at-risk populations, including integrated HIV testing; and counselling, treatment and care services in drop-in centres and similar locations, including mobile sites;

- activities in the health sector supporting service delivery and enabling action in other sectors, including providing leadership and governance; advocacy; strategic planning; programme management; access to medicines, diagnosis and technology to treat and prevent HIV infection and its complications; human resources; financing; and HIV and STI strategic information management systems.

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3   WHO. **Global health sector strategy for HIV/AIDS 2003–2007: providing a framework for partnership and action**. Geneva, WHO, 2002. Available at http://www.who.int/hiv/pub/advocacy/hiv2002_25en.pdf

4   WHO. **Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress Report**. WHO. April 2007

The principles that should guide the health sector response include those underpinning primary health care, with particular emphasis on:

- ensuring the full and proactive involvement of governmental, nongovernmental (NGO) and private sector organizations and civil society, especially people living with HIV, including people most at risk of infection;

- tailoring interventions to the people and places that carry the burden of the disease, taking into account the nature of the epidemic and the context (e.g. cultural traditions, social attitudes, political, legal and economic constraints) in specific settings;

- creating a supportive enabling environment by addressing stigma and discrimination, applying human rights principles and promoting gender equity, and reforming laws and law enforcement to ensure that they adequately respond to the public health issues raised by HIV and AIDS;

- offering a continuum of home, community and health facility services in conjunction with outreach to and consultation with community leaders and members, and especially with people living with and affected by HIV.

1.2 Linkages with other health priorities

Decisions over which interventions to include in the national HIV/AIDS programme are usually made during strategic planning, as are decisions about how to prioritize the interventions so that available resources can be allocated accordingly. Most disease control programmes do this every five years or so. The national strategy for the health sector response to HIV/AIDS, in whatever form it exists, should be directly related to the multisectoral national HIV/AIDS framework, the national health sector plan and the national development framework (see Figure 1 below).

Fig. 1 – Linkage between HIV, health and development plans and strategies

National Development Framework

Multisectoral
AIDS Plan

Health Sector
AIDS Plan

National Health
Sector Plan
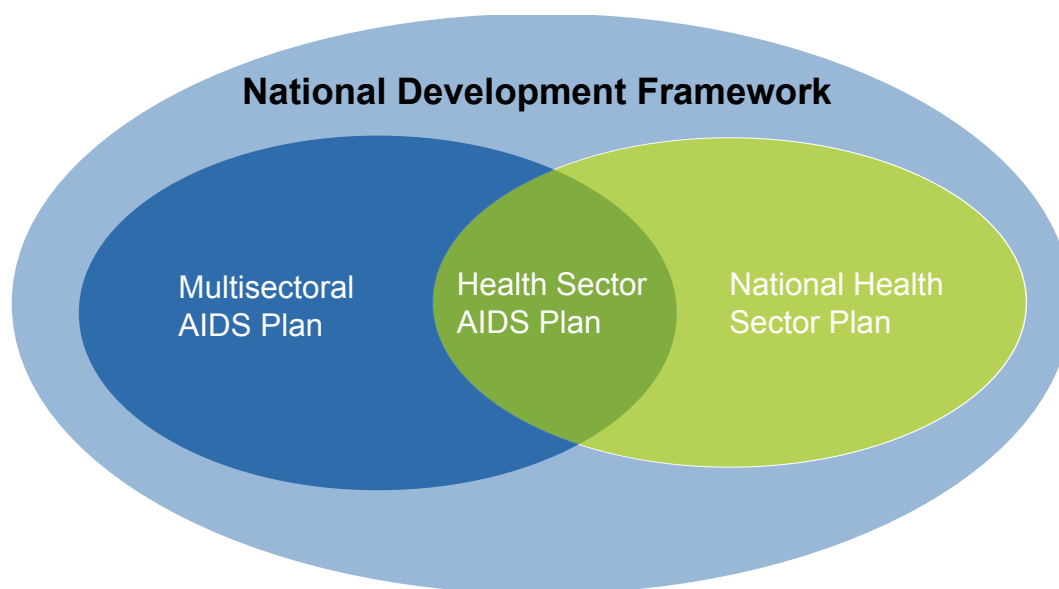
- A National Development Framework (which often exists as a Poverty Reduction Strategy) provides a national macroeconomic framework that guides overall social and economic development activity. It outlines measures aimed at enhancing economic growth, reducing inequality and improving quality of life. Health outcomes are usually clearly recognized within the National Development Framework (or Plan) and reflected in the accompanying Medium-Term Expenditure Frameworks (MTEF). HIV/AIDS needs to be clearly articulated here in terms of the expected HIV/AIDS outcomes and how they are linked to the larger development issues and the wider macroeconomic policy debate.

- National health priorities are normally described in a National Health Sector Plan, which outlines the direction and provides the goal and objectives for the entire country during a planning cycle. Coordinated by the Ministry of Health, a National Heath Sector Plan provides a national framework for prioritizing interventions to strengthen health care systems to deliver quality health care to populations. Strategies and actions to respond to HIV/AIDS within the health sector should be included in it.

- In most countries, the Multisectoral National HIV/AIDS Framework or National Multisectoral AIDS Strategic Plan is coordinated by the National AIDS Commission or its equivalent. The multisectoral response is guided by the principle of the 'Three Ones', which recognizes one coordinating authority, draws from one planning framework and follows one system for monitoring and evaluating the response. A strong national response to HIV/AIDS evolves when each concerned sector brings to bear the full extent of its unique contribution and comparative advantage and does so in a manner that ensures effective coordination and alignment with other sectors. As the health sector is usually the largest element of such a multisectoral strategic plan, it should take the lead in shaping its own contribution to the multisectoral national HIV/AIDS framework in coordination and alignment with the other sectors.

> Efforts to deliver HIV/AIDS interventions must be harmonized with efforts to strengthen health systems to achieve both HIV and other health goals.

1.3 Strategic planning for the health sector response to HIV/AIDS

According to the International Health Partnership and related initiatives (IHP+) in which WHO is an active member, the components of a good national strategic plan include:

- A situation analysis: epidemiological status, response analysis, health system readiness, stakeholder identification and resource analysis;

- Clearly defined goals, objectives and interventions based on the situation analysis;

- Mechanisms through which national plans and strategies have been developed;

- Financing, auditing and procurement arrangements;

- Implementation and management arrangements; and

- A framework for monitoring and evaluation of results.

A strategic plan should ensure coherence and follow a logical approach, from defining the problem (through a situation and response analysis), to defining priorities (in terms of goals, objectives, interventions), to costing and measuring results (through indicators). As illustrated in Figure 2 below, it is vital that all these elements hold together with strategic coherence, as they are all related to each other.

Fig. 2 – Components of a National Strategic Plan

Strategic planning

Situation analysis	Strategic framework	M&E framework	Financial framework	Operational framework
(evidence, context, response)	(goal, objectives, targets interventions)	(indicators, methods, information, systems)	(costs, financing, gaps, flows, tracking)	(implementation plans and budgets)

Linked in strategic coherence
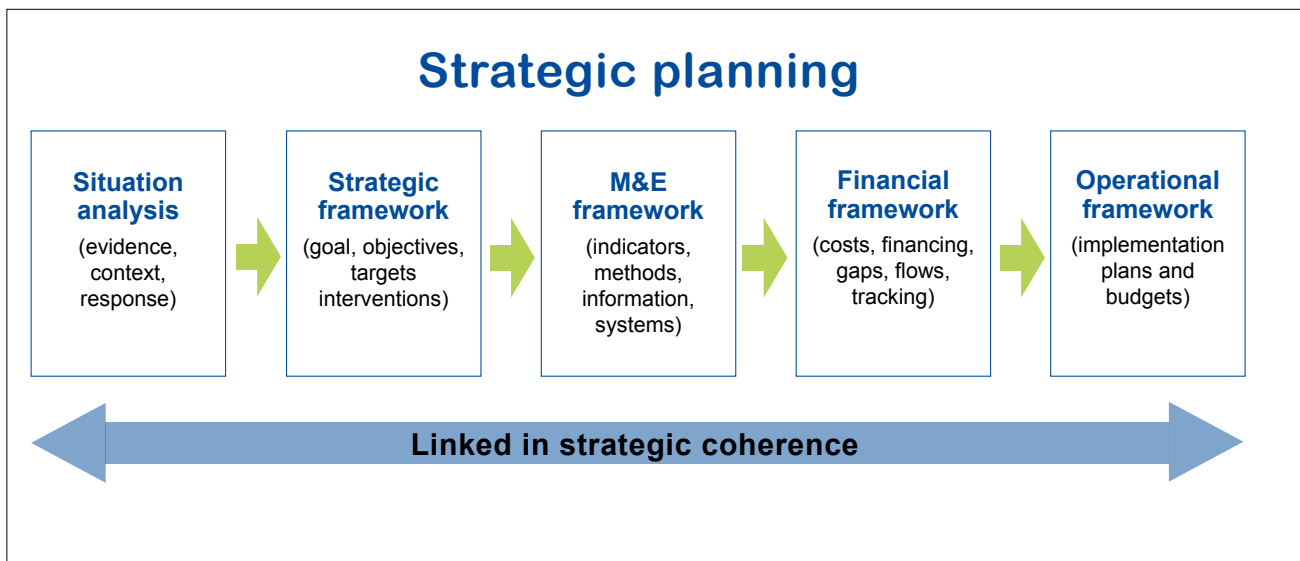
A results-based strategic plan should clearly define **goals**, **objectives** and **interventions**.

Goals indicate what should be the long-term **impact** of the health sector response to HIV/AIDS. They must state clearly what needs to change by the end of the five-year strategic cycle and by what order of magnitude. The goal(s) need to include a target element.

Objectives directly contribute to achieving a goal. Objectives should indicate the specific **outcomes** required during a certain period of time and the target that this can be measured against.

Interventions are packages of activities that will help achieve the objectives. Interventions produce a set of **outputs** which contribute to the desired outcomes and ultimately the impact. Interventions need to be:

- feasible;
- locally appropriate;
- equitable;
- based on evidence and good practice;
- taking into consideration cost effectiveness and sustainability (both financial and programmatic);
- avoiding possible negative effects on other health outcomes; and
- synergistic with other health interventions.

1.4 Tailoring priority interventions to the context of the epidemic

While priority interventions should be appropriate to the type of epidemic (see Box 1 below), planning for all epidemics should:

- place top priority on accelerating prevention;
- select prevention interventions that match current patterns of HIV transmission;
- focus on geographic areas and populations where HIV is spreading most rapidly;
- select HIV testing and counselling approaches that will optimize entry to prevention, treatment and care;
- plan treatment and care services that are accessible and will be used by those affected or targeted (this requires designing/configuring services that are acceptable to injecting drug users, sex workers and men who have sex with men);
- select the most effective service delivery approaches for implementing the interventions – through households, communities, health centres, hospitals or outreach to most-at-risk populations; and
- ensure HIV testing, counselling, prevention, and treatment and care services include outreach services to most-at-risk populations.

Box 1. Typology of HIV epidemics according to WHO

Low-level HIV epidemics

HIV may have existed for many years but has never spread to substantial levels in any subpopulation. Recorded infection is largely confined to individuals with higher-risk behaviour, e.g. sex workers, drug injectors, men who have sex with other men. Numerical proxy: HIV prevalence has not consistently exceeded 5% in any defined sub-population.

Concentrated HIV epidemics

HIV has spread rapidly in a defined sub-population but is not well established in the general population. This epidemic state suggests active networks of risk within the subpopulation. The future course of the epidemic is determined by the frequency and nature of the links between highly infected subpopulations and the general population. Numerical proxy: HIV prevalence is consistently over 5% in at least one defined subpopulation but is below 1% in pregnant women in urban areas.

Generalized HIV epidemics

In generalized epidemics, HIV is firmly established in the general population. Although subpopulations at high risk may contribute disproportionately to the spread of HIV, sexual networking in the general population is sufficient to sustain an epidemic independent of subpopulations at higher risk of infection. Numerical proxy: HIV prevalence consistently over 1% in pregnant women.

Within generalized epidemics, there is a large range of HIV prevalence, even in countries with HIV prevalence greater than 15%. The guidance provided for generalized epidemics in this document also applies to these epidemics.

1.5 Planning for low-level HIV epidemics

In low-prevalence settings, it is particularly important to focus on implementing effective prevention programmes so that HIV incidence remains low. Serological and behavioural surveillance of HIV and sexually transmitted infections (STI) is particularly important. It provides the data on which to base estimates of size and geographical location of populations living with HIV or those most at risk of infection. It also provides data on the behaviours that may have resulted in HIV infection or could result in new infection. This information should guide planning, with priority given to populations and geographical locations where people are most at risk of transmitting infection or becoming newly infected. Priority should also be given to interventions targeting particular behaviours.

In low-level epidemics, STIs are sensitive markers of high-risk sexual activity. Monitoring STI rates can help identify HIV vulnerability and also help evaluate the success of prevention programmes. In addition, early diagnosis and treatment of STIs will decrease their related morbidity and the likelihood of HIV transmission. STI services are a critical entry point for HIV prevention in low-level epidemics.

Targeting most-at-risk populations with HIV/AIDS programmes and services is an efficient way of responding to HIV in all epidemic situations, but it should be the key strategy for scaling up HIV prevention, treatment and care in low-level epidemics.

Targeted interventions are aimed at offering services to specific populations within the general population. They are also aimed at geographical locations where those specific populations are most likely to be found so that they can be given the information, skills and tools (e.g. condoms, water-based lubricants, safe injection equipment) that will minimize the risk of HIV transmission and access to HIV treatment and care services. The best HIV/AIDS programmes also improve sexual and reproductive health and well-being among these populations and address general health concerns by reducing the harm associated with practices such as female and male sex work and injecting drug use.

Successful targeted interventions do not stigmatize populations at risk; they respect their rights and endeavour to protect them. In low-level epidemics, targeted interventions optimize the use of resources by focusing on the people and places where risk is greatest and where access to HIV prevention, treatment and care is most needed.

Even in low-level epidemics, interventions to prevent HIV transmission in health facilities must ensure safe blood transfusion and provide infection control measures, standard precautions and safe injections. Client-initiated testing and counselling (CITC) should be available, and provider-initiated testing and counselling (PITC) may also be considered in STI and TB services, services for most-at-risk populations, and antenatal, childbirth and postpartum health. Essential interventions for HIV prevention and care, as well as antiretroviral therapy, should be provided for people living with HIV. However, some of these interventions may be offered in fewer facilities, depending on health system capacity and resources.

In low-level epidemics, the scale-up of HIV treatment and care services is more likely to be concentrated at provincial or regional hospitals, with some private service providers increasing access to these services. Developing special treatment and care facilities to cater to the particular needs of extremely marginalized high-risk groups – such as injecting drug users – may also be appropriate. In any case, when these services are provided in only a few facilities, a well performing system of referrals is critical. It is also important to create services that promote patient self-management, home- and community-based care, and mutual support by networks of people living with HIV.

Clinical teams that support self-management and involve expert patients on those teams are basic tenets of good chronic care in any epidemic setting. However, some community-based services may not be resource-efficient in low-prevalence settings. Components of chronic HIV care may be decentralized to health service providers over time, given the well known advantages of an integrated primary care approach close to home for adherence, community support and quality of life.

> **Box 2 – Key points to consider when planning services for low-level epidemics**
>
> In low-level epidemics:
>
> - recognize that affected individuals are often from marginalized populations and subject to stigma and discrimination;
> - plan service delivery to match the distribution of people most at risk of infection and people living with HIV;
> - define an optimal package of services and referral linkages to reach these groups; and
> - emphasize prevention so HIV incidence remains low.

1.6 Planning for concentrated HIV epidemics

Targeted interventions are the key strategy for scaling up HIV prevention, treatment and care in concentrated epidemic settings. Targeted interventions:

- are for people within the community who are most at risk of HIV infection;
- are located in settings where risk behaviours and HIV transmission are concentrated;
- are adapted to be culturally and socially appropriate for the target population;
- effectively use the language and culture of the people being targeted;
- focus on where limited resources can be used to best advantage;
- acknowledge that barriers to accessing health care services exist for some populations within communities;
- recognize that people who are at risk of HIV transmission are often marginalized from the broader community, and are experiencing stigma and discrimination.

In many countries experiencing concentrated epidemics, a continuum-of-care network revolving around a range of linked services is the preferred model for implementing HIV treatment and care. CITC serves as an entry point, supplemented by PITC and entry from TB clinics, general health services, NGOs and outreach to most-at-risk populations. Private practitioners clearly linked with HIV care services often follow up all those identified as being HIV positive.

It is important to remember that most-at-risk populations, such as sex workers and men who have sex with men, are not homogeneous. For example, there are many different types of sex workers with varying levels of HIV risk and access to health services. The same can be said of other most-at-risk populations. Some men who have sex with men, for example, adopt a cultural identity associated with this behaviour and join community groups and frequent venues where other men who have sex with men congregate. Others may not identify or socialize with this community and may have female partners on a long- or short-term basis. Having a detailed understanding of most-at-risk populations, especially those hardest to reach, is critical for programme planning purposes and assists in the prioritizing of interventions for service delivery.

Targeted interventions take many forms; selecting the right intervention depends on the degree of marginalization of the group being targeted, the availability of other services and the capacity of the focus population to participate in or lead the design and implementation of services. In many concentrated HIV epidemics, the populations that require priority interventions are sex workers, men who have sex with men, transgender people, drug users (particularly injecting drug users) and prisoners. Sometimes it is necessary to target other populations (such as minority, ethnic and displaced, mobile or migrant populations) that do not have the same access to health information and services as the general population.

Selecting the most appropriate service delivery models for promoting and distributing prevention commodities and securing entry into care and treatment involves ensuring that condoms, sterile needles and syringes are available through outreach workers and outlets in venues accessible and acceptable to the target population. The design of HIV messaging also needs to be relevant to a specific population, using language that they understand and that best suits their educational needs. Several suitable service delivery models exist.

Outreach: This approach involves peers or people who are trusted by the target population (or are making efforts to build this trust). Outreach workers make direct contact with members of the community, providing them with information and tools to protect themselves, as well as help in accessing services. Examples of outreach include:

- training sex workers or community health workers to visit brothels, provide information and condoms, and link sex workers with STI and HIV services;

- training men who have sex with men to go to bars and sex venues to talk to other men about HIV, distribute condoms and help them access STI and HIV services;

- training current and ex-drug users to go into drug-user environments to distribute clean needles and syringes, provide information, assist in overdose prevention and abscess care, and help people access drug dependence treatment and HIV services;

- arranging mobile vans to visit sex workers, men who have sex with men or injecting drug users at night to provide information, prevention commodities, clinical services and referrals.

Support for self-help and community groups: This involves facilitating self-help or community groups from target populations and providing them with resources and facilities where they can work together to address HIV and related issues in their communities. Building the capacity of target groups to create partnerships in prevention and care services has been successfully used in many settings.

Establish local clinics and link these to other services: This involves providing clinical services for particular populations – such as sex workers, men who have sex men and clients of sex workers – in their own neighbourhoods, with links to other services. It may also include introducing HIV services within already existing health, social or welfare services targeting these populations (e.g. conducting regular clinics in drop-in centres for sex workers).

Box 3 – Key points to consider when planning services for concentrated epidemics

In concentrated epidemics:

- recognize that effective targeted interventions require information on most-at-risk populations and their access to services;

- target interventions to most-at-risk populations , usually sex workers, transgender people, injecting drug users and men who have sex with men;

- prioritize special interventions for injecting drug use wherever the practice occurs;

- ensure adequate coverage of prevention interventions for identified most-at-risk populations; and use outreach by peers or people trusted by the target population, self-help and community groups, and local clinics able to provide friendly services for particular populations.

1.7 Planning for generalized HIV epidemics

Prevention efforts have led to declines in levels of HIV in some countries with generalized epidemics, but this has yet to take place in many others. Furthermore, in many countries with generalized epidemics, it disproportionately affects women.

Comprehensive prevention interventions, informed by evidence, could have broader success. Making better use of opportunities to integrate HIV prevention within health services is especially critical to this success. Providing PITC, condoms and counselling for women who take their children for immunization and other child care services is one example. The female condom remains an under-exploited option, as does safer sex counselling, which should occur after HIV testing but also on many other occasions when health workers and patients interact. Safer sex counselling should reinforce the message that concurrent sexual partnership is a very high risk behaviour.

The health sector can also play an important role in promoting progressive delay of the age of coital debut for young people and in advocating for the control of alcohol use, since the latter is increasingly recognized as a significant contributor to risk-taking behaviour. Hazardous or harmful patterns of alcohol use are associated with unsafe sex, high partner numbers and condom accidents. Addressing this problem is now recognized as an essential part of HIV prevention.

In generalized epidemics with high HIV prevalence, the large numbers of people living with HIV mean that providing efficient and decentralized services is a key strategy in moving towards universal access. This requires a public health approach to scaling up services with emphasis on achieving broader coverage with key interventions; simple, standardized regimens and formularies; algorithmic clinical decision-making; effective supervision and patient monitoring; and integrated delivery of primary health care through health centres and in the community, within a district health network.

Increasing evidence underscores the greater complexity and cost of caring for patients presenting with advanced HIV disease. Increasing the number of people who are tested and – for those who test positive – regularly following up with pre-antiretroviral care can prevent illness and ensure the timely initiation of antiretroviral therapy.

Good survival rates have been reported for patients on antiretroviral therapy, and the numbers of patients in chronic HIV care have increased steadily. This has led to the development of 'mega-clinics' in some hospitals. Decentralizing chronic HIV care to the health centre and community level and integrating it with other priority health sector interventions are challenges that must be met if universal access is to be achieved in an effective and cost-efficient way. People living with HIV require multiple interventions for TB, substance use, pregnancy, child health and so on. In many countries, these interventions are delivered through a number of different facilities with specialized personnel. This is an inefficient use of resources and an increased burden on patients. Integration of these services in health facilities, together with standardized protocols and training for health workers, enables more effective co-management of patients and promotes family-based care that addresses the needs of adults, adolescents and children.

To support scale-up and to avoid inefficient use of resources and increased burden on health workers and patients, coherent and integrated packages of essential interventions appropriate for each level of the health system are necessary. These should be developed and delivered through a shared programme of work. Operational collaboration is important, both internationally and between national HIV/AIDS programmes and those focusing on TB, maternal and newborn services, child health, STIs, mental health and oral health; programmes organized around specific health cadres (such as nursing and midwifery); and those with a cross-cutting mandate such as human resources for health, health system strengthening, palliative care, chronic care, essential drugs and essential health technologies.

Successful programming requires negotiation of a shared programme of HIV/AIDS work at the national level within a clear health sector strategy. Cosponsorship of integrated implementation at facility and district level with co-supervision by several programmes (usually HIV, TB and maternal and child health) are essential to support integrated services. Cooperation within the district management team and at point of care is often substantially better (and easier) than at the national or international level.

Meanwhile, the kind of integration described above is already happening as those responsible for HIV and TB services recognize the advantages of working together on prevention, treatment and care for both diseases.

Most HIV interventions can be decentralized to health centres by using simplified, operational guidelines. Nurse-led clinical teams in health centres (and in district hospital outpatient clinics) are able to deliver most of the interventions provided they have backup from district hospital clinicians and periodic clinical mentoring. Nurse-led teams can initiate and monitor antiretroviral therapy, manage uncomplicated opportunistic infections and provide primary mental health and neurological care.

Managing the broad range of opportunistic infections and other comorbidities experienced by people living with HIV requires an integrated and coordinated response from a wide range of health services. Clinical teams at the health centre level are able to manage uncomplicated opportunistic infections but need to be able to refer patients with severe or complicated conditions to a district hospital clinician for diagnosis and management. Cotrimoxazole prophylaxis should be started promptly for all eligible patients, in all clinical services.

Community mobilization and involvement of people living with HIV

Community mobilization is critical for scaling up HIV prevention, testing and counselling, and for preparing communities to prevent and support adherence to drug regimens. Civil society organizations and networks, including those involving people living with HIV and people most at risk of infection, complement formal health services. They provide preventive information and supplies, create demand for formal health services, ensure that the services are acceptable and of good quality, prepare communities for treatment by providing relevant education and information, support adherence to drug regimens and provide various care and support services, including palliative care. Moving towards universal access requires reinforcing support for civil society organizations and networks, as well as strengthening the links between them and formal health services. Strong civil society organizations and networks are especially important given the crisis in human resources for health that many countries are experiencing.

Most-at-risk groups in generalized epidemics

Even though an epidemic may be generalized, it is important to identify and reach marginalized or neglected populations who are at higher risk of HIV infection or who have poor access to clinical and community-based services. These often-neglected groups include sex workers, men who have sex with men, injecting drug users and prisoners. Unprotected male-to-male sex is increasingly recognized as a major contributor to HIV infection, and injecting drug use is increasing in some cities and ports in Africa.

HIV-negative people in sero-discordant relationships may be numerically the single largest group at risk in countries with generalized epidemics. Special efforts are required to identify and support them, both through facility- and community-based interventions. These interventions include partner and couples testing and counselling, and risk reduction counselling and support. Adolescent girls and young women are also at disproportionately high risk in countries with generalized epidemics. They require special attention through youth-friendly services and active support for interventions that may be delivered predominantly in other sectors, such as efforts to address transactional sex, intergenerational sex and rape.

Where to implement: health facility or community?

With high HIV prevalence and large numbers of people living with HIV, community- and home-based service delivery become increasingly important. Trained and paid community health workers, home-based caregivers, and a treatment supporter for each patient on antiretroviral therapy and TB treatment can play a crucial role in assisting patients in care (e.g. through adherence support and home-based refills) and in promoting methods to prevent HIV transmission. Community-based testing—based on outreach from an index case receiving facility-based care or on large scale 'know your status' campaigns—are important both for prevention (e.g. to identify discordant couples and support safer sex and risk reduction in both HIV-positive and HIV-negative persons) and to ensure early entry into HIV care and treatment.

Box 4 – Key points to consider when planning services for generalized epidemics

In generalized epidemics:

- select service delivery approaches able to address the high risk of infection, many new infections, multiple affected groups and large numbers of people requiring treatment and care;
- decentralize HIV services to health centres and into the community;
- integrate HIV prevention, treatment and care services within primary care;
- emphasize prevention for people living with HIV; and
- recommend PITC to all patients seeking care and to pregnant or breast-feeding women.

Key resources:

1. National AIDS programme management: A set of training modules

http://www.searo.who.int/en/Section10/Section18/Section356_13495.htm

Preliminary pages: http://www.searo.who.int/LinkFiles/Publications_Preliminar__pages.pdf

Introduction: http://www.searo.who.int/LinkFiles/Publications_Introduction.pdf

Module 1 – Situation analysis: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_1.pdf

Module 2 – Policy and planning: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_2.pdf

Module 3 – Determining programme priorities and approaches: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_3.pdf

Module 4 – Targeted HIV prevention and care interventions: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_4.pdf

Module 5 – Setting coverage targets and choosing key outcome indicators: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_5.pdf

Module 6 – Implementation of HIV Prevention, Care and Treatment Strategies:

Module 6.1 – Minimizing sexual transmission of HIV and other STIs: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.1.pdf

Module 6.2 – HIV prevention and care among drug users: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.2.pdf

Module 6.3 – HIV counseling and testing: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.3.pdf

Module 6.4 – The continuum of care for people living with HIV/AIDS and access to antiretroviral therapy: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.4.pdf

Module 6.5 – Prevention of mother-to-child transmission: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.5.pdf

Module 6.6 – Prevention of HIV transmission through blood: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.6.pdf

Module 7 – Managing the AIDS programme: http://www.searo.who.int/LinkFiles/Publications_NAP_Module7.pdf

Module 8 – Management systems for the AIDS programme: http://www.searo.who.int/LinkFiles/Publications_NAP_Module8.pdf

Module 9 – Strategic information: http://www.searo.who.int/LinkFiles/Publications_NAP_Module9.pdf

2. IMAI general principles of good chronic care

English: http://www.who.int/hiv/pub/imai/generalprinciples082004.pdf

French: http://www.who.int/hiv/pub/imai/imai_general_2008_fr.pdf

Tables 7, 8 and 9 in the annex outline priority health sector interventions appropriate for low-level, concentrated and generalized HIV epidemics, respectively.

Chapter 2: Priority interventions for HIV/AIDS prevention, treatment and care in the health sector

2.1 Background

To achieve a comprehensive response to HIV/AIDS, the health sector has to take responsibility for delivering interventions to prevent new HIV infections and to improve quality of life and avert premature death in adults and children living with HIV. When implemented together at sufficient scale and intensity, the priority interventions outlined in this chapter constitute an effective and equitable health sector response to HIV/AIDS.

Based on the best available evidence, these priority interventions are recommended by WHO. They include a wide range of interventions for providing knowledge of HIV status, preventing transmission of HIV and other sexually transmitted infections, and providing treatment and care for HIV/AIDS. Section 2.2 discusses interventions under the first strategy for action: enabling people to know their HIV status. Section 2.3 discusses interventions under the second strategy for action: maximizing the health sector's contribution to HIV prevention. Section 2.4 discusses interventions under the third strategy for action: accelerating the scale-up of HIV/AIDS treatment and care.

The effectiveness of the HIV response depends on the scale of implementation of the priority interventions. It is also contingent on the quality and characteristics of service provision, the broad cultural and social context, and the level of community commitment to and participation in efforts to counter stigma and discrimination.

HIV-related stigma and discrimination are often prevalent within health services and are critical obstacles to provision and uptake of health sector interventions. Stigma and discrimination – often pervasive at all levels of society – sustain an environment where it is difficult for health services to attract the people who most need the interventions. HIV-related stigma and discrimination can be reduced through strong leadership and concrete measures in national strategic planning and programme design and implementation. Such measures can help countries reach key targets for universal access and can also promote and protect human rights and foster respect for people living with and affected by HIV/AIDS.

Other factors that can enhance the effectiveness of the HIV response include a coordinated and participatory national strategic plan for HIV; a level of commitment to an HIV response consistent with human rights and fundamental freedoms; and a level of commitment to informing and consulting with the community during all phases of policy and programme design and implementation. Collaboration with the community should include promoting a supportive and enabling environment for women; addressing underlying prejudices and inequalities; and including women's involvement in the design of social and health services that work for them.

For each priority intervention, there is a brief description and, in some cases, a discussion of the actions required to support its implementation. There is also a summary of relevant recommendations from current technical guidelines and references to the full guidelines and other Key resources. The Key resources provide a more comprehensive list of current tools, guidelines and resources to support implementation of the priority interventions.

2.2 Enabling people to know their HIV status

Increasing the numbers of people who know their HIV status – especially among most-at-risk populations – through HIV testing and counselling is key to expanding access to HIV prevention, treatment and care.

WHO guidance on HIV testing and counselling aims to achieve synergies between medical ethics, human rights and clinical and public health objectives. The fundamental principle of HIV testing is that it must be accompanied by basic pre-test information to enable the client to make an informed and voluntary decision to be tested. The 'Three Cs' – informed Consent, Counselling and Confidentiality—should always be maintained. Additional tools are being developed to address the 'Three Cs' as they apply to children and adolescents.

The UNAIDS/WHO policy on HIV testing and counselling defines two main categories:

   i.   client-initiated HIV testing and counselling (CITC);
   ii.   provider-initiated HIV testing and counselling (PITC).

For both categories the following applies: it is crucial that those who will be tested receive pre-test counselling so they can provide informed consent. After testing, those found to be HIV-negative should learn how to remain free from HIV infection. Those found to be HIV-positive should learn how to prevent transmission to others and maintain their own good health. Additionally, they should receive clinical assessment and referral to appropriate services.

Pre-test information can be provided in the form of individual counselling sessions or in group health information talks and should provide information on: the clinical and prevention benefits of testing; the potential risks, including stigma and discrimination, abandonment or violence; the measures that will be taken to guarantee confidentiality of test results; services that are available in the case of either an HIV-negative or an HIV-positive test result; and the fact that individuals have the right to decline the test.

Post-test counselling for HIV-negative persons should provide basic information that includes an explanation of the test result, the window period for the appearance of HIV-antibodies and a recommendation to re-test, if appropriate. It should also include advice on methods to prevent sexual transmission, and provision of male or female condoms and their use. In the case of injecting drug users, it might also include provision or advice on where to obtain substitution therapy and safe injection equipment and how to use it.

Post-test counselling for HIV-positive persons should provide psychosocial support to cope with the emotional impact of the test result, referral to treatment and care services, disclosure to sexual and injecting partners, basic advice on methods to prevent HIV transmission, provision of male and female condoms and guidance on their use, and other measures outlined in Section 2.3.1.5 for people with HIV/AIDS.

WHO and UNAIDS recommend 'beneficial disclosure' where HIV-positive individuals themselves notify sexual or drug-injecting partners of their HIV status, where appropriate. Informing partners is an effective means of reducing HIV transmission. It also facilitates prevention, care, support and adherence to treatment, and promotes greater openness about HIV within communities.

3. UNAIDS/WHO policy statement on HIV testing
http://www.who.int/hiv/pub/vct/en/hivtestingpolicy04.pdf

4. Opening up the HIV/AIDS epidemic: Guidance on encouraging beneficial disclosure, ethical partner counselling & appropriate use of HIV case-reporting
English: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_en.pdf
French: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_fr.pdf

5. HIV counselling and testing e-library
http://www.who.int/hiv/topics/vct/elibrary/en/index.html

6. Guidelines for the implementation of reliable and efficient diagnostic HIV testing,
Region of the Americas
English: http://www.paho.org/English/AD/FCH/AI/LAB_GUIDE_ENG.PDF
Spanish: http://www.paho.org/Spanish/AD/FCH/AI/LAB_GUIDE_SPAN.PDF

2.2.1 Client-initiated HIV testing and counselling

Client-initiated testing and counselling (CITC), also called voluntary counselling and testing (VCT), occurs when people come to a service to find out their HIV status.

CITC emphasizes individual risk assessment and counselling that addresses the implications of taking an HIV test and the strategies for reducing risk. Counselling covers prevention both prior to and after receiving test results and, if results are positive, referral to care, treatment and support services.

Summary of recommendations

WHO and UNAIDS recommend that known and innovative approaches be used to scale up and expand access to CITC. These approaches should optimize convenience for clients, decentralize services and provide testing and counselling in a wide variety of settings – including health facilities, community-based locations and work places – and through outreach services that may be stationary or mobile. They should offer services outside normal working hours and remove any financial barriers to testing and related services.

In the case of low-level or concentrated epidemics, the programmatic focus should be on increasing access and uptake among most-at-risk populations. In the case of generalized epidemics, CITC should be made widely available using a variety of approaches.

Key resources:

7. WHO HIV testing and counselling (TC) toolkit
http://www.who.int/hiv/topics/vct/toolkit/en/index.html

8. International Organization for Migration guide for counsellors: IOM HIV counselling in the context of migration health assessment
http://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/published_docs/brochures_and_
info_sheets/HIV%20counselors%20GUIDE%20FINAL_Apr2006%20(4).pdf

2.2.2 Provider-initiated HIV testing and counselling

Provider-initiated testing and counselling (PITC) occurs when HIV testing and counselling is recommended by health providers as a standard part of medical care to individuals attending health facilities. The purpose of PITC is to enable specific clinical decisions to be made and/ or specific medical services to be offered that would not be possible without knowledge of the person's HIV status.

PITC includes testing and counselling for adults, children and infants when HIV is suspected; the routine recommendation of testing for all patients or specified groups of patients accessing health facilities; and the recommendation of testing for family members and partners of HIV-positive people.

Summary of recommendations

WHO and UNAIDS recommend that PITC start with basic pre-test information provided either on an individual or group basis. PITC should require informed consent, with the client given all necessary information to make a rational decision and given the opportunity to decline testing. This opportunity should be given in private, in the presence of a health provider. Post-test counselling should be tailored to the test result and, in the case of a positive result, should be more extensive. As with all HIV testing, confidentiality should be guaranteed and health providers should take measures to ensure that this guarantee is upheld.

The UNAIDS/WHO guidance on PITC specifies situations in which health providers should recommend testing and counselling based on the characteristics of the epidemic in a given setting.

In all HIV epidemics, HIV testing and counselling is recommended for all patients whose clinical presentation might result from underlying HIV infection. Testing and counselling is also recommended for all HIV-exposed children and prior to HIV post-exposure prophylaxis.

In low-level or concentrated epidemics, PITC is not recommended for all patients attending health facilities but should be considered in a range of specific situations (where patients have come for STI services; where services are provided to most-at-risk populations; where patients have come for antenatal, childbirth and postpartum services, or tuberculosis (TB) and hepatitis-related services).

In generalized epidemics, PITC is recommended for all patients attending health facilities, regardless of whether they show signs or symptoms of underlying HIV infection or their reason for coming to a health facility, including for men prior to circumcision.

HIV testing and counselling as early as possible during pregnancy enables pregnant women to access interventions for reducing HIV transmission to their infants and to benefit from prevention, treatment and care, and is therefore recommended.

9. Guidance on provider-initiated HIV testing and counselling in health facilities
English: http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789244595565_rus.pdf

10. WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related disease in adults and children
http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf

11. HIV testing and counselling in TB clinical settings tools
http://www.cdc.gov/globalaids/resources.html
Agenda: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Agenda_12.1.06.pdf
Overview: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20An%20Overview_12.1.06.pdf
Module 1: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%201_12.6.06.pdf
Module 2: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%202_12.7.06.pdf
Module 3: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%203_12.12.06.pdf
Module 4: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%204_12.13.06.pdf
Module 5: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%205_12.6.06.pdf
Module 6: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%206%20Demo_12.1.06.pdf

12. IMAI PITC core training course and PITC counselling training video (free registration required to access the site)
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

2.2.2.1 Family and partner HIV testing and counselling

It is important that people diagnosed HIV-positive be encouraged to disclose their HIV status to those who need to know (e.g. sexual and needle-sharing partners) and to propose HIV testing and counselling to their sexual or needle-sharing partners. It is equally important that they be supported in these endeavours. Couple testing and counselling approachs can faciliate disclosure. The testing and counselling of sexual and needle-sharing partners can be done either in the health facility – for example, following counselling of a couple – or through referral to another facility that welcomes client-initiated HIV testing and counselling.

Since parents generally accompany their children during visits to child health services, opportunities arise to recommend HIV testing and counselling for both parents and siblings of HIV-infected children. This should be done especially for mothers and fathers of HIV-infected children, and for women who were not tested while using prevention of mother-to-child transmission (PMTCT) services.

HIV testing and counselling should be recommended for sexual partners, drug-injecting partners, children and other immediate family members of all people with HIV, in cases where horizontal or vertical transmission may have occurred. Identifying family members, sexual partners and drug-injecting partners is often dependent on providing active support for beneficial disclosure, where HIV-positive individuals can notify their partners and encourage them to seek HIV testing and counselling. Within a family-centred or couple-centred approach to HIV testing, once a family member is identified as having HIV, health workers should encourage and actively facilitate HIV testing for other family members, where possible and appropriate, through couples or family testing and counselling services.

Key resources:

9. Guidance on provider-initiated HIV testing and counselling in health facilities
English: http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789244595565_rus.pdf

4. Opening up the HIV/AIDS epidemic: Guidance on encouraging beneficial disclosure, ethical partner counselling & appropriate use of HIV case-reporting
English: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_en.pdf
French: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_fr.pdf

2.2.2.2 Infant and children HIV testing and counselling

WHO and UNAIDS provider-initiated testing and counselling (PITC) guidelines and antiretroviral therapy (ART) guidelines already provide general guidance on when health care providers should recommend HIV testing and counselling for infants and children. The HIV exposure status of infants should be established at their first contact with the health system, ideally before six weeks of age. Maternal, newborn and child health clinics, where a child receives her or his first set of vaccinations, provide important opportunities for ensuring that the mother's HIV status is known and that the infant's HIV exposure is determined. Recently published data confirming the dramatic survival benefits for infants started on ART as early as possible after the diagnosis of HIV prompted a review of the WHO paediatric treatment guidelines, which now recommend immediate initiation of ART in HIV-infected infants and children under 24 months. In order to identify those infants who will need immediate ART, early confirmation of HIV infection is required and specific and more detailed recommendations on diagnosis of HIV infection in infants and children were reviewed by WHO in 2009 to establish further guidance on HIV testing and counselling for infants and children.

Summary of recommendations

PITC should be recommended for **all infants and children** when HIV is suspected or HIV exposure is recognized. This includes testing for all infants and children suspected of having TB and those with malnutrition who do not respond to appropriate nutritional therapy.

All **HIV-exposed infants** should have viral testing at or around four to six weeks of age, or at the earliest opportunity for those seen in health services after six weeks. If HIV viral testing is not available, presumptive clinical diagnosis in accordance with nationally defined algorithms will be required. HIV infection should be confirmed through HIV antibody testing at or around 18 months as part of clinical management.

WHO recommends that maternal or infant HIV antibody testing and counselling be performed for infants of unknown HIV exposure status in all settings when local or national antenatal HIV prevalence is greater than 5% (or locally determined thresholds). In such settings, infant testing can initially be done using HIV antibody testing, and those with detectable HIV antibody should then go on to have viral testing.

HIV testing and counselling should be recommended for **all immediate family members** of infants and children known to be exposed to or infected with HIV.

In **children older than 18 months**, HIV infection can be diagnosed based on HIV antibody testing, as in adults.

In **infants and children younger than 18 months**, viral tests (HIV DNA, HIV RNA or Us p24 antigen) are recommended to diagnose HIV infection.

In infants with an initial *positive* viral test result, ART should be started without delay and at the same time a second specimen should be collected to confirm the initial result. Infants with a *negative* initial positive viral test should have HIV serological testing at around 9 months of age. Those who have a reactive (positive) serological test should have a viral test performed to confirm HIV status and initiate ART if positive. Those with a non-reactive (negative) result can be confirmed as HIV-unifected children provided there is no ongoing HIV exposure through breastfeeding. If signs and symptoms suggestive of HIV infection develop, the exposed infant should be re-tested as soon as possible using HIV serological testing and if reactive, with a viral test. If viral testing is not available, HIV serological testing and use of a clinical algorithm for presumptive diagnosis of severe HIV disease is recommended for decision-making on ART initiation.

Key resources:

13. WHO recommendations on the diagnosis of HIV infection in infants and children, July 2010
http://www.who.int/hiv/topics/paediatric/en/index.html

14. Scale up of HIV-related prevention, diagnosis, care and treatment for infants and children: A programming framework
http://www.who.int/hiv/pub/paediatric/paediatric_program_fmwk2008.pdf

" Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/paediatric/infants/en/index.html

2.2.3 Blood donor HIV testing and counselling

It is the responsibility of a blood transfusion service to provide an adequate supply of safe blood and blood products while ensuring the safety of both the recipient and the donor. Globally, more than 81 million units of whole blood are collected annually and at least seven million donors are deferred from blood donation.

In accordance with national protocols and standards, quality-assured screening of all donated blood for transfusion-transmissible infections is a critical HIV prevention strategy. Inadequate screening coverage or poor quality control systems compromise the safety of the blood supply and also hinder the management of blood donors who test HIV-positive. About one million donated units are excluded annually because they contain transfusion-transmissible infections.

The blood transfusion service is often the first point of contact of the general public with the health system. It is uniquely suited to promote healthy living and to advise millions of blood donors on lifestyle issues that affect their health. Counselling of blood donors is necessary before (pre-donation counselling) and after (post-donation counselling) blood is collected and should be preceded by pre-donation information and discussion. Effective pre-donation discussion and counselling are vital activities of the blood transfusion service and are needed to encourage appropriate donor self-deferral.

Post-donation counselling is a necessary part of care for infected donors. It is also important in promoting health maintenance and regular donation by healthy donors. Donors need to be informed of the test result since it has an impact on their health and prevents the use of their donated blood. Blood transfusion services have responsibilities to confirm test results and notify donors of HIV, hepatitis B and C, or any other infections identified, thus giving an opportunity to donors to access treatment and care. These services also have responsibilities to promote low-risk behaviour that reduces the risk of the spread of infection. Effective blood donor counselling can make significant contributions to national initiatives that aim to prevent future transmission of infection and promote healthy lifestyles. It can also lead to family testing and counselling and advice on follow-up and referral.

Summary of recommendations

Develop and implement a national strategy to screen all donated blood for HIV and other transfusion-transmissible infections, using the most appropriate and effective technologies.

Maintain good laboratory practice and quality assurance systems that ensure the use of standard operating procedures in all aspects of blood screening and processing.

Include blood donor deferral, confirmatory testing, notification, counselling and referral in the national blood policy.

Encourage donors and the general public to avoid using blood transfusion services as health assessment services or alternatives to HIV testing and counselling services. Defer individuals who wish to donate blood mainly to have an HIV test.

Conduct effective pre-donation discussion and counselling to encourage appropriate donor self-deferral, and to promote health maintenance and regular donation by HIV-negative donors.

Provide post-donation counselling by staff with HIV counselling skills for donors who require this service.

Refer those donors found infected with HIV, hepatitis or other transfusion-transmissible infections for long-term follow-up and care.

Key resource:

16. WHO Blood transfusion safety (WHO web page)
http://www.who.int/bloodsafety/en/

2.2.4 Laboratory services for HIV diagnosis

Adequate quantities of high-quality laboratory services, skills and commodities are required to meet increased demand for HIV testing. WHO laboratory recommendations for HIV testing cover:

- selection of affordable technologies;
- strategies and algorithms for HIV testing protocols suited to different purposes, e.g. for blood transfusion safety, surveillance or clinical care; and
- quality assurance of testing and quality management of testing and laboratory services.

The WHO recommendations describe various testing strategies appropriate for different HIV testing purposes/objectives, such as HIV diagnosis in clinical care settings, surveillance or ensuring blood transfusion safety. These strategies take into consideration the characteristics of the epidemic and HIV prevalence in the populations to which the people being tested belong. A testing algorithm describes the combination and sequence of specific HIV assays used for a given HIV testing strategy. WHO recommendations for the selection and use of HIV antibody tests are regularly reviewed and updated. In addition, all HIV assays, rapid tests and ELISAs need to be validated at the national reference laboratory.

Summary of recommendations

National HIV testing guidelines should provide specific testing algorithms for each of the testing purposes and specify which test kits should be used and in what order. Selection of test kits and the order in which they are used are critically important for the good performance of the testing algorithm.

Serial testing is generally recommended for HIV testing purposes. For clinical care, if the result of the first HIV antibody test is negative, then the HIV serostatus is reported as negative. However, if the client/patient has been exposed to a very high risk of HIV infection recently, the client/patient will be advised to be tested again after four weeks. If the initial test result is reactive (positive), the specimen is tested with a second test which is based on different antigens and/or platforms. In populations with an HIV prevalence of 5% or more, a second positive test result is considered to indicate a true positive result. In lower prevalence settings where false positive results are more likely to occur, a third test is recommended. WHO and UNAIDS recommend serial testing in most settings because it is a reliable and cost-effective approach, as a second HIV test is required only when the initial test is reactive.

Parallel testing can be considered in special circumstances where time is crucial – for example, at the onset of labour to determine a mother's HIV status and whether or not there is need for antiretroviral prophylaxis to prevent mother-to-child transmission of HIV. Obviously parallell testing is more costly and more labour intensive because all specimens are tested with two different HIV assays. The cost difference is substantial particularly in low-prevalence settings.

Key resource:

    17.   UNAIDS/WHO revised recommendations for the selection and use of HIV antibody tests
    http://www.who.int/docstore/wer/pdf/1997/wer7212.pdf

Quality management systems should be implemented and established at all sites carrying out HIV testing. The systems should include validated standard operating procedures, internal and external quality assessment (e.g. proficiency testing), testing aligned with national algorithms and use of HIV assays approved and validated by the national reference laboratory. Daily quality control samples should be used to monitor the validity of the HIV assays used.

Key resources:

    18.   Guidelines for assuring the accuracy and reliability of HIV rapid testing: Applying a quality system approach
    http://whqlibdoc.who.int/publications/2005/9241593563_eng.pdf

    19.   Overview of HIV rapid test training package
    http://wwwn.cdc.gov/dls/ila/hivtraining/Overview.pdf

    20.   HIV rapid test training: Framework for a systematic roll-out
    http://wwwn.cdc.gov/dls/ila/hivtraining/Framework.pdf

    21.   Revised recommendations for HIV testing of adults, adolescents and pregnant women in health care settings

    http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm?s_cid=

Rapid HIV tests are recommended when there are efforts to expand access to HIV testing and counselling services, particularly within community settings or health facilities where laboratory services are weak or absent. They do not require specialized equipment, allow a quick turn-around period, usually have internal controls and can be operated by trained non-laboratory personnel, including lay service providers.

Key resource:

22. HIV assays: Operational characteristics (Phase 1). Report 14: Simple/rapid tests
http://www.who.int/diagnostics_laboratory/publications/hiv_assays_rep_14.pdf

Enzyme immunoassays (EIA or ELISAs) are very well suited to the needs of blood transfusion services and other high-volume testing services such as regional and reference laboratories and busy inpatient facilities, and for the purposes of surveillance. However, these tests require specialized laboratory equipment and staff. Some EIA and rapid tests allow combined detection of HIV antigen and antibody.

Key resources:

23. HIV assays: Operational characteristics (Phase 1). Report 15: Antigen/Antibody ELISAS
http://www.who.int/diagnostics_laboratory/publications/en/HIV_Report15.pdf

24. Guidelines for appropriate evaluations for HIV testing technologies in Africa
English: http://whqlibdoc.who.int/afro/2002/a82959_eng.pdf
French: http://www.who.int/entity/diagnostics_laboratory/publications/FR_HIVEval_Guide.pdf

National HIV/AIDS programmes should establish laboratories with the capacity to perform viral testing for HIV infection in infants. Assays suitable to use for early infant diagnosis include HIV DNA nucleic acid tests (NATs) such as polymerase chain reaction (PCR) and HIV RNA nucleic acid testing technologies. For HIV testing in infants, blood samples can be collected on filter paper (dried blood spots or DBSs), which offers advantages over other specimen collection methods, including ease of collection and transport. Currently HIV DNA and RNA detection assays can be used to diagnose HIV in infants using specimens collected on DBS. HIV RNA assays demonstrate the presence of HIV for the purposes of diagnosis and allow quantitative measurement of HIV RNA.

2.3 Maximizing the health sector's response to HIV prevention

Primary prevention of HIV transmission requires implementation of a wide range of activities involving the health sector and others.

HIV prevention in the health sector should include interventions aimed at changing individuals' behaviour and addressing cultural norms, social attitudes and behaviour that may increase people's vulnerability to HIV infection. It should also include biomedical interventions such as condoms, clean needles and prevention of mother-to-child transmisson of HIV, which comprises a combination of several interventions. In sub-Saharan African countries with very high HIV prevalence, male circumcision in HIV-negative men may also be a priority intervention, combined with HIV testing and counselling and promotion of condom use.

It is critical to complement HIV prevention for those who are uninfected with prevention for people already living with HIV. A key concern for people living with HIV is to prevent inadvertent HIV transmission. Other concerns include preventing illness, receiving care for opportunistic infections and accessing antiretroviral treatment. Interventions to address their need to engage in sexual activity without fear of transmitting the virus to their sexual partners are highlighted below (see Section 2.3.1.5). Recommendations for preventing illness and other aspects of care and treatment are outlined in Section 2.4.1. Also, since the meaningful involvement of people living with HIV is instrumental in facilitating patient-provider understanding and effective HIV responses, it is described in Section 3.6.1.1.

When prioritizing HIV prevention interventions, emphasis should be placed on those interventions that are likely to have the greatest impact and that can be implemented at sufficient scale to have such impact. Interventions should be tailored to the burden of disease and the nature of the epidemic in specific settings (Section 1.4), as well as to the capacity and level of health services in those settings (See Chapter 3).

Key resources:

25. Practical guidelines for intensifying HIV prevention: Towards universal access
http://data.unaids.org/pub/Manual/2007/20070306_prevention_guidelines_towards_universal_access_en.pdf

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

27. Glion consultation on strengthening the linkages between reproductive health and HIV/AIDS: Family planning and HIV/AIDS in women and children
http://www.who.int/entity/hiv/pub/advocacymaterials/glionconsultationsummary_DF.pdf

28. Linkages between HIV and sexual and reproductive health: Technical documents and advocacy materials (WHO web page)
http://www.who.int/reproductivehealth/publications/linkages/en/index.html

2.3.1 Preventing sexual transmission of HIV

2.3.1.1 Promoting and supporting condom use

The correct and consistent use of male condoms reduces the risk of sexual transmission of HIV by 80% to 90%. Evidence indicates that female condoms may offer similar levels of protection against HIV infection.

Essential HIV prevention interventions include providing free condoms to those most in need and ensuring that condoms are available to all sexually active people. Social marketing combines marketing strategies that increase the demand and supply of condoms at a subsidized cost.

Summary of recommendations

Promotion of male and female condom use should be scaled up as part of comprehensive HIV prevention programmes. These programmes should ensure that quality condoms are accessible to those who need them when they need them and that people have the knowledge and skills to use them correctly and consistently. Male and female condoms should be made available universally, either free or at low cost, and should be promoted in ways that help overcome social and personal obstacles to their use.

For some high risk populations, such as male sex workers and men who have sex with men, providing water-based lubricant is absolutely essential. Female and male condoms should be procured according to the standards and quality assurance procedures established by WHO, the United Nations Population Fund (UNFPA) and UNAIDS. Condoms should be stored and distributed according to international norms and standards.

As part of a multisectoral response, the health sector should provide guidance on sex education, school-based HIV education, mass media communications and education messaging, and other behaviour change interventions designed to increase demand and improve use of condoms by young people and high-risk groups.

Key resources:

29. Position statement on condoms and HIV prevention
http://www.who.int/hiv/pub/prev_care/en/Condom_statement.pdf

30. The male latex condom: Specification and guidelines for condom procurement
http://www.who.int/reproductivehealth/publications/family_planning/9241591277/en/

31. The female condom: A guide for planning and programming
http://whqlibdoc.who.int/hq/2000/WHO_RHR_00.8.pdf
English: http://www.who.int/reproductive-health/publications/RHR_00_8/PDF/female_condom_guide_planning_programming.pdf
French: http://www.who.int/reproductive-health/publications/rhr_00_08_fr/female_condom_guide_planning_programming.fr.pdf

32. Sexual and reproductive health of women living with HIV/AIDS: Guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/924159425X_eng.pdf

2.3.1.2 Detecting and managing sexually transmitted infections

Similar behaviours put people at risk for both sexually transmitted infections (STIs) and HIV. People with STIs may be at higher risk of acquiring or transmitting HIV infection.

Programmes for the prevention and treatment of STIs, especially among populations at higher risk for sexual transmission of HIV, remain important elements of HIV prevention programmes.

Services for STI prevention, case management and partner treatment also contribute to HIV prevention by promoting correct and consistent condom use and supporting health education and behaviour change. A range of models for delivering STI services are required to ensure most-at-risk and vulnerable populations have access to these services. STI services provide opportunities for access to HIV testing and counselling.

Summary of recommendations

WHO recommends that countries expand the provision of good quality STI care into primary health care, sexual and reproductive health services and HIV services. Comprehensive STI services include:

- correct diagnosis by syndrome or laboratory test;
- provision of effective treatment at first encounter;
- reduction in further risk-taking behaviour through age-appropriate education and counselling;
- promotion and provision of condoms, with clear guidance on correct and consistent use;
- notification and treatment of STIs in sexual partners, when applicable;
- screening and treatment for syphilis in pregnant women;
- provision of hepatitis and human papillomavirus (HPV) vaccines to prevent genital and liver cancers; and
- HIV testing and counselling in all settings providing care for STIs.

For primary care settings in low- and middle-income countries, WHO recommends syndromic management of STIs in patients presenting with consistently recognized signs and symptoms. Treatment for each syndrome should be directed against the main organisms responsible for the syndrome within that geographical setting. National guidelines based on identified patterns of infection and disease should be developed and disseminated to all providers of STI care.

Every country should ensure that interventions for STI prevention and care are integrated or closely coordinated with national AIDS programmes.

Key resources:

33. Global strategy for the prevention and control of sexually transmitted infections, 2006 - 2015: Breaking the chain of transmission

English: http://whqlibdoc.who.int/publications/2007/9789241563475_eng.pdf

Arabic: http://whqlibdoc.who.int/publications/2007/9789246563470_ara.pdf

Chinese: http://whqlibdoc.who.int/publications/2007/9789245563471_chi.pdf

Russian: http://whqlibdoc.who.int/publications/2007/9789244563472_rus.pdf

34. Guidelines for the management of sexually transmitted infections

English: http://www.who.int/hiv/pub/sti/en/STIGuidelines2003.pdf

French: http://www.who.int/hiv/pub/sti/STIguidelines2003_fr.pdf

Portuguese: http://www.who.int/entity/hiv/pub/sti/STIguidelines2003_pt.pdf

Spanish: http://www.who.int/entity/hiv/pub/sti/STIguidelines2003_es.pdf

35. STI interventions for preventing HIV: Appraisal of the evidence
Publication anticipated in 2010.

36. IMAI acute care STI/genitourinary problem training course participant's manual (part of IMAI acute care guideline module).
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

37. Periodic presumptive treatment for sexually transmitted infections: Experience from the field and recommendations for research
http://www.who.int/reproductivehealth/publications/rtis/9789241597050/en/

38. WHO regional strategy for the prevention and control of sexually transmitted infections 2007-2015
http://www.searo.who.int/LinkFiles/Publications_WHO_Regional_Strategy_STI.pdf

2.3.1.3 Safer sex and risk reduction counselling

Behavioural interventions at an individual, group or community level can generate safer sexual behaviour. However, it is critically important to sustain interventions for behaviour and to provide prevention tools over long periods of time. Counselling (i.e. a confidential dialogue between a client and a counsellor) can enable clients to take personal decisions related to HIV and to adopt safer sexual behaviours to reduce their risk of transmitting or acquiring HIV. The counselling process should include evaluating the personal risk of HIV transmission, discussing how to prevent infection, and assisting in identifying and overcoming impediments to safer behaviour.

Summary of recommendations

Individual and small-group dialogue between providers and clients in health settings serves as an important opportunity for providing information and counselling on safer sex and risk reduction.

Health care providers should routinely assess whether patients are at risk or have symptoms of STIs. Those identified as being at ongoing risk may require more intensive counselling and support to reduce risky behaviour, including a reduction in the number of partners.

Risk reduction counselling includes, for example, information on prevention of transmission of STIs and HIV through condom use, including for most-at-risk populations. Counselling on delay of sexual debut and reduction of number of sexual partners, including visits to sex workers and reduction of concurrent partnership, is recommended to prevent sexual transmission among heterosexual partners. However, the benefit of this counselling for men who have sex with men has not been established.

Specific measures may be needed to support and counsel discordant couples and individuals in multiple concurrent partnerships, as well as for men who have sex with men.

Safe sex counselling for prevention of transmission of HIV and other STIs should be integrated into sexual and reproductive health services, especially those dealing with family planning and STI services.

Community-based behavioural interventions complement facility-level provider-client interactions. Community-based interventions should include peer outreach for hard-to-reach populations for whom the following should be provided: information on HIV and other STIs; risk reduction counselling; and the distribution of prevention commodities such as condoms, clean needles and syringes.

Key resources:

39.   SEX-RAR guide: The rapid assessment and response guide on psychoactive substance use and sexual risk behaviour
http://www.who.int/mental_health/media/en/686.pdf

32.   Sexual and reproductive health of women living with HIV/AIDS: Guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/924159425X_eng.pdf

40.   Youth-centered counseling for HIV/STI prevention and promotion of sexual and reproductive health: A guide for front-line providers
http://www.paho.org/english/ad/fch/ca/sa-youth.pdf

2.3.1.4 Male circumcision

Randomized trials in areas of high HIV prevalence have demonstrated that male circumcision reduces the risk of heterosexually acquired HIV in men by approximately 60%. This evidence supports the findings of many observational studies. There is no definitive evidence that male circumcision reduces the risk of HIV transmission from men to women, or between men who have sex with men.

Summary of recommendations

WHO recommends that male circumcision undertaken by appropriately trained health providers be considered as part of a comprehensive HIV prevention package. Services should be scaled up for defined geographic settings and priority should be given to males in areas where HIV prevalence in the general populations exceeds 15%.

Male circumcision does not provide complete protection against HIV, so men and women who consider male circumcision as an HIV prevention method should continue to use other prevention methods such as male and female condoms, delaying sexual debut and reducing the number of sexual partners.

HIV testing and counselling should be recommended for all males seeking circumcision but should not be mandatory. Surgery should be done in an appropriate clinical setting by trained health providers. Where access to male circumcision services is limited, priority could be given to HIV-negative men who have indications of being at higher risk for HIV, such as men presenting with an STI.

Counselling should stress that resumption of sexual relations before complete wound healing may increase the risk of acquisition of HIV infection among recently circumcised HIV-negative men. Men who undergo circumcision should abstain from sexual activity for at least six weeks or until surgical wounds are completely healed.

There should be broad community engagement to introduce or expand access to safe male circumcision services. Such engagement also serves as a means of communicating accurate information about the intervention to both men and women.

Careful monitoring and evaluation of the impact of male circumcision for HIV prevention should be conducted to monitor and minimize potential negative gender-related impacts of male circumcision.

Key resources:

41. Male circumcision information package
http://www.who.int/hiv/mediacentre/infopack_en_1.pdf
http://www.who.int/hiv/mediacentre/infopack_en_2.pdf
http://www.who.int/hiv/mediacentre/infopack_en_3.pdf
http://www.who.int/hiv/mediacentre/infopack_en_4.pdf

42. New data on male circumcision and HIV prevention: Policy and programme implications (WHO/
UNAIDS technical consultation on male circumcision and HIV prevention: Research implications for
policy and programming, Montreux, 6-8 March 2007: conclusions and recommendations)
English: http://whqlibdoc.who.int/unaids/2007/male_circumcision_eng.pdf
French: http://www.who.int/entity/hiv/mediacentre/MCrecommendations_fr.pdf

43. Male circumcision: Global trends and determinants of prevalence, safety and acceptability
http://whqlibdoc.who.int/publications/2007/9789241596169_eng.pdf

44. Manual for male circumcision under local anaesthesia
http://www.who.int/hiv/pub/malecircumcision/who_mc_local_anaesthesia.pdf

45. Male circumcision quality assurance: A guide to enhancing the safety and quality of services
http://www.who.int/hiv/pub/malecircumcision/qa_guide/

46. Male circumcision quality assurance toolkit
http://www.who.int/hiv/pub/malecircumcision/qa_toolkit/

47. Safe, voluntary, informed male circumcision and comprehensive HIV prevention programming:
Guidance for decision-makers on human rights, ethical and legal considerations
http://data.unaids.org/pub/Manual/2007/070613_humanrightsethicallegalguidance_en.pdf

48. Male circumcision and HIV prevention in Eastern and Southern Africa communications guidance
http://www.malecircumcision.org/programs/documents/mc_hiv_prevention_eastern_southern_
africa_5_15_08.pdf

49. Operational guidance for scaling up male circumcision services for HIV prevention
http://www.who.int/hiv/pub/malecircumcision/op_guidance/

2.3.1.5 Prevention among people living with HIV

Addressing the prevention needs of people living with HIV is a critical challenge for the health sector. Expanding access to HIV testing and antiretroviral therapy will increase the number of people living with HIV who can benefit from comprehensive HIV prevention, treatment and care services in the health sector.

Most people living with HIV will remain sexually active. Health providers should respect their right to do so and support them and their partners in preventing further HIV transmission, including through the provision of condoms and ART when clinically appropriate. For some, knowledge about their HIV infection may not prompt a change in behaviour to reduce further HIV transmission and additional support may be needed.

A large proportion of HIV infections occur within HIV discordant, stable partnerships. HIV-negative partners in discordant couples (where one partner is HIV-negative and the other HIV-positive) are at high risk of HIV infection and represent an important group for prevention efforts. Evidence from studies of individual partners and both partners in HIV discordant couples shows that counselling and condom provision and ART are effective in preventing HIV transmission.

Recommendations to prevent HIV-associated illness are described in Section 2.4.1.

Summary of recommendations

People living with HIV should be counselled on safer sex interventions to prevent HIV transmission to others, and on how to avoid contracting sexually transmitted infections. They should also be provided with condoms.

Ongoing behavioural counselling and psychosocial support should be given to HIV-discordant couples through couples counselling and support groups that cover topics such as HIV transmission risk reduction, reproductive health issues, couples communication and condom provision.

Key resources:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.3.1.6 Interventions targeting most-at-risk populations

The health sector is responsible for configuring and supporting comprehensive programmes and service delivery models that address the needs of populations most-at-risk for HIV and for ensuring that these services are accessible, acceptable and equitable. In many countries, sex workers and men who have sex with men are criminalized and stigmatized, which increases high-risk behaviours and discourages them from accessing health services. Where these barriers to implementing priority interventions exist, there is a need to actively create a supportive policy, legal and social environment that facilitates equitable access to prevention, treatment and care.

The interventions listed below are often best delivered through community-based organizations doing outreach or at health facilities.

Key resource:

25. Practical guidelines for intensifying HIV prevention: Towards universal access
http://data.unaids.org/pub/Manual/2007/20070306_prevention_guidelines_towards_universal_access_en.pdf

2.3.1.6.1 Interventions targeting sex workers

Sex workers are among the groups most vulnerable to and affected by HIV. Specific behaviours can place sex workers, their clients and regular partners at risk, and contextual factors can further exacerbate their vulnerability to HIV. The evidence base is firmly established to support a range of interventions to prevent transmission of HIV and other sexually transmitted infections (STIs) in sex work settings, to provide care and support services, and to empower sex workers to improve their own health and well-being. Interventions can be tailored for brothel or other entertainment establishments, or for more informal street-based and home-based settings.

Worldwide, only a few countries have implemented sex worker programmes of sufficient scale to prevent transmission of HIV and other STIs. There is solid public health evidence demonstrating the effectiveness of comprehensive condom use programmes targeting sex workers or entertainment establishment workers, but most countries still have structural barriers that must be addressed to facilitate equitable access to services.

A comprehensive set of interventions is recommended to increase condom use and safe sex, reduce the STI burden and maximize sex worker involvement in and control over their working and social conditions.

Summary of recommendations

Systematic collection of strategic information on HIV and other STIs among sex workers and their clients is required to guide comprehensive programme implementation.

Programme planning must include formative assessments to determine the needs and vulnerabilities of sex workers, and sex workers should be proactively involved in the design and delivery of programmes.

The health sector should also promote legal and social frameworks that are rights-based and consistent with public health and HIV prevention goals.

Priority interventions targeting sex workers to prevent sexual transmission of HIV and other STIs include:

- promoting and supporting condom use, including water-based lubricants for male sex workers (see Section 2.3.1.6.2);

- detecting and managing STIs (see Section 2.3.1.2);

- information, education and communication through peer outreach;

- enabling people to know their HIV status (see Section 2.2).

Other health sector interventions for HIV prevention, treatment and care of sex workers are described in the following sections:

- Family planning, counselling and contraception (see Section 2.3.3.1);

- HIV treatment and care (see Section 2.4);

- Prevention of HIV in infants and young children (see Section 2.3.3);

- Prevention of viral hepatitis (see Section 2.4.1.3);

- Prevention of HIV transmission through drug use (see Section 2.3.2);

- Social support, including income generation and legal services.

HIV and STI prevention activities for sex workers can be delivered at health facilities, in community-based settings, and through peer outreach.

Key resources:

51.   Toolkit for targeted HIV/AIDS prevention and care in sex work settings
http://whqlibdoc.who.int/publications/2005/9241592966.pdf

52.   Guidelines for the management of sexually transmitted infections in female sex workers
http://www.wpro.who.int/NR/rdonlyres/90F80401-5EA0-4638-95C6-6EFF28213D34/0/Guidelines_for_
the_Mgt_of_STI_in_female_sex_workers.pdf

38.   Regional strategy for the prevention and control of sexually transmitted infections 2007-2015
http://www.searo.who.int/LinkFiles/Publications_WHO_Regional_Strategy_STI.pdf

53.   100% condom use programme in entertainment establishments 2000
http://www.wpro.who.int/NR/rdonlyres/5F1C719B-4457-4714-ACB1-192FFCA195B1/0/condom.pdf

37.   Periodic presumptive treatment for sexually transmitted infections: Experience from the field and recommendations for research
English: http://whqlibdoc.who.int/publications/2008/9789241597050_eng.pdf
French: http://whqlibdoc.who.int/publications/2009/9789242597059_fre.pdf

54.   HIV and sexually transmitted infection prevention among sex workers in Eastern Europe and Central Asia
English: http://whqlibdoc.who.int/unaids/2006/9291734942_eng.pdf
Russian: http://whqlibdoc.who.int/unaids/2006/9291734950_rus.pdf

2.3.1.6.2 Interventions targeting men who have sex with men and transgender people

While much is known about the HIV epidemic among men who have sex with men (MSM) and transgender people in high-income countries, information is limited on the prevalence of HIV among MSM and transgender people in low- and middle-income countries. Overall, HIV transmission among MSM in low- and middle-income countries appears to be greatly underreported. There is also a lack of information on access to services for HIV prevention, treatment and care among MSM and transgender people in those countries.

Recent evidence suggests that sexual transmission of HIV and other sexually transmitted infections (STIs) among MSM is resurfacing as a problem in the major cities of Asia, Europe, Latin America and North America. Unprotected anal sex between men is increasingly being reported in sub-Saharan Africa as well. Surveys in several countries have also shown that many MSM have female partners or are married.

MSM and transgender people still face stigma or are driven underground through laws or policies criminalizing MSM behaviours in many countries. Adopting a rights-based approach will ensure that MSM, transgender people and their male and female sexual partners have the right to information and commodities, enabling them to protect themselves against HIV and other STIs as well as information on where to seek appropriate care for these infections. Importantly, this approach also ensures their right to access appropriate and effective prevention and care services of the highest possible quality, delivered free from discrimination.

Summary of recommendations

The health sector has an important role to play by including services for MSM and transgender people in its programme priorities and by advocating for decriminalization of same-sex acts and for legislation against discrimination based on sexual orientation.

Programme planning needs to include formative assessments to determine the risks and needs of MSM and transgender people, and these affected groups should be fully engaged in designing and implementing the interventions.

Priority interventions targeting MSM and transgender people to prevent sexual transmission of HIV and other sexually transmitted infections should include:

* promoting and supporting condom use, including water-based lubricants (see Section 2.3.1.1 and Section 2.3.1.6.2);

* detection and management of STIs (see Section 2.3.1.2);

* prevention and treatment of viral hepatitis (see Section 2.4.2.2.5);

* enabling people to know their HIV status (see Section 2.2);

* outreach through peers, the internet and fixed or mobile services to MSM and transgender people to broaden their access to information, education and communication, condoms and water-based lubricants, as well as prevention interventions including STI care, and counselling and referral.

Other health sector interventions for HIV prevention, treatment and care for MSM and transgender people are described in the following sections:

- HIV treatment and care (see Section 2.4);

- prevention of viral hepatitis (see Section 2.4.2.2.5):

- prevention of HIV transmission through drug use (see Section 2.3.2);

- Community-based behaviour change communication (e.g. posters and brochures in venues frequented by MSM and transgender people);

- social support and legal services.

Key resources:

55. Rapid assessment and response: Adaptation guide on HIV and men who have sex with men (MSM-RAR)
http://www.who.int/entity/hiv/pub/prev_care/en/msmrar.pdf

56. Policy brief: HIV and sex between men
http://data.unaids.org/Publications/IRC-pub07/jc1269-policybrief-msm_en.pdf

57. Between men: HIV STI prevention for MSM
http://www.aidsalliance.org/includes/Publication/msm0803_between_men_Eng.pdf

58. AIDS and men who have sex with men
http://whqlibdoc.who.int/unaids/2000/a62375_eng.pdf

59. 2007 European guideline (IUSTI/WHO)on the management of proctitis, proctocolitis and enteritis caused by sexually transmissible pathogens
http://www.iusti.org/sti-information/pdf/proctitis-guideline-v7.pdf

2.3.1.6.3 Specific considerations for HIV prevention in young people[5]

In order for young people to benefit from HIV prevention, health services must take their unique concerns and needs into consideration. In terms of content, the basic package of interventions to prevent HIV is much the same for young people as it is for adults. However, young people are unlikely to use available services unless:

- staff have been trained to understand young people and their concerns and to address any needs relating to consent and confidentiality;

- facilities and services have been designed or modified to be adolescent/youth-friendly with consideration given to appropriate opening times, affordability and privacy;

- attention is paid to fostering parents' and communities' support for youth-friendly services, and to attracting young people to those services.

Prevention services for adults can be modified so that they are also appropriate for young people, but there should also be youth-specific prevention in settings where young people are more likely to access them. These may include schools, universities, youth clubs, popular youth hang-outs, workplaces and pharmacies.

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5   'Young people' includes adolescents and youth 10–24 years.

The health sector should support community outreach to young people by providing guidance and linkages between services in the health sector and other sectors. Some young people belong to most-at-risk groups. Therefore, services targeting those groups should also be designed or modified to be youth-friendly or else supplemented with services specifically geared to young members of those most-at-risk groups.

The health sector also has a responsibility to ensure that there is serological and behavioural surveillance to provide strategic information on young people and HIV (see Section 4.2). This requires data to be disaggregated by age and sex, analysed and used to guide policies and programming. The health sector should play a stewardship and advocacy role for young people (see Section 3.6), and it should ensure a supportive political, legal and social environment that addresses the specific needs of young people.

Summary of recommendations

Prevention for young people provided by the health sector should include:

- information and counselling to help young people acquire the knowledge and skills to delay sexual initiation, limit the numbers of sexual partners, use condoms correctly and consistently, and avoid substance use or, if injecting drugs, use sterile equipment;
- condoms for sexually active young people;
- harm reduction for young people who are injecting drug users;
- diagnosis and treatment of sexually transmitted infections;
- male circumcision (in high-prevalence settings);
- HIV testing and counselling;
- access to HIV treatment and care services;
- consideration of human papillomavirus (HPV) vaccination for young females.

Key resources:

60. Preventing HIV/AIDS in young people: a systematic review of the evidence from developing countries
http://whqlibdoc.who.int/trs/WHO_TRS_938_eng.pdf

61. Global consultation on the health services response to the prevention and care of HIV/AIDS among young people: Achieving the global goals - access to services
http://whqlibdoc.who.int/publications/2004/9241591323.pdf

62. Adolescent friendly health services: An agenda for change
http://whqlibdoc.who.int/hq/2003/WHO_FCH_CAH_02.14.pdf

2.3.1.7 Specific considerations for vulnerable populations

2.3.1.7.1 Displaced, mobile and migrant populations

In 2007, 67 million people were forced to flee their homes throughout the world: 26 million were internally displaced due to armed conflict, 25 million due to natural disasters, and 16 million were refugees. Increased vulnerability to HIV associated with displacement, sexual violence, and disruption of families and social and community structures, has been evident in some complex emergencies. However, in some instances, refugees or populations in conflict situations may be less at risk of HIV transmission than surrounding populations when protected in camps and supported by international organizations, or when living in isolation.

In emergency situations, access to HIV services is often limited by the breakdown of health systems. Often emergency situations occur in remote areas where populations have little access to HIV-related services; these may provide opportunities to extend HIV services to new populations and then sustain them after the emergencies are over.

Millions of people each year migrate within countries or across countries and along borders. Increased vulnerability to HIV associated with displacement and the disruption of families and social and community structures has been evident in many settings with migrant and mobile populations. Sex workers are among highly mobile populations, and labour migrants and truckers constitute a large portion of their clientele. In many cases, their work is illegal and their presence is not documented; these factors limit their access to HIV care and antiretroviral treatment services. All migrant and mobile populations are difficult to reach with behaviour change communications and other prevention interventions. This is due, in part, to the fact that their movement places them in situations where they are ethnic minorities and face cultural and language barriers.

Summary of recommendations

Access to health services should be based on the principle of equity, ensuring equal access according to need without discrimination that could lead to the exclusion of displaced, migrant or mobile people.

Displaced, migrant and mobile populations should have access to services and levels of care equivalent to those provided to surrounding populations.

Interventions to provide information and education about prevention of HIV and other sexually transmitted infections (STIs) should be made available at points of departure and arrival of migrant and mobile populations, including ethnic minorities, who may require information and education in their own languages.

Universal access to antiretroviral treatment for those who need it is now considered a minimum standard of care; displaced, mobile and migrant populations should receive this treatment as a human right.

63. Consensus statement: delivering antiretroviral drugs in emergencies: neglected but feasible
http://www.who.int/hac/techguidance/pht/HIV_AIDS_101106_arvemergencies.pdf

64. Guidelines for HIV/AIDS interventions in emergency settings
English: http://www.who.int/3by5/publications/documents/en/iasc_guidelines.pdf
French: http://www.who.int/3by5/publications/en/directivesvihfinalesfr.pdf

65. Antiretroviral medication policy for refugees
http://data.unaids.org/pub/Report/2007/20070326_unhcr_art_en.pdf

2.3.1.7.2 Prisoners and people in other closed settings

Prisons and other closed settings are key points of contact; millions of people in such settings are living with or at high risk of HIV infection. It is in the interest of public health that all people in these settings have access to HIV prevention, treatment and care. They are entitled to the same standard of health as all other members of society.

A wide range of services is required for people in prisons and similar settings, including condom distribution, clean needle and syringe provision, opioid substitution therapy, HIV testing and counselling, provision of antiretroviral therapy and treatment for sexually transmitted infections.

Prison authorities should work with people in other branches of the criminal justice system and with health authorities and nongovernmental organizations to ensure continuity of care, including antiretroviral therapy (ART), from community to prison and back to community, and also between prisons.

Summary of recommendations

Prisons and other closed settings should offer a full range of HIV prevention, treatment and care services and commodities, including HIV testing and counselling and ART.

Key resources:

66. Effectiveness of interventions to address HIV in prisons (Evidence for action series web site)
http://www.who.int/hiv/topics/idu/prisons/en/index.html

67. Policy brief: Reduction of HIV transmission in prisons (Evidence for action on HIV/AIDS and injecting drug use)
http://www.who.int/hiv/pub/advocacy/en/transmissionprisonen.pdf

68. Status paper on prisons, drugs and harm reduction
http://www.euro.who.int/document/e85877.pdf

2.3.1.8 Non-occupational post-exposure prophylaxis

HIV post-exposure prophylaxis involves the short-term use of antiretroviral drugs for preventing HIV infection in individuals who may have been exposed to HIV.

Summary of recommendations

WHO recommends that HIV post-exposure prophylaxis be included in the management of sexual assault and be made available to all HIV-negative people who may have been exposed to HIV through sexual assault.

Sexual and reproductive health facilities should have up-to-date policies and procedures for managing and assisting individuals who have experienced significant mucous membrane exposure to HIV through sexual violence.

Whether comprehensive services are provided on-site or through referral, providers should follow clear and consistent protocols for management. The necessary supplies, materials and referral information should be made available to deal confidentially, sensitively and effectively with people who have experienced sexual violence.

WHO recommends that management of non-occupational post-exposure prophylaxis include:

- evaluation of the person with potential non-occupational exposure to HIV;
- counselling;
- assessing the HIV status of the source (e.g. the assailant) if possible;
- provision of antiretrovirals for prophylaxis based on a defined protocol;
- emergency contraception;
- presumptive treatment of sexually transmitted infections; and
- follow-up counselling.

Key resource:

69. Post-exposure prophylaxis to prevent HIV infection: Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection
http://whqlibdoc.who.int/publications/2007/9789241596374_eng.pdf

2.3.2 Interventions for injecting drug users

Wherever injecting drug use occurs, countries should implement a comprehensive set of interventions for HIV prevention, treatment and care for injecting drug users (IDUs). These interventions are also known as harm reduction programmes.

Despite overwhelming public health evidence demonstrating the effectiveness of harm reduction interventions, many decision-makers remain reluctant to implement or scale up these interventions because of their controversial nature. Intense advocacy, citing public health evidence, is often required to initiate and sustain harm reduction programmes.

Where there are barriers to implementing harm reduction interventions, there is a need to create a supportive policy, legal and social environment that facilitates equitable access to prevention and treatment for all, including IDUs. There is also a need for appropriate models of service delivery, health systems strengthening and strategic information to guide harm reduction programmes. For example, procuring and distributing opioid agonist medicines, such as methadone, may require special measures and procedures.

Comprehensive harm reduction programming—a comprehensive package of HIV prevention, treatment and care for IDUs includes the following nine interventions:

1. needle and syringe programmes (NSPs) (see Section 2.3.2.1);
2. drug dependence treatment, in particular opioid substitution therapy (see Section 2.3.2.2);
3. targeted information, education and communication for IDUs (see Section 2.3.2.3);
4. enabling people to know their HIV status (see Section 2.2);
5. HIV treatment and care (see Section 2.4);
6. promoting and supporting condom use (see Section 2.3.1.1);
7. detection and management of sexually transmitted infections (see Section 2.3.1.2);
8. prevention and treatment of viral hepatitis (see Section 2.3.2 and Section 2.4.2.2.5;
9. tuberculosis prevention, diagnosis and treatment (see Section 2.4.2.4).

Community-based outreach is the most effective way of delivering HIV prevention, treatment and care to IDUs, and of referring them to specific services for opioid substitution therapy and antiretroviral therapy. Services for IDUs should take into account that the majority of IDUs are male and have sexual partners, that some sell sex to pay for their habit and that injecting drug use occurs at all levels of society.

Summary of recommendations

Stand-alone interventions are known to have little impact so policy-makers should insist on a comprehensive package of interventions. All key interventions should be scaled up at the necessary intensity until they cover all drug users. The comprehensive package should be tailored to the country's known drug-use patterns and to other unique elements of the national context.

The health sector should play a major role in advocacy—using evidence to support that advocacy—to obtain the political commitments necessary to initiate and sustain harm reduction programmes for IDUs.

Key resources:

70. Policy and programming guide for HIV/AIDS prevention and care among injecting drug users
http://www.who.int/hiv/pub/prev_care/policyprogrammingguide.pdf

71. Advocacy guide: HIV/AIDS prevention among injecting drug users
http://www.who.int/hiv/pub/advocacy/en/advocacyguideen.pdf

72. Policy briefs and technical papers on HIV/AIDS and injecting drug users (Evidence for action series web site)
http://www.who.int/hiv/pub/idu/idupolicybriefs/en/index.html

66. Effectiveness of interventions to address HIV in prisons (Evidence for action series web site)
http://www.who.int/hiv/topics/idu/prisons/en/index.html

73. HIV/AIDS: Injecting drug use and prisons (WHO web site)
http://www.who.int/hiv/topics/idu/en/index.html

74. Evidence for action: Effectiveness of community-based outreach in preventing HIV/AIDS among injecting drug users
http://whqlibdoc.who.int/publications/2004/9241591528.pdf

75. Treatment of injecting drug users with HIV/AIDS: Promoting access and optimizing service delivery
http://www.who.int/substance_abuse/publications/treatment_idus_hiv_aids.pdf

76. Training guide for HIV prevention outreach to injecting drug users: workshop manual
English: http://whqlibdoc.who.int/hq/2004/9241546352.pdf

2.3.2.1 Needle and syringe programmes

Access to and use of sterile injecting equipment is highly effective in reducing HIV risk behaviour and transmission. Evidence shows that needle and syringe programmes (NSPs) also provide opportunities for delivering harm reduction information and related services, including referrals for drug dependence treatment. NSPs can reduce the risk of other infections (such as viral hepatitis, septicaemia and abscesses) and do not increase injecting drug frequency or prevalence.

NSPs increase access to sterile injecting equipment and should be diversified to include outreach through communities and peer groups, dedicated needle and syringe exchange and dispensing services, pharmacy programmes, vending machines and drug dependence treatment services. The full range of injecting equipment should be covered, including needles, syringes, sterile mixing water, alcohol swabs and containers for mixing, dispensing and transporting drugs.

It is also critical that NSPs cover the safe disposal of used equipment to minimize re-use or accidental needle-stick injuries. Safe disposal can be promoted through education of IDUs, needle exchange programmes and placement of sharps containers in drug-using locations. Decontamination methods for cleaning used injection equipment, such as bleach programmes, are not recommended as a first line of intervention and should be used only if sterile injecting equipment cannot be obtained.

Summary of recommendations

Access to sterile injecting equipment through NSPs is a key evidence-based intervention to reduce transmission of HIV in IDUs.

77. Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users (Evidence for action technical papers)
http://whqlibdoc.who.int/publications/2004/9241591641.pdf

78. Guide to starting and managing needle and syringe programmes
http://www.who.int/hiv/idu/Guide_to_Starting_and_Managing_NSP.pdf

79. Treatment and care for HIV-positive injecting drug users (training curriculum)
http://www.searo.who.int/en/Section10/Section18/Section356_14247.htm

Module 1: Drug use and HIV in Asia

http://www.searo.who.int/LinkFiles/Publications_Module_01_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 2: Comprehensive services for injecting drug users

http://www.searo.who.int/LinkFiles/Publications_Module_02_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 3: Initial patient assessment

http://www.searo.who.int/LinkFiles/Publications_Module_03_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 4: Managing opioid dependence

http://www.searo.who.int/LinkFiles/Publications_Module_04_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 5: Managing non-opioid drug dependence

http://www.searo.who.int/LinkFiles/Publications_Module_05_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 6: Managing ART in injecting drug users

http://www.searo.who.int/LinkFiles/Publications_Module_06_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 7: Adherence counselling for injecting drug users

http://www.searo.who.int/LinkFiles/Publications_Module_07_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 8: Drug interactions

http://www.searo.who.int/LinkFiles/Publications_Module_08_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 9: Management of coinfections in HIV-positive injecting drug users

http://www.searo.who.int/LinkFiles/Publications_Module_09_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 10: Managing pain in HIV-infected injecting drug users

http://www.searo.who.int/LinkFiles/Publications_Module_10_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 11: Psychiatric illness, psychosocial care and sexual health

http://www.searo.who.int/LinkFiles/Publications_Module_11_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 12: Continuing medical education

http://www.searo.who.int/LinkFiles/Publications_Module_12_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Trainer manual

http://www.searo.who.int/LinkFiles/Publications_Module_13_Treatment_&_Care_for_HIV_positive_IDUs.pdf

2.3.2.2 Drug dependence treatment

Approaches to drug and alcohol dependence management include pharmacotherapy and psychosocial interventions that are often delivered in combination.

For individuals with opioid dependence, the most effective treatment is opioid substitution therapy (OST). There is good evidence that OST leads to substantial reductions in illicit opioid use, criminal activity, deaths attributable to overdose and risk behaviour related to HIV transmission (including injection frequency and sharing of injecting equipment). Studies have also demonstrated that OST improves retention rates in drug dependency treatment, adherence to antiretroviral therapy and overall health and well-being. Both buprenorphine and the more widely used methadone are included on the WHO Model List of Essential Medicines.

Psychosocial treatment of opioid dependence alone has limited effectiveness in managing opioid dependence and has high relapse rates. There is no evidence that this treatment reduces HIV transmission rates, though it sowns effectiveness when adopted to complement opioid substitution therapy OST. Unlike in the case of opioid dependence, there are no effective substitution therapies for the treatment of amphetamine-type stimulants, cocaine, hallucinogen or hypnosedative dependence. Psychosocial treatment remains the only option for the treatment of non-opioid dependence today.

There is no evidence that compulsory treatment programmes are effective for treating drug dependence of any kind or for preventing HIV transmission.

Alcohol dependence and the use of a range of other psychotropic substances are also associated with unsafe sexual behaviour.[6]

Summary of recommendations

Opioid substitution therapy is recommended as the most effective treatment for opioid dependence and requires initial supervised administration, adequate treatment doses and longer-term maintenance regimens (at least six months). Inadequate doses of methadone are a common cause of OST failure and relapse. Average effective methadone doses range from 60–120 mg, although higher doses may be required.

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6   http://www.who.int/substance_abuse/publications/en/index.html

80.   Treatment of opioid dependence (WHO web page)
http://www.who.int/substance_abuse/activities/treatment_opioid_dependence/en/index.html

81.   WHO recommendations for clinical mentoring to support scale-up of HIV care, antiretroviral therapy and prevention in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/9789241594684_eng.pdf

82.   Effectiveness of drug dependence treatment in prevention of HIV among injecting drug users (Evidence for action technical papers)
http://www.who.int/hiv/pub/idu/en/drugdependencefinaldraft.pdf

83.   WHO/UNODC/UNAIDS position paper: Substitution maintenance therapy in the management of opioid dependence and HIV/AIDS prevention
English: http://whqlibdoc.who.int/unaids/2004/9241591153_eng.pdf
Chinese: http://whqlibdoc.who.int/unaids/2004/9241591153_chi.pdf
Russian: http://whqlibdoc.who.int/unaids/2004/9241591153_rus.pdf
Cambodian: http://whqlibdoc.who.int/unaids/2004/9241591153_cam.pdf
Lao: http://whqlibdoc.who.int/unaids/2004/9241591153_lao.pdf
Vietnamese:http://whqlibdoc.who.int/unaids/2004/9241591153_vie.pdf

2.3.2.3 Information, education and communication for injecting drug users

HIV risk-reduction messages for IDUs should address all modes of HIV transmission, including sexual risk taking. Messages on reducing risk from injecting should be based on a harm reduction hierarchy and should encourage IDUs to adopt progressively less risky behaviours, moving from indiscriminate sharing of injecting equipment; to reducing the number of sharing partners and frequency; to decontaminating used equipment; to using only sterile equipment and adopting non-injecting drug use (e.g. smoking or ingesting); to stopping drug use all together.

Summary of recommendations

Community-based and peer-led outreach is an effective strategy for providing information, education and communication to IDUs.

Key resource:

74.   Evidence for Action: Effectiveness of community-based outreach in preventing HIV/AIDS among injecting drug users
http://whqlibdoc.who.int/publications/2004/9241591528.pdf

2.3.3 Treatment and prevention of HIV in pregnant women, infants and young children

WHO recommends implementing all four components of the comprehensive approach. It also promotes integrating prevention of mother-to-child transmission (PMTCT) of HIV with maternal, newborn and child health care; antiretroviral therapy; family planning; reproductive health; and sexually transmitted infection (STI) services to ensure the delivery of a package of essential services for quality maternal, newborn and child care. HIV testing is recommended for all pregnant women, as explained in the section on provider-initiated testing and counselling (see Section 2.2.2).

A comprehensive approach to preventing HIV in infants and young children consists of four elements:

• primary prevention of HIV transmission (also see Section 2.3);

• prevention of unintended pregnancies among women living with HIV (see Section 2.3.3.1);

• prevention of HIV transmission from women living with HIV to their children (see Section 2.3.3.2); and

• provision of treatment, care and support for women living with HIV and their children and families (see Section 2.3.3.3).

Summary of recommendations

Health services should provide effective interventions to reduce sexual transmission of HIV, with a particular focus on preventing new HIV infections in women during pregnancy or the breastfeeding period.

Women with HIV should be supported in the choices they make for their reproductive life. Health services should ensure women with HIV are (1) provided with the skills, knowledge and commodities necessary to avoid unintended pregnancy or (2) are given support for planning a pregnancy.

All pregnant women with HIV should receive antiretroviral (ARV) medicines: either ARV treatment for life, if eligible for therapy, or combined ARVs for prophylaxis to reduce HIV transmission.

All women with HIV should have access to an essential package of services during childbirth, including assistance from a skilled birth attendant.

All infants born to women living with HIV should receive ARV prophylaxis and follow-up care and support.

Health services should ensure that women with HIV and their infants have access to the skills, knowledge and support needed to make infant feeding safe, so as to reduce HIV transmission and promote child survival.

Please refer also to the report sections referenced above.

Key resources:

84. Strategic approaches to the prevention of HIV infection in infants. Report of a WHO meeting, Morges, Switzerland, 20-22 March 2002
http://www.who.int/hiv/mtct/StrategicApproaches.pdf

85. Guidance on global scale-up of the prevention of mother to child transmission of HIV: towards universal access for women, infants and young children and eliminating HIV and AIDS among children
English: http://whqlibdoc.who.int/publications/2007/9789241596015_eng.pdf
French: http://whqlibdoc.who.int/publications/2007/9789242596014_fre.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789280643114_rus.pdf

86. Report of the WHO technical reference group, paediatric HIV/ART care guideline group meeting, WHO Headquarters, Geneva, Switzerland, 10-11 April 2008
http://www.who.int/hiv/pub/paediatric/WHO_Paediatric_ART_guideline_rev_mreport_2008.pdf

87. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: towards universal access. Recommendations for a public health approach (2010 version)
http://www.who.int/hiv/pub/mtct/antiretroviral/en/index.html

88. Testing and counselling for prevention of mother-to-child transmission of HIV support tools
English: http://www.womenchildrenhiv.org/wchiv?page=vc-10-00#S3.4X
French: http://www.womenchildrenhiv.org/wchiv?page=vc-10-00-fr

89. IMAI-IMPAC integrated PMTCT training course
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

2.3.3.1 Family planning, counselling and contraception

Family planning helps women and men make informed choices about their sexual and reproductive lives, including the timing and spacing of births, which can improve their own health and substantially increase their child's chances of survival and good health. Most women, men and young people with HIV are sexually active and need information and assistance to make decisions about family planning and reproduction. Preventing unintended pregnancies is an important, though often neglected, component of preventing HIV transmission to infants.

Summary of recommendations

The consistent and correct use of condoms continues to be the most effective contraceptive method that protects against both (1) acquiring and transmitting HIV and other sexually transmitted infections (STIs), and (2) unintended pregnancy.

Counselling and family planning services for women living with HIV should provide information on:

- effectiveness and safety of contraceptive methods to prevent pregnancy, if so desired;
- risk of HIV transmission for HIV-discordant couples;
- risk of HIV transmission to the infant, and the effectiveness of antiretroviral medicines in reducing HIV transmission;
- the benefits and risks of various infant feeding choices.

Women living with HIV can safely and effectively use most of the same contraceptive methods used by women without HIV. However, to also reduce risk of transmission of HIV and other sexually transmitted infections, these methods must be combined with condom use.

Women living with HIV and taking antiretroviral therapy need to consider that several antiretroviral drugs either decrease or increase the bioavailability of steroid hormonal contraceptives.

Key resources:

32. Sexual and reproductive health of women living with HIV/AIDS: Guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/924159425X_eng.pdf

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

90. Reproductive choices and family planning for people living with HIV - Counselling tool
http://www.who.int/reproductivehealth/publications/family_planning/9241595132/en/index.html

91. IMAI one-day orientation on adolescents living with HIV
http://www.who.int/child_adolescent_health/documents/fch_cah_9789241598972/en/index.html

92. Strengthening linkages between family planning and HIV: reproductive choices and family planning for people living with HIV
http://www.who.int/reproductive-health/hiv/hiv_tecbrief_fp.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.3.3.2 Antiretroviral medicines to prevent HIV infection in infants

HIV may be transmitted to the infant during pregnancy, delivery or through breastfeeding. If no interventions are provided, an estimated 20–25% of the infants of HIV-infected women will acquire HIV up to and including during delivery. It can be as high as 45% if the child is breastfed. Transmission is increased in women with more clinically advanced disease, low CD4 cell counts and high HIV viral load. Antiretroviral (ARV) medicines and optimal infant feeding practices are necessary to reduce HIV transmission to the infant and to promote child survival.

Summary of recommendations

WHO recommends that all pregnant women with HIV receive antiretroviral medicines, either ARV therapy (ART) for life or short term ARV prophylaxis to reduce transmission to infants.

Women with clinical and/or immunological criteria to start ART must do so as early as possible in pregnancy (also see Section referring to PMTCT) and should continue it throughout their lives.

Pregnant women living with HIV with CD4 < 350 should start ART irrespective of clinical symptoms. As well, pregnant women with HIV and WHO clinical stage 3 or 4 should start ART irrespective of CD4 count. These recommendations for starting ART are the same for all adults.

Pregnant women in need of ART can be asymptomatic, so CD4 testing should be performed whenever HIV is diagnosed in pregnancy.

Pregnant women with HIV who need ART should be treated with a full combination regimen, and AZT or TDF-containing regimens are recommended (see Table 1 below). In HIV-infected pregnant women with prior exposure to PMTCT regimens, see WHO 2010 guidelines for recommendations on what ART to start.

For HIV-positive women who do not yet need ART for their own health, combination ARV regimens for prophylaxis are recommended during pregnancy, labour and delivery and during the breastfeeding period (see Table 2).

The HIV-exposed infant requires ARV prophylaxis from birth and until the end of breastfeeding. The 2009 HIV and infant feeding rapid advice recommends HIV-positive mothers to breastfeed for 12 months (see Table 2).

For HIV-positive women who present to health services late in the pregnancy or at labour and delivery, ARVs are also recommended for both the mother and newborn.

Table 1. Recommended first-line combination antiretroviral treatment regimens for a pregnant woman

Mother	Treatment
Antepartum + intrapartum + after delivery	AZT + 3TC + NVP or
	AZT + 3TC + EFV or
	TDF + 3TC (or FTC) + NVP
	TDF + 3TC (or FTC) + EFV

AZT: Azidothymidine, Zidovudine; 3TC: Lamivudine; NVP: Nevirapine; TDF: Tenofovir; FTC: Emtricitabine; EFV: Efavirenz (do not start EFV in first trimester of pregnancy)
Source: WHO 2009. Rapid Advice. Use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants.

Table 2. Recommended antiretroviral regimen options for prophylaxis in pregnant women not yet eligible for ART

Option A Maternal AZT	Option B Maternal triple ARV prophylaxis
Mother • Antepartum AZT (from as early as 14 weeks gestation) • Sd-NVP at onset of labour* • AZT+3TC during labour and delivery* • AZT+3TC for 7 days postpartum* * Sd-NVP and AZT+3TC can be omitted if mother receives >4 weeks of AZT antepartum	**Mother** Triple ARV from 14 weeks until one week after all exposure to breast milk has ended • AZT + 3TC + LVP/r • AZT + 3TC + ABC • AZT + 3TC + EFV • TDF + 3TC (or FTC) + EFV
Infant **Breastfeeding infant** Daily NVP or sd-NVP plus twice daily AZT for 4-6 weeks	**Infant** *All exposed infants* Daily NVP or sd-NVP plus twice daily AZT for 4-6 weeks

AZT: Azidothymidine, Zidovudine; 3TC: Lamivudine; NVP: Nevirapine; sd-NVP: single-dose Nevirapine; TDF: Tenofovir; FTC: Emtricitabine; EFV: Efavirenz (do not start EFV in first trimester of pregnancy)
Source: WHO 2009. Rapid Advice. Use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants.

Key resources:

87. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: towards universal access. Recommendations for a public health approach (2010 version)
http://www.who.int/hiv/pub/mtct/antiretroviral/en/index.html

93. HIV and infant feeding: Revised principles and recommendations. Rapid advice. November 2009
http://whqlibdoc.who.int/publications/2009/9789241598873_eng.pdf

94 Rapid advice: antiretroviral therapy for HIV infection in adults and adolescents. November 2009
http://www.who.int/hiv/pub/arv/rapid_advice_art.pdf
http://www.who.int/hiv/pub/arv/rapid_advice_art_fr.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.3.3.3 Treatment, care and support for women living with HIV, their children and families

During pregnancy, women living with HIV also need the other prevention and care interventions listed in Section 2.4.1 and Section 2.4.2 of this chapter, including cotrimoxazole prophylaxis, screening for and treatment of TB, counselling and care relating to nutrition and psychosocial support. Pregnant women already receiving cotrimoxazole should continue prophylaxis throughout pregnancy and postpartum.

HIV-exposed infants need a range of interventions to promote their survival, protect them from HIV infection and provide them with early antiretroviral treatment if they have acquired HIV infection.

Summary of recommendations

Infants known to be exposed to HIV should have a virological test (HIV nucleic acid test, or NAT) at four to six weeks of age or at the earliest opportunity thereafter.

HIV-exposed infants should be regularly followed up.

Virological test results for infants should be returned to the clinic and child/mother/carer as soon as possible but at the very latest within four weeks of specimen collection. Positive test results should be fast-tracked to the mother–baby pair as soon as possible to enable prompt initiation of ART.

All infants with unknown or uncertain HIV exposure being seen in health care facilities at or around birth, at the first postnatal visit (usually 4–6 weeks) or at another child health visit should have their HIV exposure status ascertained.

HIV-exposed infants should undergo HIV serological testing at around 9 months of age (or at the time of the last immunization visit). Those with a positive serological test at 9 months should have a virological test to identify infected infants who need ART.

In settings where local or national antenatal HIV seroprevalence is greater than 5%, infants under six weeks of age and with unknown HIV exposure status should be offered maternal or infant HIV antibody testing and counselling in order to establish exposure status.

Health services should provide a full set of child survival interventions to HIV-exposed and HIV-infected infants.

All HIV-infected infants and children under two years of age should start ART without delay (see Section 2.4.2.1).

Key resources:

87.   Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: towards universal access. Recommendations for a public health approach (2010 version)
http://www.who.int/hiv/pub/mtct/antiretroviral/en/index.html

26.   Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

14.   Scale up of HIV-related prevention, diagnosis, care and treatment for infants and children: A programming framework
http://www.who.int/hiv/paediatric/Paeds_programming_framework2008.pdf

15. Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/paediatric/infants/en/index.html

50.   IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

93.   HIV and infant feeding: Revised principles and recommendations. Rapid advice. November 2009
http://whqlibdoc.who.int/publications/2009/9789241598873_eng.pdf

2.3.4 Prevention of HIV transmission in health settings

Though estimates vary by region, as many as 5–10% of new HIV infections in low- and middle-income countries may be attributable to exposures in health care settings, including unsafe injections, unsafe blood and occupational exposures. However, experts acknowledge that there is substantial uncertainty around this estimate.

In health care settings, transmission of HIV can be prevented through primary prevention measures such as standard precautions, injection safety, blood safety and safe waste disposal, as well as secondary prevention measures such as post-exposure prophylaxis for occupational exposure.

Comprehensive infection control strategies and procedures can dramatically reduce the risk of transmission associated with health care. However, implementing infection control guidelines does require a permanent HIV prevention and control structure, specific equipment and trained and motivated staff.

Summary of recommendations

All health facilities should:

- have a zero tolerance policy for HIV transmission, an infection control plan, a person or team responsible for infection control and available supplies to ensure the implementation of preventive measures; and

- use **standard precautions**.

Standard precautions minimize the spread of infection associated with health care and avoid direct and indirect contact with blood, body fluids, secretions and non-intact skin. They are the basic infection control precautions in health care and include:

- attention to hand hygiene before and after any patient contact, and after contact with contaminated items, whether or not gloves are worn;
- wearing personal protective equipment, based on risk assessment, to avoid contact with blood, body fluids, excretions and secretions;
- appropriate handling of patient care equipment and soiled linen;
- safe disposal of sharps immediately after use; and
- not recapping needles.

Key resources:

95. Aide memoire: Infection control: Standard precautions in health care
English: http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf
French: http://www.who.int/csr/resources/publications/EPR_AM2_FR3.pdf

96. Joint ILO/WHO guidelines on health services and HIV/AIDS
English: http://whqlibdoc.who.int/publications/2005/9221175537_eng.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/who_ilo_guidelines_fr.pdf
Spanish: http://www.who.int/entity/hiv/pub/prev_care/who_iloguidelines_sp.pdf
Russian: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelines_ru.pdf
Arabic: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_arabic.pdf
Chinese: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelineschinese-pdf.pdf
Indonesian: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_indonesian.pdf
Vietnamese:http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_vietnamese.PDF

2.3.4.1 Safe injections

Injection is one of the most common health procedures. Each year some 16 billion injections are administered in low- and middle-income countries. The vast majority, around 95%, are given as part of curative care. Immunization accounts for around 3% of all injections and the remainder is for other indications, including use of injections for transfusion of blood and blood products and for contraceptives.

In certain regions of the world, use of injections has overtaken the real need, reaching levels that are not based on rational medical practice. In some situations, as many as 90% of patients who visit a primary health provider receive an injection; more than 70% of these injections are unnecessary, or could be given in an oral formulation.

A safe injection does no harm. However, unsafe injections expose millions of health care patients to infections, including hepatitis B and C viruses, and HIV. Worldwide, up to 39% of injections are given with syringes and needles re-used without sterilization, and in some countries this proportion is as high as 70%.

The Safe Injection Global Network (SIGN) promotes injection safety and provides normative guidance related to injection safety and infection prevention.

Summary of recommendations

Promote and coordinate the development of strategies, tools and guidelines to ensure rational and safe use of injections.

Develop a behavioural change strategy targeting health care workers and patients. This includes culturally adapted communication strategies targeting health workers and the community to reduce injection overuse and create consumer demand for safety devices. Twenty years into the HIV pandemic, knowledge of HIV among patients and health workers in some countries has driven consumer demand for safe injection equipment and has substantially improved injection practices.

Ensure continuous availability of good quality equipment and supplies. Simply increasing the availability of safe injection equipment can stimulate demand and improve practices.

Manage waste safely and appropriately. Waste disposal is frequently not an integral part of health planning, and unsafe waste management is common. National health waste management strategies require a national policy, a comprehensive system for implementation and improved awareness and training of health workers at all levels, as well as the selection of appropriate options for local solutions.

Key resource:

97. Injection safety toolbox: Resources to assist in the management of national safe and appropriate use of injection policies (WHO web page)
http://www.who.int/injection_safety/toolbox/en/

2.3.4.2 Safe waste disposal management

Safe waste disposal is key to preventing the transmission of blood-borne pathogens. Sharps waste, although produced in small quantities, is highly infectious. Contaminated needles and syringes, when poorly managed, represent a particular threat to staff and patients. They also pose a threat to the community at large when waste ends up in uncontrolled areas and dump sites at the health facility, where needles and syringes may be scavenged and re-used.

Summary of recommendations

Promote environmentally sound management policies for health waste.

Key resources:

98. Healthcare waste and its safe management (WHO web page)
http://www.healthcarewaste.org/en/115_overview.html

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

2.3.4.3 Occupational health of healthcare workers

For health workers, exposure to the blood of those receiving care occurs most often via accidental injuries from sharps, such as syringe needles, scalpels, lancets, broken glass or other objects contaminated with blood. Poor patient care practices by HIV-infected medical staff may also expose the patient to infection. Also, when injecting and other equipment is poorly sterilized, HIV may be passed from an HIV-infected individual to an uninfected patient within the health care setting.

Protecting the occupational health of health workers and ensuring that they know their status and receive HIV treatment as appropriate is an important priority for the health sector. Please also see infection control in Section 2.4.2.4.

Summary of recommendations

A good occupational health programme aims to identify, eliminate and control exposure to hazards in the workplace.

Designate a person to be responsible for the occupational health programme.

Allocate a sufficient budget to the programme and procure the necessary supplies for the personal protection of health workers.

Provide training to health care workers and involve them in identifying and controlling hazards.

Promote health workers' knowledge of their own HIV, hepatitis and TB status through employment/ pre-placement screening.

Provide immunization against hepatitis B.

Implement standard precautions.

Provide free access to post-exposure antiretroviral prophylaxis for HIV.

Promote reporting of incidents and quality control of services provided.

Key resources:

96. Joint ILO/WHO guidelines on health services and HIV/AIDS
English: http://whqlibdoc.who.int/publications/2005/9221175537_eng.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/who_ilo_guidelines_fr.pdf
Spanish: http://www.who.int/entity/hiv/pub/prev_care/who_iloguidelines_sp.pdf
Russian: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelines_ru.pdf
Arabic: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_arabic.pdf
Chinese: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelineschinese-pdf.pdf
Indonesian: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_indonesian.pdf
Vietnamese:http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_vietnamese.PDF

100. Protecting healthcare workers: Preventing needlestick injuries toolkit (WHO web site)
http://www.who.int/occupational_health/activities/pnitoolkit/en/index.html

101. Occupational health of health workers: Meeting report, October 2009
http://www.who.int/occupational_health/network/health_workers_workshop_report.pdf

102. WHO best practices for injections and related procedures toolkit, March 2010
http://whqlibdoc.who.int/publications/2010/9789241599252_eng.pdf

2.3.4.4 Occupational post-exposure prophylaxis

Post-exposure prophylaxis (PEP) is a necessary secondary HIV prevention measure in health settings. This is because there will always be rare instances in which primary prevention fails and health workers or patients may be accidentally (or through unsafe procedures) exposed to the risk of HIV transmission.

The vast majority of incidents of occupational exposure to blood-borne pathogens, including HIV, occur in health settings. PEP for HIV consists of a comprehensive set of services to prevent infection developing in an exposed person, including: first-aid care; counselling and risk assessment; HIV testing and counselling; and, depending on the risk assessment, the short term (28-day) provision of antiretroviral drugs, with support and follow-up.

Summary of recommendations

WHO recommends that PEP be provided as part of a comprehensive prevention package that manages potential exposure to HIV and other infectious hazards.

Occupational PEP should also be available not just to health workers but to all other workers who could be exposed while performing their duties (e.g. social workers, police or military personnel, rescue workers and refuse collectors).

There should be appropriate training for service providers to ensure the effective management and follow-up of PEP.

Antiretroviral (ARV) drugs for PEP should be initiated as soon as possible after exposure, within the first few hours and no later than 72 hours.

ARV drugs for PEP should not be prescribed to people already known to have been infected with HIV prior to the exposure incident.

HIV testing is recommended. The administration of ARV drugs for PEP should never be delayed because of testing procedures. If the first test is negative, it should be repeated after three and six months.

WHO recommends that the PEP ARV regimen contain two Nucleoside Reverse Transcriptase Inhibitor (NRTI) drugs. If HIV drug resistance is suspected, the addition of a protease inhibitor may be considered.

ARVs for PEP should be administered for 28 days.

Any occupational exposure to HIV should lead to an evaluation of the working environment and procedures. When appropriate, working conditions and safety precautions should be improved.

Key resources:

69. Post-exposure prophylaxis to prevent HIV infection: Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection
http://whqlibdoc.who.int/publications/2007/9789241596374_eng.pdf

2.3.4.5 Blood safety

Unsafe blood transfusion is a well-documented mode of transmission of HIV and other infections. Millions of patients requiring transfusion do not have timely access to safe blood. In many countries, even if blood is available, many recipients of blood and blood products are at risk of transfusion-transmissible infections, including HIV, as a result of poor blood donor recruitment and selection practices and the use of unscreened blood.

Access to safe blood transfusion is an essential part of modern health care. Every national AIDS programme needs to promote the establishment of national blood programmes to ensure the availability of safe blood and blood products through a nationally coordinated blood transfusion service. A well-organized blood transfusion service based on voluntary non-remunerated donations, with quality systems in all areas, is a prerequisite for the safe and effective use of blood and blood products. WHO has developed an integrated strategy to promote the provision of safe and adequate supplies of blood and to reduce the risks associated with transfusion.

Summary of recommendations

Establish well-managed and nationally-coordinated blood transfusion services, with country-wide quality systems that can provide adequate and timely supplies of safe blood for all patients who require it.

Collect blood, plasma, platelets and other blood components only from voluntary unpaid blood donors from low-risk populations, and use stringent donor selection procedures.

Ensure good laboratory practice in all aspects of the provision of safe blood, from donation to testing for transfusion-transmissible infections (HIV, hepatitis viruses, syphilis and other infectious agents) to blood grouping to compatibility testing to the issuing of blood.

Reduce unnecessary transfusions through the appropriate clinical use of blood including, where possible, the use of intravenous replacement fluids and other simple alternatives to transfusion.

Key resources:

16. WHO Blood transfusion safety (WHO web page)
http://www.who.int/bloodsafety/en/

103. WHO blood safety: Aide-memoire for national blood programmes
English: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Eng.pdf
French: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_French.pdf
Portuguese: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Port.pdf
Spanish: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Span.pdf

104. Global database on blood safety (WHO web page)
http://www.who.int/bloodsafety/global_database/en/

105. Prioritizing second-line antiretroviral drugs for adults and adolescents: a public health approach. Report of a WHO working group meeting, Geneva,   Switzerland, 21-22 May 2007
http://www.who.int/hiv/pub/meetingreports/Second_Line_Antiretroviral.pdf

2.4 Scaling up HIV/AIDS treatment and care

For infants, children or adults living with HIV, a comprehensive package of prevention, treatment and care interventions should be made available. Early referral after HIV diagnosis is essential and is most urgent for infants, children or adults with signs and symptoms of HIV and also for all pregnant women. Interventions to prevent HIV transmission and prevent ill health are often referred to as 'positive prevention' or 'prevention for positives'.

Health services should deliver a complete package of interventions for all people with HIV, ideally starting well before the need for antiretroviral therapy (ART), with pre-ART care that includes regular assessment of the clinical and immunological stage of infection. Interventions for treatment and care include ART, and treatment and management of common infections, comorbidities and toxicities. However, the interventions should also address cardiovascular disease, malignancies, palliative care and end-of-life care.

To optimize and maximize the benefit of ART, specific efforts to prepare for and support adherence are required. Nutritional support is critical, particularly for infants, children and pregnant women. Mental health disorders, including alcohol and other substance use, need to be addressed, as does the need for psychosocial support. The interventions described in this document are recommended to improve quality of life and to prevent morbidity and mortality, and the health sector is largely responsible for providing these interventions.

Health services should be configured to provide the complete range of interventions described in this document, or a so-called 'continuum of care'. There should be careful consideration of the special needs of injection drug users, sex workers, young people and men who have sex with men. There should also be family care, built around the family as a unit needing care, even where only one or two members have HIV.

Not all interventions will be necessary or equally important in all countries, or for all target populations or settings within those countries. Local and national epidemiology and context will largely determine which interventions are most appropriate. Attention must also be paid to costs, including the costs of making interventions available and accessible to all who need them. The hidden costs of laboratory testing, transportation and time away from work need to be taken into account. None of these costs should be allowed to impede access to services by people who need them.

Laboratory services required to accelerate the scale up of treatment and care are discussed in Section 2.4.3.

2.4.1 Interventions to prevent illness

Interventions to prevent illness in HIV-infected individuals include chemoprophylaxis against common opportunistic infections; measures to reduce the incidence of pneumonia, diarrhoea and other clinical conditions that are more common or more serious in children or adults with HIV infection; screening to detect common malignancies and other comorbidities; and immunizations.

Table 3 summarizes those and other essential and optional interventions to prevent illness in people living with HIV, including viral hepatitis B, tuberculosis (TB) and other conditions. These interventions are further discussed in Section 2.4.2.2.

Table 3. Interventions to prevent illness in people living

Recommended	Consider
Cotrimoxazole prophylaxis	Influenza vaccination
Safe water, water treatment methods	Yellow fever vaccination if no advance or severe HIV disease
Sanitation, proper disposal of faeces and other biological fluids	
Hand washing with soap after defecation or handling faeces and other biological fluids	
Hepatitis B vaccination for Hepatitis B core antibody-negative adults	
TB screening	**Optional**
Isoniazid preventive therapy for TB	Chemoprophylaxis for *Cryptococcus sp*
Intermittent preventive treatment for malaria in pregnant women in malarious areas, if cotrimoxazole prophylaxis (CPT) is not in use	Pneumococcal vaccine for adults (polysaccharide vaccine) if CD4 > 200 cells/mm^3
Indoor residual spraying and insecticide-treated bednets if living in malarious areas	
Full nutritional assessment	

Key resources:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.4.1.1 Cotrimoxazole prophylaxis

Cotrimoxazole is an effective, well-tolerated and inexpensive antimicrobial agent that has been used since the mid-1980s to prevent *Pneumocystis jirovecci* pneumonia (PCP) and toxoplasmosis in adults and children with advanced HIV disease. Several studies showed that it is also effective against other bacterial and parasitic diseases, and it reduces the incidence of malaria in HIV-infected individuals. Furthermore, cumulative evidence from observational data and randomized clinical trials on cotrimoxazole prophylactic treatment (CPT) conducted in resource-limited settings has shown reduced hospitalization, morbidity and mortality among people living with HIV who are on CPT, even if they are already on ART. Therefore, CPT should be implemented as an integral component of the chronic care package.

Summary of recommendations

WHO recommends that all HIV-infected adults and children living with HIV/AIDS should initiate CPT if they have symptomatic disease (WHO clinical stage 2 or higher) irrespective of CD4 count or if they have a CD4 count below 350 cells/mm3 irrespective of HIV clinical stage.

All children born to HIV-positive women should commence CPT at around four to six weeks of age, or on first contact with health services, and should stay on CPT until HIV infection can be definitively excluded.

Some countries may choose to simplify these recommendations in settings with high prevalence of HIV and very limited health infrastructure, and instead recommend universal CPT for everyone living with HIV, irrespective of their CD4 count or HIV clinical staging.

The current recommendation is to continue CPT in HIV-infected adults and children indefinitely, but the discontinuation of CPT in HIV-infected individuals may be considered in the context of drug toxicity, pregnancy and immune recovery in response to ART, and should be based on clinical judgment, including both clinical and laboratory parameters.

Trials from developed countries have shown that cotrimoxazole used for prevention of PCP and toxoplasmosis may be safely stopped following immune recovery on ART. In other settings, observational data have also demonstrated that cessation of CPT is safe when the decision is guided by CD4 count. Data on stopping CPT in the absence of CD4 monitoring are limited, and there is concern over the use of ART duration as a guide to determine when CPT may be safely stopped, especially where no baseline CD4 count is available. In situations where CPT has been discontinued, CPT should be restarted if the CD4 count falls below the initiation threshold or if new or recurrent WHO clinical events (stage 2 or higher) occur. A review of CPT recommendations, particularly regarding discontinuation after immune recovery, is planned for 2010.

Key resource:

106. Co-trimoxazole prophylaxis for HIV-exposed and HIV-infected infants and children. Practical approaches to implementation and scale up | WHO and UNICEF
http://www.who.int/hiv/pub/paediatric/co-trimoxazole/en/index.html

2.4.1.2 Preventing fungal infections

Cryptococcus is a significant cause of illness and death in children and adults with HIV infection, particularly in sub-Saharan Africa. Other fungal infections may also be important, depending on local epidemiological patterns (e.g. Penicillium marneffei in South-East Asia).

Summary of recommendations

In areas where cryptococcal disease is common, antifungal prophylaxis with fluconazole should be considered for people with HIV if they have clinically severe disease or very low CD4 cell counts (< 100 cells/mm3), whether or not they are receiving antiretroviral therapy. Prior to beginning primary prophylaxis with azoles (antifungal agents), active cryptococcal and other invasive fungal infections should be excluded. People with HIV infection who are taking fluconazole, especially those who are taking other hepatotoxic drugs, require monitoring for adverse events. Secondary prophylaxis is recommended for all HIV-positive patients after completing treatment for cryptococcal disease.

Key resource:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

2.4.1.3 Vaccinations

Recommendations on routine childhood and catch-up vaccinations for adults and children living with HIV are being reviewed by WHO expert committees in 2008, and readers are encouraged to check for updated guidance.

Summary of recommendations for infants and children

As early in life as possible, HIV-exposed infants and children should receive all vaccines under the Expanded Programme for Immunization, including Haemophilus influenzae type B and pneumococcal vaccine. This should be done according to recommended national immunization schedules. However, the schedules may require some modification for infants and children with HIV.

Because of the increased risk of early and severe measles infection, infants with HIV should receive a dose of standard measles vaccine at six months of age with a second dose as soon after nine months of age as possible, unless they are severely immunocompromised at that time. Similarly, immunization with pneumococcal conjugate vaccine or Haemophilus influenzae type B conjugate vaccine should be delayed if the child is severely immunocompromised.

New findings indicate a high risk of disseminated Bacille Calmette-Guérin (BCG) disease developing in infants who have HIV, and BCG vaccine should therefore not be given to children known to have HIV. However, infants cannot normally be identified as being infected with HIV at birth, so BCG vaccination should usually be given to all infants at birth, regardless of HIV exposure, in areas with high prevalence of TB and of HIV.

Summary of recommendations for adults

Vaccine-preventable diseases, especially hepatitis B and influenza, are among the major causes of illness among adults with HIV. However, the efficacy of hepatitis B vaccine is related to the degree of immunosuppression induced by HIV. Where serological testing for hepatitis B virus is available, WHO recommends three doses of standard- or double-strength hepatitis B vaccine for adults with HIV who are susceptible (i.e. antibody to hepatitis B core antigen-negative) and have not been vaccinated previously. Vaccine response (titre of hepatitis B surface antibody after three doses of hepatitis B vaccine) can be measured and, if suboptimal, revaccination may be considered. In settings where serologic testing is not available and hepatitis B prevalence is substantial, programme managers may choose to offer three doses of hepatitis B vaccine to all adults with HIV.

Where available and feasible, annual influenza vaccination with the inactivated subunit influenza vaccine should be offered to adults with HIV. Moreover, if influenza vaccine is indicated in the context of a large epidemic or pandemic, adults with HIV should receive inactivated influenza vaccine.

There is insufficient information to make recommendations about human papillomavirus vaccination for young females with HIV.

Key resources:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

107. Vaccine-preventable diseases, vaccines and vaccination
http://whqlibdoc.who.int/publications/2005/9241580364_chap6.pdf

108. Revised BCG vaccination guidelines for infants at risk for HIV infection
http://www.who.int/wer/2007/wer8221.pdf (see p. 193)

2.4.1.4 Nutritional care and support

Children and adults with HIV have increased energy needs, but symptoms of HIV or opportunistic infections may lead to reduced dietary intake, decreased appetite, difficulty swallowing and malabsorption. This, combined with environmental factors—such as a lack of regular access to a nutritious, balanced diet—means HIV and nutrition interactions are complex.

Evidence-based nutrition interventions should be part of all national HIV care and treatment programmes. Routine assessment should be made of diet and nutritional status (weight and weight change, height, Body Mass Index or mid-upper arm circumference, symptoms and diet) for people living with HIV. Assessment of diet should aim to ensure that protein and micronutrient intake are adequate for the patient's energy needs and that potential drug-food (including herbal and traditional remedies) interactions are avoided. Individual and household food security should also be evaluated.

Summary of recommendations

WHO recommends that all children and adults receive one recommended daily allowance (RDA) of micronutrients, regardless of their HIV status. This is best provided by food, including fortified food. Where the micronutrient content of the daily diet is inadequate, a daily multi-micronutrient supplement is required (one RDA is recommended). There is no evidence for increased protein requirements exceeding that of a balanced diet, where protein contributes about 10–15% of the total energy intake.

Whenever feasible, people with HIV and their families who lack the means to meet their basic dietary needs should be assisted in achieving food security. Assistance might, for example, include supplements to their income or direct provision of some of their food.

Key resources:

26.   Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

109. Nutrition counselling, care and support for HIV-infected women
http://www.who.int/hiv/pub/prev_care/en/nutri_eng.pdf

111. Nutrition and HIV/AIDS: A Report by the Secretariat. WHO Executive Board EB116/12, 116th Session, 12 May 2005
http://www.who.int/gb/ebwha/pdf_files/EB116/B116_12-en.pdf

112. Guidelines for an integrated approach to the nutritional care of HIV-infected children (6 months-14 years): Preliminary version for country introduction
http://www.who.int/nutrition/publications/hivaids/9789241597524/en/index.html

113. Nutritional care and support for people living with HIV/AIDS: A training course
http://www.who.int/nutrition/publications/hivaids/9789241591898/en/index.html

2.4.1.5 Providing safe water, sanitation and hygiene

Simple, accessible and affordable interventions to ensure safe household water and sanitation (i.e. management of human waste) reduce the risk of transmission of water-borne and other enteric pathogens. Where programmes offer replacement feeding or early weaning from breastfeeding for infants of women with HIV, effective water treatment is essential to protect the infants' health. Interventions for point-of-use water, sanitation and personal hygiene require continued motivation and reinforcement of behaviour change. Over the long term, governments and development partners should address the larger problem of inadequate access to piped supplies of safe water in homes.

Summary of recommendations

Household-based water treatment and storage of water in containers that reduce manual contact are recommended for people living with HIV and their households. Steps should be taken to ensure that they have a minimum of 20 litres of water per person per day.

To reduce diarrhoeal disease among people living with HIV and their families or households, disposal of faeces in a toilet, latrine or, at a minimum, burial in the ground is recommended. Hygiene interventions should include hygiene education and promotion of hand washing with soap, along with the provision of soap for people living with HIV and their caregivers and households.

Key resource:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

2.4.1.6 Preventing malaria

In malarious areas, infants and children under five years of age and pregnant women with HIV are at high risk of complications resulting from coinfection with malaria, so they should be provided with malaria prevention and treatment.

Summary of recommendations

Infants, children under five and pregnant women with HIV who live in malarious areas should be provided with insecticide-treated mosquito nets and/or residual spraying of their rooms and homes to reduce their exposure to malaria. Pregnant women with HIV who are already receiving cotrimoxazole prophylaxis do not require sulfadoxine-pyrimethamine-based intermittent preventive therapy for malaria. However, in areas of malaria transmission, pregnant women living with HIV who are not taking cotrimoxazole should be given at least three doses of intermittent preventive treatment for malaria as part of their routine antenatal care.

Key resource:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

2.4.2 Treatment and care interventions

Management of the large range of HIV-related conditions should be based on clear guidelines and standardized protocols.

Major interventions for care and treatment are discussed in the following sections and include, for example:

- Regular, periodic clinical assessment, both pre-antiretroviral therapy (ART) and post-ART initiation (see Section 2.4.2.1.2);
- Treatment preparedness and adherence support (see Section 2.4.2.1.1);
- Management of opportunistic infections and comorbidities (see Section 2.4.2.2);
- Prevention and treatment of mental health disorders (see Section 2.4.2.2.7); and
- Palliative care (see Section 2.4.2.3).

2.4.2.1 Antiretroviral therapy for adults, adolescents and children

A public health approach to antiretroviral therapy (ART) facilitates quality HIV treatment for all who need it, an essential component of the universal access goal. It promotes simplified and standardized clinical decision-making, drug regimens and formularies, and patient data recording systems. It requires that national drug prescription and clinical care guidelines be supported by regular supplies of quality-assured drugs and that these drugs be made available to patients free of charge at the point of service delivery.

Early referral to ART services and measures to retain patients in care are essential to the achievement of good patient and programme outcomes. To maintain the effectiveness of first- and second-line antiretroviral regimens, WHO recommends that countries develop a national strategy for HIV drug resistance prevention and assessment (see Section 4.2.4). WHO also recommends any expansion or improvement of laboratory services that may be necessary for diagnosis and treatment of HIV, opportunistic infections and related conditions, and to support monitoring of treatment effectiveness (see Section 2.4.2.1.2).

Summary of recommendations

Current recommendations for initiating ART in adults, adolescents and children are shown in Table 4–Table 6. These recommendations are reviewed and updated regularly. WHO recommends that criteria for starting ART be defined in national protocols and that these be based at a minimum on clinical stage and CD4 counts. The 2009 revised ART recommendations recommend an earlier start for ART, including for all HIV-infected individuals with CD4 cell count of 350 cells/mm3 or less and those with advanced HIV clinical disease, active TB or active chronic hepatitis B, irrespective of CD4 cell count values. This is based on evidence of both individual and public health benefits of earlier treatment initiation identified in several observational studies and recent clinical trials. In addition, and while WHO has not made specific recommendations, there are claims and some data suggesting that starting ART earlier has prevention benefits, too.

Laboratory eligibility criteria, including any requirements that may be in place for CD4 cell count, should not be used to delay starting ART, especially for patients who meet the clinical criteria for starting ART.

Currently recommended first-line regimens for adults, adolescents and children contain two nucleoside reverse transcriptase inhibitors (NRTIs) plus one non-nucleoside reverse transcriptase inhibitor (NNRTI) drug. WHO recommends the use of fixed-dose combination regimens to support adherence and programme delivery. For adults, Azidothymidine (AZT, also Zidovudine) or Tenofovir (TDF) combined with Lamivudine (3TC) or Emtricitabine (FTC) are the preferred first-line NRTI medicines. In children, AZT or Abacavir (ABC) combined with 3TC are preferred. Countries have also been advised to phase out more toxic Stavudine-based therapy and transition patients towards either AZT- or TDF-based regimens. First-line regimens for people with active hepatitis B should contain TDF and 3TC or FTC. For people with HIV-2 infection, which is naturally resistant to all NNRTI drugs, a triple nucleoside regimen is recommended.

The 2009 recommendations also emphasize the importance of using these drugs as fixed-dose combinations and outline an expanded role for laboratory monitoring, including both CD4 and viral load testing.

For pregnant women, ART is also essential to prevent vertical (mother-to-child) transmission and the new recommendations have emphasized the critical need for CD4 testing to identify those who are in need of ART and at greatest risk of transmission. Pregnant women who are not eligible for ART should receive ARV prophylaxis using one of the more efficacious options, including triple ARV prophylaxis (see Section 2.3.3.2). Revised recommendations have been developed for ART in infants and children (see Table 6 below), which include guidance on the management of infants who have been exposed to Nevirapine pre-delivery, perinatally or post-delivery. WHO recommends that all infants and children <24 months with a confirmed diagnosed of HIV start ART immediately.

Patients who develop failure of their first-line therapy will need second-line therapy. Treatment failure is recognized by using clinical, immunological and, where feasible, virological parameters. WHO recommends changing the drug regimen if treatment failure has occurred. The protease inhibitor (PI) class of drugs is usually reserved for second-line treatment, together with at least one new NRTI drug. 2009 WHO guidelines have addressed which second-line drugs are most feasible, affordable and safe, and how clinical, immunological and viral load criteria are best used to recognize treatment failure.

Table 4. WHO recommendations for initiating antiretroviral therapy in adults and adolescents (2009)

Target population	Clinical condition	Recommendation
Asymptomatic individuals (including pregnant women)	WHO clinical stage 1	Start ART if CD4 ≤ 350
Symptomatic individuals (including pregnant women)	WHO clinical stage 2	Start ART if CD4 ≤ 350
	WHO clinical stage 3 or 4	Start ART irrespective of CD4 cell count
	Active TB disease	Start ART irrespective of CD4 cell count
TB & hepatitis B coinfections	Hepatitis B coinfection requiring therapy	Start ART irrespective of CD4 cell count

Source: Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)

Table 5. WHO recommendations for initiating antiretroviral treatment in infants and children (2010)

Age	Infants <24 months	24 months through 59 months	5 years or over
% CD4	All**	<25%	N/A
Absolute CD4*		<750 cells/mm3	As in adults (<350 cells/mm3)

* Absolute CD4 count is naturally less constant and more age-dependent than % CD4; it is not therefore appropriate to define a single threshold. Where % CD4 is not available, absolute CD4 count thresholds may be used. All HIV-infected infants should receive ART due to the rapid rate of disease progression.

** Countries with reliable affordable access to CD4 and viral load monitoring may choose to use immunological and/or virological thresholds for initiation of children aged 12-23 months.

Source: Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)

Table 6. Summary of WHO preferred antiretroviral treatment recommendations for infants, children and adults

Patient group	Preferred first-line regimen	Preferred second-line regimen
Infants and children <24months		
not exposed to NNRTI	NVP + 2 NRTI	Boosted PI + 2 NRTI
with unknown NNRTI exposure	NVP + 2 NRTI	Boosted PI + 2 NRTI
exposed to NNRTI	LPV/r + 2 NRTI	NNRTI + 2 NRTI
Children		
Children 2 years or over	NNRTI + 2 NRTI	Boosted PI + 2 NRTI
Adults and adolescents		
Adult or adolescent	NNRTI + 2 NRTI	Boosted PI + 2 NRTI
Woman starting ART in pregnancy	NVP + AZT + 3TC	Does not apply
Woman starting ART within 6 months of single-dose NVP	NNRTI + 2 NRTI or 3 NRTI	Boosted PI + 2 NRTI
Concomitant conditions		
Child, adolescent or adult with severe anaemia	NVP + 2NRTI (avoid AZT)	Boosted PI + 2 NRTI (avoid AZT)
Child, adolescent or adult with TB	EFV + 2 NRTI or 3 NRTI	Boosted PI* + 2 NRTI
Adult or adolescent with hepatitis B	TDF + 3TC + NNRTI	Boosted PI + 2 NRTI**
Adult or adolescent with hepatitis C	EFV + 2 NRTI (avoid NVP)	Boosted PI + 2 NRTI
Injection drug user	NNRTI + 2 NRTI	Boosted PI + 2 NRTI
HIV-2 infection	3 NRTI	Boosted PI + 2 NRTI

* If using RMP in the TB regimen, superboosted LPV or SQV are the recommended PI options (based on limited pK studies). If RFB or an alternative TB regimen without RMP is used, any boosted PI at its conventional dosage can be used.
** If long-term anti-HBV therapy is still needed, maintain 3TC and TDF in addition to the new NRTI backbone.
3TC= Lamivudine, AZT = Azidothymidine, Zidovudine, EFV = Efavirenz, HBV = Hepatitis B virus, LPV/r = Lopinavir with booster dose of Ritonavir, NNRTI = Non-nucleoside reverse transcriptase Inhibitor, NRTI = Nucleoside/nucleotide reverse transcriptase inhibitor, NVP = Nevirapine, PI = Protease inhibitor, RFB = Rifabutin, RMP= Rifampicin, TDF = Tenofovir.

Source: Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)

Key resources:

10. WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related disease in adults and children
http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf

15. Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/paediatric/infants/en/index.html

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

65. Antiretroviral medication policy for refugees
http://data.unaids.org/pub/Report/2007/20070326_unhcr_art_en.pdf

86. Report of the WHO technical reference group, paediatric HIV/ART care guideline group meeting, WHO Headquarters, Geneva, Switzerland, 10-11 April 2008
http://www.who.int/hiv/pub/paediatric/art_meeting_april2008/en/index.html

94. Antiretroviral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/arv/adult/en/index.html

105. Prioritizing second-line antiretroviral drugs for adults and adolescents: a public health approach. Report of a WHO working group meeting, Geneva, Switzerland, 21-22 May 2007
http://www.who.int/hiv/pub/meetingreports/Second_Line_Antiretroviral.pdf

114. Prequalification programme: A United Nations Programme managed by WHO (WHO web site)
http://apps.who.int/prequal/

115. IMAI basic ART aid (lay counsellor) training modules
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

116. Patient treatment cards
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

117. Flipchart for patient education: HIV prevention, treatment and care
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

118. HIV/AIDS treatment and care: clinical protocols for the WHO European Region
English: http://www.euro.who.int/document/e90840.pdf
Russian: http://www.euro.who.int/document/e90840R.pdf

119. WHO consultation on ART failure in the context of a public health approach: 2008 meeting report
http://www.who.int/hiv/pub/arv/failure/en/index.html

120. ART failure and strategies for switching ART regimens in the WHO European RegionWHO consultation on ART failure in the context of a public health approach: 2008 meeting report

http://www.euro.who.int/__data/assets/pdf_file/0020/78104/E91257.pdf

2.4.2.1.1 Treatment preparedness and adherence support

Interventions to ensure treatment preparedness and support adherence optimize the effectiveness of ART and minimize the development of drug resistance. The ability of patients to follow treatment plans is frequently compromised by various factors, including stigma and discrimination against patients and their families, treatment costs they cannot afford, and the nature and tolerability of available ARV therapies. The level of readiness by patients to follow health worker recommendations is a major factor that can be addressed through information, education and counselling. Equally important are practical matters, such as the need for free or affordable transportation to and from treatment centres and the need for those centres to have convenient opening hours for patients.

Treatment preparedness and adherence support for children requires support from their parents or other primary caregivers. Children on the verge of adolescence and adolescents require special attention; they are at a stage of life where they may be inclined to ignore or rebel against the advice of adults, unless adults show respect for their emerging autonomy. Health care providers have a responsibility to assess risk of non-adherence by children and adolescents and to deliver necessary interventions to support adherence. This requires a multidisciplinary approach involving key staff at health centres to ensure convenient opening hours, free or affordable transportation, reduced direct or indirect costs of care, the provision of meals if appropriate, and so on.

Community and patients' organizations often play key roles in supporting adherence through peer monitoring, home visits and other means. Informal or formal social support from family, friends, community and patients' organizations has consistently shown to be important for treatment preparedness, adherence and good health outcomes.

Summary of recommendations

Interventions that target adherence should be tailored to the particular illness-related needs of each patient. Health care providers should be prepared to assess their patient's readiness to adhere, offer advice and monitor the patient's progress at every contact. For particular patient groups, such as infants and pregnant women, expedited treatment preparedness is often necessary, and more intensive and ongoing adherence support may be required.

Effective adherence support interventions include client-centred behavioural counselling and support, support from peer educators trained as 'expert patients', and community treatment supporters. These interventions involve encouraging people to disclose their HIV status and providing them with treatment tools such as pillboxes, diaries and patient reminder aids. There should be site-based assessments to evaluate the extent to which services such as free transport might improve adherence.

Key resources:

121. Adherence to long-term therapies: Evidence for action
http://www.who.int/chp/knowledge/publications/adherence_introduction.pdf

http://www.who.int/hiv/pub/prev_care/lttherapies/en/

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.4.2.1.2 Patient monitoring

Infants, children and adults with HIV require clinical and laboratory monitoring at predetermined intervals. Monitoring may include clinical assessment, CD4 cell count and other tests, depending on the symptoms or signs identified. Regular patient monitoring can identify problems with adherence, toxicity and effectiveness of ART and TB-HIV co-treatment. Nationally standardized patient monitoring tools (patient records, registers and reports) facilitate high-quality patient monitoring (see Section 4.2.3).

2.4.2.2 Managing HIV-associated opportunistic infections and comorbidities

Standardized clinical protocols should reflect the burden of HIV and prevalent comorbidities. Certain conditions are common in infants, children or adults living with HIV and may herald disease progression. Clinical care should manage the common acute and chronic conditions associated with HIV.

Key resources:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

122. IMAI acute care
English: http://www.who.int/hiv/pub/imai/acute_care.pdf
French: http://www.who.int/hiv/pub/imai/acute_care_fr.pdf

123. IMCI chart booklet for high HIV settings
English: http://whqlibdoc.who.int/publications/2008/9789241597388_eng.pdf
French: http://whqlibdoc.who.int/publications/2008/9789242594379.cb_fre.pdf

124. IMAI OI training course (based on IMAI Acute Care guideline module)
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

125. Global action plan for the prevention and control of pneumonia (GAPP): report of an informal consultation
http://whqlibdoc.who.int/publications/2008/9789241596336_eng.pdf

2.4.2.2.1 Managing HIV-related conditions

At a minimum, case management protocols for adults and children with HIV should include the conditions listed below, as well as other locally prevalent conditions.

Infections:

- Candida (oesophageal and mucosal)
- Cryptococcal meningitis•Cytomegalovirus infection
- Herpes virus infections (zoster and simplex)
- Hepatitis B and C
- Pneumocystis jirovecci pneumonia (PCP)
- Severe bacterial infections (including pneumonia and septicemia)
- Malaria
- Toxoplasmosis
- Tuberculosis, including multidrug-resistant (MDR) and extensively drug-resistant (XDR) (see Section 2.4.2.4)

Neurological conditions:

- Neuropathies
- Encephalopathies
- Dementia
- Developmental delay in children

Skin disorders:

- Seborrhoeic dermatitis
- Prurigo
- Skin infections
- Drug reactions

Malignancies:

- AIDS-defining malignancies:
    » Kaposi's sarcoma
    » Non-Hodgkin's lymphoma, including primary cerebral lymphoma
    » Cervical cancer
- Hodgkin's lymphoma
- Hepatocellular carcinoma

Cardiovascular, liver, renal and metabolic conditions:

- Atherosclerosis
- Cirrhosis
- Dyslipidemia
- Diabetes
- Lipodystrophy syndrome
- Cardiomyopathy
- Nephropathy

Mental health disorders:

- Substance use disorders
- Attempted suicide
- Major depression
- Psychoses
- Anxiety disorders

Others:

- Lymphocytic interstitial pneumonia (LIP) in children

Key resources:

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

122. IMAI acute care
English: http://www.who.int/hiv/pub/imai/acute_care.pdf
French: http://www.who.int/hiv/pub/imai/acute_care_fr.pdf

123. IMCI chart booklet for high HIV settings
English: http://whqlibdoc.who.int/publications/2008/9789241597388_eng.pdf
French: http://whqlibdoc.who.int/publications/2008/9789242594379.cb_fre.pdf

126. Integrated management of childhood illness (IMCI) complementary course on HIV/AIDS
Introduction: http://whqlibdoc.who.int/publications/2006/9789241594370.intro_eng.pdf
Module 1: http://whqlibdoc.who.int/publications/2006/9789241594370.m1_eng.pdf
Module 2: http://whqlibdoc.who.int/publications/2006/9789241594370.m2_eng.pdf
Module 3: http://whqlibdoc.who.int/publications/2006/9789241594370.m3_eng.pdf
Module 4: http://whqlibdoc.who.int/publications/2006/9789241594370.m4_eng.pdf
Facilitator guide for modules: http://whqlibdoc.who.int/publications/2006/9789241594370.fg_eng.pdf
Photo booklet: http://whqlibdoc.who.int/publications/2006/9789241594370.pb_eng.pdf
Chart booklet: http://whqlibdoc.who.int/publications/2006/9789241594370.cb_eng.pdf
French (all modules): http://www.who.int/child_adolescent_health/documents/9241594373/en/

127. Policy for prevention of oral manifestations in HIV/AIDS: The approach of the WHO Global Oral Health Programme
http://adr.iadrjournals.org/cgi/reprint/19/1/17.pdf

128. Pocket book of hospital care for children: guidelines for the management of common illnesses with limited resources
English: http://whqlibdoc.who.int/publications/2005/9241546700.pdf
French: http://whqlibdoc.who.int/publications/2007/9789242546705_fre.pdf
Portuguese: http://whqlibdoc.who.int/publications/2005/9789248546709_por.pdf
Russian: http://whqlibdoc.who.int/publications/2005/9241546700_rus.pdf

2.4.2.2.2 Managing pneumonia

Children and adults living with HIV have higher rates of pneumonia and mortality in both resource-constrained and high-income settings. In sub-Saharan Africa, pneumonia is the leading cause of hospital admission and the most common cause of death among children younger than five years who have HIV. The case fatality rate for pneumonia in infants and younger children with HIV is very high. In adults, pneumonia is often more serious and may be caused by a range of aetiologies.

Summary of recommendations

In patients with presumed pneumonia who fail to respond to standard antibiotics, TB, PCP pneumonia, fungal and other opportunistic pathogens need to be considered. PCP is a common cause of severe pneumonia in people with HIV infection and should always be considered.

Key resources:

122. IMAI acute care
English: http://www.who.int/hiv/pub/imai/acute_care.pdf
French: http://www.who.int/hiv/pub/imai/acute_care_fr.pdf

123. IMCI chart booklet for high HIV settings
English: http://whqlibdoc.who.int/publications/2008/9789241597388_eng.pdf
French: http://whqlibdoc.who.int/publications/2008/9789242594379.cb_fre.pdf

2.4.2.2.3 Managing diarrhoea

Chronic persistent diarrhoea is common in infants, children and adults living with HIV and may be more difficult to diagnose and manage.

Summary of recommendations

Clinical protocols should cover case management for the full range of opportunistic pathogens.

Key resources:

128. Pocket book of hospital care for children: guidelines for the management of common illnesses with limited resources
English: http://whqlibdoc.who.int/publications/2005/9241546700.pdf
French: http://whqlibdoc.who.int/publications/2007/9789242546705_fre.pdf
Portuguese: http://whqlibdoc.who.int/publications/2005/9789248546709_por.pdf
Russian: http://whqlibdoc.who.int/publications/2005/9241546700_rus.pdf

129. Implementing the new recommendations on the clinical management of diarrhoea: Guidelines for policy makers and programme managers
English: http://whqlibdoc.who.int/publications/2006/9241594217_eng.pdf
French: http://whqlibdoc.who.int/publications/2006/9242594210_fre.pdf
Chinese: http://whqlibdoc.who.int/publications/2006/9241594217_chi.pdf
Russian: http://www.euro.who.int/document/9244594218R.pdf

2.4.2.2.4 Managing malnutrition

Weight loss and malnutrition are common symptoms of HIV in infants, children and adults and may be due to reduced food intake, impaired absorption, increased food needs due to opportunistic infections or other causes. Evaluation of weight loss should include assessing symptoms and signs that could indicate underlying disease, notably chronic diarrhoea and TB. Successful treatment of the underlying disease may result in weight gain. Usually, standard management protocols can be followed, but responses may be poor and antiretroviral therapy may be required.

Summary of recommendations

Specialized therapeutic foods are required for persons with Body Mass Index (BMI) <16 and for infants and children with moderate or severe malnutrition. Supplementary feeding may be required for mild-to-moderately malnourished adults (BMI <18.5) and children.

Key resources:

129. Community-based management of severe acute malnutrition: A joint statement by the World Health Organization, the World Food Programme, the United Nations System Standing Committee on Nutrition and the United Nations Children's Fund

English: http://www.who.int/child_adolescent_health/documents/pdfs/severe_acute_malnutrition_en.pdf

French: http://www.who.int/child_adolescent_health/documents/pdfs/severe_acute_malnutrition_fr.pdf

2.4.2.2.5 Treating viral hepatitis

In many areas of the world, chronic liver disease caused by either hepatitis B virus (HBV) or hepatitis C virus (HCV) in patients with HIV is common, and this disease is now becoming one of the leading causes of morbidity and mortality among people living with HIV in many regions. Globally, approximately 10% of people with HIV have chronic hepatitis B. Men who have sex with men have higher rates of HBV/HIV coinfection than injecting drug users or heterosexuals.

HCV and HIV coinfection is particularly frequent in areas with a high prevalence of injection drug users; in some areas, up to two-thirds of injection drug users have chronic hepatitis C. In Europe, up to 30% of HIV-infected individuals are coinfected with HCV. The course of HBV- and HCV-related liver disease may be accelerated with HIV. Liver toxicity and related morbidity is not uncommon when using ARVs in the presence of underlying chronic hepatitis B and/or C. In HBV/HIV-coinfected patients with cirrhosis, hepatocellular carcinoma may appear at an earlier age and be more aggressive in those with HIV infection.

Summary of recommendations

WHO recommends that national health authorities establish prevention and treatment strategies for HBV and HCV in HIV-coinfected individuals as well as activities to prevent HBV and HCV transmission.

In addition to the key resources listed below, detailed recommendations for clinical management can be found in clinical protocols from the WHO Regional Office for Europe[7] .

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7   HIV/AIDS Treatment and Care Clinical Protocols for the WHO European Region, 2007. http://www.euro.who.int/InformationSources/Publications/Catalogue/20071121_1

131. Management of Hepatitis C and HIV coinfection: clinical protocol for the WHO European region
English: http://www.euro.who.int/__data/assets/pdf_file/0008/78146/E90840_Chapter_6.pdf
Russian: http://www.euro.who.int/__data/assets/pdf_file/0010/78148/HEP_C_rus.pdf

132. Prevention of hepatitis A, B and C and other hepatotoxic factors in people living with HIV: Clinical protocol for the WHO European Region
English: http://www.euro.who.int/__data/assets/pdf_file/0010/78157/E90840_Chapter_8.pdf
Russian: http://www.euro.who.int/__data/assets/pdf_file/0007/78163/HEP_A_B_C_rus.pdf

133. WHO EURO hepatitis web site
http://www.euro.who.int/en/what-we-do/health-topics/diseases-and-conditions/hepatitis

2.4.2.2.6 Managing malaria

Current recommendations on diagnosis and management of malaria in people living with HIV are no different than those for the general population. These recommendations are due to be reviewed in late 2008.

Summary of recommendations

For adults and children with HIV living in malarious areas who have a fever, evaluation of the cause of fever and, where possible, laboratory confirmation of malaria infection are preferred, instead of presumptive treatment of fever as malaria. Available malaria tests may include microscopy or rapid diagnostic tests. People with HIV who develop malaria require standard recommended antimalarial treatment. Patients with HIV who are receiving cotrimoxazole prophylaxis should not be given sulfadoxine-pyrimethamine.

Key resources:

134. Guidelines for the treatment of malaria, second edition
http://www.who.int/malaria/docs/TreatmentGuidelines2006.pdf

135. Malaria and HIV interactions and their implications for public health policy
English: http://whqlibdoc.who.int/publications/2005/9241593350.pdf
French: http://www.who.int/entity/hiv/pub/meetingreports/malariahivfr.pdf

2.4.2.2.7 Preventing and treating mental health disorders

Prevention and treatment of mental health disorders and provision of psychological and social support are often neglected in people living with HIV, despite the fact that they are critical components of care. HIV infection itself can lead to poor mental health including impaired cognition. In infants and children, it can lead to impaired neurological development and low attainment of developmental milestones. Timely antiretroviral therapy effectively prevents HIV related encephalopathy, but other conditions common in people with HIV include depression, anxiety and substance use. These can interfere with treatment adherence. Alcohol use is also a risk factor for unsafe sex and HIV transmission.

Promoting and supporting mental health throughout a chronic illness require a number of interventions, including psychosocial support delivered by trained lay providers and clinicians, basic counselling for depression and psychotherapeutic interventions to address recognized psychiatric disorders. Brief interventions can address harmful and hazardous alcohol use. Mental health-related issues for people living with HIV should be addressed at all levels of the health system. This requires referrals connecting HIV-related services with mental health services and linkages with psychological and social support resources in the community.

Summary of recommendations

All people living with HIV should be offered or referred to a comprehensive set of psychosocial interventions (e.g. individual and group counselling, peer support groups, family and couples counselling, and adherence support). People living with HIV who have mental health conditions, such as depression or alcohol or other substance dependence, should be provided with specific psychosocial and psychotherapeutic interventions and, when indicated, medication for these conditions. Services should be configured to support families and ensure that the needs of infants, children and adolescents are met. Delirium, dementia, suicide, major depression, psychoses and anxiety disorders all need specific interventions and may require psychotropic medication.

Key resources:

136. WHO mental health and HIV/AIDS series
Module 1 - Organization and systems support for mental health interventions in ARV therapy programmes: http://whqlibdoc.who.int/publications/2005/9241593040_eng.pdf
Module 2 - Basic counselling guidelines for ARV therapy programmes: http://whqlibdoc.who.int/publications/2005/9241593067_eng.pdf
Module 3 - Psychiatric care in ARV therapy (for second level care): http://whqlibdoc.who.int/publications/2005/9241593083_eng.pdf
Module 4 - Psychosocial support groups in ARV therapy: http://whqlibdoc.who.int/publications/2005/9241593105_eng.pdf
Module 5 - Psychotherapeutic interventions in ARV therapy (for second level care): http://whqlibdoc.who.int/publications/2005/9241593091_eng.pdf

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

2.4.2.2.8 Counselling

Counselling is an essential component of HIV services that requires specific skills and competencies in health workers and lay providers.

Summary of recommendations

Counselling is required in a range of clinical situations in order to:

- provide emotional support;

- help patients cope with challenges and fears related to diagnosis of HIV and transmission to infants, sexual partners and other family members;

- help patients cope with the need for lifelong antiretroviral therapy;

- help patients prioritize problems and find their own solutions;

- help patients who are depressed or anxious;

- address other aspects of HIV prevention, care and treatment (post-testing counselling, disclosure of HIV status, safe sex, negotiating condom use, adherence);

- intervene in crisis situations (e.g. bereavement or to prevent suicide).

Health workers, including counsellors, also require support to prevent and respond to burnout.

Key resources:

2.   IMAI general principles of good chronic care
English: http://www.who.int/hiv/pub/imai/generalprinciples082004.pdf
French: http://www.who.int/hiv/pub/imai/imai_general_2008_fr.pdf

50.   IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

136. WHO mental health and HIV/AIDS series: Module 2 - Basic counselling guidelines for ARV programmes
http://whqlibdoc.who.int/publications/2005/9241593067_eng.pdf

2.4.2.3 Palliative care

Palliative care can improve the quality of life of patients and their families. It offers prevention and relief of suffering by means of early identification, assessment and treatment of pain and other physical, psychosocial and spiritual needs. It calls for a multidisciplinary team approach that addresses the needs of patients and their families.

Palliative care provides relief from pain and other distressing symptoms; integrates psychological and spiritual aspects of patient care; and provides support systems to help patients and their families live as actively as possible until death and to cope during both illness and death.

A central focus of palliative care is pain assessment and treatment with the use of opioid and non-opioid analgesics according to an analgesic ladder. The analgesics are provided together with non-medical treatments. This requires addressing any limitations in access to opioid analgesics as well as reservations some health workers may have about prescribing or administering analgesics.

Summary of recommendations

Pain demands both specific management of the cause and control of the pain itself. The analgesic ladder involves starting pain relief with a non-opioid analgesic such as aspirin, paracetamol or ibuprofen. If pain persists or increases, an opioid analgesic such as codeine should be added for mild to moderate pain. If the pain is still not controlled or increases, codeine should be stopped and oral morphine added to the aspirin, paracetamol or ibuprofen. Morphine for home use is available as a liquid.

Quality of life can be significantly improved by: treating other physical symptoms with medication and home remedies; ensuring preventive care in the bedridden patient, with careful attention to mobility, skin care and hygiene; providing psychosocial support to patients and families, including support for caregivers and bereavement counselling; and spiritual support.

People living with HIV should be encouraged to manage most symptoms themselves, and community and peer groups and organizations can provide much of the other support.

Key resources:

137. Palliative care: symptom management and end-of-life care
English: http://www.who.int/hiv/pub/imai/genericpalliativecare082004.pdf
French: http://www.who.int/hiv/pub/imai/imai_palliative_2008_fr.pdf

138. WHO's pain ladder (web page)
http://www.who.int/cancer/palliative/painladder/en/index.html

139. IMAI palliative care training course
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

140. Caregiver booklet: Symptom management and end of life care (draft)
http://www.who.int/hiv/pub/imai/patient_caregiver/en/index.html

2.4.2.4 Tuberculosis prevention, diagnosis and treatment

Tuberculosis (TB) is a leading cause of illness and death of people living with HIV—almost one in four of the world's 2 million AIDS-related deaths each year is associated with TB, despite TB being largely preventable and curable. In countries with high HIV prevalence, up to 80% of people with TB test positive for HIV, and HIV-positive individuals are more likely to have reactivation and reinfection of TB. The majority (83%) of these deaths occur in Africa, where the HIV-positive TB mortality rate is 48 per 100 000 population, compared with 2 or fewer AIDS-related TB deaths per 100 000 in the rest of the world. Even for those that it does not kill, TB places a heavy burden on people living with HIV, causing significant illness that requires a minimum of six months treatment, with the associated economic costs to the individual, his or her family and the health care system.

This is of increasing concern, given the emergence of TB drug resistance, including multidrug- and extensively drug-resistant disease. Some most-at-risk groups (e.g. IDUs, prisoners and health workers in some settings) are at greater risk of infection and developing active TB.

In response to the dual epidemics, WHO recommends 12 collaborative TB/HIV activities as part of core HIV and TB prevention, care and treatment services (see Box 2 below). In addition to the provision of ART, which markedly reduces the risk of TB morbidity and mortality in people living with HIV, it is recommended that service providers focus on the 'Three Is for HIV/TB': intensified case finding (ICF) for TB, Isoniazid preventive therapy (IPT) and infection control for TB. In 2009 WHO produced up-to-date infection control guidelines and in January 2010 sixty experts from five regions met to review the evidence regarding ICF and IPT, and to revise the 1998 WHO UNAIDS Policy statement to produce new IPT/ICF guidelines.

WHO-recommended collaborative TB/HIV activities

Establish mechanisms for communication:

- Set up a coordinating body for TB/HIV activities effective at all levels;
- Conduct surveillance of HIV prevalence among TB patients;
- Carry out joint TB/HIV planning; and
- Conduct monitoring and evaluation (M & E).

Decrease the burden of TB in people living with HIV – the 'Three Is for HIV/TB'

- Establish Intensified TB case-finding;
- Introduce Isoniazid prevention therapy (IPT); and
- Ensure TB Infection control in health care and congregate settings.

Decrease the burden of HIV in TB patients

- Provide HIV testing and counselling;
- Introduce HIV prevention methods;
- Introduce co-trimoxazole preventive therapy (CPT);
- Ensure HIV care and support; and
- Introduce antiretroviral therapy (ART).

Summary of recommendations

To summarize the above, WHO recommends that TB and HIV/AIDS control programmes collaborate through an established coordinating body, undertake joint TB/HIV planning, ensure surveillance of HIV prevalence among TB patients and also ensure the monitoring and evaluation of activities (see Section 4.2 of Chapter 4).

The burden of HIV in TB patients should be reduced through HIV testing and counselling for TB patients and those suspected of having TB, and through provision of condoms and other HIV preventive interventions (see Section 2.3, cotrimoxazole prophylaxis (see Section 2.4.1) and HIV treatment and care. Early HIV diagnosis and ART is a critical intervention both for preventing the development of TB in people living with HIV and for reducing morbidity and mortality if they need TB treatment.

The burden of TB in people living with HIV should be reduced through the 'Three Is for HIV/TB': intensified TB case finding, Isoniazid preventive therapy and infection control for TB. Programmes providing HIV services should include TB prevention as part of high quality care. Early ART is a critical intervention for TB prevention since TB risk increases dramatically with immune status deterioration. Should TB develop, all TB patients living with HIV are eligible for ART as soon as possible and not later than 8 weeks under the new WHO 2009 ART guidelines.

WHO-recommended 'three Is for HIV/TB'

- Infection control for TB: A combination of measures aimed at minimizing the risk of TB transmission within populations
- Intensified case finding for TB: Screening for TB cases among people living with HIV
- Isoniazid preventive therapy: The use of Isoniazid to treat individuals with latent TB infection in order to prevent progression to active disease.

Intensified TB case finding in people living with HIV is essential since TB is a curable disease. Intensified HIV case finding in people with TB is also essential because cotrimoxazole prophylaxis can prevent complications.

WHO strongly recommends TB screening for all infants, children and adults with HIV. In addition, the information provided to all patients with HIV and caregivers of infants and children with HIV should address the risk of acquiring TB, ways of reducing exposure, the clinical manifestations of TB, the risks of transmitting TB to others and, where appropriate, TB preventive therapy. Regular screening for TB is also essential to quickly identify and treat TB and to determine whether patients are eligible for Isoniazid preventive therapy.

The TB status of HIV-infected patients should be monitored on all visits to health providers. Those with symptoms or signs suggestive of TB should undergo further clinical investigation. Most-at-risk populations, including injecting drug users, require specific targeting. Approaches to reducing the risk of latent TB infection progressing to TB-disease include treatment of the latent TB itself and improvement in immune function as a result of antiretroviral therapy.

TB infection control measures are essential to prevent the spread of TB to individuals, their families and others. Appropriate infection control measures (for example, developing a TB infection control plan, 'fast-tracking' coughing patients, assuring rapid TB diagnosis and improving ventilation) should be implemented and reviewed periodically to minimize the transmission risk. These measures are particularly important in congregate settings and health care facilities where there may be significant exposure and risk for TB transmission.

Isoniazid is an effective, well tolerated and inexpensive antibiotic for TB preventive therapy and should be provided to all people with HIV after screening for TB disease using fever, weight loss, current cough and night sweats as indicators. WHO strongly recommends Isoniazid daily for at least six months and conditionally recommends 36 months (evidence is emerging that longer duration may have benefits). Children and pregnant women are also eligible after screening for TB (see guidelines for dosing and indications). Specialist advice should be sought for preventive therapy for those thought to have been infected with multidrug-resistant or extensively drug-resistant TB. Previous TB is not a contraindication to TB-preventive therapy.

Key resources:

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

142. Guidelines for implementing collaborative TB and HIV programme activities
English: http://whqlibdoc.who.int/hq/2003/WHO_CDS_TB_2003.319.pdf
Russian: http://whqlibdoc.who.int/hq/2003/WHO_CDS_TB_2003.319_rus.pdf

143. Three I's Meeting: Intensified Case Finding (ICF), Isoniazid Preventive Therapy (IPT) and TB Infection Control (IC) for people living with HIV
http://www.who.int/hiv/pub/meetingreports/WHO_3Is_meeting_report.pdf

144. Isoniazid preventive therapy (IPT) for people living with HIV
http://www.stoptb.org/wg/tb_hiv/assets/documents/IPT%20Consensus%20Statement%20TB%20HIV%20Core%20Group.pdf

145. Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings
English: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269.pdf
English   Addendum (Tuberculosis infection-control in the era of expanding HIV care and treatment):
http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_ADD_eng.pdf
Russian: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_rus.pdf

146. Tuberculosis infection control in the era of expanding HIV care and treatment. Addendum to the WHO Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings
http://www.who.int/tb/publications/2006/tbhiv_infectioncontrol_addendum.pdf

148. Tuberculosis care with TB-HIV co-management: Integrated Management of Adolescent and Adult Illness (IMAI)
http://whqlibdoc.who.int/publications/2007/9789241595452_eng.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_partman.pdf

149. IMAI TB infection control at health facilities
http://www.who.int/hiv/pub/imai/TB_HIVModule23.05.07.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_partman.pdf

2.4.2.4.1 Treating HIV-associated tuberculosis

The Directly Observed Treatment, Short-course (DOTS) principles are well recognized as the most effective approach to managing TB in people living with HIV. They may develop TB at any stage in the course of HIV infection, but the incidence increases with the severity of immunosuppression. Among children under five, there is often rapid progression from infection with TB to serious TB disease. Since people living with HIV are more likely to have smear-negative extrapulmonary TB, the reliance on smear microscopy is a concern. In addition, chest X-ray patterns may be atypical in people with HIV, particularly where there is severe immunosuppression, and this can also make diagnosis of TB difficult. The 2009 WHO guidelines recommend that all TB patients with HIV should be started on ART as soon as possible and not later than 8 weeks following TB diagnosis.

Summary of recommendations

The 2009 WHO guidelines recommend that all TB patients with HIV should be started on ART as soon as possible and not later than 8 weeks. WHO recommends scaling up access to culture-based diagnosis for people living with HIV. Recommended TB treatment based on a four-drug initial phase and a continuation phase remains the same for adults and children with HIV. Thioacetazone is contraindicated, as it can result in potentially fatal skin hypersensitivity.

Key resources:

148. Tuberculosis care with TB-HIV co-management: Integrated Management of Adolescent and Adult Illness (IMAI)
http://whqlibdoc.who.int/publications/2007/9789241595452_eng.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_partman.pdf

150. Guidance for national tuberculosis programmes on the management of TB in children
http://whqlibdoc.who.int/hq/2006/WHO_HTM_TB_2006.371_eng.pdf

151. TB/HIV: a clinical manual: 2nd edition
English: http://whqlibdoc.who.int/publications/2004/9241546344.pdf
Portuguese: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.329_por.pdf

2.4.3 Laboratory services for HIV monitoring

Objective care and treatment of HIV infected individuals requires clinical and laboratory monitoring. Laboratory monitoring is done by measuring the viral load and/or CD4+ T-lymphocytes, both of which have been found to be good predictors of clinical patient outcome. CD4+ T-cell count is the commonly used marker in deciding when to start ART; initiate medical intervention to prevent opportunistic infections; monitor HIV disease progression; determine level of immune suppression; and provide overall assessment of immune restoration in patients receiving ARV. An increase in viral load and synchronous reduction in CD4 counts are good indicators to change to the next line of ARV drugs. However, HIV viral load measurement is more expensive than CD4 enumeration, though both require well established laboratories, depending on the type of CD4 technology selected.

National HIV/AIDS programmes should establish laboratories with the capacity to validate the performance of available CD4 technolgoies and viral load tests and place them in laboratories according to the levels of available infrastructure and expertise. WHO guidance on selection and use of CD4 technologies in Resource limited settings is being updated

Key resource:

152. CD4+ T-cell enumeration technologies: technical information (will be published in 2010)

Chapter 3: Operationalizing the priority interventions – strengthening health systems

3.1 Background

While one can identify priority interventions that the health sector should integrate in its response to the HIV epidemic, it is clear that they must all be delivered through channels in organizations or by people—health services, outreach, community actions—which will themselves need to be resourced in order to happen. In keeping with the ideas underlying the primary health care movement, people working on and with HIV have always maintained that those actions should be informed by concerns such as human rights, equity, efficiency, the need to provide services of good quality that are responsive to the needs of target populations who should be able to access these services without risking financial catastrophe. WHO defines 'the sum total of all the organizations, people and actions whose primary intent is to promote, restore or maintain health' as the 'health system'.[8]   The health sector—that part of the health system regulated by the health ministry—is an important part of the health system. However, as many actions to improve health (such as increasing access to water and sanitation, improving road safety or providing social support to people living with HIV/AIDS) are under the purview of other sectors, health systems span many parts of society, including civil society, home-based carers and the private sector.

It is increasingly recognized that the weakness of health systems remains a major barrier for the response to HIV and the realization of other health objectives. The biggest challenges for the response to HIV lie in countries with generalized HIV epidemics, where HIV increases the workload of the health sector while undermining the capacity of its workforce. But high-income countries with low-level or concentrated epidemics face health system challenges too—for example, in reaching most-at-risk and marginalized groups or deciding where to integrate interventions in the health system.

While the structure and operations of health systems vary from country to country and from area to area within countries, WHO has identified six building blocks of all health systems. These are illustrated in the figure below and include:

1. service delivery;
2. health workforce;
3. information;
4. medical products, vaccines and technologies;
5. financing; and
6. leadership and governance.

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8   Everybody's business: Strengthening health systems to improve health outcomes. WHO's framework for action. Geneva, World Health Organization, 2007. Available at: http://www.who.int/healthsystems/strategy/everybodys_business.pdf

'Health systems strengthening' is defined as improving these six building blocks and managing their interactions in ways that achieve more equitable and sustained improvements across health services and health outcomes. In keeping with the primary health care strategy of WHO, it is proposed that they be strengthened to reach universal coverage (to improve health equity), which will require service delivery reforms, public policy reforms and leadership reforms.[9]

In this chapter, five of these building blocks will be discussed as they relate to scaling up the response to HIV within a primary health care approach. The remaining building block, 'information' is covered in Chapter 4.

Figure 3. Health system building blocks, desirable attributes, goals and outcomes

System building blocks

- Service delivery
- Health workforce
- Information
- Medical products, vaccines and technologies
- Financing
- Leadership/governance

Access
Coverage

Quality
Safety

Overall goals/outcomes

- Improved health (level and equity)
- Responsiveness
- Social and financial risk protection
- Improved efficiency
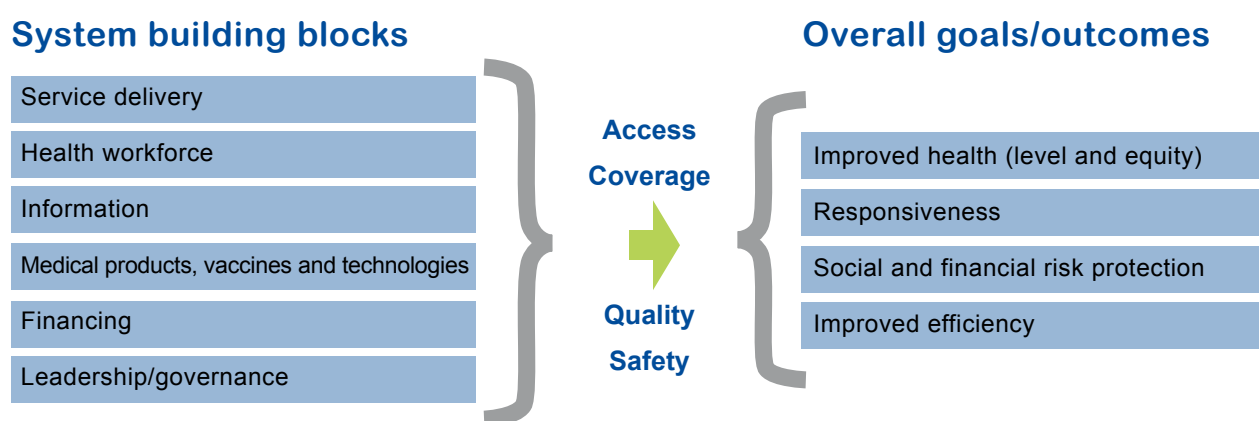
Source: Everybody's business: Strengthening health systems to improve health outcomes. WHO's framework for action. Geneva, World Health Organization, 2007. Available at http://www.who.int/healthsystems/strategy/everybodys_business.pdf

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9   The World Health Report 2008. Primary Health Care - Now more than ever. Geneva, World Health Organization, 2008. Available at: http://www.who.int/whr/2008/en/index.html

3.2 Service delivery

Good health services are those that deliver effective, safe, high-quality health interventions to the people who need them, when and where they need them and with minimum waste of resources. These interventions may target individuals or entire populations, whether defined by geography (e.g. national, district or local) or characteristics (e.g. gender, age, nature of illness, occupation, behaviour). In the case of HIV, health services should take into account that people living with HIV or most-at-risk of infection often face stigma and discrimination because of their infection or because they may belong to groups with particular behavioural or disempowering characteristics, such as sex workers, injecting drug users, prisoners, youth and men who have sex with men. Reaching these groups with HIV prevention, treatment and care requires special interventions that are often best delivered through outreach, community groups or their own organizations.

Those planning and implementing HIV-related service delivery programmes should consider the need for: integration and linkage of health services; infrastructure and logistics; demand for services; and management.

3.2.1 Integration and linkage of health services

There are no universal models for good service delivery. However, in the case of HIV-related services, it is agreed that services should be delivered across a continuum of care. This requires integrated and linked service provision at all levels of the health system, from primary to secondary to tertiary (specialist) care, embracing all elements of the health system, including home-based and community-based outreach care.

'Linkage' refers to a relationship—for example, between a local health centre and a district hospital. 'Integration' refers to delivering multiple services or interventions to the same patient by an individual health care worker or by a team of health care workers and, possibly, workers from other fields. Strong linkages (with referral and coordination between service providers) and integrated services are needed in particular areas of health care, such as family planning, care for mothers and newborn infants, mental health care and care for people living with HIV. All of these may involve a range of services and service providers, including home-based and community-based ones.

A particularly strong case can be made for integrating HIV-related services into all maternal and newborn care and sexual and reproductive health care service delivery. Integrating HIV-related and TB-related services into one package of services is also recommended.

In many large health centres and hospitals, pregnant women with HIV are identified in the antenatal clinic and then referred for HIV-related services that are in another area of the facility or in another facility altogether. This often results in a significant loss to follow-up; many women do not appear at an HIV clinic even if it is in the same facility. This is a reason why pregnant women who need ART often do not receive it.

To avoid this sequence of events, full integration of HIV intervention delivery within services for antenatal care, childbirth, newborn and postpartum care is a minimum requirement in any country, district or locality where HIV infection is common. Such integration should include HIV testing and counselling, assessment of whether antiretrovirals for treatment or prophylaxis are needed, initiation and monitoring of antiretrovirals in women and exposed infants, follow-up HIV testing for infants, clinical review and cotrimoxazole prophylaxis when infants return for immunization.

Sexual and reproductive ill health and HIV infection share the same driving forces, causes or contributors: poverty, limited access to information, gender inequality, cultural norms and social marginalization of the most vulnerable and at-risk populations. This explains why there is international consensus around the need for effective linkages between responses to HIV and responses to sexual and reproductive health concerns, as well as consensus around the need for integration of related services whenever feasible. These integrated services should include: promoting condom use for preventing unintended pregnancy, sexually transmitted infections (STIs) and HIV; reproductive choice counselling and counselling for family planning and contraception; education on sexual health for people living with HIV; and youth-friendly health services covering sexual and reproductive health.The high incidence of TB among people living with HIV and the frequent occurrence of HIV infection among people with TB provide the rationale for linkages between responses to TB and HIV, and integration of TB-related and HIV-related services. Such linkages and integration have already resulted in substantial increases in the proportion of TB patients tested for HIV and then referred to HIV care services (or provided with some HIV services on-site). In addition, HIV programmers are increasingly committed to TB control, intensified TB case finding among HIV-infected patients and to offering Isoniazid prophylaxis after excluding active TB.

How exactly to go about linking and integrating services will depend on how the health service is organized and also on the characteristics of the HIV epidemic. For more on the latter, see Chapter 1, Section 1.4.

Summary of recommendations

Services for HIV should be linked or integrated with other services in the health sector, including those for TB, sexual and reproductive health, and maternal and newborn health. They should also be linked or integrated with services provided by other sectors, such as education and social welfare, and to those provided within homes and communities by families, international and national NGOs, community-based organizations, faith-based organizations and groups or networks of people living with HIV. All of these services should be provided as close to clients as possible.

However, when considering the integration of health services, planners should opt for a pragmatic approach that takes into account and balances the specific needs of target populations (that might be marginalized), the characteristics of the particular health system and the aim of providing a comprehensive package of services.

Key resources:

28. Linkages between HIV and sexual and reproductive health: Technical documents and advocacy materials (web page)
http://www.who.int/reproductivehealth/publications/linkages/en/index.html

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

153. Integrated health services: What and why?
http://www.who.int/healthsystems/service_delivery_techbrief1.pdf

154. WHO IMAI/IMCI/IMPAC tools (IMAI includes a series of tools that addresses the overall health of the patient by supporting a shift from an exclusively acute care model to a chronic care model that includes ART and prevention. IMAI also strengthens health systems by providing tools for patient monitoring, referral and back-referral to district hospitals, clinical team building, clinical mentoring and district planning.)
http://www.who.int/hiv/topics/capacity/

http://www.who.int/hiv/pub/imai/imai_publication_diagram.pdf

155. Interim policy on collaborative TB/HIV activities
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_eng.pdf
French: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_fre.pdf
Spanish: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_spa.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_rus.pdf

156. Rapid assessment tool for sexual & reproductive health and HIV linkages: A generic guide prepared and published by IPPF, UNFPA, WHO, UNAIDS, GNP+, ICW and Young Positives

http://whqlibdoc.who.int/hq/2009/91825_eng.pdf

3.2.2 Infrastructure and logistics

Service delivery requires infrastructure and logistics, including physical space, equipment, utilities, waste management, transport and communications.

Physical space is required for receiving clients, triage, waiting, clinical management, counselling, care delivery, surgery, pharmacy, storage, management and equipment. Space is also needed for laboratories, deliveries, communications, infection control, waste management and so on.

For people living with HIV, particular attention should be paid to their needs for privacy and confidentiality, safe water, sanitation and hygiene, and infection control. The latter should take into account the need to reduce the risk of bloodborne infections such as HIV and hepatitis, and of other infections such as TB. Reducing the risk of TB infection is particularly important given the high incidence of TB among people living with HIV and the emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB.

With the recent scale-up of treatment for HIV infection, the limitations of laboratory infrastructure are increasingly recognized as major obstacles to the roll-out of services. For follow-up on ART, it is important to have access to some laboratory support in the periphery of the health system (until recently not routinely available), as well as at higher levels of the system (see Section 2.4.3 in Chapter 2). This means essential tests should be available on site at a local health centre or district hospital, as should the capacity to transport specimens to higher levels. Laboratory support for antiretroviral therapy, early infant diagnosis and TB diagnosis are important priorities for HIV-related laboratory services.

Section 2.4.3 in Chapter 2 provides detailed guidance on the types of laboratory tests needed to support treatment of people living with HIV and to manage conditions frequently found among them, such as TB. Providing the tests is a huge challenge, the dimensions of which can be understood best if laboratory support is considered as a health sub-system. When planning to scale up laboratory services, service delivery, health workforce and the other building blocks of a health system should be considered as well (see Figure 3).

Infection control in all facilities is also important. This includes safe medical waste management with separate containers and adequate disposal systems for sharps, other infectious or hazardous waste, and non-infectious and non-hazardous waste.An emerging issue is the relatively low access to information technology in resource-limited settings. Computerization has the potential to markedly enhance efficiency of HIV service delivery, as computerized record keeping, monitoring and supply management can free up time for clinical tasks.

Communication between staff at local health centres and staff in health facilities and laboratories at higher levels of the health system is essential to provide HIV care of the highest quality. Facilitating this communication involves ensuring that telephone, radio or other communications infrastructure is adequate. Ideally, the infrastructure should include computers connected by intranet or internet.

Summary of recommendations

The infrastructure and logistics of health service delivery should be designed to last. They should be configured to enable delivery on demand of services to people who need them, wherever they may be located. For managing HIV infection, it is especially important that health facilities are designed for privacy and confidentiality, infection control and ready access to laboratories and imaging services.

Every effort should be made to limit the spread of nosocomial infections (resulting from treatment in health settings) and bloodborne infections (such as HIV and hepatitis). Support should be provided for comprehensive infection control, including specific consideration of the risk of the spread of TB.

Key resources:

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

145. Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings
English: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269.pdf
English Addendum (Tuberculosis infection-control in the era of expanding HIV care and treatment): http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_ADD_eng.pdf
Russian: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_rus.pdf

148. Tuberculosis care with TB-HIV co-management: Integrated Management of Adolescent and Adult Illness (IMAI)
http://whqlibdoc.who.int/publications/2007/9789241595452_eng.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_partman.pdf

149. IMAI TB infection control at health facilities
http://www.who.int/hiv/pub/imai/TB_HIVModule23.05.07.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_partman.pdf

157. District health facilities: guidelines for development and operations
http://www.wpro.who.int/NR/rdonlyres/C0DAA210-7425-4382-A171-2C0F6F77153F/0/DistHealth.pdf

158. Management of resources and support systems: Equipment, vehicles and buildings
(WHO web page)
http://www.who.int/management/resources/equipment/en/index1.html

159. WHO consultation on technical and operational recommendations for scale-up of laboratory services and monitoring HIV antiretroviral therapy in resource-limited settings (Expert meeting, Geneva, 2004)
http://www.who.int/hiv/pub/meetingreports/labmeetingreport.pdf

160. WHO policy on TB infection control in health care facilities, congregate settings and households
http://whqlibdoc.who.int/publications/2009/9789241598323_eng.pdf

3.2.3 Demand for services

In health service planning, most attention usually goes to planning on the supply side of services. The question as to whether the services will be used is often neglected, even when it is clear that there are factors that could limit demand. Denial, fear, stigma, discrimination and high costs are among the factors that limit demand for and uptake of health services. This is especially the case for the uptake of services related to HIV and TB, conditions surrounded by fear, stigma and discrimination. Chapter 2, Sections 2.3.1 and 2.3.2 discuss interventions that can generate demand, such as outreach to people in most-at-risk populations.

Summary of recommendations

Increasing demand requires understanding the user's perspective, raising public awareness and overcoming cultural, social or financial obstacles. Overcoming such obstacles demands various forms of social engagement in planning, delivery and monitoring services. In the case of HIV-related services, people living with HIV and those vulnerable or most at risk should be involved in the design, management, delivery and monitoring of services. This can ensure that services meet their unique needs and concerns, such as fear of disapproval or open hostility on the part of staff, and fear of disclosure of their HIV status and the possible consequences.

Key resources:

161. Missing the target #5: Improving AIDS drug access and advancing health care for all
http://www.aidstreatmentaccess.org/itpc5th.pdf

162. Service delivery model on access to care and antiretroviral therapy for people living with HIV/AIDS
http://www.ifrc.org/Docs/pubs/health/service-delivery-en.pdf

3.2.4 Management

Good leadership and management are about providing direction to and gaining commitment from partners and staff, facilitating change and achieving better health services through efficient, creative and responsible deployment of people and other resources. Good leaders set the strategic vision and mobilize action towards that vision. Good managers ensure effective organization and use of resources to achieve results and meet goals and targets.

The health sector response to the HIV epidemic requires different types of management action. There is a need for strategic planning at the national and sub-national levels; for operational planning throughout the service delivery system; and for facility management.

At the highest level of a health system, good management requires situation analysis, review of the health sector response (including existing policies and strategies), setting programme priorities, selecting key indicators and setting targets. The next step is coordinating and managing the development and implementation of programmes. Good management also requires strengthening management systems and ensuring the technical quality of services, both of which are dealt with below.

Increasingly, the management of implementation occurs at district, facility and community level. The district management team, facility managers and community organizations need skills to plan the implementation, to mobilize resources and to manage staff, finances and supplies. Training is usually organized and delivered at the regional or district level; it is then followed up by regular supportive supervision from the district team and by mentoring from experienced managers from other districts, communities or facilities.

At the health facility level, the aim of good management is to provide services to the community in an appropriate, efficient, equitable and sustainable manner. This can only be achieved if key resources for service provision, including human input, information, finances and the hardware and process aspects of care delivery are brought together at the point of service delivery and are carefully synchronized.

3.2.4.1 Strengthening management systems

Deficiencies in health system management are well-recognized as obstacles to efficient service delivery.

Summary of recommendations

WHO recommends action to strengthen management capacity in the health sector. Such action should include ensuring an adequate number of managers at all levels of the health system, ensuring managers have appropriate competencies, creating better management support systems and creating enabling working environments.

Key resources:

163. Strengthening management in low-income countries
http://www.who.int/management/general/overall/Strengthening%20Management%20in%20Low-Income%20Countries.pdf

164. The health manager's web site (WHO web site)
http://www.who.int/management/en/

165. Strengthening management capacity in the health sector (WHO web site)
http://www.who.int/management/strengthen/en/index.html

3.2.4.2 Ensuring the technical quality of services

Universal access to HIV prevention, treatment and care provided by the health sector requires that the package of interventions be accessible and affordable by the people who need those services and that interventions are of good quality so that they achieve the intended results.

Summary of recommendations

Ensuring quality during scale-up of HIV-related services requires:

- Establishing external and internal quality management systems. These should address clinical care, laboratory testing, and workplace improvement. It is of critical importance to involve the community and beneficiaries (people living with HIV and those vulnerable and most-at-risk of infection) in assessing and improving the quality of care.

- Regularly updating national normative guidelines and tools so that they continue to reflect the best international practices and the latest recommendations. This requires convening technical advisory committees and working groups regularly, since HIV and AIDS are rapidly changing areas with new information constantly becoming available.

- Establishing standardized procedures to accredit health facilities and to certify health care providers in the delivery of HIV prevention, treatment and care. All facilities and providers, whether run by government, private business or NGOs, should be covered.

- Establishing national standards for HIV prevention, treatment and care.

- Ensuring quality of training through, for example, the use of experienced facilitators and attention to facilitator-trainee ratios.

- Establishing supervision and clinical mentoring systems and a budget to prepare and deploy supervisors and mentors for post-training and on-the-job supervision.

- Establishing well-functioning patient and programme monitoring systems that the clinical team is able to use to measure and improve the quality of care they provide.

Key resources:

81. WHO recommendations for clinical mentoring to support scale-up of HIV care, antiretroviral therapy and prevention in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/9789241594684_eng.pdf

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

166. Standards for quality HIV care: a tool for quality assessment, improvement, and accreditation
English: http://whqlibdoc.who.int/hq/2004/9241592559.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/standardsquality_fr.pdf

167. Guidelines for organising national external quality assessment schemes for HIV serological testing
http://www.who.int/diagnostics_laboratory/quality/en/EQAS96.pdf

168. Guidelines for establishment of accreditation of health laboratories
http://www.searo.who.int/LinkFiles/Publications_SEA-HLM-394.pdf

169. A guide to monitoring and evaluation for collaborative TB/HIV activities
http://www.who.int/hiv/pub/tb/hiv_tb_monitoring_guide.pdf

170. Toolkit on monitoring health systems strengthening: Service delivery (2008 draft document)
http://www.who.int/healthinfo/statistics/toolkit_hss/EN_PDF_Toolkit_HSS_ServiceDelivery.pdf

171. Male circumcision quality assurance guide: A guide to enhancing the safety and quality of services
http://www.who.int/hiv/pub/malecircumcision/qa_guide/en/

172. Monitoring and evaluation of health systems strengthening: An operational framework
http://www.who.int/healthinfo/HSS_MandE_framework_Nov_2009.pdf

3.3 Health workforce

Effective service provision requires trained service providers in the right number, at the right place, at the right time, working with the right attitude, knowledge and skills, commodities (medicines, disposables, reagents) and equipment, and with adequate financing. It also requires an organizational environment that provides the right incentives to providers and users.

In many of the countries with the highest burden of HIV, international migration and domestic movement out of health sector employment contribute to the crisis in human resources. In some of these countries, the crisis is aggravated by civil service hiring caps and long delays between the end of education and service posting.

HIV itself contributes to the crisis, as it increases the demand for services and infects and affects health workers. They may be disabled by illness, lost to death or required to spend less time at work and more at home taking care of HIV-infected family members, attending to those family members' usual chores and attending funerals. Thus, the supply of healthy and productive health workers is reduced.

Working with people living with HIV is labour intensive and can also be emotionally stressful and draining. When there are many HIV-infected people, the demand for services increases. High workloads, poor pay and bad working conditions are added disincentives for health care workers to deal with HIV.

Working in the HIV field may also be unpopular with some health providers because they fear becoming infected with HIV or TB, or because they cannot relate easily to clients with risk behaviours of which they disapprove. The latter is a problem especially in countries with low or concentrated epidemics, where many people living with HIV come from marginalized groups such as sex workers, injecting drug users, men who have sex with men and prisoners.

The combined results of the above are that firstly, it may be difficult to motivate health workers to take jobs providing HIV services unless they are provided with special incentives, and secondly, there is a severe shortage of skilled health workers in areas with high HIV prevalence.

Despite those challenges, a defining feature of the response to the HIV pandemic has been the ability of communities to mobilize resources to address the impact of HIV and prevent its further spread. Groups of people living with HIV, community- and faith-based organizations, and many others have taken responsibility for advocacy and action. They have learned to play a wide range of roles in the response to HIV, serving as outreach workers, home carers, adherence supporters, providers of psychosocial support, counsellors and managers. This has led to the creation of entirely new health professions in some countries. It has led to strong momentum in the direction of task shifting and to persuasive calls for recognition and payment for some of the essential services they provide. Their roles are increasingly recognized and institutionalized and are beginning to transform the debate on universal primary health care from a distant dream to an achievable goal.

Summary of recommendations

To counter difficulties in motivating and retaining health workers, WHO recommends the following actions:

- training additional health workers;
- sensitizing health workers for work with people living with HIV;
- ensuring health workers have access to prevention and other HIV- and TB-related services;
- ensuring health workers have access to immunization against vaccine-preventable diseases, especially hepatitis B immunization; and
- considering task shifting as a way of increasing the pool of knowledgeable HIV-related service providers.

A full package of HIV prevention, treatment and care services should be made available to health workers and their families on a priority basis and should be tailored specifically to their needs. Please also refer to Section 2.4.2.4 for additional information on programmes for health care workers.

In countries with generalized HIV epidemics and health worker shortages, efforts should be made to increase the number and the competence of health care workers. WHO recommends:

- recruiting and training additional health workers;
- ensuring relevant HIV content in pre-service curricula;
- shifting tasks from more- to less-specialized health workers; and
- developing in-service training and support for continued learning (including mentoring and continuing medical education).

To retain existing health workers, the following policy changes should be considered:

- instituting codes of practice and ethical guidelines to minimize migration of health workers from low-income to high-income countries;
- reducing the draw of private and NGO-run programmes on workers in public health programmes and agreeing on nationwide standard incentive practices;
- improving the quality of the workplace, including:
  - » establishing occupational health and safety procedures to reduce the risk of contracting HIV and other blood-borne diseases;
  - » addressing stress and burnout;
  - » guaranteeing job security;
  - » prohibiting HIV-related and other forms of discrimination;
  - » providing social benefits;
  - » adjusting work demands;
  - » providing financial incentives;
  - » providing non-financial incentives, such as career and training opportunities.

WHO also recommends recognition and support for the vital roles played by people living with HIV, community organizations and lay workers. It recommends that the recognition and support take tangible forms, such as certification of skills in service delivery, and pay. These measures should be integrated into national plans for developing human resources for health and HIV.

Key resources:

96. Joint ILO/WHO guidelines on health services and HIV/AIDS
English: http://whqlibdoc.who.int/publications/2005/9221175537_eng.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/who_ilo_guidelines_fr.pdf
Spanish: http://www.who.int/entity/hiv/pub/prev_care/who_iloguidelines_sp.pdf
Russian: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelines_ru.pdf
Arabic: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_arabic.pdf
Chinese: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelineschinese-pdf.pdf
Indonesian: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_indonesian.pdf
Vietnamese:http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_vietnamese.PDF

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

173. Tools for planning and developing human resources for HIV/AIDS and other health services
http://www.who.int/hrh/tools/tools_planning_hr_hiv-aids.pdf

174. Task shifting: Rational redistribution of tasks among health workforce teams: Global recommendations and guidelines
http://www.who.int/healthsystems/TTR-TaskShifting.pdf

175. How IMAI (and IMCI) support national adaptation and implementation of task shifting (IMAI-IMCI task-shifting implementation support brochure)
http://www.who.int/hiv/pub/imai/IMAI_IMCI_taskshifting_brochure.pdf

3.4 Medical products and technologies

Many health systems continue to have weak procurement and supply management systems, and the result is frequent stock-outs of antiretroviral drugs, medicines and other essential commodities, including gloves, needles and testing reagents.

Methadone and buprenorphine were added to the WHO list of essential medicines in 2005. These medicines, powerful opioid analgesics used to treat opioid addiction, are controlled substances under the international drug control conventions and are not sufficiently available in many countries, mainly due to: (1) greatly exaggerated fears of dependence; (2) overly restrictive national drug control policies; and (3) problems in procurement, manufacture, storage and distribution of controlled substances. It is estimated that more than 80% of the world's population has no proper access to controlled medications (including opioids and psychoactive substances) due to regulatory barriers, prejudice and lack of proper information at national and international levels.

Another concern is for the quality, safety and efficacy of the medicines that are available. The supply of good antiretroviral medicines is reasonably well secured by the WHO prequalification scheme, by the US Federal Drug Administration's practice of giving provisional approval to generic medicines and by quality standards insisted on by the Global Fund to Fight AIDS, Tuberculosis and Malaria. However, the same is not the case for other essential medicines brought in by a variety of suppliers under the oversight of national regulatory authorities, which face challenges in carrying out their duties.

Summary of recommendations

A well-functioning health system should ensure equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, as well as access to their scientifically sound and cost-effective use. WHO recommends:

- establishing national policies, standards, guidelines and regulations for procurement of drugs and other commodities;
- providing health authorities with information on prices, international trade agreements and capacity to set and negotiate prices;
- ensuring reliable manufacturing practices and quality control for priority products;
- establishing procurement, supply, storage and distribution systems that minimize leakage and other waste;
- providing support for rational use of essential medicines, commodities and equipment through guidelines, strategies and training to ensure enforcement, reduce resistance and maximize patient safety;
- delivering on countries' obligations under UN Conventions to provide access to analgesics and opioids for substitution therapy.

Key resources:

114. Prequalification programme: A United Nations Programme managed by WHO (WHO web site)
http://apps.who.int/prequal/

176. AIDS medicines and diagnostics service (WHO web site)
http://www.who.int/hiv/amds/

177. Essential medicines and pharmaceutical policies (WHO web site)
http://www.who.int/medicines/en/

178. Global price reporting mechanism (GPRM)
http://www.who.int/hiv/amds/gprm/en/index.html

179. A 'step-by-step' algorithm for the procurement of controlled substances for drug substitution treatment.
http://www.unodc.org/documents/hiv-aids/Step-by-Step%20procurement%20subs%20treat.pdf

180. Access to controlled medications programme: Framework
http://www.who.int/medicines/areas/quality_safety/Framework_ACMP_withcover.pdf

181. Global Fund Quality Assurance Policy for Pharmaceutical Products
http://www.theglobalfund.org/documents/psm/Annex1-%20FullTextRevisedQualityAssurancePolicy_en.pdf

182. Procurement and supply management toolbox (web site)
http://www.psmtoolbox.org/

183. CCM grant oversight tool (web site)
http://www.theglobalfund.org/en/ccm/guidelines/#dashboard

3.5 Financing

After the UN General Assembly's Declaration of Commitment on HIV/AIDS in 2001, funding for the response (including the health sector response) increased sharply each year until it reached an estimated US$ 10 billion in 2007. However, WHO and UNAIDS estimated that there was still a US$ 8 billion gap between what was available and what was actually needed to scale up the response to HIV at an acceptable pace. There is a similar gap between available resources and needs for other health priorities. In 2002, the WHO Commission on Macroeconomics and Health recommended that low- and middle-income countries spend a minimum of US$ 40 per capita on essential health services, but many still spend far less than that amount.[10] This figure has been revised to US$ 54 in 2009 by the Taskforce on Innovative Financing for Health Systems[11] of the International Health Partnership.

In many countries, the majority of people and governments cannot afford the costs of HIV treatment and care, particularly antiretroviral therapy. In most countries heavily burdened by HIV, sustainable provision of HIV treatment and care will require external funding for the foreseeable future. This would be true even if these countries increased their domestic funding for the health sector to 15% of national gross domestic product, as many African countries pledged to do in the 2001 Abuja Declaration.[12]

External and domestic government funding for the HIV response has increased considerably, but many people living with HIV still find it difficult to access essential services. Even when drugs are provided free of charge, they incur out of pocket expenditures for the treatment and prevention of concurrent diseases and opportunistic infections, laboratory diagnosis and formal and informal fees. This limits their access to essential services when they are poor or depend on others to cover their health care costs.

10   *Report of the WHO Commission on macroeconomics and health*. Geneva, WHO, Fifty-fifth World Health Assembly, 23 April 2002.

11   *More money for health, and more health for the money.* London, Taskforce on Innovative International Financing for Health Systems, 2009. Available at: http://www.internationalhealthpartnership.net//CMS_files/documents/task-force_report_EN.pdf

12   Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Disease. Abuja, Nigeria, Organization for African Unity (OAU), 27 April 2001.

Summary of recommendations

Health systems should raise and secure adequate funds for health in order to ensure that people can use the services they need and are protected from financial catastrophe or impoverishment because they have to pay for services. In 2005, the World Health Assembly urged its Member States to:[13]

- ensure that health financing systems include a method for prepayment of financial contributions for health care, with a view to sharing risk among the population and avoiding catastrophic health care expenditure and impoverishment of individuals as a result of seeking care;

- ensure adequate and equitable distribution of good-quality health care infrastructures and human resources for health so that those insured receive equitable and good-quality health services according to their benefits package;

- ensure that external funds for specific health programmes or activities are managed and organized in a way that contributes to the development of sustainable financing mechanisms for the health system as a whole;

- plan the transition to universal coverage of their citizens in ways that contribute to: meeting the needs of the population for quality health care; reducing poverty; attaining internationally agreed development goals, including those contained in the United Nations Millennium Declaration; and achieving health for all.

With regard to access to services for HIV, WHO recommends that countries implement a public health approach to scale-up of services and also adopt a policy of free access at the point of service delivery to basic HIV services, including consultation fees, HIV testing and antiretroviral therapy.

Key resources:

184. GTZ-ILO-WHO consortium on social health protection in developing countries
http://www.socialhealthprotection.org/

185. Health financing policy (WHO web site)
http://www.who.int/health_financing/en/

186. WHO discussion paper: The practice of charging user fees at the point of service delivery for HIV/AIDS treatment and care
http://www.who.int/hiv/pub/advocacy/promotingfreeaccess.pdf

187. HIV financing (WHO web site)
http://www.who.int/hiv/topics/systems/health_financing/en/

188. Global Fund HIV proposals costing tool (and user manual)
http://www.who.int/hiv/pub/toolkits/gfatm_costing_tool_user_manual_v1.1.pdf

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13 Sustainable financing, universal coverage and social health insurance. Geneva, WHO, Fifty-eighth World Health Assembly, Ninth plenary meeting, 25 May 2005.

3.6 Leadership and governance

Good leadership and governance can ensure that strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system design and accountability.

Leaders with consistent messages are needed to: counter stigma and discrimination; support the involvement of people living with HIV in the response to HIV; ensure equity in access to services; deal with the gender dimensions of the epidemic; speed progress towards reducing the gap between resources available and resources required to scale up the response; and achieve the universal access goal. Leaders with consistent messages are also needed to help people envision a better future—and to achieve that future through research and innovation that finds new tools and new ways of putting them to effective use.

Calls for leadership often seem to be aimed at politicians and others in positions of great power. However, accelerating the response to HIV will also require leadership from business, industry, trade unions, and academic and research institutions. As well, it will require leadership within neighbourhoods and communities, from community councils, faith-based and other community-based organizations, formal and informal groups, networks of people living with HIV, people vulnerable or at high-risk of infection, youth and so on. Health workers at all levels have opportunities to play leadership roles and use their professional and personal connections to advance the cause of scaling up the response to HIV.

Governance of the response to HIV has evolved considerably over the last few years. It was once dominated by the health sector and led by national AIDS programmes within ministries of health. It then shifted to national AIDS commissions with representatives from multiple sectors and HIV-related programmes in ministries and other organizations responsible for action in those sectors. In many low- and middle-income countries, UN Theme Groups on AIDS have been established. These groups were originally intended to coordinate the UN system's contribution to national responses to HIV, but they have expanded to include representatives from government, donors, civil society and the private sector, and now seek to harmonize and coordinate action by all of these stakeholders.

When the Global Fund to Fight AIDS, Tuberculosis and Malaria became operational in 2002, it introduced Country Coordinating Mechanisms (CCMs) to foster national ownership and engage government, donors, civil society and the private sector in the response to all three diseases.[14] CCMs are meant to build on already existing mechanisms, such as national AIDS commissions and Expanded UN Theme Groups on AIDS, while also increasing transparency and accountability of financing and implementation of the response to HIV. All of these mechanisms have the potential to make governance more complicated and difficult, and to increase rather than reduce duplication and waste if roles and responsibilities are not clearly defined.

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14   More information available at: http://www.theglobalfund.org/en/ccm/

The increasingly complicated governance of the response to HIV may call upon health sector stakeholders to participate in several multisectoral country coordinating mechanisms. Participating is vital to ensure their compliance with and their contributions to application of the 'Three Ones' principles: a) one agreed HIV/AIDS action framework that provides the basis for coordinating the work of all partners; b) one national AIDS coordinating authority with a broad-based multisectoral mandate; and c) one agreed country level monitoring and evaluation system.

In addition, health sector stakeholders are called upon to ensure that health sector HIV interventions are included and given appropriate priority and weight in national AIDS plans and action frameworks, as well as in national health sector plans, medium-term expenditure frameworks and Poverty Reduction Strategy Papers. There are also calls for stakeholders working in other sectors to commit to collaborating with the health sector and to support health sector HIV interventions.

While participating in all of these mechanisms and processes, health sector stakeholders need to maintain strong and coherent adherence to principles guiding the health sector in its contributions to the response to HIV, including commitment to universal access, respect for human rights and community involvement in planning, governance and delivering and monitoring HIV-related services.

These principles should be upheld within the health sector and through regular reviews of policies, legislation and regulations governing different aspects of the epidemic and any appropriate actions that may arise from such reviews. For example, reviewing legislation that contributes to marginalization of most-at-risk populations might lead to advocating for legislative reform. Reviewing a ministry's workplace policies might lead to promoting and supporting improvement of those policies. Other areas calling for attention include legislation or government regulations pertaining to the confidentiality of medical records. Regulations governing the health workforce, for example shifting certain tasks, need also to be reviewed. .

Summary of recommendations

Effective leadership in HIV creates momentum for and provides oversight of the HIV response. It is defined both by its actions and by its outcomes. Leadership should create an environment that accelerates scale-up of the HIV response, defines the values and principles that should underlie the process, holds the different stakeholders accountable and supports innovation to maximize the impact of the interventions.

Among the outputs that should be expected of leadership are development, implementation and adaptation of Strategic Policy Frameworks, policies, legislation and regulations that create a favourable environment for an effective response to HIV, coalitions and partnerships that contribute to a better response, and new and more effective interventions.

To promote and support effective coordination, health sector stakeholders should participate in and liaise regularly with key country mechanisms that have a coordination function, such as national AIDS councils/commissions, CCMs, UN Theme Groups and donor forums. They should also secure commitment of stakeholders from other sectors to actively participate in and commit to development and implementation of the response to HIV. For the health sector, establishing and strengthening coalitions and partnerships with a range of stakeholders (e.g. nongovernmental, community-based and faith-based organizations, people living with HIV, marginalized groups, academic institutions and the private sector) are critical to scaling up to universal access.

Leadership should also support innovation and foster an environment that promotes human rights, including gender equality, women's empowerment and the reduction of stigma and discrimination.

Key resources:

189. The Global Fund country coordinating mechanisms (CCMs) web site
http://www.theglobalfund.org/en/ccm/

190. 'Three ones' key principles: Coordination of national responses to HIV/AIDS: Guiding principles for national authorities and their partners
http://data.unaids.org/UNA-docs/Three-Ones_KeyPrinciples_en.pdf

191. WHO's global health sector strategy for HIV/AIDS 2003-2007
http://www.who.int/hiv/pub/advocacy/GHSS_E.pdf

192. International guidelines on HIV/AIDS and human rights: 2006 consolidated version
http://whqlibdoc.who.int/unaids/2006/9211541689_eng.pdf

193. Ensuring equitable access to antiretroviral treatment for women: WHO/UNAIDS policy statement
http://www.who.int/hiv/pub/advocacy/en/policy%20statement_gwh.pdf

3.6.1 Coalition building and partnerships

For the health sector, building coalitions and partnerships with a range of stakeholders is critical to scaling up towards universal access.

3.6.1.1 Involving people living with HIV

People living with HIV (PLHIV) are a vital resource in the response to the epidemic. The involvement of PLHIV in advocacy efforts, in policy dialogue, in service delivery and in the effort to reduce stigma and discrimination has already been documented extensively. Innovative mechanisms have been developed to involve them in HIV-related services, e.g. on clinical teams, as links with communities and as community health workers. People living with HIV can also serve as expert patients and trainers.

Integrated Management of Adolescent and Adult Illness (IMAI), a WHO-organized initiative, provides tools to support the involvement of PLHIV in clinical teams; they serve as triage officers and lay counsellors who support HIV testing, adherence to ART and TB treatment, and infant feeding, as well as data clerks, laboratory assistants and links to community support services. To be effective in these roles, PLHIV require training, appropriate supervision and remuneration. In many countries, there are policy constraints that prevent PLHIV from taking on these roles, and these constraints need to be addressed.

Summary of recommendations

WHO and UNAIDS believe the meaningful involvement of people living with HIV is central to an effective, rights-based HIV response. They should be engaged in all aspects of planning, implementing, monitoring and evaluating health sector responses to HIV at global, regional, national and local levels; this includes the development and adaptation of normative policies, tools and guidelines, and the delivery of services.

Key resources:

194. The greater involvement of people living with HIV (GIPA): UNAIDS policy brief
http://data.unaids.org/pub/BriefingNote/2007/JC1299_Policy_Brief_GIPA.pdf

195. IMAI expert patient-trainer curriculum
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

3.6.1.2 Involving civil society and the private sector

Governments, particularly ministries of health, may take overall responsibility for health sector responses to HIV. However, an effective and comprehensive response that ensures equitable access to HIV services demands the active involvement of the private sector and civil society, as well as nongovernmental, faith-based and academic organizations.

Community mobilization is key to promoting HIV testing and counselling and prevention, to preparing people for treatment and to providing adherence support. Civil society organizations complement and supplement formal health services by playing key roles in: HIV education and prevention, especially in reaching most-at-risk populations; creating demand for HIV services; ensuring that HIV/AIDS services are acceptable and of good quality; preparing people for

treatment through information and education; supporting adherence to treatment; and providing other forms of prevention, care and support. These roles need to be reinforced as much as possible through providing adequate resources for community-health activities and building strong links between health services and community organizations. Academic institutions have an important role in capacity building, adapting guidelines and tools for local use, supporting operational research and providing technical assistance.

In many countries, health services (including those related to HIV) are largely provided by faith-based organizations, NGOs and private businesses, rather than by governments. It is important to include them in any key mechanisms or processes for planning, coordinating, financing, and monitoring and evaluating the overall response to HIV.

Summary of recommendations

National health sector strategies and plans should call for the active and meaningful engagement of civil society, NGOs, faith-based organizations, private businesses and academic institutions in strategic planning, programme development, implementation, and monitoring and evaluation. These nongovernment players often constitute a significant portion of all health care providers and can play critical roles in expanding access to services, particularly for most-at-risk, vulnerable and marginalized populations.

There should be country mechanisms to ensure that all providers of HIV-related services in the health sector meet minimum standards.

Appropriate referral and communication systems should be established or expanded and strengthened to ensure continuity of care and services across the different sectors and service providers.

Key resources:

196. WHO's stakeholder analysis tool
http://www.who.int/hac/techguidance/training/stakeholder%20analysis%20ppt.pdf

197. Scaling up effective partnerships: A guide to working with faith-based organisations in the response to HIV and AIDS
http://www.e-alliance.ch/media/media-6695.pdf

198. Partnership work: the health service–community interface for the prevention, care and treatment of HIV/AIDS
http://www.who.int/hiv/pub/prev_care/en/37564_OMS_interieur.pdf

199. Working with civil society (UNAIDS web site)
http://www.unaids.org/en/Partnerships/Civil+society/default.asp

200. Universal access targets and civil society organizations: A briefing for civil society organizations
http://www.unaids.org/unaids_resources/images/Partnerships/061126_CSTargetsetting_en.pdf

3.6.2 Addressing stigma and discrimination

HIV-related stigma and discrimination are often prevalent within health services and have been consistently identified as critical obstacles to provision and uptake of health sector interventions. Stigma or, more correctly, stigmatization devalues people because of their traits, behaviours or illnesses, and it is often followed by unfair and unjust treatment. Stigma results in lower uptake of HIV prevention, care and treatment services and makes people living with HIV reluctant to disclose their status to their sexual partners, family members and health care providers. It disproportionately affects women and girls (who are often devalued merely because of their gender), sex workers, men who have sex with men, injecting drug users and ethnic minorities, whose minority status may be due to the fact that they are displaced persons or migrants.

Though stigma and discrimination are often pervasive throughout societies, they are seldom adequately addressed in national responses to HIV. Both can be tackled through simple and practical measures within a health system, such as providing people with accurate information that allays their fears and dispels their misconceptions about HIV and its transmission. The health sector can also advocate for and play its part in implementing a multifaceted national approach to combating stigma and discrimination. In order to reduce stigma and discrimination in health facilities, health workers' attitudes and practices need to be addressed, and they should be given information and supplies to prevent occupational exposure to HIV. These efforts will help countries reach targets for universal access while promoting respect for human rights, for vulnerable minorities and for people living with HIV.

Summary of recommendations

Strategic information about stigma and discrimination should be systematically collected using existing tools (e.g. questionnaires used in behavioural surveillance) to measure their prevalence and impact on the response to HIV.

Efforts to reduce stigma and discrimination should be included in national strategic planning and programming activities.

Health care workers should be provided with training on non-discrimination, and codes of conduct and oversight for service providers should be established.

As they scale up national responses to stigma and discrimination (and thus access to HIV prevention, treatment and care), planners should employ a range of approaches to prevent and reduce stigma and discrimination among different key groups (politicians, religious leaders, health authorities, law enforcers and so on). In this way, they can challenge stigma and discrimination in institutional settings and build capacity for recognizing human rights, including the establishment and enforcement of human rights legislation.

Key resources:

192. International guidelines on HIV/AIDS and human rights: 2006 consolidated version
http://whqlibdoc.who.int/unaids/2006/9211541689_eng.pdf

201. Reducing HIV stigma and discrimination: a critical part of national AIDS programmes
http://data.unaids.org/pub/Report/2008/jc1420-stigmadiscrimi_en.pdf

3.6.3 Delivering gender-responsive HIV interventions

Gender inequalities are a key driver of the HIV epidemic. Gender inequalities make women and girls especially, but also men, vulnerable to HIV in several ways. In sub-Saharan Africa, women constitute 60% of people living with HIV and in other parts of the world women continue to be disproportionately affected as sex workers, injecting drug users and as partners of injecting drug users, men who have sex with men and clients of sex workers. Harmful gender norms and practices, such as violence against women, and denial of women's access to and control over resources, contribute to women and girls' vulnerability to HIV. Social norms related to masculinity encourage men to take sexual risks. These norms also contribute to homophobia, which stigmatizes men who have sex with men. Norms related to femininity discourage women, especially young women, from accessing sexual and reproductive health information and services.

In many settings, women and girls face barriers to HIV services because they lack the financial means to access care or they require permission from their husbands or other family members to go to a health care facility. In some cases, they may be afraid of being labelled as 'promiscuous' if they are seen to seek services for STIs or HIV. Health services can reinforce gender inequalities by stigmatizing those who seek HIV services, especially if they belong to marginalized groups. Violence or fear of violence prevents many women from negotiating safe sex and also from accessing HIV testing and counselling services or disclosing their status. For these reasons, achieving universal access to HIV prevention, treatment and care is contingent on the health sector taking action to reduce gender inequalities.[15]

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15   United Nations. Scaling up HIV prevention, treatment, care and support. Note by the Secretary-General. 24 March 2006

Summary of recommendations

'Know your epidemic in gender terms': Programme managers and policy-makers in the health sector should understand who is at risk for HIV in different epidemic settings and the underlying sociocultural, economic and political factors that increase their vulnerability. Knowing your epidemic in gender terms requires disaggregating data, including figures from programme monitoring and evaluation (by sex, age and other appropriate equity parameters), in order to identify who is at risk, whether they are being reached equitably and whether programmes are working for those most in need.

Build the capacity of programme managers, policy-makers and health care providers to understand and address the links between gender inequalities and HIV.

Ensure that national health sector HIV policies and programmes explicitly integrate gender and allocate financial and human resources to promote gender-responsive strategies.

Support prevention by promoting equality between women and men in sexual decision-making and building women's skills to negotiate safer sex including through use of female and male condoms.

Address women's fear of, or potential experience of, negative consequences of HIV testing and counselling by incorporating safety planning as part of disclosure and risk-reduction counselling.

Reduce gender-related barriers to accessing services, including: non-affordability; the need for women to obtain permission from husbands or other family members to go to a health facility; stigma and discrimination against those most-at-risk for or living with HIV including marginalized groups; and providing an appropriate mix of male and female health care providers.

Support women care givers who provide the bulk of care for those living with and affected by HIV.

Advocate for gender equality in policies and laws related to women's rights, including those related to violence against women, property and inheritance rights for women and access to education for girls.

Key resources:

193. Ensuring equitable access to antiretroviral treatment for women: WHO/UNAIDS policy statement
http://www.who.int/hiv/pub/advocacy/en/policy%20statement_gwh.pdf

202. Integrating gender into HIV/AIDS programmes: A review paper
http://www.who.int/hiv/pub/prev_care/en/IntegratingGender.pdf

203. Gender, women and health: gender inequalities and HIV/AIDS (WHO web site)
http://www.who.int/gender/hiv_aids/en/

204. Integrating gender into HIV/AIDS programmes in the health sector: a tool to improve responsiveness to women's needs
http://www.who.int/gender/documents/gender_hiv/en/index.html

205. Addressing violence against women and HIV testing and counselling: a meeting report
http://www.who.int/gender/documents/VCT_addressing_violence.pdf

Chapter 4: Investing in strategic information

Strategic information guides health policy, planning, resource allocation, programme management, service delivery and accountability. It is essential for action at all levels of the health system. As countries scale up their HIV responses towards universal access, there is an increasing recognition of the need to invest in strategic information to guide programme planning and sustain national and international commitment and accountability.

This chapter presents the key elements in strengthening health information systems, one of the six building blocks of a health system mentioned in the previous chapter. It then addresses the three main activities related to strategic information for the HIV response:

- surveillance of HIV and sexually transmitted infections;
- monitoring and evaluation (including patient monitoring, prevention and assessment of HIV drug resistance, and pharmacovigilance); and
- research.

The chapter concludes by discussing the effective use of data for improving programmes, including for setting targets and conducting situation analyses.

4.1 Strengthening health information systems

A well-functioning health information system is one that generates reliable and timely strategic health information on which to base decisions at different levels of the health system. Information systems for HIV programmes must be strengthened within the context of more robust, integrated and harmonized overall health information systems.

Efforts to strengthen information systems to support the HIV response must consider three key dimensions:

1. Content: *What information is needed? What are the sources of information?* HIV programmes require a wide range of strategic information on the epidemic and the response. HIV surveillance provides data to monitor the determinants and trends of the epidemic, develop interventions and measure impact. Monitoring and evaluation is required to plan and implement programmes and document outcomes. Drug resistance monitoring and pharmacovigilance are needed to support treatment programmes. Research provides evidence to improve interventions. Both population-based and health facility-based data sources generate strategic information in these areas. Information needs and sources vary in relation to the type of epidemic and country context.

2. Processes: *How is information collected, managed and used?* Effective generation and use of strategic information requires optimal processes for data collection, sharing, management and feedback among the different levels of the health system. This involves: the definition of norms and standards, including ethical standards, for collecting and disseminating data; procedures for using data to conduct situation analyses, set targets, guide planning and implementation, and support advocacy efforts; and investment in data quality. The UNAIDS 'Three Ones' principles for coordinating national HIV responses emphasize the importance of national ownership and coordination among stakeholders, including international partners, around one agreed framework for national monitoring and evaluation.

3. Resources: *What resources are needed to support strategic information activities?* A fully functional health information system requires the infrastructure and tools for data collection, storage and management, including data recording tools, data reporting forms, databases and electronic systems for data-sharing and analysis. It requires investment in building human resource capacity (including epidemiologists, surveillance and monitoring and evaluation officers, and information technology and management information system specialists) at all levels of the health system through training, mentoring and supervision. As programmes are scaled up, there is also a need to protect the security and confidentiality of patient data. Infrastructure (e.g. laboratories) is needed to scale up research. Strengthening information systems also requires an appropriate policy, management and financial environment.

Key resource:

206. Guidelines on protecting the confidentiality and security of HIV information: Proceedings from a workshop, May 2006. Interim guidelines
http://data.unaids.org/pub/manual/2007/confidentiality_security_interim_guidelines_15may2007_en.pdf

4.2 Surveillance of HIV/AIDS and sexually transmitted infections

HIV surveillance provides essential data to understand the magnitude and determinants of the epidemic in a country, assess the burden of disease, monitor trends over time, develop interventions and evaluate their impact. In addition, second generation HIV and STI surveillance systems measure trends in risk behaviours.

HIV surveillance systems should be capable of being adapted and modified to meet the specific needs of each epidemic. For example, surveillance methods and activities in a country with a predominantly generalized heterosexual epidemic should differ greatly from those in countries where HIV infection is mostly concentrated among populations at high risk of infection, such as sex workers, men who have sex with men and injecting drug users, as well as the sexual partners of these groups.

In addition to collecting data from HIV surveillance, countries also use statistical modelling to better understand their specific HIV epidemics, including trends in HIV prevalence in the general population and most-at-risk populations, and estimates of the numbers of people who need particular interventions, such as antiretroviral therapy and antiretrovirals for preventing mother-to-child transmission. Based on the recommendations of the UNAIDS Reference Group on Estimates, Modelling and Projections, WHO and UNAIDS provide technical assistance and training to country teams to generate country estimates.

Summary of recommendations:

The health sector plays the lead role in comprehensive HIV surveillance. National HIV/AIDS programmes should build surveillance systems that provide data in a routine, standard manner with consistency of methods, tools and populations surveyed. Vital elements of a comprehensive HIV surveillance system include:

- HIV infection and HIV advanced infection case reporting;
- HIV sentinel surveillance among clients attending antenatal clinics;
- integrated biological and behavioural data among most-at-risk populations;
- periodic national population-based surveys (e.g. Demographic and Health Surveys) with HIV testing in countries with HIV prevalence above 1%; and
- data from HIV surveillance among TB patients.

Sentinel surveillance among antenatal clinic attendees and population-based surveys with HIV testing are relevant for generalized HIV epidemics. Integrated biological and behavioural surveillance among high-risk groups may be relevant for all epidemic levels and are a priority for concentrated and low-level epidemics.

Developing reliable estimates of the size of populations at high risk for HIV is another important aspect of surveillance, to inform assessment of needs and development of appropriate policies and programmes. Estimates of the population size of high-risk groups should be calculated using standard methods in conjunction with data from integrated biological and behavioural surveillance and service data.

Surveillance of new cases of HIV infection (HIV incidence) is challenging; it cannot be done through case reporting because early HIV infection has no distinct clinical features that bring newly-infected people to medical attention. Current laboratory-based tests for recent infection are not useful for individual determinations; however, they may be employed with suitable caution at the population level to produce incidence estimates. In countries or sites with linked testing, dynamic cohorts may be used to measure recent infections. Countries with more than one national population-based survey can apply mathematical models to estimate HIV incidence. STI surveillance is strongly recommended both in its own right and as a useful early warning system for expansion of an HIV epidemic.

Key resources:

207. Guidelines for measuring national HIV prevalence in population-based surveys
http://www.who.int/hiv/pub/surveillance/guidelinesmeasuringpopulation.pdf

208. The pre-surveillance assessment: Guidelines for planning serosurveillance of HIV, prevalence of sexually transmitted infections and the behavioural components of second generation surveillance of HIV
http://www.who.int/hiv/pub/surveillance/psaguidelines.pdf

209. Guidelines for HIV surveillance among tuberculosis patients. Second edition
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.339.pdf
French: http://whqlibdoc.who.int/hq/2005/WHO_HTM_TB_2004.339_fre.pdf
Spanish: http://whqlibdoc.who.int/hq/2004/OMS_HTM_TUB_2004.339_spa.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.339_rus.pdf

210. Guidelines for effective use of data from HIV surveillance systems

English: http://www.who.int/hiv/strategic/surveillance/en/useofdata.pdf

Spanish: http://www.who.int/hiv/pub/surveillance/useofdata_sp.pdf

211. Guidelines for conducting HIV sentinel serosurveys among pregnant women and other groups

English: http://www.who.int/hiv/pub/surveillance/en/ancguidelines.pdf

French: http://www.who.int/hiv/pub/epidemiology/en/guidelinesforconduction_fr.pdf

212. Estimating the size of populations at risk for HIV: Issues and methods

http://www.who.int/hiv/pub/surveillance/en/EstimatingSizePop.pdf

213. Guidelines for using HIV testing technologies in surveillance: selection, evaluation and implementation

http://www.who.int/hiv/pub/surveillance/en/guidelinesforUsingHIVTestingTechs_E.pdf

214. HIV surveillance training modules, WHO Regional Office for South-East Asia

Module 1: Overview of the HIV epidemic with an introduction to public health surveillance

http://www.searo.who.int/LinkFiles/Publications_Module-1.pdf

Module 2: HIV clinical staging and case reporting

http://www.searo.who.int/LinkFiles/Publications_Module-2.pdf

Module 3: HIV serosurveillance

http://www.searo.who.int/LinkFiles/Publications_Module-3.pdf

Module 4: Surveillance for sexually transmitted infections

http://www.searo.who.int/LinkFiles/Publications_Module-4.pdf

Module 5: Surveillance of HIV risk behaviours

http://www.searo.who.int/LinkFiles/Publications_Module-5.pdf

Module 6: Surveillance of populations at high risk for HIV transmission

http://www.searo.who.int/LinkFiles/Publications_Module-6.pdf

Facilitator training guide for HIV surveillance

http://www.searo.who.int/LinkFiles/Publications_facilitator.pdf

4.2 Monitoring and evaluation of the health sector response

A comprehensive health sector response to HIV requires sound strategies to monitor and evaluate progress. 'Monitoring' refers to the routine tracking of essential data related to the implementation of a programme and its inputs, processes, outputs, outcomes and impacts. 'Evaluation' is a collection of activities designed to assess the effectiveness of a programme. Regular monitoring and evaluation are essential to guide programme planning and implementation, measure progress and sustain commitment and accountability.

4.2.1 Monitoring health sector HIV programmes

A key step in strengthening monitoring and evaluation (M & E) systems is to determine what data should be collected, at which levels of the system, and by whom. Decisions should be made on what data need to be reported upwards and for what purpose. The main purpose is generally to measure inputs, outputs, outcomes and impacts against a limited number of key indicators—limited so as to avoid overburdening the system.

Summary of recommendations

National HIV/AIDS programmes, ministries of health and other stakeholders should collaborate on the design, implementation and strengthening of national M & E systems. A national strategy for M & E of health sector HIV/AIDS programmes should include tools and processes to generate a wide range of data, plus analysis and reporting on HIV prevention, treatment and care interventions at the national, sub-national and facility levels.

The data should include input indicators (e.g. budgets, human resources, supplies), process indicators (e.g. training, interventions to review and update procedures, availability and adequacy of national policies and guidelines); output indicators (e.g. newly trained health workers, improved procedures, geographical coverage of interventions); outcome indicators (e.g. increased uptake of services, increased knowledge of HIV, behavioural change); and impact indicators (e.g. longer survival of people living with HIV). As national programmes expand, it is also increasingly important to monitor the quality of services and to measure impacts on the health system.

Data for monitoring the health sector response to HIV come from several sources. These include routine medical and other records that are part of the broader health information management system; mapping available services in health facilities and other health settings; health facility surveys; population-based surveys; cohort studies of people living with HIV; monitoring procurement and supply of HIV medicines and diagnostics; and impact assessment. Other sources include surveillance data (e.g. behavioural and biological surveys) and mortality records and reports. Special studies should be considered when routine data collection and analysis is inappropriate or not feasible. Data from organizations providing community-based HIV services are also essential.

M & E activities should use ongoing data collection systems as far as possible to minimize burden of data collection and optimize use of resources. It is important that indicators are defined and measured in a consistent and standard way in order to assess trends and measure progress towards programme goals. It is also important that M & E systems are able to capture data disaggregated by age, sex, population groups (including most-at-risk population groups, such as sex workers, men who have sex with men and injecting drug users; patients with TB and hepatitis B and C coinfection) and by geographical regions or socioeconomic groups as appropriate.

Key resources:

215. National guide to monitoring and evaluating programmes for the prevention of HIV in infants and young children
http://whqlibdoc.who.int/publications/2004/9241591846.pdf

216. National AIDS programmes: A guide to indicators for monitoring and evaluating national HIV/AIDS prevention programmes for young people
English: http://www.who.int/hiv/pub/epidemiology/napyoungpeople.pdf
French: http://www.who.int/hiv/pub/me/napyoungpeople_fr.pdf
Spanish: http://www.who.int/hiv/pub/me/napyoungpeople_sp.pdf
Russian: http://www.who.int/hiv/pub/me/napyoungpeople_ru.pdf

217. National AIDS programmes: A guide to indicators for monitoring national antiretroviral programmes
English: http://www.who.int/hiv/pub/me/naparv.pdf
French: http://www.who.int/hiv/strategic/me/naparvfr.pdf
Spanish: http://www.who.int/hiv/pub/me/napart_sp.pdf

218. A guide to monitoring and evaluation for collaborative TB/HIV activities: Field test version
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.342.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.342_rus.pdf

219. Core indicators for national AIDS programmes: Guidance and specifications for additional recommended indicators
http://data.unaids.org/pub/BaseDocument/2009/20090305_additionalrecommendedindicators_
finalprintversio_en.pdf

Updated guidelines on monitoring and evaluation for PMTCT, male circumcision, and testing and counselling programmes can be accessed at http://www.who.int/hiv/pub/me/en/

4.2.2 Global monitoring and reporting

At the international level, demonstrating the impact of investments in HIV programmes is critical to sustaining commitment and ensuring accountability. Since the World Health Assembly in 2006, WHO is mandated to monitor and report annually on global progress in the health sector response to HIV/AIDS with a view to achieving universal access by 2010. Data from national programmes are also necessary to monitor progress towards meeting other international commitments such as the Millennium Development Goals and the UN General Assembly's Declaration of Commitment on HIV/AIDS.

Summary of recommendations

To facilitate global monitoring and reporting, WHO has developed a core framework of recommended national level indicators on the health sector response to HIV/AIDS. The framework includes indicators to measure the availability and coverage of interventions, as well as their outcomes and impact in terms of survival and improvements in quality of life. The selection of indicators has been guided by the principle of maximum alignment with existing international processes. National programmes are requested to report data on an annual basis, and data from national programmes are aggregated and analysed to produce an annual global progress report.

Key resources:

220. Global framework for monitoring and reporting on the health sector's response towards universal access to HIV/AIDS treatment, prevention, care and support
http://www.who.int/hiv/pub/me/framework/en/index.html

221. Monitoring the declaration of commitment on HIV/AIDS: Guidelines on construction of core indicators
http://data.unaids.org/pub/Manual/2007/20070411_ungass_core_indicators_manual_en.pdf

4.2.3 Patient monitoring systems

Patient monitoring systems are essential to support individual management of patients in long-term HIV care, as well as for clinical teams to monitor outcomes of groups of patients enrolled in HIV care and to maintain high-quality services. Patient monitoring systems also contribute to programme monitoring and evaluation at the health centre, sub-national and national levels since they generate essential information on the outcome and impact of programmes (e.g. survival of patients on ART) to report 'up' to the national level.

The WHO HIV care/ART patient monitoring system lays out an internationally agreed minimum data set and definitions, and includes an illustrative system to collect these data. This system includes summary HIV care/ART patient cards, pre-ART and ART registers, and cross-sectional and cohort reports. The ART register organizes patients into monthly treatment cohorts, which allows group cohort analysis and is useful for monitoring and comparing programme performance over time and across sites. The tools should be adapted for use at the country level.

WHO has also developed (and made available for free) an OpenMRS Express electronic medical record that uses the same data elements as the paper forms and produces the same reports. It can be readily customized to meet local requirements and can be used to collect all elements on the patient card or only the register elements. The standard data set is available and can be implemented in other software.

In collaboration with multiple partners, WHO has developed three interlinked patient monitoring systems to track longitudinal information on patients in HIV care/ART, TB-HIV management and maternal and child health/PMTCT monitoring. The latter integrates monitoring the care of pregnant women and infants with monitoring of PMTCT interventions and malaria prevention (cotrimoxazole or intermittent preventative therapy for malaria with sulfadoxine-pyrimethamine). Countries are beginning to adapt these three interlinked systems, particularly as decentralization of services becomes more widespread.

Many patient monitoring systems are paper-based at the health facility level and then require that paper-based data be entered again into electronic systems for transmission, aggregation and analysis. Higher-volume facilities may use electronic medical records with entry of patient-level data; or data may be entered from patient cards into an electronic register; or entry may happen at the district or national levels, where data are aggregated and analysed on a spreadsheet or other software (such as the HealthMapper extension for ART data).

Depending on the context, each way of doing things has its strengths and weaknesses. Simple and practical paper forms should provide the foundation of any patient monitoring system. In high-volume sites (>1500 patients), however, aggregating data manually to produce monthly or quarterly reports will be a great burden on the clinical team and requires a data clerk. Electronic systems facilitate generating such reports easily and sometimes automatically, but electronic systems require attention to security and confidentiality, space, equipment, human resources and training. In any case, there will be a continuum of paper to electronic data entry, depending on the needs and resources of each health facility.

Summary of recommendations

In keeping with the 'Three Ones' principles, WHO recommends developing and implementing one national patient monitoring system that supports a minimum standard data set and standardized forms and reports. Electronic forms should mirror paper forms in order to ensure that the same information is collected and reported, regardless of whether this is done through paper or electronically, and so that patients can transfer between facilities without loss of information.

WHO recommends nationally standardized and interlinked patient monitoring systems that track delivery of integrated HIV care/ART, maternal and child health with integrated PMTCT and malaria prevention interventions, and TB/HIV services. This can facilitate patient and programme management during scale-up.

Key resources:

219. Core indicators for national AIDS programmes: Guidance and specifications for additional recommended indicators
http://data.unaids.org/pub/BaseDocument/2009/20090305_additionalrecommendedindicators_finalprintversio_en.pdf

220. Global framework for monitoring and reporting on the health sector's response towards universal access to HIV/AIDS treatment, prevention, care and support
http://www.who.int/hiv/pub/me/framework/en/index.html

221. Monitoring the declaration of commitment on HIV/AIDS: Guidelines on construction of core indicators
http://data.unaids.org/pub/Manual/2007/20070411_ungass_core_indicators_manual_en.pdf

222. Patient monitoring guidelines for HIV care and antiretroviral therapy
http://www.who.int/hiv/pub/ptmonguidelines.pdf

Three Interlinked Patient Monitoring Systems for HIV care/ART, MCH/ PMTCT (including malaria prevention during pregnancy), and TB/HIV: Standardized Minimum Data Set and Illustrative Tools:
http://www.who.int/hiv/pub/imai/three_patient_monitor/en/

Training materials: http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

4.2.4 Prevention and assessment of HIV drug resistance

Given the high replication and mutation rates of HIV and the necessity of lifelong antiretroviral treatment, the emergence of some level of HIV drug resistance (HIVDR) is inevitable. However, the risk of HIVDR can be reduced with appropriate action.

Summary of recommendations

To maintain the effectiveness of first- and second-line antiretroviral regimens, WHO recommends that countries develop a national strategy for HIVDR prevention and assessment. Surveys of HIV drug resistance emergence and prevention during ART, and of transmitted drug resistance, can be used to inform optimal selection of ARV regimens on a population basis.

Interventions for preventing the emergence of resistance are required at all levels of the health system. The recommended prevention and assessment strategy was developed in consultation with WHO HIVResNet, a global network of institutions, specialists and participating countries. Technical assistance is available from the WHO HIV Drug Resistance Team and from other members of the network.

Key interventions for preventing and managing HIV drug resistance include:

- promoting use of standard ART regimens;
- supporting use of standardized individual treatment records;
- active monitoring of adherence;
- removing barriers to continuous adherence;
- providing quality assurance/control for drugs, and an adequate and continuous drug supply;
- preventing HIV transmission by persons receiving ART;
- monitoring programmes for 'early warning' of HIVDR;
- doing surveillance for HIVDR transmission, and monitoring HIVDR emergence in treated populations;
- taking appropriate actions based on the results of monitoring and surveillance.

Key resource:

223. HIV drug resistance (WHO web site)
http://www.who.int/hiv/drugresistance/

4.2.5 Pharmacovigilance

The objectives of pharmacovigilance are to enhance patient care and patient safety in relation to the use of medicines; to improve public health and safety in relation to the use of medicines; and to contribute to assessing the risk-benefit profile of medicines.

As HIV/AIDS treatment programmes are scaled up in low- and middle-income countries, there is a risk that their effectiveness may be compromised as a result of adverse events related to using antiretrovirals. These include problems of toxicity, intolerance, drug-drug interactions and adverse events linked with comorbidities such as hepatitis. Pharmacovigilance is critically important for clinicians as they seek to optimize patient adherence to treatment and treatment outcomes, and to ensure their safety. Assessing the likelihood of adverse events in a given population is also important for policy-makers and programme managers as it informs the initial selection, forecasting, procurement and distribution of antiretroviral drugs.

Summary of recommendations

WHO recommends the development of national pharmacovigilance programmes for ARV drugs with passive and active surveillance of adverse events that are potentially linked to these medicines. The main focus of these programmes should be on treatment monitoring and post-monitoring surveillance that covers detection, assessment and the understanding and prevention of adverse effects or other ARV drug-related problems. Pharmacovigilance programmes should also include communication of information about benefits, harms and risks of drugs to practitioners, patients and the public.

Using standardized methods to collect reports of suspected adverse drug reactions through spontaneous reporting should be a core activity of national pharmacovigilance centres. In the context of antiretroviral therapy, pharmacovigilance activities are also important for programmatic decision-making. Active surveillance of adverse reactions to antiretrovirals through cohort event monitoring and special studies is critical for supporting regular updates of national and global treatment, care and prevention guidelines; improving patient and public care and safety; and standardizing management of toxicity and drug-drug interactions based on local data on adverse drug reactions, as well as international recommendations.

To optimize monitoring and managing adverse events associated with antiretroviral drugs, national pharmacovigilance programmes should:

- enable clinicians to identify, report and manage adverse events and toxicity related to ARV use;
- stimulate improved reporting and analysis of ARV adverse events and toxicity;
- integrate active surveillance and cohort event monitoring in national pharmacovigilance programmes;
- carry out focused in-depth studies aimed at improving ARV use and safety;
- pool and analyse data on adverse events as a basis for developing national and global antiretroviral therapy policies, and draft or improve treatment guidelines;
- promote information sharing on issues relating to ARV adverse events, including management of toxicity, intolerance and drug–drug interactions.

Key resources:

224. Pharmacovigilance for antiretrovirals in resource-poor countries
http://www.who.int/medicines/areas/quality_safety/safety_efficacy/PhV_for_antiretrovirals.pdf

4.2.6 Evaluation

Evaluation is an essential, but often neglected, component of a comprehensive M & E system. It assesses the value or impact of a programme or intervention through a detailed analysis of inputs and outcomes. There are three sequential phases of evaluation—process, outcomes and impact evaluation.

Strengthening evaluation is essential for programme managers and decision-makers since it enables them to assess how successfully programmes are meeting their goals. Evaluation is also critical for countries and their development partners since it demonstrates the effectiveness of aid and argues for sustaining or increasing it. The effective use of evaluation data will ensure that the HIV response is based on the best available evidence and will guide continued programme improvement.

Ideally, sound monitoring provides much of the data required for evaluation, including baseline data. In practice however, additional data collection is often required because health information systems may be weak, and complete, high-quality data may not be readily available. Capacity for conducting evaluations may also be limited in many countries.

Summary of recommendations

The main steps in planning evaluation include:

- conducting a country readiness assessment that includes gauging the strengths of national strategic and M & E plans and the links between them, and assessing the availability of data and resources for an evaluation;

- creating a multidisciplinary national evaluation task force that brings together key stakeholders from government, civil society, the private sector, and technical and financial aid agencies;

- reviewing and cataloguing relevant materials and documents such as national plans, programme data, census data, data from behavioural and biological surveillance and other surveys, programme monitoring and evaluation reports, and research studies;

- developing an agenda for the evaluation, including prioritizing key questions and agreeing on an action plan and timelines.

This is followed by implementation of the evaluation agenda. Evaluations bring together data from multiple sources. In order to strengthen monitoring and evaluation, it is important that any additional necessary data collection be integrated into the existing health information system which, in turn, should be linked to the country review and strategic planning processes (see Section 4.4). (In other words, the process of doing an evaluation should strengthen the monitoring and evaluation system and, thus, facilitate future evaluations.) The evaluation process should involve collaboration among policy-makers, project managers, international stakeholders and evaluation experts.

4.3 Research

An effective response to HIV/AIDS requires that interventions and approaches be continually improved over time. Over the past 25 years, sustained research efforts have produced new scientific evidence and have enabled the evolution of HIV interventions, policies and programmes.

The importance of investing in research was acknowledged by the Sydney Declaration of the 4th International AIDS Society Conference on Pathogenesis, Treatment and Prevention held in Sydney, Australia in July 2007. The Declaration called on national governments and bilateral, multilateral and private donors to allocate 10% of all resources for HIV programming to research, which provides more and better evidence on which to base the response to HIV.

The HIV response can be strengthened through different types of research—clinical/epidemiologic, socio-behaviouraland health systems. In each of these areas, new evidence should be collected, assessed and then brought to bear on policies, strategies and programmes. Operational research builds on the different disciplines that are used for basic research to address questions related to programmes. Performing research alone is not enough; there must also be processes for bringing it quickly to bear on decisions so they are informed by the most up-to-date evidence.

There are many examples of research that is urgently needed. These include research aimed at: discovering effective prevention technologies (vaccines, microbicides and cervical barriers, and pre-exposure prophylaxis) and effective treatment and care interventions; expanding understanding of socio-behavioural factors that increase or decrease risk behaviour or hinder or facilitate access to interventions; and discovering the optimal models of service delivery within a variety of national and sub-national contexts.

To scale up research, countries need to invest in building research capacity. This means training human resources and developing research infrastructure, including laboratories. It also requires stronger health information systems to capture and use information generated through research. Greater collaboration between researchers and policy-makers is needed to ensure that the role of research is appreciated and the findings are translated into practice. Collaboration among national partners, donors and north/south research organizations and networks is also necessary to devise and conduct research that is relevant to country situations.

4.3.1 Operational research

Operational research covers all programme areas and is vital to improving programme operations and making the most effective use of available resources.

Operational research involves the use of systematic research techniques to solve programme problems. It is used to gather evidence to inform treatment and prevention programmes, and it looks at such matters as different approaches to task-shifting for ART delivery, the factors that influence adherence to medical regimens and the factors that influence uptake of testing and counselling. It uses a variety of qualitative and quantitative analytical techniques, favours multidisciplinary approaches and should be 'owned' by country partners.

Summary of recommendations

A first step for implementing operational research is to conduct a rapid assessment of what is known about the selected topic in the country, and to formulate questions that can be addressed through such research. This is best done through consulting major stakeholders from the research community, the ministry of health and NGOs. Once general priorities are established, it is important to identify individuals who can form the nucleus of the project so that they can design an appropriate study and seek resources to support the project. Data collection methods can build on available tools that can be adapted, translated and tested in the country in order to ensure that they fit with local realities. Data triangulation is recommended.

Key resources:

225. Guide to operational research in programs supported by the Global Fund
http://www.who.int/hiv/pub/epidemiology/SIR_operational_research_brochure.pdf

226. Framework for operations and implementation research in health and disease control programmes
http://www.theglobalfund.org/documents/me/FrameworkForOperationsResearch.pdf

227. HIV testing, treatment, and prevention: generic tools for operational research
http://www.who.int/hiv/pub/operational/generic/en/index.html

4.4 Using data effectively for programme improvement

The main reason for generating strategic information is to provide evidence to inform the development and implementation of policies, strategies and programmes at all levels of the health system. This means strategic information activities should be linked to the needs for evidence and to the people who need it, and that the evidence must be packaged and disseminated in ways that make it easy for those people to digest and use. Plans for disseminating the evidence should keep different readers or audiences in mind, whether they be political decision-makers, programme planners and managers, health workers, people living with HIV or at risk of infection, and so on. Feedback from readers or audiences at all levels of the health system should ensure that the information is presented in ways that meet their needs and that it encourages a culture of data generation and application for programme improvement at all levels.

4.4.1 Situation analysis

In order to remain effective, planning and programming of the HIV response must be linked to regular review of the epidemiological situation and programme performance. National HIV/AIDS programmes need a clear understanding of the country situation in order to prioritize and tailor interventions.

For example, to interrupt HIV transmission, it is important to know the geographical areas and populations where the epidemic is spreading most rapidly and to plan interventions accordingly. Similarly, organizing services for care, support and treatment requires an understanding of the location of people living with HIV. There may be considerable overlap in initiatives for HIV prevention, care and treatment in terms of geographic and population focus.

Summary of recommendations

HIV/AIDS programme managers need to regularly track, analyse and use data from multiple sources, including:

- biological and behavioural sentinel and periodic surveillance;
- HIV/AIDS case reporting from the health services;
- sexually transmitted infection (STI) clinics;
- patient monitoring from testing and counselling services, HIV care and ART services, TB and maternal and child health services;
- surveys to assess HIV drug resistance prevention and site indicators for monitoring HIV drug resistance;
- situation assessments, mapping studies and rapid assessments among target populations;
- population surveys (demographic and health surveys, HIV indicator surveys, etc);
- national census reports;
- social, cultural and behavioural research;
- operational research; and
- periodic AIDS, TB and maternal and child health programme reviews.

Rapid assessment and response (RAR) methods can be used to generate information in situations where data are needed extremely quickly, when time or cost constraints rule out using more conventional research techniques, and when current, relevant data are needed to develop, implement, monitor or evaluate programmes. RAR methods use existing information from multiple sources and are flexible and cost-effective. They can provide information on the country situation or context; target populations and settings; risk behaviours; and HIV infection and other HIV-related outcomes and responses. Both qualitative and quantitative methods and data should be considered. All RARs should include recommendations and plans of action. They should also encourage community participation.

An analytical approach known as 'triangulation' integrates multiple data sources to improve the understanding of a public health problem. It is used to guide programmatic decision-making to address such problems.

Key resources:

39. SEX-RAR guide: The rapid assessment and response guide on psychoactive substance use and sexual risk behaviour
http://www.who.int/mental_health/media/en/686.pdf

55. Rapid assessment and response: Adaptation guide on HIV and men who have sex with men (MSM-RAR)
http://www.who.int/entity/hiv/pub/prev_care/en/msmrar.pdf

226. Framework for operations and implementation research in health and disease control programmes
http://www.theglobalfund.org/documents/me/FrameworkForOperationsResearch.pdf

228. A guide to rapid assessment of human resources for health
http://www.who.int/hrh/tools/en/Rapid_Assessment_guide.pdf

229. Rapid assessment and response: Adaptation guide for work with especially vulnerable young people (EVYP- RAR)
http://www.who.int/hiv/pub/prev_care/en/youngpeoplerar.pdf

230. HIV triangulation resource guide: Synthesis of results from multiple data sources for evaluation and decision-making
http://www.who.int/hiv/pub/surveillance/triangulation/en/

4.4.2 Setting targets

Setting targets is an integral part of national health sector strategic planning and is necessary to monitor progress. Even the best interventions will have little public health impact if they are implemented on a limited scale.

All countries strive towards the goal of universal access, but individual country targets will differ in a given year depending on the country context. For example, the guidance for global scale-up of the prevention of mother-to-child transmission of HIV suggests the following coverage levels to guide setting country-level targets:

- at least 80% of all pregnant women attending antenatal care are tested for HIV, including those previously confirmed to be living with HIV;

- at least 80% of pregnant women living with HIV receive antiretroviral prophylaxis or antiretroviral therapy to reduce the risk of mother-to-child transmission;

- at least 80% of infants born to women living with HIV receive a virological HIV test within two months of birth.

Similarly, the Global Plan to Stop TB 2006–2015 sets global targets. For example, by 2015, 85% of TB patients in DOTS programmes are to receive HIV testing and counselling, and 57% of TB patients in DOTS programmes (HIV-positive and eligible) are to be enrolled on antiretroviral therapy. National target-setting is necessary to translate international commitments into country action plans and to monitor implementation.

Summary of recommendations

A number of factors need to be taken into consideration in order to set targets for scaling up priority health sector interventions for HIV/AIDS (such as the proportion of people in need who are receiving antiretroviral therapy, or the proportion of HIV-positive pregnant women receiving antiretrovirals to prevent mother-to-child transmission). These include:

- considering the epidemiological context, geographical distribution and the size of populations in need;

- reviewing the programmatic context and health service delivery infrastructure, including human and financial resources;

- assessing current coverage and the possible impact under different target scenarios;

- developing plans and time-bound targets for scaling up towards a standard or a benchmark.

Depending on the information available, targets can be set and coverage monitored in several ways: by geographical distribution, such as on the basis of administrative units (district, province, etc.); by population sub-groups (such as antiretroviral therapy targets for pregnant women, all adults, adolescents, children, or most-at-risk populations); or by combining methods for a more complete picture.

Target-setting must be integrated with programme planning and budgeting. It must be linked to related, ongoing efforts such as situation analyses and the collection of well-defined indicators and other monitoring and evaluation activities. Targets should be regularly evaluated and revised as necessary.

Key resources:

85.   Guidance on global scale-up of the prevention of mother to child transmission of HIV: towards universal access for women, infants and young children and eliminating HIV and AIDS among children

English: http://whqlibdoc.who.int/publications/2007/9789241596015_eng.pdf

French: http://whqlibdoc.who.int/publications/2007/9789242596014_fre.pdf

Russian: http://whqlibdoc.who.int/publications/2007/9789280643114_rus.pdf

231. Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users (IDUs)

 http://www.who.int/hiv/pub/idu/targetsetting/en/index.html

232. Setting national targets for moving towards universal access: operational guidance

http://data.unaids.org/pub/Guidelines/2006/20061006_report_universal_access_targets_guidelines_en.pdf

233. Scaling up towards universal access: Considerations for countries to set their own national targets for HIV prevention, treatment and care

http://data.unaids.org/pub/Report/2006/Considerations_for_target_setting_April2006.pdff

4.4.3 Data quality

A sound information system depends largely on the quality of data. This includes measures such as optimizing the amount of data to be collected, reducing the burden of data collection, using clear definitions, conducting local quality controls and checks, providing training, and providing feedback to data collectors and users to help to improve data quality.

Summary of recommendations

Data quality assessments should be carried out periodically to identify weaknesses in data collection and reporting systems, and to constantly improve data quality and accuracy.

The Health Metrics Network Assessment Tool for health information systems (available at: http://www.who.int/healthmetrics/tools/hisassessment/en/index.html) lists the following criteria to assess the quality of health-related data and indicators:

- timeliness – the period between data collection and its availability to a higher level, or its publication;

- periodicity – the frequency with which an indicator is measured;

- consistency – the internal consistency of data within a dataset, as well as consistency between datasets and over time, and the extent to which revisions follow a regular, well-established and transparent schedule and process;

- representativeness – the extent to which data adequately represent the population and relevant subpopulations;

- disaggregation – the availability of statistics stratified by sex, age, socioeconomic status, major geographical or administrative region and ethnicity, as appropriate;

- confidentiality, data security and data accessibility – the extent to which practices are in accordance with guidelines and established standards for storage, backup, transport of information (especially over the Internet) and retrieval.

Key resource:

234. Routine data quality assessment tool (RDQA): Guidelines for implementation GFATM, WHO and partners (Draft July 2008)
http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/data-quality-assurance-tools/RDQA%20Guidelines-Draft%207.30.08.pdf

Chapter 5: Resources

1. National AIDS programme management: A set of training modules
http://www.searo.who.int/en/Section10/Section18/Section356_13495.htm
Preliminary pages: http://www.searo.who.int/LinkFiles/Publications_Preliminar__pages.pdf
Introduction: http://www.searo.who.int/LinkFiles/Publications_Introduction.pdf

Module 1 – Situation analysis: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_1.pdf

Module 2 – Policy and planning: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_2.pdf

Module 3 – Determining programme priorities and approaches: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_3.pdf

Module 4 – Targeted HIV prevention and care interventions: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_4.pdf

Module 5 – Setting coverage targets and choosing key outcome indicators: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_5.pdf

Module 6 – Implementation of HIV Prevention, Care and Treatment Strategies:

Module 6.1 – Minimizing sexual transmission of HIV and other STIs: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.1.pdf

Module 6.2 – HIV prevention and care among drug users: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.2.pdf

Module 6.3 – HIV counseling and testing: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.3.pdf

Module 6.4 – The continuum of care for people living with HIV/AIDS and access to antiretroviral therapy: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.4.pdf

Module 6.5 – Prevention of mother-to-child transmission: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.5.pdf

Module 6.6 – Prevention of HIV transmission through blood: http://www.searo.who.int/LinkFiles/Publications_NAP_Module_6.6.pdf

Module 7 – Managing the AIDS programme: http://www.searo.who.int/LinkFiles/Publications_NAP_Module7.pdf

Module 8 – Management systems for the AIDS programme: http://www.searo.who.int/LinkFiles/Publications_NAP_Module8.pdf

Module 9 – Strategic information: http://www.searo.who.int/LinkFiles/Publications_NAP_Module9.pdf

2. IMAI general principles of good chronic care
English: http://www.who.int/hiv/pub/imai/generalprinciples082004.pdf
French: http://www.who.int/hiv/pub/imai/imai_general_2008_fr.pdf

3. UNAIDS/WHO policy statement on HIV testing
http://www.who.int/hiv/pub/vct/en/hivtestingpolicy04.pdf

4. Opening up the HIV/AIDS epidemic: Guidance on encouraging beneficial disclosure, ethical partner counselling & appropriate use of HIV case-reporting
English: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_en.pdf
French: http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_fr.pdf

5. HIV counselling and testing e-library
http://www.who.int/hiv/topics/vct/elibrary/en/index.html

6. Guidelines for the implementation of reliable and efficient diagnostic HIV testing, Region of the Americas
English: http://www.paho.org/English/AD/FCH/AI/LAB_GUIDE_ENG.PDF
Spanish: http://www.paho.org/Spanish/AD/FCH/AI/LAB_GUIDE_SPAN.PDF

7. WHO HIV testing and counselling (TC) toolkit
http://www.who.int/hiv/topics/vct/toolkit/en/index.html

8. International Organization for Migration guide for counsellors: IOM HIV counselling in the context of migration health assessment
http://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/published_docs/brochures_and_info_sheets/HIV%20counselors%20GUIDE%20FINAL_Apr2006%20(4).pdf

9. Guidance on provider-initiated HIV testing and counselling in health facilities
English: http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789244595565_rus.pdf

10. WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related   disease in adults and children
http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf

11. HIV testing and counselling in TB clinical settings tools
http://www.cdc.gov/globalaids/pa_hiv_tools.htm
Agenda: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Agenda_12.1.06.pdf
Overview: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20An%20Overview_12.1.06.pdf

Module 1: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%201_12.6.06.pdf

Module 2: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%202_12.7.06.pdf

Module 3: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%203_12.12.06.pdf

Module 4: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%204_12.13.06.pdf

Module 5: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%205_12.6.06.pdf

Module 6: http://www.cdc.gov/globalaids/docs/tb_tools/TB%20Module%206%20Demo_12.1.06.pdf

12. IMAI PITC core training course and PITC counselling training video (free registration required to access the site)
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

13. WHO recommendations on the diagnosis of HIV infection in infants and children, April 2010
http://www.who.int/hiv/pub/paediatric/diagnosis/en/index.html

14. Scale up of HIV-related prevention, diagnosis, care and treatment for infants and children: A programming framework
http://www.who.int/hiv/pub/paediatric/paediatric_program_fmwk2008.pdf

15. Antiretroviral therapy for HIV infection in infants and children. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/paediatric/infants/en/index.html

16. Blood transfusion safety (WHO web page)
http://www.who.int/bloodsafety/en/

17. UNAIDS/WHO revised recommendations for the selection and use of HIV antibody tests
http://www.who.int/docstore/wer/pdf/1997/wer7212.pdf

18. Guidelines for assuring the accuracy and reliability of HIV rapid testing: Applying a quality system approach
http://whqlibdoc.who.int/publications/2005/9241593563_eng.pdf

19. Overview of HIV Rapid Test Training Package
http://wwwn.cdc.gov/dls/ila/hivtraining/Overview.pdf

20. HIV rapid test training: Framework for a systematic roll-out
http://wwwn.cdc.gov/dls/ila/hivtraining/Framework.pdf

21. Revised recommendations for HIV testing of adults, adolescents and pregnant women in health care settings http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm?s_cid=

22. HIV assays: Operational characteristics (Phase 1). Report 14: Simple/rapid tests
http://www.who.int/diagnostics_laboratory/publications/hiv_assays_rep_14.pdf

23. HIV assays: Operational characteristics (Phase 1). Report 15: Antigen/Antibody ELISAS
http://www.who.int/diagnostics_laboratory/publications/en/HIV_Report15.pdf

24. Guidelines for appropriate evaluations for HIV testing technologies in Africa
English: http://whqlibdoc.who.int/afro/2002/a82959_eng.pdf
French: http://www.who.int/entity/diagnostics_laboratory/publications/FR_HIVEval_Guide.pdf

25. Practical guidelines for intensifying HIV prevention: Towards universal access
http://data.unaids.org/pub/Manual/2007/20070306_prevention_guidelines_towards_universal_access_en.pdf

26. Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
http://www.who.int/hiv/pub/prev_care/OMS_EPP_AFF_en.pdf

27. Glion consultation on strengthening the linkages between reproductive health and HIV/AIDS: Family planning and HIV/AIDS in women and children
http://www.who.int/entity/hiv/pub/advocacymaterials/glionconsultationsummary_DF.pdf

28. Linkages between HIV and sexual and reproductive health: Technical documents and advocacy materials (WHO web page)
http://www.who.int/reproductivehealth/publications/linkages/en/index.html

29. Position statement on condoms and HIV prevention
http://www.who.int/hiv/pub/prev_care/en/Condom_statement.pdf

30. The male latex condom: Specification and guidelines for condom procurement
http://www.who.int/reproductivehealth/publications/family_planning/9241591277/en/

31. The female condom: A guide for planning and programming
http://whqlibdoc.who.int/hq/2000/WHO_RHR_00.8.pdf
English: https://www.unfpa.org/public/publications/pid/376

32. Sexual and reproductive health of women living with HIV/AIDS: Guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/924159425X_eng.pdf

33. Global strategy for the prevention and control of sexually transmitted infections, 2006 - 2015: Breaking the chain of transmission
English: http://whqlibdoc.who.int/publications/2007/9789241563475_eng.pdf
Arabic: http://whqlibdoc.who.int/publications/2007/9789246563470_ara.pdf
Chinese: http://whqlibdoc.who.int/publications/2007/9789245563471_chi.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789244563472_rus.pdf

34. Guidelines for the management of sexually transmitted infections
English: http://www.who.int/hiv/pub/sti/en/STIGuidelines2003.pdf
French: http://www.who.int/hiv/pub/sti/STIguidelines2003_fr.pdf
Portuguese: http://www.who.int/entity/hiv/pub/sti/STIguidelines2003_pt.pdf
Spanish: http://www.who.int/entity/hiv/pub/sti/STIguidelines2003_es.pdf

35. STI interventions for preventing HIV: Appraisal of the evidence
Publication anticipated in 2010.

36. IMAI acute care STI/genitourinary problem training course participant's manual (part of IMAI acute care guideline module)
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

37. Periodic presumptive treatment for sexually transmitted infections: Experience from the field and recommendations for research
http://www.who.int/reproductivehealth/publications/rtis/9789241597050/en/

38. WHO regional strategy for the prevention and control of sexually transmitted infections 2007-2015
http://www.searo.who.int/LinkFiles/Publications_WHO_Regional_Strategy_STI.pdf

39. SEX-RAR guide: The rapid assessment and response guide on psychoactive substance use and sexual risk behaviour
http://www.who.int/mental_health/media/en/686.pdf

40. Youth-centered counseling for HIV/STI prevention and promotion of sexual and reproductive health: A guide for front-line providers
http://www.paho.org/english/ad/fch/ca/sa-youth.pdf

41. Male circumcision information package
http://www.who.int/hiv/mediacentre/infopack_en_1.pdf
http://www.who.int/hiv/mediacentre/infopack_en_2.pdf
http://www.who.int/hiv/mediacentre/infopack_en_3.pdf
http://www.who.int/hiv/mediacentre/infopack_en_4.pdf

42. New data on male circumcision and HIV prevention: Policy and programme implications (WHO/ UNAIDS technical consultation on male circumcision and HIV prevention: Research implications for policy and programming, Montreux, 6-8 March 2007: conclusions and recommendations)
English: http://whqlibdoc.who.int/unaids/2007/male_circumcision_eng.pdf
French: http://www.who.int/entity/hiv/mediacentre/MCrecommendations_fr.pdf

43. Male circumcision: Global trends and determinants of prevalence, safety and acceptability
http://whqlibdoc.who.int/publications/2007/9789241596169_eng.pdf

44. Manual for male circumcision under local anaesthesia
http://www.who.int/hiv/pub/malecircumcision/who_mc_local_anaesthesia.pdf

45. Male circumcision quality assurance: A guide to enhancing the safety and quality of services
http://www.who.int/hiv/pub/malecircumcision/qa_guide/

46. Male circumcision quality assurance toolkit
http://www.who.int/hiv/pub/malecircumcision/qa_toolkit/

47. Safe, voluntary, informed male circumcision and comprehensive HIV prevention programming: Guidance for decision-makers on human rights, ethical and legal considerations
http://data.unaids.org/pub/Manual/2007/070613_humanrightsethicallegalguidance_en.pdf

48. Male circumcision and HIV prevention in Eastern and Southern Africa communications guidance
http://www.malecircumcision.org/programs/documents/mc_hiv_prevention_eastern_southern_africa_5_15_08.pdf

49. Operational guidance for scaling up male circumcision services for HIV prevention
http://www.who.int/hiv/pub/malecircumcision/op_guidance/

50. IMAI-IMCI chronic HIV care with ARV therapy and prevention: Interim guidelines for health workers at health centre or district hospital outpatient clinic
English: http://www.who.int/hiv/pub/imai/Chronic_HIV_Care7.05.07.pdf
French: http://www.who.int/hiv/pub/imai/imai_chronic_2008_fr.pdf

51. Toolkit for targeted HIV/AIDS prevention and care in sex work settings
http://whqlibdoc.who.int/publications/2005/9241592966.pdf

52. Guidelines for the management of sexually transmitted infections in female sex workers
http://www.wpro.who.int/NR/rdonlyres/90F80401-5EA0-4638-95C6-6EFF28213D34/0/Guidelines_for_the_Mgt_of_STI_in_female_sex_workers.pdf

53. 100% condom use programme in entertainment establishments 2000
http://www.wpro.who.int/NR/rdonlyres/5F1C719B-4457-4714-ACB1-192FFCA195B1/0/condom.pdf

54. HIV and sexually transmitted infection prevention among sex workers in Eastern Europe and Central Asia
English: http://whqlibdoc.who.int/unaids/2006/9291734942_eng.pdf
Russian: http://whqlibdoc.who.int/unaids/2006/9291734950_rus.pdf

55. Rapid assessment and response: Adaptation guide on HIV and men who have sex with men (MSM-RAR)
http://www.who.int/entity/hiv/pub/prev_care/en/msmrar.pdf

56. Policy brief: HIV and sex between men
http://data.unaids.org/Publications/IRC-pub07/jc1269-policybrief-msm_en.pdf

57. Between men: HIV STI prevention for MSM
http://www.aidsalliance.org/includes/Publication/msm0803_between_men_Eng.pdf

58. AIDS and men who have sex with men
http://whqlibdoc.who.int/unaids/2000/a62375_eng.pdf

59. 2007 European guideline (IUSTI/WHO)on the management of proctitis, proctocolitis and enteritis caused by sexually transmissible pathogens
http://www.iusti.org/sti-information/pdf/proctitis-guideline-v7.pdf

60. Preventing HIV/AIDS in young people: a systematic review of the evidence from developing countries
http://whqlibdoc.who.int/trs/WHO_TRS_938_eng.pdf

61. Global consultation on the health services response to the prevention and care of HIV/AIDS among young people: Achieving the global goals - access to services
http://whqlibdoc.who.int/publications/2004/9241591323.pdf

62. Adolescent friendly health services: An agenda for change
http://whqlibdoc.who.int/hq/2003/WHO_FCH_CAH_02.14.pdf

63. Consensus statement: delivering antiretroviral drugs in emergencies: neglected but feasible
http://www.who.int/hac/techguidance/pht/HIV_AIDS_101106_arvemergencies.pdf

64. Guidelines for HIV/AIDS interventions in emergency settings
English: http://www.who.int/3by5/publications/documents/en/iasc_guidelines.pdf
French: http://www.who.int/3by5/publications/en/directivesvihfinalesfr.pdf

65. Antiretroviral medication policy for refugees
http://data.unaids.org/pub/Report/2007/20070326_unhcr_art_en.pdf

66. Effectiveness of interventions to address HIV in prisons (Evidence for action series web site)
http://www.who.int/hiv/topics/idu/prisons/en/index.html

67. Policy brief: Reduction of HIV transmission in prisons (Evidence for action on HIV/AIDS and injecting drug use)
http://www.who.int/hiv/pub/advocacy/en/transmissionprisonen.pdf

68. Status paper on prisons, drugs and harm reduction
http://www.euro.who.int/document/e85877.pdf

69. Post-exposure prophylaxis to prevent HIV infection: Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection
http://whqlibdoc.who.int/publications/2007/9789241596374_eng.pdf

70. Policy and programming guide for HIV/AIDS prevention and care among injecting drug users
http://www.who.int/hiv/pub/prev_care/policyprogrammingguide.pdf

71. Advocacy guide: HIV/AIDS prevention among injecting drug users
http://www.who.int/hiv/pub/advocacy/en/advocacyguideen.pdf

72. Policy briefs and technical papers on HIV/AIDS and injecting drug users (Evidence for action series web site)
http://www.who.int/hiv/pub/idu/idupolicybriefs/en/index.html

73. HIV/AIDS: Injecting drug use and prisons (WHO web site)
http://www.who.int/hiv/topics/idu/en/index.html

74. Evidence for action: Effectiveness of community-based outreach in preventing HIV/AIDS among injecting drug users
http://whqlibdoc.who.int/publications/2004/9241591528.pdf

75. Treatment of injecting drug users with HIV/AIDS: Promoting access and optimizing service delivery
http://www.who.int/substance_abuse/publications/treatment_idus_hiv_aids.pdf

76. Training guide for HIV prevention outreach to injecting drug users: workshop manual
English: http://whqlibdoc.who.int/hq/2004/9241546352.pdf

77. Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users (Evidence for action technical papers)
http://whqlibdoc.who.int/publications/2004/9241591641.pdf

78. Guide to starting and managing needle and syringe programmes
http://www.who.int/hiv/idu/Guide_to_Starting_and_Managing_NSP.pdf

79. Treatment and care for HIV-positive injecting drug users (training curriculum)
http://www.searo.who.int/en/Section10/Section18/Section356_14247.htm
Module 1: Drug use and HIV in Asia
http://www.searo.who.int/LinkFiles/Publications_Module_01_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 2: Comprehensive services for injecting drug users
http://www.searo.who.int/LinkFiles/Publications_Module_02_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 3: Initial patient assessment
http://www.searo.who.int/LinkFiles/Publications_Module_03_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 4: Managing opioid dependence
http://www.searo.who.int/LinkFiles/Publications_Module_04_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 5: Managing non-opioid drug dependence
http://www.searo.who.int/LinkFiles/Publications_Module_05_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 6: Managing ART in injecting drug users
http://www.searo.who.int/LinkFiles/Publications_Module_06_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 7: Adherence counselling for injecting drug users
http://www.searo.who.int/LinkFiles/Publications_Module_07_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 8: Drug interactions
http://www.searo.who.int/LinkFiles/Publications_Module_08_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 9: Management of coinfections in HIV-positive injecting drug users
http://www.searo.who.int/LinkFiles/Publications_Module_09_Treatment_&_Care_for_HIV_positive_IDUs.pdf

Module 10: Managing pain in HIV-infected injecting drug users
http://www.searo.who.int/LinkFiles/Publications_Module_10_Treatment_&_Care_for_HIV_
positive_IDUs.pdf

Module 11: Psychiatric illness, psychosocial care and sexual health
http://www.searo.who.int/LinkFiles/Publications_Module_11_Treatment_&_Care_for_HIV_
positive_IDUs.pdf

Module 12: Continuing medical education
http://www.searo.who.int/LinkFiles/Publications_Module_12_Treatment_&_Care_for_HIV_
positive_IDUs.pdf

Trainer manual
http://www.searo.who.int/LinkFiles/Publications_Module_13_Treatment_&_Care_for_HIV_
positive_IDUs.pdf

80. Treatment of opioid dependence (WHO web page)
http://www.who.int/substance_abuse/activities/treatment_opioid_dependence/en/index.html

81. WHO recommendations for clinical mentoring to support scale-up of HIV care, antiretroviral
therapy and prevention in resource-constrained settings
http://whqlibdoc.who.int/publications/2006/9789241594684_eng.pdf

82. Effectiveness of drug dependence treatment in prevention of HIV among injecting drug
users (Evidence for action technical papers)
http://www.who.int/hiv/pub/idu/en/drugdependencefinaldraft.pdf

83. WHO/UNODC/UNAIDS position paper: Substitution maintenance therapy in the
management of opioid dependence and HIV/AIDS prevention
English: http://whqlibdoc.who.int/unaids/2004/9241591153_eng.pdf
Chinese: http://whqlibdoc.who.int/unaids/2004/9241591153_chi.pdf
Russian: http://whqlibdoc.who.int/unaids/2004/9241591153_rus.pdf
Cambodian:http://whqlibdoc.who.int/unaids/2004/9241591153_cam.pdf
Lao: http://whqlibdoc.who.int/unaids/2004/9241591153_lao.pdf
Vietnamese:http://whqlibdoc.who.int/unaids/2004/9241591153_vie.pdf

84. Strategic approaches to the prevention of HIV infection in infants. Report of a WHO
meeting, Morges, Switzerland, 20-22 March 2002
http://www.who.int/hiv/mtct/StrategicApproaches.pdf

85. Guidance on global scale-up of the prevention of mother to child transmission of HIV:
towards universal access for women, infants and young children and eliminating HIV and AIDS
among children
English: http://whqlibdoc.who.int/publications/2007/9789241596015_eng.pdf
French: http://whqlibdoc.who.int/publications/2007/9789242596014_fre.pdf
Russian: http://whqlibdoc.who.int/publications/2007/9789280643114_rus.pdf

86. Report of the WHO technical reference group, paediatric HIV/ART care guideline group
meeting, WHO Headquarters, Geneva, Switzerland, 10-11 April 2008
http://www.who.int/hiv/pub/paediatric/WHO_Paediatric_ART_guideline_rev_mreport_2008.pdf

87. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants:
towards universal access. Recommendations for a public health approach (2010 version)
http://www.who.int/hiv/pub/mtct/antiretroviral/en/index.html

88. Testing and counselling for prevention of mother-to-child transmission of HIV support tools
English: http://www.womenchildrenhiv.org/wchiv?page=vc-10-00#S3.4X
French: http://www.womenchildrenhiv.org/wchiv?page=vc-10-00-fr

89. IMAI-IMPAC integrated PMTCT training course
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

90. Reproductive choices and family planning for people living with HIV - Counselling tool
http://www.who.int/reproductivehealth/publications/family_planning/9241595132/en/index.html

91. IMAI one-day orientation on adolescents living with HIV
http://www.who.int/child_adolescent_health/documents/fch_cah_9789241598972/en/index.html

92. Strengthening linkages between family planning and HIV: reproductive choices and family planning for people living with HIV
http://www.who.int/reproductive-health/hiv/hiv_tecbrief_fp.pdf

93. HIV and infant feeding: Revised principles and recommendations. Rapid advice. November 2009
http://whqlibdoc.who.int/publications/2009/9789241598873_eng.pdf

94. Antiretroviral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach (2010 revision)
http://www.who.int/hiv/pub/arv/adult/en/index.html

95. Aide memoire: Infection control: Standard precautions in health care
English: http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf
French: http://www.who.int/csr/resources/publications/EPR_AM2_FR3.pdf

96. Joint ILO/WHO guidelines on health services and HIV/AIDS
English: http://whqlibdoc.who.int/publications/2005/9221175537_eng.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/who_ilo_guidelines_fr.pdf
Spanish: http://www.who.int/entity/hiv/pub/prev_care/who_iloguidelines_sp.pdf
Russian: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelines_ru.pdf
Arabic: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_arabic.pdf
Chinese: http://www.who.int/entity/hiv/pub/guidelines/ilowhoguidelineschinese-pdf.pdf
Indonesian: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_indonesian.pdf
Vietnamese: http://www.who.int/entity/hiv/pub/guidelines/who_ilo_guidelines_vietnamese.PDF

97. Injection safety toolbox: Resources to assist in the management of national safe and appropriate use of injection policies (WHO web page)
http://www.who.int/injection_safety/toolbox/en/

98. Healthcare waste and its safe management (WHO web page)
http://www.healthcarewaste.org/en/115_overview.html

99. Operations manual for the delivery of HIV prevention, care and treatment at primary health centres in high-prevalence resource-constrained settings
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

100. Protecting healthcare workers: Preventing needlestick injuries toolkit (WHO web site)
http://www.who.int/occupational_health/activities/pnitoolkit/en/index.html

101. Occupational health of health workers: Meeting report, October 2009
http://www.who.int/occupational_health/network/health_workers_workshop_report.pdf

102. WHO best practices for injections and related procedures toolkit, March 2010 http://whqlibdoc.who.int/publications/2010/9789241599252_eng.pdf

103. WHO blood safety: Aide-memoire for national blood programmes
English: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Eng.pdf
French: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_French.pdf
Portuguese: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Port.pdf
Spanish: http://www.who.int/entity/bloodsafety/transfusion_services/en/Blood_Safety_Span.pdf

104. Global database on blood safety (WHO web page)
http://www.who.int/bloodsafety/global_database/en/

105. Prioritizing second-line antiretroviral drugs for adults and adolescents: a public health approach. Report of a WHO working group meeting, Geneva, Switzerland, 21-22 May 2007
http://www.who.int/hiv/pub/meetingreports/Second_Line_Antiretroviral.pdf

106. Co-trimoxazole prophylaxis for HIV-exposed and HIV-infected infants and children. Practical approaches to implementation and scale up | WHO and UNICEF
http://www.who.int/hiv/pub/paediatric/co-trimoxazole/en/index.html

107. Vaccine-preventable diseases, vaccines and vaccination
http://whqlibdoc.who.int/publications/2005/9241580364_chap6.pdf

108. Revised BCG vaccination guidelines for infants at risk for HIV infection
http://www.who.int/wer/2007/wer8221.pdf

109. Nutrition counselling, care and support for HIV-infected women
http://www.who.int/hiv/pub/prev_care/en/nutri_eng.pdf

110. Integrating nutrition and food assistance into HIV care and treatment programmes: operational guidance
http://www.who.int/hiv/topics/treatment/nutrition/en/index.html

111. Nutrition and HIV/AIDS: A Report by the Secretariat. WHO Executive Board EB116/12, 116th Session, 12 May 2005
http://www.who.int/gb/ebwha/pdf_files/EB116/B116_12-en.pdf

112. Guidelines for an integrated approach to the nutritional care of HIV-infected children (6 months-14 years): Preliminary version for country introduction
http://www.who.int/nutrition/publications/hivaids/9789241597524/en/index.html

113. Nutritional care and support for people living with HIV/AIDS: A training course
http://www.who.int/nutrition/publications/hivaids/9789241597524/en/index.html

114. Prequalification programme: A United Nations Programme managed by WHO (WHO web site)
http://apps.who.int/prequal/

115. IMAI basic ART aid (lay counsellor) training modules
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

116. Patient treatment cards
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

117. Flipchart for patient education: HIV prevention, treatment and care
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

118. HIV/AIDS treatment and care: clinical protocols for the WHO European Region
English: http://www.euro.who.int/document/e90840.pdf
Russian: http://www.euro.who.int/document/e90840R.pdf

119. WHO consultation on ART failure in the context of a public health approach:
2008 meeting report
http://www.who.int/hiv/pub/arv/failure/en/index.html

120. ART failure and strategies for switching ART regimens in the WHO European RegionWHO
consultation on ART failure in the context of a public health approach: 2008 meeting report
http://www.euro.who.int/__data/assets/pdf_file/0020/78104/E91257.pdf

121. Adherence to long-term therapies: Evidence for action
http://www.who.int/chp/knowledge/publications/adherence_introduction.pdf
http://www.who.int/hiv/pub/prev_care/lttherapies/en/

122. IMAI acute care
English: http://www.who.int/hiv/pub/imai/acute_care.pdf
French: http://www.who.int/hiv/pub/imai/acute_care_fr.pdf

123. IMCI chart booklet for high HIV settings
English: http://whqlibdoc.who.int/publications/2008/9789241597388_eng.pdf
French: http://whqlibdoc.who.int/publications/2008/9789242594379.cb_fre.pdf

124. IMAI OI training course (based on IMAI Acute Care guideline module)
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

125. Global action plan for the prevention and control of pneumonia (GAPP): report of an
informal consultation
http://whqlibdoc.who.int/publications/2008/9789241596336_eng.pdf

126. Integrated management of childhood illness (IMCI) complementary course on HIV/AIDS
Introduction: http://whqlibdoc.who.int/publications/2006/9789241594370.intro_eng.pdf
Module 1: http://whqlibdoc.who.int/publications/2006/9789241594370.m1_eng.pdf
Module 2: http://whqlibdoc.who.int/publications/2006/9789241594370.m2_eng.pdf
Module 3: http://whqlibdoc.who.int/publications/2006/9789241594370.m3_eng.pdf
Module 4: http://whqlibdoc.who.int/publications/2006/9789241594370.m4_eng.pdf
Facilitator guide for modules: http://whqlibdoc.who.int/publications/2006/9789241594370.
fg_eng.pdf
Photo booklet: http://whqlibdoc.who.int/publications/2006/9789241594370.pb_eng.pdf
Chart booklet: http://whqlibdoc.who.int/publications/2006/9789241594370.cb_eng.pdf
French (all modules): http://www.who.int/child_adolescent_health/documents/9241594373/en/

127. Policy for prevention of oral manifestations in HIV/AIDS: The approach of the WHO Global
Oral Health Programme
http://adr.iadrjournals.org/cgi/reprint/19/1/17.pdf

128. Pocket book of hospital care for children: guidelines for the management of common
illnesses with limited resources
English: http://whqlibdoc.who.int/publications/2005/9241546700.pdf

French: http://whqlibdoc.who.int/publications/2007/9789242546705_fre.pdf
Portuguese: http://whqlibdoc.who.int/publications/2005/9789248546709_por.pdf
Russian: http://whqlibdoc.who.int/publications/2005/9241546700_rus.pdf

129.Community-based management of severe acute malnutrition: A joint statement by the World Health Organization, the World Food Programme, the United Nations System Standing Committee on Nutrition and the United Nations Children's Fund
English: http://www.who.int/child_adolescent_health/documents/pdfs/severe_acute_malnutrition_en.pdf
French: http://www.who.int/child_adolescent_health/documents/pdfs/severe_acute_malnutrition_fr.pdf

130.HIV/AIDS treatment and care for injecting drug users: Clinical protocols for the WHO European Region
http://www.euro.who.int/__data/assets/pdf_file/0009/78138/E90840_Chapter_5.pdf

131.Management of Hepatitis C and HIV coinfection: clinical protocol for the WHO European region
English: http://www.euro.who.int/__data/assets/pdf_file/0008/78146/E90840_Chapter_6.pdf
Russian: http://www.euro.who.int/__data/assets/pdf_file/0010/78148/HEP_C_rus.pdf

132.Prevention of hepatitis A, B and C and other hepatotoxic factors in people living with HIV: Clinical protocol for the WHO European Region
English: http://www.euro.who.int/__data/assets/pdf_file/0010/78157/E90840_Chapter_8.pdf
Russian: http://www.euro.who.int/__data/assets/pdf_file/0007/78163/HEP_A_B_C_rus.pdf

133.WHO EURO hepatitis web site
http://www.euro.who.int/en/what-we-do/health-topics/diseases-and-conditions/hepatitis

134.Guidelines for the treatment of malaria, second edition
http://www.who.int/malaria/docs/TreatmentGuidelines2006.pdf

135.Malaria and HIV interactions and their implications for public health policy
English: http://whqlibdoc.who.int/publications/2005/9241593350.pdf
French: http://www.who.int/entity/hiv/pub/meetingreports/malariahivfr.pdf

136.WHO mental health and HIV/AIDS series

Module 1 - Organization and systems support for mental health interventions in ARV therapy programmes:
http://whqlibdoc.who.int/publications/2005/9241593040_eng.pdf

Module 2 - Basic counselling guidelines for ARV therapy programmes:
http://whqlibdoc.who.int/publications/2005/9241593067_eng.pdf

Module 3 - Psychiatric care in ARV therapy (for second level care):
http://whqlibdoc.who.int/publications/2005/9241593083_eng.pdf

Module 4 - Psychosocial support groups in ARV therapy:
http://whqlibdoc.who.int/publications/2005/9241593105_eng.pdf

Module 5 - Psychotherapeutic interventions in ARV therapy (for second level care):
http://whqlibdoc.who.int/publications/2005/9241593091_eng.pdf

137.Palliative care: symptom management and end-of-life care
English: http://www.who.int/hiv/pub/imai/genericpalliativecare082004.pdf
French: http://www.who.int/hiv/pub/imai/imai_palliative_2008_fr.pdf

138. WHO's pain ladder (web page)
http://www.who.int/cancer/palliative/painladder/en/index.html

139. IMAI palliative care training course
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

140. Caregiver booklet: Symptom management and end of life care (draft)
http://www.who.int/hiv/pub/imai/patient_caregiver/en/index.html

141. Restoring hope: Decent care in the midst of HIV/AIDS
Available soon at the following web link:
http://www.palgrave.com/products/title.aspx?PID=323603

142. Guidelines for implementing collaborative TB and HIV programme activities
English: http://whqlibdoc.who.int/hq/2003/WHO_CDS_TB_2003.319.pdf
Russian: http://whqlibdoc.who.int/hq/2003/WHO_CDS_TB_2003.319_rus.pdf

143. Three I's Meeting: Intensified Case Finding (ICF), Isoniazid Preventive Therapy (IPT) and TB Infection Control (IC) for people living with HIV
http://www.who.int/hiv/pub/meetingreports/WHO_3Is_meeting_report.pdf

144. Isoniazid preventive therapy (IPT) for people living with HIV
http://www.stoptb.org/wg/tb_hiv/assets/documents/IPT%20Consensus%20Statement%20TB%20HIV%20Core%20Group.pdf

145. Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings
English: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269.pdf
English Addendum (Tuberculosis infection-control in the era of expanding HIV care and treatment): http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_ADD_eng.pdf
Russian: http://whqlibdoc.who.int/hq/1999/WHO_TB_99.269_rus.pdf

146. Tuberculosis infection control in the era of expanding HIV care and treatment. Addendum to the WHO Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings
http://www.who.int/tb/publications/2006/tbhiv_infectioncontrol_addendum.pdf

147. The global plan to Stop TB 2006-2015
English: http://www.stoptb.org/assets/documents/global/plan/GlobalPlanFinal.pdf
French: http://www.stoptb.org/assets/documents/global/plan/StopTB_GlobalPlan_FR_web.pdf
Spanish: http://www.stoptb.org/assets/documents/global/plan/GPII_SPversion%20finale.pdf
Arabic: http://www.stoptb.org/assets/documents/global/plan/GPII_Arabic.pdf

148. Tuberculosis care with TB-HIV co-management: Integrated Management of Adolescent and Adult Illness (IMAI)
http://whqlibdoc.who.int/publications/2007/9789241595452_eng.pdf

Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_fac.pdf

Participant's manual: http://www.who.int/hiv/pub/imai/primary/tbhiv_comgt_partman.pdf

149. IMAI TB infection control at health facilities
http://www.who.int/hiv/pub/imai/TB_HIVModule23.05.07.pdf
Facilitator's guide: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_fac.pdf
Participant's manual: http://www.who.int/hiv/pub/imai/primary/tb_infec_control_partman.pdf

150. Guidance for national tuberculosis programmes on the management of TB in children
http://whqlibdoc.who.int/hq/2006/WHO_HTM_TB_2006.371_eng.pdf

151. TB/HIV: a clinical manual: 2nd edition
English: http://whqlibdoc.who.int/publications/2004/9241546344.pdf
Russian: http://whqlibdoc.who.int/hq/1997/WHO_TB_96.200_rus.pdf
Russian: http://whqlibdoc.who.int/publications/2005/9244546345_rus.pdf
Portuguese:http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.329_por.pdf

152. CD4+ T-cell enumeration technologies: technical information (will be published in 2010)

153. Integrated health services: What and why?
http://www.who.int/healthsystems/service_delivery_techbrief1.pdf

154. WHO IMAI/IMCI/IMPAC tools (IMAI includes a series of tools that addresses the overall health of the patient by supporting a shift from an exclusively acute care model to a chronic care model that includes ART and prevention. IMAI also strengthens health systems by providing tools for patient monitoring, referral and back-referral to district hospitals, clinical team building, clinical mentoring and district planning.)
http://www.who.int/hiv/topics/capacity/
http://www.who.int/hiv/pub/imai/imai_publication_diagram.pdf

155. Interim policy on collaborative TB/HIV activities
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_eng.pdf
French: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_fre.pdf
Spanish: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_spa.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330_rus.pdf

156. Rapid assessment tool for sexual & reproductive health and HIV linkages: A generic guide prepared and published by IPPF, UNFPA, WHO, UNAIDS, GNP+, ICW and Young Positives
http://whqlibdoc.who.int/hq/2009/91825_eng.pdf

157. District health facilities: guidelines for development and operations
http://www.wpro.who.int/NR/rdonlyres/C0DAA210-7425-4382-A171-2C0F6F77153F/0/DistHealth.pdf

158. Management of resources and support systems: Equipment, vehicles and buildings (WHO web page)
http://www.who.int/management/resources/equipment/en/index1.html

159. WHO consultation on technical and operational recommendations for scale-up of laboratory services and monitoring HIV antiretroviral therapy in resource-limited settings (Expert meeting, Geneva, 2004)
http://www.who.int/hiv/pub/meetingreports/labmeetingreport.pdf

160. WHO policy on TB infection control in health care facilities, congregate settings and households
http://whqlibdoc.who.int/publications/2009/9789241598323_eng.pdf

161. Missing the target #5: Improving AIDS drug access and advancing health care for all
http://www.aidstreatmentaccess.org/itpc5th.pdf

162. Service delivery model on access to care and antiretroviral therapy for people living with HIV/AIDS
http://www.ifrc.org/Docs/pubs/health/service-delivery-en.pdf

163. Strengthening management in low-income countries
http://www.who.int/management/general/overall/Strengthening%20Management%20in%20Low-Income%20Countries.pdf

164. The health manager's web site (WHO web site)
http://www.who.int/management/en/

165. Strengthening management capacity in the health sector (WHO web site)
http://www.who.int/management/strengthen/en/index.html

166. Standards for quality HIV care: a tool for quality assessment, improvement, and accreditation
English: http://whqlibdoc.who.int/hq/2004/9241592559.pdf
French: http://www.who.int/entity/hiv/pub/prev_care/standardsquality_fr.pdf

167. Guidelines for organising national external quality assessment schemes for HIV serological testing
http://www.who.int/diagnostics_laboratory/quality/en/EQAS96.pdf

168. Guidelines for establishment of accreditation of health laboratories
http://www.searo.who.int/LinkFiles/Publications_SEA-HLM-394.pdf

169. A guide to monitoring and evaluation for collaborative TB/HIV activities
http://www.who.int/hiv/pub/tb/hiv_tb_monitoring_guide.pdf

170. Toolkit on monitoring health systems strengthening: Service delivery (2008 draft document)
http://www.who.int/healthinfo/statistics/toolkit_hss/EN_PDF_Toolkit_HSS_ServiceDelivery.pdf

171. Male circumcision quality assurance guide: A guide to enhancing the safety and quality of services
http://www.who.int/hiv/pub/malecircumcision/qa_guide/en/

172. Monitoring and evaluation of health systems strengthening: An operational framework
http://www.who.int/healthinfo/HSS_MandE_framework_Nov_2009.pdf

173. Tools for planning and developing human resources for HIV/AIDS and other health services
http://www.who.int/hrh/tools/tools_planning_hr_hiv-aids.pdf

174. Task shifting: Rational redistribution of tasks among health workforce teams: Global recommendations and guidelines
http://www.who.int/healthsystems/TTR-TaskShifting.pdf

175. How IMAI (and IMCI) support national adaptation and implementation of task shifting (IMAI-IMCI task-shifting implementation support brochure)
http://www.who.int/hiv/pub/imai/IMAI_IMCI_taskshifting_brochure.pdf

176. AIDS medicines and diagnostics service (WHO web site)
http://www.who.int/hiv/amds/

177. Essential medicines and pharmaceutical policies (WHO web site)
http://www.who.int/medicines/en/

178. Global price reporting mechanism (GPRM)
http://www.who.int/hiv/amds/gprm/en/index.html

179. A 'step-by-step' algorithm for the procurement of controlled substances for drug substitution treatment.
http://www.unodc.org/documents/hiv-aids/Step-by-Step%20procurement%20subs%20treat.pdf

180. Access to controlled medications programme: Framework
http://www.who.int/medicines/areas/quality_safety/Framework_ACMP_withcover.pdf

181. Global Fund Quality Assurance Policy for Pharmaceutical Products
http://www.theglobalfund.org/documents/psm/Annex1-%20
FullTextRevisedQualityAssurancePolicy_en.pdf

182. Procurement and supply management toolbox (web site)
http://www.psmtoolbox.org/

183. CCM grant oversight tool (web site)
http://www.theglobalfund.org/en/ccm/guidelines/#dashboard

184. GTZ-ILO-WHO consortium on social health protection in developing countries
http://www.socialhealthprotection.org/

185. Health financing policy (WHO web site)
http://www.who.int/health_financing/en/

186. WHO discussion paper: The practice of charging user fees at the point of service delivery for HIV/AIDS treatment and care
http://www.who.int/hiv/pub/advocacy/promotingfreeaccess.pdf

187. HIV financing (WHO web site)
http://www.who.int/hiv/topics/systems/health_financing/en/

188. Global Fund HIV proposals costing tool (and user manual)
http://www.who.int/hiv/pub/toolkits/gfatm_costing_tool_user_manual_v1.1.pdf

189. The Global Fund country coordinating mechanisms (CCMs) web site
http://www.theglobalfund.org/en/ccm/

190. 'Three ones' key principles: Coordination of national responses to HIV/AIDS: Guiding principles for national authorities and their partners
http://data.unaids.org/UNA-docs/Three-Ones_KeyPrinciples_en.pdf

191. WHO's global health sector strategy for HIV/AIDS 2003-2007
http://www.who.int/hiv/pub/advocacy/GHSS_E.pdf

192. International guidelines on HIV/AIDS and human rights: 2006 consolidated version
http://whqlibdoc.who.int/unaids/2006/9211541689_eng.pdf

193. Ensuring equitable access to antiretroviral treatment for women: WHO/UNAIDS policy statement
http://www.who.int/hiv/pub/advocacy/en/policy%20statement_gwh.pdf

194. The greater involvement of people living with HIV (GIPA): UNAIDS policy brief
http://data.unaids.org/pub/BriefingNote/2007/JC1299_Policy_Brief_GIPA.pdf

195. IMAI expert patient-trainer curriculum
http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

196. WHO's stakeholder analysis tool
http://www.who.int/hac/techguidance/training/stakeholder%20analysis%20ppt.pdf

197. Scaling up effective partnerships: A guide to working with faith-based organisations in the response to HIV and AIDS
http://www.e-alliance.ch/media/media-6695.pdf

198. Partnership work: the health service–community interface for the prevention, care and treatment of HIV/AIDS
http://www.who.int/hiv/pub/prev_care/en/37564_OMS_interieur.pdf

199. Working with civil society (UNAIDS web site)
http://www.unaids.org/en/Partnerships/Civil+society/default.asp

200. Universal access targets and civil society organizations: A briefing for civil society organizations
http://www.unaids.org/unaids_resources/images/Partnerships/061126_CSTargetsetting_en.pdf

201. Reducing HIV stigma and discrimination: a critical part of national AIDS programmes
http://data.unaids.org/pub/Report/2008/jc1420-stigmadiscrimi_en.pdf

202. Integrating gender into HIV/AIDS programmes: A review paper
http://www.who.int/hiv/pub/prev_care/en/IntegratingGender.pdf

203. Gender, women and health: gender inequalities and HIV/AIDS (WHO web site)
http://www.who.int/gender/hiv_aids/en/

204. Integrating gender into HIV/AIDS programmes in the health sector: a tool to improve responsiveness to women's needs
http://www.who.int/gender/documents/gender_hiv/en/index.html

205. Addressing violence against women and HIV testing and counselling: a meeting report
http://www.who.int/gender/documents/VCT_addressing_violence.pdf

206. Guidelines on protecting the confidentiality and security of HIV information: Proceedings from a workshop, May 2006. Interim guidelines
http://data.unaids.org/pub/manual/2007/confidentiality_security_interim_
guidelines_15may2007_en.pdf

207. Guidelines for measuring national HIV prevalence in population-based surveys
http://www.who.int/hiv/pub/surveillance/guidelinesmeasuringpopulation.pdf

208. The pre-surveillance assessment: Guidelines for planning serosurveillance of HIV, prevalence of sexually transmitted infections and the behavioural components of second generation surveillance of HIV
http://www.who.int/hiv/pub/surveillance/psaguidelines.pdf

209. Guidelines for HIV surveillance among tuberculosis patients. Second edition
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.339.pdf
French: http://whqlibdoc.who.int/hq/2005/WHO_HTM_TB_2004.339_fre.pdf
Spanish: http://whqlibdoc.who.int/hq/2004/OMS_HTM_TUB_2004.339_spa.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.339_rus.pdf

210. Guidelines for effective use of data from HIV surveillance systems
English: http://www.who.int/hiv/strategic/surveillance/en/useofdata.pdf
Spanish: http://www.who.int/hiv/pub/surveillance/useofdata_sp.pdf

211. Guidelines for conducting HIV sentinel serosurveys among pregnant women and other groups
English: http://www.who.int/hiv/pub/surveillance/en/ancguidelines.pdf
French: http://www.who.int/hiv/pub/epidemiology/en/guidelinesforconduction_fr.pdf

212. Estimating the size of populations at risk for HIV: Issues and methods
http://www.who.int/hiv/pub/surveillance/en/EstimatingSizePop.pdf

213. Guidelines for using HIV testing technologies in surveillance: selection, evaluation and implementation
http://www.who.int/hiv/pub/surveillance/en/guidelinesforUsingHIVTestingTechs_E.pdf

214. HIV surveillance training modules, WHO Regional Office for South-East Asia
Module 1: Overview of the HIV epidemic with an introduction to public health surveillance
http://www.searo.who.int/LinkFiles/Publications_Module-1.pdf

Module 2: HIV clinical staging and case reporting
http://www.searo.who.int/LinkFiles/Publications_Module-2.pdf

Module 3: HIV serosurveillance
http://www.searo.who.int/LinkFiles/Publications_Module-3.pdf

Module 4: Surveillance for sexually transmitted infections
http://www.searo.who.int/LinkFiles/Publications_Module-4.pdf

Module 5: Surveillance of HIV risk behaviours
http://www.searo.who.int/LinkFiles/Publications_Module-5.pdf

Module 6: Surveillance of populations at high risk for HIV transmission
http://www.searo.who.int/LinkFiles/Publications_Module-6.pdf
Facilitator training guide for HIV surveillance
http://www.searo.who.int/LinkFiles/Publications_facilitator.pdf

215. National guide to monitoring and evaluating programmes for the prevention of HIV in infants and young children
http://whqlibdoc.who.int/publications/2004/9241591846.pdf

216. National AIDS programmes: A guide to indicators for monitoring and evaluating national HIV/AIDS prevention programmes for young people
English: http://www.who.int/hiv/pub/epidemiology/napyoungpeople.pdf
French: http://www.who.int/hiv/pub/me/napyoungpeople_fr.pdf
Spanish: http://www.who.int/hiv/pub/me/napyoungpeople_sp.pdf
Russian: http://www.who.int/hiv/pub/me/napyoungpeople_ru.pdf

217. National AIDS programmes: A guide to indicators for monitoring national antiretroviral programmes
English: http://www.who.int/hiv/pub/me/naparv.pdf
French: http://www.who.int/hiv/strategic/me/naparvfr.pdf
Spanish: http://www.who.int/hiv/pub/me/napart_sp.pdf

218. A guide to monitoring and evaluation for collaborative TB/HIV activities: Field test version
English: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.342.pdf
Russian: http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.342_rus.pdf

219. Core indicators for national AIDS programmes: Guidance and specifications for additional recommended indicators
http://data.unaids.org/pub/BaseDocument/2009/20090305_additionalrecommendedindicators_finalprintversio_en.pdf

220. Global framework for monitoring and reporting on the health sector's response towards universal access to HIV/AIDS treatment, prevention, care and support
http:/ http://www.who.int/hiv/pub/me/framework/en/index.html

221. Monitoring the declaration of commitment on HIV/AIDS: Guidelines on construction of core indicators
http://data.unaids.org/pub/Manual/2007/20070411_ungass_core_indicators_manual_en.pdf

222. Patient monitoring guidelines for HIV care and antiretroviral therapy
http://www.who.int/hiv/pub/ptmonguidelines.pdf
Three Interlinked Patient Monitoring Systems for HIV care/ART, MCH/ PMTCT (including malaria prevention during pregnancy), and TB/HIV: Standardized Minimum Data Set and Illustrative Tools:
http://www.who.int/hiv/pub/imai/three_patient_monitor/en/
Training materials: http://www.who.int/hiv/topics/capacity/sharespace/en/index.html

223. HIV drug resistance (WHO web site)
http://www.who.int/hiv/drugresistance/

224. Pharmacovigilance for antiretrovirals in resource-poor countries
http://www.who.int/medicines/areas/quality_safety/safety_efficacy/PhV_for_antiretrovirals.pdf

225. Guide to operational research in programs supported by the Global Fund
http://www.who.int/hiv/pub/epidemiology/SIR_operational_research_brochure.pdf

226. Framework for operations and implementation research in health and disease control programmes
http://www.theglobalfund.org/documents/me/FrameworkForOperationsResearch.pdf

227. HIV testing, treatment, and prevention: generic tools for operational research
http://www.who.int/hiv/pub/operational/generic/en/index.html

228. A guide to rapid assessment of human resources for health
http://www.who.int/hrh/tools/en/Rapid_Assessment_guide.pdf

229. Rapid assessment and response: Adaptation guide for work with especially vulnerable young people (EVYP- RAR)
http://www.who.int/hiv/pub/prev_care/en/youngpeoplerar.pdf

230. HIV triangulation resource guide: Synthesis of results from multiple data sources for evaluation and decision-making http://www.who.int/hiv/pub/surveillance/triangulation/en/
http://www.who.int/hiv/pub/idu/targetsetting/en/index.html

232. Setting national targets for moving towards universal access: operational guidance
http://data.unaids.org/pub/Guidelines/2006/20061006_report_universal_access_targets_guidelines_en.pdf

233. Scaling up towards universal access: Considerations for countries to set their own national targets for HIV prevention, treatment and care
http://data.unaids.org/pub/Report/2006/Considerations_for_target_setting_April2006.pdff

234. Routine data quality assessment tool (RDQA): Guidelines for implementation GFATM, WHO and partners (Draft July 2008)
http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/data-quality-assurance-tools/RDQA%20Guidelines-Draft%207.30.08.pdf

Annexes: Tables 7–9

Table 7. Example of health sector interventions by level of health system in low-level epidemic

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of interventions	Primary care: at health centres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpatient care	Regional or central hospital: specialist physicians, paediatricians
Increasing knowledge of HIV sero-status	Outreach HIV testing and counselling	CITC	CITC: at health facility PITC: • Antenatal PITC • Family and partner testing	As in box to left, plus: • Blood donor HIV testing and counselling • PITC for HIV-exposed infants • PITC before post-exposure prophylaxis (PEP) • Resolve discordant results	Perform virological tests on dried blood spot and send back results

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of interventions	Primary care: at health centres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpatient care	Regional or central hospital: specialist physicians, paediatricians
Prevention of HIV transmission	HIV prevention outreach to MARPs (e.g. sex workers, drug users, men who have sex with men) and vulnerable populations (e.g. migrants, mobile populations) including: • Peer-based information and education • Provision and exchange of sterile needles and syringes • Condom promotion and programming, including 100% condom promotion campaigns • Targeted STI and sexual and reproductive health services, particularly for vulnerable girls and women • Referral to specific prevention services	Community prevention literacy Peer support for prevention for people living with HIV Pharmacy programmes for needle and syringe access Community family planning If HIV-positive mothers in the community: • Mother-to-mother support for PMTCT • Infant feeding support, and replacement feeding if AFASS	**Prevent sexual transmission of HIV:** • Condom promotion, provision to prevent STIs in MARPs • Detect and manage STIs • Safer sex, risk reduction counselling (as at hospital depending on people living with HIV client population) • Special, friendly clinical services for sex workers, men who have sex with men **Prevent HIV infection through IDU** – Comprehensive harm reduction including: • Patient information, education • Sterile needle, syringe provision • Drug dependence treatment (including opioid substitution treatment) **Prevent infection in infants, young children:** • Family planning • ARV prophylaxis for PMTCT • Care, support for pregnant women • Infant feeding counselling and support **Prevent transmission in healthcare settings, including:** • Infection control, standard precautions • Safe injections • Safe medical waste management • Occupational health of health workers • Post-exposure prophylaxis	*As in box to left, plus:* • Manage STI treatment failures **Prevention for people living with HIV:** • Discordant couples risk reduction • Counsel on continued possibility of HIV transmission on ART • Condom promotion and provision • Counselling on sexual health, return to sexuality and fertility, reproductive choices • Counsel on substance use and relationship to risky behaviour • Brief interventions for harmful or hazardous alcohol use **PMTCT:** • ART for eligible women; support for complications on ART/AZT prophylaxis Safe blood	Safe blood

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of interventions	Primary care: at health centres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpatient care	Regional or central hospital: specialist physicians, paediatricians
HIV/AIDS treatment and care	Interventions delivered through outreach to MARPs (in partnership with other sectors) Integration of treatment support for antiretroviral therapy, TB treatment and prophylaxis in outreach services	**Home-based care:** Palliative care	**Prevent illness:** • Cotrimoxazole prophylaxis • Vaccination • Nutritional care and support • Education: safe water, hygiene, sanitation **Clinical care, manage opportunistic infections and comorbidities:** • Primary care for pneumonia, fever/malaria, diarrhoea, malnutrition, other common conditions • Mental health, psychosocial support • Back up palliative care at home, symptom management **TB prevention, diagnosis, treatment:** • Intensified TB casefinding • TB infection control • Isoniazid preventive therapy • Diagnose, start, follow TB treatment	*As in box to left, plus:* **ART:** • Adherence preparation, support • Recommend or initiate first-line regimens • Monitor, adjust dose • Clinical, CD4, limited laboratory monitoring • Support patient self-management • Diagnose treatment failure (under supervision clinical mentor) • Manage serious complications of ART **HIV care:** • Assess and manage severe opportunistic infections • Inpatient care • Manage severe malnutrition • TB-ART co-treatment plan • TB-HIV co-management	Second-line ART Clinical mentor for district clinicians Management of uncommon and certain severe opportunistic infections, ART toxicities, oncology

AFASS	Acceptable, feasible, affordable, sustainable and safe	AZT	Azidothymidine, Zidovudine	MARP	Most-at-risk-populations
ART	Antiretroviral therapy	CITC	Client-initiated testing and counselling	PITC	Provider-initiated testing and counselling
ARV	Antiretroviral	IDU	Injecting drug use	PMTCT	Prevention of mother–to-child transmission
				STI	Sexually transmitted infections

Table 8. Example of health sector interventions by level of health system in concentrated epidemic

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of inter-ventions	Primary care: at health cen-tres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpa-tient care	Regional or central hospital: specialist physicians, paedia-tricians
Increasing knowledge of HIV sero-status	Outreach HIV testing and counselling to MARPs and bridge populations; consider offering CITC and including sites with rapid tests Support for self-help and community groups	CITC closest to MARP settings	CITC at health centres PITC: • Consider in health services targeting MARPs and prison health care • Sexual and injecting partners of index cases • Patients with TB, STIs, hepatitis B and C, other blood-borne viruses • Patients in drug dependence settings • Bridge populations • Pregnant women • Infant testing and counselling • Prior to receiving post-exposure prophylaxis (PEP)	*As in box to left, plus:* Blood donor HIV testing and counselling Resolve discordant HIV test results	Perform virological tests on dried blood spot and send back results

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of interventions	Primary care: at health centres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpatient care	Regional or central hospital: specialist physicians, paediatricians
Prevention of HIV transmission	HIV prevention outreach to MARPs and bridge populations such as mobile populations, migrants, border populations: • Peer-mediated information and education, and distribution of prevention commodities • Condom promotion and programming, including 100% condom promotion campaigns • Provision of harm reduction including exchange of needles and syringes • Linkage/referral to prevention, care and treatment sites friendly and oriented to MARPs	Advocacy to reduce stigma, discrimination and criminalization of MARPs Peer support for prevention with MARPs Support for self-help and community groups Condom promotion and provision Counselling to reduce risky behaviour Community prevention literacy, including STI prevention Harm reduction, including needle-syringe programmes PMTCT for women in MARPs	Prevention in people living with HIV **with emphasis on prevention in MARPs** • Targeted STI management and sexual and reproductive health services • Management of rape and sexual violence including PEP **Prevent HIV infecti**on through injecting drug use – comprehensive harm reduction including: • Patient information, education • Sterile needle, syringe provision • Drug dependence treatment (including opioid substitution treatment) Special and tolerant clinical services for sex workers, MSM including mobile services to attend MARP sites **HIV prevention among youth:** • Special attention to young MARPs • Tolerant, adolescent-friendly services • Ensure access to reproductive health, family planning **Prevent infection in infants, young children** • Family planning • ART or ARV prophylaxis • Treatment, care, support for pregnant women • Infant feeding counselling and support **Prevent transmission in health care settings, including:** • Infection control, standard precautions • Safe injections • Safe medical waste management • Occupational health of health workers; • Post-exposure prophylaxis	*As in box to left, plus:* • Resolve discordant HIV test results • Manage STI treatment failures PMTCT for complicated cases Safe blood	

	Outreach to most-at-risk populations (MARPs)	Community- and home-based delivery of inter-ventions	Primary care: at health cen-tres or outpatient clinics (including district hospital) or private providers	District hospital: second level referral care; inpa-tient care	Regional or central hospital: specialist physicians, paedia-tricians
HIV treat-ment and care (in-cluding prevention of illness in people living with HIV)	Integration of care and support in outreach services Use prevention outreach as entry point to HIV treatment and care services Referral to prevention, care and treatment sites friendly and oriented to MARPs	Self-help and community support groups **Home-based:** • Care-seeking support • Social support • Nutritional support **Palliative care:** • Symptom management and end-of-life care in home by caregivers • Patient self-management	At prevention, care and treatment sites friendly and oriented to MARPs Counselling of people living with HIV on adherence, ART, opportunistic infections prevention and treatment ART Opportunistic infections prevention and treatment Management of hepatitis and other coinfections Management of non-infectious comorbidities Patient monitoring (including lab follow up): • Psychological support • Immunization • Opioid substitution treatment **TB prevention, diagnosis, treatment** • Intensified TB casefinding • TB infection control • Isoniazid preventive therapy • TB-HIV co-management • Diagnose, start, follow TB treatment with focus on MARPs	*As in box to left, plus:* Management of complicated HIV cases ART including toxicities and treatment failure If resources available: manage severe comorbidities including oncology and opportunistic infections Supervise ART prescription at previous level of care Inpatient care	*As in box to left, plus:* Clinical mentor for previous level Referral for uncommon and certain severe opportunistic infections, ART toxicities, oncology

AFASS	Acceptable, feasible, affordable, sustainable and safe	CITC	Client-initiated testing and counselling	PEP	Post-exposure prophylaxis
ART	Antiretroviral therapy	IDU	Injecting drug use	PITC	Provider-initiated testing and counselling
ARV	Antiretroviral	MARP	Most-at-risk populations	PMTCT	Prevention of mothe- to-child transmission
AZT	Azidothymidine, Zidovudine	MSM	Men who have sex with men	STI	Sexually transmitted infections

Table 9. Example of health sector interventions by level of health system in generalized epidemic with high prevalence

	Outreach to most-at-risk populations and vulnerable groups	Outreach to most-at-risk populations and vulnerable groups	Primary care: at health centre or outpatient clinics of district hospital or private providers	Second level care at district hospital; inpatient care	Tertiary care at regional or central hospital/specialist physicians, paediatricians
Increasing knowledge of HIV sero-status	Outreach HIV testing and counselling to most-at-risk populations	CITC PITC: • Home-based testing and counselling for family/partners of index case • National and local campaigns (Know Your Status)	CITC at health centre PITC: • All patients in all health facilities • Infant testing and counselling • Send dried blood spot for virological testing • Family and partner testing • Prior to receiving post-exposure prophylaxis	*As in box to left, plus:* • Blood donor HIV testing and counselling • Resolve discordant HIV test results	Perform virological tests on dried blood spot and send back results

	Outreach to most-at-risk populations and vulnerable groups	Outreach to most-at-risk populations and vulnerable groups	Primary care: at health centre or outpatient clinics of district hospital or private providers	Second level care at district hospital; inpatient care	Tertiary care at regional or central hospital/specialist physicians, paediatricians
Prevention of HIV transmission	HIV prevention outreach to sex workers, drug users, men who have sex with men, young people and mobile populations, including: • Peer information and education, and distribution of prevention commodities • Condom promotion and provision, including support for 100% condom programming • Provision and exchange of sterile needles and syringes • Targeted STI and sexual and reproductive health services, particularly for vulnerable girls and women • Referral to specific prevention services	Community prevention literacy Support condom programming Home-based: • Risk reduction support for discordant couples • Peer support for prevention with people living with HIV • Community family planning • Mother-to-mother support for PMTCT • Assure delivery ART/ ARV prophylaxis during home delivery • Infant feeding support	**Prevent sexual transmission of HIV** • Condom promotion, provision • Detect and manage STI • Safer sex, risk reduction counselling with emphasis prevention with people living with HIV » Discordant couples risk reduction » Continued possibility of HIV transmission on ART » Condom promotion and provision » Counsel on sexual health, return to sexuality and fertility on ART, reproductive choices » Counsel on substance use and risky behaviour » Brief interventions on harmful or hazardous alcohol use • Male circumcision—in some sites or counselling, wound care **HIV prevention among youth:** • Tolerant, adolescent-friendly services—acute and chronic HIV care • Ensure access to reproductive health, family planning Special, friendly clinical services for sex workers and men who have sex with men Management of rape, sexual violence including post-exposure prophylaxis **Prevent HIV infection through IDU: comprehensive harm reduction including:** • Patient information, education • Sterile needle, syringe provision • Drug dependence treatment (including opioid substitution treatment) • **Prevent infection in infants, young children:** • Family planning • ART or ARV prophylaxis • Treatment, care, support for pregnant women • Infant feeding counselling and support	*As in box to left, plus:* Manage STI treatment failures Male circumcision in high HIV prevalence settings PMTCT: support for complications on ART/AZT prophylaxis Safe blood	

	Outreach to most-at-risk populations and vulnerable groups	Outreach to most-at-risk populations and vulnerable groups	Primary care: at health centre or outpatient clinics of district hospital or private providers	Second level care at district hospital; inpatient care	Tertiary care at regional or central hospital/specialist physicians, paediatricians
Prevention of HIV transmission continued...			**Prevent transmission in health-care settings, including:** • Infection control, standard precautions • Safe injections • Safe medical waste management • Occupational health of health workers; special focus on care and treatment for health workers • Post-exposure prophylaxis—all sites		

	Outreach to most-at-risk populations and vulnerable groups	Outreach to most-at-risk populations and vulnerable groups	Primary care: at health centre or outpatient clinics of district hospital or private providers	Second level care at district hospital; inpatient care	Tertiary care at regional or central hospital/specialist physicians, paediatricians
HIV/AIDS treatment and care	• Interventions delivered through outreach to most-at-risk populations (in partnership with other sectors) • Integration of treatment support for antiretroviral therapy, TB treatment and prophylaxis in outreach services	Treatment preparedness for both HIV and TB Patient self-management Peer support groups **Home-based:** • Treatment support—ART, TB treatment, and prophylaxis • Drug refill delivery • Management diarrhoea, fever • Careseeking support • Psychosocial support • Nutritional support • Water treatment and safe storage • Hygiene • Insecticide-treated nets • Palliative care: pain and other symptom management and end-of-life care	**First-line ART:** • Adherence preparation, support • Recommend or initiate first-line treatment • Monitor, adjust dose • Clinical, CD4, limited lab; patient monitoring systems for HIV care/ART, TB-HIV, MCH-PMTCT • Support patient self-management **Prevent illness:** • Cotrimoxazole prophylaxis • Vaccination • Nutritional care and support • Education: safe water, hygiene, sanitation • Prevent malaria **Clinical care / manage opportunistic infections and comorbidities:** • Primary care for pneumonia, fever/malaria, diarrhoea, malnutrition, other common conditions • Mental health, psychosocial support • Back up palliative care at home, symptom management **TB prevention, diagnosis, treatment:** • Intensified casefinding TB • TB infection control • Isoniazid preventive therapy • Diagnose, start, follow TB treatment including, if referral difficult, suspected smear-negative TB • TB-HIV co-management	*As in box to left, plus:* **ART:** • Initiate ART in complicated patients; • Oversee initiation of first-line ART in uncomplicated patients by primary care team • Diagnose treatment failure • Second-line ART (under supervision clinical mentor) • Manage serious complications of ART • Assess and manage severe opportunistic infections • Inpatient care • Manage severe malnutrition • TB-ART co-treatment plan	Clinical mentor for district clinicians: • Reviews cases of suspected treatment failure • Makes decision on switching to second-line ART Management of uncommon and certain severe opportunistic infections, ART toxicities, oncology

AFASS	Acceptable, feasible, affordable, sustainable and safe	AZT	Azidothymidine, Zidovudine
ART	Antiretroviral therapy	CITC	Client-initiated testing and counselling
ARV	Antiretroviral	IDU	Injecting drug use

MARP	Most-at-risk populations
PITC	Provider-initiated testing and counselling
PMTCT	Prevention of mother-to-child transmission
STI	Sexually transmitted infections

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Priority Interventions

HIV/AIDS prevention, treatment
and care in the health sector