Priority interventions

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

August 2008
PRIORITY INTERVENTIONS

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

AUGUST 2008
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<td>3TC</td>
<td>Lamivudine</td>
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<tr>
<td>AFASS</td>
<td>Acceptable, Feasible, Affordable, Sustainable and Safe</td>
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<tr>
<td>ABC</td>
<td>Abacavir</td>
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<td>AFB</td>
<td>Acid Fast Bacilli</td>
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<td>ALT</td>
<td>Alanine Aminotransferase</td>
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<td>ART</td>
<td>Antiretroviral Therapy</td>
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<td>ARV</td>
<td>Antiretroviral</td>
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<td>AZT</td>
<td>Azido Thymidine</td>
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<tr>
<td>BCG</td>
<td>Bacille Calmette-Guerine</td>
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<tr>
<td>BMI</td>
<td>Body Mass Index</td>
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<tr>
<td>BTS</td>
<td>Blood Transfusion Services</td>
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<tr>
<td>CITC</td>
<td>Client Initiated Testing and Counselling</td>
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<tr>
<td>DBS</td>
<td>Dry Blood Spot</td>
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<tr>
<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
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<tr>
<td>DOTS</td>
<td>Directly Observed Treatment</td>
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<tr>
<td>EIA</td>
<td>Enzyme Immunoassay</td>
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<tr>
<td>FTC</td>
<td>Fixed Dose Combination</td>
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<tr>
<td>HBV</td>
<td>Hepatitis B Virus</td>
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<td>HCC</td>
<td>Hepatocellular Carcinoma</td>
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<tr>
<td>HCV</td>
<td>Hepatitis C Virus</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency</td>
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<tr>
<td>ICF</td>
<td>Intensified TB case finding</td>
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<td>IDU</td>
<td>Injecting Drug Users/Use</td>
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<tr>
<td>IPT</td>
<td>Isoniazide Preventive Therapy</td>
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<tr>
<td>IRS</td>
<td>Indoor Residual Spraying</td>
</tr>
<tr>
<td>ITN</td>
<td>Insecticide-Treated Net(s)</td>
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<tr>
<td>MSM</td>
<td>Men who have sex with men</td>
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<tr>
<td>NAT</td>
<td>Nucleic Acid Testing</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>NNRTI</td>
<td>Non-Nucleoside Reverse Transcriptase Inhibitor</td>
</tr>
<tr>
<td>NRTI</td>
<td>Nucleoside Reverse Transcriptase Inhibitor</td>
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<td>NSP</td>
<td>Needle Syringe programs</td>
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<td>NVP</td>
<td>Nevirapine</td>
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<tr>
<td>OI</td>
<td>Opportunistic Infection</td>
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<tr>
<td>OST</td>
<td>Opioid Substitution therapy</td>
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<tr>
<td>MDR</td>
<td>Multidrug Resistant</td>
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<tr>
<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<td>PEP</td>
<td>Post Exposure Prophylaxis</td>
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<td>PI</td>
<td>Protease Inhibitor</td>
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<tr>
<td>PITC</td>
<td>Provider Initiated Testing and counselling</td>
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<tr>
<td>PML</td>
<td>Progressive Multifocal Leukoencephalopathy</td>
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<tr>
<td>PLWHIV</td>
<td>People living with HIV</td>
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<tr>
<td>RDA</td>
<td>Recommended Daily allowance</td>
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<tr>
<td>RNA</td>
<td>Ribonucleic Acid</td>
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<td>RPR</td>
<td>Rapid Plasma Reagin</td>
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<tr>
<td>SIGN</td>
<td>Safe Injection Global Network</td>
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<tr>
<td>STI</td>
<td>Sexually Transmitted Infections</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TC</td>
<td>Testing and Counselling</td>
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<tr>
<td>TG</td>
<td>Transgender people</td>
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<tr>
<td>UNAIDS</td>
<td>Joint United Nations programme on HIV/AIDS</td>
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<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<tr>
<td>VCT</td>
<td>Voluntary Testing and Counselling</td>
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<tr>
<td>XDR</td>
<td>Extensive Drug Resistant</td>
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Foreword

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

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

The rapidity of change in scientific understanding and the breadth of the response mounted meant that technical advice concerning prevention, diagnosis, treatment or care for HIV/AIDS could quickly become obsolete. However, no mechanism was in place at WHO to update earlier guidance, discard it, or confirm on an on-going basis that it was still relevant. In addition, the range of technical guidance was diverse, and no single place existed where it could be easily accessed in a “one stop shopping” approach.

2003 was an important year in the global AIDS response with the Global Fund to Fight AIDS, Tuberculosis and Malaria becoming operational, the President’s Emergency Plan for AIDS Relief being announced, and WHO’s “3x5” initiative being launched. The substantial programmatic scale-up that these events signified highlighted the need for sound, evidence-based, impartial guidance for public health action. .

Building on the achievements of “3x5” and other initiatives, in 2005 leaders of the G8 countries meeting in Gleneagles, Scotland, committed to working with international organizations to develop and implement a “package” of interventions to try to achieve universal access, a goal later endorsed by member states at the United Nations General Assembly. The nature of such an essential package remained to be defined.

Following the “3x5” initiative, WHO has been acutely aware of the increasing importance of the health sector in the quest for universal access to HIV prevention, treatment, care and support, and in tracking the epidemic and monitoring the response. The original call by the G8 for a package of interventions, combined with the need to update technical guidance on an ongoing basis and to make such advice more user-friendly, led WHO to develop this umbrella document that brings together in one place key WHO guidance and references for the health sector’s response to HIV/AIDS.

Priority interventions: HIV/AIDS prevention, treatment and care in the health sector defines the essential interventions the health sector should deliver and provides key references as well as links to web-based resources. This initial version of the document will be further adapted and finalized in coming weeks, and will be published in print format as well as electronically, to be then updated on a regular basis as a “living document”. The document provides WHO’s best attempt to assemble and package normative advice for the health sector concerning the essential response to HIV/AIDS. We hope it will prove useful for all those who work in the health sector, whatever their capacity, as they confront the realities of HIV/AIDS throughout the world.

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21 July, 2008

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Introduction

TOWARDS UNIVERSAL ACCESS

Every day, more than 6,800 people become infected with HIV and more than 5,700 die, mostly because they have no access to HIV prevention, treatment and care services. Despite progress made in scaling up the response over the last decade, the HIV pandemic remains the most serious infectious disease challenge to global public health. Of eight key areas covered by the Millennium Development Goals (MDGs), six — reduced poverty and child mortality, increased access to education, gender equality, improved maternal health and efforts to combat major infectious diseases — are being undermined by continuing transmission of HIV and its progression to AIDS.

International mobilization to combat HIV has increased substantially since the MDGs were established in 2000. The 2001 Declaration of Commitment on HIV/AIDS marked the beginning of a sea change in the response to AIDS. It was followed, in subsequent years, by ever increasing political and financial commitment. The WHO-and-UNAIDS-led ‘3 by 5’ initiative, major donors such as the Global Fund to Fight AIDS, Tuberculosis and Malaria, the World Bank’s Multi-country AIDS Programme, the US President’s Emergency Plan for AIDS Relief and other partners’ programmes have all contributed to a dramatic scale up of antiretroviral treatment (ART) in many developing countries.

By December 2007, an estimated 3 million people living with HIV were receiving ART in low- and middle-income countries and they represented 31% of the estimated 9 million people in need of ART. However, the number of new HIV infections remains high — an estimated 2.5 million in 2007 — because too many people are unable to access HIV prevention services. Prevention efforts have often been late in starting, under-resourced and poorly supported, even though it is now well recognized that a comprehensive approach comprising HIV prevention, treatment and care is essential for reducing new infections and AIDS deaths.

The achievements of the ‘3 by 5’ initiative inspired the current commitment to universal access. In 2005, G8 leaders announced their intention to “…work with WHO and UNAIDS and other international organisations to develop and implement a package of HIV prevention, treatment and care, with the aim of coming as close as possible to universal access to treatment for all those who need it by 2010.”

In September 2005, 191 United Nations Member States endorsed the universal access goal at the High-Level Plenary Meeting of the 60th Session of the United Nations General Assembly. In June 2006, a United Nations General Assembly High-Level Meeting on AIDS reaffirmed both the 2001 Declaration of Commitment on HIV/AIDS and the universal access goal. In July 2008 at their Hokkaido Toyko Summit, G8 leaders reaffirmed their commitment to the universal access goal and also called for enhanced efforts to address gender inequalities and stigma and discrimination and to expand access to sexual and reproductive health services, especially for adolescents and most-at-risk populations.

The global partners’ continuing reaffirmation of their commitment to the universal access goal highlights two needs, for the accelerated scaling up of a comprehensive package of HIV prevention, treatment and care for the accelerated strengthening of health care systems.

‘Universal access’ means establishing an environment in which HIV prevention, treatment, care and support interventions are available, accessible and affordable to all who need them. It covers a wide range of interventions that are aimed at individuals, households, communities and countries.
**THE HEALTH SECTOR RESPONSE**

The scaling up of a comprehensive package of HIV prevention, treatment and care and the strengthening of health care systems will require the mobilization of partners from many sectors and their collaboration with each other. However, partners in the health sector have special responsibilities for providing leadership and coordination given that their sector provides so many of the critical opportunities for scaling up HIV-related services.

As the UNAIDS cosponsor primarily responsible for promoting and supporting health sector initiatives, WHO has established priorities under five strategies for action 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:9

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.

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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, non-governmental 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).”10 11

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**THE PUBLIC HEALTH APPROACH**

Efforts to scale up HIV programmes have resulted in a wide variety of service delivery models, guidelines and tools. WHO promotes a public health approach to health service delivery.12 13 The foundation of this approach is the identification and implementation of the priority HIV prevention, treatment and care interventions to be delivered by the health sector; standardization and simplification of protocols and tools to allow broad delivery; and optimization of financial and human resources to deliver the most appropriate and effective interventions for the greatest good for the most people.

The principles that should guide the health sector response include:

- ensure the full and proactive involvement of governmental, non-governmental and private sector organizations and of civil society, especially people living with HIV including people with most-at-risk of infection;
- tailor interventions to where the burden of the disease lies, 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;
- create a supportive enabling environment by addressing stigma and discrimination, applying human rights principles and promoting gender equity, as well as by reforming laws and law enforcement to ensure that they adequately respond to the public health issues raised by HIV and AIDS;
- offer a continuum of services from those that can be provided by home and community to those that require health facilities, all in conjunction with outreach to and consultation with community leaders and members and especially with people living with and affected by HIV.

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PRIORITY INTERVENTIONS
The priority interventions described in Chapter 1 are the complete set of interventions recommended by WHO as necessary to mount an effective and comprehensive health sector response to HIV and AIDS.

Universal access in the health sector requires that the priority interventions be delivered in ways that are physically accessible, publicly acceptable, affordable and of satisfactory quality.

The full package of priority interventions is ideal or “aspirational.” The actual package of priority interventions chosen by each country should be based on practical considerations such as the nature of the country’s epidemic, the context (cultural traditions, etc), the country’s unique approach to service delivery (e.g., through some mix of public, non-governmental and private providers), and the availability of financial, human and other resources.

The priority health sector interventions for HIV prevention, treatment and care include:

- Interventions based in health facilities, including information and education and supplies and services for preventing HIV transmission in health care settings, preventing sexual HIV transmission, managing sexually transmitted infections, 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, counselling, treatment and care services in drop-in centres and similar locations, including mobile ones;
- National measures required for supporting service delivery, including leadership, advocacy, strategic planning, programme management, procurement and supply management, laboratory services, human resources, financing and HIV and STI strategic information management systems.

TAILORING PRIORITY INTERVENTIONS TO THE TYPE OF HIV EPIDEMIC
At a global, national and local levels the HIV epidemic comprises a multitude of diverse epidemics. The priority given to different interventions may vary from place to place, according to the particular characteristics of each place’s epidemic and the epidemic’s context (see Box 1).

BOX 1. TYPOLOGY OF HIV EPIDEMICS
WHO and UNAIDS define the different types of HIV epidemics as follows:

Low-level HIV epidemics
Although HIV may have existed for many years, it has never spread to substantial levels in any sub-population. Recorded infection is largely confined to individuals with higher risk behaviour: e.g. sex workers, drug injectors, men having 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 sub-population. The future course of the epidemic is determined by the frequency and nature of links between highly infected sub-populations 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.

Generalised HIV epidemics
In generalized epidemics, HIV is firmly established in the general population. Although sub-populations 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 sub-populations 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, including countries with HIV prevalence greater than 15%. The guidance provided for generalized epidemics in this document would also apply to these epidemics.
The selection of priority interventions and target populations needs to be based on a clear understanding of the epidemiology of HIV in the country — who is being infected, where, how and why — together with a detailed understanding of the most appropriate interventions for the particular setting. To successfully curtail transmission, effective services for prevention must reach those geographic areas and populations where HIV is spreading most rapidly and the interventions must be at sufficient scale and intensity to achieve impact. Similarly, effective services for treatment and care must reach those geographic areas where people with HIV are located.

TAILORING PRIORITY INTERVENTIONS TO THE CONTEXT OF THE EPIDEMIC
Besides taking the unique characteristics of the epidemic into consideration, successful tailoring requires taking context into consideration. This requires assessing the health system's readiness, the unique nature of the health system in a particular geographic area (e.g., who are the service providers, how are they financed, etc), cultural traditions, social attitudes, political will, requirements for additional staff and facilities and equipment and supplies, costs and available sources of financing. Such an assessment is best kept current through a regularly updated situation analysis.

Once the epidemic's typology and context are well understood, a number of key principles can be used to guide the selection and prioritization of interventions and of appropriate service delivery approaches (see Box 2).

BOX 2. SELECTING AND PRIORITIZING INTERVENTIONS AND SERVICE DELIVERY APPROACHES

In all epidemics:
- Place top priority on accelerating prevention
- Select prevention interventions which 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 and care while also testing all pregnant women at risk
- 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 IDUs, sex workers and MSM)
- Select the most effective service delivery approaches for implementing the interventions — through households, communities, health centres, hospitals or outreach to most-at-risk populations.
- Ensure HIV testing, counselling, prevention, and treatment and care services include outreach services to most-at-risk populations.

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 the above people
- Emphasize prevention so HIV incidence remains low

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, MSM, transgender people, injecting drug users
- Prioritize special interventions for injecting drug use wherever the practice occurs
- Ensure adequate coverage of prevention interventions for identified most-at-risk populations
- 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

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 PLWH
- Recommend HIV testing to all patients seeking care (PITC), and pregnant or breastfeeding women

See chapter 5 for further detail and resources.
OBJECTIVES OF THIS DOCUMENT
This document aims to:

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

(2) summarize key policy and technical recommendations developed by WHO and related to each of the priority health sector interventions;

(3) guide the selection and prioritization of interventions for HIV prevention, treatment and care;

(4) 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 the design and delivery of HIV-related services.

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

The document is structured as follows:

CHAPTER 1: The 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 2: 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 (PLHIV); and addressing gender, stigma and discrimination.

CHAPTER 3: 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 4: Operationalizing the health sector response
This chapter discusses HIV programme management and provides guidance on critical issues to consider when selecting and prioritising interventions in different types of HIV epidemics.

CHAPTER 5: Resources to support implementation of the priority health sector interventions for HIV prevention, treatment and care
This chapter is organized by intervention area and provides references to and descriptions of a wide range of tools and other resources for scaling up the health sector response to HIV.

To ensure broad access, this document will be available in hard copy and in electronic version (on the web and on CD-ROM). It is designed to be a living document, making it possible for WHO to continually learn from and contribute to the rapidly evolving experiences of scaling up the health sector response to HIV. This means that WHO will update its content on a regular basis and maintain a current version online.
Chapter 1
The priority interventions for HIV/AIDS prevention, treatment and care in the health sector

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. The priority interventions outlined in this chapter, if implemented together and at sufficient scale and intensity, 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 1.1 discusses interventions under the first strategy for action, enabling people to know their HIV status. Section 1.2 discusses interventions under the second strategy for action, maximising the health sector’s contribution to HIV prevention. Section 1.3 discusses interventions under the third strategy for action, accelerating the scale-up of HIV/AIDS treatment and care. Chapter 2 and 3 discuss interventions under the final two strategies for action, strengthening and expanding health systems and investing in strategic information to guide a more effective response.

In addition to depending on implementation of the priority interventions described in this chapter, the effectiveness of the HIV response is contingent on the quality and characteristics of service provision and especially on 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 they are critical obstacles to provision and uptake of health sector interventions. They are also often pervasive at all levels of society and, if so, sustain an environment where it is difficult to for health services to attract the people who most need them. They can be reduced through strong leadership and concrete measures in national strategic planning and programme design and implementation. Such measures can not only help countries to reach key targets for universal access, but can also promote and protect human rights and foster respect for people living with and affected by HIV/AIDS.

Other factors that can undermine or enhance the effectiveness of the HIV response include the weakness or strength of a coordinated and participatory national framework for HIV; the level of commitment to an HIV response that is consistent with human rights and fundamental freedoms; and the 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, should address underlying prejudices and inequalities and should include 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.

Chapter 5 provides a more comprehensive list of current tools, guidelines and resources to support implementation of the priority interventions.

1.1 ENABLING PEOPLE TO KNOW THEIR HIV STATUS
Increasing the numbers of people, especially in most-at-risk populations, who know their HIV status through HIV testing and counselling is key to expanding access to HIV prevention, treatment and care.

WHO guidance on HIV testing and counselling aims for 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 C’s” - informed Consent, Counselling and Confidentiality - should always be maintained. Additional tools are being developed to address the “Three C’s” 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**

ii) **provider-initiated HIV testing and counselling**
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 who found to be HIV-negative should learn how to remain negative and those found to be HIV-positive should learn how to prevent transmission to others and maintain their own good health and, where appropriate, 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, of 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 as outlined in section 1.4 for people living with HIV/AIDS.

WHO and UNAIDS recommend “beneficial disclosure” where HIV-positive individuals themselves notify sexual or drug-injecting partners of their HIV status, whenever 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.

**Key resources:** 1 2 3 4  
(The preceeding numbers provide links to the key resources listing at the end of this document)

UNAIDS/WHO Policy Statement on HIV Testing  
[LINK](http://www.who.int/rpc/research_ethics/hivtestingpolicy_en_pdf.pdf)

Opening up the HIV/AIDS epidemic: Guidance on encouraging beneficial disclosure, ethical partner counselling and appropriate use of HIV case-reporting  
[LINK](http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_en.pdf)

HIV counselling and testing E-Library  
[LINK](http://www.who.int/hiv/topics/vct/elibrary/en/index.html)

Guidelines for implementation of reliable and efficient diagnostic HIV testing - Region of the Americas (PAHO, 2008)  
[LINK](http://www.paho.org/English/AD/FCH/AI/LAB_GUIDE_ENG.PDF)

### 1.1.1 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, also, 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, in 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 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:** 5 6

- WHO “Scaling Up HIV testing and counselling (TC) services” online Toolkit: [LINK](http://www.who.int/hiv/topics/vct/toolkit/en/index.html)

### 1.1.2 PROVIDER-INITIATED HIV TESTING AND COUNSELING

Provider-initiated testing and counselling (PITC) occurs when HIV testing and counselling is recommended by health care providers as a standard part of medical care to individuals attending health care 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 where 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 care 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 care providers should take measures to ensure that this guarantee is upheld.

The UNAIDS/WHO guidance on PITC specifies situations in which health care 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, 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 care 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; and patients have come for TB- or 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 of 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 benefit from prevention, treatment and care and to access interventions for reducing HIV transmission to their infants and is therefore recommended.

**Key resources:** 7 8 9 10

- WHO Case Definitions of HIV for Surveillance and revised Clinical Staging and Immunological Classification of HIV-related Disease in Adults and Children [LINK](http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf)
- US CDC HIV testing and counselling in TB clinical settings tools. [LINK](http://www.cdc.gov/nchstp/od/gap/pa_hiv_tools.htm)
- IMAI PITC core training course and PITC counselling training video. [LINK](http://www.who.int/hiv/capacity/IMAIsharepoint/en)
1.1.2.1 FAMIly ANd PArtner HIV te StIng 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 sex or needle-sharing partners and that they be supported in these endeavours. 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 the parents and siblings of HIV-infected children. This is should be done especially for mothers of HIV-infected children and for women who were not tested while using PMTCT services.

Summary of recommendations:

HIV testing and counselling should be recommended for sex partners, drug-injecting partners, children and other immediate family members of all people living with HIV where horizontal or vertical transmission may have occurred. Identifying these people is often contingent on active support for beneficial disclosure, where HIV-positive individuals notify their partners and encourage them to seek HIV testing and counselling. With a family-centered 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: 7  2

WHO/UNAIDS Guidance on Provider-Initiated HIV Counselling and Testing in Health Services
[LINK](http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf)

Opening up the HIV/AIDS epidemic: Guidance on encouraging beneficial disclosure, ethical partner counselling and appropriate use of HIV case-reporting
[LINK](http://data.unaids.org/Publications/IRC-pub05/JC488-OpenUp_en.pdf)

1.1.2.2 InFAnt ANd CHIlDren HIV te StIng AnD CoUnSellIng

WHO and UNAIDS PITC guidelines and ART guidelines provide guidance on when health care providers should recommend HIV testing and counselling for infants and children. Infants should have their HIV exposure 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 infant’s HIV exposure is determined. Specific guidance on testing and counselling in children is under development.

Summary of recommendations:

PITC should be recommended for all infants and children where HIV is suspected or HIV exposure is recognized, including for all infants and children with malnutrition that does not respond to appropriate nutritional therapy or with suspected TB.

All HIV-exposed infants should have virological testing at or around 4-6 weeks of age, and confirmatory HIV antibody testing at or around 18 months.

WHO recommends that maternal or infant HIV antibody testing and counselling be performed for infants of unknown HIV exposure status in all settings where local or national antenatal HIV prevalence is greater than 1 per cent (or locally determined thresholds). In such settings, infant testing can initially be done using HIV antibody testing, and those with detectable HIV antibodies should then go on to have virological 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 can be diagnosed based on HIV antibody testing, as in adults.

In infants, virological tests are required to confirm the diagnosis of HIV.

Key resources:  11 12 8

1.1.3 BLOOD DONOR HIV TESTING AND COUNSELLING

Quality-assured screening of all donated blood for transfusion-transmissible infections, in accordance with national protocols and standards, 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.

Blood transfusion services (BTSs) have responsibilities to confirm test results and notify donors of any infections identified and thus give donors opportunities to access HIV treatment and care. They 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 the spread of HIV and other transfusion-transmissible infections.

Summary of recommendations:

Develop and implement a national strategy for the screening of 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 into the policies of blood transfusion services.

Encourage donors and the general public to avoid using the 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 those 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: 13

WHO Blood Transfusion Safety website

http://www.who.int/bloodsafety/en/

1.1.4 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;
- Quality assurance and good management of testing and laboratory systems.

The WHO recommendations describe different testing strategies appropriate for different HIV testing purposes, such as HIV diagnosis in clinical care settings, research and surveillance, or ensuring ensure blood transfusion safety. These different 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 currently being updated.
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 of the utmost importance for good performance of the testing algorithm.

Serial testing is recommended for most HIV testing purposes. For clinical care, serial testing is usually recommended; if the result of the first HIV antibody test is negative, then the test is reported as negative. If the initial test result is positive, the specimen is tested with a second test using different antigens and/or platforms from the first. In populations with an HIV prevalence of 5% or more, a second positive test result is considered to indicate a true positive result. In low prevalence settings where false positive results are more likely, a third test is usually recommended. WHO and UNAIDS recommend serial testing in most settings because it is cheaper, since a second test is required only when the initial test is reactive.

Parallel testing is more costly because of the number of assays and labour required (particularly in low prevalence settings) but it may reduce the time needed to obtain a final test result. Parallel testing strategies can be considered in special circumstances such as, for example, the onset of labour in order 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.

Key resource: 14

Revised recommendations for the selection and use of HIV antibody tests. WHO Weekly Epidemiological Record. 1997, 72, 81–88

Quality management systems should be established in all sites carrying out HIV testing and 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. Ongoing quality assurance is required to monitor and evaluate the performance of each test within the national algorithm and to ensure ongoing performance of the testing technology and algorithm.

Key resources: 15 16 17

Guidelines for Assuring the Accuracy and Reliability of HIV Rapid Testing: Applying a Quality System Approach
Overview of HIV Rapid Test Training Package
HIV Rapid Test Training: Framework for a Systematic Roll-out

Rapid HIV tests are recommended where 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, usually have internal controls and can be operated by trained non-laboratory personnel, including lay service providers. Increasingly, HIV assays are being produced in countries with less-stringent regulatory systems and the performance of such assays warrants close attention before adoption into national testing algorithms.

Key resource: 18

HIV Assays: Operational Characteristics (Phase 1). Report 14 Simple/Rapid Tests

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

Key resources: 19 20

HIV Assays: Operational Characteristics (Phase 1). Report 15 Antigen/Antibody ELISAs

Lab capacity to perform virological testing for HIV in infants should be established by national programmes. 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 (PCR and other methods). For HIV testing in infants, blood samples can be collected on filter paper (dried blood spots or DBSs), which offer advantages over other specimen collection methods, including ease of collection and transport. To date, however, only HIV DNA detection assays can be used to diagnose HIV in infants using specimens collected on DBS. Plasma specimens are required for using HIV RNA methods for diagnosis. While HIV RNA assays also demonstrate the presence of HIV for purposes of diagnosis, and allow quantitative measurement of HIV RNA, there is currently insufficient evidence to recommend these are performed on DBS specimens.

1.2 MAXIMIZING THE HEALTH SECTOR’S CONTRIBUTION TO HIV PREVENTION

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

HIV prevention interventions in the health sector should include: interventions aimed at changing individuals’ behaviour; interventions aimed at addressing cultural norms and social attitudes and behaviour that may increase people’s vulnerability to HIV infection; and biomedical interventions such as condoms, clean needles and providing ARVs to women and infants for prophylaxis and safe delivery. These usually require behaviour change to achieve adoption or acceptance. In sub-Saharan African countries with very high HIV prevalence, biomedical interventions including male circumcision may also be important components of HIV prevention when 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 those already living with HIV. For those living with HIV, preventing inadvertent HIV transmission is only one of their needs. Others include preventing illness, receiving care for opportunistic infections (OIs) and accessing antiretroviral treatment. Interventions to address their need to engage in sexual activity without fear of transmitting the virus to their sexual partners is highlighted below (see 1.2.1.5 and 1.2.3), while recommendations for preventing illness and other aspects of care and treatment are outlined in section 1.3.1. 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 2.5.2.

When prioritizing HIV prevention interventions, there should be emphasis on interventions that are likely to have the greatest impact and 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 as well as to the capacity and level of health services in those settings (see chapter 4).

The principles described on page 7 and in Box 2 of the introduction to this document are particularly important to apply when selecting and prioritizing prevention interventions.

**Key resources:** 21 22 23 24

**Practical Guidelines for Intensifying HIV Prevention: Towards Universal Access**


**Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings**


1.2.1 PREVENTION OF SEXUAL TRANSMISSION OF HIV

1.2.1.1 PROMOTING AND SUPPORTING CONDOM USE

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

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

**Summary of key recommendations:**

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 promoted in ways that help overcome social and personal obstacles to their use.
For some high risk populations, such as sex workers and men who have sex with men, providing water-based lubricant is also important. Female and male condoms should be procured according to the standards and quality assurance procedures established by WHO, UNFPA and UNAIDS and should be stored and distributed according to international norms and standards.

The health sector, as part of a multisectoral response, should provide guidance to 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:** 25 26 27 28

Position Statement on Condoms and HIV Prevention: July 2004
[LINK](http://data.unaids.org/una-docs/condom-policy_jul04_en.pdf)

The male latex condom: Specification and guidelines for condom procurement
[LINK](http://www.who.int/reproductive-health/publications/m_condom/index.html)

The female condom: a guide for planning and programming
[LINK](http://www.who.int/reproductive-health/publications/RHR_00_8/index.html)

### 1.2.1.2 Detection and Management of Sexually Transmitted Infections

Because sexually transmitted infections (STIs) facilitate the acquisition and transmission of HIV, STI services are critical for controlling the HIV epidemic, especially among populations at higher risk for HIV transmission.

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.

**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, where applicable;
- Screening and treatment for syphilis in pregnant women;
- Provision of hepatitis and human papilloma virus (HPV) vaccines to prevent genital and liver cancers;
- 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 prevention and care of STIs are integrated or closely coordinated with national AIDS programmes.

**Key resources:** 29 30 31 32 33 34

Global strategy for the prevention and control of sexually transmitted infections
[LINK](http://who.int/gb/ebwha/pdf_files/WHA59/A59_11-en.pdf)

Guidelines for the management of sexually transmitted infections
1.2.1.3 SAFER SEX AND RISK REDUCTION COUNSELLING

Behavioural interventions at an individual, group or community level can generate safer sexual behaviour. It is, however, critically important to sustain interventions for behaviour change together with the provision of 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 if 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 reduction in number of partners.

Individual and small group dialogue between providers and clients in health and community settings serves as an important opportunity for providing information and counselling on safer sex and risk reduction. Risk reduction includes, for example, information on delay of sexual debut, abstinence as appropriate, reduction of number of sexual partners, including visits to sex workers and reduction of concurrent partnership, and prevention of STIs and HIV transmission through condom use.

Specific measures may be needed to support and counsel discordant couples and individuals in multiple concurrent partnerships.

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

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

Key resources: 35 28 36

SEX-RAR Guide: The Rapid Assessment and Response Guide on Psychoactive Substance Use and Sexual Risk Behaviour

Sexual and reproductive health of women living with HIV/AIDS
LINK http://www.who.int/hiv/pub/guidelines/sexualreproductivehealth.pdf

Youth-centered counseling for HIV/STI prevention and promotion of sexual and reproductive health: a guide for front-line providers

1.2.1.4 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 per cent. This evidence supports the findings of numerous observational studies. There is no definitive evidence that male circumcision reduces the risk of HIV transmission from men to women or between men.

Summary of recommendations:

WHO recommends that male circumcision undertaken by appropriately trained health care providers be considered as part of a comprehensive HIV prevention package. Services should be scaled up for defined geographic settings, prioritizing males in areas where HIV prevalence in the general populations exceeds 15%, while considering how to promote neonatal circumcision in a safe and culturally acceptable manner as a means of ensuring sustainability of the circumcision efforts.

Male circumcision does not provide complete protection against HIV, so men and women who consider male circumcision as an HIV preventive 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 care 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 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 programmes, such as increases in the incidence of unsafe sex and/or sexual violence.

**Key resources:** 37 38 39 40 41 42 43 44 45 46 47

Male Circumcision Information package
[LINK](http://www.who.int/hiv/pub/malecircumcision/infopack/en/index.html)

New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications
[LINK](http://www.who.int/hiv/mediacentre/MCrecommendations_en.pdf)

WHO/UNAIDS Male Circumcision: Global trends and determinants of prevalence, safety and acceptability
[LINK](http://www.who.int/hiv/pub/malecircumcision/globaltrends/en/index.html)

Strategies and approaches for male circumcision, WHO meeting report 5–6 Dec. 2006 Geneva
[LINK](http://whqlibdoc.who.int/publications/2007/9789241595865_eng.pdf)

Manual for Male Circumcision under Local Anaesthesia
(to be available soon)

Male Circumcision Quality Assurance: A Guide to enhancing the quality and safety of services
(to be available soon)

Male Circumcision Quality Assurance Toolkit
(to be available soon)

### 1.2.1.5 **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 and health-care 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. 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, together with the provision of condoms, is effective in preventing HIV transmission.

Recommendations to prevent HIV-associated illness are described in section 1.3.1.

**Summary of key recommendations:**

People living with HIV should be counselled about safer sex interventions to prevent HIV transmission to others and about how to avoid acquisition of sexually transmitted infections (STIs), and should 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.
1.2.1.6 INTERVENTIONS TARGETING MOST-AT-RISK POPULATIONS

The health sector is responsible for configuring and supporting comprehensive programmes and service delivery models that are able to address the needs of populations most-at-risk for HIV and to ensure that these services are accessible, acceptable and equitable. In many countries, sex workers and men who have sex with men are criminalized and stigmatized, increasing high-risk behaviours and discouraging them from accessing health services. Where these barriers to implementing the 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 special health facilities. New approaches such as internet and mobile phone based interventions for information and education could be considered.

1.2.1.6A 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 in sex work settings, and to provide care and support services, and empower sex workers to improve their own health and wellbeing. Interventions can be tailored to brothel or other entertainment establishments, or to more informal street-based and home-based settings.

Programmes to address sex workers have been implemented but at sufficient scale in only a few countries. Despite solid public health evidence demonstrating the effectiveness of comprehensive condom use programmes targeting sex worker or entertainment establishment workers, many countries still have structural barriers that must be overcome to facilitate equitable access to services.

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 needs to 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.
- A comprehensive set of interventions are recommended, aimed at increasing condom use and safe sex, reducing STI burden and maximising sex worker involvement and control over their working and social conditions.
- 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 for prevention of sexual transmission of HIV and other STIs include:
  - Promoting and supporting condom use (see 1.2.1.1);
  - Detection and management of sexually transmitted infections (see 1.2.1.2);
  - Behaviour change communication through peer outreach.
- Other health sector interventions for HIV prevention, treatment and care in sex workers are described in the following sections:
  - Family planning, counselling and contraception (1.2.3.1);
Enabling people to know their HIV status (1.1);
HIV treatment and care (1.3);
Prevention of HIV in infants and young children (1.2.3);
Prevention and treatment of viral hepatitis (see 1.3.2.2e);
Prevention of HIV transmission through injecting drug use (1.2.2).

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

Key resources: 49 50 51 52

Toolkit for targeted HIV/AIDS prevention and care in sex work settings
LINK http://www.who.int/hiv/pub/prev_care/sexworktoolkit.pdf

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

Regional strategy for the prevention and control of sexually transmitted infections, 2007–2015 (WHO Regional Office for South-East Asia)
LINK http://www.searo.who.int/LinkFiles/Publications_WHO_Regional_Strategy_STI.pdf

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

Guidelines on the periodic presumptive treatment of STIs are under development.

1.2.1.6B INTERVENTIONS TARGETING MSM AND TRANSGENDER PEOPLE

Although much is known about the HIV epidemic among men who have sex with men (MSM) and transgender people (TGs) in high-income countries, information is limited on the prevalence of HIV among MSM and TGs in low- and middle-income countries and on access to services for HIV prevention, treatment and care among MSM and TGs in those countries. Overall, HIV transmission among MSM in low and middle income countries appears to be greatly underreported. Recent evidence suggests, however, that sexual transmission of HIV and other 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 recognized in sub-Saharan Africa as well.

Men who have sex with men (MSM) and transgender people (TGs) are still stigmatized or driven underground through laws or policies criminalizing MSM behaviours in many countries.

Summary of key recommendations:

The health sector has an important role to play by including services for MSM and TGs in the programming priorities of the national health sector 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 TGs and they should be fully engaged in the design and implementation of interventions.

Priority interventions targeting MSM and TGs for prevention of sexual transmission of HIV and other STIs should include:

• Promoting and supporting condom use (see 1.2.1.1);
• Detection and management of sexually transmitted infections (see 1.2.1.2);
• Prevention and treatment of viral hepatitis (1.3.2.2c);
• Enabling people to know their HIV status (see 1.1);
• HIV treatment and care (see 1.3);
• Prevention of HIV transmission through drug use (see 1.2.2).
• Information, education and communication through peer outreach and the internet
• Community-based behaviour change communication (e.g., posters and brochures in venues frequented by MSM and TGs);
• Outreach through fixed or mobile services for MSM and TGs to broaden access to prevention interventions including STI care, condoms, hepatitis B vaccination, and counselling and referral;
• Social welfare and legal services.

**Key resources:** 53 54 55 56 57

Rapid Assessment and Response Adaptation Guide on HIV and Men Who Have Sex with Men
[LINK](http://www.who.int/hiv/pub/prev_care/en/msmrar.pdf)

Policy Brief: HIV and Sex between Men
[LINK](http://data.unaids.org/Publications/IRC-pub07/jc1269-policybrief-msm_en.pdf)

1.2.1.7 **SPECIFIC CONSIDERATIONS FOR HIV PREVENTION IN YOUNG PEOPLE**

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.

While prevention services for adults can be modified so that they are also appropriate for young people, 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.

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 and services for targeting those groups should also be designed or modified to be youth-friendly or else supplemented with services specifically geared to young member of those most-at-risk groups.

The health sector also has responsibilities to ensure there is serological and behavioural surveillance to provide strategic information on young people and HIV (see section 3.2); which requires data to be disaggregated by age and sex, analysed and used to guide policies and programming; to play a stewardship and advocacy role for young people (see section 2.5); and to ensure a supportive political, and legal and social environment that address the specific needs of young people.

**Summary 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, avoid substance use or, if injecting drugs, to use sterile equipment;
• Condoms for sexually active young people;
• Harm reduction for young people who are injecting drug users:
  • Diagnosis and treatment of STIs;
  • In high prevalence settings, male circumcision;
• HIV testing and counselling;
• Access to HIV treatment and care services;
• Consider HPV vaccination for young females.

**Key resources:** 58 59 60

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14 Young people includes adolescents 10–19 years and youth 15–24 years.
1.2.1.8 SPECIFIC CONSIDERATIONS FOR VULNERABLE POPULATIONS

1.2.1.8A DISPLACED, MOBILE AND MIGRANT POPULATIONS

In 2007, of the 67 million people forced to flee their homes, 26 million were internally displaced due to armed conflict and 25 million due to natural disasters while 16 million were refugees. Increased vulnerability to HIV, associated with displacement, disruption of families and social and community structures, and sexual violence have been evident in some complex emergencies. In these situations, access to HIV services is often limited by the breakdown of health systems. However, there is evidence that, in some instances, refugees or populations in conflict situations may be less exposed than surrounding populations to the risk of HIV transmission when protected in camps and supported by international organizations, or when living in isolation.

Millions of people each year migrate within countries or across countries and along borders. Increased vulnerability to HIV, associated with displacement, disruption of families and of 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 large portions of their clientele. Their work is often illegal and their presence is often undocumented and these facts limit their access to HIV care and ART service. All migrant and mobile populations are difficult to reach with behaviour change communications and other prevention interventions, in part due to fact that their movement places them in situations where they are ethnic minorities and face cultural and language barriers.

Since emergencies often occur in remote areas where populations have little access to HIV-related services, emergency situations may be opportunities to extend those services to them and then sustain them after the emergencies are over.

Summary of recommendations:

- Access to health services should be based on the principle of equity, ensuring equal access according to need, without any 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 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.

Key resources: 61 48 62 63

Providing Antiretroviral Drugs for Prevention and Treatment in Emergency Settings
LINK http://www.who.int/hac/techguidance/pht/HIV_AIDS_101106_arve mergencies.pdf

Guidelines for HIV/AIDS interventions in emergency settings

Antiretroviral Medication Policy for Refugees (UNHCR, 2007)
1.2.1.8B PRISONERS AND PEOPLE IN OTHER CLOSED SETTINGS

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

A wide range of services are required for people in prisons and similar settings and they include condom distribution, clean needle and syringe provision, opioid substitution therapy, HIV testing and counselling, provision of ART, 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 NGOs to ensure continuity of care, including ART, from community to prison and back to community and also between prisons.

Summary 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: 64 65 66

Effectiveness of Interventions to Address HIV in Prisons

Policy Brief: Reduction of HIV Transmission in Prisons

Status Paper on Prisons, Drugs and Harm reduction
LINK http://www.euro.who.int/document/e85877.pdf

1.2.1.9 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 persons 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 status of the source (e.g., the assailant), where possible
• Provision of ARVs for prophylaxis based on a defined protocol
• Emergency contraception
• Presumptive treatment of STIs, and
• Follow-up counselling.

Key resource: 67

Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection
1.2.2 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 such interventions because of their controversial nature. It often requires intense advocacy, citing public health evidence, to initiate and sustain harm reduction programmes.

Where there are barriers to implementing the harm reduction interventions, there is need to create a supportive policy, legal and social environment that facilitates equitable access to prevention and treatment for all, including injecting users. There are also needs for appropriate models of service delivery, appropriate health systems strengthening and appropriate 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 injecting drug users includes the following nine interventions:

1. needle and syringe programmes (NSPs) (see 1.2.2.1);
2. drug dependence treatment (see 1.2.2.2);
3. targeted information, education and communication for IDUs (see 1.2.2.3);
4. enabling people to know their HIV status (see 1.1);
5. HIV treatment and care (see 1.3);
6. promoting and supporting condom use (see 1.2.1.1);
7. detection and management of sexually transmitted infections (see 1.2.1.2);
8. prevention and treatment of viral hepatitis (see 1.3.1.3 and 1.3.2.2e);
9. tuberculosis prevention, diagnosis and treatment (see 1.3.2.4).

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

Summary of recommendations:

Since stand-alone interventions are known to have little impact, advocates should insist on a comprehensive package of interventions. All key interventions should be scaled up at once until they cover all drugs users and at the necessary intensity. The comprehensive package should be tailored to the drug use patterns known to exist in a country and to other unique elements of the country’s context.

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

Key resources: 68 69 64 70 71 72 73

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

Advocacy guide: HIV/AIDS Prevention among injecting drug users

Evidence for Action series: Policy briefs and technical papers on HIV/AIDS and Injecting Drug Users

Prevention, treatment and care for injecting drug use in prisons
1.2.2.1 NEEDLE AND SYRINGE PROGRAMMES (NSPs)
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 community and peers, 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 encompass the safe disposal of used equipment to minimize reuse 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.

Key resources: 74 75 76
Effectiveness of Sterile Needle and Syringe Programming in Reducing HIV/AIDS among Injecting Drug Users
Guide to Starting and Managing Needle and Syringe Programmes
LINK http://www.who.int/hiv/idu/Guide_to_Starting_and_Managing_NS.pdf

1.2.2.2 DRUG DEPENDENCE TREATMENT
Approaches to drug and alcohol dependence management include pharmacotherapy and psychosocial interventions, which 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 overdoses 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 ART, and overall health and wellbeing. Both buprenorphine and the more widely used methadone are included on the WHO Model List of Essential medicines.

Psychosocial treatment of drug dependence has limited effectiveness in managing drug dependence, with high relapse rates. There is no evidence that such treatment reduces HIV transmission rates, though it may complement OST. Unlike for opioid users, there are no effective substitution therapies for people with amphetamine-type stimulant, cocaine, hallucinogen or hypnotosedative dependence. Though not very effective, psychosocial treatment remains the only option for non-opioid users.

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 short term abuse is associated with unsafe sexual behaviour.
LINK www.who.int/substance_abuse/publications/

Summary of recommendations:
Opiod substitution therapy (OST) 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 60mg-120mg, though higher doses may be required.
1.2.2.3 INFORMATION, EDUCATION AND COMMUNICATION FOR IDUS

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 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, to adopting non-injecting drug use (e.g. smoking or ingesting), through to stopping drug use altogether.

Summary of recommendations:

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

Key resource: 71

Effectiveness of Community-based Outreach in preventing HIV/AIDS among Injecting Drug Users


1.2.3 PREVENTION OF HIV IN INFANTS AND YOUNG CHILDREN

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

• Primary prevention of HIV transmission (also see 1.2.1);
• Prevention of unintended pregnancies among women living with HIV (see 1.2.3.1);
• Prevention of HIV transmission from women living with HIV to their children (see 1.2.3.2 and 1.2.3.4), and
• Provision of treatment, care and support for women living with HIV, their children and families (see 1.2.3.3)

WHO recommends implementation of all four components of the comprehensive approach, and promotes the integration of prevention-of-mother-to-child-transmission (PMTCT) with maternal, newborn and child health care, antiretroviral therapy, family planning and sexually transmitted infection, to ensure the delivery of a package of essential services for quality maternal, newborn and child care. Many elements of the four components are described elsewhere in this document, so attention is paid here to those requiring more information. HIV testing is recommended for all pregnant women is explained in the section on PITC (see section 1.1.2.)

Summary of recommendations:

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

Health services should ensure women with HIV are provided with the skills, knowledge and commodities necessary to avoid unintended pregnancy or are given support for planning a pregnancy.

All pregnant women with HIV should receive ARV medicines, either ARV treatment for life 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.

Infants exposed in utero to HIV should receive ARV prophylaxis.

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 to promote child survival.
1.2.3.1 FAMILY PLANNING, COUNSELLING AND CONTRACEPTION

Family planning assists women and men in making 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 in making 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 acquiring and transmitting HIV and other STIs and 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;
• Risks of HIV transmission for HIV-discordant couples;
• Risk of HIV transmission to the infant and the effectiveness of ARV medicines in reducing HIV transmission;
• The benefits and risks of various infant feeding choices.

Women living with HIV can safely and effectively use most contraceptive methods as for women without HIV.

Women living with HIV should not use spermicides without condoms or other barrier methods.

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

1.2.3.2 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. Transmission is increased in women with more clinically advanced disease, low CD4 cell counts and high HIV viral load. Antiretroviral medicines and optimal infant feeding practices are necessary to reduce HIV transmission to the infant and promote child survival. These recommendations are regularly reviewed and updated.

Summary of recommendations:

WHO recommends that all pregnant women with HIV receive antiretroviral medicines, either ART for life or combined ARV for prophylaxis to reduce vertical transmission.

Women with clinical and/or immunological criteria to start ART must do so as early as possible in pregnancy (also see 1.2.3.3) and should continue it life long.

Pregnant women with HIV and clinical stage 3 and CD4 < 350 should start ART, otherwise recommendations to start ART are as 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 needing ART should be treated with a full combination regimen, and AZT containing regimens are recommended (see Table One).

For HIV-positive women who do not need yet need ART for life, combination ARV regimens for prophylaxis are recommended (see Table Two).

The HIV exposed infant requires ARV prophylaxis (see Table Three).

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

**TABLE ONE: RECOMMENDED FIRST LINE COMBINATION ANTIREtroVIRAL TREATMENT REGIMENS FOR PREGNANT WOMAN**

<table>
<thead>
<tr>
<th></th>
<th>Mother</th>
</tr>
</thead>
</table>
| Antepartum     | AZT + 3TC + NVP  
                | *twice daily*                                |
| Intrapartum    | AZT + 3TC + NVP  
                | *twice daily*                                |
| Postpartum     | AZT + 3TC + NVP  
                | *twice daily*                                |

Source: WHO 2006. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants

**TABLE TWO: RECOMMENDED ANTIREtroVIRAL REGIMENS FOR PROPHYLAXIS IN PREGNANT WOMEN NOT YET ELIGIBLE FOR ART**

<table>
<thead>
<tr>
<th></th>
<th>Mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antepartum</td>
<td>AZT starting at 28 weeks of pregnancy or as soon as feasible thereafter</td>
</tr>
<tr>
<td>Intrapartum</td>
<td>Sd-NVP + AZT/3TC</td>
</tr>
<tr>
<td>Postpartum</td>
<td>AZT/3TC x 7 days</td>
</tr>
</tbody>
</table>

**TABLE THREE: RECOMMENDED ANTIREtroVIRAL REGIMENS FOR PROPHYLAXIS IN INFANTS**

<table>
<thead>
<tr>
<th></th>
<th>Recommended infant prophylaxis regimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 4 weeks Maternal ART or ARV</td>
<td>Sd-NVP + AZT x 7 days</td>
</tr>
<tr>
<td>&lt; 4 weeks maternal ART or ARV</td>
<td>Sd-NVP + AZT x 4 weeks</td>
</tr>
</tbody>
</table>

Source: WHO 2006. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants

**Key resource: 82 48**

Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants: Towards Universal Access

**LINK** [http://www.who.int/entity/hiv/pub/guidelines/pmtctguidelines3.pdf](http://www.who.int/entity/hiv/pub/guidelines/pmtctguidelines3.pdf)
1.2.3.3 TREATMENT, CARE AND SUPPORT FOR WOMEN LIVING WITH HIV, THEIR CHILDREN AND FAMILIES

During pregnancy, women living with HIV also need other prevention and care interventions listed in sections 1.3.1 and 1.3.2 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 child survival, protect them from HIV infection and provide them with early antiretroviral treatment in the event of them having acquired HIV infection.

Summary of recommendations:

- Infants known to be exposed to HIV should have a virological test (HIV nucleic acid test NAT) at 4-6 weeks of age or at the earliest opportunity for infants seen after 4-6 weeks.
- HIV exposed infants should be regularly followed up.
- In settings where local or national antenatal HIV seroprevalence is greater than 1%, infants under 6 weeks of age, of 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 should start ART.

Key resources: 82 22 12 87 48 88 11

- Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants: Towards Universal Access
  LINK http://www.who.int/entity/hiv/pub/guidelines/pmtctguidelines3.pdf
- Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings
- Scale Up Of HIV-Related Prevention, Diagnosis, Care and Treatment For Infants and Children. A Programming Framework.
  LINK http://www.who.int/hiv/paediatric/Paeds_programming_framework2008.pdf

1.2.3.4 INFANT FEEDING COUNSELLING AND SUPPORT

Breastfeeding reduces child mortality and has health benefits that extend into adulthood. WHO recommends exclusive breastfeeding for the first six months of life, followed by continued breastfeeding with appropriate complementary foods for two years or beyond. However without HIV-related interventions, an estimated 5-20% of infants born to women living with HIV will become infected through breastfeeding, depending on the duration and type of breastfeeding. The risk of transmission of HIV through breastfeeding increases with advanced maternal disease, low CD4 cell count, high viral load and mixed feeding. The risk of transmission also increases with prolonged duration of breastfeeding. A range of interventions are necessary to reduce breastfeeding transmission of HIV in settings where replacement feeds cannot be provided safely.

Summary of recommendations:

- The most appropriate infant feeding option for an HIV-infected mother depends on her particular circumstances.
- Exclusive breastfeeding is recommended for HIV-infected women for the first 6 months of life unless replacement feeding is Acceptable, Feasible, Affordable, Sustainable and Safe (AFASS) for them and their infants before that time.
- When replacement feeding is AFASS, avoidance of all breastfeeding by HIV-infected women is recommended.
- Breastfeeding is recommended for all infants with HIV infection.
- Health services should help women to make appropriate infant feeding choices and whatever their decisions, should continue to offer infant feeding counselling and support, particularly at key points when feeding decisions may be reconsidered, such as the time of infant testing for HIV and at six months of age.
- Health service support is also needed beyond 6 months to ensure optimal feeding of infants when exclusive breastfeeding alone is no longer adequate.
- At six months, when complementary feeding needs to be introduced, if replacement feeding is still not AFASS, continuation of breastfeeding with additional complementary foods is recommended. All breastfeeding should stop once a nutritionally adequate and safe diet without breast milk can be provided.
Women who are taking ART can breastfeed their infants if replacement feeding is not AFASS but they should be made aware that some ARV medicines are found in the mother’s milk.

**Key resources:** 89 90 91 92 93

WHO HIV and infant feeding technical consultation - consensus statement

Complementary feeding: Report of the global consultation, and summary of guiding principles for complementary feeding of the breastfed child

Several documents on HIV and infant feeding can be found on the Child and adolescent health website

### 1.2.4 Prevention of HIV Transmission in Health Care Settings

Though estimates vary by region, as much as 5-10% of new HIV infections in developing and transitional countries may be attributable to unsafe health care injections, including unsafe blood and occupational exposures. It is acknowledged, however, that there is substantial uncertainty around this estimate.

In health care settings, transmission of HIV through needle and sharp injuries is preventable through primary prevention measures such as standard precautions, injection safety, blood safety, safe waste disposal, and secondary prevention measures, such as PEP for occupational exposure.

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

**Summary of recommendations:**

All health facilities should:

- have zero tolerance policy on HIV transmission, an infection control (IC) plan, a person or team responsible for IC, and available supplies to ensure the implementation of preventive measures;
- 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;
- Not recapping of needles.

**Key resources:** 94 95

Aide-Memoire: Infection control standard precautions in health care
1.2.4.1 SAFE INJECTIONS

Each year at least 16 billion injections are administered in developing and transitional countries.

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 culturally adapted communication strategies targeting health care workers and the community in order to reduce injection overuse and create consumer demand for safety devices.

 Guarantee the safety of injections of all types, in particular by using auto-disable syringes which are now widely available at low cost.

**Key resource:** 96

Toolbox: Resources to assist in the management of national safe and appropriate use of injection policies

[LINK](http://www.who.int/injection_safety/toolbox/en/)

1.2.4.2 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. Poorly managed, contaminated needles and syringes represent a particular threat to the staff and patients but also to the community at large when waste ends up in uncontrolled waste areas and dump sites at the health care facility, where needles and syringes may be scavenged and reused.

**Summary of recommendations:**

Promote environmentally sound management policies for health-care waste.

**Key resource:** 97 98

Healthcare waste and its safe management

[LINK](http://www.healthcarewaste.org/en/115_overview.html)

1.2.4.3 OCCUPATIONAL HEALTH OF HEALTHCARE WORKERS

For healthcare workers, exposure to the blood of people receiving care most often occurs 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 carry a risk of infection for the patient. Also, when injecting and other equipment is poorly sterilized, HIV may be carried from an HIV-infected to an uninfected patient within the health care setting.

Protecting the occupational health of healthcare workers and ensuring health-care workers know their status and receive HIV treatment as appropriate is an important priority for the health sector.

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

**Summary of recommendations:**

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 healthcare workers.

Provide training to health care workers and involve them in the identification and control of hazards.

Promote healthcare worker’s 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 prophylaxis for HIV.
Promote reporting of incidents and quality control of services provided.

Key resources: 95 99
Joint ILO/WHO guidelines on health services and HIV/AIDS, items 32-53 and, also, Fact Sheet No. 4 in the annex
LINK http://www.who.int/hiv/pub/prev_care/ilowhoguidelines.pdf
Protecting Healthcare Workers: Preventing needlestick injuries toolkit

1.2.4.4 OCCUPATIONAL POST-EXPOSURE PROPHYLAXIS (PEP)
Post-exposure prophylaxis (PEP) is a necessary secondary prevention measure in health care settings, since there will always be rare instances in which primary prevention fail and healthcare workers or patients may be accidentally or through unsafe procedures be exposed to the risk of HIV transmission.

The vast majority of incidents of occupational exposure to blood borne pathogens, including HIV, occur in health care 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 healthcare 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.

ARVs 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 NRTI drugs. If drug resistance is suspected the addition of a protease inhibitor(PI) may be considered.

ARVs for PEP should be administered for a duration of 28 days.

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

Key resources: 67 95
Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection
Joint ILO/WHO guidelines on health services and HIV/AIDS
1.2.4.5 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 where blood is available, many recipients of blood and blood products remain 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 (BTS) based on voluntary non-remunerated donation, 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 non-remunerated 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 the use of intravenous replacement fluids and other simple alternatives to transfusion, wherever possible.

Key resources: 13 100 101
WHO Blood Transfusion Safety website
LINK http://www.who.int/bloodsafety/en/
Checklist of Aide-Memoire for National Blood Programmes
WHO Recommendations on Screening of Donated Blood for Transfusion Transmissible Infections in Blood
LINK http://www.who.int/bloodsafety/global_database/en/

1.3 ACCELERATING THE SCALE UP OF 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 ART, with pre-ART care that includes regular assessment of the clinical and immunological stage of infection. Interventions for treatment and care include ART, treatment and management of common infections, co-morbidities and toxicities but the interventions should also address cardiovascular disease, malignancies, palliative care and end of life care.

To optimize and maximize benefit from 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 here are recommended to improve the quality of life and 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 here, or a so-called “continuum of care”. There should be careful consideration of the special needs of IDUs, sex workers, MSM and young people. There should also be family care, built around the family as a unit needing care even where only one or two members have HIV (see also Chapter 4 on intervention mix and targeting).
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. There must also be attention to costs, including the costs of making interventions available and accessible to all who need them, with hidden costs for laboratory testing, transportation and time away from work taken into account. No such costs should be allowed to impede access to services by people who need those services.

Laboratory services required to accelerate the scale up treatment and care are discussed in section 1.4.

1.3.1 INTERVENTIONS TO PREVENT ILLNESS

Interventions to prevent illness include chemoprophylaxis against common opportunistic infections (OIs); measures to reduce the incidence of pneumonia, diarrhoea and other conditions which are more common or more serious in children or adults with HIV; screening to detect common malignancies and other co-morbidities; and immunization. Table Four summarizes those and other essential and optional interventions to prevent illness in people living with HIV including prevention of viral hepatitis, TB and other conditions (see 1.3.2).

Diagnosis and chemoprophylaxis for TB (section 1.3.2.4)
Prevention of fungal infections
Vaccination
Intermittent preventive treatment for malaria
Nutrition support
Safe water
Environmental interventions (ITNs, IRS, water treatment, NSP)

<table>
<thead>
<tr>
<th>TABLE FOUR: INTERVENTIONS TO PREVENT ILLNESS IN PEOPLE LIVING WITH HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended</strong></td>
</tr>
<tr>
<td>Co-trimoxazole</td>
</tr>
<tr>
<td>Safe water, water treatment methods</td>
</tr>
<tr>
<td>Sanitation, proper disposal of faeces</td>
</tr>
<tr>
<td>Hand washing with soap after defecation or handling faeces</td>
</tr>
<tr>
<td>Hepatitis vaccine for Hep B core antibody negative adults</td>
</tr>
<tr>
<td>TB screening</td>
</tr>
<tr>
<td>Isoniazid prophylaxis for TB</td>
</tr>
<tr>
<td>IPT for malaria in pregnant women in areas of malaria transmission</td>
</tr>
<tr>
<td>IRS and ITN if living in malarious areas</td>
</tr>
<tr>
<td>Full nutritional assessment</td>
</tr>
</tbody>
</table>

Key resources: 22 48

Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings


1.3.1.1 CO-TRIMOXAZOLE PROPHYLAXIS

Co-trimoxazole is an effective, well tolerated and inexpensive antibiotic used to prevent Pneumocystis jiroveci pneumonia (PCP) and toxoplasmosis in adults and children with HIV. It is also effective against other infectious and parasitic diseases and should be an essential part of pre-antiretroviral therapy care.

Summary of recommendations:

WHO recommends that the criteria for HIV infected adults be adapted, depending on disease burden in different settings. All HIV infected adults with a previous episode of PCP require co-trimoxazole prophylaxis, as do all HIV infected infants and
children under 5. In settings where diagnosis of HIV in exposed children may be delayed due to lack of laboratory testing capacity, it is recommended that all children born to HIV positive women should commence co-trimoxazole at around four to six weeks of age or on first contact with health services.

Countries may choose to simplify these recommendations in settings with high prevalence of HIV and limited health infrastructure, and recommend universal cotrimoxazole prophylaxis for everyone living with HIV, no matter their CD4 count or clinical state.

It is generally recommended that, once started, cotrimoxazole prophylaxis for adults living with HIV be continued indefinitely. However, discontinuation may be necessary where adverse drug reactions occur. Due to insufficient data at this time stopping due to a sustained favourable response to ART cannot be recommended either for adults or children in low or middle income settings with limited access to CD4.

Key resource: 102
Guidelines on co-trimoxazole prophylaxis for HIV related infections among children, adolescents and adults

1.3.1.2 PREVENTING FUNGAL INFECTIONS
Cryptococcus is a significant cause of illness and death in children and adults with HIV. Other fungal infections may be important depending on local epidemiological patterns (e.g. Penicillium marneffei in Asia).

Summary of recommendations:
In areas where cryptococcal disease is common, antifungal prophylaxis with azoles should be considered for people with HIV if they have clinically severe disease or very low CD4 cell counts (< 100/mm^3), whether or not they are receiving antiretroviral therapy. Prior to beginning primary prophylaxis with azoles, active cryptococcal and other invasive fungal infections should be excluded. People with HIV who are taking azoles, especially those who are taking other hepatotoxic drugs, require monitoring for adverse events. Secondary prophylaxis is recommended for patients after completing treatment for cryptococcal disease.

Key resources: 22
Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings

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

Summary of recommendations for children:
HIV-exposed infants and children should receive all vaccines under the Expanded Programme for Immunization, including Haemophilus influenzae type B and pneumococcal vaccine, as early in life as possible. 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 age nine months as possible, unless they are severely immuno-compromised at that time. Similarly, immunization with pneumococcal conjugate vaccine or Haemophilus influenzae type B conjugate vaccine should be delayed if the child is severely immuno-compromised. 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 usually 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 immuno-suppression 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 HBV 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 papilloma virus vaccination for young females with HIV.

**Key resources:** 22 103 104

1.3.1.4 **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 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, BMI 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 should receive one recommended daily allowance (RDA) of micronutrients, regardless of their HIV status. This is best provided by food, including fortified food, but 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 per cent of the total energy intake.

Whenever feasible, people with HIV and their families without the means to meet their basic dietary needs should be assisted in achieving food security. Assistance might include, for example, supplements to their income or direct provision of some of their food.

**Key resource:** 22 105 106

1.3.1.5 **PROVISION OF SAFE WATER, SANITATION AND HYGIENE**

Simple, accessible and affordable interventions for safe household water and sanitation (i.e., management of human waste) reduce the risk of transmission of waterborne 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 for and reinforcement of behaviour change by individuals and households. In 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 they have a minimum of 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: 22**

Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings


### 1.3.1.6 PREVENTION OF MALARIA

In malarious areas, infants and children under five and pregnant women with HIV are at high risk of complications resulting from co-infection 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 co-trimoxazole 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 co-trimoxazole should be given at least three doses of intermittent preventive treatment for malaria as part of their routine antenatal care.

**Key resource: 22**

Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings


### 1.3.2 TREATMENT AND CARE INTERVENTIONS

Management of the full range of HIV related conditions should be based on clear guidelines and standardized protocols. Interventions for care and treatment are discussed in the following sections and include, for example:

- Regular periodic clinical assessment, both pre-ART and post-ART (see 1.3.2.1);
- Treatment preparedness and adherence support (see 1.3.2.1a);
- Management of opportunistic infections and co-morbidities (see 1.3.2.2);
- Prevention and treatment of mental health disorders (see 1.3.2.2g);
- Palliative care (1.3.2.3).

### 1.3.2.1 ANTIRETROVIRAL THERAPY FOR ADULTS, ADOLESCENTS AND CHILDREN

A public health approach to ART facilitates quality HIV treatment for all who need treatment, 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, also, making these drugs available to patients free 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 ARV regimens, WHO recommends that countries
develop a national strategy for HIV drug resistance prevention and assessment (see section 3.3.3). WHO also recommends any expansion or improvement of laboratory services that may be necessary to diagnosis and treatment of HIV, opportunistic infections (OIs) and related conditions and to support monitoring of treatment effectiveness (see 1.4).

Summary of recommendations:

Regular periodic clinical and immunological staging to determine need for treatment is recommended for adults and children with HIV. Where laboratory services are available and affordable, determining viral load may provide additional information. Currently, it is not clear in which situations targeted or routine viral load testing will be of benefit in low and middle income countries. WHO recommends that criteria for starting ART be defined in national protocols and that these protocols be based on the minimum clinical data and, wherever available, CD4 counts. Eligibility criteria, including any requirements there may be for CD4 or viral load, should not be used to delay starting ART, especially for patients who meet the clinical criteria for starting ART.

Recommendations for initiating ART in adults, adolescents and children are shown in Tables Five, Six and Seven. These recommendations are reviewed and updated regularly and readers are encouraged to check for updates. For pregnant women, ART is also essential to prevent vertical transmission (see section 1.2.3.2). Revised criteria have recently been developed for initiating antiretroviral therapy among infants, and revised recommendations have been made for infants requiring ART who have been exposed to nevirapine pre-delivery, parentally or post delivery. WHO recommends that all infants diagnosed with HIV start immediate ART.

Currently recommended first-line regimens for adults, adolescents and children contain two nucleoside reverse transcriptase inhibitors (NRTIs) plus one non-nucleoside reverse transcriptase inhibitors (NNRTI) drug. WHO recommends the use of fixed-dose combination regimens to support adherence and programme delivery. For adults, AZT or tenofovir combined with 3TC or FTC are the preferred first line NRTI medicines. In children, AZT or ABC combined with 3TC are preferred. First line regimens for those with active hepatitis B should contain tenofovir and lamivudine and avoid nevirapine wherever possible. For people with HIV-2 infection, a triple nucleoside regimen is recommended. Guidelines or protocols produced by WHO regional offices also provide specific recommendations that can be used to guide national technical reference groups developing national recommendations. Regional guidelines for SEARO/EURO/PAHO and WPRO are referenced in chapter 5.

Patients who develop failure of their first-line therapy go on to need second-line therapy. Treatment failure is recognized by using, at a minimum, clinical criteria and CD4 cell thresholds and, where feasible, the results of virological monitoring. WHO recommends changing the entire drug regimen if treatment failure has occurred. The protease inhibitor (PI) class of drugs is usually reserved for second-line treatment, preferably supported by two new NRTIs. Recent technical consultations have addressed which second line drugs are most feasible, affordable and safe and how clinical, immunological and virological criteria are best used to recognize treatment failure.

<table>
<thead>
<tr>
<th>WHO CLINICAL STAGE</th>
<th>CD4 TESTING NOT AVAILABLE</th>
<th>CD4 TESTING AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do not start ART</td>
<td>Start ART if CD4 is &lt; 200 /mm³</td>
</tr>
<tr>
<td>2</td>
<td>Do not start ART</td>
<td>Start ART if CD4 is &lt; 200 /mm³</td>
</tr>
<tr>
<td>3</td>
<td>Start ART</td>
<td>Consider starting ART if cd4&lt; 350 /mm³, starting before it drops to &lt; 200 /mm³. Recommended for all HIV+ pregnant women if CD4 &lt; 350 /mm³</td>
</tr>
<tr>
<td>4</td>
<td>Start ART</td>
<td>Start all irrespective if CD4</td>
</tr>
</tbody>
</table>

*Absolute CD4 count is naturally less constant and more age-dependent than %CD4; it is not therefore appropriate to define a single threshold.*
### Table Seven: Summary of WHO Preferred Antiretroviral Treatment Recommendations for Infants, Children and Adults

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Preferred First Line Regimen</th>
<th>Preferred Second Line Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant not exposed to ARV</td>
<td>NVP + 2 NRTI</td>
<td>LPV/r + 2 NRTI</td>
</tr>
<tr>
<td>Infant exposed to NVP</td>
<td>Boosted PI + 2 NRTI</td>
<td>NNRTI + 2 NRTI</td>
</tr>
<tr>
<td>Infant with unknown ARV exposure</td>
<td>NVP + 2 NRTI</td>
<td>LPV/r + 2 NRTI</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children 3 years or over</td>
<td>NNRTI + 2 NRTI</td>
<td>Boosted PI + 2 NRTI</td>
</tr>
<tr>
<td><strong>Adult or Adolescents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult or adolescent</td>
<td>NVP + 2 NRTI</td>
<td>Boosted PI + 2 NRTI</td>
</tr>
<tr>
<td>Woman starting ART in pregnancy</td>
<td>NVP + 2 NRTI</td>
<td>Doesn’t apply</td>
</tr>
<tr>
<td>Women starting ART within 6 months of single dose NVP</td>
<td>NVP + 2 NRTI or 3 NRTI</td>
<td>Doesn’t apply</td>
</tr>
<tr>
<td><strong>Concomitant Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child, adolescent or adult with severe anaemia</td>
<td>NVP + 2 NRTI (avoid AZT)</td>
<td>Boosted PI + 2 NRTI (avoid AZT)</td>
</tr>
<tr>
<td>Child, adolescent or adult with TB</td>
<td>EFV + 2 NRTI or 3 NRTI</td>
<td>Boosted PI * + 2 NRTI</td>
</tr>
<tr>
<td>Adult or adolescent with Hepatitis B</td>
<td>TDF + 3TC + NNRTI</td>
<td>Boosted PI + 2 NRTI**</td>
</tr>
<tr>
<td>Adult or adolescent with Hepatitis C</td>
<td>EFV + 2 NRTI</td>
<td>Boosted PI + 2 NRTI</td>
</tr>
<tr>
<td>IDU</td>
<td>NNRTI + 2 NRTI</td>
<td>Boosted PI + 2 NRTI</td>
</tr>
<tr>
<td>HIV-2 or dual infection</td>
<td>3 NRTI</td>
<td>Boosted PI + 2 NRTI</td>
</tr>
</tbody>
</table>

* If using RMP in the TB regimen, LPV/r + extra dose of RTV is the recommended PI option, based on pK interactions. If RFB or an alternative TB regimen without RMP is used, any bPI at its conventional dosage can be used.

** If long term anti-HBV therapy is still needed consider maintaining 3TC and/or TDF, in addition to the new 2 NRTI backbone.

NNRTI = Non nucleoside reverse transcriptase Inhibitor NRTI= nucleoside/nucleotide reverse transcriptase inhibitor PI= Protease inhibitor, IDU= Injecting drug user, AZT= Zidovudine, EFV= Efavirenz, NVP= Nevirapine, LPV= Lopinavir / r= booster dose ritonavir, RTV= Ritonavir, TDF= Tenofovir, 3TC= Lamivudine, RMP= Rifampicin, RFB= Rifabutin, HBV= Hepatitis B virus.

**Key resources:** 87 107 48 108 107 109 110 111 112 113 114 63

WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-Related Disease in Adults and Children

[Link](http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf)

Antiretroviral therapy for HIV infection in infants and children: Towards universal access

[Link](http://www.who.int/hiv/pub/guidelines/paediatric020907.pdf)

Antiretroviral therapy for HIV infection in adults and adolescents: Recommendations for a public health approach

[Link](http://www.who.int/hiv/pub/guidelines/adult/en/index.html)

IMAI-IMCI Chronic HIV Care with ARV Therapy and Prevention

[Link](http://www.who.int/hiv/pub/ima/Chronic_HIV_Care7.05.07.pdf)

Prioritizing Second-Line Antiretroviral Drugs for Adults and Adolescents: a Public Health Approach

[Link](http://www.who.int/hiv/pub/meetingreports/Second_Line_Antiretroviral.pdf)

Prequalification Programme (with a list of WHO-prequalified antiretroviral medicines)

[Link](http://healthtech.who.int/pq/)

The report of a 2008 meeting on treatment failure will be published shortly, so readers should check for updates on this document.


1.3.2.1A 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 them 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 healthcare worker recommendations is a major factor that can be addressed through information, education and counselling. Practical matters, such as the need for free or affordable transportation to and from treatment centres and the need for those centres to have opening hours convenient for patients, are also important.

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, since they are at stages of life where they may be inclined to ignore or rebel against the advice of adults unless adults show respect for their emerging autonomy. Healthcare providers have responsibilities to assess risk of non-adherence by children and adolescents and deliver whatever interventions may be necessary to support adherence. This requires a multidisciplinary approach involving key staff in healthcare centres to ensure convenient opening hours, free or affordable transportation, decreases in the direct or indirect costs of care, 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. Healthcare providers should be prepared to assess their patient’s readiness to adhere, provide advice on how to do it, 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 and support from peer educators trained as “expert patients” and community treatment supporters. They 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: 115 48

Adherence to Long-Term Therapies: Evidence for Action
LINK http://www.who.int/chp/knowledge/publications/adherence_introduction.pdf

1.3.2.1B PATIENT MONITORING

Infants, children and adults with HIV require clinical and laboratory monitoring at pre-determined 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 3.3.2).

1.3.2.2 MANAGEMENT OF OPPORTUNISTIC INFECTIONS AND CO MORBIDITIES

Standardized clinical protocols should reflect the burden of HIV and prevalent co-morbidities. 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: 48 116 92 22 117 118

IMAI/IMCI Chronic HIV Care with ARV Therapy and Prevention

IMAI Acute Care
1.3.2.2A MANAGEMENT OF HIV RELATED CONDITIONS

Case management protocols for adults and children with HIV should, at a minimum, include the conditions listed below, and should also include other locally prevalent conditions.

**Infections:**
- Candida (oesophageal and mucosal)
- Cryptococcal meningitis
- Cytomegalovirus infection
- Herpes virus infections (zoster and simplex)
- Hepatitis B and C
- PCP pneumonia
- Septicaemia (including especially Gram negative and Gram positive for IDU)
- Severe bacterial pneumonia
- Malaria
- Toxoplasmosis
- Tuberculosis including MDR/XDR (see 1.3.2.4)
- Atypical mycobacteria

**Neurological conditions:**
- Neuropathy
- Encephalopathy
- Progressive Multifocal Leukoencephalopathy (PML)
- Dementia
- Developmental delay

**Skin disorders:**
- Seborrhoeic dermatitis
- Prurigo
- Infections
- Drug reactions

**Malignancies:**
- AIDS defining malignancies:
  - Kaposi’s sarcoma
  - Non-Hodgkin’s lymphoma, including primary cerebral lymphoma
  - Cervical cancer
  - Hepatocellular carcinoma

**Cardiovascular and metabolic conditions:**
- Atherosclerosis
- Dyslipidemia
- Diabetes
- Lipodystrophy
- Cardiomyopathy.

**Mental health disorders:**
- Substance use disorders
- Attempted suicide
- Major depression
- Psychoses
- Anxiety disorders

**Others:**
- Lymphocytic interstitial pneumonia (LIP) in children
1.3.2.2B MANAGEMENT OF 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 5 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 different 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 HIV infection and should always be considered.

Key resources: 116 92

Acute Care (including opportunistic infections, when to suspect and test for HIV, prevention)


IMCI Chart Booklet for High HIV Setting


1.3.2.2C MANAGEMENT OF 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: 123 121

Implementing the new recommendations on the clinical management of diarrhoea: Guidelines for policy makers and programme managers


Pocket book of hospital care for children: Guidelines for the management of common illnesses with limited resources


1.3.2.2D MANAGEMENT OF 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 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: 124

Joint statement on the community-based management of severe malnutrition in children

1.3.2.2E TREATMENT OF VIRAL HEPATITIS

Chronic liver disease caused by either hepatitis B virus (HBV) or hepatitis C virus (HCV) in patients with HIV is common in many areas of the world, and chronic liver disease is now becoming one of the leading causes of morbidity and mortality among PLHIV in many parts of the world. Globally approximately 10% of people with HIV worldwide have chronic hepatitis B. Men who have sex with men (MSM) have higher rates of HBV/HIV coinfection than injecting drug users (IDUs) or heterosexuals. HCV and HIV coinfection is particularly frequent in areas with a high prevalence of intravenous drug users (IDUs), as in some areas up to two-thirds of IDUs have chronic hepatitis C. In Europe, up to 30% of HIV-infected individuals are co-infected with HCV. The course of HBV- and HCV-related liver disease may be accelerated with HIV, and 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 (HCC) 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 co-infected individuals, and activities to prevent HBV and HCV transmission.

Detailed recommendations for clinical management can be found in clinical protocols from the WHO Euro regional office (HIV/AIDS Treatment and Care Clinical Protocols for the WHO European Region, 2007) and other regional resources in chapter 5.

Key resources: 72 125 126 127 128 129 118

WHO EURO Hepatitis website
LINK http://www.euro.who.int/aids/hepatitis/20070621_1

Prevention of Hepatitis A, B and C and Other Hepatotoxic Factors in People Living with HIV

HIV/AIDS Treatment and Care for Injecting Drug Users
LINK http://www.euro.who.int/document/SHA/e90840_chapter_5.pdf

Management of Hepatitis C and HIV Coinfection

1.3.2.2F MANAGEMENT OF MALARIA

Current recommendations on diagnosis and management of malaria in people living with HIV are not different from those for the general population, but are due to be reviewed in late 2008.

Summary of recommendations:

For adults and children with HIV living in malarious areas who have 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 co-trimoxazole prophylaxis should not be given sulfadoxine-pyrimethamine.

Key resources: 130 131

Guidelines for the Treatment of Malaria (due to be reviewed and updated in 2008)
LINK http://www.who.int/malaria/docs/TreatmentGuidelines2006.pdf
1.3.2.2G PREVENTION AND TREATMENT OF MENTAL HEALTH DISORDERS

Prevention and treatment of mental health disorders and the need for 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 ART 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 and that requires referrals connecting HIV-related services and with mental health services and linkages with psychological and social support resources in community.

Summary of recommendations:

All people with HIV should be offered or provided referral 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 and alcohol and 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: 132 119 48 133

Psychiatric Care in Anti-retroviral (ARV) Therapy: for second level care

Psychosocial Support in Anti-retroviral (ARV) Therapy Programmes

1.3.2.2H COUNSELLING

Counselling is an essential component of HIV services, and requires specific skills and competencies for healthcare 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, transmission to infants, sexual partners and other family members;
- Help patients cope with the need for lifelong treatment with ART;
- 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).

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

Key resources: 134 135 136

Basic counselling guidelines for Anti-retroviral (ARV) Therapy Programmes

IMAI/IMCI Chronic HIV Care with ARV Therapy and Prevention
1.3.2.3 PALLIATIVE CARE

Palliative care can improve the quality of life of patients facing life-threatening illness and of their families, through the prevention and relief of suffering by means of early identification, assessment and treatment of pain and of other physical, psychosocial and spiritual needs. It calls for a multidisciplinary team approach which 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 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 and provided together with non-medical treatments. This requires addressing any limitations in access to opioid analgesics and any reservations some healthcare workers may have about prescribing or administering analgesics.

Summary of recommendations:

Pain requires both specific management of the cause and control of the pain itself. The analgesic ladder involves beginning 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 bed-ridden 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 self-manage most symptoms and community and peer groups and organizations can provide much of the other support.

Key resources: 137 138 139 140

Palliative care: symptom management and end-of-life care
LINK http://www.who.int/hiv/pub/ima/genericpalliativecare082004.pdf

WHO’s pain ladder

Caregiver Booklet Symptom Management and End of Life Care.
LINK http://www.who.int/hiv/pub/ima/PatientCommune/en

Restoring hope: decent care in the midst of HIV/AIDS

1.3.2.4 TUBERCULOSIS PREVENTION, DIAGNOSIS AND TREATMENT

In many parts of the world, TB is the leading cause of HIV-related morbidity and mortality. It accounts for about 12% of all HIV related deaths. 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 re-infection of TB. This is of increasing concern given the emergence of TB drug resistance including multi-drug and extensively drug resistance disease. Some high risk groups (e.g., IDUs, prisoners and healthcare workers in some settings) are at greater risk of infection and of developing active TB.

Summary of recommendations:

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 ensures the monitoring and evaluation of activities (see 2.1.1 and Chapter 3).

The burden of HIV in TB patients should be reduced through HIV testing and counselling for TB patients and TB suspects and through provision of condoms and other HIV preventive interventions (see 1.2), co-trimoxazole prophylaxis (see 1.3.1.1) and HIV treatment and care (see 1.3.2).

The burden of TB in people living with HIV should be reduced through what are sometimes called the “Three I’s for HIV/ TB”: intensified TB case finding (ICF), isoniazid preventive therapy (IPT) and infection control for TB.
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, since co-trimoxazole 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. Screening for TB is also essential to stop TB from worsening and to determine whether patients are eligible for IPT.

The TB status of HIV-infected patients should be monitored on all visits to healthcare providers and 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, also, improvement in immune function as a result of antiretroviral therapy.

TB infection control measures are essential to prevent the spread of TB through populations. 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.

Isoniazid is an effective, well tolerated and inexpensive antibiotic for TB preventive therapy, and should be provided to all people with HIV once active TB disease has been excluded. Criteria for starting isoniazid for HIV infected adults may be adapted for different country settings but, once it is started, WHO recommends isoniazid daily for six months. Specialist advice should be sought for preventive therapy for people with multidrug-resistant or extensively drug-resistant TB. Previous TB is not a contraindication to TB-preventive therapy.

Key resources: 141 22 142 143 144 145 146

Interim policy on collaborative TB/HIV activities

Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings

Intensified Case Finding (ICF), Isoniazid Preventive Therapy (IPT) and TB Infection Control (IC) for people living with HIV, April 2008,
LINK http://www.who.int/hiv/pub/meetingreports/WHO_3Is_meeting_report.pdf

Isoniazid preventive therapy (IPT) for people living with HIV

1.3.2.4A  TREATMENT OF HIV-ASSOCIATED TUBERCULOSIS

The DOTS (Directly Observed Treatment, Short-course) principles are well-recognized as the most effective approach to managing TB among 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 immuno-suppression. 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 of concern. So is the fact that chest X-ray patterns may be atypical in people with HIV, particularly where there is severe immuno-suppression, and this can also make diagnosis of TB difficult.

Summary of recommendations:

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 as for children with HIV. Thioacetazone is contraindicated as it can result in potentially fatal skin hypersensitivity.

Key resources: 147 148 149

Guidance for national tuberculosis programmes on the management of TB in children

TB/HIV: A Clinical manual

IMAI/STB TB Care with TB-HIV Co-Management guideline module
LINK http://www.who.int/hiv/pub/imai/TB_HIVModule23.05.07.pdf
1.4 LABORATORY SERVICES

Strengthening laboratory services is an essential component of the strengthening and expanding health systems. Accurate and reliable clinical laboratory testing is an essential component of a public health approach to disease management. Healthcare workers need laboratory services in order to assess the status of patients’ health, make accurate diagnoses, formulate treatment plans, and monitor and predict the benefits and adverse effects of treatment. Laboratory services should provide accurate, reliable and timely results.

A tiered laboratory network is an integrated system of laboratories organized in alignment with the public health delivery network in a country. In low income settings, four levels of laboratories are usually recognized within the national network. The primary level is at health posts, clinics or centers. The secondary level is at district hospitals and other facilities to which people are referred at primary level. The tertiary level is at regional hospitals or other regional health administrative units. The fourth and highest level consists of a national reference laboratory. In exceptional cases, national reference functions may be provided by laboratories outside of national administrative units and, instead, inside specialized facilities, e.g., for determining HIV drug resistance or virological diagnosis.

A national reference laboratory is responsible for overseeing the training of medical staff in good laboratory practice and biosafety; proper clinical use of essential laboratory tests; appropriate selection and use of laboratory technologies and equipment, including maintenance and quality assurance of equipment.

Summary of recommendations:

WHO recommends that national health authorities be guided by HIV programme staff and national technical experts and develop a consolidated costed plan for strengthening laboratory capacity and identifying the HIV related diagnostic reagents, technologies and equipment that appropriate for their country.

Basic laboratory procedures, testing strategies and protocols for using specific markers should be validated and standardized at the national level, and quality systems put in place for all levels of laboratory services.

National guidelines should stipulate basic laboratory procedures, testing strategies standard operating procedures and quality control systems.

There should be expanded access to CD4 testing, especially to optimize HIV care for pregnant women, facilitate their timely initiation of ART and achieve ambitious targets for the elimination of HIV infection in infants and children.

WHO recommends HIV drug resistance testing be performed as part of a national strategy for prevention monitoring and surveillance of HIV drug resistance (see section 3.3.3).

WHO also recommends a minimum essential list of investigations and laboratory tests by level of the health system. Those recommended for the primary and secondary levels (i.e., local health facilities and district hospitals) are outlined in Table Eight.
### Table Eight: Essential Lab Tests at the Primary and Secondary Levels.

<table>
<thead>
<tr>
<th><strong>Essential Lab Tests at Health Centre</strong></th>
<th><strong>Additional Essential Lab Tests at District Hospital</strong></th>
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</thead>
<tbody>
<tr>
<td>- HIV diagnostics</td>
<td>- HIV diagnostics</td>
</tr>
<tr>
<td>• Rapid HIV antibody tests (first and second tests)</td>
<td>• Rapid HIV antibody tests (first, second and third tests)</td>
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<tr>
<td>• Infant diagnosis; preparation of dried blood spot (DBS) and send out for virological testing</td>
<td>• CD4 absolute count and percentage</td>
</tr>
<tr>
<td>- Haemoglobin or haematocrit determination</td>
<td>- Full blood count with differential</td>
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<tr>
<td>- Blood collection and send-out for CD4 cell absolute count and percentage</td>
<td>- TB diagnostics</td>
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<tr>
<td>- TB diagnostics</td>
<td>• Acid fast bacilli (AFB) smear microscopy</td>
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<tr>
<td>• Sputum send-out for smear microscopy (or on-site acid fast bacilli (AFB) smear microscopy)</td>
<td>• Sputum send-out for culture and drug susceptibility testing</td>
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<tr>
<td>• Sputum send-out for culture and drug susceptibility testing</td>
<td>• Serum alanine aminotransferase (ALT)</td>
</tr>
<tr>
<td>- Malaria tests (if in endemic area)</td>
<td>• Blood sugar (glucose)</td>
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<tr>
<td>• Peripheral blood smear (PBS) preparation and smear microscopy or</td>
<td>• Serum creatinine and blood urea nitrogen</td>
</tr>
<tr>
<td>• Rapid test to detect and discriminate between Plasmodium falciparum and mixed Plasmodium species</td>
<td>• Gram stain</td>
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<tr>
<td>- Rapid syphilis test</td>
<td>• Syphilis - rapid plasma reagin (RPR)</td>
</tr>
<tr>
<td>- Rapid pregnancy test</td>
<td>• Basic cerebrospinal fluid (CSF) and urine microscopy</td>
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<tr>
<td>- Urine dipstick for sugar and protein</td>
<td>• Bilirubin determination for neonates</td>
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<tr>
<td></td>
<td>• Blood and sputum cultures (sent out)</td>
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<tr>
<td></td>
<td>• Cryptococcal antigen and/or India ink</td>
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<td></td>
<td>• Lactic acid</td>
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<tr>
<td></td>
<td>• Type and cross match for transfusion</td>
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<td></td>
<td>• Pulse oximetry</td>
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<tr>
<td></td>
<td>- Chest X-ray</td>
</tr>
</tbody>
</table>

**Key resources: 98 19 150 151 4 152 153 154**

**HIV diagnosis see section 1.1.4**

**CD4 T cell**


[Link: http://www.who.int/diagnostics_laboratory/CD4_Technical_Advice_ENG.pdf]

**Essential List of Laboratory Equipment And Supplies For HIV Testing. WHO AFRICA Regional Office 2005**

**Summary of WHO Recommendations For Clinical Investigations By Level Of Health Care Facility**

[Link: http://www.who.int/hiv/amds/WHOLabRecommendationBylevelFinal.pdf]

**Laboratory services chapter in Operations Manual**

**MEETING REPORT: Consultation on technical and operational recommendations for clinical laboratory testing harmonization and standardization: Helping to expand sustainable quality testing to improve the care and treatment of people infected with and affected by HIV/AIDS, TB, and Malaria**

*Meeting report will be available later*