7. HIV and other bloodborne viruses in prisons

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Key points

- The prevalence of HIV, hepatitis B and hepatitis C is particularly high in pre-trial detention centres and in prisons.
- All modes of transmission of these diseases occurring in the community also occur in prisons: through blood, sexual activity and vertical transmission to a child.
- Measures to address HIV and hepatitis in prisons should be comprehensive.
- Guidelines and standard operating orders should be developed, in line with national guidelines and based on international guidelines, to address bloodborne viral diseases in prisons.
- All preventive, curative and supportive interventions for HIV, hepatitis C and B that are available in the community are effective, feasible and needed in prisons.
- Continuity of treatment is key in the response to HIV, including for people going into, transferring between or released from prisons.
- Measures to address HIV and AIDS in prisons also address HIV and AIDS for staff working in prisons, for people visiting prisons and for the entire community.
- HIV testing cannot be mandatory and all health interventions need to have the informed consent of the people concerned.
- People living with HIV should not be segregated.

Introduction

People in prisons and other closed settings, including people working in prisons, are particularly at risk for hepatitis B, hepatitis C and HIV, due to their own vulnerability compounded by the characteristics of the environment. The prevalence of individuals who use drugs, including injecting drugs, is particularly high in prisons in Europe, a region with an HIV epidemic concentrated among the most vulnerable populations, especially people who inject drugs. Such people are also particularly affected by viral hepatitis, especially hepatitis C. Each of these diseases is preventable and each has a treatment. The overuse of imprisonment and pre-trial detention for drug users is responsible for the high prevalence of HIV and hepatitis among prisoners. In the absence of preventive measures, transmission can also occur in prisons. The lack of access to preventive, curative and palliative care in prisons, poor prison conditions and poor prison management all contribute to increasing the risk of transmission of bloodborne diseases.

Bloodborne viruses

HIV and AIDS

HIV is a virus that infects cells of the human immune system and progressively impairs their function. Infection with HIV leads to immune deficiency, making people vulnerable to a wide range of diseases. About one year after an initial infection, symptoms will develop. AIDS describes the collection of symptoms and infections associated with the deficiency of the immune system caused by HIV infection. The level of CD4 cells (cells from the immune system) and the appearance of certain infections or cancers are used as indicators that HIV infection has progressed to AIDS. Diseases associated with severe immunodeficiency are known as opportunistic diseases. In the prison context, the most significant of these is TB, which can spread very quickly in overcrowded conditions.

HIV is transmitted when infected blood, semen, vaginal fluids or breast-milk enter another person's body. This occurs during unprotected sex, when sharing needles during injection drug use or tattooing and piercing, through blood transfusion, through unsafe medical care (such as the use of improperly sterilized syringes and other medical equipment in health-care settings) or through accidental puncture with contaminated medical wastes. Women living with HIV who become pregnant can transmit HIV to their babies during pregnancy or delivery as well as through breastfeeding. All these modes of transmission can occur in prisons if appropriate measures are not taken.

HIV is not transmitted through casual contact. HIV infection is asymptomatic for a long period during which the virus can be transmitted to another person. The only way to determine whether HIV is present in a person's body is by taking a test for it. There is no vaccine to prevent HIV, and there is a treatment but no cure. Antiretroviral therapy (ART) slows down the progression of the disease by decreasing the amount of virus (viral load) in an infected body. The decrease in viral load, for example when people are on antiretroviral treatment, also reduces the risk of transmission to another person.

Hepatitis B

Hepatitis B is a viral infection of the liver that can cause both acute and chronic disease. About 10% of infected adults will develop chronic liver disease, with a high risk of death from cirrhosis of the liver and/or liver cancer. The virus is transmitted through contact with the blood

or other bodily fluids (semen and vaginal fluid) of an infected person or from an infected mother to her child at birth. Hepatitis B is not spread through food or water or by casual contact, such as hugging, kissing and sharing food or drinks with an infected person. The transmission of hepatitis B is thus similar to HIV but the virus is 50 to 100 times more infectious than HIV. Hepatitis B virus (HBV) can survive outside the body for at least seven days. It is an occupational hazard for health workers, but it is preventable with a vaccine and is curable. More and more countries vaccinate infants against hepatitis B during national immunization.

Hepatitis C

Hepatitis C is also a liver disease, caused by the hepatitis C virus (HCV). It can also be acute or chronic, but most of the time the acute phase is unnoticed. About 70% of infected persons develop chronic liver disease. In the absence of treatment, after 20 years of evolution, 5–20% will develop cirrhosis and 1–5% will die from cirrhosis or liver cancer. HCV is most commonly transmitted through contact with the blood of an infected person, such as through receipt of contaminated blood transfusions, blood products and organ transplants; injections given with contaminated syringes, needle-stick injuries; injection drug use; and vertical transmission from an HCV-infected mother. It is less commonly transmitted through sex with an infected person and sharing of personal items contaminated with infectious blood. Hepatitis C is also very infectious. It is not spread through breast-milk, food or water or by casual contact such as hugging, kissing and sharing food or drinks with an infected person. Currently, there is no vaccine to prevent hepatitis C but it is curable.

The issues or challenges within the prison environment

HIV prevalence is generally higher in prisons and pre-trial detention centres than in the community. People in prisons typically come from socially and educationally disadvantaged groups with poor access to health care and prevention in the community. The populations at highest risk for HIV, hepatitis B and C infections in the community, such as people who inject drugs and sex workers, are over-represented in prison populations. In the absence of preventive measures, transmission occurs in prisons. Risky behaviour such as sexual intercourse (consensual or forced) without protection, sharing injection equipment and tattooing and piercing equipment, sharing razors or scissors or sharing blood through brotherhood rituals occur in prisons in all countries in the world. Epidemics have been described in several countries such as Estonia (2002), where 300 people were infected in less than 6 months. Factors related specifically to the prison system and environment that contribute indirectly to HIV vulnerability are: overcrowding, poor prison conditions, violence, sexual abuse, gang activities, poor classification, lack of protection for vulnerable prisoners, stigma and discrimination, corruption and poor medical services.

Medical services that are separate from national public health programmes, especially from HIV programmes, often do not access or use the resources available in the community such as medication and guidelines for prevention, diagnosis, follow-up or treatment. Underfunded and underskilled medical services and programmes may be responsible for transmission through the use of contaminated medical or dental equipment, inadequate sterilization procedures and absence of or inadequate universal precautions. In the absence of programmes for comprehensive prevention of mother-to-child transmission, pregnant and nursing mothers can transmit hepatitis B or HIV to their children.

A comprehensive approach

As mentioned above, there are many factors and co-factors contributing to the prevalence of bloodborne diseases in prisons. Health authorities alone cannot address prevention, early identification and treatment. Attention from other actors, such as in the environmental, criminal justice and prison management areas, is often required. The health sector does, however, have a crucial role to play in the implementation of health-specific measures and in raising the awareness of prison managers about other essential interventions.

A comprehensive approach needs to be taken, including protecting staff, since transmission can occur in prisons, people entering prison can already be infected with HIV and some can be severely ill (Fig. 1). In 2013, UNODC in collaboration with the International Labour Organization, the United Nations Development Programme, WHO and the Joint United National Programme on HIV/AIDS (UNAIDS) published a policy brief on a comprehensive response to HIV in prisons *(1)*. This included a comprehensive package of interventions, mainly in connection with the health sector, as under:

- information, education and communication;
- condom programmes;
- prevention of sexual violence;
- drug dependence treatment including opioid substitution therapy;
- needle and syringe programmes;
- prevention of transmission through medical or dental services;
- prevention of transmission through tattooing, piercing and other forms of skin penetration;
- post-exposure prophylaxis;

- HIV testing and counselling;
- HIV treatment, care and support;
- prevention, diagnosis and treatment of TB;
- prevention of mother-to-child transmission of HIV;
- prevention and treatment of sexually transmitted infections;
- vaccination, diagnosis and treatment of viral hepatitis;
- protection of staff from occupational hazards.

The evidence

By definition, an intervention that is effective in the community to prevent or to treat a disease should be effective in prisons. However, the prison system, and sometimes each prison in the system, needs to develop or adapt new implementation modalities to ensure effective access to and impact from the intervention. There is a need to be creative and to discuss the objective of the interventions with all stakeholders to ensure they understand and to identify the best modalities for implementation and evaluation. Prison-specific evidence has been collected on the prevention of sexually-transmitted infections (STIs) and programmes for condoms, treatment for HIV, needle and syringe programmes and treatment for drug dependence in prisons.

Interventions

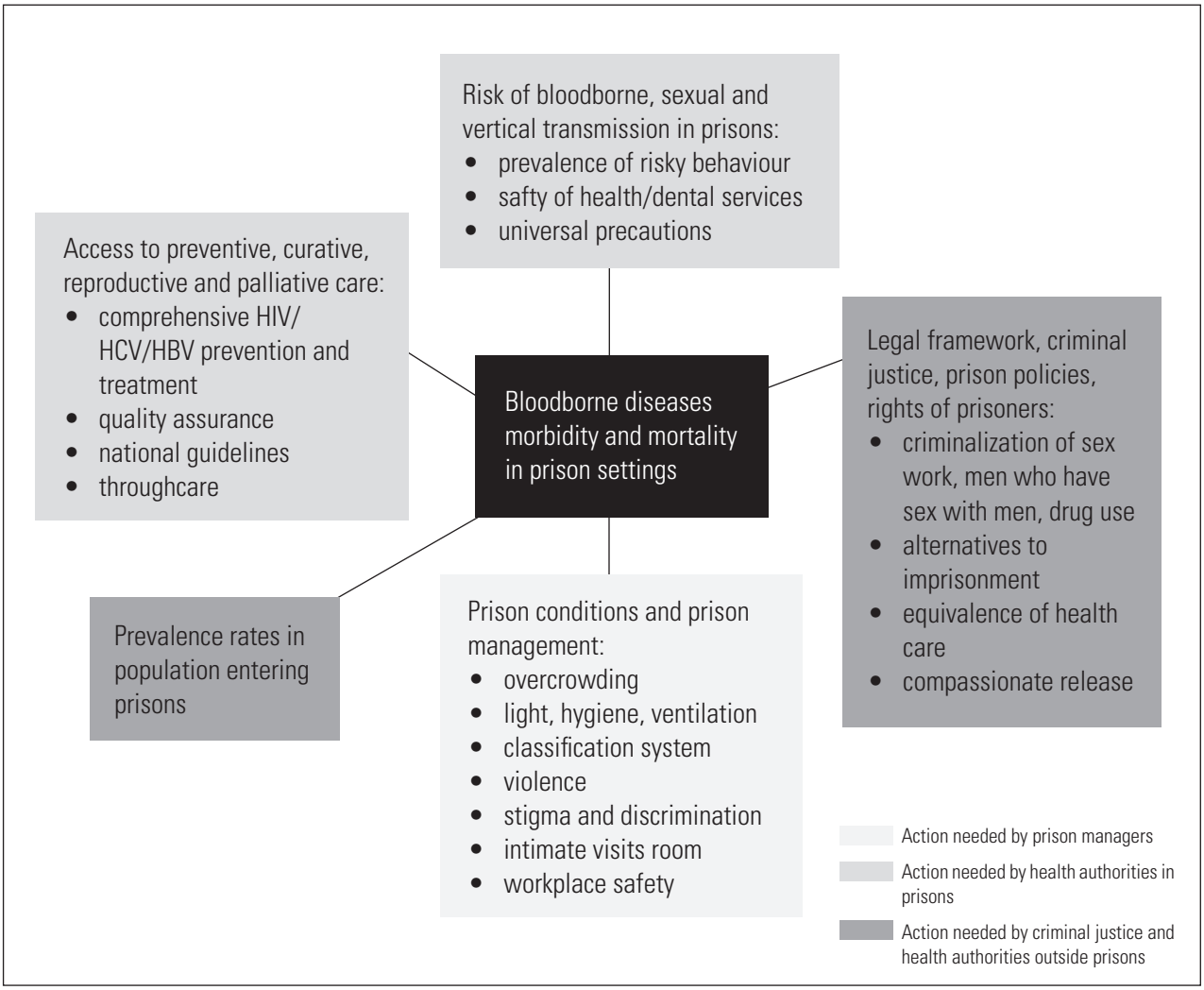
Prevention

The similarities in modes of transmission of bloodborne diseases means that measures for their prevention are almost all valid for all three diseases.

Information, education and communication for prisoners and prison staff

Information is not enough to prevent the transmission of HIV or hepatitis but it is an essential precondition to the implementation of HIV prevention measures in prisons. The main principle is that all information on bloodborne diseases that is available to the community should be tailored to the needs, cultural and educational backgrounds and languages of the prison population, both staff and prisoners. All types of support, including hard copy, videos, radio programmes and electronic support can be used, and staff or prisoners should actively participate in developing them. Education programmes in prisons

Fig. 1. HIV management in prison settings men who have sex with men



are more likely to be effective if they are developed and delivered by peers, although nongovernmental organizations can play a leading role in developing, implementing and monitoring them. These programmes should cover all the aspects of the diseases – prevention of transmission, testing and treatment – and they should address stigma and discrimination.

Prevention of sexual transmission and provision of condoms and lubricants

In prisons, consensual sex occurs between men, between women and between men and women. However, sex in prison is a major taboo, which makes access to condoms a particular challenge. There is evidence that when programmes are well-prepared and well-implemented they are effective and are not the source of problems.

Condoms and lubricant should be easily, discreetly and freely accessible. Staff in each prison should identify the best locations for making them accessible, taking into account the layout of the building, leadership and the movement of prisoners within the premises. In addition, it is essential to make condoms available in the intimate visit rooms.

Measures to prevent sexual violence, such as proper classification, protection of the most vulnerable, rooms for conjugal visits and reporting systems must also be put in place by prison management.

Prevention of transmission through needles shared by injecting drug users

Different modalities have been adopted in several countries to make safe injection equipment available in prisons through health staff, by peers or through dispensing machines. There is evidence that these programmes are effective and not the source of security problems. They have also been shown to facilitate contacts with health staff and enrolment in a drug dependence treatment programme. Not only do they prevent transmission between injecting drug users but they also protect staff by reducing the risk of accidental puncture during cell searches. To prevent hepatitis C, the injection kits should contain (in addition to the syringes) filters, water and cups. Bleach, especially in the prison context, is barely or not effective for disinfecting injection equipment and preventing the transmission of HIV and hepatitis. Whichever system is chosen to provide needles and syringes or kits, the method should include a component for the safe disposal of used needles and syringes.

Safe tattooing and piercing equipment

Tattooing or piercing is highly prevalent in prisons and closely linked to the prison sub-culture. Research has demonstrated that injecting drug users tend to get tattooed in prison more frequently than other prisoners.

Tattooing workshops, with professionals well-trained to give information and show how to operate safely, can be held. Alternatively, professional tattooists could be invited to offer their services. Information, needles and bleach can be distributed to the prisoners. Nongovernmental organizations can also play an important role in the implementation of such programmes.

Prevention of transmission of hepatitis through shavers, scissors, etc.

It is important to ensure that information on the risks of transmission, especially of hepatitis, from sharing toothbrushes, shavers or scissors is communicated to all prisoners. In some countries, all prisoners entering prison are given kits with items for personal hygiene to prevent the sharing of equipment.

Prevention of mother-to-child transmission

Prevention of the transmission of virus to children begins with access to reproductive health and contraception. As with pregnant women outside prison, pregnant women in prisons need access to the full range of interventions for the prevention of mother-to-child transmission, including family planning and ART prophylaxis for pregnant and breastfeeding mothers. Children born to women living with HIV should be followed up according to national guidelines.

To prevent transmission of hepatitis B from mother to child, newborns should be vaccinated at birth. The schedule for hepatitis B immunization of children recommended by WHO consists of a dose within 12–24 hours of birth, followed by a second and third dose of vaccines containing hepatitis B at intervals of at least 4 weeks. If, as recommended, the mother gives birth at the hospital, it must be ensured that the vaccination is given to the child as soon as possible after birth if the mother has HBV infection, and before they leave the hospital in other cases.

To prevent transmission of HIV, all pregnant women who are not in need of ART for their own health (CD4 >350 and no symptoms of AIDS) require an effective antiretroviral prophylaxis strategy to prevent HIV transmission to the infant. This prophylaxis should start at the 14th week of pregnancy, or as soon as possible when women present late in pregnancy, in labour or at delivery *(2)*. Infants born to HIV-infected women receiving ART for their own health should receive ART for six weeks.

To prevent transmission of HCV, caesarean sections are not recommended for HCV-infected pregnant women. Mothers with chronic hepatitis C can breastfeed their

babies unless they are co-infected with HIV. Children of HCV-infected mothers should be tested for HCV-ribonucleic acid (RNA) one month after birth.

Universal precautions and safe health services *(3)*

Universal precautions are essential to ensure a safe workplace for staff and to prevent accidental or iatrogenic transmission of HIV and hepatitis in prisons. In addition to the transmission through blood transfusion of infected blood or through transplantations, HIV and hepatitis can be transmitted through used needles or dental and gynaecological equipment or any medical equipment that can be in contact with blood. Up-to-date sterilization measures, the safe collection and disposal of sharps and disposal of medical waste, based on guidelines for health (and dental) settings in the community, apply in prisons. All cuts and abrasions should be covered. Prison staff can be provided with gloves and eye protection to avoid accidental exposure to contaminated blood. Training of staff is essential for the understanding and application of these measures. Posters could be placed in different parts of the prisons as reminders of these essential measures.

Hepatitis B vaccination

All staff working in prisons and prisoners should be vaccinated against hepatitis B. All prisoners entering prisons who have not been vaccinated should be offered the hepatitis B vaccination. There is no need to check the serological status for hepatitis B before vaccination if there is no suspicion of hepatitis B infection. Three doses are needed and different schedules are possible. A classic schedule requires a minimum of two months. In view of the high turnover in prisons and the need to get early protection, a rapid schedule might be the best choice, as national regulatory authorities allow. But this type of schedule requires a booster after one year. A combined hepatitis A and B vaccine is particularly indicated for people affected by hepatitis C (Table 1).

Post-exposure prophylaxis

Both prisoners and staff can be accidentally exposed to body fluids potentially infected by HIV. Post-exposure prophylaxis is short-term (one month) ART to reduce the likelihood of HIV infection after potential exposure, either through sexual activity or blood. Post-exposure prophylaxis should only be offered for exposure that has the potential for HIV transmission and must be initiated within 72 hours after exposure. It is, therefore, essential that clear guidelines and standard procedures to follow in case of suspected accidental exposure are produced and disseminated *(4)*. These guidelines, based on national guidelines for post-exposure prophylaxis, should include first aid measures, reporting mechanisms, persons to contact, support and counselling measures. Most countries have a reference centre for post-exposure prophylaxis, with people trained to prescribe the treatment.

Drug dependence treatment

Drug dependence treatment, including opioid substitution therapy for maintenance, is an essential component of the prevention of transmission through injection equipment (see Chapter 14).

Testing and counselling

Testing for HIV or hepatitis is both an information (prevention) measure and a diagnostic measure. Thus whatever the context in which a test is conducted, it should be accompanied by pre- and post-counselling for both positive and negative test results. Testing for HIV and hepatitis, as with any other medical intervention, cannot be mandatory. In view of the window period during which the test is negative even if a person is infected, and of the risk of a person acquiring HIV while in pre-trial detention or prison, mandatory testing is not effective. Health services in prisons can use rapid tests with laboratory confirmation, according to national regulations.

All tests need to ensure the informed consent of the person and confidentiality. Every effort must be made to return the final results confidentially and within a reasonable time (about one week), accompanied by counselling. All persons with a positive test for HIV or hepatitis should be referred to a service that provides follow-up and treatment, including ART and other treatments as needed. There is no need for anyone, except the patient and the medical doctor, to be informed about the result of a test.

Table 1. Hepatitis B simmunization schedules for adults

Dose	Hepatitis B	Hepatitis A-B (very rapid schedule)	Hepatitis A-B (rapid schedule)
First dose	day 0	day 0	day 0
Second dose	month 1	day 7	1 month later
Third dose	1–12 months later	day 21	2 months later
Booster	–	after 1 year	after 1 year

Testing and counselling for HIV

Health care providers should offer confidential HIV testing and counselling to all detainees during medical examinations, especially when prisoners ask for it and if the previous test was more than 12 months earlier. The test should be recommended to all prisoners with symptom markers of HIV infection, those with TB, and female prisoners who are pregnant.

All detainees should have unhindered access to voluntary counselling and HIV testing programmes at any time during their detention. Nongovernmental organizations can most effectively organize and provide voluntary counselling and testing in prisons. Often prisoners will prefer to be tested by an external organization.

Testing for hepatitis B

The viral incubation period for hepatitis B is 90 days on average, but can vary from about 30 to 180 days. HBV may be detected 30 to 60 days after infection and persist for widely variable periods of time. Hepatitis B surface antigen (HBsAg) testing is the primary tool for screening and diagnosis. A second test a few weeks later is needed to confirm a first positive test *(5)* (Table 2).

Testing for hepatitis C

The diagnosis of HCV infection is based on detection of anti-HCV antibodies by enzyme immunoassay. A positive test must be confirmed with an HCV RNA qualitative assay or, ideally, with a real-time polymerase chain reaction assay.

Table 2. How to interpret a hepatitis B serological test

Hepatitis B test	Result	Interpretation
HBsAg anti-HBc[a] anti-HBs[b]	Negative Negative Negative	Susceptible (no recent or old infection)
HBsAg anti-HBc anti-HBs	Negative Positive Positive	Immune due to natural infection
HBsAg anti-HBc anti-HBs	Negative Negative Positive	Immune due to hepatitis B vaccination
HBsAg anti-HBc IgM[c] anti-HBc anti-HBs	Positive Positive Positive Negative	Acutely infected (less than 6 months)
HBsAg anti-HBc IgM anti-HBc anti-HBs	Positive Positive Negative Negative	Chronically infected
HBsAg anti-HBc anti-HBs	Negative Positive Negative	Interpretation unclear; four possibilities: • resolved infection (most common) • false-positive anti-HBc, thus susceptible • low-level chronic infection • resolving acute infection

[a] anti-HBc – hepatitis B core antibody
[b] anti-HBs – hepatitis B surface antibody
[c] IgM – immunoglobulin

Source: US Centers for Disease Control *(6)*.

The diagnosis of chronic hepatitis C is based on the detection of HCV infection, confirmed by HCV RNA assay (positive anti-HCV antibodies and HCV RNA) in a patient with signs of chronic hepatitis.

Collaborative HIV/TB programme

The risk of developing TB is about 12–20 times greater among people living with HIV than among those who do not have HIV infection. These risks are especially serious in prisons, with their high HIV prevalence, high TB prevalence rates and environmental conditions that include overcrowding, poor ventilation and poor light.

Collaborative HIV/TB programmes aim to reduce TB-related mortality and morbidity among people living with HIV and to reduce HIV-related morbidity and mortality (see Chapter 8).

Assessment, treatment and follow-up

HIV

Sustainable HIV treatment programmes in prisons are either integrated into or linked to countries' general HIV treatment programmes.

The strategies for treating people living with HIV are:

- provision of ART to reduce the progression, mortality and transmission of the disease;
- prevention, diagnosis and treatment of opportunistic diseases.

Assessment

The first step for a person diagnosed with HIV is to determine the stage of the disease and when to start ART. It is, therefore, most important to check any person diagnosed with HIV infection every six months. Both clinical and immunological criteria are used. Where clinical and immunological classifications are both available, immune status (reflected by CD4) is usually more informative. If there is no access in the country to CD4 count, clinical criteria can be used alone.

CD4 cells count is the standard way to assess the severity of HIV-related immunodeficiency. HIV infection is responsible for a decrease in the number of a specific type of lymphocyte, the T cells that bear the CD4 receptor. The progressive depletion of CD4 is associated with an increased likelihood of opportunistic infections, wasting and death. The immune status of a person living with HIV/AIDS can be assessed by measuring the absolute number (per mm^3) or percentage of CD4+ cells. It is recommended that all patients, irrespective of the clinical stage, have access to CD4 counts *(7)*.

Viral load testing is not needed routinely and is only recommended to confirm suspected failure of treatment.

The assessment should include testing for hepatitis B and C and screening for TB.

Clinical assessment of HIV

Clinical assessment is used to guide decisions on when to start cotrimoxazole prophylaxis and when to start ART. Table 3 shows WHO's recommendations for a staging system for HIV infection and disease in adults and adolescents *(8)*.

ART

There is evidence that ART is feasible in prison settings *(9)*. One of the problems of ART is resistance to some of the drugs that can be caused by the interruption of treatment. It is, therefore, most important to avoid any interruption of treatment when individuals are admitted to pre-trial detention centre or prison, when they are transferred from one prison or pre-trial detention centre to another, and when people under treatment are released into the community. In addition, specific attention should be paid to adherence to the treatment.

ART should be started:

- as a priority, in all individuals with severe or advanced HIV clinical disease (WHO clinical stage 3 or 4) and individuals with CD4 count ≤350 cells/mm^3 *(strong recommendation, moderate-quality evidence)*;
- in all individuals with HIV with CD4 count >350 cells/mm^3 and ≤500 cells/mm^3 regardless of WHO clinical stage *(strong recommendation, moderate-quality evidence)*;
- in all individuals with HIV regardless of WHO clinical stage or CD4 cell count in the following situations:
  - those with HIV and active TB disease (*strong recommendation, low-quality evidence*);
  - those co-infected with HIV and HBV with evidence of severe chronic liver disease (*strong recommendation, low-quality evidence*);
  - those with partners with HIV in serodiscordant couples, to reduce HIV transmission to uninfected partners (*strong recommendation, high-quality evidence*);
  - pregnant and breastfeeding women.

As the medical treatment is rapidly changing, please consult the WHO web site for the drug regimen *(10)*.

Clinical and laboratory follow-up is needed to monitor the response to treatment. The minimum requirement is to monitor the level of CD4. All ART drugs have numerous adverse effects and the treatment requires monitoring for these effects.

Table 3. WHO's recommendations for a staging system for HIV infection and disease in adults and adolescents

Clinical stage	Symptoms
1. No symptoms	No symptoms or only persistent generalized lymphadenopathy.
2. Mild symptoms	Moderate weight loss (5–10%). Recurrent upper respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis). Minor mucocutaneous manifestations (Herpes zoster, Angular cheilitis, recurrent oral ulcerations, Papular pruritic eruptions, Seborrhoeic dermatitis).
3. Moderate symptoms	Weight loss >10%. Unexplained chronic diarrhoea for longer than one month. Unexplained persistent fever (intermittent or constant for longer than one month). Persistent oral candidiasis. Oral hairy leukoplakia. Pulmonary TB. Severe bacterial infections (pneumonia, empyema, meningitis, pyomyositis, bone or joint infection, bacteraemia, severe pelvic inflammatory disease). Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis. Unexplained anaemia (below 8 g/dl), neutropenia (below 0.5 x 109/litre) and/or chronic thrombocytopenia (below 50 x 109/litre).
4. Severe symptoms (AIDS)	HIV wasting syndrome. Pneumocystis jiroveci pneumonia. Recurrent severe bacterial pneumonia. Chronic herpes simplex infection (orolabial, genital or anorectal of more than one month's duration or visceral at any site). Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs). Extrapulmonary TB. Kaposi sarcoma. Cytomegalovirus disease (retinitis or infection of other organs, excluding liver, spleen and lymph nodes). Central nervous system toxoplasmosis. HIV encephalopathy. Extrapulmonary cryptococcosis, including meningitis. Disseminated non-TB mycobacteria infection. Progressive multifocal leukoencephalopathy. Chronic cryptosporidiosis.

Prevention of opportunistic infections

Prevention of opportunistic infections is part of the treatment for HIV. In view of the higher risk in prison settings, this component is essential to prevent mortality linked to HIV. Please refer to the WHO web site for detailed information *(10–12)*.

Adults and adolescents living with HIV and screened with a clinical algorithm for TB, and who report any one of the symptoms of current cough, fever, weight loss or night sweats may have active TB and should be evaluated for TB and other diseases.

HIV/hepatitis B co-infection

As mentioned above, ART should start in all individuals co-infected with HIV/HBV who require treatment for their HBV infection (chronic active hepatitis), irrespective of the CD4 cell count or the WHO clinical stage. The drug regimen should include two ARVs having both anti-HIV and anti-HBV activity.

HIV/TB co-infection

In cases with active TB co-infection, ART treatment should be initiated as soon as possible (within the first eight weeks) after starting TB treatment.

Co-infection with HCV is associated with a higher risk of death and of advanced liver disease. HIV infection accelerates the progression of and mortality from HCV-related disease. The management of people co-infected by HIV and HCV is complicated owing to the increased toxicity and interactions between the ribavirin used for HCV treatment and several ARV used for the treatment of HIV.

Assessment and treatment of hepatitis B *(13)*

There is no specific treatment for acute hepatitis B. Care is aimed at maintaining comfort and adequate nutritional balance, including replacement of fluids that are lost from vomiting and diarrhoea.

Assessment of and treatment for chronic hepatitis B is expensive and not available in all countries. The objectives of the assessment are to evaluate the severity of the liver disease and to decide when to start the treatment.

Assessment of the severity of the liver disease should include:

- biochemical markers, including at least aspartate aminotransferase and alanine aminiransferase, and possibly gamma-glutamyl transpeptidase, alkaline phosphatase, prothrombin time and serum albumin;
- blood counts;
- abdominal ultrasounds;
- HBV DNA detection and measurement of the HBV DNA level as they are essential for the diagnosis, decision to treat and subsequent monitoring of patients;
- investigations for other causes of liver disease and co-infection with hepatitis C or with HIV.

Liver biopsy is not always required (for example, when there are clinical symptoms of cirrhosis) but enables the determination of the degree of inflammation and fibrosis in patients with either increased alanine aminiransferase or HBV DNA levels >2000 IU/ml (or both). Recently, non-invasive techniques (including serological techniques) have been developed to assess the level of fibrosis.

The goal of therapy for chronic hepatitis B is to prevent the progression of the disease to cirrhosis, decompensated cirrhosis, end-stage liver disease, hepatocellular carcinoma and death through suppression of HBV replication. HBV infection cannot, however, be completely eradicated.

Hepatitis C

As with hepatitis B, diagnosis and treatment for hepatitis C are expensive and not available in all countries.

Assessment for hepatitis C is very similar to assessment for hepatitis B *(14)*. In addition to assessment of the severity of liver disease, it includes the determination of the genotype of the virus. Both components are critical to treatment decisions. It consists of the following steps:

- assess the severity of the liver disease (see hepatitis B);
- investigate other causes of liver disease and co-infection with hepatitis B or with HIV;
- determine HCV genotype (1 to 6) prior to antiviral treatment, as the genotype will determine the treatment;
- vaccinate for hepatitis A-B to prevent co-infection with these hepatitis viruses and protect the liver – the objective of the treatment is to cure the patient; the current standard therapy includes pegylated interferon in combination with ribavirin.

Nutrition support and diet

The energy needs of people living with HIV, and in particular people with AIDS, increase by about 10%. HIV infection affects the person's appetite and ability to take in food and reduces the body's ability to absorb ingested nutrients, while metabolic changes actually increase the person's nutritional needs. Adherence to treatment is key to its success and to prevent interruption and possible development of resistance. Poor nutrition status and a low diet lead to difficulties in ingesting the medications and lower compliance with treatment. Malnutrition increases mortality among people living with HIV/AIDS who are on ARV treatment. People on ART are at an increased risk for metabolic diseases, such as dyslipidemia or diabetes.

People living with HIV require food supplements that complement their diet to enable them to meet their total micronutrient and macronutrient needs. In particular, fresh fruits and vegetables should complement the staple foods. A nutritionist should advise the prison authorities on the specific needs of patients without breaching confidentiality about the disease.

Continuity of treatment

For both HIV and hepatitis C, continuity of treatment is essential to ensure the best outcomes and prevent the development of resistance. Health programmes in prisons should, therefore, work in close collaboration with the HIV programme in the community to ensure that treatment is not interrupted when people enter and leave prison. It is also important to organize this continuity when prisoners are transferred from one prison to another within the police/justice system.

Before an individual is released from prison, links should be established with a service that will continue treatment. Sometimes it is difficult for ex-prisoners to go to these services. This situation should be identified in advance and remedies or support should be provided to ensure that contact will be established. The continuity of treatment is best when community services can provide support to a prisoner in prison and after release and accompany his/her re-entry into the community. Before release, prisoners undergoing treatment should be provided with a stock of medications for one month and a complete copy of their medical files, including the results of all tests conducted during incarceration. When a prisoner is transferred between prisons, health professionals should ensure that the medical file follows the prisoner.

Palliative care/compassionate release

Terminally ill prisoners, if they have support from family or friends in the community, should be released on compassionate grounds so that they are able to die with dignity at home in the company of family or friends.

Quality assurance and monitoring of, and interventions for, HIV and hepatitis C and D

Different measures should be implemented to optimize the result of the HIV programme. The development of guidance notes and standard operating procedures, based on national guidelines, strengthens the adherence of prison staff, both security and health, to the policy and strategy. All staff should be trained in these guides and the rationale and importance of their role in the response explained.

Monitoring related to HIV should be aligned with and integrated into national HIV and other bloodborne diseases monitoring systems.

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Further reading

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