PROCEDURES OF STI, HIV AND AIDS TREATMENT AND CARE

Ulaanbaatar
2017

ORDER OF THE MINISTER OF HEALTH, MONGOLIA

Date: 3th August No. A/305 Ulaanbaatar city

Endorsement of principles and guidelines

Pursuant to Article 24.2 of the Law on the Government of Mongolia and Provisions 8.1.1 and 8.1.3 of Article 8 and Provision 36.1 of Article 36 of the Law on Health, the Minister of Health of Mongolia hereby issues the following ORDER:

1. The procedures and guidelines below shall be approved:
   a.) "Procedures of STI, HIV and AIDS treatment and care" in Annex 1;
   b.) "Guidelines for the diagnostics and treatment of STIs" in Annex 2;
   c.) "Guidelines for the diagnostics and treatment of HIV and AIDS" in Annex 3; and
   d.) "Procedures for providing people living with HIV and AIDS, their lawful spouses, cohabiting partners, parents, legal guardians and custodians with counseling and health care and services" in Annex 4.
2. Directors of the aimag and district health departments shall be obliged to supervise and monitor the execution of the procedures and guidelines approved hereby and directors and managers of healthcare organizations at every level shall be obliged to comply with these procedures and guidelines in their operations.
3. The State secretary of the ministry /D.Ochirbat/ shall be entrusted with the supervision of the execution of this Order and the National Centre for Communicable Diseases /D.Nyamhuu/ shall be entrusted with the technical and methodical guidance.
4. In accordance with the issuance of this Order, the Provision no.6 of the "Provisions for diseases indicated to be treated in the pregnancy and delivery room for pregnant women with infectious diseases"- the annex of the Order no.241 of year 2009; the Order no.427 of year 2011; the Order no.191 of year 2012; and the Order no.278 of year 2014 of the Minister of health shall be invalidated.

MINISTER OF HEALTH OF MONGOLIA A.TSOGTSETSEG

Annex 1 to the Ministerial Order No A/305,
dated on 3.8.2017(day/month/year),
Minister of Health, Mongolia

PROCEDURES OF STI, HIV AND AIDS TREATMENT AND CARE

ONE. COMMON GROUNDS

1.1. ***Purpose of the Procedures is to regulate the matters for providing citizens with treatment and care for STI, HIV and AIDS in a prompt and simple manner.***

1.2. ***National Centre for Communicable Diseases***

1.2.1. To analyze the epidemics, morbidity and mortality of STI, HIV and AIDS;

1.2.2. To develop national standards and methodologies of diagnostics and treatment;

1.2.3. To train medical doctors and health care providers;

1.2.4. To perform research and scientific work;

1.2.5. To conduct monitoring and evaluation of the implementation of STI, HIV and AIDS treatment and care, and prevention programmes, and to provide technical and methodical guidance.

1.3. ***Aimag and city health departments and public health centres***

1.3.1. Shall lead local administrative organizations and collaborate with governmental, non-governmental and international organizations in implementing the national programme on prevention and control of communicable diseases.

1.3.2. Shall be responsible for organization of STI, HIV and AIDS prevention and early detection activities and delivery of treatment, care and services to the population of the respective geographical area of responsibility.

1.3.3. Shall assess the morbidity rates of STI, HIV and AIDS; evaluate the diagnostics, treatment and preventive interventions among populations of the geographical areas of responsibility; determine further actions to be taken; and collaborate with professional and other relevant organizations and stakeholders.

1.3.4. Shall be responsible for ordering, storage, transportation, stocking and distribution of the tools and equipment, laboratory diagnostic devices, reagents, drugs and condoms needed in STI, HIV and AIDS diagnostics and treatment; and taking necessary actions for ensuring annual allocation of required funds in the local budget and continuous funding.

1.3.5. Shall collaborate with other organizations in conducting surveillance on the estimates of STI, HIV and AIDS prevalence among the population of the areas of responsibility and provide necessary support.

1.3.6. Shall plan and implement activities for involving medical doctors and healthcare providers in specialization training and retraining on STI, HIV and AIDS and ensuring continuous human resource development.

1.3.7. Shall support the sustainability of non-governmental organizations, which implement targeted interventions among key affected populations.

1.3.8. Shall conduct information, communication and training activities aimed at maintaining non-risky behaviors to prevent from STIs, HIV and AIDS.

1.3.9. Shall take measures for continuous increase of the coverage of HIV screening testing and services.

1.4. ***Aimag and district polyclinics and STI, HIV and AIDS cabinets:***

1.4.1. Staff of the STI, HIV and AIDS cabinet of the aimag and district polyclinics shall consist of one manager of the cabinet, 3-5 medical doctors, one epidemiologist, one serologist, one bacteriologist, 3-5 nurses, one nurse-contact tracer, one counselor for HIV screening testing and services, 2 technicians of STI laboratory and one nurse practitioner responsible for data registry.

1.4.2. Shall oorganize activities to deliver integrated STI, HIV and AIDS treatment, care and services in coordination with antenatal care, reproductive health and prevention of viral hepatitis infection.

1.4.3. Shall estimate the needs for tools and equipment, laboratory reactants, drugs and condoms required in STI, HIV and AIDS diagnostics and treatment; arrange order, storage and distribution of the items; improve internal control system; and produce relevant data and reports in due course.

1.4.4. Shall conduct active tracing of contacts of the patients with STI, HIV and AIDS.

1.4.5. Shall provide local stakeholders involved in the STI, HIV and AIDS prevention interventions with necessary information and technical assistance.

1.4.6. Shall organize training workshops on STI, HIV and AIDS for doctors of family, soum and village health centres, specialized clinics and maternity hospitals, clinic doctors and the doctors and healthcare practitioners specialized in other areas.

1.4.7. Shall organize intensive STI, HIV and AIDS detection surveillance among key affected populations, in collaboration with relevant organizations and communities.

1.4.8. Shall settle the matter of assessing the labour incapacity of people living with HIV and AIDS as per applicable rules and regulations.

1.4.9. Shall conduct information, communication and training activities aimed at maintaining non-risky behaviors to prevent from STIs, HIV and AIDS.

1.4.10. Shall disseminate STI, HIV and AIDS morbidity data, reports and research findings to relevant organizations in due course, provide local authorities with information and take appropriate response.

1.5. ***Special hospitals, specialized professional centres, specialized clinics, maternity hospitals, private healthcare organizations***

1.5.1. For STI and HIV infected patients, who were diagnosed while getting treatment, care and services at special hospitals, specialized professional centres, specialized clinics, maternity hospitals or private healthcare organizations, the ones juristically coming from the rural areas without any temporary residence or registered address in the city should be sent to NCCD, whereas the registered citizens of the city should be sent to the STI, HIV and AIDS cabinet of the respective districts to confirm the diagnosis, to provide treatment recommendations and to involve the patients in follow-up.

1.5.2. Shall take measures for preventing from the transmission of HIV in the form of hospital-acquired infection and the exposure of medical professionals to the infection while performing their work.

1.6. ***Family, soum and village health centres***

1.6.1. Shall coordinate antenatal care and reproductive health care and services with the interventions of preventing from STIs, HIV and viral hepatitis infection and deliver them in an integrated form.

1.6.2. Shall implement the antenatal care of pregnant women who are temporary or permanent residents of that particular area, early detection, contact tracing and treatment, in collaboration with the local administrative units.

1.6.3. Shall organize campaigns of early detection of STI, HIV and AIDS infection among key affected populations in the respective areas, jointly with relevant authorities, non-governmental organizations and community members.

1.6.4. Shall send the relevant data and reports in due course, following the procedures.

Annex 2 to the Ministerial Order No A/305,
Dated on 3.8.2017 (day/month/year),
Minister of Health, Mongolia

GUIDELINES FOR THE DIAGNOSTICS AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STIs)

CHAPTER 1. TERMS AND DEFINITIONS

Sexually transmitted infections: Sexually transmitted infections (hereinafter referred to as "STIs") are a group of infections that are passed on from an infected person to another mainly through sexual contact and are capable of not only damaging urinary, genital and reproductive organs but affecting other organs and systems as well.

Pathogens of STIs: STIs are caused by bacteria including Treponema *pallidum,* Neisseria gonorrhoeae, Chlamydia trachomatis, M.genitalium and Haemophilus Ducreyi; parasites such as Trichomonas vaginalis; viruses like Retrovirus, Herpes simplex virus and Human papillomavirus; and/or yeasts such as Candida etc.

Main source of infection:

- STI infected person
- Vectors

Transmission ways:

- Sexual: Common way of transmission of STIs is sexual contact (vaginal and/or anal)
- From mother to child/fetus:
    - During pregnancy (syphilis)
    - During childbirth (gonorrhea, chlamydia etc.)
    - Postpartum / breastfeeding (gonorrhea etc.)
- Blood:
    - Transfusion of infected blood and blood products, dealing with infected blood, sharing of unsterilized needle and syringe (i.e. syphilis)

Latency period:

Period from infection to initial manifestation of symptoms of the disease

Contact tracing:

Contact tracing is an activity to trace, treat and provide sexual partners of STI infected persons with health education.

Sexual partner:

Person who had sexual intercourse with an STI infected person

Permanent sexual partner:

Husbands and wives and sexual partners who've lived together for more than 12 months

Risky behaviors:

Behaviors that increase the risks of contracting STIs

Syndrome:

Combination of pain reported by a patient and a set of signs and symptoms identified with medical examination

Syndromic diagnosis and treatment of STIs (syndromic case management):

Approach of diagnosing and treating STI signs and symptoms based on the organisms most commonly responsible for each syndrome

CHAPTER 2. EARLY DETECTION

2.1. Preventive measures

STIs are preventable. Preventive measures are classified as primary prevention and secondary prevention as follows:

- Primary prevention seeks to protect people from STIs by promoting and maintaining healthy sexual behaviors (abstinence, delaying sexual debut, being faithful to only one sexual partner, condom use)
- Secondary prevention seeks to provide STI infected people with treatment, care and services so that the infection is not further transmitted to others. Followings are the components of secondary prevention:
    - Sensitization on the benefits of being involved in STI treatment, care and services
    - Early detection of STI infected patients and effective treatment within a short period
    - Contact tracing and treatment
    - Dissemination of accurate information, understanding and counseling of STIs among at-risk and key affected populations

2.2. STI testing methods

Rapid testing

- Rapid testing method is easy to use and it doesn't require special laboratory tools and equipment or special trainings for lab technicians.

Results of the rapid tests are shortly available. The rapid tests allow the initiation of treatment forthwith.

- Rapid test kits used should be the ones satisfying the quality standard requirements of uniqueness and sensitivity recommended by World Health Organization (hereinafter referred to as “WHO”) in a given year.

Microscopy testing

This is dark-field microscopy for detection and identification of Treponema pallidum. With this method, specimen from visible lesions of primary and secondary stage syphilis infection is collected and examined in a dark-field condenser to detect Treponema pallidum.

Wet smears/mount testing

This method is used in detecting trichomoniasis and candidiasis. Analysis of smear preparation washed in saline or alkaline solution of potassium is performed through direct microscopy.

Gram stain

This method helps detecting specific and non-specific genitourinary tract inflammatory agents by staining smear preparations with the Gram technique and analyzing through microscopy.

Nugent criteria

This criteria is used in quantifying and grading specific and non-specific bacterial vaginosis via counting the below elements (see Table 1) in a microscopic field and grading them by average scores and summing up the scores of each element.

Table 1. Nugent criteria

Elements	Quantity	Score
A. Lactobacillus	>30 5-30 1-4 <1 0	0 1 2 3 4
B. Gardnerella/Bacteroides	>30 5-30 1-4 <1 0	4 3 2 1 0
C. Mobiluncus	>4 1-4 0	2 1 0

In analyzing the vaginal smear, scores of the elements A, B and C should be listed and final scores as per Nugent criteria counted as follows:

- Normal = 0-3
- Indeterminate = 4-6 (should be tested again after a month)
- Nonspecific vaginitis = 7-10

Culture and isolation techniques

- To detect gonorrhea and to identify its pathogen, and to assess its antibiotic susceptibility, selective nutrient environmental conditions of Thayer Martin should be used. Smears prepared from colons grown under nutrient condition should be stained and analyzed using Gram's technique and should be examined by oxidase test. Carbohydrate decomposition activity of the cultures, which show oxidase-positive and Gram-negative diplococci, should be identified and the diagnosis should be confirmed.
- Trichomoniasis agent should be cultured under liquid nutrient condition.
- Genitourinary candidiasis agent should be cultured under Saburo's nutrient condition.

Molecular biological test

Molecular biological test is a testing method to detect and identify nucleic acid of a pathogen. There are two main ways to detect the nucleic acid: i.) with amplification and ii.) without amplification. This method is more sensitive than culture test and has specific nature. It doesn't require the sample to contain bacteria, which is capable of living, and the advantage of it lies in the availability of the test results within short time.

Table 2. Molecular biological testing methods widely used in STI diagnostics

Pathogens	Testing methods
Chlamydia trachomatis (CT)	PCR[1] LCR [2] TMA[3] Hybridization
Neisseria gonorrhoeae (NG)	PCR LCR Hybridization
Human papilloma virus	PCR Hybridization
Herpes Simplex Virus	PCR

HIV	PCR Hybridization
Gardnerella vaginalis	PCR Hybridization
Trichomonas vaginalis	PCR Hybridization
Candida	PCR Hybridization

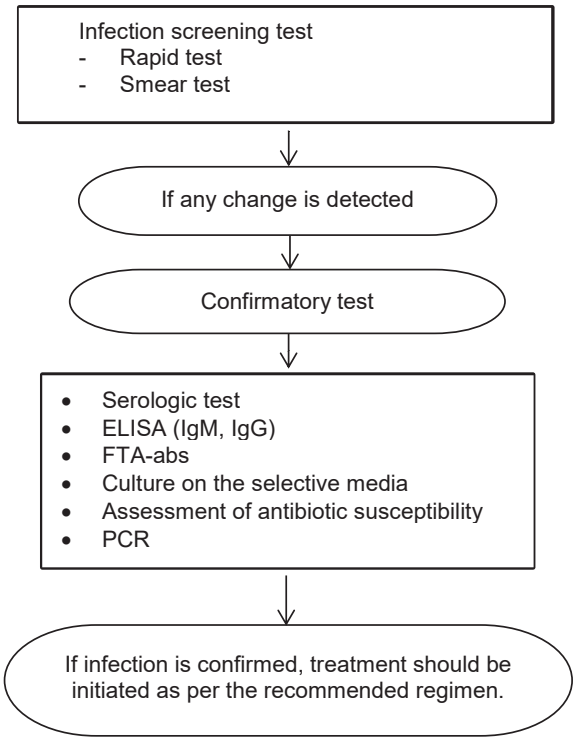
Remarks: *PCR[1]- Polymerase chain reaction;*
LCR[2]- Ligase chain reaction;
TMA[3]- Transcription-mediated amplification.

Table 3. STI diagnostics

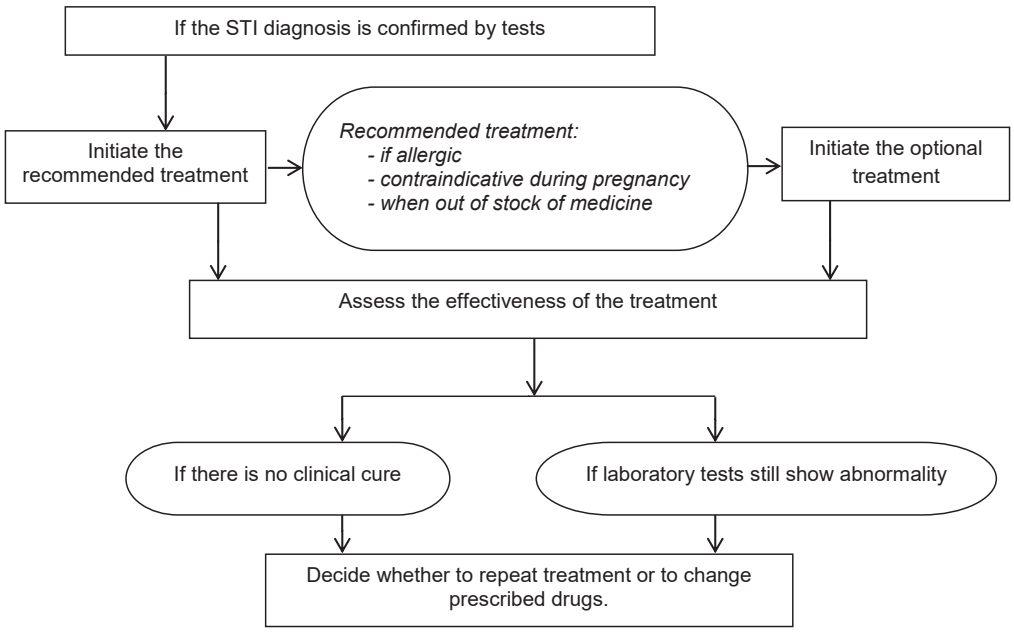
STIs	Testing methods	Family, soum and village health centres	Aimag and district hospitals	NCCD
Syphilis	Syndromic approach /primary syphilis/	√		
	Rapid test	√	√	
	Dark-field microscopy for detection of Treponema pallidum		√	√
	Serologic test /RPR, TPHA/		√	√
	ELISA (IgM, IgG)		√	√
	Fluorescent treponemal antibody absorption test /FTA-abs/			√
	Direct fluorescent antibody test (DFA) for detection of Treponema pallidum			√
	PCR			√
Congenital syphilis	Dark-field microscopy for detection of Treponema pallidum	In case of a suspected congenital syphilis, the test results and the diagnosis shall be transferred to a next level healthcare organization for confirmation.	√	√
	Serologic test /RPR, TPHA/		√	√
	ELISA / IgM/		√	√
	Radiograph analysis		√	√
	Cerebrospinal fluid (CSF) analysis /VDRL/		√	√
	PCR			√
Gonorrhea	Syndromic approach	√		
	Gram staining	√	√	√
	Culture on the selective media		√	√
	Antibiotic susceptibility test		√	√
	PCR			√

Chlamydia	Syndromic approach	√		
	Rapid test	√	√	
	PCR			√
Trichomoniasis	Syndromic approach	√		
	Wet mount test	√	√	√
	Culture on the selective media		√	√
	PCR			√
Genitourinary candidiasis	Syndromic approach	√		
	Wet mount test	√	√	√
	Gram stain	√	√	√
	Culture		√	√
Bacterial vaginosis	Syndromic approach	√		
	Wet mount test	√	√	√
	Whiff test	√	√	√
	Gram stain (Nugent criteria)	√	√	√
Genitourinary mycoplasma and ureaplasma	PCR			√
Genital herpes	Syndromic approach	√		
	Clinical symptoms		√	√
	ELISA (IgM, IgG)			√
	PCR			√
Genital warts	Clinical symptoms	√	√	√
	PCR			√
Cancroids	Syndromic approach	√		
	Gram stain		√	
	Culture			√
	ELISA			√
	PCR			√

2.3. Figure 1. Algorithm of scenarios with abnormal laboratory test results



2.4. Figure 2. STI treatment scheme



2.5. Sending patients to next level healthcare organizations

Patients should be sent to a next level healthcare organization for the following reasons:

From family, soum and village health centres to aimag and district hospitals:

- Diagnostic clarification and confirmation
- Advanced stage of genitourinary inflammation
- Syphilis of different stages except the primary
- Confirmation of the diagnosis of congenital syphilis

From aimag and district hospitals to NCCD:

- Diagnostic clarification and confirmation
- Diagnosis of rare types of STI
- Confirmation of congenital syphilis and technical advice

2.6. Health education and counseling

Health education: All the healthcare facilities should provide their clients with information about infections and explain to them the benefits of receiving complete and timely treatment. Risks of clients to be exposed to infections should be assessed and suitable information given. Such information should be aimed at protecting from exposure to STIs, preventing from transmitting infections to others and at changing risky behaviors. It should also explain that correct condom use can reduce the risks of unwanted pregnancy and exposure to infections.

Counseling: Counseling is aimed at assessing clients' risk of exposure to infections, sensitizing them on the importance of being tested, explaining the steps for getting tested and providing them with accurate information. Behavioral, biological and social factors increase the risks of exposure to STIs. Counseling should be suitable to any individual client and satisfy his/her needs. The place of counseling should create an atmosphere, which allows having open discussions on personal and confidential matters, and be easily accessible to clients and reassure them of the confidentiality of the shared information. Counselors should possess necessary skills of counseling.

Population groups that require special efforts in STI screening

Pregnant women: Pregnant women and their sexual partners should be screened for STI and provided with treatment, care and services. When a pregnant woman who hasn't been tested within antenatal care approaches a hospital to deliver a child, she should be screened for syphilis using a rapid test method. In case if she tests positive, syphilis treatment should be initiated without waiting for the result of confirmatory tests. Every woman who has a stillbirth should be screened for syphilis. All the pregnant women should be tested for *C.trachomatis and N.gonorrhoeae*.

Adolescents: Adolescents are often exposed to STIs. Thus, doctors and healthcare professionals who deliver treatment, care and services to adolescents should assess the adolescents' risks of exposure to STIs, maintain safer sexual behaviors among them, conduct medical examinations aimed at reducing risk factors and provide them with counseling.

Key affected populations: Key affected populations include men who have sex with men (MSM), female sex workers (FSWs) and people who inject drugs (PWID) that are at higher risks of exposure to STI and HIV infection.

1.) As MSM and FSWs are at a higher risk of contracting infections, they should be involved in STI screening tests and be provided with treatment, care and services that suit their special needs. Healthcare providers have limited experience of communicating with MSM. Therefore, it's essential to train healthcare professionals for making the healthcare and services more client-friendly for the community and reducing stigma and discrimination in healthcare settings, and collaboration with non-governmental organizations in these directions would be effective.

2.) FSWs have multiple sexual partners and thus are at greater risks. Hence, targeted interventions among FSWs should be focused on changing their risky behaviors, maintaining healthy and less risky behaviors and building their skills for correct and constant condom use.

3.) Because sharing needles and syringes is a common practice among PWID, the probability of transmission of infections through blood is very high. Besides transmitting infections to their regular sexual partners, it's common for PWID to have casual sex. Therefore, they should be advised to reduce the risks of transmission of STI and HIV, to prevent stigma and discrimination, to maintain safer sexual practices, to refuse sharing needle and syringe with others and to get regular counseling and testing.

CHAPTER 3. KEEPING RECORDS OF DISEASE HISTORY AND CONDUCTING MEDICAL EXAMINATION

3.1. Keeping records of disease history

To keep records of disease history, an enabling environment should be created for having individual and open dialogue with clients, restoring confidence in clients and keeping confidentiality. Through talking with clients individually and gaining their trust, healthcare providers can collect required data and information. The data collected is useful for conducting specific diagnostics and epidemiological surveillance.

Following data shall be collected in keeping records of a disease history:

General data:

- Patient's age, sex, home address, education and employment status

Current disease history:

Clarify about his/her pain by asking the questions below:

- When and how did it start;
- Is there any discharge: its formation, colour, odor and amount;
- Is urination burning;
- Is there any swelling, pain and tenderness of testicles;
- Has any rash, sores or lesions appeared: its location, pain and recurrence etc.

Past disease history:

If the patient has ever been infected with STIs, further details should be asked with the following questions:

- What was the disease and when did it happen;
- Results of tests and treatment provided (where and what type of treatment was conducted under whose' supervision);
- Has he/she got any drug allergies

Assessment of sexual life and risks:

Clarify about the patient's sexual life by asking the following :

- What was his/her age of sexual debut;
- Marital status;
- History of pregnancy, birth, abortion, menstruation and menstrual irregularities.

Investigation of risky behaviors, which increase the exposure to STIs:

- Has he/she changed sexual partner(s) regularly;
- Did he/she have multiple sexual partners;
- Did he/she have sexual intercourse with sex workers and their clients, or casual sex;
- Any past history of being infected with STIs;
- Does he/she use condoms;
- His/her sexual orientation;
- Any new sexual partner(s) during the last 3 months;
- Did he/she have more than one sexual partner during the last 3 months;
- Did he/she have skin damaging surgery (tattooing eyebrows, lips etc.);

- Did he/she get blood transfusion;
- Did he/she consume alcohol and drugs.

3.2. Medical examination

Medical examination should be carried-out in fully individual atmosphere. The examination room should be well-lit, warm and comfortable. Before the examination starts, a written consent of clients should be obtained. A doctor should commence the examination after explaining the benefits and the sequence of the medical examination, washing his/her hands and wearing sterilized gloves.

Examination of women

General physical examination:

- Check to see whether there is any rash on the skin and/or any changes in organ systems

Vulva exam:

- Lay the patient on an examination bed and cover the parts of her body not to be examined with a sheet;
- Examine labia, anus and perineum of the patient, touch the groin lymph nodes and check for swelling, tenderness and movement;
- Carefully palpate lower abdominal part and check if there is any pain and tenderness;
- Determine shape, size and formation of wounds, scrapes and rash, if any;
- Check if there is any vaginal discharge
- Examination with the use of vaginal speculum:
- With help of a side mirror, insert the speculum into the vagina and examine the cervix to see if there are any wounds and ulcers. Determine the nature of discharge and take smear samples from the cervical canal and the posterior mesh of the vagina. Carefully turn the speculum and examine the walls of the vagina. Keep records and document all the information in the disease history.

Bimanual exam:

- Place the index finger of the right hand inside the vagina and gently press down. When the vaginal muscles relax, insert the middle finger and face the palm upwards, and palpate the cervix. Detect if there is any disorder in the adjacent fat cells and anus;
- Use the left hand to gently press down on the lower abdominal area. With the right hand inside the vagina, feel the uterus, fallopian tube and ovaries. Note if the uterus has changed in location, size or shape and

check for any disorder, pain or tenderness.

Examination of men

General physical examination:

- Check to see whether there is any rash on the skin and/or any changes in organ systems

Genital exam:

- In most cases, examine the patient standing and, if necessary, ask the patient to lie down;
- Touch the groin lymph nodes and check for swelling, tenderness and movement

Rectal exam:

- Ask the patient to urinate before the examination starts;
- Ask the patient to lie on his left side placing his buttocks on the bed edge while bending and holding his knees close to his chest;
- Wipe and clean the rectum of the patient with iodine or spirit, lubricate the index finger of your right hand with cream (glycerin or vaseline) and slide the lubricated finger into the rectum until it feels the lower edge of the prostate that lies next to and then palpate carefully until the upper edge of the prostate;
- Palpate the edges, surface, shape, size, formation, right and left parts and grooves of the prostate and reveal whether the prostate has any pain and epicenter;
- Keep records of all the information in the disease history

CHAPTER 4. STI CLASIFICATION, CLINICAL PRESENTATION, DIAGNOSTICS AND TREATMENT

Table 4. STI diagnostic codes and classification

Chapter		Area of treatment and care and list of STIs	ICD-10 classification codes	Mark the healthcare organizations to provide treatment and care /+/			
Specialty of the course		STIs, HIV and AIDS studies		Specialized clinics	Polyclinics	Maternity hospitals	Clinics
1	**Infections with a predominantly sexual mode of transmission**		A50-A64	(+)	(+)	(+)	(+)
	Congenital syphilis	Early congenital syphilis, symptomatic	A50.0	(+)	(+)	(+)	
		Early congenital syphilis, latent	A50.1	(+)	(+)	(+)	
		Early congenital syphilis, unspecified	A50.2	(+)	(+)	(+)	
		Late congenital syphilitic oculopathy	A50.3	(+)	(+)		(+)
		Late congenital neurosyphilis (juvenile neurosyphilis)	A50.4	(+)	(+)		(+)
		Other late congenital syphilis, symptomatic	A50.5	(+)	(+)		(+)
		Late congenital syphilis, latent	A50.6	(+)	(+)		(+)
		Late congenital syphilis, unspecified	A50.7	(+)	(+)		(+)
		Congenital syphilis, unspecified	A50.9	(+)	(+)	(+)	(+)
	Early syphilis	Primary genital syphilis	A51.0	(+)	(+)	(+)	(+)
		Primary anal syphilis	A51.1	(+)	(+)	(+)	(+)
		Primary syphilis of other sites of the body	A51.2	(+)	(+)	(+)	(+)
		Secondary syphilis of skin and mucous membranes	A51.3	(+)	(+)	(+)	(+)
		Other secondary syphilis	A51.4	(+)	(+)	(+)	(+)
		Early syphilis, latent	A51.5	(+)	(+)	(+)	(+)
		Early syphilis, unspecified	A51.9	(+)	(+)	(+)	(+)
	Late syphilis	Cardiovascular syphilis	A52.0	(+)	(+)		(+)
		Symptomatic neurosyphilis	A52.1	(+)	(+)		(+)
		Asymptomatic neurosyphilis	A52.2	(+)	(+)		(+)
		Neurosyphilis, unspecified	A52.3	(+)	(+)		(+)
		Other symptomatic late syphilis	A52.7	(+)	(+)		(+)
		Late syphilis, latent	A52.8	(+)	(+)		(+)
		Late syphilis, unspecified	A52.9	(+)	(+)		(+)

1	**Other and unspecified syphilis**	Latent syphilis, unspecified as early or late	A53.0	(+)	(+)		(+)
		Syphilis, unspecified	A53.9	(+)	(+)		(+)
	Gonococcal infections	Gonococcal infection of lower genitourinary tract without periurethral or accessory gland abscess	A54.0	(+)	(+)		(+)
		Gonococcal infection of lower genitourinary tract with periurethral or accessory gland abscess	A54.1	(+)	(+)		(+)
		Gonococcal pelviperitonitis and other gonococcal genitourinary infections	A54.2	(+)	(+)	(+)	(+)
		Gonococcal infection of eye	A54.3	(+)	(+)	(+)	(+)
		Gonococcal infection of musculoskeletal system	A54.4	(+)	(+)		(+)
		Gonococcal pharyngitis	A54.5	(+)	(+)	(+)	(+)
		Gonococcal infection of anus and rectum	A54.6	(+)	(+)	(+)	(+)
		Other gonococcal infections	A54.8	(+)	(+)	(+)	(+)
		Gonococcal infection, unspecified	A54.9	(+)	(+)	(+)	(+)
	Trichomoniasis	Urogenital trichomoniasis	A59.0	(+)	(+)	(+)	(+)
		Trichomoniasis of other sites	A59.8	(+)	(+)	(+)	(+)
		Trichomoniasis, unspecified	A59.9	(+)	(+)	(+)	(+)
2	**HIV and AIDS**		B20-B24	(+)	(+)	(+)	(+)
3	**Chlamydial infection**	Chlamydial infection of lower genitourinary tract	A56.0	(+)	(+)	(+)	(+)
		Chlamydial infection of pelviperitoneum and other genitourinary organs	A56.1	(+)	(+)	(+)	(+)
		Chlamydial infection of genitourinary tract, unspecified	A56.2	(+)	(+)	(+)	(+)
		Chlamydial infection of anus and rectum	A56.3	(+)	(+)	(+)	(+)
		Chlamydial infection of pharynx	A56.4	(+)	(+)	(+)	(+)
		Sexually transmitted chlamydial infection of other sites	A56.8	(+)	(+)	(+)	(+)
4	**Chancroid**		A57	(+)	(+)		(+)
5	**Granuloma Inguinale**		A58	(+)	(+)		(+)

6	**Anogenital Herpesviral Infection**	Herpesviral infection of genitalia and urogenital tract	A60.0	(+)	(+)	(+)	(+)
		Herpesviral infection of perianal skin and rectum	A60.1	(+)	(+)	(+)	(+)
		Anogenital herpesviral infection, unspecified	A60.9	(+)	(+)	(+)	(+)
7	**Mycoplasma infection**		A63.8	(+)	(+)	(+)	(+)
8	**Bacterial vaginosis**		N76	(+)	(+)	(+)	(+)
9	**Candidiasis**	Candidiasis of vulva and vagina	B37.3	(+)	(+)	(+)	(+)
		Candidiasis of other urogenital sites	B37.4	(+)	(+)	(+)	(+)
10	**Other predominantly sexually transmitted diseases, not elsewhere classified**	Anogenital (venereal) warts	A63.0	(+)	(+)	(+)	(+)
		Other specified predominantly sexually transmitted diseases	A63.8	(+)	(+)	(+)	(+)
11	**Unspecified sexually transmitted disease**		A64.0	(+)	(+)		(+)
12	**Nonvenereal syphilis**		A65	(+)	(+)		(+)
13	**Syndromic approaches of STI diagnostics**	Ulceration of genital organs	N48.5/ N76.5	(+)	(+)		(+)
		Urethral discharge	R36	(+)	(+)		(+)
		Vaginal discharge	R87.2	(+)	(+)		(+)
		Pain localized to other parts of lower abdomen	R10.3	(+)	(+)		(+)
		Orchitis and epididymitis	N45	(+)	(+)		(+)
		Localized enlarged lymph nodes	R59.0	(+)	(+)		(+)
		Neonatal conjunctivitis	P31.1	(+)	(+)		(+)

4.1. Syphilis, Iues

Syphilis is a sexually transmitted disease, which is caused by the bacterium t*reponema pallidum.* Syphilis with its chronic and slow progress damages all the organ systems (skin, mucosa, internal organs, nerves and the musculoskeletal system) of the human body and transmits to the fetus.

4.1.1. Presumed or confirmed cases of diagnosis

Presumed cases of primary, secondary and tertiary stage syphilis

- Appearance of chancres (primary stage); or blemished, blistered, pustular and vesicular rash, hair loss or white patches on the skin (secondary stage); tuberculate and nodular rash on the skin, mucosa and internal organs (tertiary stage); and
- Serologic test (non-significant treponemal reaction) is positive

Confirmed diagnosis of primary, secondary and tertiary stage syphilis

Presumed case signs and symptoms and positive result of any of the following tests:

- Treponema pallidum is detected with the dark-field microscopy
- Fluorescent treponemal antibody absorption test /FTA-abs/ is positive
- Serologic test (significant treponemal reaction) is positive
- Significant treponemal reaction in the CSF is positive

Presumed case of latent syphilis:

- Clinically asymptomatic, but serologic test of significant treponemal reaction is positive for a case that has never been diagnosed with syphilis before.
- Confirmed latent syphilis case:
- Clinically asymptomatic, but the result of the serologic test of significant treponemal reaction is positive.

4.1.2. Classification and clinical presentation

The latent period: 3-4 weeks

Primary stage syphilis: In average, it lasts for 6-7 weeks. It has two clinical types as follows:

- Serologically negative primary stage syphilis (Syphilis I seronegativa)
- Serologically positive primary stage syphilis (Syphilis I seropositiva)

Clinical symptoms:

- Chancres
- Swollen lymph nodes near the chancre
- Lymphangitis

Secondary stage syphilis: This stage starts with the onset of disseminated rash on the skin and mucosa approximately 2-3 months after contracting the infection or 6-7 weeks after the onset of chancres and it lasts for 2-5 years. Clinically, it has two types as follows:

- Secondary stage new type syphilis (Syphilis II recens)
- Secondary stage recurrent syphilis (Syphilis II recediva).

Clinical symptoms:

- Blemished, blistered, pustular and vesicular rash on the skin and mucosa;
- Hair loss and white patches on the skin;
- Serologic tests are 98-100% positive. Without having treatment, the rash disappears in 1-3 months, while the serologic tests remain positive and the disease shifts into latent type of the secondary stage.

Latent syphilis (Syphilis latens)

- Latent syphilis detected at early stage within 2 years after contracting the infection (Syphilis latens praecox)
- Latent syphilis detected at late stage in more than 2 years after contracting the infection (Syphilis latens tarda).

In latent syphilis, patients are clinically asymptomatic and the serologic tests are positive.

Tertiary stage syphilis: It emerges in 3-5 years after the initial infection and lasts for 5-10 years or longer. Clinical types are as follows:

- Tertiary stage latent syphilis (Syphilis III latens)
- Tertiary stage active syphilis (Syphilis III activa)

Clinical symptoms:

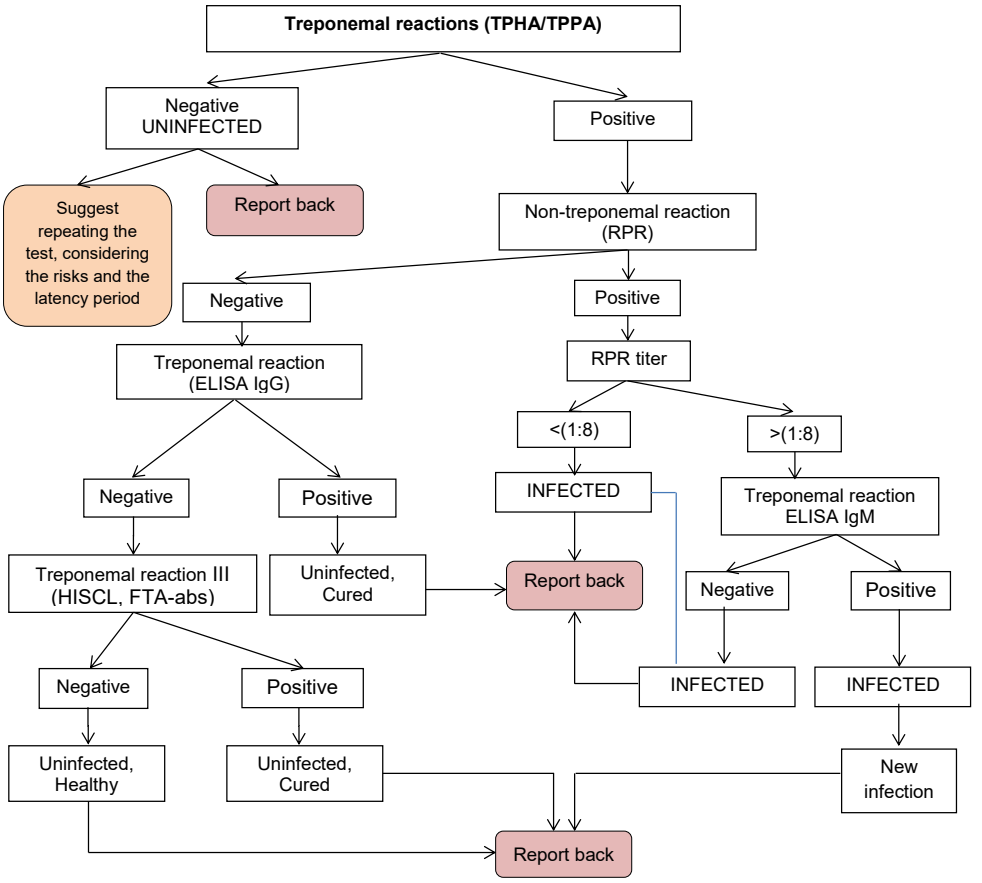
- Tuberculate and nodular rash on the skin
- Profound changes in the internal organs and nervous system and damages to the bones and joints are detected. Serologic tests are 25-35% negative.

4.1.3. Diagnostics

Table 5. Diagnostics of syphilis

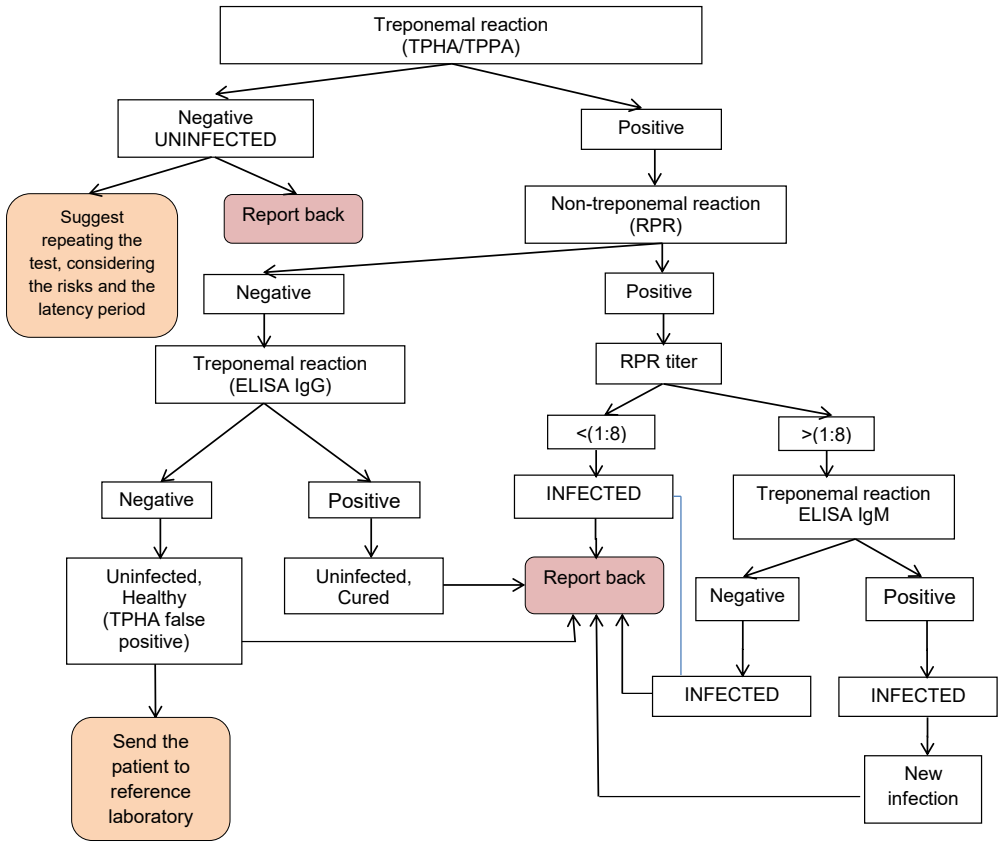
No	Healthcare settings	Tests
1.	Family, soum and village health centres	Syndromic approaches of diagnostics (primary syphilis) Rapid tests for syphilis screening
2.	Polyclinics	Dark-field microscopy illumination of Treponema pallidum RPR titer,TPHA ELISA – IgM,G
3.	Specialized treatment and care providing organizations	Dark-field microscopy illumination of Treponema pallidum Direct fluorescent antibody test (DFA) for detection of Treponema pallidum FTA-Abs VDRL, RPR titer, TPHA, TPPA ELISA–IgM,G PCR

Figure 3. Serologic tests for syphilis diagnostics - NCCD



Treponemal reaction: TPHA, EIA Ig/AMG/, TPPA, FTA-abs, HISCL
Non-treponemal reaction: RPR, VDRL

Figure 4. Serologic tests for syphilis diagnostics – Aimag / district



4.1.1. Treatment

Table 6. Treatment for primary stage syphilis

Treatment	Doses and regimens	Adults	Pregnant women
Recommended course	Penicillin G Benzathine - intramuscular injection of a single dose 2.4 million IU	√	√
Optional course	Procaine Penicillin - intramuscular injection of once-daily dose 1.2 million IU for 10 days		√
	Ceftriaxone - intravenous infusion or intramuscular injection of once-daily dose 1.0gr for 10-14 days	√	√
	Doxicyclyne 100mg – orally, twice-daily for 14 days	√	
	Erythromycin 500mg – orally 4 times a day for 14 days		√ Only during the first trimester of pregnancy
Any one of the above treatments should be selected.			

Table 7. Treatment for secondary, latent and tertiary stage syphilis

Treatment	Doses and regimens	Adults	Pregnant women
Recommended course	Penicillin G Benzathine - intramuscular injection of once-weekly dose 2.4 million IU, a total of 3 injections	√	√
Optional course	Procaine Penicillin - intramuscular injection of once-daily dose 1.2 million IU for 20 days	√	√
	Ceftriaxone - intravenous infusion or intramuscular injection of once-daily dose 1.0gr for 10-14 days	√	√
	Doxicyclyne 100mg – orally, twice-daily for 30 days	√	
	Erythromycin 500mg – orally 4 times a day for 30 days		√ Only during the first trimester of pregnancy
Any one of the above treatments should be selected.			

Table 8. Treatment for neurosyphilis and ocular syphilis

Treatment	Doses and regimens	Adults	Pregnant women
Recommended course	Aqueous crystalline penicillin G, intravenous infusion of 3-4 million IU every 4 hours, with the maximum daily dose of 18-24 million IU for 10-14 days	√	√
If allergic to penicillin	If possible, initiate a treatment for desensitization to penicillin and continue with the penicillin treatment (See Table 6).	√	
Optional course	Procaine penicillin, intramuscular injection of 2.4 million IU once a day COMBINED WITH Probenecid 500mg - orally 4 times a day, conduct the combination for 14 days *After the treatment* Penicillin G Benzathine, intramuscular injection of once-weekly dose 2.4 million IU, a total of 3 injections	√	√
	Ceftriaxone - intravenous infusion or intramuscular injection of once-daily dose 2.0gr for 10-14 days	√	√
	Doxicyclyne 200mg – orally, twice-daily for 28 days	√	

Treatment considerations:

- If the amount of white cells is high in the first CSF test, the testing should be repeated every six months until the white cell count becomes normal. The CSF test controls the post-treatment VDRL and fetal changes. If the cell count doesn't reduce after 6 months or the CSF test result isn't within the normal range, the treatment should be repeated.
- If it's symptomatic late stage syphilis, the CSF test should be conducted before the start of the treatment.
- Neurosyphilis, cardiovascular or ocular syphilis or syphilis of internal organs should be treated at the specialized clinics and units and in accordance with diagnostic confirmation and technical advice and recommendations provided by STI doctors.
- For treatment of cardiovascular syphilis and neurosyphilis, oral anti-inflammatory hormone Prednisolone (steroid drug) with a once-daily dosage of 40-60mg is recommended to be administered for 3 days, a day before the beginning of antibiotic medication.
- For patients with positive skin allergy tests and diagnosed with neurosyphilis or ocular syphilis, when suitable, treatment for desensitization to penicillin should be initiated. Desensitization with oral suspension is an easy and safe medication. Desensitization treatment should be provided as inpatient care and caution should be exercised for severe IgE-mediated allergic reactions the patients may develop. The treatment takes approximately 4-12 hours after oral suspension of the first dose. Penicillin should be used, as per the treatment regimen, after the ddesensitization. In case if the penicillin treatment is required to be conducted again after a full course is over, the ddesensitization treatment should be repeated.

Table 9. The dosage and regimen of desensitization treatment with oral suspension for patients who test positive in skin allergy tests

Penicillin V suspension dose†	Amount § (units/mL)	mL	Units	Cumulative dose (units)
1	1,000	0.1	100	100
2	1,000	0.2	200	300
3	1,000	0.4	400	700
4	1,000	0.8	800	1,500
5	1,000	1.6	1,600	3,100
6	1,000	3.2	3,200	6,300
7	1,000	6.4	6,400	12,700
8	10,000	1.2	12,000	24,700
9	10,000	2.4	24,000	48,700
10	10,000	4.8	48,000	96,700
11	80,000	1.0	80,000	176,700
12	80,000	2.0	160,000	336,700
13	80,000	4.0	320,000	656,700
14	80,000	8.0	640,000	1,296,700

Remarks:

*Observation should be done for 30 minutes prior to oral administration of penicillin.

†Intervals between doses are 15-30 minutes; total time spent is 4-8 hours; and the cumulative dose is 1.3 million units.

§The drug preparation should be diluted with 30ml of water and orally taken.

4.2. Congenital syphilis

Congenital syphilis is caused by Treponema pallidum, which is transmitted from a syphilis infected mother to the fetus via the umbilical vein and lymph vessel.

4.2.1. Presumed and confirmed cases of diagnosis

Presumed cases

- An infant (regardless of whether the infant has shown any symptoms) born to a syphilis infected woman who didn't receive any or complete treatment for syphilis while she was pregnant
- Serologic test (specific and non-specific treponemal reactions) results of the infant are positive
- Clinical symptoms of congenital syphilis

Confirmed cases - Following symptoms manifest in addition to the signs of presumed cases listed above:

- Serologic test titer of the infant is fourfold higher than the mother's titer
- Radiographic detection of changes in marrow bones

- Positive VDRL and elevated lymphocyte cell number and protein level in the CSF
- IgM detected through ELISA
- TTreponema pallidum detected through dark-field microscopy
- Antibodies against Treponema pallidum detected through FTA-Abs method
- TTreponema pallidum detected in the infant's lesion and biological fluid through PCR

Stillbirth

- The baby was stillborn with the birth weight of more than 500 grams after the 20th week of pregnancy;
- If the mother was diagnosed with syphilis at the time of child delivery and was untreated or incompletely treated, the child should be presumed to have congenital syphilis;
- Pathology test revealed congenital syphilis associated signs and characteristics.

Table 10. Congenital syphilis diagnostic criteria

Absolute criteria	Key criteria	Auxiliary criteria	Serologic tests
Dark-field microscopy to detect *Treponema pallidum*	Broad-based condyloma	Cleft lip and palate	RPR/VDRL or TPHA/ TPPA positive
PCR Or	Osteochondritis	Skin rash	IgM positive
Histology	Periostitis	Hepatomegaly	RPR/VDRL or TPHA/ TPPA negative
	Rhinitis – sniffles	Splenomegaly	RPR/VDRL – doesn't change to negative after 4 months
		Generalized lymphadenopathy	RPR/VDRL – grows after 3 months
		Neurological disorder	
		Hemolytic anemia	
		Increased white blood cells and protein in CSF	

Table 11. Confirming diagnosis of congenital syphilis with the use of clinical criteria

Confirmed	High probability	Presumed	Low probability
1 and more of the absolute criteria were met	Serologic tests – E or – D	Serologic tests – A or – B Clinical presentation / criteria is nonexistent	Serologic test – C
	1 key criteria + Serologic tests – A or B		Serologic tests – A or – B + Mother was fully healed
	2 and more of the auxiliary criteria were met + Serologic tests – A, B		

The "Confirmed" "High probability" cases should be diagnosed, treated, registered and reported as congenital syphilis. The "Presumed" and "Low probability" cases should be followed up for a period of 6 months.

4.2.2. Classification and clinical presentation

Congenital syphilis is classified as early congenital syphilis (syphilis congenital praecox) and late congenital syphilis (syphilis congenital tarda).

Early congenital syphilis (syphilis congenital praecox) can be diagnosed at the age of 0-2. Manifestations of early congenital syphilis are classified as follows:

- Fetal syphilis
- Early ccongenital syphilis (birth through the age of 2 years)
- Late congenital syphilis (after the age of 2 years)

Clinical symptoms of fetal syphilis:

- Low birth weight
- Ruffled, dirty and grey scaly skin
- Enlarged and hardened internal organs (liver, spleen and lungs)

Clinical symptoms of early congenital syphilis:

- Common protuberance infiltration
- Syphilitic vesication
- Sniffles
- False seizures of Parro

Clinical symptoms of late congenital syphilis:

- Delayed development and growth of child
- Symptoms of secondary stage acquired syphilis

Late congenital syphilis (syphilis congenital tarda) is diagnosed at the ages above 2 years. Symptoms include tuberculate and nodular rash on the skin and organs. Followings are the symptoms of late congenital syphilis:

Reliable symptoms:

- The Hutchinson's triad (interstitial keratitis, eighth nerve deafness and **Hutchinson** incisors) symptoms

Potential symptoms:

- Appearance of sword-shaped legs, buttocks-shaped skull and saddle-shaped nose in terms of bone structure
- A beam shaped scarring of the skin around the mouth (the Robinson and Furney symptom)

4.2.3. Diagnostics

Table 12. Diagnostics of congenital syphilis

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	RPR titer, TPHA Dark-field microscopy illumination of Treponema pallidum
2.	Polyclinics	RPR titer,TPHA ELISA-IgM Dark-field microscopy illumination of Treponema pallidum VDRL in the CSF Radiographic examination (X-rays) of long bones Pathology test
3.	Specialized treatment and care providing organizations	VDRL, RPR titer,TPHA ELISA-IgM Dark-field microscopy illumination of Treponema pallidum VDRL in the CSF Radiographic examination (X-rays) of long bones PCR Pathology test

- Quantitative non-treponemal reaction test (VDRL, RPR) and treponemal reaction test (TPHA) in the infant serum
- Detection of IgM through ELISA

- Dark-field microscopy detection of Treponema pallidum in the fluid of lesions and rash and nasal discharge
- Detection of Treponema pallidum in the samples from the placenta and the umbilical vein through FTA-abs test
- VDRL ppositive and elevated lymphocyte cell count and protein level in the CSF
- Polymerase chain reaction (PCR)
- X-rays detects changes in the long bones
- Significant changes in the cells detected via pathology test

4.2.4. Treatment

Treatment should be decided depending on the following circumstances:

- Whether the mother is infected with syphilis
- Whether the mother is treated completely
- Whether the infant has been detected with any clinical, laboratory and radiographic signs of congenital syphilis
- Comparison of results of the intrapartum non-treponemal serologic tests of both the mother and the infant performed in the same laboratory using the same methods

The table below (Table 13) shows the four alternatives of congenital syphilis diagnosis and treatment to be used:

Table 13. Alternatives of diagnosis and treatment of infant congenital syphilis

		Confirmed	**High probability**	**Presumed**	**Low probability**
Treatment	Aqueous crystalline penicillin G - intravenous infusion of 50,000 IU every 12 hours, with the maximum daily dosage of 100.000- 150.000 IU, for 7 days. For the next 10 days the same infusion with the same maximum daily dosage should be given every 8 hours. OR Procaine penicillin with a dose of 50,000 IU - intramuscular injection once a day for 10 days	√	√		
	Penicillin G Benzathine - intramuscular injection of a single dose of 50,000 IU			√	√

Special considerations:

If the therapy is missed or skipped for one day, the entire course should be restarted.

Assessment and treatment for congenital syphilis of nursing age children:

Children aged ≥1 month who tested positive on serologic tests of syphilis should have the maternal serology and records reviewed and compared, in order to assess whether they have congenital or suspected syphilis. Every infant who's presumed to have congenital syphilis should be involved in full assessment and HIV screening test.

Recommended tests:

- CSF analysis for VDRL, cell count, and protein check
- Complete blood count, differential and platelet count
- Other tests as per the symptoms detected (i.e. long-bone radiographs, chest radiograph, liver-function tests, auditory brain stem response, ophthalmologic examination, and cranial ultrasound)

4.2.4. Treatment:

- Aqueous crystalline penicillin G, intravenous infusion of 50,000 IU in every 4-6 hours and for 10 days, with the maximum daily dosage of 200.000- 300.000 IU.

In case if a child doesn't have any disease symptoms and the CSF test is normal and VDRL test is nonreactive, the following regimen should be administered:

- Penicillin G Benzathine - intramuscular injection of once-weekly dose 50,000 IU, a total of 3 injections
- If it's a suspected case of congenital syphilis and neurological disorder is detected, intravenous infusion of Aqueous crystalline penicillin G for 10 days should be administered and followed by a single dose intramuscular injection 50,000 IU of Penicillin G Benzathine.

Below are the regimens for infants younger than 1 month who have penicillin allergy:

- Erythromycin 7.5-12.5mg/kg, orally 4 times a day for 30 days

Or

- Ceftriaxone, intravenous infusion or intramuscular injection of once-daily dose 75mg/kg for 10-14 days
- For children aged 1 month and older the injection dose should be 100mg/kg once a day.

Special considerations*:*

If 1 day of therapy is missed, the entire course should be restarted.

4.2.5. Treatment care and service for congenital syphilis

- Pregnant women should be involved in the syphilis screening test 2 times during the antenatal care: one during their first antenatal care visit and the other during the 28th-32nd week of pregnancy. In case if a pregnant woman wass not enrolled on antenatal care and didn't get involved in all the serologic tests as scheduled, she should be screened with a rapid test during the child delivery.
- Any woman who's had a miscarriage at later stage of pregnancy (during 13th-21st week) or premature birth or stillbirth should be screened for syphilis.
- In case if the rapid test of syphilis results positive, the woman should be given the first dose of treatment and her blood sample should be collected and transported to a next level healthcare organization for serologic tests to confirm the diagnosis.
- Syphilis treatment and follow-up of pregnant women should be conducted through collaboration with STI, HIV and AIDS doctors and obstetricians of respective jurisdiction.
- Postnatal syphilis treatment follow-up should be carried out in collaboration with STI, HIV and AIDS doctors and family health practitioners of respective jurisdiction.
- If there is a suspected syphilis infection case detected at family and soum health centres, the case should be sent to a next level healthcare organization to confirm the diagnosis.
- Should the National Center for Maternal and Child Health detect any suspected congenital syphilis infection in an infant born to a mother who comes from rural areas, the diagnosis should be confirmed by STI, HIV and AIDS doctor of NCCD. If the mother of the infant is a citizen of Ulaanbaatar, the diagnosis confirmation and medical consultation should be provided by the STI, HIV and AIDS doctor of the respective district hospital.
- If the suspected syphilis case is detected in infants born at maternity hospitals in the city or at maternity wards of aimag hospitals, respective aimag and district STI, HIV and AIDS doctors should confirm the diagnosis and provide medical consultation.
- If a congenital syphilis diagnosis is confirmed, the attending doctor should fill out "STI reporting form–AM3" and report the case as per the STI data report flow.
- Infants who were diagnosed with congenital syphilis at maternity hospitals should be treated in the neonatal units of the same maternity hospitals. If necessary, the infants should be transferred to the pediatric units of

respective district or aimag hospitals oonly when the health condition of such infants is stabilized.

- Infants with congenital syphilis diagnosed at the maternal warts of aimag hospitals should be treated in the neonatal and pediatric units of the hospital.
- Follow-up of neonatal syphilis treatment should be carried out by family and soum health practitioners under the supervision of STI, HIV and AIDS doctors.

4.3. Gonorrhea

Gonorrhea is a sexually transmitted disease caused by *Neisseria gonorrhoeae* and it damages the genitourinary organs of men and women.

4.3.1. Cases of confirmed diagnosis:

- Manifestation of clinical signs and symptoms
- Gram-negative, oxidase positive diplococci bacteria grows in selective nutrient condition.
- *N. gonorrhoeae* bacteria is identified through polymerase chain reaction (PCR).
- Microscopy test reveals gram-negative diplococci habitant in the white cell of the specimen extracted from male urinary tract.
- If intracellular Gram-negative diplococci are detected in the swabs from the eyes of an infant, a prospective diagnosis should be done and the diagnosis should be considered as confirmed in case if culturing tests detect *N. Gonorrhoeae bacteria*.

4.3.2. Classification and clinical presentation

Latent period is 2-5 days in average.

In men, the symptoms are mainly detected through urinary tract inflammation.

- Burning, numbness and pain with urination
- Thick green and purulent discharge from urethra
- Redness and swelling of the opening of the urethra

In women, it's revealed by cervical inflammation and in majority (75%) of the infection cases it's painless and asymptomatic.

- Thick and green purulent discharge from the cervix
- Redness and swelling of the cervical mucosa

Gonococcal conjunctivitis: It occurs among adults mainly as secondary corneal manifestations as follows:

- Usually damages one of the eyes

- Conjunctiva redness, edema, eyelid irritation and difficulty in opening the eye
- Thick and green purulent discharge from the eyes

Neonatal conjunctivitis: Infects the newborn by birth and clinical symptoms manifest 2-3 days after the birth.

- Conjunctiva and eyelid redness and edema of the newborn
- Massive purulent discharge from the eyes
- Difficulty in eyelid opening and yellowish-green purulent discharge upon pressing
- Rupture in the apple of the eye, possible to cause blindness.

Gonococcal pharyngitis: In most cases (70-80%) it's asymptomatic, can have the signs below:

- Kittling throat, oral dryness, tingling sensation of tongue, lips and oral mucosa, and increased saliva secretion and bad breath
- Soft palate and red and inflamed back walls of the throat

Gonococcal proctitis: It is often asymptomatic, but may develop the following signs:

- Anal itching and anorectal pain, in rare cases
- Rectal mucus discharge and false pushes

Typical gonococcal infection: It rarely happens, it is caused by gonococci spread in the blood.

- Spotted and pustular vesicular rash on the skin
- Osteoarthritis
- Tenosynovitis
- Mostly the symptoms of septic arthritis
- In seldom cases, it may cause liver hepatitis, endocarditis and meningitis

Complications of gonococcal infection of genitourinary tract

- **In men**, prostate, testicular adnexa and sperm alveoli inflammations, urinary tract stenosis and infertility
- **In women**, pelvic inflammatory disease, chronic lower abdominal pain, infertility and ectopic pregnancy

Gonococcal infection in children

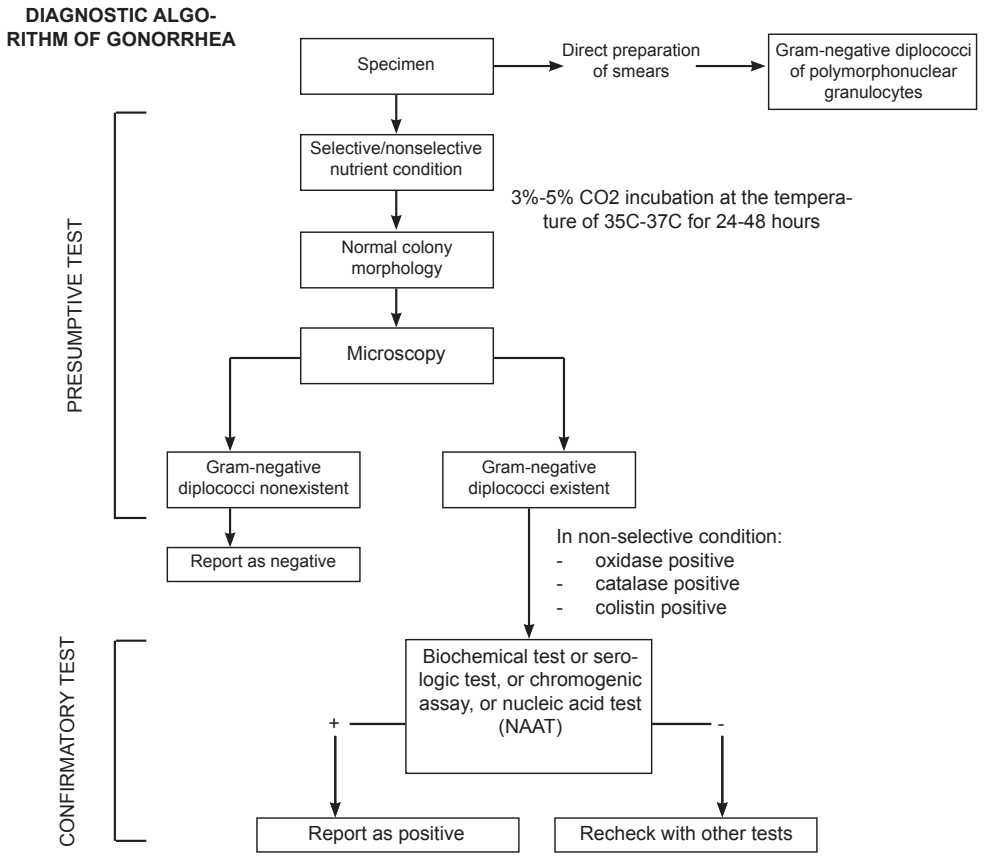
Sexual abuse is the most common cause of gonococcal infection in preadolescent children. Among sexually abused children, anorectal and pharyngeal infections with *N. gonorrhoeae* are common and usually asymptomatic. For girls, vaginitis is the most common manifestation of this infection; gonococcal-associated pelvic inflammatory disease is uncommon.

4.3.3. Diagnostics

Table 14. Diagnostics of gonorrhea

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	Syndromic approaches Gram staining analysis Rapid test
2.	Polyclinics	Gram staining analysis Rapid test Culturing specimen in selective nutrient condition Antibiotic susceptibility assessment
3.	Specialized treatment and care providing organizations	Gram staining analysis Culturing specimen in selective nutrient condition Antibiotic susceptibility assessment PCR

Figure 5. Diagnostics of gonorrhea



4.3.4. Treatment

Table 15. Treatment of uncomplicated gonorrhea

Type of disease	Doses and regimens	Combined drug treatment doses and regimens	If combined drug treatment regimen is ineffective	Remarks
Cervical, urethral, anorectal and pharyngeal gonorrhea	Ceftriaxone 250mg - a single dose intramuscular injection	Ceftriaxone 250mg - a single dose intramuscular injection PLUS Azithromycin 1gr - a single dose oral intake	Ceftriaxone 500mg - a single dose intramuscular injection PLUS Azithromycin 2gr - a single dose oral intake	Any one of the drugs should be selected.
	Cefixime 400mg - a single dose oral intake	Cefixime 400mg - a single dose oral intake PLUS Azithromycin 1gr - a single dose oral intake	Cefixime 800mg - a single dose oral intake PLUS Azithromycin 2gr - a single dose oral intake	
	Spectinomycin 2gr - a single dose intramuscular injection		Gentamicin 240mg - a single dose intramuscular injection PLUS Azithromycin 2gr - a single dose oral intake	
			In case if it's not pharyngeal gonorrhea: Spectinomycin 2gr - a single dose intramuscular PLUS Azithromycin 2gr - a single dose oral intake	

Treatment considerations: Repeated therapy should be administered in the following scenarios where the gonorrhea treatment failed:

- If it's a suspected reinfection case, the therapy should be repeated with the regimen and the patient should be advised to use condoms and his/her sexual partner should be treated as well.
- If a patient went for a treatment other than the recommended therapy and the treatment failed, he/she should be administered with repeated therapy via following the regimen.

- When there is information about resistance to drugs, if the treatment fails, a repeated therapy should be conducted with the regimen of sensitive drugs.
- Should the "single drug regimen" fail to cure the disease, a repeated therapy with "combined drugs regimen" should be administered. Before starting the repeated therapy, the patient must be screened to find out whether he/she contracted reinfection. The information about the patient's resistance to drugs must be taken into consideration (should try to determine) and the treatment with suitable regimen should be administered.

Table 16. Treatment of gonorrhea during pregnancy

Doses and regimens of treatment	Selective treatment	Remarks
Ceftriaxone 250mg - a single dose intramuscular injection	Cefixime 400mg - a single dose oral intake	Any one of the drugs should be selected.
	Cefixime 800mg - a single dose oral intake	
	Ceftriaxone 250mg - a single dose intramuscular injection PLUS Azithromycin 1gr - a single dose oral intake	
	Cefixime 400mg - 2 times of oral intake PLUS Azithromycin 1gr - a single dose oral intake	

Table 17. Treatment for gonococcal conjunctivitis

Adult conjunctivitis	Neonatal conjunctivitis	Remarks
Ceftriaxone 1gr - a single dose intramuscular injection PLUS Azithromycin 1gr - a single dose oral intake Cleansing conjunctiva with isotonic saline solution	Ceftriaxone 25-50mg/kg (<125mg) – a single dose intravenous or intramuscular injection	Any one of the drugs should be selected.
	Kanamycin 25mg/kg (<75mg) - a single dose intramuscular injection	
	Spectinomycin 25mg/kg (<75mg) - a single dose intramuscular injection	

Table 18. Neonatal prophylactic therapy of gonorrhea

<table>
<tr><th>Therapy for infants born to mothers with gonococcal infection</th><th>Prophylactic therapy of gonorrhea</th><th>Remarks</th></tr>
<tr><td>Ceftriaxone 25-50mg/kg (<125mg) – a single dose intravenous or intramuscular injection</td><td>Tetracycline hydrochloride 1%, ophthalmic ointment</td><td rowspan="5">All the newborns should be provided with any one of the topical therapies for preventing from conjunctivitis.</td></tr>
<tr><td rowspan="4">Topical therapy:
Erythromycin 0,5% ophthalmic ointment should be applied until the symptoms disappear.</td><td>Erythromycin 0.5%, ophthalmic ointment</td></tr>
<tr><td>Povidone-iodine 0.25%, solution</td></tr>
<tr><td>Silver nitrate 1%, solution</td></tr>
<tr><td>Chloramphenicol 1%, ophthalmic ointment</td></tr>
</table>

Do not touch the eye tissue while conducting the topical therapy and use only water-based solution of povidone-iodine.

Caution: Do not use alcohol-based povidone-iodine solution.

Table 19. Treatment for children infected with gonorrhea

Body weight / complication	Treatment doses and regimens
For children weighing more than 45kg	Any one of the regimens of gonorrhea treatment for adults should be selected.
For children weighing 45kg and less /uncomplicated case/	Ceftriaxone 125mg - a single dose intramuscular injection
For children weighing 45kg and less /complicated case/	Ceftriaxone 50mg/kg (<1.0gr) – a single daily intravenous or intramuscular injection for 7 days
For children weighing 45kg and more /complicated case/	Ceftriaxone 50mg/kg – a single daily intravenous or intramuscular injection for 7 days

Table 20. Treatment of complicated gonorrhea

<table>
<tr><td rowspan="2">Gonococcal epididymo-orchitis</td><td colspan="2">Ceftriaxone 250mg – a single dose intramuscular injection
COMBINED WITH
Doxycycline 100mg – orally, twice-daily for 10 days</td></tr>
<tr><td colspan="2">Scrotal support and elevation</td></tr>
<tr><td rowspan="4">Common type gonococcal infection (symptoms of arthritis and psoriatic arthritis)</td><td>Recommended therapy</td><td>Ceftriaxone 1gr – intravenous or intramuscular injection every 24 hours
PLUS
Azithromycin 1gr - a single dose oral intake</td></tr>
<tr><td rowspan="3">Alternative therapy</td><td>Cefotaxime 1gr – intravenous infusion every 8 hours
PLUS
Azithromycin 1gr - a single dose oral intake</td></tr>
<tr><td>Ceftizoxime 1gr – intravenous infusion every 8 hours
PLUS
Azithromycin 1gr - a single dose oral intake</td></tr>
<tr><td>Select any one of these treatments and administer for up to 24-48 hours after the patient starts feeling better. The treatment should be followed by Cefixime 400mg – oral administration, twice-daily for a minimum of 7 days.</td></tr>
<tr><td rowspan="2">Gonococcal meningitis and endocarditis</td><td colspan="2">Ceftriaxone 1gr-2gr - intravenous infusion every 12-24 hours
PLUS
Azithromycin 1gr - a single dose oral intake</td></tr>
<tr><td colspan="2">The treatment for meningitis should last for 10-14 days and for endocarditis it should continue for a minimum of 4 weeks.</td></tr>
<tr><td colspan="3">In case if common type gonococcal infection worsens, consultation with other specialized healthcare professionals should be undertaken and collective therapy should be administered.</td></tr>
</table>

Table 21. Treatment of pelvic inflammatory disease (PID)

<table>
<tr><th colspan="3">Recommended treatment doses and regimens</th></tr>
<tr><td>Injection therapy regimen A</td><td>Injection therapy regimen B</td><td>Intramuscular injection and oral administration regimen</td></tr>
<tr><td rowspan="3">Cefotetan 2gr - intravenous infusion every 12 hours
OR
Cefoxitin 2gr - intravenous infusion every 6 hours
COMBINED WITH
Doxycycline 100mg – twice-daily oral administration or intravenous injection every 12 hours</td><td rowspan="3">Clindamycin 900mg -intravenous infusion every 8 hours
COMBINED WITH
Gentamicin -intravenous or intramuscular injection with a loading dose (2mg/kg of body weight), followed by a maintenance dose (1.5mg/kg of body weight) every 8 hours;
OR
a single daily dose (3-5 mg/kg of body weight) injection</td><td>Ceftriaxone 250mg – a single dose intramuscular injection
COMBINED WITH
Doxycycline 100mg – orally, twice-daily for 14 days;
Metronidazole 500mg – orally, twice-daily for 14 days</td></tr>
<tr><td>Cefoxitin 2gr – a single dose intramuscular injection and Probenecid 1gr –a single dose oral administration
COMBINED WITH
Doxycycline 100mg – orally, twice-daily for 14 days;
Metronidazole 500mg – orally, twice-daily for 14 days</td></tr>
<tr><td>Intravenous infusion of other antibiotics of the 3rd generation cephalosporins (i.e. ceftizoxime cefotaxime)
COMBINED WITH
Doxycycline 100 mg – orally, twice-daily for 14 days;
Metronidazole 500mg – orally, twice-daily for 14 days</td></tr>
<tr><td colspan="3">Alternative therapy</td></tr>
<tr><td colspan="3">Ampicillin/Sulbaktam 3gr - intravenous injection every 6 hours
COMBINED WITH
Doxycycline 100мg - oral administration or intravenous injection every 12 hours</td></tr>
</table>

Treatment considerations:

Injection treatment regimens A and B:

The injection treatment should be stopped 24-48 hours after the observation of clinical improvement and stabilization and be replaced with oral administration. The treatment should be followed by Doxycycline 100mg orally, twice-daily OR Clindamycin 450mg orally 4 times a day until the end of the entire treatment period of 14 days. Patients with fallopian tube-ovarian abscess should be treated with Clindamycin.

Oral administration regimen:

In case no improvement in the patient's health condition has been observed within 72 hours since the start of the oral administration, the patient should be examined again and given shifted to the injection regimen. A lack of adherence to treatment has a negative impact on the effectiveness of Erythromycin, Doxycycline and Metronidazole treatment regimens, which take many days. In order to avoid such circumstances, it's recommended to use single-dose and/or short-term regimens.

4.4. Genitourinary chlamidial infection

Genitourinary chlamydial infection is a sexually transmitted disease caused by *Chlamydia trachomatis (serovars D-K*). It damages mucous membranes of genital and urinary tract organs and systems.

4.4.1. Cases of confirmed diagnosis

- Manifestation of cclinical symptoms of the disease
- Direct fluorescent treponemal antibody absorption test /FTA-abs/ identified *C.trachomatis* in the endocervical specimen
- *C.trachomatis* is detected either by ELISA or PCR
- In case if gonococcal infection is diagnosed at a site where it's impossible to conduct tests, combined treatment for genitourinary chlamydial infection should be initiated.

4.4.2. Classification and clinical presentation

Latency period: 10-15 days

In men, it's detected with urinary tract infection. In most cases, the infection is asymptomatic and imperceptible (25%). The following signs may be noted:

- Urethral numbness and itching and painful urination
- Slightly mucinous and mucinous-purulent urethral discharge

In women, it's detected with cervicitis, but in most cases the infection is asymptomatic and imperceptible (70%). The following signs may be noted:

- Pruritus vulva (vulval itch) and Dyspareunia
- Lower abdominal pain
- Cervical redness and swelling, and slightly mucinous-purulent vaginal discharge

Adult conjunctivitis

- Conjunctiva redness and edema, lacrimation and difficulty in eyelid opening
- Mucinous-purulent discharge from the eye

Neonatal conjunctivitis

- Symptoms manifest in 5-12 days after birth
- Redness and edema of the infant's conjunctiva and eyelid, lacrimation and mucinous-purulent discharge from the eye

Chlamydial neonatal pneumonia

- Infection is detected in 4-12 weeks after birth.
- Dry cough followed by sputum production
- Dyspnea and tachypnea. No fever, but in rare cases wet wheezing is heard.

Pharyngeal chlamydia

- In most cases (70-80%) it is asymptomatic.
- Tickling sensation in the throat, difficulty in swallowing and dry cough

Chlamydial proctitis

- It is usually asymptomatic.
- Clinical symptoms are more imperceptible than those of gonococcal proctitis
- Occasional pain in the rectum and mucinous rectal discharge

Complications of genitourinary chlamydial infection

- **In women**, pelvic inflammatory disease, chronic pelvic and lower abdominal pain, ectopic pregnancy and infertility
- **In men**, prostate, testicular adnexa and sperm alveoli inflammation and infertility

4.4.3. Diagnostics

Table 22. Diagnostics of chlamydial infection

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	Syndromic approach Rapid test
2.	Polyclinics	Rapid test
3.	Specialized treatment and care providing organizations	Immunoferment determination method PCR

4.4.4. Treatment

Table 23. Treatment of genitourinary chlamydial infection

Treatment	Doses and regimens		Adults	Children	Pregnant women
Recommended treatment	Doxycycline 100mg – orally, twice-daily for 7 days		√		
	Azithromycin 1gr – a single dose oral administration		√		√
	Amoxicillin 500mg – orally 3 times a day for 7 days				√
	Erythromycin				
	For children weighing less than 45kg	Erythromycin		√	
		Erythromycin ethylsuccinate, the daily dose of ¼ of 50mg/kg/day is orally taken for 14 days		√	
	For children of the age below 8 who weigh 45kg and more: Azithromycin 1gr – a single dose oral administration			√	
	Children of the age 8 and above	Azithromycin 1gr – a single dose oral administration		√	
		Doxycycline 100mg – orally, twice-daily for 7 days		√	
Alternative treatment	Erythromycin 500mg – orally 4 times a day for 7 days		√		√
	Erythromycin ethylsuccinate 800mg – orally 4 times a day for 7 days		√		√
	Erythromycin 250mg – orally 4 times a day for 14 days				√
	Erythromycin ethylsuccinate 400mg – orally 4 times a day for 14 days				√
	Josamycin 500mg – orally 3 times a day for 7-10 days		√		√
	Levofloxacin 500mg – once-daily dose for 7 days		√		
	Ofloxacin 300mg - twice-daily for 7 days		√		

Table 24. Treatment for neonatal conjunctivitis

Treatment doses and regimens	Doses and regimens of selective treatment	Doses and regimens of prophylactic topical therapy	Remarks
Erythromycin ethylsuccinate, the daily dose of ¼ of 50mg/kg is orally taken for 14 days* PLUS Erythromycin 0.5%, o*phthalmic ointment* is applied to the eyelids.	Azithromycin suspension, once-daily dose of 20mg/kg for 3 days	Tetracycline hydrochloride 1%, o*phthalmic ointment; Erythromycin* 0.5%, o*phthalmic ointment*; *Povidone-iodine 0.25%,* solution; Silver nitrate 1%, solution; Chloramphenicol 1%, o*phthalmic ointment*	Any one of the drugs should be selected.

Treatment considerations:

- The eye tissue shouldn't be touched while conducting the topical therapy and only water-based solution of povidone-iodine should be used.
- Alcohol-based povidone-iodine solution shouldn't be used.
- Oral erythromycin treatment for infants aged below 6 weeks should be carefully instituted.
- Partial treatment with antibiotics alone is ineffective. The use of Doxycycline, Ofloxacin and Levofloxacin is forbidden during pregnancy.

4.5. Trichomoniasis

Trichomoniasis is a genitourinary tract infection caused by the pathogen *Trichomonas vaginalis*.

4.5.1. Cases of confirmed diagnosis

- Manifestation of clinical symptoms
- Identification of *T.vaginalis* through wet mount testing of the specimen extracted from the posterior mesh of the vagina
- Growth of *T.vaginalis* via culturing in selective nutrient condition
- The specimen preparation was tested *T.vaginalis* positive via PCR

4.5.2. Clinical presentation

Latency period: 5-15 days

In women:

- Vaginal itch and tickling sensation
- Large amount of yellow-green frothy vaginal discharge
- Redness and inflammation on vulva and inner thighs, besides excessive vaginal discharge

- Redness, scrapes and punctate strokes on vagina and cervix being identified through vaginal inspection with speculum

In men:

- Asymptomatic in most of the times
- Urethritis symptoms such as abnormally frequent urination and itching, pain and burning during urination etc. in rare cases

4.5.3. Diagnostics

Table 25. Diagnostics of Trichomoniasis

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	Wet mount test
2.	Polyclinics	Wet mount test Culturing in selective nutrient condition
3.	Specialized treatment and care providing organizations	Wet mount test Culturing in selective nutrient condition PCR

4.5.4. Treatment

Table 26. Treatment of Trichomoniasis

Treatment	Doses and regimens	Adults	Pregnant women	Remarks
Recommended therapy	Metronidazole 500mg – orally, twice-daily for 7 days*	√	√	Oral Metronidazole treatment is not allowed in the first trimester of pregnancy.
	Tinidazole 2gr – a single dose oral administration	√		
Alternative therapy	Metronidazole 2gr – a single dose oral administration	√		
Any one of the treatments above should be selected.				

Treatment considerations:

- Alcohol consumption is banned during Metronidazole and Tinidazole treatment.
- In case if a breastfeeding mother needs to use Metronidazole, she should avoid breastfeeding her child over the course of the treatment and within 12-24 hours after taking the last dose of the drug. If she used Tinidazole, she shouldn't breastfeed her child for 3 days after the drug administration.
- If the treatment is ineffective while the patient hasn't contracted reinfection, tests should be conducted to identify whether T.vaginalis has developed any strains resistant to Metronidazole and Tinidazole.

4.6. Genitourinary candidiasis

Genitourinary candidiasis is a sexually transmitted infection, which is caused by yeast-like fungus of Candida group. It's has a chronic process of damaging mucous membranes of genital and urinary tract systems and a relapsed infection.

4.6.1. Cases of confirmed diagnosis

- Manifestation of clinical symptoms
- Wet mount and Gram staining tests detect false micelles
- Yeast-like fungus of Candida is detected via culturing in the Saburo's nutrient condition

4.6.2. Classification and clinical presentation

- Complicated form
- Uncomplicated form
- Recurrent form

In women

- Strong itch and burning of genitals
- Redness and irritation on labia majora and labia minora
- Large amount of thick, white and cheesy type vaginal discharge
- Redness and swelling, and punctate erosions on the vaginal mucosa

In men

- Irritations with tickles and itches
- Redness, small blistered rash and grayish-white coating on the glans and foreskin

4.6.3. Diagnostics

Table 27. Diagnostics of genitourinary candidiasis

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	Wet mount test Gram staining
2.	Polyclinics	Wet mount test Gram staining Culturing in selective nutrient condition
3.	Specialized treatment and care providing organizations	Wet mount test Gram staining Culturing in selective nutrient condition PCR

4.6.4. Treatment

Table 28. Treatment of genitourinary candidiasis

Adult treatment	Doses and regimens	Remarks
Uncomplicated form	- Flukonazole 150mg – a single dose oral intake *Topical therapy:* - Clotrimazole 1% vaginal cream, for 7-14 days - Clotrimazole 2% vaginal cream - for 3 days - Natamycin 2% cream - apply for 5-7 days - Clotrimazole 100mg vaginal tablets – for 7 days - Clotrimazole 500mg vaginal tablets - a single dose - Natamycin 100mg vaginal tablets - for 6 days - Miconazole 100mg vaginal tablets – for 7 days - Miconazole 200mg vaginal tablets - for 3 days - Miconazole 2% vaginal cream – for 7 days - Miconazole 4% vaginal cream – for 3 days	Any one of these therapies should be selected.
Recurrent form	- Flukonazole 150mg – oral intake once in every 3 days, a total of 3 doses - Topical therapy for 7-14 days	-
Complicated form	- Flukonazole 150mg – oral intake once in every 3 days, a total of 3 doses - Topical therapy for 10-14 days	-

Treatment considerations:

- For a woman who's on corticosteroid therapy or with uncontrolled diabetes, short-term treatment is mostly ineffective. Hence, the duration of her treatment against candidiasis should be prolonged for up to 7-14 days.
- During pregnancy, only a topical therapy is administered.
- In case if sexual partners don't have clinical symptoms, it's unnecessary to treat them together with the patient.

4.7. Bacterial vaginosis

Bacterial vaginosis is a vaginal inflammatory disease caused by the imbalance of vaginal bacteria, the dramatically reduced amount of *Lactobacillus* and the increased amount of anaerobic bacteria.

4.7.1. Cases of confirmed diagnosis

The Amsel and Nugent criteria should be used for diagnosing bacterial vaginosis.

Amsel criteria:

- White-colored homogeneous discharge, which smoothly coats the vaginal epithelium

- Vaginal fluid pH >4.5
- Positive whiff test
- Presence of “clue cells” on microscopy

Nugent criteria:

It assesses the ratio between the vaginal lactic acid-producing bacteria and the anaerobic bacteria and scores them with points. The bacteria elements listed in the table below (see Table 29) are counted on the microscopy fields and graded by the average scores and the scores of each element are summed up.

Table 29. Nugent criteria and scores

Elements	Quantity	Scores
A. *Lactobacillus*	>30 5-30 1-4 <1 0	0 1 2 3 4
B. *Gardnerella/Bacteroides*	>30 5-30 1-4 <1 0	4 3 2 1 0
C.*Mobiluncus*	>4 1-4 0	2 1 0

In observing and assessing the vaginal discharge (smear) the scores of the elements A,B and C should be listed and the final scores of the Nugent criteria should be calculated as follows:

Normal = 0-3
Indeterminate = 4-6 (should be tested again after a month)
Nonspecific vaginitis = 7-10

4.7.2. Clinical presentation

- White-colored, foul-smelling, homogeneous discharge smoothly coats the vaginal epithelium.
- Bacterial vaginosis may cause pregnancy complications such as water breaking in early pregnancy, miscarriage, fetal infection and postnatal cervicitis, etc.

4.7.3. Diagnostics

Table 30. Diagnostics of bacterial vaginosis

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	Wet mount test Gram stain analysis Nugent criteria
2.	Polyclinics	Wet mount test Gram stain analysis Nugent criteria Culturing in selective nutrient condition
3.	Specialized treatment and care providing organizations	Wet mount test Gram stain analysis Nugent criteria Culturing in selective nutrient condition PCR

The diagnosis of bacterial vaginosis should be performed through assessment of clinical and Nugent criteria or Gram staining of vaginal smear. Where it's impossible to use the Gram stain method, the following clinical criteria should be used:

- Thin, white, sticky and homogeneous discharge
- Presence of clue cells on microscopy
- Vaginal fluid pH >4,5
- Positive whiff test (release of a fishy odor on adding alkali—10% potassium hydroxide (KOH) solution)

If any three of these four criteria are present, the results should be compared to the result of the Gram staining analysis.

4.7.4. Treatment

Table 31. Treatment of bacterial vaginosis

Treatment	Doses and regimens	Adults	Pregnant women	Remarks
Recommended treatment	Metronidazole 500mg, twice-daily oral intake for 7 days*	√	√ Forbidden during the first trimester of pregnancy	Any one of these treatments should be selected.
	Clindamycin 2% vaginal cream -applied into the vagina for 7 days	√		
Alternative treatment	Tinidazole 2.0gr, once-daily oral intake for 2 days Tinidazole 1.0gr, once-daily oral intake for 5 days Clindamycin 100mg vaginal tablets - inserted into the vagina once a day for 3 days	√		
	Clindamycin 300mg, twice-daily oral intake for 7 days	√	√	

Treatment considerations:

- Alcohol consumption should be avoided during the entire course of the treatment and within 24 hours after the treatment.
- If sexual partners don't have clinical symptoms, it's unnecessary to treat them.
- Treatment regimen for pregnant women: Metronidazole 500mg, oral intake, twice-daily for 7 days.

Follow-up: If the treatment was fully conducted in compliance with the regimen, follow-up is not required. Because the recurrent bacterial vaginosis is very common, patients should be advised to come again, in case if the symptoms recur.

4.8. Genitourinary mycoplasma

Genitourinary mycoplasma is a sexually transmitted infection caused by a pathogen *M.genitalium*.

4.8.1. Cases of confirmed diagnosis

- Manifestation of clinical symptoms
- Presence of *M.genitalium* detected through laboratory tests

Clinical presentation:

Latency period: 3 days to 3-5 weeks in average

In men:

It's usually asymptomatic. The following major signs may be noted:

- During acute phase, tickling and burning in the urethra and its opening
- Redness and swelling in the urethra and discharge
- During sub-acute and imperceptible phase, slight itch and tickling, and burning sensations

In women:

The following major signs may be noted:

- Symptoms of Vaginitis and Bartholinitis occur
- Manifestation of Endometritis symptoms, irregular menstrual cycle and prolonged menstrual duration, which lead to bleeding
- Initiation of pelvic inflammatory disease via combining with other pathogens

4.8.2. Diagnostics

- PCR

4.8.3. Treatment

Table 32. Treatment of genitourinary mycoplasma

Treatment	Doses and regimens	Adults	Pregnant women	Children who weigh less than 45kg
Recommended treatment	Doxycycline 100mg – twice-daily oral intake for 7 days	√		
	Azithromycin 1gr – a single dose oral intake Or Azithromycin 250mg once-daily oral intake for 4 days			
	Josamycin 500mg – oral intake 3 times a day for 10 days	√	√	
	Josamycin 50mg/kg/day - dose divided into three equal parts and orally taken for 10 days			√
Alternative treatment	Levofloxacin 500mg – once-daily oral intake for 10 days	√		
	Ofloxacin 400mg – twice-daily oral intake for 10 days	√		
Any one of the treatments should be selected.				

4.9. Genital herpes

Genital herpes is a chronic viral infection, which is caused by subtype 2 of simple herpes virus *(Herpes simplex virus=HSV*) and it tends to recur.

4.9.1. Cases of confirmed diagnosis

Although genital herpes is diagnosed with various laboratory testing methods, in practice it's diagnosed on the basis of clinical symptoms.

4.9.2. Classification and clinical presentation

Latency period: 2-21 days with an average of 2-7 days

Signs and symptoms:

- Tickling and burning sensations and itch on the genital organs
- Onset of blistered rash in a group placed on reddened bases around the genital organs

First episode:

- In the preliminary phase of the infection, only a certain part of the body or organ has itches, pain or burning sensations.
- Fatigue, headache, fever and muscle pain
- Onset of blistered rash in a group and sores placed on reddened bases and areas around the genital organs

Recurrent episode:

- Onset of only a few blistered rash in a group on reddened bases and abrasions develop
- During frequent recurrences clinical manifestations are simple, but the infection may cause psychological discomfort, deterioration of normal sexual life and impotence.

Asymptomatic episode:

Infection can be diagnosed only with laboratory tests.

Complicated episode:

Disseminated infection, pneumonia, hepatitis and central nervous system complications such as mmeningoencephalitis can occur.

4.9.3. Diagnostics

Table 33. Diagnostics of genital herpes

No.	Healthcare settings	Tests
1.	Family, soum and village health centres	- Syndromic approach of diagnosis - Clinical symptoms based diagnostics
2.	Polyclinics	
3.	Specialized treatment and care providing organizations	- Clinical symptoms based diagnostics - PCR - ELISA

Genital herpes is usually diagnosed on the basis of the clinical symptoms and the specimen collected from the blisters, lesions and abrasions on the genital skin and mucosa are analyzed with PCR and type-specific serologic testing methods.

Type-specific and nonspecific antibodies to HSV often develop during the first several weeks of infection. The HSV serologic testing method is based on the detection of type-specific glycoprotein of HSV.

Type-specific assays for HSV antibodies should use the HSV-specific glycoprotein G2 for HSV-2 and glycoprotein G1 for HSV-1. The rate of sensitivity of such tests to detect glycoprotein G for HSV is 80-98%. The tests often give false negative results during the early stages of the disease. Specificity of the tests is 96% ≥.

If it's been a while since the sores have occurred, specimen culturing test is non-sensitive. Hence, PCR analysis should be conducted.

4.9.4. Treatment

Table 34. Treatment of genital herpes

<table>
<tr><th>Disease episodes</th><th>Doses and regimens of adult treatment</th><th>Doses and regimens of infant treatment</th></tr>
<tr><td rowspan="4">Treatment for the first episode of genital herpes</td><td>Acyclovir 400mg – oral intake, 3 times a day for 7-10 days</td><td rowspan="17">- Risk of mother-to-child transmission of HSV infection at late stage pregnancy is high. Thus, the infant must be treated with acyclovir.

- Acyclovir intravenous infusion with a dosage of 20mg/kg of body weight –every 8 hours should be administered.

- If it’s only skin rash, the treatment should last for 14 days.

- If any disorder of the diffuse and the central nervous systems is detected, the treatment should last for 21 days.</td></tr>
<tr><td>Acyclovir 200mg – oral intake, 5 times a day for 7-10 days</td></tr>
<tr><td>Valacyclovir 1gr – twice-daily oral intake, for 7-10 days</td></tr>
<tr><td>Famciclovir 250mg – twice-daily oral intake, for 7-10 days</td></tr>
<tr><td rowspan="8">Treatment for the recurrent episode of genital herpes</td><td>Acyclovir 400mg – oral intake, 3 times a day, for 5 days</td></tr>
<tr><td>Acyclovir 800mg – twice-daily oral intake, for 5 days</td></tr>
<tr><td>Acyclovir 800mg – oral intake, 3 times a day, for 2 days</td></tr>
<tr><td>Valacyclovir 500mg - twice-daily oral intake, for 3 days</td></tr>
<tr><td>Valacyclovir 1gr – once-daily oral intake for 5 days</td></tr>
<tr><td>Famciclovir 125mg – twice-daily oral intake, for 5 days</td></tr>
<tr><td>Famciclovir 1gr - twice-daily oral intake, for 1 day</td></tr>
<tr><td>Famciclovir 500mg – once-daily dose for 1 day followed by 250mg – twice-daily oral intake for 2 days</td></tr>
<tr><td rowspan="5">Long-term ttreatment for the recurrent episode of genital herpes</td><td>Acyclovir 400mg - twice-daily oral intake</td></tr>
<tr><td>Valacyclovir 500mg - once-daily oral intake</td></tr>
<tr><td>Valacyclovir 1gr – once-daily oral intake</td></tr>
<tr><td>Famciclovir 250mg – twice-daily oral intake</td></tr>
<tr><td>Note: The treatment above should be administered only if the episode recurs more than 6 times a year. The treatment has been proven to be effective and safe for daily administration for a period of one year and longer.</td></tr>
<tr><td>Complicated episode of genital herpes</td><td colspan="2">Administration of Acyclovir 5-10 mg/kg, intravenous infusion 3 times a day for 2-7 days until the patient feels better and the treatment should be followed by antiviral drugs. The entire period of the treatment should be ≥10 days.
For Herpes Simplex Encephalitis, the entire course of the intravenous infusion treatment should take 21 days.</td></tr>
<tr><td colspan="3">Any one of the treatments above should be selected.</td></tr>
</table>

Treatment of genital herpes during pregnancy

A. Treatment regimen for the first and recurrent episodes of genital herpes in pregnant women: oral administration of Acyclovir following the regimen for adults, and if it's a complicated episode the treatment should be administered in the form of intravenous infusion.

B. Treatment regimen for prevention of the recurrence of genital herpes during pregnancy*

Acyclovir 400mg - oral intake, three times a day or Valacyclovir 500mg - oral intake, twice-daily

*Recommendation for starting the treatment from the 36th week of pregnancy should be given.

The treatment should be combined with topical treatment of externally applied ointment.

Treatment for genital herpes coinfected with HIV

Associated with reduced systemic immune activation, HIV infected persons often have more severe HSV with greater pain, long-lasting lesions and/or unclear signs and symptoms.

A. *Long-term treatment regimen for HIV infected persons with HSV:*

Acyclovir 400mg-800mg - oral intake, 2-3 times a day

Or

Valacyclovir 500mg - oral intake, twice-daily

Or

Famciclovir 500mg – oral intake, twice-daily

B. Regimen of treatment for reactivation of HSV in HIV infected persons:

Acyclovir 400mg - oral intake, 3 times a day for 5-10 days

Or

Valacyclovir 1gr - oral intake, twice-daily for 5-10 days

Or

Famciclovir 500mg – oral intake, twice-daily for 5-10 days

The treatment should be combined with externally applied topical ointment.

Treatment considerations*:*

- Pregnant women infected with genital herpes should be prescribed with oral intake of Acyclovir and in case of complicated episode the treatment should be administered in the form of intravenous infusion.
- In every episode of genital herpes, topical Acyclovir 5% ointment should be thinly applied 3-5 times a day.

4.10. Genital warts

Genital warts is an STI caused by *Human papilloma virus*. It's identified by the symptom of bumps and polyps grown on the genital and rectal areas.

4.10.1. Cases of confirmed diagnosis

Genital warts is diagnosed with the use of laboratory testing methods, but in practice it's often done on the basis of the clinical symptoms.

4.10.2. Clinical presentation

Latency period: 3-8 months

Signs and symptoms:

- It's asymptomatic in most cases.
- Manifestation of symptoms such as pain and itches, which vary depending on the size and location of the genital warts
- Onset of dull-pink to bright-red colored, narrow-based and chicken comb or cauliflower-like polypous rash on the genital and rectal areas.

4.10.3. Diagnostics

Table 35. Diagnostics of genital warts

No.	Healthcare settings	Tests
1.	Family and soum health centres	- Clinical symptoms based diagnostics
2.	Polyclinics	
3.	Specialized treatment and care providing organizations	- Clinical symptoms based diagnostics - PCR

Genital warts is usually diagnosed on the basis of the clinical symptoms and confirmed by PCR analysis. Histological analysis should be conducted, in case if the diagnosis is doubtful or the treatment is ineffective, or the patient is immunosuppressed, or the warts are pigmented, hardened, swollen or ulcerated and bleeding.

4.10.4. Treatment

The surgical interventions should be conducted at the surgery department of the respective jurisdiction hospital, whereas children should be shifted to the pediatric

surgery department and pregnant women to the pregnancy care and delivery unit of the jurisdiction hospital, in order to conduct the surgical interventions.

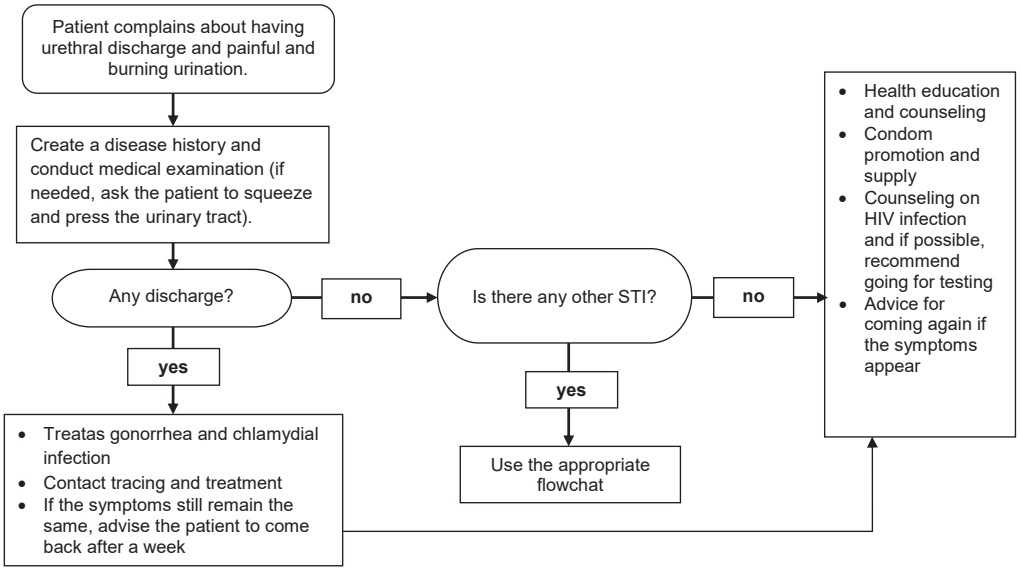
Table 36. Treatment of genital warts

External genital warts in the perigenital region	***Treatment self-administered by Patients:*** Podofilox gel or 0.5% solution: Apply the gel with fingers or the solution with cotton buds onto the genital warts, twice daily for 3 days. The treatment should stop during the 4th-7th day. The treatment can be repeated up to 4 times until the warts completely disappear; OR Imiquimod 5% cream: Should be applied once-daily before going to bed. The regimen is 3 times a week for up to 16 weeks. The cream applied areas should be washed with soap and water after 8-10 hours; OR Sinecatechins 15% ointment: This is catechine containing extract of green tea leaves. The ointment could be applied until the warts disappear, but shouldn't be used for longer than 16 weeks.
	Healthcare provider-administered treatment method: Cryotherapy: Freezing solution should be applied every week; OR Podophyllin resin 10-25% mixed with benzoin tincture: Apply a small amount to the genital warts and let them air dry. If the warts don't disappear, repeat the procedure every week. Avoid infiltration into the healthy skin and membranes surrounding the warts. Podophyllin shouldn't be used during pregnancy; OR 3 chloroacetic acid (3CA)- Trichloroacetic acid (TCA); OR 2 chloroacetic acid (2CA)- Bichloroacetic acid (BCA) 80-90%. Apply to the genital warts until the skin turns white and let them air dry. If necessary, repeat the procedure every week; OR Warts can be removed with surgical interventions Warts can be electrically burned (electrocoagulation). The surgical interventions are more suitable for removing warts in large size and quantity.
Vaginal warts	Trichloroacetic acid (TCA); OR Bichloroacetic acid (BCA) 80-90%. *(Cryotherapy* with liquid nitrogen is not recommended for treatment because of the risk for *vaginal perforation* and *fistula* formation.)
Urethral warts	Surgical interventions; OR *Cryotherapy* with liquid nitrogen; OR Podophyllin resin 10-25% mixed with benzoin tincture Consultation with specialized doctors should be held before removing the warts with surgical intervention
Rectal warts	Surgical interventions; OR *Cryotherapy* with liquid nitrogen; OR 3 chloroacetic acid (3CA); OR 2 chloroacetic acid (2CA) 80-90% Consultation with specialized doctors should be held before removing the warts with surgical intervention
Oral warts	*Cryotherapy* with liquid nitrogen should be administered; OR Surgical interventions

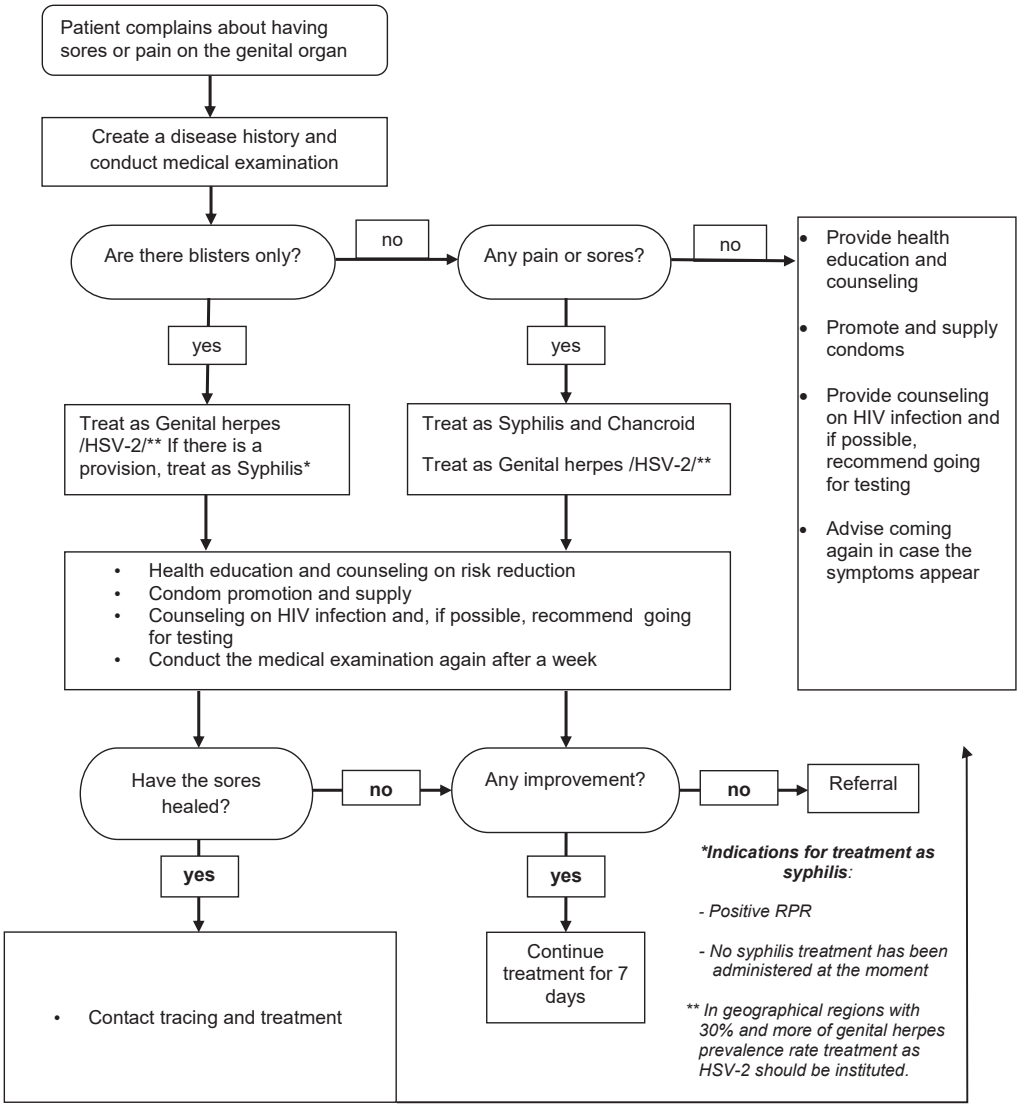
4.11. STI syndromic management

STI syndromic management is a comprehensive approach of diagnostics and treatment of STIs based on the key clinical symptoms and pain experienced by patients. This approach is mainly used at family, soum and village health centres and under circumstances when laboratory tests can't be conducted.

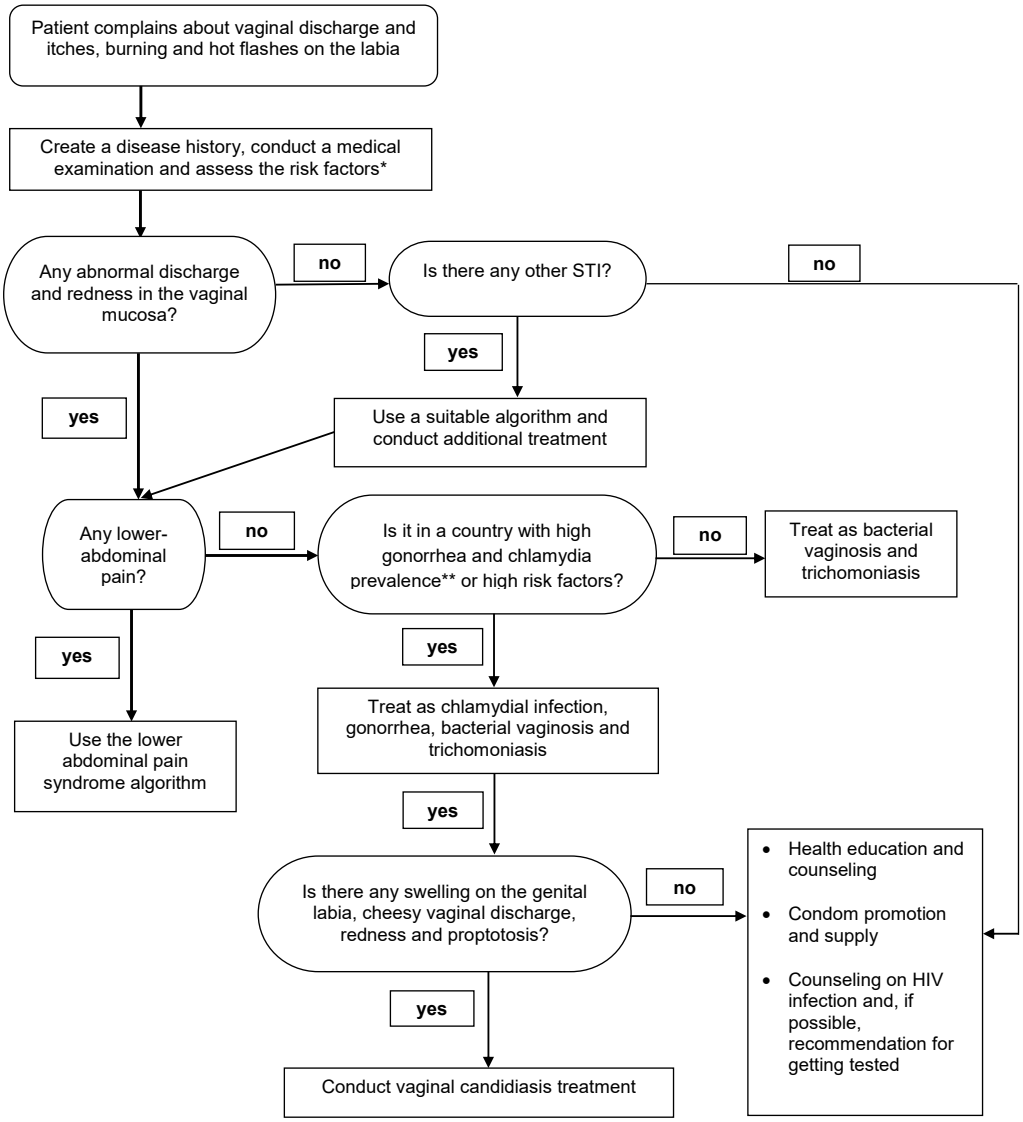
4.11.1. Figure 6. Flowchat of Urethral discharge syndrome



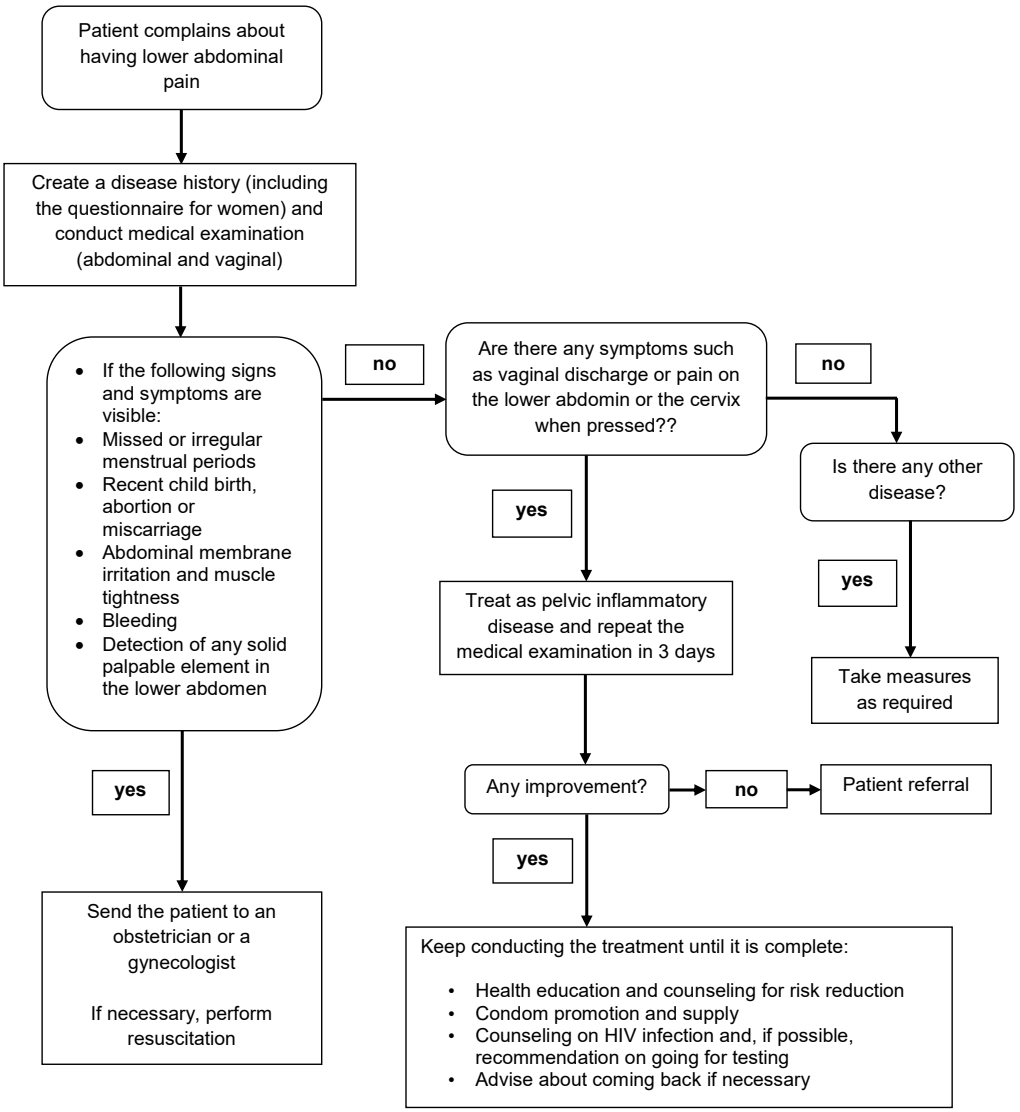
4.11.2. Figure 7. Flowchat of Genital sores syndrome



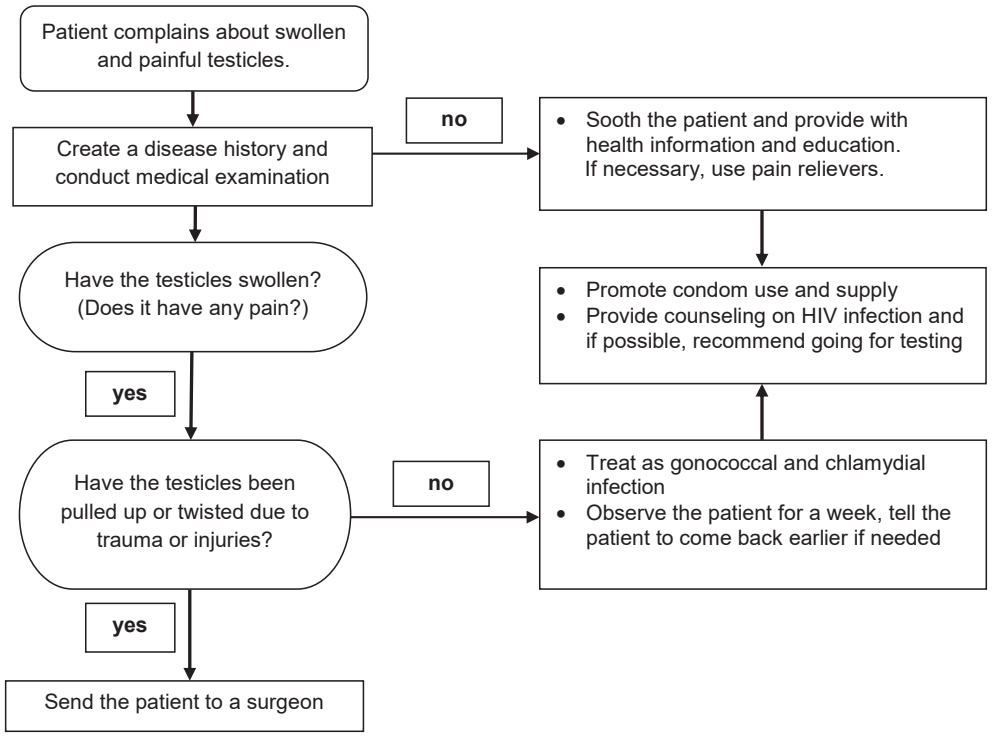
4.11.3. Figure 8. Flowchat of Vaginal discharge syndrome



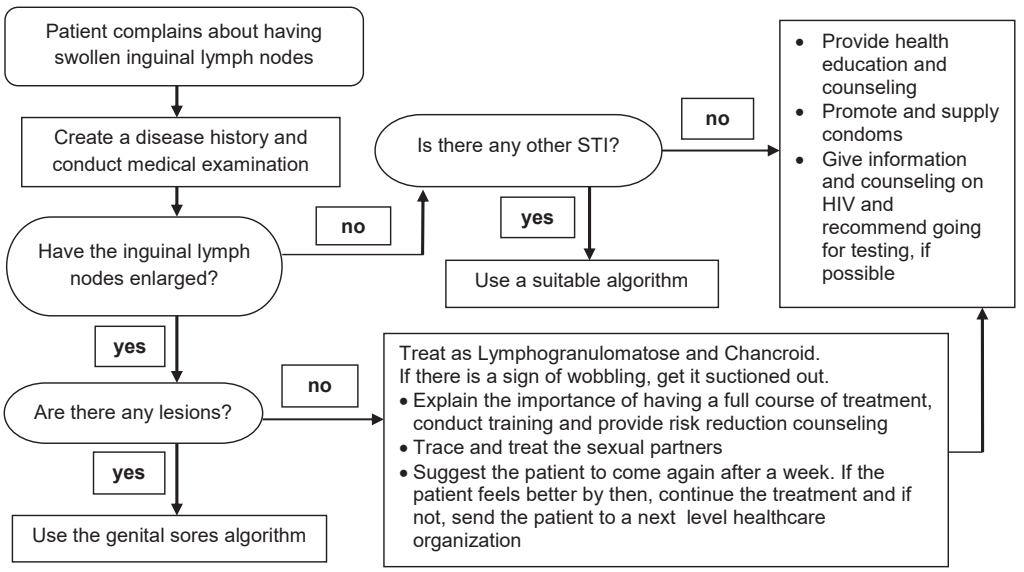
4.11.4. Figure 9. Flowchat of Lower abdominal pain syndrome



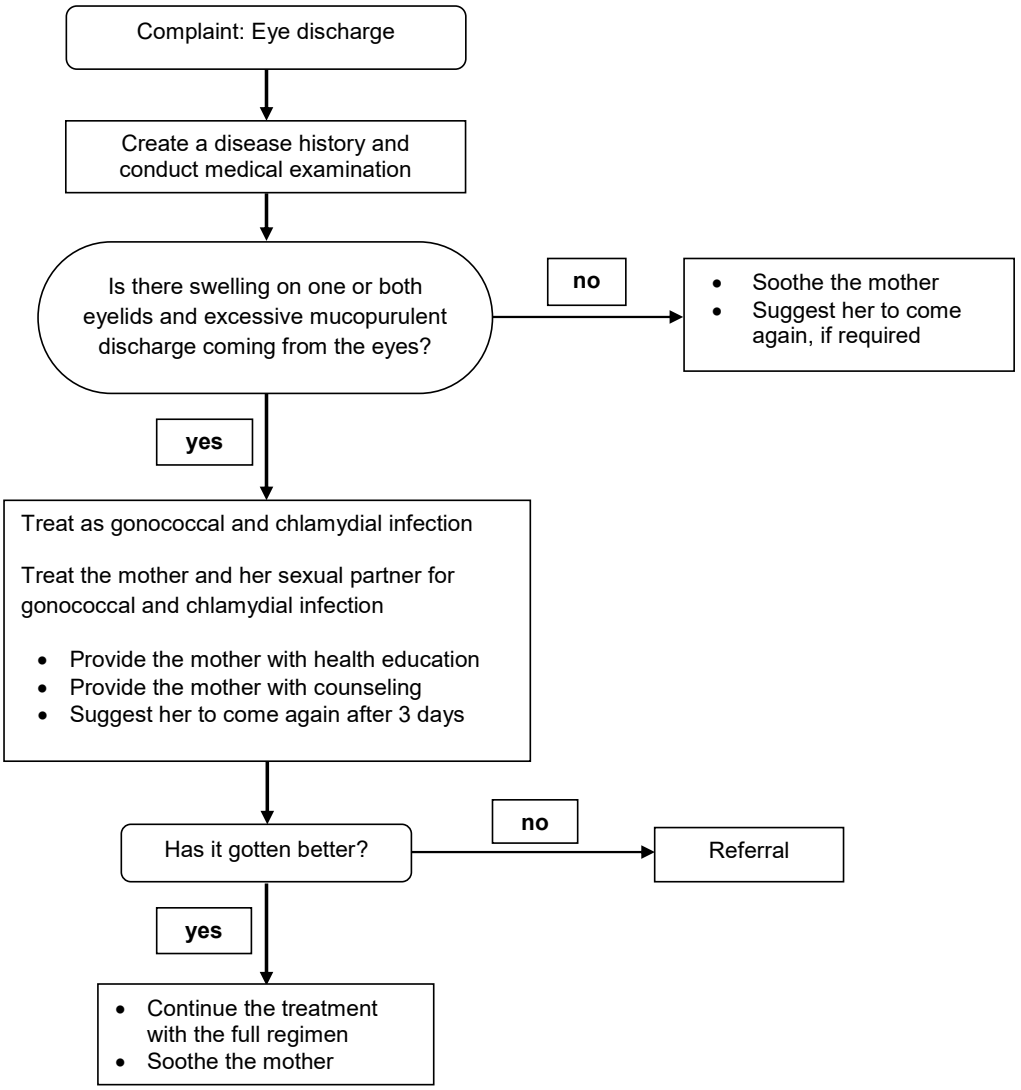
4.11.5. Figure 10. Flowchat of Testicular swelling syndrome



4.11.6. Figure 11. Flowchat of Swollen inguinal lymph nodes syndrome



4.11.7. Figure 12. Flowchat of Neonatal conjunctivitis syndrome



CONSIDERATIONS FOR THE USAGE OF SYNDROMIC MANAGEMENT APPROACHES IN STI DIAGNOSTICS AND TREATMENT:

Urethral discharge syndrome

Men who have urethral discharge should be treated for gonorrhea and chlamydia. The same treatment should be provided to their sexual partners.

Vaginal discharge syndrome

Women with vaginal discharge should be treated for vaginal infection (bacterial vaginosis and trichomoniasis).

If the symptoms of candidiasis occur, treatment for candidiasis should be administered.

Because it's difficult to distinguish between the vaginal and the cervical infections, the following questions should be asked from the clients, in order to assess their risks and to choose the appropriate treatment:

- If the client is aged below 21
- If the client is unmarried
- If she had multiple sexual partners during the last 3 months
- If she had a new sexual partner during the last 3 months
- If her current sexual partner is infected with STI

If the client answers "Yes" to any of the questions above, she should be treated for both bacterial vaginosis and cervicitis together. If the answer is "No" to all the questions, the treatment should be instituted only for bacterial vaginosis.

Main cause of cervicitis is contraction of gonorrhea and chlamydia. Hence, if the patient is diagnosed with cervicitis, treatment of these diseases should also be concurrently administered.

Lower abdominal pain syndrome

Main causes of pelvic inflammatory disease are N.gonorrhoeae, C.trachomatis and anaerobic bacteria. Thus, treatment against these pathogens should be administered at the same time.

Considerations:

If the patient who's been diagnosed with pelvic inflammatory disease doesn't feel any better within 72 hours from the start of ambulatory treatment (24 hours, if the patient has a fever), the patient should be sent to a specialized clinician.

Genital sores syndrome

Patients with sores on the genital organs should be treated for syphilis and chancroid.

Testicular swelling syndrome

When infected with testicular adnexa inflammation, the main signs and symptoms are testicular pain and swelling, which are often complications of infection caused by *Neisseria gonorrhoeae* and *Chlamydia trachomatis.* Hence, a combination treatment of gonorrhea and chlamydia should be instituted concurrently.

Inguinal lymph nodes swelling syndrome

In case if the inguinal lymph nodes are enlarged, the patient should be treated for limfogranulomatoza and chancroid together.

In most cases of chancroid, the sores on the genitals are visible. Thus, in such cases, the treatment can be instituted using the genital sores syndrome treatment algorithm.

Neonatal conjunctivitis syndrome

Neonatal conjunctivitis is mainly caused by gonococcal and chlamydial infections. Hence the treatment administered should be against these infections.

Infection of conjunctivitis in children aged above 1 month is usually caused by non-STI-related pathogens.

CHAPTER 5. POST-TREATMENT FOLLOW-UP

Table 37. Follow-up care after STI treatment

No.	Name of disease	Duration of follow-up
1	Syphilis	Depending on the stage of the disease, initial post-treatment follow-up should take 1-2 years. Serologic testing (RPR) titers should be determined and followed-up every quarter in the first year and every 6 months in the second year. Treatment should be started over again, if the nontreponemal test titers don't become 4 times less during the 6-12 months after the treatment. If there is a suspected neurosyphilis case, CSF test should be conducted.
2	Congenital syphilis	Disease control should continue for 12-18 months depending on the results of the medical and serologic tests. Serologic tests should be carried out and controlled every 2-3 months until the serum reaction tests negative or the titers become 4 times less. If the child is not infected or has been fully treated (infection was transmitted to the child through inactive IgG transportation from the mother), the titers should start decreasing when the child is 3 months old and become negative when the child is 6 months old. If the child was treated at the age of more than one month, the serologic test titers should be decresed a bit slower. If the serologic test titers are stabilized or increased during the 6^{th}-12^{th} month period, the diagnostic issues (CSF test) should be solved and a 10-day course treatment should be instituted. Treponemal reaction tests shouldn't be used in assessing the effectiveness of the treatment. Treponemal antibodies, which were transmitted from mother to child through inactive transportation, can be detected with tests for up to 15 months. If treponemal antibodies are detected after the child turns 18 months, it should be diagnosed as congenital syphilis. If nontreponemal reaction tests are negative during this period, further diagnostics or treatment is unnecessary. In case of abnormal CSF test, the test should be repeated every 6 months in average and continue until the test becomes normal.
3	Gonorrhea	If uncomplicated gonorrhea was treated as per the regimen, further follow-up is unnecessary. If the disease symptoms still remain after the treatment, culturing tests and antibiotic susceptibility analysis should be carried out. Manifestation of post-treatment cervical, urethral and rectal inflammation symptoms is caused by *C.trachomatis* and other bacteria. This could also be a reinfection. Hence, the patient's sexual partner(s) should be traced and provided with health education.

4	*Genitourinary chlamydial* infection	For the patients who've been treated with the complete regimen, post-treatment follow-up tests are not required. During pregnancy, the follow-up tests should be done in 3-4 weeks after the treatment course is over.
5	*Genitourinary mycoplasma and ureaplasma*	For the patients who've been treated with the complete regimen, post-treatment follow-up tests are not required.
6	Trichomoniasis	In case of asymptomatic episode or disappearance of the symptoms after treatment, the post-treatment follow-up is not required, if the treatment was provided with appropriate regimen.
7	Genitourinary candidiasis	Follow-up is unnecessary. Medical examination should be conducted if patients have recurrent or constant manifestation of symptoms within 2 months after the occurrence of initial symptoms.
8	Bacterial vaginosis	If the symptoms disappeared, follow-up is unnecessary. Due to commonly recurrent episode of bacterial vaginosis, patients should be advised to come again when they have the symptoms.
9	Genital herpes	Follow-up is unnecessary.
10	Genital warts	Follow-up is unnecessary.
11	Chancroid	Medical examination should be conducted again in 3-7 weeks after the treatment was started. If the treatment is effective, the infection symptoms should disappear within 3-7 weeks and the sores heal. The followings should be considered, if the clinical symptoms of the infection don't disappear: 1) Has the patient been diagnosed accurately? 2) is there co-infection of any other STI? 3) Has the patient got HIV infection? 4) Has the treatment regimen been adhered? 5) Has the patient developed *H.ducreyi drug-resistance?* The healing period depends on the size of the sores. Big sores take more than 2 weeks. The healing process takes longer for men who haven't had the glans amputation. Should the enlarged lymph nodes become soft and wobbly, the sores should be cleansed through suctioning or incision.

CHAPTER 6. STI CONTACT TRACING

Contact tracing is a significant activity, which helps prevention of STI transmission to others, progression of the disease and contraction of reinfection. A doctor who first diagnoses STI infection should sensitize the patient on the importance of contact tracing and treatment through providing him/her with accurate information and counseling on STIs.

There are two ways of contacting sexual partners of patients as follows:

- Contacting through clients: clients bring their sexual partners for treatment
- Contacting through healthcare providers: healthcare providers meet and talk to sexual partners in person.

Although these ways both have their advantages, contacting through clients is more significant.

When the clients voluntarily bring their sexual partners, they should do the followings:

- Directly explain to their partners that the clients have been infected with STI and they need to receive treatment
- Bring their sexual partners to the hospitals without explaining why it's necessary
- Give all of their sexual partners an invitation to get services at the relevant hospitals

The clients extend an invitation, which has been given by the healthcare providers, to their sexual partners and explain to them how to reach the hospital. The invitation should contain the diagnostic code of the clients.

There should also be a special registration number to inform the healthcare providers about to which patients the sexual partners who visit the hospitals belong.

In case if the clients can't bring their sexual partners, the service providers should be assigned the task. Followings are the requirements in doing so:

- The service providers should get the clients' permission, in order to meet and talk to their sexual partners.
- The service providers should maintain the confidentiality of the personal information of the clients and their sexual partners.

All the sexual partners who approach the health centers should be provided with health education and medical examination. The ones who are diagnosed with any disease should all receive treatment and counseling.

Table 38. Duration of tracing and treating sexual partners of the patients with STIs

№	STIs	Contact tracing
1	Gonorrhea, genitourinary chlamydial infection	All the sexual partners with whom the patients had sexual intercourse during the last 60 days
2	Primary stage syphilis	All the sexual partners with whom the patients clients had sexual intercourse within 90 days before being diagnosed
3	Secondary stage syphilis and early latent syphilis	All the sexual partners with whom the patients had sexual intercourse within 6 months before being diagnosed
4	Late latent syphilis	Consider all the sexual partners with whom the patients had sexual intercourse within 12 months before being diagnosed have syphilis and involve them in testing, and treat the ones diagnosed with the infection.
5	Chancroid	All the sexual partners with whom the patients had sexual intercourse within 30 days before the manifestation of symptoms
6	Bacterial Vaginosis	Unnecessary to treat sexual partners
7	Trichomoniasis	Should treat the current sexual partners of the patients
8	Genitourinary mycoplasma	Unnecessary to treat sexual partners
9	Genital warts	Trace sexual partners the patients had during the last 12 months, involve them in testing and examination and provide with treatment, if symptoms are detected
10	Genital herpes	Current sexual partners should be treated, if they have the symptoms.

Table 39. Main components of contact tracing care

Components of contact tracing	Patient/case with new infection	Sexual partners
Tracing sexual partners of newly infected patients	√	
Informing sexual partners about the possibility of them being infected		√
Tracing contacts of newly infected patients and their sexual partners	√	√
Providing newly infected patients with counseling aimed at reducing their risks of getting infection from others or transmitting the infection to others, and, if necessary, referring them to additional preventive care and services	√	
Offering sexual partners to get involved in STI and HIV screening tests		√

Providing sexual partners with counseling on how to reduce the risks of contracting STIs and HIV and referring them to additional preventive care and services as needed		√
Providing the newly infected patients and their sexual partners with treatment or referring them to treatment	√	√
Referring to other services	√	√

Which sexual partners should be first informed about their likelihood of being infected?

All the sexual partners traced should be carefully informed about their likelihood of being infected. Regardless of what type of infection the newly infected patients have contracted, the following sexual partners should be informed first of all about the potential contraction of the infection:

- Sexual partners of pregnant or likely-to-be-pregnant women
- Sexual partners with highly risky behaviors (for instance, sex workers, etc.)

Table 40. Invitation to services of healthcare organizations

Invitation number. _____ Date: _____ Diagnostic code of the newly infected client: _____ Name, address, contact telephone number and other details of the client: _____ _____	Invitation number, diagnostic code (_____) (_____) Date: _____ Name: _____ Address, room number, contact telephone number and work hours of the hospital.

Remarks: The invitation to services provided at healthcare facilities has 2 sections. After filling the invitation out as per the questions, the invitation should be divided into two sections. The left-hand section should be kept in the registration files of the healthcare organization. The right-hand section should be given to the sexual partners through the clients. The following information should be placed on the back of the invitation.

To .....

Sexually transmitted infections are very common types of disease and if diagnosed at early stage, these diseases can be fully treated. Most of the sexually transmitted infections progress imperceptibly and untreated infections lead to major complications.

Therefore, we invite you to come to our hospital and receive medical testing and examination without any delay.

Annex 3 to the Ministerial Order No A/305,
Dated on 3.8.2017 (day/month/year),
Minister of Health, Mongolia

GUIDELINES FOR THE DIAGNOSTICS, TREATMENT, CARE AND SERVICES OF HUMAN IMMUNODEFICIENCY VIRUS AND ACQUIRED IMMUNE DEFICIENCY SYNDROME

CHAPTER 1. TERMS AND DEFINITIONS

Human immunodeficiency virus (HIV): HIV is a virus with single-stranded RNA, grouped to the genus *Lentiviruses* within the family of *Retroviridae*. It has two primary types: HIV-1 and HIV-2, which differ from each other in terms of gene structure and serological indicators.

Sources of infection:

1. HIV infected people
2. AIDS patients

Ways of transmission:

1. Sexually: having unprotected (without using condom) sexual intercourse with an HIV infected person
2. Through blood:
    - Transfusion of uncertified blood and blood products and implantation of donor organs and tissues
    - Medical and cosmetic surgery, which causes harms to the skin and mucous integrity, with the use of unsterilized instruments
    - Needle and syringe sharing
3. Transmission of HIV infection from an infected mother to child during pregnancy and childbirth, and through breast milk during postnatal breastfeeding

HIV transmission risks:

In relation to their employment and professional nature, physical health condition, lifestyles and sexual behaviors, people who are at higher risk of exposure to HIV and AIDS and other blood-borne infections should be categorized as follows:

1. In relation to employment and professional nature:

a) Medical doctors, healthcare professionals and researchers who have direct contact with blood and biological fluids (engaged in surgery, obstetrics, gynecology, dentals, autopsy, laboratory, basic emergency medical care, and treatment, care and support for STI and HIV infected people),

b) Employees of drug and biopreparation manufacturing industry, blood centers and hemodialysis centers,

c) Staff who clean and sterilize medical instruments, maintenance service engineers and technical workers.

2. In relation to physical health condition:

a) Recipients of blood, blood products, tissues, organs, semen and breast milk;

b) People who received hemodialysis therapy, other surgeric interventions and abortion;

c) Fetus in the uterus of and infants born to mothers infected with STI, HIV and AIDS.

3. In relation to lifestyles and sexual behaviors:

a) Sex workers and their sexual partners;

b) People with multiple sexual partners;

c) STI patients and their sexual partners;

d) People who inject drugs;

e) People who excessively drink alcohol;

f) Men who have sex with men;

g) People who have unprotected casual sex;

h) Mobile populations, migrants and long distance truck drivers etc.

Sexual behaviors with risks of contracting HIV:

1. Highly risky:
   - Having unprotected receptive anal sex
   - Having unprotected receptive vaginal sex
2. Risky:
   - Having unprotected insertive anal sex
   - Having unprotected insertive vaginal sex (the risk is higher during menstruation)
   - Having unprotected receptive oral sex
   - Having unprotected insertive oral sex
3. Less risky:
   - Using female/male latex/vinyl condoms in having every form of sexual intercourse listed above. Male condoms reduce the HIV transmission

risk by 80-95 percent, whereas female condoms reduce the risk by 94-97 percent.

- Using dams during sexual intercourse
- Male circumcision reduces the risk of HIV transmission by 50-60 percent.

4. Safer:

- Kissing
- Safer sexual practices

5. Safest:

- Sexual abstinence

Conditions and factors to influence sexual transmission of HIV:

1. Male-to-female:	RR (relative risk)
• Oral administration of contraceptive pills	2,5 - 4,5
• Gonococcal cervicitis	1,8 - 4,5
• Vaginal candidiasis	3,3 - 3,6
• Genital sores and lesions	2,0 - 4,0
• Bacterial vaginosis	1,6
• HSV-2 infection	2,5
• Deficiency of vitamin	2,6 - 12,9
• CD4 count <200 cell/ml	6,1 - 17,6
• Contraceptive implant	2,2
• Discordant couples with the same HLA-B molecules	2,23

2. Female-to-male:	RR (relative risk)
• Male circumcision not performed	5,4 - 8,2
• Genital sores and lesions	2,6 - 4,7
• Having sexual intercourse during menstruation	3,4
• HSV-2 infection	6,0 - 16,8

HIV transmission and drug use:

1. Highly risky:

- Sharing needles and syringes and other paraphernalia (special equipment for drug use). About 85 percent of needles and syringes and 1/3-2/3 of cotton, cookers, wash waters used in ”shooting galleries” had positive HIV RNA.

2. Less risky:

- Sharing cleaned needles and syringes, and works
- Repeated utilization of paraphernalia for personal use

3. Least risky:

- Using disposable needles and syringes, and drugs by oneself
- Using sterile needles and syringes, and drugs by oneself

Window period of HIV infection: it is the time period from infection with HIV until the body produces unique HIV antibodies to be detected by serologic tests. This period lasts from 3 weeks to 6 months, with an average of 3 months.

Key affected populations: This includes sexual minority men and men who have sex with men (MSM) depending on their sexual behavior, transgendered people, people who inject drugs (PWID) and sex workers (SW).

Vulnerable populations: Compared to the key affected populations, this group of populations has relatively lower risk, but it plays a role of bridge in the spread of the epidemic among the vulnerable and/or general populations. The vulnerable populations consist of STI clients, mobile populations, clients of sex workers, prison inmates, people with disabilities and migrants.

Serodiscordant couples: These couples are sexual partners of which one is HIV positive and the other is HIV negative.

Health care and services for people living with HIV and AIDS: This is a comprehensive intervention, which includes diagnostics, treatment, care and support provided to people living with HIV. This contains necessary services such as HIV infection diagnostics, linkage to other care and services, opportunistic infection management, initiation and supervision of antiretroviral therapy, alteration of treatment regimens, admission to specialized and palliative care and mediation to social welfare services etc., as required. The health care and services for children affected by HIV and families of people living with HIV include prevention of HIV infection, care and support.

Provider initiated testing and services: This is HIV screening testing and services conducted in clinical settings by the initiative of healthcare providers.

HIV screening testing and services: HIV screening testing and services is a comprehensive package of services to conduct testing for detection of HIV infection, to provide pre-test information and post-test counseling, to link to HIV prevention, treatment and care and other supportive services, and to ensure the quality of laboratory tests.

Drug-based prevention to reduce the risks of HIV transmission: This is antiretroviral therapy (ART) conducted with a purpose of reducing the risks of HIV transmission.

Viral load suppression: This is the scenario when the viral load is maintained at the level less than 1000 copies/mL blood for a period of longer than 6 months. Goal of ART is to reduce the viral load down to the level (less than 20 copies/mL blood) that's impossible to detect.

New incidence of HIV infection: It is the number of persons being newly infected with HIV during a certain period of time.

HIV prevalence: It is the number of people living with HIV infection at a given time and is indicated by the percentage of the people infected in a given population.

Concentrated epidemics: While HIV prevalence is low among general populations, it's rapidly increasing among one or a few sub-population groups. Numerically, this means HIV infection prevalence rate is constantly more than 5% among a minimum of one sub-population group, but among pregnant women it's less than 1%.

Disseminated epidemics: HIV prevalence is spread among the overall population. Numerically, this means HIV prevalence among pregnant women is constantly higher than 1%.

Low prevalance: HIV prevalence among general population is constantly less than 1%, and among certain sub-population groups it is less than 5%.

Situation of high rates of HIV and tuberculosis coinfection: While the HIV prevalence rate among adults is ≥1%, among the people infected with tuberculosis it is ≥5%.

Antiretroviral (ARV) drugs: These are antiviral drugs used in HIV treatment.

Antiretroviral therapy (ART): It is consumption of a combination of 3 or more antiretroviral drugs, in order to suppress HIV infection. ART is a lifelong process of treatment.

Prevention of mother-to-child transmission (PMTCT) of HIV: This refers to administration of ART to prevent transmission of HIV from an HIV-positive mother to her fetus/infant during pregnancy, labor, delivery, or breastfeeding.

Post-exposure prophylaxis (PEP) of HIV infection: This is a comprehensive action aimed at reducing the risk of contracting the infection after being potentially exposed to HIV.

Pre-exposure prophylaxis (PrEP) of HIV infection: This refers to administration of ART as an addition to prevent transmission of HIV to the non-infected partner in a serodiscordant couple.

Patients with HIV infection and tuberculosis: This refers to tuberculosis patients who were confirmed to be infected with HIV during or before the tuberculosis treatment.

CHAPTER 2. HIV SCREENING TESTING AND SERVICES

2.1. Sequence of early detection

2.1.1. HIV screening test

Through undergoing HIV screening test, people can enjoy the benefits of knowing their HIV status at earlier stages, changing their risky behaviors, preventing reinfection from and transmission to others and receiving treatment, care and support without delay, and prolonging their lives. HIV screening testing and services should comply to the primary counseling and testing principles and it should be arranged at the initiatives of clients and healthcare providers, in order to diagnose HIV and AIDS infection as early as possible and to provide the HIV infected clients with treatment, care and services.

2.1.2. Objectives of HIV screening test

- To diagnose HIV infection at early stage;
- To prevent from HIV transmission (in particular through blood, cells and organs and biological fluids)
- To conduct research and surveillance

2.1.3. Principles of HIV testing

The following 5 principles should be complied in conducting HIV tests:

- Obtaining voluntary **consent** of clients:

People receiving HIV testing and counselling must give informed consent (verbal consent is sufficient and written consent is not required) to be tested and counseled.

- **Confidentiality**:

Private information of the person who received HIV screening test shouldn't be disclosed to anyone, in accordance with the "Law on HIV and AIDS prevention" and the "Law on Confidentiality of private information" of Mongolia.

- **Counseling**:

HIV testing and services must be accompanied by pre-test and post-test counselling, which provides appropriate, high quality and comprehensive information about HIV and AIDS in general, assesses HIV infection risks, encourages to decide to go for testing and explains the meaning of "negative" or "positive" test results, provides psychological support and referral to other treatment, care and services. Pre-test information can be provided in groups or individually, but post-test counseling should be provided only individually. Information about STIs, HIV and AIDS should be given to clients through discussion on the following questions and issues, and any other information required to be provided in further should be identified.

Basic information	Additional information
What is HIV and AIDS?	What is a window period?
Transmission ways	
Ways HIV is not transmitted	Sexual orientation
Benefits of getting tested	
Types of testing /rapid and confirmatory tests/	Risky behaviors
Explanation about positive and negative test results	Information about STIs
Condom use	Safer sexual practices

- Ensuring **correct** test results:

HIV testing services should have regular quality control system to ensure the screening tests meet the quality standards and the result of the tests conducted is correct.

- **Connection** to prevention, care and treatment services:

This means connecting people living with HIV and AIDS and their contacts to long-term treatment and prevention, effective referral and support, control and follow-up services.

2.1.4. Organization of HIV counseling and testing

HIV screening test and counseling should be organized, in order to assist individuals to assess their risks of exposure to HIV infection and to encourage making a decision to go for HIV screening test.

HIV testing and service centres should be functioning as a unit of structure of the aimag health departments, general hospitals, district health centres, special hospitals, specialized professional centres, soum health centres and private and non-governmental healthcare organizations. Management of the respective organization should appoint a counselor and allocate required funds in their budget.

2.2. Types of HIV testing and services

2.2.1. Healthcare organization based HIV testing and services

Healthcare organization based HIV testing and services should include the testing and services initiated by clients and service providers.

The following population groups should be involved in provider-initiated testing and counseling (PITC) conducted at healthcare organizations (public and private):

- Adults, adolescents and children having clinical symptoms of HIV and AIDS and indeterminate diagnosis;
- Infants born to HIV infected mothers or exposed to the risks of HIV infection and infants who have the clinical symptoms of HIV and AIDS;
- Children of families in which any one or both of the parents have HIV

infection (in every 12 months); and

- For people infected with HIV and AIDS:
    - First screening test of sexual partners should be arranged by the STI, HIV and AIDS doctor, who's been following up with the HIV infected person, within one month;
    - The HIV negative person in the serodiscordant couples should be tested in every 6 months following the first test;
    - The HIV negative person in the serodiscordant couples who's on prophylactic ART should be tested in every 6-12 months.
- Clients aged 15 years and above who have tuberculosis (TB):
    - All the new and re-registered TB cases
    - Registered drug-resistant TB cases, in every 6 months during the TB treatment and follow-up period
    - Clients enrolled on TB treatment who have HIV infection symptoms
- Key affected populations (in every 6-12 months)
    - Female sex workers (FSWs)
    - Men who have sex with men (MSM)
    - People who inject drugs (PWID)
    - Transgendered people
- Poor, homeless and marginalized people
- Prison inmates
- Clients with acute and chronic viral hepatitis
- Cleints undergoing all types of surgeries and procedures
- Hospital inpatients
- Sexual partners
    - Clients with STIs
    - Newlyweds
- Men being called up for military service, only once
- Pregnant women
    - Twice under the antenatal care coverage (when first enrolls for ANC and during the weeks 28-32 of pregnancy)
    - Repeat the tests in case of exposure to STI and HIV infection during pregnancy
    - Repeat the tests, in case of appearance of HIV and AIDS clinical symptoms
    - In case if a pregnant woman who wasn't enrolled in ANC or tested on HIV during pregnancy comes to a hospital for a

childbirth, the HIV screening test should be performed in the reception department of the hospital using rapid test kits. If the test result is positive, measures for prevention of mother-to-child transmission should be taken. Confirmatory tests should be conducted after the childbirth and appropriate guidance, counseling and medical care and services should be provided.

2.2.2. Community based HIV testing and services

- Targeting general population
    - **Mobile HIV testing and services.** These services are tailored for isolated or targeted population groups and people with no or limited access to health care and services.
    - **Campaigns.** A large number of people representing various population groups is provided with the services once at a certain location and time.
    - **Workplace-based HIV testing and services.** People in employment are provided with these services at their workplace. The testing and services shouldn't be performed with coercion of employers.
    - **Educational institution-based HIV testing and services.** The testing and services for students and pupils should be conducted in their schools, learning environments and dormitories at times that is suitable for them.
- Targeting key HIV affected populations with risky behaviors
    - **Key affected population-based testing and services.** Community members and outreach workers of key affected populations should be involved in skills building trainings of HIV testing and service counselors and should conduct HIV screening tests by using methods (i.e. OraQuick oral swab test) that don't deteriorate the skin.
    - **Special (V.I.P) service for key affected populations.** This type of service is paid and provided by the request of individuals, at special hours in hospitals or doctors and nurses visit homes of the clients who request the services. In this case, any of the rapid testing methods of screening HIV infection can be used.

CHAPTER 3. HIV SCREENING TESTS AND METHODS

3.1. HIV antibody assays

- Rapid testing
    - It detects HIV-1 and HIV-2
    - Susceptibility >99%
    - Unique quality >98%
    - Possible to check in the peripheral blood
    - Doesn't require special equipment
    - Storage temperature: 1- 30^{o}C
    - Storage period specified by the manufacturer ≥12 cap
    - Possible to provide the test result within 30 minutes
- Agglutination test
    - Detects HIV-1 and HIV-2
    - Susceptibility >99%
    - Unique quality >98%
    - Possible to check in blood, serum and plasma
    - Storage temperature 2- 8^{o}C
    - Storage period specified by the manufacturer ≥12 cap
    - Possible to provide the test result within 2 hours
- ELISA
    - Detects HIV-1 and HIV-2
    - Susceptibility 100%
    - Unique quality >98%
    - Possible to check in blood, serum and plasma
    - Storage temperature 2- 8^{o}C
    - Storage period specified by the manufacturer ≥12 cap
- Western blot test: This test used for detecting HIV antibodies through differentiating their specific proteins is called protein immunoblot or Western blot test. The test is mainly used in detecting HIV antibodies of specific core and surface proteins in the sample of tissue homogenate or extract, which tested repeatedly positive or indeterminate through ELISA and other tests. Western blot test is administered at NCCD.

3.2. Virologic tests

This is an analytical technique called Polymerase Chain Reaction (PCR) used for directly detecting nucleic acid of HIV. This assay is performed at NCCD with a purpose of diagnosing HIV infection in children born to HIV infected mothers.

3.3. Conducting HIV screening tests at healthcare facilities

- Family, soum and village health centres, HIV testing and service centres and maternity hospitals should conduct rapid tests and when the test result is either “positive” or “indeterminate” the sample should be transferred to the next level healthcare organization.
- Aimag and district hospitals, special hospitals, specialized professional centers and specialized clinics should conduct the HIV screening tests using rapid test kits, agglutination or ELISA techniques and transfer the blood samples that tested “positive” or “indeterminate” to NCCD.
- The AIDS/STI laboratory of NCCD should use rapid testing methods, and agglutination and ELISA techniques for detecting HIV antibody. The Western blot and PCR methods should be used for this purpose too.

Table 1. HIV screening test methods

Test methods	Family, soum and village health centres	HIV testing and service centres	MHs	Aimag General hospitals	SHs, SPCs, SCs	NCCD
Rapid testing	+	+	+	+	+	+
Particle agglutination test (Serodia-HIV)				+	+	+
ELISA				+	+	+
Western blot						+
PCR						+
CD4 cell count						+

3.4. HIV screening test algorithm

Figure 1. Tests provided for adults and adolescents at family, soum and village health centers, HIV testing and service centres and maternity hospitals

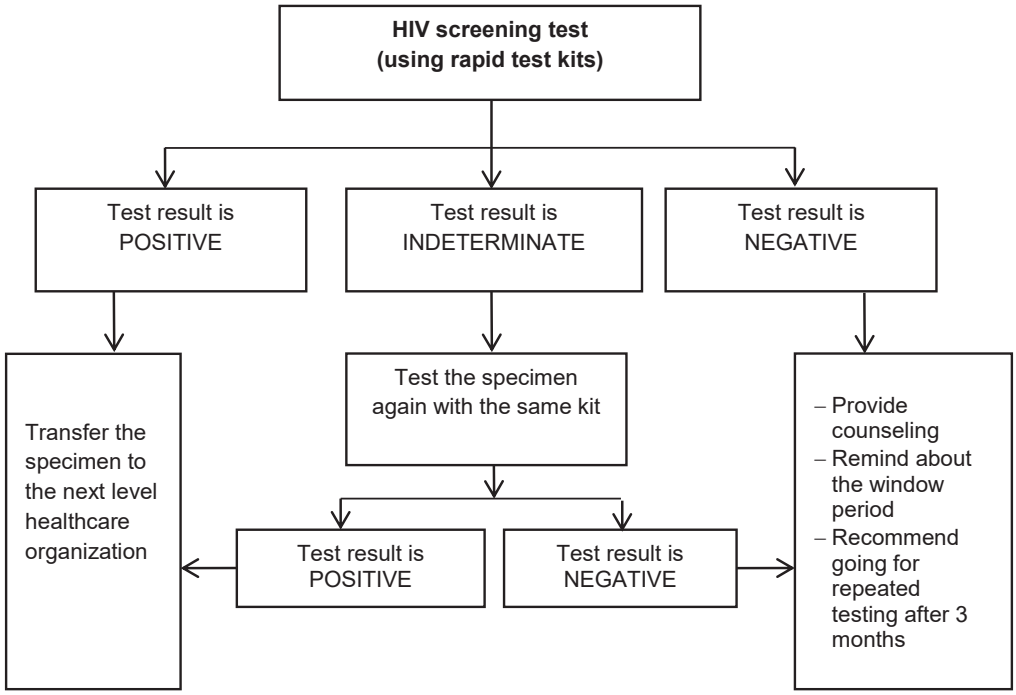
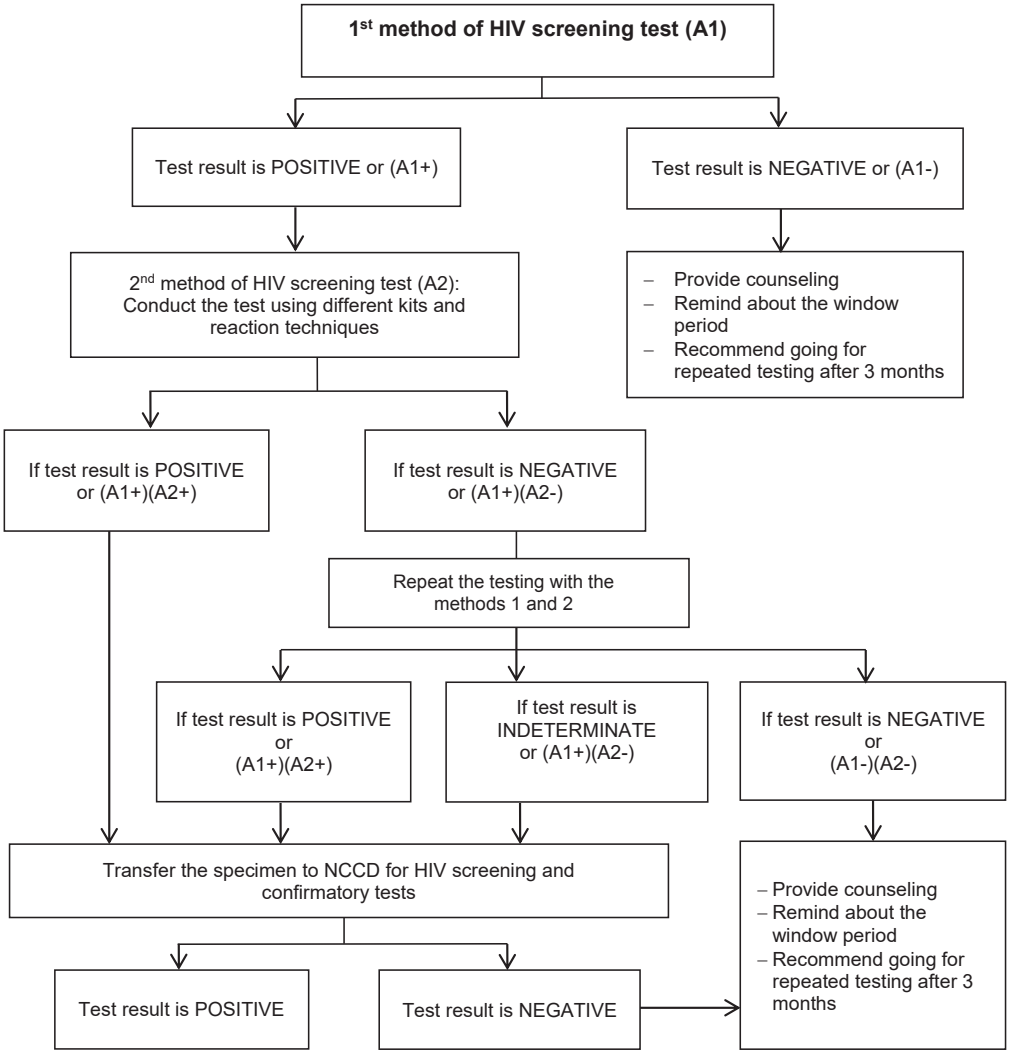


Figure 2. Tests provided for adults and adolescents at aimag and district general hospitals, special hospitals, specialized professional centres and specialized clinics



- The 1st kit /A1/ has high susceptibility. In case the first test result was negative, the client should be provided with counseling, and a reminder of the window period and recommendations on going for repeated tests after 3 months.
- If the first test result was either "positive" or "indeterminate", the test should be repeated using a different kit /A2/, which has higher susceptibility, and a different method /A2/.
- If the second test result was "positive" again, the specimen should be packed as per the "Procedures of transportation of contagious and potentially contagious specimen" and transferred to NCCD.

- If the results of the first two tests were contradictory (first test result is “positive” and second test result is “negative”), the tests should be repeated with the two methods.
- It the results of the tests conducted using 2 different methods were both negative, the client should be provided with counseling, a reminder of the window period and recommendations on going for repeated tests after 3 months.
- It the results of the tests conducted using 2 different methods were either both positive or contradictory as before, the test result should be considered “indeterminate” and the specimen should be transferred to NCCD for confirmatory tests, as per the applicable procedures.
- Healthcare organizations should have their own certified and numbered stamp **“No HIV antibodies detected”**.

Figure 3. Tests conducted at NCCD for adults and adolescents

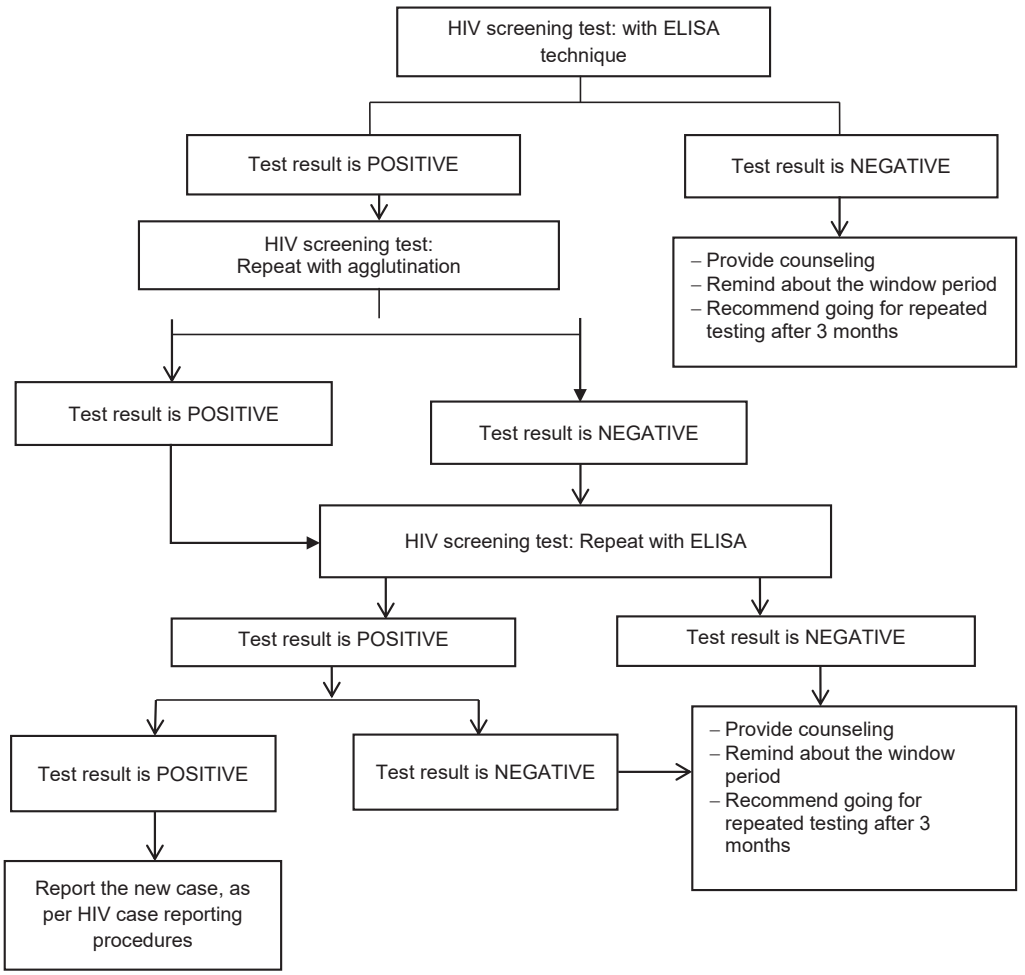
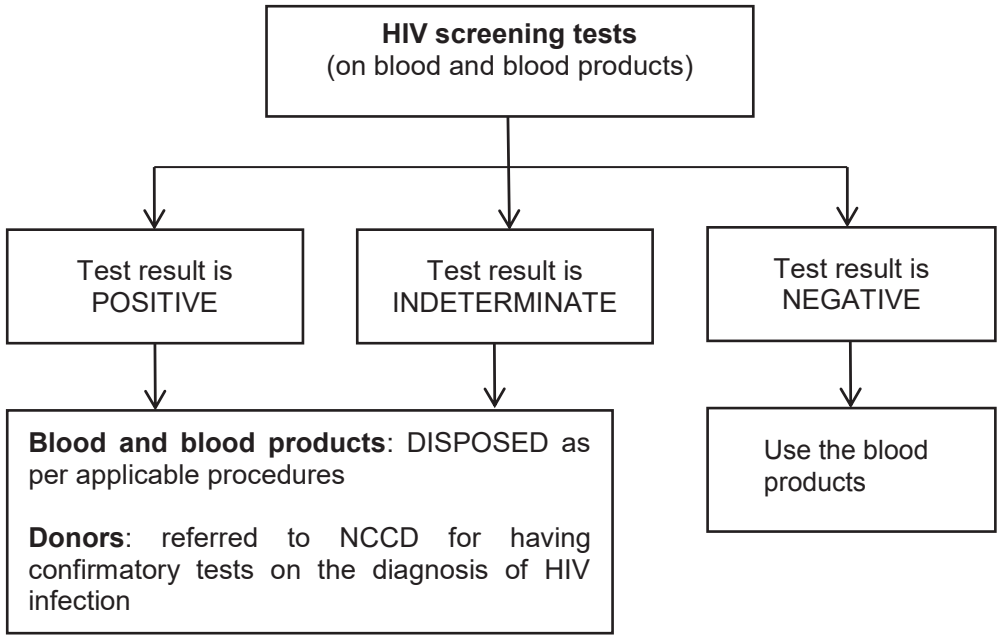


Figure 4. Tests conducted to prevent from HIV transmission through blood, tissues, organs and biological fluids

HIV screening tests must be conducted on donors of blood and blood products, tissues, organs, sperm and breast milk, in order to assure safety and security.



3.5. Principles of client referral to next level healthcare organizations

- If the HIV screening test result is "positive" - both the control and test strips are distinct; or "indeterminate" - the control strip is distinct but the test strip is dim, the tested specimen should be packed and transferred along with supportive documents to the next level healthcare organization, in accordance with the "Procedures of transportation of contagious and potentially contagious specimen".
- As defined in these guidelines, if the specimen transferred to the next level healthcare organization tests "positive" or "indeterminate" again, it should be sent to the AIDS/STI laboratory of NCCD for confirmatory tests according to applicable procedures.
- Before conducting confirmatory tests on the specimen, the head or epidemiologist of the HIV and AIDS care and treatment section of the STI, HIV and AIDS Sentinel Surveillance Department (Department) of NCCD should be consulted to confirm whether the patient has enrolled on the control program of the Department.
- If the patient has enrolled on the control program, the confirmatory tests shouldn't be conducted on the specimen.

- If the patient hasn't enrolled on the control program of the Department, the confirmatory tests should be conducted in the AIDS/STI laboratory of NCCD. In case the result of the first confirmatory test is "negative", a repeated confirmatory test should be performed after 4 weeks.
- If the result of the confirmatory test conducted in the AIDS/STI laboratory of NCCD is "positive", the patient should voluntarily, and through doctor who sent the specimen, enroll on the treatment and control program of local healthcare organization or the STI, HIV and AIDS Sentinel Surveillance Department of NCCD.

3.6. HIV infection incidence registration and reporting

- The STI, HIV and AIDS Sentinel Surveillance Department of NCCD should issue an unduplicated control number, which contains the case registration number and the date of confirmatory test to newly registered HIV infected clients.
- The STI, HIV and AIDS Sentinel Surveillance Department of NCCD should comply with the "Order to endorse procedures of providing the National Security Council with information".
- Relevant officials should disseminate the data and information about the HIV prevalence through media, within the rules of law.

CHAPTER 4. MEDICAL TREATMENT, CARE AND SERVICES FOR PEOPLE LIVING WITH HIV

4.1. Medical treatment, care and services needed for people living with HIV and AIDS

Medical treatment, care and services needed for people living with HIV and AIDS shall be provided in the following ways.

Table 2. HIV and AIDS treatment, care and services, by healthcare organizations

№	Types of treatment, care and services	Family, soum and village health centres	Aimag general hospitals and district health centres	Maternity hospitals	Special hospitals	Specialized professional centres, specialized clinics	NCCD
1	HIV and AIDS treatment ART ART adherence control Immunostimulant therapy Treatment of opportunistic infections PrEP	 - - - - -	 √ √ √ √ √	 - - - - -	 √ √ √ √ -	 - - - - -	 √ √ √ √ √
2	Follow-up care of HIV and AIDS patients	-	√	-	√	-	√
3	Follow-up care of pregnant women with HIV and AIDS	-	√	-	√	√	√
4	Child delivery of pregnant women with HIV and AIDS	-	√	√	-	√	√
5	Follow-up care of infants and children born to mothers with HIV and AIDS	√	√	-	-	√	√
6	PEP	-	√	√	√	√	√
7	Specialized professional care Various types of surgeric operations Instrumental analysis Hemodialysis Inpatient care and service Palliative care and service	 - - - - -	 √ √ √ √ -	 √ √ - √ -	 - √ - √ -	 √ √ √ √ √	 √ √ - √ √

Table 3. Assessment of a person living with HIV

№	Types of treatment, care and services	Upon diagnostics	Upon initiation of ART	Frequency	Remarks
Questionnaire regarding the disease history and life story					
1	Disease history: Genetic disorders Pills taken at present Past/present combined morbidity Immunization history Allergy	 √ √ √ √ √	 - √ √ - √	 First time At every visit At every visit Every year Every year	If the patient has been transferred to another hospital, the assessment should be considered as of the first visit.
2	Psychosocial questionnaire: Current life style Employment Social welfare Mental health Partners, marital status	 √ √ √ √ √	 √ √ √ √ -	 Every 6-12 months At every visit Every 2 years Every year At every visit	Bad habits, exercise, diet and eating habits etc.; Assessment of mental health condition with instructions of a clinician, regardless of time frame.
3	Sexual and reproductive health questionnaire: Sexual life history Safer sexual practice Disclosure of infection status to partners Questionnaire for women	 √ √ √ √	 - - - √	 Every 6-12 months Every 6-12 months Every 6-12 months Every 6-12 months	Assessment of sexual transmission risks of the infection; Advise to serodiscordant couples to initiate ART; Assessment of the usage of contraceptive methods .
Assessment of HIV infection pathophysiology					
1	Virologic assessment: Confirmatory test of anti-HIV antibody titer Serological viral load of HIV Detection of HIV genotypes and drug-resistance mutations (if possible)	 √ √ √	 - √ √	 First time Every 6-12 months If ART fails, the course should be repeated.	Assessment of the viral load with instructions of a clinician, regardless of time frame; Stocking of specimen retained every time the control test is conducted.
2	Immunological assessment: CD4 cell count	 √	 √	 Every 3-6 months	Assessment with instructions of a clinician, regardless of time frame

№	Types of treatment, care and services	Upon diagnostics	Upon initiation of ART	Frequency	Remarks
3	Identification of the clinical stage with the WHO recommended methodology	√	√	At every visit	
Coinfection assessment					
1	STI screening: RPR, TPHA Smears	√ √	- -	With doctor's prescription	
2	Viral hepatitis: HAV HCV HBV	√ √ √	- - √	Every year/ with doctor's prescription	HCV RNA should be counted in case if HCV antibodies were detected or acute infection was diagnosed.
3	Tuberculosis: Chest radiograph Sputum smear	√ -	- -	By algorithm With doctor's prescription	Tuberculosis should be assessed as per the early screening algorithm of tuberculosis.
4	Others: *Varicella zoster virus* Measles/rubella Toxoplasmosis *CMV* Leishmania Shistosoma Influenza virus Streptococcus pneumonia	√ √ √ √ √ √ √ √	- - - - - - - -	- - - - - - Every year -	Conduct an assessment of infections, which are preventable with immunization, and recommend getting immunization/ vaccination.
Combined illness assessment					
1	BMI	√	√	Every year	
2	Cardiovascular diseases: Framingham score Electrocardiography High blood pressure	√ √ √	√ - √	Every 2 years With doctor's prescription At every visit	Specialized cardiologist should conduct the assessment.
3	Blood sugar level	√	√	Every 6 months	
4	Pulmonary disease: Chest radiograph Spirometer	√ -	- -	With doctor's prescription	Specialized pulmonologist should conduct the assessment.

№	Types of treatment, care and services	Upon diagnostics	Upon initiation of ART	Frequency	Remarks
5	Liver disease: Check liver function through biochemical tests Liver ultrasound scan Assessment of the degree of liver fibrosis	√ - -	√ - -	Every 3-12 months Every 6 months Every year	The assessment of the degree of liver fibrosis should be conducted on the patients with coinfection of HCV and HBV.
6	Kidney disorder: eGFR Urine analysis	√ √	√ √	Every year Every year	Assessment conducted by a professional nephrologist.
7	Vitamin D: 25(OH) Vit-D	√	-	With doctor's prescription	
8	Neurologic questionnaire	√	√	With doctor's prescription	
9	Tumors: Mammography Pap test Colonoscopy and cancer blood test	- - -	- - -	Every 1-3 years Every 1-3 years Every 1-3 years	>40 years old women; Sexually active women

4.2. Clinical diagnostics of HIV infection

4.2.1. Classification of HIV infection

4.2.1.1. The International Classification of Diseases, ICD-10:

Human Immunodeficiency Virus infection (B20- B24)

(Exclude: Asymptomatic HIV infection status (Z21) and HIV disease complicating pregnancy, childbirth and the puerperium (O98.7))

B20 Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases

(Exclude: Acute HIV infection syndrome (B23.0))

B20.0 HIV disease resulting in mycobacterial infection

HIV disease resulting in tuberculosis

B20.1 HIV disease resulting in other bacterial infections

B20.2 HIV disease resulting in cytomegaloviral disease

B20.3 HIV disease resulting in other viral infections

B20.4 HIV disease resulting in candidiasis

B20.5 HIV disease resulting in other mycoses

B20.6 HIV disease resulting in Pneumocystis jirovecii pneumonia

HIV disease resulting in Pneumocystis carinii pneumonia

B20.7 HIV disease resulting in multiple infections

B20.8 HIV disease resulting in other infectious and parasitic diseases

B20.9 HIV disease resulting in unspecified infectious or parasitic disease

HIV disease resulting in infection NOS

B21 Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms

B21.0 HIV disease resulting in Kaposi sarcoma

B21.1 HIV disease resulting in Burkitt lymphoma

B21.2 HIV disease resulting in other types of non-Hodgkin lymphoma

B21.3 HIV disease resulting in other malignant neoplasms of lymphoid, haematopoietic and related tissue

B21.7 HIV disease resulting in multiple malignant neoplasms

B21.8 HIV disease resulting in other malignant neoplasms

B21.9 HIV disease resulting in unspecified malignant neoplasm

B22 Human immunodeficiency virus (HIV) disease resulting in other specified diseases

B22.0 HIV disease resulting in encephalopathy

HIV dementia

B22.1 HIV disease resulting in lymphoid interstitial pneumonitis

B22.2 HIV disease resulting in wasting syndrome

HIV disease resulting in failure to thrive

B22.7 HIV disease resulting in multiple diseases classified elsewhere

Note: For use of this category, reference should be made to the morbidity or mortality coding rules and guidelines in Volume 2.

B23 Human immunodeficiency virus (HIV) disease resulting in other conditions

B23.0 Acute HIV infection syndrome

B23.1 HIV disease resulting in (persistent) generalized lymphadenopathy

B23.2 HIV disease resulting in haematological and immunological abnormalities, not elsewhere classified

B23.8 HIV disease resulting in other specified conditions

B24 Unspecified human immunodeficiency virus (HIV) disease

Include:

Acquired immunodeficiency syndrome (AIDS) NOS

AIDS-related complex (ARC) NOS

Maternal infectious and parasitic diseases classifiable elsewhere in the International Classification of Diseases ICD-10 but complicating pregnancy, childbirth and the puerperium (O94-O99)

O98.1 Syphilis complicating pregnancy, childbirth and the puerperium

Include: Conditions in A50-53

O98.2 Gonorrhoea complicating pregnancy, childbirth and the puerperium

Include: Conditions in A54

O98.7 HIV disease complicating pregnancy, childbirth and the puerperium

Include: Conditions in B20-24

Abnormal immunological finding in blood, unspecified (R70-R79)

R75 Inconclusive laboratory evidence of HIV

Persons with potential health hazards related to communicable diseases (Z00-Z99)

Z11.4 Encounter for early screening for HIV

Z20.6 Contact with and (suspected) exposure to HIV

Z21 Asymptomatic HIV infection status

Z71.7 Person receiving HIV counseling

Z83.0 Family history of HIV disease (person with one or more HIV infected family members)

4.1.2.2. Clinical stages of HIV infection:

The HIV infection clinical stages are determined in accordance with WHO clinical classification as shown in the table below (see Table 4).

Table 4. HIV infection clinical stages /WHO, 2007/

Adults and adolescents	Children
Clinical stage 1	
Asymptomatic Persistent generalized lymphadenopathy (PGL)	Asymptomatic Persistent generalized lymphadenopathy (PGL)
Clinical stage 2	
Moderate unexplained weight loss (<10% of presumed or measured body weight) Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis) Herpes zoster Angular cheilitis Recurrent oral ulceration Papular pruritic eruption Seborrhoeic dermatitis Fungal nail infections	Unexplained persistent hepatosplenomegaly Recurrent or chronic upper respiratory tract infections (otitis media, otorrhoea, sinusitis, tonsillitis) Herpes zoster Lineal gingival erythema Recurrent oral ulceration Papular pruritic eruption Fungal nail infections Extensive wart virus infection Extensive molluscum contagiosum Unexplained persistent parotid enlargement
Clinical stage 3	
Unexplained severe weight loss (>10% of presumed or measured body weight) Unexplained chronic diarrhoea for longer than 1 month Unexplained persistent fever (intermittent or constant >37.5°) for longer than 1 month Persistent oral candidiasis Oral hairy leukoplakia (OHL) Pulmonary tuberculosis Severe bacterial infections (such as pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia) Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis Unexplained anaemia (<8 g/dl), neutropaenia (<0.5 x 10^9/l) and/or chronic thrombocytopaenia (<50 x 10^9/l)	Unexplained moderate malnutrition not adequately responding to standard therapy Unexplained persistent diarrhoea (14 days or more) Unexplained persistent fever (above 37.5°C, intermittent or constant, for longer than one 1 month) Persistent oral candidiasis (after first 6 weeks of life) Oral hairy leukoplakia Lymph node tuberculosis Pulmonary tuberculosis Severe recurrent bacterial pneumonia Acute necrotizing ulcerative gingivitis or periodontitis Unexplained anaemia (Hb<8 g/dl), neutropaenia (<0.5 x 10^9/l) or chronic thrombocytopaenia (<50 x 10^9/l) Symptomatic lymphoid interstitial pneumonitis Chronic HIV-associated lung disease, including bronchiectasis
Clinical stage 4	

Adults and adolescents	Children
HIV wasting syndrome Pneumocystis (jirovecii) pneumonia Recurrent severe bacterial pneumonia Chronic herpes simplex infection (orolabial, genital or anorectal lasting for more than 1 month or visceral at any site) Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs) Extrapulmonary tuberculosis Kaposi sarcoma Cytomegalovirus infection (retinitis or infection of other organs) Central nervous system toxoplasmosis HIV encephalopathy Extrapulmonary cryptococcosis, including meningitis Disseminated nontuberculous mycobacterial infection Progressive multifocal leukoencephalopathy Chronic cryptosporidiosis Chronic isosporiasis Disseminated mycosis (extrapulmonary histoplasmosis, coccidioidomycosis) Recurrent septicaemia (including nontyphoidal Salmonella) Lymphoma (cerebral or B-cell non-Hodgkin) Invasive cervical carcinoma Atypical disseminated leishmaniasis Symptomatic HIV-associated nephropathy or cardiomyopathy	Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy *Pneumocystis (jirovecii)* pneumonia Recurrent severe bacterial infections (such as empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia) Chronic herpes simplex infection (orolabial or cutaneous for more than 1 month or visceral at any site) Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs) Extrapulmonary tuberculosis Kaposi sarcoma Cytomegalovirus infection (retinitis or infection of other organs with onset at the age of more than 1 month) Central nervous system toxoplasmosis (after the neonatal period) HIV encephalopathy Extrapulmonary cryptococcosis, including meningitis Disseminated nontuberculous mycobacterial infection Progressive multifocal leukoencephalopathy Chronic cryptosporidiosis (with diarrhoea) Chronic isosporiasis Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidioidomycosis) Lymphoma (cerebral or B-cell non-Hodgkin) HIV-associated nephropathy or cardiomyopathy

4.1.2.3. HIV infection stages:

HIV infection shall be categorized by the quantitative changes in its lymphocyte cell counts and the clinical symptoms manifested, as per the categorization of the CDC of USA and WHO, 2014.

Table 5. HIV and AIDS classification on the basis of infection stages

CD4 cell counts	**Clinical categories**		
	Category A Asymptomatic stage of HIV infection	Category B Symptomatic stage of HIV infection	Category C AIDS disease stage
≥500 cells/ml	A1	B1	C1
200-499 cells/ml	A2	B2	C2
<200 cells/ml	A3	B3	C3

In this classification, the infection stages are determined on the basis of CD4 cell count and previously diagnosed disorders. For instance, the patient who had any disorder belonging to the Category B but turned to be asymptomatic, as a result of treatment, should remain in the Category B. The presence of A3, B3 and C1-C3 should be considered AIDS disease.

Category A:

- Primary HIV infection
- Asymptomatic stage of HIV
- Detected persistent generalized lymphadenopathy in a patient with no previous records of having any of the disorders under the clinical categories B and C

Category B:

Symptomatic conditions that are not included among the conditions listed under the clinical categories A and C: general conditions attributed to HIV infection or the ones indicative of a defect in cell-mediated immunity or the conditions, which may lead to clinical complications of HIV infection or require treatment, as follows:

- Bacillary angiomatosis
- Oropharyngeal candidiasis (thrush)
- Vulvovaginal candidiasis (persistent, frequent or poorly responsive to treatment)
- Cervical dysplasia (moderate or severe)
- Constitutional symptoms, such as fever (>38.5°C) or diarrhoea lasting >1 month
- Oral hairy leukoplakia
- Herpes zoster (involving at least two distinct episodes or more than one dermatome)
- Idiopathic thrombocytopenic purpura

- Listeriosis
- Pelvic inflammatory disease, particularly if complicated by tubo-ovarian abscess
- Peripheral neuropathy

If the above conditions are present but not complicated (haven't shifted to the Category C), and asymptomatic, they should belong to the clinical Category B.

Category C:

These are the accompanying conditions and disorders present during AIDS disease, which is the last stage of HIV infection. Should the following conditions be reported, the patient should belong to the Category C:

- Candidiasis of pharynx, bronchi, trachea, or lungs
- Coccidioidomycosis, disseminated
- Cryptococcosis
- Cryptosporidiosis, chronic (>1 month)
- Cytomegalovirus disease or retinitis
- Herpes simplex virus (HSV) (>1 month)
- Histoplasmosis, disseminated
- HIV Encephalopathy/HIV-associated dementia
- Cervical cancer, invasive
- Isosporiasis, intestinal, chronic (>1 month)
- Kaposi sarcoma
- Lymphoma, Burkitt's, immunoblastic, primary of brain
- Tuberculosis (pulmonary or extrapulmonary)
- Mycobacterium avium-intracellulare complex (MAC)
- Other mycobacterial infections (disseminated or extrapulmonary)
- Bacterial pneumonia, recurrent
- Penicillium marneffei infection
- Pneumocystis pneumonia
- Progressive multifocal leukoencephalopathy (PML)
- Salmonella septicemia, recurrent
- Cerebral toxoplasmosis
- Wasting syndrome of HIV, CD4 count ≤200 cells/ml

CHAPTER 5. CLINICAL MANAGEMENT OF HIV AND AIDS

5.1. Treatment of HIV infection: ART

ART counseling for people infected with HIV should be provided until the clients voluntarily give consent for the initiation of ART and the therapy should be administered on the clients regardless of their CD4 cell count or clinical stage of the HIV disease.

Clients should be provided with information and knowledge about ART and sign the form "Client's consent for enrolment into HIV and AIDS treatment programme" prior to initiation of the therapy.

If the client refuses to enroll into the therapy or follow-up medical examination, testing or clinical treatment and care even after receiving information and counseling on ART, he/she should sign the form "Voluntary refusal of enrolment into HIV and AIDS treatment and care" jointly with the doctor, the epidemiologist and the head of the department. The form should have two copies, one will be given to the client and the other kept in the client profile at the hospital. The ART counseling should continue to be given to the client even after he/she signs the form "Voluntary refusal of enrolment into HIV and AIDS treatment and care" and when the client consents voluntarily for initiation of ART, the therapy should be administered regardless of the client's CD4 cell count and the clinical stage of the infection.

ART should be administered consistently and continued lifelong. Adherence to treatment regimen should be monitored by counting the quantity of drugs left and conducting tests in the 1st, 3rd, 6th and 12th (±1,5) months of the year of ART initiation and in every 3-6 months in further.

Table 6. Name and dosage of ARV drugs

Name of drugs	Dosage	Storage condition
Nucleoside Reverse Transcriptase Inhibitors (NRTIs)		
Abacavir (ABC)	300mg x twice-daily, or 600mg x once-daily	At room temperature
Zidovudine (ZDV)	250mg x twice-daily, or 300mg x twice-daily	
Emtricitabine (FTC)	200mg x once-daily	
Lamivudine (3TC)	150mg x twice-daily, or 300mg x once-daily	
Nucleotide Reverse Transcriptase Inhibitors (NtRTIs)		
Tenofovir (TDF)	300mg x once-daily	At room temperature
Non-nucleoside Reverse Transcriptase *Inhibitors (NNRTIs)*		

Name of drugs	Dosage	Storage condition
Efavirenz (EFV)	600mg x once-daily	At room temperature
Nevirapine (NVP)	200mg x once-daily, for 14 days, followed by 200mg x 2 times	
Integrase Inhibitors (INIs)		
Dolutegravir (DTG)	50mg x 1-2 times a day	At room temperature
Raltegravir (RAL)	400mg **x** twice-daily	
Protease Inhibitors (PIs)		
Darunavir/ritonavir (DRV/r)	DRV/r 800mg+100mg oncedaily	At room temperature
Etravirine (ETV)	200mg x twice-daily	At room temperature
Lopinavir/ ritonavir (LPV/r)	LPV/r 133.3mg +33.3mg - 3pcs a day (400/100mg) x 2 times EFV, or When combined with NVP – 4pcs (533/133.33mg) x twice-daily	Store LPV at room temperature for a period of <30 days, for longer storage keep it refrigerated
	LPV/r 200mg + 50mg EFV, or When combined with NVP – 3pcs (600/150mg) x twice-daily	

5.2. Initiation of ART

Specialized STI, HIV and AIDS doctors should initiate ART on patients and monitor the effectiveness of the therapy.

Table 7. Initiation of ART

Preparing patients for ART	
Early initiation of ART	Provide patients with counseling on ART, in order to initiate the therapy as soon as HIV infection is diagnosed.
ART initiation	
Groups	Indications
Adults and adolescents (10-19 years old)	ART should be initiated regardless of CD4 cell count and the WHO recommended clinical stages. For patients with complicated progression and in the late stage of HIV infection (WHO clinical stages 3 and 4) and the ones with CD4 cell count ≤350 cells/mm^3 , ART should be immediately initiated.

Children aged below 10	ART should be initiated regardless of CD4 cell count and the WHO recommended clinical stages. ART should be immediately initiated for all the children aged 2≥, or the children aged 5> who have complicated progression in the late stage of HIV infection (WHO clinical stages 3 and 4), or the children with CD4 cell count ≤750 cells/mm^3 or less than 25%, or the children aged 5≤ with complicated progression in the late stage of HIV infection (WHO clinical stages 3 and 4), or the ones with CD4 cell count ≤350 cells/mm^3. For all the children diagnosed during the 1st year of life, ART should be initiated regardless of CD4 cell count and WHO clinical stages.
Pregnant women and breastfeeding mothers	ART should be initiated, regardless of CD4 cell count and WHO clinical stages, and should be prescribed as a lifelong treatment.
Adults and children with tuberculosis	ART should be initiated on the children and adults with HIV and tuberculosis coinfection, regardless of CD4 cell count and WHO clinical stages. Treatment of tuberculosis should be started first and ART should be initiated as soon as possible within the period of 8 weeks. If the immune is severely suppressed (CD4 cell count<50cells/ml), ART should be initiated within 2 weeks after the start of tuberculosis treatment. The treatment of tuberculosis for patients with HIV and tuberculosis coinfection should be conducted with drugs of suitable group and last for at least 6 months.

Table 8. ART initiation regimen

Groups	Primary regimens	Selective regimens
Adults and adolescents	TDF+3TC (or FTC)+EFV	TDF+3TC (or FTC)+NVP TDF+3TC (or FTC)+DTG (or RAL) AZT+3TC+EFV (or NVP)
Pregnant women and breastfeeding mothers	TDF+3TC (or FTC)+EFV	TDF+3TC (or FTC)+NVP AZT+3TC+EFV (or NVP)
Children aged 3-10 years	ABC+3TC+EFV	ABC+3TC+NVP AZT+3TC+EFV (or NVP) TDF+3TC (or FTC)+EFV (or NVP)
Children aged 3>	ABC (or AZT)+3TC +LPV/r	ABC (or AZT)+3TC+NVP

Figure 5. ART for adults and adolescents with HIV

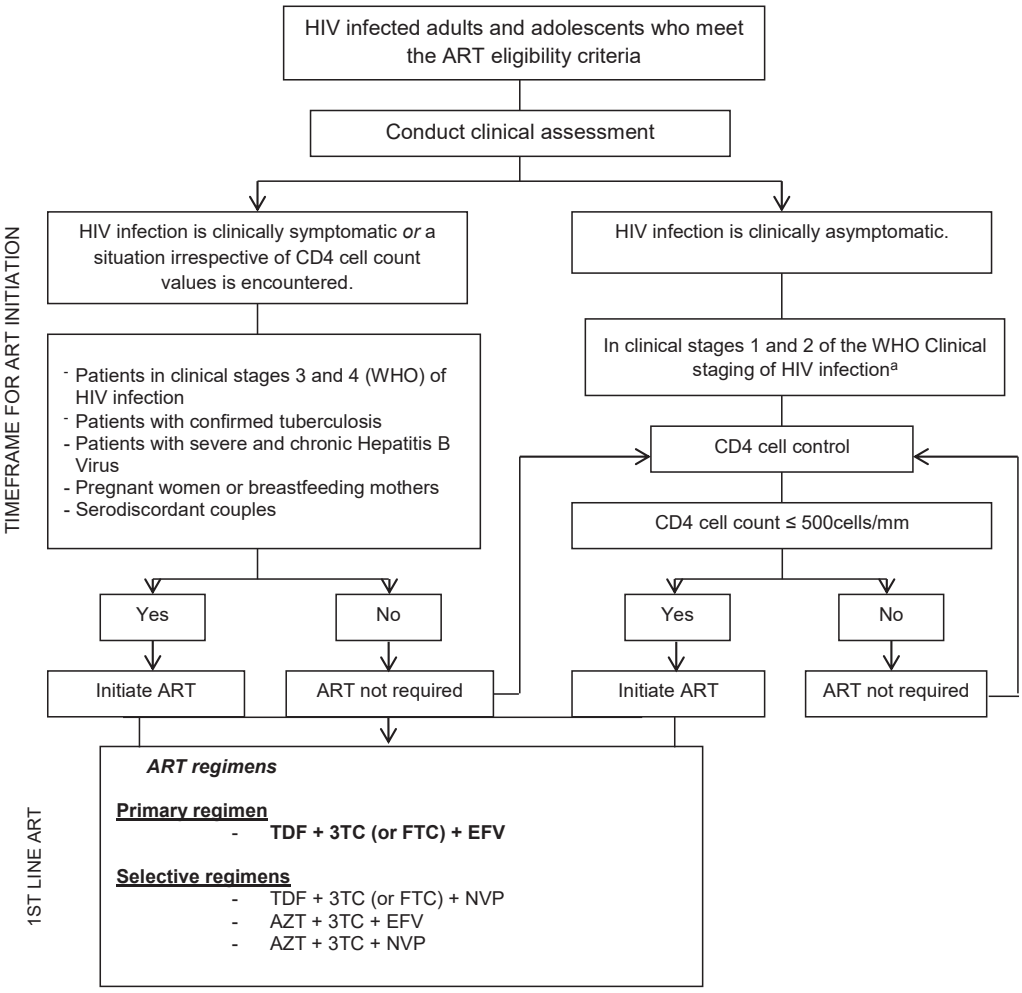


Figure 6. ART for HIV infected pregnant women and breastfeeding mothers

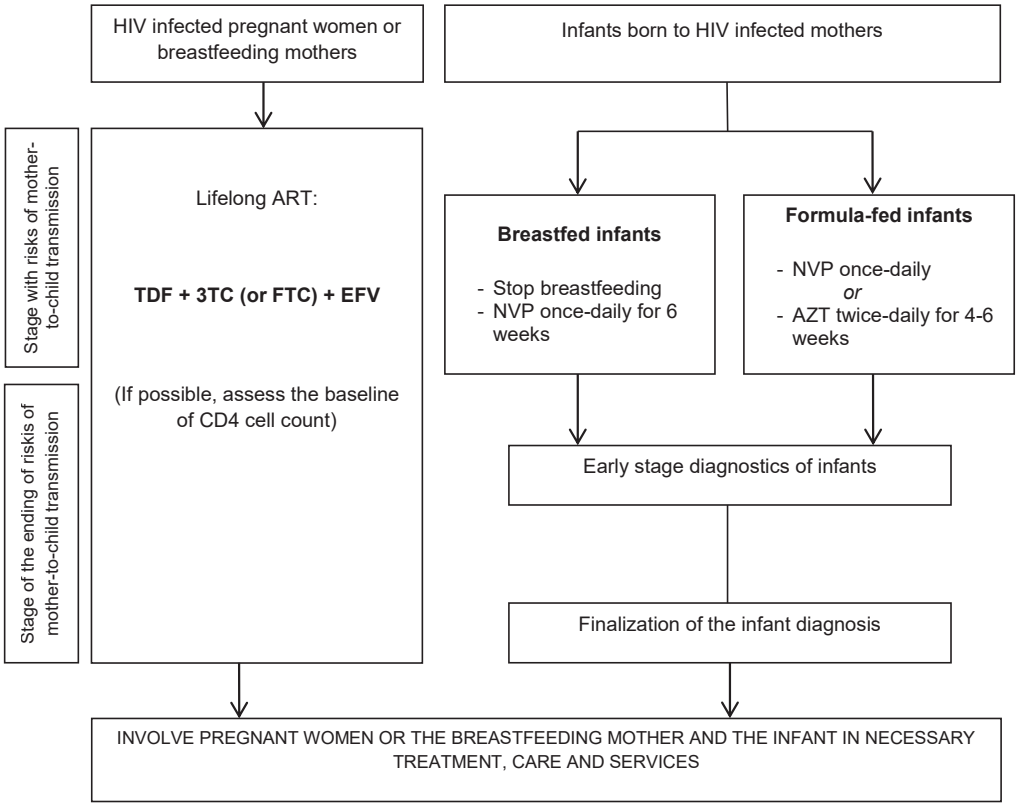
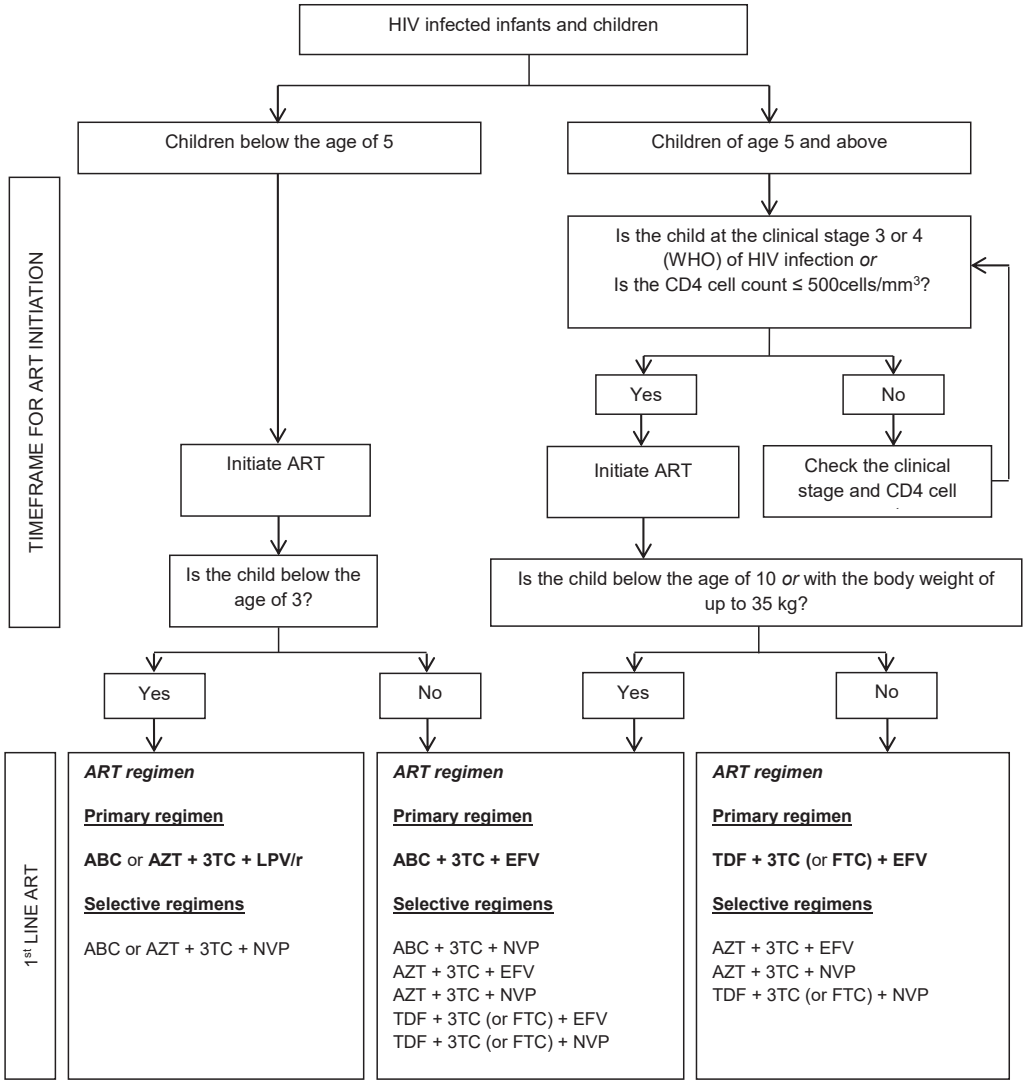


Figure 7. ART for HIV infected infants and children



5.3. Changing ART regimen

Should ART fail or the ARV adverse effects cause greater harms to health than the effectiveness of the treatment, the ART regimen should be switched by a decision of the clinician.

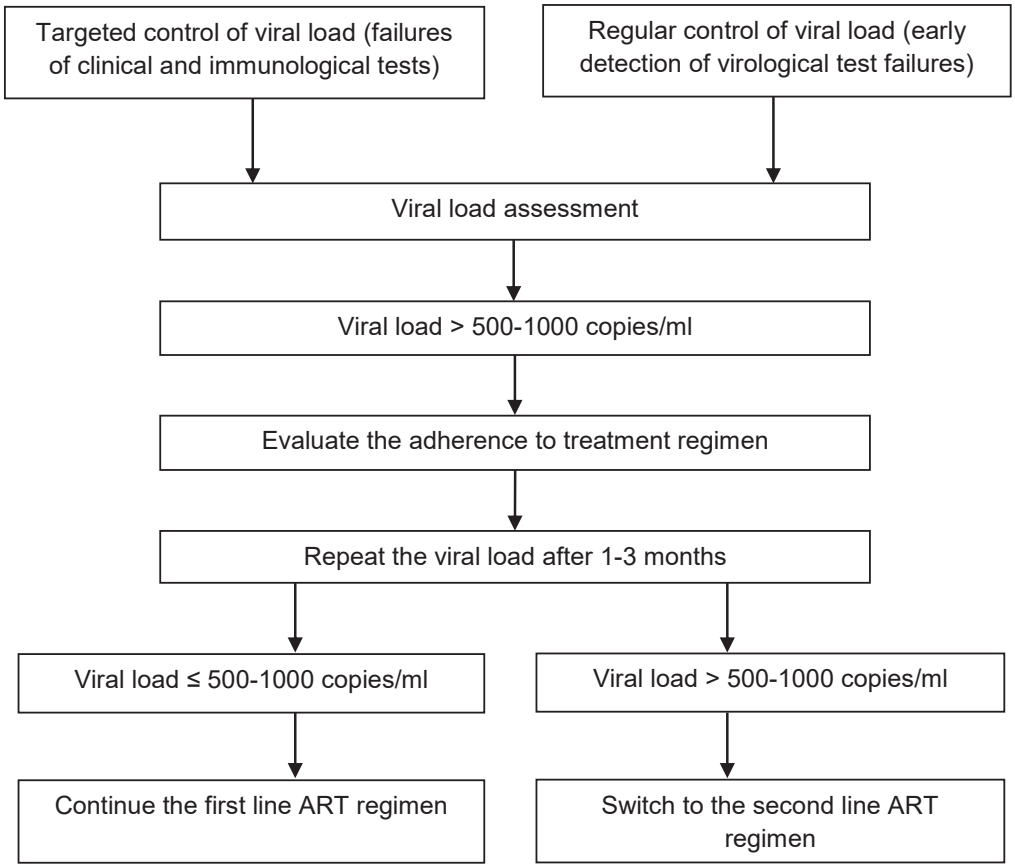
Table 9. Justifications for switching ART regimens

Failure	Definition	Remarks
Clinical Failure	Adults and adolescents New or recurrent clinical event indicating severe immunodeficiency (WHO clinical stage 4 condition) after 6 months of effective treatment Children New or recurrent clinical event indicating advanced or severe immunodeficiency (WHO clinical stage 3 and 4 clinical condition with the exception of TB) after 6 months of effective treatment	Diagnosis should be differentiated from immune reconstitution inflammatory syndrome. Occurrence of diseases, which are usually diagnosed in adults in the WHO clinical stage 3 (pulmonary tuberculosis, severe bacterial infection etc.), may also indicate a failure of the treatment.
Immunolgical Failure	Adults and adolescents CD4 cell count at or below 250 cells/mm3 following treatment failure or persistent CD4 cell count below 100 cells/mm3 Children CD4 cell count of children younger than 5 years is constantly less than 200 cells/mm; CD4 cell count of children aged 5-9 years is constantly less than 100 cells/mm.	CD4 cell count can temporarily reduce due to opportunistic infections or new infections.
Viral load Failure	While the treatment regimen has been strictly adhered, the viral load is estimated to be more than 500-1000 copies/ml in 2 consecutive tests conducted with a 3 month interval.	Treatment failure can be identified only after conducting a minimum of 6 months of continuous ART.

Table 10. ART switching regimen

Failure	Adults	Children
Second line	To select: AZT+3TC+LPV/r TDF+3TC+LPV/r	To select: AZT+3TC+LPV/r TDF or ABC+3TC or FTC+LPV/r
Third line	To select: DRV/r+DTG or RAL+TDF+3TC or FTC DRV/r+TDF+3TC or FTC+EFV or NVP	To select: DTG+ABC or AZT+3TC DRV/r+ABC or AZT+3TC DRV/r+ABC or AZT+3TC

Figure 8. Strategies of viral load tests aimed at detecting and confirming the failure of treatment and switching the ART regimen



5.2.1. ART considerations

Clinicians should consider the following aspects upon conducting ART:

- Build trust and relationship with the patient
- Assist in identifying the person who will provide support to treatment
- Develop ART plan, which suits the patient's lifestyle
- If more than 3 doses of the drugs are missed within one month, drug resistance can develop and risks of treatment failure may encounter.
- In case if a once-daily dose of the drug wasn't administered on time, it should be taken as soon as possible within 12 hours. If it's been more than 12 hours since the time of the missing dose, the dose of the day should be considered skipped. The next dose should be taken on time as supposed.
- Remind them that ART is a lifelong therapy.
- Explain about adverse effects of ARV drugs before ART initiation
- Precaution about some herbal preparations can reduce the efficacy of ART
- Followings should be assessed during the treatment course:
- Number of drugs missed or skipped since the last visit for follow-up
- Whether the drugs were taken on time (if not, for how many hours/days was it delayed)
- Whether the dosage of drugs was accurate
- Find out the reasons of skipping drugs

5.2.1.1. Immune reconstitution inflammatory syndrome

Immune Reconstitution Inflammatory Syndrome (IRIS) means the occurrence of chronic disorders in relation to reconstitution of the immune, within 100 says after ART initiation.

Diagnostic criteria of IRIS:

- Process of previously known infections becomes severe (paradoxical IRIS) or any infection, which was undetected before, is clinically identified (revealed IRIS)
- CD4 cell count <100 cells/ml, during tuberculosis treatment it can be detected even when CD4 cell count is greater than 200 cells/ml.
- Viral load values decrease while CD4 cell counts increase.
- The 3rd or 4th level adverse effects of ARV drugs haven't been detected.
- It's detected within 100 days after ART initiation.

Actions to be taken during manifestation of IRIS:

1. Continue ART. Provide treatment against disease-specific pathogen, which affects physical condition of the patient.
2. In severe conditions, discontinue ART and provide treatment against disease-specific pathogen, which affects physical condition of the patient.
3. Nonsteroidal anti-inflammatory drugs should be administered with suitable dosage. In severe episodes of IRIS, corticosteroid treatment should be conducted. Depending on the degree of severeness of the disorder, prednisolone treatment should be administered with once-daily dose of 1mg/kg for 1-4 weeks and followed by reduced doses until the symptoms disappear.
4. During suppurative lymphadenitis or tracheal or intestinal obstruction, necessary treatment and care should be provided.

5.2.1.2. Adverse effects of ARV drugs

Ретровирүсийн эсрэг эмэнд өгч буй хариу урвал нь дараах зэрэглэлтэй байна.

Reactions to antiretroviral drugs have the following levels:

- Level 1. Mild reaction: unneccesary to modify the therapy.
- Level 2. Moderate reaction: If the patient's condition doesn't improve with symptomatic treatment, switch one of the ARV drugs.
- Level 3. Strong reaction: Switch the drugs with greater adverse effects to different drugs
- Level 4. Life-threatening strong reaction: Stop the ART and start symptomatic and supportive

Treatment. All the drugs which show adverse effects should be replaced and ART restarted, when the patient's condition is stabilized.

Table 11. Adverse effects of ARV drugs

Name of drugs	Skin	Digestive system	Liver	Cardiovascular system	Skeletal system organs
Nucleoside Reverse Transcriptase Inhibitors (NRTIs)					
ABC	Rash*	Nausea*, Diarrhoea*	Ischemic Heart Disease		
ZDV	Melanonychia	Nausea	Fatty liver		Myopathy, Rhabdomyolysis
FTC					

Name of drugs	Skin	Digestive system	Liver	Cardiovascular system	Skeletal system organs
3TC					
Nucleotide Reverse Transcriptase Inhibitors (NtRTIs)					
TDF[iii]					BMI↓, Osteomalacia, Bone fracture risk↑
Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)					
EFV	Rash		Hepatitis		
NVP	Rash*		Hepatitis*		
ETV	Rash				
Integrase inhibitors (INIs)					
DTG	Rash	Nausea			
RAL					Myopathy, Rhabdomyolysis
Protease inhibitors (PIs)					
DRV	Rash	Nausea, Diarrhoea [i]			
LPV			Ischemic Heart Disease		
PI booster					
RTV					
Name of drugs	Genitourinary tract	Nerve	Fat	Metabolism	Others
Nucleoside Reverse Transcriptase Inhibitors (NRTIs)					
ABC					*Systemic hypersensitivity syndrome (HLA B*5701 dependent)
ZDV			Lipoatrophy	Dyslipidemia Hyperlactatemia	Anemia
FTC					
3TC					
Nucleotide Reverse Transcriptase Inhibitors (NtRTIs)					
TDF[ii]	*eGFR*↓, **Fanconi syndrome**				
Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)					
EFV		*Depression, Sleeplessness, Headaches,* **Suicidal ideation**		*Dyslipidemia*, Breast growth	*Plasma 25(***OH***) vitamin D Д*↓

Name of drugs	Skin	Digestive system	Liver	Cardiovascular system	Skeletal system organs
NVP					
ETV					
Integrase inhibitors (INIs)					
DTG	eGFR↓[iii]	*Headaches*			* Systemic hypersensitivity syndrome (<1%)
RAL		Mood swings			
Protease inhibitors (PIs)					
DRV	Nephrolithiasis			Dyslipidemia	
LPV	eGFR↓			Dyslipidemia	
PI booster					
RTV	eGFR↓[iii]				

Italicised: Occurs commonly

Bold: Severe adverse effects

i Frequency and severity of the adverse effects vary between ARV drugs.

ii TAF has relatively less adverse effects than TDF.

iii Because it has no impact on glomerular filtration, but inhibits the tubular creatinine secretion only

* Related to hypersensitivity reaction.

Table 12. ARV drugs adverse effect reduction management

Side effects	Drug name	Recommendation
Diarrhoea	NVP, LPV/r,	Not necessary to discontinue ART. Symptomatic treatment can be provided.
Mild and severe rashes of drug allergy (Stevens-Johnson syndrome, superficial skin tissue necrosis)	NVP, EFV (rare)	In mild episodes, antihistamine drugs should be used. If it's a non-progressive disease without systemic changes, one of the drugs in NRTIs should be changed (replace NVP with EFV). In moderate to severe progression, stop ART and administer supportive treatment. After the disease heals, restart ART with the regimen of 3NRTIs or 2NRTIs + PIs (TDF-based).
Development of resistance to Dyslipidemia Hyperglycemia and Insulin	PIs, EFV	Replace PIs, which have harmful effects, with PIs that show less impact on metabolism
Gastrointestinal crisis	All ARV drugs	It's unnecessary to stop ART. Symptomatic treatment should be conducted.
Reduced red and white blood cell counts	ZDV	In severe conditions (Hb<6.5 g/l, neutrophils +<500 cells/mm^3), the drugs should be replaced with the ones, which have no or minimal suppression over bone marrow function (d4T, ABC, TDF). If necessary, blood transfusion should be performed.
Hepatitis	All ARV drugs (specially NVP, PIs)	If alanine aminotransferase (ALT) has increased over 5 times and greater than the normal amount, ART should be stopped and physical condition of the patient should be monitored. After recuperation, replace NVP with EFV, TDF, or ABC and continue ART.
Hypersensitivity reaction	ABC	Stop ART and conduct symptomatic treatment. The ABC drug is life-threatening, thus it shouldn't be used again. Replace it with ZDV or TDF.
Neural and psychological disorders	EFV	As symptoms will gradually disappear, ART shouldn't be discontinued. During long-lasting central nervous system disorders with severe progression, substitution drugs such as NVP, TDF or ABC should be used.
Kidney dysfunctioning	TDF	Stop TDF and start supportive treatment. After recuperation, replace the drugs with ZDV or ABC and restart ART.

5.3. Prevention of opportunistic infections

5.3.1. Co-trimoxazole prophylaxis (CTX Prophylaxis)

Co-trimoxazole is an antibiotic used to treat a variety of bacterial, fungal and protozoal infections. It consists of two different antibiotics: trimethoprim and sulfamethoxazole. Co-trimoxazole prophylaxis is preventive treatment against

pneumocystis pneumonia and toxoplasmosis. It is useful in reducing HIV associated morbidity and mortality and thus commonly prescribed to people with HIV who have a low level of CD4 cell count.

Table 13. Co-trimoxazole prophylaxis (CTX Prophylaxis)

Primary CTX prophylaxis	When CD4 cell count is ≤350 cells/mm^3 (Indications for starting and stopping. See Table 15) *Indication for restarting:* CD4 cell count is ≤350cells/mm^3 for longer than 3 months, while the patient is on ART
Secondary CTX prophylaxis	Administered on patients who have undergone a complete course of treatment for pneumocystis pneumonia, to prevent from recurrent episodes. *Indications for starting:* Course of treatment for pneumocystis pneumonia is complete. Regardless of CD4 cell count. Indication for stopping: CD4 cell count increased and remained to be >350 cells/mm^3 for more than 3 months, as a result of ART administration Indication for restarting: CD4 cell count is ≤350cells/mm^3 for longer than 3 months , while the patient is on ART.
CTX prophylaxis to be provided upon ART initiation of a patient with CD4 count <350 cells/mm^3	Firstly, Cotrimoxazole prophylaxis should be initiated. If no allergic symptoms or reactions (rashes, changes in liver etc.) appear within 2 weeks of the therapy, initiate ART.
Dosage of CTX prophylaxis for adults and adolescents	Oral administration of 960 mg (combination of Sulfamethoxazole 800 mg and *Trimethoprim* 160 mg) per day
CTX prophylaxis for pregnant women and breastfeeding mothers	Women who initiate CTX prophylaxis should keep on with the regimen during pregnancy. Should CTX prophylaxis be needed, it can be initiated at any phase of pregnancy. Mothers who breast feed their children should remain on the CTX prophylaxis.
Patients allergic to sulfanilamide drugs	Dapsone oral 100mg per day. To select: Dapsone oral 50mg, once-daily + (pyrimethamine oral 50mg + leucovorin oral 25mg) once-weekly, or Dapsone oral 200mg + pyrimethamine oral 75mg + leucovorin oral 25mg, once-weekly, or Pentamidine oral 300mg aerosol, once-monthly, or Atovaquone oral 1500mg once-daily Cotrimoxazole desensitization shouldn't be performed on patients who had strong allergic reaction to drugs of sulfanilamide group and cotrimoxazole.
Control	It's unnecessary to control patients on CTX therapy through laboratory tests.

Table 14. Indications for starting and stopping CTX prophylaxis

Age	When to start	When to stop[A]
Infants born to HIV infected mothers	For infants born to mothers with HIV infection, treatment should be initiated in case if the virological tests are positive.	If HIV infection in infants was rejected
Age 1-5	If in WHO clinical stages 2, 3 and 4, regardless of CD4 cell count; or In any clinical stage, if CD4 cell count is ≤350cells/mm^3	Persistent
Age ≥5 (inclusive of adults)	In any clinical stage, if CD4 cell count is ≤350cells/mm^3; or If in clinical stages 3 and 4, regardless of CD4 cell count	No symptoms of clinical stages 2, 3 and 4 newly manifested within 1 year after the initiation of ART; CD4 cell count is > 350 cells/mm^3 and the viral load has reached an undetectably low level.

[A] If the patient has Stevens-Johnson syndrome, chronic liver and kidney disorder, severe anemia or pancytopenia, or a negative HIV screening test result, the therapy should be discontinued.

Table 15. Dosage of CTX prophylaxis

Volume of pharmaceutical packaging of syrup and tablets (mg, mg /5 ml)	**Body weight-based daily dosage estimations**					**Volume of packaging of tablets for adults**	**Number of tablets to take based on body weight**
	3-5,9	6-9,9	10-13,9	14-19,9	20-24,9		
Syrup, *SMX*200/ TMP40mg in 5ml	2,5ml	5ml	5ml	10ml	10ml	-	-
Tablet, *SMX*100/ TMP20mg	1	2	2	4	4	-	-
Tablet, *SMX*400/ TMP80mg	-	½	1/2	1	1	400/80mg	2
Tablet, *SMX*800/ TMP160mg	-	-	-	½	1/2	800/160mg	1

SMX – sulfamethoxazole

TMP – trimethoprim

Table 16. Regimen for reducing cotrimoxazole sensitivity

Step	**Dosage of tablets**	**Dosage of syrup SMX200/TMP40mg in 5ml**
Day 1	80mg *SMX* + 16mg TMP	2ml
Day 2	160mg *SMX* + 32mg TMP	4ml
Day 3	240mg *SMX* + 48mg TMP	6ml
Day 4	320mg *SMX* + 64mg TMP	8ml
Day 5	400mg *SMX* + 80mg TMP	10ml
Day 6	800mg *SMX* + 160mg TMP	(1 tablet)

SMX – sulfamethoxazole

TMP – trimethoprim

5.3.2. Prevention of common opportunistic infections

Table 17. Prevention of common opportunistic infections

Opportunistic infections	Primary prevention	Secondary prevention
Mycobacterium avium complex (MAC)	CD4 cell count <50 cells/ mm^3 Based on the clinical condition – Active episode of MAC – When treatment for disseminated MAC disorder is stopped *Primary treatment:* Azithromycin 1200mg orally once a week; or Clarithromycin 500mg -orally twice a day; or Azithromycin 600mg –orally twice a week *Substitution therapy:* Rifabutin dose should be chosen *Indication for stopping:* As a result of ART, CD4 cell count has increased to >100 cells/mm^3 for more than 3 months Indication for restarting: CD4 cell count reduces down to <50cells/mm^3	Adults and adolescents with disseminated MAC disorder should be involved in secondary prevention in all cases except having ART-caused IRIS. The same as MAC treatment regimen *Indication for stopping:* The 12 month treatment is over; Symptoms of MAC disorder disappear; As a result of ART, CD4 cell count has been >200 cells/mm^3 for longer than 6 months Indication for restarting: CD4 cell count <100 cells/mm^3
Herpes Simplex Virus	Primary prevention is not required.	Reduce complicated and recurrent type episodes Treatment: Acyclovir 400mg – orally, twice a day; or Valacyclovir 500mg – orally, twice a day; or Famciclovir 500mg – orally, twice a day The regimen should continue despite the increase of CD4 cell count.

Opportunistic infections	Primary prevention	Secondary prevention
Cryptococcosis	Primary prevention is not required.	During acute episode, treatment should start after the first 10 week regimens of the inception and stabilization treatments were completely conducted. *Chronic support and care:* Fluconazole 200mg- orally one tablet a day The regimen should last for at least 12 months. *Indication for stopping:* Patient received inception and stabilization treatments, and one-year long chronic support and care. Indication for restarting: CD4 cell count 100 >cells/mm^3
Cryptosporidiosis	ART should be initiated before immunity of a patient is heavily suppressed; If Rifabutin and Clarithromycin are included in the MAC prophylaxis, the regimen can serve as ccryptosporidium prophylaxis too.	Secondary prevention is not available.
Candidiasis	Because mucosal disease is far from life-saving indication and the treatment upon acute episode is highly effective, primary prevention is not recommended.	In complicated or recurrent episodes: Oropharyngeal candidiasis Fluconazole 150mg orally once-daily or twice-weekly Esophageal candidiasis Fluconazole 150mg-200mg once-daily oral intake; or Posaconazole 400mg twice-daily oral intake If the disease is cured, the treatment should be stopped. Indication for restarting: CD4 cell count >200 cells/mm3
Human papillomavirus (HPV)	In females aged 13-26: Intramuscular injection of 4-valent HPV vaccine with a dose of 0,5ml at the months 0, 1-2 and 6 respectively; or 2-valent HPV vaccine with a single dose of 0,5ml at the months 0, 1-2 and 6 respectively In males aged 13-26: Intramuscular injection of 4 valent HPV vaccine with a single dose of 0,5ml at the months 0, 1-2 and 6 respectively.	Secondary prevention is not required.

5.3.3. Clinical diagnosis and treatment of common opportunistic infections

Table 18. Diagnostics and treatment of common opportunistic infections

<table>
<tr><th>Opportunistic infections</th><th>Clinical symptoms (diagnostics and treatment)</th></tr>
<tr><td>Pneumocystis pneumonia (PCP)</td><td>
Signs and symptoms like dry coughing, dyspnea, fever and night sweats appear.
Lasts for 1-2 months in mild forms. In over 90% of all cases, radiograph analysis reveals bilateral diffuse interstitial lung disease.
<u>For patients with moderate to severe progression:</u>
Preferred Therapy:
A daily dosage of TMP 15-20mg + SMX 75-100mg/kg/day should be intravenously infused every 6-8 hours and can switch to oral administration regimen after the clinical condition improves.
Alternative Therapy:
Primaquine 30mg (base), orally once-daily dose + Clindamycin intravenous infusion of 600mg every 6 hours or 900mg every 8 hours; or orally 300mg every 6 hours or 450mg every 8 hours
Pentamidine 4mg/kg, intravenous infusion – once-daily dose to inject for at least 60 minutes continuously. Due to drug toxicity, the daily dosage can be reduced to 3mg/kg.
<u>For patients with mild to moderate progression:</u> treatment can be provided on outpatient basis.
Preferred treatment:
Orally, a tablet of TMP 15-20mg per day + SMX 75-100mg/kg/day divided into 3 equal doses; or
Orally, 2 tablets of TMP-SMX DS (double dosed or 160mg / 800mg) 3 times a day.
Alternative Therapy:
Dapsone 100mg, orally one tablet a day + TMP 15mg/kg/day tablet divided into 3 equal doses (in other words, a dose of 5mg/kg 3 times a day) or
Primaquine 30mg, orally once-daily + Clindamycin 300mg, orally every 6 hours or 450mg every 8 hours
Atovaquone 750mg, orally, one tablet, twice-daily with meal
In addition, hormone therapy should be administered in the following patients:
In room temperature PaO_2 <70 mm.Hg. ; or
If alivyeol-arterial O_2 gradient is ≥35 mm.Hg., Prednisolone treatment should be provided with the following dosage as soon as possible within 72 hours after the initiation of pneumocystis pneumonia treatment:
<table>
<tr><th>Prednisolone treatment weeks</th><th>Dosage</th></tr>
<tr><td>Week 1-5</td><td>40mg tablets orally twice-daily</td></tr>
<tr><td>Week 6-10</td><td>40mg tablets orally once-daily</td></tr>
<tr><td>Week 11-21</td><td>20mg tablets orally once-daily</td></tr>
</table>
For patients without ART, the treatment should be initiated within 2 weeks after the diagnosis of Pneumocystis pneumonia.
</td></tr>
</table>

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Candidiasis	Oropharyngeal candidiasis: White mucinous coat ± erythema in the oral cavity. Diagnosed by specific clinical symptoms. Through microscopy (with 10% KOH solution) fake micelles are detected. **Preferred Therapy:** 7-14 days Fluconazole 100mg tablets - orally once-daily dose Clotrimazole 10mg troche - orally 5 times a day; or Topical treatment: Miconazole 50mg oral tablets – one tablet a day to be dissolved slowly in the mouth (the pill shouldn't be swallowed, chewed and shredded) **Alternative Therapy:** 7-14 days Itraconazole 200mg syrup, orally once a day Posaconazole 400mg syrup – twice-daily in the first day and once-daily onwards. Topical treatment: Nystatin suspension – oral administration of 4ml-6ml 4 times a day; or Nystatin pastilles – 1-2 pieces slowly dissolved in mouth 4-5 times a day
	Pharyngeal candidiasis Discomfort in swallowing and pain behind the sternum. Identify specific clinical features and monitor the results of the treatment. Conduct endoscopy. **Preferred Therapy:** 14-21 days Fluconazole 100mg tablets (up to 400mg) once-daily dose of oral or intravenous administration; or Itraconazole 200mg syrup, orally once a day **Alternative Therapy:** 14-21 days Posaconazole 400mg – orally, twice-daily; or Amphotericin B deoxycholate – intravenous injection of once-daily dose of 0,6 mg/kg; or Amphotericin B lipid formulation - intravenous injection of once-daily dose of 3-4 mg/kg
	Vulvovaginal candidiasis Diagnose on the basis of clinical symptoms and the result of smear tests. If necessary, culturing and PCR can be conducted. *Uncomplicated vulvovaginal candidiasis:* **Preferred Therapy:** Fluconazole 150mg – orally, once-daily Topical therapy with Clotrimazole, Butoconazole, Miconazole, Tioconazole and Terconazole for 3-7 days. **Alternative Therapy**: Itraconazole 200mg syrup, orally once a day for 3-7 days *Complicated or recurrent vulvovaginal candidiasis:* **Preferred Therapy:** Fluconazole 100-200mg tablets – orally, once-daily for at least 7 days; or Use anti-fungal drugs for topical therapy for at least 7 days

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Cryptococcosis	Signs and symptoms: occipital neuralgia; meningitis symptoms: discomfort in lights, neck stiffness and increased intracranial pressure; fever; mental disorder; disseminated necrotizing and bumpy rashes on the skin; and pulmonary infiltrates. Increased intracranial pressure and detection of protein presence in CSF. Microscopy test should be conducted on on the smears from CSF and skin rashes. Cryptococcal meningitis: **Preferred Therapy:** ***Inception treatment:*** It should continue for at least 2 weeks. Subsequently, stabilization treatment should be administered. Liposomal amphotericin B 3-4mg/kg intravenous injection with once-daily dose + Flucytosine 25mg/kg orally 4 times a day ***Stabilization treatment:*** This should be provided for at least 8 weeks and followed with supportive treatment or secondary prevention. Fluconazole 400mg once-daily dose oral administration or intravenous injection **Alternative Therapy:** ***Inception treatment:*** It should continue for at least 2 weeks. Subsequently, stabilization treatment should be administered. Amphotericin B deoxycholate – intravenous injection with once-daily dose of 0,7mg/kg + Flucytosine 25mg/kg orally 4 times a day; or Amphotericin B lipid complex - intravenous injection with once-daily dose of 5mg/kg + Flucytosine 25mg/kg orally 4 times a day; or Liposomal amphotericin B - intravenous injection with once-daily dose of 3-4mg/kg + Fluconazole 800mg tablets once-daily dose of oral or intravenous administration; or Amphotericin B deoxycholate – intravenous injection with once-daily dose of 0,7mg/kg + Fluconazole 800mg once-daily dose oral administration or intravenous injection; or Fluconazole 400mg-800mg once-daily dose oral administration or intravenous injection + Flucytosine 25mg/kg orally 4 times a day For non-CNS extrapulmonary cryptococcosis and diffuse pulmonary disease: The same treatment as of cryptococcal meningitis For mild to moderate symptomatic non-CNS cryptococcosis and partial pulmonary infiltrates: Fluconazole 400mg once-daily dose oral administration for 12 months

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Cerebral toxoplasmosis	Symptoms: headaches; drowsiness; fever; partial neurologic disorders; and seizures. Brain computed tomography reveals growing annular focal changes. efficacy of the treatment should be monitored. During acute infection: Treatment should continue for at least 6 weeks. If the clinical symptoms and the variance revealed through radiological tests still remain the same, the duration of the treatment should be extended. **Preferred Therapy:** Pyrimethamine 200mg - oral administration of once-daily dose should be continued with the following treatment regimen as per body weight of patients: If body weight is <60kg, Pyrimethamine 50mg orally, once-daily + Sulfadiazine 1000mg orally, every 6 hours + Leucovorin 10-25mg orally, once-daily If body weight is ≥60kg, Pyrimethamine 75mg orally, once-daily + Sulfadiazine 1500mg orally, every 6 hours + Leucovorin 10-25mg orally, once-daily Dose of Leucovorin can be increased to oral administration of 50mg 1-2 times a day. **Alternative Therapy**: Pyrimethamine (Leucovorin)* + Clindamycin 600mg orally or intravenously every 6 hours; or TMP-SMX (TMP 5mg/kg, SMX 25mg/kg) orally or intravenously, twice- daily; or Atovaquone 1500mg orally, twice-daily with meal + Pyrimethamine (Leucovorin)*; or Atovaquone 1500mg orally, twice-daily with meal + Sulfadiazine 1000mg-1500mg orally every 6 hours (dosage should be chosen as per body weight, the same as in the primary treatment); or Atovaquone 1500mg twice-daily with meal; or Pyrimethamine (Leucovorin)* + Azithromycin 900mg-1200mg orally once-daily dose * Pyrimethamine, Leucovorin dosage is the same as for primary treatment Note: Corticosteroids only can be added to the regimen if the partial disorder development process covers wide range and treatment has shown necessary efficacy or the patient has swelling, and the drugs should be removed from the regimen as soon as clinical improvement is observed. Patients with history of *epilepsy* and seizures can be prescribed anti-epileptic drugs during the treatment of acute infection, but the drugs shouldn't be used for the purpose of preventing epilepsy or seizures. If Sulfadiazine has been substituted with Clindamycin, the pneumocystis pneumonia prophylaxis should be added to the treatment regimen.

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Herpes Simplex Virus Infection	Sores and blisters on facial and genital areas. It can affect body organs and systems (HSV-caused pharyngeal infection and encephalitis). Significant clinical symptoms occur. **Preferred Therapy:** Mouth and lip cold sores: should be treated for 5-10 days Valacyclovir 1gr – orally, twice-daily; or Famciclovir 500mg – orally, twice-daily; or Acyclovir 400mg – orally 3 times a day First and recurrent episodes of genital herpes: should be treated for 5-14 days Valacyclovir 1gr – orally, twice-daily; or Famciclovir 500mg – orally, twice-daily; or Acyclovir 400mg – orally, 3 times a day Severe mucosal HSV infection: Treatment should start with intravenous injection of Acyclovir 5mg/kg in every 8 hours. When sores heal and return to normal, the regimen should switch to oral administration with the same dose. Treatment should continue until the mucosal sores are fully healed. **Alternative Therapy:** For Acyclovir-resistant HSV infection: Foscarnet intravenous infusion of 80-120mg/kg/day divided into 2-3 equal doses. Treatment should continue until clinical improvement is observed (21-28 days or longer). *Topical therapy:* Trifluridine and Cidofovir solution for topical treatment can be prepared from Trifluridine eyedrops and Cidofovir intravenously injectable medication.

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Lupus erythematosus Herpes zoster	Onset of a number of painful vesicular rash along the nerves and occurrence of significant clinical symptoms **Preferred Therapy:** Valacyclovir 1gr - orally 3 times a day Famciclovir 500mg – orally 3 times a day **Alternative Therapy**: Acyclovir 800mg – orally 5 times a day *In episodes with larger skin injuries (sores) or spread to internal organs:* **Preferred Therapy:** Acyclovir 10-15mg/kg – intravenously every 8 hours until improvement of clinical condition is verified. The regimen can be substituted with oral administration of Valacyclovir, Famciclovir and Acyclovir for 10-14 days upon clinical improvement (no new blisters or decreased clinical symptoms of the internal organs infection). *Progressive outer retinal necrosis* (PORN): Ganciclovir 5mg/kg ± Foscarnet 90mg/kg - intravenous infusion every 12 hours + Ganciclovir 2mg/0,05ml ± Foscarnet 1,2mg/0,05ml suspension - intravitreal injection, 2 times a week ART initiation or switching to appropriate dose and regimen Acute retinal necrosis: Acyclovir 10-15mg/kg - intravenous infusion every 8 hours + Ganciclovir 2mg/0,05ml 2 times a week x 1-2 doses of intravitreal injection. This treatment should be administered for 10-14 days, followed by Valacyclovir 1gr – orally 3 times a day for 6 weeks. To treat retinal inflammation, collaboration with ophthalmologist is necessary. Duration of the treatment should depend on the results of clinical, virologic, immunological and ophthalmological tests and analysis.

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Disseminated mycobacterium avium complex	Symptoms: intermittent or constant fever; weight loss; and fatigue. Tests for detecting pathogens in blood and other specimen should be conducted. For unexplained anemia, differential diagnosis should be performed. Treatment should continue for at least 12 months and can be discontinued only if the disease symptoms have disappeared and the patient's condition has been stable for more than 6 months and CD4 cells count is >100 cells/mm^3. **Preferred Therapy:** It should start with at least 2 different drugs. Clarithromycin 500mg orally, twice-daily + Ethambutol 15mg/kg orally, once-daily; or If the drugs aren't suitable for the patient or Clarithromycin can't be used due to drug interactions, choose oral administration of Azithromycin 500mg-600mg once-daily + Ethambutol 15mg/kg once-daily. When the CD4 cell count is reduced to less than 50 cells/mm^3 and it's impossible to initiate ART, the following additional drug can be used for treatment: Rifabutin 300mg orally, once-daily (dosage should be decided with regard to drug interactions). Patient's sensitivity to Clarithromycin and Azithromycin should be assessed. Non-steroidal anti-inflammatory drugs (NSAIDs) can be used for patients with moderate to severe symptoms in the form of IRIS. If IRIS develops, systemic corticosteroid treatment (Prednisolone 20mg-40mg) can be administered for a short period or 4-8 weeks.
Cryptosporidiosis	Symptoms include chronic diarrhoea; stomach cramps; vomiting; and upper right abdominal pain. Stool smears should be tested by Ziehl–Neelsen's modified acid-fast staining, Kesteren's safranin and Giemza's azure-eosin and negative staining methods, to detect oxygen-resistant bacteria. ART should be initiated immediately on the patient who isn't on it. The treatment can start with the PIs-based ARV regimen. **Principles of primary treatment:** ART initiation Oral or intravenous fluid infusion to correct electrolyte imbalances Anti-diarrhoea symptom treatment should be administered with the use of movement coordination drugs **Alternative Therapy:** Without ARV drugs, no treatment can be effective. Hence, the following drugs can be used in addition (should be avoided during the 1st trimester of pregnancy) Nitazoxanide 500mg -1000mg orally, twice-daily for 14 days. Note: Compared to Loperamide, opium extract is more effective in treating diarrhoea. Opium extract shouldn't be used during the later stages of pregnancy.

Opportunistic infections	Clinical symptoms (diagnostics and treatment)
Human Papillomavirus Infection	Symptoms: warts on genital organs, mouth and anorectal areas. The infection should be clinically diagnosed. Patient-applied regimens for external, non-complicated warts (genital warts): Podophyllotoxin (podofilox 0,5% solution or 0,5% gel) should be applied to the warts 2 times a day. The treatment should be administered in 4 repetitive phases each having 3 consecutive days of treatment followed by 4 days of break or until the warts disappear; Provider-administered regimens for warts occurring in groups or patients being unable to reach the warts: *Cryotherapy* - liquid nitrogen or cryoprobe is applied to the warts until they completely freeze. This regimen should be repeated every 1-2 weeks for a total of 4 weeks or until the warts disappear; or Trichloroacetic acid or bichloroacetic acid moxibustion: Apply 80-90% water solution only to the warts and allow them to dry until a white frosting develops. This should be done once a week for a total of 6 weeks or until the warts disappear; or Externally located or anal warts should be removed surgically by scissor excision or laser surgery.

5.4. HIV and tuberculosis coinfection management

Tuberculosis (TB) is a leading cause of death among people living with HIV in Mongolia. Thus, clients should be assessed on a regular basis, as per the TB screening algorithm, and a decision made regarding whether diagnostics, treatment and prophylactic isoniazid treatment (PIT) should be administered. Conduncting a combination of ART and PIT is a good way of preventing from TB for people living with HIV, even when their CD4 cell count is high and it contributes to reducing the risks of death. Initiation of ART at the right time is important for preventing from TB and reducing the risks of HIV-associated TB deaths among HIV positive TB patients.

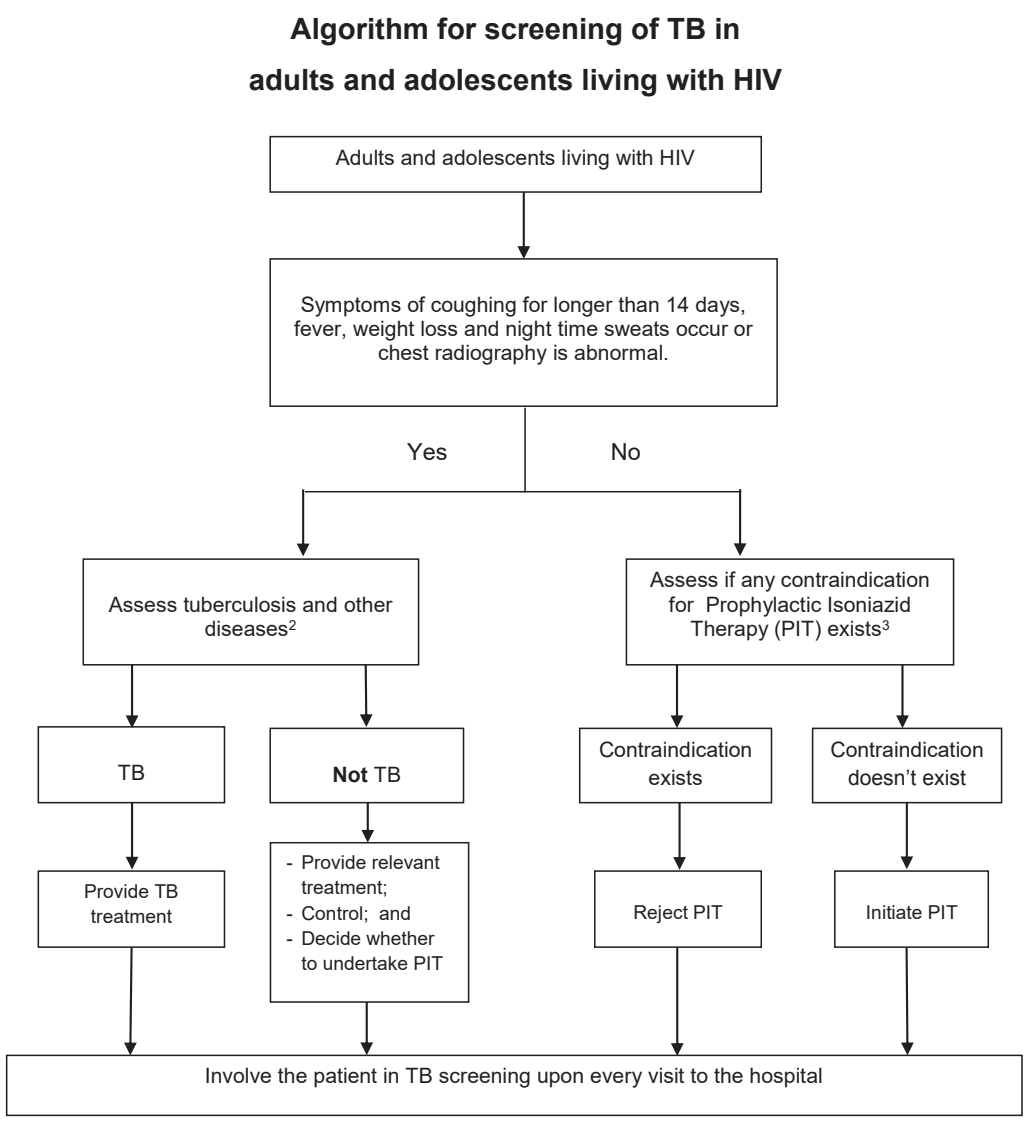
5.4.1. TB screening in clients with HIV and AIDS

TB screening test and examination should be conducted on clients with HIV and AIDS in the following circustances:

- For a newly diagnosed HIV and AIDS infection case, and in every 6 months in further
- Manifestation of TB clinical symptoms

The TB screening medical examination conducted on adults and adolescents with HIV should identify if any the clinical symptoms of coughing for longer than 14 days, fever, weight loss and night time sweats occur and chest radiography should be performed. If these symptoms are occurring and it's suspected to be TB infection, the tests uncluding Xpert MTB/RIF, bacteriological test and other instrumental tests should be conducted.

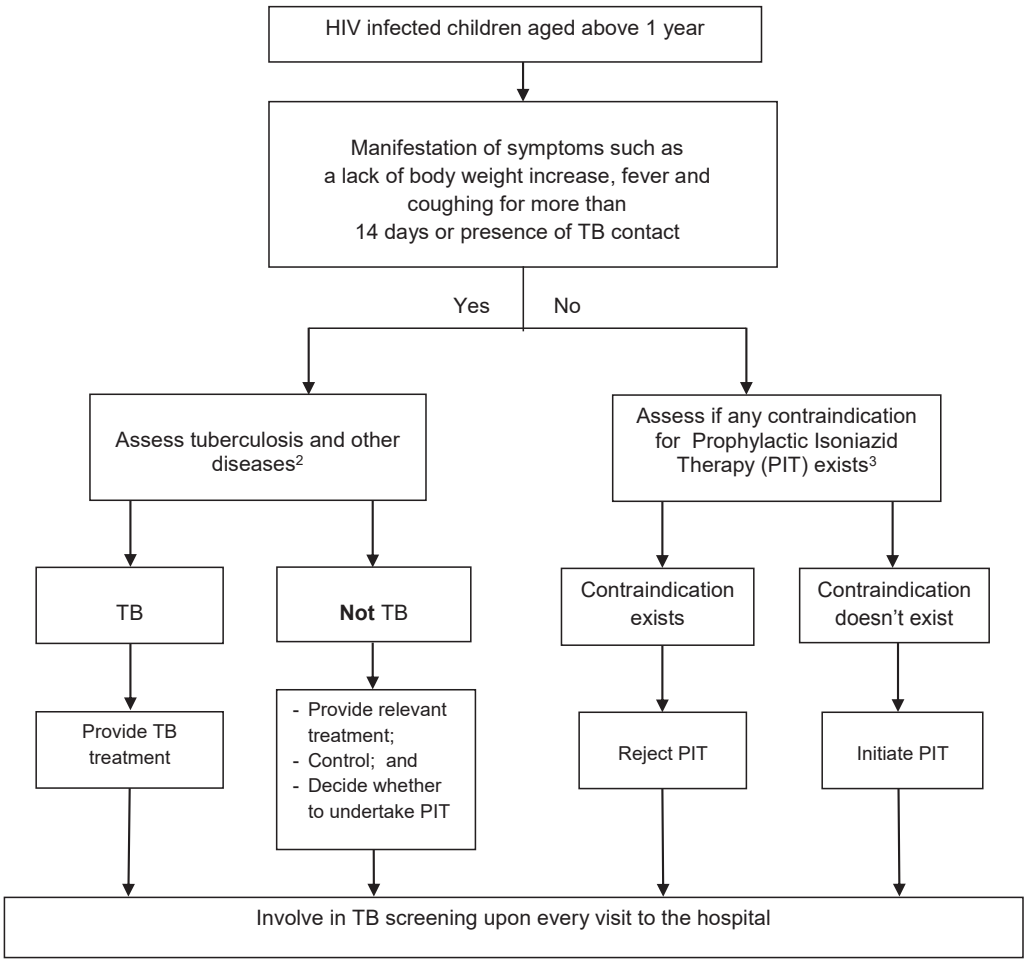
Figure 9. Screening of TB in adults and adolescents living with HIV



[2]Guidelines for the treatment and care of tuberculosis should be followed.

[3]Contraindications: TB or presumed TB infection cases, hypersensitivity to isoniazid, acute and chronic liver diseases (jaundice, nausea, vomiting, pain in the right rib cage, dark urine and white stool etc.), alcohol dependence, peripheral nervous disorders, people at risk of having epilepsy and seizure (in particular, when phenytoin is employed in treatment), if some types of drugs (aluminum-containing antacids, carbamazepine, corticosteroids, ethanol, phenytoin, warfarin etc.) have been employed in treatment.

Figure 10. Detection of tuberculosis in HIV infected children aged above 1 year



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5.4.2. TB treatment for HIV positive TB patients

Treatment should be conducted as per the guidelines for the treatment and care of TB.

Considerations for treatment of HIV positive drug-resistant TB patients:

- Bedaquiline and Thioacetazone shouldn't be employed in TB treatment. In case if Bedaquiline is chosen in the regimen, HIV and AIDS doctor should be consulted for deciding ART regimen. Regimen:
    - NRTIs + NRTIs + NVP — For instance: AZT+3TC (or FTC)+NVP
    - NtRTIs + NRTIs + NVP — For instance: TDF+3TC (or FTC)+NVP
    - NRTIs + NRTIs + NRTIs — For instance: AZT+3TC (or FTC)+ABC
- Reject any regimen that contains Efavirenz and PIs, monitor QT intervals in electrocardiogram on a monthly basis, prevent from liver toxicity caused by Nevirapine and Bedaquiline, monitor QT intervals on a monthly basis.

5.4.3. ART initiation on HIV positive TB patients

For HIV positive TB patients, ART should be initiated after starting Tb treatment, regardless of CD4 cell count.

Table 19. ART initiation timeline for HIV positive adults and children with TB

CD4 cell count	Recommendations
<50 cell/mm^3	Start TB treatment. If it doesn't show adverse effects and the process is normal, ART can be initiated within 2-3 weeks after the TB treatment starts. If meningitis is detected, ART should be initiated within 2 weks after the TB treatment starts.
>50 cell/mm^3 <350 cell/mm^3	Start TB treatment. ART should be initiated as early as possible (within 8 days). If the patient experiences adverse effects of anti-TB drugs, ART should be initiated as soon as the intensive treatment period is over. CD4 cell count should be constantly monitored during TB treatment and if it decreases to >100 cells/mm^3, ART should be initiated immediately.
>350 cell/mm^3	ART can be initiated at the same time with TB treatment.
Regardless of CD4 cell count	All the HIV positive TB patients (CD4 cell count <500 cells/mm^3) should initiate ART as soon as possible within 8 weeks after starting TB treatment. In children, ART should be initiated as soon as possible within 8 weeks after starting TB treatment, regardless of CD4 cell count.
Note: To initiate ART for patients on TB treatment, Efavirenz should be selected as the first choice NNRTIs.	

5.4.4. IPT for people living with HIV

- HIV positive adults and adolescents who haven't been confirmed to have TB should be provided with IPT (isoniazid 300mg/day oral intake for 6 months).
- If an HIV infected person aged above 12 months doesn't live with any TB infected persons and tests negative on active TB through symptomatic clinical diagnosis, he/she should be provided with IPT (oral administration with a daily dose of 10mg/kg of body weight (with the maximum daily dose of 300mg) for 6 months).
- During IPT, pyridoxine should be orally administered with a dosage of 10mg/day if for prevention of peripheral nervous disorder and 50-70mg/day for treatment purpose.
- Contraindications of PIT:
    - TB or presumed TB infection case
    - Hypersensitivity to isoniazid
    - Acute and chronic liver diseases (jaundice, nausea, vomiting, pain in the right rib cage, dark urine and white stool etc.)
    - Alcohol dependence
    - Peripheral nervous disorders
    - People at risk of having epilepsy and seizure (in particular, when phenytoin is employed in treatment)
    - If some types of drugs (aluminum-containing antacids, carbamazepine, corticosteroids, ethanol, phenytoin, warfarin etc.) have been employed in treatment

5.4.5. Treatment follow-up

- The intensive stage TB treatment of the client whose diagnosis was confirmed through lung microbiome analysis should be administered at the hospital and further stage follow-up treatment should be conducted under direct control of a TB cabinet doctor.
- Sputum smear and culture tests during treatment follow-up should be conducted in accordance with the guidelines for the treatment and care of drug-sensitive and drug-resistant TB endorsed by this Order.
- Clients with HIV and AIDS should be involved in TB screening tests and examination in every 6 months after conducting a complete course of TB treatment.

CHAPTER 6. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

Prevention of mother-to-child transmission (PMTCT) of HIV is a comprehensive action taken, in order to prevent HIV transmission from an infected mother to her child.

6.1. Risks of mother-to-child transmission of HIV

HIV infection can be transmitted from an HIV infected mother to her child: 1) during pregnancy; 2) during childbirth; and 3) during breastfeeding. High level of HIV viral load in the mother's blood increases the risks of transmission of the infection from the mother to her child. The mother-to-child transmission rates range from 13% to 40%. Transmission stages:

- During pregnancy: HIV is detected in tissues of the fetus when it's 8 weeks old. In most of the cases, the infection is transmitted to the fetus during the final stage of pregnancy.
- During childbirth: About 50-70 percent of the overall mother-to-child transmission cases take place at this stage. The infection is transmitted via contacts with the HIV positive mother's blood, cervical secretion or amniotic fluid upon childbirth.
- Postpartum: It concerns breastfeeding. Under breastfeeding, the level of the risk of HIV transmission is 1/3. When an infant is breastfed, his/her risk of contracting HIV increases by 10-14 percent.

Table 20. Factors influencing mother-to-child transmission of HIV

During pregnancy	At childbirth	While breastfeeding
• Placental infection caused by virus, bacteria or parasite • Sexually transmitted infections • Maternal malnutrition (indirect cause)	• Fetal water breaks 4 hours and more before the labour • Surgeric interventions (i.e. episiotomy) performed during childbirth increases the risk of having contact with the infected blood of mother and other bodily fluids • First multifetal pregnancy and delivery • Chorioamnionitis	• During breastfeeding • Early transitioning of child from breastfeeding to mixed food • Mastitis, nipple cracks and breast ulcer • Infant stomatitis and oral sores
Viral load in the mother's blood is high.		

6.2. ART administration for prevention of mother-to-child transmission of HIV

In order to prevent from mother-to-child transmission of HIV, all the pregnant women and breastfeeding mothers with HIV should initiate ART, regardless of their clinical stage and CD4 cell count or term of pregnancy of the HIV infected women, and continue for their lifetime. Breastfeeding mothers should give up breasfeeding their children immediately before ART initiation.

If a pregnant woman is diagnosed with HIV during or after the childbirth, she should be linked to follow-up care of STI, HIV and AIDS doctor and provided with ART as soon as possible and the treatment should prescribed for lifetime.

If the pregnant woman Xwaa diagnosed with HIV infection and ART was initiated before she became pregnant, ART should be continued during pregnancy and after childbirth.

Table 21. ART for prevention of mother-to-child transmission (PMTCT) of HIV

PMTCT programme regimens	HIV infected pregnant women and breastfeeding mothers	Children exposed to HIV infection
All the pregnant women and breastfeeding mothers with HIV should initiate ART and continue for lifetime[1] TDF+3TC (or FTC)+EFV	Regardless of WHO clinical stage and the CD4 cell count	Feed with formula
	Initiate ART and continue after childbirth, breastfeeding is suspended.	To prevent infants of the age below 6 weeks (42 days) from HIV, NVP - with once-daily dose (if body weight is 2000-2499gr 10mg; if ≥2500gr 15mg; if < 2000gr 2 mg/kg) + AZT - 2 times a day (if body weight is 2000-2499gr 10mg; if ≥2500gr 15mg; if <2000gr 2mg/kg) should be orally administered.[2]
	If a child is breastfed, this should stop and ART should be initiated immediately	Breastfeeding should stop immediately and child should be fed with formula. In addition to the primary treatment conducted during the first 6 weeks of the child's life, following 6-week therapy should be provided. NVP once-daily + AZT twice-daily (if body weight is 2000-2499gr 10mg; if ≥2500gr 15mg; if <2000gr 2 mg/kg) should be orally taken; OR NVP once-daily oral intake (infants 2000-2499gr 10mg; ≥2500gr 1mg; <2000gr 2mg/kg).

If mother is on ART and her viral load is suppressed	Continue with ART, breasfeeding should be suspended.	NVP once-daily oral administration (infants 2000-2499gr 10mg; ≥2500gr 15mg; <2000gr 2mg/kg); OR AZT twice-daily (infants 2000-2499gr 10mg; ≥2500gr 15mg; <2000gr 2mg/kg) for 4-6 weeks.
	If a child is breasfed, stop it and change the feeding to formula and continue with ART	NVP once-daily oral administration (infants 2000-2499gr 10mg; ≥2500gr 15mg; <2000gr 2mg/kg) for 6 weeks.

[1]Treatment for pregnant women and breastfeeding mothers should be monitored by clinical examination, viral load and CD4 cell count to determine if the regimen has failed and the assessment for the initiation of second-line therapy should be conducted.

- If a mother who has a child aged between 6 weeks and 1 year is diagnosed with HIV infection, child breastfeeding should stop and shift to formula feeding and the child will be observed and provided with follow-up care by pediatricians and STI, HIV and AIDS doctors until the child turns 18 months.
- Children born to HIV infected mothers should be involved in early diagnostics of infants.

6.3. Childbirth care and support for HIV positive pregnant women

To prevent mother-to-child transmission of HIV, pregnant women with HIV should have a planned cesarean delivery.

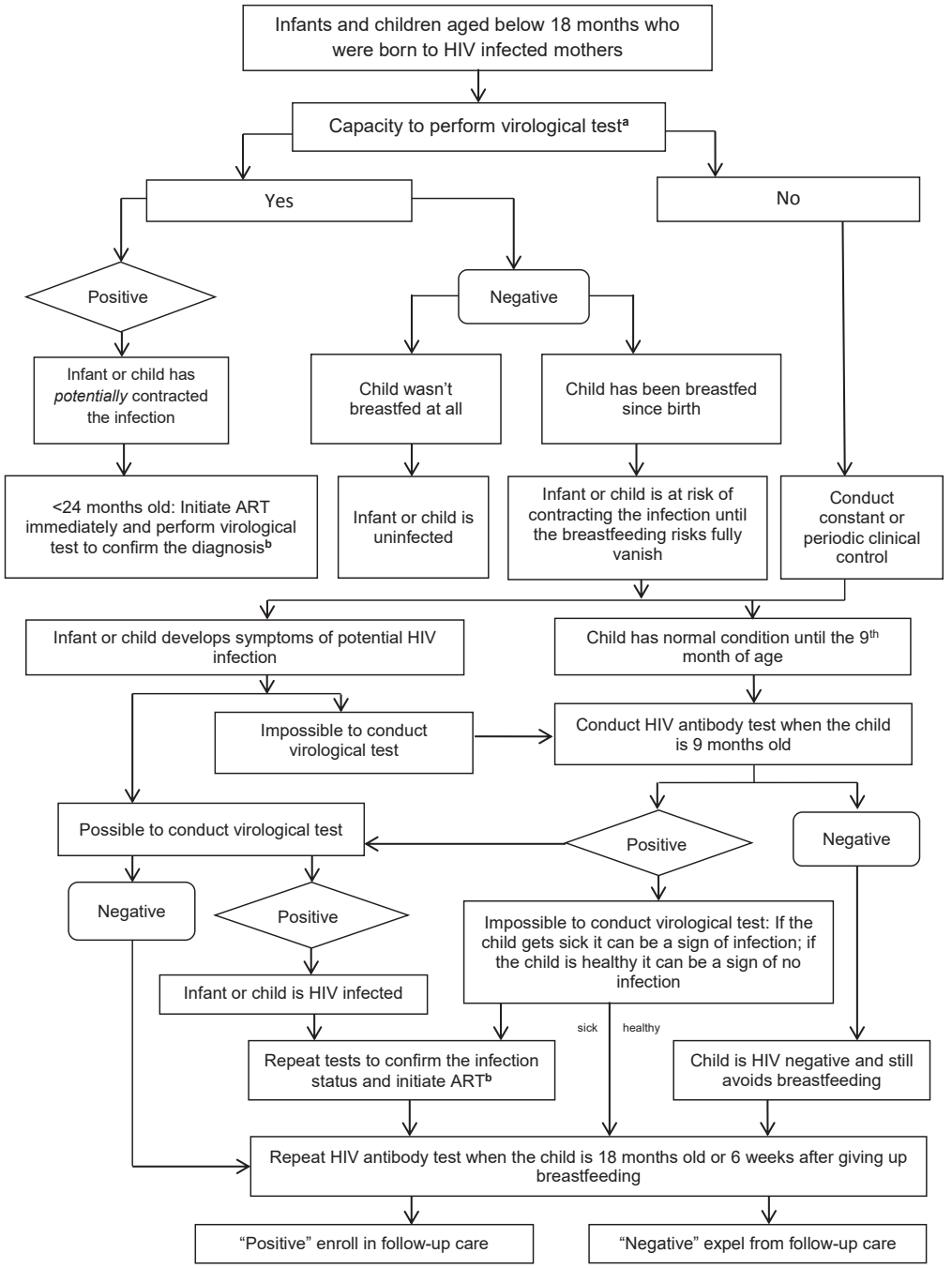
6.4. Early diagnostics of infants

- Infants with signs of potential HIV infection should be involved in HIV screening test and, if the test result is positive, virological tests should be conducted.
- Infants who tested “positive” on virological tests should be initiated on ART immediately and repeated tests should be performed, in order to confirm the “positive” result of the first virological test. ART should be initiated without waiting for the confirmatory test result and the infant should be enrolled in follow-up care.
- Children aged ≥18 months who were born to HIV infected mothers should be diagnosed by the HIV screening test algorithm used for adults and adolescents.
- Children born to HIV infected mothers should be provided with HIV screening test when they are 18 months old. If their test result is “negative”, they should be considered non-infected with HIV and expelled from the STI, HIV and AIDS doctor’s follow-up care. If the test result is positive, they should be considered HIV infected and enrolled on ART.

6.5. Considerations for treatment, care and support of pregnant women

- Treatment, care and follow-up of pregnant women with HIV should be provided by medical doctors and HIV and AIDS doctors of the healthcare organization of respective jurisdiction and, if necessary, by HIV and AIDS clinical physicians of the STI and AIDS Sentinel Surveillance Department of NCCD, in accordance with the “Procedures of detection, treatment and care for vulnerable pregnant women”.
- Pregnant women with HIV should be provided with treatment and care by the healthcare organization of the jurisdiction and the children should be delivered by caesarean section.
- Should HIV infected pregnant women and neonates need specialized obstetric and pediatric care and service, the childbirth process should be managed at the National Center of Maternal and Child Health.
- Healthcare providers should strictly comply with the precautionary rules and principles in managing childbirth.
- Healthcare providers should avoid having stigmatizing and discriminatory attitude towards HIV-infected mothers while providing them with treatment and care and maintain confidentiality of their private information.

Figure 11. Early diagno stics of infants



[a]In infants, at postnatal stage or upon the first follow-up visit (in the 4th – 6th week after childbirth)

[b]If required, ART should be initiated without delay. The diagnosis confirmatory tests should be conducted at the same time.

Table 22. Tests conducted on infants

Categorization	Required tests	Purpose	Measures
Infants born to HIV infected mothers	Virological test conducted right after birth	To diagnose HIV infection	ХДХВ-ийн халдвартай бол РВЭЭ эхлэх
	If testing wasn't done right after birth, virological test should be conducted in the week 4-6		
9 month old infants born to HIV infected mothers	HIV screening test using rapid test kits	To detect HIV infection	If the result is "positive", conduct virological test and enroll on the control program; If the result is "negative", assume the infant is uninfected and repeat the tests at the 18th month.
Infants and children with potential HIV infection symptoms	HIV screening test	To confirm HIV infection status	If aged <18 months, conduct virological test
Infants and children who tested "positive" on the HIV screening test	Virological test	To diagnose HIV infection	If the result is "positive", enroll on the control program and initiate ART.
Infants and children born to HIV infected mothers and given-up on breastfeeding	Infants and children aged <18 months who tested "positive" on serological and virological tests should be involved in repeated HIV screening and virological tests at least 6 months after giving-up breastfeeding.	To confirm HIV infection status	If the result is "positive", enroll on the control program and initiate ART.

CHAPTER 7. PROPHYLACTIC ART OF HIV

To reduce the risks of transmission to persons uninfected with HIV or the ones who've been exposed to HIV infection, prophylactic ART should be administered.

7.1. Pre-exposure prophylaxis (PEP)

Pre-exposure prophylaxis (PrEP) is administration of ARV drugs on a daily basis aimed at reducing the risks of transmission of the infection to people who don't have HIV.

PrEP should be administered of the un-infected partner in a serodiscordant couple as an additional prevention from HIV. PrEP is only one component of the comprehensive HIV prevention intervention and it cannot replace safer sexual practices and behaviors

Couples or sexual partners means two people who are in active relationship of having sexual intercourse and it doesn't distinguish heterosexual and homosexual partners.

Table 23. PrEP regimens, indications for starting and suspending, and control

Regimens	TDF 300mg + FTC 200mg once-daily dose of oral administration; or TDF 300mg once-daily dose of oral administration
Indications for starting	HIV negative status was confirmed Had unprotected sexual intercourse with an HIV infected person over the past months and still have the same relationship Identify whether the women who plan to get pregnant are pregnant or breasfeeding. Breastfeeding mothers shouldn't start PrEP. Explain that while no avderse effects of conducting PrEP during pregnancy has been recorded so far, evidence for serodiscordant couples is insufficient.
Indications for suspending and actions to be taken	By the request of the client Decision to suspend PrEP administration due to its adverse effects is made. Actions to be taken upon suspension: Conduct tests to confirm the HIV infection status It the test result is positive, test and document whether any drug-resistance has developed, and refer to HIV treatment and care If the test result is negative, link to risk reduction services If the client was diagnosed with active HBV infection when PrEP starts, pay attention to the selection of appropriate drugs to continue with the treatment of the infection If the client is pregnant, inform the ANC doctor about the client's oral administration of TDF/FTC during early stage of pregnancy and provide the client with HIV preventive measures during the periods of pregnancy and breastfeeding

Control	Conduct HIV screening tests in every 3 months Conduct CBC, UA and biochemical assays in every 3 months after starting PrEP and in every year onwards, and monitor protein and creatinine Investigate ART history of the sexual partner and, if no ART has been conducted, initiate Even if no symptoms have manifested in the client, conduct STI screening tests in every 6 months Conduct HBV screening tests, vaccinate regardless of the decision on PrEP and provide treatment if it's active infection Provide counseling on the adherence to treatment regimen upon every visit of the disease control. If the client seems to be not taking the drugs as regularly as prescribed, increase the frequency of the counseling For female clients, conduct pregnancy test upon every visit for control, document the result, and discuss with the client and her ANC doctor about continuing PrEP Assess the risky behaviors of clients and provide them with risk reduction counseling and condoms, and involve them in STI screening test and examination in every 3 months

7.2. Post-exposure prophylaxis (PEP)

Post-exposure prophylaxis is an intervention aimed at reducing the risks of exposure to STI and HIV and viral hepatitis infection, and pregnancy.

Post-exposure prophylactic therapy (PEP) is a set of actions to reduce the risks of contracting the infection upon being exposed to HIV (via the mucous membranes: sexual intercourse, eyes, nose, mouth cavity; via the bloodstream). This includes counseling, risk assessment, HIV screening tests conducted on both the exposed person and the source person, first aid, administration of prophylactic ART as per the regimen, and clinical and laboratory control and follow-up etc.

The PEP principles:

- Staying free from discrimination
- Keeping confidentiality
- Obtaining informed consent
- Initiating PEP within 72 hours after the exposure. If later than this, PEP is ineffective.

Table 24. HIV transmission risks of biological fluids

"Risky" fluids	**"Non-risky fluids** (When no visible blood is contained)
Blood	
Seemen	
Vaginal secretion	Tears
Cerebrospinal fluid	Sweat
Joint, pleural, pericardial and abdominal fluids	Urine, stool
	Salive
Amniotic fluid	Vomit

Figure 12. Sequence of PEP implementation steps

PEP initiation

PEP lasts for 28 days. First dose of ARV drugs should be administered as soon as (in 1-2 hours) the decision to implement PEP is made.

Table 25. Regimen for emloyment of ARV drugs in PEP

Adults and adolescents	**Children (aged 10≥ years)**
TDF + 3TC (or FTC) or TDF + 3TC (or FTC) + EFV or TDF + 3TC (or FTC) + LPV/r or TDF + 3TC (or FTC) + RAL or TDF + 3TC (or FTC) + DRV/r	ZVD+ 3TC ABC+3TC TDF + 3TC (or FTC) if required, select any one from LPV/r, DRV, RAL and NVP as the 3rd drug.

PEP is not required in the following cases

- Person is infected with HIV
- Source of the infection is HIV negative
- If contact was made with "non-risky" biological fluids

Considerations

- HIV screening test should be conducted right after the exposure and repeated at the 3rd and 6th months after the exposure to infection.
- Clients should be provided with counseling on how to prevent from secondary transmission of infection to others (to avoid being a donor of blood, organs and tissues, breastfeeding a child, having unprotected sexual intercourse and getting pregnant). They should also be advised to use condoms.

- Clients should be advised about the importance of the adherence to treatment and adverse effects of drugs and reminded of the advise every time they come for re-examination.
- People who've been exposed to HIV infection experience fear and tension. Hence, they should be provided with psychological counseling.

CHAPTER 8. MEASURES TO BE TAKEN WHEN DOCTORS AND HEALTH PROFESSIONALS ARE DIAGNOSED WITH HIV INFECTION

1.1. If a doctor or a health worker is tested and confirmed HIV positive, the STI and AIDS Surveillance Department of NCCD shall enroll him/her in its control program and the chief of the HIV and AIDS treatment, care and service unit or an epidemiologist shall officially notify the management of the health worker's organization.

1.2. Doctors and health workers diagnosed with HIV infection should be prohibited to directly interfere with any medical care and activities such as surgery, organ transplant surgery, dental, obstetrics, gynecology and ENT etc.

1.3. Workplace of the doctors and health workers who've been diagnosed with HIV should be retained and the management of the organizations should make necessary arrangements of duties and responsibilities in their job descriptions excluding the specifics of medical treatment, care and services that require special operations.

1.4. Officer who's in charge of treatment within the respective health organization should be responsible for medical examination, testing and control of the HIV infected doctor or health worker and when required he/she should consult with specialists of relevant organizations.

1.5. The HIV infected doctor or health worker should be protected from stigma and discrimination and his/her personal information should be strictly confidential. In case confidentiality is infringed, the guilty person(s) should be responsible for the full extent of the law.

Annex 4 to the Ministerial Order No A/305,
dated on 3.8.2017 (day/month/year),
Minister of Health, Mongolia

PROCEDURES FOR PROVIDING PEOPLE LIVING WITH HIV AND AIDS, THEIR SPOUSES, COHABITING PARTNERS, PARENTS, LEGAL GUARDIANS AND CUSTODIANS WITH COUNSELING AND HEALTH CARE, TREATMENT AND SERVICES

The Procedures should be followed in providing people living with HIV and AIDS, their lawful spouses, cohabiting partners, parents and legal guardians and custodians with counseling and health care and services.

ONE. GENERAL PRINCIPLES

1.1. Doctors and health workers should ensure safety and confidentiality when meeting with people living with HIV and AIDS, their spouses, cohabiting partners, parents and legal guardians and custodians.

1.2. Information and understanding about the sources of HIV infection, ways of transmission, window period, risks of exposure to the infection, clinical stages, difference between HIV and AIDS, opportunistic infections, and the prevention from HIV infection.

1.3. Counseling should be given about getting tested and examined and receiving necessary treatment on time as scheduled, following the guidance provided by healthcare organizations doctors and health workers.

1.4. All the provisions of the Mongolian laws and legislations concerning people living with HIV and AIDS should be clearly explained in details.

1.5. Information and counseling on family planning and pregnancy and thr risks of mother-to-child transmission should be provided.

1.6. Clients should be explained about the health care and services for people infected with HIV and AIDS being delivered by a team of health professionals including infection control doctors, epidemiologists, social workers, pharmacists, case managers, psychologists and nurses etc.

TWO. REPORTING DIAGNOSTIC CONFIRMATION

1.1. The clients with confirmed HIV and AIDS diagnosis should be officially informed by the STI, HIV and AIDS doctor or the epidemiologist.

1.2. In order to provide health and sychological support to the client infected with HIV and AIDS, after discussing with the client, the doctor should inform anyone of the client's spouse, cohabiting partner, parents and legal guardians and custodians about the client's diagnosis.

1.3. If the HIV infected client is a minor or in ciritical physical condition, or has mental health problems, or repeatedly refused to get treatment and services, anyone of his/her spouse, cohabiting partner, parents, legal guardians and custodians should be informed about the diagnosis without the client's permission.

1.4. Counseling and guidance for people infected with HIV and AIDS, their spouses, cohabiting partners, parents, legal guardians and custodians should be delivered and verified with their signatures.

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LIST OF ABBREVIATIONS:

ABC	Abacavir
MH	Maternity hospitals
HBP	High blood pressure
AGH	Aimag general hospital
PID	Pelvic inflammatory disease
OHL	Oral hairy leukoplakia
BMI	Body mass index
STIs	Sexually transmitted infections
IRIS	Immune reconstitution inflammatory syndrome
AIDS	Acquired immune deficiency syndrome
WHO	World Health Organization
3TC	Lamivudine
INIs	Integrase inhibitors
IPT	Isoniazid Prophylactic therapy
CTX prophylaxis	*Co-trimoxazole prophylaxis*
MAC	*Mycobacterium* avium complex
BV	Bacterial vaginosis
NNRTIs	Non-nucleoside Reverse Transcriptase Inhibitors
NtRTIs	Nucleotide Reverse Transcriptase Inhibitors
ICD	International classification of diseases
PEP	Post-exposure prophylaxis
PrEP	Pre-exposure prophylaxis
PCR	Polymerase chain reaction
PCP	Pneumocystis pneumonia
PI	Protease inhibitors
ARV	Antiretroviral drugs
ART	Antiretroviral therapy
VCT	Voluntary counseling and testing
PGL	Persistent generalized lymphadenopathy
TG	Transgendered
SHs	Special hospitals
SPCs	Specialized professional centres
SCs	Specialized clinics
PIT	Provider initiated testing
ELISA	Enzyme-linked immunosorbent assay
Hep A virus	Hepatitis A virus
Hep C virus	Hepatitis C virus
Hep B virus	Hepatitis B virus

HPV	Human papillomavirus
HIV	Human immunodeficiency virus
NCCD	National Centre for Communicable Disease
PWID	People who inject drugs
PHCO	Private healthcare organizations
CBC	Complete blood count
UA	Urinalysis
GUCI	Genitourinary chlamydial infection
GUMU	*Genitourinary mycoplasma and ureaplasma*
VVC	*V*ulvovaginal candidiasis
FSWs	Female sex workers
MSM	Men who have sex with men
ECG	Electrocardiography
HC	Health centre
HSV	Herpes simplex virus
NCMCH	National Centre for Maternal and Child Health
PMTCT of HIV infection	Prevention of mother-to-child transmission of HIV infection
PMTCT	Prevention of mother-to-child transmission
DFA	Direct fluorescent antibody
DTG	Dolutegravir
EIA	Enzyme immunoassay
EFV	Efavirenz
FTA-Abs	Fluorescent treponemal antibody absorption
FTC	Emtricitavine
LPV	Lopinavir
NVP	Nevirapine
RPR	Rapid plasma reagin
SMX + TMP	Sulfametoxazol + trimetoprim
TDF	Tenofovir disoproxil fumarate
TPHA	Treponema pallidium heamoagglutination assay
VDRL	Venereal disease research laboratory
ZDV	Zidovudine