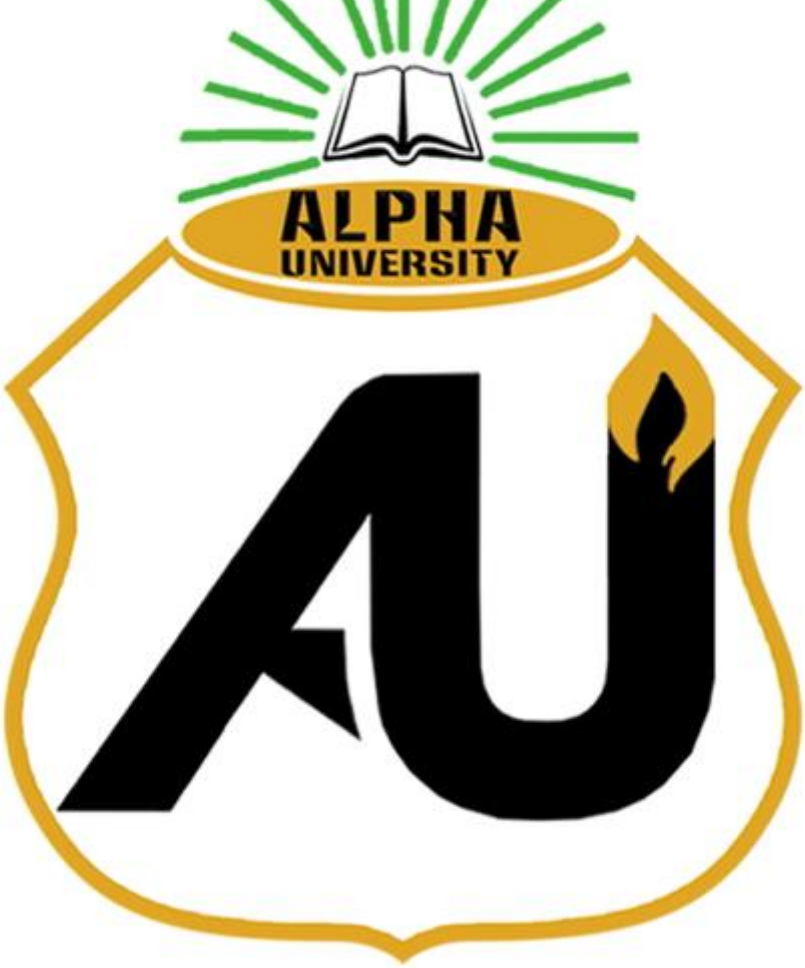

Alpha University Borama

Name: *Ayan Muhumed Dahir*

Faculty: *Public Health's*

Program: *Diploma*

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Class: *Online*

Course: *Communicable Disease (CDC)*

Assignment: *Arthropod Borne Infection*

Deadline: *8/5/2025*

Lecturer:*Mustafe Abdillahi Kahin*

Arthropod Borne Infection

1. Introduction to Arthropod-Borne Infections

Arthropod-borne infections are diseases caused by viruses, bacteria, or parasites that are transmitted to humans by arthropods such as mosquitoes, ticks, lice, fleas, and mites. These infections are common in tropical and subtropical areas and often increase during rainy seasons when breeding grounds for vectors increase. Arthropods act as vectors, meaning they carry and transmit pathogens without getting infected themselves.

2. Types of Arthropod-Borne Infections

Arthropod-borne infections can be classified based on the type of pathogen and vector involved:

Viral

:

Dengue fever

Yellow fever

Zika virus

Chikungunya

West Nile virus

Crimean-Congo hemorrhagic fever

Bacterial

:

Lyme disease (from ticks)

Plague (from fleas)

Typhus (from lice)

Ehrlichiosis (from ticks)

Parasitic

:

Malaria (from mosquitoes)

Leishmaniasis (from sandflies)

Trypanosomiasis (from tsetse flies)

Filariasis (from mosquitoes)

3. Signs and Symptoms of Arthropod-Borne Infections

Symptoms can vary depending on the disease but commonly include:

Fever

Headache

Fatigue and muscle pain

Skin rashes

Nausea or vomiting

Joint pain

Swollen lymph nodes

In severe cases: bleeding, confusion, coma, organ failure

4. Common Arthropod-Borne Infections

Here are some well-known diseases:

Malaria

– Mosquito-borne, causes fever and chills.

Dengue Fever

– Mosquito-borne, high fever and joint pain.

Zika Virus

– Mosquito-borne, mild symptoms but can cause birth defects.

Chikungunya

– Mosquito-borne, severe joint pain.

Yellow Fever

– Mosquito-borne, fever and liver damage.

Lyme Disease

– Tick-borne, causes rash and joint pain.

Plague

– Flea-borne, serious bacterial infection.

Leishmaniasis

– Sandfly-borne, skin sores or organ damage.

Sleeping Sickness

– Tsetse fly-borne, affects the brain.

Typhus

– Louse or flea-borne, causes high fever and rash

5. Prevention and Control Measures

Personal protection

:

Use of insect repellents

Wearing long sleeves and pants

Sleeping under insecticide-treated bed nets

Environmental control

:

Removing stagnant water (mosquito breeding sites)

Spraying insecticides

Improving sanitation

Public health interventions

:

Vector control programs

Health education

Surveillance systems

Vaccination

: Available for some diseases like yellow fever and dengue (in certain regions)

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6. Diagnosis of Arthropod-Borne Infections

Diagnosis depends on the disease and includes:

Clinical examination

and history of travel or exposure

Blood tests

:

Serology (antibody/antigen tests)

PCR (detects DNA or RNA of pathogen)

Blood smear (e.g., malaria parasites)

Culture

(for bacterial infections)

Imaging

(for complications)

7. Treatment of Arthropod-Borne Infections (in detail)

a) Viral infections (e.g., dengue, chikungunya, Zika)

No specific antiviral drugs in most cases

Supportive care

:

Rest

Fluids

Pain relievers (like acetaminophen, avoid aspirin in dengue)

Monitor for complications (e.g., dengue hemorrhagic fever)

b) Bacterial infections

Antibiotics

depending on the bacteria:

Lyme disease

: Doxycycline

Typhus

: Doxycycline

Plague

: Streptomycin, gentamicin

c) Parasitic infections

Malaria

:

Artemisinin-based combination therapy (ACT)

Chloroquine (for sensitive strains)

Leishmaniasis

:

Amphotericin B or antimonial drugs

Filariasis

:

Diethylcarbamazine (DEC), albendazole, ivermectin