

PREVENTIVE MEDICINE

Ebola virus

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Syllabus:

- General principles of prevention and control of diseases
- **Cholera**
 - SARS
 - **Ebola virus**
 - Influenza
 - Acute respiratory infections
 - Malaria
 - Chicken guinea
 - Dengue
 - Lymphatic filariasis
 - Pneumonia
 - Hypertension
 - Diabetes mellitus
 - Cancer
 - Drug addiction-drug substance abuse

Topic of Today's Discussion:

General principles of prevention and control of diseases

- Ebola Virus

EBOLA VIRUS

INTRODUCTION:

- **Ebola Virus Disease (EVD)** is a severe, often fatal illness in humans. The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.
- The average EVD case fatality rate is around 50%.

Introduction . . .

- The Ebola virus first appeared in 1976 in
 - Sudan
 - Democratic Republic of Congo
- 431 fatality figures recorded in 1976

WHO – Key facts of Ebola

- Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans.
- The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.

WHO – Key facts of Ebola

- The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks.
- The first EVD outbreaks occurred in remote villages in Central Africa, near tropical rainforests, but the most recent outbreak in West Africa has involved major urban as well as rural areas.

WHO – Key facts of Ebola

- Community engagement is key to successfully controlling outbreaks. Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, a good laboratory service, safe burials and social mobilization.

WHO – Key facts of Ebola

- Early supportive care with rehydration, symptomatic treatment improves survival. There is as yet no licensed treatment proven to neutralize the virus but a range of blood, immunological and drug therapies are under development.
- There are currently no licensed Ebola vaccines but 2 potential candidates are undergoing evaluation.

SIGNS & SYMPTOMS

- The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days.
- Humans are not infectious until they develop symptoms.
- First symptoms are the sudden onset of fever fatigue, muscle pain, headache and sore throat.

Signs & Symptoms . . .

- This is followed by vomiting, diarrhea, rash, symptoms of impaired kidney and liver function, and in some cases, both internal and external bleeding.
- Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.

Symptoms of Ebola

Headache

Red Eyes

Systemic

- Fever
- Lack of appetite
- Internal bleeding

Muscular

- Aches
- Weakness

Joints

- Aches

Intestines

- Diarrhea

Pharynx and lungs

- Hiccups
- Sore throat
- Difficulty breathing
- Difficulty swallowing

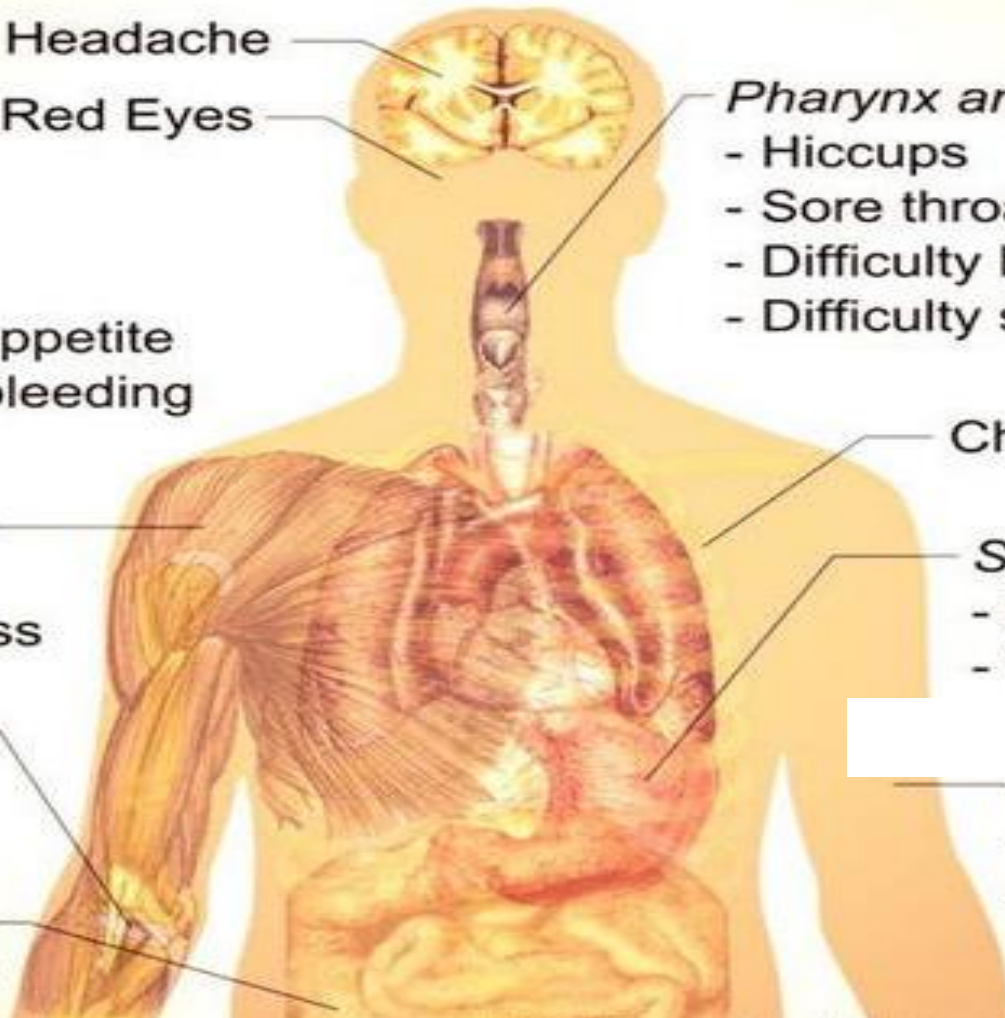
Chest pain

Stomach

- Pain
- Vomiting

SKIN

- Rash
- Bleeding



WHAT ARE CAUSES FOR EBOLA?

- EVD in humans is caused by one of the five strains of the Ebola virus
 - Bundibugyo virus (BDBV)
 - Sudan virus (SUDV)
 - Tai Forest virus (TAFV)
 - Ebola virus (EBOV)
 - Reston virus (RESTV)

All five viruses are closely related to Morburg virus

HOW IS EBOLA SPREAD?

- Ebola is not an airborne virus. Unlike some other viruses, the Ebola virus can only be spread by body fluids.
- Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as chimpanzees, gorillas, fruit bats, monkey, forest antelope and porcupines.

How is Ebola spread?

- Ebola then spreads through human-to-human transmission via direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people.
- And with surfaces and materials (e.g. bedding, clothing) contaminated with these fluids.

How is Ebola spread?

- Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD.
- This has occurred through close contact with patients when infection control precautions are not strictly practices.

How is Ebola spread?

- Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola.
- People remain infectious as long as their blood contains the virus.

How is Ebola spread?

- No formal evidence exists of sexual transmission, but sexual transmission from convalescent patients cannot be ruled out.
- There is evidence that live Ebola virus can be isolated in fluids of convalescent men for 82 days after onset of symptoms.
- Evidence is not available yet beyond 82 days. There is no evidence of live Ebola virus in vaginal secretions.

Enzootic Cycle

New evidence strongly implicates bats as the reservoir hosts for ebolaviruses, though the means of local enzootic maintenance and transmission of the virus within bat populations remain unknown.

Ebolaviruses:

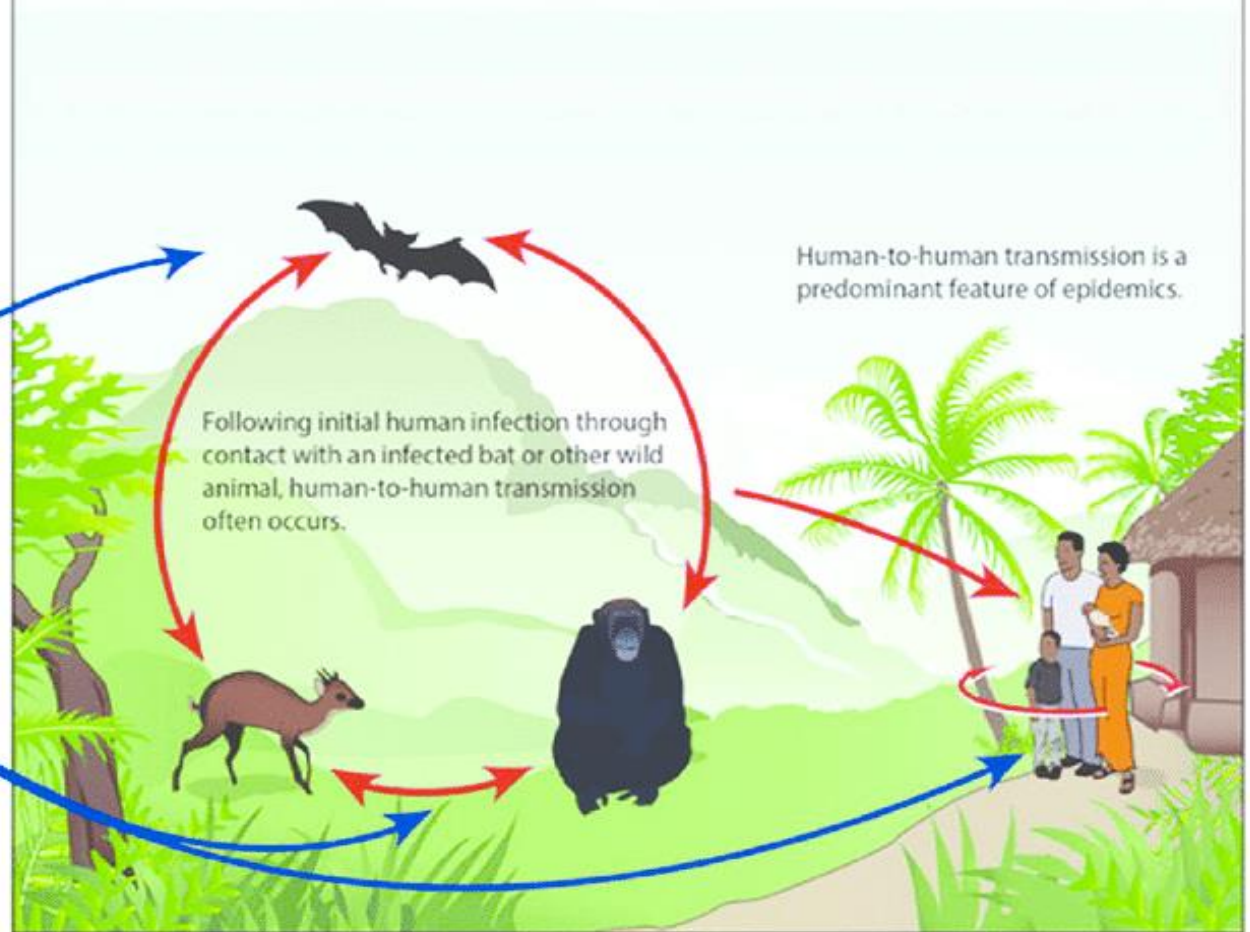
- Ebola virus (formerly Zaire virus)
- Sudan virus
- Tai Forest virus
- Bundibugyo virus
- Reston virus (non-human)



Epizootic Cycle

Epizootics caused by ebolaviruses appear sporadically, producing high mortality among non-human primates and duikers and may precede human outbreaks. Epidemics caused by ebolaviruses produce acute disease among

humans, with the exception of Reston virus which does not produce detectable disease in humans. Little is known about how the virus first passes to humans, triggering waves of human-to-human transmission, and an epidemic.



DIAGNOSIS

- Antibody-capture enzyme-linked immunosorbent assay (ELISA)
- Antigen-capture detection tests
- Serum neutralization test
- Reverse transcriptase polymerase chain reaction (RT-PCR)
- Electron microscopy
- Virus isolation by cell culture

PREVENTION & CONTROL

- Most people outside of West Africa do not need to worry about Ebola prevention. Only those who live in an area affected by Ebola and medical professionals are in danger of contracting the virus.
- For those individuals, the CDC has a tip sheet on ways to prevent infection.



Viral Haemorrhagic Fevers Isolation Precautions



Wash hands as needed



Isolate the patient



Wear protective clothing



Dispose of needles and syringes safely



Dispose of waste safely



Use safe burial practices

TREATMENT & VACCINES

- There is no cure for Ebola, nor are there any vaccines that can prevent the disease. Those who recover from the disease do so through the strength of their own immune system.
- However, a range of potential treatments including blood products, immune therapies and drug therapies are currently being evaluated.
- No licensed vaccines are available yet, but 2 potential vaccines are undergoing human safety testing.

EBOLA VIRUS PREVENTION



AVOID DIRECT CONTACT WITH INFECTED PEOPLE



DON'T TOUCH ANIMALS, RAW MEAT AND DEAD ANIMALS WITHOUT PROTECTION



DON'T TOUCH INFECTED BODY FLUIDS



DON'T GET IN CONTACT WITH INFECTED DEAD BODIES



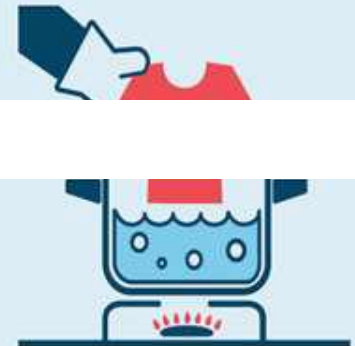
WASH HANDS OFTEN WITH DIETAGENT



DISINFECT RAW FOOD



BOIL WATER



BOIL INFECTED PEOPLE'S CLOTHES AND BELONGINGS USING GLOVES



EBOLA VIRUS



"One UN, One Goal"
United for peace and
development in Liberia
UNITED NATIONS IN LIBERIA

EBOLA IS A DEADLY VIRUS. IT SPREADS QUICKLY AND KILLS!

HOW TO PREVENT IT FROM SPREADING



1 AVOID PHYSICAL CONTACT WITH PEOPLE SHOWING SIGNS AND SYMPTOMS SUCH AS CONTINUOUS HIGH FEVER, RED EYES, VOMITING AND STOMACH ACHES.



2 WASH YOUR HANDS REGULARLY WITH SOAP AND CLEAN WATER



3 DO NOT SHAKE HANDS WITH PERSONS SHOWING SIGNS OF EBOLA



4 KEEP AWAY FROM BATS, MONKEYS, BABOONS AND DEAD ANIMALS



5 AVOID EATING BUSH MEAT
COOK ALL FOOD VERY WELL

ANY QUESTION
?

Thank You....

BE HEALTHY

A vibrant, multi-colored brushstroke graphic in shades of purple, blue, yellow, green, and red, positioned behind the text 'BE HEALTHY'.