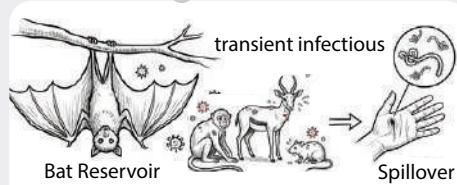


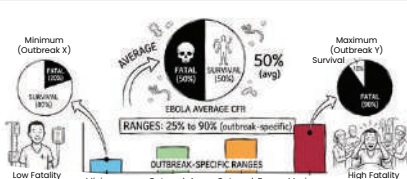
PART 1: EBOLA EXPLAINED – ORIGINS, TRANSMISSION & DISEASE



Ebola – Overview



Severe zoonotic viral disease caused by *Orthoebolavirus* species (notably Ebola, Sudan, Bundibugyo viruses).



Average case-fatality rate around 50%, with outbreak-specific ranges from roughly 25% to 90%.



Major outbreaks have occurred in Central and West/East Africa, often overwhelming fragile health systems.

Virology

- Enveloped, filamentous, negative-sense single-stranded RNA viruses in the *Filoviridae* family.
- Viral glycoprotein drives host-cell attachment and entry via host receptors, then fusion and genome release.
- Replication triggers intense innate immune activation, cytokine storm, endothelial injury, and coagulopathy.
- *Zaire ebolavirus*: largest and deadliest outbreaks; target of licensed vaccines and monoclonal antibodies.
- *Sudan ebolavirus* and *Bundibugyo ebolavirus*: clinically similar but still lack licensed, species-specific countermeasures.

Reservoir and Spillover to Humans



- Likely reservoir: fruit bats, with the virus maintained in sylvatic cycles.



- Spillover to humans typically linked to contact with infected wildlife (bats, nonhuman primates, bushmeat).

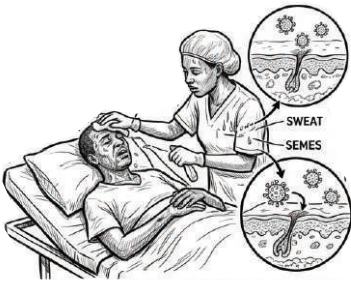


- Initial human cases often involve hunters, people handling carcasses, or individuals in bat-rich environments.



- Environmental and land-use changes may influence spillover risk by altering human-bat interfaces.

Transmission to Humans



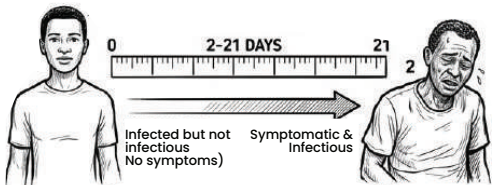
- Primary route: direct contact with blood, vomitus, diarrhea, saliva, sweat, breast milk, semen (for many months), and other body fluids of symptomatic patients or corpses.



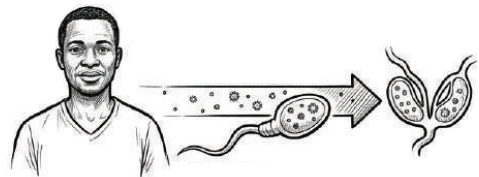
- Transmission via contaminated fomites and surfaces in homes and health care facilities.



- High-risk settings: bedside care without adequate protection, traditional funeral and burial practices, and crowded health facilities.



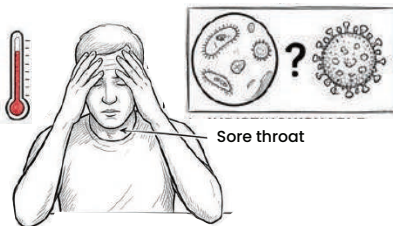
- Incubation period usually 2–21 days; patients are not considered infectious before symptom onset.



- Sexual transmission from survivors can occur for many months, particularly via semen.

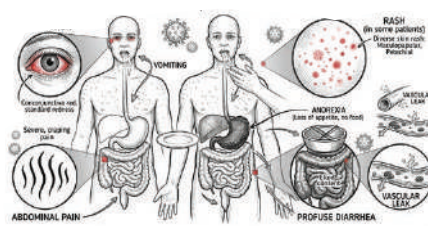
Disease

Early symptoms



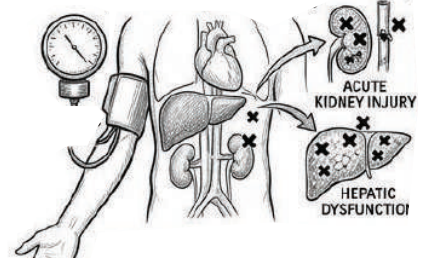
- Acute onset of fever, intense fatigue, headache, myalgia, sore throat; often indistinguishable from malaria and other febrile illnesses.

Progressive phase



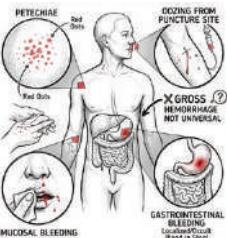
- Vomiting, profuse diarrhea, abdominal pain, anorexia, conjunctival injection, and rash in some patients.

Severe disease



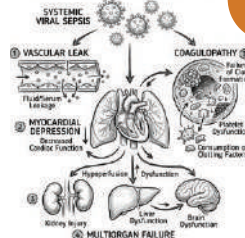
- Hypovolemic shock, metabolic acidosis, electrolyte disturbances, acute kidney injury, and hepatic dysfunction.

Hemorrhagic manifestations



- Petechiae, oozing from puncture sites, mucosal bleeding, gastrointestinal bleeding, but gross hemorrhage is not universal.

Pathophysiologic concept



- Systemic viral sepsis with vascular leak, myocardial depression, coagulopathy, and multiorgan failure.

[READ MORE](#)

