

Infectious Diseases in Africa; Are we really winning?

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Synopsis

- Recent Local Reports
- Global Trends
- Rationale for Interventions
- Bottlenecks
- Conclusion

Infectious Diseases in Africa; Are we really winning?

Yellow Fever: Nigeria confirms nine deaths

January 8, 2018 Ayodamola Owoseye



JUST IN: Cholera rises in Yobe, dips in Borno – report

By Judd-Leonard Okafor | Published Date Nov 8, 2018 11:24 AM

HEALTH NEWS

JUNE 11, 2018 / 8:18 AM / 5 MONTHS AGO

Kenyan official says five dead in reemergence of Rift Valley Fever

Carlos Mureithi

National

Cholera claims 186 lives in 6 months – NCDC

By NAN

24 July 2018 | 2:55 pm

The Nigeria Centre for Disease Control (NCDC) says Cholera has claimed 186 lives across the country in the last six months.

Monkeypox virus infection

- Monkeypox is a rare viral zoonotic disease that occurs primarily in remote parts of central and west Africa, near tropical rainforests.
- The monkeypox virus is similar to human smallpox, a disease that has been eradicated in 1980. Although monkeypox is much milder than smallpox, it can be fatal.
- The monkeypox virus is mostly transmitted to people from various wild animals such as rodents and primates, but has limited secondary spread through human-to-human transmission.
- Typically, case fatality in monkeypox outbreaks has been between 1% and 10%, with most deaths occurring in younger age groups.
- There is no specific treatment or vaccine available although prior smallpox vaccination was highly effective in preventing monkeypox as well.

Monkeypox: Nigeria records 31 suspected cases in seven states

October 9, 2017 Ebuka Onyeji



Monkeypox victim used to illustrate the story [Photo: Outbreak News Today]

Ebola in DRC

Ebola Death Toll in Congo Climbs to 191, WHO Official Says

By

[Eric Ombok](#)

November 8, 2018, 4:09 AM CST



Monkey Cage • Analysis

The U.S. has pulled back its Ebola response in Congo. Here's the story.

By **Jeremy Youde**

November 8 at 5:00 AM

The current Ebola outbreak in Congo [threatens to become uncontrollable](#) — because of politics, not the disease itself.

The Post Recommends

CDC director warns that Congo's Ebola outbreak may not be containable

If the deadly viral disease becomes entrenched, it will be the first time that's happened in modern history.

3 days ago



Viral Hemorrhagic Fever



Clinical Presentation and Management of Viral Hemorrhagic Fever (VHF)

VHF Misconceptions

Misconception

They all have the same features

Misconception

They all spread easily

Misconception

They are easily recognizable

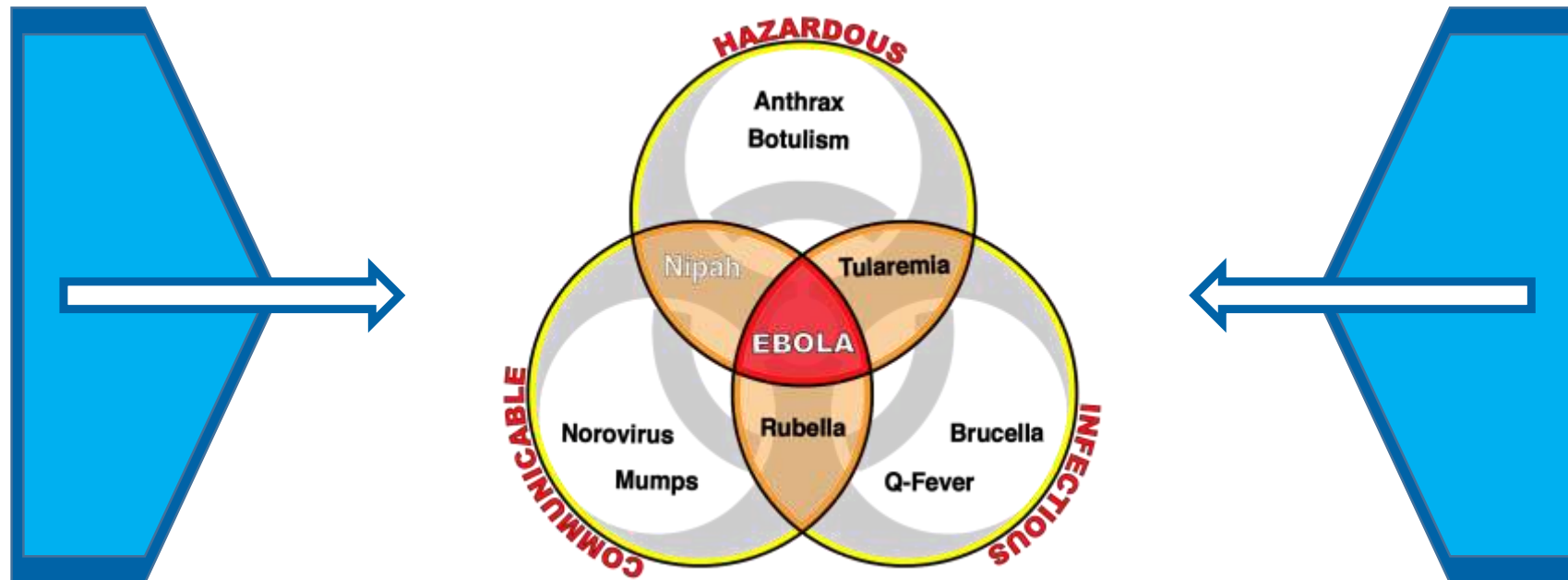
Misconception

Bleeding is the primary cause of death



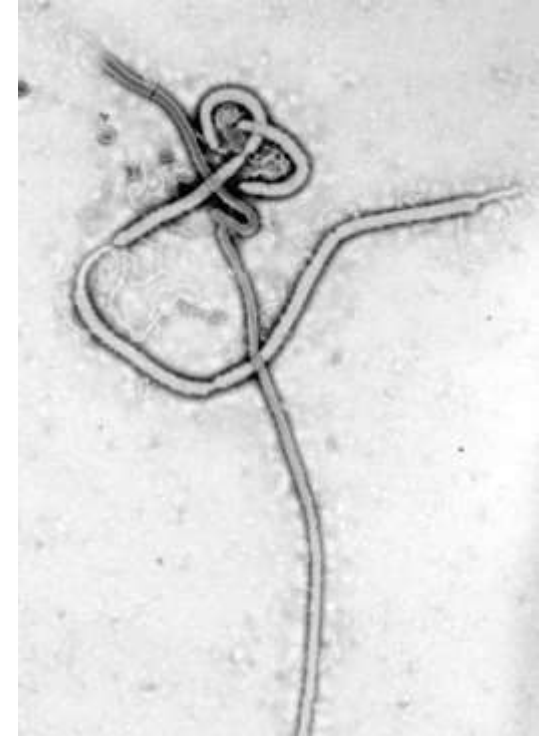
The Special Pathogens

The Special Pathogens: Infectious, Highly Hazardous, and Communicable



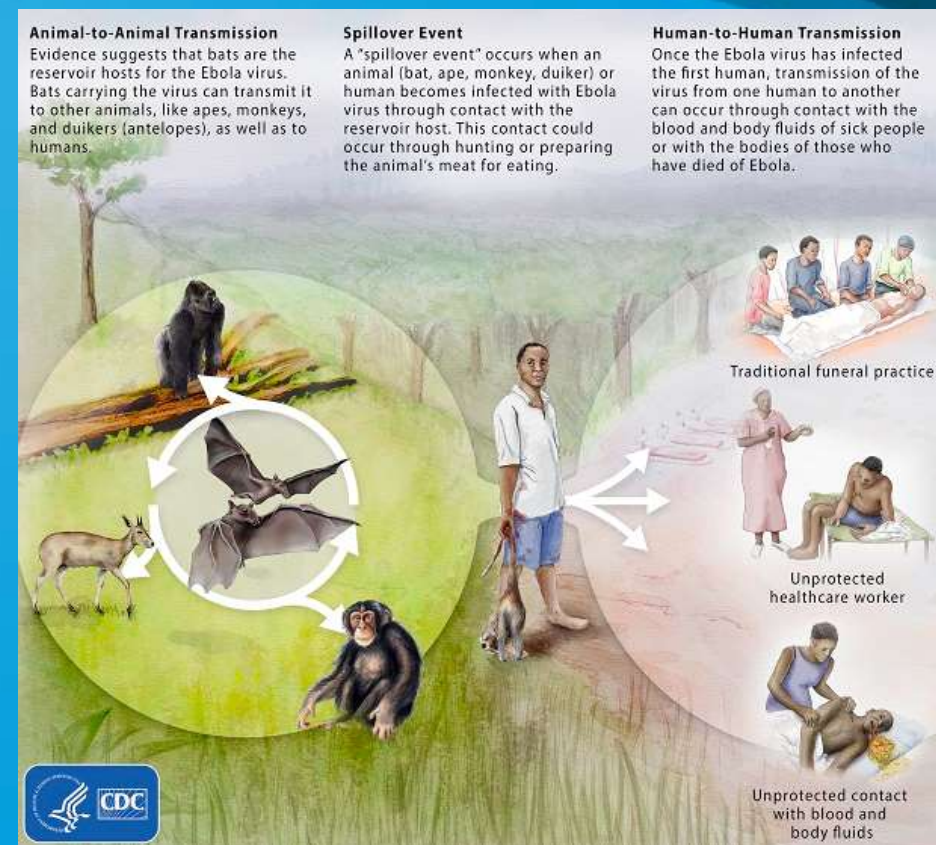
Ebola Virology

- Taxonomy: Family *Filoviridae*
Genera *Ebolavirus*
- 5 recognized species: *Zaire*, *Sudan*, *Reston*, *Tai Forest*, *Bundibugyo*
- (*Filum-thread*, L)
- RNA virus-- single stranded, negative-sense genome, lipid envelope
- 1976 First report of Ebola virus hemorrhagic fever in DRC (then Zaire) and Sudan



Source

- In Africa, fruit bats are considered natural host for the Ebola virus
- As a result, the geographic distribution of Ebola viruses may overlap with the range of the fruit bats.
- Although non-human primates have been a source of infection for humans, they are not thought to be the reservoir, but are an accidental host like human beings.

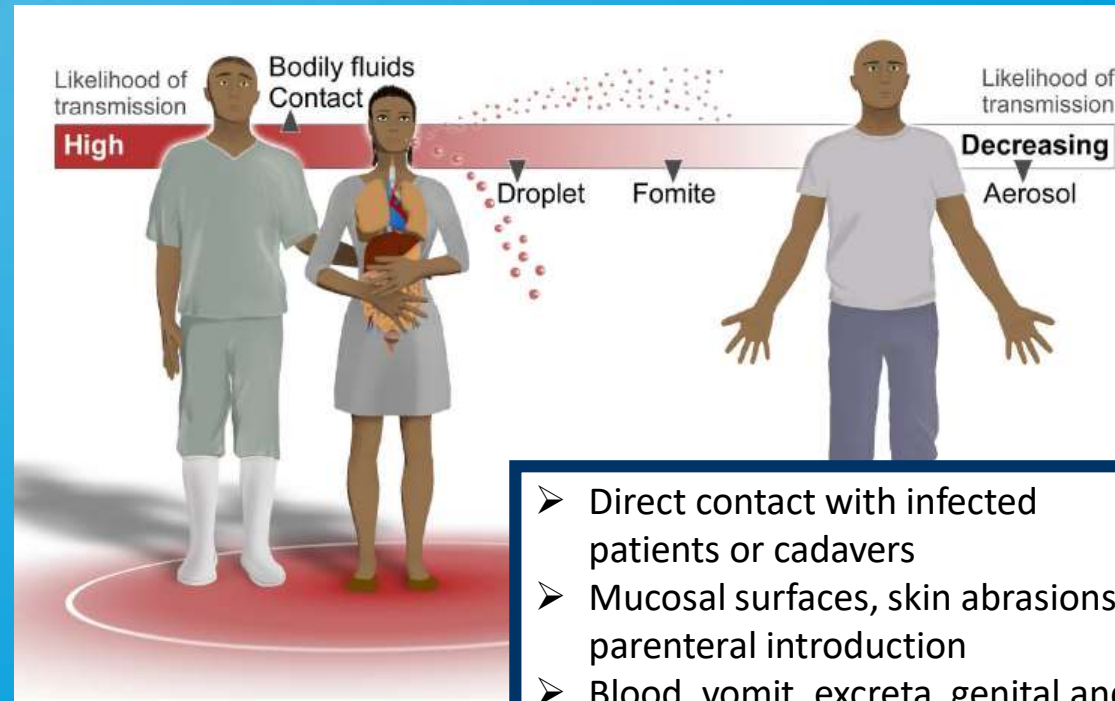




Ebola virus disease (EVD) outbreak in West Africa



Ebola virus transmission











Ebola Transmission in Perspective

How contagious is Ebola?

How the Ebola virus compares with other contagious viruses. The reproduction rate or R_0 , calculates the number of people likely to be infected by one person who has a disease.

REPRODUCTION RATE (R_0)

Initial infected patient ● — • Person he or she has infected

								
R_0	1 to 4 people	2 to 4	4 to 7	5 to 7	5 to 7	6 to 7	12 to 18	12 to 17
DISEASE	Ebola	SARS	Mumps	Polio	Smallpox	Rubella	Measles	Pertussis (Whooping cough)
HOW IT SPREADS	Bodily fluids	Airborne droplets	Airborne droplets	Fecal-oral route	Airborne droplets	Airborne droplets	Airborne	Airborne droplets

Sources: Michigan Center for Public Health; WHO; Transmission Dynamics and Control of Severe Acute Respiratory Syndrome, Nature; Understanding the Dynamics of Ebola Epidemics, National Institute of Health

Meningococcal Meningitis



- Meningococcal meningitis is observed worldwide but the highest burden of the disease is in the meningitis belt of sub-Saharan Africa.
- Around 30 000 cases are still reported each year from the region.

Meningococcal Meningitis

- Associated with high fatality (up to 50% when untreated) and high frequency (more than 10%) of severe sequelae. Early antibiotic treatment is the most important measure to save lives and reduce complications.
- Serogroup specific vaccines are used for prevention (routine immunization) and in response to outbreaks (prompt reactive vaccination).
- Since 2010 and the roll-out of a meningococcal A conjugate vaccine through mass preventive immunization campaigns in the meningitis belt, the proportion of the A serogroup has declined dramatically but other serogroups are becoming more prevalent.

“Bottlenecks to victory”

- Poor surveillance systems
- Poor healthcare funding, inadequate personnel
- Healthcare provider attitude
- Healthcare seeking behavior
- Too many vertical programs
- Overdependence on “foreign aid”

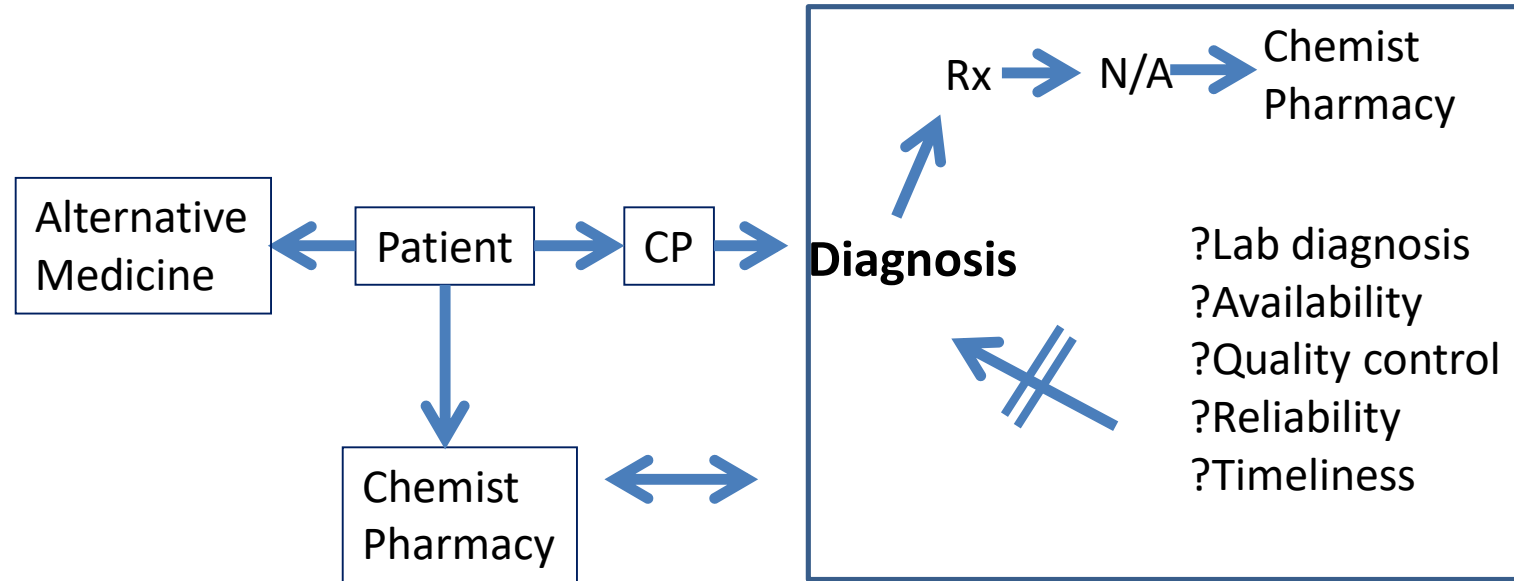
Not every fever is malaria!



Clinical diagnosis of malaria ~ 32-93% with negative smear (*Amexo et al 2004*)

25% of cases with parasitemia have alternative diagnosis at autopsy (*Taylor et al. 2004*)

Health Care Seeking Behavior



Managing Infection Control



Health worker Strike Action

A blue square with white text and colorful confetti. The text is centered and reads:

**Breaking News!!!
Native Doctors
threaten to join
Resident Doctors in
Nationwide Strike!**

The background of the square is blue and decorated with various colorful confetti shapes, including circles, triangles, and diamonds in shades of green, yellow, and red.

WHAT IS THE WAY FORWARD?



Manageable Options



Extrapolating Foreign Standards of Care

- Justifiable
- Affordable
- Acceptable
- Practical
- Risk/Benefit
- Sustainability

Field Sites and Collaborators in Africa

