Ebola outbreak in West Africa
History of Ebola Virus Outbreaks

- **1976, Ebola first appeared** in 2 simultaneous outbreaks
  - Sudan
  - Democratic Republic of Congo

- **From 1976 to December 2013**
  - 23 outbreaks
  - 2388 human cases
  - 1590 deaths
Ebola and Marburg viruses

Family *Filoviridae*, single-strand, negative-sense RNA virus

- **Genus Marburgvirus**, 1 species *Marburg marburgvirus*
  - Virus 1: Marburg virus (MARV)
  - Virus 2: Ravn virus (RAVV)

- **Genus Ebolavirus**, 5 distinct species
  - Species *Taï Forest ebolavirus*, virus: Taï Forest virus (TAFV)
  - Species *Reston ebolavirus*, virus: Reston virus (RESTV)
  - Species *Sudan ebolavirus*, virus: Sudan virus (SUDV)
  - Species *Zaire ebolavirus*, virus: Ebola virus (EBOV)
  - Species *Bundibugyo ebolavirus*, virus: Bundibugyo virus (BDBV)

- **Genus Cuevavirus***, Species *Lloviu cuevavirus***
  - virus: Lloviu virus (LLOV)
Geographic distribution of Ebola virus disease outbreaks in humans and animals

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization
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1. Virus reservoir: Fruit bats

The virus maintains itself in fruit bats. The bats spread the virus during migration.

2. Epizootic in primates

Infected fruit bats enter in direct or indirect contact with other animals and pass on the infection, sometimes causing large-scale epidemics in gorillas, chimpanzees and other monkeys or mammals (e.g. forest antelopes).

3. Primary human infection

Humans are infected either through direct contact with infected bats (rare event), or through handling infected dead or sick animals found in the forest (more frequent).

4. Secondary transmission

Secondary human-to-human transmission occurs through direct contact with the blood, secretions, organs or other body fluids of infected persons. High transmission risk when providing direct patient care or handling dead bodies (funerals).
Short Duration Viraemia

(Figure adapted from T Ksiazek CDC/Atlanta)
Symptoms

- **Start with** feverish syndrome: often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat

- **Followed by** vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding
Advice to public

● What are your first messages?
How Ebola Outbreaks Start

- First human cases start with infection by an animal
  - Chimpanzes, monkeys, forest antelopes, fruit bats...

- Infection from person-to-person creates an outbreak
  - Direct or indirect physical contact with body fluids of infected person

- Well known locations where transmission occurs
  - Hospital: health care workers, other patients, accidents
  - Community: Family, friends, caring for ill, funerals
DRC outbreak

https://www.youtube.com/watch?v=2JWn9JyeufU
Nigeria

July 20: Traveler from Liberia to Lagos (later secondary chain in Port Harcourt via doctor)

Conventional control tools

- early detection
- contact tracing
- isolation and monitoring of those exposed
- adequate supplies of personal protective equipment for medical and nursing staff, and
- strict procedures for infection prevention and control
Geographical location of confirmed and probable cases in West Africa
26 September 2014
Ebola West Africa - Distribution of cases by week of onset as of 26 September 2014
Victor (11 years-old, centre), Sheku (5 years-old, left) and Ibrahim (4 years-old, right) have just been released from the government-run treatment centre in Kenema, Sierra Leone, after surviving Ebola. They spent over three weeks at the centre, where they lost their mother in the first few days.

Victor - the eldest, said he did not cry when his mother died because he didn’t want to scare his li... See More

Heidi Hoy Dyrholm "People are at their beautiest when under extreme pressure" a journalist said recently, after 25 years of reporting from the edge of wars and disasters. I found it very provocative, but perhaps Victor represents what he meant? Thank you Victor, for your will to be there for your brothers, and thank you Nyka Alexander and WHO for sharing this story and bringing everyday nonsense into perspective.

Daniel López Strong boys in a cruel world,
What we’ve learned

- Spread at funerals
- Home care (by choice or not)
- Survivors say:
  - “Rehydrate, rehydrate, rehydrate”
  - Importance of hope
Questions to consider

Severely affected countries

- How do you keep up hope?

Countries at risk

- How to explain the balancing of risks related to air travel?
- What do you ask people to do?
- How to engage media in setting right tone?
THANK YOU