

Confronting Ebola: Crafting a public health response

October 16, 2014



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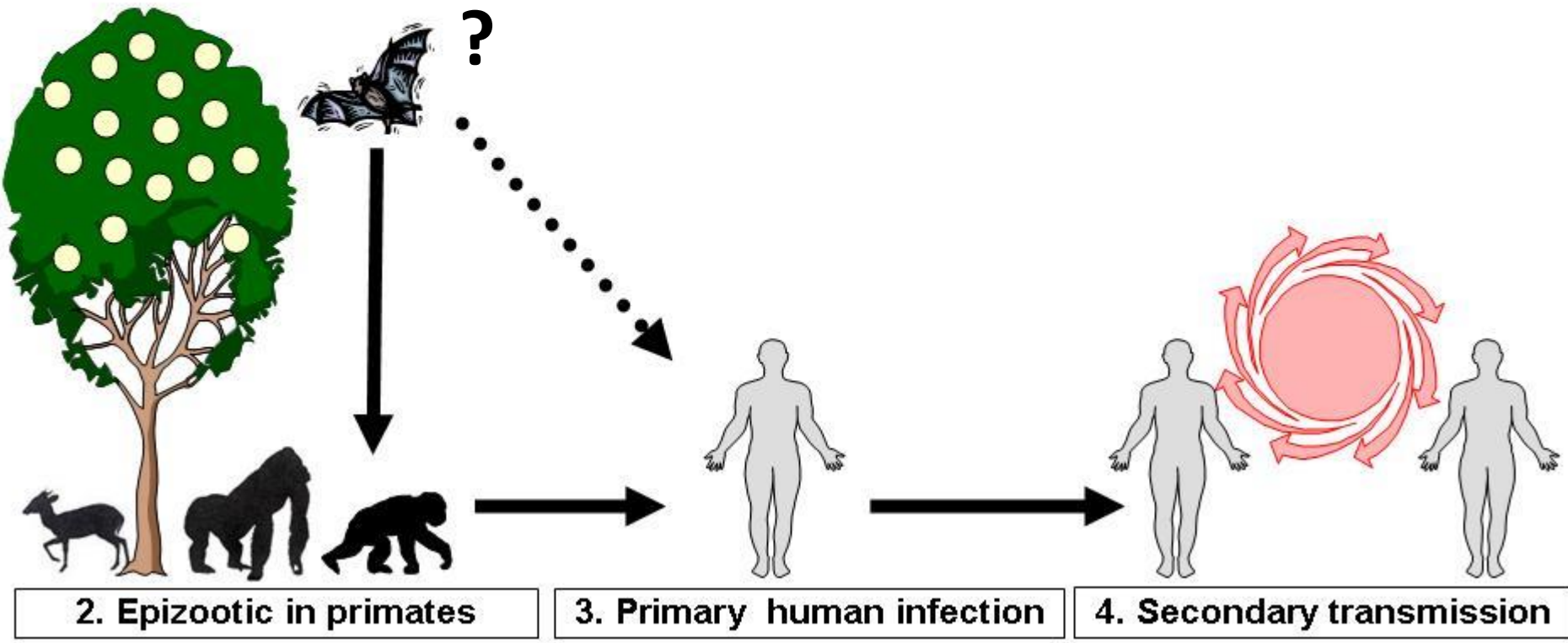
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1. Virus reservoir : ? Fruit bats

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

EBOLA

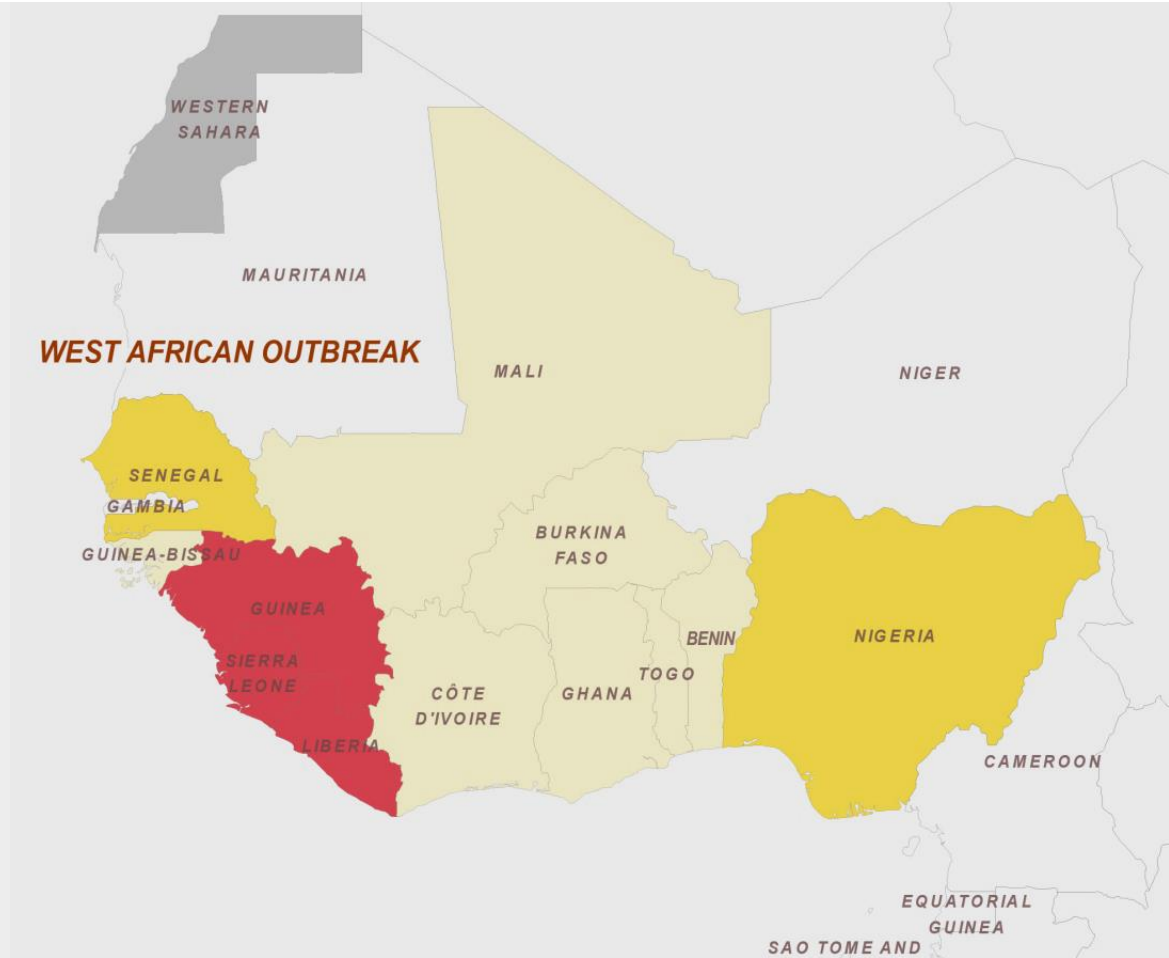
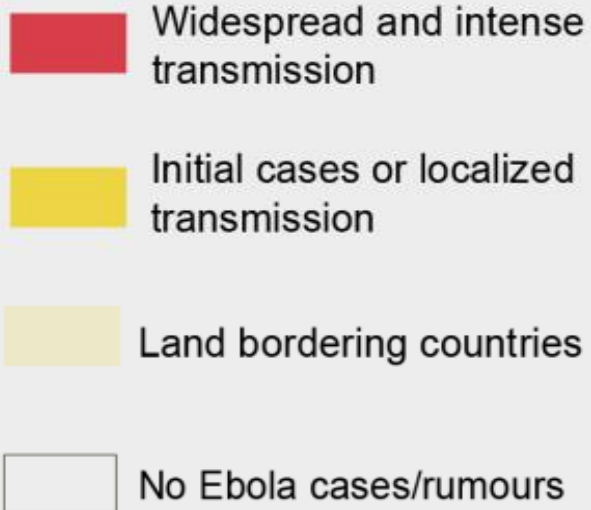


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- LIPID CAPSULE
 - SHORT SURVIVAL OUTSIDE BODY FLUIDS
 - SENSITIVE TO SUNLIGHT, CHLORINE, HEAT, COLD

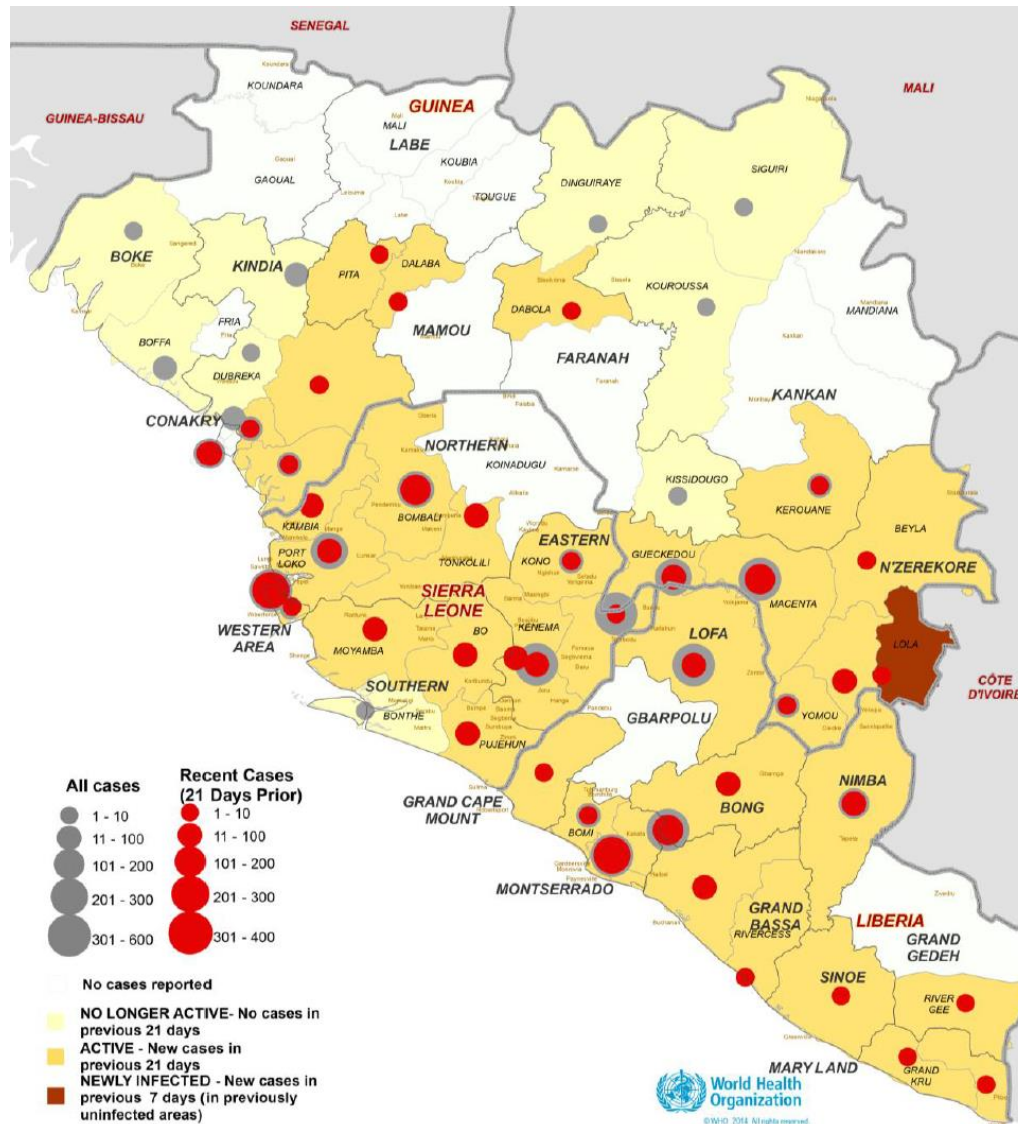
Ebola Transmission

- Direct contact with blood or body fluids of person who is sick with Ebola (EVD) **without** protective equipment
- Contact with objects (e.g. needles, syringes) that have been contaminated with blood or body fluids of a person who is sick with Ebola or an infected animal **without** protective equipment
- Virus in blood and body fluids enters another person's body through broken skin or through unprotected mucous membranes (eyes, nose, or mouth)
- Need for protective equipment if in contact with an individuals with Ebola disease
- No evidence for airborne transmission

The Ebola Outbreak: 2014



Geographic Distribution of Cases and New Cases of EVD as of October 4



Ebola Outbreak-- Update

As of October 15, 2014

The background image is a grayscale photograph. On the left, there is a white tent structure. In the center, a person is visible wearing a full-body white protective suit and a hood. On the right, a poster titled 'EBOLA case definition' is hanging on a wall. The poster lists symptoms like 'FEVER +', 'rash', 'diarrhea', 'vomiting', 'difficulty in swallowing or breathing', and 'PLUS:'. It also mentions 'Liberia', 'Guinea', 'Sierra Leone', 'Ivory Coast', 'Nigeria', 'Senegal', 'Ghana', 'Cote d'Ivoire', 'Liberia', 'Guinea', 'Sierra Leone', 'Ivory Coast', 'Nigeria', 'Senegal', 'Ghana', 'Cote d'Ivoire'.

8,997

Total number of suspected
and confirmed Ebola Virus Disease
(EVD)

4,493

Total number EVD-related deaths

Country Characteristics

- **Guinea**

- 94,000 square miles
- 11.7 m population
- Physicians: 10/100,000
- Nurses and midwives: 4/100,000

US: Physicians: 250/100,000
Nurses: 978/100,000

- **Liberia**

- 43,000 square miles
- 4.2m population
- Physicians: 1.2/100,000
- Nurses and midwives: 27/100,000

- **Sierra Leone**

- 27,600 square miles
- 6m population
- Physicians: 2.2/100,000
- Nurses and midwives: 16.9/100,000

Ebola in West Africa



- EVD transmission rates remain high in the three most severely-affected countries Guinea, Liberia, Sierra Leone.
- EVD cases are doubling at alarming rates:
 - Liberia every 24 days
 - Guinea every 16 days
 - Sierra Leone 30 days
- Outbreak both urban and rural
- Health systems are being severely strained as the outbreak grows
- Accurate data collection remains a constraint in tracking the current outbreak

Ebola in the U.S.



US, as of 10/15/14

- Confirmed Cases: 3
- Contacts: 11
- Possible Contacts: 107
- Total: 118



Global Response



CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™



EBOLA: HOW YOU CAN HELP

Qualified medical professionals: click here if you would like to volunteer to work in West Africa

LEARN MORE →

HOW CAN I HELP?

Medical Volunteers

We are appealing to the medical community in the United States for assistance with the West Africa Ebola Outbreak. If you are a qualified medical professional and want to volunteer to work in West Africa, [click here to contact reputable organizations who are active in the Ebola response](#) through the Center for International Disaster Information (CIDI).

As part of a comprehensive and coordinated response to the 2014 Ebola outbreak in West Africa, the CDC is developing an [introductory safety training course](#) for licensed clinicians intending to work in an Ebola Treatment Unit (ETU) in Africa.

Ebola virus: UK government response



MSPH EFFORTS

- Hackathon in collaboration between MSPH and CU School of Engineering and Applied Sciences
- Field support using staff/volunteers
- Offer to support laboratories
- Seek collaborations with US governmental and non-governmental organizations
- Disseminate accurate information to faculty, staff, students, alumni



Columbia Design Challenge: Confronting the Ebola Crisis, MSPH-Engineering School Initiative



A Public Health Response

**SYSTEM BUILDING
BLOCKS**



**OVERALL
GOALS/OUTCOMES**



Service Delivery



Health Workforce



Information



**Medical Products, Drugs
& Technologies**



Financing



Leadership/Governance

Access

Coverage

Quality

Safety



**Improved health
(level and equity)**



Responsiveness



**Social and Financial
Risk Protection**



Improved Efficiency

The New York Times

Experts Offer Steps for Avoiding Public Hysteria, a Different Contagious Threat

By [BENEDICT CAREY](#) OCT. 15, 2014



HEALTH EDUCATION/SENSITIZATION



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