Confronting Ebola: Crafting a public health response
October 16, 2014

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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

3. Primary human infection

4. Secondary transmission

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

Estrella Lasry, MD
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

- Widespread and intense transmission
- Initial cases or localized transmission
- Land bordering countries
- No Ebola cases/rumours

WEST AFRICAN OUTBREAK
Geographic Distribution of Cases and New Cases of EVD as of October 4
Ebola Outbreak-- Update
As of October 15, 2014

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

• 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

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

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
A Public Health Response

SYSTEM BUILDING BLOCKS
- Service Delivery
- Health Workforce
- Information
- Medical Products, Drugs & Technologies
- Financing
- Leadership/Governance

OVERALL GOALS/OUTCOMES
- Improved health (level and equity)
- Responsiveness
- Social and Financial Risk Protection
- Improved Efficiency

Access
Coverage
Quality
Safety
Experts Offer Steps for Avoiding Public Hysteria, a Different Contagious Threat
By BENEDICT CAREY OCT. 15, 2014
HEALTH EDUCATION/SENSITIZATION
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