EBOLA – a new pandemic threat?

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My introduction to Ebola –1976
The first outbreaks

- Request to WHO for emergency help from Congo (Zaire)
  - Epidemic disease causing severe hemorrhage and death
  - 11 of 17 staff members of a 120 bed hospital were dead
  - Many villages with cases
- No known disease that could cause an epidemic like this
  - Could this be epidemic smallpox?
- Two experienced U.S. specialists agree to go
  - Dr. Joel Breman (WHO smallpox)
  - Dr. Karl Johnson (CDC virology)
- Dinner in Geneva

The Zaire epidemic--1976

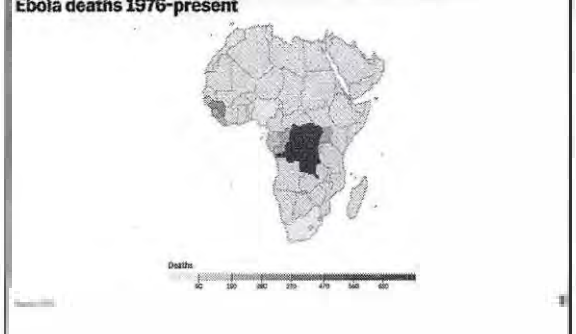
- First case – Sept. 1: Team arrived Oct. 18
  - 280 cases in 55 of 550 rural villages (pop. of 238,000)
    - Many cases due to contact in hospital (120 beds)
    - Rapid spread of cases at funerals
    - Only 20% of household contacts became ill
- Measures taken
  - Isolation of ill patients in the hospital wards
  - Gowns and masks for hospital staff
  - Traditional burial practices strongly discouraged
- Last case on Nov. 9 (duration– 3 months)

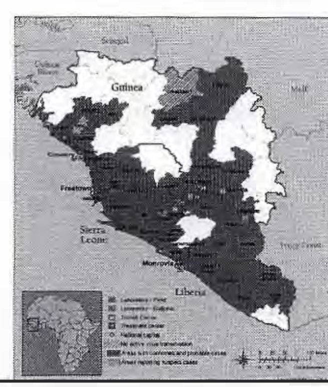
Dimensions of the present epidemic

- Began in Guinea -- Dec. 2013: First reports – March 2014
- Cases and deaths (as of 30 September)
  - 6262 cases; 5017 deaths (actual-probably 2 to 4 times this)
  - Over 400 cases were health staff– more than half died
- Three countries account for almost all cases as of now
  - Guinea – 10.2 million people
  - Liberia -- 4.1 " "
  - Sierra Leone – 6.0 " "
- Imported into Nigeria (72 cases); Senegal (1case); U.S. (1 case)

NORWAY / SPAIN / FRANCE

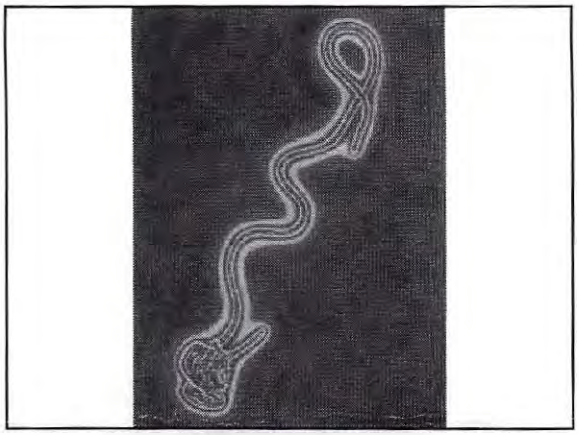
Ebola deaths 1976-present

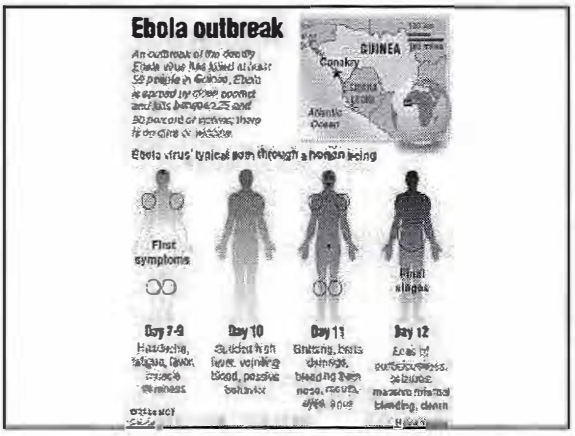




How significant is the problem?

- "A colossus that continues to gather force"
  Center for Strategic and International Studies
- "Spiraling out of control"
  Dr. Tom Frieden, Director of CDC
- "Moving beyond our grasp"
  Dr. David Navarro, UN Coordinator
- "The world is losing the battle to contain it"
  Dr. Joanne Lieu, President MSF

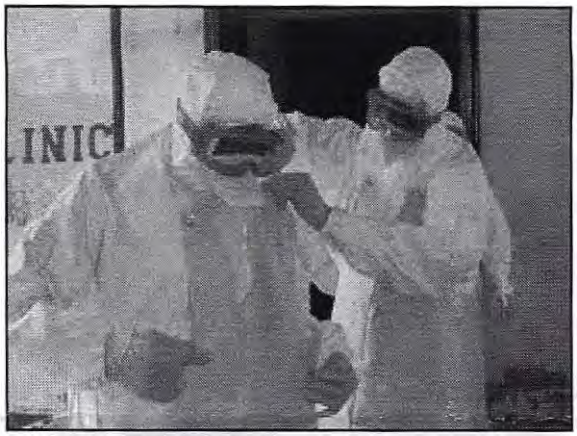




Basic strategy for control

SPREAD OF VIRUS IS BY DIRECT CONTACT– not droplets

- Isolate patients in a restricted treatment center or hut
  - Provide food and water
  - No visitors allowed
- Persons who come into contact with patient to wear gown, mask, covering for head and feet
- Dead bodies to be transferred in a sealed bag by special teams
- Bodies to be deeply buried
- Family and close contacts to be checked for next 21 days
  (Attempts to isolate contacts for 21 days abandoned)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Challenges of gowns and masks

- Extreme shortages of equipment of all types
- Removing gowns and masks to prevent skin or eye contact
- Limited time for wearing because of heat stroke
- Decontamination of gear
- Reflections of a New Zealand nurse

Reflections of a New Zealand nurse

- The most dangerous time comes when the protective equipment is taken off. Simply touching the outside of a gown or goggles might be enough to transfer the Ebola virus to one's skin. If the virus gets into the body through a cut or the eyes, it can wreak devastation.
- What scares me more than the patients are my colleagues. If someone else is not that careful—if someone makes a mistake and I don't know it, and he doesn't know it, he might give me Ebola.

Reflections of a New Zealand nurse (cont.)

- Dozens of workers share the same eating areas, kitchen, and hotel space. You never know how safe they have been.
- Harder still is accepting the reality that so many won't make it: "I now that fewer than 50 percent are going to survive"

Special problems with impact

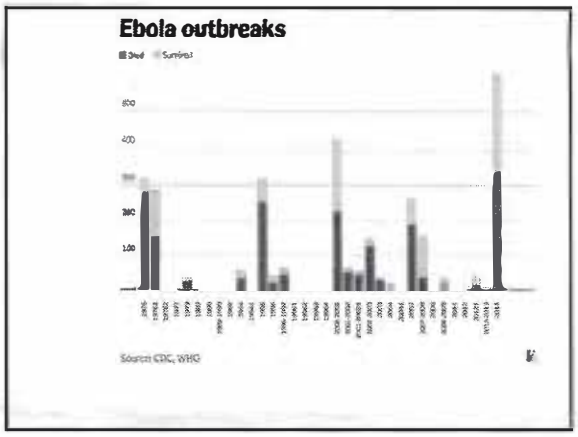
- Two decades of civil war (Liberia, Sierra Leone)
  - From 1958 --years of communist socialism (Guinea):
- Three of the poorest countries in western Africa
  - Few paved roads, poorly maintained
  - Scarcity of health facilities and staff
  - Communications difficult
  - Few schools and poorly educated population
- Burial traditions
  - Friends and family touch or stroke body before burial
  - Body sometimes retained for weeks

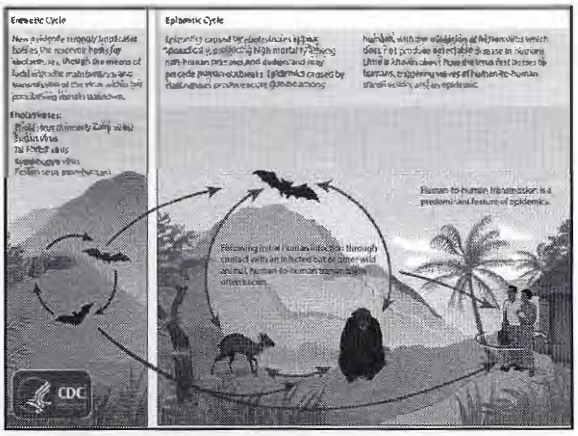
Among the many challenges

- Patients fear hospitals – resist entry and sometimes flee
  - Visitors are not allowed. Health care staff are all in gowns and masks
  - It is known that not more than one in four will leave the hospital alive
- Severe food shortages -- especially in urban areas, led to riots
- Government funds -- sparse and management poor.
- Recruitment of health staff is a special problem--
  - Promises of extra-pay for hazardous duty and special pay for families if they died
- Acute shortages of IV fluids, drugs of all types, Chlorox

Ebola generated panic and fed a disaster

- Fear of the disease
  - Major foreign airlines suspend flights
  - Some shipping lines will not dock
  - Difficulties in recruiting all staff
- Where to find more emergency treatment beds
  - U.S. Hospital ship (1000 beds)?
  - U.K. is providing (in 8 weeks) a 50 bed field hospital and a 12 bed care center for volunteers who become ill
  - U.S. promises a 25 bed field hospital ($22 million)





What of the future?

- Will the disease spread throughout Africa? What about other countries? What about the U.S.?
- Should we be screening all air travelers? How?
- Should students or former residents of infected countries be kept under special surveillance
- How soon will we have drugs for treatment?
- What about vaccines?
- Some agencies predict 20,000 to 1,400,000 cases?

What is the message?

- The threat and gravity of Epidemic Ebola is real
  It could have been detected far sooner and contained.
- Thirty years ago, a new disease emerged – AIDS
  Early detection and response for other unexpected diseases requires coordination and cooperation– WHO has the responsibility.
- In recent years, the WHO budget has been slashed.
  It is now one-third that of CDC, Atlanta.
- We have only ourselves to blame for this disaster

Center for Public Health Emergency Preparedness.