





Ebola and Rhode Island: Calm, Thoughtful, Vigilant

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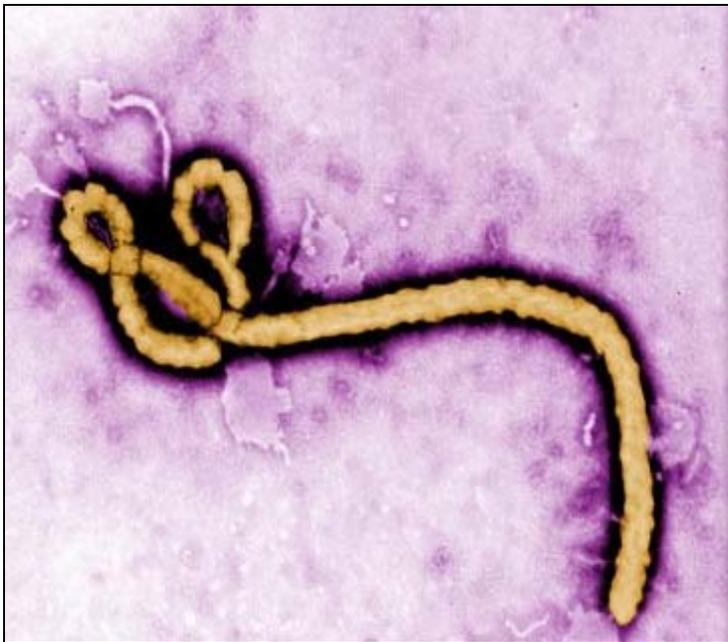
Last updated: October 15, 2014

Overview



- 2014 West Africa Ebola outbreak is the worst in history
- Case fatality rate 50-70%
- Only people who have been in West Africa in prior 21 days are at risk
- People are not contagious until they show symptoms
- No vaccine or treatment besides supportive care
- The outbreak can be stopped by good public health practice
- While we may see a few imported cases in RI, good public health collaboration will likely prevent any spread

Ebola Virus Disease



- Filovirus
- Is a severe, often fatal disease in humans and animals (bats, monkeys, gorillas, and chimpanzees in Africa)

Ebolavirus Ecology



- Bats appear to be reservoir hosts
- Following initial human infection through contact with infected bat or other animal, human-to-human transmission often occurs

Ebola: Symptoms



Symptoms usually begin **2 to 21 days** after exposure:

- Fever
- Severe headache
- Muscle pain
- Weakness
- Diarrhea
- Vomiting
- Abdominal pain
- Lack of appetite
- Unexplained bleeding or bruising

A graphic showing a calendar for 3 weeks. The title "3 WEEKS" is in a red box at the top. Below it is a calendar grid with days of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat) and dates from 1 to 31. The dates 1 through 21 are highlighted in yellow, indicating the period of concern.

3 WEEKS						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

If you aren't sick after 21 days since exposure, you will not become sick with Ebola.

How Ebola Spreads



The virus is spread through body fluids.

A person becomes infected by touching or handling:

- A person who is sick with Ebola
- Objects contaminated with body fluids
- The body of a deceased Ebola victim

The virus enters the body through:

- Hand to mouth contact
- Hand to eye, nose, mouth contact
- An open cut, wound, abrasion (incl. needle sticks)
- Sexual contact

Body Fluids:

- Blood
- Vomit
- Feces
- Urine
- Saliva
- Breast milk
- Sweat
- Semen

Life of Ebola Virus



Ebola lives in wet body fluids outside the body for several days.

The virus lives on a dry surface for several hours.

The Ebola virus lives in the body of a deceased patient for weeks.

Ebola lives in the semen of people who have recovered for 2-3 months.

Transmission Scenarios



- A hunter or cook handles, cleans, or eats “**bush meat**” from an infected animal from West Africa.
- A family member or caregiver cleans up after a sick Ebola patient and removes their **soiled sheets** to do laundry, without wearing PPE.
- At a **funeral in West Africa**, many mourners unknowingly touch a loved one who died from Ebola, wipe tears, cover their mouths, rub their eyes, etc.
- A healthcare worker treats an Ebola patient without wearing **Personal Protective Equipment (PPE)**, or improperly reuses PPE, or removes PPE in the wrong order.



How Ebola is Treated

- No vaccine
- No proven treatment--care is supportive (fluids, oxygen, etc.)
- Ebola transmission can be stopped by classic public health management:
 - contact tracing
 - identification of all cases
 - isolation

Ebola is NOT Spread by:

- Air
- Water
- Food (except bushmeat)
- Mosquitoes
- People without Ebola symptoms



How is an Outbreak Stopped?



- **Find:**
 - Find and diagnose patients.
- **Respond:**
 - Isolate patients, find and monitor patient contacts.
- **Prevent:**
 - Healthcare infection control, avoid risk factors.



Contact Tracing: Identifying Exposure and Risk

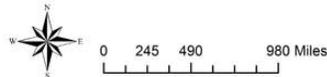
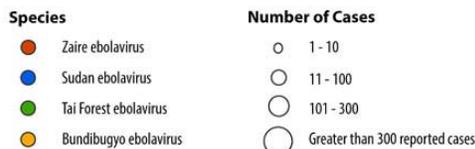


- Find everyone who comes in direct contact with a sick Ebola patient and evaluate exposure
- Those exposed are monitored twice a day for temperature and watched for symptoms for 21 days from exposure
- If fever or other symptoms develop, contact is **immediately isolated**, tested, and given care
- Cycle starts again with new patient's contacts

Ebola Outbreaks In Africa 1976 - 2014

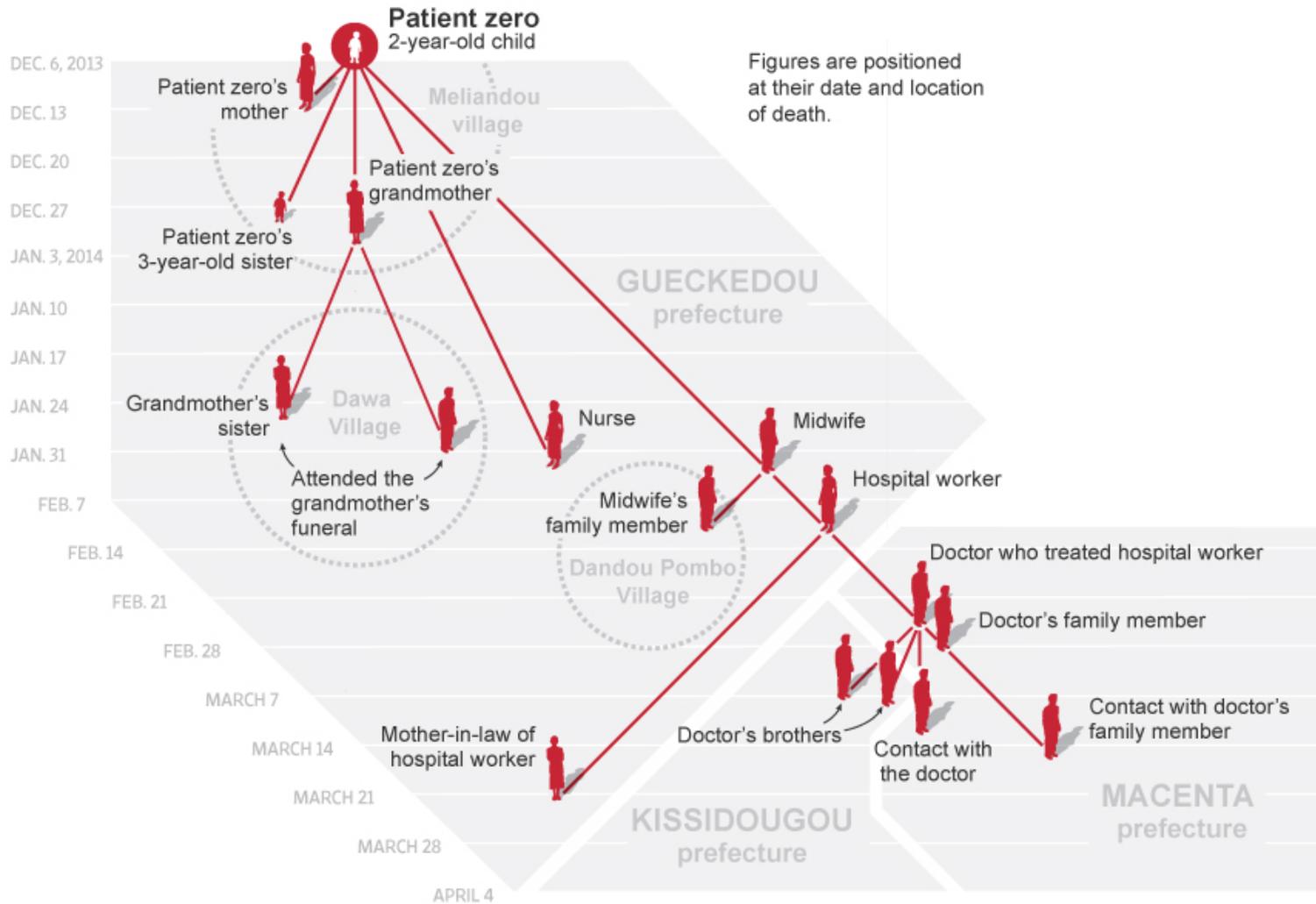


EBOLAVIRUS OUTBREAKS BY SPECIES AND SIZE, 1976 - 2014



- **First outbreak:** 1976 in Zaire (now Democratic Republic of the Congo)
- 318 cases with a fatality rate of 88%
- Spread by close personal contact and use of contaminated needles and syringes in hospitals and clinics
- Ten other outbreaks of the *Zaire ebolavirus* since 1976 with a range of 2 to 315 people infected and fatality rates of 57% to 89%

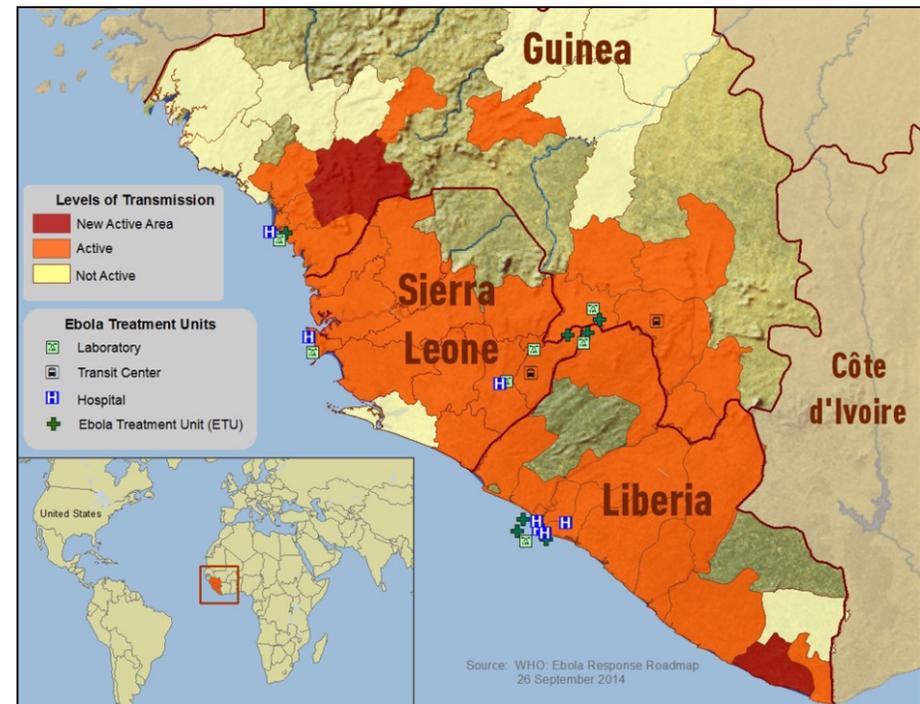
How the 2014 West Africa Outbreak Began



2014 West Africa Outbreak



- Largest, deadliest Ebola outbreak in history
- First in West Africa
- Six countries have been affected:
 - Outbreak control now focused primarily in **Guinea, Liberia, and Sierra Leone.**
 - After 20 cases, **Nigeria** has had no new cases since September 5, 2014.
 - 1 case in Senegal
 - 1 case in Spain
 - 1 case in Dallas, Texas



Current Situation: Liberia, Guinea, Sierra Leone



- As of October 8 - **3865** deaths, per World Health Organization
- **8033** confirmed, probable and suspected cases (WHO)
- CDC estimates underreporting by rate of 2.5

Predicted Case Numbers — Liberia and Sierra Leone



- Without scale-up of interventions, CDC models project Ebola cases in Liberia to double approximately every 15-20 days, and every 30-40 days in Sierra Leone.
- By January 20, 2015, Liberia and Sierra Leone projected to have 550,000 Ebola cases **(1.4 million when corrected for underreporting)** without additional interventions or changes in community behavior (e.g., unsafe burial practices).
- CDC models suggest that epidemic will end when 70% of infected people are in medical care facilities or Ebola treatment units.

Source: Morbidity and Mortality Weekly Report, Sept. 26. 2014

http://www.cdc.gov/mmwr/preview/mmwrhtml/su6303a1.htm?s_cid=su6303a1_w

U.S. Imported Cases



As of Oct. 8, 2014, **six** Ebola patients treated in U.S. hospitals:

- **Four** were U.S. healthcare workers were infected in West Africa and flown back to U.S. for treatment.
- **One** case involved a Liberian man who was admitted to a hospital in Dallas, Texas with symptoms 4 days **AFTER** arriving in Dallas. He died on October 8, 2014.
- **One** patient is originally from Rhode Island. He became ill in Liberia, was initially treated there, then flown to a Nebraska hospital on Oct. 5, 2014.



RI Preparedness Scenarios

A person who recently traveled from West Africa within the last 21 days AND has symptoms of Ebola.





RI Preparedness Scenarios

Sick person enters Hospital Emergency Department





RI Preparedness Scenarios

Sick person goes to primary care doctor's office





RI Preparedness Scenarios

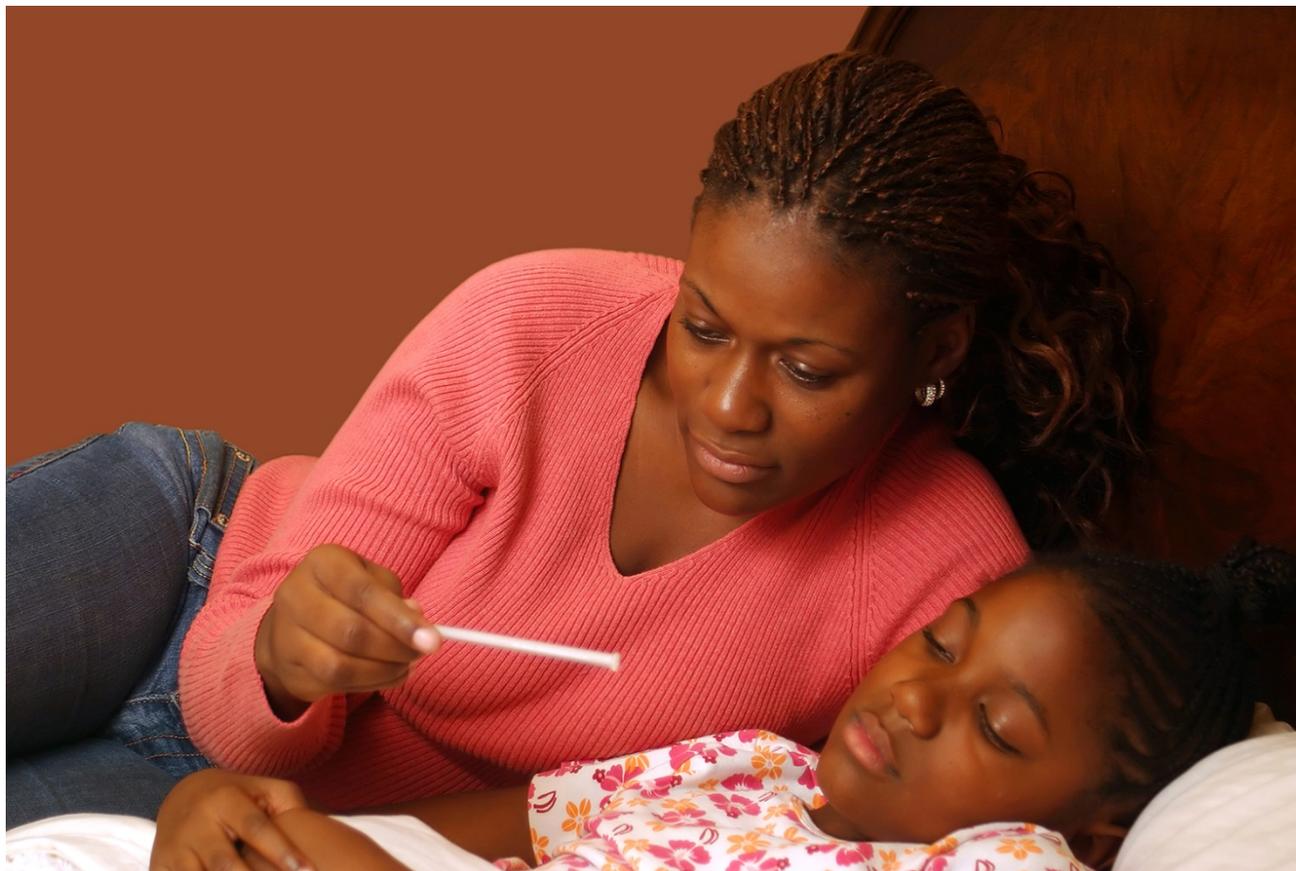
Sick person enters a nursing home as a healthcare worker





RI Preparedness Scenarios

Person stays home while sick and exposes others who themselves have contact with others.



RI's West African Community Mobilizes



- Nearly 15,000 with ties to West Africa
- HEALTH working with the Liberian community
 - Statehouse Rally, August 2014
 - *Ebola Be Gone* Call 5 campaign with United Way & Cox Communications
 - Weekly meetings
 - Church and other community meetings
 - Flyer distribution
 - Supplies drive
 - Three relief funds



Public Health Response In Rhode Island



Health System Preparedness

- Guidance
- Conference Calls
- Face-to-face meetings
- Consultation
- Planning
- Gaps assessment and solutions

Public Health Response In Rhode Island



Public Information

- Website (health.ri.gov/ebola)
- Guidance
- Community meetings
- Speaker's bureau
- HEALTH Information Line
- Consultation

Summary



- Only people who have been in West Africa in prior 21 days are at risk
- People with no symptoms are not contagious
- The outbreak can be stopped by good public health practice
- While we may see a few imported cases in RI, good public health collaboration will likely prevent any spread



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