What is Ebola?
What is Ebola?

- Formally known as Ebola Hemorrhagic Fever
- A rare virus normally found in Africa
- 21 day maximum life span, mean 7-10 days
What is Ebola?

- Symptoms: fever, fatigue, muscle pain, headache, sore throat, vomiting, rash, impaired kidney and liver function, and unexplained hemorrhaging.
What is Ebola?

- Human-to-Human Transmission - Spreads through exchange of bodily fluids
- NOT AIRBORNE!
- No vaccine, but currently being worked on
  - Blood transfusions of those who survived are being used as treatment with infected individuals
Where did Ebola come from?

- Originated in the Ebola River in the Democratic Republic of the Congo in 1976
- Came to the US in 1989 by introducing contaminated monkeys imported from the Philippines into quarantined areas of Virginia and Pennsylvania.
- Current outbreak is thought to come from fruit bats (has yet to be confirmed)
EBOLA VIRUS OUTBREAKS BY YEAR

Survived: 2014
Deaths from Cases: 2014

Source: World Health Organization, July 27
How past outbreaks were contained

- Not so much active containment, but where the virus spread:
  - The Congo in isolated, forest areas
  - In quarantined medical facilities
  - Underground mining camps in the rain forest
- In cases where it was actively contained, the first individual infected was actively treated immediately
Where is it currently endemic?

- Sierra Leone
- Liberia
- Guinea

...that’s all
Why these three?

- All coastal – trade ports
- Rural areas
- Lack of resources
- Previous wars
- Lack of medical facilities, supplies, and staff
- Cultural/burial practices
- Failed state/fragile states
Misconception or Fact

Mosquitoes carry Ebola.
Misconception or Fact

Quarantines are the encouraged method to contain the illness.
You can catch Ebola through a handshake or hug.
Giving aspirin or ibuprofen to patients is the best treatment available if they do not have access to experimental drugs or a blood transfusion.
If you don’t show any symptoms you can still spread Ebola.
Will Ebola Spread?

COUNTRIES WITH EBOLA
- GUINEA
- SIERRA LEONE
- LIBERIA
- BENIN
- NIGERIA

HOW EBOLA GOT OUT OF CONTROL

REPORTED BY USA Today World Aug 28 11:45 AM EST
Ebola outbreak could lead to food crisis

KILLER VIRUS
Beyond the Ebola Scare - What Else Is Out There?

EBOLA CRISIS

EBOLA OUTBREAK
Total Infected

**EBOLA**

As of Nov. 20\textsuperscript{th} (only includes endemic countries)

- **Total Cases:** 15,145 cases
- **Laboratory-Confirmed Cases:** 9,427
- **Total Deaths:** 5,420

**INFLUENZA**

Estimated yearly average

- **Total Cases:** 3 to 5 million severe
- **Total deaths:** 250,000 to 500,000
What is causing the panic surrounding Ebola?
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 27</td>
<td>Two U.S. aid workers, one a doctor (Dr. Brantly) and the other a missionary (Nancy Writebol), are infected with Ebola while working with patients in Liberia.</td>
</tr>
<tr>
<td>July 31</td>
<td>Both received the only experimental drug Zmapp.</td>
</tr>
<tr>
<td>August 19</td>
<td>Writebol tests negative for Ebola, discharged from hospital.</td>
</tr>
<tr>
<td>August 21</td>
<td>Brantly, after negative Ebola test, is sent home.</td>
</tr>
<tr>
<td>September 20</td>
<td>Liberian national Thomas Eric Duncan flies into Dallas to visit with family.</td>
</tr>
<tr>
<td>September 21</td>
<td>Duncan is sent home with antibiotics after going to Texas Health Presbyterian Hospital, where he tells a nurse that he’s running a fever and came from Liberia.</td>
</tr>
</tbody>
</table>
## Case Study: United States, 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 29</td>
<td>Duncan becomes the first Ebola patient diagnosed in the United States.</td>
</tr>
<tr>
<td>October 8</td>
<td>Duncan dies.</td>
</tr>
<tr>
<td>October 10</td>
<td>Amber Vinson, a nurse at the Dallas hospital, takes a flight from Dallas to Cleveland.</td>
</tr>
<tr>
<td>October 12</td>
<td>Officials confirm Nina Pham, a Dallas nurse who treated the dying Duncan, tested positive for Ebola.</td>
</tr>
<tr>
<td>October 14</td>
<td>Vinson is confirmed with Ebola. She returned from Cleveland Oct. 13.</td>
</tr>
<tr>
<td>October 15</td>
<td>Vinson flown to Emory University for treatment.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>October 22</td>
<td>Vinson is declared virus-free.</td>
</tr>
<tr>
<td>October 24</td>
<td>Nurse Nina Pham is virus-free, the National Institutes of Health announces.</td>
</tr>
<tr>
<td>November 10</td>
<td>Dr. Martin Salia, a U.S. resident who contracted Ebola while treating patients in Sierra Leone, tests positive for Ebola.</td>
</tr>
<tr>
<td>November 15</td>
<td>Salia arrives at Nebraska Medical Center. He is &quot;extremely ill,&quot; doctors say. His wife has agreed to pay for his trip to the U.S. for treatment.</td>
</tr>
<tr>
<td>November 17</td>
<td>Salia dies of the virus at Nebraska Medical Center.</td>
</tr>
</tbody>
</table>
The Cure

Ebola: NGOs, corporations, and international institutions

- World Bank
- African Development Bank
- Central Emergency Response Fund (UN)
- Paul G. Allen Family Foundation
- Children's Investment Fund Foundation
- General Electric

Donations in US dollars

- Promised in future
- Actually paid
Ebola: Who has donated the most?

Donations by each country as tracked by the UN

- United States of America
- United Kingdom
- Germany
- Australia
- Japan
- Sweden
- China
- France
- Switzerland
- Kuwait
- Venezuela

Donations in US dollars

- Promised in future
- Actually paid
Where are we now?

- Ebola deaths
- Figures up to 31 January 2015
- 8,936
- Deaths - probable, confirmed and suspected
  - (Includes one in the US and six in Mali)
  - 3,710 Liberia
  - 3,274 Sierra Leone
  - 1,937 Guinea
  - 8 Nigeria
The total number of reported cases is more than 22,000.
Vaccines have been used on Liberians though no one is definitively used.
For the first time since June 29, 2014, there have been fewer than 100 new confirmed cases reported in a week in Guinea, Liberia, and Sierra Leone (as of Jan. 31st)
How has the hysteria brought about by the media transformed this disease?

Whose job is it to assist those infected?

Was the right choice made in bringing individuals who became exposed to the U.S. and other developed nations?

How can we use this outbreak to prepare for future ailments?