Ebola virus
How contagious is Ebola?

How the Ebola virus compares with other contagious viruses. The reproduction rate or $R_0$, calculates the number of people likely to be infected by one person who has a disease.

**REPRODUCTION RATE ($R_0$)**

- **$R_0$**
  - 1 to 4 people
  - 2 to 4
  - 4 to 7
  - 5 to 7
  - 6 to 7
  - 12 to 18
  - 12 to 17

**DISEASE**

- Ebola
- SARS
- Mumps
- Polio
- Smallpox
- Rubella
- Measles
- Pertussis (Whooping cough)

**HOW IT SPREADS**

- Bodily fluids
- Airborne droplets
- Airborne droplets
- Fecal-oral route
- Airborne droplets
- Airborne droplets
- Airborne
- Airborne droplets

Sources: Michigan Center for Public Health; WHO; Transmission Dynamics and Control of Severe Acute Respiratory Syndrome, Nature; Understanding the Dynamics of Ebola Epidemics, National Institute of Health

M. Murray, M. Weber; 3/10/2014
Ebolavirus Disease (EVD) Outbreaks

- PFC
- Confirmed EVD cases
- EVD Deaths
- Suspect/Probable/Confirmed EVD cases
- Suspect/Probable/Confirmed EVD deaths

Number of cases:

Proportion of fatal cases (PFC):

Year and location of outbreak:


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Awareness is high, denial is low, but there are serious misconceptions.

Everyone in Sierra Leone has heard of Ebola and nearly everyone believes that it exists in the country (97%). About 77% of respondents have heard of someone who survived Ebola. Nonetheless, nearly one-third of respondents believe that EVD is transmitted by air or through mosquito bites. About 2 in 5 respondents believe that they can protect themselves from Ebola by washing with salt and hot water while nearly 1 in 5 believe that spiritual healers can successfully treat the disease – such belief is more higher in Western Urban and Rural (32-45%) as compared to other parts of the country. Regarding risk perceptions, 36% believe that they are at no risk of contracting Ebola within the next 6 months while nearly the same proportion (34%) believes that they are at great risk.

Type: Qualitative findings from quantitative and qualitative study; Scientific journal

Beliefs and practices of the national and international healthcare professionals that enhanced and lowered health of some persons during Gulu Ebola hemorrhagic fever (EHF) outbreak

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<thead>
<tr>
<th>Health-enhancing beliefs and practices</th>
<th>Health-lowering beliefs and practices</th>
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<td>Most national government health workers and decision makers spoke local language and had an understanding of local cultures</td>
<td>Unintended consequences of WHO's health education video: burning of houses of survivors</td>
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<td>Establishment of isolation unit and use of barrier nursing</td>
<td>Taking bodies to burial ground before family members could verify the death. This practice led to sick persons hiding from family and health workers; family members being afraid to take sick persons to hospital; persons running away from the ambulance; and stories of Europeans selling body parts</td>
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<td>Providing gloves and bleach to local communities</td>
<td>Omitting traditional healers from control efforts; they were ready and willing as a group to help mobilize the community</td>
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<td>Medical care of Ebola victims including rehydration, control of vomiting, other drugs/medications</td>
<td>Early stages only: 1) nurses and healthcare nurses lacked training about barrier nursing, protective gear, and education about the transmission and nature of the disease; 2) lack of transport for sick patients; 3) international health workers not familiar with naming, kinship system, household organization of local communities</td>
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<td>Multidimensional health education</td>
<td>Taking blood samples for research only or blood taken without reporting results back to persons or communities' increased distrust of healthcare workers</td>
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<td>Suspension of the following activities: handshaking upon greeting, cutting by traditional healers, schools, disco, public funerals, traditional beer drinking</td>
<td>International team members conducting EHF studies for research only. This diverted time and energy from control efforts</td>
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<td>Diagnostic laboratories for Ebola</td>
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<td>Ambulances to transport patients to hospital to isolate</td>
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<td>Reallocation of tasks of health workers to focus on EHF</td>
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WAYS OF GETTING EBOLA

EATING BUSH MEAT

PLAYING WITH MONKEYS

WARNING

VISIT

STAY CLEAR
Facts about Ebola

You can't get Ebola through air

You can't get Ebola through water

You can't get Ebola through food

You can only get Ebola from touching bodily fluids of a person who is sick with or has died from Ebola, or from exposure to contaminated objects, such as needles. Ebola poses no significant risk in the United States.
Dame Esther ..Dame Joan!
New Year's Honours revealed

KILLER VIRUS IN BRITAIN

WHY DID THEY LET EBOLA NURSE GO HOME?

Sick victim allowed to catch flight after 7 tests
Frantic hunt for other passengers
When is information going to go out for people stay put if they suspect Ebola. And when are people travelling from infected areas going to be quarantined?

Very, very sad but confusing.. The doctors are telling us not to worry because it is a difficult disease to catch. Yet this poor girl worked with it and knew the risks, precautions, etc, etc yet still managed to contract it... How?

I don't understand why you would fly to the UK and infect everyone on the plane and in the country.

Why are people from other countries going to Africa to treat the highly contagious ebola? Coming back to the UK putting other people at risk and possibility of an outbreak here in the UK? Who would come to our country to treat us if this does happen? Why are the medical staff in Africa not treating the people. Stay in your own country medical staff to stop putting a worldwide epidemic. Quetirine / put people in isolation in Africa to keep ebola where it first started for this reason.

No cure, I'm scared of the potential of this virus, if it has only started too get a grip, no country is prepared to deal with an outbreak really. I don't believe it will ever be 100% gone.
Persons with Ebola outside of Africa

Where they contracted Ebola  Where they received treatment  Who contracted Ebola outside of Africa

U.S.
- Thomas Eric Duncan
- Dr. Craig Spencer
- Ashiko Mukpo
- Dr. Rick Sacra
- Doctor*
- Dr. Kent Brantly
- Nancy Writebol

Nina Pham
Amber Vinson
Both nurses had cared for Duncan during his treatment

GUINEA
- Spain
  - Miguel Pajares
  - Manuel Garcia

Teresa Romero
Nurse had cared for Pajares during his treatment

LIBERIA
- Germany
  - Sudanese doctor*
  - Ugandan doctor*
  - Senegalese doctor*

SIERRA LEONE
- France
  - Nurse*
- Norway
  - Healthcare worker*
- U.K.
  - Nurse*

Died from the disease
Receiving treatment
Recovered after receiving treatment

Sources: Reuters; local media
* Unidentified. Status as of Oct. 25
“I came in the following morning and she was covered in blood. She still had a very puzzled expression on her face... erm, and she wasn’t breathing. So I put her in a bag and left her next to her brother... She was a beautiful little girl.

So my specific fear is that the horror and and the misery of these deaths really fill a well of my despair... and I just, I just don’t know what happens if that’s repeated a million times. And so I say, at all costs, we can’t let that happen.”

Quote taken from a video clip of British nurse William Pooley recalling his experience treating Ebola in Sierra Leone
The Ebola epidemic has put great strain on the already weak African health infrastructure. Although quarantine measures are seen by some as ensuring the security of their population, it is clear that restrictive measures have the potential to discourage volunteering, reduce humanitarian assignments to west Africa, and stigmatise those travelling from affected countries. A travel ban could also affect research for new treatments and vaccines. Often researchers fly to study sites in Africa before then returning to their home countries; if this movement is restricted it will have a devastating effect on the progress that has been already made in treatment research. Better coordination and planning are urgently needed to avoid expansion of the Ebola outbreak, and to ensure that other endemic diseases are not further neglected. Such coordination will only be possible with a rational and evidence-based response.

Editorial, The Lancet Infectious Diseases, December 2014
The community is no longer involved in burying of bodies we call the government burial team to help. People are now avoiding the sick and the dead. The Community Leaders have been making these changes to happen (Montserrado, Banjor, male Focus Group Discussion participant, age 26-63).

Before, we did not believe that Ebola was real. After so many deaths, followed by awareness on prevention from the health teams, such as washing hands, no touching dead bodies, avoiding sick persons, we believed...The changes came after two months in September 2012 (Lofa, Barkedu, male Focus Group Discussion participant, age 42-80).

People do not feel comfortable asking for help because they are afraid of being stigmatized or avoided by people...and it has not changed overtime (Montserrado, New Kru Town, male Key Informant interview, age 36).

As an imam, I don't only pray for my people, encourage them to keep washing their hands, they should not touch sick people and dead bodies. In the morning, I walk in the community to see whether people have Ebola buckets in front of their houses. Those who don't have, I tell them to get one and at times I recommend them to the Red Cross people to provide for them and they do get (Lofa, Barkedu, chief, imam KI, age ).

The attitude and reactions have changed, now community members are encouraging survivors to tell their stories, give them food, clothing and incorporate the survivors in the community task force. (Montserrado, New Kru Town, mixed FGD participant, age 47-64).

The government should stop the burning of bodies because it is not part of our culture. (Montserrado, New Kru Town, Christian religious leader KI, age).

USAID (2014) Community Perspectives about Ebola in Bong, Lofa and Montserrat Counties of Liberia: Results of a Qualitative Study.
PREVAIL Vaccine Trial, Liberia