
Ebola Virus: Disease, Preparedness, and Response

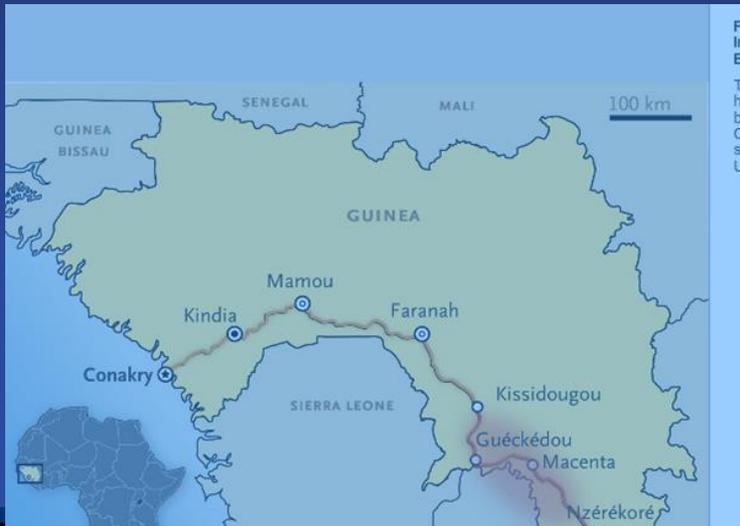
*HAI Advisory Committee
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2014 Ebola Outbreak in West Africa

- From rural to urban
 - Started in rural area of Guinea in early 2014 and spread ultimately to the capital Conakry (~ 2 million residents)



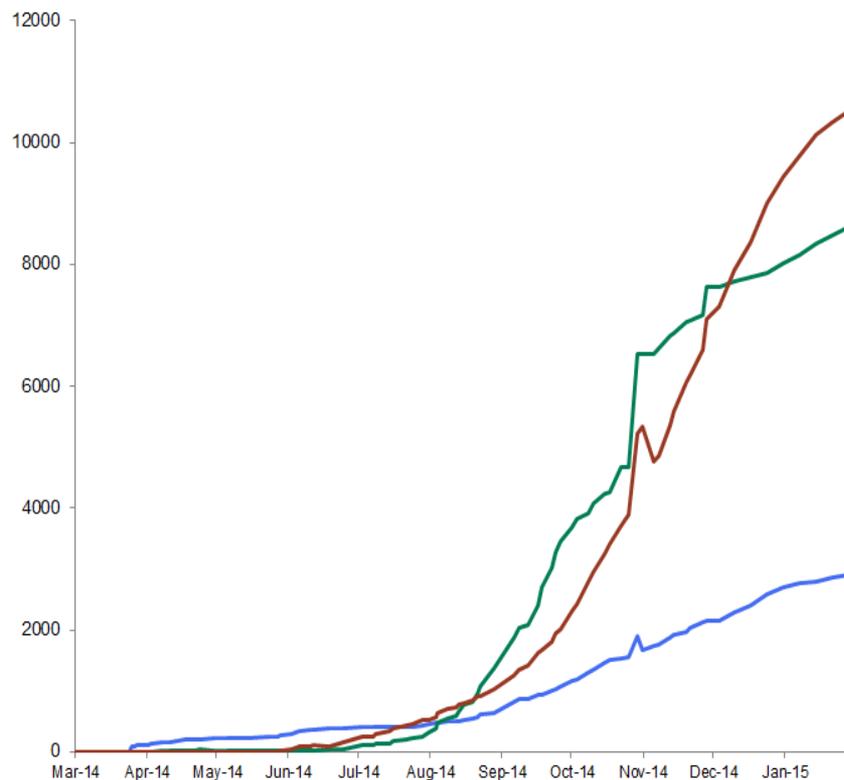
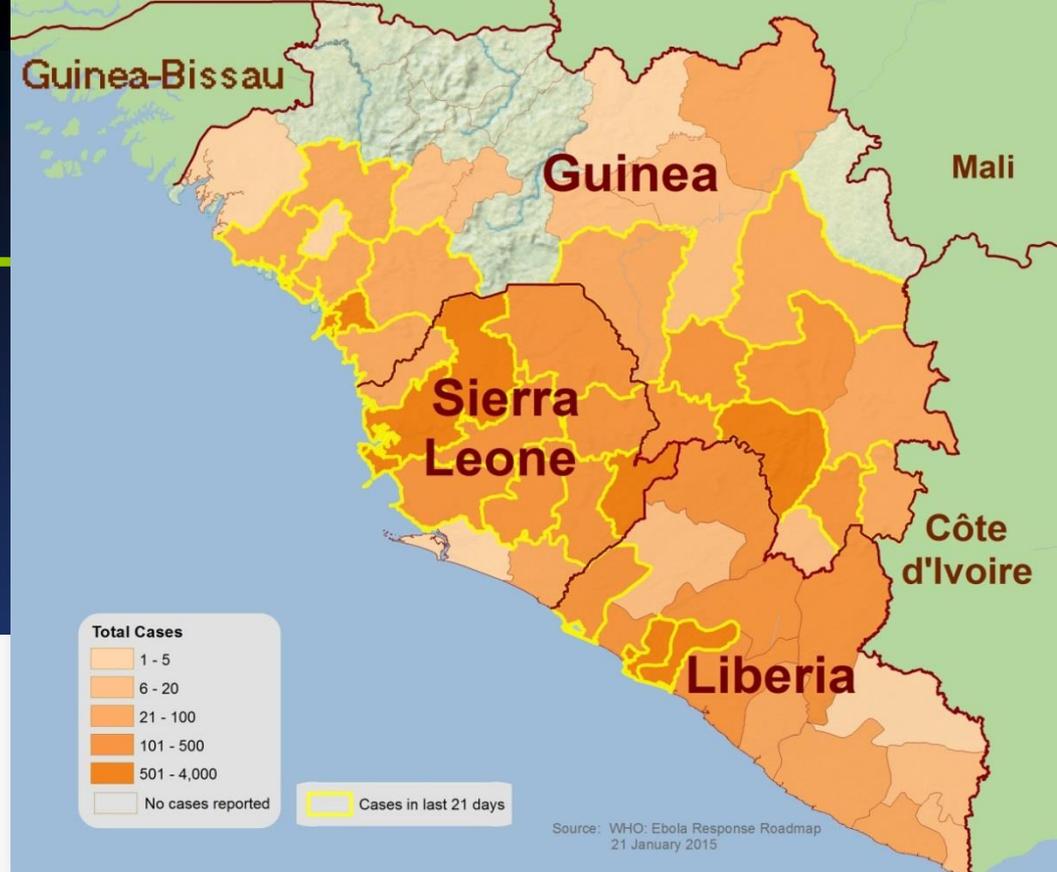
2014 Ebola Outbreak in West Africa

- Over the next 2 months the outbreak spread to neighboring countries of Sierra Leone and Liberia.
- June 28: CDC issues a Health Alert regarding ongoing Ebola outbreak in West Africa.
- Late July: 2 US healthcare workers become ill in Liberia with confirmed EVD - evacuated to Atlanta
- August 8: WHO declares “Public Health Emergency of International Concern”



Ebola in Africa (CDC: 21 Jan 2015)

- ~22,000 cases
- ~9,000 deaths



- Total Cases, Guinea
- Total Cases, Liberia
- Total Cases, Sierra Leone



A burial team from the Liberian health department praying before entering a house to remove the body of a woman suspected of dying of the Ebola virus.

John Moore/Getty Images



Photos courtesy of Dr. Patrick Ayscue, CDPH / CDC EIS Officer

Experience with Ebola in the U.S.

- Texas case
 - Presented unexpectedly
 - Diagnosis not suspected initially
 - Inconsistent infection control
 - Complex contact investigation (no prior PH awareness of case)
 - *Secondary cases*
- New York case
 - Monitored by public health
 - Controlled transport and presentation at prepared hospital
 - Movements known—simplified investigation
 - *No transmission*
- Emory/Nebraska cases: *no transmission*

Prevention of Ebola in the U.S.

- Returning travelers identified and monitored
- Treatment hospitals identified
- EMS prepared
- Opportunities
 - Planning for evaluation if symptoms develop
 - Early identification of symptoms in travelers
 - Controlled transport with special EMS
 - Hospitals warned
 - Improved infection control

California EVD Preparedness and Response

State Collaborations – Key Partners

- Governor's Task Force
- California Department of Public Health – lead
- Emergency Medical Services Authority
- Department of Industrial Relations – Cal/OSHA
- California Office of Emergency Services
- Local Health Jurisdictions



CDPH Preparedness and Response

- Executive Policy Council
 - Strategic direction, policy-setting
- Activation of Emergency Operations Centers
 - Medical and Health Coordination Center
 - Richmond Campus Coordination Center
- Guidance/Recommendations
 - Local Health Departments
 - Hospitals and Healthcare Providers
 - Infection Control
 - Laboratories
 - Environmental Health
- Technical consultation
 - 24/7 Clinical Consultation

Public and Provider Communications

The screenshot shows the California Department of Public Health (CDPH) website. At the top left is the CA.GOV logo. Next to it is the CDPH logo with the text "California Department of Public Health". To the right of the logo is a search bar with a "GO" button and radio buttons for "This site" (selected) and "California". Below the logo is a navigation menu with buttons for Home, Programs, Services, Health Information, Certificates & Licenses, Publications & Forms, and Data. The main content area has a breadcrumb trail: Home > Programs > Communicable Disease Emergency Response Branch > Ebola Virus Information Webpage. The page title is "Ebola Virus Information Page" with a sub-section "Background". The background text states: "On March 23, 2014, the Ministry of Health in Guinea notified the World Health Organization (WHO) of a rapidly evolving outbreak of Ebola Virus Disease (EVD). For the latest updates on Ebola activity, please visit the CDC website at <http://cdc.gov/vhf/ebola/index.html> and the WHO website at <http://www.who.int/csr/disease/ebola/en/>. EVD is an infectious disease caused by the Ebola virus. Symptoms may appear from 2 to 21 days after exposure and include fever, headache, joint and muscle aches, weakness, diarrhea, vomiting, stomach pain, and abnormal bleeding. It is classified as a viral hemorrhagic fever (VHF) because of the fever and abnormal bleeding. Among the VHFs, Ebola is feared because of its high mortality. There are no specific treatments but supportive therapy can be provided to address bleeding and other complications. Important facts about Ebola include: Current science shows that people CANNOT get EVD through the air, food, or water."

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Home > Programs > Communicable Disease Emergency Response Branch > **Ebola Virus Information Webpage**

Ebola Virus Information Page

Background

On March 23, 2014, the Ministry of Health in Guinea notified the World Health Organization (WHO) of a rapidly evolving outbreak of Ebola Virus Disease (EVD). For the latest updates on Ebola activity, please visit the CDC website at <http://cdc.gov/vhf/ebola/index.html> and the WHO website at <http://www.who.int/csr/disease/ebola/en/>.

EVD is an infectious disease caused by the Ebola virus. Symptoms may appear from 2 to 21 days after exposure and include fever, headache, joint and muscle aches, weakness, diarrhea, vomiting, stomach pain, and abnormal bleeding. It is classified as a viral hemorrhagic fever (VHF) because of the fever and abnormal bleeding. Among the VHFs, Ebola is feared because of its high mortality. There are no specific treatments but supportive therapy can be provided to address bleeding and other complications.

Important facts about Ebola include:

Current science shows that people CANNOT get EVD through the air, food, or water.

<http://cdph.ca.gov/programs/cder/Pages/Ebola.aspx>

<http://www.cdc.gov/vhf/ebola/about.html>



Public and Provider Communications

- Ebola Hotline
 - Telephone: 1-855-421-5921
 - Email Information Line: jeocuser43@cdph.ca.gov
- LHJ and Provider Ebola Updates
 - Weekly conference calls (now monthly)
- Legislative Briefings
- Media
 - Press Conferences and Releases

Surveillance: Traveler Monitoring

- National surveillance and notification system developed
 - Travel from Ebola-affected countries through 5 East Coast Airports
 - States notified of incoming traveler and destination by Division of Global Migration and Quarantine (DGMQ)
- CDPH Develops Traveler Monitoring Team
 - CDPH 24/7 point of contact for notifications from DGMQ
 - CDPH notifies the LHJ of incoming traveler
 - Monitoring, reporting to state and CDC



Surveillance: Traveler Monitoring

- Each traveler assigned a level of “risk”
 - High, Some, Low, None
- Local Health Jurisdictions conduct 21 day monitoring of travelers
 - Direct Active Monitoring
 - ✓ Face-to-face monitoring 1-2 times daily
 - ✓ Skype or FaceTime used
 - Active Monitoring
 - ✓ Traveler reports to LHJ daily
 - LHJ reports to CDPH
 - ✓ Daily for some or high risk
 - ✓ Weekly for low, no risk

Interim Guidance for Monitoring and Movement of Persons with EVD Exposure

- CDC has created guidance for monitoring people exposed to Ebola virus but without symptoms

RISK LEVEL	PUBLIC HEALTH ACTION		
	Monitoring	Restricted Public Activities	Restricted Travel
HIGH risk	Direct Active Monitoring	Yes	Yes
SOME risk	Direct Active Monitoring	Case-by-case assessment	Case-by-case assessment
LOW risk	Active Monitoring for some; Direct Active Monitoring for others	No	No
NO risk	No	No	No

Surveillance: Traveler Monitoring

- Nearly all possible U.S. EVD cases will be known
 - However, we must be prepared for the unknown!
- Special traveler situations
 - Travel between jurisdictions, states, countries
 - Pregnancy
 - Children
 - Homeless
 - Rural locations

Returning Travelers in California

- 294 persons monitored to date (2/9/15) in 29/61 CA counties
 - Majority to urban areas
 - Some rural travelers
- 30-40 at any time
 - At 96 during the holidays 2014
- Almost all low risk
 - No high risk
 - Few some risk – mostly returning healthcare workers

Tiered Ebola Hospitals

- Frontline Healthcare Facilities (“All”)
 - Identify, Isolate, Inform
- Ebola Assessment Hospitals (Pending)
 - Likely few, regional where needed
 - First 96 hours: Evaluation and testing
- Ebola Treatment Centers
 - 8 identified in California: UC Med Centers (5); Kaiser Permanente Medical Centers (3)
 - Significant investment (resources, time, etc.)

Will involve EMS transfers...

PPE recommendations

CDC's current infection control recommendations:

- Principle #1: Rigorous and repeated training
- Principle #2: No skin exposure when PPE is worn
- Principle #3: Trained monitor

Department of Industrial Relations / Cal/OSHA
establishing recommendations/guidelines



CDC Recommended Healthcare Personal Protective Equipment (PPE)

- Powered air purifying respirator (PAPR) or fit-tested NIOSH approved N95 respirator*.
- Single-use fluid-resistant or impermeable gown...
- Single-use nitrile examination gloves with extended cuffs – two pairs...
- Single-use fluid-resistant or impermeable boot/shoe covers ...
- Single-use, fluid-resistant or impermeable apron....if vomiting or diarrhea.
- A trained observer and specific areas for donning and doffing
- *Per the CalOSHA ATD Standard, a PAPR must be used during aerosol-generating procedures.
- CDPH recommends that all hospitalized Ebola patients be placed in an airborne infection isolation room.

Environmental Issues

- Medical waste management
- Wastewater/sewer
- Decontamination
 - Healthcare and EMS
 - Community
- Pets

Ebola and Pets (“Bentley”)



More information about Ebola and pet dogs and cats

CDC, the U.S. Department of Agriculture, the American Veterinary Medical Association, and many other partners worked together to develop additional guidance for the U.S. pet population.

- [Interim Guidance for Dog or Cat Quarantine after Exposure to a Human with Confirmed Ebola Virus Disease](#)
[PDF - 9 pages]
- [Interim Guidance for Public Health Officials on Pets of Ebola Virus Disease Contacts](#) [PDF - 5 pages]



Keeping it in perspective



2012

In 2012, approximately 122,000 people worldwide died from the measles, a highly contagious disease caused by a virus. Typhoid fever kills around 216,000 people a year. Tuberculosis, an infectious bacterial disease, killed an estimated 1.3 million in 2012. These are some of the infectious diseases that most concern health officials today.

Questions? Discussion

Thank You!

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