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# **Ebola Preparedness for California Frontline Healthcare Facilities: Identify, Isolate and Inform**

**November 10, 2022  
12:00pm-1:00pm**



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# Objectives

- Discuss the current Ebola outbreak status in Uganda, returning traveler monitoring, and criteria for a person under investigation (PUI)
- Understand expectations for frontline healthcare facilities to identify, isolate and inform their local health department regarding patients with symptoms and potential exposure to Ebola
- Describe real-world implementation strategies for screening and PUI identification
- Discuss Ebola treatment capacity at Cedars-Sinai Medical Center Special Pathogens Program

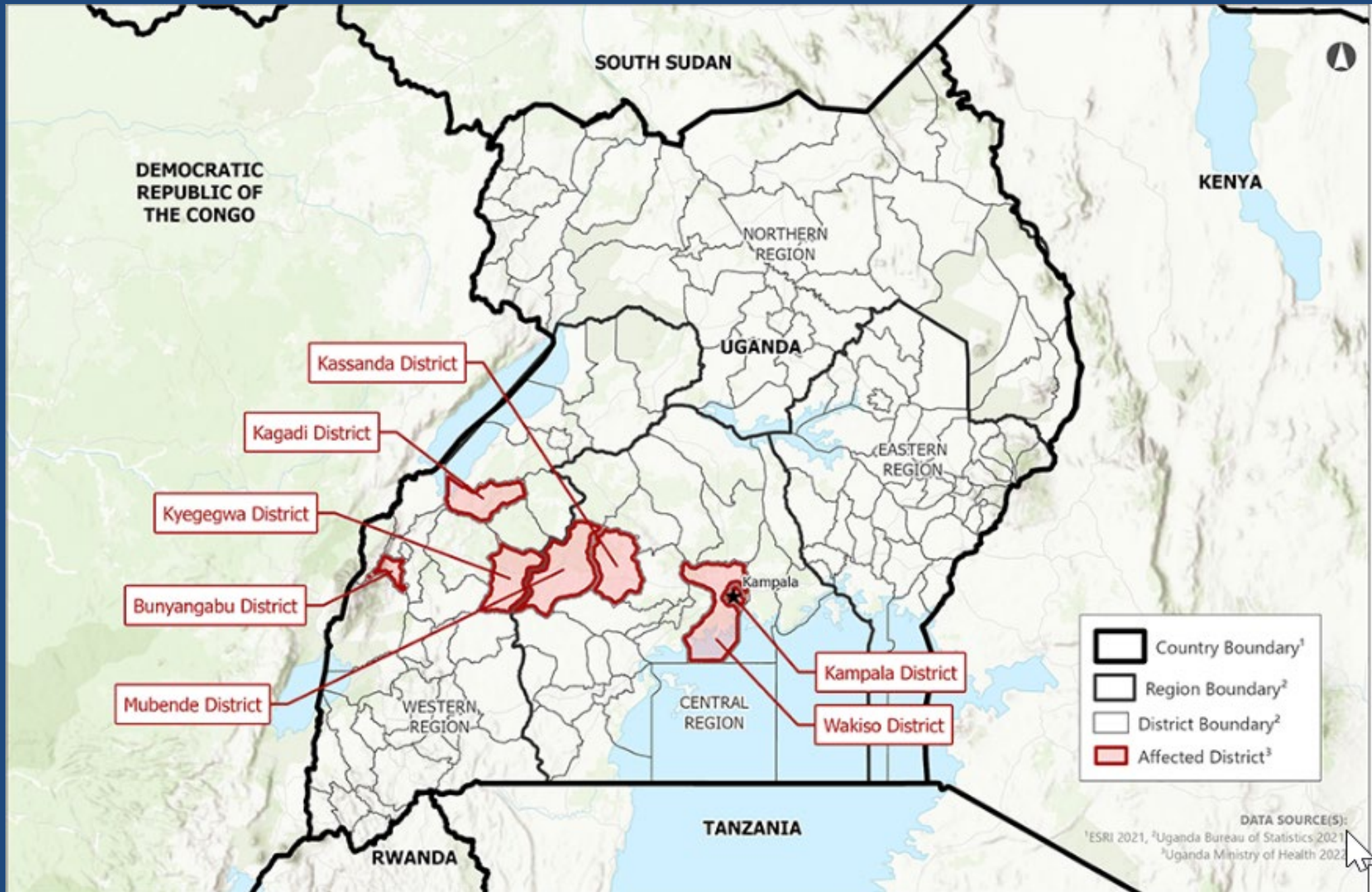
# Ebola Outbreak Due to Sudan Virus in Uganda

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Infectious Diseases Branch  
California Department of Public Health

November 10, 2022

# Uganda Outbreak

- Ebola virus disease (EVD) outbreak due to Sudan virus (species *Sudan ebolavirus*)
- September 20, 2022, Uganda declared an outbreak of EVD in Mubende district in Central Uganda
- As of November 7, 2022, a total of 135 confirmed cases and 53 confirmed deaths have been identified.
- No cases have been reported in the United States



[CDC Ebola September 2022](http://www.cdc.gov/vhf/ebola/outbreaks/uganda/2022-sep.html) ([www.cdc.gov/vhf/ebola/outbreaks/uganda/2022-sep.html](http://www.cdc.gov/vhf/ebola/outbreaks/uganda/2022-sep.html))

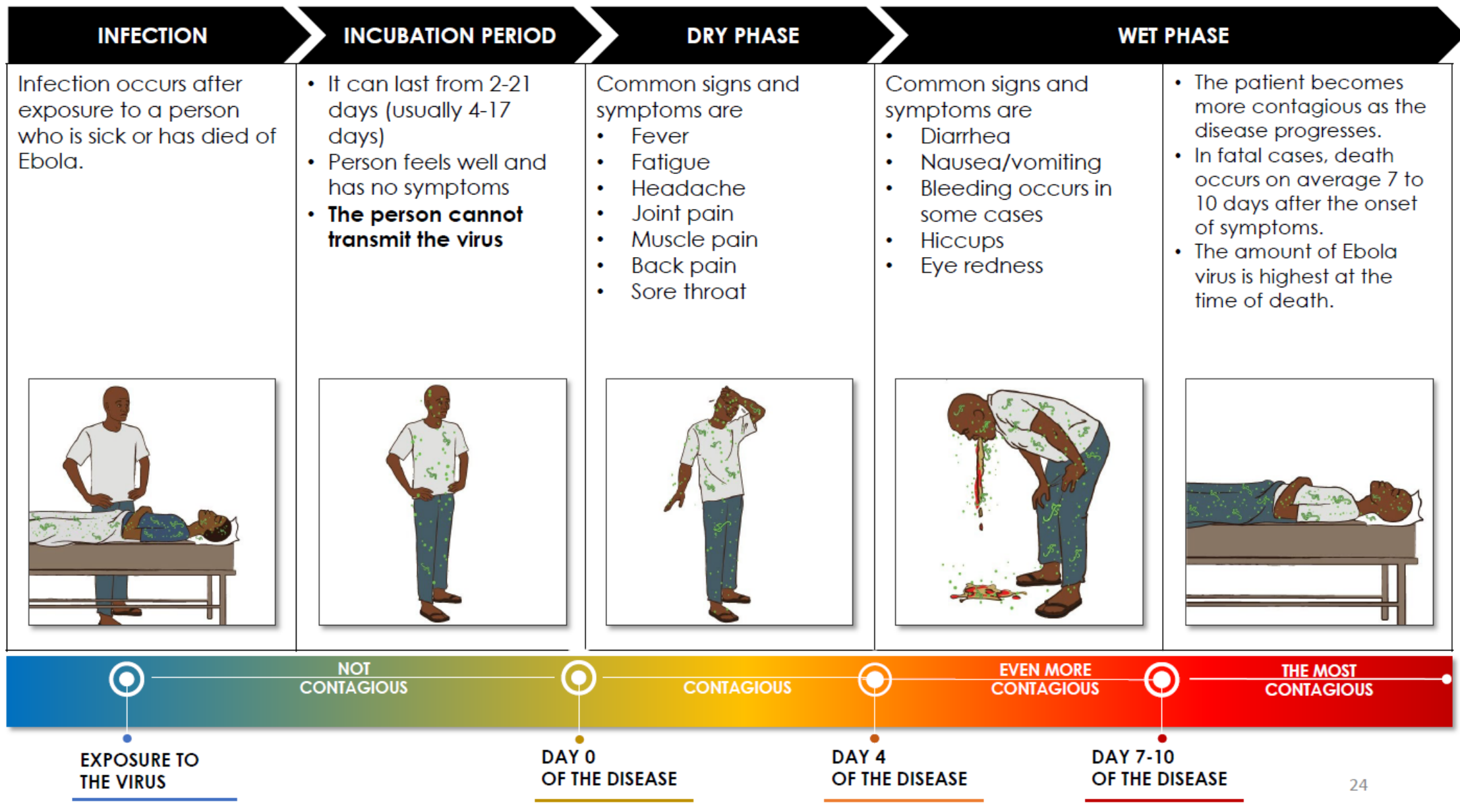
# Sudan Virus (*Sudan ebolavirus*)

- One of four species of Ebola viruses that affect humans
  - Ebola virus (species *Zaire ebolavirus*)
  - Sudan virus (species *Sudan ebolavirus*)
  - Taï Forest virus (species *Taï Forest ebolavirus*)
  - Bundibugyo virus (species *Bundibugyo ebolavirus*)
- 7 previous outbreaks in Sudan and Uganda – last one was in Uganda in 2012
- Approximately 50% mortality rate
- No approved vaccines or therapeutics. Mainstay of treatment is early supportive care.



# Ebola Virus Disease (EVD)

- Incubation period: 2-21 days
- Symptoms:
  - Fever
  - Severe headache
  - Muscle pain
  - Weakness
  - Fatigue
  - GI complaints - vomiting, diarrhea, stomach pain
  - Unexplained bleeding
- Fever and bleeding are not universally present





# EVD Transmission

- Direct contact (such as through broken skin or mucous membranes in the eyes, nose, or mouth) with:
  - Blood or body fluids (urine, saliva, sweat, feces, vomit, breast milk, amniotic fluid, and semen) of a person who is sick with or has died from EVD
  - Objects (clothes, bedding, needles, and medical equipment) contaminated with body fluids from a person with EVD
  - Semen from a man who recovered from EVD (through oral, vaginal, or anal sex)
- A person transmits EVD after becoming **symptomatic**

CDC Ebola Transmission

([www.cdc.gov/vhf/ebola/transmission/index.html](http://www.cdc.gov/vhf/ebola/transmission/index.html))

# EVD Diagnostic Testing

- Presumptive testing for EVD due to Sudan ebolavirus can be performed using the BioFire FilmArray NGDS Warrior Panel ([www.biofiredefense.com/products/biofire-filmarray-biosurveillance-system/](http://www.biofiredefense.com/products/biofire-filmarray-biosurveillance-system/)).
- California laboratories currently using the BioFire Warrior Panel: CDPH Viral and Rickettsial Disease Laboratory, Los Angeles County Public Health Laboratory, Santa Clara County Public Health Laboratory, and Cedars-Sinai Medical Center.
- Confirmatory testing for presumptive positive samples must be performed at the CDC.
- The decision to test for EVD must be made in conjunction with the LHD, CDPH, and CDC's Viral Special Pathogens Branch (VSPB).

# EVD Diagnostic Testing

- A negative RT-PCR test result from a blood specimen collected less than 72 hours after onset of symptoms does not rule out Ebola virus infection
- A negative RT-PCR test result from a blood specimen collected from a symptomatic patient more than 72 hours after symptom onset rules out EVD

[2022 CDC Update on Ebola Outbreak in Uganda \(PDF\)](https://emergency.cdc.gov/coca/ppt/2022/101222_slides.pdf)  
([emergency.cdc.gov/coca/ppt/2022/101222\\_slides.pdf](https://emergency.cdc.gov/coca/ppt/2022/101222_slides.pdf))

# Monitoring of Travelers Returning from Uganda

- On October 11, 2022, CDC and Department of Homeland Security implemented funneling of air passengers traveling to the U.S. who had been to Uganda.
- Passengers will fly into: Atlanta (ATL), Chicago (ORD), Newark (EWR), New York (JFK) and Washington DC (IAD).
- CDC will release lists of travelers to the state of residence daily.
  - CDPH will notify involved LHD of travelers to their jurisdiction
- LHDs will contact returned travelers within 48 hours of notification and evaluate risk for EVD
  - CDPH will work with LHDs to provide guidance on risk assessments, monitoring, and follow-up

# Summary of Post-arrival Management Recommendations for Asymptomatic Travelers by Exposure Category

Intervention	Reported High-risk Exposure	Present in Designated Outbreak Area	Present in Outbreak Country but not Designated Outbreak Area
Initial Risk Assessment	Yes	Yes	Yes
Health education	Yes	Yes	Yes
Symptom monitoring	Daily	At least twice weekly until 21 days after departure from Uganda	At least weekly until 21 days after departure from Uganda
Movement restrictions	Quarantine	None	None
Travel	Not permitted	Advance notification to health department and coordination with destination health department	Advance notification to health department and coordination with destination health department

## Examples of high-risk exposures:

- Direct contact with an EVD patient (e.g., household)
- Providing healthcare to an EVD patient without using appropriate PPE

# Returned Travelers

- Self-monitor for fever and other symptoms of EVD for 21 days after leaving affected areas in Uganda
- Notify local health department (LHD) immediately if symptoms develop
- Contact doctor or other healthcare provider by phone and inform them about the recent travel and symptoms before going to the clinic, urgent care, or emergency department



# Role of CDPH

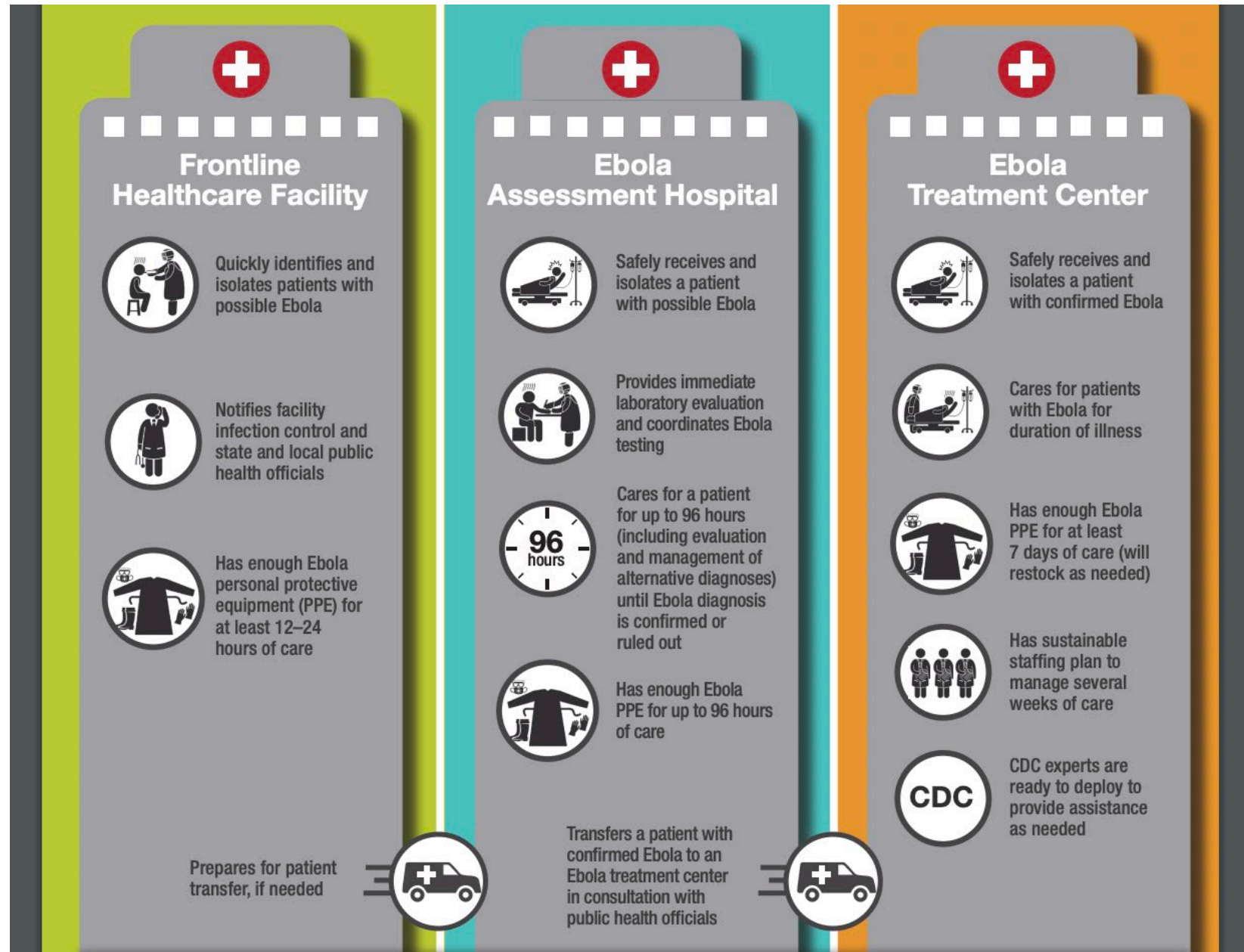
- Remind hospitals and LHDs to:
  - Ask all patients about recent travel
- Inform and provide guidance
- Work with LHDs and hospitals to:
  - Determine if a person is at risk for EVD, who would then be considered a person under investigation (PUI)
  - If a PUI, then:
    - Help facilitate Ebola virus testing
    - Provide infection control guidance
    - Help coordinate movement to a different hospital if needed
  - Coordinate and consult with CDC as needed
  - Provide additional infection control and waste management guidance as needed

[CDPH Ebola Virus Disease](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx)

([www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx))

# CDC Healthcare Ebola Preparedness Framework

**Frontline facilities:**  
acute care hospitals,  
critical access hospitals,  
other emergency care  
settings such as urgent  
care clinics



# Expectations for All California Frontline Healthcare Facilities

- All **Frontline** facilities should be able to:
  - Rapidly **identify** and triage a person with relevant Ebola exposure history and signs or symptoms
  - Immediately **isolate**, and take appropriate steps to protect staff caring for the patient
  - Immediately **inform** the facility infection control program and other relevant staff, the local health department, and Licensing and Certification District Office (if applicable)
  - If public health determines a patient is not a PUI and not being tested for Ebola, test, manage, and treat etiologies of febrile illness (malaria, COVID, influenza, etc) as clinically indicated
- **Coordinate** with local and state public health departments
  - Transfer PUI to an Ebola Assessment Hospital (EAH) or Ebola Treatment Center (ETC) as soon as possible (12-24 hours)



## Frontline healthcare facilities should prepare now to identify, isolate and inform their LHD regarding an Ebola PUI

- Develop or re-establish Ebola-specific policies and procedures
  - Roles and points of contact within the facility and with the LHD
- Implement routine [triage screening](http://www.cdc.gov/vhf/ebola/clinicians/evaluating-patients/index.html) (www.cdc.gov/vhf/ebola/clinicians/evaluating-patients/index.html) for international travel for patients presenting with potentially infectious symptoms
- Select and standardize the personal protective equipment (PPE) ensemble(s) the facility will use for an Ebola PUI in accordance with [CDPH PPE guidance](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaHealthProfessionals.aspx) (www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaHealthProfessionals.aspx)
  - Ensure enough appropriate PPE supplies to care for PUI while awaiting transfer
- Identify, train small group of volunteer staff ahead of time who will care for a PUI
  - Provide repeated training and practice, especially for doffing PPE
- Conduct drills/exercises to review and practice procedures and identify potential gaps in readiness



# Preparing for Ebola: Identify, Isolate, and Inform for Frontline Facilities Region 9 Special Pathogens Treatment Center Capabilities

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[cedars-sinai.org](https://www.cedars-sinai.org)

# Overview

- Introduction and the role of frontline healthcare facilities
- Guidance on management of an Ebola person under investigation (PUI)
  - Identify, Isolate, Inform
  - Waste Management
  - Specimen Collection
  - Practical tips
- Cedars-Sinai Special Pathogen Capabilities and Preparedness



# Introduction

While the risk of a symptomatic Ebola patient presenting to a frontline hospital is currently very low, the impact of a single case is high, and **preparation is critical**

Focus your initial preparations on the **most likely** scenario

The vast majority of returned travelers will not have Ebola, and patients without Ebola symptoms are not a risk to healthcare workers

“**Identify, Isolate, and Inform**” is intended to promptly identify patients that may meet criteria for Ebola testing as a “person under investigation” (PUI)

Establishing if someone is a “PUI” will require obtaining a detailed history of their travel, exposures, symptoms, and a discussion with public health

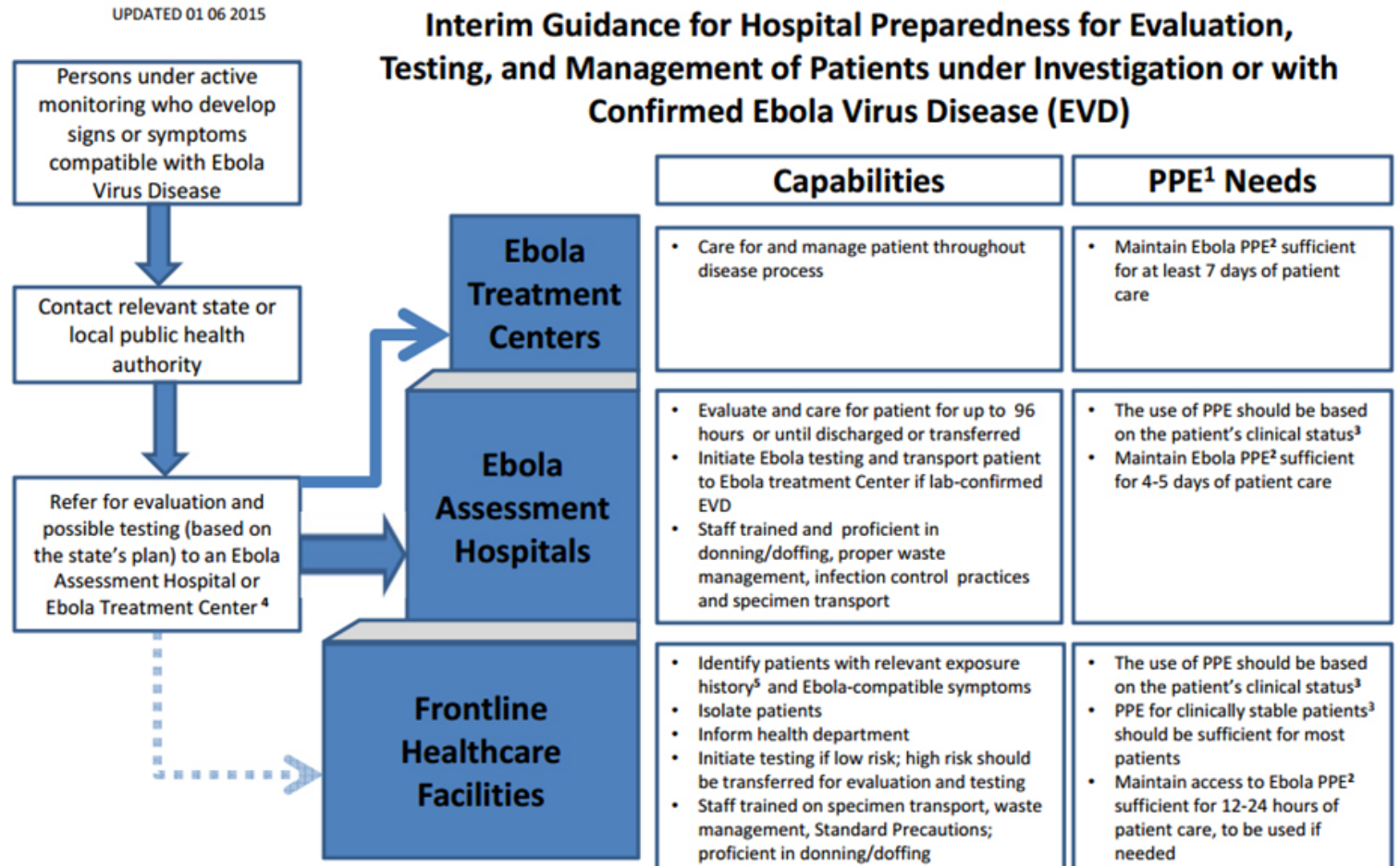
Don't forget about the patient (“do no harm”)

# Frontline Healthcare Facility Capabilities

**Treatment centers** remain prepared to care for a patient through the course of their illness

**Assessment hospitals** should care for a patient while test results are pending

**Frontline healthcare facilities** should Identify, Isolate, and Inform. May need to initiate testing in low-risk PUI



# Identify, Isolate & Inform

## Should we be screening all patients?



### Identify

- Know your points of entry.
- Post signage for self-identification.
- Screen all patients .
- Ask about symptoms then travel history.



### Isolate

- If screened positive, ask individual to don a mask.
- Place in private room, or a private area if a room is not available.
- Limit contact with other patients, visitors, and healthcare workers.
- Don appropriate PPE to care for the patient.



### Inform

- Inform the patient of the process.
- Notify appropriate leadership in the unit and organization.
- Inform Public Health Officials through the appropriate channels.

<https://www.cdc.gov/vhf/ebola/pdf/ed-algorithm-management-patients-possible-ebola.PDF>

# Identify

While returned travelers from Uganda are being monitored by local health departments, this process may not be perfect

Anyone with symptoms of acute infection should be screened for recent travel

Both symptoms AND an epidemiologic risk factor are required to be considered a PUI

**Details are important!** Information that will be helpful to confirm PUI criteria may include:

- Exact travel locations/cities and dates
- Exposure to sick contacts or animals
- Attendance at funerals

## Case Definitions

Early recognition of Ebola is critical for infection control. Individuals can be classified as *Persons Under Investigation (PUI)* or *Confirmed Cases*.

### Persons Under Investigation (PUI)

Individuals can be classified as a PUI if they have

1. Signs and symptoms consistent with Ebola virus infection.

AND

2. An [epidemiological risk factor](#) within 21 days before the onset of symptoms.

### Confirmed Case

Laboratory-confirmed diagnostic evidence of Ebola virus infection.

# Isolate

## Where will they be isolated?

- Private room (with private bathroom or commode) with door closed
- Consider phone or tablet for communication (e.g., for obtaining a detailed history and review of symptoms)
- Appropriate signage indicating PPE required
- Designate a clean area for donning PPE outside the room
- Designate a separate doffing area
- Segregate waste until diagnosis is established

## [PPE Guidance for Viral Hemorrhagic Fevers](https://repository.netecweb.org/items/show/1693)

([repository.netecweb.org/items/show/1693](https://repository.netecweb.org/items/show/1693))

## [Space Recommendations for PPE Donning/Doffing](https://repository.netecweb.org/items/show/1708)

([repository.netecweb.org/items/show/1708](https://repository.netecweb.org/items/show/1708))



# Isolate – Personal Protective Equipment for California

**Stable PUI (no bleeding, vomiting, diarrhea, or need for invasive or aerosolizing procedures)**



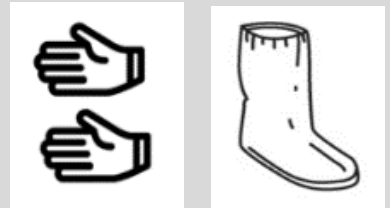
**Face shield (not goggles)**

**N95 Respirator**



**Keep hair enclosed**

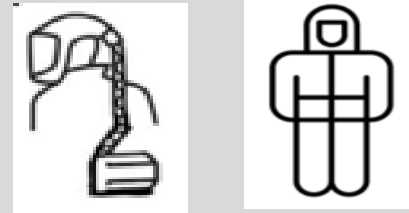
**Fluid-Resistant Isolation Gown**



**Two Pairs of Gloves (outer pair with extended cuffs)**

**Boots or coverings of feet and lower legs**

**PUI with bleeding, vomiting, diarrhea, or need for invasive or aerosolizing procedures**

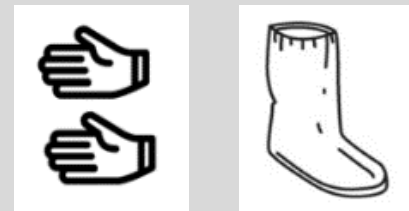


**PAPR with hood extending to shoulders**

**Fluid-Impermeable Coverall with integrated feet covering**

Blood and viral penetration resistance:  
Gown = ANSI/AAMI PB70 Level 4  
Coverall = ASTM F1671 or EN14126

**Consider Apron**



**Two Pairs of Gloves (outer pair with extended cuffs)**

**Boots or coverings of feet and lower legs**



# Inform

## Inform the patient about the situation

## Inform key stakeholders (internal and external)

- Infection Prevention
- Local Health Department
- State Health Department (via LHD)
- Pre-Hospital Providers (as necessary)



County  
Health  
Department

## Use Isolation Signage

- Restrict access to essential personnel only
- Maintain a log of all people entering the room



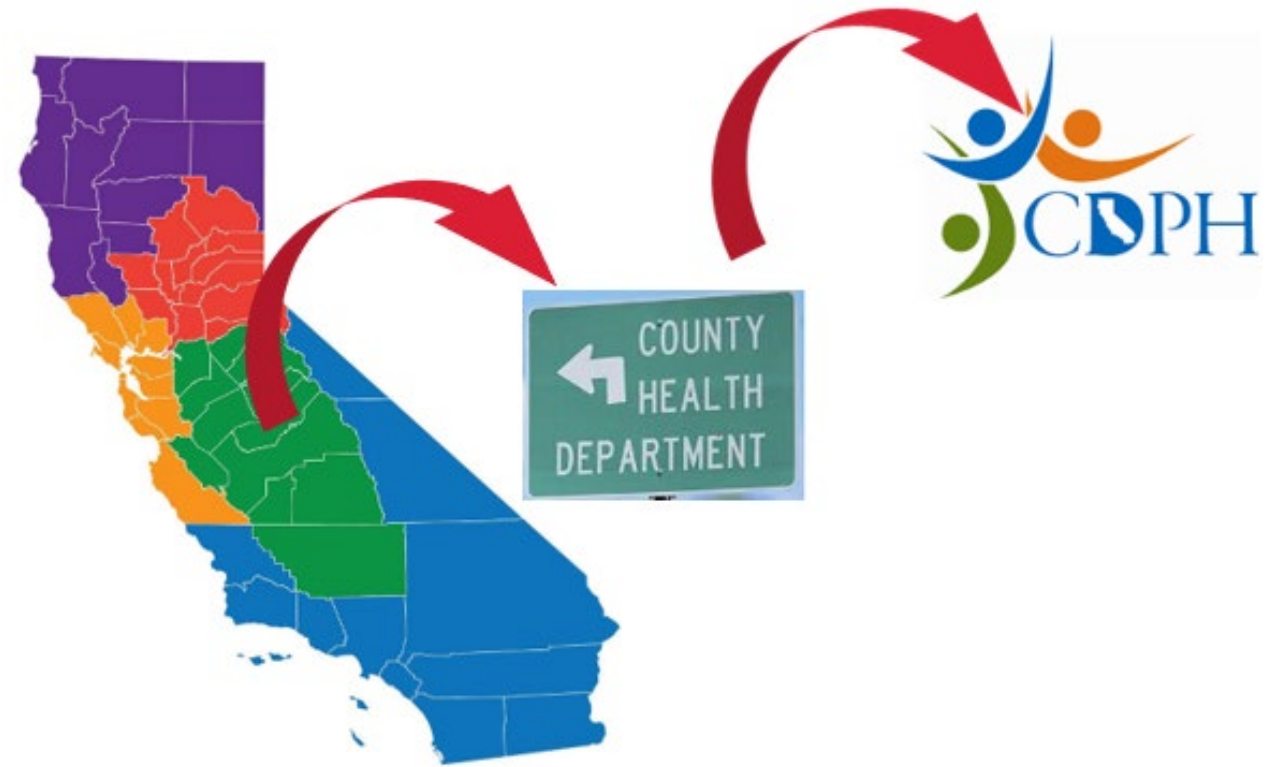
# Inform – The Role of Public Health

Follow your chain of command

Public Health will help in decisions about designating someone a PUI and testing

Detailed travel history with dates, cities, and activities is essential in determining if a patient is a PUI

**You are not alone!** The decision to test and/or transfer a patient should be made in conjunction with Public Health



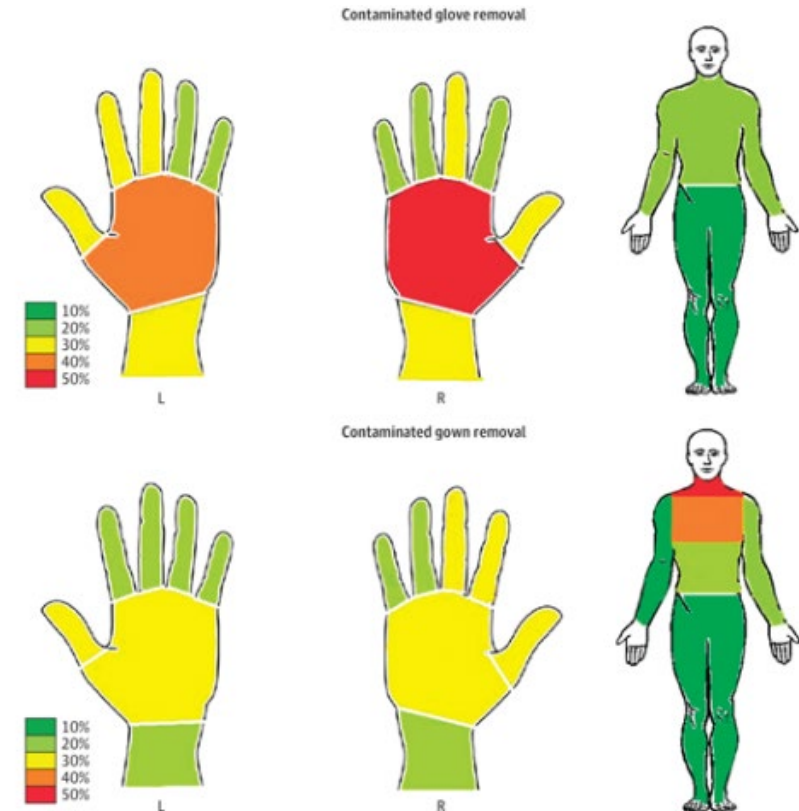
# Role of the Trained Observer

Healthcare workers are at risk of self-contamination when removing contaminated PPE

The **Trained Observer (TO)** guides health care providers (using a checklist) as they don and doff PPE to ensure their safety and prevent self-contamination during PPE doffing. The TO does not provide direct patient care.

An effective TO:

- is vigilant in spotting defects in equipment;
- is proactive in identifying upcoming risks;
- uses a checklist, but also focuses on the big picture;
- is informative, supportive and well-paced in issuing instructions or advice;
- always practices hand hygiene immediately after providing assistance.



Sites of frequent self-contamination while doffing PPE

# Waste Management

Waste contaminated (or suspected to be contaminated) with Ebola virus is a **Category A infectious substance** regulated as a hazardous material under the US DOT Hazardous Materials Regulations (HMR; 49 CFR, Parts 171-180) until it has been inactivated (i.e., through autoclave or incineration)

Frontline facilities should **develop a plan to securely sequester waste** until the patient diagnosis can be established

- In the unlikely event the patient is confirmed to have Ebola, a plan to transport the waste via a commercial waste vendor with Category A Waste permits for off-site inactivation

Other key points:

- Do not overfill waste containers
- Double bag waste in biohazardous bags
- Do not “burp” bags or handle in a way that may aerosolize the contents
- Secure in a way that ensures contents remain contained and segregated from other facility biohazardous waste





# Liquid Waste Management

Plan for stable PUIs needing a commode and/or a urinal.

Options for liquid waste disposal include:

- Using a solidifier
- Chemical inactivation prior to flush (use appropriate dwell time)

Considerations for liquid waste disposal

- Will your waste vendor accept solidified liquid waste?
- Chemical disinfection and use of sewer system should be reviewed by local sanitation department AND your internal facilities department



# Specimen Testing

Additional precautions may be required for lab personnel and equipment involved in the testing of specimens from PUI for Ebola

Perform a laboratory risk assessment to determine what testing can be performed, and **consider using point-of-care instruments** that can be dedicated to the patient's room

Considerations include:

- How will POC results be uploaded into the EMR?
- Training and maintenance of POC equipment
- Are personnel trained on POC instruments also trained in proper PPE donning and doffing?
- Do you have the ability to test for alternate diagnoses (i.e. malaria, influenza, COVID-19)?
- How will lab equipment be disinfected?
- How will you manage lab waste?



# Specimen Transport – Category A

Specimens collected for Ebola diagnosis must be transported using Category A precautions (i.e., appropriate packaging, transport containers, and courier)

For specimen collection: Clarify the specific tubes required with public health and gather all necessary supplies prior to entering the room

Butterfly needles are not recommended; do not take cardboard shipping boxes into the room

## What are the shipping considerations?

- **Category A**
  - *Category A infectious substance affecting humans (UN 2814)*
- **Personnel must be trained & certified to ship Category A specimens**
  - **Online trainings available**
  - **Check with your facility or State Public Health Department**
- **Identify couriers**
  - **Courier's may have different requirements**
  - **Ground courier vs air courier**
- **Do you have the correct shipping supplies?**
  - **Category A box for required shipping condition & appropriate labels**
  - **Appropriate packaging material**
- **What days can you ship?**
  - **Is your courier available 7 days a week?**
  - **Is your testing facility available 7 days a week?**



# Preparing for Ebola: Practical Advice

Plan for the **most likely** scenario first

**Mystery Patient Drills** are an effective way to reinforce Identify, Isolate, and Inform

Prepare an **“Activation Kit”** for likely points of entry

Involve **Educators and Infection Preventionists** in developing protocols

Involve **leadership** early and often

Use **Trained Observers**

Ensure disinfectants are listed on **EPA List L**

Checklists, training tools, and exercise templates are available at **NETEC.org**

The screenshot shows the NETEC website interface. At the top, there is a navigation bar with links for 'NETEC Home', 'Resource Library', 'Online Courses', and 'NSPS Home'. Below this is the NETEC logo and a secondary navigation bar with links for 'News & Blog', 'Webinars on YouTube', and 'Podcast'. The main content area features a large blue banner for 'Education & Training'. Below this, there is a section titled 'Preparing Health Care Workers for Special Pathogen Events'. A white document preview is shown, titled 'Health Care Facility Special Pathogen Preparedness Checklist'. The document includes an introduction paragraph, a table of contents, and a table with the following items:

IDENTIFY .....	2
Identify Readiness Items .....	3
Identify Resources/Guidance .....	3
Isolate .....	4

# Resources

## CAL/OSHA

- [Interim Guidance on Ebola Virus](http://www.dir.ca.gov/dosh/documents/Cal-OSHA-Guidance-on-Ebola-Virus-for-Hospitals.pdf) (PDF) (www.dir.ca.gov/dosh/documents/Cal-OSHA-Guidance-on-Ebola-Virus-for-Hospitals.pdf)

## CDC

- [Ebola Donning and Doffing](http://www.medscape.com/viewarticle/833907#vp_2) (www.medscape.com/viewarticle/833907#vp\_2)
- [Ebola Virus Disease](http://www.cdc.gov/vhf/ebola/index.html) (www.cdc.gov/vhf/ebola/index.html)
- [Waste Management](http://www.cdc.gov/vhf/ebola/clinicians/cleaning/waste-management.html) (www.cdc.gov/vhf/ebola/clinicians/cleaning/waste-management.html)
- [Category A Waste](http://www.phmsa.dot.gov/transporting-infectious-substances/transporting-infectious-substances-overview) (www.phmsa.dot.gov/transporting-infectious-substances/transporting-infectious-substances-overview)

## CDPH

- [Ebola Guidance Interim Guidance on Personal Protective Equipment](http://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/PPEGuidanceforEVD.pdf) (PDF) (www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/PPEGuidanceforEVD.pdf)
- [Ebola Virus Disease Ebola Virus Disease](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx) (www.cdph.ca.gov/Programs/CID/DCDC/Pages/EbolaVirusDisease.aspx)

## EPA

- [Approved Disinfectants](http://www.epa.gov/pesticide-registration/list-l-disinfectants-use-against-ebola-virus) (www.epa.gov/pesticide-registration/list-l-disinfectants-use-against-ebola-virus)

## NETEC NETEC.org

- [Doffing Considerations](http://repository.netecweb.org/search?query=doffing) (repository.netecweb.org/search?query=doffing)
- [How Frontline Health Care Workers Can Prepare for an Ebola Outbreak](http://repository.netecweb.org/items/show/1720) (repository.netecweb.org/items/show/1720)
- [Preparing Frontline Health Care Workers for Ebola](http://www.youtube.com/watch?v=Okh_Sa9cVa4) (www.youtube.com/watch?v=Okh\_Sa9cVa4)

# Tools & Exercises

## CDC

- [PPE Calculator and Healthcare Team Roles](http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/calculator.html) (www.cdc.gov/vhf/ebola/healthcare-us/ppe/calculator.html)

## DASH

- [Estimate PPE Needs](http://dashtool.org/) (dashtool.org/)

## NETEC

- [Exercise Templates](http://repository.netecweb.org/exhibits/show/exercise-templates/exercises) (repository.netecweb.org/exhibits/show/exercise-templates/exercises)
- [Health Care Facility Special Pathogen Preparedness Checklist](http://repository.netecweb.org/items/show/1724) (repository.netecweb.org/items/show/1724)
- [Hospital Readiness Assessment](http://netec.org/readiness-assessments/hospital-assessment-areas/) (netec.org/readiness-assessments/hospital-assessment-areas/)

# Special Pathogen Preparedness at Cedars-Sinai

# Cedars Sinai Medical Center - Los Angeles, California

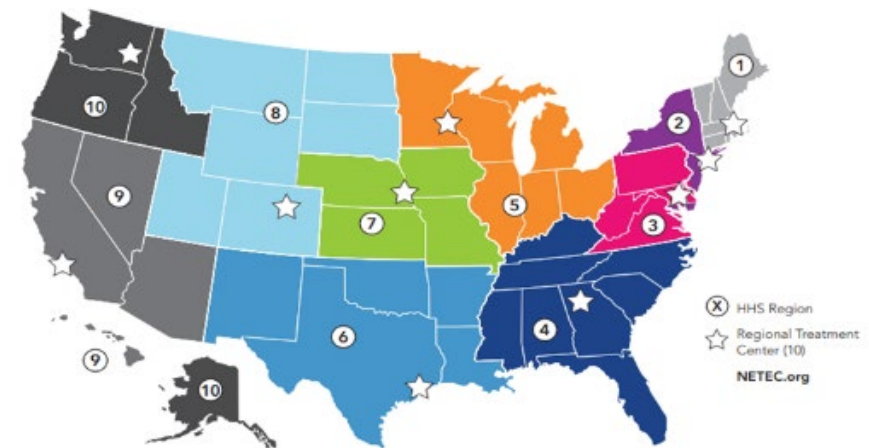
- 889-bed tertiary care, academic, community not-for-profit medical center
- Approximately 14,000 full-time employees and >500 residents/fellows
- Magnet Excellence in Nursing designation



# Regional Special Pathogens Treatment Center

## Key Responsibilities:

- Be prepared to receive a patient within 8 hrs
- Capacity to care for 2 simultaneous patients
- Maintain a trained response team
- Maintain adequate PPE supplies
- Capacity to handle a high volume of infectious waste (onsite autoclave)
- Volunteer multi-disciplinary team
- Quarterly training and exercises



### Regional Treatment Centers

- 1: Massachusetts General Hospital
- 2: NYC Health + Hospitals/Bellevue
- 3: Johns Hopkins Hospital
- 4: Emory University Hospital and Children's Healthcare of Atlanta – Egleston Hospital

- 5: University of Minnesota Medical Center
- 6: University of Texas Medical Branch at Galveston
- 7: University of Nebraska Medical Center
- 8: Denver Health Medical Center
- 9: Cedars-Sinai
- 10: Providence Sacred Heart Medical Center and Children's Hospital



# Potential Ways the CS Special Pathogen Team Can Activate

Cedars-Sinai may be asked to admit a **confirmed or high-risk suspect** (“person-under-investigation”) special pathogen patient through:

- Federal partners (DHHS/ASPR)
  - Patient within Region IX (CA, AZ, NV, Pacific)
  - Patient outside of Region IX
  - Repatriated US citizen (e.g., HCW responding to a special pathogen outbreak)
- State or local health department
  - E.g., return traveler being monitored
- Unannounced patient arriving to Cedars-Sinai
  - Emergency Department
  - Other point-of-entry

Ground transport via LA County  
“high risk ambulance” to a  
dedicated ambulance bay





# Treatment Unit

- One-patient activation requires 2 ICU rooms; two patients requires 3 rooms
- Dedicated path of travel from the ambulance bay to the unit
- Dedicated point-of-care lab set up in adjacent room
- Doffing occurs within large anteroom
- Privacy barriers



# Treatment & Patient Care

## Response Team composed of members with a variety of skill sets

- Team members undergo initial training followed by quarterly refresher training using the Sim Lab
- MDs include intensivists, pediatrician, proceduralist, and infectious disease specialists
- RNs include ED, ICU, Pediatric ICU, Med/Surg, dialysis
- Frequently drill to intubation, central line placement, and other procedures

## Urgent surgical interventions would be done in patient room

## Would not perform ECMO or chest compressions on a confirmed EVD patient

- All other procedures would be considered on a case-by-case basis



# Laboratory Testing Capacity

All testing is performed with a biosafety cabinet using point-of-care equipment set-up in an adjacent patient room

Testing menu and Epic order set restricted to Special Pathogens team members

Lab members trained in Category A specimen packaging

Exercises performed with local public health



## **Piccolo Express**

- Chemistries, Liver function, Amylase

## **iSTAT**

- Chemistries and Glucose
- Hg/Hct and blood gases

## **POCCHI**

- Hematology / CBC

**Hemochron Signature Elite (PT, INR)**

**Urinalysis: Dipstick and pregnancy**

## **Diagnostics:**

- Cepheid (Ebola Zaire)
- Biofire Warrior Panel (includes targets for Ebola spp.)
- Biofire Sentinel Surveillance Panel
- Biofire (bloodstream and GI pathogens)
- Biofire Respiratory (RP2.1) including SARS-CoV-2 and Influenza
- Alere BionaxNOW (Malaria)



# Frequent Exercises



# Situation Report Resources



STAT

All infectious diseases-human, animal, and plants updated daily

- [ProMed International Society for Infectious Diseases](http://promedmail.org/) (promedmail.org/)

Infectious diseases affecting humans and animals updated daily

- [CIDRAP Center for Infectious Disease Research and Policy](http://www.cidrap.umn.edu/) (www.cidrap.umn.edu/)
- [STAT News](http://statnews.com) (statnews.com)



Weekly bulletins from WHO Afro updated weekly:

- [WHO Africa Outbreaks and Emergencies Bulletin](http://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates) (www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates)



Monthly updates from the UK Health Security Agency

- [GOV.UK](http://www.gov.uk/government/publications/high-consequence-infectious-diseases-monthly-summaries) (www.gov.uk/government/publications/high-consequence-infectious-diseases-monthly-summaries)

Weekly updates from the Nigerian CDC Disease Situation Reports

- [Nigeria Centre for Disease Control and Prevention NCDC](http://ncdc.gov.ng/diseases/sitreps) (ncdc.gov.ng/diseases/sitreps)



**UK Health  
Security  
Agency**



**Nigeria Centre for Disease Control**  
Protecting the health of Nigerians



**Thank you**