Cedars-Sinai
Special Pathogens Program

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Cedars-Sinai

- 886-bed tertiary care, academic, community not-for-profit medical center in Los Angeles
- ~50,000 admissions per year
- ~14,000 full-time employees
- >500 residents and fellows in graduate medical programs
- Magnet Excellence in Nursing designation four consecutive times
- CS designated as the Region IX Ebola Treatment Center in June 2016 (through mid-2020)

ORIGINAL ARTICLE

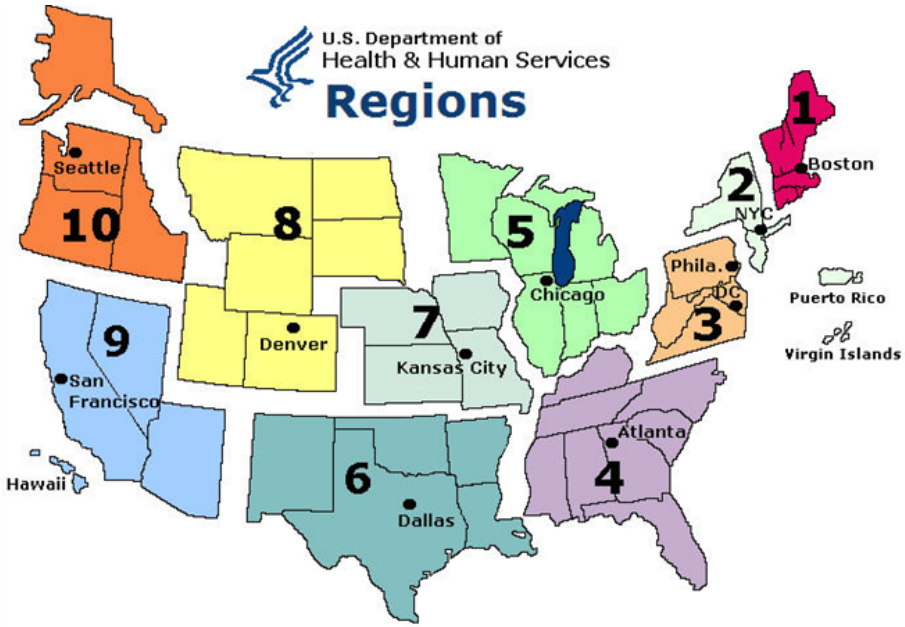
Clinical Management of Ebola Virus Disease in the United States and Europe

- 27 patients cared for in the US/Europe:
  - Hospital stay 20 days (median)
  - 85% received investigation therapy
  - Mortality 18.5%

- Take Away for Ebola Treatment Centers:
  - Long hospitalization
  - Be prepared to use investigational agents
  - **High quality care can improve outcomes**

Uyeki TM et al, NEJM 2016; 374: 636-46

Regional Special Pathogens Center: Key Responsibilities



- Be prepared to receive a patient within 8 hours of notification
- Capacity to care for 2 simultaneous patients (including 1 child)
- Maintain a trained response team
- Maintain adequate supplies of personal protective equipment (PPE)
- Capacity to handle a high volume of infectious waste
- Annual NETEC onsite assessment

Cedars-Sinai Special Pathogens Program

- Special Pathogens Program Coordinator
- Special Pathogen Response Team (SPRT) Multi-disciplinary Task Force
- SPRT Clinical Response Team (voluntary)
  - –Nurses
  - –Physicians
  - –Respiratory therapy
  - –Laboratory
  - –Environmental Services
  - –Imaging
- Quarterly Training and Exercises

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THE BRIDGE

PRODUCED BY AND FOR THE EMPLOYEES OF CEDARS-SINAI

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Ebola Drill Tests Cedars-Sinai's Readiness

Caring for the "patient" during the Ebola drill were Heather Jones, MD, medical director of the Critical Intensivist Service, (left) and Eileen Dulce, BSN, RN, CCRN. Playing the patient was Gregory Eichelz MSN, RN, CEN, clinical nurse IV educator.

Treatment Areas

- Ambulance bay to accept EMS ground transport
  - Secured, private bay
  - Separate from ED ambulance bay
  - Direct and controlled access to medical ICU
- Emergency Department
  - Dedicated ED room adjacent to trauma elevator
  - Direct and controlled access to medical ICU
  - Commode accessible
- Medical ICU
  - Two (2) adjacent negative-pressure isolation rooms
  - Large shared anteroom
  - Secured access

Emergency Department Preparation

IF you have recently traveled out of the U.S.

OR had close contact with someone who recently traveled out of the U.S. and is ill...

AND now you have: fever, cough, trouble breathing, rash, vomiting or diarrhea

PLEASE TELL STAFF IMMEDIATELY

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CSMC Emergency Department – Triage Tier 1 Travel Screen

For patients with the following symptoms:

• fever • cough • SOB • sore throat • abdominal pain
• vomiting • diarrhea • headache • muscle pain • weakness

Assess for international travel within the last 30 days

If No Travel → Proceed with routine triage. Mask all patients with respiratory symptoms.

If YES

If: fever OR respiratory symptoms
AND: travel to countries in and around the Arabian Peninsula in the last 14 days:

If: fever OR headache, muscle pain, abdominal pain, vomiting or diarrhea
AND: travel to the Democratic Republic of the Congo in the last 21 days:

Immediately notify Hospital Epidemiology (3-5574) of potential special pathogen. Speak directly with an Epi RN or use the on-call pager

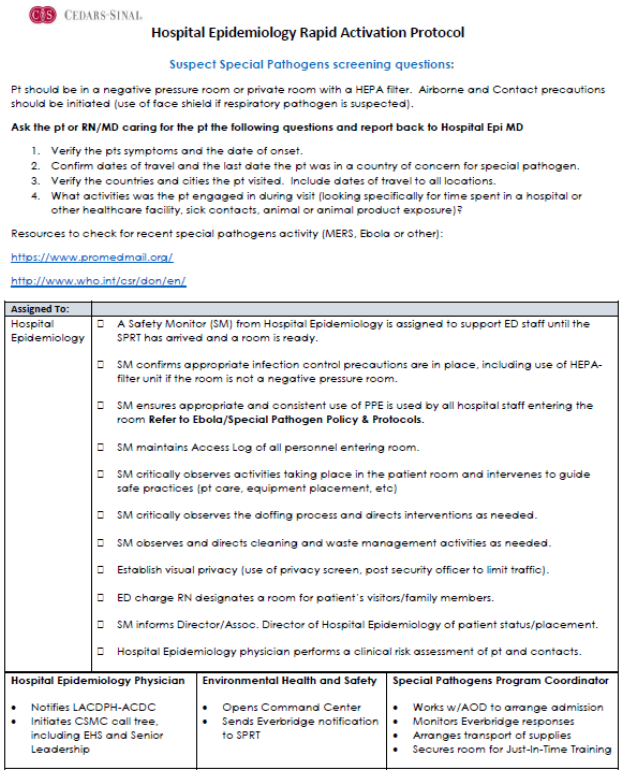
- Immediately place mask on pt and move to room 21 (or any private room with HEPA filter)
- Place pt on Contact and Airborne precautions with use of faceshield
- Notify ED physician and charge nurse of MERS risk

- Immediately place pt in a single room (ED room 43 preferred)
- If no private rooms are available, direct pt outside ambulance bay near decon. shower to await bed availability
- Avoid direct contact and place pt on Contact and Airborne precautions
- Notify ED physician and charge RN of Ebola risk

Identify → Isolate → Inform

Emergency Department Preparation

- Incorporated Special Pathogens education into annual ED training
- No-notice walk-in drills
  - Assess time to isolation and notification
  - Also “no-notice” training
- PPE supplies stored in ED
- Rapid Activation Protocol
  - Goal: Maximize safety while determining if patient may be a PUI
  - Get trained “safety monitor”/IP on site ASAP
  - PPE at door/ensure appropriate use
  - Minimize traffic/patient contact
  - Maintain access log
  - Initiate Special Pathogen team activation if determined to meet PUI criteria
- Focus preparation on the most likely scenarios, not the most extreme
- Learn from real world events



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Hospital Epidemiology Rapid Activation Protocol

Suspect Special Pathogens screening questions:

Pt should be in a negative pressure room or private room with a HEPA filter. Airborne and Contact precautions should be initiated (use of face shield if respiratory pathogen is suspected).

Ask the pt or RN/MD caring for the pt the following questions and report back to Hospital Epi MD

1. Verify the pts symptoms and the date of onset.
2. Confirm dates of travel and the last date the pt was in a country of concern for special pathogen.
3. Verify the countries and cities the pt visited. Include dates of travel to all locations.
4. What activities was the pt engaged in during visit (looking specifically for time spent in a hospital or other healthcare facility, sick contacts, animal or animal product exposure)?

Resources to check for recent special pathogens activity (MERS, Ebola or other):

https://www.promedmail.org/

http://www.who.int/csr/don/en/

Assigned To:	
Hospital Epidemiology	☐ A Safety Monitor (SM) from Hospital Epidemiology is assigned to support ED staff until the SPRT has arrived and a room is ready. ☐ SM confirms appropriate infection control precautions are in place, including use of HEPA-filter unit if the room is not a negative pressure room. ☐ SM ensures appropriate and consistent use of PPE is used by all hospital staff entering the room **Refer to Ebola/Special Pathogen Policy & Protocols.** ☐ SM maintains Access Log of all personnel entering room. ☐ SM critically observes activities taking place in the patient room and intervenes to guide safe practices (pt care, equipment placement, etc) ☐ SM critically observes the doffing process and directs interventions as needed. ☐ SM observes and directs cleaning and waste management activities as needed. ☐ Establish visual privacy (use of privacy screen, post security officer to limit traffic). ☐ ED charge RN designates a room for patient's visitors/family members. ☐ SM informs Director/Assoc. Director of Hospital Epidemiology of patient status/placement. ☐ Hospital Epidemiology physician performs a clinical risk assessment of pt and contacts.

Hospital Epidemiology Physician	**Environmental Health and Safety**	**Special Pathogens Program Coordinator**
• Notifies LACDPH-ACDC • Initiates CSMC call tree, including EHS and Senior Leadership	• Opens Command Center • Sends Everbridge notification to SPRT	• Works w/AOD to arrange admission • Monitors Everbridge responses • Arranges transport of supplies • Secures room for Just-In-Time Training

Special Pathogen Team/Unit Activation

- Immediate local health department notification
- Special Pathogen clinical response team activation (Everbridge notification)
- Hospital Incident Command Center activation
  - Internal/External communication (templates prepared)
- Treatment Unit Set-up (unit activation checklist)
- Just-In-Time training for response team
- Experimental Therapy (Zmapp) protocol activation (requires patient weight)

Special Pathogen Response Team

- Membership is voluntary.
  - Must be able to tolerate PPE for 4 consecutive hours and commit to quarterly training
- Initial training includes:
  - Activation Protocols
  - Infection Control practices
  - Member roles and responsibilities
  - Personal Protective Equipment
  - Behavioral health
- Refresher training (quarterly)
  - PPE donning/doffing
  - Skills while in PPE (i.e., PIV placement, intubation)
- "Just-in-Time" training
- Dedicated training for Safety Monitors, Security
- Physician consultants (e.g., nephrologists) to utilize telemedicine equipment for patient care

Portable Laboratory (Neighboring Patient Room)

- Portable Class 2 Biosafety cabinet setup in adjacent room
- Lab techs will work in pairs (both in full PPE)
- Specimen handoff protocols
- Category A Specimen packaging
- No labs performed in main laboratory
- Testing capabilities include:
  - Electrolytes, CBC with differential, LFT, coagulation studies, urinalysis, malaria, rapid influenza, HIV, pregnancy test

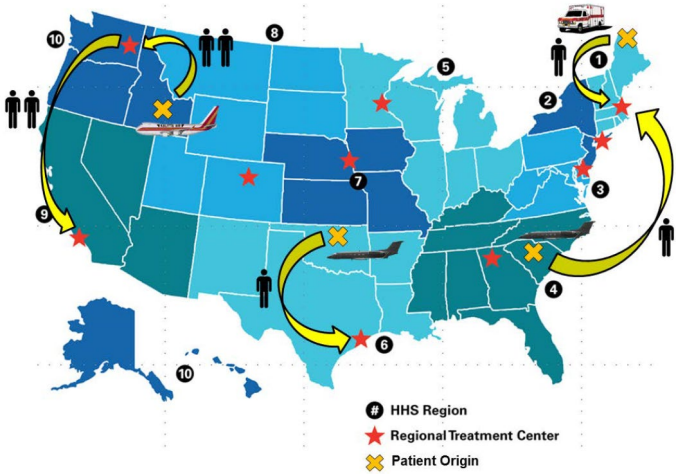
Waste Management

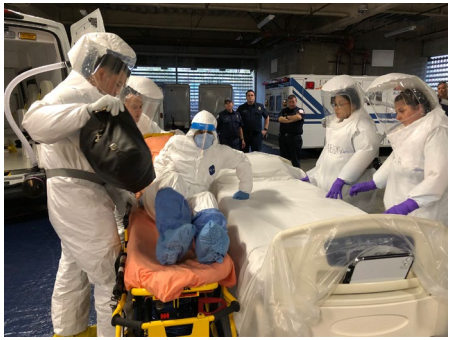
- Waste Streams
  - EMS/Ambulance waste
  - ED
  - Treatment area (ICU)
- Liquid waste
  - Pretreatment with disinfectant
  - Applies to toilet, sink, dialysate
- Solid waste
  - Dedicated transport pathway
  - Four large-capacity onsite autoclaves
  - Contracted third-party waste transport vendor (backup)

Special Pathogens Exercises

- Conducted quarterly
- Often involve multiple external agencies (e.g., health department, EMS)
- Always include a previously untested skill

- **April 2018: "Tranquil Terminus"**
  - Largest patient movement exercise in DHHS history
  - Cedars-Sinai accepted 2 patients flown to LAX from Idaho (via Washington)
  - Command Center activation; team notification and staffing plan
  - Experimental therapy (Zmapp); drug received within 24 hours and appropriately dosed





Other Recent Exercises

- Admission of a patient with viral hemorrhagic fever (VHF)
  - Lab draw and reporting, remote clinical consultation, dialysis initiation, intubation
- Inpatient with confirmed VHF
  - Portable CXR, spill management, waste transport
- Management of two VHF patients simultaneously
  - Informed Consent for experimental therapy
- Management of a cluster of patients with Middle East Respiratory Syndrome (MERS)

Summary; Cedars-Sinai Special Pathogens Program

- As the regional Ebola/Special Pathogen Treatment Center, Cedars-Sinai remains prepared to manage up to two patients with “special pathogens” within 8 hours of notification

- Cedars-Sinai conducts quarterly training and exercises to continue to expand our treatment capabilities

- Considerations for hospitals preparing to manage a patients suspected of having Ebola:
  - Emphasize readiness for the *likely* presentation of a PUI
  - Unannounced “walk-in” exercises can be an effective tool to reinforce the concept of “Identify, Isolate, Inform” with front line staff
  - Consider “rapid activation” checklists to promote healthcare worker and patient safety while assessing a patient as a possible PUI
  - Close collaboration with your local health department is essential

Thank you

Providence Health & Services ■ Emory Medicine ■ University of Nebraska Medical Center ■ Denver Health ■ UTMB Health ■ Massachusetts General Hospital ■ University of Minnesota Health ■ Cedars-Sinai Medical Center ■ NYC Health + Hospitals/Bellevue ■ Johns Hopkins Medicine ■

NETEC

ASPR ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

Alone we can do so little... together we can do so much.

—Helen Keller