Occupational Health: Monitoring Healthcare Workers Caring for Patients with EVD

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Isolation Units - Various Names, Same Purpose

- Emory University Hospital: Serious Communicable Disease Unit (SCDU)
- Bellevue Hospital Center: Special Pathogens Unit (SPU)
- Nebraska: Nebraska Biocontainment Unit (NBU)
Objectives

- Understanding what a good Occupational Monitoring Program looks like
- Understand the mission and role of Occupational Health as it pertains to monitoring HCWs caring for a patient with EVD
  - Review signs/symptoms and transmission of EVD
  - Discuss the various models used at different health systems for staff monitoring strategies
  - Guidance to staff returning from West African travel
  - Managing exposures to EVD
  - Review the CDC Exposure Risk Categories
  - EVD Monitoring Tool Demo
  - Beyond, Ebola: What’s Next?
Mission of Occupational Health Services

Fostering a safe and healthy work environment for employees
Occupational Safety & Health Standards (OSHA)

- OSH Act of 1970 (general duty clause)
- Personal Protective Equipment Standard #1910.132
- Respiratory Protection Standard #1910.134
- Bloodborne Pathogen Standard #190.1030

* Be sure to check for additional local requirements
Role of Occupational Health in EVD Management

• Conduct an Occupational Health Inventory of EVD Providers wearing a PAPR and/or N-95 mask
• Management of EVD Providers: Temperature and Symptom Monitoring
• Guidance to staff and faculty returning from travel to West Africa (Guinea and Sierra Leone)
• Management of staff potentially exposed to EVD
Occupational Health Inventory of EVD Providers

- Comprehensive Health Screening performed prior to working in Highly Infectious Disease Unit
- Identify potential health risks or intolerability to work conditions while wearing a PAPR and/or N-95 mask
- Comprehensive health history and brief physical performed by Occupational Health Services
- Work clearance notification sent to Highly Infectious Disease unit manager for review
- If a health condition arises that warrants concern, then further investigation is conducted by the Occupational Health Medical Director or Occupational Health Designee who makes the final determination of fitness for duty
Signs and Symptoms of EVD

- Fever
- Severe headache
- Muscle pain
- Weakness
- Fatigue
- Diarrhea
- Vomiting
- Abdominal (stomach) pain
- Unexplained hemorrhage (bleeding or bruising)
- Symptoms may appear anywhere from 2 to 21 days after exposure to Ebola, but the average is 8 to 10 days.
- Recovery from Ebola depends on good supportive clinical care and the patient’s immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years.
Transmission of EVD

- the virus can be spread to others through direct contact (through broken skin or mucous membranes) with blood or body fluids (including but not limited to urine, saliva, sweat, feces, vomit, breast milk, and semen) of a person who is sick with Ebola or that have been contaminated with the virus via infected fruit bats or primates (apes and monkeys).

- Ebola is not spread through the air, by water, or in general, by food. However, in Africa, Ebola may be spread as a result of handling bushmeat (wild animals hunted for food) and contact with infected bats.
Management of EVD Providers Protocol
Response Plan

Protocol for employees providing direct patient care (including lab personnel and anyone managing the waste stream)

• All health care providers, including lab personnel and anyone managing the waste stream, are required to measure their temperature and complete the symptom questionnaire twice daily.
• If you have a fever of > 37.8 degrees C, 100 degrees F. OR If you have any of the following symptoms: chills, malaise, headache, joint/muscle aches, weakness, diarrhea, nausea/vomiting, stomach pain, or lack of appetite.
• Call the Occupational Health Services Leader for personal consultation/triage, prior to leaving the Unit.
• Complete an Employee Incident Report.
• If you are symptomatic, do not leave the Unit until consultation with Occupational Health Services.
• If you are unable to work an assigned shift, you are required to notify the unit director of the Highly Infectious Disease Unit as well as Occupational Health Services.
• You are required to report any fever of > 37.8 degrees C, 100 degrees F for any of the following symptoms (headache, joint/muscle aches, weakness, diarrhea, vomiting, stomach pain, or lack of appetite) for 21 days from the last shift worked on the Unit.
• Any health care provider (including lab and waste handlers) is required to monitor their temperature twice daily and monitor for any symptoms (listed above) on days not worked on the Unit. Report these symptoms immediately to Occupational Health Services.

• Please note the CDC defines fever as 100.4 F. Individual institutions may define fever differently but it should not be less stringent than the CDC guidelines.
Upgrades to Symptom Questionnaire and Temperature Monitoring

• Began as a Word Document Form (Paper) with individual files for each staff member

• Next, an online link to the electronic version of the questionnaire. Data dumped into one large spreadsheet sorted by the occupational health team

• Emory customized People Soft for their Symptom Monitoring tool. Nebraska utilizes Redcap and Bellevue works with the local Health Department. (Same mission, accomplished in a multitude of ways)
Model of a HCW
Symptom Questionnaire

- Direct Health Care Provider (including Lab Personnel and Anyone Managing the Waste Stream) Symptom Questionnaire (EVD)
- Name_________________________________________
- Employee ID #__________________________________
- Date______________________ Time ____________
- Cell phone number (best contact #) __________________
- Temperature: ___________ degrees C/F If yes, onset and duration
- Nausea/Vomiting:
- Diarrhea:
- Headache:
- Joint or Muscle Aches, or both:
- Stomach Pain:
- Lack of Appetite:
- Weakness:

All health care providers providing direct patient care (including lab personnel and anyone managing the waste stream) are required to complete this form at the beginning and at the end of their shift.

- If you have a fever of > 37.8 degrees C, 100 degrees F, or any of the symptoms listed above, please call the Occupational Health Services Department, prior to leaving the Unit.
- Complete an Employee Incident Report.
- Refrain from leaving the Unit until consultation with Occupational Health Services.
- If you are unable to work an assigned shift, you are required to notify the Unit director of the Infectious Disease Unit as well as Occupational Health Services.
- You are required to report any fever of > 37.8 degrees C, 100 degrees F or any of the following symptoms (chills, malaise, headache, joint/muscle aches, weakness, diarrhea, nausea/vomiting, stomach pain, or lack of appetite) for 21 days from the last shift worked on the Unit.
- Any health care provider (including lab and anyone managing the waste stream) are required to monitor their temperature twice daily and monitor for any symptoms (listed above) on days not worked on the Unit. Report these symptoms immediately to Occupational Health Services.

Signature: ____________________
Case Management

Strive to implement a case management process that insures:

• Twice daily temperature and symptom reviews are completed with 100% compliance
• Utilize an electronic reporting system to make compliance easier for the HCW’s and the case management more manageable
• Methods are in place for easily reaching and communicating with Occupational Health Services at all times
• Create a culture of trust so that HCW’s are forthcoming with any possible breach in PPE or hazard experienced, no matter how minor the incident
Management of EVD Providers Protocol
Compliance Statement

• Occupational Health Services will manage the symptom monitoring data.
• The Occupational Health Services will review data on daily basis and make contact with any direct care provider that does not have a temperature and symptom review documented two times in a day for 21 days from the last day worked on the unit.
• Once contact is made with noncompliant providers, the Occupational Health Services Department will review symptoms with the provider and log the results on their behalf.
• Executive leadership will be provided the names of any provider that has three instances of noncompliance.

• Case management may differ by institution. Local Health Departments may perform the HCW monitoring for you but there should be an escalation process that is clearly defined for non-compliant HCWs.
Guidance to Staff Returning from Travel

- **Subject:** Guidelines for staff and physicians traveling to West Africa
- **This email is sent on behalf of Occupational Health Services**
- Dear Staff and Physicians, As the Ebola outbreak in West Africa continues, we want to remind you of the procedures put in place in August to mitigate exposure of those coming to our facilities. While the CDC considers Ebola to pose little risk to our country at this time, individuals traveling to the countries where Ebola cases are occurring may be at risk for exposure. Therefore, we have put in place the following protocol for all faculty, staff and students who have recently traveled to or are planning to travel to Guinea and Sierra Leone (Note: The at-risk regions listed has changed since the communication sent in August).
- **Who to Contact Upon Return**
  - **Faculty and Staff:** Prior to returning to work after travel, faculty/staff should contact Occupational Health Services for counseling.
  - **Students:** Prior to returning to campus/classes, students with recent travel to the countries listed above should contact Student Health Services’ for counseling.
- **Procedures for 21 Days:** Faculty/staff and students should check their temperature and report any symptoms, including headache, joint/muscle aches, weakness, diarrhea, vomiting, stomach pain or lack of appetite once daily from the first day of their return from travel and for 21 days thereafter. For a complete list of Ebola symptoms, visit the CDC website. In the event of onset of a fever of 100 degrees or higher or any of the symptoms listed above, DO NOT REPORT TO WORK OR SCHOOL.
- **Procedures if You Are Symptomatic:** Symptomatic faculty/staff should contact Occupational Health Services, immediately at the phone numbers above for further guidance.
- **Symptomatic students** should contact Student Health Services immediately at the phone numbers above for further guidance.
- Thank you for your commitment to providing a safe environment and to your personal well-being.
Current Travel Advisories

What is the current situation?

For recent travel to Sierra Leone and Guinea, it is recommended to restrict nonessential travel to these two countries due to ongoing outbreaks of Ebola virus disease. The recent transmission of the virus in Sierra Leone and Guinea continues to be monitored closely by health authorities. The situation remains evolving, and travelers should stay informed of the latest developments and follow guidance from the Centers for Disease Control and Prevention (CDC) and other relevant authorities.

CDC recommends that travelers avoid nonessential travel to Sierra Leone and Guinea. If nonessential travel is unavoidable, travelers should consult with their healthcare providers prior to departure. CDC advises travelers to remain vigilant for signs of illness and report any symptoms promptly.

For more information, visit the CDC's website for up-to-date travel health notices and recommendations.
CDC’s Outbreak Distribution Map

Management of Staff Potentially Exposed to EVD: Protocol

Risk Assessment for Exposure to Ebola Virus

• Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids from an EVD patient?
• Direct skin contact with skin, blood or body fluids from an EVD patient?
• Processing blood or body fluids from an EVD patient without appropriate PPE?
• Healthcare personnel in facilities providing care to EVD patients without recommended PPE?

• If “Yes” to any BBP exposure, Alert Highly Infectious Disease Leadership for counseling and consideration for work furlough including twice daily temperature monitoring and symptom reviews until 21 days post this exposure. I.D. would make the determination if PEP (Post Exposure Prophylaxis) is indicated. This exposed employee must submit an Incident Report.
Ebola Risk Assessment

- Addresses likelihood a patient with fever could have EVD and could pose a risk of transmission to HCWs
- Likelihood of Ebola
- Travel + Exposure risk + Clinical presentation
- CDC Exposure risk categories:
  - Old
    - High
    - Low
    - None
  - Low
    - High
    - Some
    - Low
    - None
New CDC Exposure Risk Categories

High risk—**Rare in US**
- Direct contact with body fluids, from a person sick with Ebola:
  - Needle stick, splashes to eyes, nose, or mouth, getting body fluids directly on skin
  - Touching a dead body while in a country with a large Ebola outbreak without wearing recommended PPE or not wearing PPE correctly
  - Both living with and taking care of a person sick with Ebola

Some risk—
- Close contact with a person sick with Ebola such as in a household, healthcare facility, or the community (with no PPE worn).
- Direct contact with a person sick with Ebola in a country with a large outbreak while wearing PPE correctly
Low Risk Categories

Low (but not zero) risk—

• Having been in a country with a large Ebola outbreak within the past 21 days, with no known exposure
• Being in the same room for a brief period of time with a person sick with Ebola
• Brief direct contact, like shaking hands, with someone sick with Ebola
• Direct contact with a person sick with Ebola in the US while wearing PPE correctly
• Travel on an airplane with a person sick with Ebola
Travel Policy for HCWs working in the Highly Infectious Disease Unit within the 21 day monitoring period

- A Direct Care Provider who is Afebrile, Asymptomatic, has had no breach in PPE protocol, has had no known exposure to blood or body fluids of a patient with EVD, and has been consistent with their temperature monitoring may travel.
- During Travel
  a) Check temperature prior to travel and upon arrival at destination.
  b) Continue to monitor temperature and symptoms twice daily, everyday until 21 days past last shift worked on unit.
- If the Direct Care Provider develops fever of 100 F or higher or any symptoms
  a) Self-Isolate, Quarantine
  b) Contact OIM Director or OIM Clinical Lead NP immediately for telephonic triage. The OIM NP on-call is XXX-XXX-XXXX, PIC # XXXXX.
  c) Further Risk Assessment will be conducted via consultation with Infectious Disease MD.
  d) If high risk, the Direct Care Provider will be directed to go to the nearest Emergency Room. Prior to this either the OIM NP or the ID MD will communicate with the receiving ER facility so they are prepared and expecting our staff member.
  e) No further commercial travel will be authorized until medical clearance is given by the receiving/treating hospital.
  f) An employee incident report will need to be reported in E-vantage.
  g) Follow-up with OIM upon return.
  h) May not return to work until work clearance is approved through OIM.

Please note that individual institutions may have varying travel policies for HCWs caring for patients with EVD. If a HCW within the unit became a PUI, this travel policy would be null and void and stricter policies would be in place.
Interim Table of State Ebola Screening and Monitoring Policies for Asymptomatic Individuals
No Risk Categories

• Examples in the No Risk category include:
• Contact with a healthy person who had contact with a person sick with Ebola
• Having contact with a person sick with Ebola before he or she had any symptoms
• Having left a country with a large Ebola outbreak MORE than 21 days ago and has not been sick with Ebola since leaving that country
• Having been in a country where there have been Ebola cases, but no large Ebola outbreak (for example, Spain)
Original File System
Computer Station
Resources for Staff
EVD Monitoring Tool Demonstration

- Electronic
- Confidential
- May access from Smart Phone
- Email Alerts for any “yes” symptom or temperature recording of 100 F or higher
- Queries to pull data quickly
Beyond Ebola, What’s Next?

• The goal is to be prepared
• It’s important to be prepared for other pathogens and have the protocols be adaptable, accordingly
• Be familiar with other likely Viruses or Pathogens that could pose a realistic threat
• Consider PPE requirements, HCW clearance/determination of fitness for duty, Occupational monitoring tailored to the specific pathogen
• Team Effort with Infectious Disease, Infection Control, Biosafety Department, Nursing, Occupational Health, Administration
Beyond Ebola, What’s Next?

• MERS (Middle East Respiratory Syndrome)
• Novel Influenza (Avian Influenza)
• Pneumonic Plague
• Smallpox
• Viral Hemorrhagic Fevers (Ebola, Marburg, Lassa)
A Happy Ending
A Happy Ending
A Happy Ending
“We can fear, or we can care.”

Susan Mitchell Grant, RN, chief nurse for Emory Healthcare, Washington Post, August 6, 2014
References

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• http://wwwnc.cdc.gov/travel/notices/warning/ebola-guinea
• http://wwwnc.cdc.gov/travel/notices/warning/ebola-sierra-leone
• http://www.cdc.gov/phlp/docs/interim-ebolascreening.pdf

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Questions?