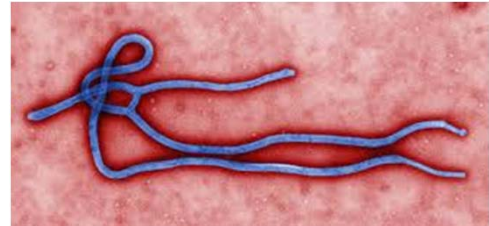




Department
of Health

Ebola Virus Disease Patient Evaluation

Frontline Hospitals in NYS



Elizabeth Dufort, MD, FAAP
NYSDOH
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Objectives

To discuss the expectations of acute care settings (non-designated hospitals) during the 'rule-out' period

- Emergency Departments
- Urgent Care Centers



Patient Evaluation – Frontline Hospitals

Given traveler monitoring program and two tier hospital system for NYS...

- There is a lower likelihood of a patient with EVD coming to a frontline ED unannounced
- The likelihood of the patient having another diagnosis is higher
- They are more likely to present earlier for care with less risk to HCW

Frontline hospitals have two goals:

- Prepare for the care of the patient with EVD
- Prepare for the provision of quality care to those with an exposure history who ultimately do NOT have EVD and have an alternative diagnosis (the majority)



Expectations for Patient Evaluation in Frontline Hospitals During the Rule Out Period

1. **To screen for EVD**
2. To perform an initial evaluation to determine whether the patient meets definition for a Person Under Investigation (PUI)
3. To provide acute care and stabilization
4. To evaluate and provide management for alternate diagnoses
5. To arrange for transfer to a designated EVD treatment center for further assessment and treatment



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Patient Evaluation- PUI Determination

Acute care staff should enter the isolation room in appropriate PPE

Review the travel, exposure history, signs, and symptoms to assess if they are consistent with possible EVD exposure and disease

Determine if meets definition of a PUI

A PUI is a person who has **BOTH**

- An epidemiologic risk factor within the 21 days before the onset of symptoms

AND

- Elevated temperature, subjective fever, or symptoms consistent with EVD



Patient Evaluation – PUI Determination

If patient meets criteria for possible exposure however does not have symptoms or signs consistent with EVD → Not a PUI

Example

- HCW returns from Liberia and injures their ankle while taking a walk
- Routine medical care
- Ensure HD is monitoring (they are a returned traveler)

Therefore, the frontline hospital performs routine medical care



Patient Evaluation – PUI Determination

If patient meets PUI definition, assess the likelihood of the patient having EVD

Assess the level of risk exposure (based upon detailed history)

Complete history, physical exam, and initial clinical evaluation to determine whether or not the illness is consistent with EVD

→ Determine next steps (to be discussed with HD)

- Testing for EVD
- Need for transfer to designated facility



Patient Evaluation – Risk Exposures

High risk exposure

- Exposure to blood or body fluids of a person or body symptomatic with EVD without appropriate PPE (including having lived in the immediate household of person with symptomatic EVD)

Some risk exposure

- In *countries with widespread transmission*, direct contact to a person symptomatic with EVD (or body fluids) *with* appropriate PPE (includes HCWs in West Africa)
- Close contact within three feet a person symptomatic with EVD for a prolonged period of time without appropriate PPE

Low (but not zero) risk exposure

- Have been in a country with widespread EVD transmission within the past 21 days *without known exposures*
- Direct contact (e.g., shaking hands) with a person with EVD in early stages without appropriate PPE
- Brief proximity, such as being in the same room for a brief period of time, with a person with symptomatic EVD
- U.S. based healthcare exposure - direct contact while using appropriate PPE with a person with symptomatic EVD
- Includes the majority of our returned travelers

CDC website – Epidemiologic Risk Factors to Consider when Evaluating a Person for Exposure to Ebola Virus.
<http://www.cdc.gov/vhf/ebola/exposure/risk-factors-when-evaluating-person-for-exposure.html>



Patient Evaluation – Risk Exposures

No identifiable risk exposure

- Contact with an asymptomatic person who had contact with a person with EVD
- Contact with a person with EVD before they developed symptoms
- Having been more than 21 days previously in a country with widespread EVD transmission

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Clinical Manifestations by Organ System in West African Ebola Outbreak

Organ System	Clinical Manifestation
General	Fever (87%), fatigue (76%), arthralgia (39%), myalgia (39%)
Neurological	Headache (53%), confusion (13%), eye pain (8%), coma (6%)
Cardiovascular	Chest pain (37%),
Pulmonary	Cough (30%), dyspnea (23%), sore throat (22%), hiccups (11%)
Gastrointestinal	Vomiting (68%), diarrhea (66%), anorexia (65%), abdominal pain (44%), dysphagia (33%), jaundice (10%)
Hematological	Any unexplained bleeding (18%), melena/hematochezia (6%), hematemesis (4%), vaginal bleeding (3%), gingival bleeding (2%), hemoptysis (2%), epistaxis (2%), bleeding at injection site (2%), hematuria (1%), petechiae/ecchymoses (1%)
Integumentary	Conjunctivitis (21%), rash (6%)

WHO Ebola Response team. *NEJM*. 2014
 CDC Website: <http://www.cdc.gov/vhf/ebola/index.html>



Department of Health

Patient Evaluation – Laboratory Testing



NYS/NYC GUIDANCE FOR LABORATORY TESTING AND MANAGEMENT OF PERSONS-UNDER-INVESTIGATION, FOR EBOLA VIRUS DISEASE (EVD) IN NON-DESIGNATED HOSPITALS

Purpose:

To provide guidance on how hospitals and off-campus emergency departments in New York State can safely perform the laboratory testing necessary for the management of persons-under-investigation (PUI) for EVD and for ruling in or out alternative diagnoses, while EVD testing is in progress or while a decision to transfer the patient is being made.

Scope of Guidance:

This guidance is intended to be used in conjunction with the biohazard risk assessment and protocol that each hospital and off-campus emergency department must develop for its clinical laboratory, in accordance with the NYS Department of Health (NYSDOH) Commissioner's Order dated October 16, 2014 and available at the following website:

http://www.health.ny.gov/diseases/communicable/ebola/docs/commissioner_order.pdf

Guidance is also available from the Centers for Disease Control and Prevention (CDC) at:

<http://www.cdc.gov/vhf/ebola/hcp/safe-specimen-management.html>

Expectations frontline hospitals during 'rule out period'

Laboratory testing

- EVD

Discuss EVD testing with Health Department



Department of Health

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Patient Evaluation – Acute Care and Stabilization

(Once appropriate PPE has been donned)

Suspicion of EVD should not alter the completion of a detailed history, physical exam, diagnostics, and interventions

- Although modification for a safe approach to medical care for HCWs is appropriate
- Use of disposable or dedicated equipment for the duration of care

Placement of peripheral IV, phlebotomy for diagnosis, should continue as indicated by clinical status

- Limit the use of needles and other sharps as much as possible, to those deemed necessary for appropriate care



Patient Evaluation – Acute Care and Stabilization

- Provide aggressive intravenous fluid resuscitation, if warranted
- Assess for electrolyte and acid-base abnormalities and aggressive repletion and correction
- Evaluate for bleeding and correct hematologic and coagulation abnormalities, as appropriate
- Consider antibiotics for empiric therapy of possible bacterial infections mimicking EVD or possible secondary bacterial infections
- Symptomatic management of fever, nausea, vomiting, and abdominal pain (avoid NSAIDs and Aspirin due to bleeding risk)
- Multisystem organ failure can develop and may require oxygenation, mechanical ventilation, renal replacement therapy, hemodynamic support, among other critical care management
- Empiric treatment of other possible diagnoses (e.g., malaria in travelers)



Fowler RA et al. *Am J Respir Crit Care Med.* 2014

Patient Evaluation – Laboratory Testing





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Expectations frontline hospitals during 'rule out period'

Laboratory testing

- EVD
- Acute care
- Alternate diagnoses



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Patient Evaluation – Transfer

- Each non-designated hospital should have a written transport protocol for safe transportation of a PUI
- The transport protocol must include a pre-identified emergency medical service as well as receiving facility
- **PUI should receive initial stabilization, appropriate acute care, and preparation for transfer**
 - As with other cases (EMTALA)
- Blood for EVD testing should be drawn prior to transfer and plans initiated for transport of specimen to the public health lab



(Image Grady EMS)

Patient Evaluation – Length of Care at Frontline Hospital

Ebola virus is detected in blood only after the onset of symptoms

It may take up to 3 days after symptoms appear for the virus to reach levels detectable by our current testing available

- Negative results on specimens collected less than 3 days after onset of symptoms require repeat testing

Frontline hospitals - likely will not be possible to rule out EVD

- Even with an initial negative EVD test, if early in illness onset, transfer to an assessment/treatment hospital is appropriate
- Generally, if meets PUI definition → test and transfer

If a patient has been symptomatic for more than three days

- Can consider continued acute care at frontline hospital while awaiting the EVD test result within the next several hours
- This will be less likely given the traveler monitoring program



Resources For EVD Clinical Care

The University of Nebraska Medical Center website:

<http://www.nebraskamed.com/biocontainment-unit/ebola>

- UNMC iTunes University App

Emory University Hospital website:

<http://www.medicine.emory.edu/news/2014/08/emory-ebola-patients-frequently-asked-questions-news.html>

Ebola Clinical Care Guidance: A guide for clinicians in Canada. Interim Report August 29, 2014. Canadian Critical Care Society, Canadian Association of Emergency Physicians, Association of Medical Microbiology & Infectious Diseases Canada.

<http://www.ammi.ca/media/69846/Ebola%20Clinical%20Care%20Guidelines%20%20Sep%202014.pdf>



Patient Evaluation – Expectations of Frontline Hospitals During The Rule Out Period

- *Guidance for the Evaluation and Management of a Patient with Possible Ebola Virus Disease in Frontline Healthcare Facilities in New York State* – In process