Ebola Virus Disease Evaluation and Initial Management of Returned Traveler Order Set

Reason / Problem

- *Initiate this order set for patients who present with a subjective fever or temperature greater than 100.4 F/ 38 C or compatible Ebola symptoms (headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage) in a patient who has resided in or traveled to a country with wide-spread Ebola transmission in the 21 days before illness onset (Sierra Leone, Guinea, Liberia)*
- *Infection control precautions should be used for all patients suspected of having Ebola virus disease who are undergoing an initial evaluation. Such patients should be isolated in a single room with a private bathroom and with the door to hallway closed, and all healthcare workers should use standard, contact, and droplet precautions (gown, facemask, eye protection, and gloves). In addition, the hospital infection control program and other appropriate staff should be notified, as well as local and state health departments.*
- *Report any ASYMPTOMATIC patients with high- or low-risk exposures (see below) in the past 21 days to the state health department*

Ebola Virus Disease (EVD)

Admit / Transfer

- *A HIGH RISK EXPOSURE includes any of the following:*

  Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids of EVD patient
  OR
  Direct skin contact with, or exposure to blood or body fluids of, an EVD patient
  OR
  Processing blood or body fluids of a confirmed EVD patient without appropriate PPE or standard biosafety precautions
  OR
  Direct contact with a dead body without appropriate PPE in a country where an EVD outbreak is occurring
- *A LOW RISK EXPOSURE includes any of the following:*

  Household members of an Ebola patient and others who had brief direct contact (e.g., shaking hands) with an Ebola patient without appropriate PPE
  OR
  Healthcare personnel in facilities with confirmed or probable Ebola patients who have been in the care area for a prolonged period of time while not wearing recommended PPE
- *NO KNOWN EXPOSURE includes patients with residence in or travel to a country with wide-spread Ebola transmission (Sierra Leone, Guine, Liberia) WITHOUT HIGH- or LOW-risk exposure*
- *All HIGH-RISK EXPOSURE patients should be tested for Ebola Virus Disease.*
- *LOW-RISK EXPOSURE and NO KNOWN RISK EXPOSURE cases should be reviewed with the state health department including pertinent information such as severity of illness, laboratory findings (e.g. platelet counts), and any alternative diagnoses.*

  -If Ebola Virus Disease is suspected then initiate testing.

  -If Ebola Virus Disease is NOT suspected and the patient requires IN-HOSPITAL management, decisions regarding infection control precautions should be based on the patient's clinical situation and in consultation with hospital infection control and the state health department. If the patient's symptoms progress or change, re-assess need for testing with the state health department.

☐ Admit inpatient STAT to a private room, isolation precautions: standard, contact and droplet

☐ Patient restricted to room

Precautions:

- *Personal protective equipment must be donned prior to entry into patient's room (refer to hospital policy on Ebola).*
- *A trained monitor should actively observe and supervise each worker donning and doffing PPE.*
- *Avoid entry of visitors into the patient's room; exceptions may be considered on a case by case basis for those who are essential for the patient's wellbeing*
- *The CDC recommends that mothers with Ebola virus disease avoid close contact with their infants if there are alternative ways for their infants to receive adequate care and nutrition*

☐ All personnel entering patients room must sign log

☐ Door to patient's room must be kept closed at all times

Vital Signs

- *Intensive nursing may be required in order to respond to the patient's changing clinical situation*

☐ Check vital signs ☐

☐ Check vital signs per protocol

IV

- *The mainstay of treatment for Ebola virus disease involves supportive care while the immune system mobilizes an immune response.*
- *The most important aspect of supportive care involves preventing intravascular volume depletion, correcting profound electrolyte abnormalities, and avoiding the complications of shock*

☐ Insert peripheral IV line

☐ Central venous catheter

☐ Lactated Ringer's

☐ Normal saline

Other Nursing

- *Patients may develop significant electrolyte disturbances (eg, hyponatremia, hypokalemia, and hypocalcemia) and may require frequent repletion of electrolytes to prevent cardiac arrhythmias*

☐ Intake and output

☐ Potassium Replacement Protocol

☐ Calcium Replacement Protocol

☐ Sodium Replacement Protocol

☐ Magnesium Replacement Protocol

Medications UpToDate UpToDate UpToDate

Antibacterials:

- *Empiric antimicrobial treatment should be considered when patients develop vomiting, diarrhea, and other signs of severe gastrointestinal dysfunction*

☐ Ciprofloxacin 400 mg intravenously every 12 hours

☐ Azithromycin 500 mg intravenously every 24 hours

☐ cefTRIAXone sodium 2 grams intravenously every 12 hours

☐ Meropenem 1 gram intravenously every 8 hours

☐ Vancomycin HCl 1 gram intravenously every 12 hours

Antimalarials: UpToDate

- *Patients should be evaluated for concomitant malaria if they are at risk for this disease, and treated if disease is detected.*
- *Questions about malaria treatment may be directed to the CDC (CDC Malaria Hotline: (770) 488-7788 Monday-Friday 8a to 4:30p EST; (770) 488-7100 after hours, weekends, and holidays)*

For uncomplicated malaria:

☐ Arthemether-lumefantrine (Coartem) Oral: 4 tablets at hour 0 and hour 8 on the first day, then 1 tablet twice daily on day 2 and day 3 (total of 24 tablets per treatment course)

☐ Atovaquone and proguanil (Malarone) 1000mg/400mg Oral: Taken as a single dose, once daily for 3 consecutive days

☐ Quinine Oral: 648 mg every 8 hours (Tetracycline, doxycycline, or clindamycin should also be given)

☐ Mefloquine Oral: 20-25 mg/kg/day in 2 divided doses, taken 6-8 hours apart (maximum total dose: 1250 mg). Note: If clinical improvement is not seen within 48-72 hours, an alternative therapy should be used for retreatment.

For severe malaria:

☐ Quinidine gluconate IV 10 mg/kg infused over 60 to 120 minutes then 0.02 mg/kg/minute continuous IV infusion

---

Laboratory UpToDate UpToDate

- *The differential diagnosis will vary markedly with the clinical and epidemiologic circumstances. As an example, travelers returning from West or Central Africa should be evaluated for common illnesses, such as malaria. Other diagnoses to consider include influenza, typhoid fever, yellow fever, Lassa hemorrhagic fever, varicella, measles, dengue, staphylococcal or streptococcal infection, gram-negative sepsis, toxic shock syndrome, meningococcemia, and leptospirosis.*
- *Limit the use of needles and other sharps as much as possible. Phlebotomy, procedures, and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and medical care*

Ebola:

- *Ebola virus is detected in blood only after the onset of symptoms, usually fever. It may take up to 3 days after symptoms appear for the virus to reach detectable levels. Virus is generally detectable by real-time RT-PCR from 3-10 days after symptoms appear.*
- *Specimens ideally should be taken when a symptomatic patient reports to a healthcare facility and is suspected of having an Ebola exposure. However, if the onset of symptoms is <3 days, a later specimen may be needed to completely rule-out Ebola virus, if the first specimen tests negative.*

☐ Ebola Virus by RT-PCR. One time order; today. Specimen: Whole Blood (EDTA) *(CDC test directory code CDC - 10309 Ebola Identification)*

General Diagnostics:

- *Leukopenia, thrombocytopenia, transaminase elevations, as well as renal and coagulation abnormalities are often observed in patients with Ebola or Marburg virus disease. Other laboratory findings include a marked decrease in total plasma protein (reflective of a capillary leak syndrome) and elevated amylase levels.*

☐ Comprehensive metabolic panel (serum) today

☐ CBC with platelets and differential (whole blood) today

Other Testing:

☐ Influenza A rapid antigen test

☐ Malaria examination (Giemsa) *Both thin and thick slides stained with Giemsa*

☐ Malaria Antigen (RDT) *All positive rapid detection tests also should be followed by microscopy.*

☐ Routine culture and sensitivities 2 sets (blood)

Physician's Signature _____ Date _____ Time _____