

Friday Night [under the] Lights 2014



Happy Friday.

Greetings everyone. Hope you're well this week. Summer sure seems to dwindle quickly with every passing day. As with every change of season though, there's a degree of excitement when entering the next season. Just think – Many of you will be raking leaves soon!

Before we, move forward, a couple, of you – have once again pointed out some “punctuation” errors, in FNuL., !?.

Thanks, very much, but Microsoft checks every issue and short, of them pointing out FRAGMENTS they, are comfortable with. everything else (purposeful fragment). Questions?

Ebola

It's scary when a deadly infectious disease starts to spread through a population, regardless of where it is in the world. I've spent a good deal of this week responding to questions about the emergence and spread of the world's latest infectious disease threat, Ebola. Truth be told, as with SARS, Hantavirus and other emerging infectious diseases, most of us remember reading about it somewhere, coming to the conclusion that it would probably never be a disease we would see in our patients, certainly not something a healthcare provider would get and hopefully not a question on our Board Exams.



And then we get the phone call that we've been asked to move a potential Ebola patient from Hospital A to Hospital B. *It becomes real* (for the record, we have not moved any potentially infected patients as of this writing).

It's important for us to prepare to manage this population in case we are faced with infected patients. One of the privileges of being a healthcare provider (and I specifically use the word privilege) is that patients trust we will be there for them when they need us, even when the risk of transmission exists. It's our job, *our responsibility*, to do everything we can to understand the disease, understand how it is transmitted, what the risks are and how to protect ourselves.

We've chosen a profession filled with risk, but we've committed to minimizing or eliminating that risk through knowledge and specific action. Fortunately, there is a tremendous amount of supportive material to help healthcare providers navigate this phase of the emerging disease as effectively as possible.

So, let's walk through what the Ebola virus is, how it's transmitted, what we need to do to protect ourselves and care for our patients and what the status of the disease spread is as of today.

The virus and transmission

First of all, the virus is pretty ugly (see above). The Influenza virus is much better looking, but we have the tools to control that. You'll be getting your Flu Shot soon so you won't need to worry about the good looking one (NoFlu4U, remember?).

The Ebola virus causes what's known as Ebola Virus Disease (EVD) a very severe, often fatal illness with a case fatality rate of almost 90% (meaning 90% of patients with confirmed disease will not survive). The disease was formerly known as Ebola Hemorrhagic Fever. The current outbreak in West Africa is the largest Ebola outbreak in history and it's the first in West Africa. The high mortality and size of the outbreak create (appropriately) concern for all of us.

The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission. Fruit bats of the Pteropodidae family are considered to be the natural host of the Ebola virus.

According to the WHO, Ebola is introduced into the human population through close contact with blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.

It's always good practice to not handle any dead porcupines you may find in the rainforest.

The Ebola infection is then spread via human-to-human transmission, with infection resulting from direct contact (mucous membranes, broken skin) with the blood, secretions, organs or other bodily fluids of infected people. It can also be transmitted by indirect contact with environments contaminated with such fluids such as bathrooms, treatment areas or living quarters.

The disease can also be transmitted from dead bodies. Funeral ceremonies must be managed safely and appropriately to prevent transmission. Mourners that have direct contact with the body of the deceased person can also play a role in the transmission of Ebola.

Signs & symptoms of EVD

The disease is severe and acute and is characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhea, a rash, impaired renal and liver function, and in some cases, both internal and external bleeding.

Laboratory findings are remarkable for low white blood cell and platelet counts and elevated liver enzymes.

Patients will remain infectious as long as their blood and secretions contain the virus. Of note, Ebola virus was isolated from semen 61 days after onset of illness in a man who was infected in a laboratory (I don't even want to try and work through how they sorted all that out – I'm sure he had a porcupine at home he found in the forest).

The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days. Put another way, signs and symptoms of the disease may appear anywhere from 2 to 21 days after exposure to the virus.

➤ **A person infected with Ebola virus is not contagious until symptoms appear.**

Ebola is not spread through the air or by water or, in general, by food; however, in Africa, Ebola may be spread as a result of hunting, processing, and consumption of infected animals (e.g., bushmeat).

Case definitions for EVD

There are essentially three target populations of interest:

- *Person Under Investigation (this will be the most likely patient type EMS will encounter)*
 - A person who has both consistent symptoms and risk factors as follows: 1) Clinical criteria, which includes fever of greater than 101.5 degrees and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage; **AND** 2) Epidemiologic risk factors within the past 21 days before the onset of symptoms, such as contact with blood or other body fluids or human remains of a patient known to have or suspected to have EVD; residence in—or travel to—an area where EVD transmission is active (see below); or direct handling of bats, rodents, or primates from disease-endemic areas.
- *Probable case*
 - A PUI who is a contact of an EVD case with either a high or low risk exposure
- *Confirmed case*
 - A case with laboratory confirmed diagnostic evidence of Ebola virus infection

Global status of the disease today

The disease has been identified in four affected countries in West Africa - Guinea, Liberia, Nigeria, and Sierra Leone. The CDC and WHO do not feel the disease poses a significant risk to the U.S. public at this time. As you would imagine, there are international teams of experts that are working together globally to minimize spread and provide guidance in management. The CDC has activated their Emergency Operations Center, a concept we all know well and one that helps provide 24/7 support. The WHO & CDC have noted the outbreak is worsening in West Africa.

There have been no confirmed cases of Ebola in the US (remember the two patients treated at Emory Hospital in Atlanta were healthcare workers transported from West Africa). All other Persons Under Investigation (PUI) have tested negative for the virus (PUI is a term that describes what we would historically call a “rule out” or suspected case, not yet confirmed)

➤ **As of today, according to the World Health Organization, there are 2615 suspected or confirmed cases and there have been 1427 deaths.**

Precautions for healthcare providers

Because Ebola is transmitted via blood and body fluids, healthcare providers should take steps to prevent direct contact with any blood or body fluids as described in the attached CDC document "Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Hemorrhagic Fever in US Hospitals". This includes:

- Wearing personal protective gear including gloves, fluid resistant or impermeable gown, goggles or faceshield, and a mask
- For patients who have copious blood/body fluid losses (bleeding, vomiting, diarrhea) it may be prudent to double glove, don fluid resistant leg covering, and/or shoe covers.
- Avoid procedures that might lead to aerosolization of blood or body fluids such as tracheal suctioning, placement of invasive airways, or the use of CPAP or biPAP. If these procedures must be performed limit the number of caregivers who are exposed and assure that those who are performing the procedures are fully covered and wearing N95 or higher masks.
- Avoid the use of needles or other sharps for treatment or diagnostic testing when possible. If use cannot be avoided, exercise extreme care and place sharps immediately into puncture proof sharps containers.
- Perform hand hygiene before and after contact of ANY patient (as always).
- When possible utilize disposable equipment to treat infected patients, and dispose of equipment as regulated medical waste.

Following care of a suspected or confirmed Ebola patient:

- Non-porous surfaces (counters, metal, plastic) should be thoroughly cleaned using a EPA registered hospital disinfectant that is effective against norovirus, rotavirus, adenovirus or poliovirus (non-enveloped virus similar to Ebola).
- Reusable medical equipment should be cleaned and disinfected following manufacturer/hospital/organization policies.
- Reusable porous surfaces (linens, cloth, carpet, upholstery) should be placed in a leak-proof container and discarded as regulated medical waste (following state regulated medical waste policies).
- Healthcare organizations should develop policies and procedures for monitoring caregivers and other workers who have cared for Ebola patients, especially those who have had unprotected contact.

Implications for EMS (us)...

Big thanks to Scott Bourn [AMR VP Clinical Practices & Research] who compiled this comprehensive approach for EMS based on what we know today:

At the present time there is no evidence to suggest that Ebola cases may enter the US healthcare system through 911. So, unlike during 2009's H1N1 influenza outbreak, there is no need to be engaged in efforts to "screen" patients who utilize 911 for Ebola symptoms and/or recent travel history.

However, it is conceivable that AMR or other EMS organizations might be asked to transfer a suspected or confirmed Ebola patient between healthcare facilities. To assure patient, public, and employee safety such a request must be carefully planned. The steps below describe the process local practices should follow:

Call prescreening/planning (securing the appropriate equipment may take up to 24 hours)

- After receiving the transfer request from a hospital, ask for/coordinate phone discussion between the treating physician, your Medical Director, and AMR's Chief Medical Officer Dr. Ed Racht. The purpose of this call is to clarify the patient's diagnosis and confer about the patient's acuity and treatment plan. It will also be important to establish that the patient's condition is stable enough for transport.
- As with any interfacility transport confirm the treatment that the patient will need to receive during transit (medications, ventilator, etc.) and assure that it is within the scope of practice for your crew. If necessary request that the hospital provide an appropriately trained clinician to provide "out of scope" care during transport.
- Assure that the receiving facility is aware of the patient's status and has the appropriate team to receive the patient. Confirm the timing of the transport.
- If at all possible assure that any necessary intravenous access or invasive airway devices have been secured prior to transport.
- Secure disposable equipment to use during transport if necessary.
- Secure appropriate PPE for crews as described above. Use of an air purifying respiratory for crews was utilized by Grady in their transports to Emory, and may be considered in future transports.
- Brief the crew on the appropriate PPE and procedures during the transport. Optimally, get your Medical Director involved in this instruction.
- Drape the interior of the ambulance to minimize/prevent contamination with blood or body fluids; the article "How Grady EMS Managed 2 Ebola Patient Transports" (<http://www.ems1.com/ebola/articles/1962467-How-Grady-EMS-managed-2-Ebola-patient-transports/>) offers some practical suggestions. This could include:
 - ✓ Impermeable covers for the cot mattress, pillow, other porous surfaces
 - ✓ Impermeable covers for the walls, counters, and other non-porous surfaces to reduce the likelihood of contamination.

During the call

- Maintain PPE
- Minimize procedures that could aerosolize blood or body fluids. Minimize invasive procedures. Use scrupulous sharps procedures.

Following transport

- Assure that crews follow recommended procedures for removing PPE to minimize the chance of contamination.
- Assure that any individuals assisting with cleaning and disinfection of the ambulance wear appropriate PPE.
- Place porous materials and disposable non-sharps (including draping) in a leak-proof container to be discarded as regulated medical waste.
- Wipe down and disinfect all non-porous surfaces using an EPA registered disinfectant as described above.
- Work with hospital staff to coordinate cleaning and disinfection of non-disposable medical equipment.
- Work with local safety/risk leaders to monitor caregivers following the transport, especially if they had an unprotected exposure.

Regular updates on the Ebola outbreak are available on the CDC website. Watch for these updates and others from EVHC; we will provide additional information as it becomes available. If you have questions please contact Scott Bourn at scott.bourn@amr.net.

The key points in managing any potential Ebola patient are the same key points we should use for managing any potentially infected patient:

- Always maintain a healthy level of vigilance (not paranoia). Constantly evaluate your patients and surroundings
- Universal Precautions always apply
- If a patient is symptomatic, apply appropriate protection and continue your detective work to better understand what the potential could be
- Seek help. We are fortunate to have a very robust group of experts both within our organization and within the industry.

Regular updates from CDC

You can personally receive Health Alert Network (HAN) updates from the CDC that notify you of health & preparedness issues of importance. I would encourage you to sign up now.

Not only is it important information for the global management of Ebola, you'll be able to see what's happening during Influenza season and you will be VERY thankful you decided to get the Flu shot (NoFlu4U).



You can sign up to receive HAN Update Alerts when a new HAN is added to the system by using the following steps:

1. Go to <https://public.govdelivery.com/accounts/USCDC/subscriber/new?pop=t>
2. Enter your e-mail address and delivery preferences and click Save.
3. Select the Emergency Preparedness and Response / Health Alert Network (HAN) check box from the Quick Subscribe window and click Save.
4. Select your state from the state drop-down list box.
5. Enter your five-digit zip code in the zip code text box.
6. Select your country from the country drop-down list box and click Save.

Once you complete the previous steps, you will receive HAN alerts by e-mail when new HANs are distributed.

Weird call from the East...

Thanks to Jeff Boyd [AMR Regional Clinical Director – NE] for sharing this interesting call:

He was working on a data report for a GSW study for Yale and came across this (triggered by being a “Trauma-Penetrating” Primary Impression):

Patient's Complaint: I WAS FEEDING MY CHICKEN, IT GOT SCARED OF A SNAKE AND IT KICKED GLASS IN MY EYE

I would have expect this in the South Region, not the East, in particular located down the street from Yale.

Just one more reason to ALWAYS wear PPE when dealing with chickens and snakes (and apparently, porcupines).

Epilogue...



That's it from my world. *Happy Friday. Thanks for being a part of the community safety net. And, as always, thanks for what you do and how you do it...*

Ed

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