

Special Advisor to the Fire Commissioner on Health Policy Chief Medical Officer, Fire Dept. City of New York (FDNY) Co-Director FDNY World Trade Center (WTC) Health Programs Professor of Medicine, Albert Einstein College of Medicine Montefiore Medical Center, Pulmonary Division

# **FDNY RESOURCES**

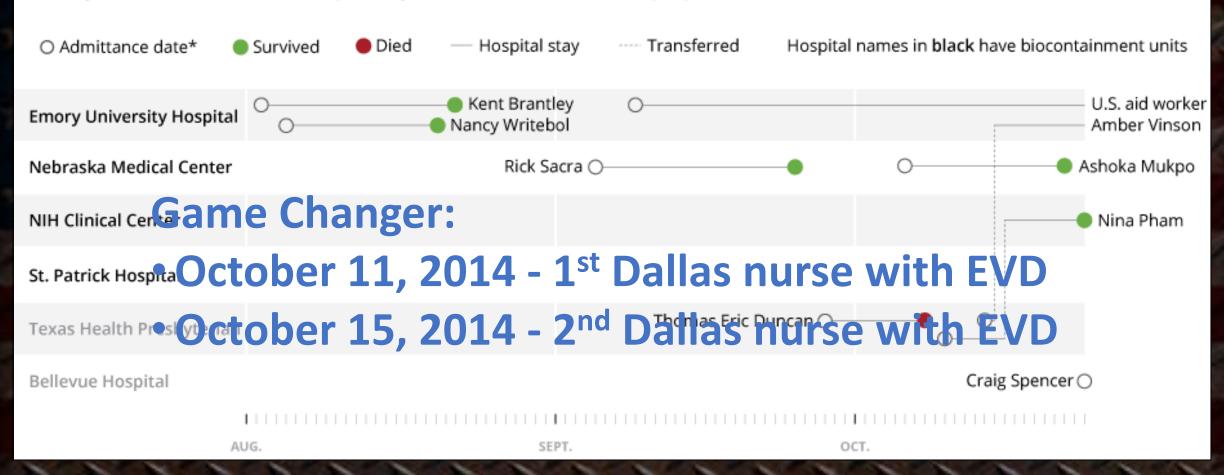
- Firehouses- 218
  - Engines- 205
  - Trucks- 143
  - Rescues- 5
- EMS Stations- 34
  - BLS Ambulances- 140
  - ALS Ambulances- 70
- HazTac Ambulances:
  - BLS- 15
  - ALS- 10
  - Rescue Ambulances- 10



# Ebola in the USA

## **U.S. Ebola Patients Over Time**

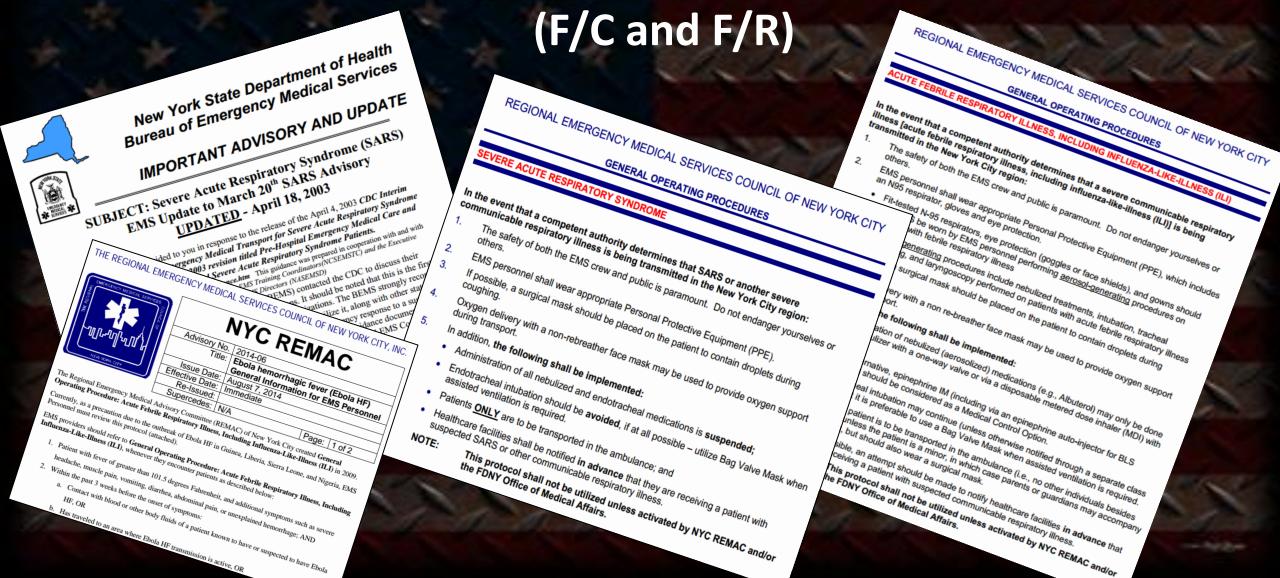
While the outbreak of Ebola in West Africa began in December 2013, an Ebola patient was not brought over to the United States until August of this year. Here is a timeline of hospital stays and outcomes for the nine people who have been treated for Ebola in the U.S.



# Rapid evolution over only about 2 months

- In August, FDNY Commissioner directed FDNY to assess & increase our level of preparedness
- In October, immediately after the first case of Ebola was diagnosed in the US, FDNY Commissioner formed a task force to prepare for all contingencies. EVD Task Force
  - Leadership roles clearly designated
  - Highest levels within FDNY represented along with full participation by subject matter experts.
  - Close coordination with NYC DOHMH, NYS DOH, OEM, Mayors
    Office, HHC, GNYHA
    - Protocols for JFK Airport
    - Protocols for designating Emergency Depts and Hospitals as equipped and trained to receive and treat suspected patients

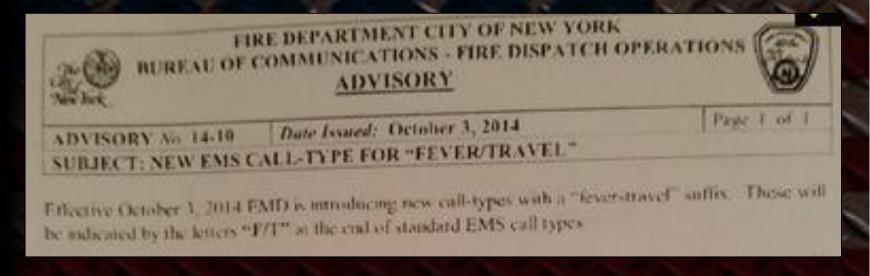
Re-visitation of existing SARS / Flu / Smallpox protocols



- In October, the taskforce made the following recommendations, each immediately approved:
  - EMS dispatch to ask every patient with fever if traveled to West Africa in the last month.
  - If history consistent then designate call-type = FT (fever/travel)
  - If call-type = FT, restrict 911 response to specially trained units
  - NYC DOHMH and Receiving Hospitals Contacted by FDNY OMA

# Lessons Learned NYC 911 / FDNY "Fever / Travel"

(F/T call type)





CFR-D MANUAL, CHAPTER 6
OFFICE OF MEDICAL AFFAIRS DIRECTIVE 2014-05A
October 3, 2014

EBOLA VIRUS DISEASE (EVD) ADVISORY (ADDENDUM)

## PURPOSE

1.1 To increase the awareness by all EMS providers of the concerns associated with treating and transporting patients who may have Ebola Virus Disease (EVD)

### SCOPE

2.1 This directive applies to all FDNY EMS providers (CFRs, EMTs and Paramedics) and Voluntary Hospital ambulance personnel who provide prehospital emergency medical treatment in the New York City 911 system.

## 3. BACKGROUND

- 3.1 Human to human transmission of EVD occurs through direct contact with body fluids (saliva, blood, breast milk, sweat, semen, and other body substances such as fecal material and vomitus contaminated with blood) or following contaminated sharps injuries (e.g. needle sticks). Airborne transmission of the virus may occur during aerosol-generating procedures.
- 3.2 Patients are not contagious prior to the development of symptoms. Patients can transmit the virus from onset of fever and through later stages of the disease, as well as post mortem.
- 3.3 EVD symptoms can appear from 2 to 21 days after exposure with 8 to 10 days being the most common. Symptoms typically include: fever, headache, myalgia (muscle pain), arthralgia (joint pain), diarrhea, vomiting, and abdominal pain. Some patients may also experience: rash, conjunctival injection (redness and swelling), cough, pharyngitis (sore throat), chest pain, dyspnea, and hemorrhagic symptoms (conjunctival hemorrhage, easy bruising, GI bleeding).
- 3.4 The largest ever EVD outbreak currently is taking place in the West African countries of Guinea, Liberia, Sierra Leone, Nigeria and Senegal. EVD may spread to other countries before the outbreak is contained. An updated list from the CDC is maintained at http://www.cdc.gov/vhf/ebola/resources/distribution-map-guinea-outbreak.html

## 4. PROCEDURE

4.1 EMS providers must be alert for and suspect patients as possibly having EVD who have (1) fever and/or any of the symptoms listed above and (2) have traveled to one of the West African countries affected by the EVD outbreak within the three weeks prior to the onset of symptoms.

- In October, the taskforce made the following recommendations, each immediately approved:
  - FDNY EMS HAZTAC units with FDNY Fire HAZMAT support.
    - PPE = Tychem F Suits with PAPR
      - Alternative = full APR/SCBA full face shield & P-100 or P-95 cartridge
    - Fire SOC units respond only if patient carry assistance is needed
      - Similar PPE to HAZMAT
    - Regular EMS only responds to provide non-patient assistance
    - Fire CFR does NOT respond

# "Reserve" 10 HazTac ambulances (2 / Boro) specifically for F/T calls

FIRE DEPARTMENT OF NEW YORK DEPARTMENT FAX 021-2014

Oct. 16, 2014



Message from Fire Commissioner Daniel Nigro

## PROTOCOLS/GUIDELINES FOR HANDLING SUSPECTED EBOLA INCIDENTS

Effective immediately, the following dispatch, response and decontamination protocols are to be used for emergency calls that may involve potential cases of the Ebola virus.

DISPATCH

## Dispatchers

Dispatchers (EMD) will inquire of callers if the patient is presenting with symptoms of fever. If "yes", the caller is asked if the patient has travelled in the last month to West Africa. If the response is "yes", the EMD attempts to confirm that travel involved the countries of concern (Liberia, Guinea or Sierra Leone), and, if response is "yes" or unclear, the call is coded in EMS CAD with F/T suffix (fever/travel).

## RESPONSE/PPE

F/T calls will prompt the following response: a HAZ TAC EMS unit and supervisor will be dispatched for patient care and transport. HAZ TAC members will wear TyChem F suit (rated to protect against blood borne pathogens as well as chemical protection) and PAPR breathing system (Power Air Purified Respirator), which is being recommended NOT for respiratory protection – as Ebola virus is not airborne - but because it allows for full face protection from any bodily fluids.

Upon arriving at the scene and confirming the F/T circumstances, the supervisor or HAZ TAC unit will request a second EMS unit to assist with driving the ambulance back so they can remain in full PPE during transport. They will also request Fire Operations HAZ MAT resources be sent to the destination hospital.





## FIRE DEPARTMENT

9 MetroTech Center BROOKLYN, N.Y. 11201-3857 TEL. 718 999-0742 FAX 718 999-0034

## BUREAU OF OPERATIONS

To: All Borough Commands and SOC

From: James E. Esposito Chief of Operations

Date: October 20, 2014

Subject: Ebola Virus Disease

Effective immediately, the following information shall supersede all previously issued material pertaining to the Ebola Virus.

## 1. CFR Unit Response Policy:

CFR units will no longer be assigned to any known "F/T" (Fever/Travel) incident; this includes segment 1, 2, and 3 incidents. Patient care and transport for known "F/T" incidents will be managed by EMS HAZ-TAC ambulances only at this time. CFR units who are inadvertently directed to respond on an "FT" call type response shall notify the dispatcher of this and remain in service or discontinue response. However, units should be aware of the possibility of confronting a potential Ebola/infectious disease case while responding to any CFR incident not previously coded as "F/T" by EMD.

- Even before the CDC changed their recommendations, the level of PPE required during care of a suspected Ebola patient was increased to protect skin and mucous membranes from exposure
  - Protocol and training adjusted to pay careful attention to proper donning and doffing techniques so as to avoid self-contamination.
  - Buddy system or a valet to assist in donning and doffing.
  - Supervisor to provide direct oversight
  - Disinfection of PPE prior to taking off by decon spraying (Blue Bleach).
  - Reinforce PPE and Training for all infectious calls as may become FT calltype only after response and on-scene evaluation

# Lessons Learned Focus on PPE for "evolving threat"



## Reinforce standard isolation kit use for all members



Fire Department of the City of New York

Isolation Kit for Standard Universal Precautions

## DONNING PROCEDURE

- You must have your Bunker/PPE pants on prior to donning an Isolation Kit.
- 1. Put on the first pair of gloves (i.e., inner gloves).
- Slide both arms into the sleeves and adjust them for a proper fit.
- Tie the strings of the gown in a shoelace bow to ensure easy removal.
- Insert your entire foot into shoe coverings.
- Push your foot forward until shoe is snug.
- Don an appropriate size N95 respirator mask ensuring a proper seal.
- Don your goggles.
- Don the supplied head covering.
- Put on a second pair of gloves over the first pair and over the sleeves of the gown (i.e., outer gloves).

### KEY POINTS

- If appropriate, change the Isolation Kit garments and your gloves as often as you feel it is necessary in order to avoid contamination.
- Keep hands away from face.
- Limit surfaces touched.
- Change gloves when torn or heavily contaminated.
- Perform hand hygiene.























Fire Department of the City of New York Isolation Kit for Standard Universal Precautions

## DOFFING PROCEDURE

\*Have a Biohazard bag ready.

- 1. Until the strings of the gown.
- 2. With your right hand grab the gown by the left shoulder (avoid touching your uniform), pull down the gown by inverting the sleeve, grasp the wrist area of both the garment and outer glove simultaneously and remove your left hand. On the right side put your gloved left hand inside the gown and roll downward. Your inner gloves should still be on.
- Roll the gown and outer gloves together inward in order to minimize splash and place into the biohazard bag. Your inner gloves should still be on.
- Remove the shoe coverings by placing gloved fingers inside and roll the boot covers outward. Then place into the biohazard bag.
- If bunker pants came into contact with bodily fluids, remove at this time and send for decontamination.
- 6. Remove the head covering and place into the biohazard bag.
- 7. Remove gloves and put on a fresh pair.
- Remove the goggles by grabbing the straps from the back to avoid touching your face. If necessary, decontaminate.
- 9 Remove the N95 respirator mask by grabbing the straps from the back to avoid touching your face and place into the biohazard bag.
- 10. Wash your hands and face upon completion.





















## **Donning and Doffing Procedure**

## Infectious Control Ensemble: Doffing

- 1. Disinfect your gloves using hand sanitizer, bleach spray or disinfectant wipes (Allow to air dry).
- 2. Remove the outer shroud:

Hold APR/SCBA facepiece with one hand while pulling the shroud from the back and towards the front with the other hand over P100 canister and tubing on the APR. Repeat step-1 and disinfect your gloves.

- 3. Unseal the adhesive flap and unzip the suit (If using Tian suit, peel the ChemTape carefully prior to unzipping).
- 4. Remove the hood by grabbing it from the top and pulling it toward the back.
- 5. Remove the ChemTape from your wrists.
- 6. Grasp the fingertips of the outer gloves in order to loosen the gloves.
- 7. Grab the sleeve and outer glove together and pull your arm out of the suit. Keep your clean hand over chest to avoid contact with the outside of suit.
- 8. Slide clean hand from the chest to the opposite side and from the inside of the suit, slide the sleeve off, only removing the outer glove.
- 9. Keeping hands inside the suit, roll the suit down to the ankles (Repeat step-1 before rolling down suit).
- 10. Sitting on a smooth surface, place hands inside suit and remove rubber boots and suit together.
- 11. Disinfect your inner gloves by repeating step-1. Add a clean pair of gloves over the inner gloves.
- 12. Carefully remove the APR or SCBA facepiece (Dispose of canister in the red bag, APR or SCBA shall be placed in a clear bag for later decontamination). Disinfect or wash hands.

## Important Points

- If highly suspected Ebola patient encountered, HazMat will perform"Valet Doffing."
- Inspect the suit. If there is minimal contamination, wipe off and proceed with doffing if directed by Officer.
- You must have a large clear bag and red bag ready.
- WASH OR DISINFECT HANDS IMMEDIATELY AFTER DOFFING



## **Donning and Doffing Procedure**

12/30/14

## Infectious Control Ensemble: Donning

- 1.Insert feet into legs of suit. Sitting on a smooth surface, don the rubber boots and pull up suit to waist.
- 2.Don first pair of Nitrile gloves.
- 3. Slip arms into the suit.
- 4. Don APR or SCBA facepiece.
- 5. Put on the attached hood then zip up the suit.
- 6. Seal the adhesive flap over the zipper of the suit (When using the Tian suit, use ChemTape to seal flap).
- 7.Don second pair of gloves ensuring the cuff of the glove is over the sleeve of the suit.
  Using ChemTape, seal the outer glove cuff to the sleeve of the suit. Make sure there is a tab at the end of the tape to allow for easy doffing.
- 8. Put on the outer shroud over the hood.
  Ensure that the elastic band of the outer shroud is properly fitted around the APR or SCBA facepiece so that no skin is exposed.
- 9. Inspect and attach the P100 canister to your APR or SCBA facepiece.

## Important Points

- Inspect the APR at the start of each tour.
- Avoid or remove any sharp objects from your person as to not tear the suit or rubber boots.
- Inspect the suit before donning.
- Limit surfaces touched.
- Keep your hands away from your face.
- Remember to change gloves as often as necessary.
- Avoid stepping in or soiling the suit with the patient's bodily fluids.



















# Transportation of Dr. Spencer to Bellevue Hospital



- Developed post-exposure monitoring protocol
  - FDNY Bureau of Health Services phone contacts each member who responded to check on fever and symptoms twice daily for 21 days
  - Share data with NYC DOHMH daily
- Case confirmation:
  - FDNY Fire Marshals work with US Customs to confirm Travel
  - FDNY OMA & BHS work with NYCDOHMH on EVD test results
- If breach during care of confirmed case
  - Quarantine protocol
    - In member's home
      - if member and family agrees and home is equipped
    - FDNY facility if member wishes or member's home situation ill-equipped

# FDNY Actions 2014 -> 2015

- FDNY prepares for worst case scenario
  - High FT call volume
- In October 2014 began purchasing additional PPE
- In November 2014 began accelerated training program for all EMS pre-hospital healthcare providers (EMTs & Paramedics)
  - Over 2,000 trained already
  - Only trained members, receive appropriate PPE ICE packages
  - Only EMS units with 2 trained members, will be able to treat
    - If call volume becomes excessive, & need more than HAZTAC to respond
    - If patient unstable and awaiting HAZTAC
- In February 2015 extend training to all Fire CFR

# **Practice Makes Perfect – Tabletops & Exercises**



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Officer's Corner (FIRE)

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Practical Ckills





Scenario -

Don't Forget the Flu Dwelling Operations



IMPORTANT MESSAGE FROM COMMISSIONER NIGRO AND CHIEF LEONARD

## **Full Scale Exercise Simulates EVD Transfer**

## Post-Exposure Protocol: Ebola Virus Disease

response to patients suspected or confirmed to have Ebola Virus Disease has been developed to provide guidance to our









Review: Worst Case

Halloween Tragedy



Review: 5g Single-Vial Cyanokit (Hydroxocobalamin)



November 02 - November 08

ODD IN REMEMBRANCE

DiamondPlate Monthly Archive

Procedures for the Isolation Kit (Non-Ebola Related Emergencies)

## **HOT LINKS**

Ferrara Aerial Ladder Pinch Point Propane Used During Suicide Fire Escape Landing Collapse Needlestick Update 2014 Indigenous Sharps High-Rise Commercial Class E Unit Fighting Wind Impacted Fires

## RECENT ACTIVITY

BKLYN 7-5 BOX 0650, 970 KENT AVE / DEKALB VE, 9 STY 75X260 OMD FIRE ON 7TH FLR, BN 57

## ALSO ON DIAMONDPLATE



Review: Importance of Prompt Followup to Complaints



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## Video: EVD Update from Commissioner Nigro

Published by: Office of Fire Commissioner

Updated: 10/28/2014 5:00 PM



The spread of the Ebola virus disease has the Department taking extra and preemptive steps. Safety is paramount and should be your highest priority.

## Full Scale Exercise to be Held Tonight to Simulate EVD Transfer Ebola Update from Commissioner Daniel A. Nigro and Chief of **Department Leonard**

Updated: 11/05/2014

To FDNY Members.

Tonight, FDNY members will take part in a Full Scale Exercise (FSE) to simulate a transfer of a suspected Ebola patient from Kings County Hospital in Brooklyn to Bellevue Hospital in Manhattan. The drill will include participation from FDNY HAZTAC and HAZMAT Units in full personal protective equipment, along with hospital staff and other city and state agencies, utilizing our latest EVD policy.

This important exercise is part of our ongoing process to refine and develop our protocols and will aid the Department in creating plans for each 911 approved fever/travel call-types receiving Emergency Departments

Once a hospital is approved by the City and State Departments of Health as being able to isolate and stabilize a suspected Ebola patient, FDNY adds that hospital's emergency department (ED) as a 911 approved fever/travel call-types receiving ED. This requires FDNY Hazmat and EMS officers visit hospital EDs to make certain that protocols for patient receiving are in place and that appropriate destination and decon areas are appropriately identified. Staten Island University Hospital North was recently added to Bellevue and Mount Sinai as a 911 approved fever/travel call-types receiving ED for patients suspected of having Ebola. This addresses a need in the

How to Become a NYC 911 Receiving Emergency Department for FT Suspected Ebola Virus Patient Multi-step Process:

- Step 1 Follow all NYS and NYC DOH Guidelines
- Step 2 Meet with FDNY EMS and FDNY HAZMAT to define Patient Drop Off location and Decon Location for EMS Crew
- Step 3 Tabletop Exercise with FDNY EMS & HAZMAT
- Step 4 Depending on Complexities, may benefit from a full-scale exercise with FDNY EMS and HAZMAT

# Lessons Learned-Summary

Take care of your people
They are your most precious resource
No Care without Safe Care

Thank You