Personal Protective Equipment

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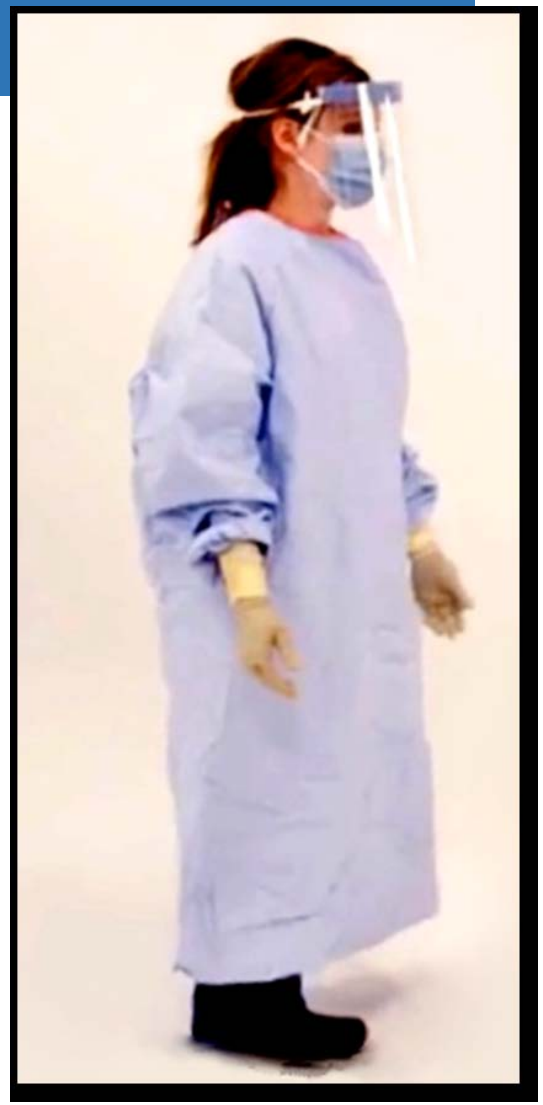
OBJECTIVES

- Define the CDC guidelines for Screening PPE for rule out Ebola patient.
- Describe an all hazards approach to Screening PPE in an Emergency Department.
- Compare different PPE ensembles for screening patients in an emergency department and demonstrate the donning/doffing techniques.
- Identify approaches to managing PPE breaches.

PPE Guidance

- *Clinically stable “dry” PUI for Ebola:
  - Fluid resistant gown (mid-calf) or coverall (no hood)
  - Full face shield
  - Facemask
  - Gloves with extended cuff, 2 pairs
- Designated don/doff areas separate from patient care
- ABHR during doffing



*https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html

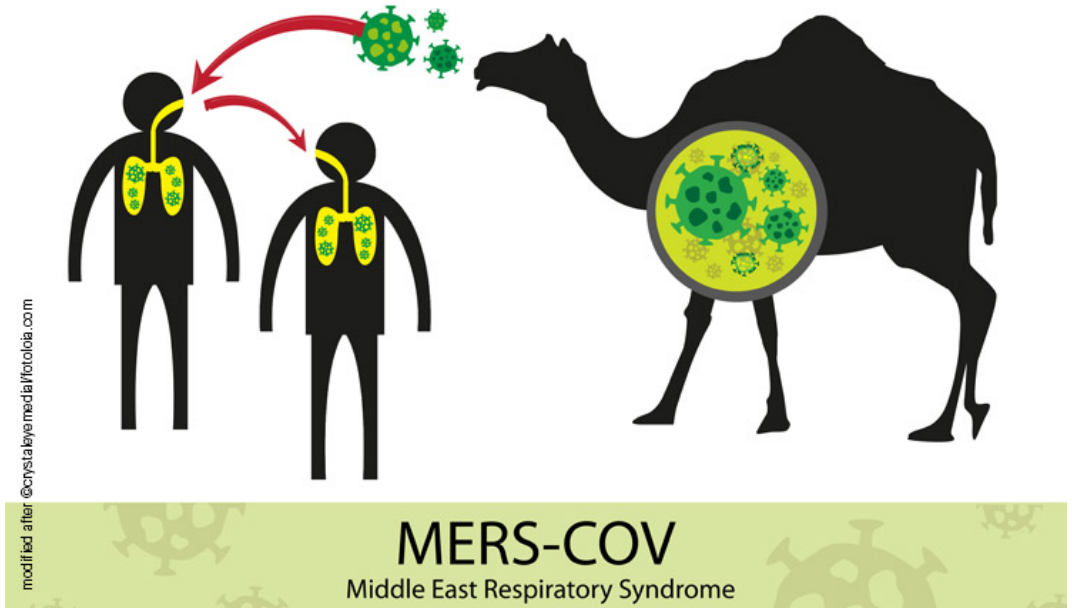
PPE Guidance

- *Confirmed Ebola or PUI for Ebola (clinically unstable or “wet”)
  - Fluid impermeable gown or coverall
  - PAPR w/hood or N95 w/surgical hood & full face shield
  - Extended cuff gloves, 2 pair
  - Disposable boot covers (mid-calf)
  - Disposable apron
- Designated don/doff areas
- Trained observer
  - Separate from doffing assistant
- Slow and deliberate process

*https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html

PPE Guidance

- *PPE for MERS:
  - Standard, Contact and Airborne precautions
    - Gloves
    - N95 or PAPR
    - Eye Protection (face shield/goggles with N95)
    - Airborne Infection Isolation (AII) room



*https://www.cdc.gov/coronavirus/mers/infection-prevention-control.html

PSHMC Screening PPE in a Bag

- All hazards approach
- Same PPE for Ebola/MERS
  - Change mask for N95
- 2 gallon Ziploc bag
  - PPE
- Cart/Bin
  - Additional supplies
  - Checklists
- 4 Hospitals/3 Urgent Care Clinics

PPE DEMO: PSHMC and HMC

Scenario 1: January 2020

- 46 y/o female arrives in your ED with the following symptoms: muscle aches, fatigue, fever 102 F (38.8 C). She reports that symptoms started in the morning. She had some coffee and then went back to bed. Around 1030 she developed an unproductive cough. She lives with her partner and 1 y/o child.

What are the initial steps for your front desk staff?

If your front desk staff ask about travel, what do they do with that information? Where does it live? Who does it go to?

- Influenza A strains are currently circulating in the community

Scenario 1: January 2020

- 46 y/o female arrives in your ED triage with the following symptoms: muscle aches, fatigue, fever 102 F (38.8 C). She reports that symptoms started in the morning. She had some coffee and then went back to bed. Around 1030 she developed an unproductive cough. She lives with her partner and 1 y/o child.

What are the initial steps of your triage RN?

If your triage RN ask about travel, what do they do with that information? Where does it live? Who does it go to? Do they know what countries are of current concern?

Scenario 1: January 2020

- 46 y/o female arrives in your ED triage with the following symptoms: muscle aches, fatigue, fever 102 F (38.8 C). She reports that symptoms started in the morning. She had some coffee and then went back to bed. Around 1030 she developed an unproductive cough. She lives with her partner and 1 y/o child.
- Patient was masked at initial contact with staff (front desk or triage).
- She was also asked about recent travel outside the US in 30 days and she said “no”.
- Patient spent 35 minutes in your waiting room before they were brought back to ED open bay.

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What PPE would your ED staff wear in this scenario?

Where do you put ED patients with respiratory symptoms?

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- ED MA comes and takes vitals and ED MD sees the patient within 5 minutes of arrival.
- Vitals are: 40.0 C, 108 HR, 108/74, 13
- Lab tests order were respiratory panel to rule out influenza and patient was started fluids
- Flu results came back with in 30 minutes and were negative.

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THEY WERE WHAT?

- ED MD goes back into see the patient and askes “I see you haven’t traveled anywhere in the past month, is that correct?” Patient replies: “Oh yes, I traveled to New York to visit my sister two weeks ago”

Measles

What you should know.

Tacoma-Pierce County Health Department
Healthy People in Healthy Communities

It's a serious viral infection.

Measles is very contagious and can be deadly.

It's still in the air 2 hours after an infected person leaves an area.

Protect your family.

The measles vaccine is safe and effective. Get your family immunized.

What to look for.

Measles starts with a fever, red eyes, cough and runny nose.

About 3 days later, a red rash starts on the face and spreads down the body.

Young children usually get the sickest and may need to go to the hospital.

If you think you or a family member has measles:

1. Call your healthcare provider right away.

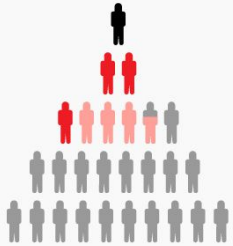
2. Your healthcare provider will tell you how to get care without exposing others.

3. Stay home and don't have visitors in your home.

For more information about measles, go to www.tpchd.org/measles.

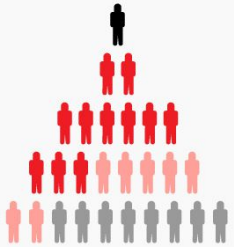
How contagious is a disease?

Scientists use "R naught," or R0, to estimate how many other people one sick person is likely to infect

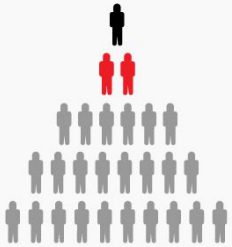


ZIKA
3-6.6

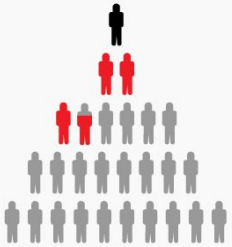
*An early estimate based on the Colombia outbreak in 2015



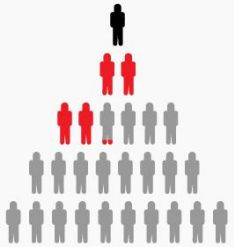
MEASLES
11-18



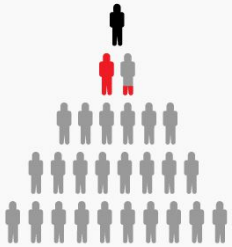
EBOLA
2



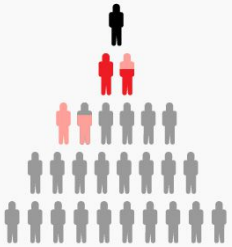
HIV
3.6-3.7



CHIKUNGUNYA
4.1



SEASONAL FLU
1.3



NOROVIRUS
1.6-3.7

*An estimate based on Réunion Island in 2006

SOURCES: Travel Medicine, PLOS One, JAMA Pediatrics, MDPI, NCBI, New England Journal of Medicine, "The Spread and Control of Norovirus Outbreaks Among Hospitals in a Region"

Vox

Scenario 2: Lets apply this case to Ebola

- 46 y/o female arrives in your ED triage with the following symptoms: muscle aches, fatigue, fever 102 F (38.8 C). She reports that symptoms started in the morning. She had some coffee and then went back to bed. Around 1030 she developed an unproductive cough. She lives with her partner and 1 y/o child.
- What does your front desk/triage do?
- If the first person asks about travel, what do they do with that information? How do they know its an area of concern?
- Lets say its flagged for DRC. What happens then? What is your facility plan?

HMC Management Guidelines for a Patient Reporting or Presenting with a Fever and Rash

PROCEDURE:

I. Pathway 1: Patient symptoms are known to staff prior to arrival

The following precautions must be taken:

1. If possible, schedule the patient at the end of the day or per clinic a time in which there is the least amount of patients. Instruct patient to limit their exposure to areas outside their home and clinic.
2. If the patient cannot be seen in clinic and is referred to another location (e.g. primary care or ED) notify the location **before** sending the patient. Patients must wear a mask during transport.
3. Designate a location to meet patient prior to entering the facility. This area is determined by each clinic. Ideally, it is a back entrance and/or pathway that have least amount of risk of exposure to others. This would be considered the "safe pathway to clinic entry".* Give them a phone number them at the pre-determined location.
4. Clinic staff will meet the patient at pre-determined location will escort patient to clinic area and place them directly to e door closed. Again, pathway to room must have least amou closest to entry into clinic). This would be considered "safe
5. Patient should be placed in **Airborne Respiratory/Contac**
   a. If your clinic does not have a negative pressure roo
   b. Staff entering the room must have documented imr
   c. Staff should wear the following PPE: Gown, Gloves tested, staff should wear a mask with eye shield.
6. Mask anyone that may be accompanying patient. Have the evaluation.
7. Notify HMC Infection Prevention & Control immediately (20

* Safe pathway can be determined in consultation with HMC Infecti

II. Pathway 2: Patient is unknown to staff

Patient presents to front desk with any positive symptom screen + visible rash or patient report of rash.

1. Front desk to immediately mask patient and seat patient in an area that is away from other patients (e.g. ideally, at least 30 ft from others). If a surgical mask can't be tolerated use other means of containment, e.g. place a blanket loosely over the head of infants or young children if they are in the waiting room or other common area.
2. Front desk will notify clinical staff.
3. Clinic staff should immediately meet patient out in designated area masked and assess patient for infectious pathogen (e.g. measles). If this area is not conducive to patient privacy, take patient back to private room via "safe pathway to clinic room".
4. If measles is suspected, clinic staff should follow their "safe pathway to clinic room" procedure to minimize risk to others in the area.
5. Patient should be placed in **Airborne Respiratory/Contact Precautions**: Enter only if immune.
   a. If your clinic does not have a negative pressure room, a private room with door closed is appropriate.
   b. Staff entering the room must have documented immunity to measles and varicella.
   c. Staff should wear the following PPE: Gown, Gloves, fit-tested N95. If an N95 is not available, or staff not fit-tested, staff should wear a mask with eye shield.
6. Consider masking anyone that may be accompanying the patient.
7. Notify HMC Infection Prevention & Control immediately (206-744-9560)

ED Front Desk Triage: Patients Suspected of highly infectious diseases

Step 1: Identify	*Symptoms:* ☐ High Fever and Rash → Yes Proceed to Step 2. ☐ High fever and any combination of the following: cough, runny nose, red watery eyes → Yes. Proceed to step 2 *Travel:* Where has the patient been within the last month? ☐ Area where there is an outbreak of measles? Yes, proceed to step 2 ☐ Area where there is an outbreak of Special Pathogen? Yes, proceed to step 2. ☐ Unsure? Check HMC IPC Situational Reports
Step 2: Isolate	Mask patient, covering nose and mouth Move patient to a private room, if possible with negative pressure • ED- Consider Family Room until Iso room is available. Get the patient to a private area ASAP, do no leave in communal areas
Step 3: Inform	*If measles or other special pathogens of concern is suspected:* ☐ Contact HMC Infection Prevention and Control 206-744-9560 (24/7/365) immediately ☐ Review DOH Measles Triage form o Consult with ED provider regarding suspected measles case o Contact Public Health Seattle & King County 206-296-4774 (24/7/365) for discussion regarding approval for testing

Infection Prevention and Control (IP&C) Special Pathogen Action Plan: Internal Department Plan

For any suspected cases: IP&C should be paged via the Paging Operator 206-744-3000 and request: "Please page Infection Control to this number" or Pages directly at 206-663-8872.

The following checklist should be used if paged from staff about a potential rule out/suspected Special Pathogen patient:

1. Identify where patient is placed (ED or Clinic):
   - Patient has been placed in private room.
   - If possible, obtain:
     - Pt name and H number.
     - Obtain name of attending and contact number to relay to Tim/John.
     - Obtain name of point of contact (if different than attending).
   - Reassure staff that you will be activating the Special Pathogen Team.
   - That all staff remain calm. Nothing is an emergency.

2. **CALL** John [redacted] Tim [redacted] Chloe [redacted] Immediately with as much information from above. John and/or Tim will contact Attending and evaluate clinical definition and confirm probable diagnosis.

3. **Notify** IPC Team via TIGERTEXT

4. If John/Tim, deem appropriate will then activate the rest of the EVD team by calling the paging operator at **206-744-3000** and ask **"Activate Special Pathogen Team"**. Text should read: "HMC Special Pathogen Team ACTIVATED. CALL CONFERENCE LINE AT (FILL IN TIME) FOR ROLE CALL 1[redacted] OR 1[redacted] PASSCODE[redacted]

   *Make sure you designate a time on text, perhaps 5-10 minutes from the time the page goes out.

   *By doing this all departments that are identified by Incident Command are notified.

   ROLE CALL

Security Services	Emergency Department	ICU RN Managers
AOC	PCS Admin	Medical Director
Supply Chain	EVS	Respiratory Therapy
Surgical Services	Engineering	Nursing Supervisor /Pt Placement
Food and Nutrition Services	Patient Liaisons	Communications
Laboratory Medicine/ Lab Med Resident On Call	Pathology	IP&C
Social Work	Triage Hospitalist On Call	Anyone else?

5. John/Tim Notifies:
   - ☐ Public Health 206-296-4774

IDENTIFY, ISOLATE, INFORM

- How do you identify?
- How do you isolate?
- Who do you inform?
- Who is trained? Maintenance of training?

- What about the clinics?

PPE Breaches

- Coverall/Hood Breach:
  - “One wipe/one swipe” method
  - Mark area with tape
  - ABHR-doff gloves-ABHR-don gloves
- Inner glove Breach:
  - ABHR-doff gloves-ABHR-don gloves
  - Finish doffing
  - Occupational exposure protocols
- Boot Covers Breach:
  - Decontaminate and change in room

Lessons Learned

- Symptom survey: GET A MASK
- Excellent IPC foundations is KEY
- What is your institution plan and how will it be maintained?
- PPE Preparedness:
  - Expiration and Expense
  - Use what you got
  - Maintain competencies