



# UTSW/BioTel EMS ALERT

July 7, 2015

## EMS ALERT 15-003

### Middle East Respiratory Syndrome (MERS) Health Alert

#### Purpose:

To set forth for UTSW/BioTel EMS Providers current information about the ongoing international outbreak of Middle East Respiratory Syndrome (MERS).

#### Background:

1. MERS is an acute respiratory illness caused by a Coronavirus (MERS-CoV). The virus spreads from ill persons through unprotected **close contact** with respiratory secretions (e.g. caring for or living with an infected person). It is **NOT** spread through casual contact.
2. Since first reported in 2012, all cases worldwide have been directly or indirectly linked to travel to or residence in countries in the Arabian Peninsula (especially Saudi Arabia); there were 2 cases in the U.S. in 2014. About 35% of patients reported with MERS have died.
3. As of June 30, the Republic of Korea ("South Korea") has confirmed 181 MERS cases, including 33 deaths (the largest known MERS outbreak outside the Arabian Peninsula). Over 13,000 persons have completed quarantine; 8% of cases were healthcare providers.
4. This outbreak and ongoing global travel emphasize the continued risk of MERS-CoV spread to the United States, including the Dallas-Fort Worth region.
5. *EMS providers should be aware of how to identify this disease and how to prepare for its potential arrival.*
  - a. The CDC is closely monitoring the situation to better understand this virus.
  - b. New information presented in this EMS Alert may change, as the situation evolves.

#### Critical Points:

1. All EMS Providers shall at all times adhere to all UTSW/BioTel EMS System Guidelines and agency recommendations for Respiratory Hygiene, Cough Etiquette and the prevention of transmission of MERS-CoV and other communicable diseases:
  - a. General infection control guidelines are summarized on page 2 of this Alert.
  - b. Specific EMS Infection Control, PPE and Decontamination Guidelines may be found on page 3, in the [CDC PPE Poster](#) attached to this Alert, and at the [CDC web site](#).
  - c. *New guidance will be provided to the UTSW/BioTel EMS System, when available.*
2. **EMS Providers shall continue to routinely ask their patients about their travel history and healthcare facility exposure**, and to consider the possibility of MERS-CoV infection in patients meeting criteria (see p.2) for a "Patient Under Investigation" (PUI).
3. **For any patient meeting criteria as a possible MERS PUI, EMS Providers shall:**
  - a. Utilize stringent Standard, Contact and Airborne isolation precautions; and
  - b. Transport the patient to the receiving hospital's Emergency Department; and
  - c. **Notify [BioTel](#) AND [Emergency Department personnel](#) of the possibility of MERS.**

### **Clinical Presentation (Patient History, Signs, and Symptoms):**

1. All known cases have been related directly either to the Arabian Peninsula, to travel to that region, or to exposure via close contact with an infected person or in a healthcare facility.
2. The incubation period is typically 5 days (range 2 to 14 days).
3. Most patients with MERS experience fever, headache, cough and shortness of breath.
  - a. Other symptoms include: sore throat, diarrhea, nausea and vomiting.
4. Rapid progression to pneumonia and severe, acute respiratory illness within a week of illness onset can occur, particularly in patients with underlying medical conditions.

### **Diagnosis and Treatment:**

1. Diagnostic confirmation requires special tests performed on patient respiratory and blood samples obtained at the hospital and submitted to the Dallas County Health and Human Services (DCHHS) laboratory.
2. There is no specific treatment or vaccine for MERS; treatment consists of supportive and symptomatic measures.

### **CRITICAL EMS SCREENING, TRANSPORT and NOTIFICATION INFORMATION:**

1. These are the MERS-CoV PUI screening criteria. Patients may fall into one of two groups:
  - a. Fever **AND** acute respiratory illness symptoms (e.g. cough and shortness of breath) **AND ANY** of the following:
    - i. History of travel from countries in or near the Arabian Peninsula within 14 days before symptom onset *{Includes Bahrain; Iraq; Iran; Israel, West Bank and Gaza; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; United Arab Emirates; Yemen}*; **OR**
    - ii. Close contact with a traveler who developed fever and acute respiratory symptoms within 14 days of travel from a country in or near the Arabian Peninsula; **OR**
    - iii. History of being in a healthcare facility (as a patient, worker or visitor) in the Republic of Korea ("South Korea") within 14 days of symptom onset; **OR**
  - b. Fever **OR** respiratory symptoms, **AND** close contact with a *confirmed* MERS patient while the patient was ill.
2. **Any** patient meeting PUI screening criteria listed above should be evaluated, transported to a hospital Emergency Department, **and reported to BioTel, preferably before hospital arrival**. BioTel will inform Dallas County Health and Human Services at 214-677-7899. DCHHS will follow-up with the hospital regarding the outcome of their clinical evaluation.

### **General Infection Control and Prevention Measures:**

1. Use rigorous hand hygiene, washing hands before and after EVERY patient contact for at least 20 seconds with soap and water or alcohol-based hand gel.
2. Avoid touching eyes, nose and mouth with unwashed hands.
3. Avoid close contact (e.g. kissing, hugging, or sharing cups/eating utensils) with persons who are experiencing respiratory symptoms or fever.
4. Cover coughs and sneezes with a tissue or shirt sleeve, not your hands. Immediately discard a used tissue in the trash.
5. Clean and disinfect frequently-touched surfaces especially in areas where ill persons have come into contact. Examples include: ambulance steering wheel, door handles, stretcher rails, and jumpseat; stethoscope and other medical equipment; and computer keyboards.
6. When ill, try to avoid public places and travel, and stay home, if possible.

**EMS PPE and Infection Control Measures – *These are the same as those used for known or suspected cases of Tuberculosis, measles and other respiratory illnesses:***

1. Standard, Contact and Airborne Precautions shall be used for contact with **all** patients with fever, acute respiratory symptoms, and possible MERS-CoV infection (according to PUI screening criteria on p. 2). This includes at least the following items:
  - a. Disposable gown (fluid-impermeable);
  - b. Respiratory protection (N95 respirator);
  - c. Eye protection (disposable face shield or clean reusable goggles);
  - d. Clean non-sterile gloves (double-gloving is not required).
2. Implement source-control:
  - a. Standard surgical mask for the patient, if tolerated, until placement in an Airborne Isolation Room is possible;
  - b. For mildly ill patients requiring supplemental oxygen, nasal cannula oxygen, plus a standard surgical mask;
  - c. For severely ill patients, a non-rebreather mask with 100% oxygen or advanced airway management may be needed:
    - i. Special caution should be used during aerosol-generating procedures, such as airway suctioning and advanced airway placement.
3. Proper removal (doffing) of PPE – Refer to the attached [CDC PPE Poster](#) on pages 4-6:
  - a. **CRITICAL CONCEPT:** Do **NOT** contaminate your clothing, skin, or mucous membranes – especially your eyes, nose or mouth. If hands become contaminated at any step of PPE removal, immediately wash them or use alcohol-based sanitizer.
4. Rigorous hand hygiene immediately after removing PPE.
5. Standard cleaning and disinfection procedures of ambulance surfaces and equipment, as well as routine management of laundry and medical waste.

**SUMMARY:**

1. As of July 6, there are no confirmed or suspected MERS cases in the DFW area.
2. Global travel, however, increases the likelihood of spread of MERS-CoV to this region.
3. EMS Providers must remain vigilant, obtain an accurate travel history for all patients, and adhere to stringent infection control and prevention guidelines to protect themselves, their coworkers, other healthcare providers, and their family/loved ones.
4. Any patient who meets MERS PUI criteria must be reported to BioTel and to the E.D. staff.

**Resources (accessed July 7, 2015):**

1. [UTSW/BioTel EMS Alert 15-003 MERS \(html\)](#)
2. [UTSW/BioTel EMS Alert 15-003 MERS PowerPoint \(pdf\)](#)
3. [UTSW/BioTel EMS Guidelines for Therapy](#)
4. [UTSW/BioTel EMS System Training Bulletin 14-008 Decontamination](#)
5. [CDC MERS Index Page](#)
  - a. [CDC MERS Healthcare Professionals Information](#)
  - b. [CDC Interim Infection Prevention and Control Recommendations for Hospitalized Patients with Middle East Respiratory Syndrome Coronavirus \(MERS-CoV\)](#)
  - c. [CDC MERS Case Definitions](#)
6. [CDC PPE Sequence Poster – 10/2014 \(pdf\)](#) also available [here](#)

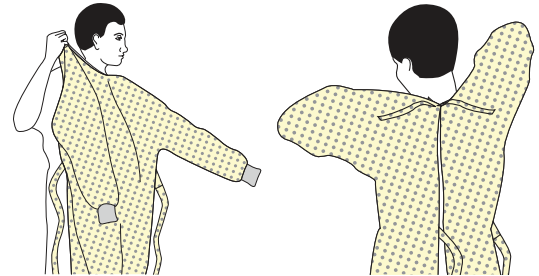
➤ **UTSW/BioTel EMS Providers may contact BioTel at any time with questions or concerns**

# SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

## 1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



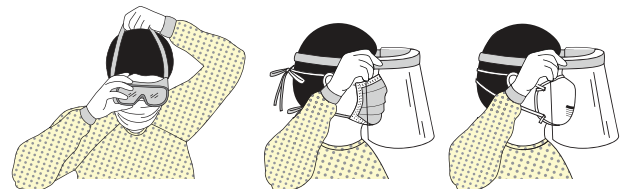
## 2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



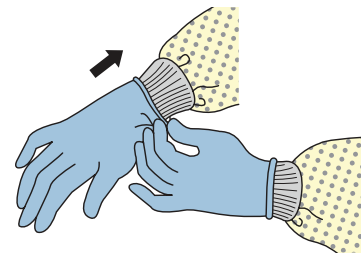
## 3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



## 4. GLOVES

- Extend to cover wrist of isolation gown



## USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



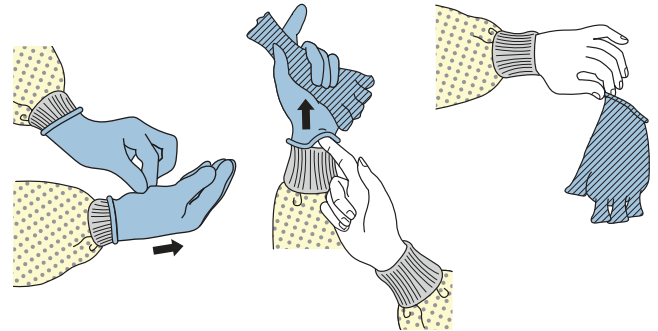
# HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)

## EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

### 1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



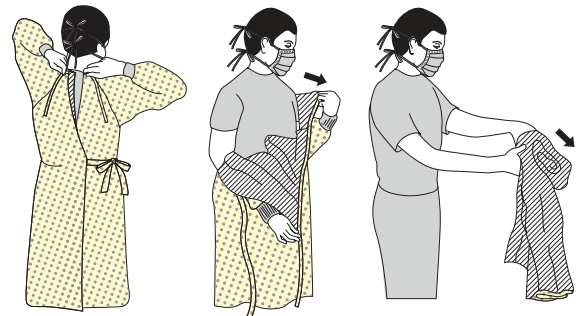
### 2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container



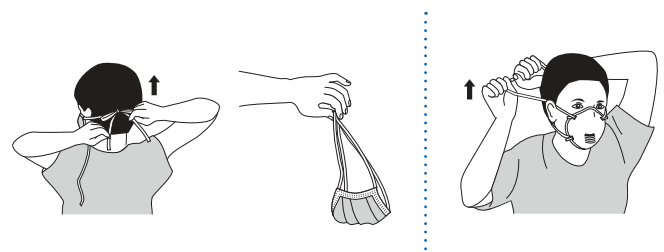
### 3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

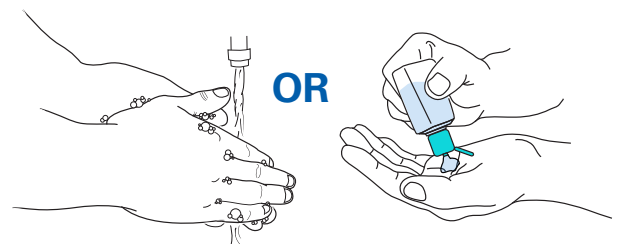


### 4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — **DO NOT TOUCH!**
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



### 5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE**

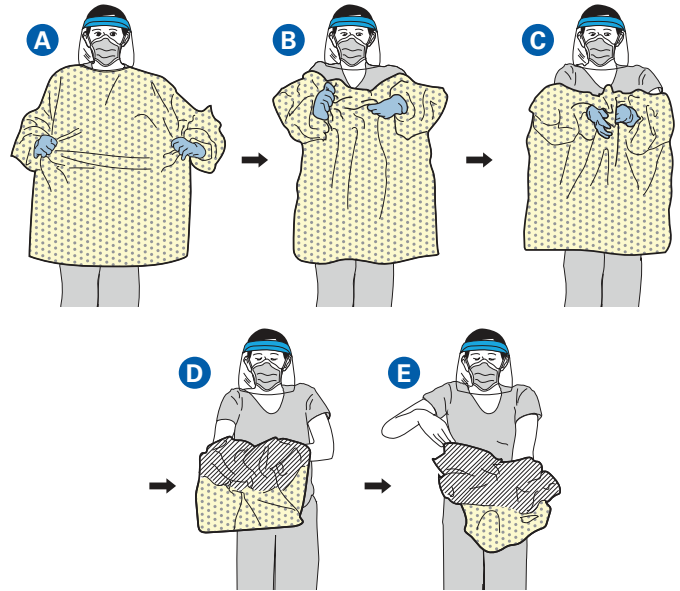


# HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

## 1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container



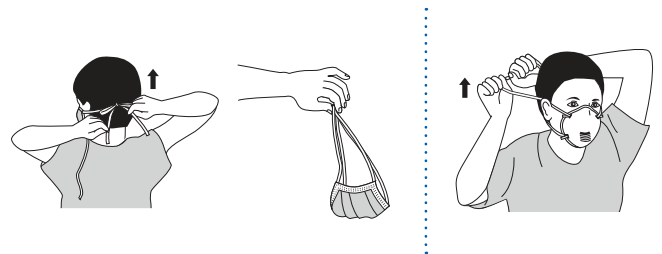
## 2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

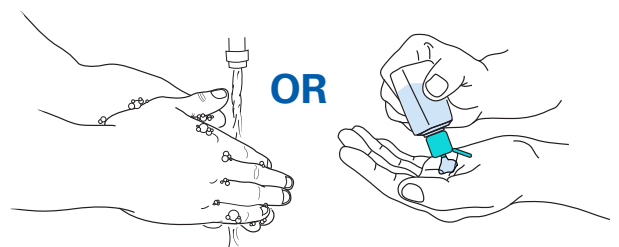


## 3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



## 4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE**

