

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-CoV) UPDATE

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Presentation Objective

- Explain the epidemiology of recent novel coronavirus activity

Outline

- Background and current data
- Guidance changes in the US
- Reminders for when you receive MERS inquiries

BACKGROUND AND CURRENT DATA

MERS Disease

- Etiologic agent: Novel (beta) coronavirus (MERS-CoV)
- Reservoir: camels likely
- Transmission: not fully understood
 - Direct or indirect contact with camels
 - Close contact with infected persons
- Incubation period: 2-14 days (median: 5.5-6.5 days)
- Clinical spectrum: asymptomatic/mild to severe
- Symptoms: Fever, cough, SOB; pneumonia is common, but not always present; possibly GI symptoms
- Higher risk of severe disease:
 - Older individuals
 - Those with chronic disease (e.g., diabetes, chronic lung disease)
 - Immunocompromised

MERS Data Overview

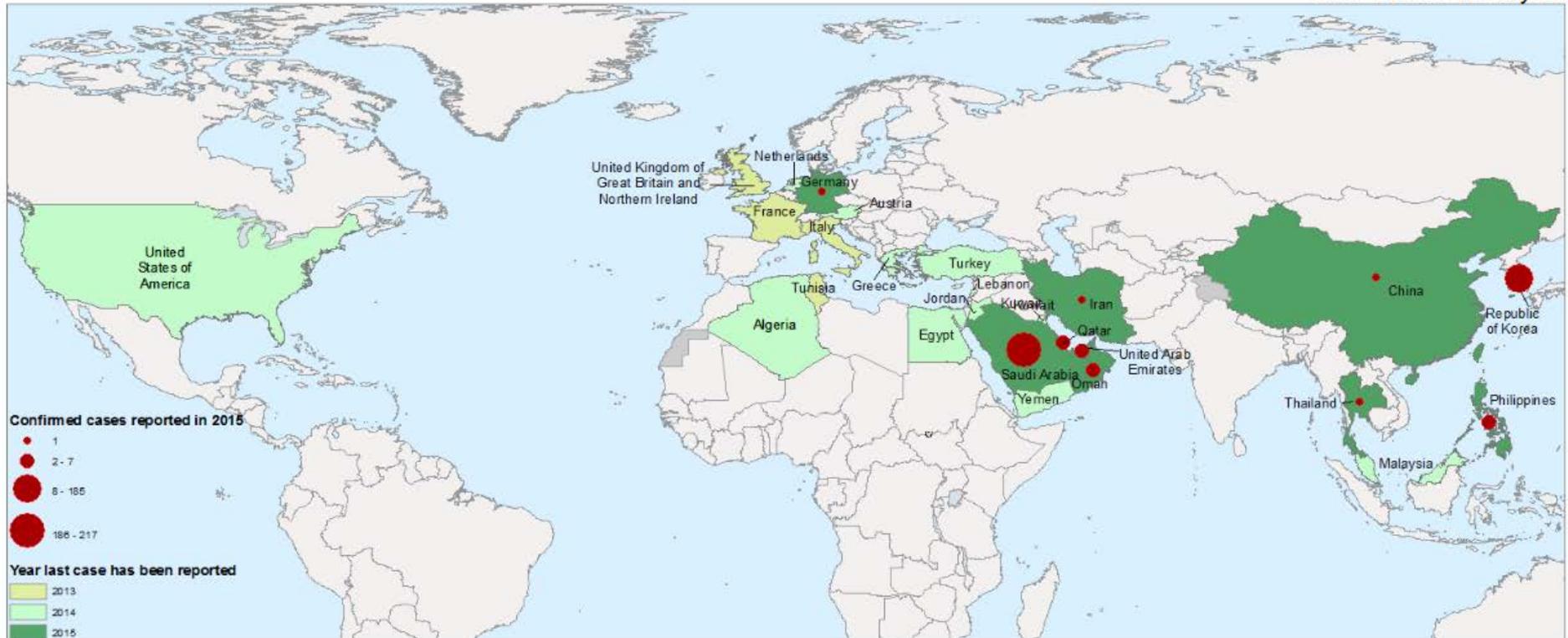
- First known case in 2012
- Global cases: 1,368*
 - Deaths: 489* (35.5%)
 - 65% male**
 - Median age: 50 years (range: 9 mo–99 yr)**
- Clusters in families, healthcare settings
- 26 countries have reported cases
 - >85% in Kingdom of Saudi Arabia (KSA)

*As of 7/10/15; source: WHO

**7/7/15 WHO Risk Assessment

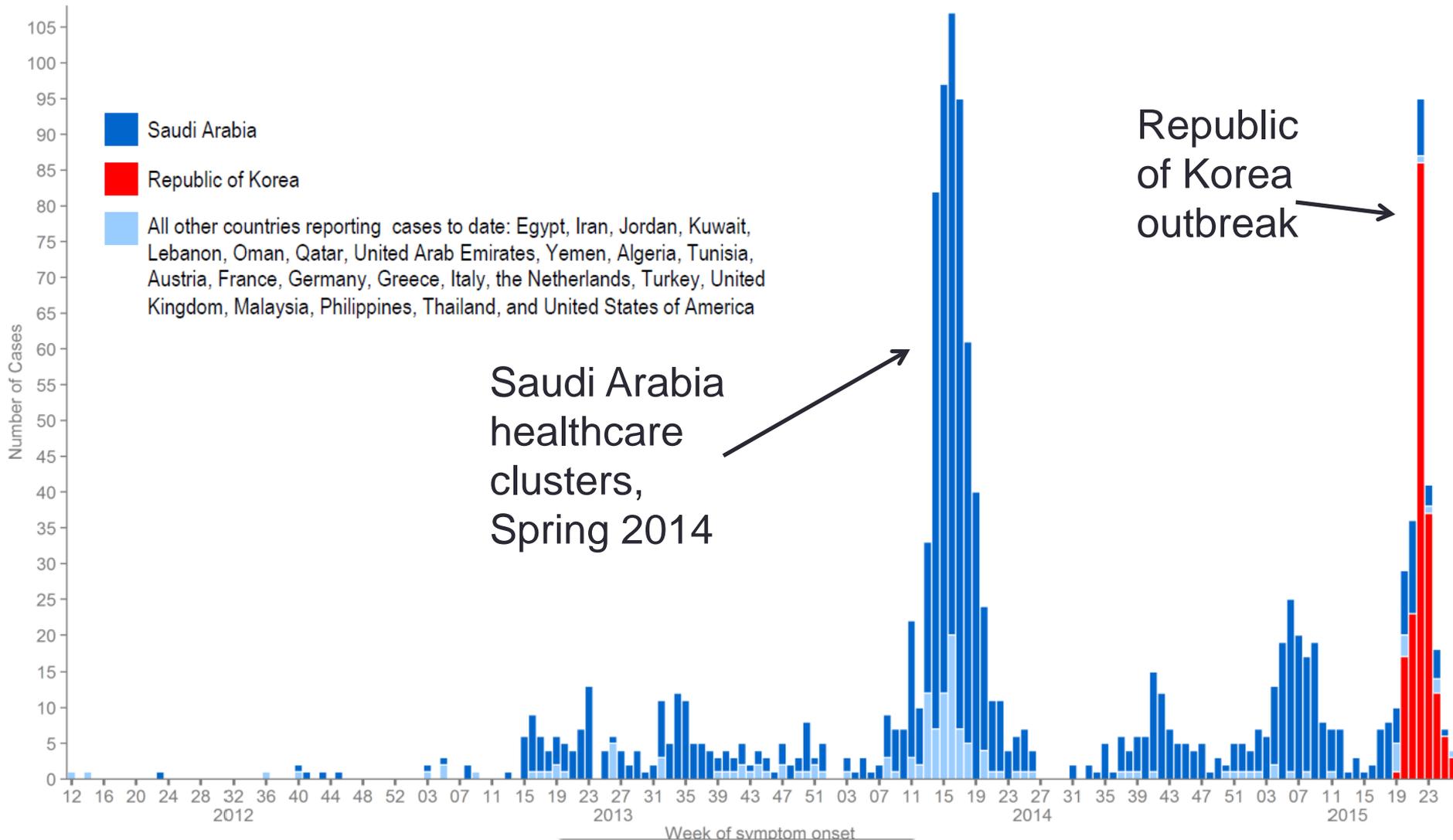
CONFIRMED CASES OF MIDDLE EAST RESPIRATORY SYNDROME - CORONAVIRUS 2012 - 2015

MAP DATE: 15 July 2015



- Countries in or near the Arabian Peninsula with MERS cases: Iran, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, UAE, Yemen
- Travel-associated MERS cases: Algeria, Austria, China, Egypt, France, Germany, Greece, Italy, Malaysia, Netherlands, Philippines, Republic of Korea, Thailand, Tunisia, Turkey, UK, USA

Epidemic curve of MERS-CoV cases (as of 7/7/15)



Source: http://www.who.int/csr/disease/coronavirus_infections/maps-epicurves/en/

Outbreak in the Republic of Korea

- Index case:
 - 68yo national of Republic of Korea with recent travel to Middle East (infection source??)
 - Traveled home 5/4/15 (asymptomatic)
 - Onset on 5/11/15; sought care at 2 hospitals and 2 outpatient clinics
- China reported first travel-associated MERS case on May 29
 - 44yo business traveler, close contact to confirmed cases in South Korea, traveled to/in China while symptomatic
- To date, all cases linked to a single chain of transmission and associated with health care facilities

Outbreak in the Republic of Korea

- Contributing factors:
 - Crowded environments in EDs
 - Insufficient infection control in healthcare facilities
 - Practice of “doctor shopping”
 - “Custom” of having many friends and family members accompanying or visiting patients and providing care for patients
 - Possibly fomite transmission

Republic of Korea: Data Summary

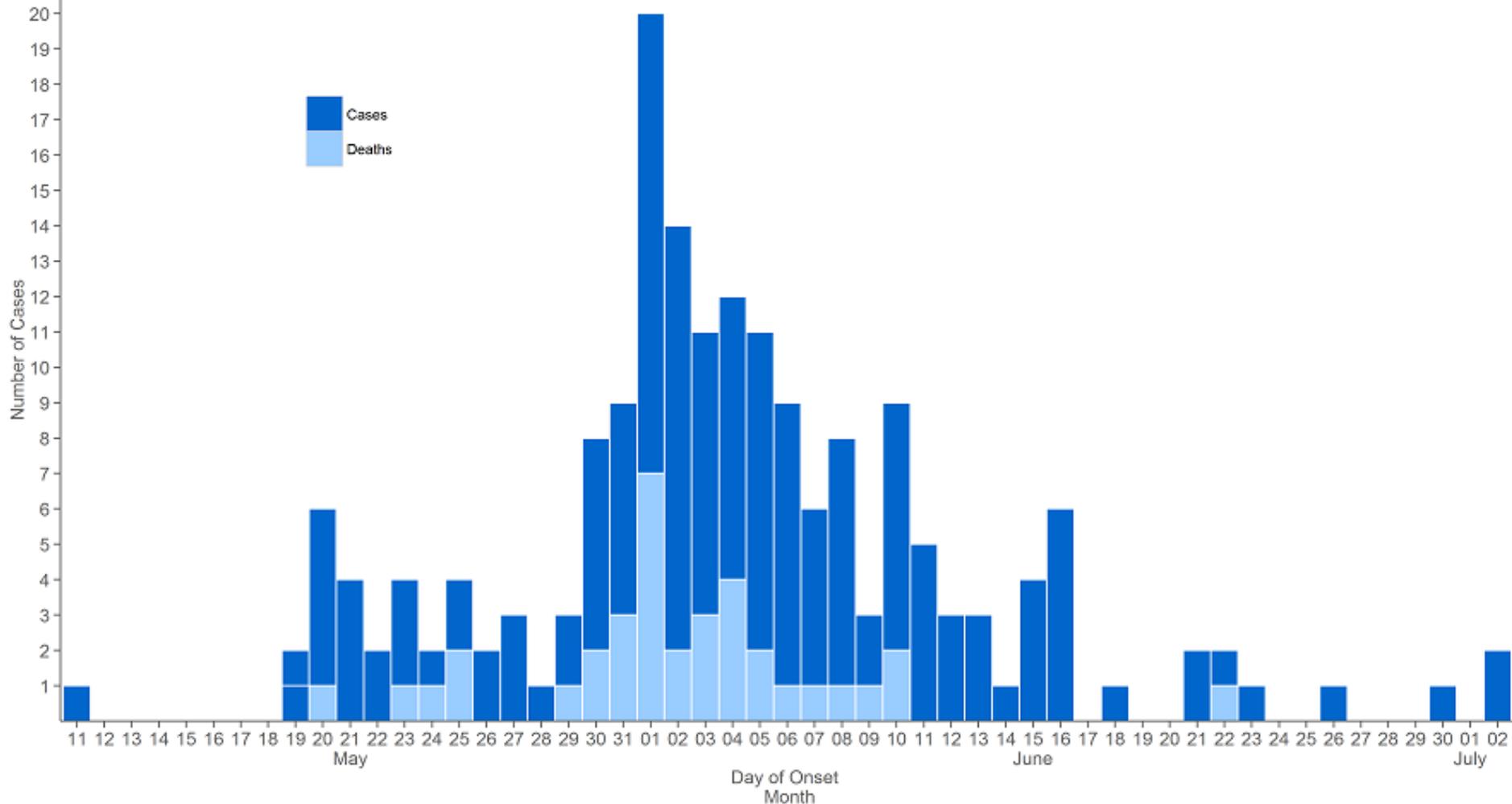
- Cases: 186 (includes China case)[†]
 - Deaths: 36[†] (19.4%)
 - Median age of cases: 55 years (16-87 years) [†]
 - Sex of cases: 59% men[†]
 - Cases in HCWs: 26/169 (15.4%) [†]
 - Latest onset: 7/2/15
- Contacts being monitored: 322[†]
 - Contacts who have completed monitoring: 16,368[†]
- Clustered around healthcare facilities
 - 98 facilities where confirmed MERS patients were exposed and/or treated before they were isolated
- No evidence of virus circulation in the community
- No significant changes to the virus

[†]Source: WHO 7/15/15 MERS in Korea page

*Source: www.mers.go.kr

Confirmed cases of MERS-CoV in the Republic of Korea and China

Reported to WHO as of 13 Jul 2015 (n=186)



Please note that the underlying data is subject to change as the investigations around cases are ongoing. Onset date estimated if not available. Source: WHO

Source: http://www.who.int/csr/disease/coronavirus_infections/maps-epicurves/en/

RECENT GUIDANCE CHANGES - USA

Recent Guidance Changes

- CDC HAN-0380 (6/11/15): “Updated Information and Guidelines for Evaluation of Patients for Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infection”
- DSHS MERS emails to Regional ERTs on 6/5/15 and 6/11/15
- Updates/changes:
 - Patient Under Investigation (PUI) definition
 - PUI investigation form
 - Infection control guidance

Changes to Patient Under Investigation (PUI) Definition – Slide 1

- PUI definition based on clinical features and epidemiologic risk:

Clinical Features		Epidemiologic Risk
<p>Severe illness Fever <i>and</i> pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence)</p> <p>Red text = new/change</p>	and	<p>A history of travel from countries in or near the Arabian Peninsula¹ within 14 days before symptom onset, <i>or</i> close contact² with a symptomatic traveler who developed fever and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula¹.</p> <p>– <i>or</i> –</p> <p>A history of being in a healthcare facility (as a patient, worker, or visitor) in the Republic of Korea within 14 days before symptom onset.</p> <p>– <i>or</i> –</p> <p>A member of a cluster of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) of unknown etiology in which MERS-CoV is being evaluated, in consultation with state and local health departments in the US.</p>

Changes to Patient Under Investigation (PUI) Definition – Slide 2

Clinical Features		Epidemiologic Risk
Milder illness Fever <i>and</i> symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	and	A history of being in a healthcare facility (as a patient, worker, or visitor) within 14 days before symptom onset in a country or territory in or near the Arabian Peninsula in which recent healthcare-associated cases of MERS have been identified.
Fever <i>or</i> symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	and	Close contact ² with a confirmed MERS case while the case was ill.

<http://www.cdc.gov/coronavirus/mers/case-def.html>

PUI Caveats

- “The above [PUI] criteria serve as **guidance** for testing; however, patients should be evaluated and discussed with public health departments on a case-by-case basis if their clinical presentation or exposure history is equivocal (e.g., uncertain history of health care exposure).”
- When evaluating a patient, consider the following:
 - PUI definition will not detect all cases
 - Maybe milder illness with younger, healthier patients
 - MERS-CoV not fully understood

Changes to PUI Case Form

- Changes:
 - Addition of “South Korea” to exposure questions
- Reminders:
 - Complete and submit PUI form for any patient who is/will be tested for MERS

Infection Control Guidance Changes

- No major changes
- Recommendations more detailed, expanded
- Reorganized, reformatted
- New headings:
 - **Minimize Chance for Exposures - New**
 - Ensure Adherence to Standard, Contact and Airborne Precautions
 - Additions: PPE training, removal sequence; more extensive PPE descriptions
 - Manage Visitor Access and Movement Within the Facility
 - **Implement Engineering Controls - New**
 - Monitor and Manage Ill and Exposed Healthcare Personnel
 - Additions: Sick leave policies; availability of consultation, treatment for staff
 - **Train and Educate Healthcare Personnel - New**
 - Implement Environmental Infection Control
 - **Establish Reporting within Hospitals and to Public Health Authorities - New**

REMINDERS

If You Receive a MERS Inquiry

- Verify that appropriate infection control measures are in place
 - Healthcare facility should keep a log of close contacts, visitors, HCP
- Is the patient a PUI or otherwise suspicious for MERS?
 - Symptoms? Differential diagnosis? Any testing done?
 - Exposures?
 - Travel (locations and dates)
 - Healthcare facilities (any type)
 - Contact with known or suspected MERS cases
- Collect specimens for testing, if indicated
- LHDs/RHDs should work with providers to evaluate patients for testing
 - Please notify the Region and DSHS Austin of patients under evaluation
 - In addition to Region, DSHS Austin can assist with decisions, coordination
 - Primary DSHS Austin MERS contacts: Lesley Brannan (512-776-6354), Johnathan Ledbetter (512-776-6223)

Use PUI
short form
to collect
info

Specimen Collection/Testing

- Collect multiple specimens from different sites at different times after symptom onset
- Collect ALL 3 of these types:
 - **Lower respiratory (sputum, BAL, or tracheal aspirate)**
 - Upper respiratory (NP and OP swab)
 - Serum
- Collect specimens as close to onset as possible
 - If >14 days since onset, recommended specimens and testing types depend on whether the patient is still symptomatic
- Texas PHL labs that perform PCR test for MERS-CoV:
 - DSHS Austin
 - Dallas LRN
 - Houston LRN
- <http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>

Questions?

MERS-CoV

Middle East respiratory syndrome coronavirus



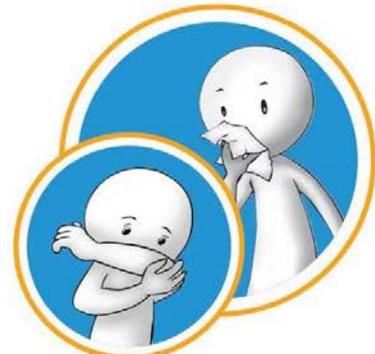
Consult a health worker if you have fever (38 °C or higher), cough or difficulty breathing. Inform them of your recent travel history



Avoid close contact with people if you are sick



Wash your hands regularly with soap and water and maintain good personal hygiene



Cover your mouth and nose with a tissue or your sleeve when coughing or sneezing