CURRENT SITUATION

- There has been a recent increase in the number of reported cases of MERS-CoV (previously known as Novel Coronavirus). More information on MERS-CoV is available on the CDC website at: http://www.cdc.gov/coronavirus/mers/index.html
- There have been no cases of MERS-CoV identified in the United States.
- Overall the epidemiology of MERS-CoV for known cases indicates a 50% mortality rate, male predominance in cases, median age of 56 with 2 known pediatric cases and most cases reported with co-morbidities.

BACKGROUND:
In September 2012, the World Health Organization announced the discovery of a novel coronavirus in an individual who died with an acute respiratory distress syndrome in Saudi Arabia, now called Middle East Respiratory Syndrome Coronavirus (MERS-CoV). This particular strain of coronavirus has not been previously identified in humans. There is very limited information on transmission, severity and clinical impact with only a small number of cases reported thus far.

CURRENT RECOMMENDATIONS:
1. SURVEILLANCE AND REPORTING
The Centers for Disease Control and Prevention (CDC) is recommending surveillance and testing for individuals who have unexplained severe respiratory illness and history of travel to countries in the Arabian Peninsula or neighboring countries*.

Patients who should be evaluated for MERS-CoV infection:

- an acute respiratory infection, which may include fever (≥ 38°C , 100.4°F) and cough; AND
- suspicion of pulmonary parenchymal disease (e.g., pneumonia or acute respiratory distress syndrome based on clinical or radiological evidence of consolidation); AND
- history of travel from the Arabian Peninsula or neighboring countries* within 14 days; AND
- not already explained by any other infection or etiology, including all clinically indicated tests for community-acquired pneumonia** according to local management guidelines.
In addition, the following people may be considered for evaluation for MERS-CoV infection:

- People who develop severe acute lower respiratory illness of known etiology within 14 days after travel from the Arabian Peninsula or neighboring countries* but do not respond to appropriate therapy; OR
- People who develop severe acute lower respiratory illness who are close contacts of a symptomatic traveler who developed fever and acute respiratory illness within 14 days after travel from the Arabian Peninsula or neighboring countries*.

Close contact is defined as:

- Any person who provided care for the patient, including a healthcare worker or family member, or had similarly close physical contact.
- Any person who stayed at the same place (e.g. lived with, visited) as the patient while the patient was ill.

*Arabian Peninsula or neighboring countries include: Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Palestinian territories, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates, and Yemen.

If you have a suspect case of MERS-CoV, contact Contra Costa Public Health Communicable Disease Programs immediately at 925-313-6740.

2. LABORATORY TESTING

The CDPH Viral and Rickettsial Disease Laboratory (VRDL) will provide initial screening tests for MERS-CoV. Specimens submitted to Contra Costa Public Health Lab will be forwarded to CDPH VRDL.

Interim Guidelines for Collection, Processing and Transport of Clinical Specimens from Patients under Investigation for MERS-CoV


Specimen Type and Priority To date, little is known about pathogenic potential and transmission dynamics of the MERS-CoV. To increase the likelihood of detecting infection, it is recommended to collect multiple specimens from different sites at different times after symptom onset, if possible. Consider lower respiratory tract and stool specimens a priority for collection and testing.

General Guidelines For short periods (≤ 72 hours), most specimens should be held at 2-8°C rather than frozen; for delays exceeding 72 hrs, freeze specimens at -70°C as soon as possible after
collection (with exceptions noted below). Label each specimen container with the patient’s ID number, specimen type and the date the sample was collected.

I. Collecting Respiratory Specimens

A. Lower respiratory tract

Bronchoalveolar lavage, tracheal aspirate, pleural fluid
Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C up to 72 hrs; if exceeding 72 hrs, freeze at -70°C and ship on dry ice.

Sputum
Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C up to 72 hrs; if exceeding 72 hrs, freeze at -70°C and ship on dry ice.

B. Upper respiratory tract

Nasopharyngeal and oropharyngeal swabs
Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media. Refrigerate specimen at 2-8°C up to 72 hrs; if exceeding 72 hrs, freeze at -70°C and ship on dry ice.

Nasopharyngeal swabs -- Insert a swab into the nostril parallel to the palate. Leave the swab in place for a few seconds to absorb secretions. Swab both nostrils. Oropharyngeal swabs -- Swab the posterior pharynx, avoiding the tonsils and tongue.

Nasal Aspirates
Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C up to 72 hrs; if exceeding 72 hrs, freeze at -70°C and ship on dry ice.

II. Blood Components

Serum
For eventual serum antibody testing: Serum specimens should be collected during the acute stage of the disease, preferably during the first week after onset of illness, and again during convalescence, ≥ 3 weeks later.

Children and adults Collect 1 tube (5-10 mL) of whole blood in a serum separator tube. Allow the blood to clot, centrifuge briefly, and separate sera into sterile tube container. The minimum amount of serum required for testing is 200 μL. Refrigerate specimen at 2-8°C and ship on ice-pack; freezing and shipment on dry ice is permissible.
Infants: A minimum of 1 cc of whole blood is needed for testing of pediatric patients. If possible, collect 1 cc in an EDTA tube and in a serum separator tube. If only 1 cc can be obtained, use a serum separator tube.

EDTA blood (plasma)
Collect 1 tube (10 mL) of heparinized (green-top) or EDTA (purple-top) blood. Refrigerate specimen at 2-8°C and ship on ice-pack; do not freeze.

III. Stool
Collect 2-5 grams of stool specimen (formed or liquid) in sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Refrigerate specimen at 2-8°C up to 72 hrs; if exceeding 72 hrs, freeze at -70°C and ship on dry ice.

3. Infection Control
Standard, contact, and airborne precautions are recommended for management of hospitalized patients with known or suspected MERS-CoV infection. These recommendations are consistent with those recommended for the coronavirus that caused severe acute respiratory syndrome (SARS) in 2003. The recommendations are based on available information (as of June 10, 2013) and will be re-evaluated and updated as needed when new information becomes available. See 2013 Interim Infection Prevention and Control Recommendations for Hospitalized Patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Additional Questions:
The Contra Costa Public Health Communicable Disease Programs can be reached 8AM-5PM M-F at: 925-313-6740 (office) or 925-313-6465 (fax). After hours the Health Officer on call may be reached through the office number listed above.

More information may be found at the following websites:
California Department of Public Health:
http://www.cdph.ca.gov/programs/cder/Pages/MERS-CoV.aspx

U.S. Centers for Disease Control: