

## Current Event

### Laboratory Diagnosis of MERS

In 2015, only 1,197 (1.3%) out of 92,286 nasopharyngeal (NP) swabs tested positive for MERS-CoV in Saudi Arabia.

## Editorial Notes

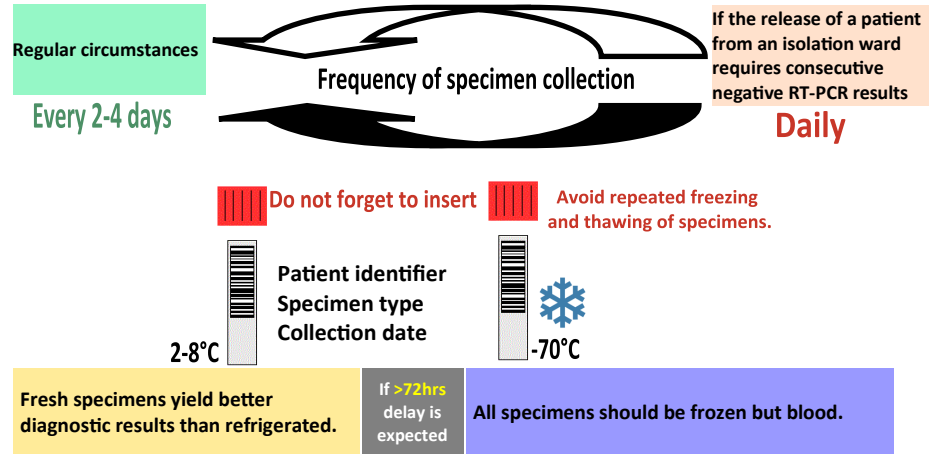
Testing biological specimens for MERS is relatively an expensive procedure. Use of a good case definition, proper collection, shipment and storage of specimens influence the yield of laboratory testing for MERS. Figure 1 demonstrates tips on handling specimens.

Ministry of Health (MoH) contracted a courier for shipment of the collected specimens to a well-defined list of public health laboratories in the Kingdom. Serological tests and genomic sequencing are done abroad. All HCWs who collect specimens from suspected or confirmed cases of MERS must wear appropriate Personal Protective Equipment (PPE) and follow MoH guidelines to ensure safe handling of collected specimens.

Upper Respiratory Tract (URT) specimens have a relatively lower yield for MERS-CoV as compared to Lower Respiratory Tract (LRT) specimens. The proportion of the virus genome sequence obtained is dependent on collection of good-quality clinical specimens from relevant disease sites that can yield higher levels of the virus. Dipeptidyl peptidase 4 (DPP4) was recently identified as the cellular receptor for MERS-CoV. DPP4 is expressed on non-ciliated bronchial epithelial cells; thus explains the observation that LRT specimens such as bronchoalveolar lavage, sputum and tracheal aspirates contain the highest viral loads of MERS-CoV.

NP specimens should be collected from all suspected cases of MERS using swabs specifically designed for

Figure 1: Specimens' Collection and Storage



### Cases of MERS-CoV: International Week (IW) No. 11: 13 – 19 Mar 2016

Total	13
Symptomatic (S)	13
Asymptomatic (AS)	0
Healthcare worker (S)	1
Healthcare Worker (AS)	0

collecting specimens for virological testing, i.e. containing virus transport medium. The NP and oropharyngeal swabs should be placed in the same tube to increase the viral load. It is recommended that both URT and LRT specimens should be collected whenever possible.

MERS-CoV nucleic acid has been detected by RT-PCR in serum, thus collecting serum for virus detection may be useful, particularly if LRT samples were not available. Paired serum samples should ideally be collected 14-21 days apart, with the first sample taken during the first week of illness. If only a single sample can be collected, it should be done at least 14 days after the onset of symptoms. Serum samples should also be stored for antibody detection. MERS-CoV has been detected in urine and feces but at levels below those found in the LRT. To confirm clearance of the virus, respiratory samples should be collected until there are two consecutive negative results in clinically recovered persons.

## Recent Publications:

Hunter JC, Nguyen D, Aden B, Al Bandar Z, Al Dhaheri W, Abu Elkheir K, Khudair A, Al Mulla M, El Saleh F, Imambaccus H, Al Kaabi N, Sheikh FA, Sasse J, Turner A, Abdel Wareth L, Weber S, Al Ameri A, Abu Amer W, Alami NN, Bunga S, Haynes LM, Hall AJ, Kallen AJ, Kuhar D, Pham H, Pringle K, Tong S, Whitaker BL, Gerber SI, Al Hosani FI. Transmission of Middle East Respiratory Syndrome Coronavirus Infections in Healthcare Settings, Abu Dhabi. Emerg Infect Dis. 2016 Apr;22(4):647-56. doi: 10.3201/eid2204.151615.

## MERS-CoV in KSA 2016\*

Region	Case	Primary	Secondary	U.C.
Qassim (5)	27	7	17	3
Riyadh (5)	24	17	6	1
Jeddah	5	4	0	1
Hail (2)	4	4	0	0
Taif (1)	3	2	1	0
Asir	2	2	0	0
Najran	2	2	0	0
Madinah	1	1	0	0
Bisha	1	1	0	0
Eastern Region	1	1	0	0
Al-Baha	1	0	0	1
Makkah	0	0	0	0
Tabuk	0	0	0	0
Al-Ahsaa	0	0	0	0
Al-Joaf	0	0	0	0
Jazan	0	0	0	0
Northern Borders	0	0	0	0
Qunfotha	0	0	0	0
Hafr Al-Batin	0	0	0	0
Qurayyat	0	0	0	0
<b>Total</b>	<b>71</b>	<b>41</b>	<b>24</b>	<b>6</b>

Case: Confirmed Symptomatic. U.C.: Unclassified cases  
\*Period: Form 3 Jan to 19 Mar 2016  
Regions with new cases of this week are highlighted in yellow.

