

Department of Defense  
Armed Forces Health Surveillance Center  
Global MERS-CoV Surveillance Summary  
(10 JUN 2015)



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*For questions or comments, please contact:*

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# DEPARTMENT OF DEFENSE (AFHSC)

## Global MERS-CoV Surveillance Summary #56

### 10 JUN 2015



**CASE REPORT:** From SEP 2012 to **10 JUN 2015**, **1338 (+135) cases** of Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported including **490 (+24) deaths** in the Kingdom of Saudi Arabia (KSA), Jordan, Qatar, United Arab Emirates (UAE), United Kingdom, France, Germany, Tunisia, Italy, Oman, Kuwait, Yemen, Malaysia, Greece, Philippines, Egypt, Lebanon, Netherlands, Iran, Algeria, Austria, Turkey, **Republic of Korea (ROK)**, **China**, and the U.S.

Since the last summary, ongoing transmission continues in urban areas of KSA, predominately in the city of Hafoof. Additionally, two new cases included in the above total case count have been reported elsewhere in the Arabian Peninsula; one in UAE and Oman, respectively.

In ROK, a cluster of 108 cases, 4 suspected cases, and 9 fatalities have been reported by the Korean CDC (KCDC). As of 10 JUN, 64 of these 108 cases have been confirmed by WHO. No community-based infections have been reported to date. The index case for the ROK cluster had previously travelled to Bahrain, UAE, KSA, and Qatar. The case was involved in agricultural activities during his travel, however he reported no contact with camels. The individual developed symptoms on 11 MAY, seven days after returning to ROK, and is currently undergoing treatment.

Six hospitals in ROK have reported ongoing transmission associated with this outbreak (see map) and at least 30 hospitals have reported seeing or treating at least one MERS-CoV patient. Media reported on 10 JUN that at least 2,200 schools have been temporarily closed to prevent further transmission.

According to the U.S. CDC and the KCDC, at least 2,712 people who may have had exposure to a MERS-CoV case have been isolated in their homes and are being monitored for symptoms; and at least 180 people are under quarantine in healthcare facilities. Media report the ROK government intends to compensate those who have lost income as a result of the isolation and quarantine efforts.

The Korea National Institutes of Health and Seoul National University have sequenced samples from the ROK cluster and found the, "Chinese and Korean viruses are however divergent enough from the Riyadh 2015 cluster to potentially be derived from a separate zoonotic event in the Arabian Peninsula...[however] the new MERS-CoVs are unlikely...to present different virulence or transmission properties."

The tenth confirmed case associated with ROK cluster did not adhere to quarantine orders and travelled to China, via Hong Kong, on 26 MAY. This individual previously visited his father, the ROK index case, in the hospital and became symptomatic before travel. This is the first imported case of MERS-CoV reported in China. Three individuals that had contact with this imported case are hospitalized in Hong Kong and are considered suspected MERS-CoV cases; confirmatory tests are pending.

Information on contact tracing efforts is limited, however AFHSC is aware of at least 77 contacts of the index case in China that are being monitored for symptoms. Additionally, all 19 contacts of the index case previously being monitored for symptoms in Hong Kong, have been released.

**BACKGROUND:** In SEP 2012, [WHO reported two cases of a novel coronavirus](#) (now known as MERS-CoV) from separate individuals - one with travel history to the KSA and Qatar and one a KSA citizen. This was the sixth strain of human coronavirus identified (including SARS). Limited human-to-human transmission has been identified in at least **33 spatial clusters** predominately involving close contacts. Limited camel-to-human transmission of MERS-CoV has been proven to occur; and [recent studies suggest](#) camels infected with MERS-CoV may appear asymptomatic but are able to shed large quantities of the virus from the upper respiratory tract. Media outlets, as well as the ECDC and [a review article](#) in the American Journal of Infection Control, indicate "strict infection control measures are essential, given that MERS-CoV survival on hospital surfaces is at least 48 hours and that it has been detected for up to 16 days in respiratory specimens and stool and up to 13 days in urine."

The most recent known date of onset is **4 JUN 2015**; however at least 40% of symptomatic cases have been reported without onset date. Due to inconsistencies in reporting, it is difficult to determine a cumulative breakdown by gender, however AFHSC is aware of **at least 343 cases in females** to date. On 18 JAN, Qatar's SCH reported that [their recent studies have shown](#) people in the 50-69 year age group are more vulnerable to the MERS-CoV virus. CDC reports **217 of the total cases have been identified as healthcare workers (HCWs)**. Of these, 134 were from KSA, 31 from UAE, 5 from Jordan, 2 from Iran, 1 from Tunisia, and **12 from ROK**. Characteristics of reported cases are limited, however, CDC reports among the **217 HCW cases**: 11 died; 55 were asymptomatic; 20 had comorbidities; and 15 presented with only mild symptoms. On 31 MAR, WHO released a [MERS-CoV Situation Update](#) stating that the recent epidemiological and demographic characteristics of the outbreak are not significantly different from those reported in previous years.

**INTERAGENCY/GLOBAL ACTIONS:** WHO [reiterated](#) on 3 FEB that people with diabetes, renal failure, or chronic lung disease, and immunocompromised persons are considered to be at high risk of severe disease from MERS-CoV infection. WHO convened the [Eighth International Health Regulations \(IHR\) Emergency Committee](#) on 4 FEB to discuss MERS-CoV and concluded that the conditions for a Public Health Emergency of International Concern (PHEIC) have not yet been met. A WHO GOARN team, with one U.S. CDC representative, has deployed to assist ROK with genetic sequencing and outbreak response efforts. Media report that the ROK government has also set up a special task force to oversee the government response to the outbreak. On 9 JUN, ROK President Park Geun-hye announced she will delay her planned travel to the U.S. in order to deal with MERS-CoV outbreak.

CDC has elevated their travel notice for MERS-CoV in the ROK to a [Travel Watch Level 1](#). CDC is maintaining their [Travel Alert Level 2](#) for MERS-CoV in the Arabian Peninsula, which includes specific precautions for the upcoming Hajj (approximately 20 – 25 SEP 2015) and Umrah Pilgrimages (approximately 17 JUN – 17 JUL 2015). On 9 JUN, Hong Kong issued a travel alert for its citizens to avoid all unnecessary travel to ROK. On 9 JUN, the U.S. Embassy in ROK posted an [updated U.S. Citizen Security Message regarding MERS-CoV for AMCITs in ROK](#).

**DIAGNOSTICS:** Clinical diagnostic testing is available at NAMRU-3, LRMC, NHRC, USAFSAM, SAMMC, WRNMMC, and NIDDL (NMRC). Tripler AMC has been removed from this list as they presently cannot compliantly perform the MERS-CoV assay. Brian Allgood Army Community Hospital is expected to be able to perform MERS-CoV testing by the end of next week. USAFSAM should be used as the referral laboratory for specimens until Brian Allgood Army Community Hospital can establish their own in-house testing capability. Surveillance testing capability is available at NHRC, AFRIMS, NAMRU-2, NAMRU-3, NAMRU-6, and Camp Arifjan. Additionally all 50 state health laboratories and the New York City DHMH have been offered clinical testing kits. On 8 JUN, AFHSC updated [MERS-CoV testing guidelines for DoD components on their website](#). These guidelines are aimed at capturing mild cases that may present in healthier populations such as DoD personnel.

Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous Summary (28 MAY 2014).

All information has been verified unless noted otherwise. Sources include the CDC, WHO, KSA MOH, ECDC, NEJM, SCH Qatar, and ASM.

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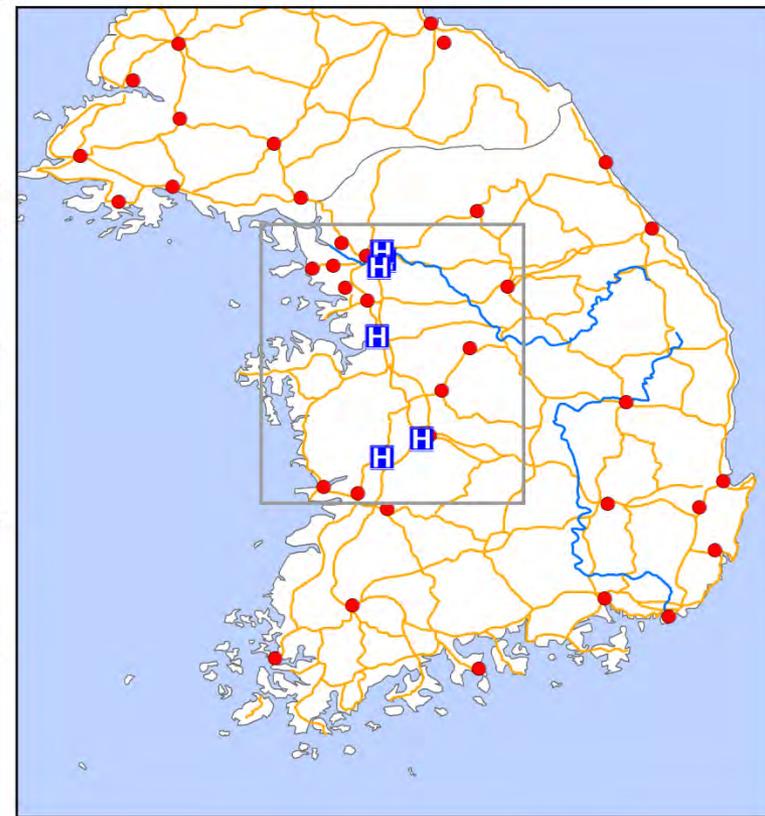
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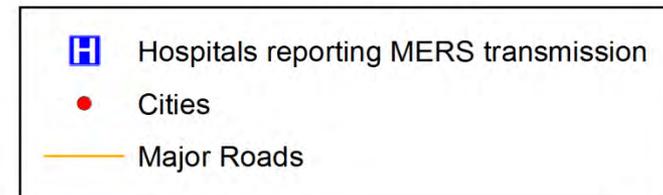
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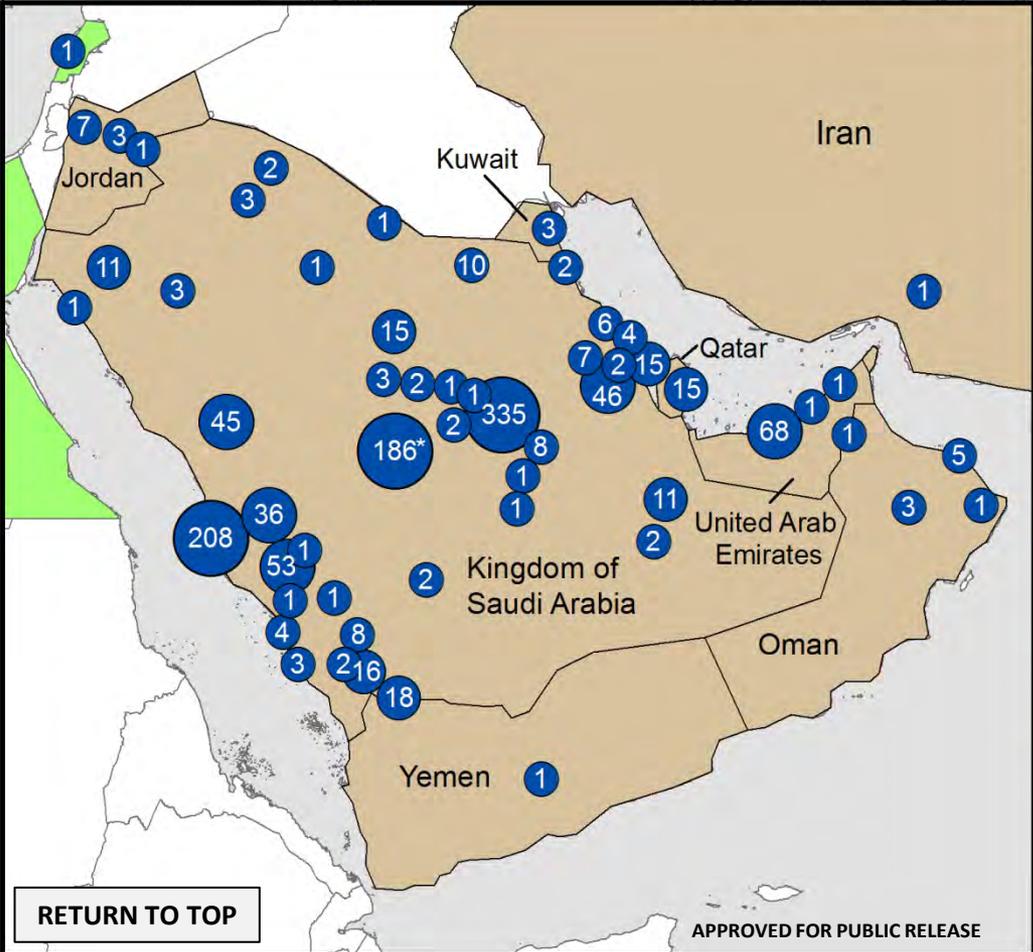
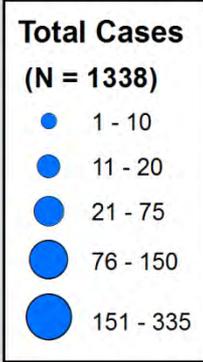
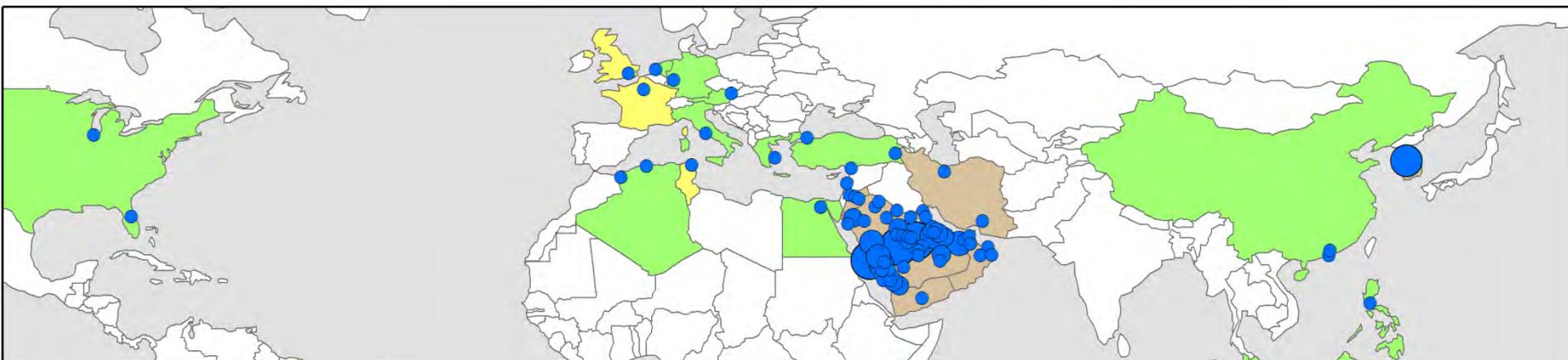
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### 10 JUN 2015



Hospitals with Known MERS-CoV Transmission in the Republic of Korea  
10 JUN 2015





**Geographic Distribution of MERS-CoV Cases**  
**1 APR 2012 - 10 JUN 2015**



- Imported Cases
- Imported Cases with Local Transmission
- Local Transmission

\*186 cases have been reported in the Kingdom of Saudi Arabia without specific location information

[RETURN TO TOP](#)

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## Global MERS-CoV Surveillance Summary #56

### 10 JUN 2015



### Global MERS-CoV NUMBERS AT A GLANCE

	Total in 2012	Total in 2013	Total in 2014	Total in 2015	Cumulative Total (2012-2015)
Confirmed Cases	9	171	777	381 (+135)	1338 cases (+135)
Confirmed Deaths*	6 deaths	72 deaths	277 deaths	135 deaths (+24)	at least 490 deaths (+24)
Case-Fatality Proportion	66%	42%	36%	35%	37%
Mean Age	45 years	51 years	49 years	55 years	51 years
Gender Breakdown*	1 female	at least 58 females	at least 175 females	109 females (+52)	at least 343 females (+52)
# of Healthcare Workers (HCWs) reported*	at least 2 HCWs	at least 31 HCWs	at least 87 HCWs	38 HCWs (+14)	at least 217 HCWs (+14)

**\*Disclaimer:** Data reported on MERS-CoV cases are limited and adapted from multiple sources including various Ministries of Health, CDC, and WHO. Consequently, yearly information may not equate to the cumulative totals provided by WHO and CDC.

**Legend:** Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous Summary (28 MAY 2014).

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**RETURN TO TOP**

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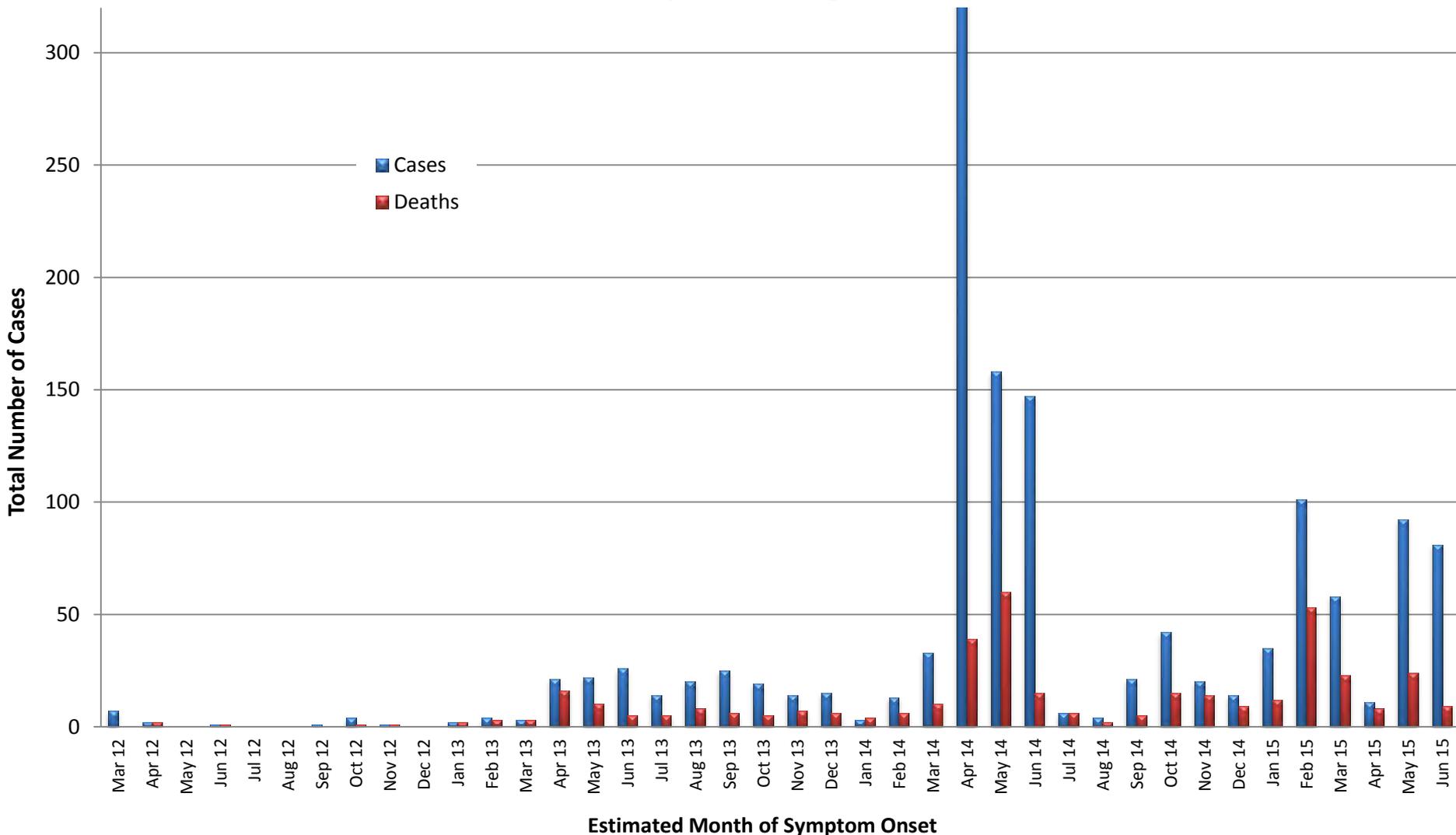
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## Global MERS-CoV Surveillance Summary #56

### 10 JUN 2015



### Global MERS-CoV Epidemiological Curve – 10 JUN 2015



[RETURN TO TOP](#)

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## Global MERS-CoV Surveillance Summary #56

### 10 JUN 2015



#### MERS-CoV Web Sites

- [WHO](#)
- [WHO Lab Testing Guidance](#)
- [WHO Travel Advice for Pilgrimages](#)
- [WHO 8<sup>th</sup> IHR Meeting Press Release](#)
- [CDC](#)
- [CDC Travel Advisory for the Arabian Peninsula](#)
- [CDC Travel Advisory for ROK](#)
- [CDC MMWR](#)
- [ECDC](#)
- [AFHSC Detecting and Reporting Guidelines for MERS-CoV](#)

#### Information and News

- [Latest WHO DON on MERS-CoV in the Arabian Peninsula](#) (WHO, 9 JUN)
- [Latest WHO DON on MERS-CoV in ROK](#) (WHO 9 JUN)
- [South Korea's Park delays trip to U.S. over MERS outbreak](#) (Washington Post, 9 JUN)
- [Security Message for U.S. Citizens: Seoul \(South Korea\) Updated Information Regarding MERS](#) (OSAC, 9 JUN)
- [Update of MERS-CoV rapid risk assessment following large South Korean cluster](#) (ECDC, 5 JUN)
- [South Korea, Saudi Arabia confirm more MERS cases](#) (CIDRAP, 26 MAY)
- [Occupational Exposure to Dromedaries and Risk for MERS-CoV Infection, Qatar, 2013–2014](#) (CDC Emerging Infectious Diseases Journal (EIDJ), early release on 8 MAY, anticipated publication date AUG 2015)
- [Public health response to two incidents of confirmed MERS-CoV cases travelling on flights through London Heathrow Airport in 2014 - Lessons Learnt](#) (Eurosurveillance, 7 MAY)
- [Laboratory Investigation and Phylogenetic Analysis of an Imported Middle East Respiratory Syndrome Coronavirus Case in Greece](#) (PLOS ONE, 28 APR)
- [MERS-CoV in Upper Respiratory Tract and Lungs of Dromedary Camels, Saudi Arabia, 2013–2014](#) (CDC EIDJ, early release on 22 APR, anticipated publication date JUL 2015)
- [Presence of Middle East respiratory syndrome coronavirus antibodies in Saudi Arabia: a nationwide, cross-sectional, serological study](#) (The Lancet, 8 APR)
- [Acute Middle East Respiratory Syndrome Coronavirus Infection in Livestock in Dromedaries, Dubai, 2014](#) (CDC EIDJ, early release on 13 MAR 2015, anticipated publication date JUN 2015)
- [MERS-CoV Situation Report](#) (WHO, 31 MAR)
- [Passive Immunotherapy With Dromedary Immune Serum In An Experimental Animal Model For MERS Coronavirus Infection](#) (American Society for Microbiology (ASM), 18 MAR)
- [Replication and Shedding of MERS-CoV in Upper Respiratory Tract of Inoculated Dromedary Camels](#) (CDC EIDJ, 18 NOV 2014)
- [WHO DON on first novel coronavirus infection](#) (WHO, 23 SEP 2012)