

Department of Defense Armed Forces Health Surveillance Center MERS-CoV Surveillance Summary (14 MAY 2015)



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DEPARTMENT OF DEFENSE (AFHSC)

MERS-CoV Surveillance Summary #54

14 MAY 2015



CASE REPORT: From SEP 2012 to 14 MAY 2015, 1176 (+20) cases of Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported including 454 (+3) deaths in the Kingdom of Saudi Arabia (KSA), Jordan, Qatar, United Arab Emirates, United Kingdom, France, Germany, Tunisia, Italy, Oman, Kuwait, Yemen, Malaysia, Greece, Philippines, Egypt, Lebanon, Netherlands, Iran, Algeria, Austria, Turkey, and the U.S. AFHSC's death count was revised upwards to reflect deaths confirmed by the CDC as well as deaths reported by the KSA MOH, which are not yet verified. 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. However, WHO did say that more cases in 2015 have no known history of exposure to other MERS patients when compared to data from previous years.

On 7 MAY, *Eurosurveillance* published an [account of lessons learned](#) by the Centre for Infectious Disease Surveillance and Control, Public Health England (PHE) regarding the incident responses for two confirmed MERS-CoV cases travelling through London Heathrow Airport in 2014. The article's findings highlighted the lack of awareness of MERS-CoV among travelers to/from the Middle East as well as the airline industry's reluctance to circulate materials on MERS-CoV from the UK PHE. Based on current evidence of limited transmissibility of MERS-CoV on airplanes and the significant resources and time required for contact tracing, the authors recommend that future contract tracing efforts for MERS-CoV patients on planes be limited to two rows in front and behind the symptomatic individual.

An [article](#) published on 28 APR in *PLOS ONE* summarized the events surrounding an individual with MERS-CoV who travelled from the Middle East to Greece. The authors noted that the first specimen collected from the patient was negative for MERS-CoV, however, the second specimen collected later was confirmatory for the virus. Due to their initial inconclusive tests results, the authors recommend that multiple specimens be collected from MERS-CoV cases with an emphasis on lower respiratory tract specimens.

A [study](#) published in *Emerging Infectious Diseases* analyzed sera to determine if individuals in Qatar who handle dromedary camels are at greater risk for MERS-CoV infection than the general population. The authors found MERS-CoV neutralizing antibodies 20 of 294 healthy persons who had daily occupational contact with dromedaries and none in persons without such contact. MERS-CoV-seropositive participants did not report severe health problems, which provides evidence that mild or asymptomatic human infections frequently go unrecognized.

DIAGNOSTICS: Clinical diagnostic testing is available at NAMRU-3, LPMC, NHRC, USAFSAM, Tripler AMC, SAMMC, WRNMMC, and NIDDL (NMRC). 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. AFHSC has placed 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.

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 32 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 3 APR 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 280 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 201 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, and 1 from Tunisia. Characteristics of reported cases are limited, however, CDC reports among the 201 HCW cases: 11 died; 55 were asymptomatic; 20 had comorbidities; and 15 presented with only mild symptoms.

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.

On 6 MAY, CDC updated their [Level 2 Travel Alert](#) to include specific precautions with regards to the upcoming Hajj (approximately 20 – 25 SEP 2015) and Umrah Pilgrimages (approximately 17 JUN – 17 JUL 2015). In addition to MERS-CoV information, this guidance includes a map of the pilgrimage routes, recommendations for vaccinations, best practices on mitigating dehydration, safe shaving rituals, and other healthy behaviors relevant for performing these pilgrimages.

Two KSA MOH staffing changes occurred in APR 2015. As previously reported, Minister of Health Ahmed Khatib was replaced on 11 APR by newly appointed acting Minister, Dr. Mohammed Ali al-Sheikh. Then on 29 APR, Dr. Mohammed Ali al-Sheikh was replaced by Aramco CEO Khalid Al Falih as the new Minister of Health. Notably, at that time Khalid Al Falih was also named Chairman of the State Oil Firm. A new public awareness campaign to combat MERS-CoV was launched this week by the KSA MOH called [#We Can Stop This](#).

Text updated from the previous report will be printed in red; items in (++) represent the change in number from the previous Summary (30 APR 2014).

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

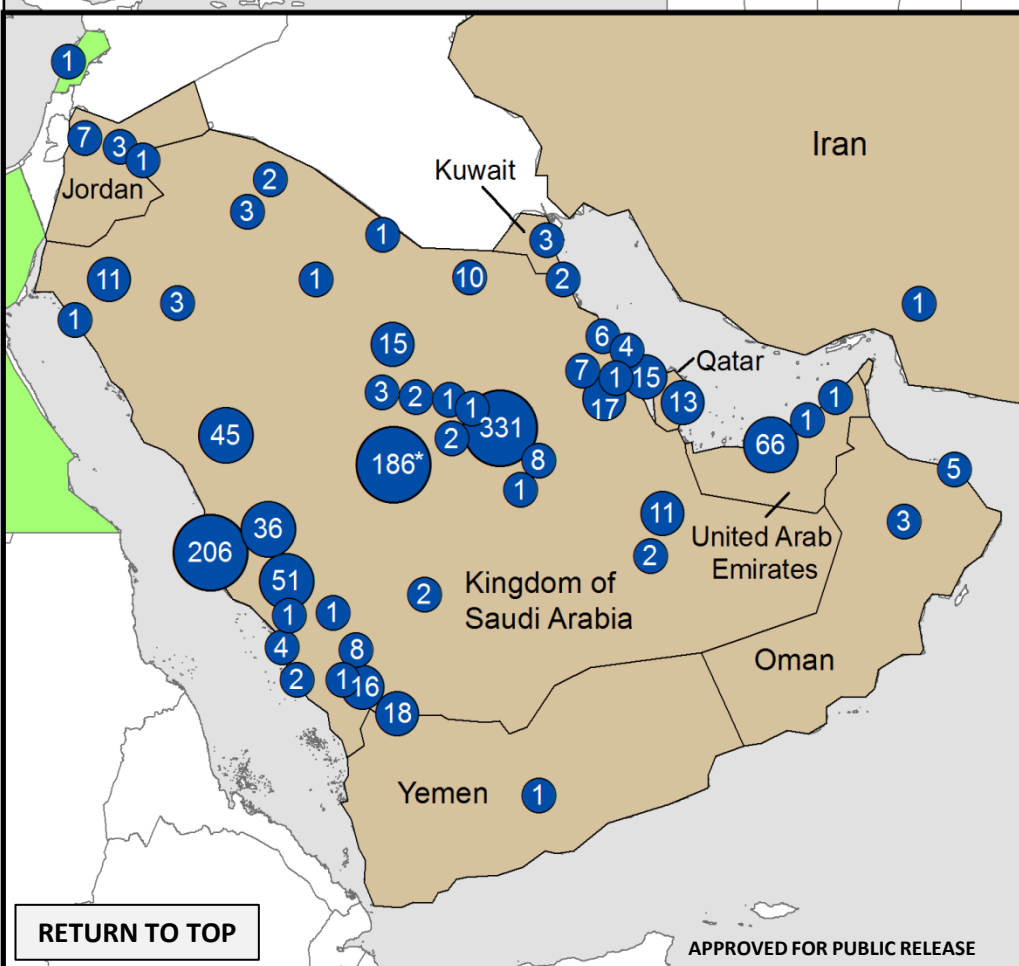
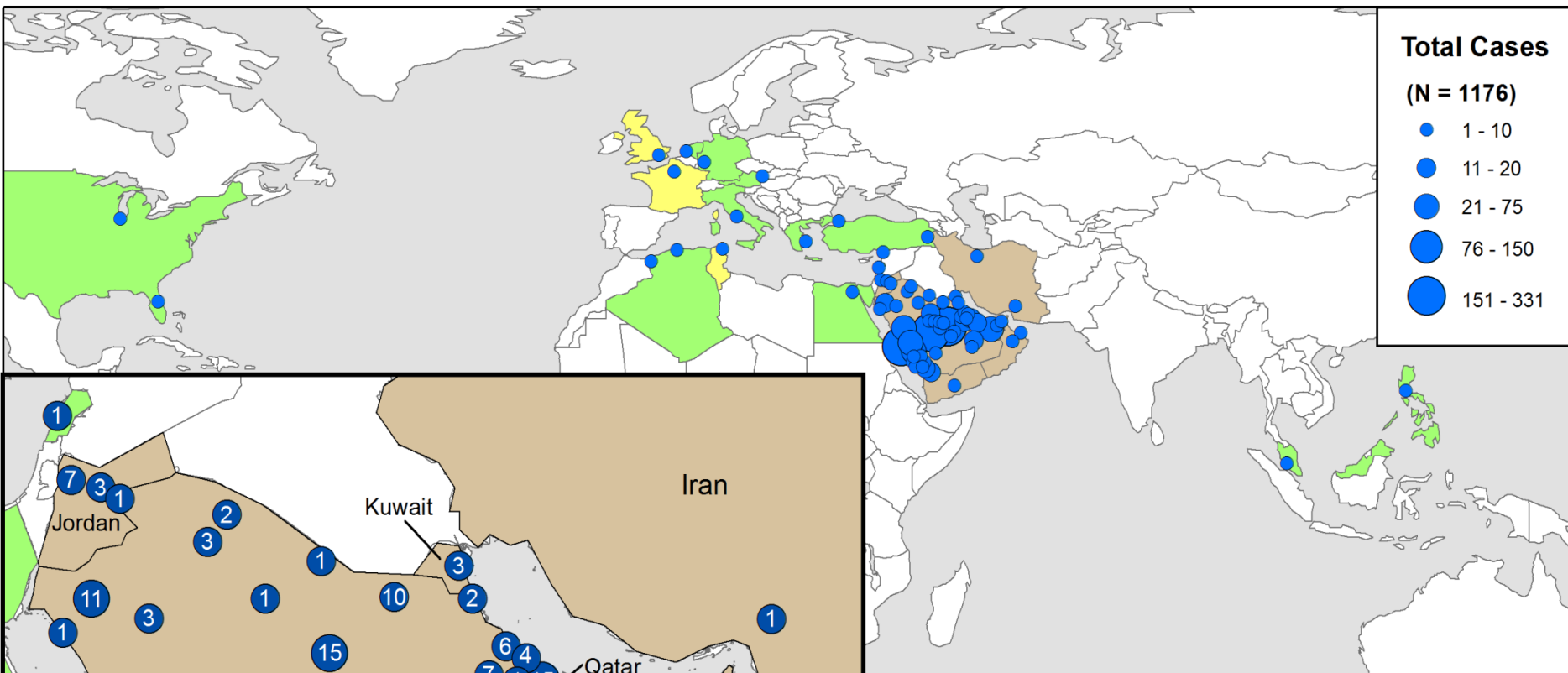
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Total Cases

(N = 1176)

- 1 - 10
- 11 - 20
- 21 - 75
- 76 - 150
- 151 - 331



Geographic Distribution of MERS-CoV Cases 1 APR 2012 - 14 MAY 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

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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	772	224 (+20)	1176 cases (+20)
Confirmed Deaths*	6 deaths	72 deaths	277 deaths	99 deaths (+3)	at least 454 deaths (+3)
Case-Fatality Proportion	66%	42%	36%	42%	38%
Mean Age	45 years	51 years	49 years	56 years	51 years
Gender Breakdown*	1 female	at least 58 females	at least 175 females	49 females	at least 283 females
# of Healthcare Workers (HCWs) reported*	at least 2 HCWs	at least 31 HCWs	at least 87 HCWs	22 HCWs	at least 201 HCWs

*Disclaimer: Data reported on MERS-CoV cases is limited and adapted from multiple sources including the KSA MOH, 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 (30 APR 2014).

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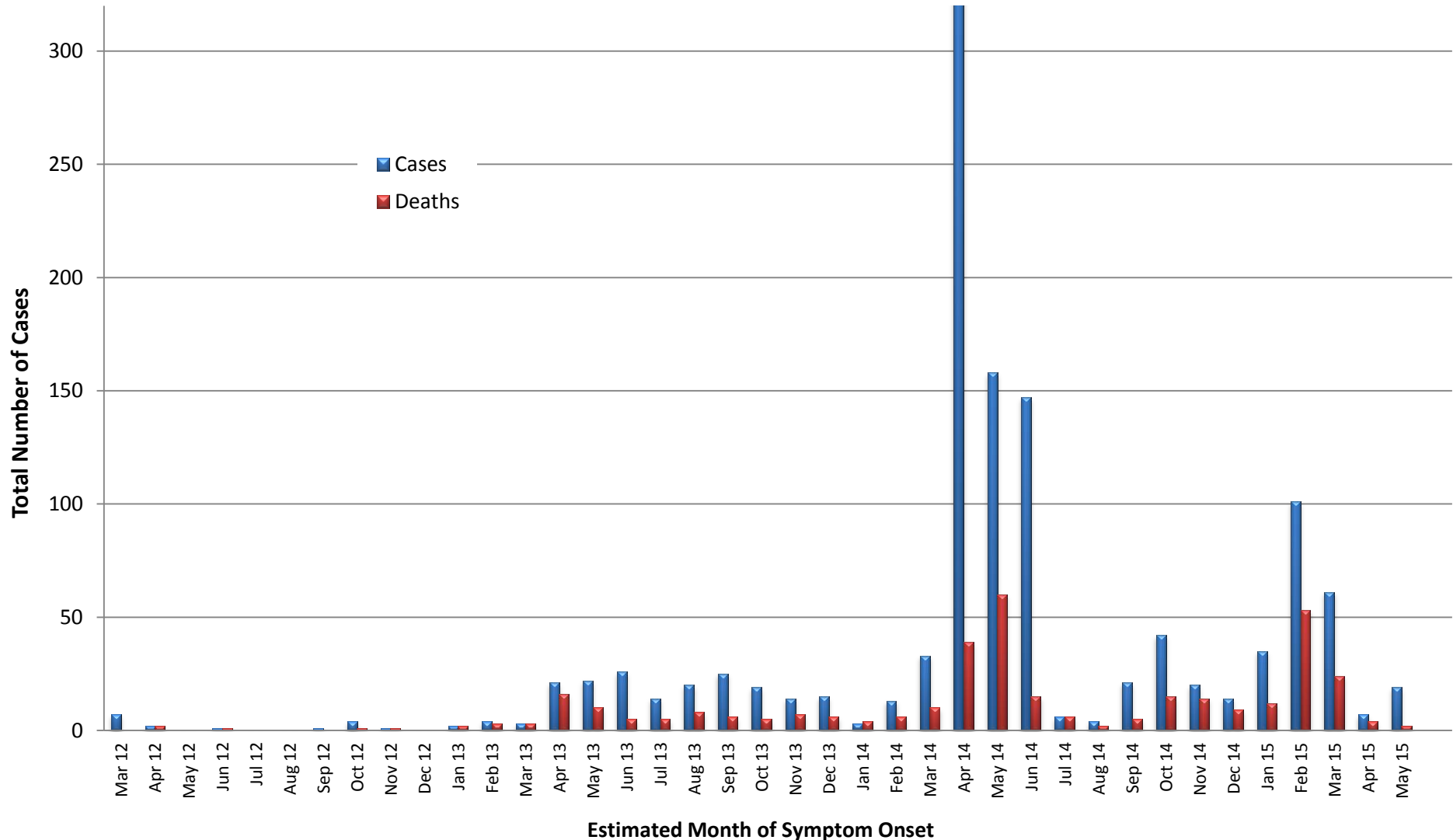
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MERS-CoV Epidemiological Curve – 14 MAY 2015



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MERS-CoV Web Sites

- [WHO](#)
- [WHO Lab Testing Guidance](#)
- [WHO Travel Advice for Pilgrimages](#)
- [WHO 8th IHR Meeting Press Release](#)
- [CDC](#)
- [CDC Travel Advisory](#)
- [CDC MMWR](#)
- [ECDC](#)
- [AFHSC Detecting and Reporting Guidelines for MERS-CoV](#)

Information and News

- [Latest WHO DON on MERS-CoV](#) (WHO, 8 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)
- [#We Can Stop This](#) (KSA MOH's Public Awareness Campaign Website, launched APR 2015)
- [Saudi Arabia witnesses decline in MERS cases](#) (Global Post, 26 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)
- [Lack of Middle East Respiratory Syndrome Coronavirus Transmission from Infected Camels](#) (CDC EIDJ, APR 2015)
- [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)
- [2014 MERS-CoV Outbreak in Jeddah – A Link to Health Care Facilities](#) (NEJM, 26 FEB)
- [More progress needed to control the Middle East respiratory syndrome coronavirus \(MERS-COV\) in Saudi Arabia](#) (WHO, 23 FEB)
- [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)