

Department of Defense
Armed Forces Health Surveillance Center
MERS-CoV Surveillance Summary
(30 APR 2015)



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DEPARTMENT OF DEFENSE (AFHSC)

MERS-CoV Surveillance Summary #53

30 APR 2015



CASE REPORT: From SEP 2012 to 30 APR 2015, 1156 (+3) cases of Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported including 446 (+2) 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. 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. **Saudi media report a decline in MERS-CoV cases for the fifth consecutive week and attributed the rise in cases in FEB and MAR to changing weather and camel breeding season.**

The newly formed KSA MOH Command and Control Center (CCC) has [established](#) Rapid Response Teams to assist with the MERS-CoV outbreak. These teams are tasked with ensuring readiness of infection control departments in hospitals throughout KSA, providing training, prompting appropriate cleaning and disinfecting measures, and coordinating response efforts and outbreak investigations within hospitals. On 11 APR, the CCC also [announced](#) 55% of MERS-CoV cases in KSA have recovered since 2012.

A [study](#), published in the Lancet on 8 APR, found that sero-prevalence of MERS-CoV antibodies was significantly higher in camel-exposed individuals than the general population in KSA. These individuals might be the source of infection for patients with confirmed MERS-CoV who had no previous exposure to camels. This study is the first population-based, sero-epidemiological investigation of MERS-CoV in an area where zoonotic transmission is sustained. The authors also found that men had a significantly higher proportion of infection than women and more infections were noted in central rural areas than in coastal provinces.

The Lancet also published a [study](#) done by CDC researchers and King Faisal University on 22 APR that examined the prevalence of MERS-CoV RNA in dromedary camels in Al-Ahsa Province, KSA during the period APR 2013 – MAY 2014. The authors found 29.2% of nasal swab samples from live camels and 61.5% of nasal swab samples from camel carcasses were positive for MERS-CoV RNA via reverse transcription PCR.

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.

CDC's [Level 2 Travel Watch](#) remains in effect and specifically notes health care providers should be alert for patients who develop severe acute lower respiratory illness within 14 days of travel from the Arabian Peninsula. On 30 JAN, [CDC issued an MMWR](#) with updated guidance for the public, clinicians, and public health authorities on when to consider MERS-CoV infection.

Two KSA MOH staffing changes occurred in APR 2015. As previously reported, Minister of Health Ahmed Khateeb 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 (+xx) represent the change in number from the previous Summary (15 APR 2014).

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

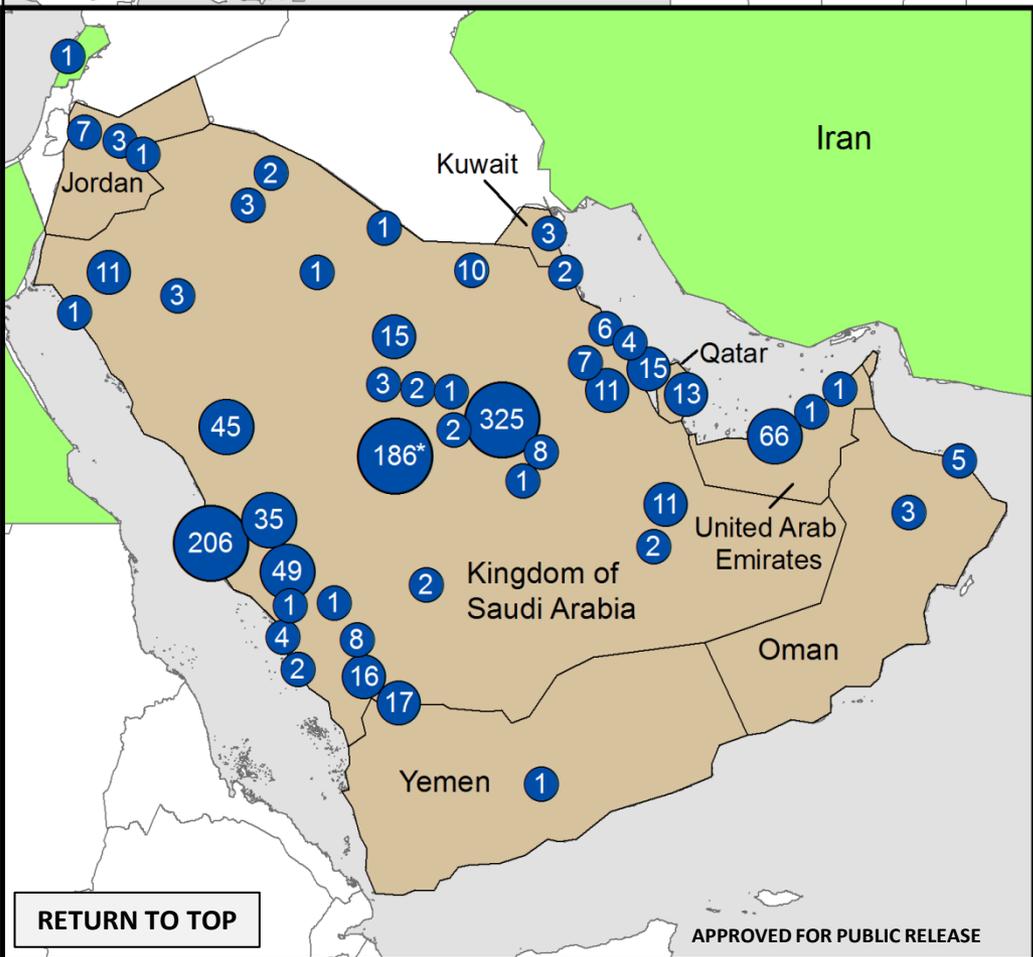
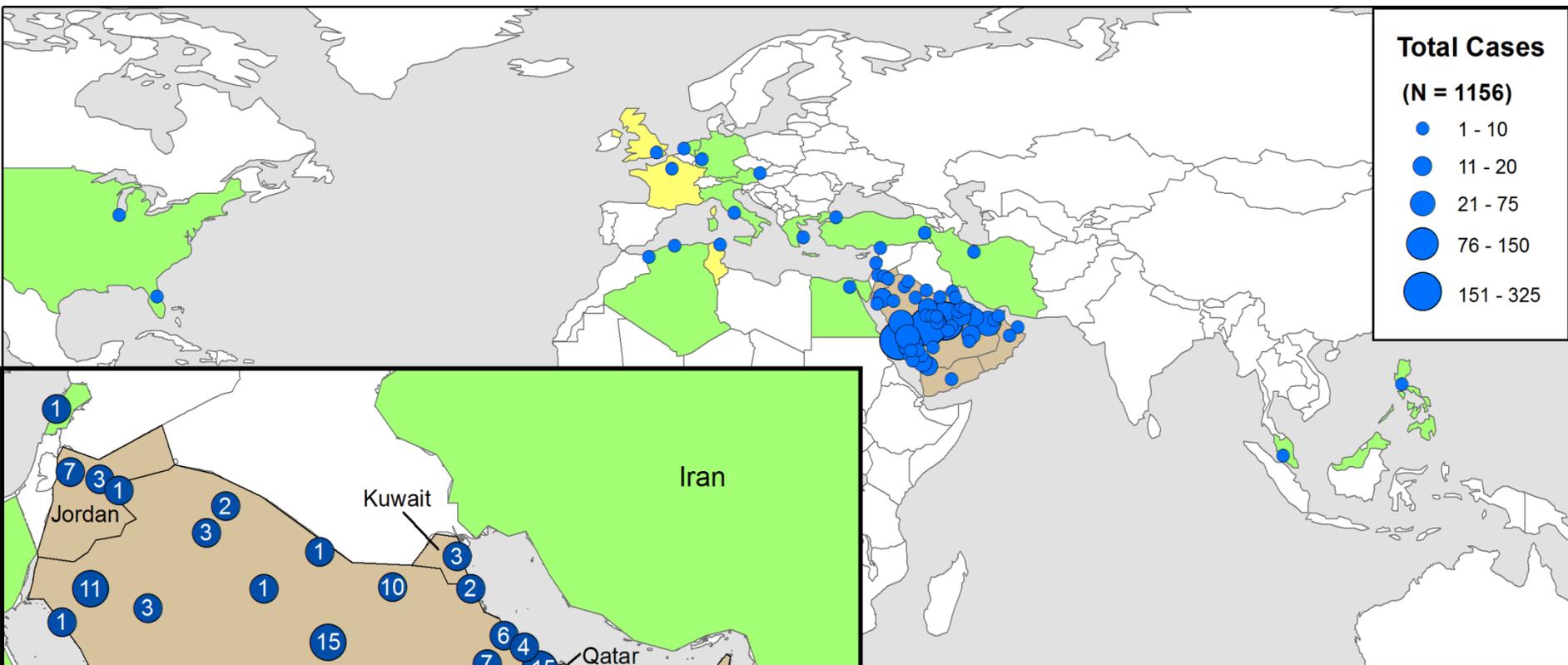
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Total Cases

(N = 1156)

- 1 - 10
- 11 - 20
- 21 - 75
- 76 - 150
- 151 - 325



Geographic Distribution of MERS-CoV Cases
1 APR 2012 - 30 APR 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	204 (+3)	1156 cases (+3)
Confirmed Deaths*	6 deaths	72 deaths	277 deaths	91 deaths (+2)	at least 446 deaths (+2)
Case-Fatality Proportion	66%	42%	36%	45%	39%
Mean Age	45 years	51 years	49 years	57 years	51 years
Gender Breakdown*	1 female	at least 58 females	at least 175 females	46 females	at least 280 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.

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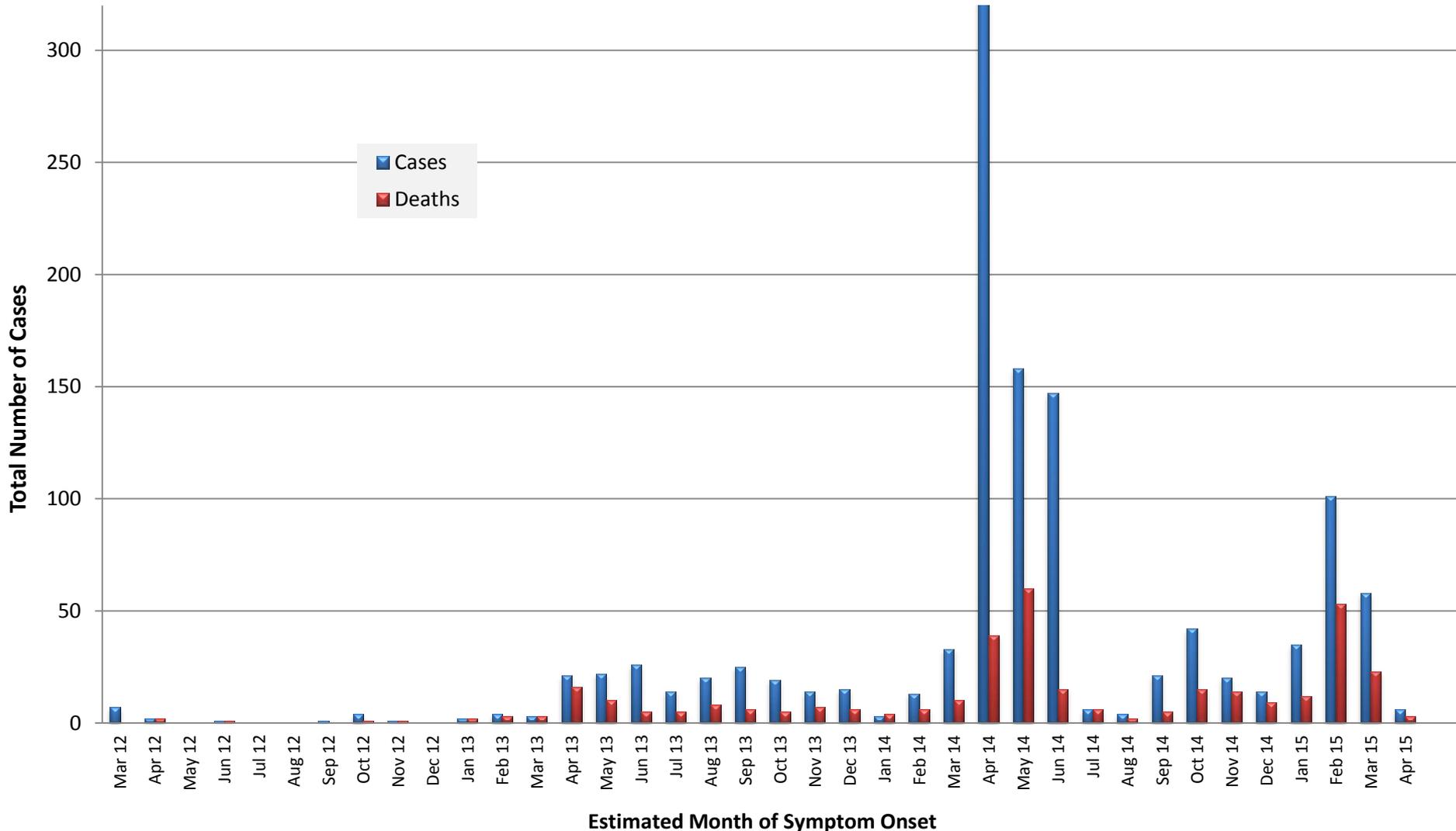
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MERS-CoV Web Sites

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

Information and News

- [Latest WHO DON on MERS-CoV](#) (WHO, 29 APR)
- [#We Can Stop This](#) (KSA MOH's Public Awareness Campaign Website, launched APR 2015)
- [Saudi Aramco CEO named chairman and health minister](#) (Reuters, 29 APR)
- [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 Emerging Infectious Diseases Journal (EIDJ), early release on 22 APR, anticipated publication date JUL 2015)
- [Ministry of Health announces continuing decline in MERS cases](#) (KSA MOH, 12 APR)
- [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 Emerging Infectious Diseases Journal (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)
- [Saudi doctors face jail, loss of license over MERS](#) (Arabian Business, 26 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)
- [CDC MMWR: Update on the Epidemiology of Middle East Respiratory Syndrome Coronavirus \(MERS-CoV\) Infection, and Guidance for the Public, Clinicians, and Public Health Authorities](#) (CDC, 30 JAN)
- [Middle East Respiratory syndrome coronavirus: Implications for health care facilities](#) (AJIC, DEC 2014)
- [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)