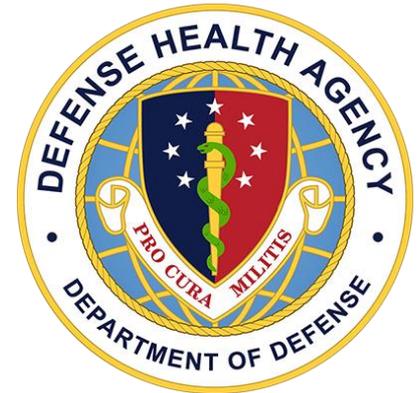


Department of Defense
Armed Forces Health Surveillance Branch
Global MERS-CoV Surveillance Summary
(29 JUN 2016)



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DEPARTMENT OF DEFENSE (AFHSB)

Global MERS-CoV Surveillance Summary #86

29 JUN 2016 (next Summary 13 JUL)



CASE REPORT: As of 29 JUN 2016, 1,852 (+40) cases of Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported, including at least 569 (+4) deaths (CDC reports at least 649 deaths as of 27 JUN) in the Kingdom of Saudi Arabia (KSA) (+39), Jordan, Qatar, United Arab Emirates (UAE) (+1), United Kingdom (UK), France, Germany, Tunisia, Italy, Oman, Kuwait, Yemen, Malaysia, Greece, Philippines, Egypt, Lebanon, Netherlands, Iran, Algeria, Austria, Turkey, Republic of Korea (ROK), China, Thailand, Bahrain, and the U.S. AFHSB's death count (Case Fatality Proportion (CFP) - 31%) includes only those deaths which have been publicly reported and verified; while CDC's death count (CFP - 36%) may present a more complete picture, it's unclear when and where those additional deaths occurred during the outbreak.

From 9 JUN to 29 JUN, a total of 30 cases have been identified in Riyadh and are believed to be associated with an ongoing nosocomial cluster at King Khalid Hospital. The index case of this cluster had symptom onset on 9 JUN and passed away on 20 JUN; it is unclear if the patient was from Riyadh or from Buraidah, where a separate cluster of MERS-CoV was reported earlier this spring. As of 21 JUN, WHO reports that because of other predominant symptoms, MERS-CoV was not considered early on in the treatment process and there have consequently been at least 49 health care workers (HCWs) and patients exposed. Of the 30 cases associated with this cluster, four have been identified as secondary household contacts, and three others have been identified as HCWs that directly cared for the index case. In total, 25 cases in this cluster were reported as asymptomatic. The number of asymptomatic cases reported has been unusual. Due to the inconsistent reporting by the KSA Ministry of Health (MOH), it is difficult to determine if this increase in reported asymptomatic cases reflects an increase in contact tracing efforts or a true increase in asymptomatic transmission of the virus. On 24 JUN, the Director of Public Administration for Infection Control at the KSA MOH publicly denounced the "accusations...of negligence" by the WHO in reference to this cluster of MERS-CoV cases. He assured local media that this outbreak has been "contained," despite continued reporting of secondary healthcare associated cases by the MOH. Additionally, he suggested that the recent rise in cases can be attributed to the increased consumption of camel meat during Ramadan, which began on 5 JUN (and lasts until 5 JUL).

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 in 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 51 (+1) spatial clusters predominately involving close contacts. Limited camel-to-human transmission of MERS-CoV has been proven to occur. The most recent known date of symptom onset is 18 JUN 2016. The KSA MOH has previously admitted to inconsistent reporting of asymptomatic cases. Due to these inconsistencies, it is also difficult to determine a cumulative breakdown by gender; however, AFHSB is aware of at least 534 (+25) cases in females to date. CDC reports 262 (+18) of the total cases have been identified as healthcare workers (HCWs). A joint study by the Health Authority of Abu Dhabi, UAE, and the U.S. CDC retrospectively analyzed medical data on MERS-CoV patients in UAE from JAN 2013 to MAY 2014, and found that mild and asymptomatic MERS-CoV cases made up the majority (35% and 35% respectively) of UAE's cases in this time period (65 cases), and that many of these mild/asymptomatic individuals were shown to shed the virus for longer than two weeks. A systematic review published in the International Journal of Infectious Diseases reported that the most commonly identified comorbidities (among the 637 patients surveyed) included diabetes, hypertension, cardiac diseases, and obesity. On 4 MAR, CDC published a study that tested archived serum (from 2013-2014) from livestock handlers in Kenya for MERS-CoV antibodies to search for autochthonous MERS-CoV infections in humans outside of the Arabian Peninsula. The study found two (out of 1,122 samples) tested positive, providing evidence of previously unrecorded human MERS-CoV infections in Kenya.

On 16 JUN, OIE released a follow-up report on four MERS-CoV outbreaks in camels, affecting 52 camels total: 33 at a livestock market in Riyadh, two in a village in Al Dammam, two on a farm in Al Ahsa, and 15 on a farm in Al Madinah. All 52 camel cases are associated with human cases of MERS-CoV according to OIE. On 22 JUN, FAO reported that, to date, field surveys have identified MERS-CoV seropositive livestock in the following countries: Spain (the Canary Islands), Nigeria, Tunisia, Ethiopia, Somalia, Kenya, Sudan, Egypt, Jordan, KSA, Oman, and UAE. A recent study in Tropical Animal Health and Production found that dromedary camels from KSA show significantly higher MERS-CoV carrier rates than dromedaries imported from Africa. Additionally, the two MERS-CoV lineages identified in Nigerian camels were found to be genetically distinct from those strains currently circulating in the Arabian Peninsula. These findings support the theory that camel imports from Africa are not contributing significantly to the circulation of MERS-CoV in camels in the Arabian Peninsula.

Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous Summary (15 JUN 2016).

All information has been verified unless noted otherwise. For questions or comments, please contact: dha.ncr.health-surv.list.afhs-ib-alert-response@mail.mil

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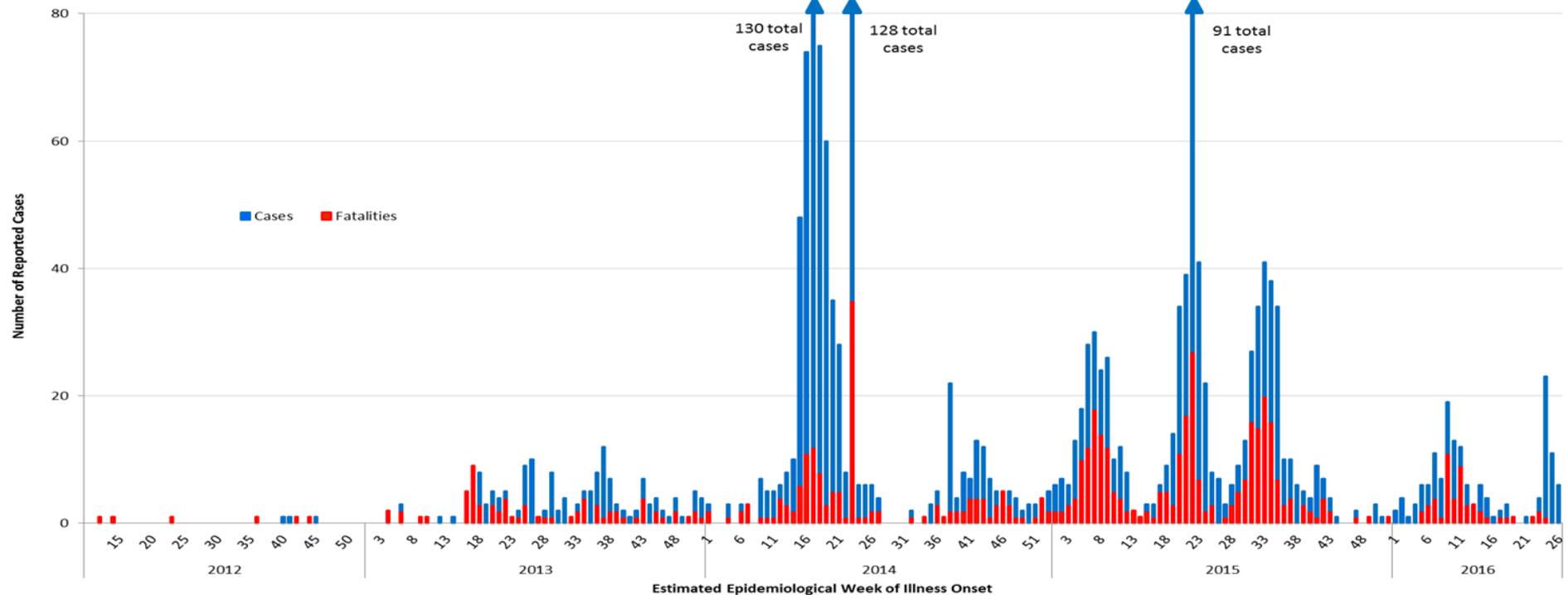
29 JUN 2016



DIAGNOSTICS/MEDICAL COUNTERMEASURES: Clinical diagnostic testing is available at BAACH, NAMRU-3, LPMC, MAMC, NHRC, USAFSAM, SAMMC, TAMC, WBAMC, WRNMMC, and NIDDL (NMRC). Surveillance testing capability is available at NHRC, AFRIMS, NAMRU-2, NAMRU-3, NAMRU-6, USAMRU-K, and Camp Arifjan. All 50 state health laboratories and the NYC Department of Health and Mental Hygiene (DOHMH) were offered clinical testing kits. On 23 FEB 2016, AFHSB updated MERS-CoV testing guidelines for DoD which are aimed at capturing mild cases that may present in healthier populations such as DoD personnel.

INTERAGENCY/GLOBAL ACTIONS: WHO convened the Tenth International Health Regulations (IHR) Emergency Committee on 2 SEP 2015 and concluded the conditions for a Public Health Emergency of International Concern (PHEIC) had not yet been met. However, the Committee also emphasized that they still have concerns as transmission from camels to humans continues in some countries, instances of human-to-human transmission continue to occur in health care settings, and asymptomatic cases are not always being reported as required. On 11 MAY, CDC updated their Level 2 Travel Notice for MERS-CoV in the Arabian Peninsula to include more information on possible sources of exposure and to remove information pertaining specifically to the Hajj and Umrah pilgrimages. On 23 JUN, the Dubai Health Authority of UAE issued a reminder to those travelling to KSA for the Hajj and Umrah pilgrimages to take steps to avoid infection with MERS-CoV.

Global MERS-CoV Epidemiological Curve by Illness Onset



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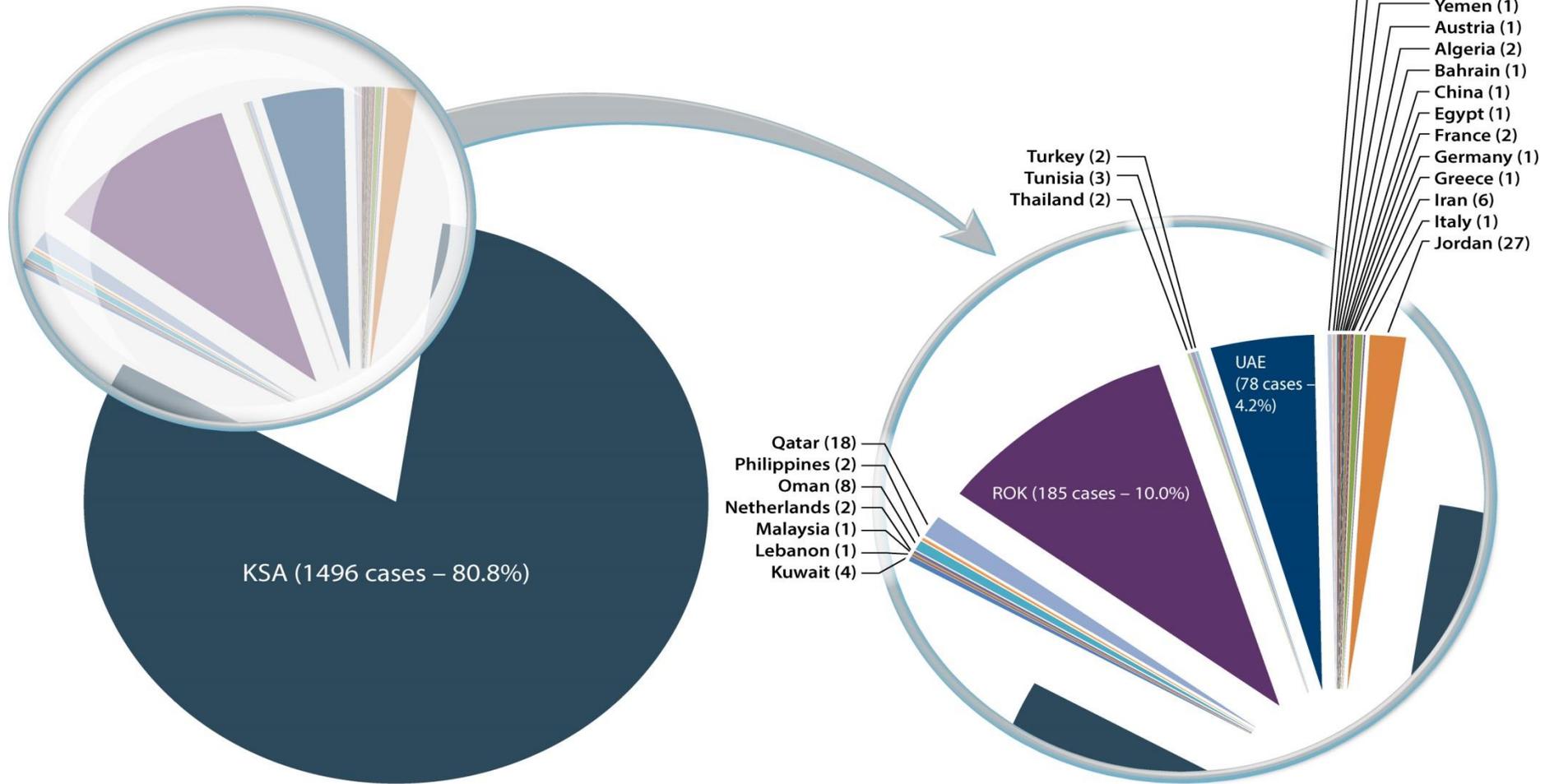
DEPARTMENT OF DEFENSE (AFHSB)

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29 JUN 2016



Global Distribution of Reported MERS-CoV Cases* (SEP 2012–JUN 2016)



*Data includes confirmed, suspect and probable cases reported by WHO, CDC, and various country MOHs

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