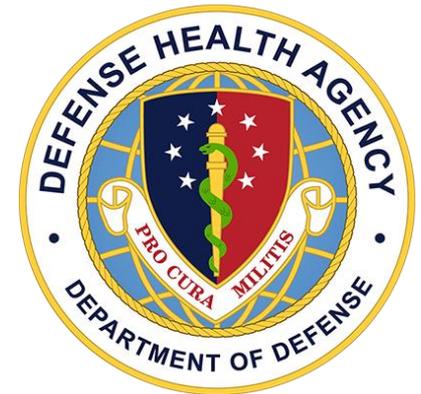


Department of Defense
Armed Forces Health Surveillance Branch
Global MERS-CoV Surveillance Summary
(22 FEB 2017)



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DEPARTMENT OF DEFENSE (AFHSB)

Global MERS-CoV Surveillance Summary #103

22 FEB 2017 (next Summary 8 MAR 2017)



CASE REPORT: As of 22 FEB, 1,990 (+10) cases of Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported, including at least 621 (+3) deaths (CDC reports at least 709 (+4) deaths as of 21 FEB) in the Kingdom of Saudi Arabia (KSA) (+10), Jordan, Qatar, United Arab Emirates (UAE), 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. The KSA Ministry of Health (MOH) has classified all ten of the new cases as primary, of which seven had confirmed contact with camels. The source(s) of exposure for the remaining three are under investigation. Primary cases are individuals who have had direct or indirect exposure to dromedary camels, or have had no known exposure to a confirmed MERS-CoV case. Secondary cases are individuals who have had direct or indirect exposure to a confirmed MERS-CoV case. All of the new cases occurred in KSA: Al Asyah (1), Al Makhwah (1), Jeddah (3), Khaybar (1), Mahayel (1), Mecca (1), and Riyadh (2). 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 - 37%) may present a more complete picture, it's unclear when and where those additional deaths occurred during the outbreak.

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 camel-to-human transmission of MERS-CoV has been proven to occur. The most recent known date of symptom onset is 30 JAN 2017. 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 612 cases in females to date. In its most recent MERS-CoV risk assessment on 5 DEC, WHO reported 20% of total MERS-CoV cases have been HCWs. Limited human-to-human transmission has been identified in at least 58 spatial clusters as of 22 FEB, predominately involving close contacts. On 10 FEB, WHO [announced](#) that the nosocomial cluster in Buraidah (initially reported by AFHSB on 11 JAN) involving six cases (5 patients and 1 HCW) and two hospitals in Buraidah and Jeddah has concluded.

DIAGNOSTICS/MEDICAL COUNTERMEASURES: A new study in BMC Infectious Diseases found that the natural compound resveratrol, found in grape seeds, skin, and red wine, is a potent anti-MERS-CoV agent *in vitro* and a potential antiviral agent against MERS-CoV infection.

RELEVANT STUDIES: A [study](#) published in CDC Emerging Infectious Diseases provided the first serologic evidence that MERS-CoV has circulated in dromedary camels in South Asia; MERS-CoV antibodies were found in 39.5% of 565 dromedary camels from nine districts in Punjab, Pakistan, sampled between 2012 and 2015. On 4 MAR 2016, 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.

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. On 5 FEB, the KSA MOH launched the largest country-wide health assessment survey ever conducted; the survey is expected to include 250,000 people, with the participation of 571 health centers and 9,000 health practitioners and administrators. The study is scheduled to conclude in about six months (early AUG 2017).

(+xx) represents the change in number from the previous AFHSB Summary of 8 FEB 2017.

All information has been verified unless noted otherwise.

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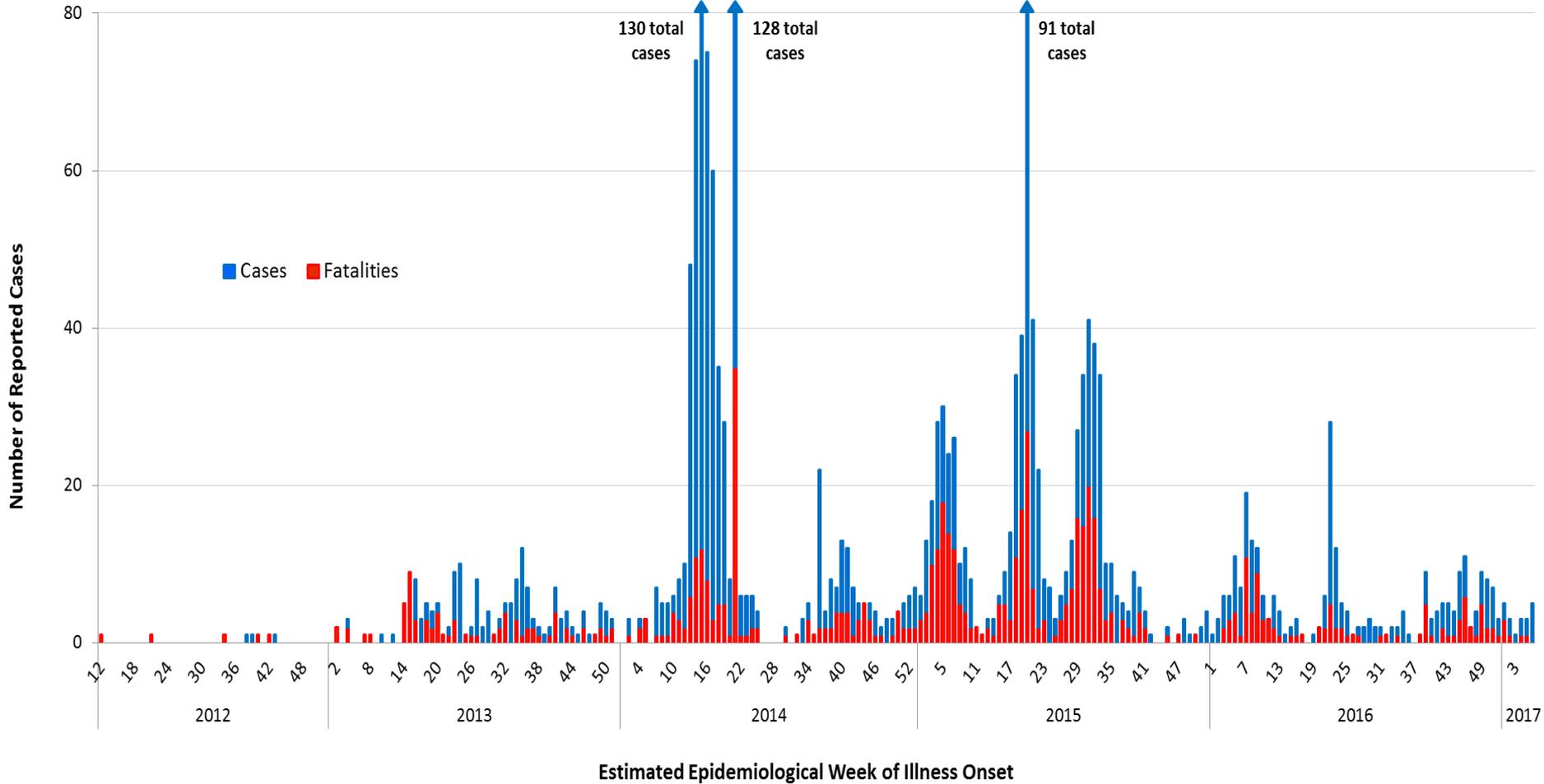
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Global MERS-CoV Surveillance Summary #103

22 FEB 2017



Global MERS-CoV Epidemiological Curve as of 22 FEB 2017



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Global MERS-CoV Surveillance Summary #103

22 FEB 2017



MERS-CoV Diagnostics and Medical Countermeasures at DoD Laboratories





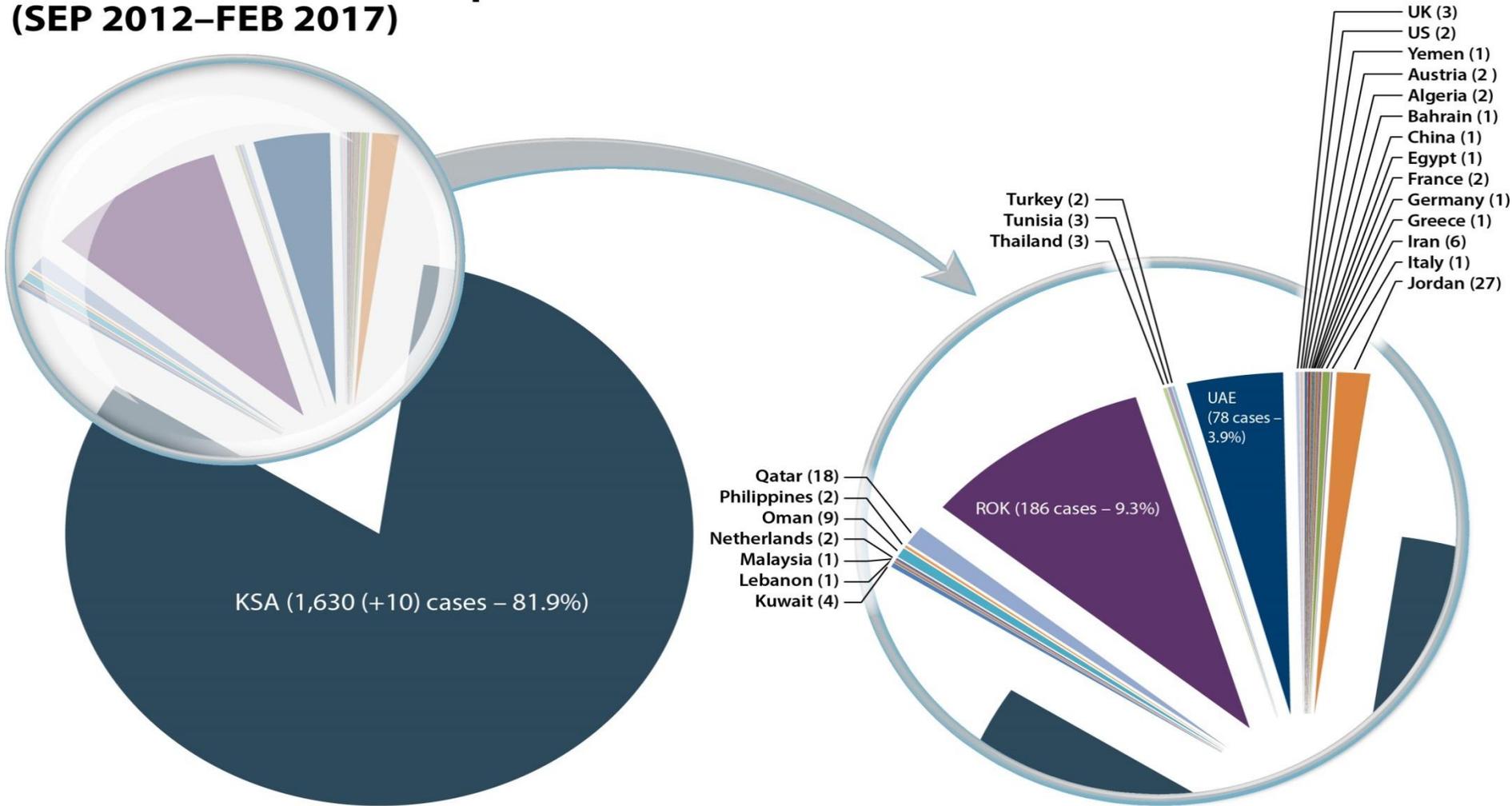
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Global Distribution of Reported MERS-CoV Cases* (SEP 2012–FEB 2017)



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

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