

samples in contact tracing of HCWs over 9 years. Furthermore, it shows that when MRSA contact tracing is performed according to the national guideline, only 1 of 1,000 samples results in a secondary case. This is similar to the population carriage rate of MRSA in The Netherlands. More frequently, an unrelated strain is found. These findings raise questions regarding the efficacy of the current strategy to perform contact tracing after unprotected exposure.

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### Presentation Type:

Poster Presentation

**Middle East Respiratory Syndrome Coronavirus, Saudi Arabia, 2017 Outbreak: Super-Spreading Event and Control Measures**  
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**Background:** The hallmark of Middle East respiratory syndrome coronavirus (MERS-CoV) disease is the ability to cause major healthcare-associated outbreaks with superspreading events leading to massive transmission and excessive morbidity and mortality. This abstract provides overview of MERS-CoV multi-healthcare facilities outbreak in Riyadh in June 2017, with focus on cluster reported and the control measures taken at King Saud Medical City. The outbreak began with a patient who presented with acute renal failure requiring hemodialysis and became a MERS-CoV superspreader, igniting the cluster of cases in several hospitals in King Saud Medical City. **Methods:** For epidemiologic investigation, a case was defined as any patient with laboratory-confirmed MERS-CoV infection with connection to the affected healthcare facilities. Contact tracing and testing were performed according to the Ministry of Health (MOH) guidelines. MERS-CoV testing was recommended for HCWs who had unprotected close contact with a confirmed case. Considering the superspreading phenomena, contact tracing was included all persons attended the same area with the positive case either as a patient, an HCW, or a patient's visitor or companion. Laboratory confirmation was conducted using real-time RT-PCR. Genome sequencing and phylogenetic analysis were performed for available MERS-CoV rRT-PCR-positive samples by the CDC. The infection control measures applied included decreasing patient load through downsizing

Spider chart of Middle East respiratory syndrome coronavirus outbreak, King Saud Medical City cluster

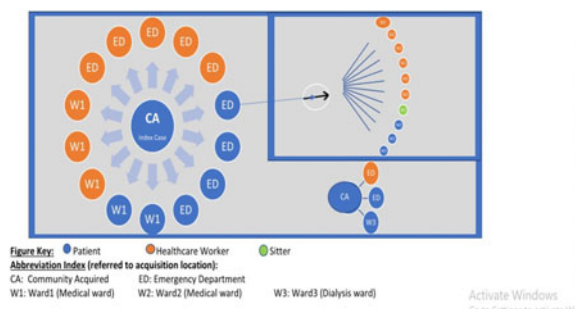


Fig. 1.

Mapping of the patient's journey with numbers of contacts. ED, emergency department; HCW, health care worker, ICU, intensive care unit.



Fig. 2.

emergency department acceptance, maintaining low elective services, limiting inpatient admissions, and encouraging discharge. Early detection and quarantining of any suspected cases took place through extensive contact tracing, properly triaging all patients upon admission, consistent monitoring of inpatients and HCWs for any emerging acute respiratory illness, allocation of more single rooms inside the facility and staff dormitory, and extending the services of virology laboratory to get timely results. Further measures consisted of extensive education on infection control practices, monitoring healthcare worker adherence, reassuring the public by maintaining transparency of published reports, and launching a hotline to respond to HCW concerns. Moreover, travel restrictions applied to any person with a history of exposure to a confirmed MERS-CoV case during the 2-week monitoring period. **Results:** Overall, 44 cases of MERS-CoV infection were reported from 3 simultaneous clusters during the 2017 Riyadh outbreak, including 11 fatal cases. Among all of the cases, 29 cases were reported at King Saud Medical City. The outbreak at KSMC required 30 days to be controlled. **Conclusions:** High vigilance for early detection is a key control measure. To be more sensitive, point-of-care MERS-CoV testing is required because clinical suspicion is challenging in patients presenting with acute renal failure.

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### Minimum Healthcare Worker Influenza Immunization Rates Required to Decrease Influenza Transmission in Acute-Care Inpatients

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**Background:** Annual influenza immunization of healthcare workers (HCWs) is widely recommended to reduce the risk of healthcare-associated influenza (HAI). Although there is a clear association between