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INNOVATIVE APPROACHES TO MONITOR AND MANAGE INFECTIOUS DISEASE OUTBREAKS
IN THE GULF COOPERATING COUNTRIES USING SPACE TECHNOLOGY

Abstract

Infectious diseases, outbreaks and pandemics have caused more deaths than several wars combined. The recent COVID-19 Pandemic continues to show how the world has been impacted by communicable diseases, which not only impacts health but several areas that impact our social determinants of health (Economy, food security, etc.).

No country in the World is immune from infectious diseases and zoonotic infections, including those in the Gulf Region. Middle East Respiratory Syndrome (MERS) is an illness caused by the Middle East Respiratory Syndrome Coronavirus (MERS-CoV). The first reported cases in Saudi Arabia were in 2012 and resulted in over 2190 cases and 854 deaths. The U.A.E. had 92 MERS cases and 12 deaths. MERS-CoV was listed by the World Health Organization among viruses that would likely cause a future epidemic. MERS causes a severe respiratory illness and with almost 40

The Gulf Cooperating Countries (G.C.C.) particularly the United Arab Emirates and Saudi Arabia have taken significant strides in enhancing their space pursuits and ambitions and have the potential to support their efforts to address infectious disease and zoonotic illness outbreaks such as MERS utilizing space assets.

Additionally, the UAE and Saudi Arabia also support many other countries in their efforts to tackle outbreaks, with Saudi Arabia and UAE providing around 35millionand5 million respectively to help tackle the 2014 Ebola outbreak in West Africa. Thus, having the option of extending their support of other nations by exploration support through space-based assets.

We investigated various space related assets and technologies that can be utilized by the U.A.E., Saudi Arabia and other G.C.C. Countries. Options such as remote sensing utilizing satellite data to monitor outbreaks, disease vector migratory patterns can assist in monitoring outbreaks. Additionally, telemedicine offers the opportunity to assist managing and monitoring patients at remote locations, as well as patients that are in isolation. This paper outlines key areas to focus efforts upon and address global challenges pertaining to MERS and other infectious disease outbreaks