

Current major event

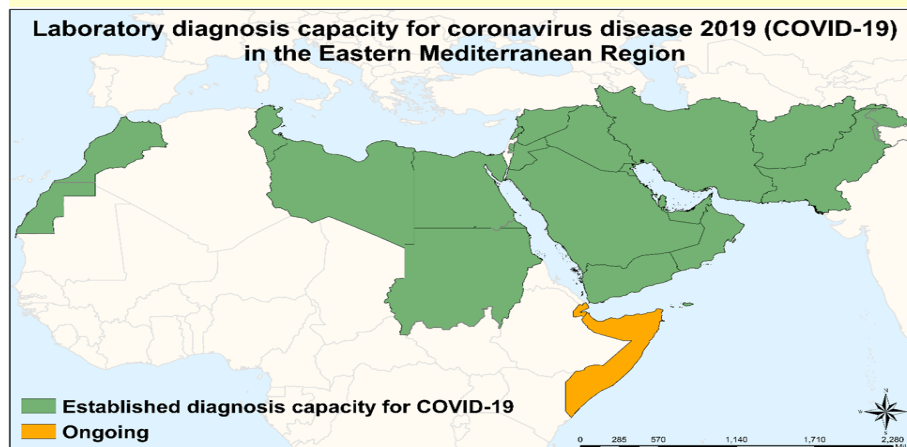
Laboratory Testing for COVID-19 in the EMR

In Eastern Mediterranean Region, as of 4th April 2020, a total of 73 077 cases were tested positive for SARS-CoV-2 pandemic by using real time reverse transcription polymerase chain reaction (rRT-PCR), which is considered as the gold standard for detection of SARS-CoV-2. rRt-PCR capacity exist in 21 out 22 countries in the region (*See map*). The highest reported cases were in IR Iran followed by Pakistan and Saudi Arabia.

Editorial note

Laboratory diagnostic testing for COVID-19 is fundamental to tracking the virus, suppressing transmission, and containing the disease. It is critical for grasping epidemiology and informing case management. Laboratory testing for COVID-19 and its associated virus includes methods for detecting the virus itself (molecular), and methods for detecting antibodies (serology) in response to the viral infection. Detection of the virus and/or its genetic material can be done by using rRT-PCR, along with nucleic acid tests and other sophisticated analytical testing techniques. Serological assays can be used to detect infection in individuals starting 7 days or so after the onset of symptoms, to determine immunity, and in population surveillance. There are many considerations associated with these serological assays including; not having very high sensitivity which necessitate duplication of testing for confirmation, cross-reactivity with substantial circulation of human corona viruses (NL63, OC43, 229E and HKU1) and yielding false results when compared to rRt-PCR as shown in many studies. Therefore, the molecular testing is the current WHO recommended method for the identification and confirmation of infectious cases.

In responding to COVID-19 pandemic, WHO has defined four transmission scenarios; at which the transition from one to another (i.e; sporadic cases to community transmission) can be extremely rapid. WHO strongly advises all countries to prepare even before the first case has been detected. Preparedness and readiness should include the establishment of COVID-19 testing capacity in country. If testing capacity is not yet available, assess preparedness for sending specimens of suspected cases to a WHO reference laboratory for COVID-19 testing while establishing local testing capacity. If testing is available at the national level, plan for surge



COVID-19 Laboratory testing capacity, EMR 2020

Capacity	No
National influenza centers (NICs)	18
National influenza laboratories (NILs)	3
rRT-PCR testing capacity	22
Virus Isolation capacity	12
Genome sequencing capacity	7
WHO collaborating centers (WHO CCs)	0
WHO essential regulatory laboratories (WHO ERLs)	0

capacity by establishing decentralized testing capacity in sub-national laboratories under the supervision of the COVID-19 national reference laboratory. Options to engage private laboratory services or the academic sector should be considered. When testing facilities are limited, available facilities tend to be located in or near a capital city, making timely access to testing difficult for people living in other parts of the country. Consider the possibility of mobile laboratories or, if available, automated integrated Nucleic Acid Amplification Test (NAAT) systems that can be operated in remote regions and by staff with minimal training.

Supported by WHO, almost all the countries in EMR have established and maintained robust laboratory diagnostic capacity for COVID-19 (*See table*). EMR laboratory quality is regularly reassessed and assured through the External Quality Assessment Programme, a system for objectively checking lab performance. These assessments are always followed by corrective actions such as national and regional trainings, and capacity building through regional exchange visits and technical missions.

Update on outbreaks

in the Eastern Mediterranean Region

COVID-19 in 21 EMR countries;

Current public health events of concern

[cumulative N° of cases (deaths), CFR %]

Coronavirus disease 2019 (COVID-19): 2019-2020

Afghanistan	[270(5), 1.9%]
Bahrain	[688 (4), 0.6%]
Djibouti	[51 (0)]
Egypt	[985 (66), 6.7%]
Iran	[55 743 (3452), 6.2%]
Iraq	[878 (56), 6.4%]
Jordan	[310 (5), 1.6%]
Kuwait	[479 (1), 0.2%]
Lebanon	[520 (17), 3.3%]
Libya	[17 (1), 5.9%]
Morocco	[858 (50), 5.8%]
occupied Palestinian territory (oPt)	[205 (1), 0.5%]
Oman	[277 (1), 0.4%]
Pakistan	[2450 (35), 1.4%]
Qatar	[1075 (3), 0.3%]
Saudi Arabia	[2179 (29), 1.3%]
Somalia	[7 (0)]
Sudan	[10 (2), 20%]
Syrian Arab Republic	[16 (2), 12.5%]
Tunisia	[495 (18), 3.6%]
United Arab Emirates	[1505 (10), 0.7%]