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Current Health Event

Coronaviruses

Coronaviruses are a family of viruses that cause illness ranging from mild infection in the upper respiratory tract to more severe lower respiratory tract infections. There are many coronaviruses but few are known to cause disease in humans. 3 of these coronaviruses can produce severe symptoms in humans; the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), and the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which is the virus that causes Coronavirus Disease 2019 (COVID-19).

Editorial note:

The first cases of SARS were detected in November 2002 in China, and SARS was recognized as a global threat in March 2003. The epidemic's last human chain of transmission was broken in July 2003. By that time the virus had resulted in 8089 cases in 26 countries, and 774 deaths. The 2003 epidemic caused significant social and economic disruption in countries with local transmission. Since then, SARS reappeared on a few smaller occasions in 2004, most were related to laboratory-acquired infections due to biosafety incidents. There have not been any SARS cases reported since 2004. However, it is difficult to predict if SARS will reemerge again someday in epidemic form.

In September 2012, the first MERS case was reported in Saudi Arabia. Since then, it has spread to 27 countries. Up until January 2020, more than 2500 human MERS infections and more than 800 deaths have been confirmed. Around 80% of the infected cases have occurred in Saudi Arabia. Most of the MERS-CoV infections have been attributed to human-to-human infections in health care settings. Healthcare workers and caregivers are most at risk because of their close contact with the patient.

On 31 December 2019, WHO was informed of a cluster of cases of pneumonia of unknown etiology in Wuhan, China. SARS-CoV-2 was later identified as the causative agent of this outbreak. On the 11th of February the disease caused by the virus was named Coronavirus Disease 2019 (COVID19). WHO declared COVID-19 outbreak a Public Health Emergency of International Concern (PHEIC) on the 30th of January. By doing so WHO has emphasized the pressing need to coordinate international efforts in order to reduce the threat in affected countries and to curb the risk of further spread. On the 11th of March, WHO declared COVID-19 as a pandemic, the first pandemic caused by a coronavirus. Up until the 31st of March 750,890 cases were reported to WHO from 202 countries, and 36,405 deaths were confirmed.

Research suggests that the primary host of SARS-CoV and MERS-CoV is bats, and this is likely to be true about SARS-CoV-2 as well. The intermediate host for MERS-CoV is dromedary camels while that of SARS-CoV is civet cats. The animal reservoir of SARS-CoV-2 has not been determined yet.

Human-to-human transmission of the three viruses happens through respiratory droplets, by direct contact with infected persons, or by contact with contaminated surfaces. COVID19 seems to spread more easily than MERS and SARS; a recent study suggests that this might be the case because people with COVID-19 may be transmitting the virus earlier in the course of the infection, just as their symptoms are developing, or even while asymptomatic (*L. Zou et al, 2020*).

COVID19 has a lower Case Fatality Rate (CFR) than SARS and MERS. Common symptoms of these diseases include fever, cough and shortness of breath. Gastrointestinal symptoms have also been reported. Moreover, pneumonia is common among severe cases. Persons who are most prone to severe illness and complications are older adults, persons with compromised immune systems, and those with chronic conditions. No vaccine or specific treatment has been developed yet for these diseases. The administered treatment is in the form of supportive care and depends on the patient's clinical condition.

In Lebanon, no SARS cases were reported during the 2003 outbreak. 2 MERS cases were confirmed; one in 2014 and the other in 2017. However, no deaths from MERS were reported. As for COVID19, the first case was detected on the 21st of February 2020, and up until the 31st of March 463 cases and 12 deaths were reported. In recent years, WHO supported the MOPH in establishing an Early Warning Alert and Response System (EWARS) and a Severe Acute Respiratory Infections (SARI) surveillance network. These efforts aim at enhancing the country's communicable diseases detection capacity and are key interventions in improving Lebanon's preparedness in the face of outbreaks.

Figure 1: Comparison between SARS-CoV, MERS-CoV, and SARS-CoV-2

Virus	First identified	Primary host	Intermediate host	Incubation period	Number of cases	Number of deaths	CFR
SARS-CoV	2002	Bats	Civet cats	2-10 days	8,098	774	~10%
MERS-CoV	2012	Bats	Camels	2-14 days	2,519	866	~34%
SARS-CoV-2	2019	Possibly bats	Not identified yet	2-14 days	750,890*	36,405*	~5*

*as of 31 March 2020

WHO encourages all Member States to continue their surveillance for severe acute respiratory infections (SARI) and to carefully review any unusual patterns. As per the International Health Regulations (IHR), Member States are reminded to promptly assess and notify WHO of any new case of infection with SARS-CoV, MERS-CoV, and SARS-CoV-2. WHO will continue to monitor the epidemiological situation of severe acute respiratory infections, and to conduct risk assessments based on the latest available information.

Notifiable Diseases in Lebanon
[Cumulative n° of cases among all residents]
as of 27 May 2020

Disease	2019	2020	Feb 20	Mar 20
Vaccine Preventable Diseases				
Polio	0	0	0	0
AFP	87	23	8	4
Measles	1070	17	5	0
Mumps	124	12	8	0
Pertussis	78	44	13	7
Rabies	0	0	0	0
Rubella	26	0	0	0
Tetanus	0	0	0	0
Viral Hep. B	278	31	14	7
Water/Food Borne Diseases				
Brucellosis	224	35	3	9
Cholera	0	0	0	0
Hydatid cyst	30	5	2	1
Typhoid fever	257	41	10	9
Viral Hep. A	426	108	15	65
Other Diseases				
Meningitis	448	64	18	15
Viral Hep. C	78	23	7	4