Current major event

Influenza laboratory capacity in the EMR

As of March 2018, a total of 21 influenza laboratories from 20 countries of the WHO Eastern Mediterranean Region (EMR) have built their capacities to detect and diagnose seasonal influenza. Of these, 16 are National Influenza Centers (NICs). These laboratories have varying capabilities and capacities in monitoring seasonal influenza virus and responding to the emergence of novel influenza virus subtypes, reassortant viruses, and other newly emerging respiratory pathogens in a timely and coordinated manner.
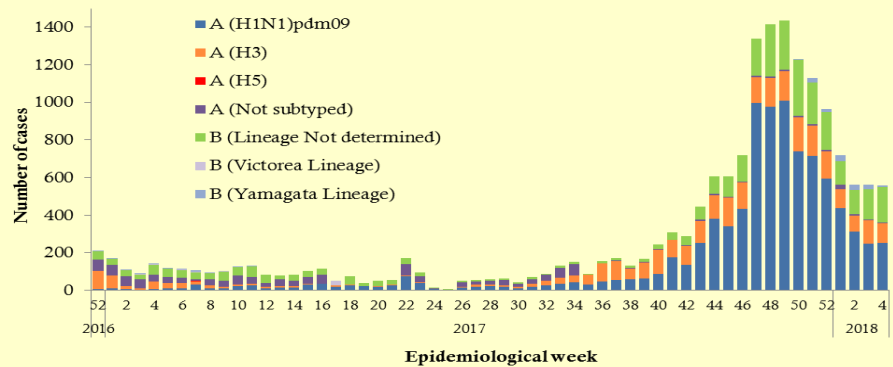
Editorial note

National Influenza Centers (NICs) form the backbone of the WHO's Global Influenza Surveillance and Response System (GISRS). The NICs collect and/or receive clinical specimens from the surveillance system of each country and perform preliminary analysis and detection. Then, for advanced antigenic and genetic analysis, the NICs ship representative clinical specimens and isolated viruses to WHO Collaborating Centers (WHO CCs). The results of this analysis guide the basis for WHO's recommendations on the composition of seasonal influenza vaccine each year. They are also used for risk assessment of seasonal influenza and viruses with pandemic potential. This early detection stimulates rapid response in the event of any emergency.

In the EMR, 16 NICs were designated by WHO from 15 countries; the remaining 5 countries have Influenza Laboratories that are not yet designated by the ministry of health of the concerned countries as National Influenza Center. At the moment, 2 countries lack influenza testing capacity (Djibouti and Somalia). The functioning of these laboratories contribute significantly to GISRS by sharing influenza virological data and representative samples with WHO CCs either directly to WHO's FluNet platform or indirectly to a regional platform such as the EMFLU (*see graph*).

Influenza laboratories across EMR have good molecular detection capabilities, however their capacities still vary. Only 6 countries are sequencing partial genome of influenza A and/or B viruses using Sanger sequencing and 2 laboratories have the capability to conduct phenotypic antiviral tests (*see table*). A total of 12 laboratories perform seasonal influenza virus isolation in cell culture as well as antigenic characterization of human influenza virus, however these laboratories are neither monitoring the antigenic and genetic characteristics nor the drug susceptibility of influenza viruses in their routine influenza virus surveillance.

Laboratory capacity strengthening for influenza virus detection and isolation is required for periodic monitoring of circulating influenza virus, detection of any new or abnormal sub-type (showing antigenic drift) and also for early detection of any novel influenza virus with pandemic potential. Influenza Laboratories form an integral part of pandemic influenza preparedness. Therefore, just as it is important to enhance the laboratories capacities for influenza virus detection, it is also essential that these capacities are maintained or sustained at any given point in time.

Weekly positive cases of influenza by subtype, epi week 52 (2016) to epi week 4 (2018)

Laboratory Elements and Capacities of EMR Countries

Laboratory Elements	Number of countries
Designated NICs	15
Laboratories with RT-PCR capacities	19
Laboratories sharing influenza viruses with WHO CC	14
Laboratories participating in EQAP	16
Laboratories with virus isolation capacities	12
Laboratories sharing data with FluNet/EMFLU	16
Laboratories with sequencing capacity	6
Laboratories having capacity for antiviral susceptibility testing	2

Update on outbreaks in the Eastern Mediterranean Region

MERS in Saudi Arabia; **cholera** in Somalia; **cholera** in Yemen; **dengue** in Sudan.

Current public health events of international concern
[cumulative N° of cases (deaths), **CFR** %]

Avian influenza: 2006-2017	
Egypt (A/H5N1)	[359 (122), 34%]
Egypt (A/H9N2)	[4 (0)]
Avian influenza A (H7N9): 2013-2017	
China	[1,565 (612), 39.1%]
Chikungunya: 2016-2018	
Pakistan	[8,484 (0)]
Cholera: 2017-2018	
Somalia (2018)	[997 (8), 0.80%]
Yemen	[1,069,197 (2262), 0.21%]
Diphtheria: 2018	
Yemen	[1216 (73), 6.0%]
Bangladesh	[5,764 (38), 0.65%]
Dengue fever: 2017-2018	
Sudan	[197 (3), 1.5%]
MERS: 2012-2018	
Saudi Arabia	[1,803 (703), 38.9%]
Wild poliovirus: 2018	
Afghanistan	[3 (0)]
Yellow Fever: 2017-2018	
Brazil	[464 (154)] 33.1%