World Health Organization
REGIONAL OFFICE FOR THE Eastern Mediterranean

Weekly Epidemiological Monitor

ISSN 2224-4220
Volume 12; Issue no 09; 03 March 2019

Current major event

A cluster of deaths in children reported from Sudan

A cluster of 13 deaths among children with the signs and symptoms of neurological manifestations of unknown illness has been reported from Red Sea state in Sudan in recent time.

Editorial note

Since 7th November 2018 to 3rd February 2019, a total of 17 children with the age ranging from 6-13 years were admitted in four different hospitals of Red Sea state in Sudan. Of these 13 children died on the same day of their admission to the hospitals and four children recovered.

The first case was reported on 7th of November 2018, and the last reported case was on 3rd of February 2019 from three hospitals in Red Sea state. The laboratory analysis of blood samples collected and tested at the Central Public Health Laboratory of Sudan revealed 3 samples positive for Chikungunya fever (by enzyme-linked immunosorbent assays (ELISA). These samples were also tested for dengue, malaria and West Nile fever as well but none of the samples were positive.

In January 2019, a joint investigation team comprising of the Federal Ministry of Health in Sudan and WHO Country Office in Sudan went to Red Sea state in Sudan to investigate this cluster of 13 death in children. A case definition was prepared and agreed by the team for field investigation. The mission visited four hospitals where the cases were reported, reviewed registers and interviewed various health staff and found that these cases were presenting the similar picture of the illness (*see table*).

The aetiology of the current cluster remained unknown, and remains a concern. Although no human-to-human transmission has been reported amongst the reported cases, the fact that a number of cases are presenting with similar signs and symptoms with high CFR (76.47%), the situation remains a public health concern. At the moment, what is important is to collect more samples from the cases with similar presentations and screen and test these fresh samples for all viral, bacteriological and as well as for other pathogens that may also cause neurological manifestations. At the same time, all efforts should also continue to identify more cases using a standard case definition, improve case detection and case management and enhance surveillance *(Please see above)*

A number of knowledge gaps exist which are needed to be addressed as quickly as possible in order to better understand the nature and characteristics of this cluster of deaths in Sudan and the reasons behind such a high case fatality rate. Enhanced surveillance using a defined case definition and using a structured line list for the collection of the data, better analysis of the data, scaling up of laboratory confirmation and including options for pathogens as much as possible can help in addressing these knowledge gaps.

Risk communication may play a major role in the community to increase awareness about protective measures needed to reduce the possibilities of interaction with the risk factors.

Recommended public health actions

- In-depth epidemiological investigation can be conducted to understand the characteristic of the cluster.
- Develop a case definition according to the available data and use it to list down the similar cases may be reported from other hospitals as well.
- A standard line list can be developed and shared with the relevant stakeholders and ensure appropriate data collection.
- The available samples of the current cluster should be tested for all hemorrhagic fevers including Yellow fever and Rift valley fever, as well as other viral and bacteriological pathogens.
- According to the signs and symptoms and using the defined cases definition collect the necessary samples for diagnosis (CSF, Urine, blood, serum etc.).
- If the laboratory confirmations are non-conclusive then efforts can be made to transport the specimens to other referral laboratories for understand the cause

Signs and symptoms of the reported cluster from Sudan

Signs and symptoms	Percentage
High fever	100%
Severe headache	76%
vomiting	76%
Joint pain	41%
Convulsion	29%
Confusion	35%
Coma	29%

Update on outbreaks

in the Eastern Mediterranean Region

MERS in Saudi Arabia; **MERS** in Oman; **cholera** in Somalia; **cholera** in Yemen; **Multidrug-resistant typhoid fever** in Pakistan.

Current public health events of concern

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

Avian influenza: 2006-2017	
Egypt (A/H5N1)	[359 (122), 33.98%]
Egypt (A/H9N2)	[4 (0)]
Ebola virus disease (EVD): 2018-2019	
Democratic Republic of Congo (DRC)	[895 (561), 62.68%]
Cholera: 2017-2019	
Somalia	[6 822 (46) , 0.67%]
Yemen	[1 436 206 (2 781), 0.19%]
Diphtheria: 2018-2019	
Yemen	[3 392 (194), 5.71%]
Bangladesh	[8 442 (45), 0.53%]
MERS: 2012-2019	
Saudi Arabia	[1 985(744), 37.48%]
Oman	[24 (7), 29.16%]
Multidrug-resistant typhoid fever: 2016-2019	
Pakistan	[6 204 (0)]