

Current major event

OCV risk assessment in Sudan

In October 2017, the Federal Ministry of Health, Sudan, in collaboration with WHO and other partners conducted assessment to determine risk profile of states and localities for occurrence and spread of cholera in order to prioritize localities and special high risk groups for use of oral cholera vaccine (OCV) for prevention of the outbreak.

Editorial note

The country has faced a number of cholera outbreaks in last decade (*See table*). In order to prevent the occurrence of cholera in the country, the government decided to use oral cholera vaccine which is safe, effective and immunogenic for preventing the occurrence of cholera. As such the country conducted a risk assessment to identify areas that are at risk and which can be targeted for oral cholera vaccination campaign. The assessment adopted three approaches for data collection including key respondents interviews using a standardized questionnaire that was adapted for this purpose; desk review of relevant documents including past outbreak of cholera; field assessment to review the available capacities for early detection and public health interventions, and patterns of environmental risk factors including access to water and sanitation facilities as part of risk assessment.

According to the findings, key risk factors for cholera outbreak were identified in assessed states and localities. These factors include poor access to safe water and sanitation facilities in most localities; and behavioral factors such as open defecation, etc. Other factors included limited access to health services, movement of refugees and displaced populations from affected areas to non-affected areas, including cross border movements between Ethiopia and Sudan; Chad and Sudan; and South Sudan and Sudan.

The assessment found that the major risk factors in most at risk district are predominantly environmental in nature. These include recurring heavy rains and subsequent floods, and poor water and sanitation infrastructure for high risk areas. Other key risk factors that were identified include overcrowding and congestion in IDP/refugee camps; protracted armed conflict and insecurity; mass population movements including internal displace-

Phase wise implementation of OCV campaign in Sudan

State	Locality	Target population (incl. host community)	Phases	Target for each phase	Doses required for 2 rounds incl. 10% wastage	Approximate time of vaccination (Two rounds per phase, with at least 14 days apart)
Gedarf	Elfashaga	235519	Phase 1	780569	1717252	April 2018
Kassala	Wad Elhelaw	149599				
Kassala	Reifi Kassala	245432				
Kassala	Khasm Algirba	150020				
White Nile	Guli	155110	Phase 2	704053	1548916	October 2018
White Nile	Rabak	286873				
White Nile	Elgetaina	262070				
White Nile	Elsalam	265150	Phase 3	517416	1138315	January 2019
White Nile	Elgabalaïn	252266				
E. Darfur	Aldein	240283	Phase 4	684041	1504891	April 2019
E. Darfur	Bahr Alarab	176599				
E. Darfur	El Firduce	119238				
N. Darfur	Al-liayit	101386				
W. Darfur	Karainek	46535	Phase 5	664822	1462609	October 2019
Northern	Dongola	28115				
Khartoum	Khartoum	565303				
Red Sea	Toker	71404				
GRAND TOTAL		3350901		3350901	7371983	

Past reported outbreaks of cholera in Sudan

Year	Cases
2006	9,497
2007	1,000
2008	14,535

ment and refugee movements in South Darfur and other Darfur states, Kassala, Blue Nile, and South and West Kordofan states in the country.

The findings underscored the need for multifaceted approach to minimize the risk of outbreak and spread of cholera in Sudan. Priority interventions that were considered as part of long term plan for cholera control in the country include targeted improvement of access to safe water and optimal sanitation facilities; effective real time surveillance systems and enhanced cross-border communication; and targeted use of OCV among high risk and vulnerable population groups.

Previously the country used preventive campaign using OCV in August 2016 and also in June 2017. The current cholera vaccination campaign is also planned as a pre-emptive intervention which will be implemented in five phases covering a total of nine high risk states comprising of 17 districts. As per the plan more than 3.3 million population will be vaccinated with 7.3 million doses of OCV (*see table*). These five phases of the campaign will be completed in the last quarter of 2019.

Evidence has shown that pre-emptive OCV campaigns complemented by other preventive public health interventions can prevent major cholera epidemics.

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	[8,521 (0)]
----------	-------------

Cholera: 2017-2018

Somalia	[2,672 (13), 0.4%]
Yemen	[1,091,288 (2,275), 0.2%]

Diphtheria: 2018

Yemen	[1,675 (90), 5.3%]
Bangladesh	[6,780 (42), 0.6%]

Dengue fever: 2017-2018

Sudan	[233 (3), 1.2%]
-------	-----------------

MERS: 2012-2018

Saudi Arabia	[1,831 (713), 38.9%]
--------------	----------------------

Wild poliovirus: 2018

Afghanistan	[7 (0)]
Pakistan	[1 (0)]

Yellow Fever: 2017-2018

Brazil	[1,257 (394)] 31.3%
--------	---------------------