



Malaria and VHF Outbreak in Darfur, Sudan
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Federal Ministry of Health | World Health Organization



Highlights

- In the period of 29 August–4 November 2015, a total of 227 suspected cases of severe dengue including 110 deaths were reported in South, East, Central, West and North Darfur. A total of 27 new cases, including 6 deaths, were reported in the period of 30 October–4 November 2015.
- Of 50 patient samples analyzed at the Central Public Health Laboratory (CPHL) in Khartoum, 10 were positive for dengue (by PCR, ELISA IgM & NS-1); 8 positive for West Nile virus and one positive for Chikungunya. All the samples tested negative for Yellow fever, Crimean Congo Hemorrhagic Fever (CCHF), and Rift Valley fever.
- Of 55 samples collected from healthy family members of the cases, 18 were positives for dengue (PCR, IgM & NS-1), one positive for West Nile, and 3 positive for Chikungunya. All the samples tested also negative for Yellow fever, CCHF, and Rift Valley fever.
- In addition, review of records in the reporting health facilities revealed that over 80%, 58% and 33% of the cases tested also positive for malaria in West, Central and East Darfur, respectively. This point out the high level of co-infection with malaria amongst patients with severe symptoms who tested positive for Dengue Fever, and has implications on the approach for vector control and surveillance activities.

Epidemiology

- About 59% of the reported cases were from West Darfur, 20% from Central Darfur, 16% from North Darfur, 4% from East Darfur and 0.4% from South Darfur.
- The cases are from 16 localities in Darfur: Zalingei, Azom, Mukjer, Nertity Wadi Salih, Bendecy, Keranik, Genaina, Habela, Alseraif, Saraf Omra, Aliaat, Kubum, Eddaein, Asalaya, and Adella. The last four localities are newly affected and started reporting suspected cases since 30 October.
- Out of the total reported cases, 54% were males.
- Age distribution of the cases: 4% in the age group 0-1.9 years, 16% in the age group 2-4.9 years, 48% in the age group 5-14.9 years, 19% in the age group 15-29.9 years, 9% in the age group 30-44.9 years and 4% in the age group ≥45 years.
- No evidence of person to person transmission, as well as no reported cases among health workers.
- No neurological signs were reported among the cases.
- Ongoing veterinary surveys show no evidence of infection and no reports of perished animals or abortions.
- Since the epidemiological week 30 (end of July), the number of reported cases of malaria has been increasing sharply particularly in Central Darfur but also in other states of Darfur.

Table 1: Distribution, case fatality ratio (CFR), attack rate (AR) of suspected cases of severe dengue per locality in Darfur in the period from 29th August to 2nd November 2015.

State	Locality	No. of Cases	No. of Deaths	CFR	AR/10000	Date of Last Case Admitted	Date of Last Case Reported
Central Darfur	Zalingei	28	3	11	1.06	31-Oct-15	1-Nov-15
	Azom	3	3	100	0.49	4-Oct-15	6-Oct-15
	Mukjer	6	0	0	0.88	3-Nov-15	4-Nov-15
	Nertity	4	1	25	0.24	29-Oct-15	31-Oct-15
	Wadi Salih	3	0	0	0.13	31-Oct-15	31-Oct-15
	Bendecy	1	0	0	0.01	31-Oct-15	1-Nov-15
	Total	45	7	15.6	0.52		
West Darfur	Keranik	110	77	70	3.37	3-Nov-15	4-Nov-15
	Genaina	24	8	33	0.79	3-Nov-15	4-Nov-15
	Habela	1	1	100	0.12	31-Oct-15	31-Oct-15
	Total	135	86	64	1.87		
North Darfur	Alseraif	35	13	37	5.30	1-Nov-15	2-Nov-15
	Saraf Omra	1	1	100	0.12	7-Oct-15	8-Oct-15
	Aliaat	1	1	100	0.12	20-Oct-15	24-Oct-15
	Total	37	15	41	1.59		
South Darfur	Kubum	1	0	0	0.03	21-Sep-15	22-Sep-15
	Total	1	0	0	0.03		
East Darfur	Eddaein	5	2	40	0.30	26-Oct-15	27-Oct-15
	Asalaya	3	0	0	0.21	24-Oct-15	2-Nov-15
	Adeela	1	0	0	0.08	1-Nov-15	1-Nov-15
	Total	9	2	22.2	0.21		
Total		227	110	48.5	0.87		

Actions taken

- The three joint high level FMOH/WHO investigation and response teams have completed their field mission in all affected states on 1 November (final report pending).
- States joint MOH/WHO RRT continues to conduct alert investigations in newly affected districts, and samples from suspected cases are sent to Khartoum.
- One-month stock of anti-malaria and intravenous fluids and other essential drugs were made available for all Darfur states.
- FMOH medical teams have been sent to support case management in West Darfur.
- Vector control activities have been started in 12 out of 16 affected localities with support of WHO and FMOH.
- The Federal and States Task Forces have been meeting on daily basis.
- Ministry of Finance transferred SDG 3,45 million to FMOH for response to the outbreak to be distributed to the affected states.
- FMOH jointly with WHO prepared a detailed response plan covering all aspects of disease surveillance, laboratory, vector control, case management and community mobilization. All initial response activities have started, however for the implementation of an effective, comprehensive response and containment plan there is a financial gap of around USD 1,94 million.
WHO is drafting a concept note based on the identified gaps for emergency funding of the response to the outbreak.

Recommendations

- MoH, international agencies and NGOs to deploy mobile clinics and provide proper case management in affected localities.
- MoH, WHO and NGOs to intensify and expand integrated vector control activities to the newly affected localities and the neighbouring ones.
- Engage families and communities in prevention activities including: kill adult mosquitoes by indoor spraying, search for and destroy larva breeding sites in and surrounding household, cover water containers to prevent mosquito egg-laying, sleep under bed nets, wear protective clothing and use mosquito repellents.
- MoH to expedite shipping the positive samples to Pasteur Institute (WHO Collaborating Centre) in Dakar, Senegal for confirmatory testing.
- Revision and strengthening of the surveillance (including entomological and laboratory confirmation) system for VHF to capture the magnitude of DF viral infection in affected communities that will direct the implementation of further preventive measures.
- Improvement of treatment capacity at hospital level.