

Current major event

Deaths from Dengue in Pakistan

Pakistan is endemic for Dengue fever (DF) since 1994. The country faced a number of repeated outbreaks in different provinces during last two decades. The recorded peak transmission season of DF virus is during July to October/November. This year an outbreak was reported from the province of Khyber Pakhtunkhwa with 69 deaths reported from this outbreak so far.

Editorial note

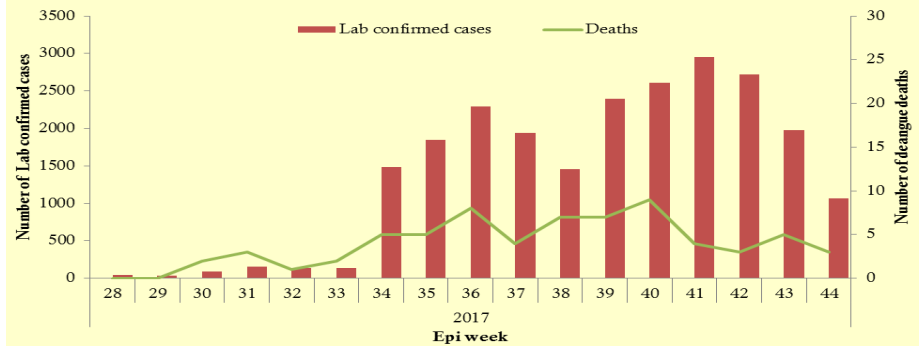
A total of 24,807 laboratory confirmed cases with 69 associated deaths were so far reported from the currently on-going outbreak of DF in Khyber Pakhtunkhwa province (*Please see the graph*).

During this outbreak, a large number of hospitalized cases were reported from the leading tertiary care hospital of Khyber Pakhtunkhwa province. As per the assessment conducted recently revealed that every suspected dengue case was tested by using NS1Ag test in which less than 25% were positive but all of the patients irrespective of the laboratory test result were admitted. This resulted in over admission of cases including mild cases which did not require admission in the hospital. Sometimes such situation may lead to deaths if treatment is not standardized for more severe cases

There are number of reasons for death in dengue (*Please see the box*) such as fluid overload, delay in blood transfusion etc. Majority of dengue illnesses are not severe and need no admission. About 10% of dengue patients may present with severe manifestation such as massive bleeding and these cases need to be treated with timely fluid replacement. Fluid overload or delay in blood transfusion in the event of prolonged blood loss may lead to multiple organ failure and will obviously have poor prognosis or clinical outcome.

In this outbreak in Khyber Pakhtunkhwa province, number of reported deaths increased from epidemiological week no 33 onwards. It is unclear what resulted in such increase in deaths but a recent mission conducted by the WHO Collaborating Center for Case Management of Severe Dengue revealed that the monitoring parameters practiced in the wards for severe dengue fever cases were not standardized. Most of the deaths were

Dengue cases and deaths reported from Peshawar district, Epi week 28-44/2017 (July-9th November)



POSSIBLE CAUSES OF DEATH FROM DENGUE FEVER

- Fluid over load
 - No IV fluid titration
 - No monitoring of in and out of fluid
 - Prolonged duration of IV fluids
 - No use of dextran-40 in cases of fluid overload
 - No initial and follow up Hematocrit testing
- Delayed blood transfusion

reported to have complications like fluid overload (50%) and delayed blood transfusion (60%).

In order to avoid such unnecessary deaths, triage and appropriate clinical management decisions at health facility level are critical in determining the clinical outcome of dengue. In view to strengthen clinical case management, it is important to adapt the dengue case management guidelines to the country context emphasizing on triaging, having clear clinical and laboratory criteria for hospital admission and discharge and also having proper flow diagram for IV fluid management, monitoring parameters, etc.

In addition to proper case management triaging, regular capacity building for doctors, nurses and healthcare personnel are necessary to maintain a reasonably the low CFR for dengue. A well-managed front-line response not only reduces the number of unnecessary hospital admissions but also saves the lives of dengue patients. In the end, the community education and participation is an important key success factor in the prevention and control of dengue morbidity and mortality.

Update on outbreaks in the Eastern Mediterranean Region

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

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	[1,564 (612), 39.1%]
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Chikungunya: 2016-2017

Pakistan	[8,246 (0)]
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Cholera: 2016-2017

Somalia	[78,349 (1,159), 1.5%]
Yemen	[913,741 (2,196), 0.24%]

Plague: 2017

Madagascar	[2,034 (165), 8%]
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Dengue fever: 2017

Pakistan	[114,350 (69), 0.1%]
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MERS: 2012-2017

Saudi Arabia	[1,737 (677), 39%]
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Wild poliovirus: 2014-2017

Pakistan	[5 (0)]
Afghanistan	[10 (0)]

Zika virus infection: 2015-2017

84 countries and territories have reported transmission so far.