

Current major event

Endemicity of Dengue in Pakistan

The outbreak of dengue fever (DF) reported in the province of Khyber Pakhtunkhwa of Pakistan continues unabated (*Please see the graph*). The capital city of the province-Peshawar remains the worst affected area with over 90% of cases reported from this city. Since mid July to mid October 2017, a total of 87,250 suspected/clinically diagnosed cases of DF including 56 associated deaths were reported. Of these, 18,892 cases have been laboratory-confirmed. Samples from the suspected cases were also tested at the National Institute of Health (NIH) in Islamabad and Dengue serotype-2 (DENV-2) was identified as the causative agent for this outbreak in Peshawar.

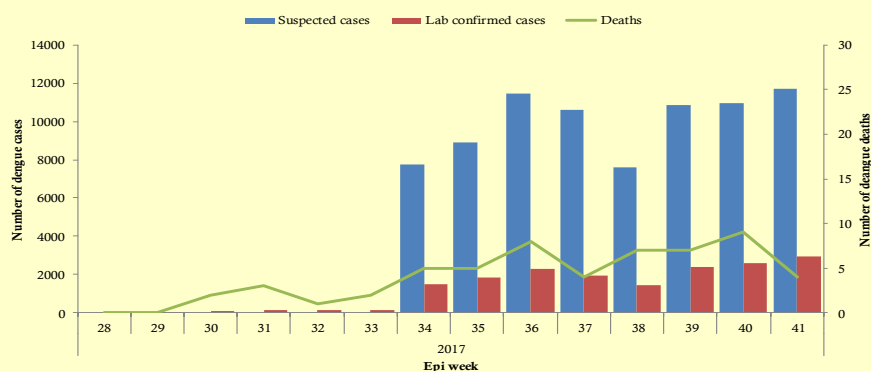
Editorial note

DF is endemic in Pakistan. During early 90s the disease was not known in Pakistan. The first outbreak of DF was detected in Karachi (Sindh Province) during 1994; 145 cases and one death reported. After this outbreak, the country faced a number of repeated outbreaks in different provinces during 1994, 1995, 2003, 2006, 2011, 2013 and in 2017 (*See table*). The biggest outbreak that the country faced, so far, was in 2011 in Lahore (Punjab Province) immediately after the floods in 2010. Over 550,000 suspected/clinically diagnosed cases were reported during that outbreak. During 2013, the country faced another major outbreak in Swat valley of Khyber Pakhtunkhwa province where more than 25,000 suspected cases were reported.

The first outbreak of dengue fever in the province of Khyber Pakhtunkhwa was reported in September 2003 in Haripur district with over 1,000 cases and 07 deaths reported. The laboratory test result revealed Dengue serotype-2 (DENV-2) as the causative strain. Therefore, this is not the first time that the province of Khyber Pakhtunkhwa has reported dengue fever cases caused by the same serotype of DF. A small focal outbreaks of DF were also reported in 2013 from the same province which were also caused by the same serotype of dengue virus (DENV-2).

The vector-borne arboviral diseases such as dengue and chikungunya remain a major health concern in Pakistan responsible for high number of morbidity and mortality. The country is at high risk for repeated epidemics from DF owing to a

Dengue cases and deaths reported from Peshawar district, Epi week 28-41/2017 (July-October)*



*Number of suspected cases prior to week 34 is not available

DENGUE MAJOR OUTBREAKS IN PAKISTAN, 1994-2017

Years	Suspected Cases	Lab confirmed cases
1994	145	NA
1995	77	57
2003	1,000	NA
2006	4,961	1,931
2011	554,663	23,019
2013	33,366	3,668
2017	87,250	18,892
Total	681,462	47,567

multitude of reasons such as unplanned urbanization, over-crowding, limited access of the people to safe drinking water and inadequate sanitation in improvised areas, poor health awareness, and inadequate vector control activities.

Despite the documented evidence that DF remains endemic in Pakistan, the actual burden and magnitude of DF including the high risk areas for potential circulation of DF virus remains unknown. It is important that the country conducts a study to determine the burden of DF in order to identify the hot spots so that these areas can be targeted for integrated vector management. Vector surveillance can also be scaled up in these areas to determine vector densities in order to early pre-empt the occurrence of an outbreak. Disease surveillance also needs to be strengthened in these high risk areas for early detection of cases. In the end, determination of such high risk areas will enable the country to introduce DF vaccines in an evidence-informed way which is effective and immunogenic against all four serotypes of DF.

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) [3 (0)]

Avian influenza A (H7N9): 2013-2017

China [1,564 (612), 39.1%]

Chikungunya: 2016-2017

Pakistan [8,063 (0)]

Cholera: 2016-2017

Somalia [77,783 (1,159), 1.5%]

Yemen [844,046 (2,168), 0.3%]

Plague: 2017

Madagascar [1,297 (102), 7.9%]

Dengue fever: 2017

Pakistan [87,250 (56), 0.1%]

MERS: 2012-2017

Saudi Arabia [1,726 (674), 39%]

Wild poliovirus: 2014-2017

Pakistan [5 (0)]

Afghanistan [7 (0)]

Zika virus infection: 2015-2017

84 countries and territories have reported transmission so far.