

Abstract

# Outbreak Investigation of Dengue Fever in District Malir, Karachi, Sindh, Pakistan, 2015

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**Abstract**

**Background:** Dengue fever is an acute arboviral disease transmitted to humans by bite of mosquito genus *Aedes*. On September 13, 2015, private hospital reported cluster of 19 suspected dengue cases from district Malir. In response to this, we initiated an epidemiological and entomological investigation.

**Objective:** To know magnitude, risk factors, Contain and suggest recommendations.

**Methods:** Descriptive followed by case-control study was carried-out Age- and sex-matched controls were taken with a ratio of 1:2. World Health Organization standard case definition was used to identify suspected and confirmed cases. Active case finding done in health facilities and in community from September 14 to November 10, 2015. Data were analyzed using Epi Info version 7.0. Bivariate analysis done on 95% Confidence interval with 5% margin of error. Blood was collected for confirmation. Entomological surveillance was carried out.

**Results:** One hundred five cases identified, and two deaths reported. CFR=1.9%). Eighty-three (79%) were males with attack rate 1.5/1000. Mean age for cases was 26 years (range: 7-84 years). Most affected age group was 21-30 years n=42; 40% with attack rate (2.4/1000). Over all attack rate was 0.9/1000. Uncovered fresh water reservoir around and the house (OR 6.9; 95% CI: 2.9-11.32;  $P<0.05$ ) non-usage of repellents (OR 3.0; 95% CI: 1.36-3.7;  $P<0.05$ ), absence of window screens (OR 9.5; 95% CI 6.4-24.3;  $P<0.05$ ) were statistically significant associations. All cases were confirmed on ELISA and NS1 Antigen. Adult mosquitoes inside the homes, while Larva and pupa detected in storage fresh water.

**Conclusions:** Stagnant of fresh water in and around domestic premises and not using of repellents in homes and larvicides were most probable causes of this outbreak. Failure to implement mosquito preventive control measures may have contributed to this outbreak. Establishment of isolation wards, Mass awareness, distribution of bed nets, spraying mosquito insecticide and fogging contributed to control outbreak.

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