



Trend Analysis of Dengue Fever –Cases & Deaths in Haryana

KEYWORDS

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ABSTRACT Haryana is one of the states in the north India region regularly reporting Dengue Fever (DF)/ Dengue Haemorrhagic Fever (DHF) outbreaks for the last few years. We have analyzed the trend of cases and deaths due to dengue fever by the methods of moving averages and the method of curve fitting.

1. Introduction

Dengue Fever/ Dengue Haemorrhagic Fever (DF/DHF) is a viral disease having the potential of causing huge scale outbreaks. It occurs in two types:-

- (a) Dengue Fever: it is severe, flu like illness.
- (b) Dengue Haemorrhagic Fever: it is a more severe disease, which may cause death.

Aedes aegypti is the vector of DF/DHF [1]. *Aedes* is a small, black mosquito with white strips. It can breed in any kind of storage containers, having even a small quantity of water, desert coolers, drums jars, pots, buckets, flower vases, tanks, bottles, cisterns, plant saucers, tins, tires, roof gutters, refrigerator drip pans, cemetery urns, bamboo stumps, coconut shells, tree holes and many more places where rainwater is stored.

In India, the first outbreak of DF/DHF is reported during 1963 in Kolkata [2]. In north India region, the outbreaks of DF/DHF was reported in Delhi, Haryana & neighboring states during 1996, 1999, 2003, 2009 [3]. In following years, outbreaks did not occur but a high number of cases of DF/DHF were reported in pre-monsoon & monsoon seasons. DF/DHF was not considered as a major health hazard in Haryana before 1996 outbreak. So there was a little awareness in this regard. Recently, a large outbreak of DF/DHF was reported during Sept. 2015 to Nov. 2015 in Haryana. Here in this paper, we have analyzed the trend of cases and deaths due to DF/DHF during 2010 to 2015 by the methods of moving averages and the method of curve fitting.

2. Trend analysis by the method moving averages and method of curve fitting

A. Determination of the trend of cases of DF/DHF by the method of moving averages [4]

Table-1

Years	Number of Cases	Trend Value(3-year moving average)
2010	866	--
2011	267	634
2012	768	940
2013	1784	922
2014	214	3973
2015	9921	3993
2016	1843*	--

*Provisional till 30th Oct. 2016.

B. Quadratic Trend fitted to the data on no. of cases of DF/DHF

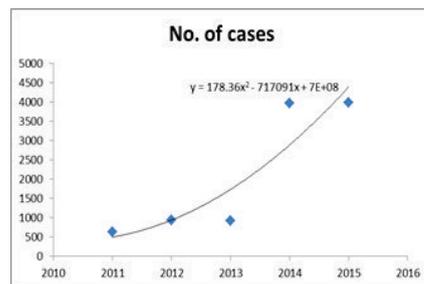


Fig-1

C. Determination of the trend of deaths due to DF/DHF by the method of moving averages [4]

Table-2

Years	Number of Deaths	Trend Value(3-year moving average)
2010	20	--
2011	3	8
2012	2	3
2013	5	3
2014	2	7
2015	13	5
2016	0*	--

*Provisional till 30th Oct. 2016.

D. Cubic Trend fitted to the data on no. of deaths due to DF/DHF

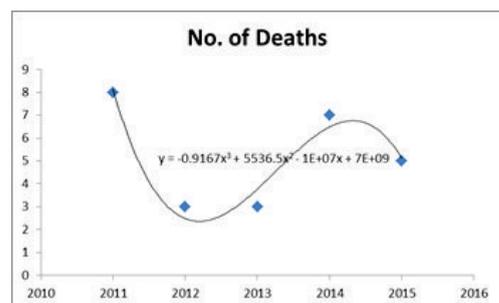


Fig-2

3. Discussion & Conclusion

The trend of DF/DHF cases in Haryana is inclining in past few years. However number of deaths due to DF/DHF has been decreased as per compare to number of cases. The rise in cases was found to be in pre-rainy & rainy season of the year. Increasing in number of cases reflects that there is a need to

organize public health education programs about DF/DHF to increase community knowledge and sensitize the community to participate in Integrated Vector Programme. Also, in each school, there is need of Educational-cum-Health counselor to educate the students. DF/DHF is one of the major health problems which can be controlled by the active participation of community because prevention is better than cure. The control of Aedes mosquito is the only choice; with early detection and proper case management and symptomatic procurement mortality can be reduced substantially. The pathogenesis of DF/DHF is not known, no vaccine is yet available for protection and the vector measures are inadequate. DF/DHF was isolated in India 1944, But the scientific study addressing DF/DHF have been carried out at limited number of centers. The trend of declining in number of deaths due to DF/DHF reflects that Public Health Department plays a significant role. A lot more remains to be accomplished for creating an impact.

References

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