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Community Medicine

DENGUE EPIDEMIOLOGY-VISAKHAPATNAM (GVMC PERI-URBAN)

M.Satyanarayana Raju* Assistant Professor, Dept. of Community Medicine, GVP IHC & MT, Visakhapatnam, AP
*Corresponding Author

Yenni Mani Biologist, GVMC, Visakhapatnam

ABSTRACT In the recent past significant number of dengue cases are reported from peri-urban areas. Gajuwaka, Anakapalli, Bhimili Municipalities and 13 Grama Panchayat are considered as peri-urban (GVMC -Rural). As per the classification of dengue basing on severity in South –East Asia region, India falls under category A (1) and dengue is Major public health problem. Though dengue is notifiable (2), the true incidence is not reported by GVMC like, many other local bodies because of the fear from press and local politicians. Most of the dengue fevers are identified as un-differentiated fevers (3) and there is no further follow up. Some of such fevers may land in dengue hemorrhagic fever /dengue shock syndrome (4) which are life threatening. The disease in peri-urban (5) areas of Visakhapatnam has shown seasonal pattern. Aedes aegypti was found in the houses. Visakhapatnam being costal area climate i.e. (6) annual rain fall (ranging from 1013mm to 1439 mm, 2012 to 2017, source : Cyclone warning center, VSP, Meteorological dept ,govt of India) temperature (16 0 c – 30 0 c) and a relative humidity (60 to 80 percent) are congenial for breeding of Aedes mosquitoes and transmission of virus. Unlike Visakhapatnam urban, there is no Urban Malaria Scheme (7) operating in peri-urban areas except active, passive surveillance, radical treatment for positive cases and Indore residual spray (8) (not accepted by residents). In view of the present situation and further rapid urbanization, lifestyle changes and deficient water management including improper water storage, future epidemics are expected in peri-urban areas also. It is highly essential to prepare advance action plan particularly identifying the high risk areas for implementation of (9) Integrated Vector Management. Further it is necessary to extend the UMS to peri-urban areas also on par with GVMC Urban.

KEYWORDS : : Dengue, Peri-Urban, GVMC

Introduction

Visakhapatnam was set up as municipality in 1858 and later upgraded as corporation in 1979. From 2006 onwards adjacent municipalities i.e. Gajuwaka, Anakapalli, Bhimili and 13 Gram panchayat were added to the Municipal Corporation and upgraded as Greater Visakhapatnam Municipal Corporation (Maha nagara palika). The earth wile Municipal Corporation was confined to the present 7th to 49th election wards and is considered as purely urban (pop 943435, area114.21 km2) with nearly 400 weaker section colonies (slums) located in various parts of the city leading to high density (8260 km2) of population. The newly added municipalities and panchayat are considered as peri- urban (pop 902512, area 465.51km2) areas, with relatively low density (1939 km2) of population. In the recent past GVMC Urban (7-49 Election wards) reported high incidence of dengue (853 cases in 2016). Further the incidence of dengue in peri-urban areas is also showing rising trend. Information regarding undifferentiated fevers is not available. Though Dengue is notifiable disease GVMC is not able to disclose the true picture of the disease like other local bodies due to fear of press and local politicians. No deaths (10) due to fevers were recorded.

Dengue is self-limiting in majority of case. A prevalence of Aedes aegypti together with circulation of dengue virus of more than one type in a particular area tends to be associated with outbreaks of DHF/DSS. It is found in tropical and sub tropical regions around the world predominantly in urban, semi urban areas and is now spreading to rural areas. Children aged less than 5 years are mostly affected. In India the risk of dengue has shown an increase in recent years due to rapid urbanization, lifestyle changes and deficient water management including improper water storage practices.

Materials and Methods

Secondary data was collected from Grater Visakhapatnam Municipal Corporation (GVMC), Visakhapatnam from 2014 to 2017. Total 4 years data was collected. There is raising trend of dengue in peri-urban areas of GVMC; the DM&HO staff is attending active and passive surveillance, radical treatment of positive malaria cases and Indore residual spray (many houses are left due to refusal). GVMC is looking after sanitation Rapid diagnostic tests (RDT) (11). NS1 antigen and number of commercial rapid format serological test kits for anti dengue IgM and IgG anti bodies have become available in the past few years, some of these producing results within 15 minutes. Unfortunately, the accuracy of most of these tests is uncertain since they have not yet been properly validated.

Standard hematological pattern such as platelet count and Hematocrit (12) (13) are important and part of the diagnosis of dengue which was made clear to all Medical officers.

Results

Table-1: Visakhapatnam-Peri-Urban – area wise-Incidence of Dengue 2014-2017

Peri urban -year wise area wise dengue incidence					
Sl. no	Peri urban Election wards/Areas	Year wise dengue 2014	2015	2016	2017
1	1 to 6	24	16	102	55
2	50 to 65	63	53	203	116
3	66 to 72	10	14	61	185
4	Anakapalli	0	1	10	24
5	Bhimili	0	0	1	7
6	total	97	83	377	387

Table-2: Visakhapatnam - Peri-Urban- Incidence of Dengue-Month wise-2014-2017.

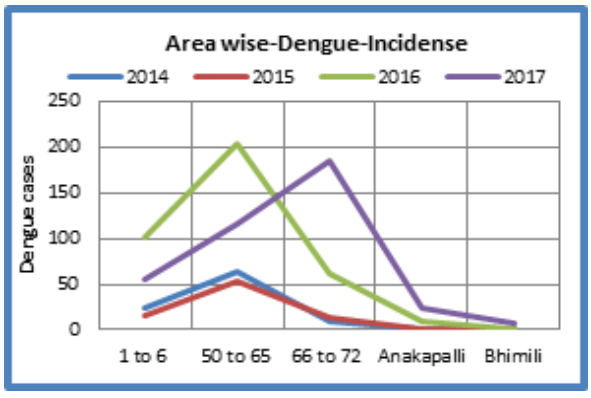
Month	Year			
	2014	2015	2016	2017
Jan	0	1	1	4
Feb	0	1	2	2
Mar	0	1	1	3
Apr	0	1	0	2
May	0	0	5	3
Jun	0	4	11	6
Jul	5	1	12	7
Aug	11	15	74	26
Sep	35	14	132	79
Oct	20	19	94	115
Nov	16	18	37	106
Dec	10	9	8	34
total	97	84	377	387

Table-3: GVMC-Peri-urban malaria month wise-2014-2017

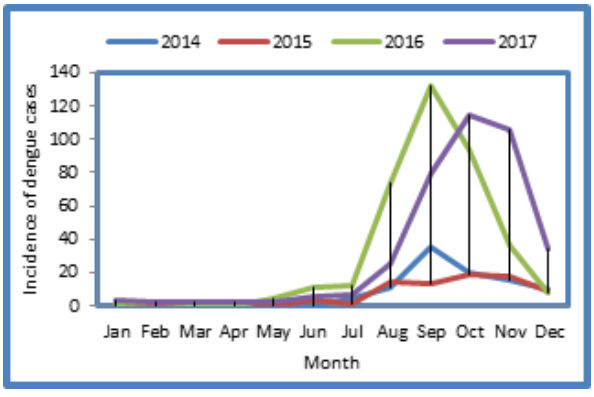
Month	2014	2015	2016	2017
Jan	9	9	18	27
Feb	6	6	12	18
Mar	22	22	44	66
Apr	15	15	30	45

May	17	17	34	51
Jun	23	23	46	69
Jul	137	137	274	411
Aug	50	50	100	150
Sep	40	40	80	120
Oct	27	27	54	81
Nov	29	29	58	87
Dec	20	20	40	60

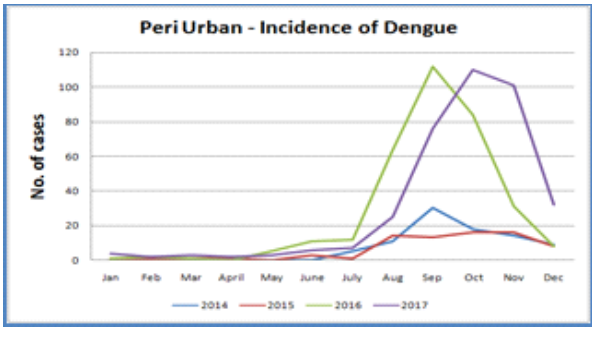
Graph-1 area wise Dengue incidence



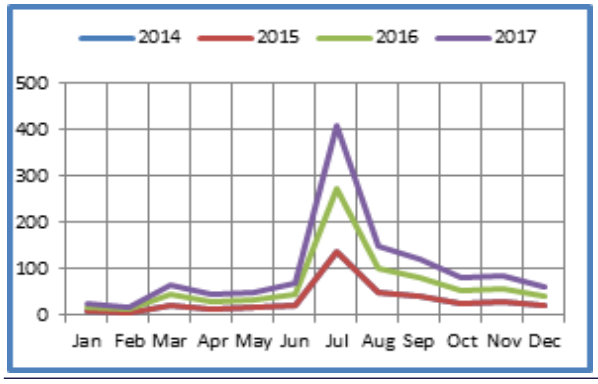
Graph- 2 Month wise Incidence of Dengue cases-2014-2017



Graph-3 –Incidence of dengue-annual rain fall



Graph-4- Peri-Urban area-Malaria fevers showing seasonal



1) Among peri-urban areas, 50 to 65 and 66 to 72 wards reported high incidence
2) Incidence of dengue shown seasonal disease pattern in peri-urban areas
3) GVMC-Peri urban-malaria also shown seasonal pattern

Discussion

Dengue is particularly known for its sudden rise in incidence and report cases in epidemic proportions (14). During entomological survey conducted by Zonal malaria team, larva was found in house containers and aedes mosquitoes were also found. Integrated Vector Management (IVM) in peri urban areas of GVMC is immediately called for in view of rising trend in peri-urban areas. Prevalence of Aedes (entomological survey) together with the circulation of Dengue virus (NS1 antigen and detection of IgM and IgG anti bodies) tends to be associated with outbreaks. Undifferentiated fevers are common during rainy season and dengue fevers are undetected, leading to high number of false negatives. Since there is no follow up of such fevers later they may land in complications. To begin with high risk areas are to be identified in per-urban region areas for intensive action.

Conclusion

In view of the raising trend of Dengue in peri-urban areas the Integrated Vector Management (IVM) may be extended to peri-urban area on par with GVMC- Urban by extending the services of Urban Malaria Scheme since overall responsibility of health lies with the GVMC and Integrated Vector Management (IVM) can be implemented. Notification of dengue is a must, so that appropriate health measures can be initiated and also actual incidence can be documented. Deaths (15) due to fevers in hospitals (private or govt) or at house particularly during rainy season must be recorded by GVMC.

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