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TRENDS OF IDSP REPORTED DISEASES IN A DISTRICT OF ASSAM

Epidemiology

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ABSTRACT

IDSP routinely collects and analyses disease data from a number of reporting units. This study was undertaken to observe the trends of important IDSP reported diseases for seven years in Barpeta district of Assam. Data was collected from DSU, IDSP and desk evaluation done.

ARI, ADD and BD were observed to be the mostly reported cases in the district. Typhoid and malaria have shown a gradual decreasing trend over the years. Dengue has shown a cyclical trend with a rise in the number of cases every third year. Regarding AES and JE, annually around 30% of AES cases have been observed to be JE positive.

Improvement in hygiene and drinking water supply is important to tackle the high case load of ADD and BD in the district. Prompt actions in case of water borne disease outbreak with a potent and vigilant IDSP surveillance network is a necessity in the district.

KEYWORDS

Integrated Disease Surveillance Program, Trends, Surveillance, Assam

INTRODUCTION

The formal birth of surveillance program took place in 1997-98 when the Government of India launched the National Surveillance Program for Communicable Diseases to keep watch over the disease dynamics in the community. It was followed by the launch of Integrated Disease Surveillance Project with World Bank Assistance in November 2004.[1,2] Public health disease reporting systems or surveillance is the first line of defence in identifying any public health emergency with the ultimate aim to early detection of outbreaks or potential outbreaks.[3] Surveillance is recognized as an important means to measure disease burden, morbidity and mortality patterns. IDSP is one such exercise wherein resource is used to collect and analyse data from a number of focal source into a common platform. The project was later phased out in entire India and renamed into Integrated Disease Surveillance Program and funded completely by the government of India. The program now includes new technology like computerization, electronic data transmission, web portal, video conferencing etc.[4]

Usage of surveillance system can enable the government to take note of the diseases specific to a region and thereby provide focussed and improved healthcare facilities in areas deficient of needs. Inspite of nearly a decade of being launched in Assam, not much published literature is available on the holistic disease trends in the state. This paper tries to fill the gap and lean into the trend of the common diseases in a district of Assam.

OBJECTIVE:

To observe the trends of important IDSP reported diseases for seven years in Barpeta district of Assam.

MATERIALS AND METHODS

The present study was undertaken in the district of Barpeta which lies in the eastern part of Assam. As per Census 2011, the total population was 1693622 with average literacy rate of 63.81% and 91.3% of the population reside in rural areas. Mostly, followers of Islam reside in the district with 70.74% population followed by 29.11% of followers of Hindu and 0.06% followers of Christianity.

District Surveillance Unit (DSU), IDSP Barpeta collects weekly reports in "S", "P" and "L" formats from the designated reporting units of the district. "S" means syndromic, "P" means presumptive or probable and "L" means laboratory confirmed. S, P and L forms are reported from Subcenter, health institutions like PHC, CHC, DH and L forms from the laboratory facilities respectively. Data regarding the diseases were collected from DSU, IDSP, Barpeta office and web portal. The compiled reports were used for desk review and analysis was done using MS Excel 2010. Due permission was obtained from the Joint Director of Health Services, Barpeta and District Surveillance Officer, IDSP, Barpeta prior to collection and use of the data. The data have been presented as table, bar diagram, line diagram etc. The rate of annual incidence was calculated by averaging the total number of cases throughout the years, dividing that by the total population of the district and then multiplied by 100000. It was then expressed as per one lakh population per year. Trend analysis of the various diseases were also done accordingly.

RESULTS AND ANALYSIS

(I) Acute Diarrheal Disease and Bacillary Dysentery- The cases of ADD and BD shows an increase in the initial years but have been declining since 2012. The increase in awareness and general hygiene may be a reason in this declining trend.

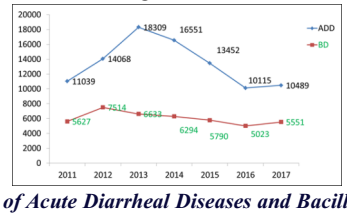

Fig-1: Trend of Acute Diarrheal Diseases and Bacillary Dysentery from 2011-17

(ii) Acute Respiratory Tract Infection- Number of Acute Respiratory Tract Infections cases are on a constant declining trend over the years

Fig-2: Trend of Acute Respiratory Tract Infections from 2011-17

(iii) Enteric fever- The number of suspected Enteric fever cases subjected to Widal test for Typhoid has been almost constant throughout the years. The percentage of Widal positive cases stands at around 10-15% of the samples tested.

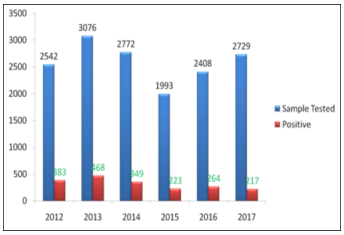

Fig-3: Trend of Enteric fever cases from 2011-17

(iv) Malaria- The number of Vivax and Falciparum malaria has been on a constant decreasing trend over the years.

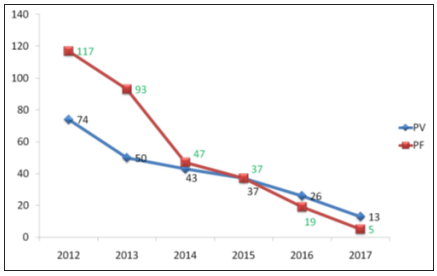

Fig-4: Trend of Pv and Pf cases from 2011-17

(v) Dengue- The reporting of dengue cases has been variable over the years. There was a sharp rise in the number of dengue cases and deaths in 2016. In 2018, a case of dengue death was identified, and EWS was generated, however an expert committee on death review at the state level held that it was not a case of dengue death. The same case has been retained in this paper as dengue death as EWS was already generated.

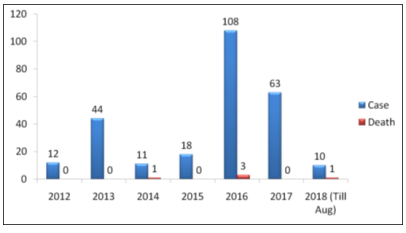

Fig-5: Trend of Dengue cases and death from 2011-17

(vi) AES/JE- AES and JE cases have remained stagnant over the years in Barpeta**.** However, in 2014 there was a sharp rise in the number of AES cases and JE positive cases. In most of the years, the percentage of JE positive cases lies in and around 30% of the AES cases.

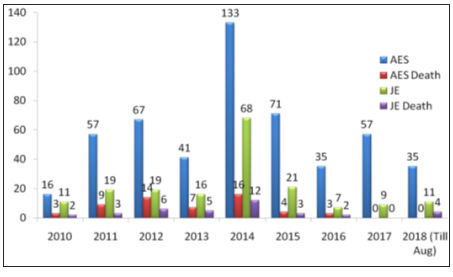

Fig-6: Trend of AES/JE cases and death from 2011-17

(vii) Animal bite- The number of dog bite cases varied widely during the study period with a sharp rise in 2017. On investigating the cause of the rise, it was observed that some institutions reported the same case for each time the case visited to get Anti Rabies vaccine. Hence many cases were shown as new case repeatedly. The health workers were advised to avoid such duplication of reporting.

Snake bite cases declined since 2013 and has been almost constant throughout.

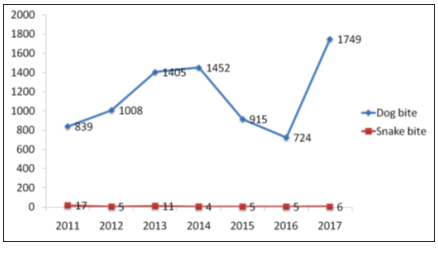

Fig-7: Trend of animal bite cases from 2011-17

(viii) Annual Incidences of disease- The annual incidence of some IDSP reported diseases are shown in table-1. ARI has a high incidence in Barpeta followed by ADD and BD.

Table-1: Rate of annual incidence of various IDSP reported diseases

Disease	Total reported cases (2011*-2017)	Annual incidence/100000/year
ARI	677566	5715
ADD	94023	793
BD	42432	357
Dengue*	256	2.5
AES	461	3.9
JE	159	1.3
Malaria pf	318	2.7
Malaria pv	243	2
Viral hepatitis	1193	10
Enteric fever (widal positive)	1904	16

**2012-2017 for Dengue*

DISCUSSION:

ARI, ADD and BD was observed to be the most reported case in our study. The district lies in the downstream of Brahmaputra and forms a major source of drinking water. This along with the overall poor hygiene and awareness level with low levels of literacy (Census 2011) may play an important role in such high burden of cases. Studies in different parts of India show similar picture[2,6.] of high level of morbidity due to ARI, ADD and BD.

Cases of ARI have shown a gradual decreasing trend over the years in the Barpeta district. This is in contrast to the national trend[7] which has been on a rise. It may reflect the need of improvement in the quality of reporting in the district as with improvement in healthcare delivery system, more cases are bound to come into the surveillance system thereby showing rise in incidence.

Typhoid over the years have been on an overall decreasing trend. However, with improvement in drinking water and awareness regarding sanitation, the fall in the number of cases in not consistent and points towards more work that need to be done.

Our study revealed the gradual decline in the number of malaria cases which is in line with the National Health Policy Report 2018.[8] Pv cases have been found to be the predominant form of infection at present. The observation is similar to a study done in Karnataka where Pv incidence was observed to be higher.[9,10] However reports that Pf cases have gradually increased from 38.8% in 1995 to 66.9% in 2013 due to increasing choloroqine resistance. The difference may be due to the latest Malaria drug regime using ACT-AL that was initiated in 2014 following which the drop of Pf cases was seen from 2015.[11]

Dengue has shown a cyclical trend with a rise in the number of cases every third year. This has been similar to the observation made in another study where dengue epidemics were observed every 3-5 years in the South-East Asian nations[12].

JE is an endemic disease in Assam. As such, it is bound to be present over the years. Because of their dependence in the monsoon, it might have been a factor in the sharp spike in the number of AES/JE cases in 2014. However, only around 30% of the cases of AES have been observed to be JE positive over the years. This is much lower than another study done in Upper Assam that observed nearly 36-46% of JE cases[13] but similar to another study carried out at Jorhat Assam.[14] It might suggest the prevalence of some other common cause of AES that needs in-depth study for detection.

Animal bites have remained relatively stagnant except for the sharp rise in dog bites in 2017 due to uncorrected clerical error. This calls for frequent training and sensitization on data management. The reporting of dog bites are expected to rise with the launch of a robust National Rabies Control Programme.

CONCLUSION

The highest reported cases were ARI, ADD, BD and Enteric fever. Hence the district should work to increase the overall hygiene and improvement of drinking water. Prompt actions should be carried out in case of any water borne disease outbreak and a potent vigilance with high alertness should be in place. India is a nation with diverse demography, culture, geography and social dynamics and since health is a state subject hence such studies need to be conducted at the state

level so that appropriate strategies and local policies can be prepared. Further in-depth research is needed.

Limitations

Secondary data was used in the study and hence it carries the inherent weaknesses of such data. Not all diseases were included as that goes beyond the scope of this paper. Data fallacies like under reporting, over reporting or data entry errors cannot be ruled out. The quality of data reported and collected may not reflect the true picture.

Conflict of interest- None
Source of funding- None

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