



# Disease Alert

## प्रकोप चेतावनी

A monthly Surveillance Report from Integrated Disease Surveillance Programme  
National Health Mission

November 2018

### Inside

1. Investigation of Scrub typhus Outbreak in Nagpur Region of Maharashtra..... Page 1
2. Surveillance data of Enteric Fever, ADD, Viral Hepatitis A & E, Dengue, Leptospirosis, Chikungunya, Seasonal Influenza H1N1 & Diphtheria.....Page 5
3. Action from Field..... Page 18
4. Glossary.....Page 18

### Investigation of Scrub typhus Outbreak in Nagpur Region of Maharashtra

Sept-Oct 2018

### Background

In first week of August, media alert about rising number of cases and deaths admitted due to suspected Scrub Typhus in Nagpur Government Medical College Hospital was received. A death due to scrub typhus was reported on August 4, 2018. District and State were notified on the same day. On August 30 2018, two India Epidemic Intelligence Officers (EIS) joined the State and district team and started investigations to describe epidemiology, identify risk factors and provide evidence-based recommendations.

### Case Definition

A case was defined as a person of any age with fever more than five days and tested positive by IgM ELISA for scrub typhus at GMCH Nagpur between August 1 and September 7, 2018.

Cases were searched from hospital admission records and death records and line list obtained from Microbiology laboratory of Government Medical College and Hospital Nagpur (GMCH) and Indira Gandhi Government Medical College Hospital (IGGMCH), Nagpur. District Entomologists carried out Entomological survey in one affected village from where majority of the cases were reported

### Objectives

- To confirm the outbreak,
- To describe the epidemiology of the outbreak,
- To identify the risk factors
- To recommend evidence based preventive and control measures.

### Case search

Passive surveillance: cases were searched from hospital admission records and death records and line list obtained from Microbiology laboratory of Government Medical College and Hospital Nagpur (GMCH) and Indira Gandhi Government Medical College Hospital (IGGMCH), Nagpur.

## Data collection

For descriptive analysis, IDSP, Microbiology laboratory and PSM department line list were reviewed, for all cases. Cases and relatives admitted at the time of investigation team visit were interviewed using a structured questionnaire. Data on clinical course and progression of disease, investigations and treatment given was collected using a data abstraction form.

For analytical study, face to face as well as telephonic interviews were conducted with cases and only telephonic interviews with controls using a semi structured questionnaire and collected data on exposure to risk factors such as occupation, visit to farms and bushy areas, exposure to rats, piles of wood in house or the verandah open air defecation etc.

## Laboratory investigations

The laboratory investigations done for the cases included complete hemogram, liver function tests, renal function tests, Peripheral smear for malarial parasites, HRP2 for malarial antigen, IgM for Dengue and Leptospirosis, NS1 antigen for Dengue, IgM ELISA for scrub typhus

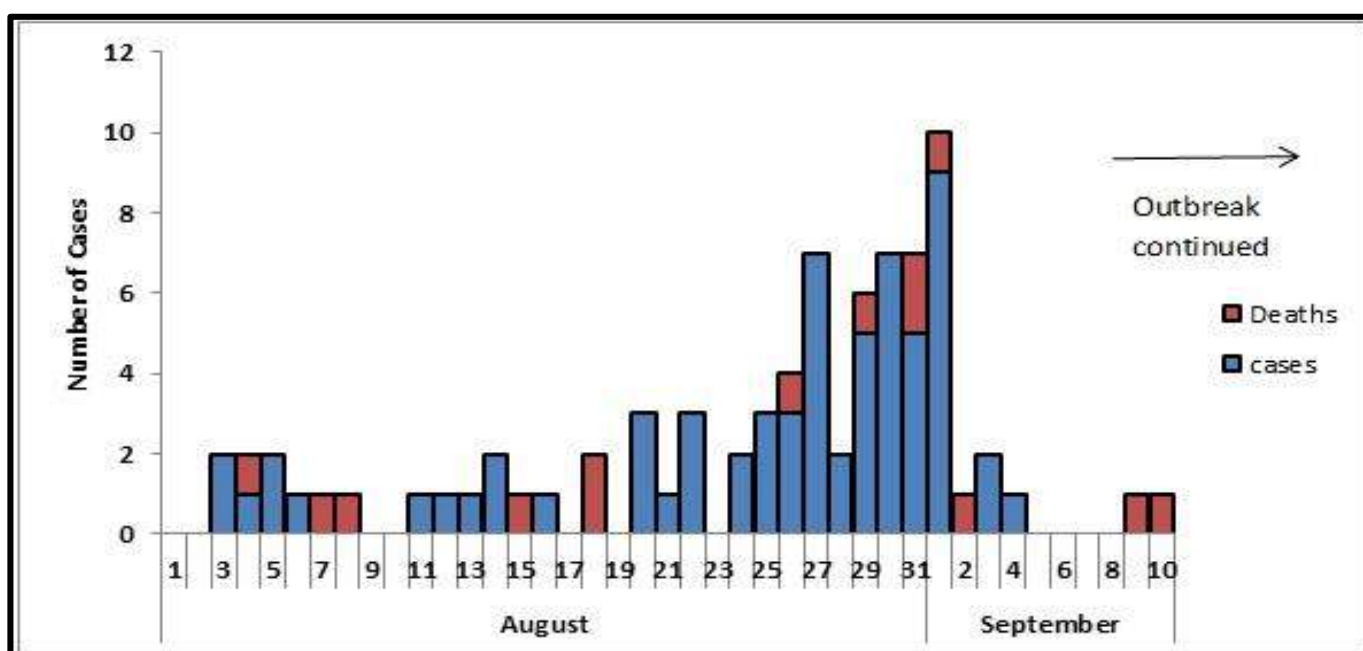
## Environmental Investigations

District Entomologist along with the Veterinarians from Nagpur Veterinary Institute carried out Entomological survey in one affected village from where majority of the cases were reported. Rat traps were laid near the houses and fringe areas to look for domestic rats infested with mites.

With respect to the blood and the organ samples collected from the rat, those were given to the Centre for Zoonosis, Department of VPH, Nagpur Veterinary College, Nagpur wherein the further isolation of DNA and identification for presence of Orientia pathogen is going on

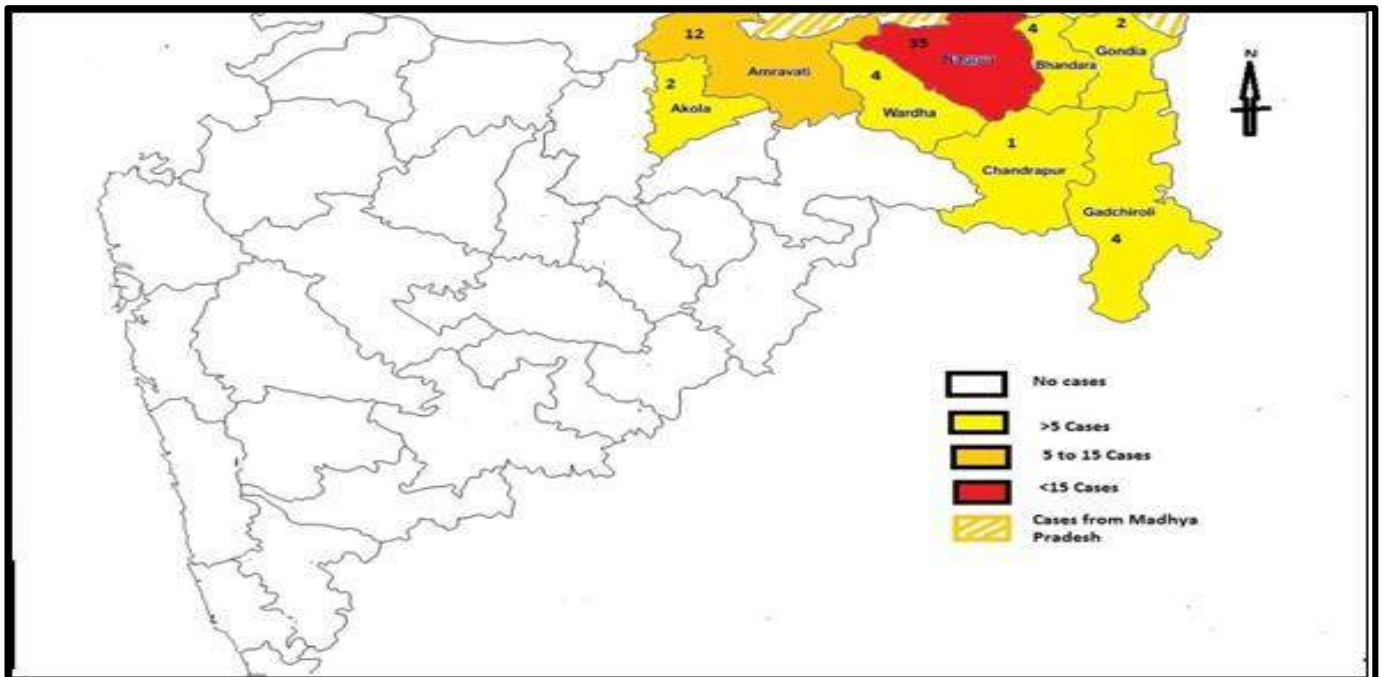
## Results

<b>Till September 7, 2018, there were 78 cases.</b>		
Median age in years(range)	43	(Range 1 year-83 years)
Females	43	(53%)
Deaths (Case fatality rate)	14	(18%)



**Fig. 1: Scrub typhus cases by date of onset of illness tested at Government Medical College Hospital, Nagpur district Maharashtra August - September 2018 (n=65)\***

The first case reported on August 3 and a peak was observed on September 1 and cases continued to report thereafter.



**Fig. 2: Area Map of Scrub typhus Cases tested and admitted at GMCH, Nagpur between August 1 to September 7, 2018 (n=78)**

Majority of the cases 35 are from Nagpur district, followed by 12 cases from Amravati district. Fourteen cases were from Madhya Pradesh state bordering this region. For Madhya Pradesh, the districts involved were Balaghat 5 cases, Chindwara 4, Seoni 2 cases and one each from Umariya, Betul and Satna

**Table 1. Age sex distribution of the Scrub typhus cases between August 1, 2018 till 7 September 2018 (n=76)**

Age group (years)	Male	Female	Total	Percentage%
<15	4	2	6	8
15 to 30	6	10	16	21
31 to 45	8	16	24	32
<u>46 to 60</u>	11	10	21	28
<u>≥60</u>	6	3	9	12

Majority of the cases 32% (24) belonged to age group 31 to 45years. Only 8% (06) cases were under 15 years of age.

**Table 2. Symptoms among the Scrub typhus cases (n=36)**

Symptoms	Number	Percentage
<b>Fever</b>	36	100
<b>Breathlessness</b>	22	61
<b>Headache</b>	19	53
<b>Cough</b>	13	36
<b>Altered sensorium</b>	13	36
<b>Bodyache</b>	12	33
<b>Vomiting</b>	11	31
<b>Malaise</b>	9	25
<b>Eschar</b>	8	22
<b>Pain in abdomen</b>	7	19

Of the 36 cases analysed, all had fever followed by breathlessness 61%, headache 53% and altered sensorium 36% of the cases. The classical Eschar was present in 8 (28%) cases

**Table 3. Physical examination signs of cases with scrub typhus (n=36)**

Signs (n=36)	Number	Percentage %
BP (low, <100/60))	12	33
Pulse rate (>100)	10	28
Temp (>1000 F)	10	28
Pallor	8	22
Crepitations on auscultation	8	22
Icterus	5	14
Lymphadenopathy	3	8
Hepatomegaly	2	6
Pedal edema	1	3
Ascitis	1	3
Pleural effusion	1	3
Anasarca	1	3

Hypotension was observed among 33% of the cases, tachycardia (28%), lymphadenopathy was observed in 8% and generalised anasarca only in 3%.

**Table 4. Median time from the onset of illness to hospitalisation, confirmation of diagnosis and receiving treatment (n=36)**

Time(range)	
Median time from onset of illness to admission to hospital	7 days (2 to 16) days
Median time from onset of illness to diagnosis	10 days (0 to 16) days
Median time from onset to initiation with Azithromycin/Doxycycline	10 days ( 1 to 16) days

A median delay of 7 days (2 to 16 days) from the onset of illness to admission in GMC hospital, 10 days (range 0 to 16 days) from onset of illness to diagnosis and 10 days (range 1 to 16 days) from onset to initiation of treatment for scrub typhus

**Table 5. Treatment received by the scrub typhus cases admitted at GMC Hospital Nagpur (n=36)**

	Number	Percentage
Aizthromycin	20	56
Doxycycline	35	97

**Table 6. Co-infection among Scrub typhus cases (N=36)**

	Number	Percentage
<b>Malaria (n=12)</b>		
Peripherhal smear for Malarial and parasiteHRP2	0	-
<b>Dengue(n=21)</b>		
NS1 antigen(21)	02	10
IgM antibody(18)	03	17
<b>Leptospirosis (n=6)</b>		
IgM antibody	0	-
<b>Typhoid (n=23)</b>		
Widal		
O	01	4
H	04	17

## Key informant interviews

Key informants reported private practitioners from the region do not report to IDSP system. Patients admitted to GMC Nagpur and IGGMCH referred in critical conditions and hence the mortality is high at the Government Medical College hospitals.

<b>Risk factors (n=18)</b>	<b>Number</b>	<b>Percentage</b>
Presence of rat in house/surrounding	15	83.3
History of visit to forest/vegetation	13	72.2
House surrounded by farm/vegetation	9	50
Working in farm/forest	8	44.4
Place for defecation (farm)	5	27.8
History of travel	2	11

Majority 83 % had rats in the house, and 72% gave a history of visits to farms or forested areas .Only 11% gave a history of travel to a forest or bushy area.

## Laboratory investigations

Out of the 127 cases tested with IgM ELISA for Scrub typhus, 78 showed positive results

## Environmental Investigations

The rat species identified was (*Rattus rattus*). No mites were observed on skin of the rat. Under zoom stereoscope, the skin of rat showed presence of mites. It was found that the mites were firmly attached to the internal ear. Both the ears were infested with mites. The mites were yellowish in colour with few of them red coloured. The mites when observed under zoom stereoscope had three pairs of legs and few were alive. Overall 25 mites were collected. The mites were identified as larva of *Leptotrombidium* spp.

## Conclusion

From our findings we conclude that an outbreak of Scrub typhus occurred in Nagpur and neighbouring districts of Maharashtra with high case fatality rate. Entomological investigation showed presence of mites of *Leptotrombidium* specius on the rat (*rattus rattus*). Analytical study showed that, working in farms, belonging to rural areas, walking through the bushes to reach home, visit to farms and bushy areas before illness ,practice of open defecation in bushy areas, presence of firewood in the house or nearby and cemented flooring was significantly associated with the illness.

## Recommendations

### Immediate

- Sensitisation of Private practitioners regarding reporting of Scrub typhus to district IDSP through Continuing Medical Education(CME) by the professional bodies like Indian Medical Association(IMA)

- Training and workshops for private practitioners as well as the Primary care doctors at Government hospitals on early diagnosis and treatment and early referral of cases to tertiary care hospitals
- Guidelines for early initiation of treatment with Doxycycline or Azithromycin at all levels of health care
- Proposal to State for strengthening fever surveillance through rapid fever surveys for early screening of the cases
- IEC material on need for early diagnosis and treatment, warning symptoms of Scrub typhus general public

#### **Long term**

- Strengthen Laboratories at district level and start testing for Scrub typhus as per IDSP guidelines
- Capacity building at district level for Entomological surveys for mites and initiate surveillance on a regular basis during transmission season
- Doxycycline should be at the essential drug list under NHM and its availability needs to be ensured at all levels Public health actions taken by district
- Public health actions by the state

#### **Public Health Action**

State initiated fever survey in affected villages, started testing with IgM ELISA tests for all clinically suspected cases and also initiated treatment with on Doxycycline. Vector control measures with Malathion dusting powder were also carried out in the affected villages. Private practitioners were sensitised on reporting to IDSP during a CME conducted by the Indian Medical Association district Chapter.

#### **Outbreak Investigated & Report Submitted by:**

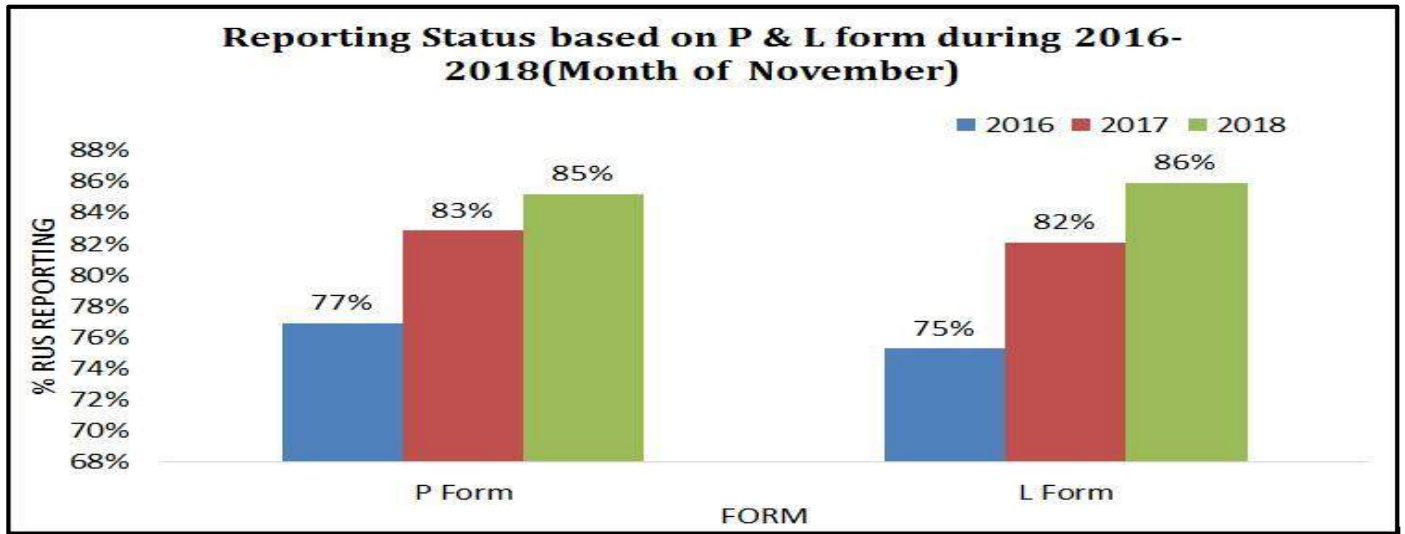
Pallavi, EISO, NCDC

#### **Acknowledgements:**

- **Maharashtra State Surveillance Unit:** Dr. Pradip Awate, SSO, IDSP, Maharashtra; Dr. Mahendra Jagtap; Mr. Deshpande; Mrs. Shravani Kulkarni
- **Nagpur Region District Surveillance Unit & Public Health Department:** Dr. Sanjeev Kamble; Dr. Sanjay Jaiswal; Dr. Ganvir; Dr. A Nisawade; Dr. Yogendra Savai; Dr. Asim Inaamdar; Dr. Walke; Mrs. Monica Charmode

**Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue  
Leptospirosis and Chikungunya During November 2016 - 2018\***

\* Data extracted from IDSP Portal ([www.idsp.nic.in](http://www.idsp.nic.in)) as on February 11, 2019.



**Fig. 3: RU wise reporting based on P & L form during November 2016 - 2018**

As shown in Fig 3, in November 2016, 2017 and 2018, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 77%, 83% and 85% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 75%, 82% and 86% respectively across India for all disease conditions, during the same month for all disease conditions reported under IDSP in L form.

The completeness of reporting has increased over the years in both P and L form, thereby improving the quality of surveillance data.

**Fig 4: State/UT wise P form completeness % for November 2018**

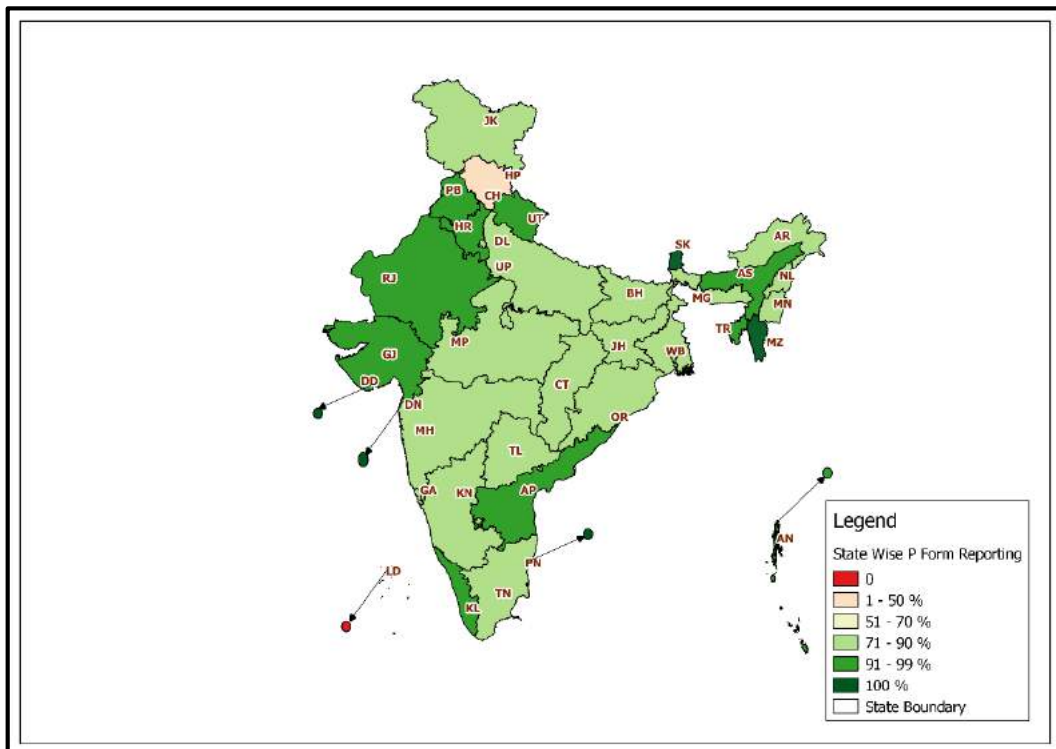




Fig 5: State/UT wise L form completeness % for November 2018

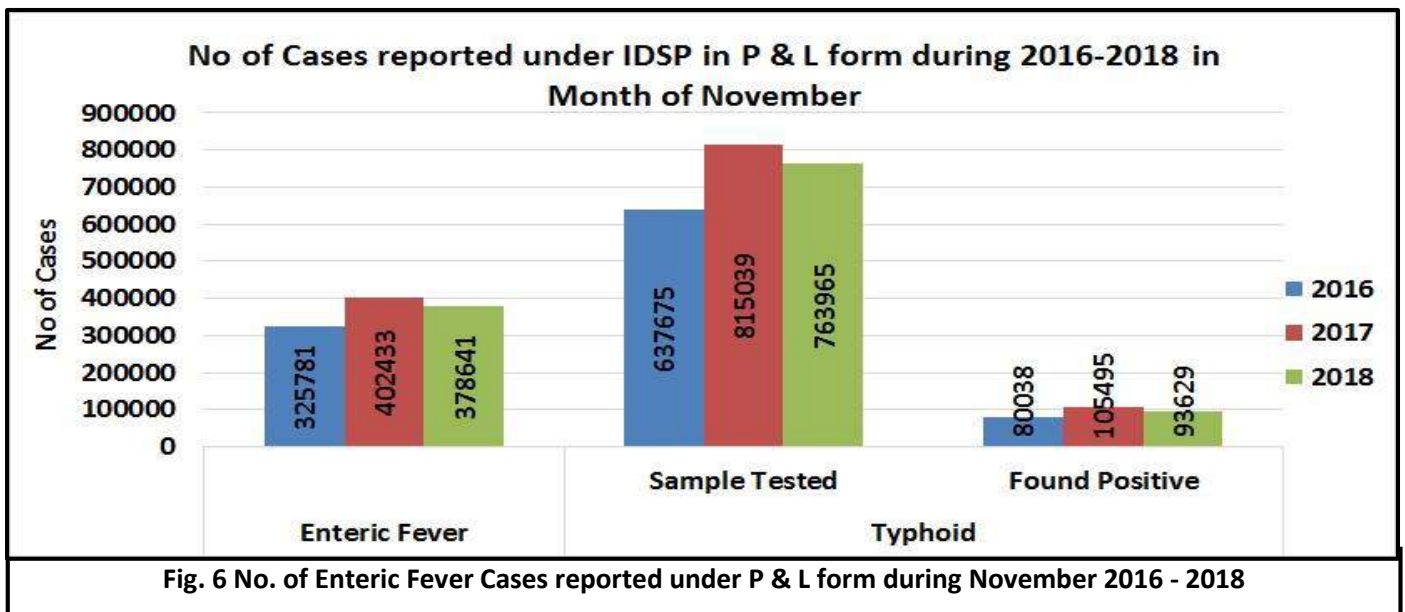
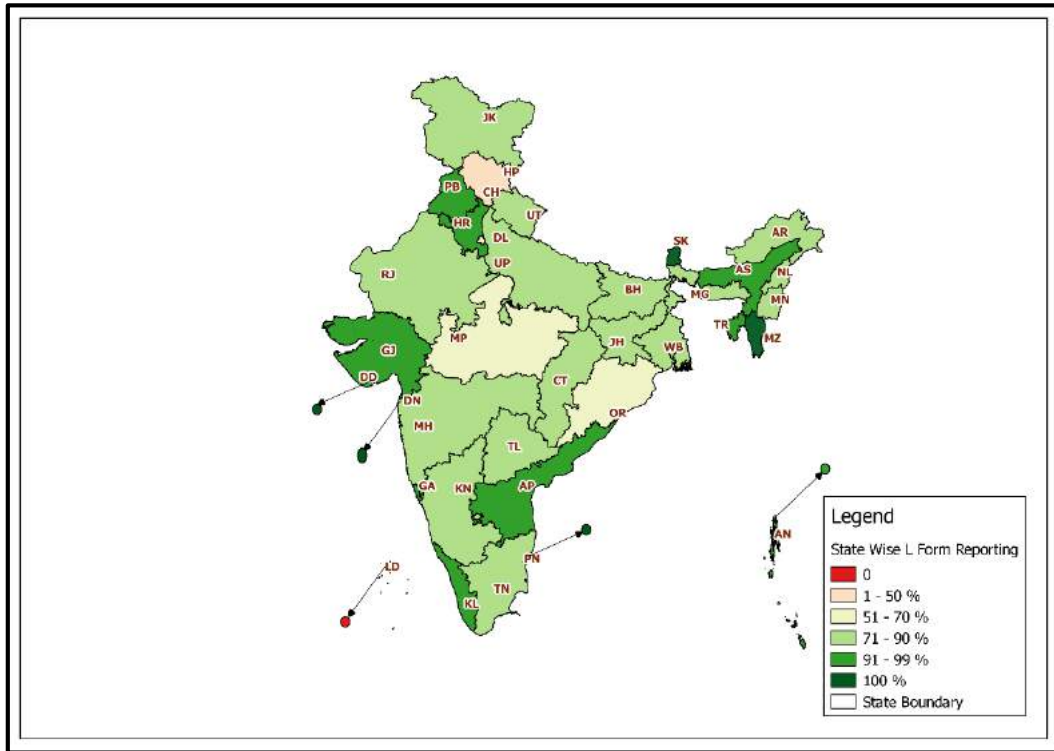


Fig. 6 No. of Enteric Fever Cases reported under P & L form during November 2016 - 2018

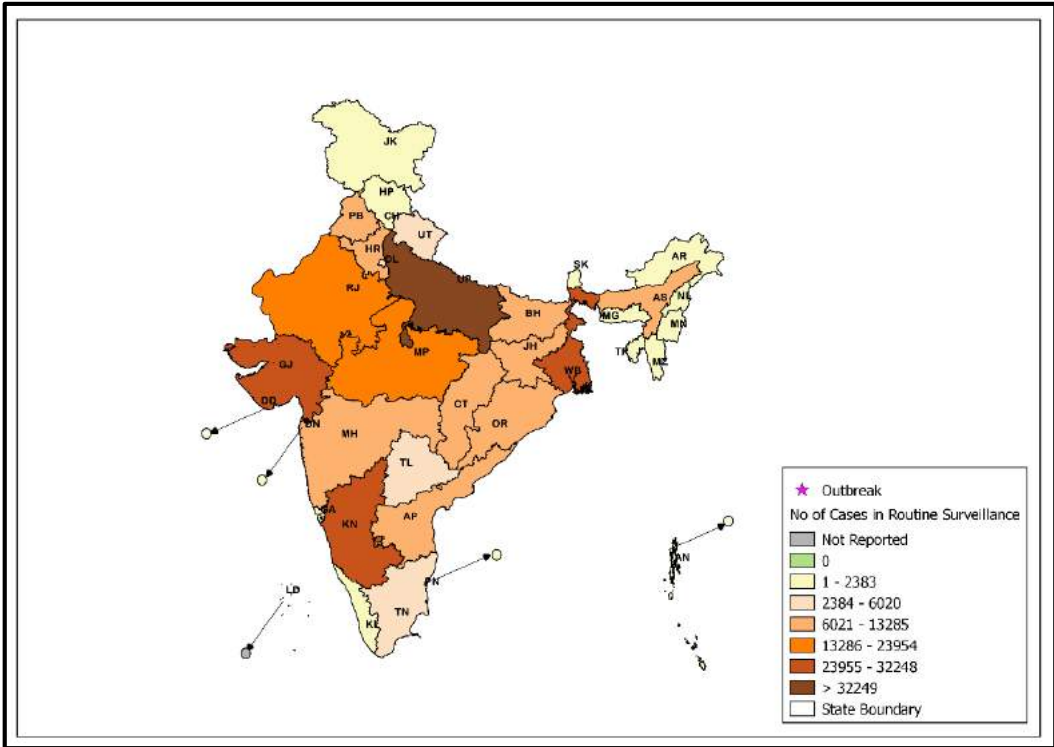
As shown in Fig 6, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 325781 in November 2016; 402433 in November 2017 and 378641 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in November 2016; 637675 samples were tested for Typhoid, out of which 80038 were found positive. In November 2017; out of 815039 samples, 105495 were found to be positive and in November 2018, out of 763965 samples, 93629 were found to be positive.

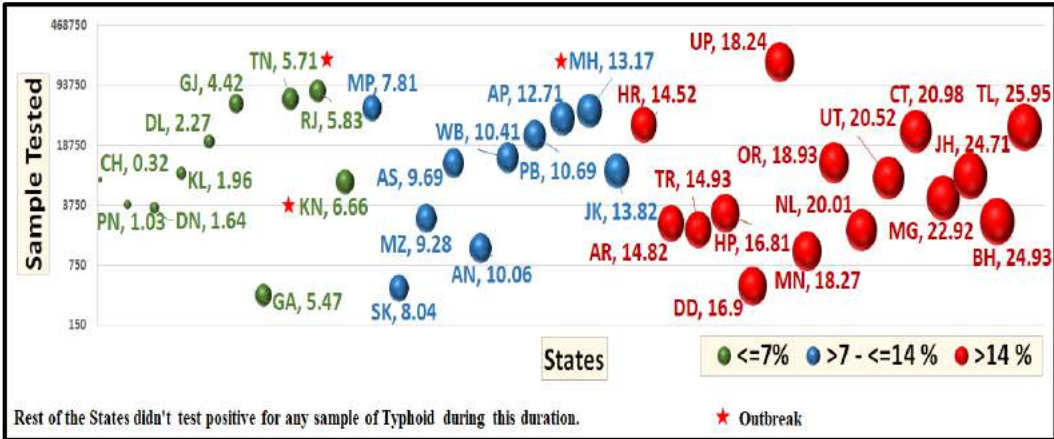
Sample positivity has been 12.55%, 12.94% and 12.25% in November month of 2016, 2017 & 2018 respectively.

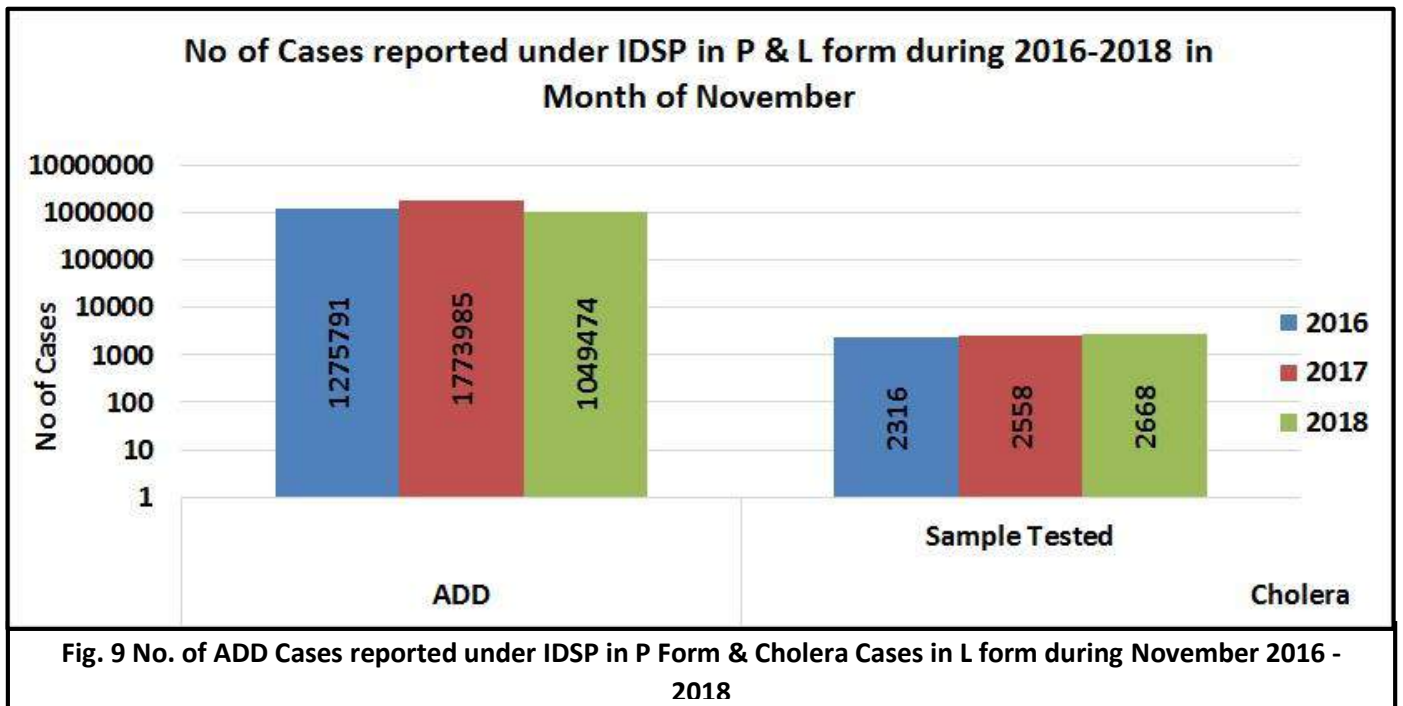
**Limitation:** The test by which above mentioned samples were tested could not be ascertained, as currently there is no such provision in L form.

**Fig 7: State/UT wise Presumptive Enteric fever cases and outbreaks for November 2018**



**Fig 8: State/UT wise Lab Confirmed Typhoid cases and outbreaks for November 2018**



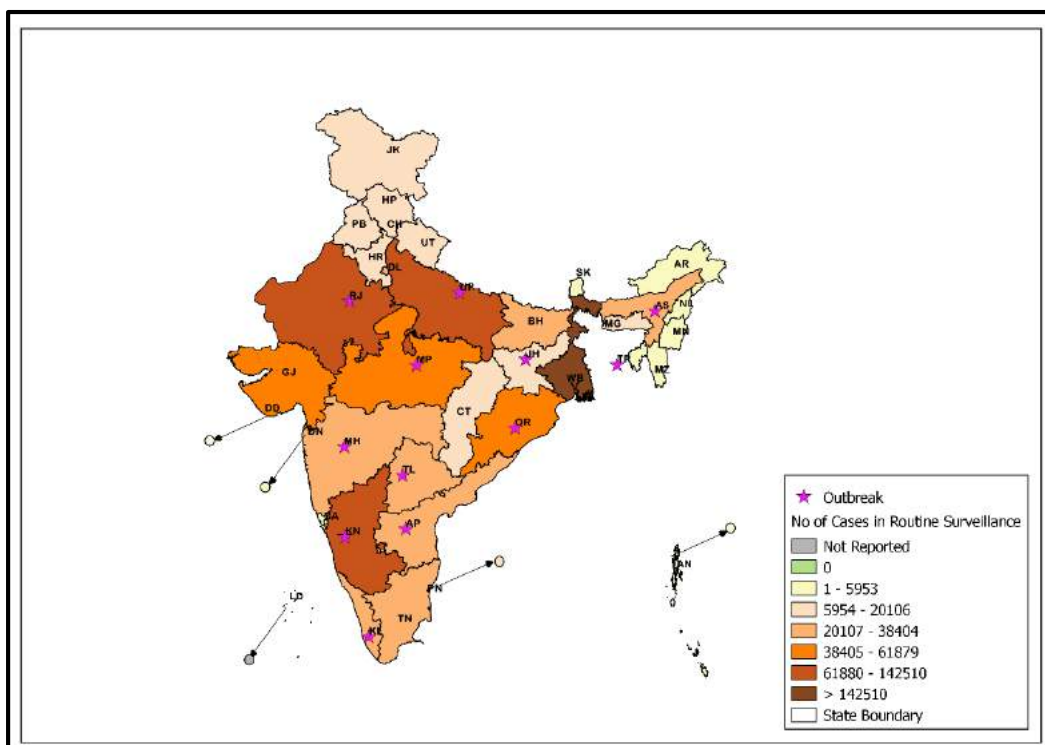


As shown in Fig 9, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1275791 in November 2016; 1773985 in November 2017 and 1049474 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

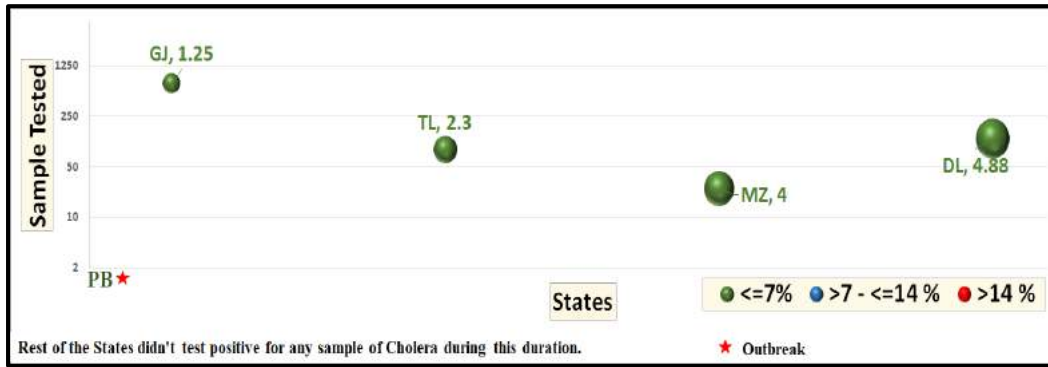
As reported in L form, in November 2016, 2316 samples were tested for Cholera out of which 21 tested positive; in November 2017, out of 2558 samples, 41 tested positive for Cholera and in November 2018, out of 2668 samples, 18 tested positive.

Sample positivity of samples tested for Cholera has been 0.91%, 1.60% and 0.67% in November month of 2016, 2017 & 2018 respectively.

**Fig 10: State/UT wise Presumptive ADD cases and outbreaks for November 2018**

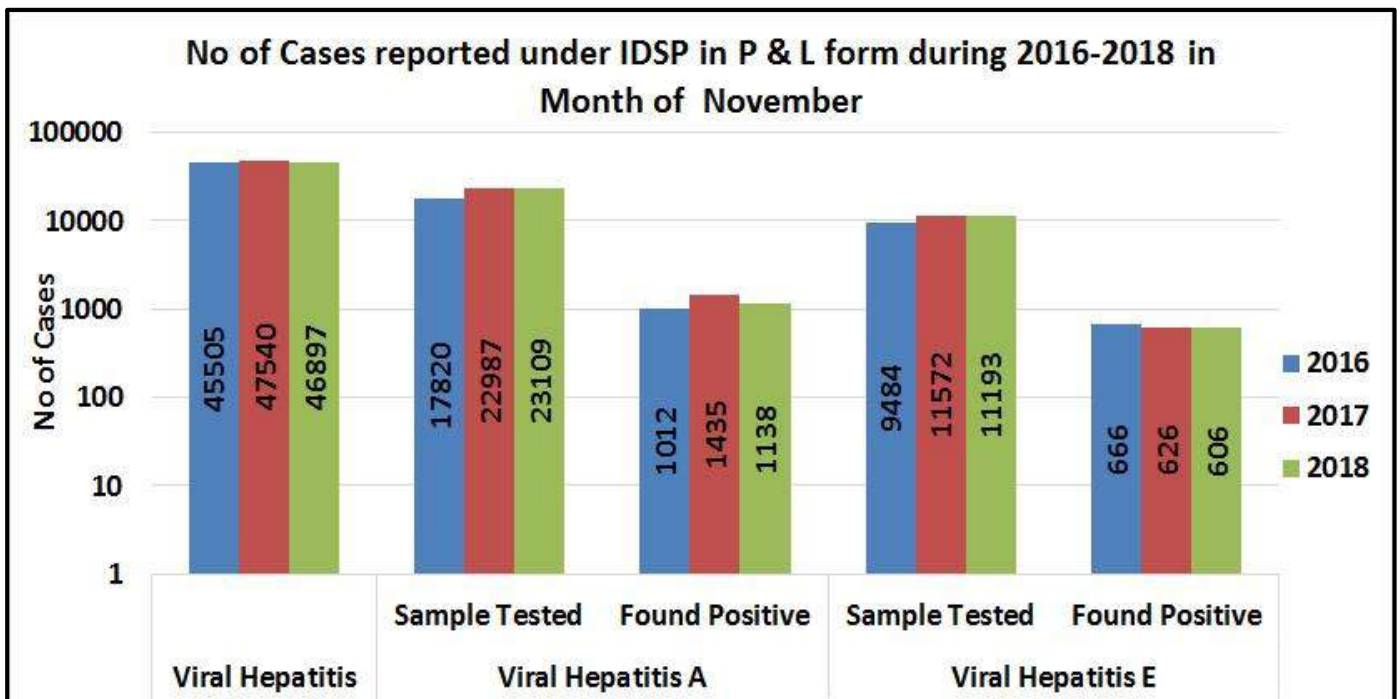


**Fig 11: State/UT wise Lab Confirmed Cholera cases and outbreaks for November 2018**



Rest of the States didn't test positive for any sample of Cholera during this duration.

★ Outbreak



**Fig 12: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during November 2016 - 2018**

As shown in Fig12, the number of presumptive Viral Hepatitis cases was 45505 in November 2016, 47540 in November 2017 and 46897 in November 2018. These presumptive cases were diagnosed on the basis of case definitions provided under IDSP.

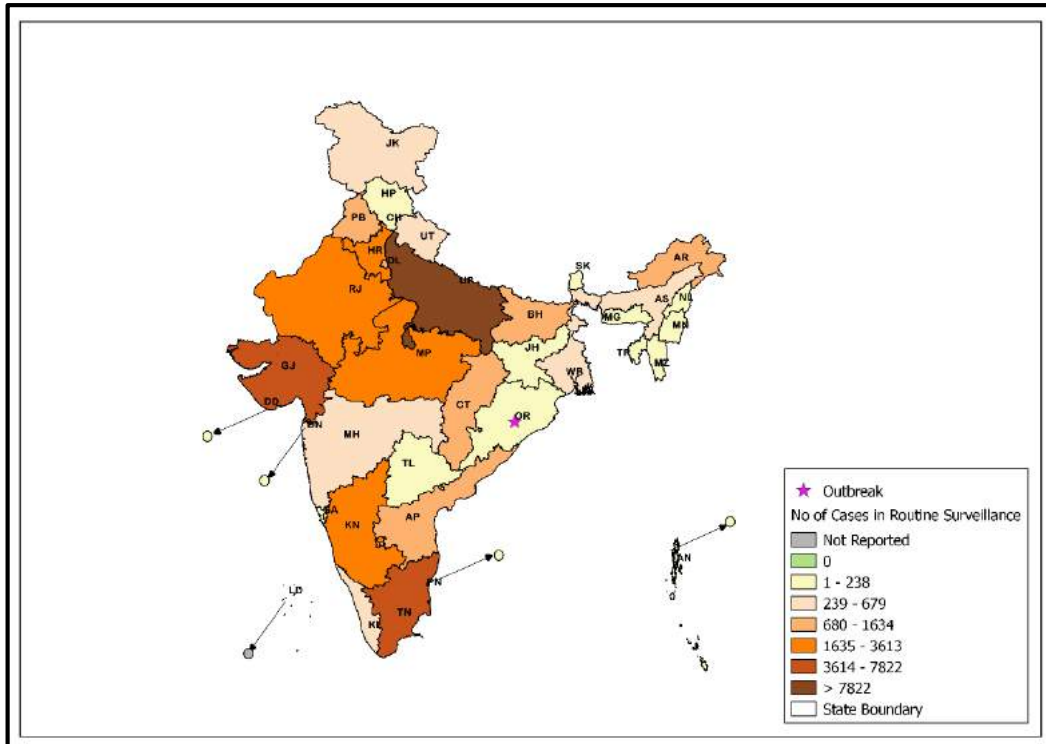
As reported in L form for Viral Hepatitis A, in November 2016; 17820 samples were tested out of which 1012 were found positive. In November 2017 out of 22987 samples, 1435 were found to be positive and in November 2018, out of 23109 samples, 1138 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 5.68%, 6.24% and 4.92% in November month of 2016, 2017 & 2018 respectively.

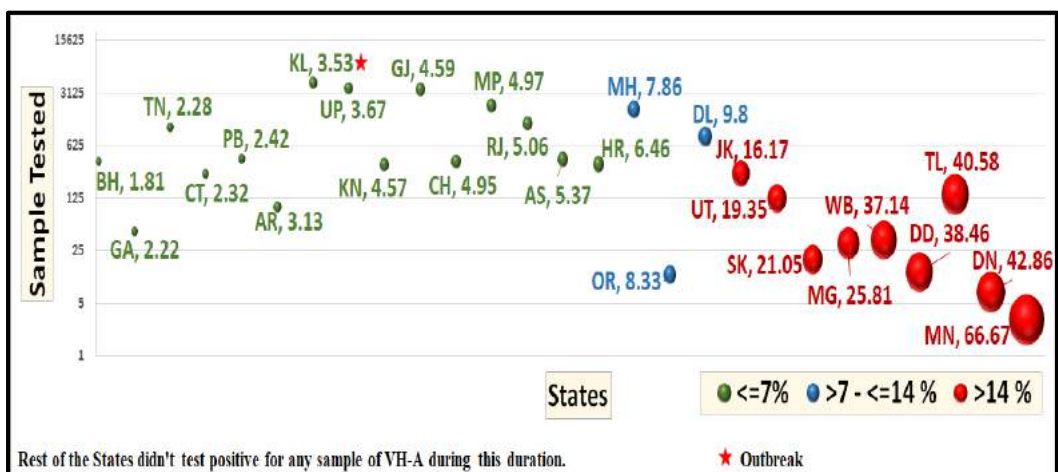
As reported in L form for Viral Hepatitis E, in November 2016; 9484 samples were tested out of which 666 were found positive. In November 2017; out of 11572 samples, 626 were found to be positive and in November 2018, out of 11193 samples, 606 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 7.02%, 5.41% and 5.41% in November month of 2016, 2017 & 2018 respectively.

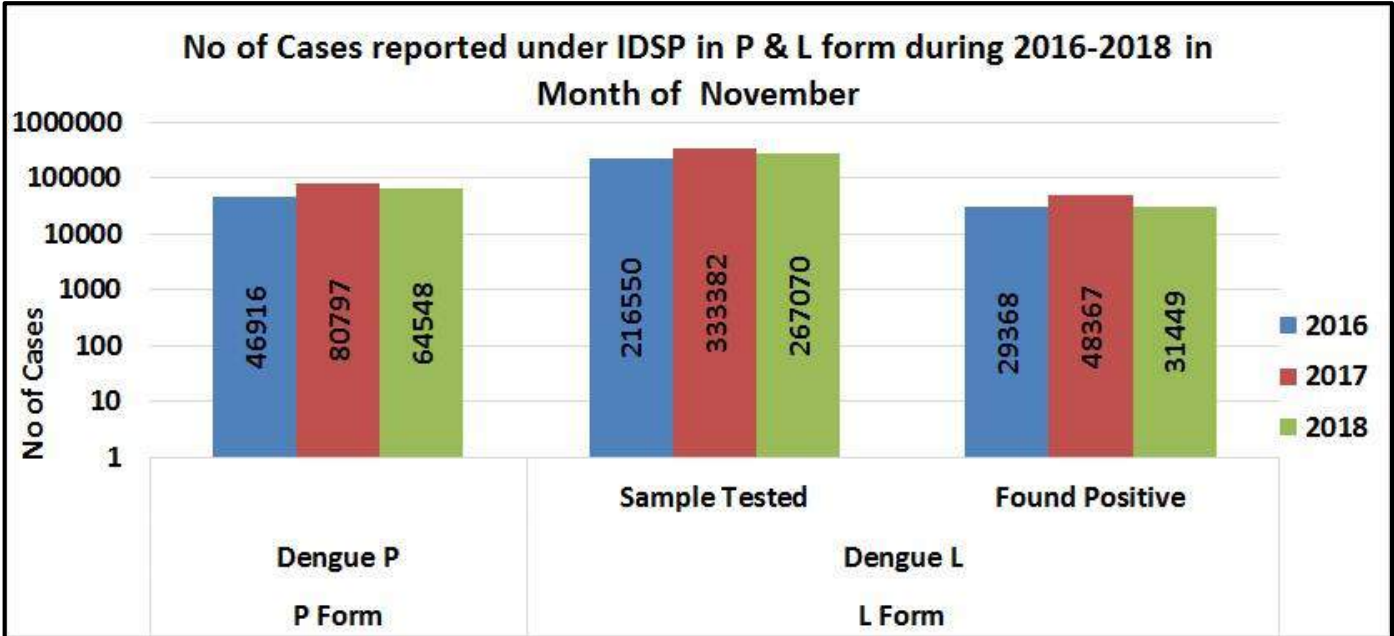
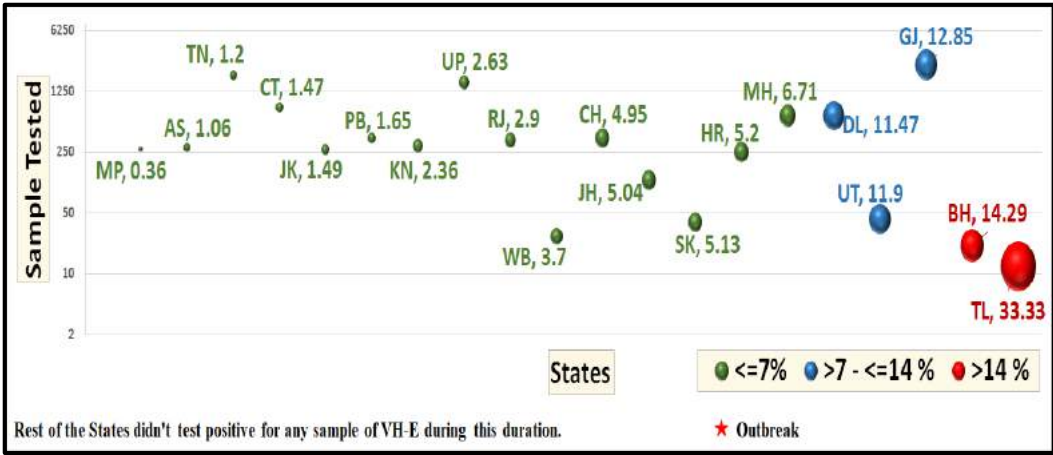
**Fig 13: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for November 2018**



**Fig 14: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for November 2018**



**Fig 15: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for November 2018**



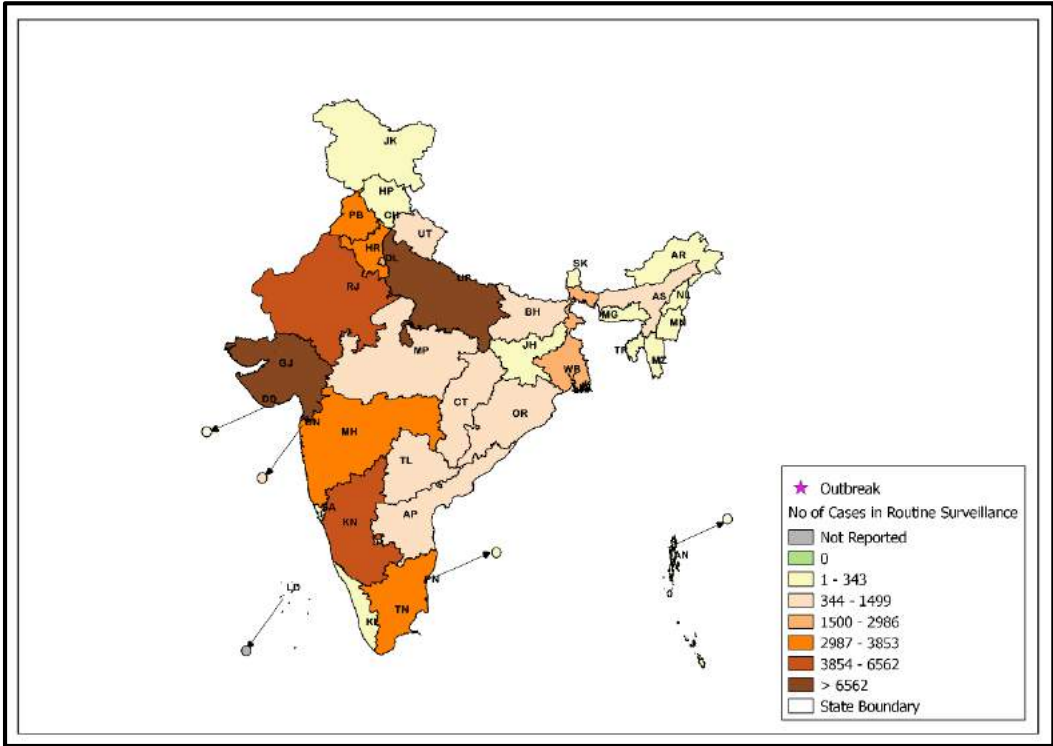
**Fig 16: No. of Dengue Cases reported under IDSP in P & L form during November 2016 - 2018**

As shown in Fig 16, number of presumptive Dengue cases, as reported by States/UTs in ‘P’ form was 46916 in November 2016; 80797 in November 2017 and 64548 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

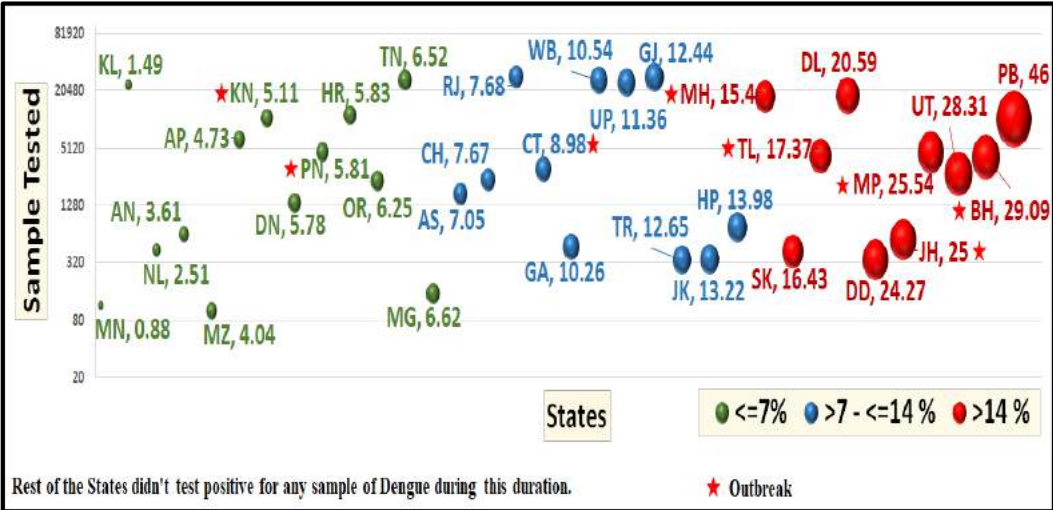
As reported in L form, in November 2016; 216550 samples were tested for Dengue, out of which 29368 were found positive. In November 2017; out of 333382 samples, 48367 were found to be positive and in November 2018, out of 267070 samples, 31449 were found to be positive.

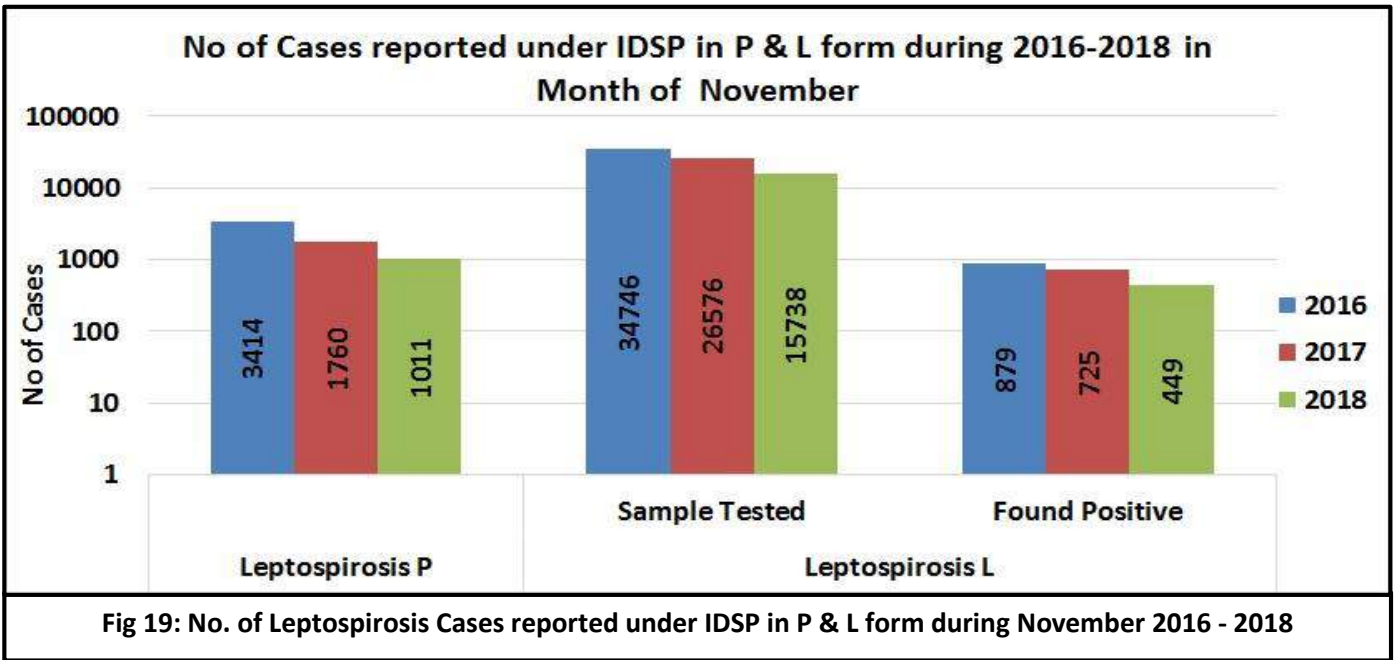
Sample positivity of samples tested for Dengue has been 13.56%, 14.50% and 11.77% in November month of 2016, 2017 & 2018 respectively.

**Fig 17: State/UT wise Presumptive Dengue cases and outbreaks for November 2018**



**Fig 18: State/UT wise Lab Confirmed Dengue cases and outbreaks for November 2018**



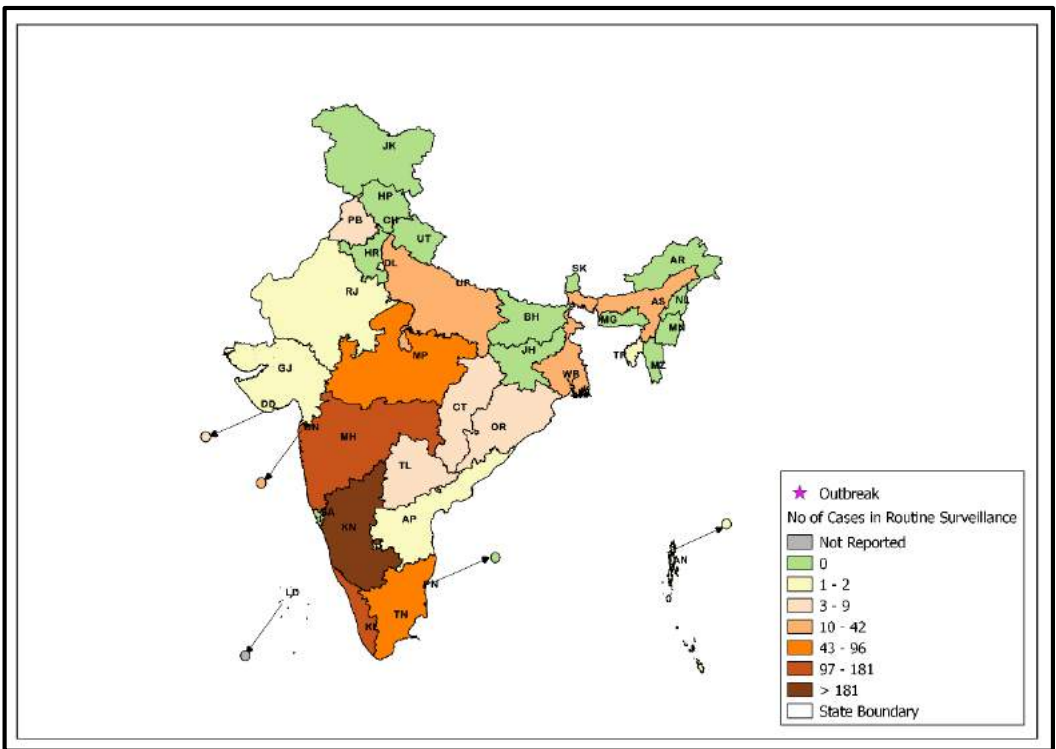


As shown in Fig 19, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 3414 in November 2016; 1760 in November 2017 and 1011 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in November 2016; 34746 samples were tested for Leptospirosis, out of which 879 were found positive. In November 2017; out of 26576 samples, 725 were found to be positive and in November 2018, out of 15738 samples, 449 were found to be positive.

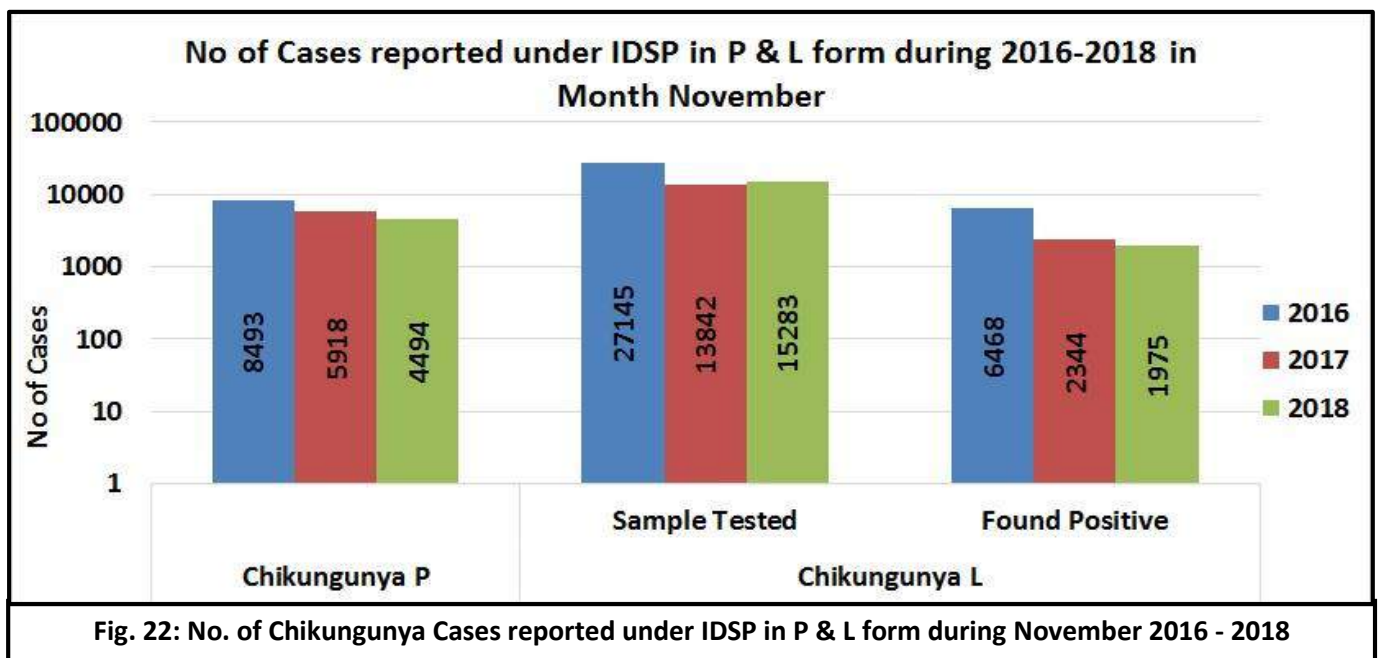
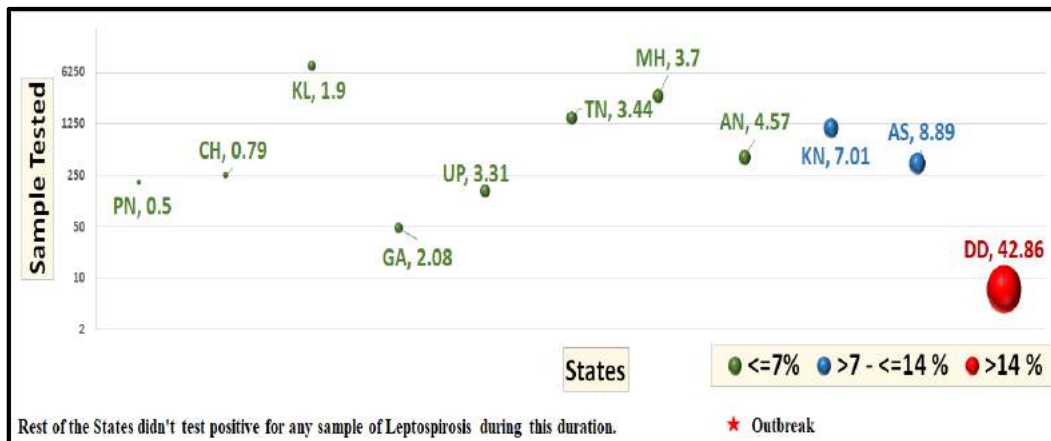
Sample positivity of samples tested for Dengue has been 2.53%, 2.73% and 2.85% in November month of 2016, 2017 & 2018 respectively.

**Fig 20: State/UT wise Presumptive Leptospirosis cases and outbreaks for November 2018**





**Fig 21: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for November 2018**



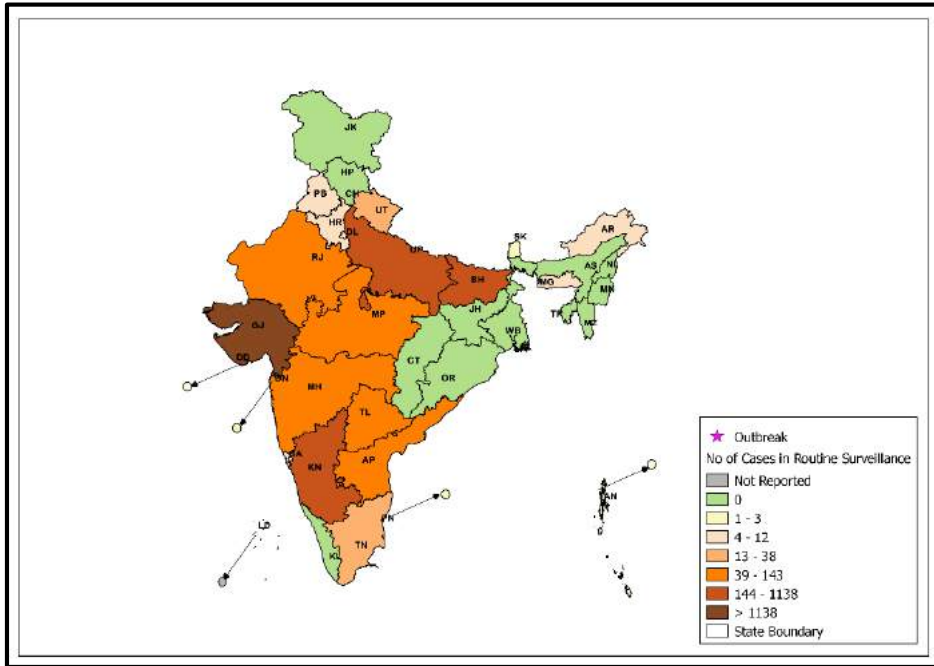
**Fig. 22: No. of Chikungunya Cases reported under IDSP in P & L form during November 2016 - 2018**

As shown in Fig 22, number of presumptive Chikungunya cases, as reported by States/UTs in ‘P’ form was 8493 in November 2016; 5918 in November 2017 and 4494 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

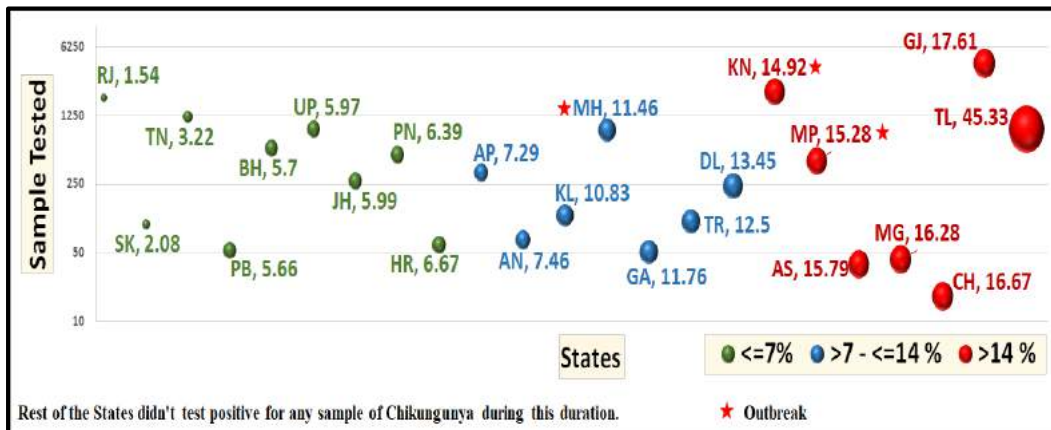
As reported in L form, in November 2016; 27145 samples were tested for Chikungunya, out of which 6468 were found positive. In November 2017; out of 13842 samples, 2344 were found to be positive and in November 2018, out of 15283 samples, 1975 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 23.83%, 16.93% and 12.92% in November month of 2016, 2017 & 2018 respectively.

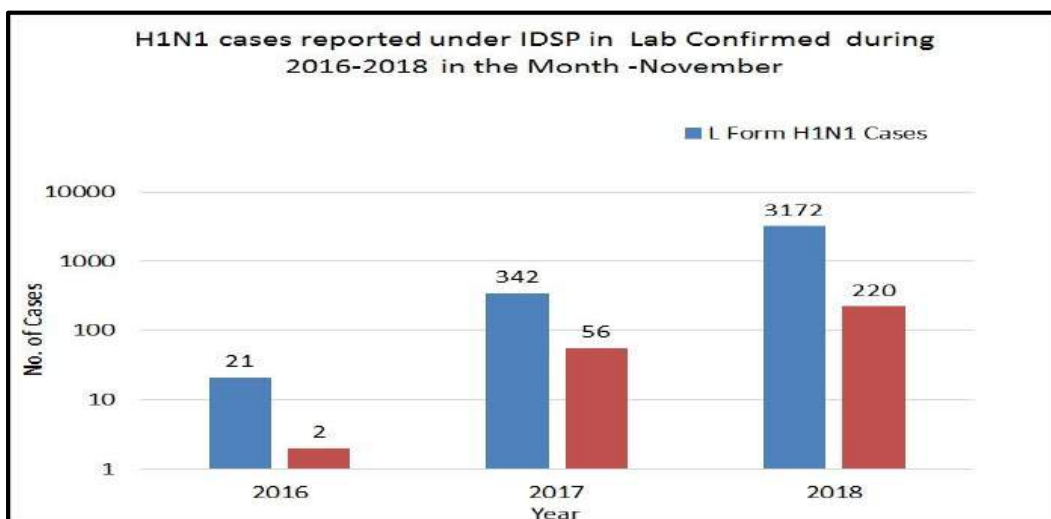
**Fig 23: State/UT wise Presumptive Chikungunya cases and outbreaks for November 2018**



**Fig 24: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for November 2018**



**Fig 25: H1N1 cases reported under IDSP in L Form during 2016-2018 in November Month**



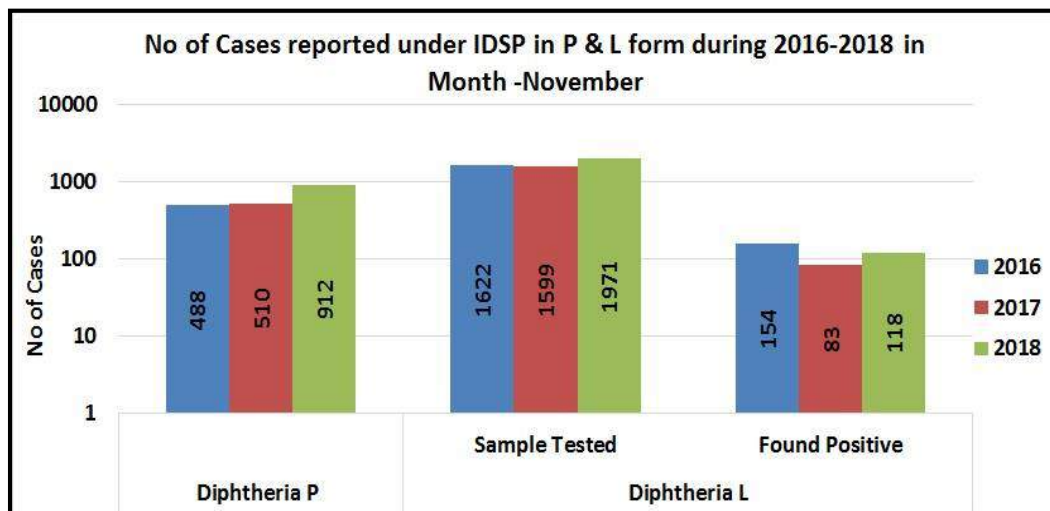
As reported in L form, in November 2016; there were 21 cases and 2 deaths. In November 2017; there were 342 cases and 56 deaths and in November 2018, there were 3172 cases and 220 deaths.

Case fatality rate for H1N1 were 9.52%, 16.37% and 6.94% in November month of 2016, 2017 & 2018 respectively.

**Fig 26: State/UT wise Lab-confirmed H1N1 cases and outbreaks for November 2018**



**Fig 27: Diphtheria cases reported under IDSP under P & L Form during 2016-2018 in November Month**

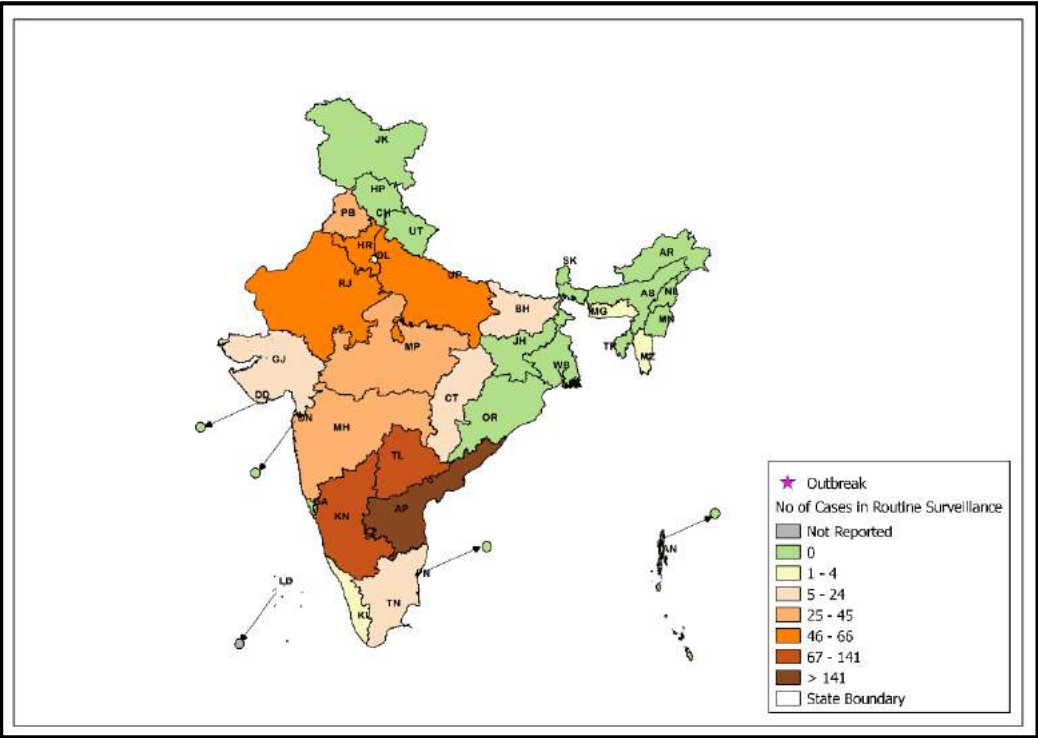


As shown in Fig 27, number of presumptive Diphtheria cases, as reported by States/UTs in 'P' form was 488 in November 2016; 510 in November 2017 and 912 in November 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

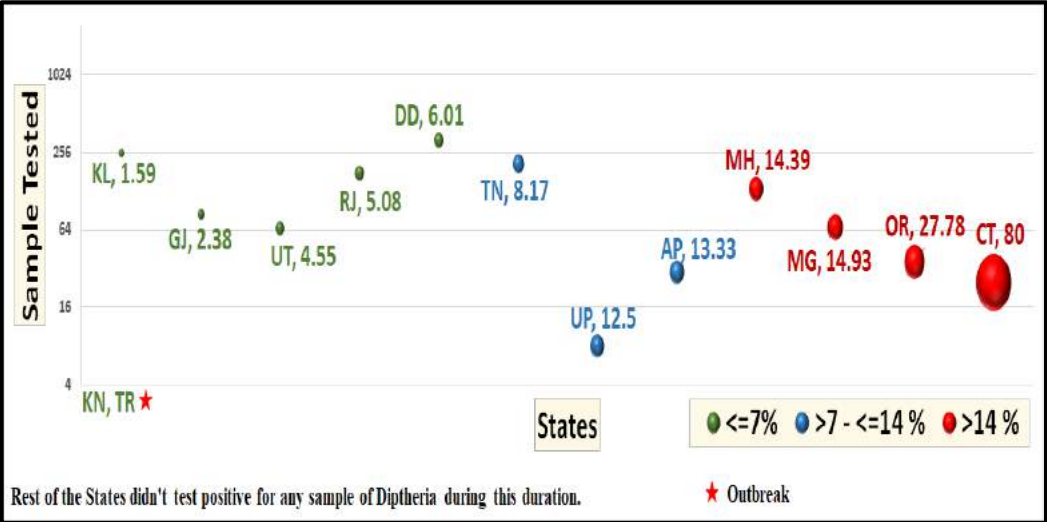
As reported in L form, in November 2016; 1622 samples were tested for Diphtheria, out of which 154 were found positive. In November 2017; out of 1599 samples, 83 were found to be positive and in November 2018, out of 1971 samples, 118 were found to be positive.

Sample positivity of samples tested for Diphtheria has been 9.49%, 5.19% and 5.99% in November month of 2016, 2017 & 2018 respectively.

**Fig 28: Presumptive Diphtheria cases reported under IDSP under P & L Form during 2016-2018 in November Month**



**Fig 29: Lab Confirmed Diphtheria cases reported under IDSP under P & L Form during 2016-2018 in November Month**



### Glossary:

- **P form:** Presumptive cases form, in which cases are diagnosed and reported based on typical history and clinical examination by Medical Officers.
- **Reporting units under P form:** Additional PHC/ New PHC, CHC/ Rural Hospitals, Infectious Disease Hospital (IDH), Govt. Hospital / Medical College\*, Private Health Centre/ Private Practitioners, Private Hospitals\*
- **L form:** Lab confirmed form, in which clinical diagnosis is confirmed by an appropriate laboratory tests.
- **Reporting units under L form:** Private Labs, Government Laboratories, Private Hospitals(Lab.), CHC/Rural Hospitals(Lab.),
- HC/ Additional PHC/ New PHC(Lab.), Infectious Disease Hospital (IDH)(Lab.), Govt. Hospital/Medical College(Lab.), Private Health Centre/ Private Practitioners(Lab.)
- **Completeness %:** Completeness of reporting sites refers to the proportion of reporting sites that submitted the surveillance report (P & L Form) irrespective of the time when the report was submitted.

### Case definitions:

- **Enteric Fever: Presumptive:** Any patient with fever for more than one week and with any two of the following: Toxic look, Coated tongue, Relative bradycardia, Splenomegaly, Exposure to confirmed case, Clinical presentation with complications e.g. GI bleeding, perforation, etc. AND/OR Positive serodiagnosis (Widal test)  
**Confirmed:** A case compatible with the clinical description of typhoid fever with confirmed positive culture (blood, bone marrow, stool, urine) of *S. typhi*/ *S. paratyphi*.  
ARI/ ILI:-An acute respiratory infection with fever of more than or equal to 38° C and cough; with onset within the last 10 days.
- **Acute Diarrheal Disease: Presumptive Acute Diarrheal Disease (Including Acute Gastroenteritis):** Passage of 3 or more loose watery stools in the past 24 hours. (With or without vomiting).
- **Confirmed Cholera:** A case of acute diarrhoea with isolation and identification of *Vibrio cholera* serogroup O1 or O139 by culture of a stool specimen.
- **Viral Hepatitis: Presumptive:** Acute illness typically including acute jaundice, dark urine, anorexia, malaise, extreme fatigue, and right upper quadrant tenderness.  
**Confirmed:** Hepatitis A: A case compatible with the clinical description of acute hepatitis with demonstration of anti-HAV IgM in serum sample.  
**Confirmed:** Hepatitis E: A case compatible with the clinical description of acute hepatitis with demonstration of anti-HEV IgM in serum sample.
- **Dengue: Presumptive:** An acute febrile illness of 2-7 days duration with two or more of the mentioned manifestations:
  - Headache, Retro-orbital pain, Myalgia, Arthralgia, Rash, haemorrhagic manifestations, leukopenia, or Non-ELISA based NS1 antigen/IgM positive. (A positive test by RDT will be considered as probable due to poor sensitivity and specificity of currently available RDTs.)**Confirmed:** A case compatible with the clinical description of dengue fever with at least one of the following:
  - Demonstration of dengue virus NS-1 antigen in serum sample by ELISA.
  - Demonstration of IgM antibodies by IgM antibody capture ELISA in single serum sample.
  - IgG seroconversion in paired sera after 2 weeks with fourfold increase of IgG titre.
  - Detection of viral nucleic acid by polymerase Chain reaction (PCR).
  - Isolation of the dengue virus (virus culture +ve) from serum, plasma, leucocytes.(Source – Dengue National guidelines, NVBDCP 2014)
- **Leptospirosis Case Definition: Presumptive Leptospirosis:** Acute febrile illness with headache, myalgia and prostration associated with a history of exposure to infected animals or an environment contaminated with animal urine With one or more of the following:

- Calf muscle tenderness
  - Conjunctival suffusion
  - Oliguria or anuria and/or proteinuria
  - Jaundice
  - Haemorrhagic manifestations (intestines, lung)
  - Meningeal irritation
  - GI symptoms ( Nausea/ Vomiting/ Abdominal pain/Diarrhoea)
- And/or one of the following:-
    - A positive result in IgM based immune- assays, slide agglutination test or latex agglutination test or immunochromatographic test.
    - A Microscopic Agglutination Test (MAT) titre of 100/200/400 or above in single sample based on endemicity.
    - Demonstration of leptospire directly or by staining methods

**Lab Confirmed Leptospirosis:** A case compatible with the clinical description of leptospirosis with at least one of the following:

- Isolation of leptospire from clinical specimen.
  - Four fold or greater rise in the MAT titre between acute and convalescent phase serum specimens run in parallel. (Source: -National Guidelines on Diagnosis, Case Management Prevention and Control of Leptospirosis NCDC 2015).
- **Chikungunya case definition: Presumptive Case Definition:** An acute illness characterised by sudden onset of fever with any of the following symptoms: headache, backache, photophobia, severe arthralgia and rash.
    - Lab confirmed: A case compatible with the clinical description of chikungunya fever with at least one of the following: Demonstration of IgM antibodies by IgM antibody capture ELISA in a single serum sample.
    - Detection of viral nucleic acid by PCR.
    - Isolation of chikungunya virus from clinical specimen. (Source – Mid Term Plan Guidelines, NVBDCP 2013.

**Acknowledgement:**

This Disease Alert from IDSP acknowledges the contribution of Dr. Sujeet K Singh, NPO Project Director - IDSP & Director NCDC; Dr. Pradeep Khasnobis, Joint Director, IDSP; Dr. Pranay Verma, Deputy Director, IDSP; Mr. Priyank Pandya, Communication Officer, IDSP, Ms. Ritu Malik, Consultant (GIS), IDSP; Mr. Prasun Sharma, Statistician-cum-Programmer, IDSP & Ms. Sujata Malhotra, Data Manager, IDSP.

Data shown in this bulletin are provisional, based on weekly reports to IDSP by State Surveillance Unit. Inquiries, comments and feedback regarding the IDSP Surveillance Report, including material to be considered for publication, should be directed to: Director, NCDC 22, Sham Nath Marg, Delhi 110054. Email: [dirnicd@nic.in](mailto:dirnicd@nic.in) & [idsp-npo@nic.in](mailto:idsp-npo@nic.in)

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