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Issue - 4 Vol. 3

Disease Alert
प्रकोप चेतावनी

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

April 2018

Inside

Investigation of Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Introduction

It was reported to DSU, Jamnagar on 05/3/2018 that cases of fever with rash are being reported from Villages Chhiri-1 and 2, PHC-Chhiri, Block Vapi, District Valsad, Gujarat.

The total population of village was 32373 and of affected area was 3047.

Investigation Team

Following receipt of report, an outbreak investigation team was constituted comprising of following members:

Sr No.	Name	Designation	Headquarter	Trained (Yes/No)
1	Dr.Anil Patel	CDHO	D.P.Valsad	Yes
2	Dr.Rajesh B Patel	RCHO	D.P.Valsad	Yes
3	Dr.Manoj N Patel	EMO	D.P.Valsad	Yes
4	Dr.Rupesh Gohill	i/c THO	THO Office Vapi	Yes
5	Dr.Dipal Patel	MO	PHC Chhiri	Yes
6	Shri.Yogesh G Patel	Supervisor	D.P.Valsad	Yes
7	Shri Umesh C Patel	Supervisor	THO Office Vapi	Yes
8	Shri Kinjal Patel	MPHS	PHC Chhiri	Yes
9	Smt.Yogita Patel	FHS	PHC Chhiri	Yes

Active house to house search was done by health staff.

Based on analysis of hospital records and active case search, total of 16 cases were identified.

Course of Investigation

It was found that first cases of suspected measles occurred on 10-2-18, peak of outbreak was during week 9. Last Case occurred on 16-3-18 in week number 132 and there was no case reported subsequently.

Rapid Survey of cases was started and detail of cases was collected and line-listing prepared. Major Symptoms found from history were-fever, rash, cough and running nose. Caregivers reported that patients initially had fever with running nose and cough for 2-3 days. This was followed by rashes on the trunk and on face. Symptoms were similar in all epidemiologically linked cases.

Based on this, a tentative diagnosis of Measles was made and outbreak investigated accordingly.

The epi-curve of number of cases is as follows

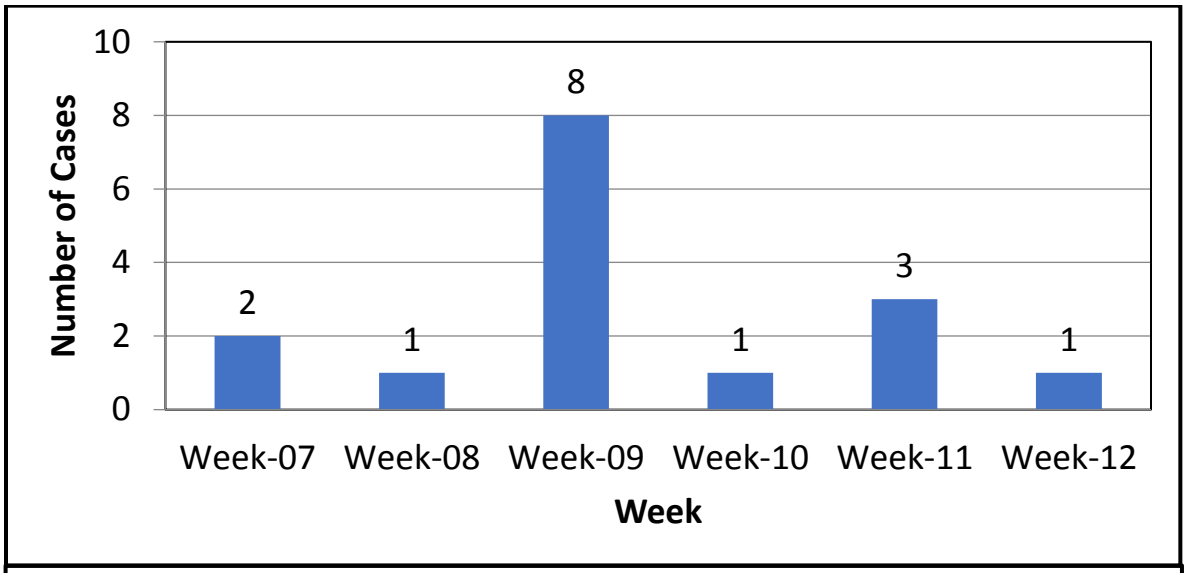


Fig. 1: Epi-Curve (Week wise Cases) of Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Epidemic Curve of cases by date:

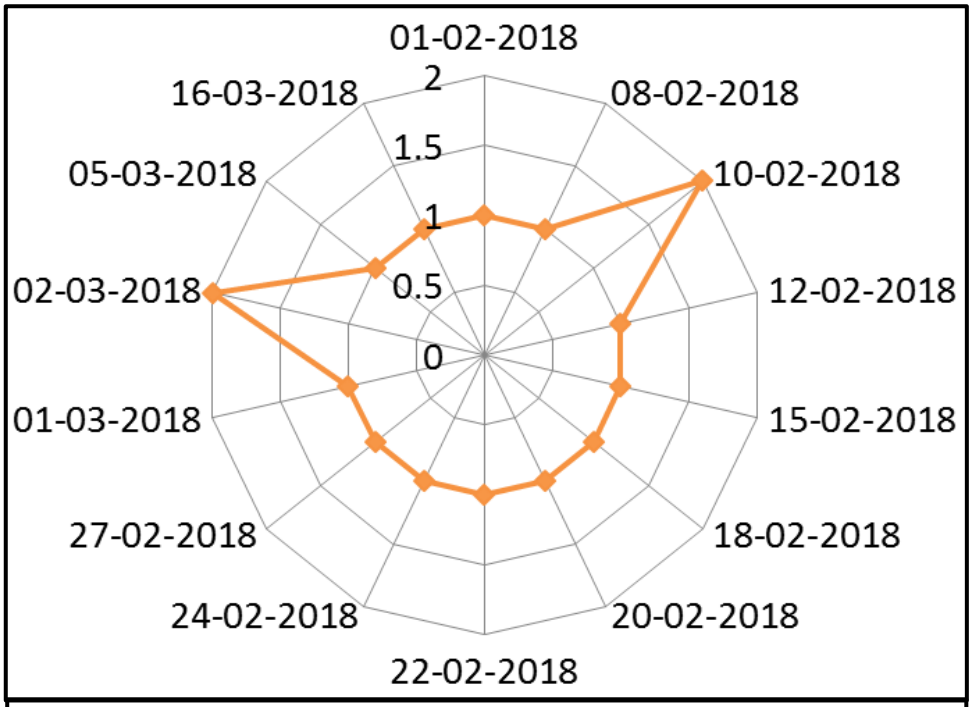


Fig. 2: Epi-Curve (Date wise Cases) of Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Age Group affected

Primarily affected were children of older age groups in 3 to 5 years and 6 to 15 years age bracket. Out of 16 affected cases, immunization status was unknown for 13 cases (81%) while 3 cases were immunized against measles (18%).

Pic. 1: ***Clinical examination of patients*** **for Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat**

Table 2: ***Age group and sex wise Cases of Measles in in Villages Chhiri-1 and 2, PHC-Chhiri, Block Vapi, District Valsad.***

Age Group	Male	Female	Total
0-1	2	2	4
1-2	1	1	2
3-5	2	3	5
6–15	3	2	5
Total	**8**	**8**	**16**

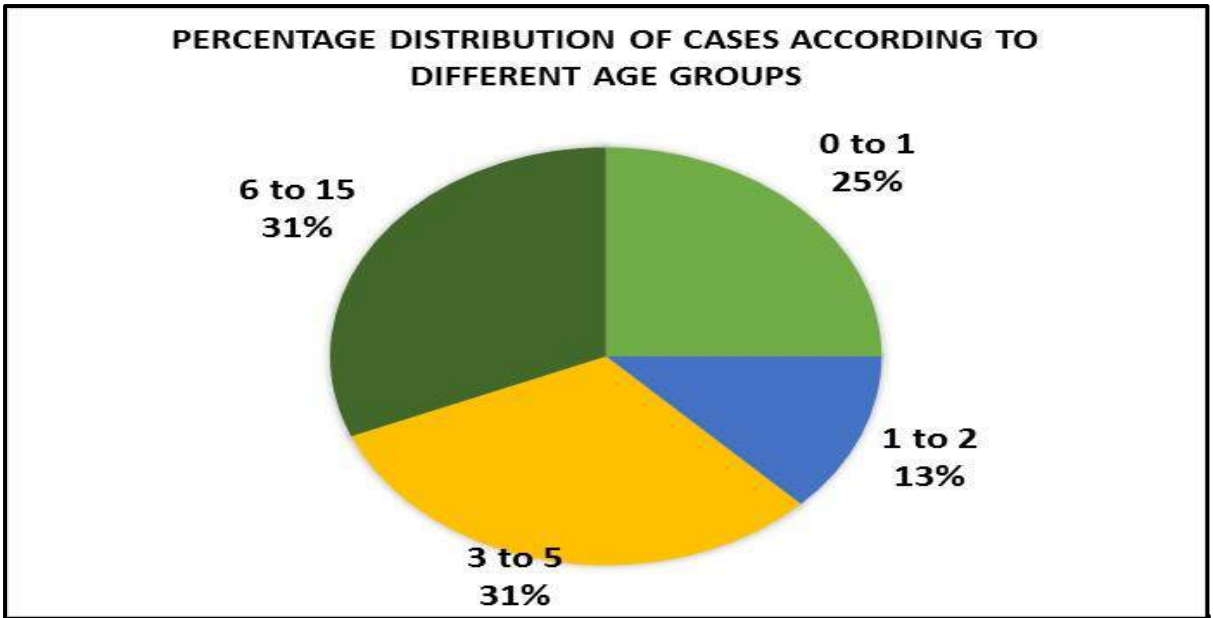


Fig. 3: Percentage distribution of cases according to different age groups of Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

NFHS Survey (2015-16) regarding key immunization parameters in Gujarat

According to NFHS Survey (2015-16), the percentage coverage regarding key parameters for State of Gujarat is as follows:

Table 3: Percentage Coverage regarding Key Parameters for the State of Gujarat

Child Immunizations and Vitamin-A Supplementation	Urban	Rural	Total
Children age 12-23 months fully immunized (BCG, measles, and 3 doses each of polio and DPT) (%)	50.4	50.4	50.4
Children age 12-23 months who have received measles vaccine (%)	76.7	73.7	75.0
Children age 9-59 months who received a vitamin A dose in last 6 months (%)	69.9	72.2	71.2

Immunization status of cases in the outbreak

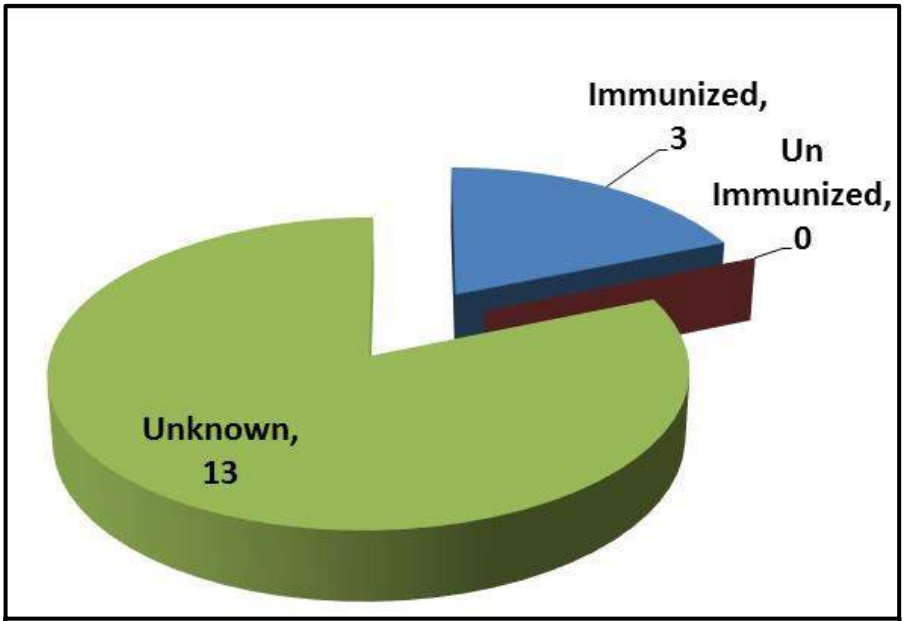


Fig. 4: Immunization status of cases of Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Affected Area

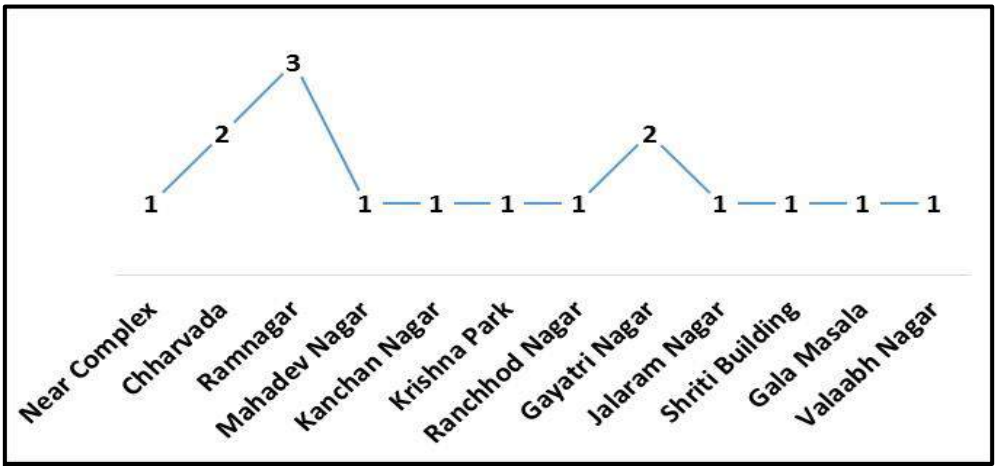


Fig. 5: Affected Area during Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Lab Results

5 serum Samples collected and sent to Dept. of Microbiology, Govt. Medical College, NCH (New Civil Hospital) Surat. Reverse cold chain was used to transport the samples. Following were the test results:-

Table 4: Lab Result during Measles Outbreak in Villages Chhiri-1 & 2, Vapi, District Valsad, Gujarat

Type of sample	No of samples	Result
Serum	5	4 samples were tested positive for Measles by IgM ELISA, where in 1 was tested negative.

Conclusion

Based on investigations conducted & lab results it was concluded to be an outbreak of Measles. Possibly, the source of outbreak was a migrant case who was unimmunized. The mode of transmission was by airborne droplet infection from cases of measles.

In team's opinion, following factor contributed to the outbreak

- Measles vaccination has low coverage in area due to migration of population & parent's refusal to get their children immunized.
- Inadequate awareness of people about disease and transmission.
- Poverty and illiteracy in people of the local community

Control Measures

Immediate control measures were initiated. Following Control & Preventing Measures were taken:-

1. Immediate clinical management of every suspected cases were done with Paracetamol, Cetrazine, Multivitamin, Eye drops, Septran Tab., and ORS.
2. Vitamin A was administered to children of 9 month to 5 year age group in affected area.
3. Active house to house surveillance for measles in affected area done by health teams.
4. Measles vaccine was given to unimmunized children.
5. Ring immunizations were done of the affected area to restrict the transmission of the disease in other area and nearby village. And other vaccination status also checked and due children vaccination as per schedule.
6. Meeting & sensitization of school teachers, ASHA workers, anganwadi workers, Paramedical staff and medical officers was done regarding identification and reporting of any new suspected cases
7. Establishment of an effective system to monitor coverage and conduct measles surveillance was set up in the area
8. Intensive IEC activities done.

Recommendations

The children of the area should be protected by measles vaccine. Awareness about the disease should be generated in the people of the area by regular IEC activities.

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

* Data extracted from IDSP Portal (www.idsp.nic.in) as on 06 August, 2018.

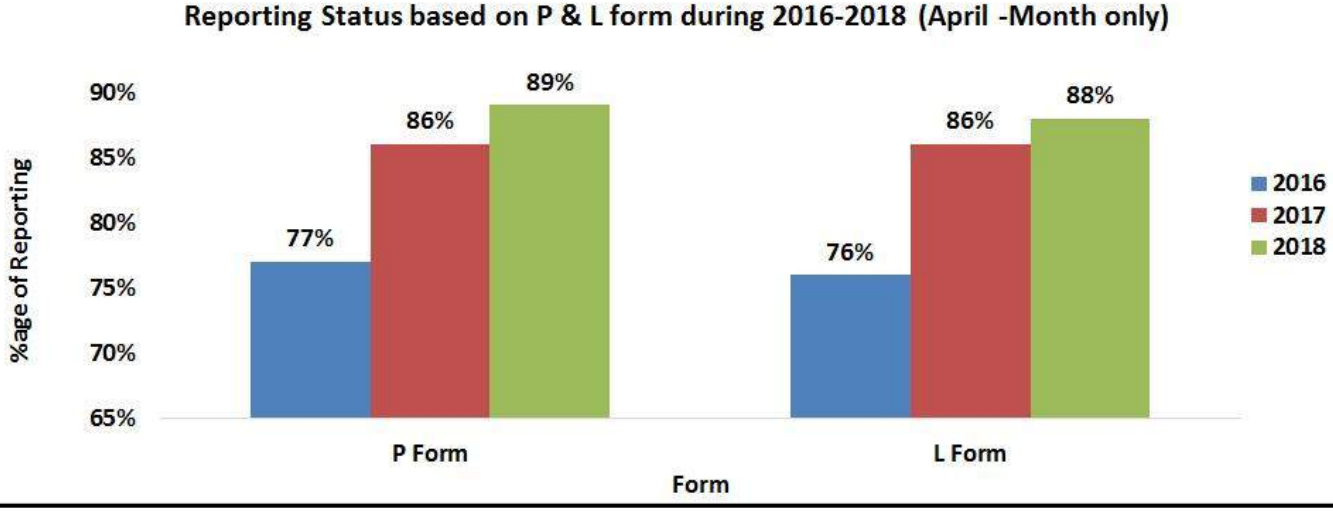


Fig. 6: RU wise reporting based on P & L form during April 2016 - 2018

As shown in Fig 6, in April 2016, 2017 and 2018, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 77%, 86% and 89% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 76%, 86% and 88% 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 7: State/UT wise P form completeness % for April 2018

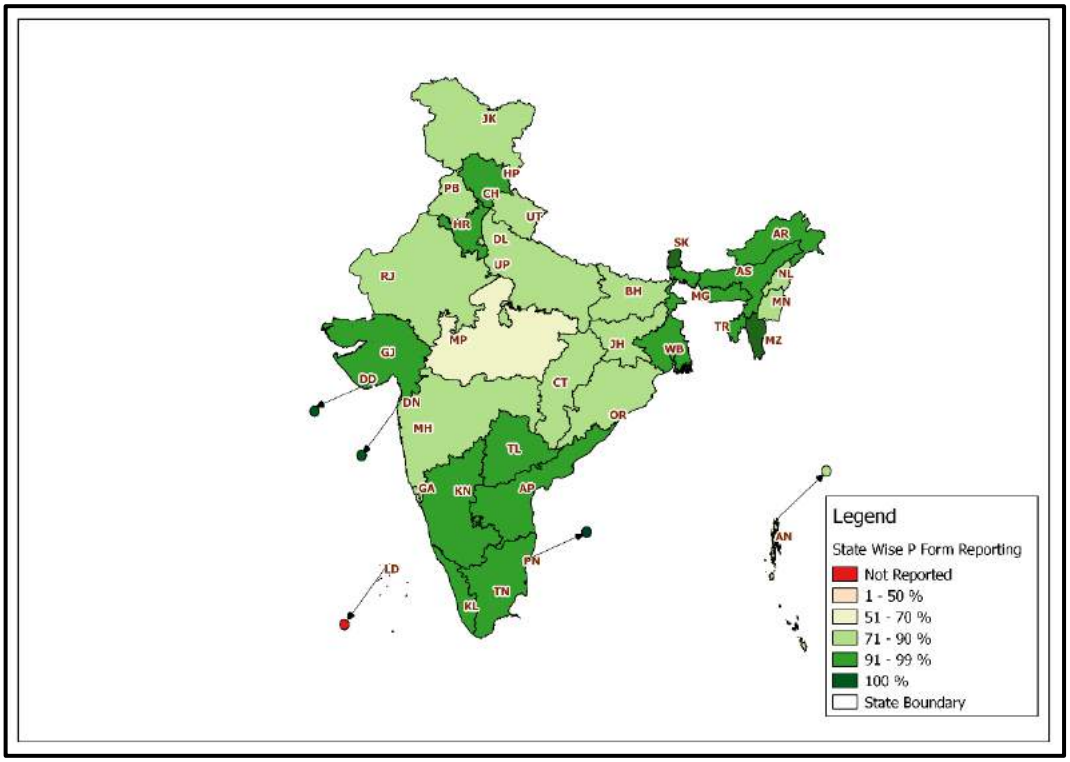
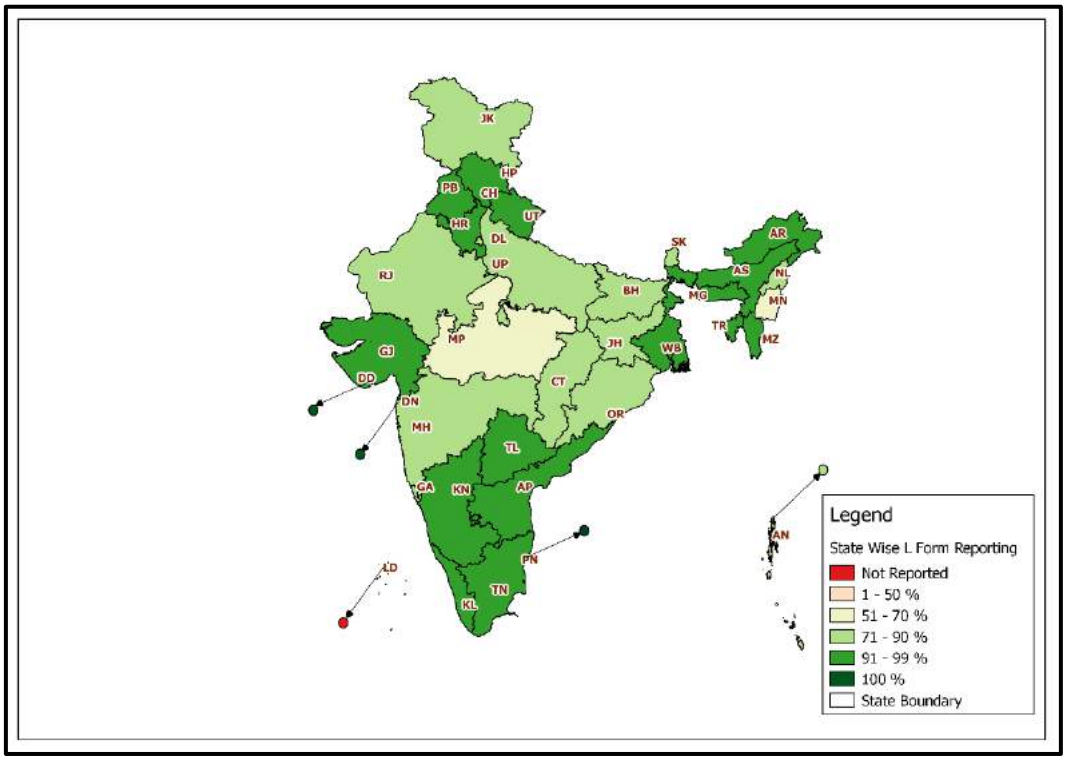


Fig 8: State/UT wise L form completeness % for April 2018



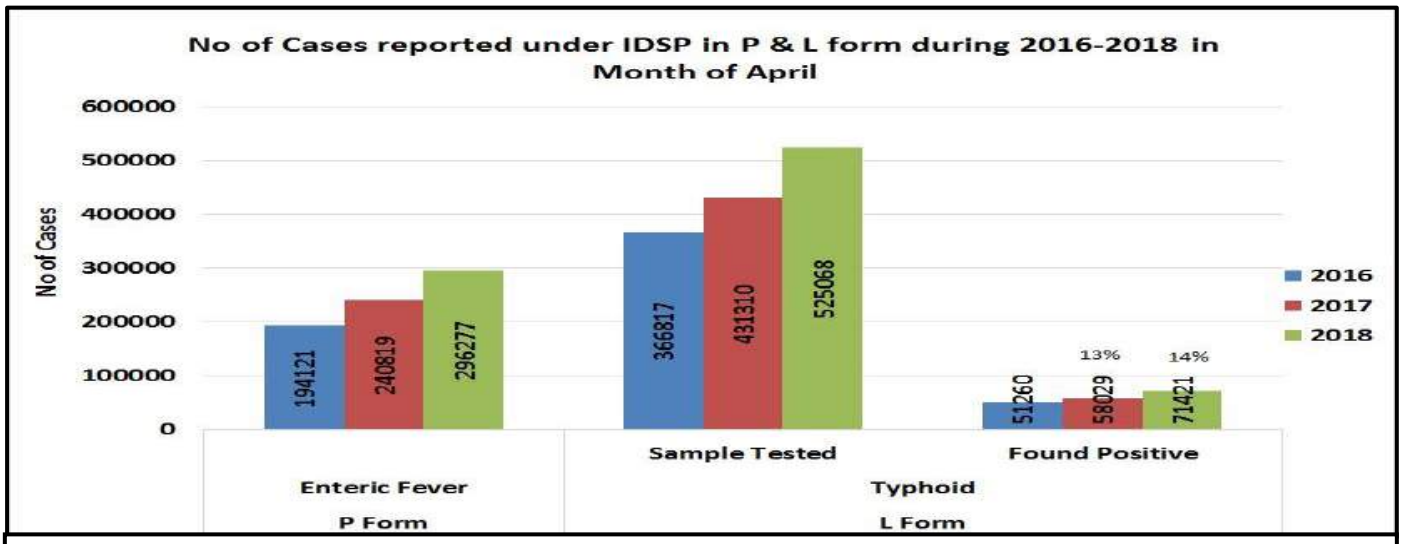


Fig. 9 No. of Enteric Fever Cases reported under P & L form during April 2016 - 2018

As shown in Fig 9, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 194121 in April 2016; 240819 in April 2017 and 296277 in April 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2016; 366817 samples were tested for Typhoid, out of which 51260 were found positive. In April 2017; out of 431310 samples, 58029 were found to be positive and in April 2018, out of 525068 samples, 71421 were found to be positive.

Sample positivity has been 13.9%, 13.5% and 13.6% in April 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 10: State/UT wise Presumptive Enteric fever cases and outbreaks for April 2018

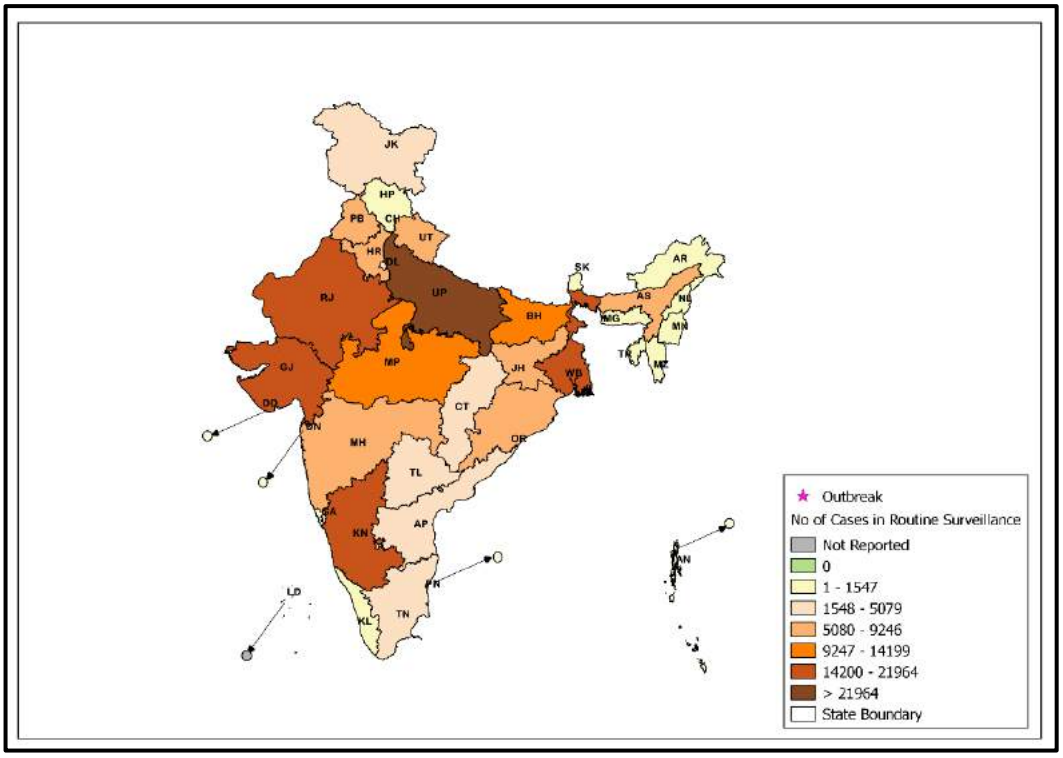
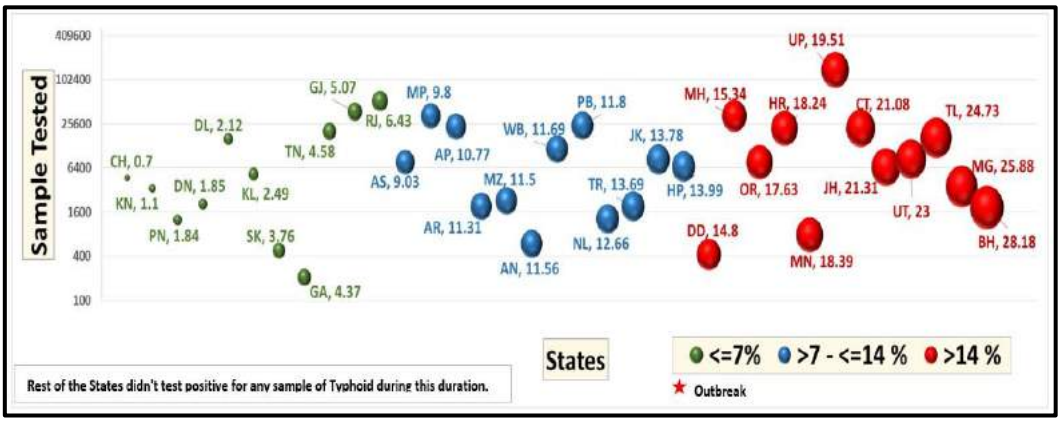


Fig 11: State/UT wise Lab Confirmed Typhoid cases and outbreaks for April 2018



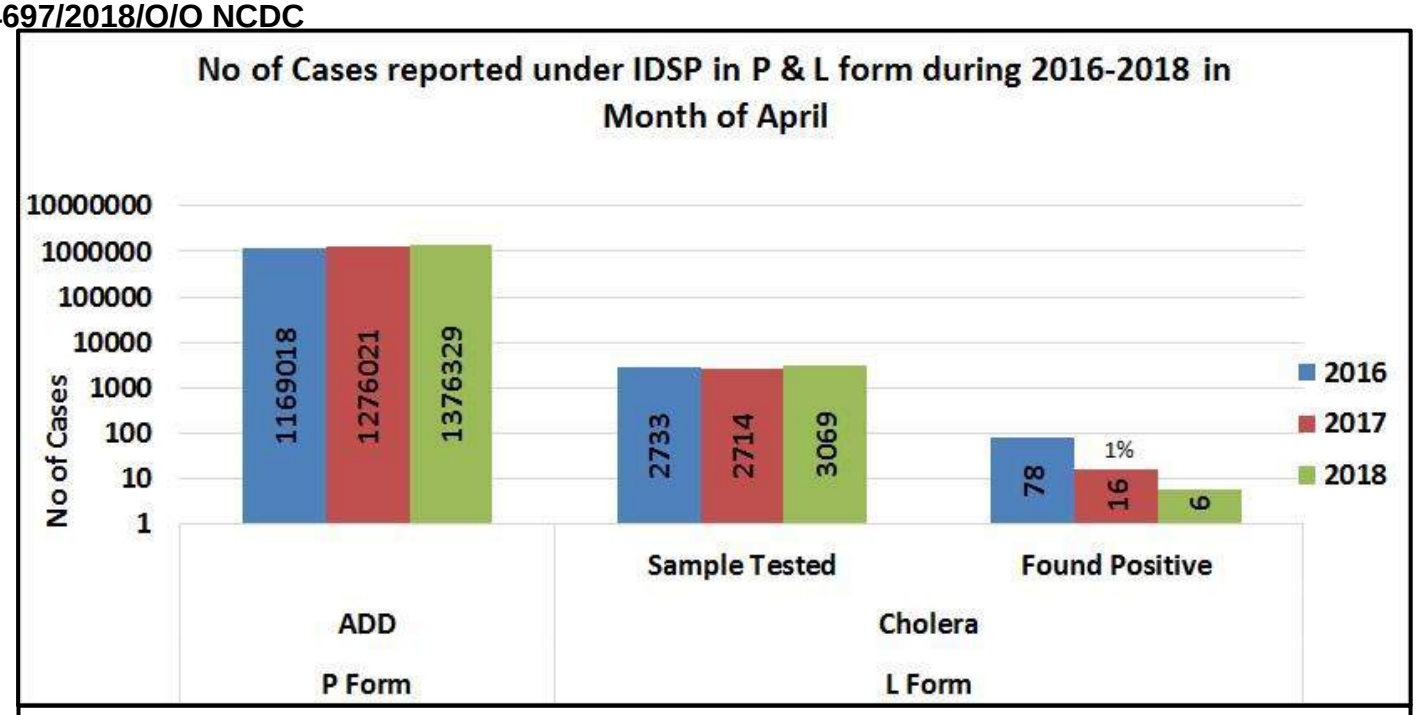


Fig. 12 No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during April 2016 - 2018

As shown in Fig 12, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1169018 in April 2016; 1276021 in April 2017 and 1376329 in April 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2016, 2733 samples were tested for Cholera out of which 78 tested positive; in April 2017, out of 2714 samples, 16 tested positive for Cholera and in April 2018, out of 3069 samples, 6 tested positive.

Sample positivity of samples tested for Cholera has been 2.85%, 0.59% and 0.19% in April month of 2016, 2017 & 2018 respectively.

Fig 13: State/UT wise Presumptive ADD cases and outbreaks for April 2018

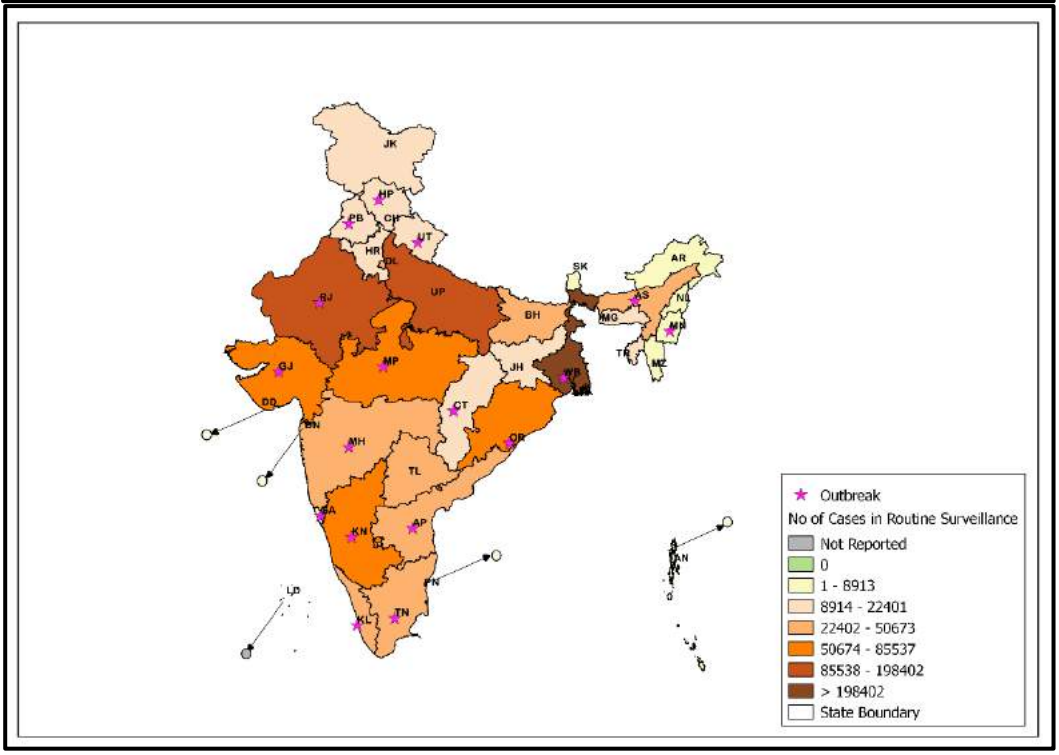
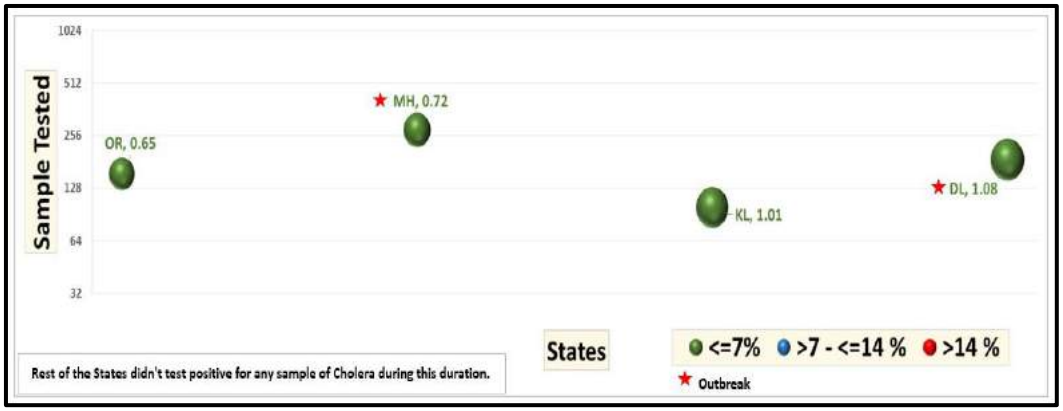


Fig 14: State/UT wise Lab Confirmed Cholera cases and outbreaks for April 2018



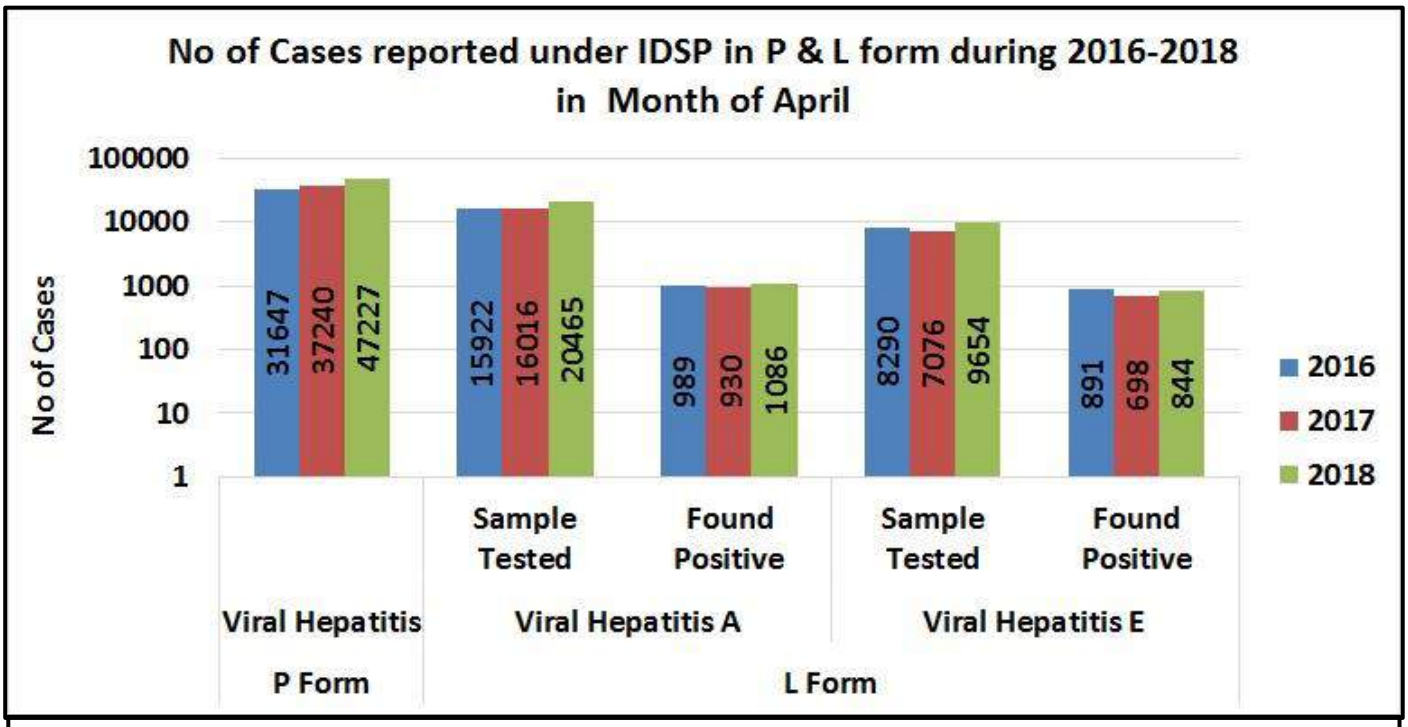


Fig 15: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during April 2016 - 2018

As shown in Fig 15, the number of presumptive Viral Hepatitis cases was 31647 in April 2016, 37240 in April 2017 and 47227 in April 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 April 2016; 15922 samples were tested out of which 989 were found positive. In April 2017 out of 16016 samples, 930 were found to be positive and in April 2018, out of 20465 samples, 1086 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 6.2%, 5.8% and 5.3% in April month of 2016, 2017 & 2018 respectively.

As reported in L form for Viral Hepatitis E, in April 2016; 8290 samples were tested out of which 891 were found positive. In April 2017; out of 7076 samples, 698 were found to be positive and in April 2018, out of 9654 samples, 844 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 10.7%, 9.9% and 8.7% in April month of 2016, 2017 & 2018 respectively

Fig 16: State/UT wise Presumptive Viral Hepatitis A cases and outbreaks for April 2018

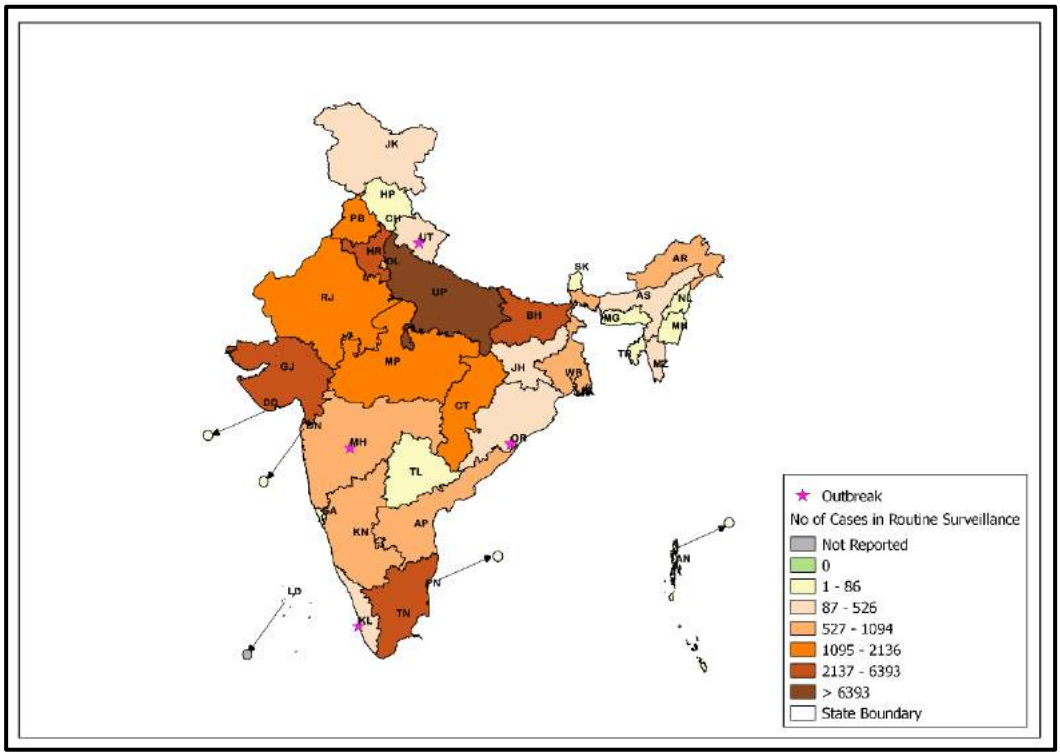


Fig 17: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for April 2018

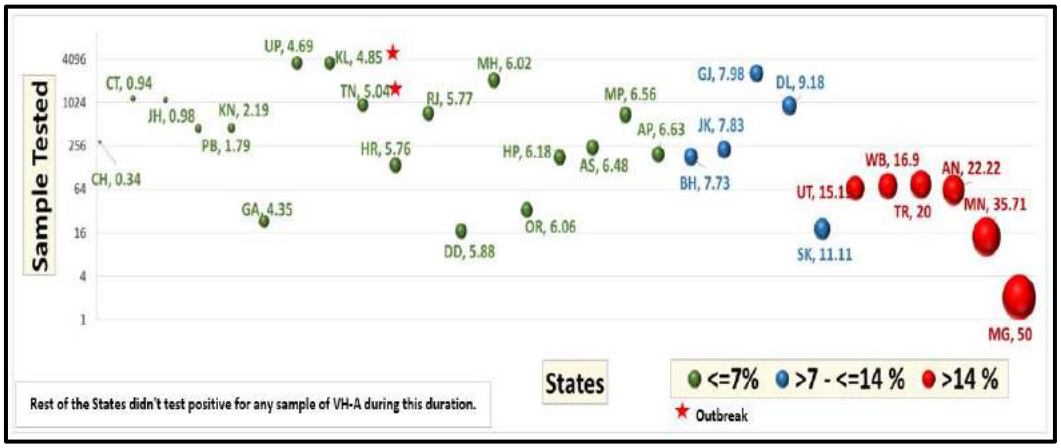
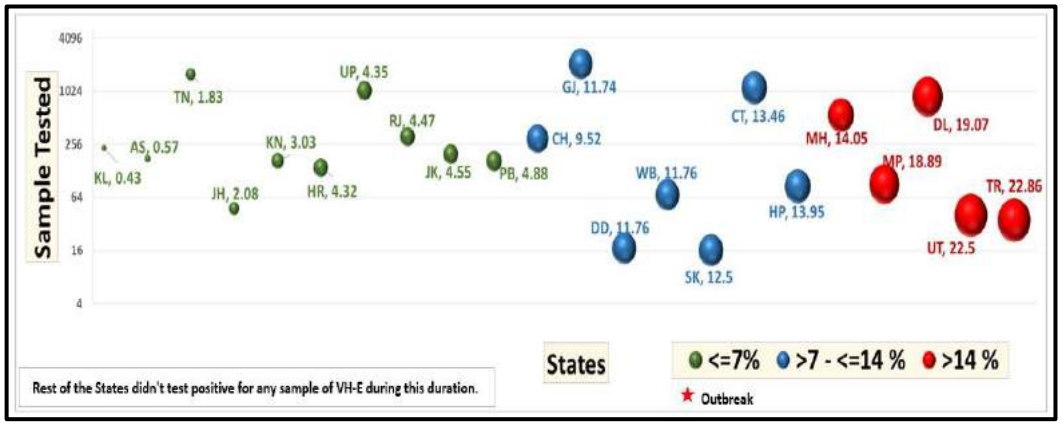


Fig 18: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for April 2018



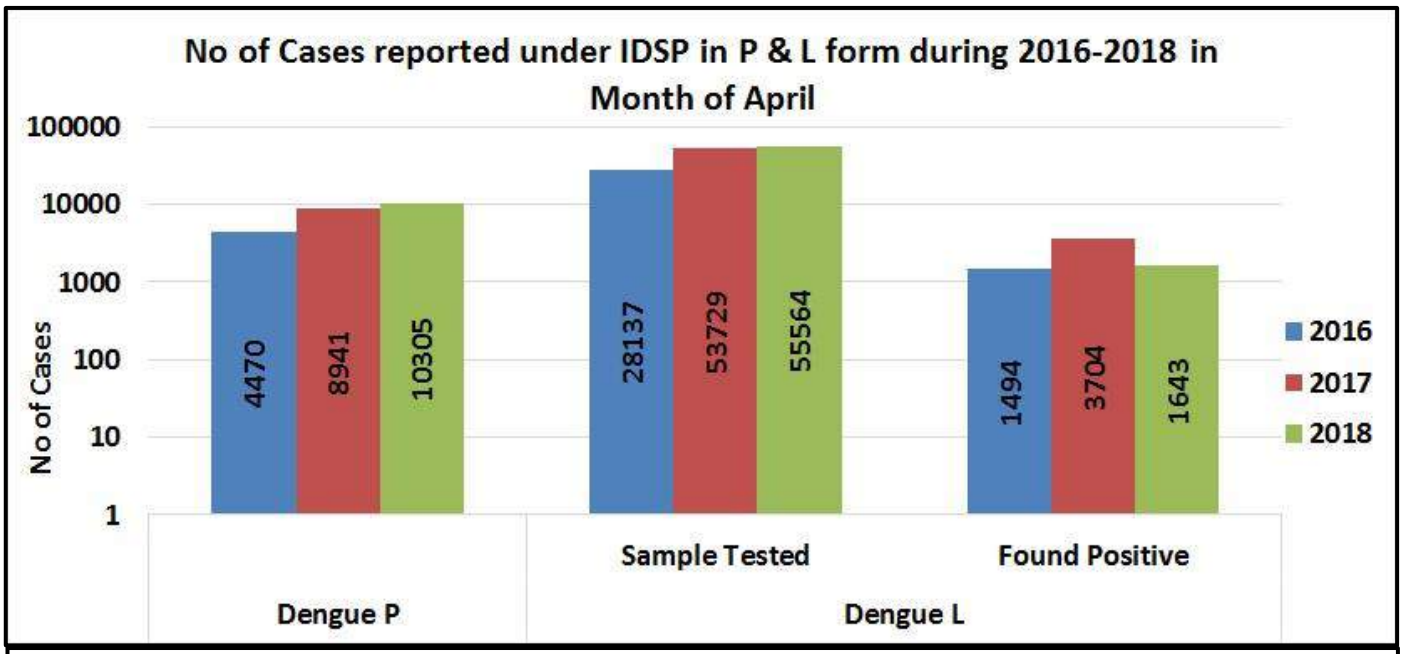


Fig 19: No. of Dengue Cases reported under IDSP in P & L form during April 2016 - 2018

As shown in Fig 19, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 4470 in April 2016; 8941 in April 2017 and 10305 in April 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2016; 28137 samples were tested for Dengue, out of which 1494 were found positive. In April 2017; out of 53729 samples, 3704 were found to be positive and in April 2018, out of 55564 samples, 1643 were found to be positive.

Sample positivity of samples tested for Dengue has been 5.3%, 6.9% and 2.9% in April month of 2016, 2017 & 2018 respectively.

Fig 20: State/UT wise Presumptive Dengue cases and outbreaks for April 2018

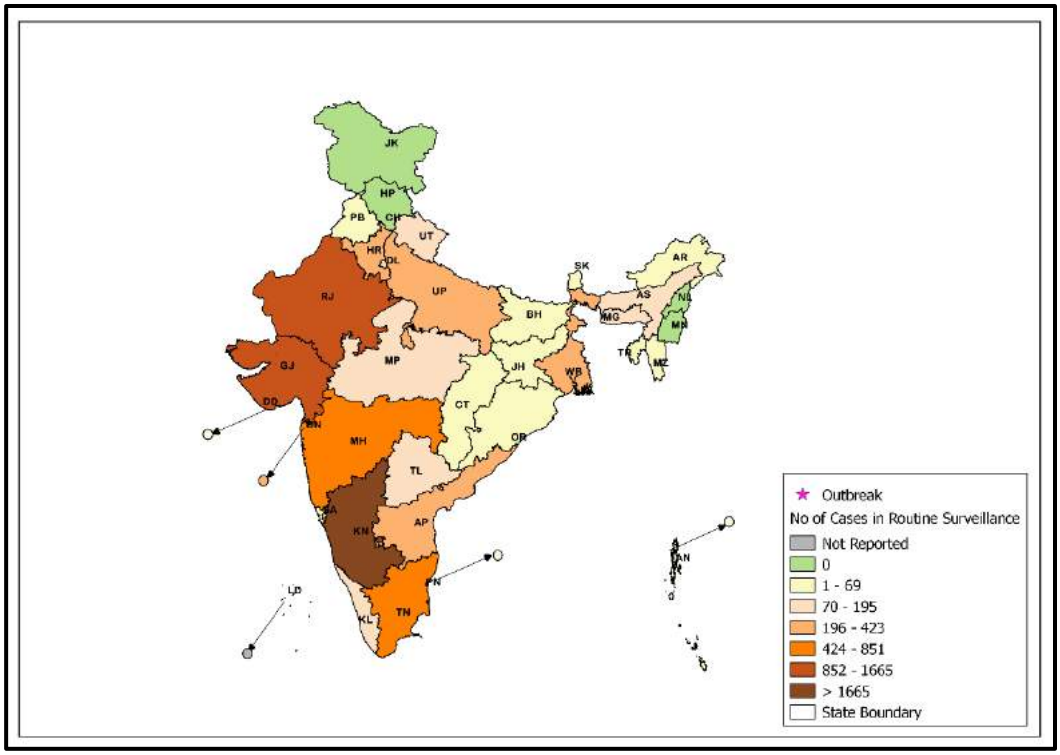
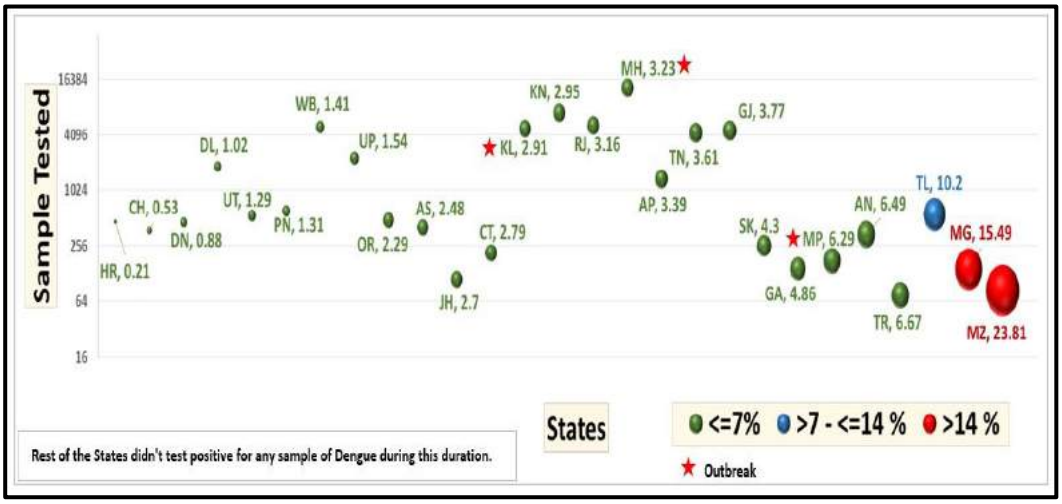


Fig 21: State/UT wise Lab Confirmed Dengue cases and outbreaks for April 2018



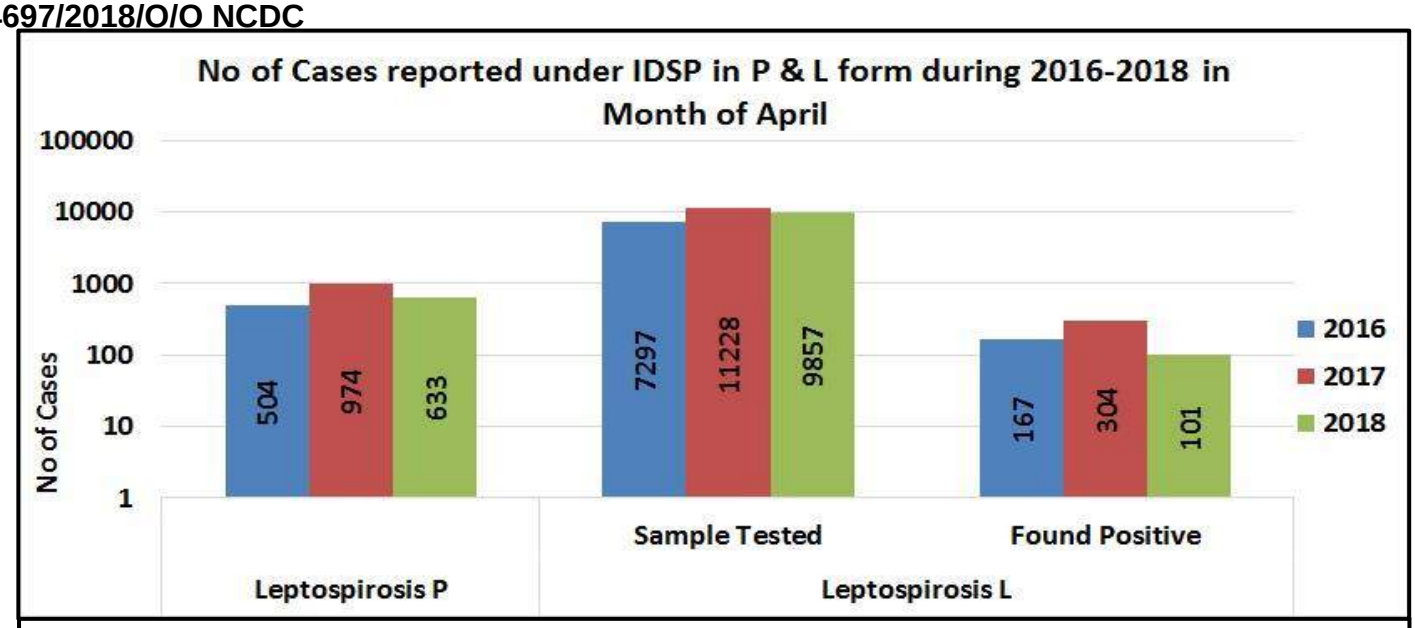


Fig 22: No. of Leptospirosis Cases reported under IDSP in P & L form during April 2016 - 2018

As shown in Fig 22, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 504 in April 2016; 974 in April 2017 and 633 in April 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2016; 7297 samples were tested for Leptospirosis, out of which 167 were found positive. In April 2017; out of 11228 samples, 304 were found to be positive and in April 2018, out of 9857 samples, 101 were found to be positive.

Sample positivity of samples tested for Dengue has been 2.3%, 2.7% and 1.0% in April month of 2016, 2017 & 2018 respectively.

Fig 23: State/UT wise Presumptive Leptospirosis cases and outbreaks for April 2018

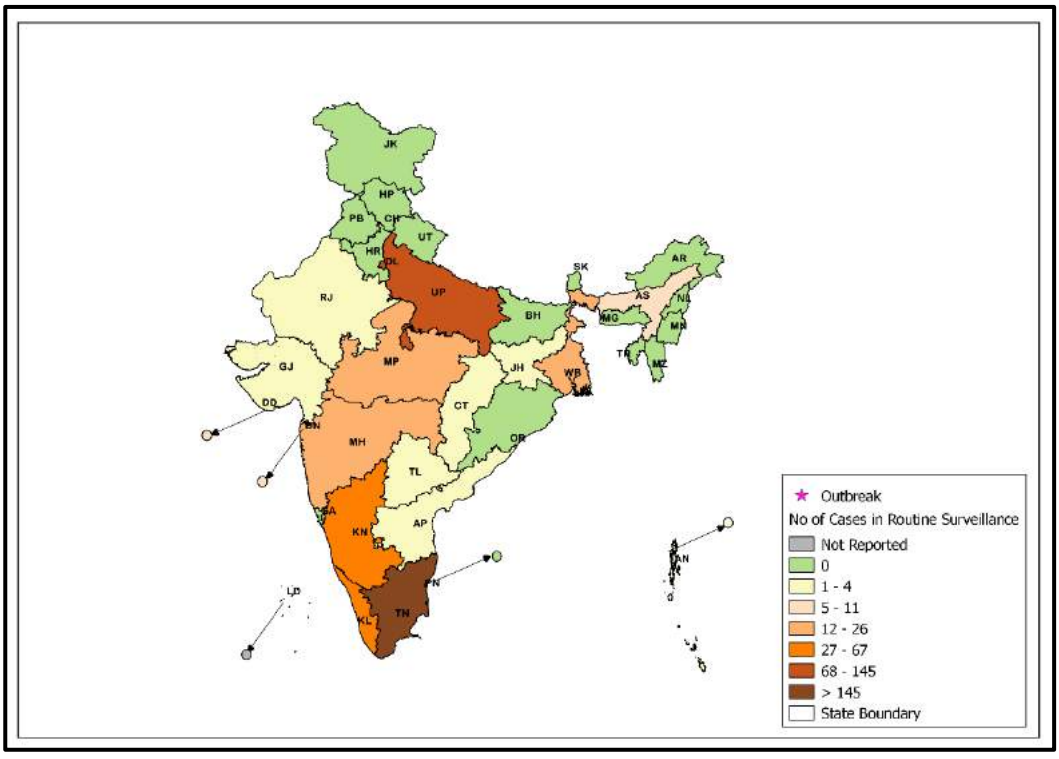
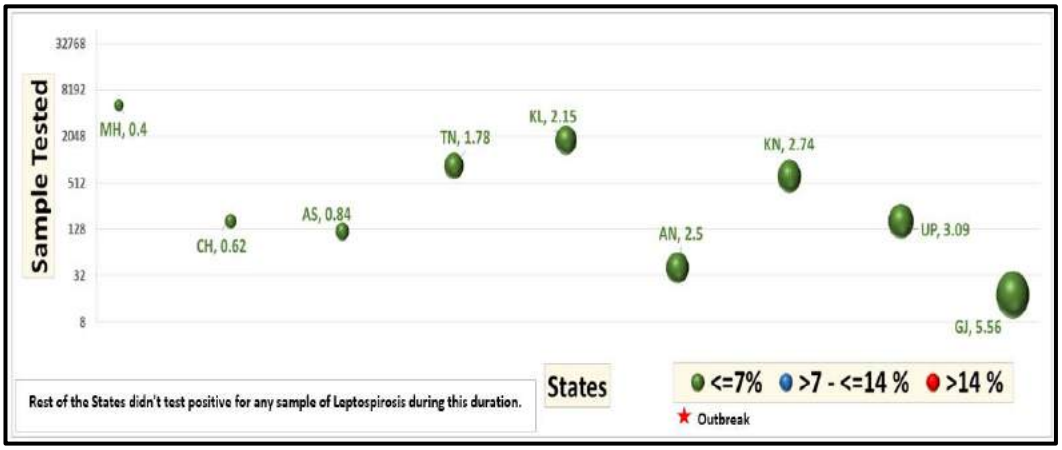


Fig 24: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for April 2018



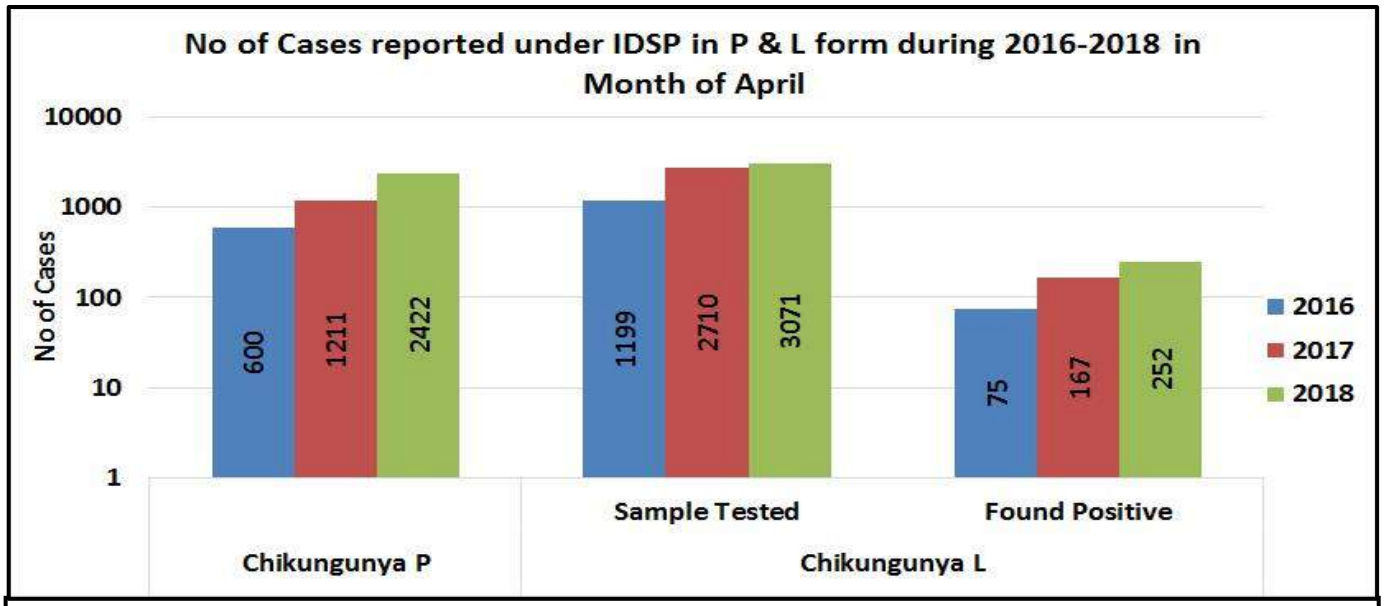


Fig. 25: No. of Chikungunya Cases reported under IDSP in P & L form during April 2016 - 2018

As shown in Fig 25, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 600 in April 2016; 1211 in April 2017 and 2422 in April 2018. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2016; 1199 samples were tested for Chikungunya, out of which 75 were found positive. In April 2017; out of 2710 samples, 167 were found to be positive and in April 2018, out of 3071 samples, 252 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 6.3%, 6.2% and 8.2 % in April month of 2016, 2017 & 2018 respectively.

Fig 26: State/UT wise Presumptive Chikungunya cases and outbreaks for April 2018

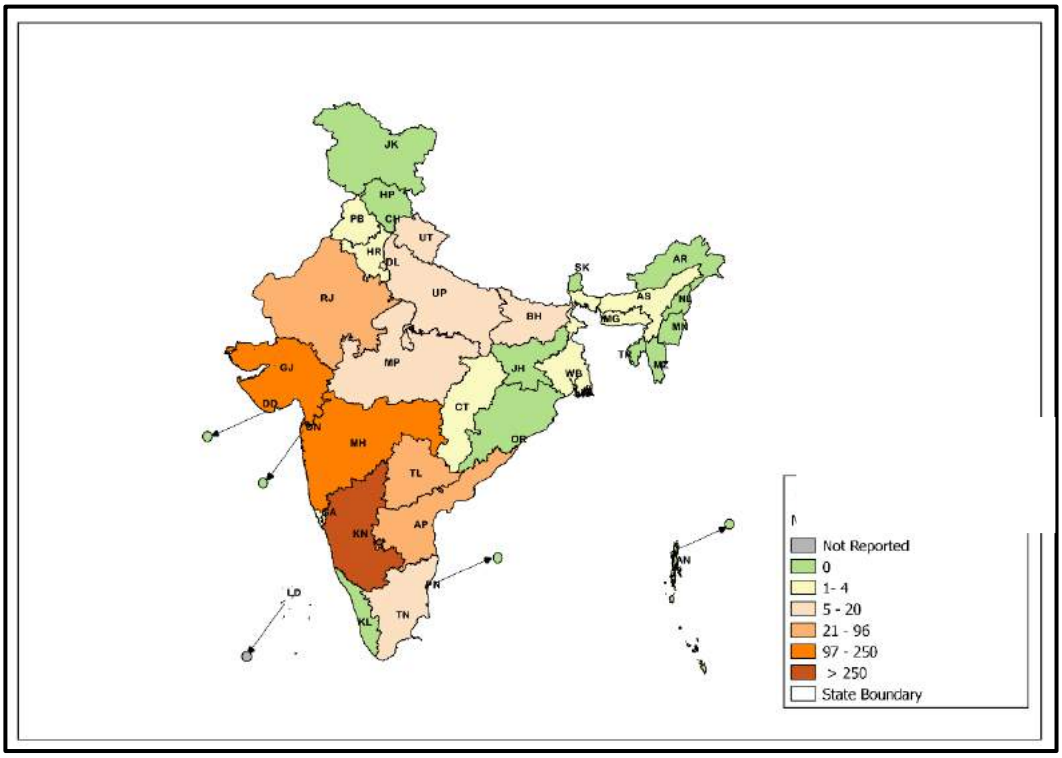
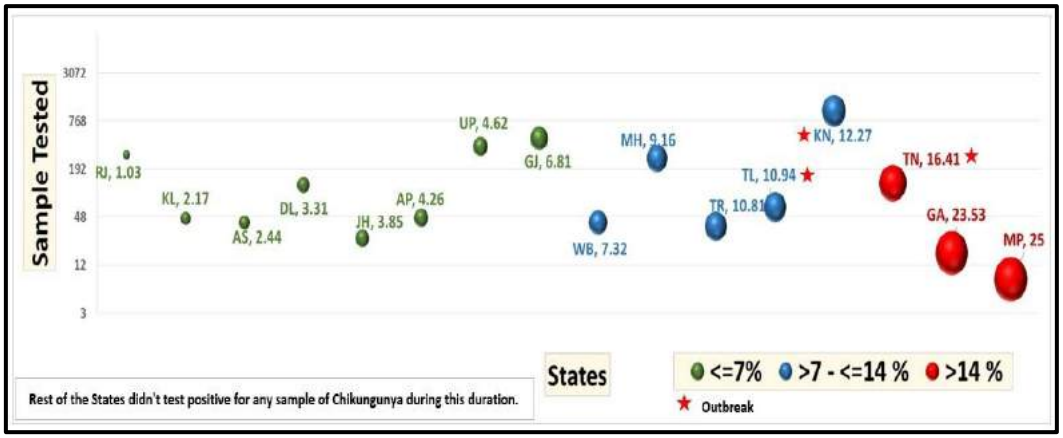
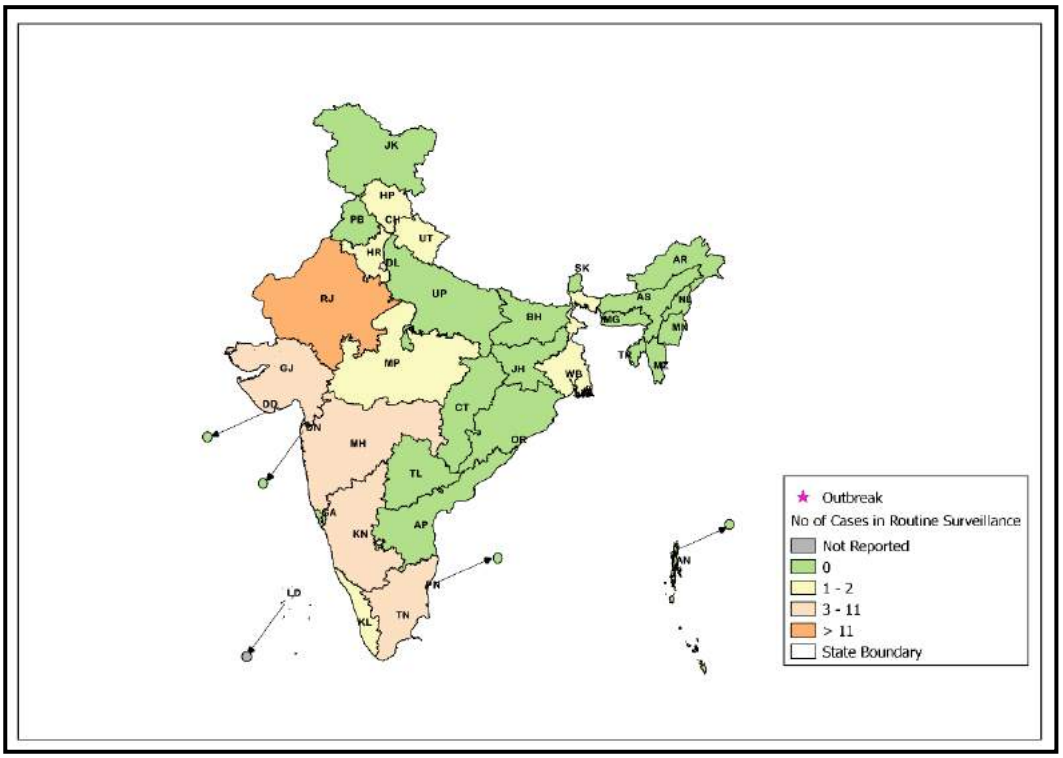


Fig 27: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for April 2018



1024697/2018/O/O NCDC

Fig 28: State/UT wise Influenza A (H1N1) cases & outbreak for April 2018



Action from the field

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 leptospires 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 leptospires 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.

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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 & idsp-npo@nic.in

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