

Disease Alert

प्रकोप चेतावनी

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

February 2019

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Investigation report of Leptospirosis Outbreak in Karur District, Tamil Nadu

Background

On 23th January it was reported to DSU Karur by HSC Hi Sengai, Block Krishnarayapuram that many cases with fever and meningeal signs from village Chinnamalaipatty were being reported. The village is a plain area with 221 houses having approx. population of 1023.

The DSU immediately dispatched an RRT with DDHS, District Entomologist, MO PHC. They started outbreak investigation on 24th January. They were joined by Block RRT from Kulithalai.

Details of Investigation

It was found that a child, 14/M, of Kanakkupillaiyur village, Kulithalai Block was admitted for Acute meningitis illness in MGM Govt. Hospital, Trichy on 19.01.2019 for higher treatment.

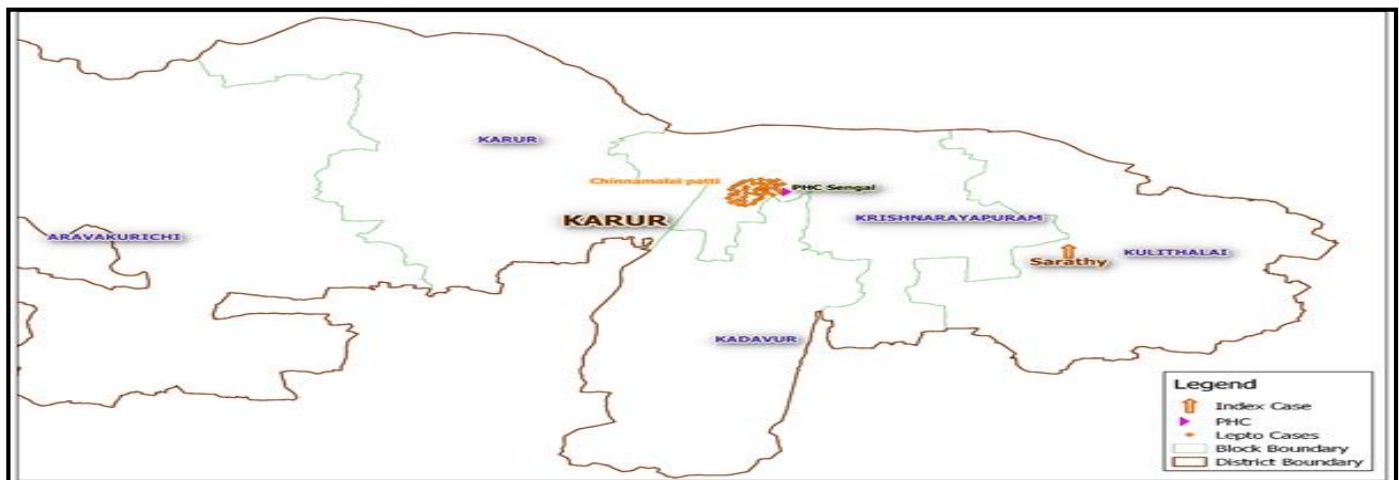
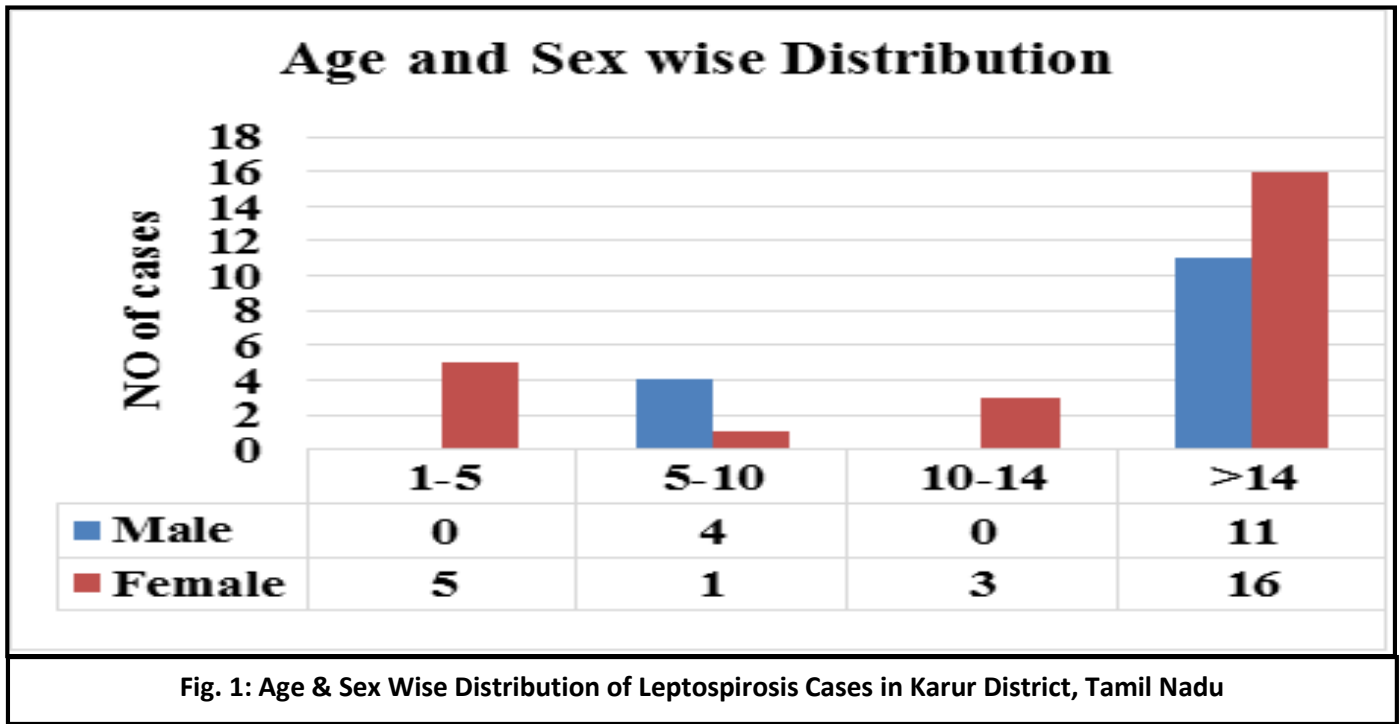
The RRT interviewed his parents. As per his parent's statement he had gone to Chinnamalaipatty village of Sengal PHC in Krishnarayapuram Block during Pongal Holiday (12.01.2019 To 18.01.2019) and there he developed fever with convulsion and Joint pain on 18.01.2019 onwards and was admitted to MGM Govt. Hospital, Trichy.

They told that some more households in the village were also having similar fever and joint pain like symptoms. On knowing this details BRRT and DRRT rushed to the Chinnamalaipatty village of Sengal PHC in Krishnarayapuram Block of Karur District and carried out fever survey and found few more fever cases with Joint Pain, Myalgia, Joint swelling and Arthralgia etc.

Descriptive Epidemiology

Table 1: Age & Sex Wise Distribution of Cases

| Age Group | Male | Female | Total |
|--------------|-----------|-----------|-----------|
| 1-5 | 0 | 5 | 5 |
| 5-10 | 4 | 1 | 5 |
| 10-14 | 0 | 3 | 3 |
| >14 | 11 | 16 | 27 |
| Total | 15 | 25 | 40 |



Salient epidemiological observations

1. Water stagnation in and around the tap water system with animal infestation (dog and cattle’s are sitting/lying around).
2. Tap water lines digged and erected in the sullage drains with leakages identified.
3. No record of periodical cleaning of Over-head tanks (OHT).
4. Dampness of water around the OHT which is used for bathing and other purposes was also found to be contaminated by animal as well as rats.
5. Few pipelines leakages in the village particularly near the tea shops were found

Lab results / investigation

- Type & no. of sample taken: 8 Serum sample taken on 25.1.2019.
- Name of Lab where samples sent: DPHL, GH, Karur on 25.1.2019
- Name of the Test done: Leptospirosis by IgM ELISA (on 27.1.2019)
- Results: One sample tested positive while 7 tested negative

Treatment

All fever cases were treated appropriately by MMU through standard antibiotics & supplementary measures.

Control measures undertaken

- Disinfection
- Chlorination
- Pipeline leakages corrected.
- Related Civil Work.
- Mass Cleaning
- Fogging
- IEC were

Conclusions

The index case probably contracted the disease from village Chinnamalaipatty during his stay there for Pongal holidays.

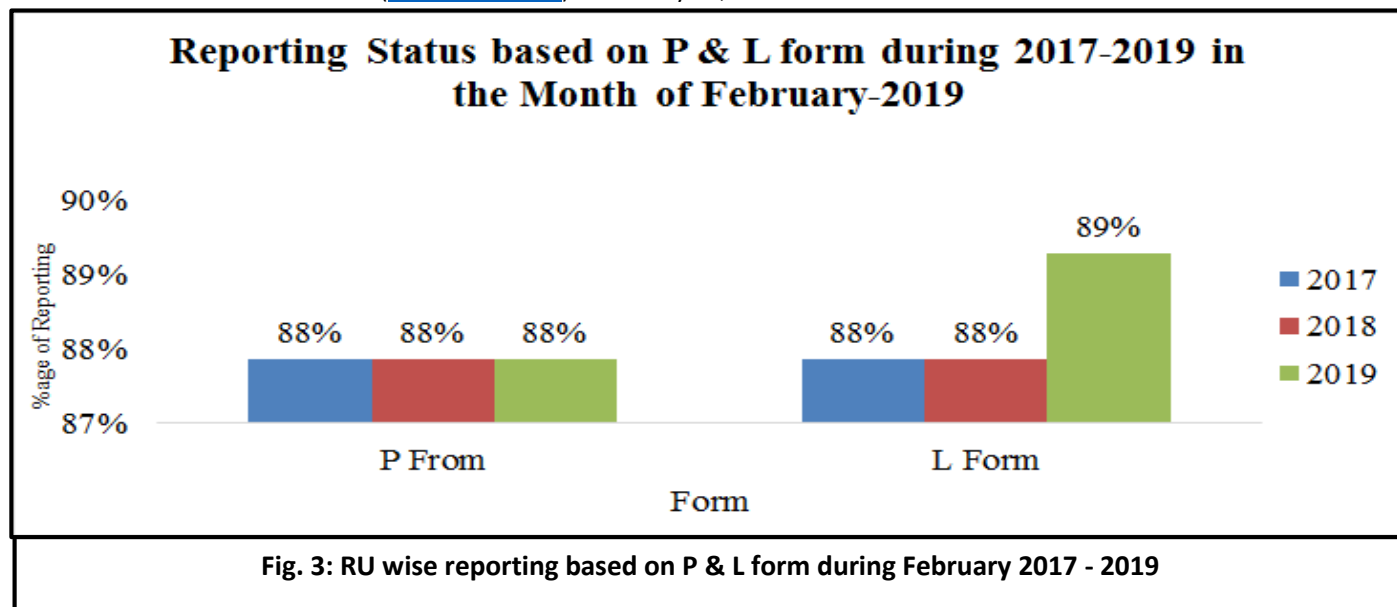
Factors contributing to the outbreak: Contamination of water sources by cow dung and sullage stagnation around the syntax tank which is used for bathing and other purposes. This may have gotten contaminated.

Recommendations

1. Proper & adequate disinfection chlorination & mass cleaning to be undertaken regularly.
2. Repair of pipeline leakages to done immediately as soon as the leakages are found/detected.
3. Intensive fever surveys to be undertaken to detect any new cases and institute appropriate measures.
4. Health personnel at PHCs and Sub-Centers to be trained for detecting Leptospirosis suspects and to institute appropriate symptomatic treatment.
5. Regular reporting to IDSP system to ensure appropriate monitoring & trend analysis.
6. Regular IEC activities in the affected areas.

Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue Leptospirosis, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During February 2017 - 2019*

* Data extracted from IDSP Portal (www.idsp.nic.in) as on May 14, 2019.



As shown in Fig 3, in February 2017, 2018 and 2019, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 88%, 88% and 88% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 88%, 88% and 89% 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.

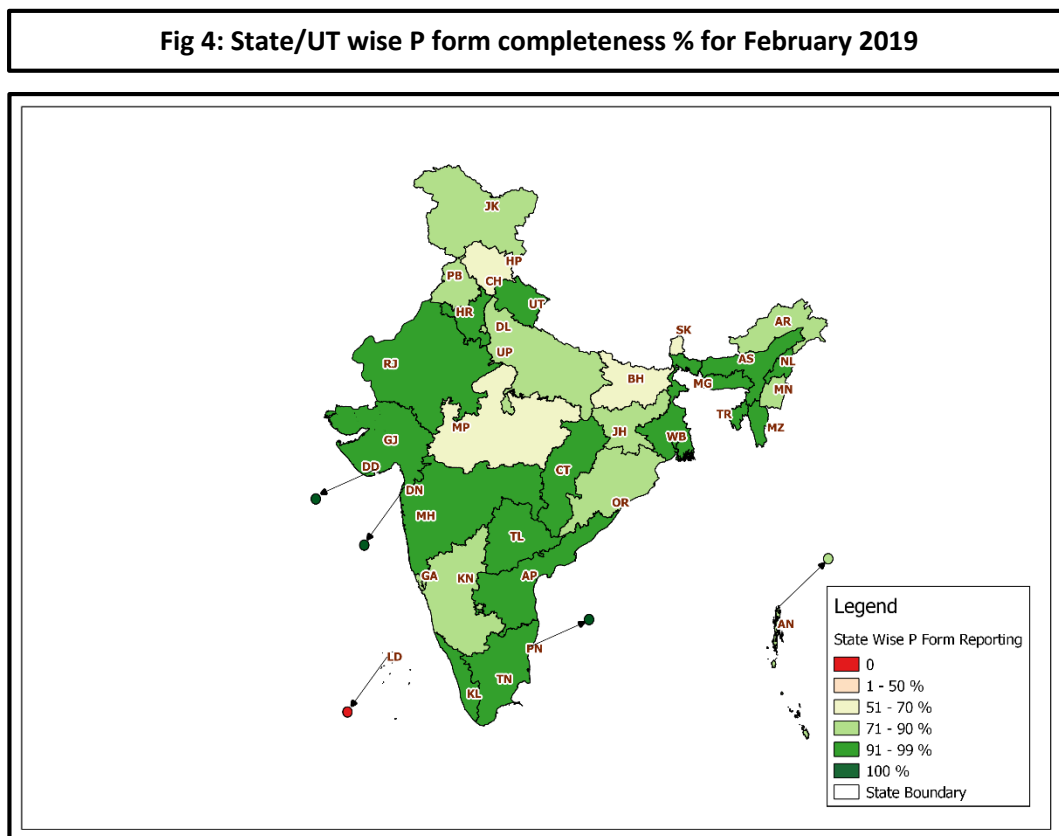


Fig 5: State/UT wise L form completeness % for February 2019

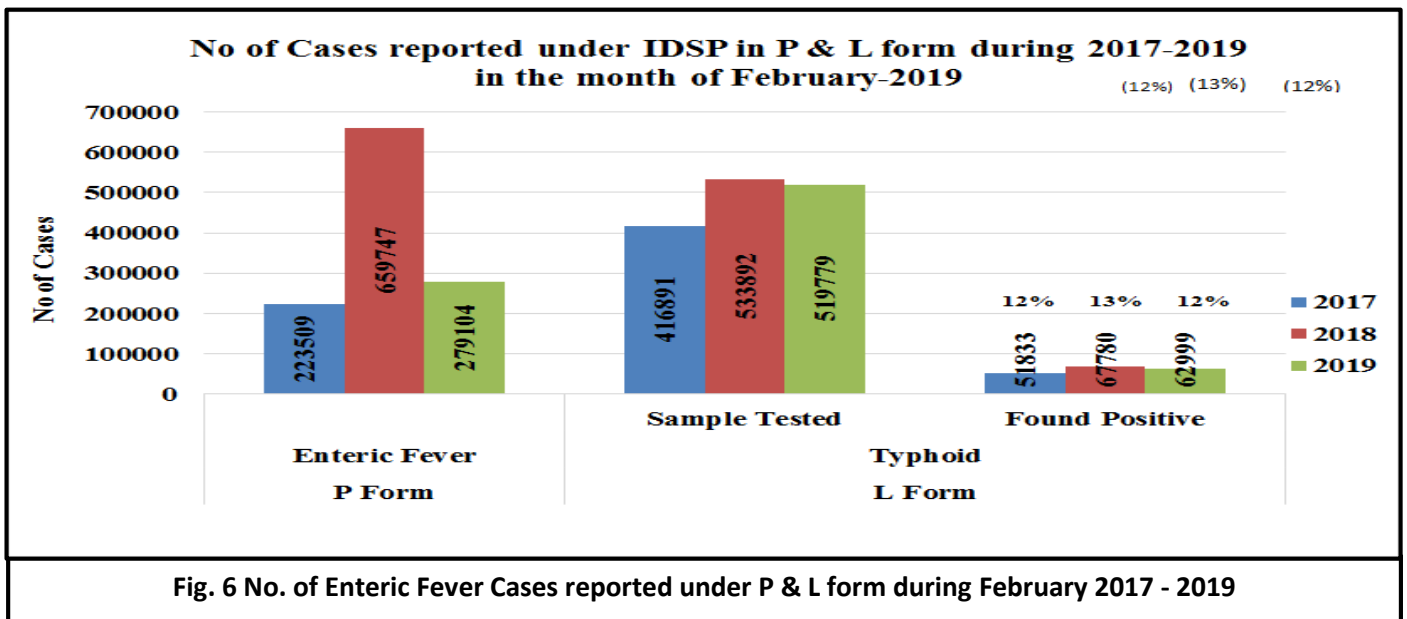
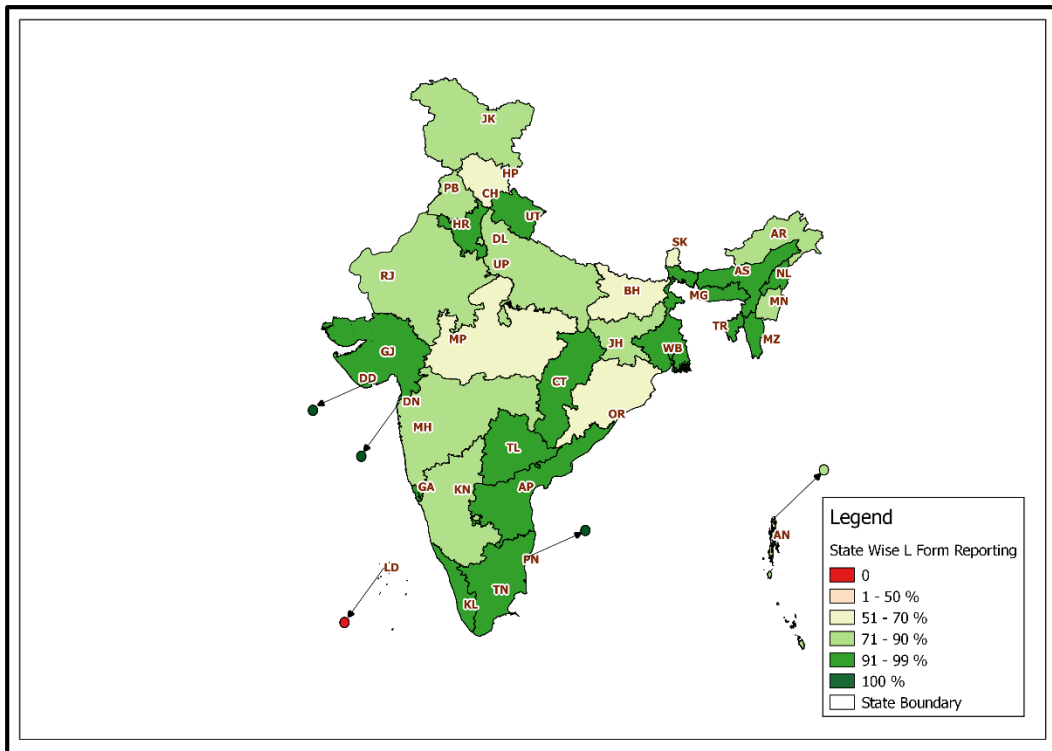


Fig. 6 No. of Enteric Fever Cases reported under P & L form during February 2017 - 2019

As shown in Fig 6, number of presumptive enteric fever cases, as reported by States/UTs in ‘P’ form was 223509 in February 2017; 659747 in February 2018 and 279104 in February 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in February 2017; 416891 samples were tested for Typhoid, out of which 51833 were found positive. In February 2018; out of 533892 samples, 67780 were found to be positive and in February 2019, out of 519779 samples, 62999 were found to be positive.

Sample positivity has been 12.43%, 12.69% and 12.12% in February month of 2017, 2018 & 2019 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 February 2019

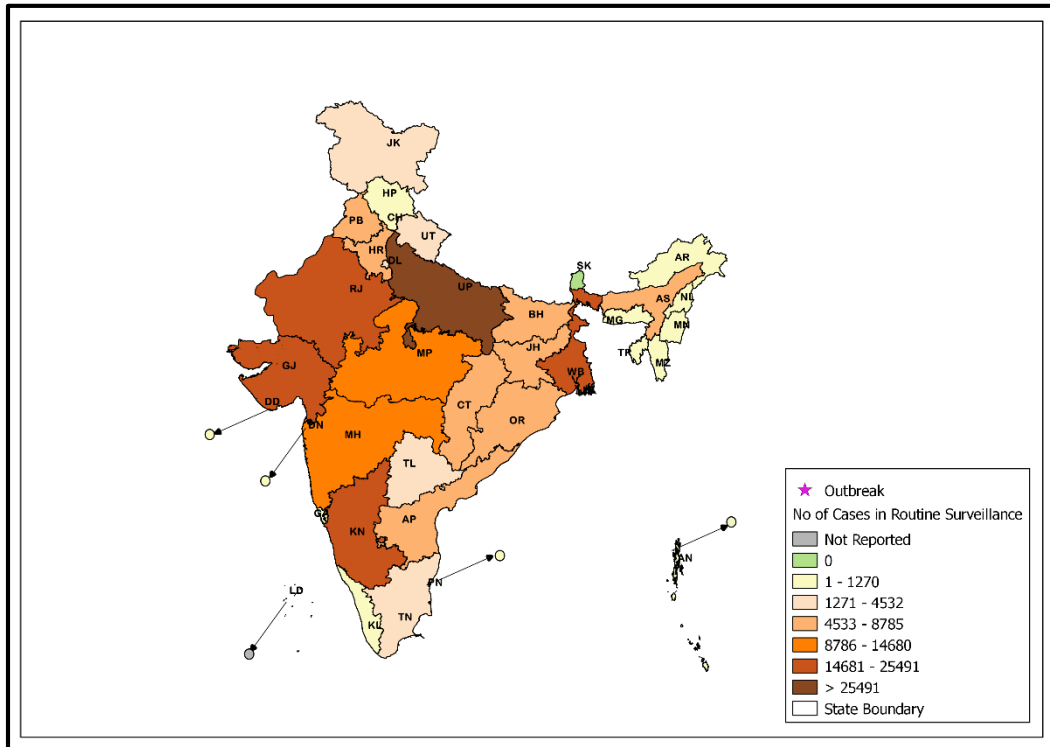
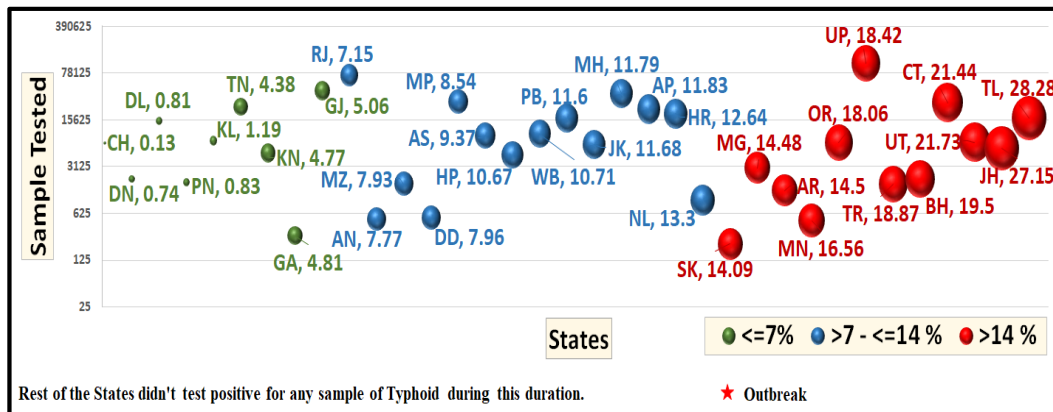


Fig 8: State/UT wise Lab Confirmed Typhoid cases and outbreaks for February 2019



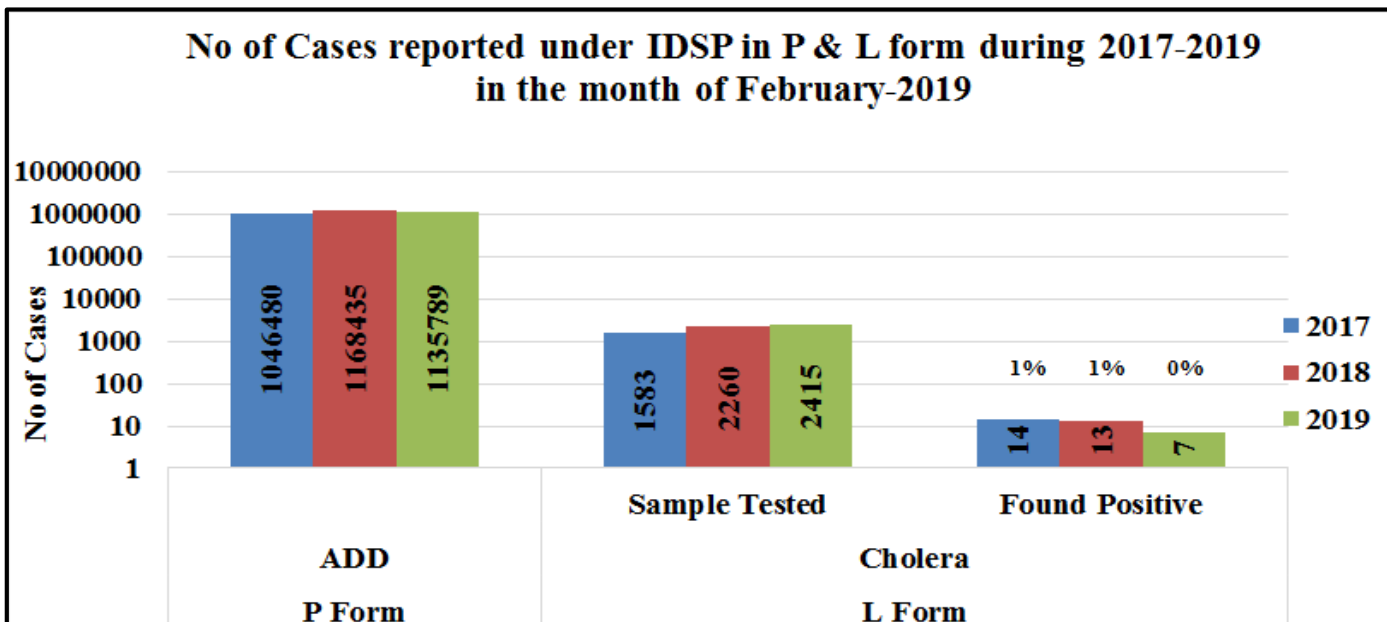


Fig. 9 No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during February 2017 - 2019

As shown in Fig 9, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1046480 in February 2017; 1168435 in February 2018 and 1135789 in February 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in February 2017, 1583 samples were tested for Cholera out of which 14 tested positive; in February 2018, out of 2260 samples, 13 tested positive for Cholera and in February 2019, out of 2415 samples, 7 tested positive.

Sample positivity of samples tested for Cholera has been 0.88%, 0.57% and 0.29% in February month of 2017, 2018 & 2019 respectively.

Fig 10: State/UT wise Presumptive ADD cases and outbreaks for February 2019

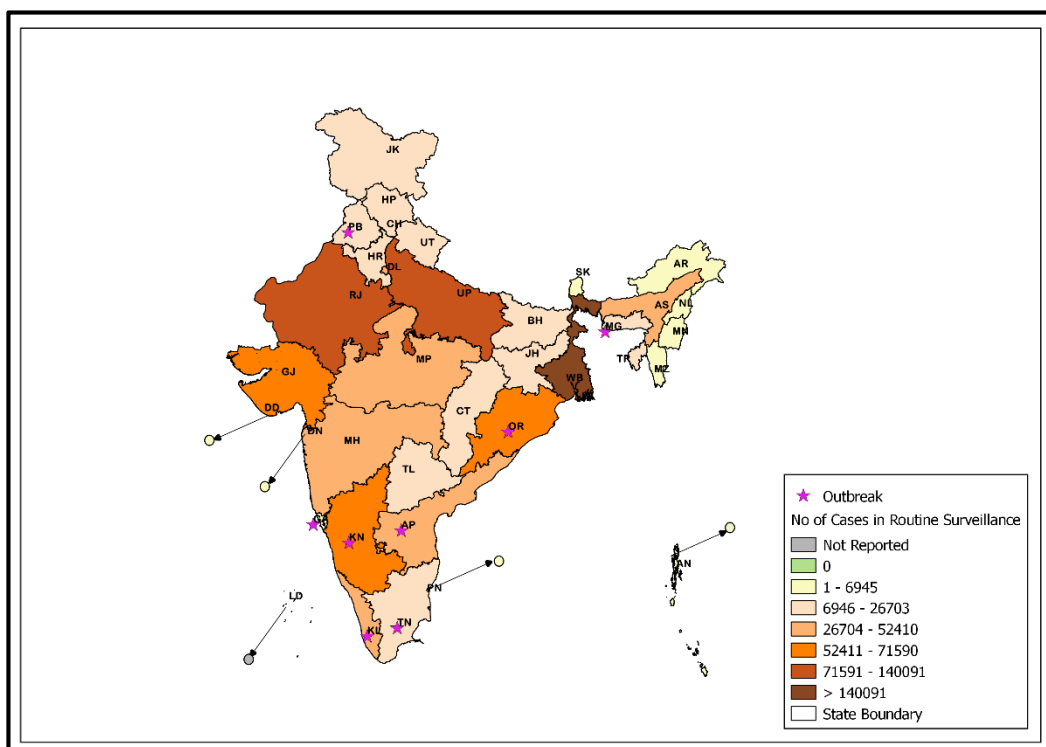


Fig 11: State/UT wise Lab Confirmed Cholera cases and outbreaks for February 2019

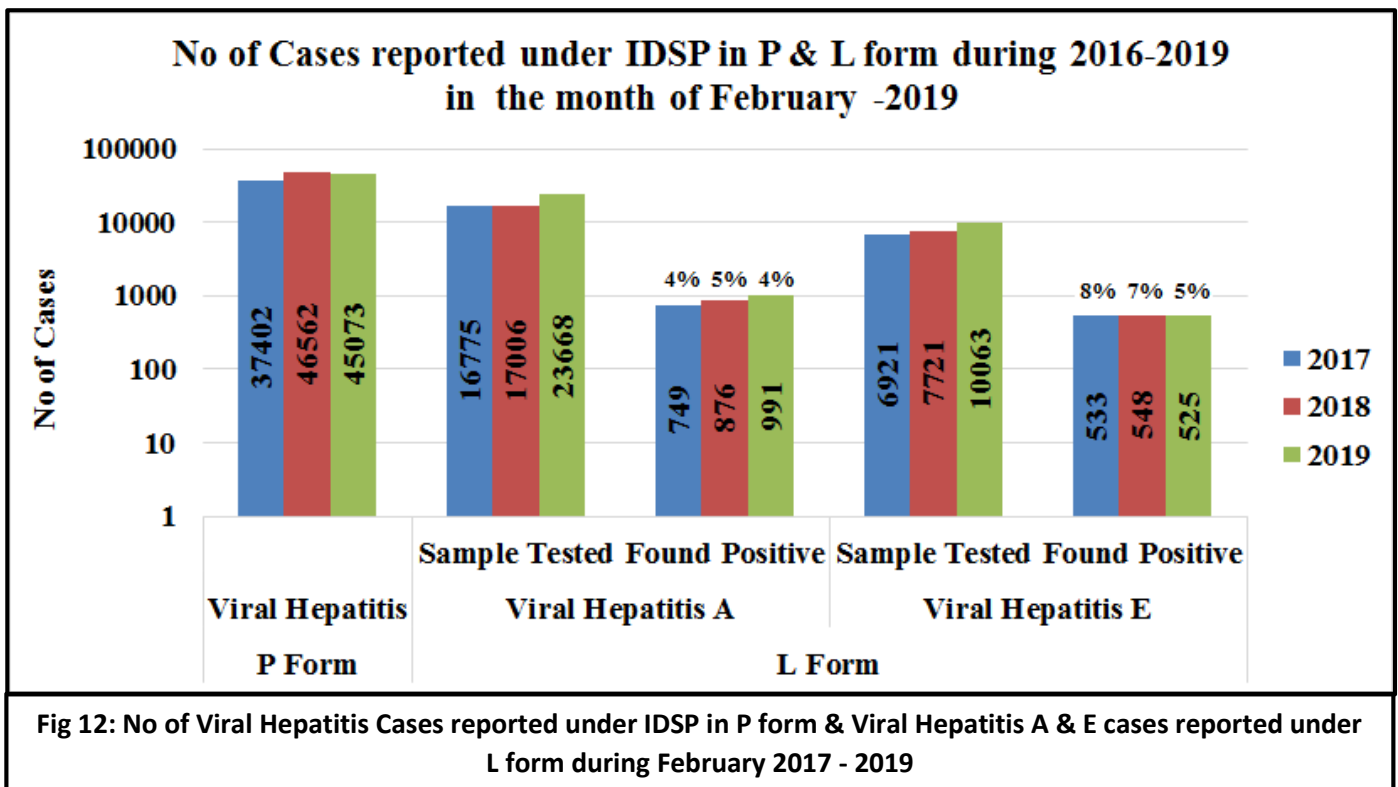
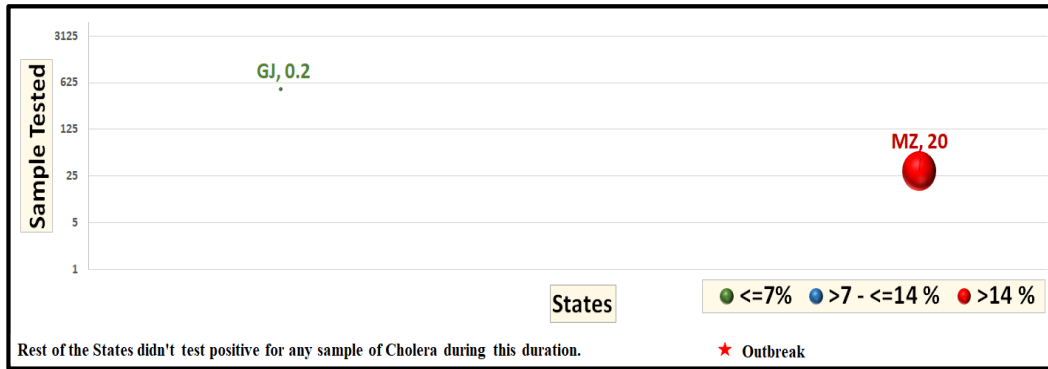


Fig 12: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during February 2017 - 2019

As shown in Fig 12, the number of presumptive Viral Hepatitis cases was 37402 in February 2017, 46562 in February 2018 and 45073 in February 2019. These presumptive cases were diagnosed on the basis of case definitions provided under IDSP.

As reported in L form for Viral Hepatitis A, in February 2017; 16775 samples were tested out of which 749 were found positive. In February 2018 out of 17006 samples, 876 were found to be positive and in February 2019, out of 23668 samples, 991 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 4.46%, 5.15% and 4.18% in February month of 2017, 2018 & 2019 respectively.

As reported in L form for Viral Hepatitis E, in February 2017; 6921 samples were tested out of which 533 were found positive. In February 2018; out of 7721 samples, 548 were found to be positive and in February 2019, out of 10063 samples, 525 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 7.70%, 7.09% and 5.21% in February month of 2017, 2018 & 2019 respectively.

Fig 13: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for February 2019

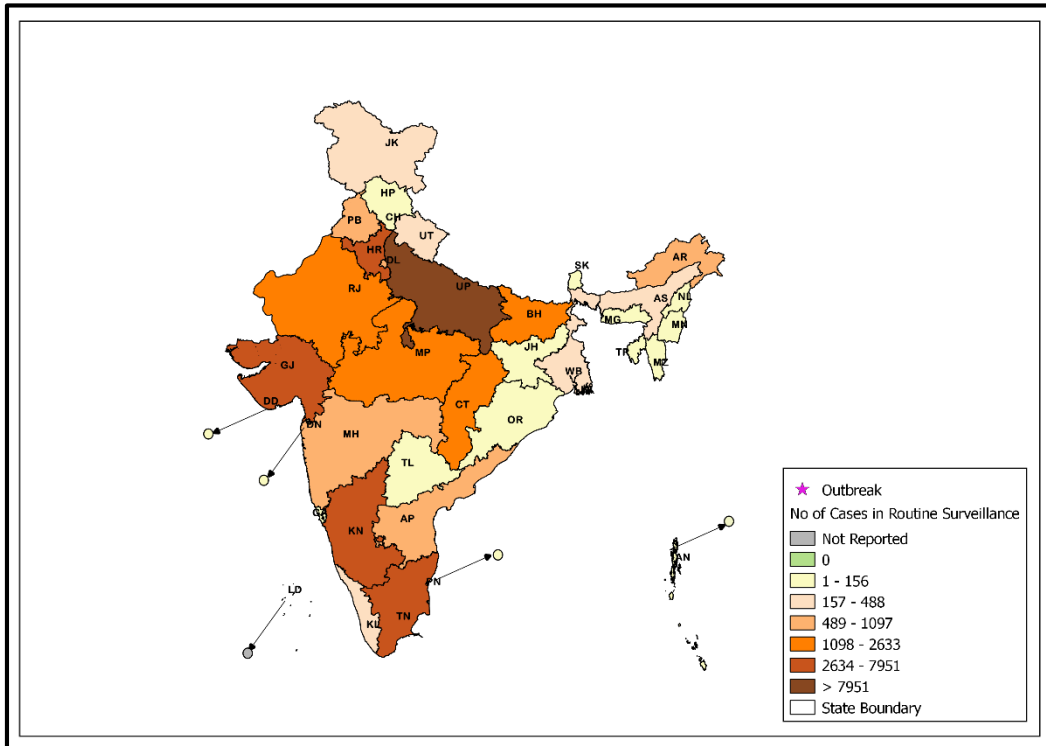


Fig 14: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for February 2019

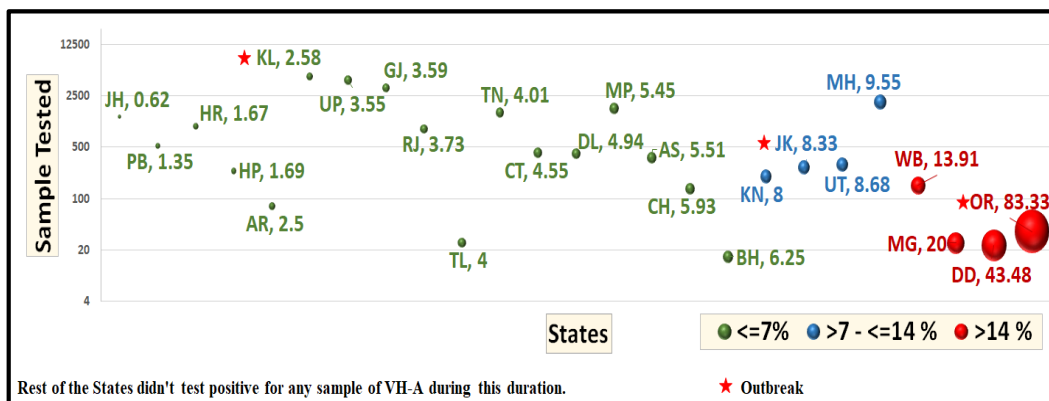


Fig 15: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for February 2019

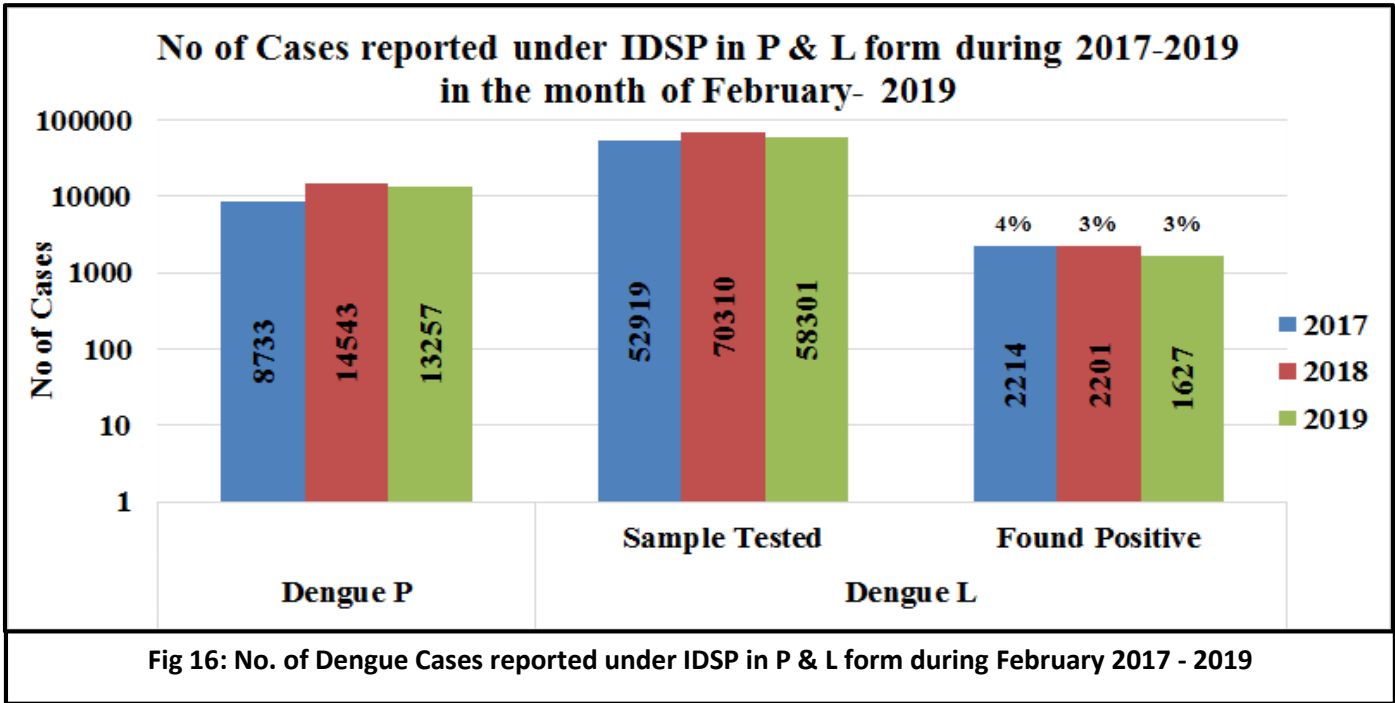
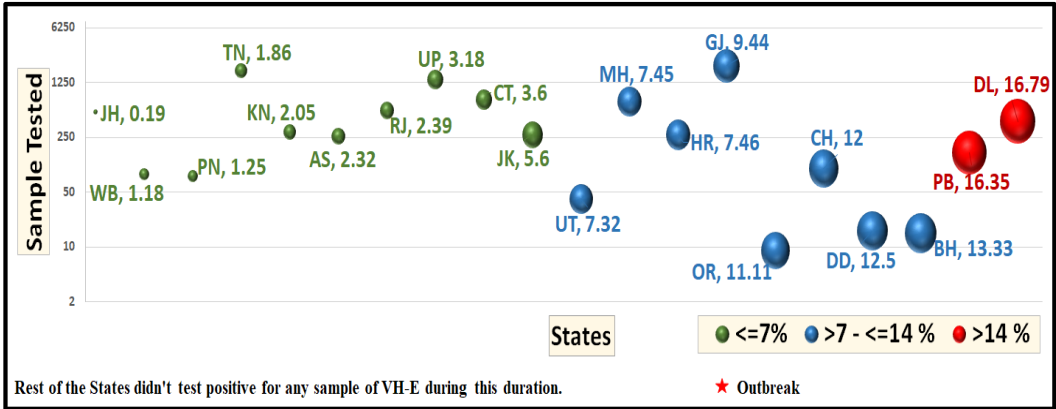


Fig 16: No. of Dengue Cases reported under IDSP in P & L form during February 2017 - 2019

As shown in Fig 16, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 8733 in February 2017; 14543 in February 2018 and 13257 in February 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in February 2017; 52919 samples were tested for Dengue, out of which 2214 were found positive. In February 2018; out of 70310 samples, 2201 were found to be positive and in February 2019, out of 58301 samples, 1627 were found to be positive.

Sample positivity of samples tested for Dengue has been 4.18%, 3.13% and 2.79% in February month of 2017, 2018 & 2019 respectively.

Fig 17: State/UT wise Presumptive Dengue cases and outbreaks for February 2019

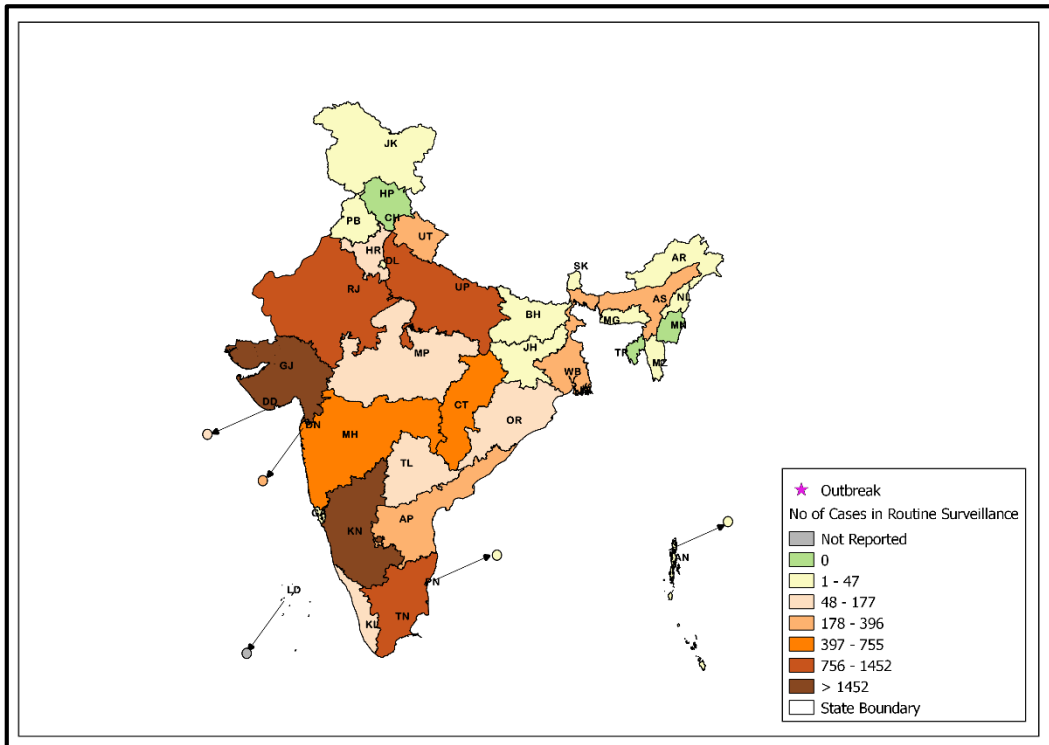
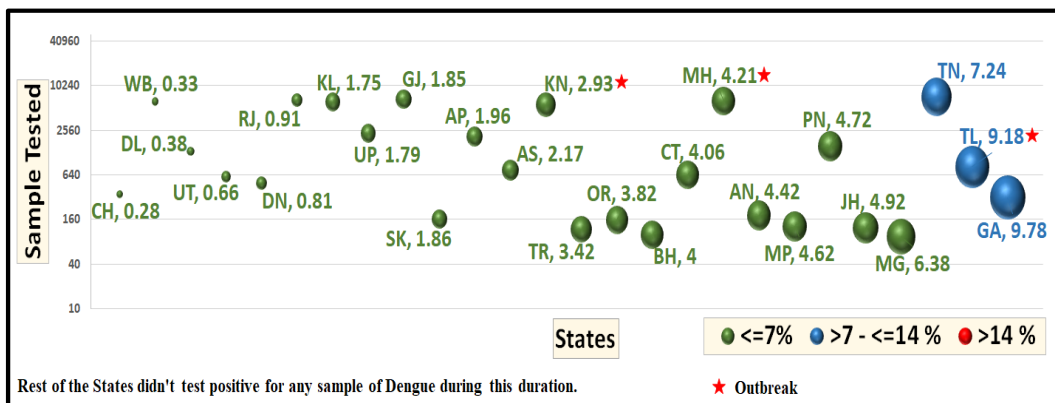
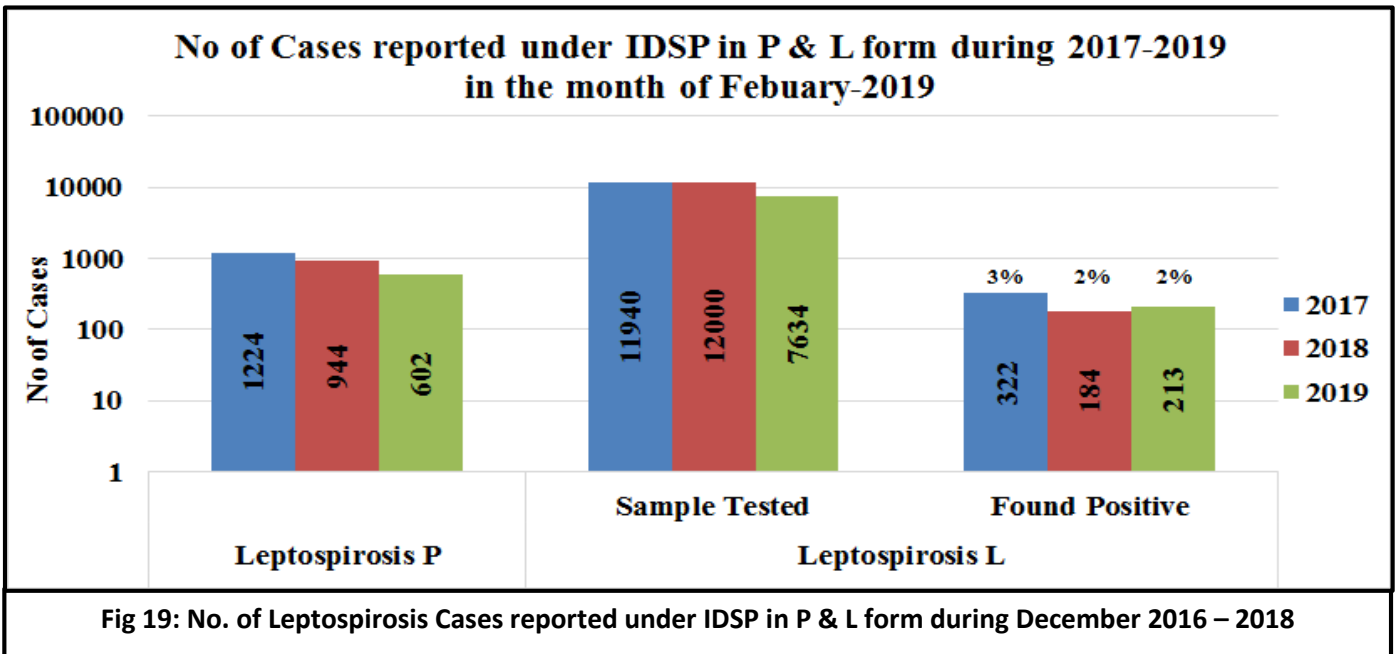


Fig 18: State/UT wise Lab Confirmed Dengue cases and outbreaks for February 2019





As shown in Fig 19, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1224 in February 2017; 944 in February 2018 and 602 in February 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in February 2017; 11940 samples were tested for Leptospirosis, out of which 322 were found positive. In February 2018; out of 12000 samples, 184 were found to be positive and in February 2019, out of 7634 samples, 213 were found to be positive.

Sample positivity of samples tested for Dengue has been 2.69%, 1.53% and 2.79% in February month of 2017, 2018 & 2019 respectively.

Fig 20: State/UT wise Presumptive Leptospirosis cases and outbreaks for February 2019

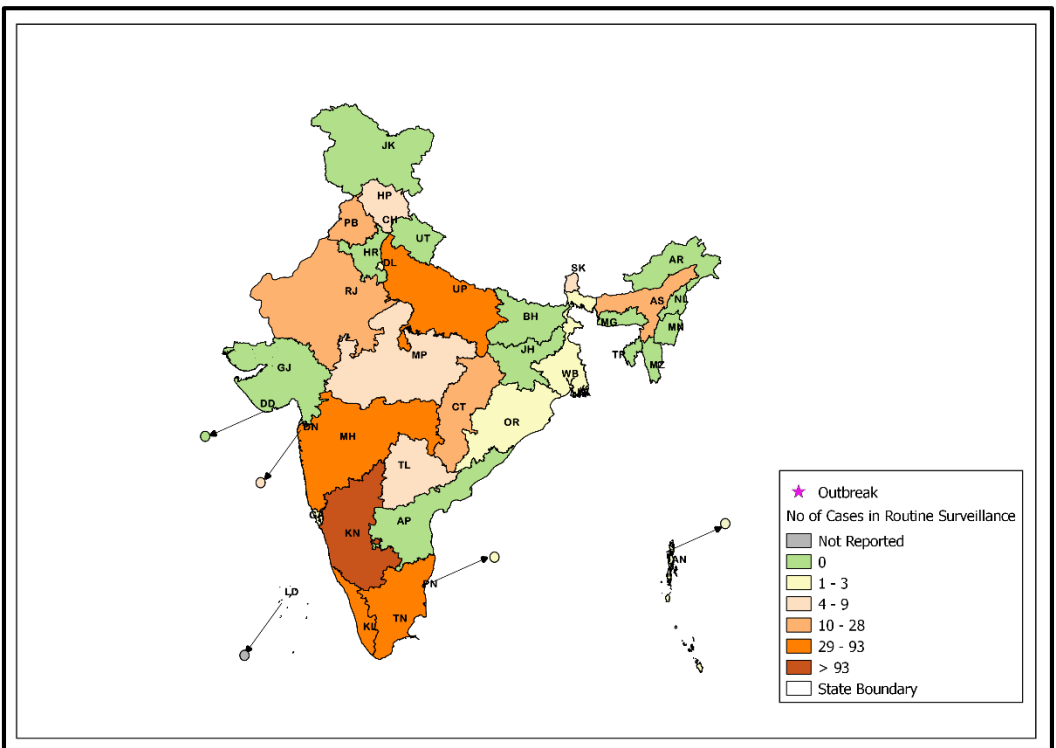
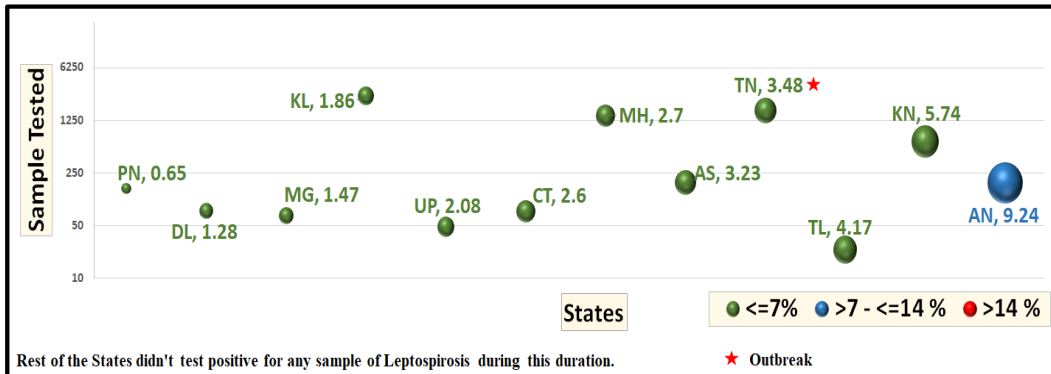


Fig 21: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for February 2019



No of Cases reported under IDSP in P & L form during 2017-2019 in the month of February-2019

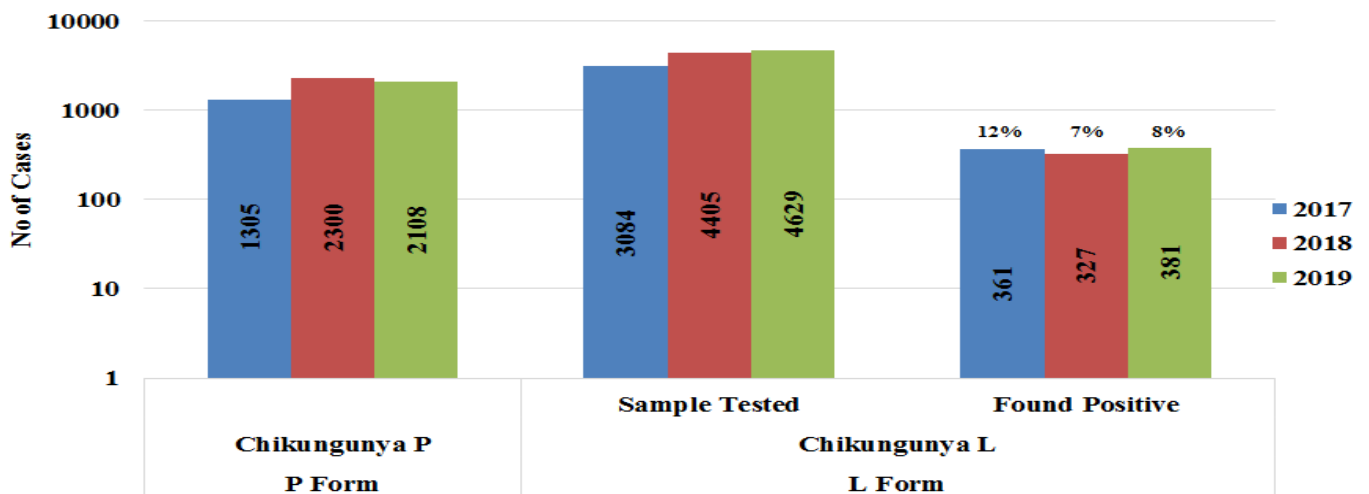


Fig. 22: No. of Chikungunya Cases reported under IDSP in P & L form during February 2017 - 2019

As shown in Fig 22, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 1305 in February 2017; 2300 in February 2018 and 2108 in February 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in February 2017; 3084 samples were tested for Chikungunya, out of which 361 were found positive. In February 2018; out of 4405 samples, 327 were found to be positive and in February 2019, out of 4629 samples, 381 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 11.71%, 7.42% and 8.23% in February month of 2017, 2018 & 2019 respectively.

Fig 23: State/UT wise Presumptive Chikungunya cases and outbreaks for February 2019

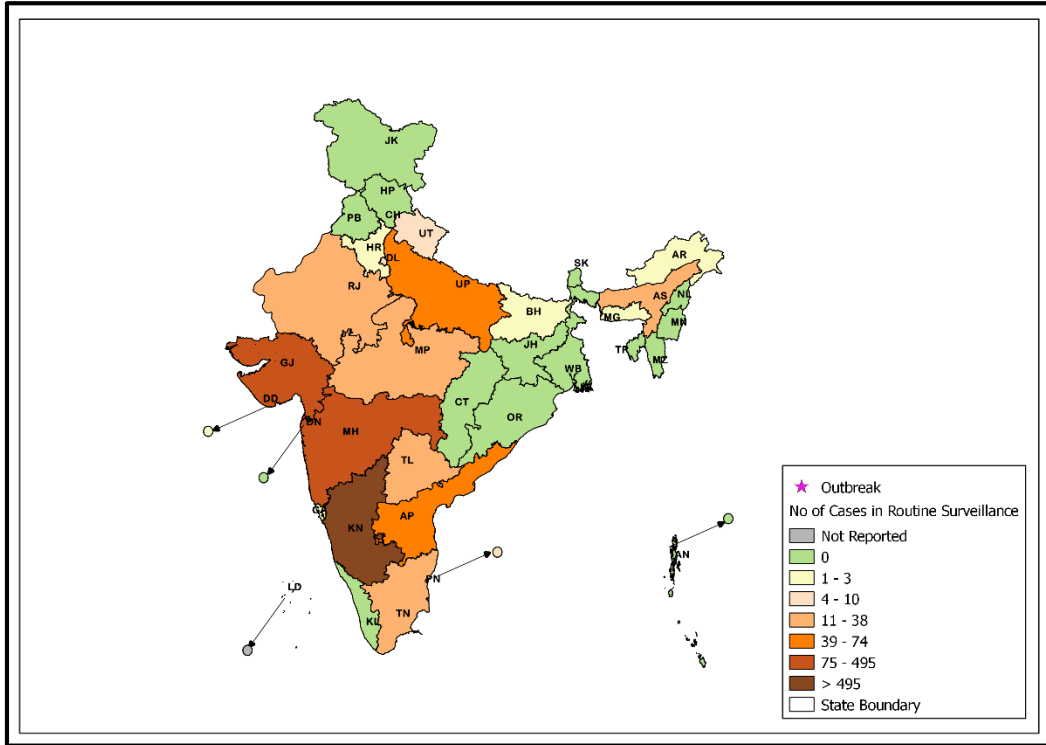


Fig 24: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for February 2019

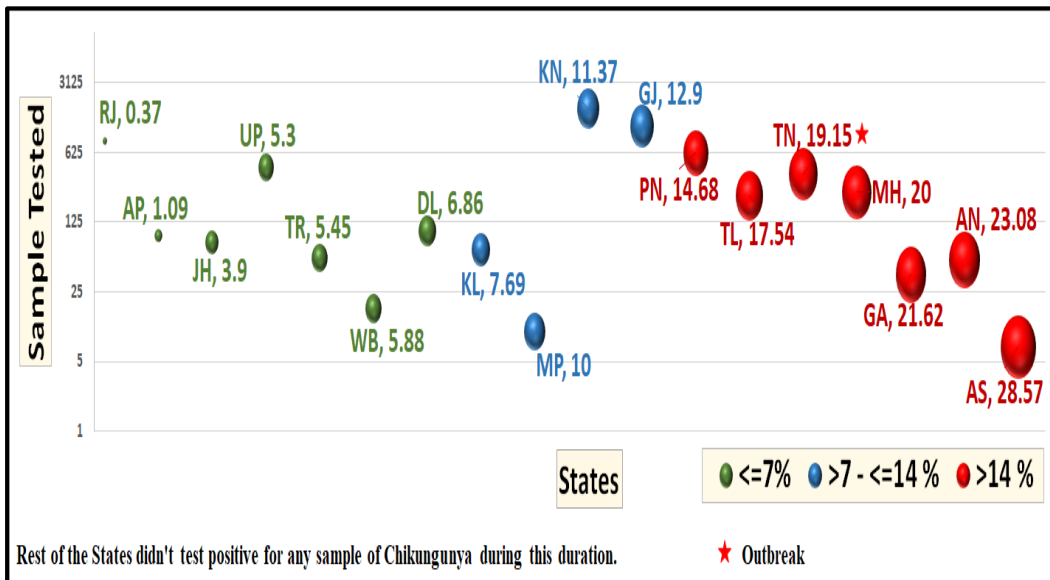
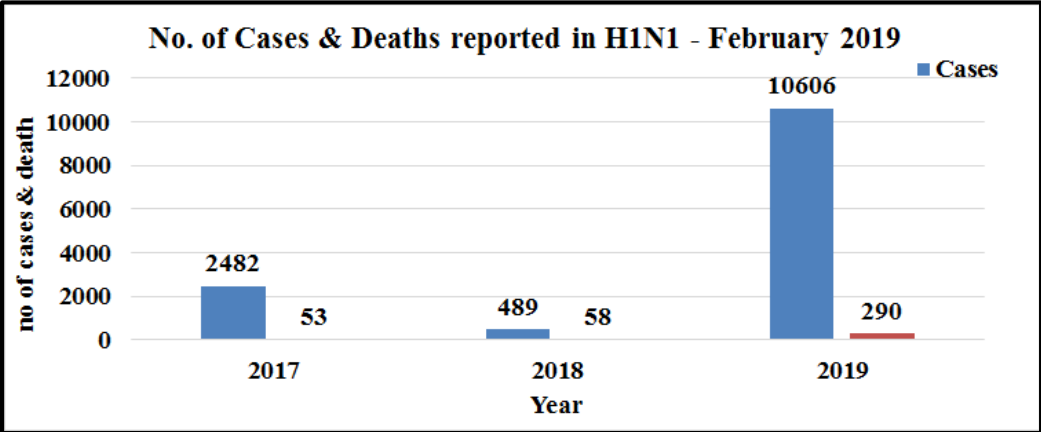


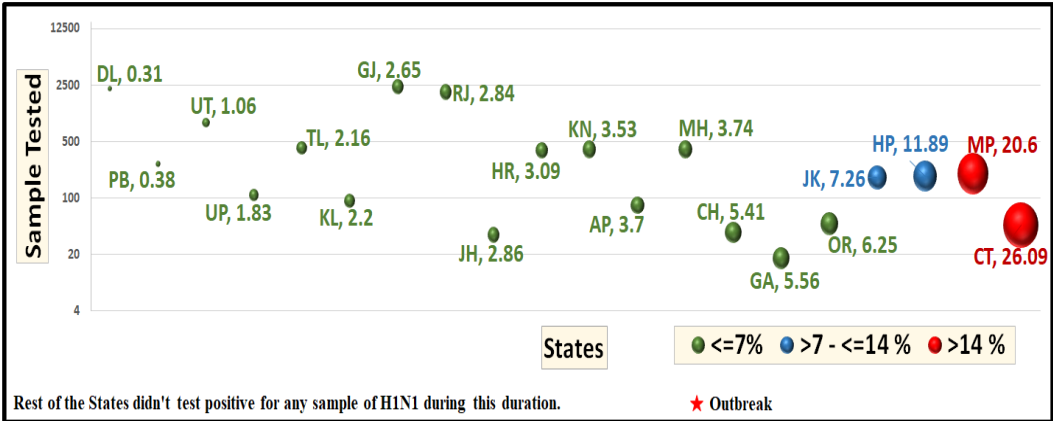
Fig 25: H1N1 cases reported under IDSP in L Form during 2017-2019 in February 2019



As reported in L form, in February 2017; there were 2482 cases and 53 deaths. In February 2018; there were 489 cases and 58 deaths and in February 2019, there were 10606 cases and 290 deaths.

Case fatality rate for H1N1 were 2.13%, 11.86% and 2.73% in February month of 2016, 2017 & 2018 respectively

Fig 26: State/UT wise H1N1 cases reported and outbreaks for February 2019



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:** The acute illness characterized by persistent high fever with any of the following clinical features: Headache, nausea, loss of appetite, toxic look, Constipation or sometimes diarrhoea, splenomegaly and/or significant titre in 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 (Including Acute Gastroenteritis): Presumptive:** Passage of 3 or more loose watery stools (with or without vomiting) in the past 24 hours.
- **Confirmed Cholera:** A presumptive Acute Diarrheal case with Culture OR Polymerase chain reaction (PCR) test.
- **Viral Hepatitis: Presumptive:** Any person having clinical evidence of jaundice with signs and symptoms of acute hepatitis like malaise, fever, vomiting and bio-chemical criteria of serum bilirubin of greater than 2.5mg/dl, AND more than tenfold rise in ALT/SGPT.
- **Lab Confirmed Hepatitis A:** A presumptive case with IgM antibodies to hepatitis A(anti HAV IgM) in serum/plasma.
- **Lab Confirmed Hepatitis E:** A presumptive case with IgM antibody to hepatitis E virus (anti HEV IgM) in serum/plasma.
- **Dengue: Presumptive:** Acute febrile illness of 2-7 days with any one of the following:
 - Nausea, vomiting, rash, headache, retro orbital pain, myalgia or arthralgia, or Non-ELISA based NS1 antigen/IgM positive. (RDT reports are considered as probable due to poor sensitivity and specificity of currently available RDTs).
- **Lab Confirmed:** A presumptive case with:
 - Demonstration of dengue virus antigen in serum sample by NS1-ELISA OR
 - Demonstration of IgM antibody titre by ELISA in single serum sample OR
 - IgG seroconversion in paired sera after 2 weeks with four fold increase of IgG titres OR
 - Detection of viral nucleic acid by polymerase chain reaction (PCR) OR
 - Isolation of the virus (Virus culture positive) from serum, plasma or leucocytes.)
- **Leptospirosis Case Definition: Presumptive Leptospirosis:** A person having 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:
 - Calf muscle tenderness
 - Conjunctival suffusion
 - Anuria or oliguria and/or proteinuria

- Jaundice
- Hemorrhagic manifestations
- Meningeal irritation
- Nausea, Vomiting, Abdominal pain, Diarrhoea

Lab Confirmed Leptospirosis: A presumptive case with -

- IgM ELISA positive OR
- Isolation of leptospire from clinical specimen OR
- Four fold or greater rise in the MAT titer between acute and convalescent phase serum specimens run in parallel OR
- PCR test

• **Chikungunya case definition: Presumptive Case Definition:** Any person:

- With or without history of travel to or having left a known endemic area 15 days prior to the onset of symptoms AND Meeting the following clinical criteria:
- Acute onset of fever
- Arthralgia / arthritis
- With or without skin rash.

Lab confirmed: A presumptive case with

- MAC ELISA- Presence of virus specific IgM antibodies in a single serum sample collected in acute or convalescent stage. Four-fold increase in IgG values in samples collected at least three weeks apart OR
- Virus isolation OR
- Presence of viral RNA by RT-PCR.

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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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