Disease Alert
प्रकोप चेतावनी

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

Inside

Investigation report of Chickenpox Outbreak in Kumbh Mela, Prayagraj, Uttar Pradesh

Background

The Prayag Kumbh Mela is held every 12 years at Allahabad (now officially known as Prayagraj). The fair involves ritual bathing at Triveni Sangam, the meeting points of three rivers: the Ganga, the Yamuna and the mythical Sarasvati. In 2019 Ardh Kumbh Mela was held at Triveni Sangam in Prayagraj, Uttar Pradesh from 15 January to 4 March 2019.

Swami Mehsanand Sarashwati Vidyapeeth is situated near Tulsi chauraha, Soordas Marg (sector 14 of zone 4), Kumbh mela Pryagraj which intends to provide basic education of *ved, purana* and *karmakand* to the students enrolled in this Vidyapeeth. The vidyapeet comprises of 35 students and 40 adults, residing in 8 tents. The outbreak of Chickenpox was reported from the Vidyapeeth.

Index case of Chickenpox was reported to the surveillance system by Infectious disease hospital (IDH) Jhunsi hospital on 09 Feb 2019. Team of EIS officers from NCDC initiated investigation on the same day with an objective to describe the epidemiology, identify risk factors, and suggested recommendations for prevention and control of the outbreak.

Case Definition
Case of Chickenpox for this outbreak was defined "a case as an acute onset of diffuse maculo-papulo-vesicular rash occurring in Kumbh mela, Pryagraj after 1st January 2019 till date". Team conducted contact tracing of index case reported to IDH Jhunsi on 9th Feb 2019 in Swami Mehsanand Sarashwati Vidyapeeth. Team also searched for additional cases in all health facilities in the zone, reported if any and conducted community survey. Team conducted environmental survey in all the tents of the Vidyapeeth to assess overcrowding, ventilation, hygiene and sanitation.

Results

14 cases of chickenpox were found with an attack rate of 19% within the Vidyapeeth. All were male with median age 18 years, ranging from 12 to 19 years. Six had active skin lesions and rest recovered from illness.
One of the active cases have been isolated and admitted in IDH of sector 14, within mela area and other five cases were sent back home to their respective places outside mela area.
Rash and itching were the most common symptoms. Other symptoms reported were fever (57%) and diarrhea (14%) (Table no. 1)

Table 1: Clinical profile of Chickenpox cases		
Clinical profile	**No. of cases(n=14)**	**Percentage**
Rash	14	100%
Itching	14	100%
Fever	08	57.14%
Loose stool	2	14.28%

Index case had onset of illness on 5th Jan 2019. The distribution of Chickenpox cases by illness onset is shown in figure 1.
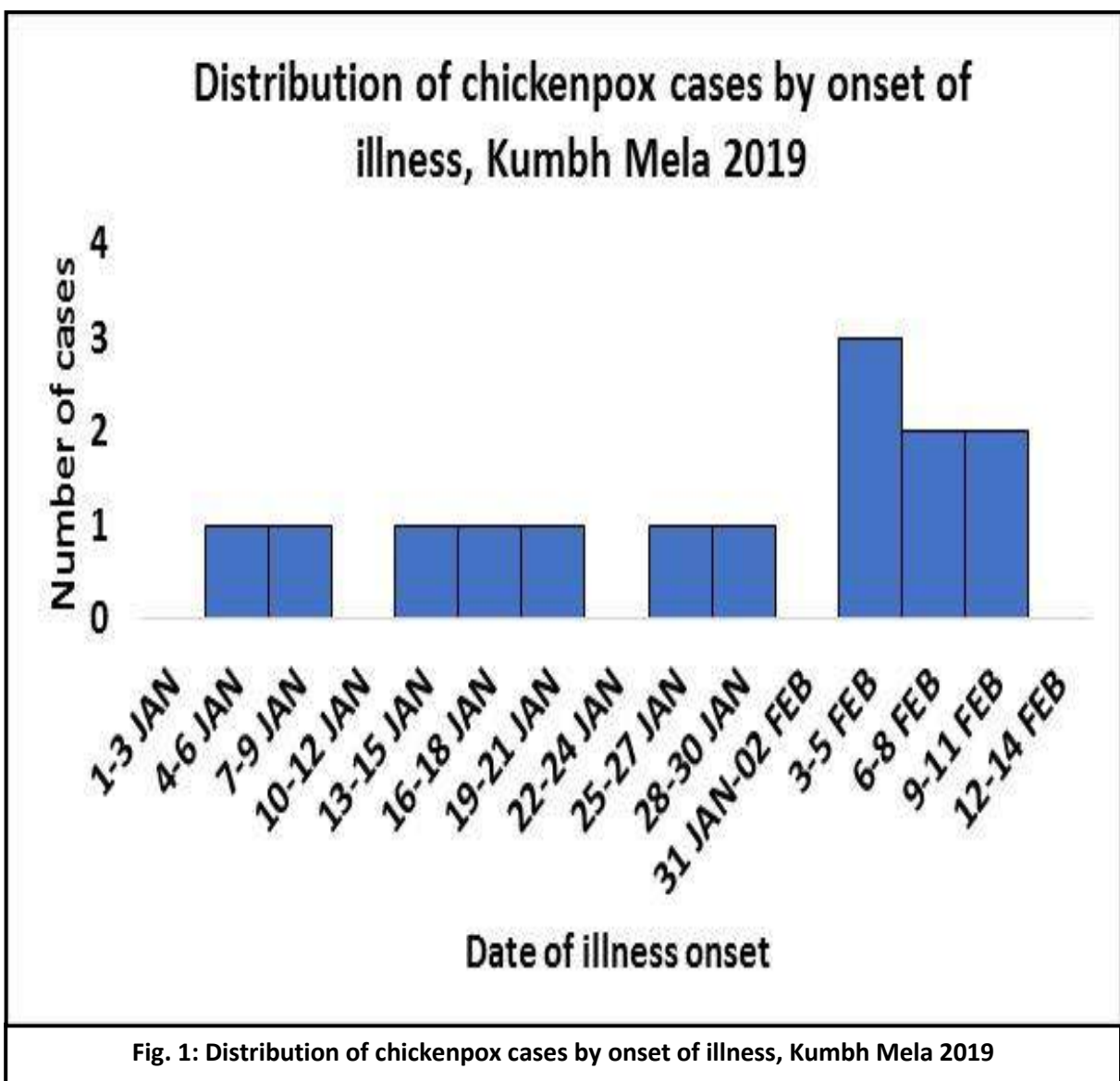

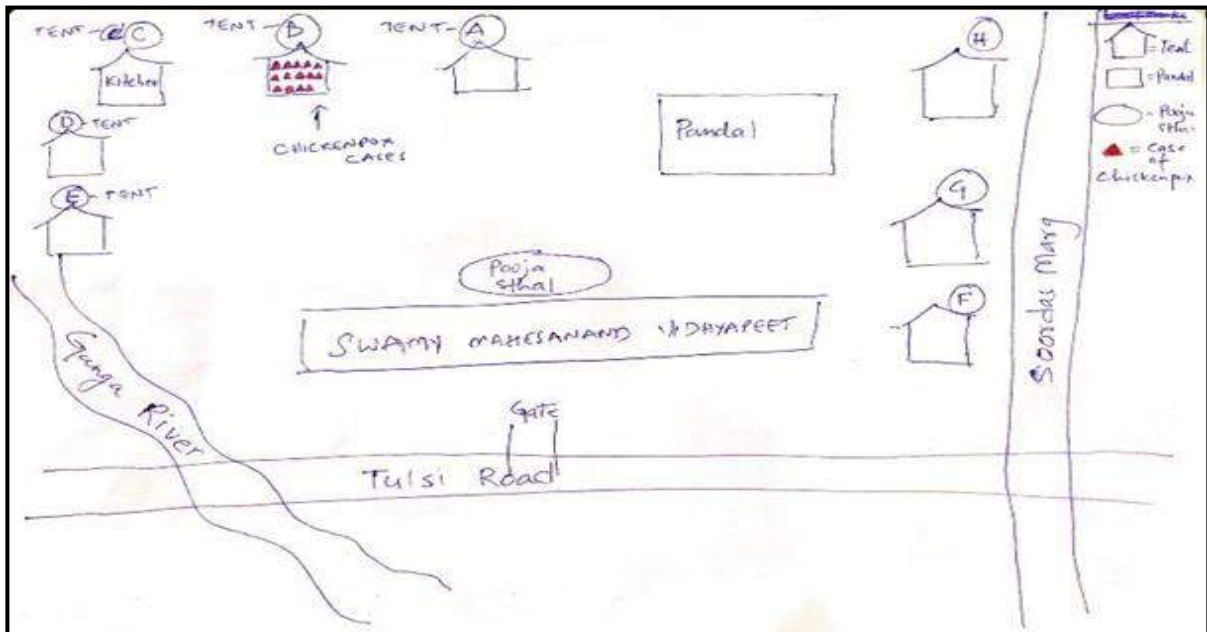**Fig. 1: Distribution of chickenpox cases by onset of illness, Kumbh Mela 2019**

Fig. 2: Distribution of cases in Swami Mehsanand Sarashwati Vidyapeeth, Khumbmela, Prayagraj, Jan- Feb 2019

Environmental survey revealed overcrowding in the tents of Vidyapeeth. All the students (including active cases) were staying and sleeping in the same tent. The tents are poorly ventilated. The hygiene and sanitation at the Vidyapeeth was satisfactory

Conclusions

Index case possibly carried the infection to kumbhmela area from hometown and further propagated among the individuals staying in the vidyapeet probably due to overcrowding and poor ventilation.

Recommendations

1. Active case search to be continued for early detection of fresh cases if any, till 21 January 2019 and encourage all reporting units to report all the cases to surveillance system.
2. Immediate isolation of all cases in IDH of mela area.
3. Health education sessions regarding washing of hands and respiratory etiquette to be continued to improve the awareness among the residents of Vidyapeeth.

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

Reporting Status based on P & L form during 2017-2019 in the Month of January -2019
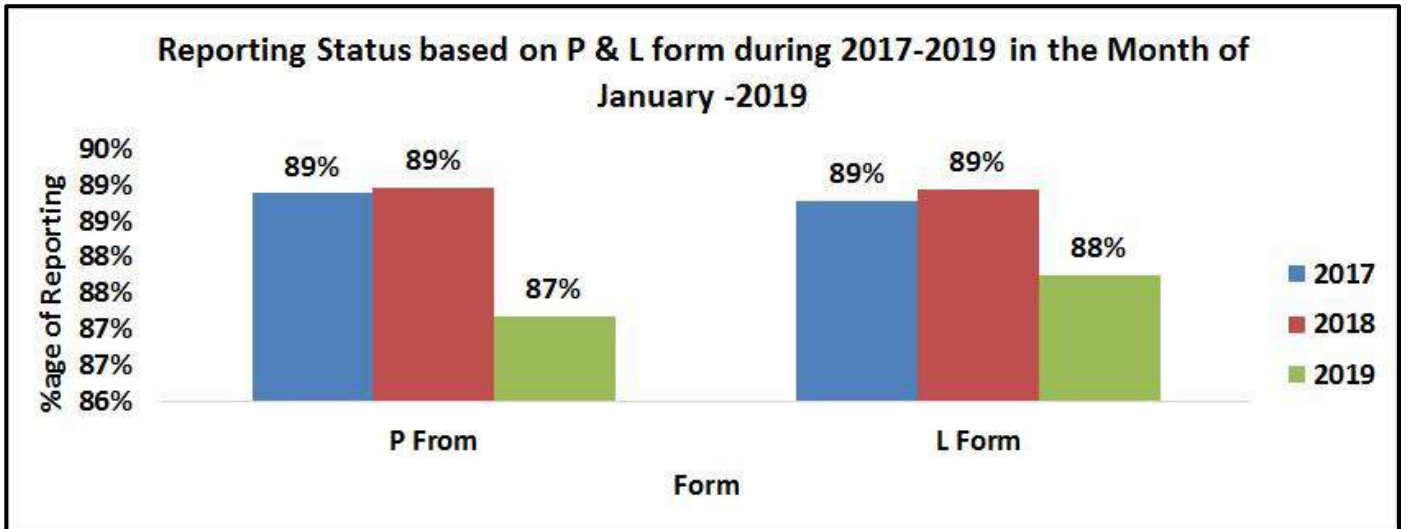
Fig. 3: RU wise reporting based on P & L form during January 2017 - 2019

As shown in Fig 3, in January 2017, 2018 and 2019, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 89%, 89% and 87% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 89%, 89% 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.

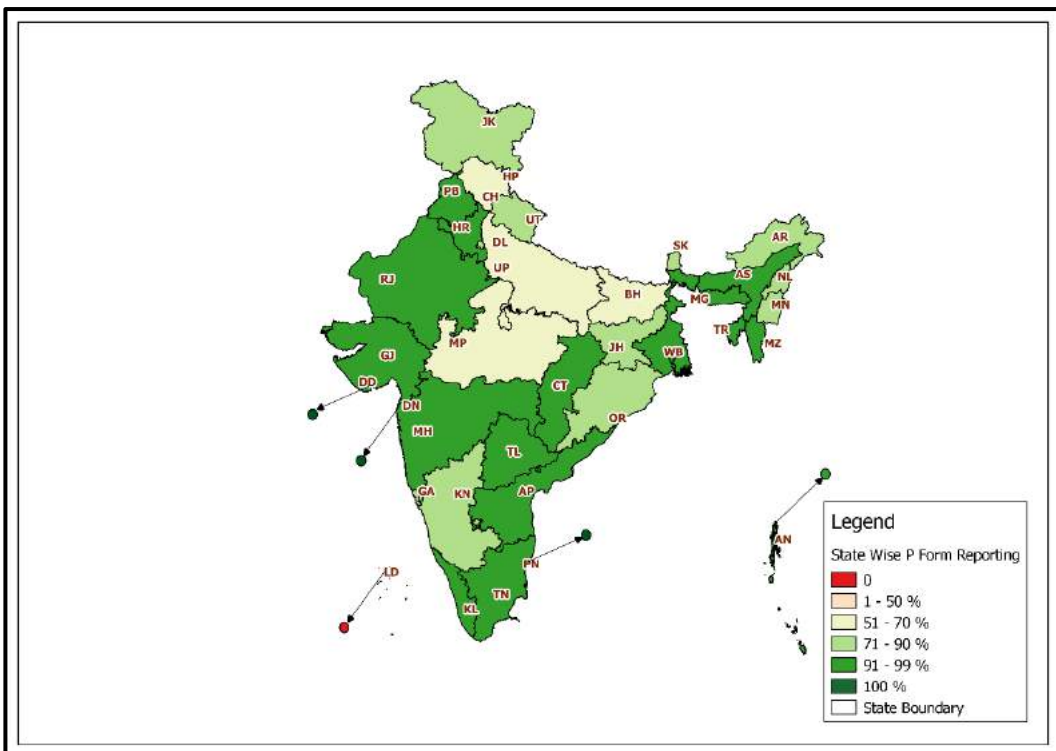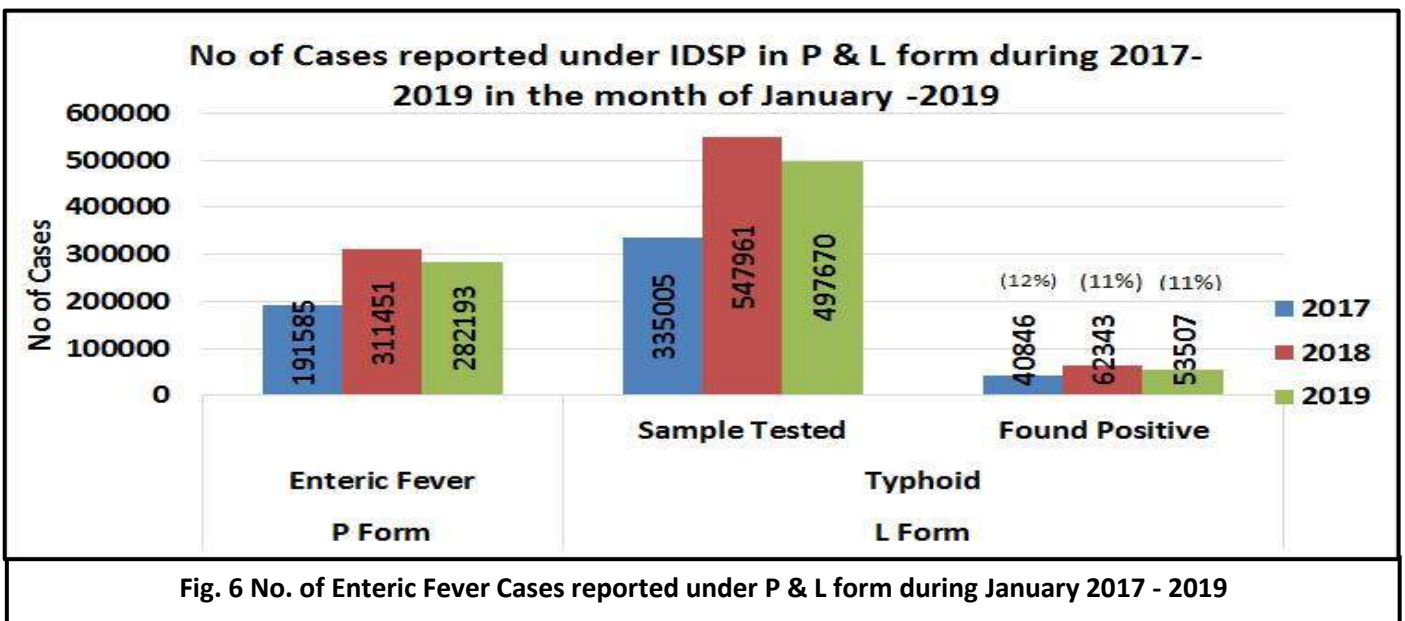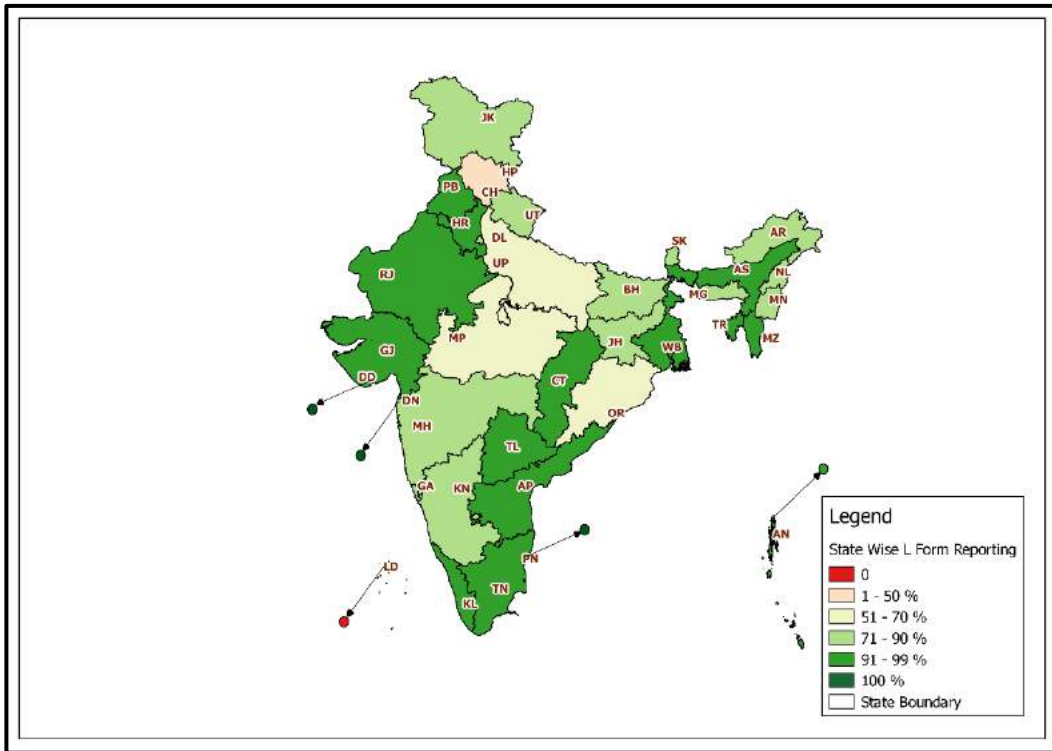**Fig 4: State/UT wise P form completeness % for January 2019**

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

As shown in Fig 6, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 191585 in January 2017; 311451 in January 2018 and 282193 in January 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2017; 335005 samples were tested for Typhoid, out of which 40846 were found positive. In January 2018; out of 547961 samples, 62343 were found to be positive and in January 2019, out of 497670 samples, 53507 were found to be positive.

Sample positivity has been 12.19%, 11.38% and 10.75% in January 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.

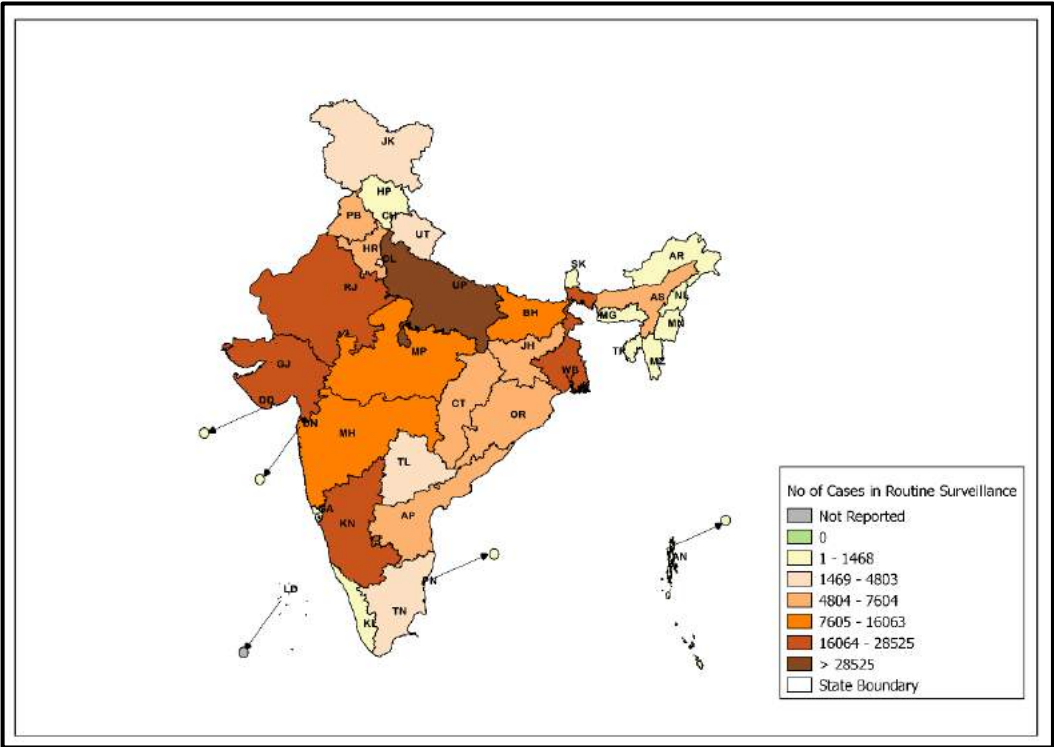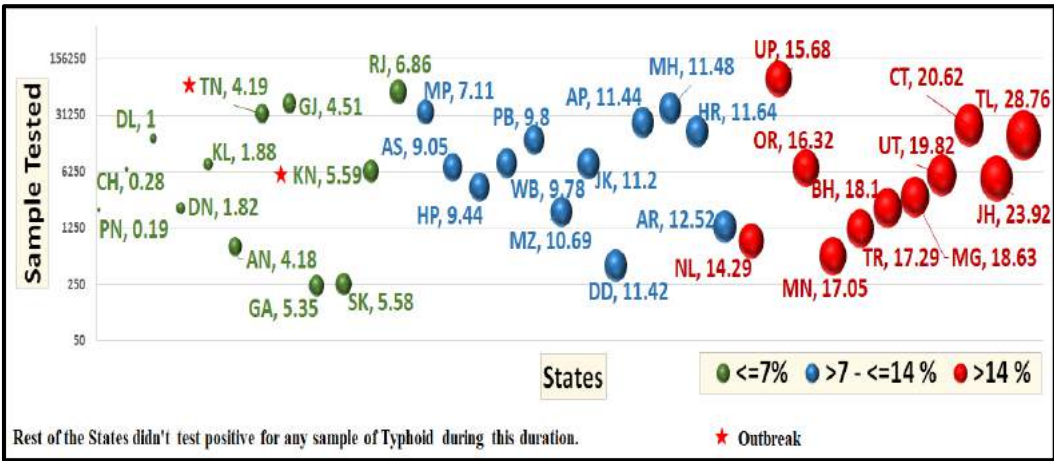Fig 7: State/UT wise Presumptive Enteric fever cases and outbreaks for January 2019

Fig 8: State/UT wise Lab Confirmed Typhoid cases and outbreaks for January 2019
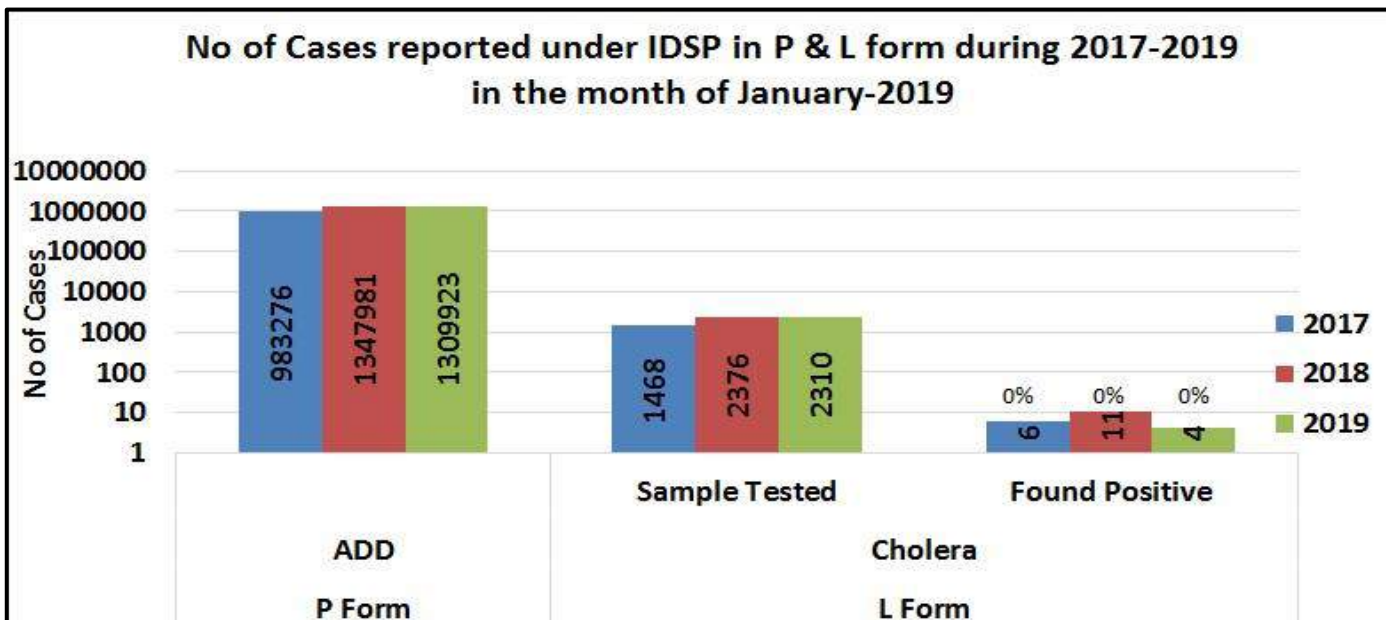
Fig. 9 No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during January 2017 - 2019

As shown in Fig 9, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 983276 in January 2017; 1347981 in January 2018 and 1309923 in January 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2017, 1468 samples were tested for Cholera out of which 6 tested positive; in January 2018, out of 2376 samples, 11 tested positive for Cholera and in January 2019, out of 2310 samples, 4 tested positive.

Sample positivity of samples tested for Cholera has been 0.41%, 0.46% and 0.17% in January month of 2017, 2018 & 2019 respectively.

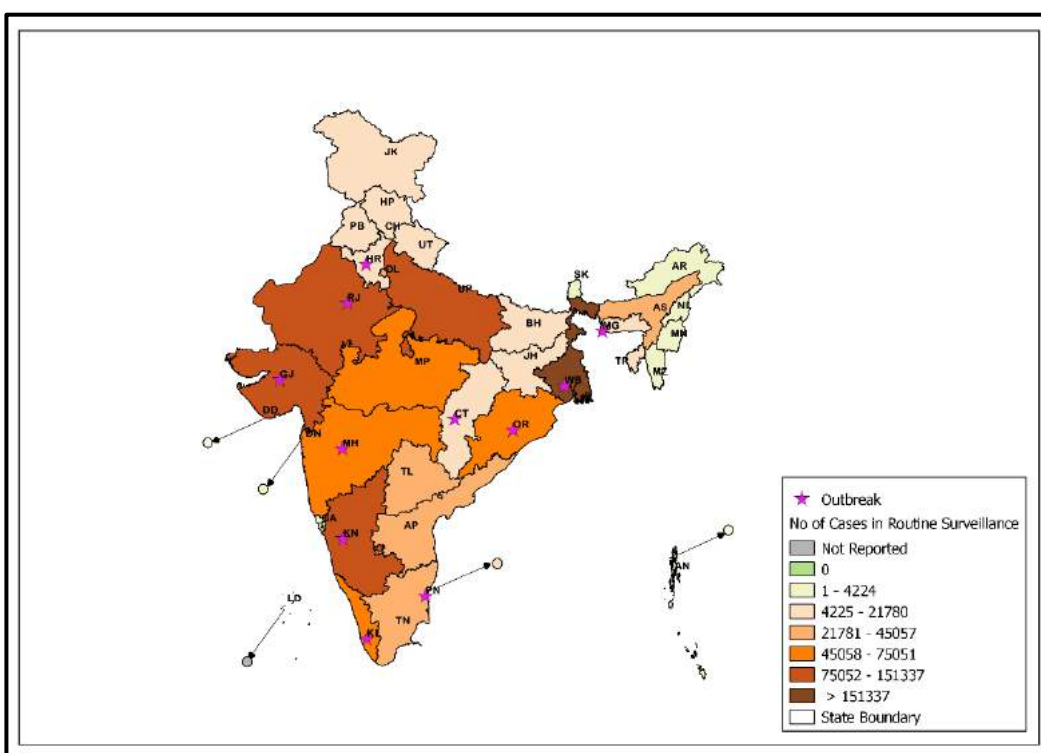**Fig 10: State/UT wise Presumptive ADD cases and outbreaks for January 2019**

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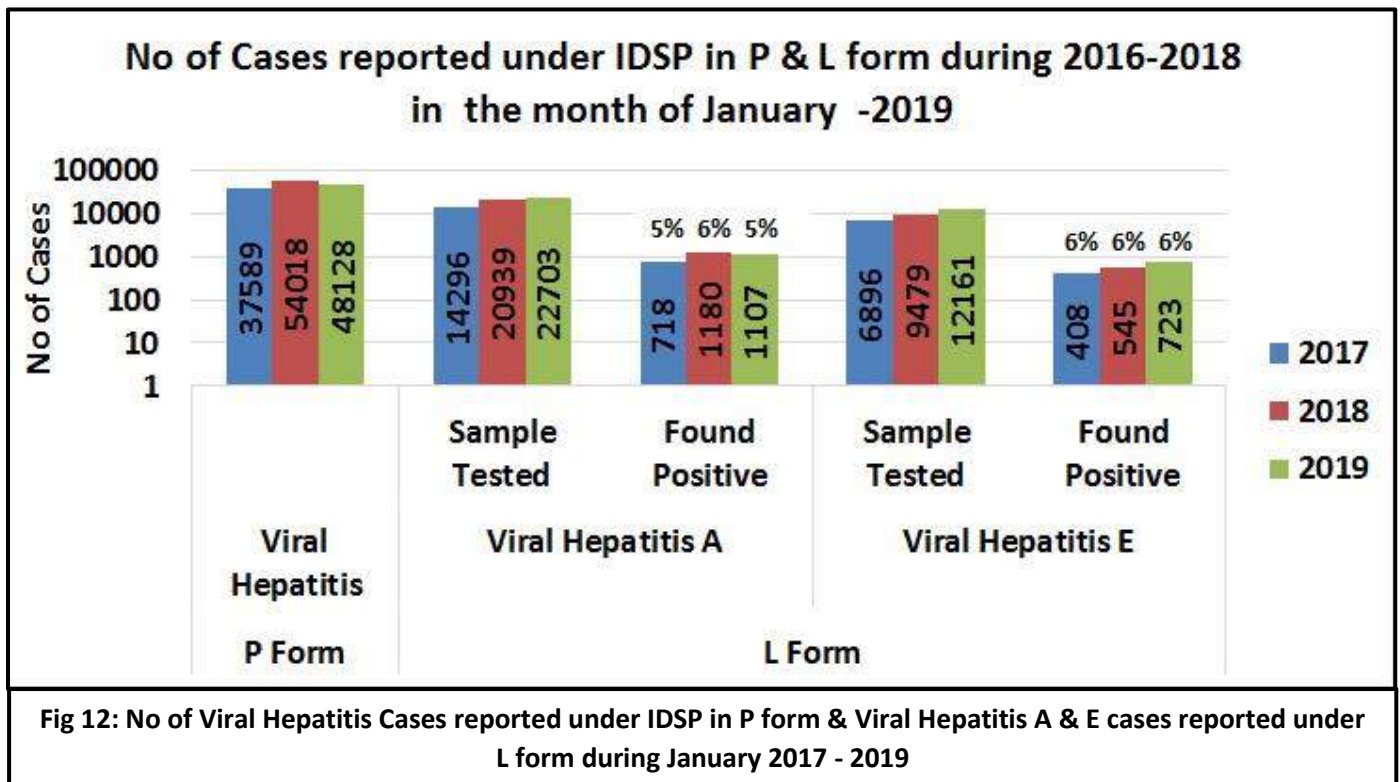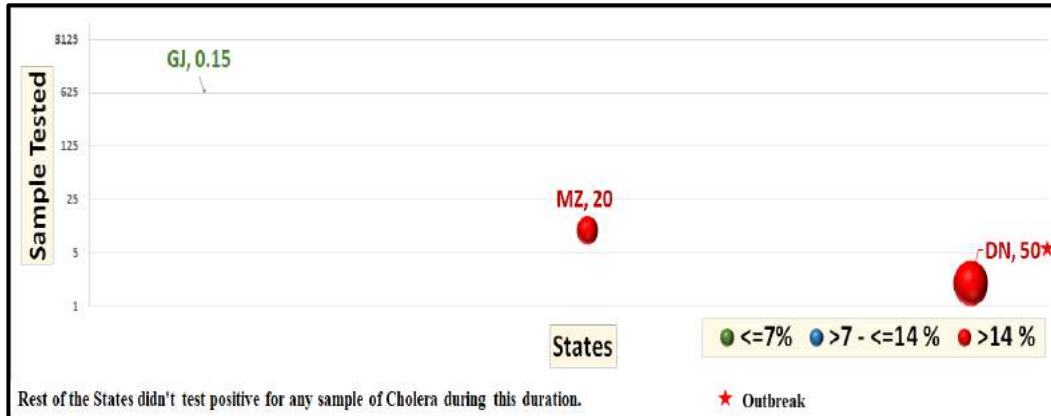

Fig 12: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during January 2017 - 2019

As shown in Fig 12, the number of presumptive Viral Hepatitis cases was 37589 in January 2017, 54018 in January 2018 and 48128 in January 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 January 2017; 14296 samples were tested out of which 718 were found positive. In January 2018 out of 20939 samples, 1180 were found to be positive and in January 2019, out of 22703 samples, 1107 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 5.02%, 5.64% and 4.88% in January month of 2017, 2018 & 2019 respectively.

As reported in L form for Viral Hepatitis E, in January 2017; 6896 samples were tested out of which 408 were found positive. In January 2018; out of 9479 samples, 545 were found to be positive and in January 2019, out of 12161 samples, 723 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 5.92%, 5.75% and 5.95% in January month of 2017, 2018 & 2019 respectively.

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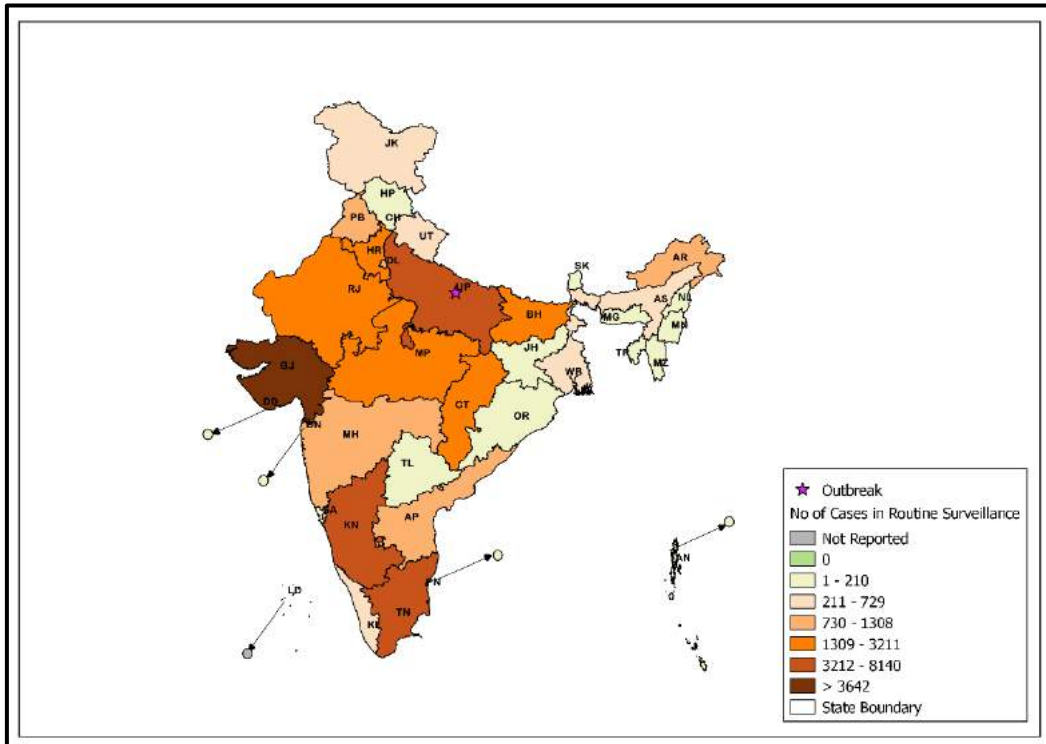

Fig 14: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for January 2019
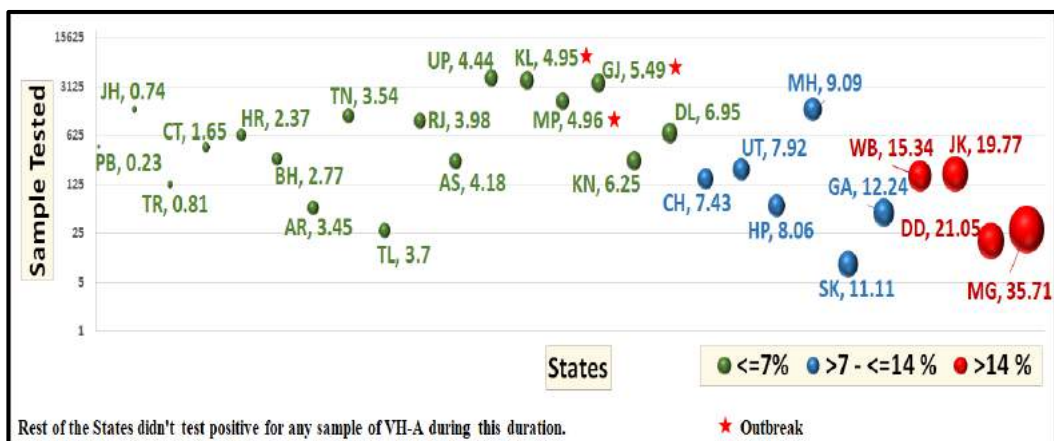
Fig 15: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for January 2019

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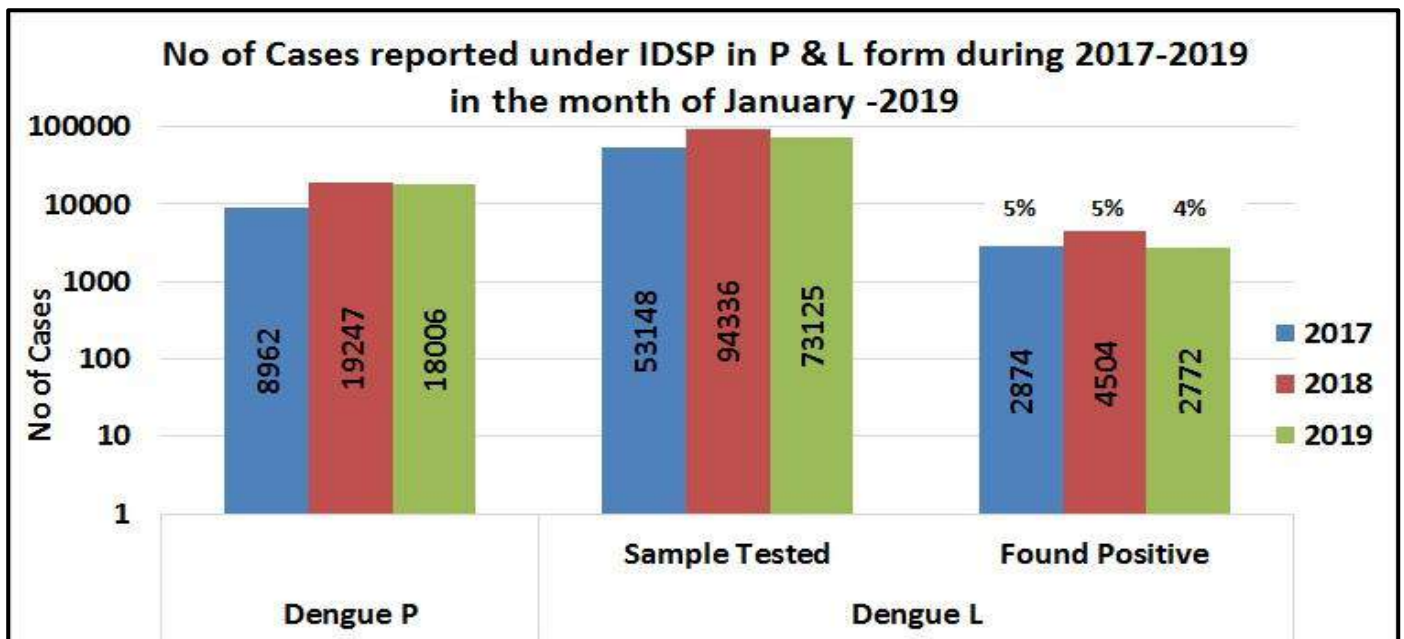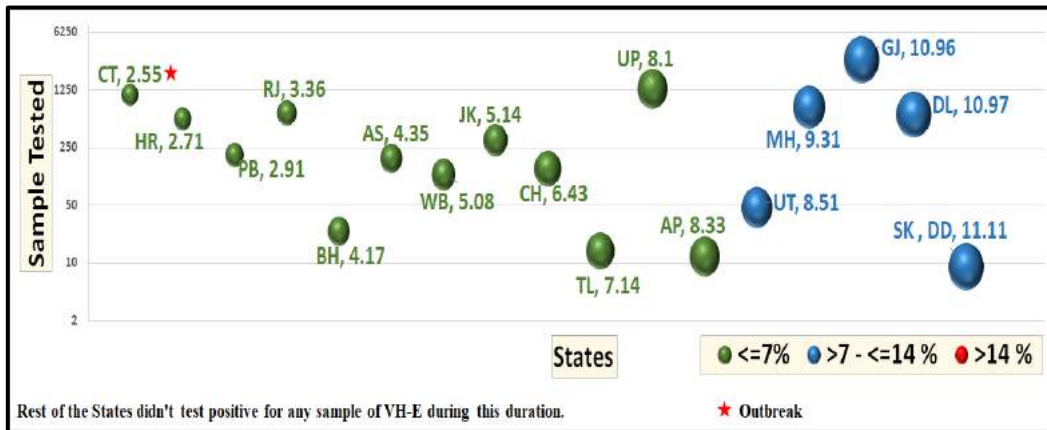

Fig 16: No. of Dengue Cases reported under IDSP in P & L form during January 2017 - 2019

As shown in Fig 16, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 8962 in January 2017; 19247 in January 2018 and 18006 in January 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2017; 53148 samples were tested for Dengue, out of which 2874 were found positive. In January 2018; out of 94336 samples, 4504 were found to be positive and in January 2019, out of 73125 samples, 2772 were found to be positive.

Sample positivity of samples tested for Dengue has been 5.41%, 4.77% and 3.79% in January month of 2017, 2018 & 2019 respectively.

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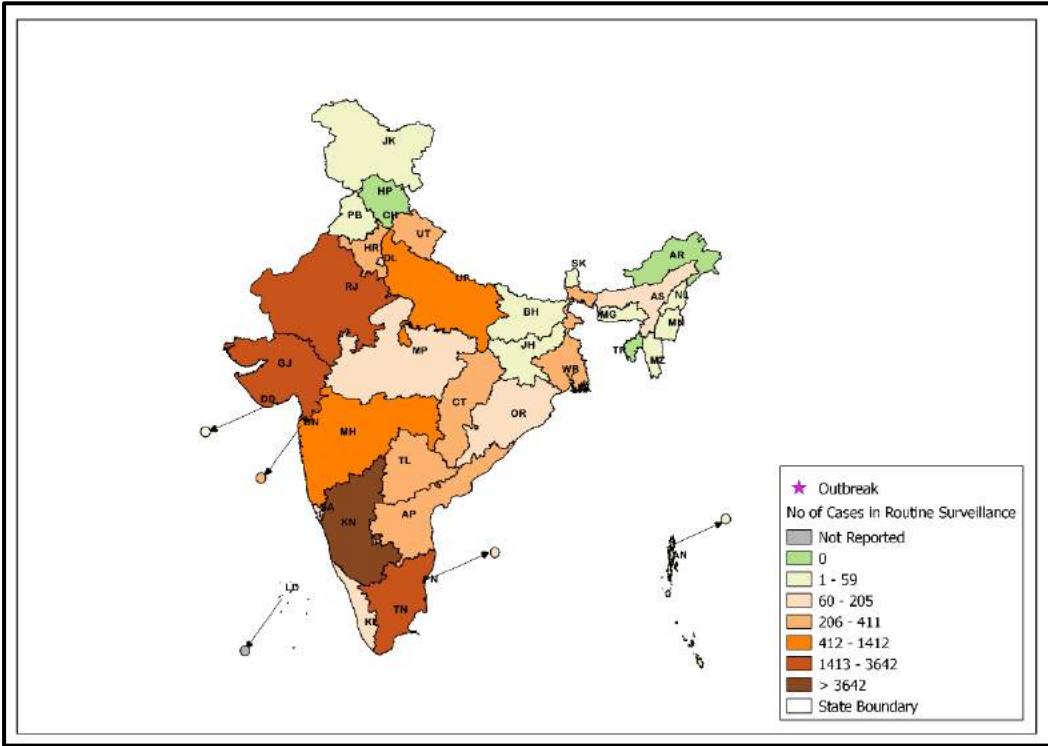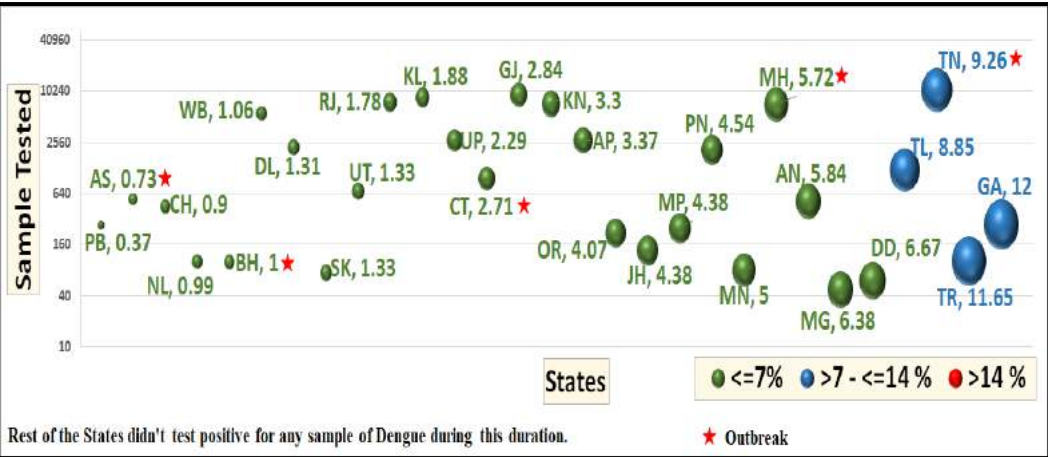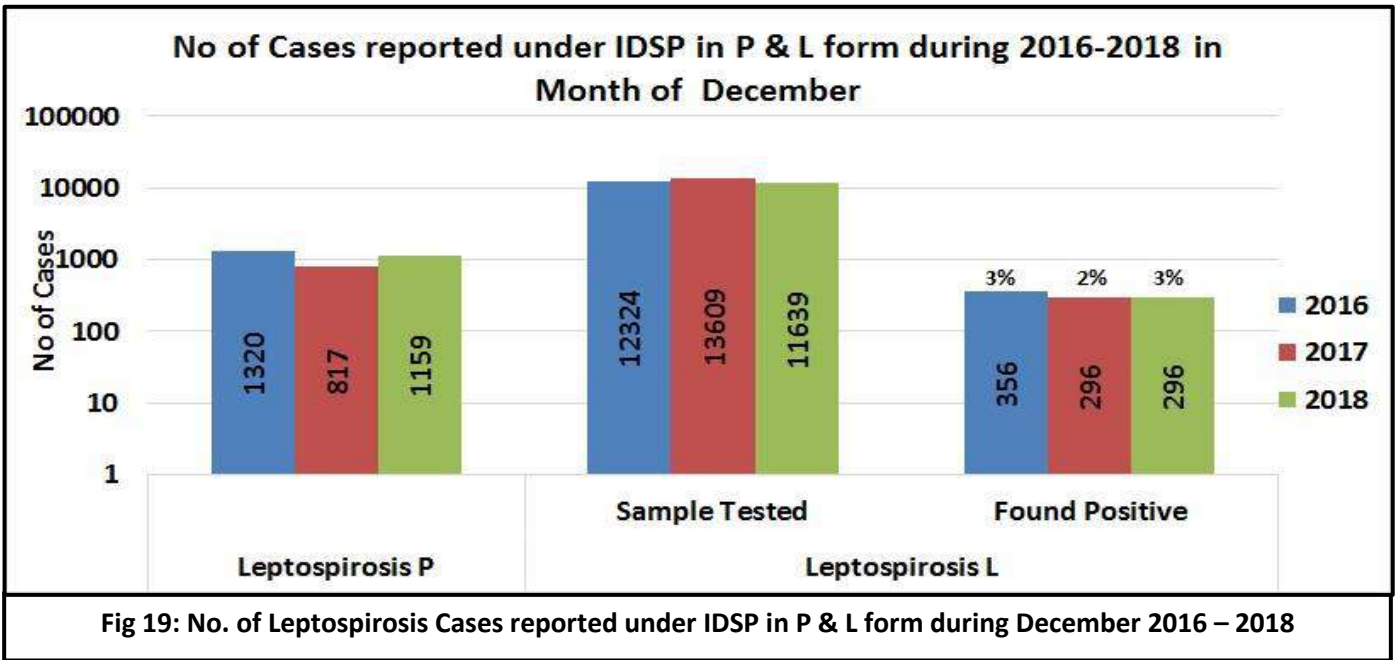

Fig 18: State/UT wise Lab Confirmed Dengue cases and outbreaks for January 2019

Fig 19: No. of Leptospirosis Cases reported under IDSP in P & L form during December 2016 – 2018

As shown in Fig 25, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1320 in December 2016; 817 in December 2017 and 1159 in January 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2016; 12324 samples were tested for Leptospirosis, out of which 356 were found positive. In December 2017; out of 13609 samples, 296 were found to be positive and in January 2019, out of 11639 samples, 296 were found to be positive.

Sample positivity of samples tested for Dengue has been 2.89%, 2.17% and 2.54% in December month of 2016, 2017 & 2018 respectively.

Fig 20: State/UT wise Presumptive Leptospirosis cases and outbreaks for January 2019
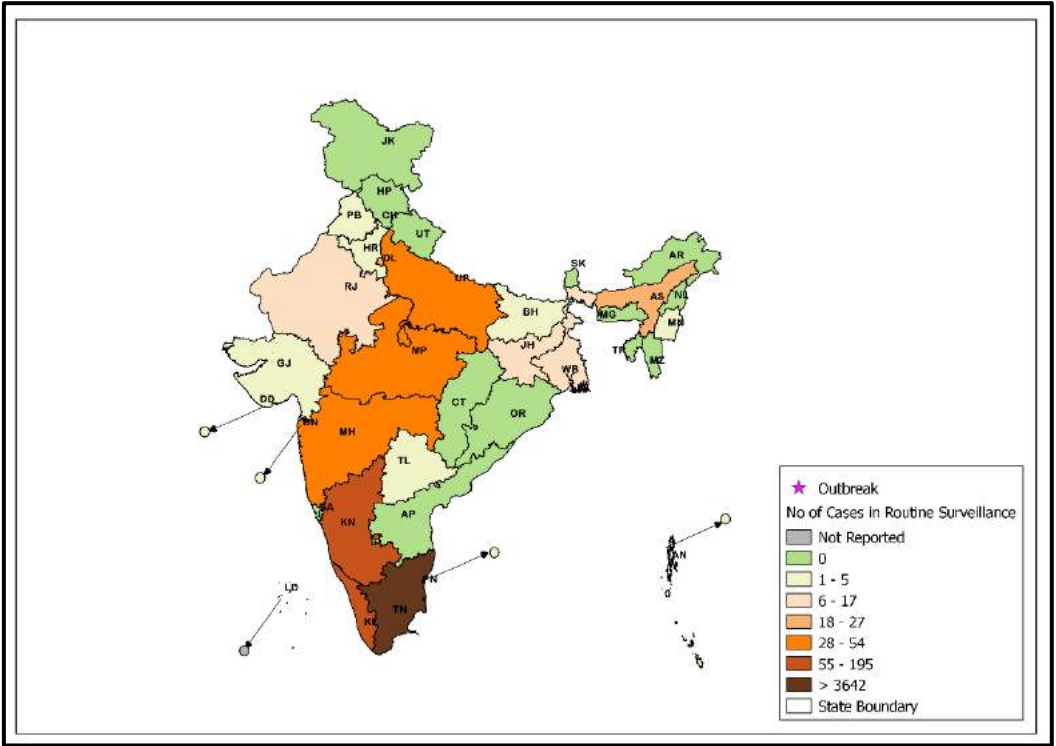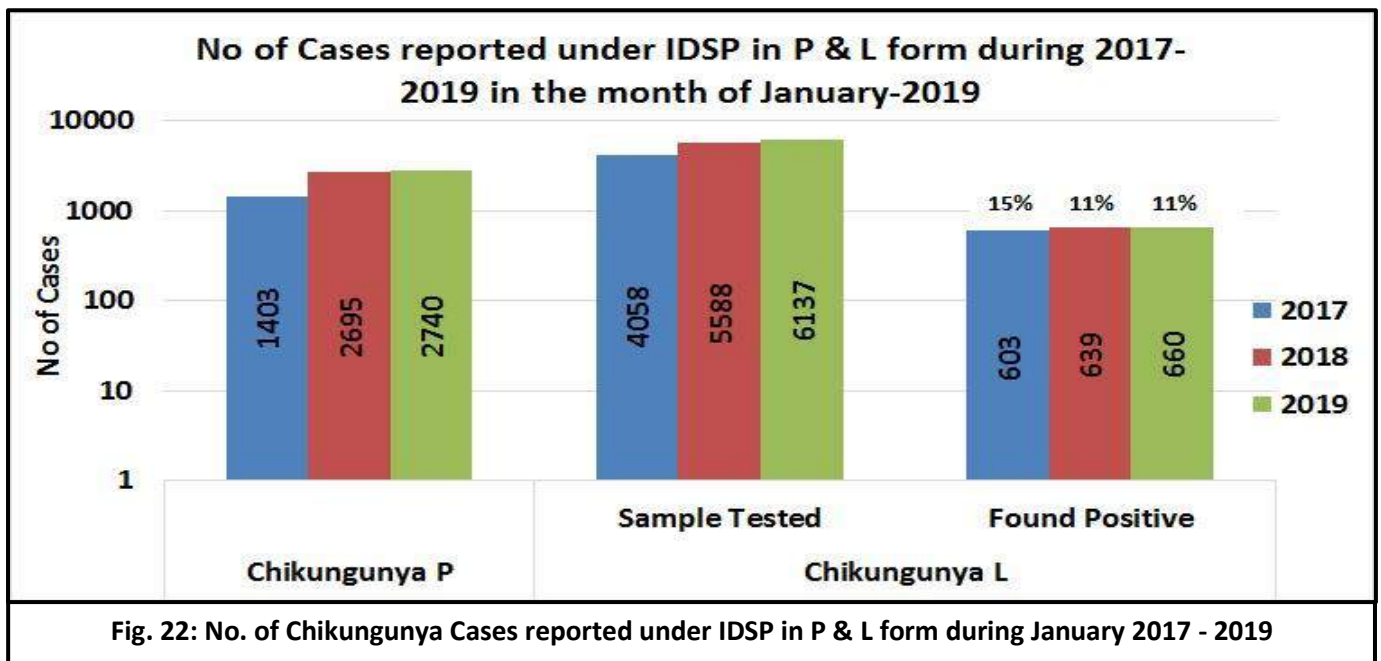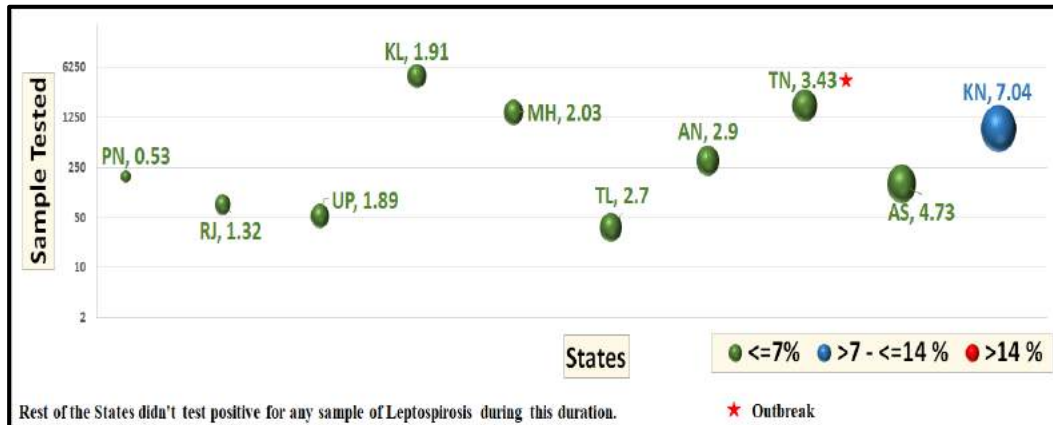
Fig. 22: No. of Chikungunya Cases reported under IDSP in P & L form during January 2017 - 2019

As shown in Fig 22, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 1403 in January 2017; 2695 in January 2018 and 2740 in January 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2017; 4058 samples were tested for Chikungunya, out of which 603 were found positive. In January 2018; out of 5588 samples, 639 were found to be positive and in January 2019, out of 6137 samples, 660 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 14.86%, 11.44% and 10.75% in January month of 2017, 2018 & 2019 respectively.

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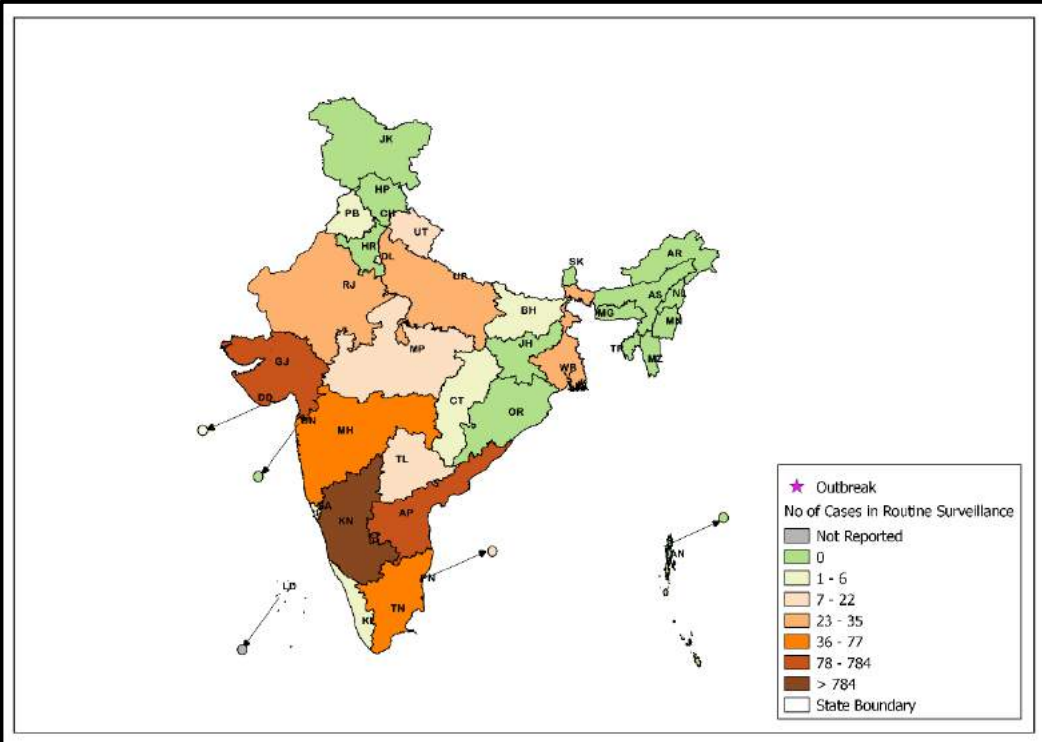

Fig 24: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for January 2019
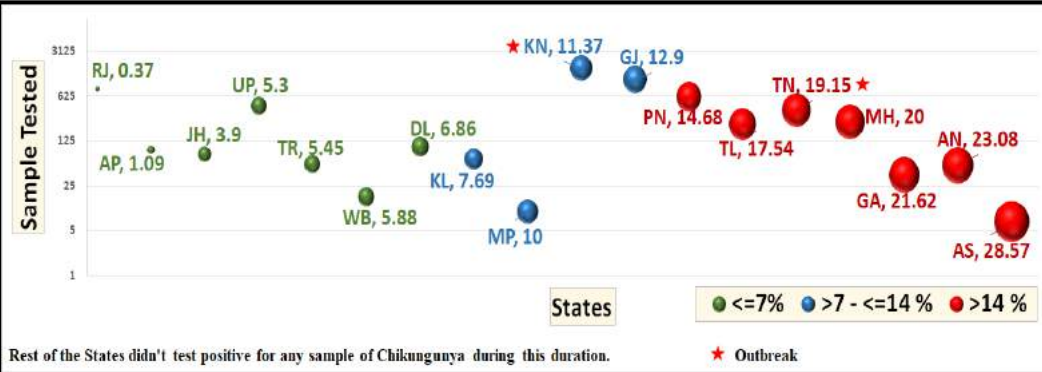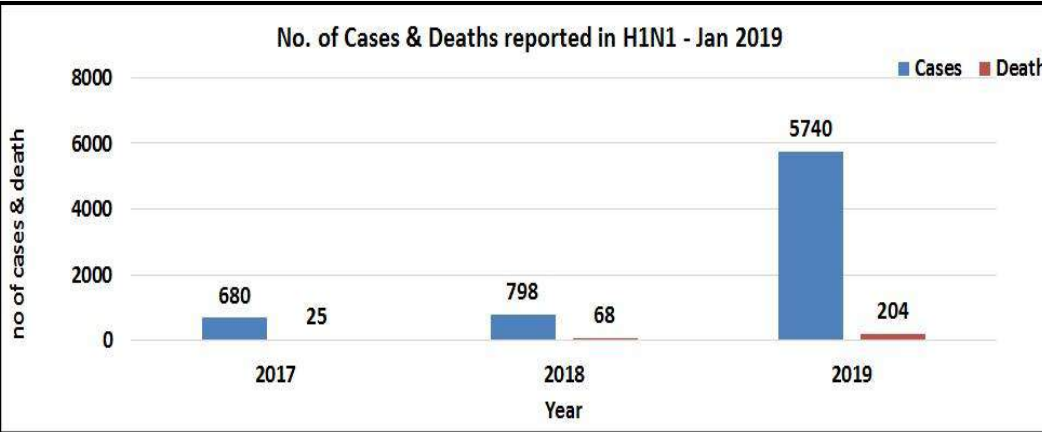

Fig 25: H1N1 cases reported under IDSP in L Form during 2016-2018 in December Month

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.

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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