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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report
From
Integrated Disease Surveillance Programme
National Health Mission

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INVESTIGATION REPORT OF ADD OUTBREAK – THRIKKAKARA MUNICIPALITY, KOCHI, KERALA

BACKGROUND

Thrikkakkara is a municipality in the city of Kochi (previously called as Cochin). Kochi is largest and the most populous metropolitan area in Kerala. Thrikkakkara municipality comprises of 43 wards. Although it is a suburb of Kochi, the municipality is mostly located in Ernakulam district. The region is notable for annual Onam festival.

The total population of region is 77319 with 38035 males and 39284 females. Sex ratio is about 1000:1084. The literacy rate is 93.75%.

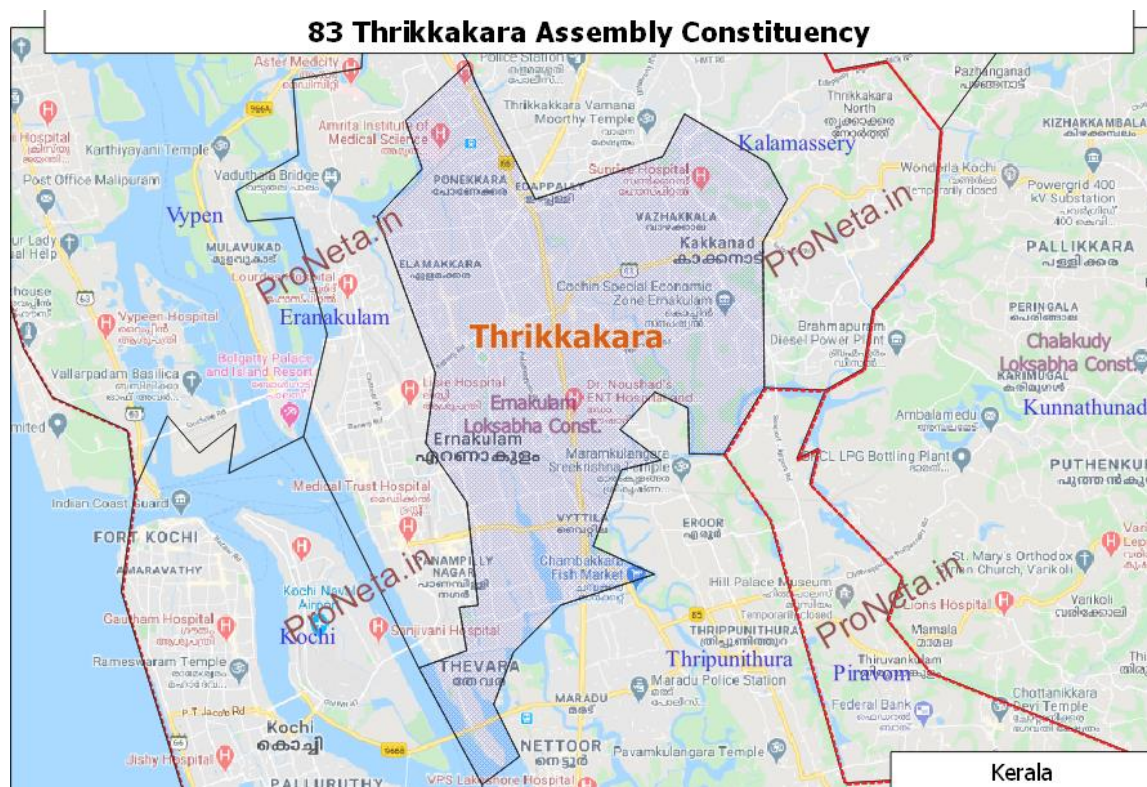


Fig.1 Location of Thrikkara constituency within Kochi metropolitan area

EPIDEMIOLOGY OF ADD:

According to WHO (Diarrhoeal disease (who.int)) diarrhoea is defined as passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual).

There are three clinical types of diarrhoea according to WHO:

- Acute watery diarrhoea – lasts several hours or days, and includes cholera;
- Acute bloody diarrhoea – also called dysentery; and
- Persistent diarrhoea – lasts 14 days or longer.

Diarrhoea is usually a symptom of an infection in the intestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms. Infection is spread through contaminated food or drinking-water, or from person-to-person as a result of poor hygiene.

OUTBREAK CHRONOLGY:

On 29th Oct' 21, a single case of diarrhoea was reported in Assumption girl's hostel, Kakkanad. The case was a B. tech student staying in the hostel. Then after, there was a sustained increase in cases. By 29th Feb' 22, there were 61 cases with 2 peaks observed on 3rd December and 23rd November.

Taking stock of the situation, on 1st January an RRT was constituted under DSO which also comprised on District Epidemiologist, MOs of local health facilities as well as ASHA workers of the locality.

Following were the key findings of RRT team:

- Most of the affected were of the age group between 19 to 21 years of age
- The affected patients showed symptoms of fever, headache, nausea, vomiting, and abdominal pain in addition to loose stools.
- Water purifiers have been provided in the hostel and the provision of drinking water was found to be satisfactory.
- Water for utilitarian consumption is stored in overhead tanks. It is distributed to kitchen & washrooms after purification.
- Based on investigations, RRT narrowed on 2 possible sources of outbreak – contaminated drinking water or fried rice.
- Lab testing & control measures were initiated immediately.

DISCRIPTIVE EPIDEMIOLOGY:

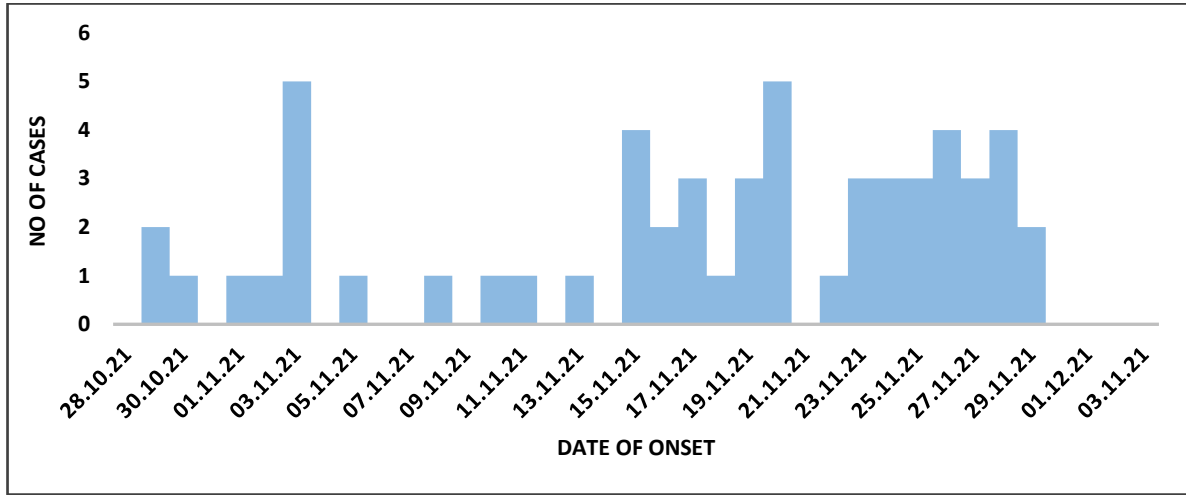
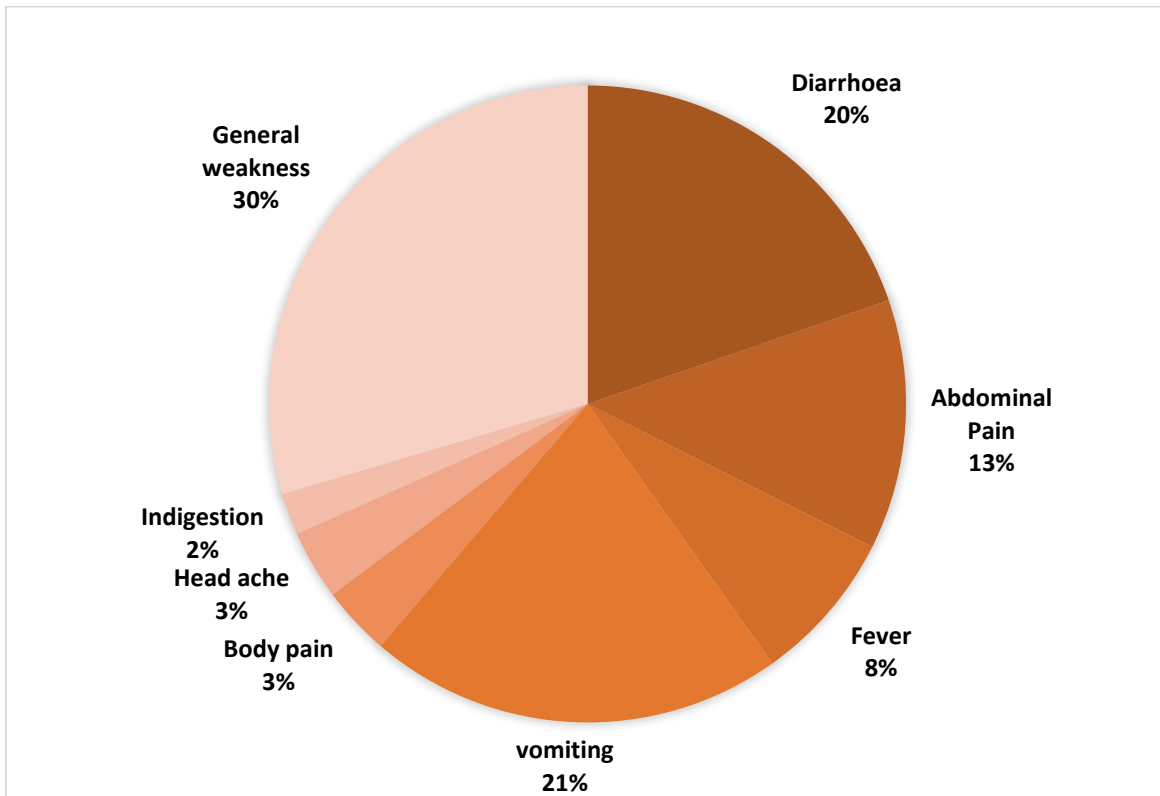


Fig. 2: Progression of cases

Fig. 3: The symptom-wise representation is as follows –



Among 61 cases: 30% had general tiredness, 20% had diarrhoea, 21% had vomiting, 13% had abdominal pain, 8% had fever, 3% had headache, 3% had body pain, 2% had indigestion.

CONTROL MEASURES TAKEN

1. Totally 9 Water sample collected from also from the taps, wells and water purifiers. All samples send
2. to RPH lab and RAL for biological and chemical Analysis on 3rd December.
3. Additional safe water supply provided to Hostel inmates.
4. IEC strengthened in the affected area.
5. Chlorinated all the water sources of hostel was done on 3rd December with the support of PHC team.
6. ORS distributed to all affected students.

RECOMMENDATIONS:

1. Intersectoral meeting under the chairmanship of Municipal chairman, Thrikkakara to review the outbreak and preparation of action plan for the prevention future water borne outbreaks.
2. Awareness class including handwashing demo sessions conducted in the hostel.
3. Observe 14 days strict surveillance in and around the outbreak reported area.
4. Super chlorination should be done in all water sources in the affected area.
5. Hotel & eateries inspection should be planned in association with Food and Safety departments and Municipal health wing.
6. Stool sample collection from the fresh case (to rule out Noro virus) for culture test.

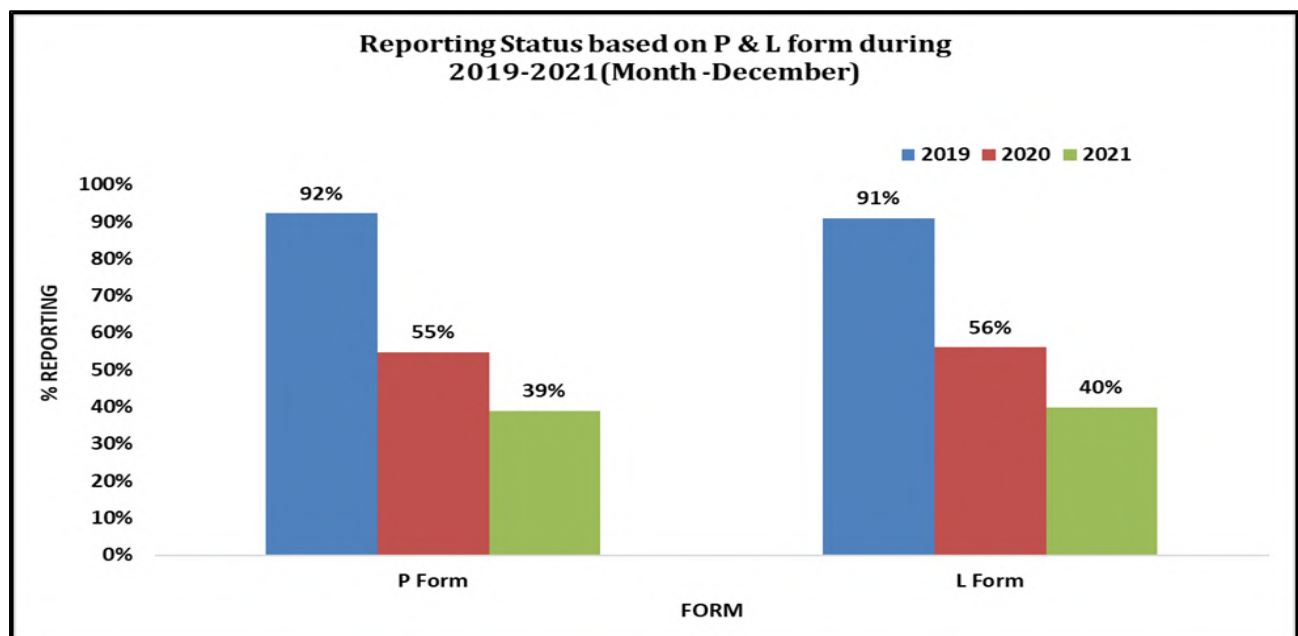
DISCUSSIONS:

According to WHO ([Diarrhoeal disease \(who.int\)](https://www.who.int)) Diarrhoeal disease is a leading cause of child mortality and morbidity in the world, and mostly results from contaminated food and water sources. Worldwide, 780 million individuals lack access to improved drinking-water and 2.5 billion lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries.

In low-income countries, children under three years old experience on average three episodes of diarrhoea every year. Each episode deprives the child of the nutrition necessary for growth. As a result, diarrhoea is a major cause of malnutrition, and malnourished children are more likely to fall ill from diarrhoea.

Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue Leptospirosis, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During December 2019 - 2021*

Fig. 4: RU-wise reporting based on P & L forms during December 2021



As shown in Fig 4, in December 2019, 2020 and 2021, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 92 %, 55% and 39% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 91%, 56% and 40% 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 decreased in December 2021 compared to the same month in previous years for both P and L forms, thereby compromising on the quality of surveillance data.

Fig. 5: State/UT wise P form completeness % for December 2021

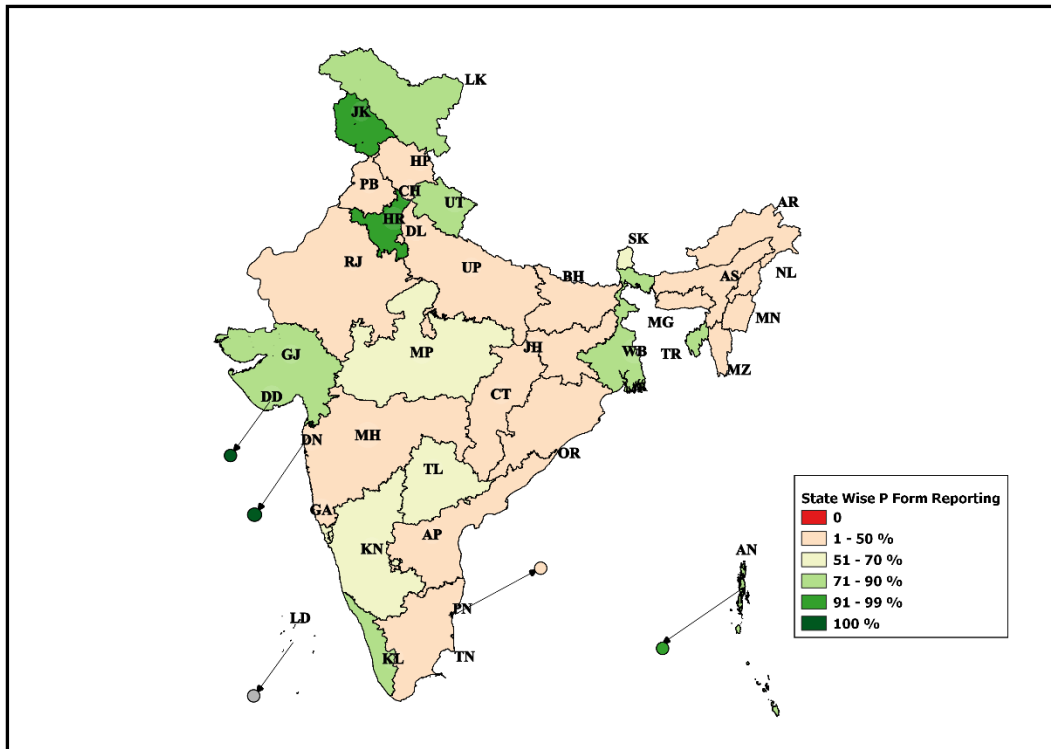


Fig. 6: State/UT wise L form completeness % for December 2021

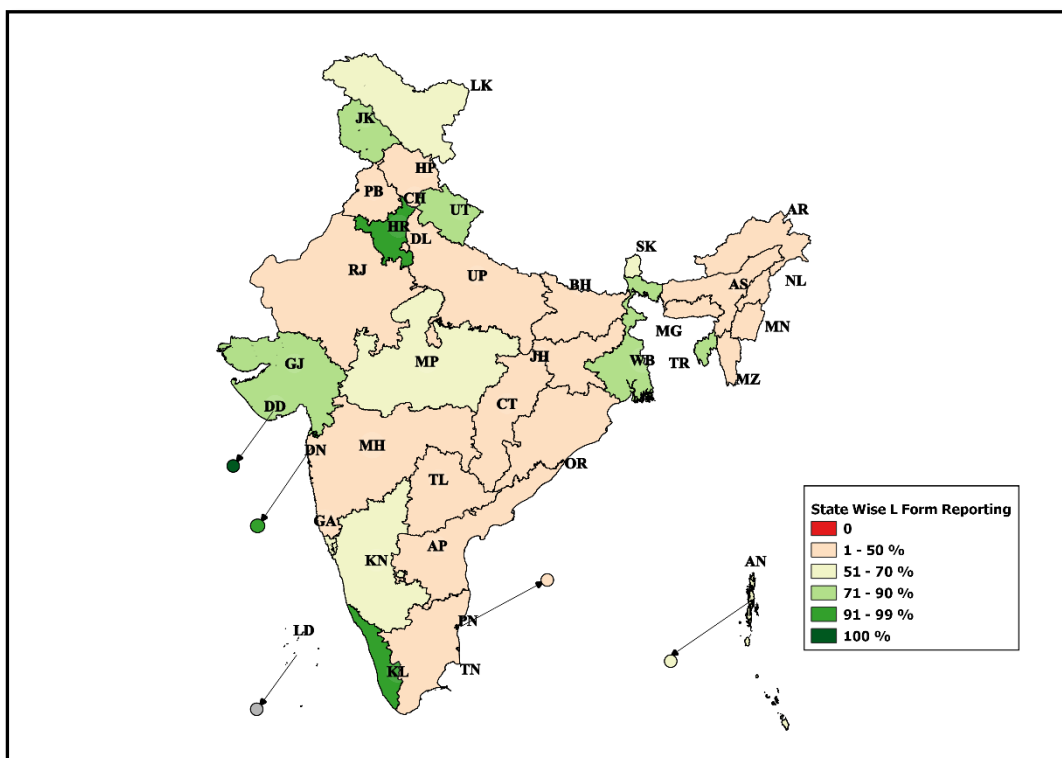
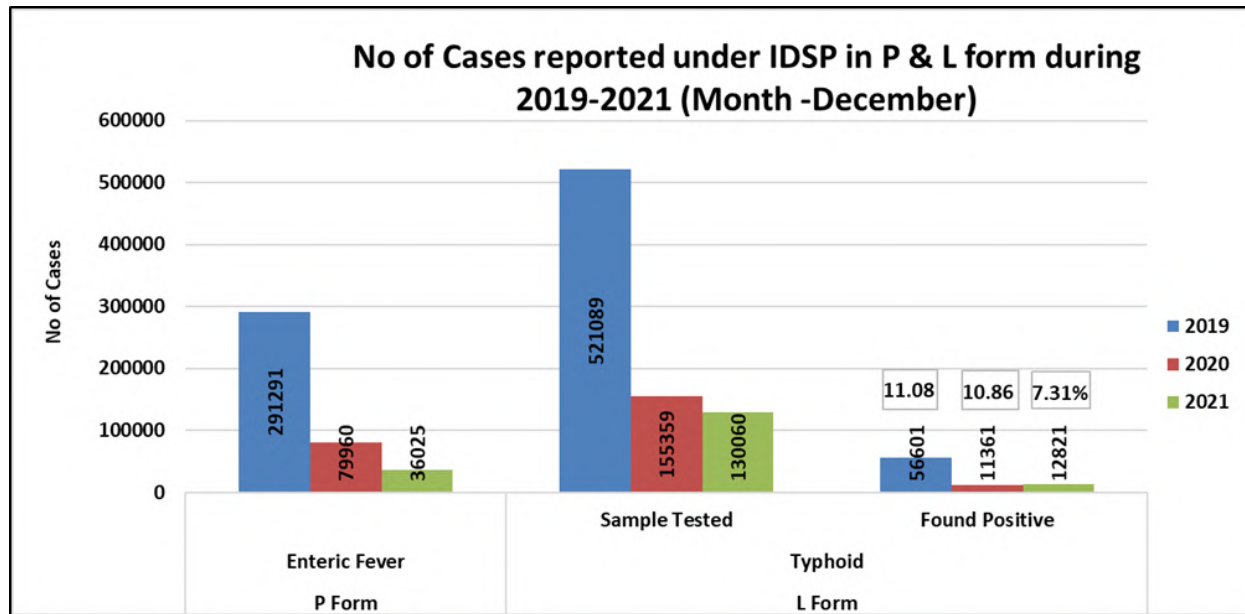


Fig. 7: No. of Enteric Fever Cases reported under P & L form during December 2019 - 2021



As shown in Fig 7, number of presumptive enteric fever cases, as reported by States/UTs in ‘P’ form was 291291 in December 2019; 79960 in December 2020 and 36025 in December 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2019; 521089 samples were tested for Typhoid, out of which 56601 were found positive. In December 2020; out of 155359 samples, 11361 were found to be positive and in December 2021, out of 130060 samples, 12821 were found to be positive.

Sample positivity has been 11.08%, 10.86% and 7.31% in December month of 2019, 2020 & 2021 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. 8: State/UT wise Presumptive Enteric fever cases & outbreaks for December 2021

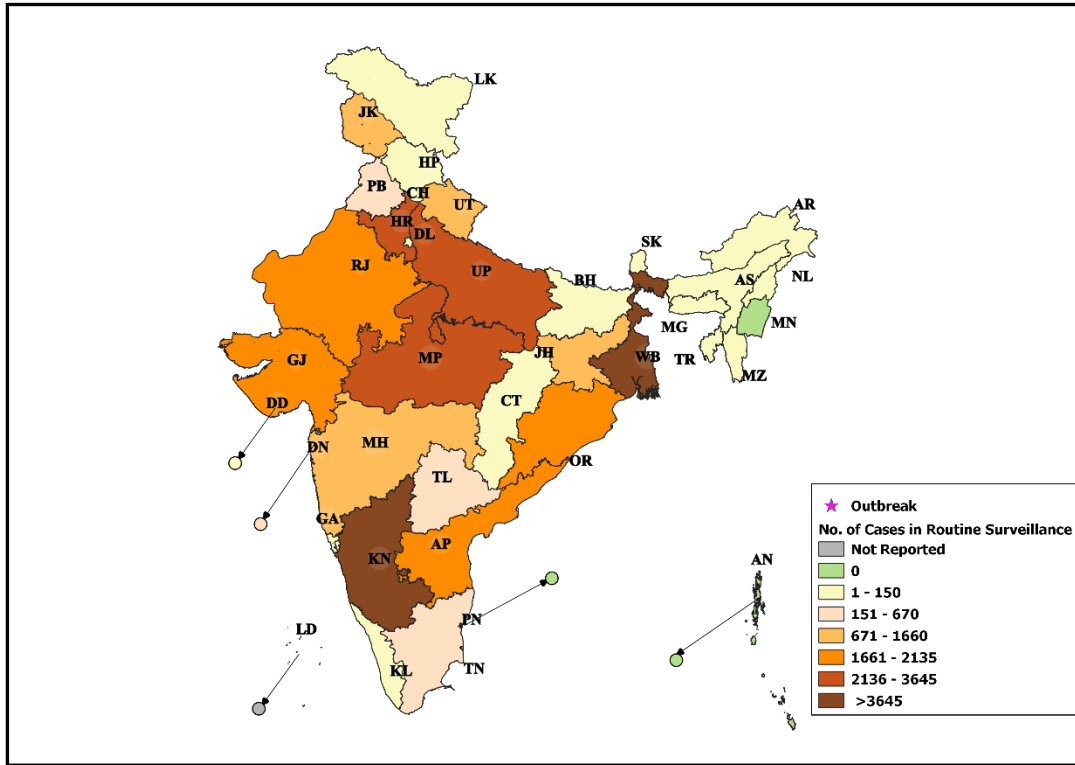


Fig. 9: State/UT wise Lab Confirmed Typhoid cases and outbreaks for December 2021

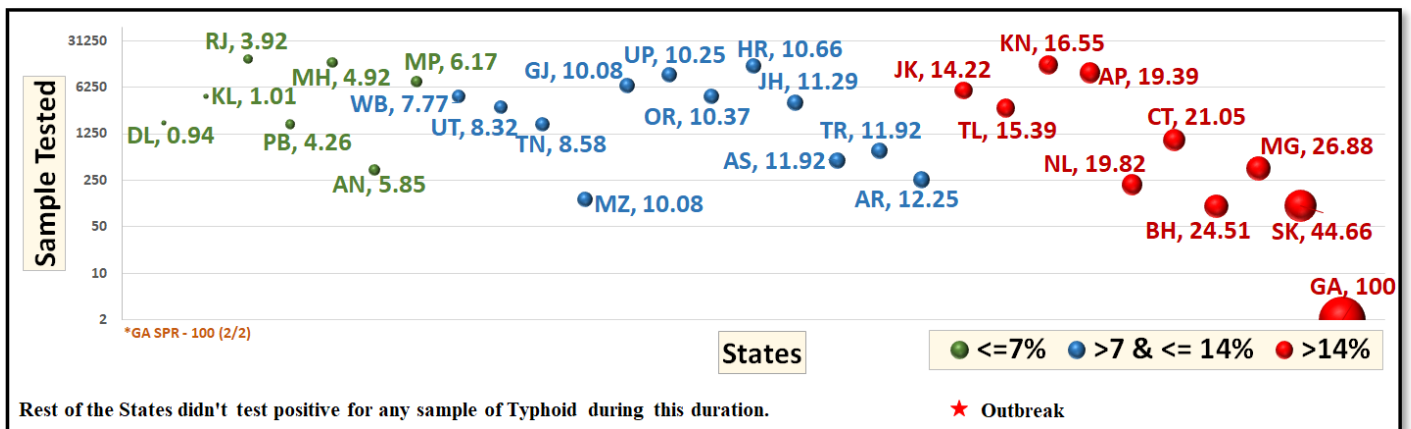
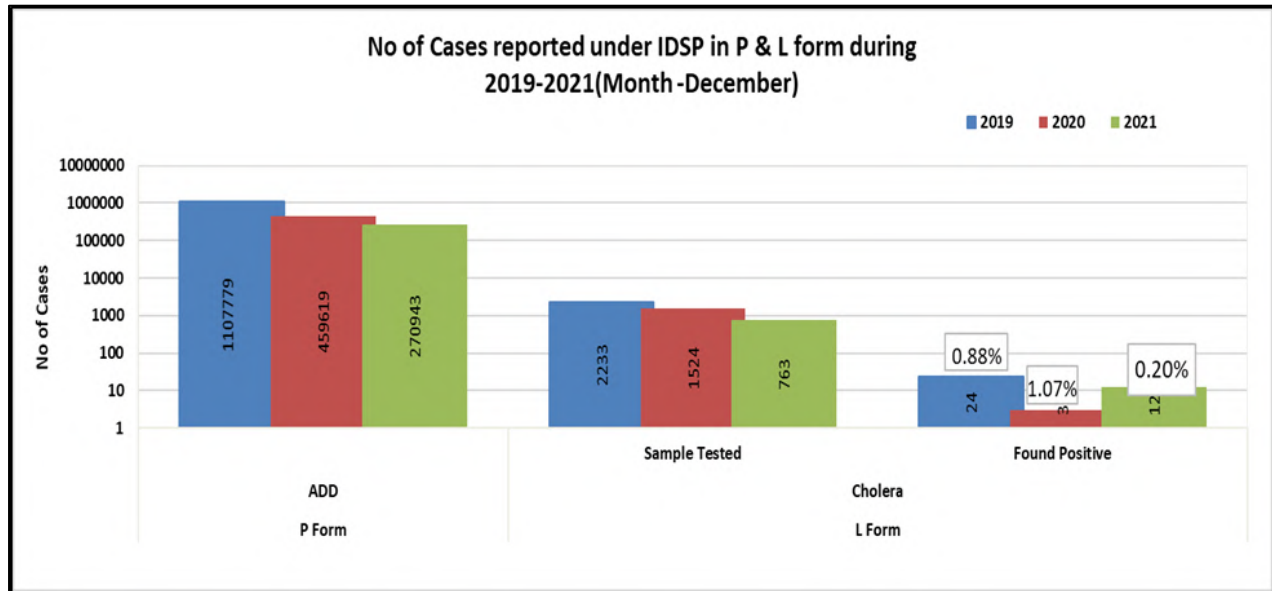


Fig. 10: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during December 2019 - 2021



As shown in Fig 10, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in ‘P’ was 1107779 in December 2019, 459619 in December 2020 and 270943 in December 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2019, 2233 samples were tested for Cholera out of which 24 tested positive; in December 2020, out of 1524 samples, 3 tested positive for Cholera and in December 2021, out of 763 samples, 12 tested positive.

Sample positivity of samples tested for Cholera has been 1.07%, 0.2% and 1.6% in December month of 2019, 2020 & 2021 respectively.

Fig. 11: State/UT wise Presumptive ADD cases and outbreaks for December 2021

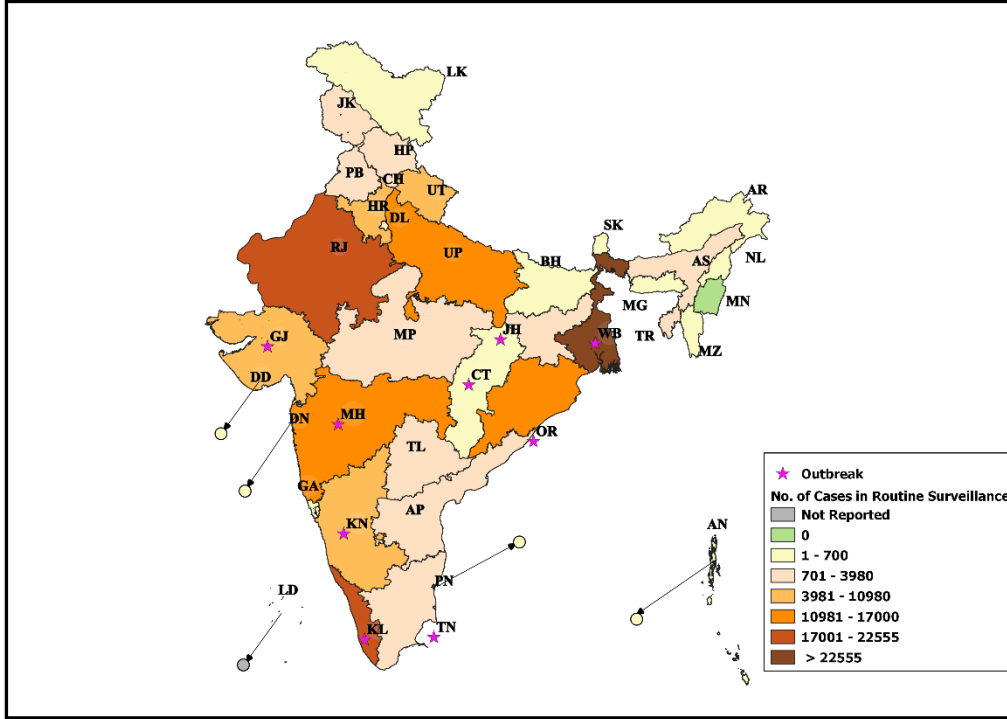


Fig. 12: State/UT wise Lab Confirmed Cholera cases and outbreaks for December 2021

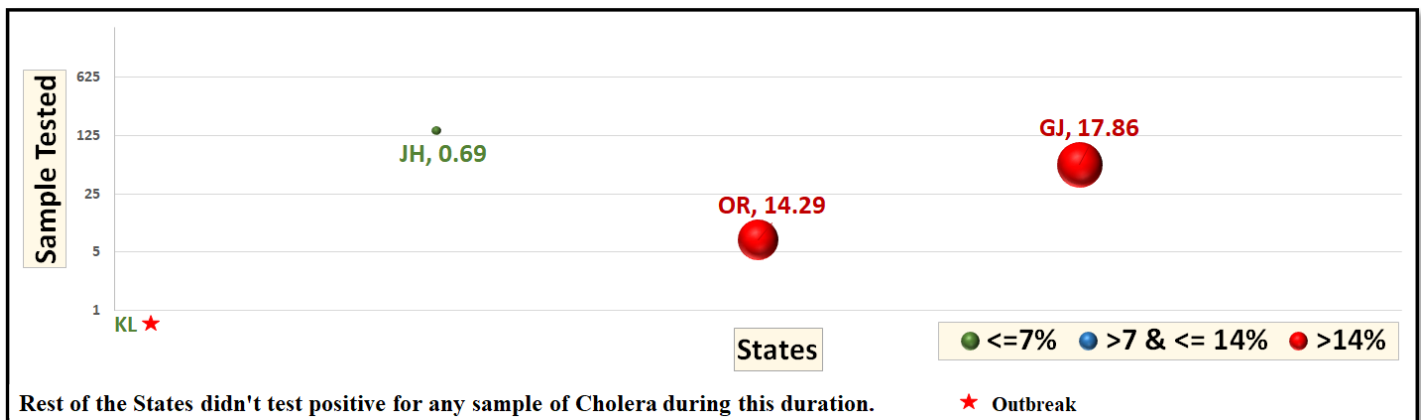
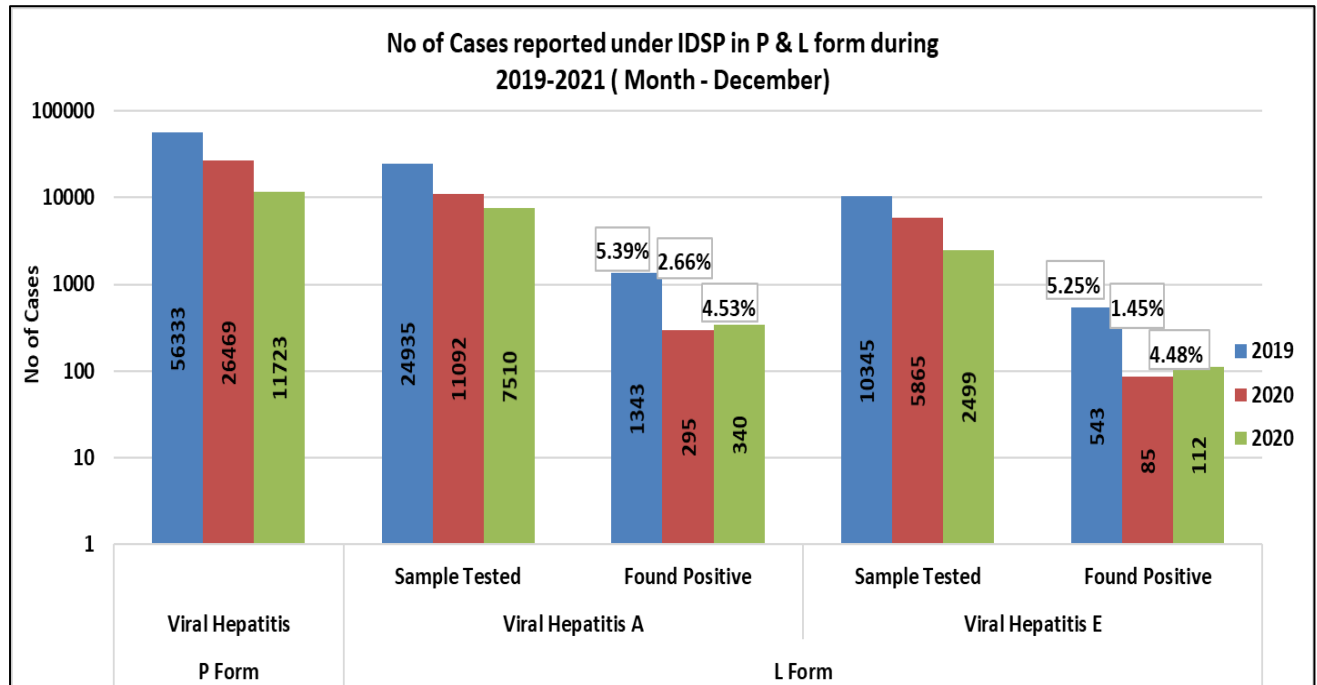


Fig. 13: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during December 2019 - 2021



As shown in Fig 13, the number of presumptive Viral Hepatitis cases was 56333 in December 2019, 26469 in December 2020 and 11723 in December 2021. These presumptive cases were diagnosed on the basis of case definitions provided under IDSP.

As reported in L form for Viral Hepatitis A, in December 2019; 24935 samples were tested out of which 1343 were found positive. In December 2020 out of 11092 samples, 295 were found to be positive and in December 2021, out of 7510 samples, 340 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 5.39%, 2.66% and 4.53% in December month of 2019, 2020 & 2021 respectively.

As reported in L form for Viral Hepatitis E, in December 2019; 10345 samples were tested out of which 543 were found positive. In December 2020; out of 5865 samples, 85 were found to be positive and in December 2021, out of 2499 samples, 112 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 5.25%, 1.45% and 4.48% in December month of 2019, 2020 & 2021 respectively.

Fig. 14: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for December 2021

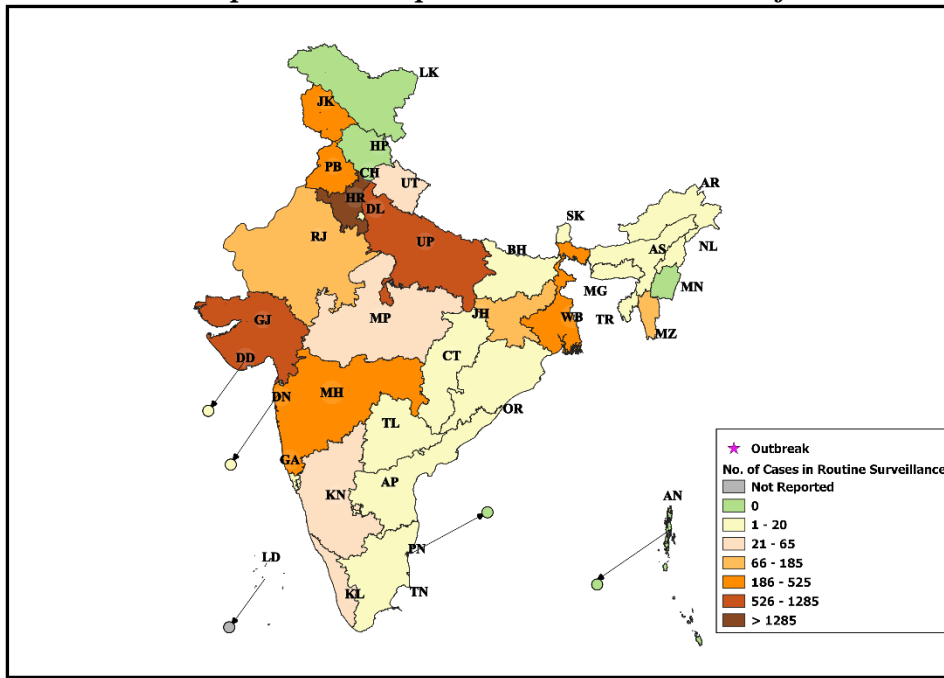


Fig. 15: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for December

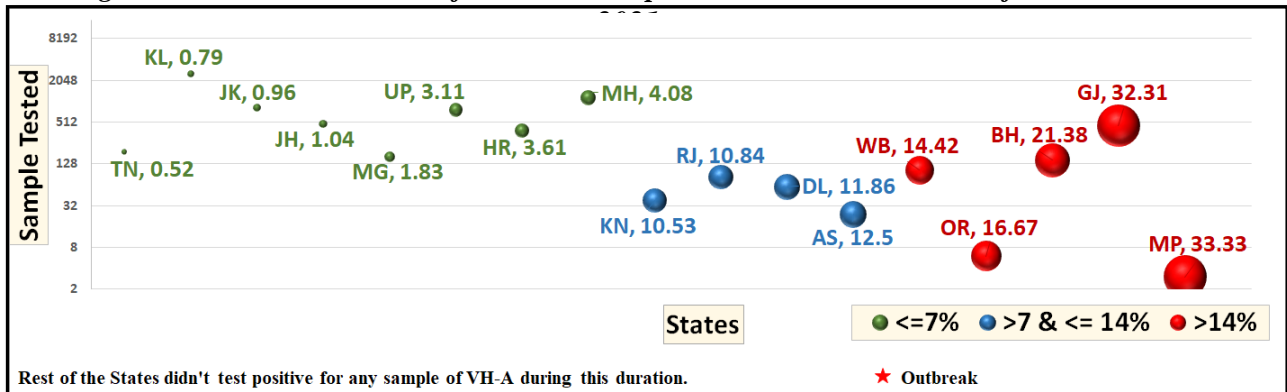


Fig. 16: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for December 2021

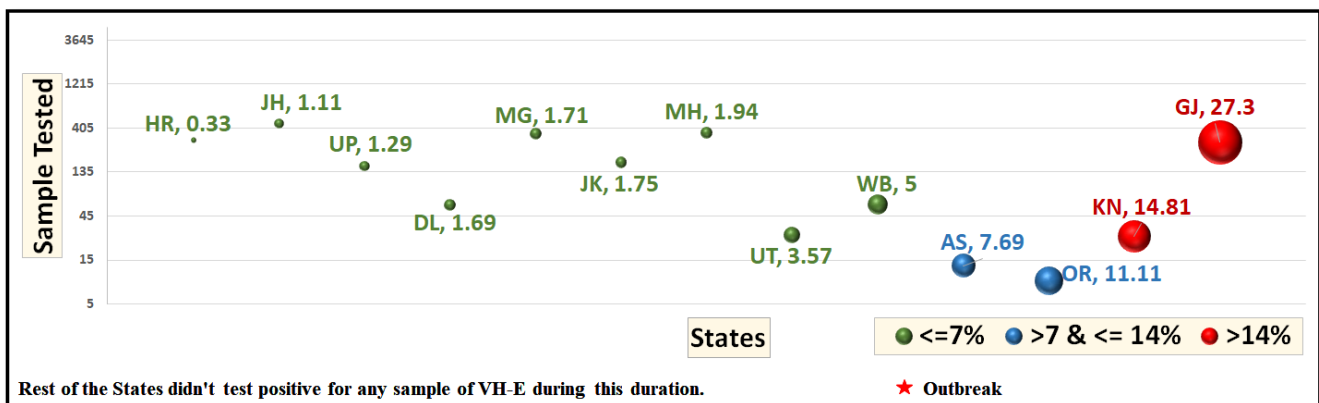
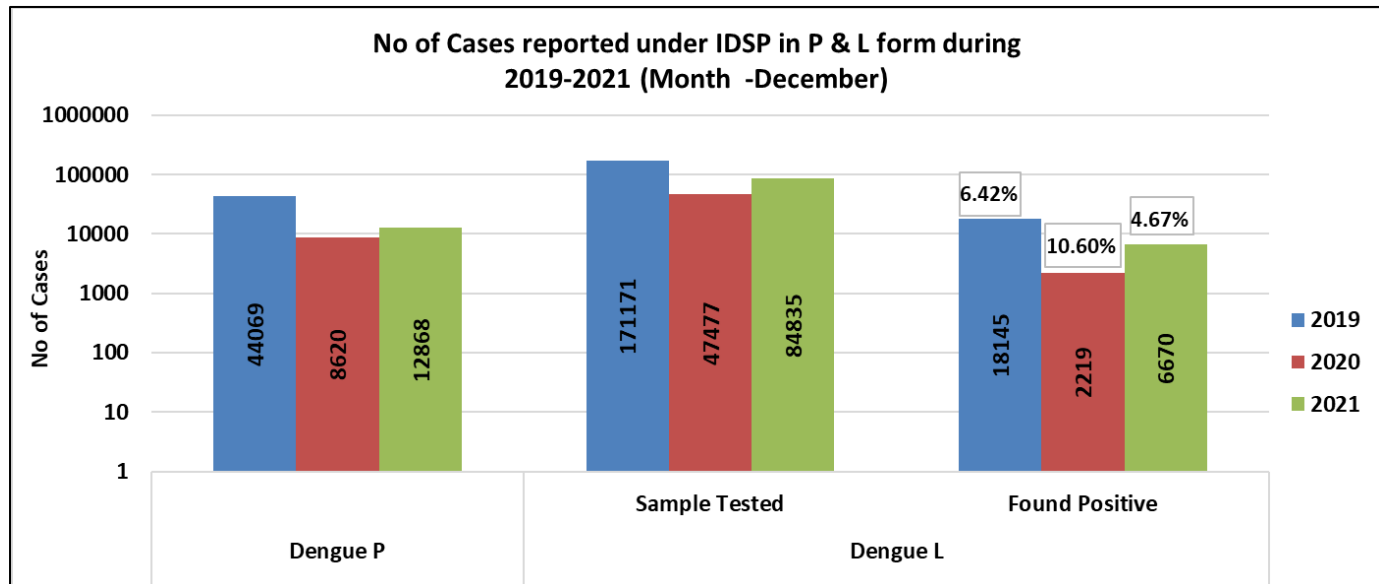


Fig. 17: No. of Dengue cases reported under IDSP in P & L form during December 2021



As shown in Fig 17, number of presumptive Dengue cases, as reported by States/UTs in ‘P’ form was 44069 in December 2019; 8620 in December 2020 and 12868 in December 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2019; 171171 samples were tested for Dengue, out of which 18145 were found positive. In December 2020; out of 47477 samples, 2219 were found to be positive and in December 2021, out of 84835 samples, 6670 were found to be positive.

Sample positivity of samples tested for Dengue has been 6.42%, 10.6 % and 4.67% in December month of 2019, 2020 & 2021 respectively.

Fig. 18: State/UT wise Presumptive Dengue cases and outbreaks for December 2021

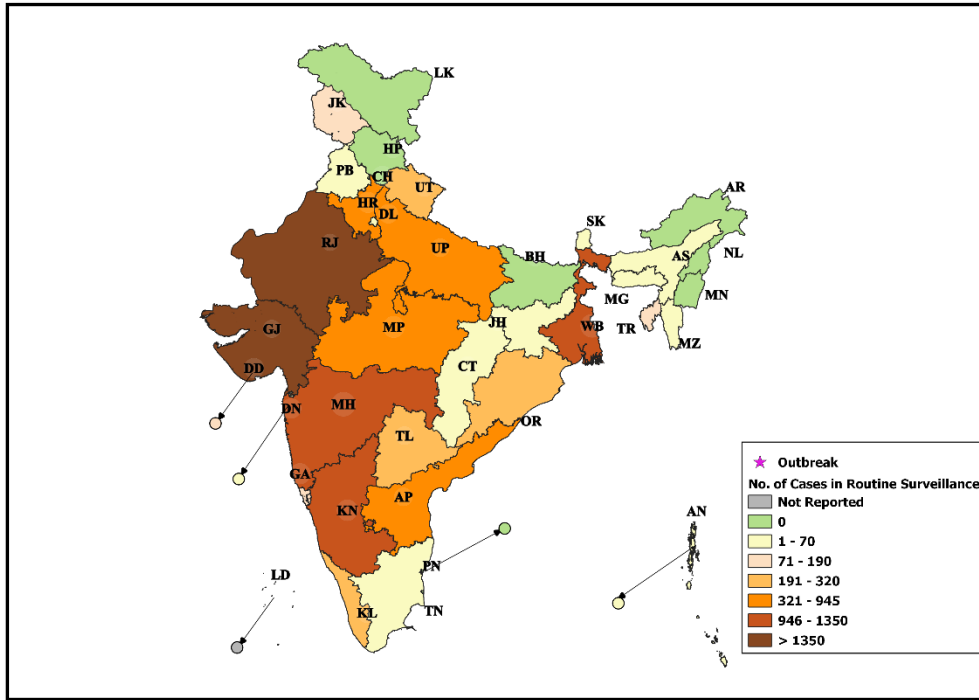


Fig. 19: State/UT wise Lab Confirmed Dengue cases and outbreaks for December 2021

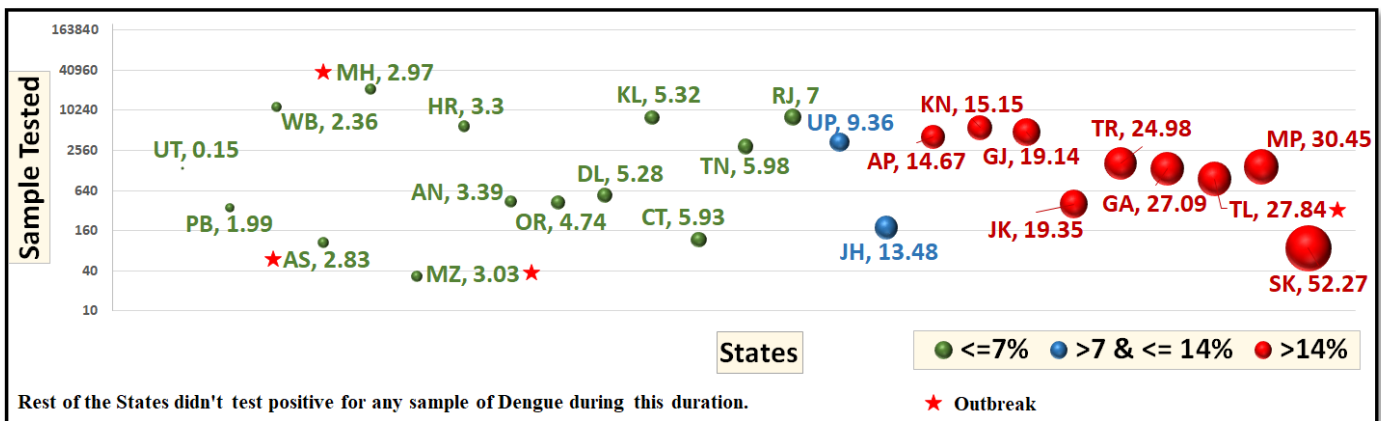
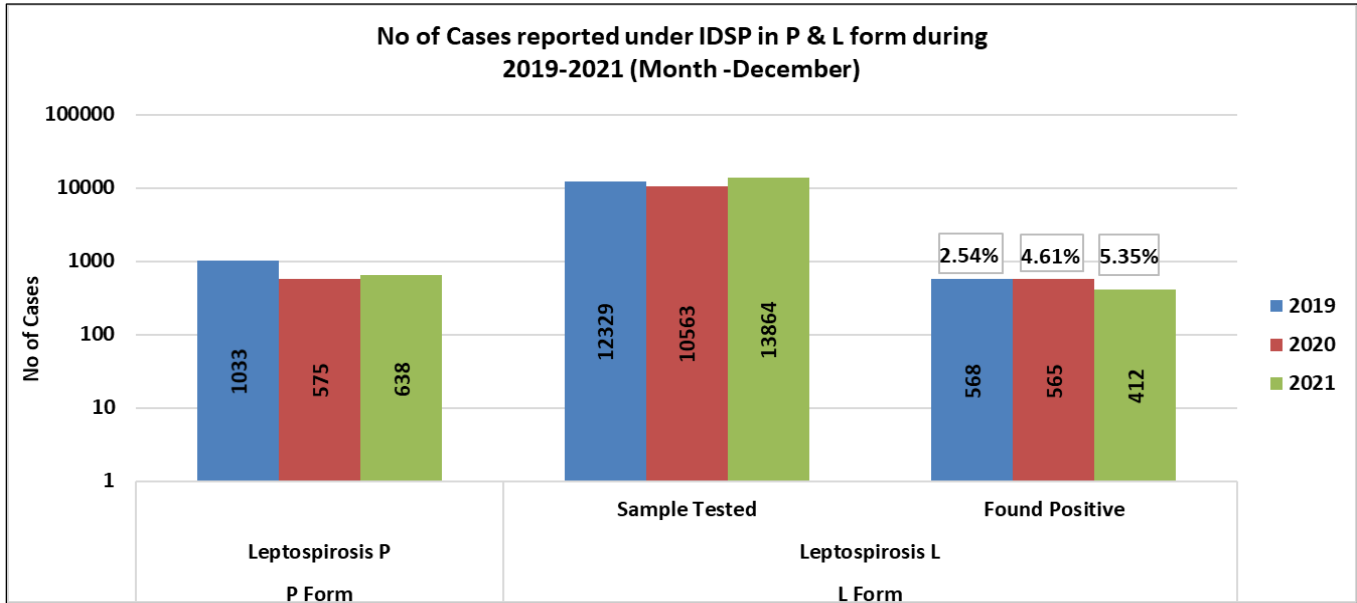


Fig. 20: No. of Leptospirosis Cases reported under IDSP in P & L form during December 2019 - 2021



As shown in Fig 20, number of presumptive Leptospirosis cases, as reported by States/UTs in ‘P’ form was 1033 in December 2019; 575 in December 2020 and 638 in December 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2019; 12329 samples were tested for Leptospirosis, out of which 568 were found positive. In December 2020; out of 10563 samples, 565 were found to be positive and in December 2021, out of 13864 samples, 412 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 2.54%, 4.61% and 5.35% in December month of 2019, 2020 & 2021 respectively.

Fig. 21: State/UT wise Presumptive Leptospirosis cases and outbreaks for December 2021

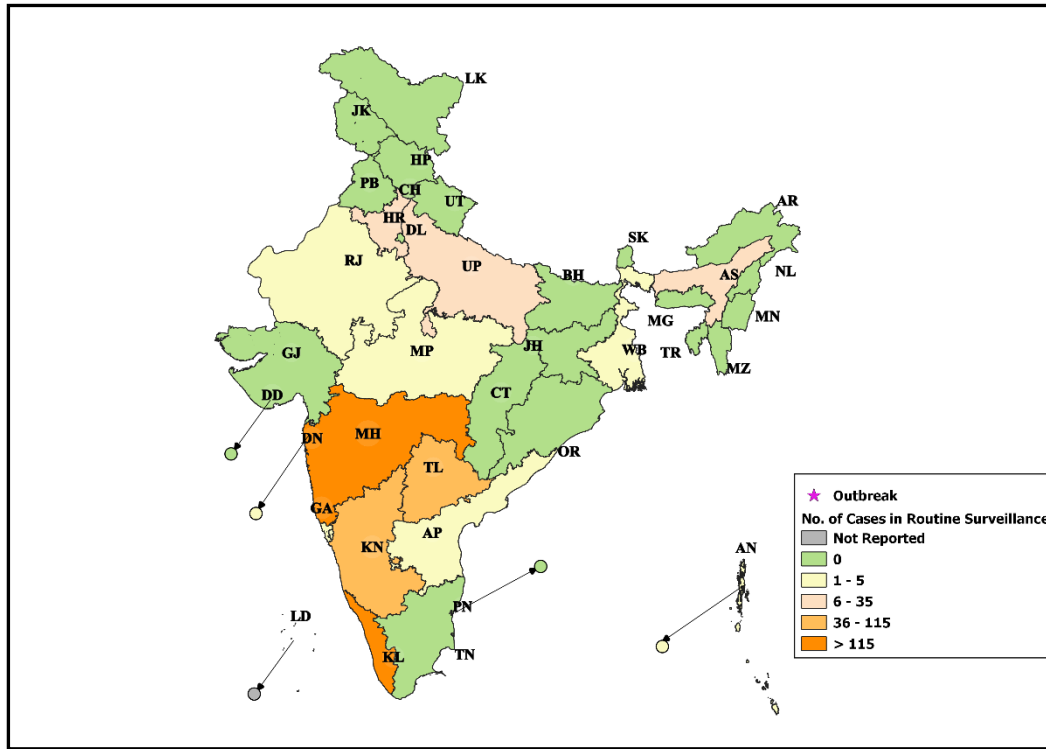


Fig. 22: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for December 2021

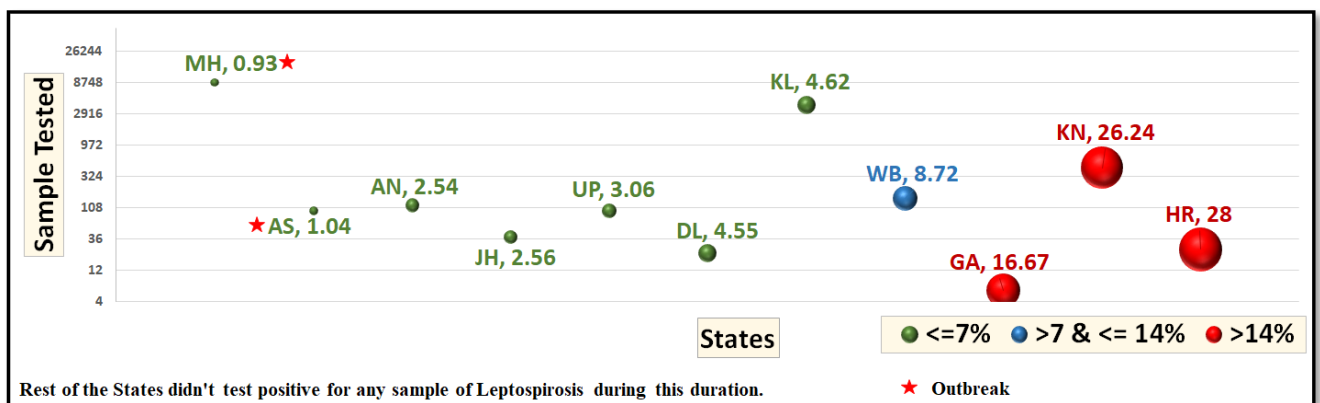
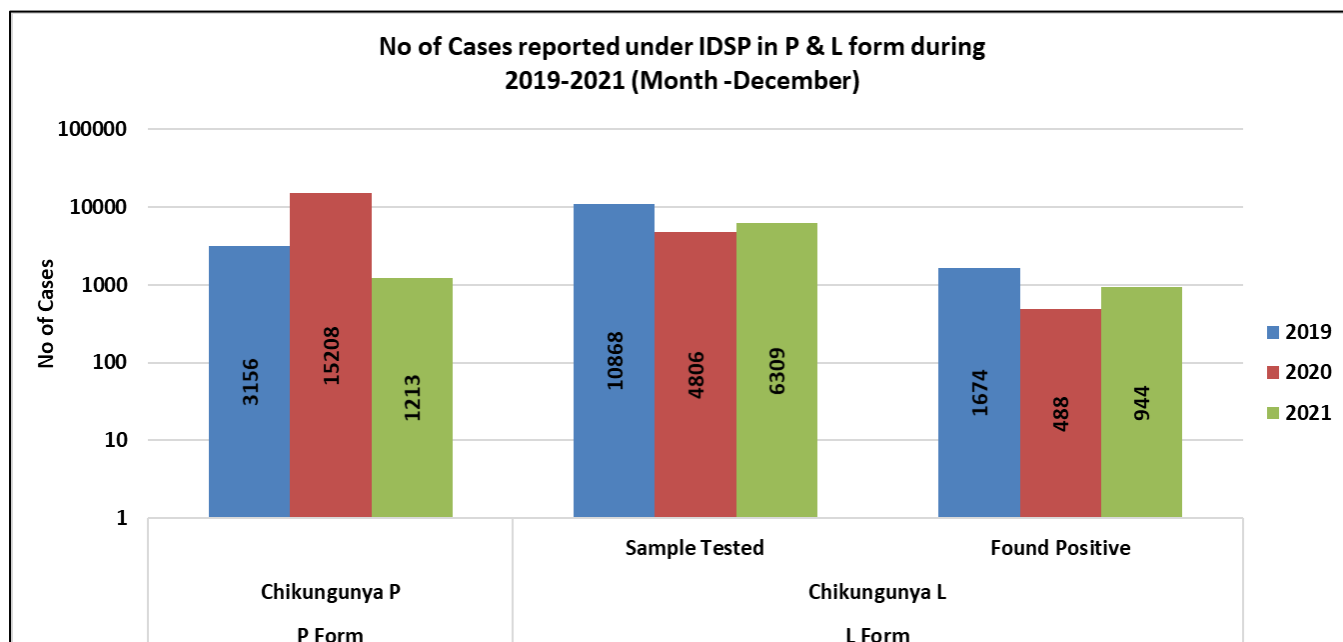


Fig. 23: No. of Chikungunya Cases reported under IDSP in P & L form during December 2019 - 2021



As shown in Fig 23, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 3156 in December 2019; 2040 in December 2020 and 1213 in December 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in December 2019; 10868 samples were tested for Chikungunya, out of which 1674 were found positive. In December 2020; out of 4806 samples, 488 were found to be positive and in December 2021, out of 6309 samples, 944 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 13.7%, 15.4% and 10.15% in December month of 2019, 2020 & 2021 respectively.

Fig. 24: State/UT wise Presumptive Chikungunya cases and outbreaks for December 2021

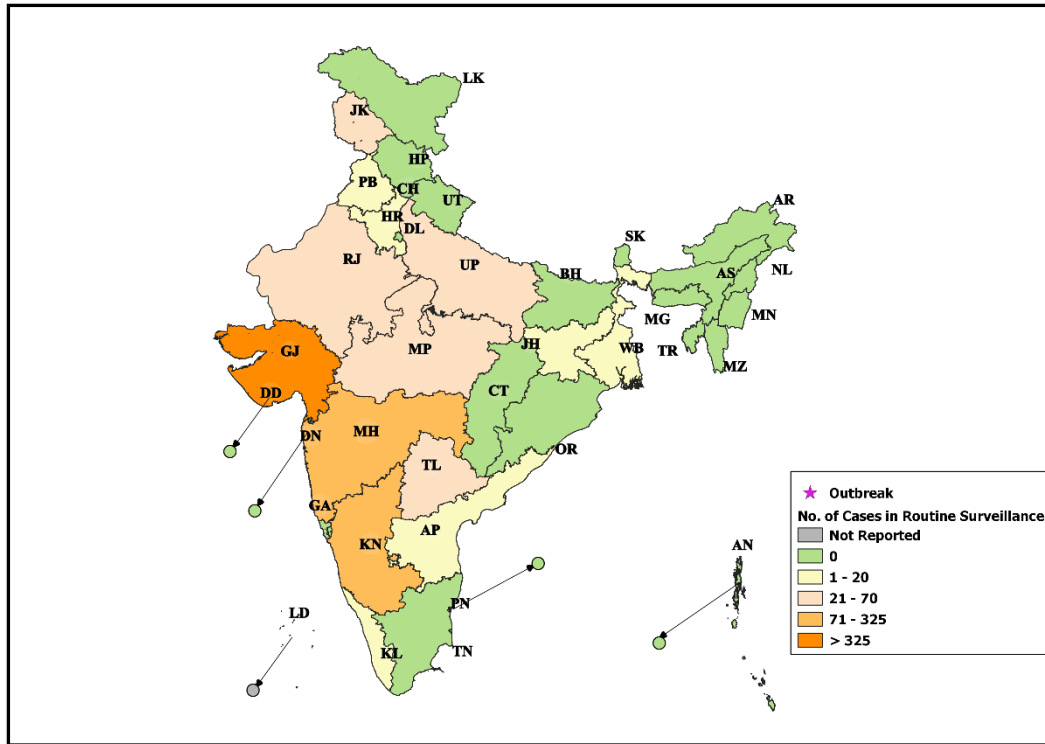


Fig. 25: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for December 2021

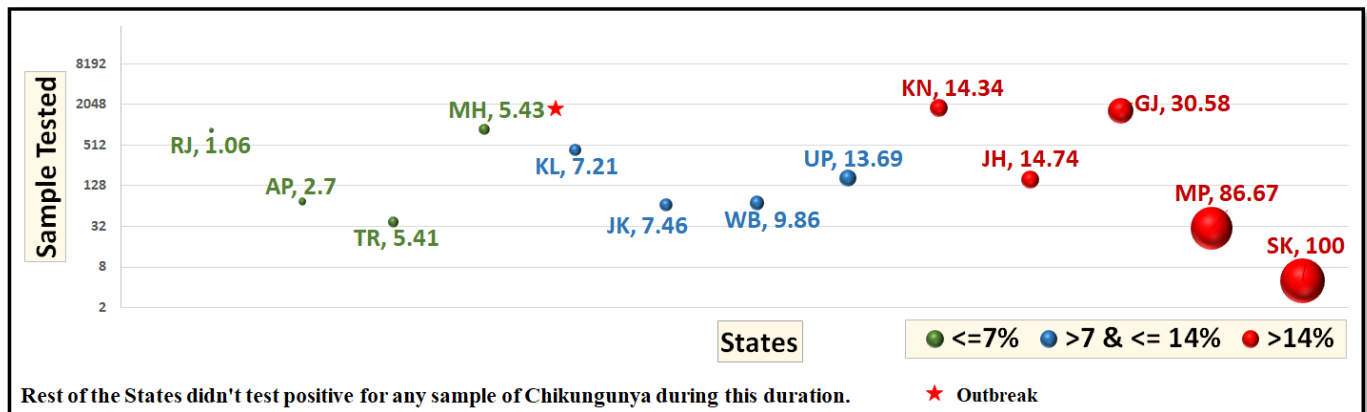
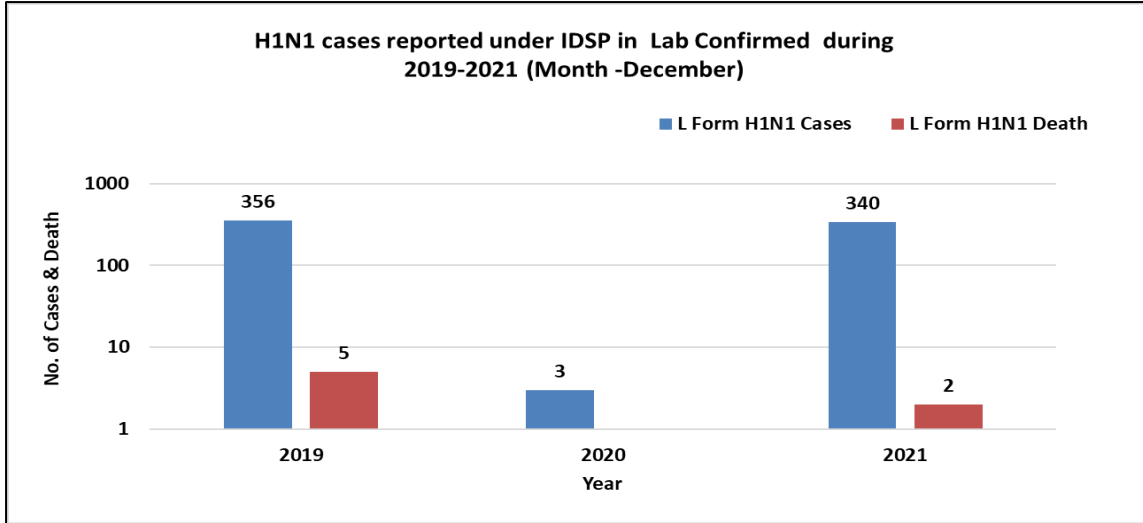


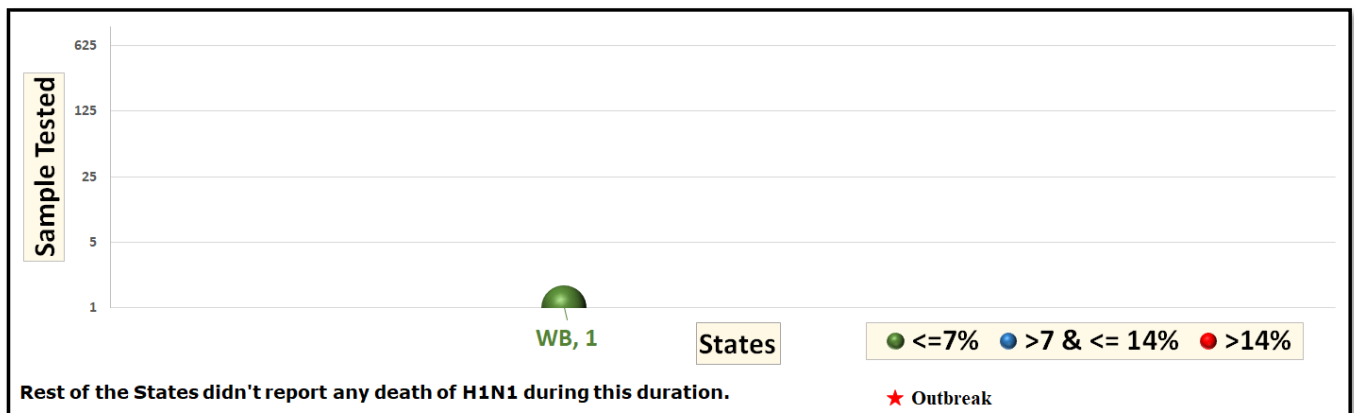
Fig. 26: H1N1 cases reported under IDSP in L Form during 2019-2021 in December 2021



As shown in Fig. 26, as reported in L form, in December 2019, there were 356 cases and 5 deaths. In December 2020, there were 3 cases and 0 deaths; and in December 2021, there were 340 cases and 2 deaths.

Case fatality rate for H1N1 were 1.4%, 0.00% and 0.59 % in December month of 2018, 2019 & 2020 respectively.

Fig. 27: State/UT wise H1N1 cases and outbreaks for December 2021



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.

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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: dircid@nic.in & idsnp@nic.in

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