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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report
From
Integrated Disease Surveillance Programme
National Health Mission

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DENGUE FEVER OUTBREAK INVESTIGATION SHOLAYUR PANCHAYAT, PALAKKAD, KERALA

BACKGROUND

Palakkad is a district in eastern part of Kerala, and shares border with Tamil Nadu. It is quite proximal to the town of Coimbatore in Tamil Nadu. The Sholayur village has population of 7012 as per Population Census 2011. Literacy rate is 71.43 % compared to 94.00 % of Kerala. Therefore, it can be said that in regional context, it has low literacy rate.

Dengue is a mosquito-borne viral disease that has rapidly spread in all regions of SEARO, WHO in the recent years. It is transmitted by female mosquitoes mainly of the species *Aedes aegypti* and, to a lesser extent, *Aedes albopictus*. These mosquitoes are also vectors of Chikungunya, Yellow Fever and Zika. Dengue is widespread throughout the tropics, with local variations in risk influenced by rainfall, temperature, relative humidity and unplanned rapid urbanization.

Dengue is caused by a virus of the Flaviviridae family and there are four distinct, but closely related, serotypes of the virus that cause dengue (DENV-1, DENV-2, DENV-3 and DENV-4).

Fig. 1: Geographical location of Dengue Fever Outbreak, Palakkad



DETAILS OF INVESTIGATION

- In the first week of April 2021, 7 suspected cases of dengue fever were reported from Ward 4, Kulukkur Padi, Sholayur panchayath. Kulukkur Padi is a colony area. Outbreak investigation was conducted on 12.04.2021 with the objectives to identify risk factors and recommend control measures.
- Kulukkur Padi colony is one of the remote hamlets of Attapady forest reserve area with population of 347. This area is characterized by scarcity of water at all times. Residents used to collect the water in big pots like barrels for house hold purposes.
- All cases of Dengue Fever were reported in two neighboring families' single ward of Sholayur panchayath in Attapady. They use water pumped from the Shiruvani dam. The available water is stored and used in cement containers, plastic drums and synthetic tanks in available containers. In the houses where the cases were reported, mosquitoes were found growing without using the water stored for month.
- 01.04 .2021, 6 cases of dengue fever were reported in Govt. Tribal Hospital, Kottathara from the same colony. Among these 6 cases, 3 cases were from the same family of index case and other 3 cases were belongs to another family.
- First case consulted at GTSH Kottathara on 01.04. 2021.Patient had fever since 28.03.2021 and treated at GTSH Kottathara as probable Dengue.
- The second case reported from the same family in 3 members on 10.04.2021 admitted in GTSH Kottathara, and tested Dengue Ns1 card test, the results are positive. Afterwards, ELISA test became confirmed.
- Another 3 cases reported from the same area 10.04.2021 at GTSH, Kottathara. They have been fever since last 2 days. Dengue Elisa test done on 11.04.2021 and confirmed as positive.

Date of Onset of Symptoms	Cases
28.03.2021	1
09.04.2021	1
08.04.2021	1
07.04.2021	1
07.04.2021	1
09.04.2021	1
09.04.2021	1

LABORATORY INVESTIGATIONS

First case found to be Dengue Ns1 Positive at GTSH Kottathara. Following this, out of 6 blood sample collected; 6 samples were positive for Dengue IgM ELISA at GTSH Kottathara.

CONTROL MEASURES

On 12.04.2021 team investigated the outbreak. Fever survey was conducted in 113 households. However, no fever cases were identified. Entomological survey had also been done. Source reduction activity done, 139 containers checked, out of these 52 containers eliminated. 9 houses found positive for *Aedes* larvae, 14 of containers found positive for *Aedes* larvae. ISS, fogging was done in the affected area. Health education was also provided in the area. DVC Unit conducted vector surveillance activity, report attached. Following these intensive & massive source reduction and other control activities conducted daily for one week and then continued the same once in a week for 2-3 weeks. As part of this, the health workers and volunteers including District Vector Control Unit Teams and carried out source reduction and control activities.

POSSIBLE FACTORS THAT CONTRIBUTED TO THE DISEASE

In the area, the community store water in different containers for long period of time for the domestic use. In addition to domestic containers, different discarded containers and tires hold rain water for long period time. This type of water storage practices may be lead to high vector indices.

CURRENT STATUS

Last case reported on 10.04.2021. No new cases have been reported after this. Frequent source reduction has been done at the hamlet area.

RESULTS

- Every Dengue endemic states should be make reporting of dengue cases to the government mandatory.
- Electronic reporting systems should be developed and used.
- At minimum dengue surveillance data should include incidence, hospitalization rates, deaths by age group.
- Tests that identify dengue virus should be used in patients with fever for four days or less and antibody tests should be used after day 4 to diagnose dengue; and
- Early detection and prediction of dengue outbreaks should be goals for national surveillance systems

Source Reduction Activities Conducted



POSSIBLE FACTORS THAT CONTRIBUTED TO THE DISEASE

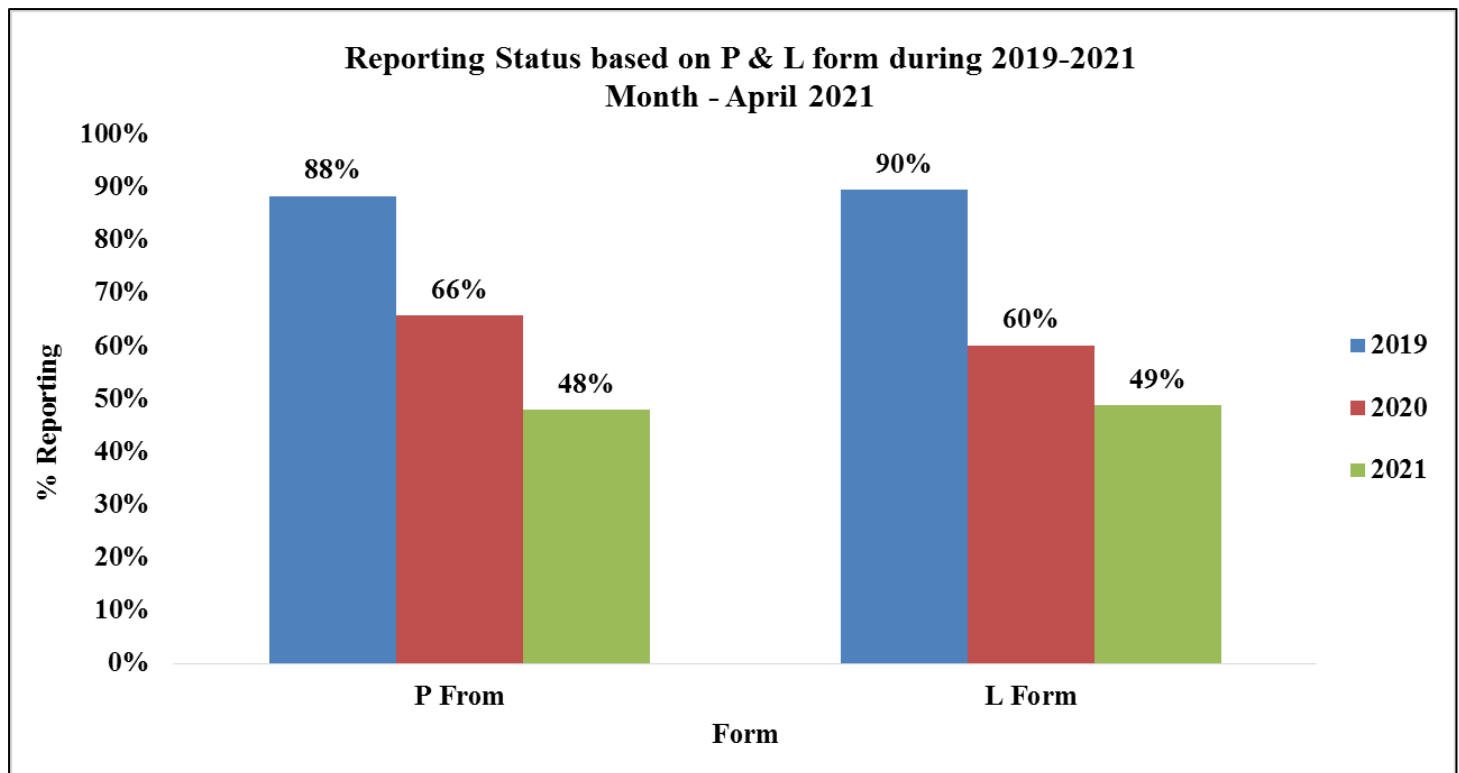
High indices shows the patients might have got infection due to unprotected daily activities.

CONCLUSION & RECOMMENDATIONS

The area belongs to High risk. Intensive & massive source reduction and other control activities may be planed daily for one week and then continue the same once in a week for 2-3 weeks.

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

Fig. 2: RU-wise reporting based on P & L forms during April 2021



As shown in Fig. 2, in April 2019, 2020 and 2021, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 88%, 66% and 48% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 90%, 60% and 49% 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 April 2021 compared to the same month in previous years for both P and L forms, thereby compromising on the quality of surveillance data.

Fig. 3: State/UT wise P form completeness % for April 2021

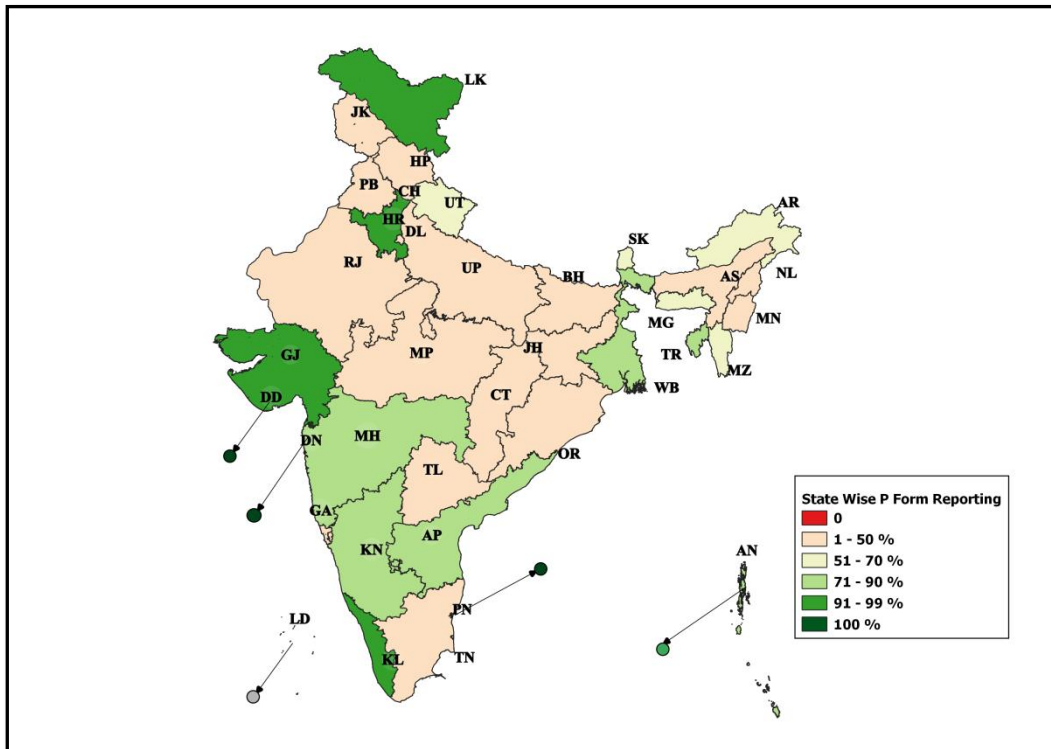


Fig. 4: State/UT wise L form completeness % for April 2021

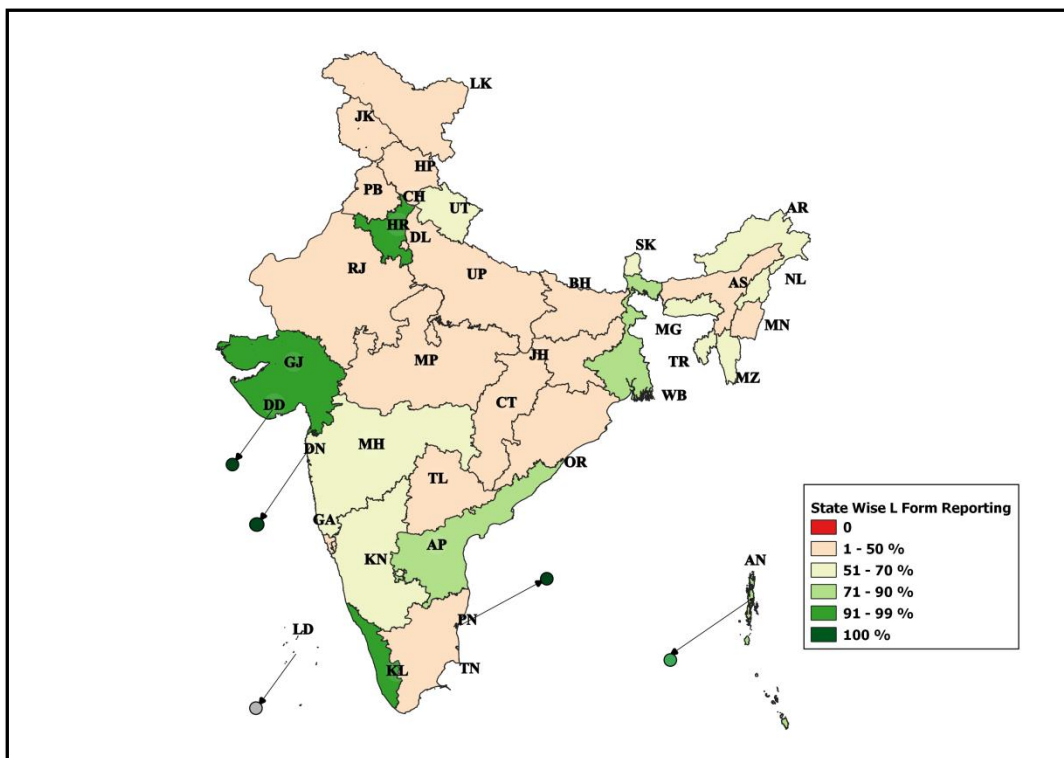
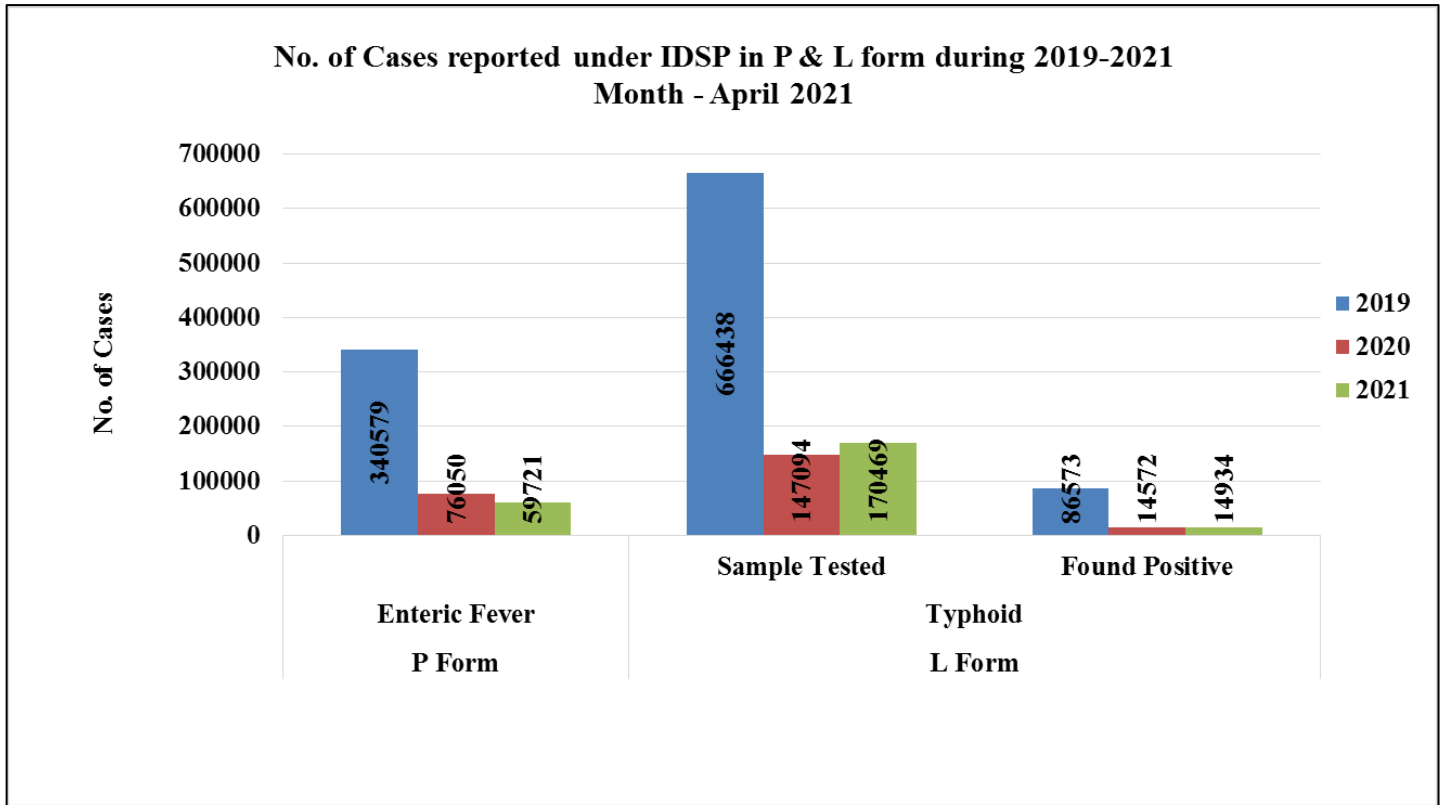


Fig. 5: No. of Enteric Fever Cases reported under P & L form during April 2019 - 2021



As shown in Fig. 5, number of presumptive enteric fever cases, as reported by States/UTs in ‘P’ form was 340579 in April 2019; 76050 in April 2020 and 59721 in April 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2019; 666438 samples were tested for Typhoid, out of which 86573 were found positive. In April 2020; out of 147094 samples, 14572 were found to be positive and in April 2021, out of 170469 samples, 14934 were found to be positive.

Sample positivity has been 12.99%, 9.91% and 8.76% in April 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. 6: State/UT wise Presumptive Enteric fever cases & outbreaks for April 2021

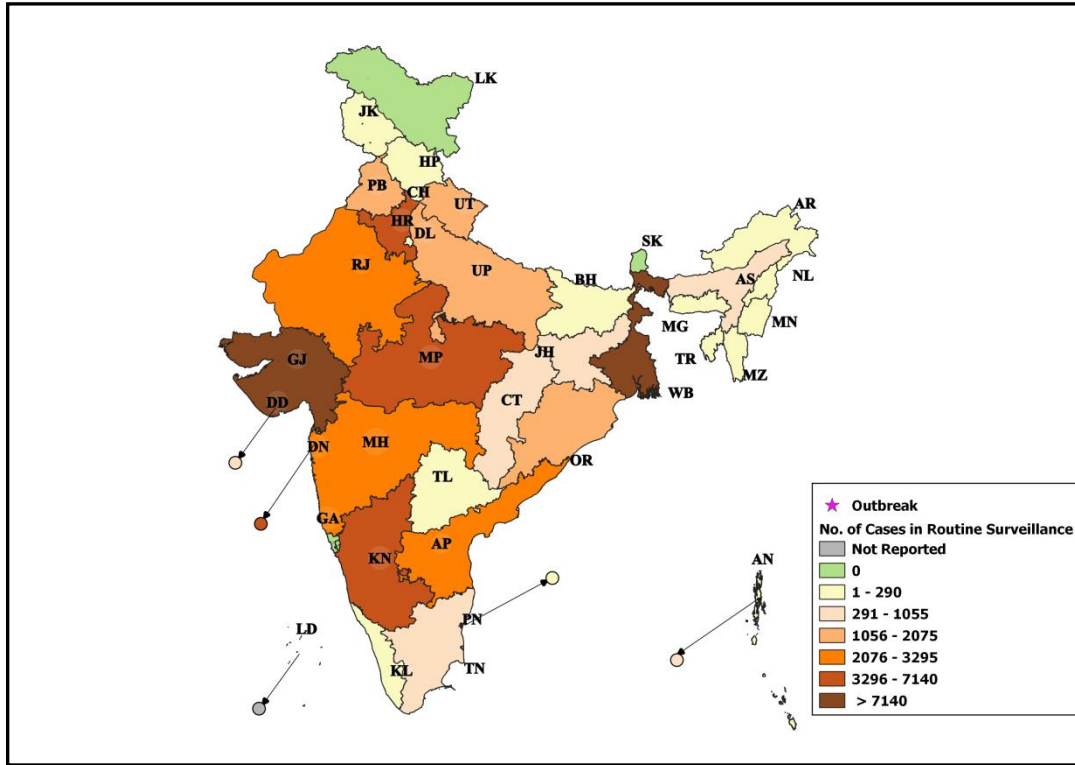


Fig. 7: State/UT wise Lab Confirmed Typhoid cases and outbreaks for April 2021

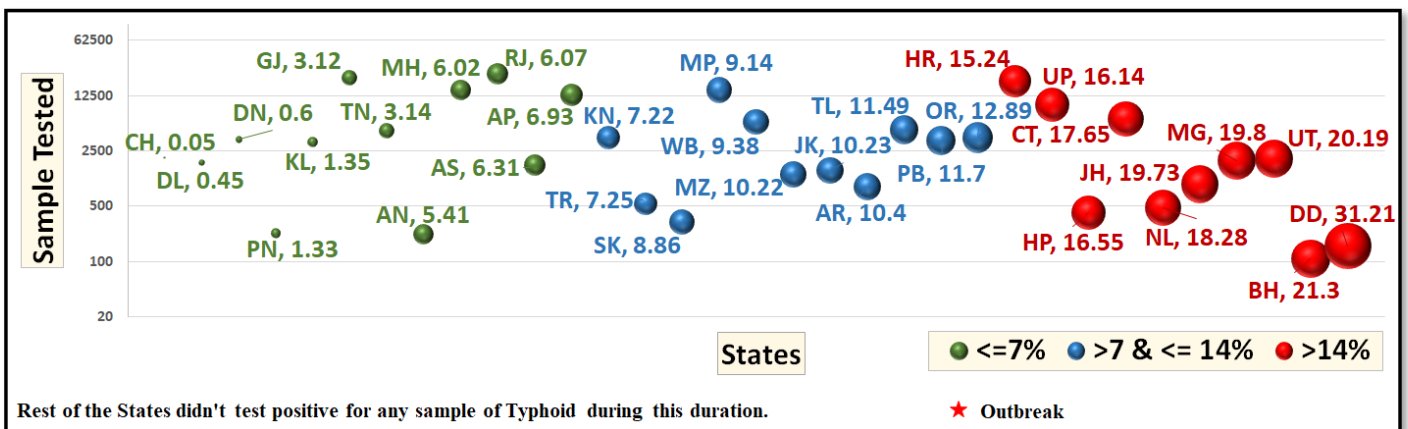
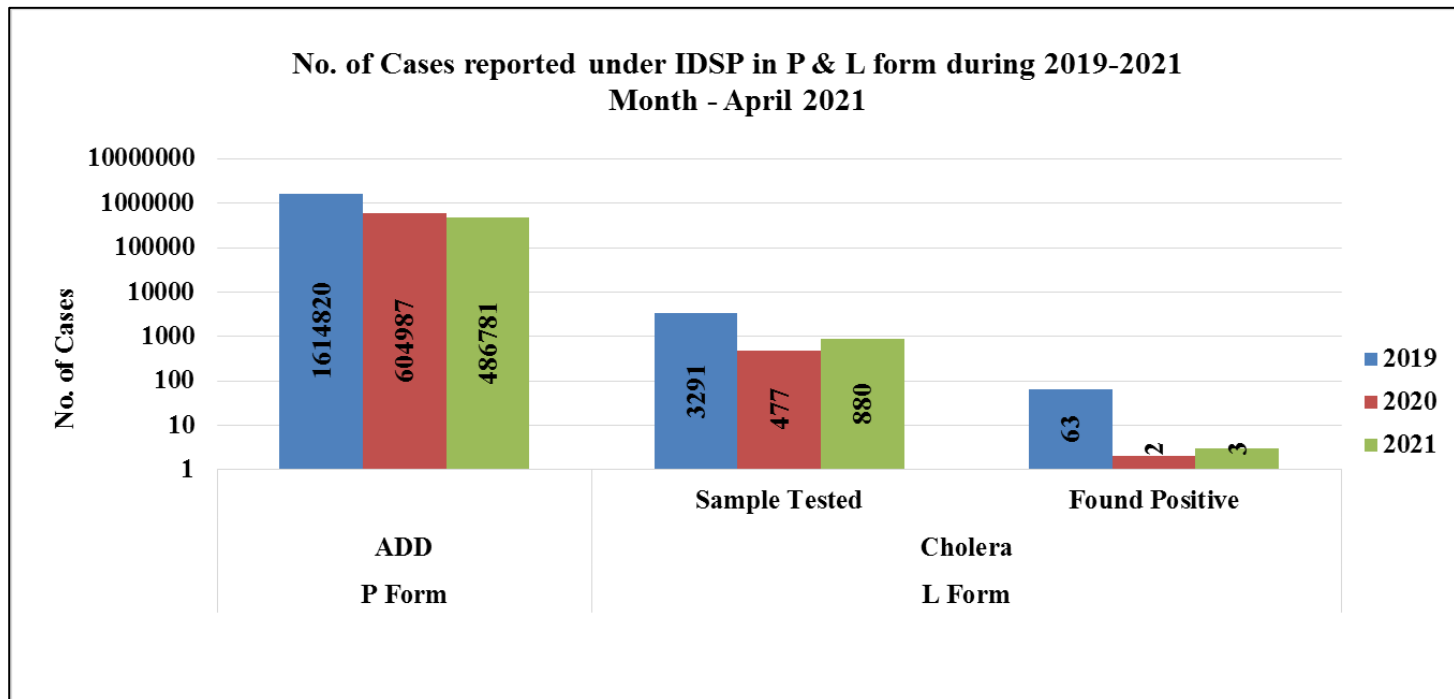


Fig. 8: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during April 2019 - 2021



As shown in Fig. 8, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1614820 in April 2019; 604987 in April 2020 and 486781 in April 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2019, 3291 samples were tested for Cholera out of which 63 tested positive; in April 2020, out of 477 samples, 2 tested positive for Cholera and in April 2021, out of 880 samples, 3 tested positive.

Sample positivity of samples tested for Cholera has been 1.91%, 0.42% and 0.34% in April month of 2019, 2020 & 2021 respectively.

Fig. 9: State/UT wise Presumptive ADD cases and outbreaks for April 2021

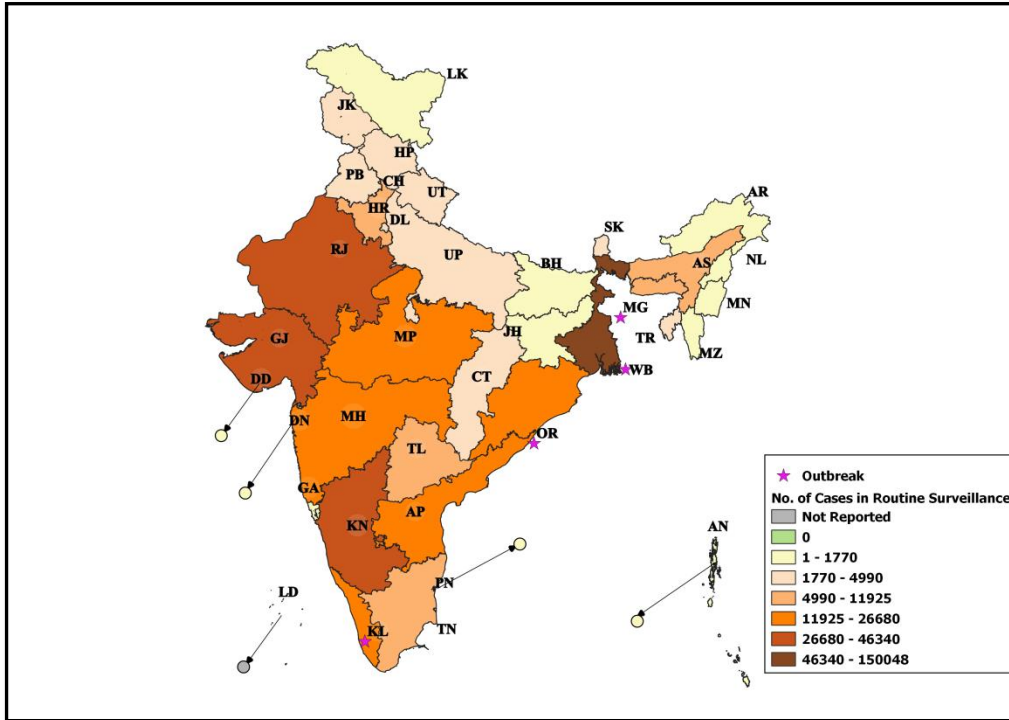


Fig. 10: State/UT wise Lab Confirmed Cholera cases and outbreaks for April 2021

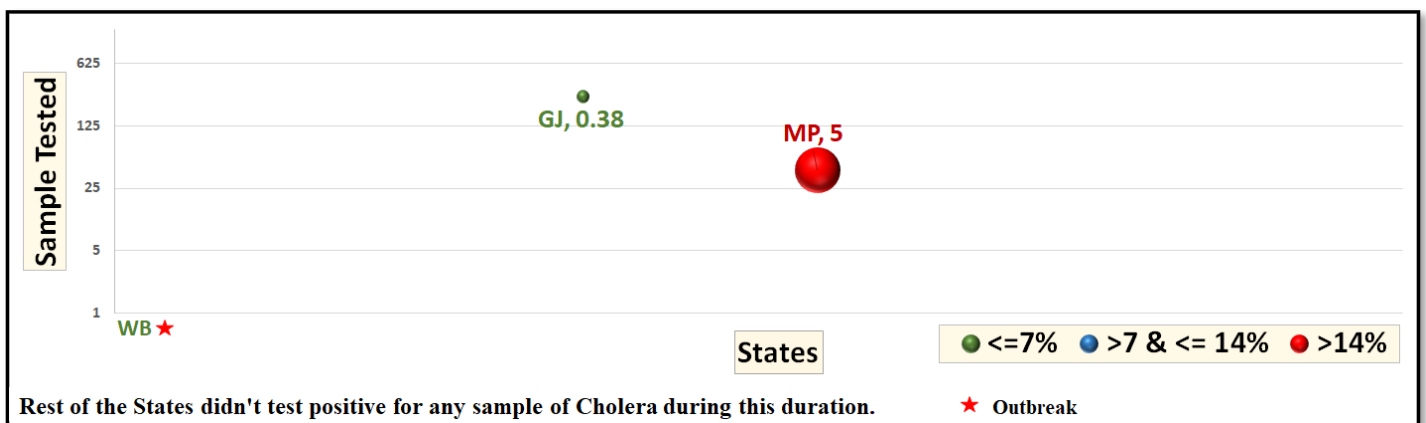
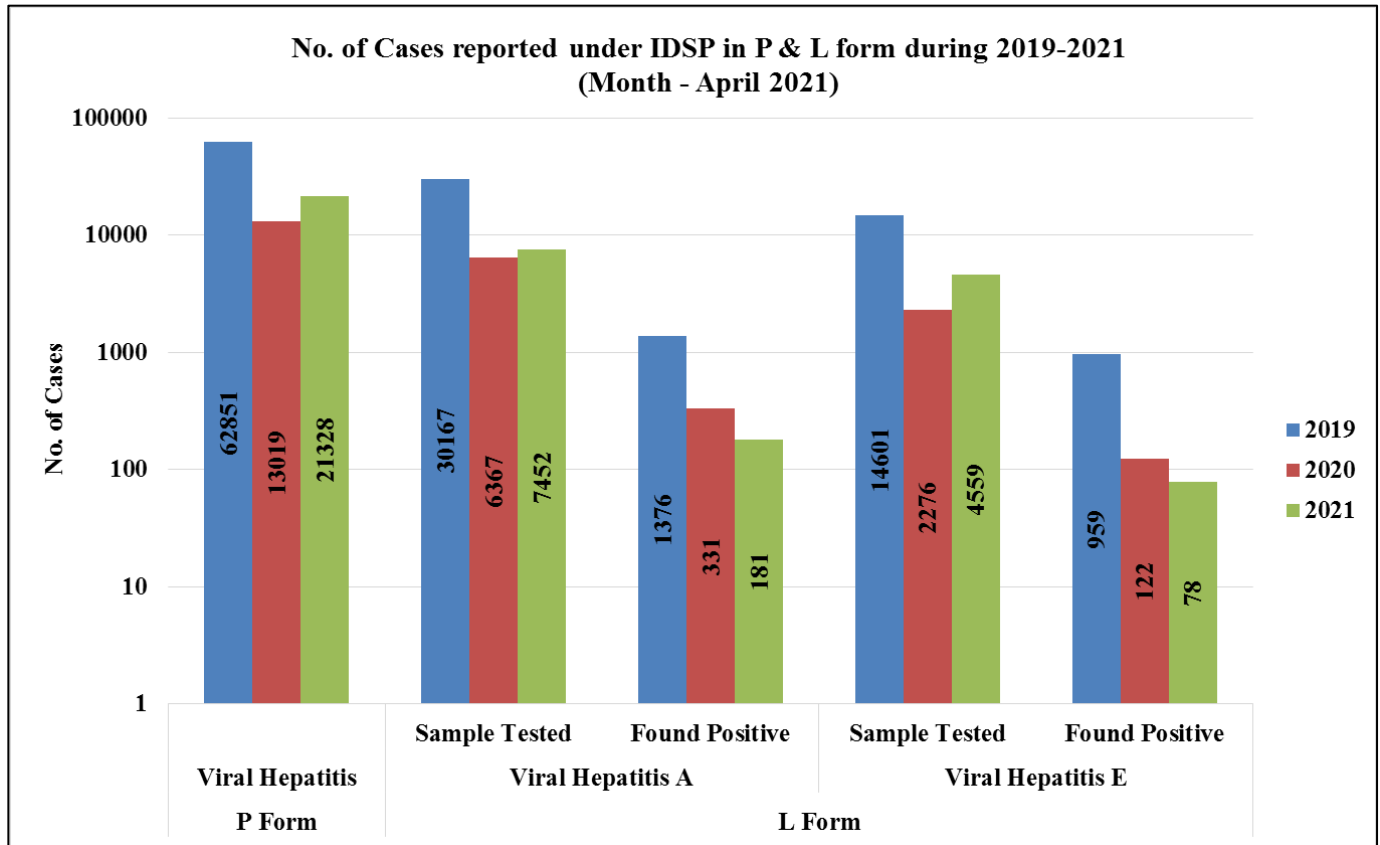


Fig. 11: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during April 2019 - 2021



As shown in Fig. 11, the number of presumptive Viral Hepatitis cases was 63851 in April 2019, 13019 in April 2020 and 21328 in April 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 April 2019; 30167 samples were tested out of which 1376 were found positive. In April 2020 out of 6367 samples, 331 were found to be positive and in April 2021, out of 7452 samples, 181 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 4.56%, 5.20% and 2.43% in April month of 2019, 2020 & 2021 respectively.

As reported in L form for Viral Hepatitis E, in April 2019; 14601 samples were tested out of which 959 were found positive. In April 2020; out of 2276 samples, 122 were found to be positive and in April 2021, out of 4559 samples, 78 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 6.57%, 5.36% and 1.71% in April month of 2019, 2020 & 2021 respectively.

Fig. 12: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for April 2021

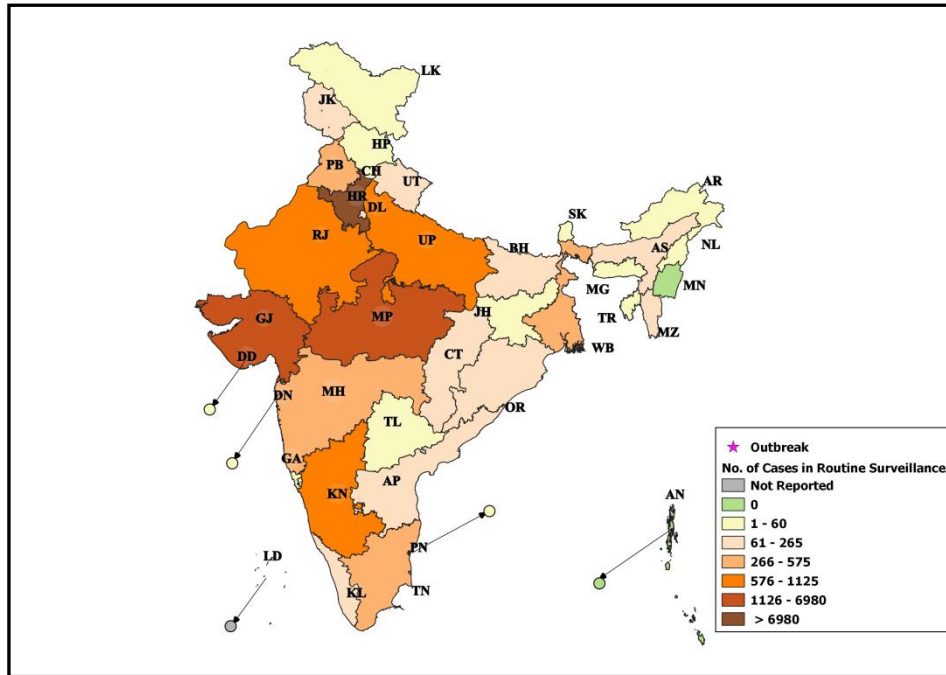


Fig. 13: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for April 2021

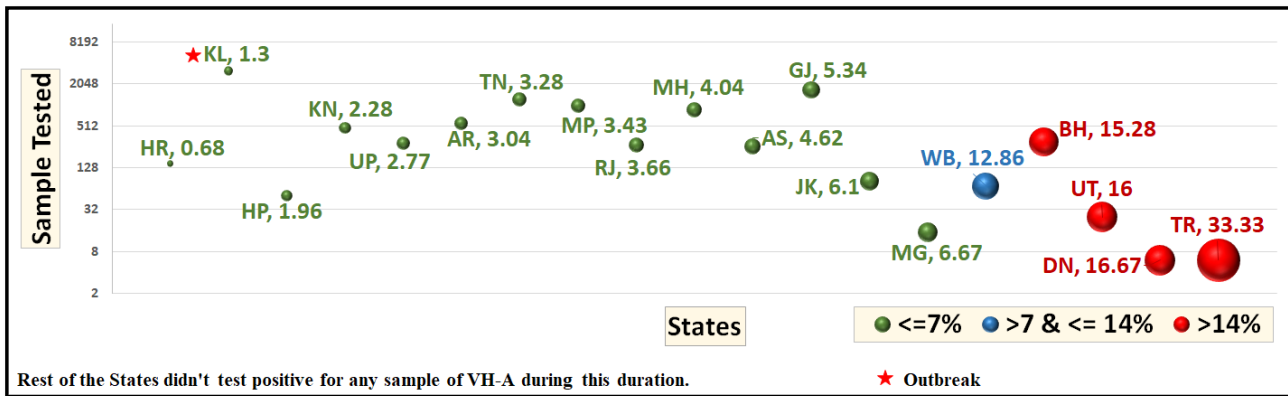


Fig. 14: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for April 2021

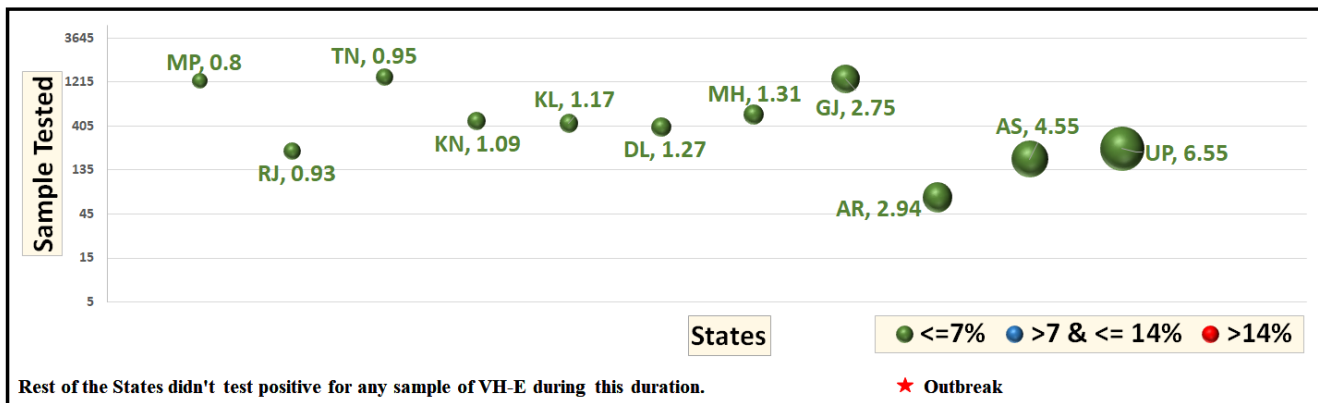
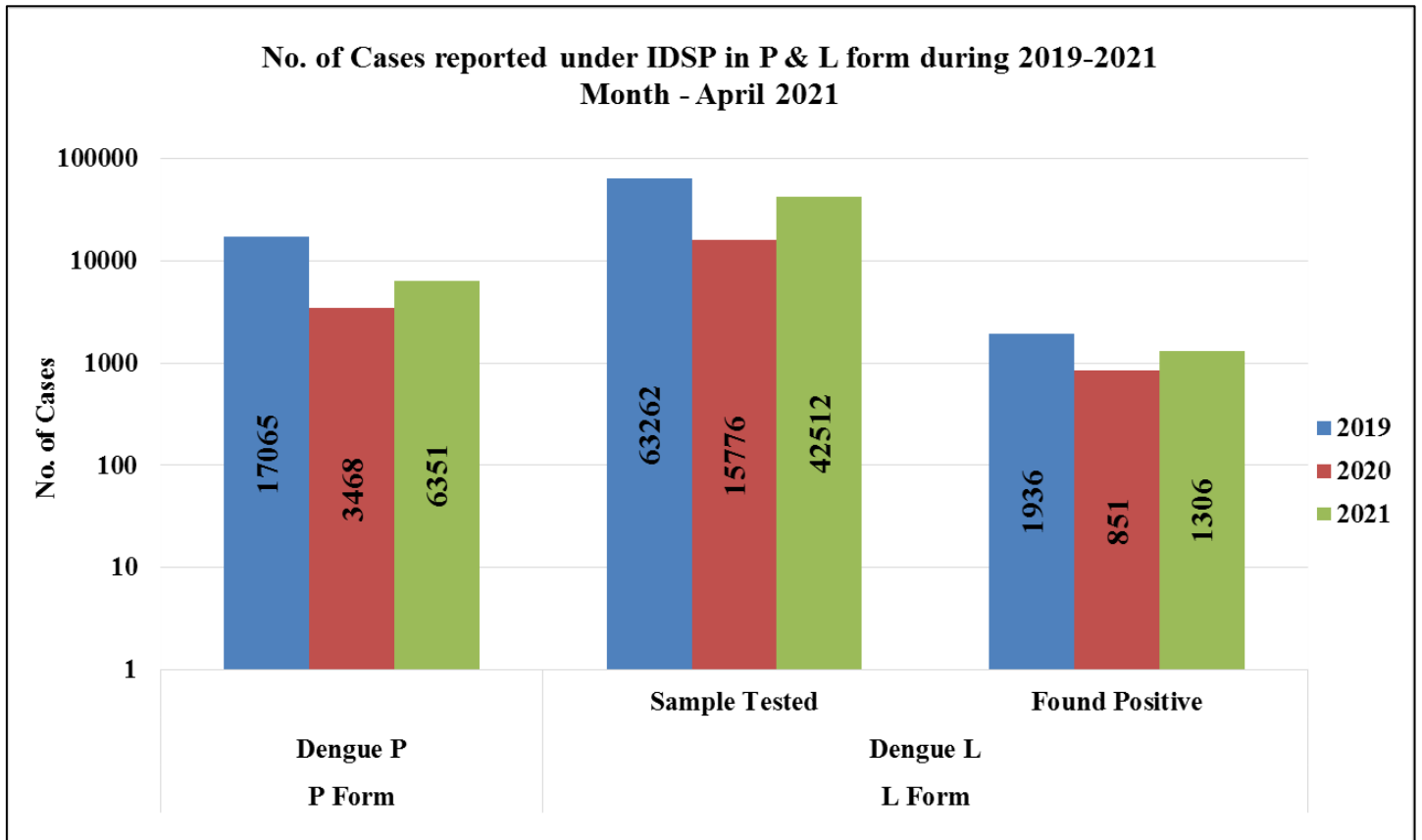


Fig. 15: No. of Dengue cases reported under IDSP in P & L form during April 2021



As shown in Fig. 15, number of presumptive Dengue cases, number of presumptive Dengue cases, as reported by States/UTs in ‘P’ form was 17065 in April 2019; 3468 in April 2020 and 6351 in April 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2019; 63262 samples were tested for Dengue, out of which 1936 were found positive. In April 2020; out of 15776 samples, 851 were found to be positive and in April 2021, out of 42512 samples, 1306 were found to be positive.

Sample positivity of samples tested for Dengue has been 3.06%, 5.39% and 3.07% in April month of 2019, 2020 & 2021 respectively.

Fig. 16: State/UT wise Lab Confirmed Dengue cases and outbreaks for April 2021

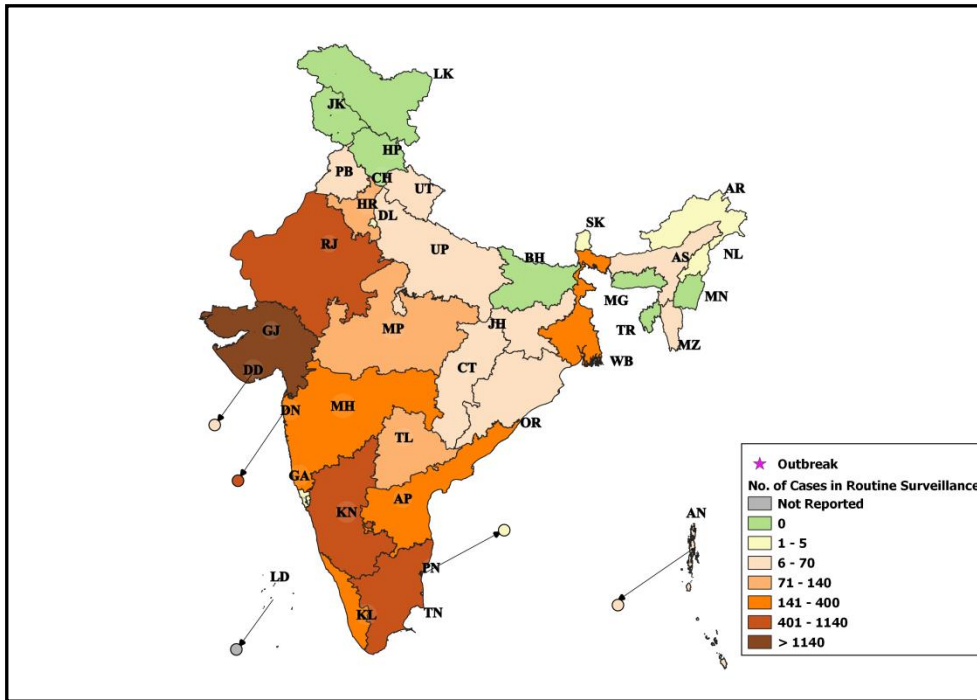


Fig. 17: State/UT wise Presumptive Dengue cases and outbreaks for April 2021

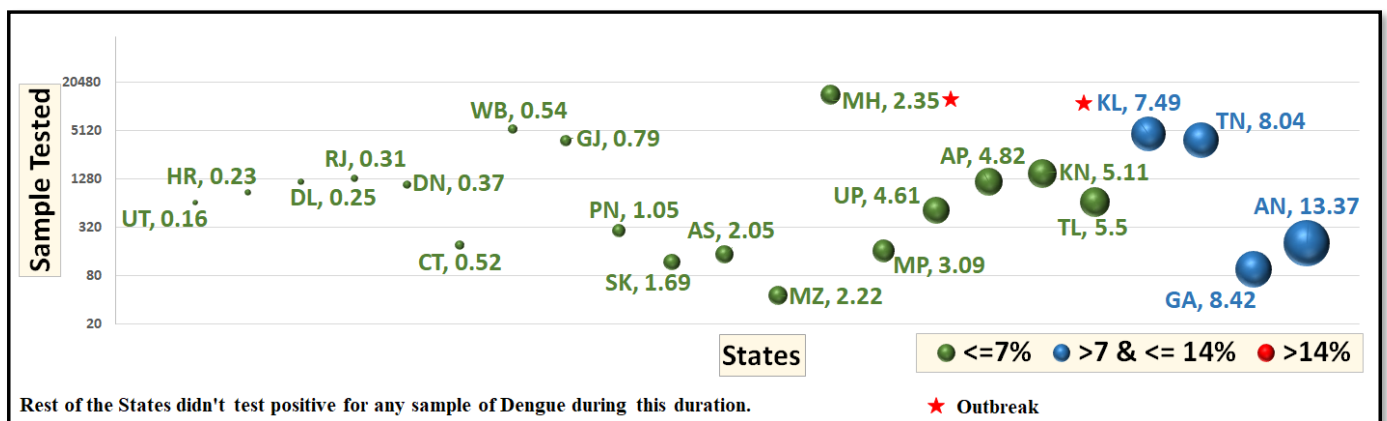
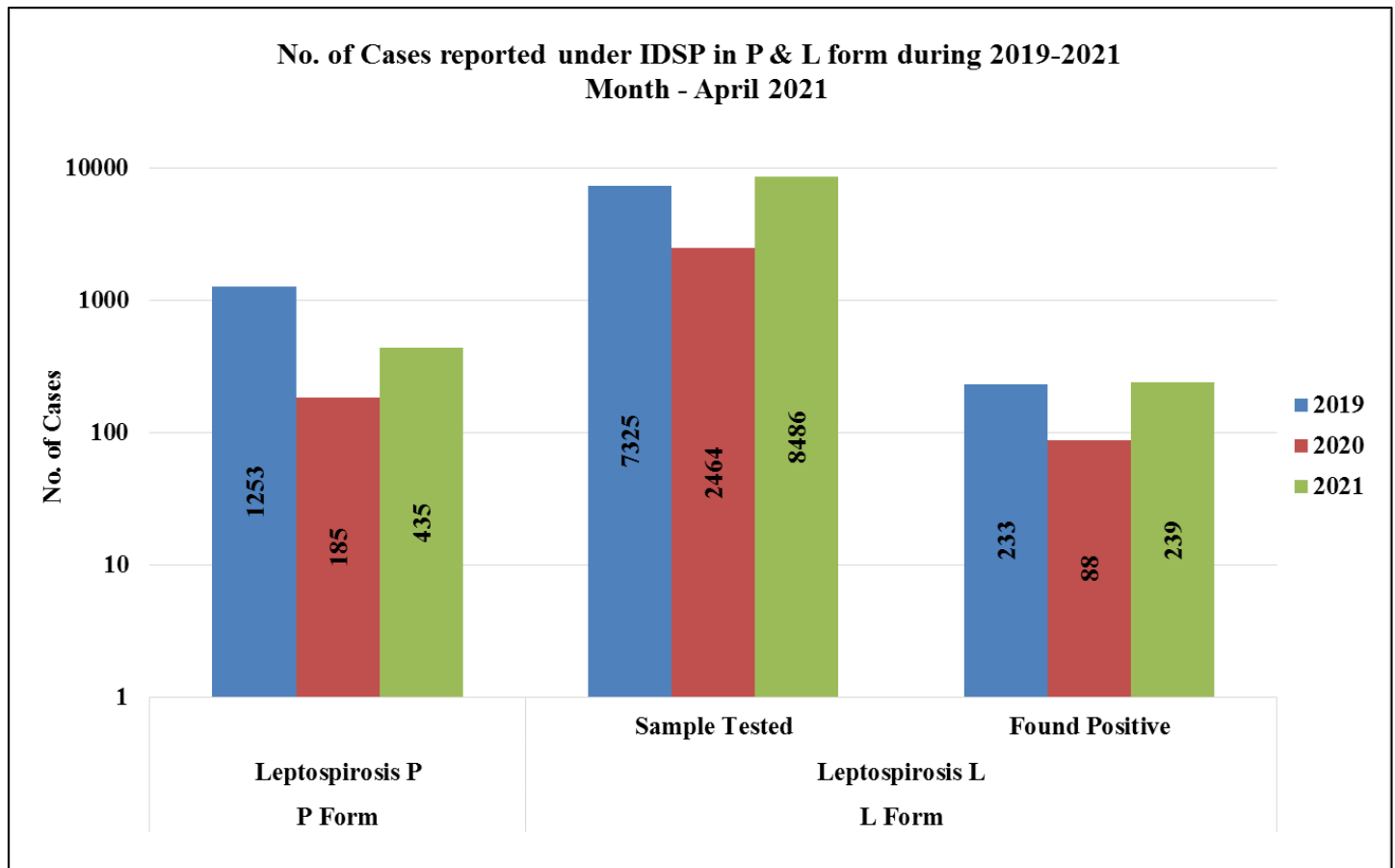


Fig. 18: No. of Leptospirosis Cases reported under IDSP in P & L form during April 2019 - 2021



As shown in Fig. 18, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1253 in April 2019; 185 in April 2020 and 435 in April 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2019; 7325 samples were tested for Leptospirosis, out of which 233 were found positive. In April 2020; out of 2464 samples, 88 were found to be positive and in April 2021, out of 8486 samples, 239 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 3.18%, 3.57% and 2.82% in April month of 2019, 2020 & 2021 respectively.

Fig. 19: State/UT wise Presumptive Leptospirosis cases and outbreaks for April 2021

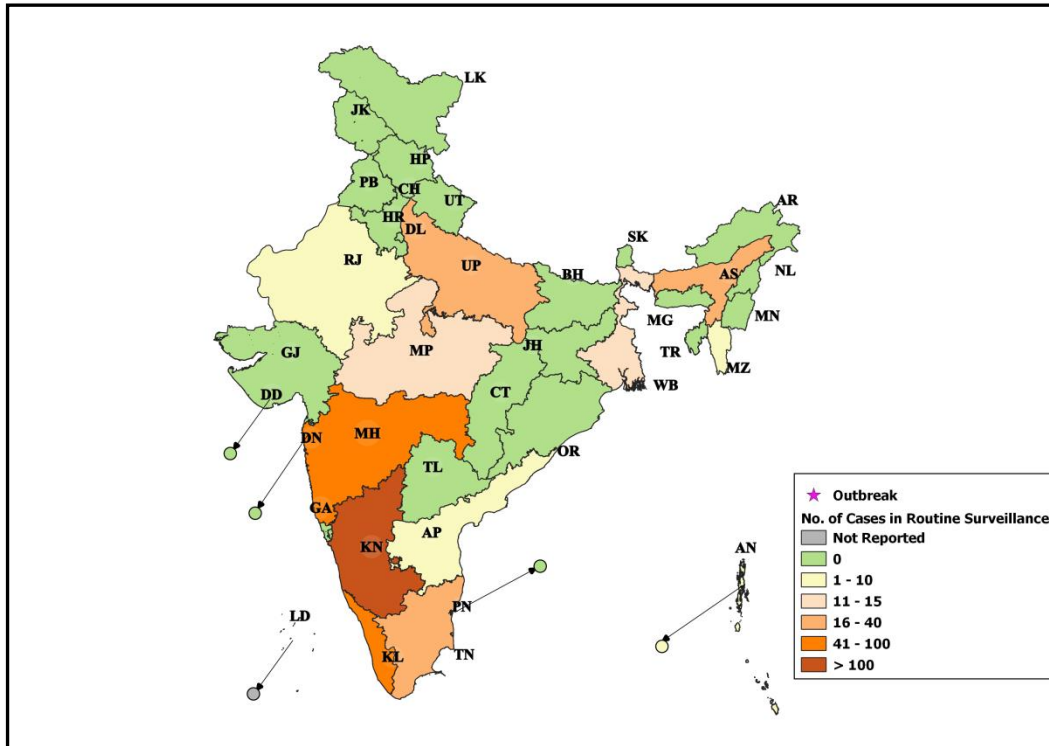


Fig. 20: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for April 2021

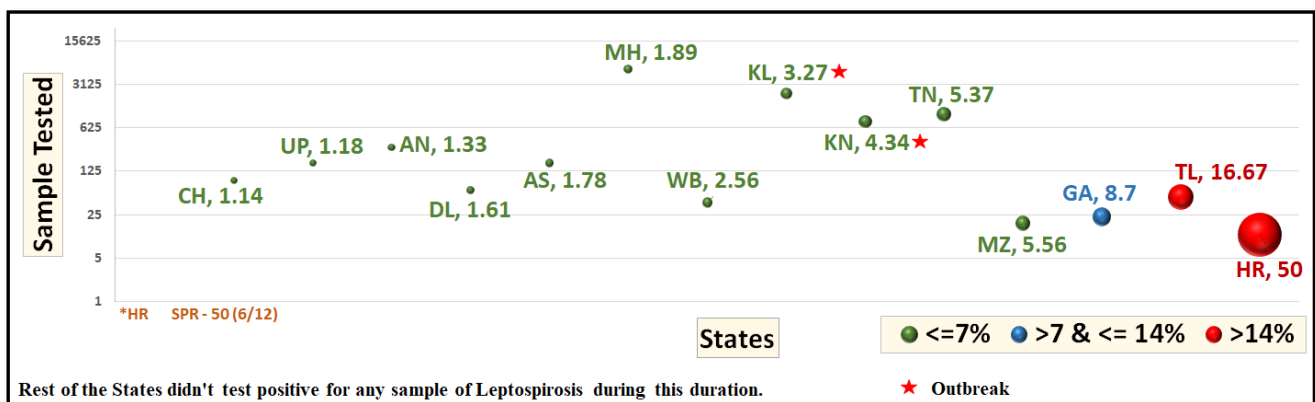
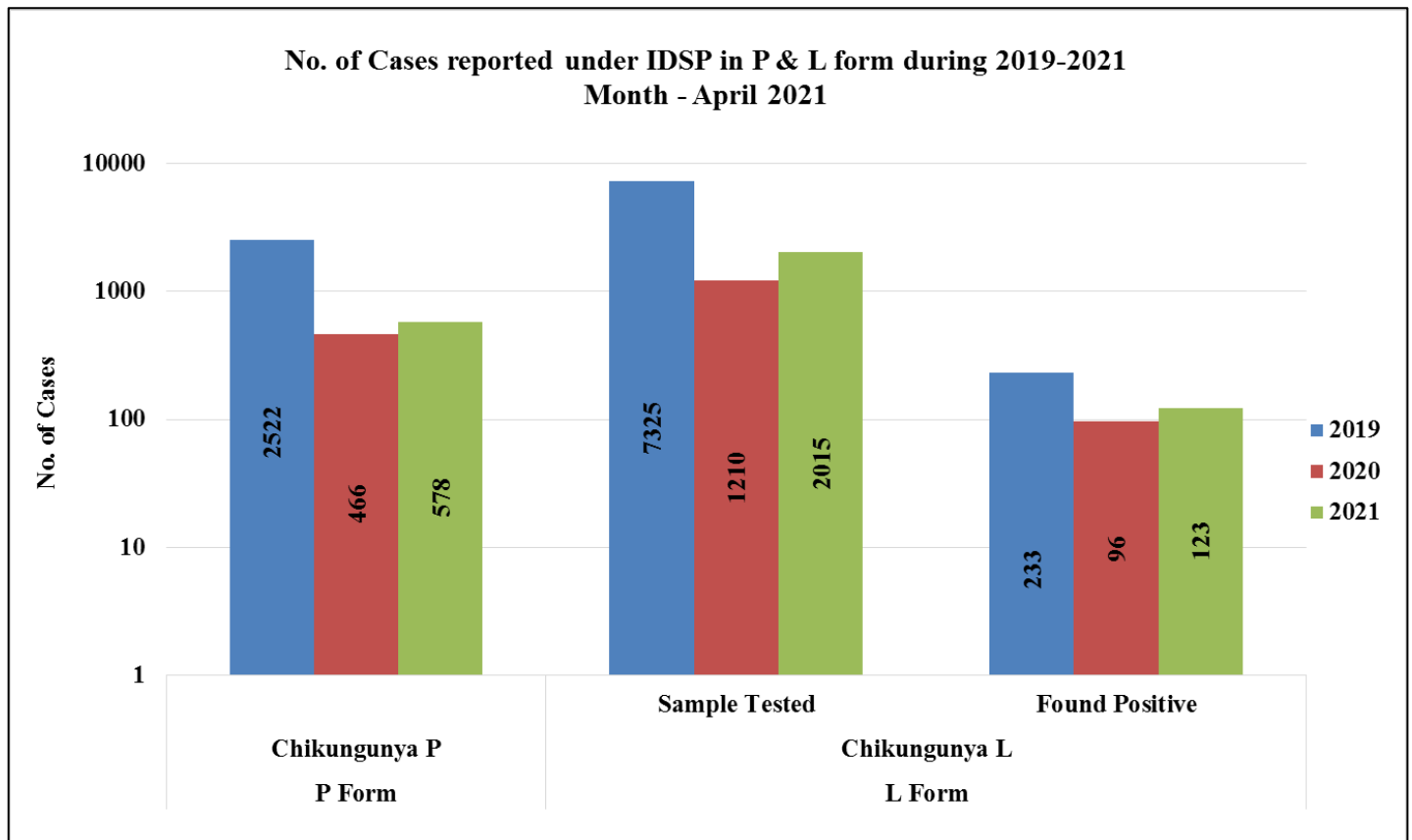


Fig. 21: No. of Chikungunya Cases reported under IDSP in P & L form during April 2019 - 2021



As shown in Fig. 21, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 2522 in April 2019; 466 in April 2020 and 578 in April 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2019; 7325 samples were tested for Chikungunya, out of which 233 were found positive. In April 2020; out of 1210 samples, 96 were found to be positive and in April 2021, out of 2015 samples, 123 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 3.18%, 7.93% and 6.10% in April month of 2019, 2020 & 2021 respectively.

Fig. 22: State/UT wise Presumptive Chikungunya cases and outbreaks for April 2021

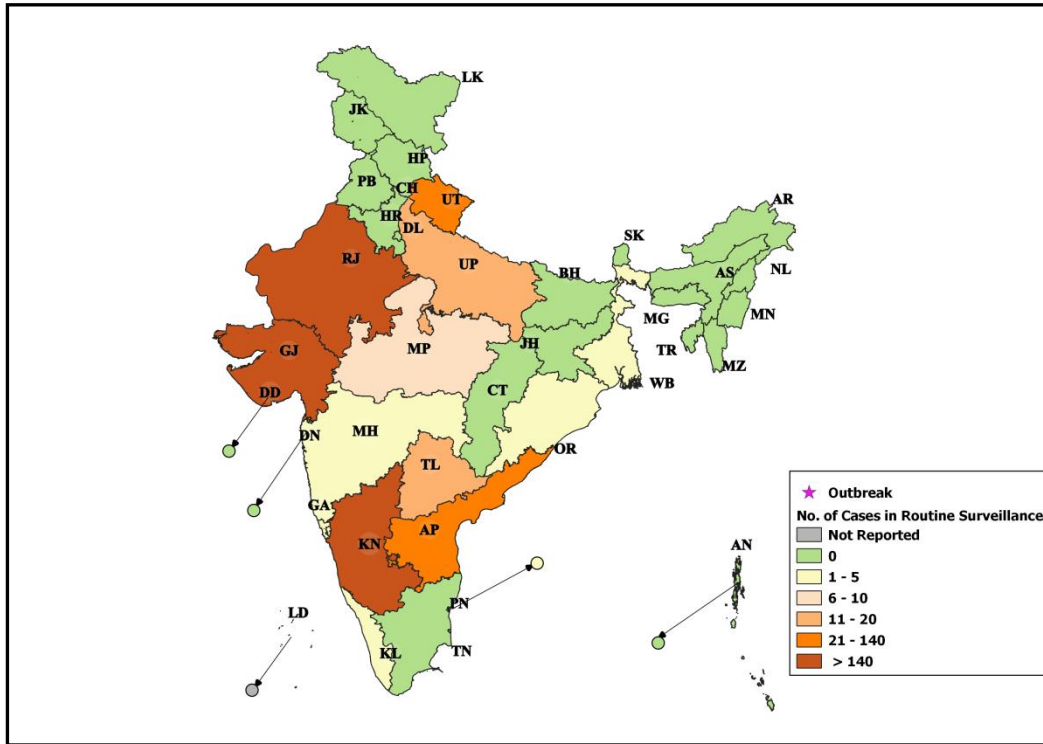


Fig. 23: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for April 2021

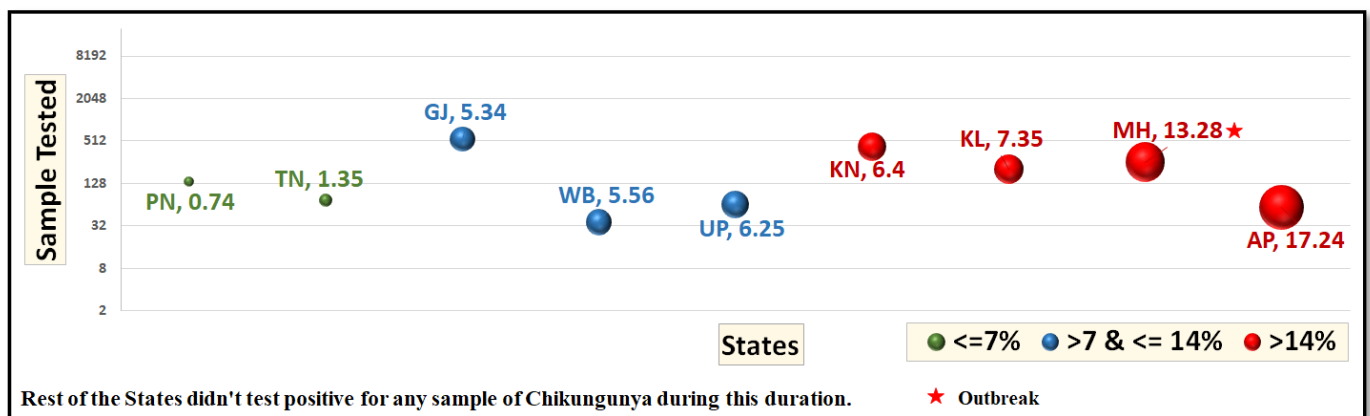
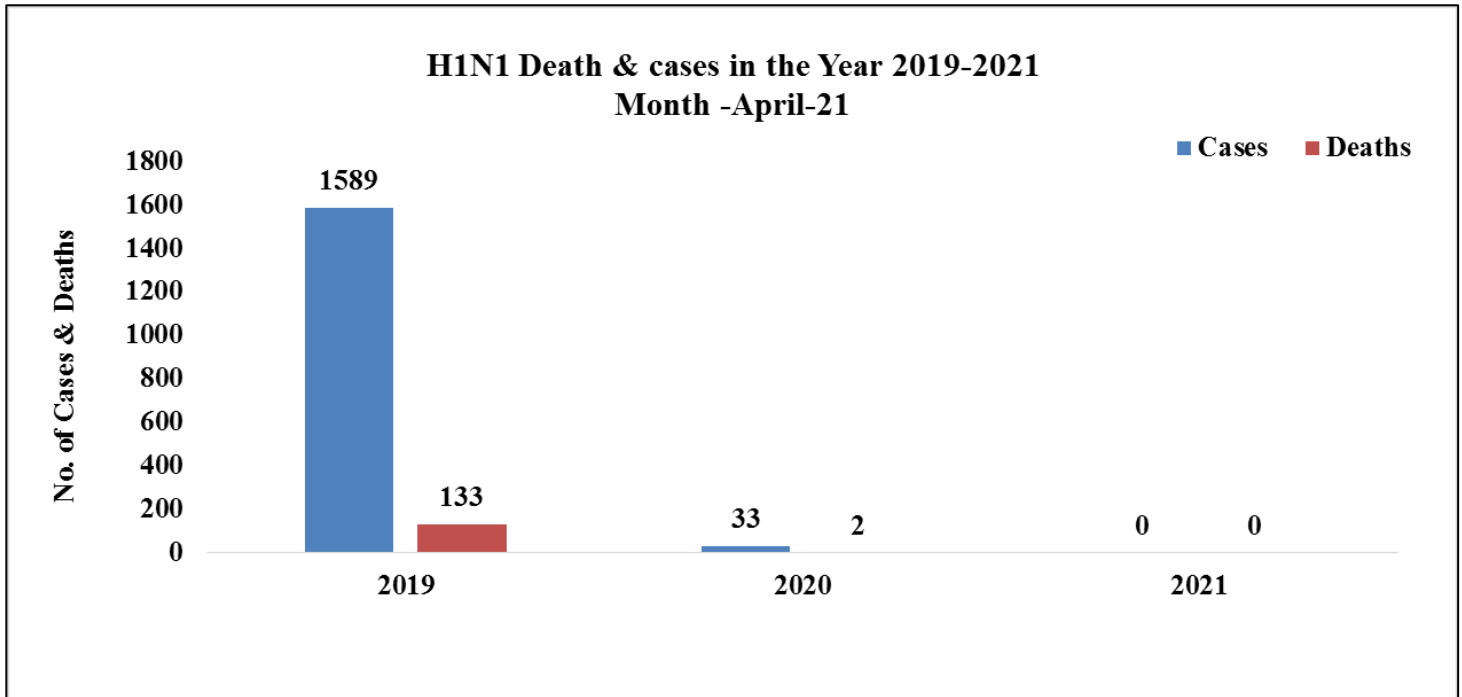


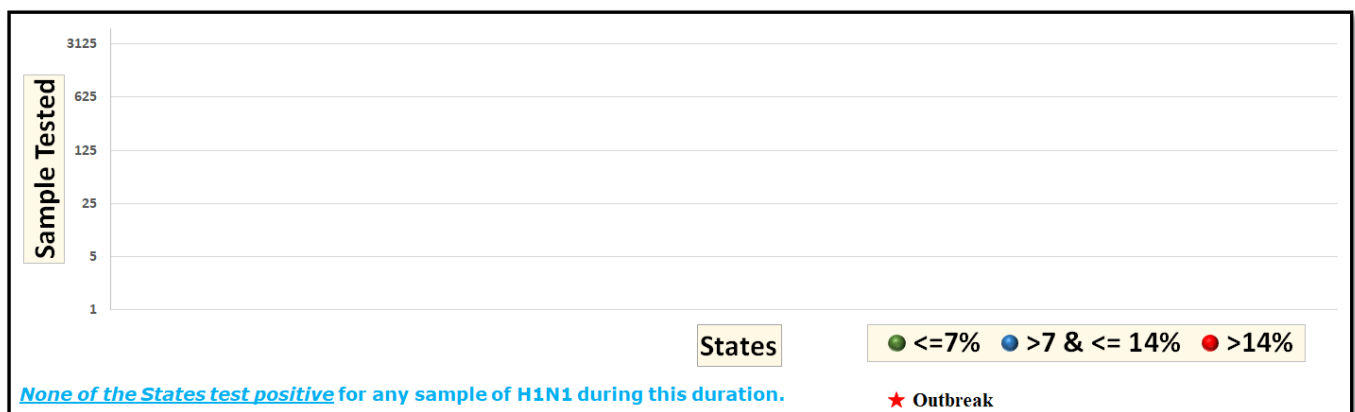
Fig. 24: H1N1 cases reported under IDSP in L Form during 2019-2021 in April 2021



As shown in Fig. 24, as reported in L form, in April 2019, there were 1589 cases and 133 deaths. In April 2020, there were 33 cases and 2 deaths; and in April 2021, there were 0 cases and 0 deaths.

Case fatality rates for H1N1 were 8.37%, 6.06% and 0.00% in April month of 2018, 2019 & 2020 respectively.

Fig. 25: State/UT wise H1N1 cases and outbreaks for April 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: dinricd@nic.in & idsp-npo@nic.in

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