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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report
From
Integrated Disease Surveillance Programme
National Health Mission

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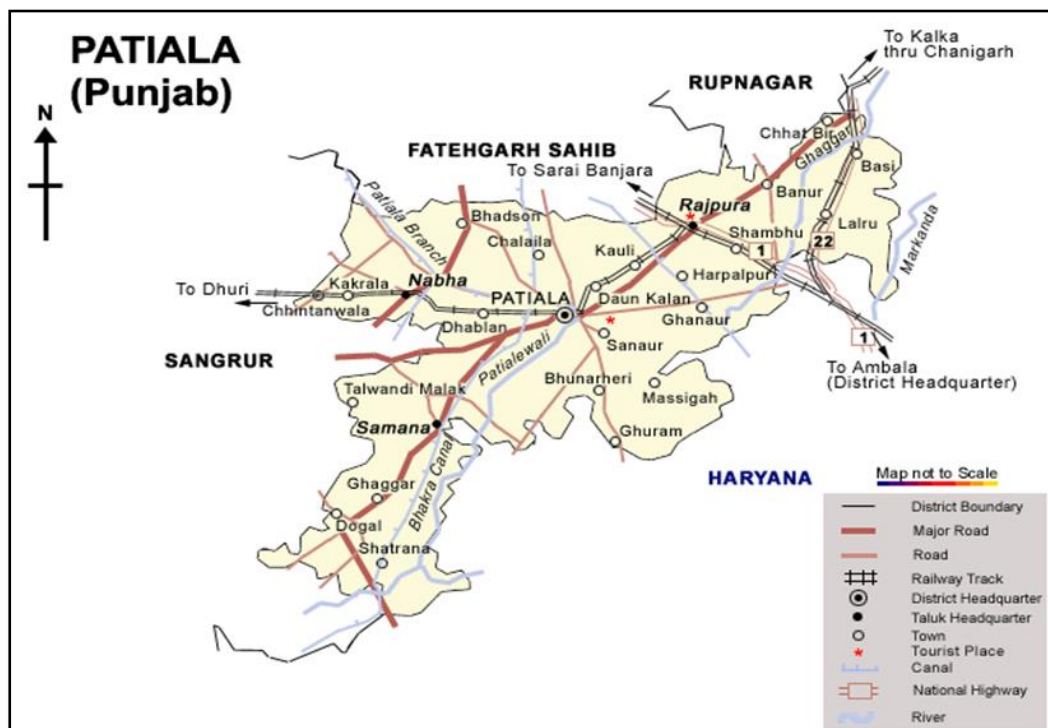
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ACUTE DIARRHOEAL DISEASE OUTBREAK INVESTIGATION
RAJPURA TOWN, PATIALA DISTRICT, PUNJAB

BACKGROUND:

Rajpura is a Municipal Council city in district of Patiala, Punjab. The Rajpura city is divided into 25 wards. The Rajpura Municipal Council has population of 92,301 of which 48,340 are males while 43,961 are females as per report released by Census of India in 2011.



Diarrhoea is a leading cause of illness and death among children in developing countries, where an estimated 1.3 thousand million episodes and 4 million deaths occur each year in under-fives. About 80% of deaths due to diarrhoea occur in the first two years of life. The main cause of death from acute diarrhoea is dehydration, which results from the loss of fluid and electrolytes in diarrheal stools.

Diarrhoea is defined as the passage of three or more loose or watery stools in a 24-hour period, a loose stool being one that would take the shape of a container. The most important causes of acute watery diarrhoea in developing countries are Rotavirus, Enterotoxigenic *Escherichia Coli*, and Shigella. In some

areas, *Vibrio Cholerae* and Salmonella are also important causes. The infectious agents that cause diarrhoea are usually spread by the faecal-oral route, which includes the ingestion of fecal contaminated water or food, person-to-person transmission, and direct contact with infected faeces.

DETAILS OF INVESTIGATION:

Fourteen cases of loose stools / vomiting were reported from Star Enclave, Narnol Colony, Focal Point Rajpura area of Patiala district by SMO of civil hospital Rajpura to district surveillance unit (DSU) on 18th January' 2021 through telephone.

On hearing the news, District Rapid Response Team (RRT) supervised by District Epidemiologist rushed to site and started investigations. House-to-house survey was started. In addition, medical camp was established in gurudwara sahib for managing diarrhoea cases.

During house-to-house visits residents were advised to use boiled and chlorinated water for drinking /cooking purpose and to maintain hand hygiene before eating anything.

House to house teams included MPHWS and ASHAs. IEC activities were done and Chlorine pellets were distributed by teams in the affected area. The water supply to the colony was stopped immediately and alternate water supply was arranged. SDO and J.E. from water supply department & sewerage board were informed about checking of leakage in water and sewerage pipelines in area.

Fig. 1: Photos of the outbreak site



Stool samples and 5 water samples were taken. Stool Samples were sent to IDSP Lab, MKH Patiala for investigation and Water Samples were sent to SPHL, Kharar. Local private practitioners were instructed to report similar cases.

On Jan 19, 2021 State Program Officer, IDSP along with an Epidemic Intelligence Service Officer (EISO) joined the investigation with the objective to confirm and describe the outbreak, and to determine the risk factors and to provide the recommendations for control and prevention. 4 more stool samples and 9 water samples were taken and sent for further investigations.

At the culmination of investigation, following information was delineated -

- Total Number of cases: 110
- Total Population affected: 4061
- Total number of houses surveyed: 507
- Total number of chlorine tabs distributed: 9000
- ORS Packet Distributed: 295
- Group Meetings: 45

A line listing was prepared from the data received during survey and medical camp, which was analyzed and interpreted.

LAB INVESTIGATION:

It was confirmed from the stool culture at IDSP Lab that this acute diarrhoea outbreak is due to *E.Coli* infection. The details of results are:

S. No	Name of Sample sent	Laboratory	Number of samples Tested	Results
1)	Stool sample for Pyrogenic growth	District IDSP Lab, MKH Patiala	6	All 6 positive with <i>E.Coli</i> .
2)	Water samples	State Public health lab. (SPHL)	14	All 14 samples failed with Bacterial contamination with fecal contamination.

CONTROL MEASURES

Details of control measures undertaken included —

1. **House-to-house survey conducted:** House to house active survey was started and line listing of all the cases was prepared. In addition, free treatment was provided to all the patients who were suffering with the mild symptoms of diarrhoea.

Fig. 2: IEC activities being conducted at the field



2. **Alternate water was supplied** through water tankers to the affected locality by water supply and sewerage board.
3. **Chlorine pellets** were distributed by the health workers in the affected locality.
4. Medical Camp was established in gurudwara sahib, focal point for managing diarrhoea cases and free medicines and ORS packets was given to the affected patients.

Fig. 3: IEC activities being conducted at the field



5. **IEC activities** were done for sanitation and hygiene through announcements in religious places (Mandir and Gurudwara), miking and through small group meetings.
6. **Local private practitioners** were sensitized about the disease outbreak and instruct them to report cases to health department teams.
7. They had intimated Respected Deputy Commissioner, Patiala and SDM Rajpura about the leakage and mixing of water in the affected area through unauthorized sewerage pipeline.

CONCLUSION

This ADD outbreak affected in Star Enclave, Narnol Colony, Focal Point Rajpura town, District Patiala is due to contamination of water by *E.coli*. The main cause behind the disease outbreak may be mixing of sewerage with the drinking water. It was due to unauthorized sewer drain found near overflowing near water pipelines. Secondly another cause is, tube well pump supplying drinking water had no chlorination.

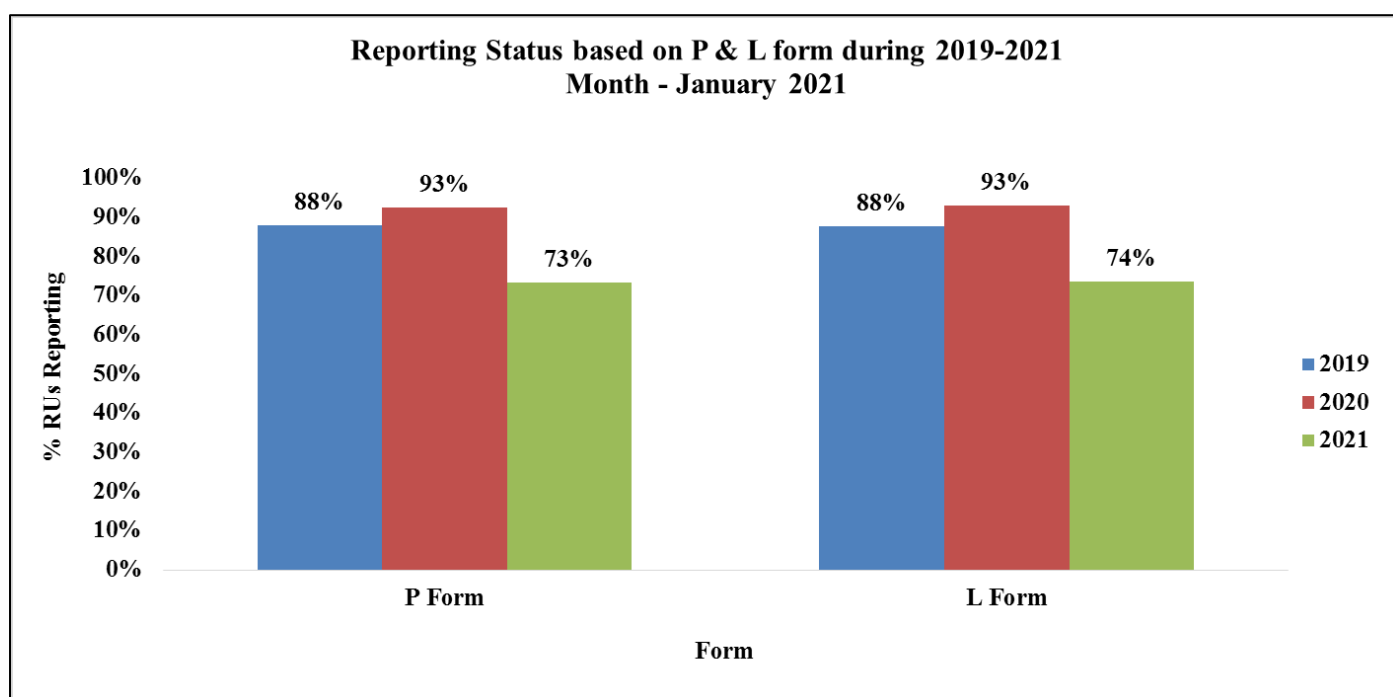
RECOMMENDATIONS

To prevent ADD outbreaks in future following measures needs to be undertaken:

1. Regular survey is to be done in the different area by Water supply and sewerage board so that unauthorized connection would be disconnected and if there is any leakage or any loose connection it is repaired on early basis.
2. It was found that most of water supply pipe and sewerage pipe are obsolete, need to be replaced.
3. It was noticed that area where outbreak took place the supplied water was not properly chlorinated, so there would be regular monitoring of chlorination of water done at supply point.
4. Maintain a gap between the drinking water supply pipe and sewage pipe.
5. Remove the garbage and nuisance material from the residential area regularly.

Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue Leptospirosis, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During August 2018 - 2020*

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



As shown in Fig. 4, in January 2019, 2020 and 2021, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 88%, 93% and 73% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 88%, 93% and 74% 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 January 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 January 2021

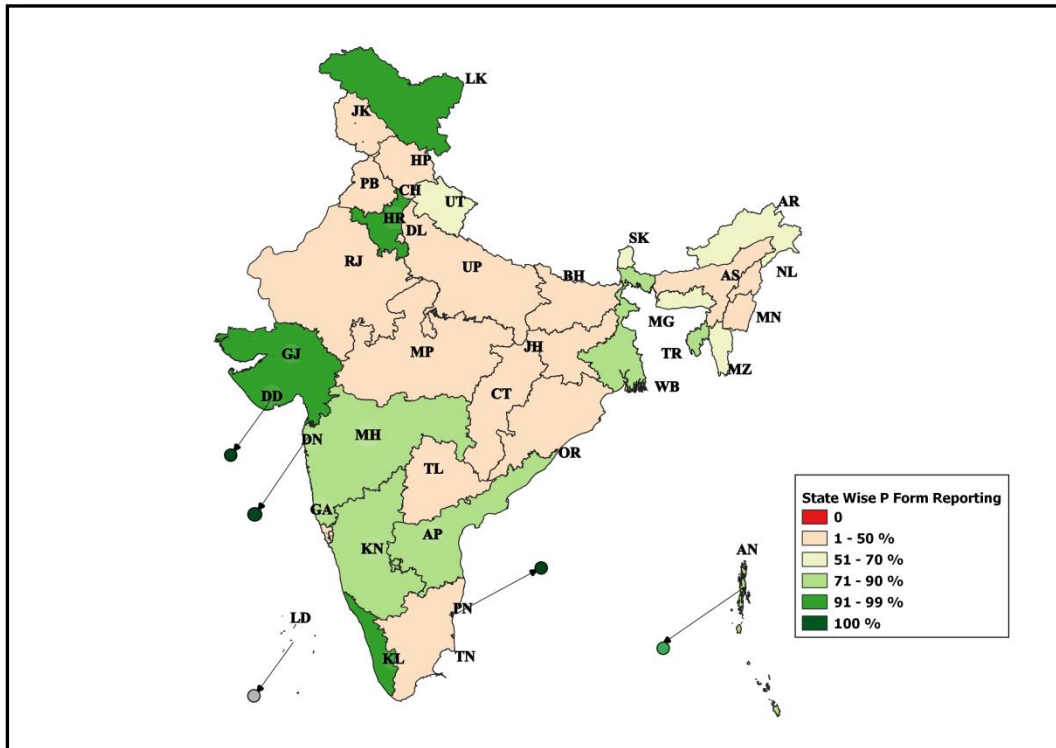


Fig. 6: State/UT wise L form completeness % for January 2021

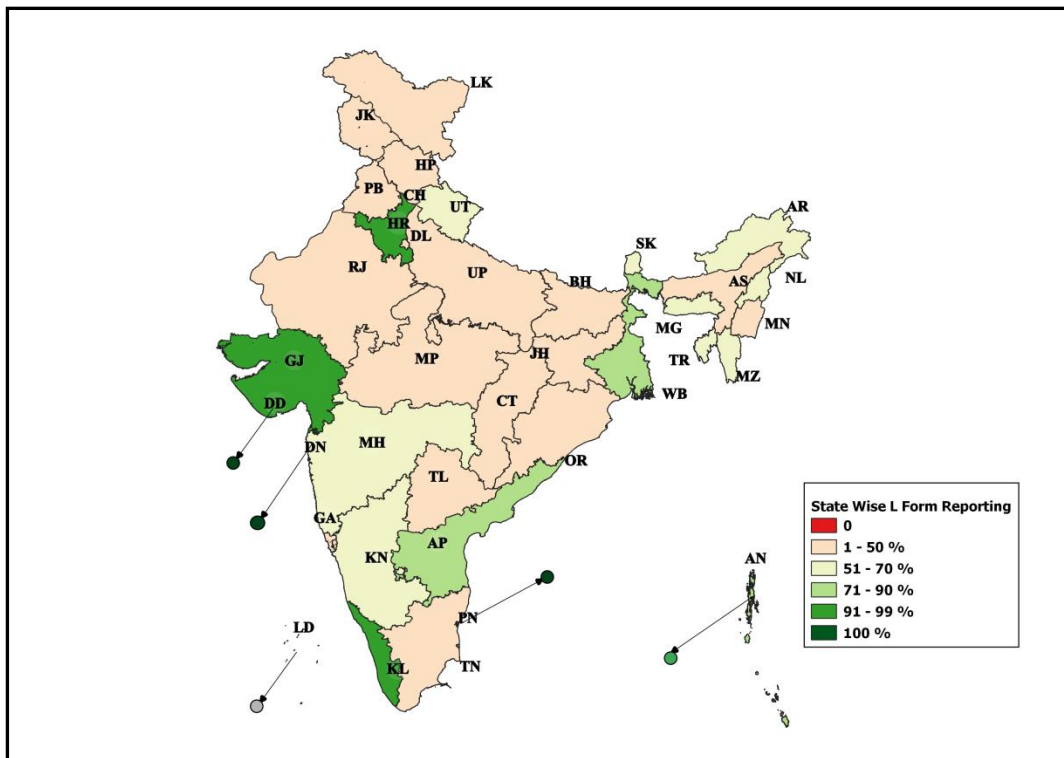
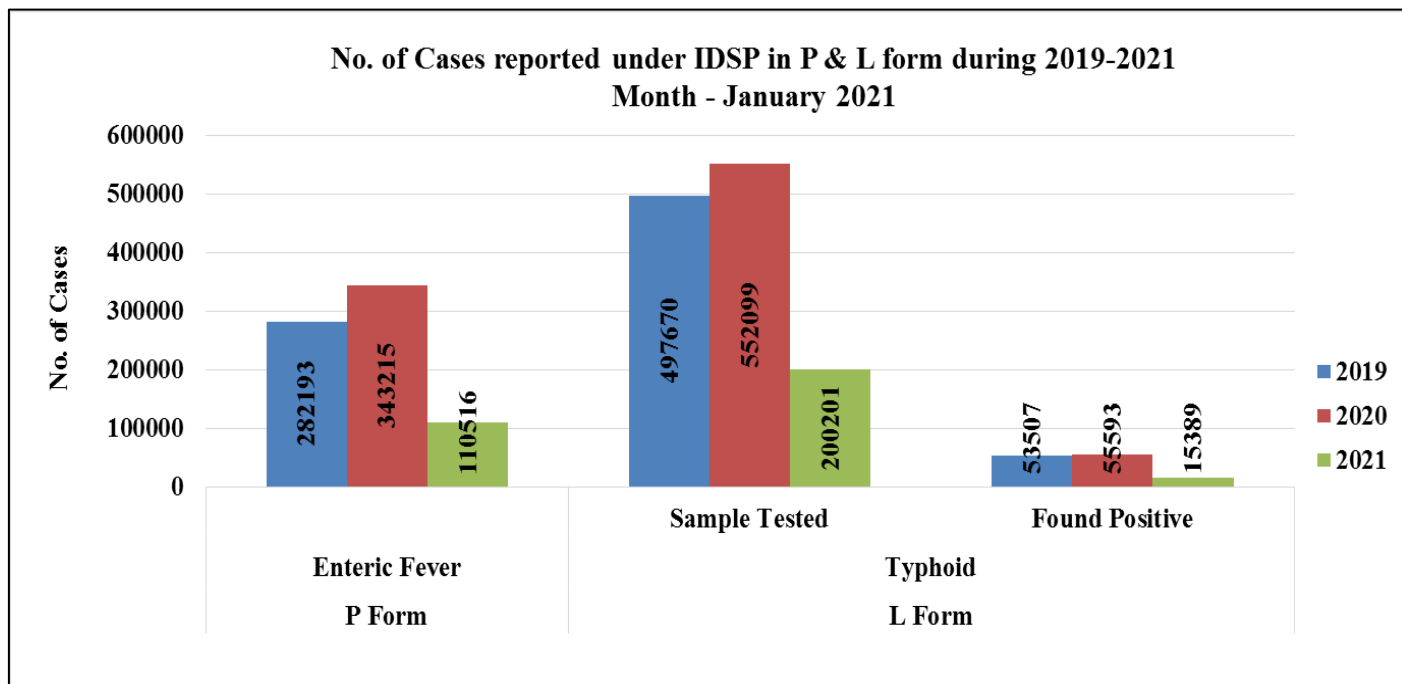


Fig. 7: No. of Enteric Fever Cases reported under P & L form during January 2019 - 2021



As shown in Fig. 7, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 282193 in January 2019; 343215 in January 2020 and 110516 in January 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2019; 497670 samples were tested for Typhoid, out of which 53507 were found positive. In January 2020; out of 552099 samples, 55593 were found to be positive and in January 2021, out of 200201 samples, 15389 were found to be positive.

Sample positivity has been 10.75%, 10.07% and 7.69% in January 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 January 2021

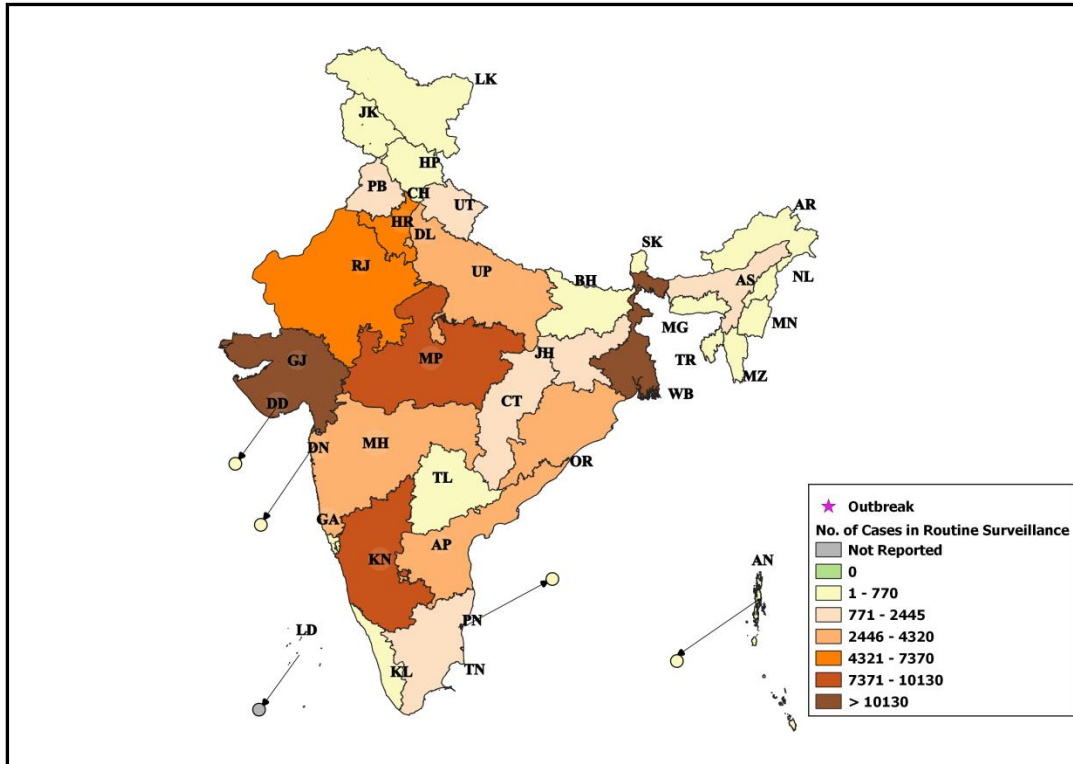


Fig. 9: State/UT wise Lab Confirmed Typhoid cases and outbreaks for January 2021

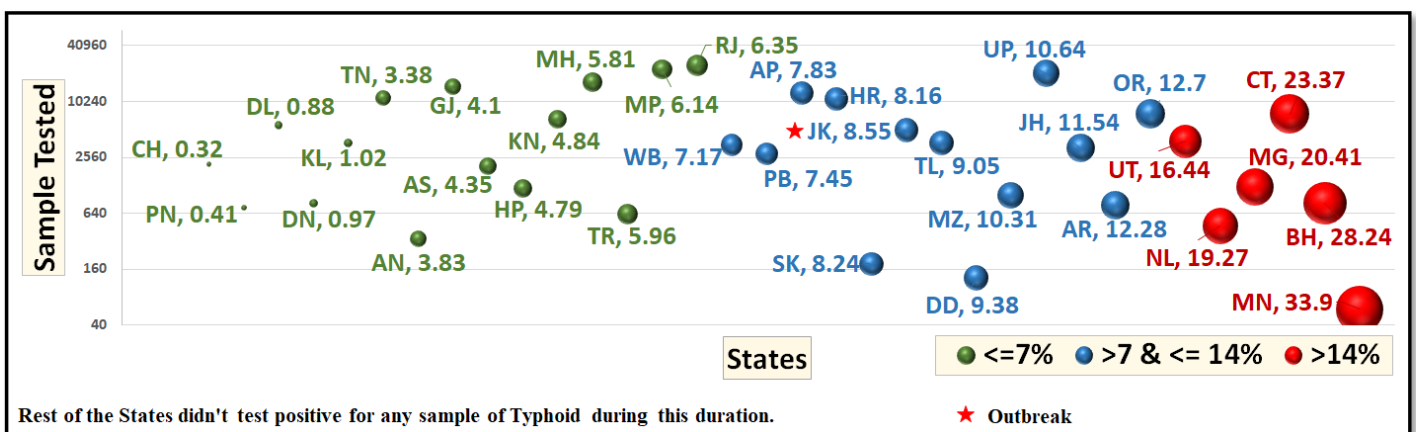
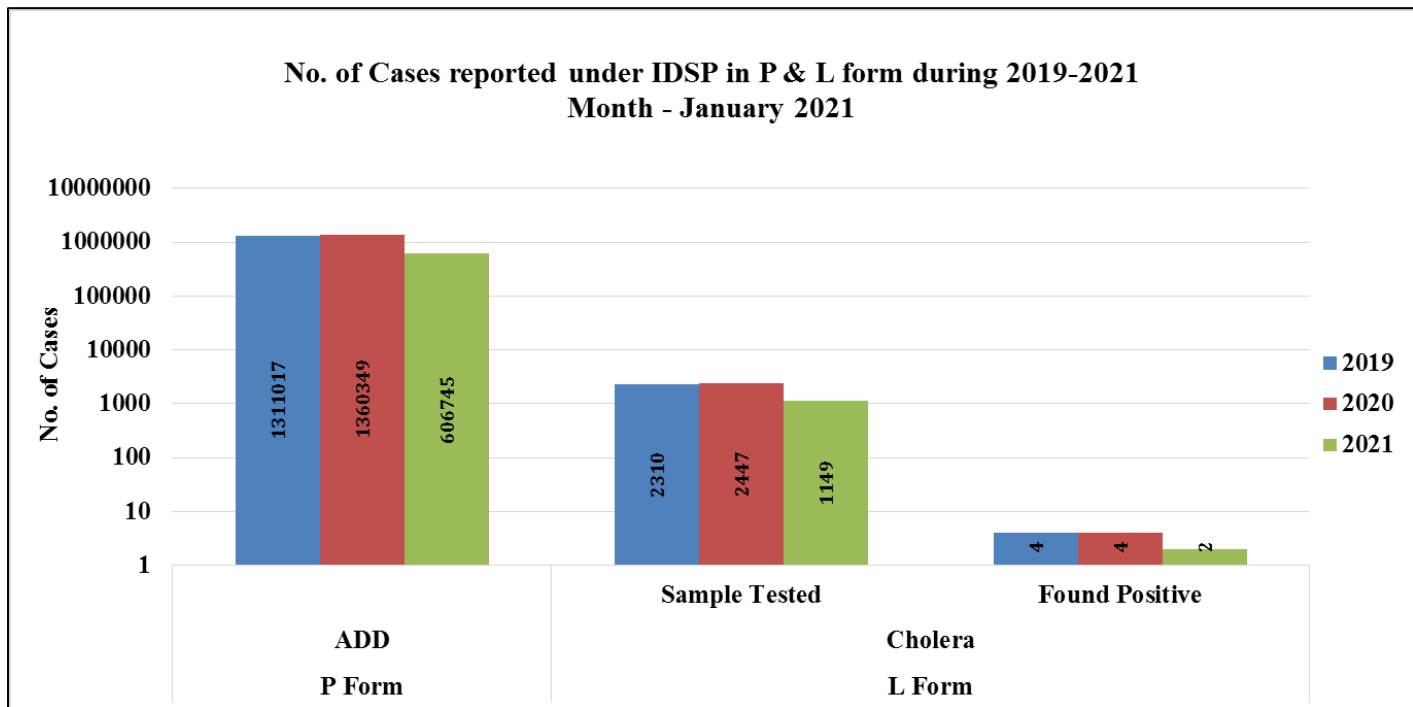


Fig. 10: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during January 2019 - 2021



As shown in Fig. 10, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1311017 in January 2019; 1360349 in January 2020 and 606745 in January 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2019, 2310 samples were tested for Cholera out of which 4 tested positive; in January 2020, out of 2447 samples, 4 tested positive for Cholera and in January 2021, out of 1149 samples, 02 tested positive.

Sample positivity of samples tested for Cholera has been 0.17%, 0.16% and 0.17% in January month of 2019, 2020 & 2021 respectively.

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

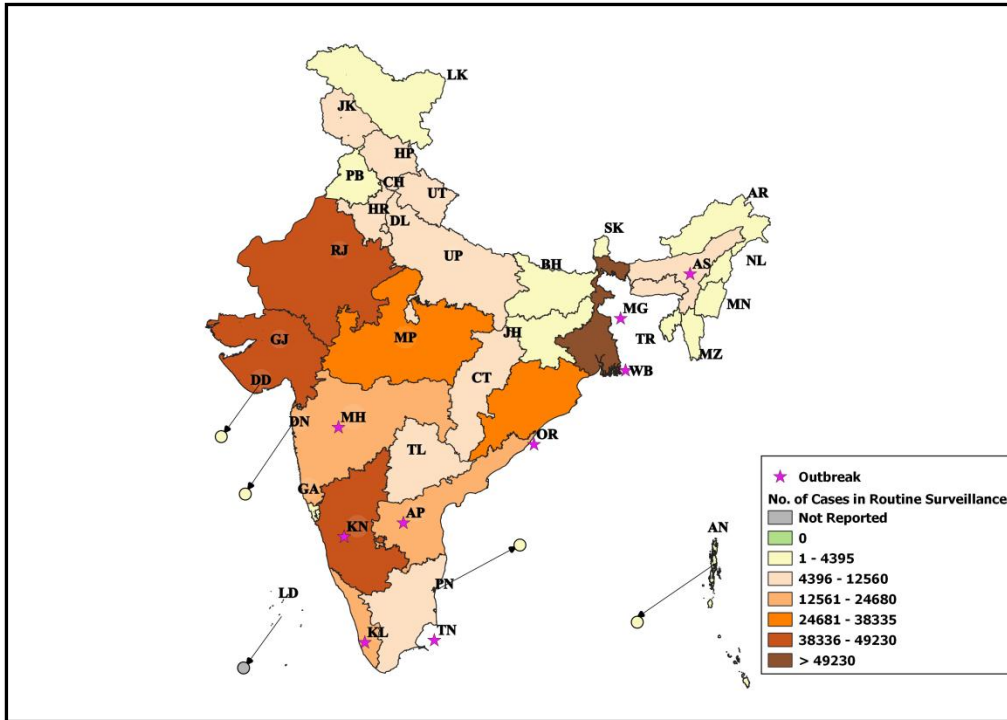


Fig. 12: State/UT wise Lab Confirmed Cholera cases and outbreaks for January 2021

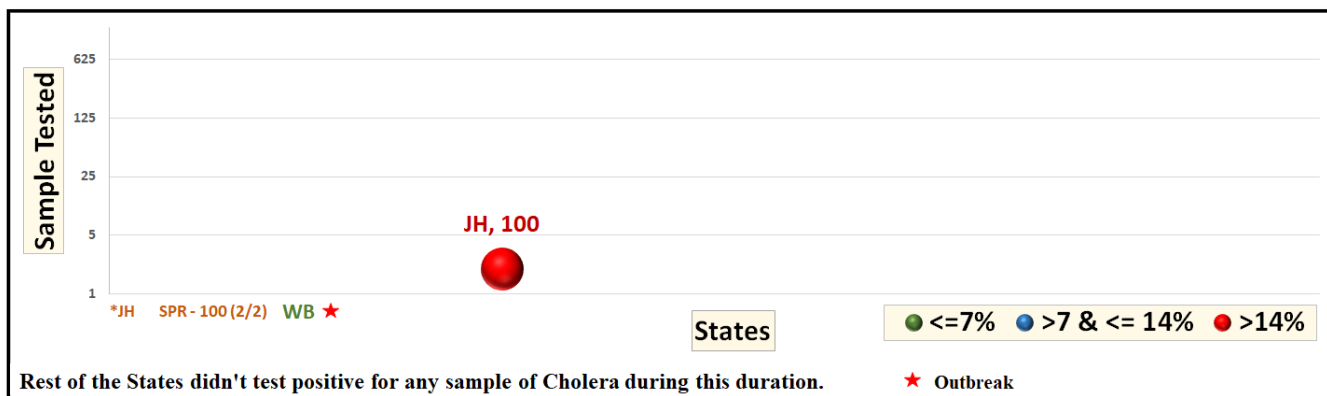
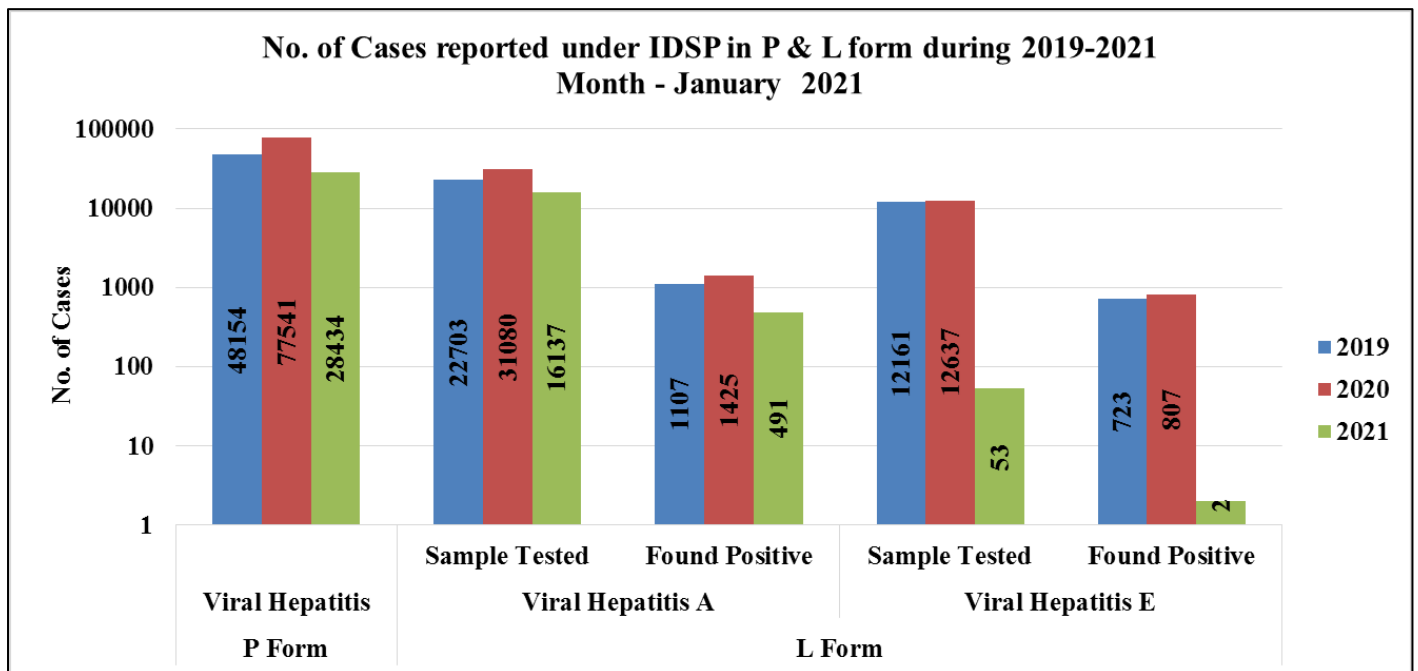


Fig. 13: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during January 2019 - 2021



As shown in Fig. 13, the number of presumptive Viral Hepatitis cases was 48154 in January 2019, 77541 in January 2020 and 28434 in January 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 January 2019; 22703 samples were tested out of which 1107 were found positive. In January 2020 out of 31080 samples, 1425 were found to be positive and in January 2021, out of 16137 samples, 491 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 4.88%, 4.58% and 3.04% in January month of 2019, 2020 & 2021 respectively.

As reported in L form for Viral Hepatitis E, in January 2019; 12161 samples were tested out of which 723 were found positive. In January 2020; out of 12637 samples, 807 were found to be positive and in January 2021, out of 53 samples, 2 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 5.95%, 6.39% and 3.77% in January month of 2019, 2020 & 2021 respectively.

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

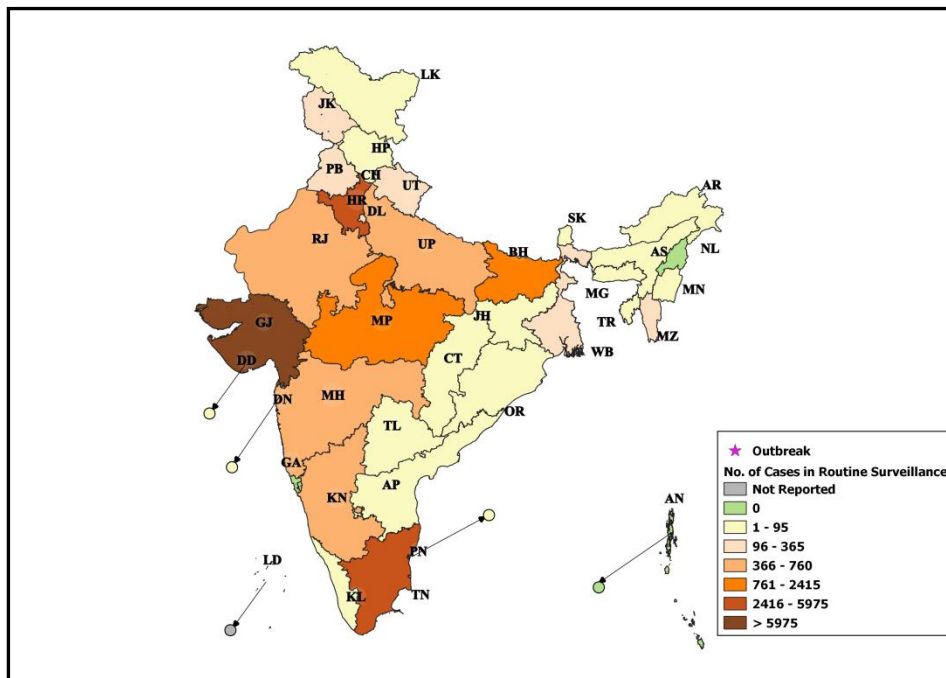


Fig. 15: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for January 2021

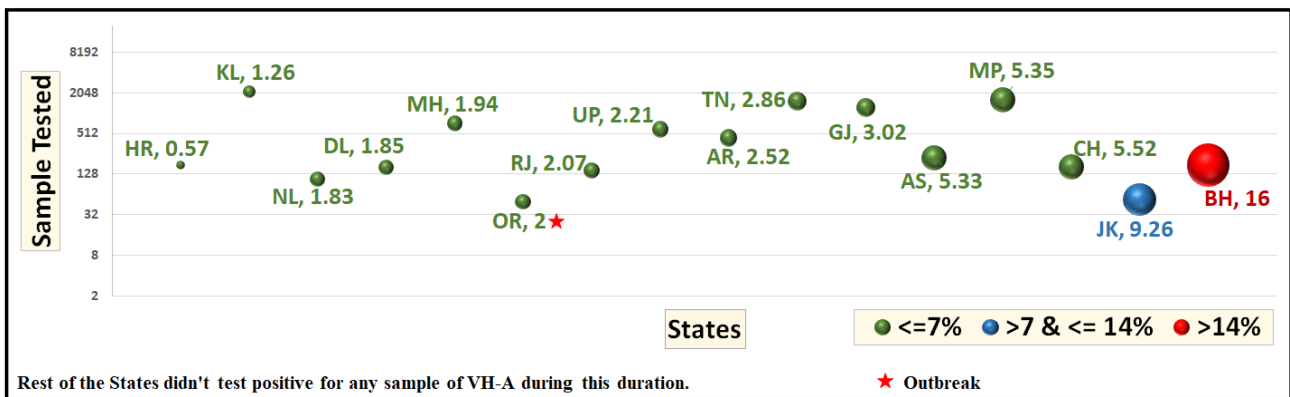


Fig. 16: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for January 2021

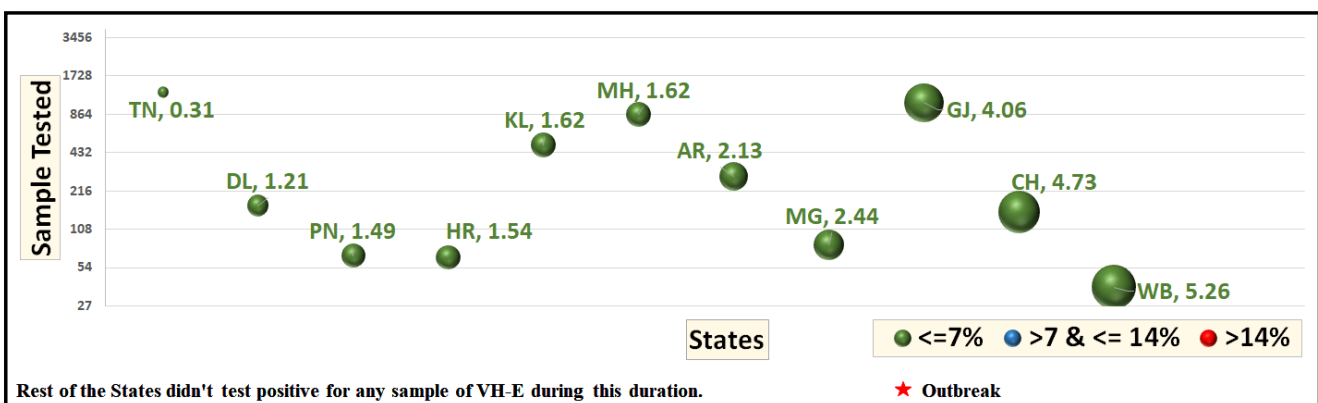
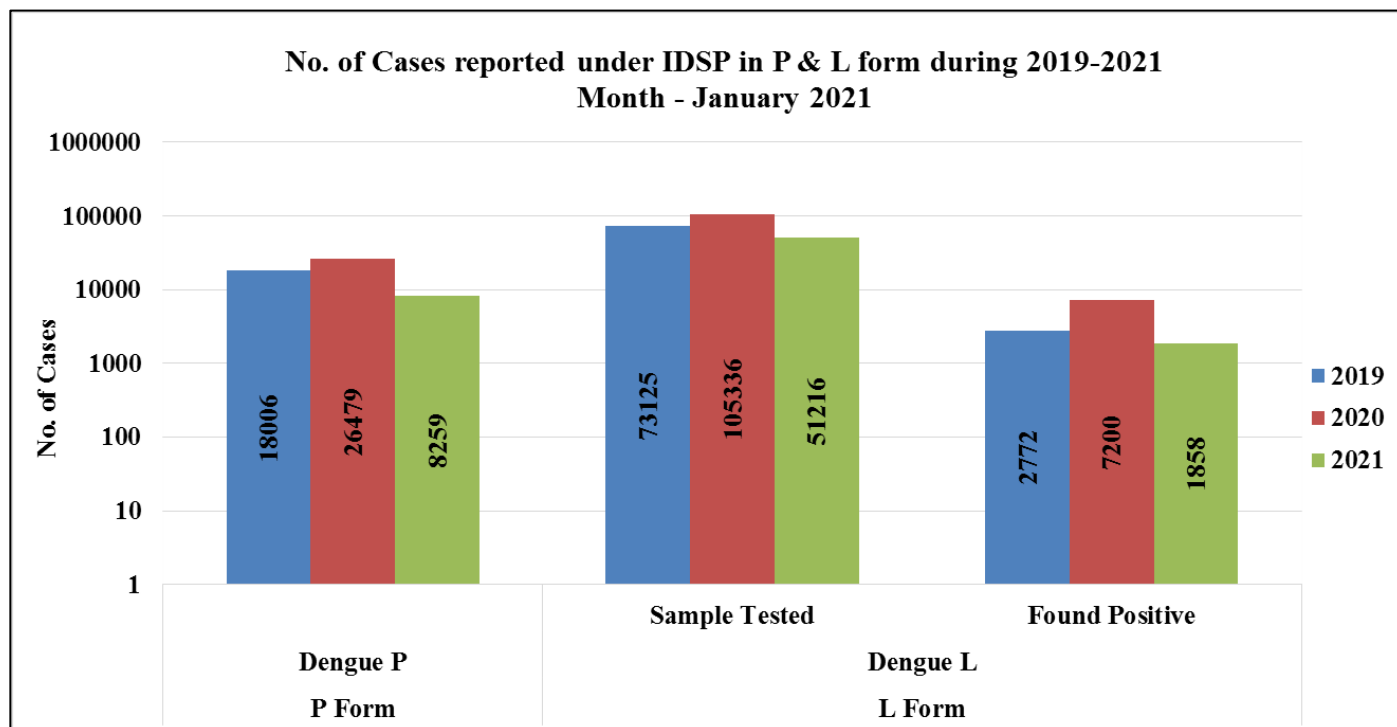


Fig. 17: No. of Dengue cases reported under IDSP in P & L form during January 2021



As shown in Fig. 17, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 18006 in January 2019; 26479 in January 2020 and 8259 in January 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2019; 73125 samples were tested for Dengue, out of which 2772 were found positive. In January 2020; out of 105336 samples, 7200 were found to be positive and in January 2021, out of 51216 samples, 1858 were found to be positive.

Sample positivity of samples tested for Dengue has been 3.79%, 6.84% and 3.63% in January month of 2019, 2020 & 2021 respectively.

Fig. 18: State/UT wise Lab Confirmed Dengue cases and outbreaks for January 2021

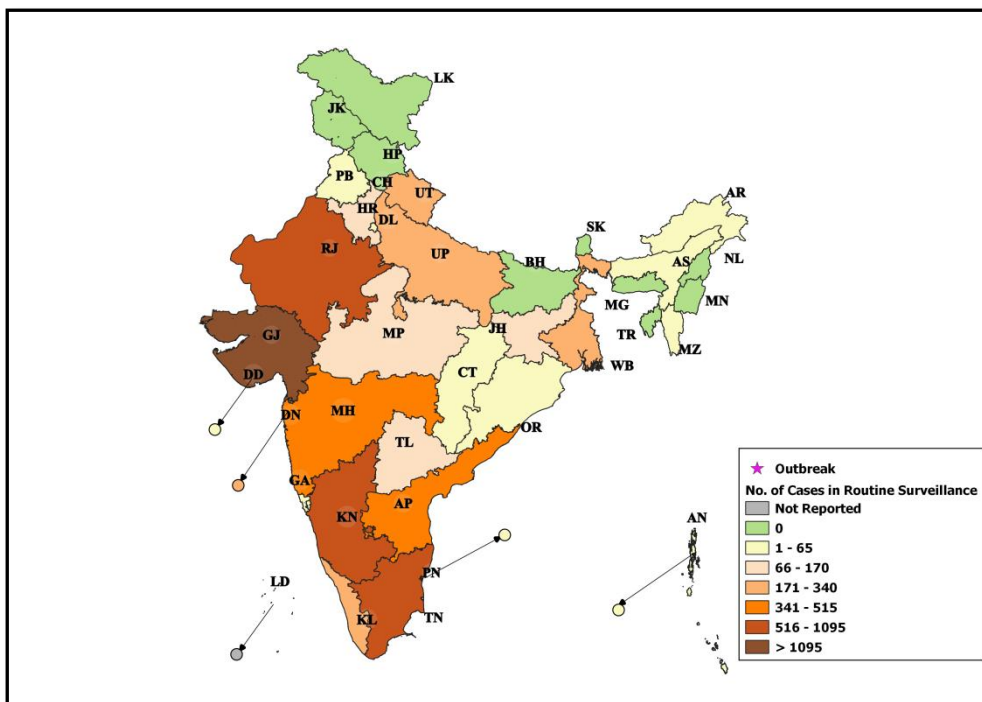


Fig. 19: State/UT wise Presumptive Dengue cases and outbreaks for January 2021

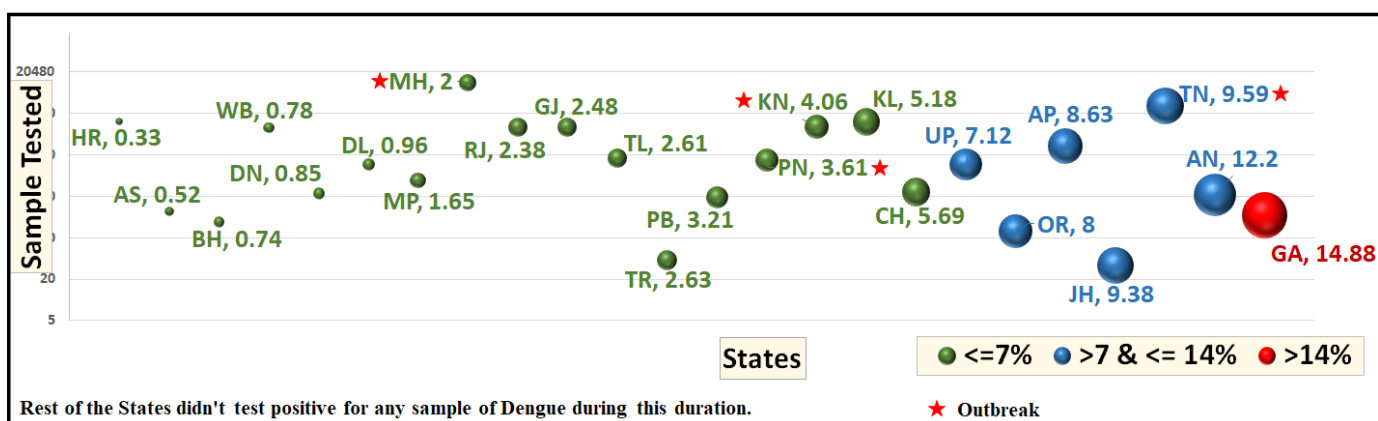
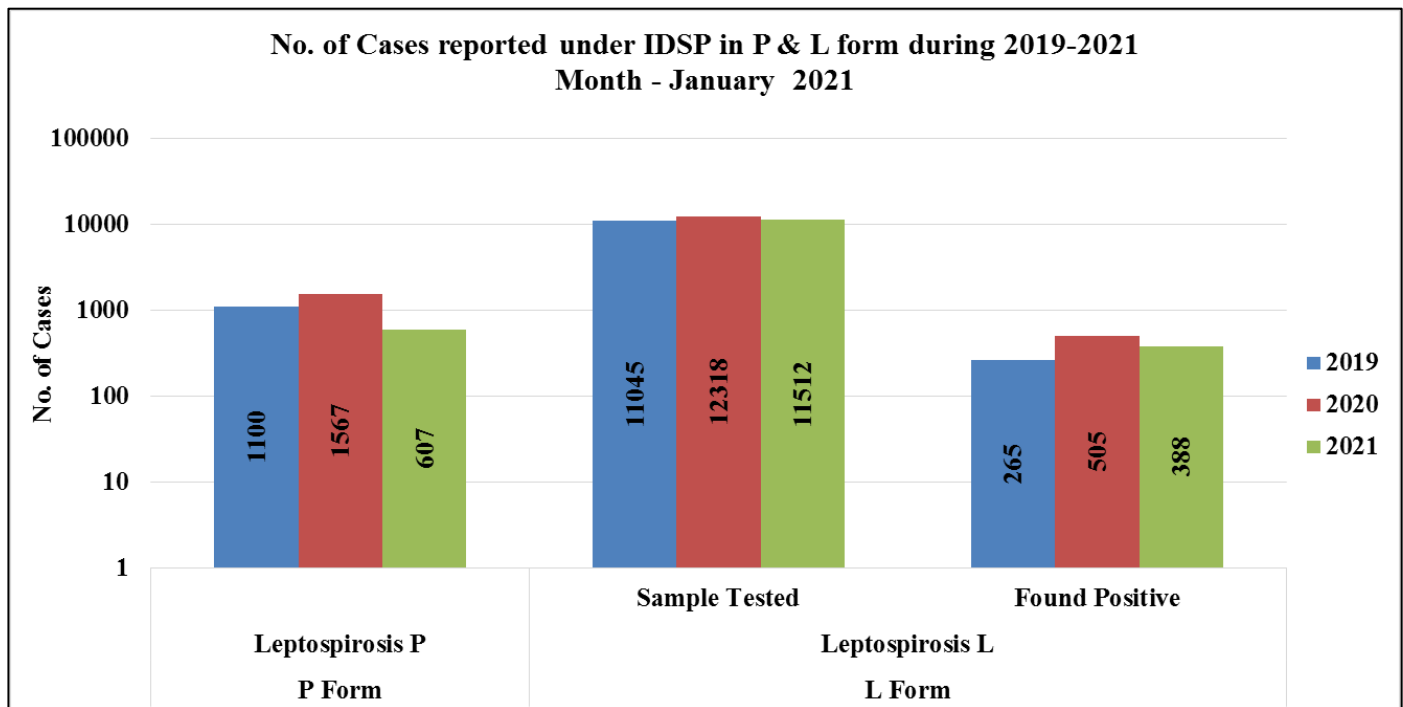


Fig. 20: No. of Leptospirosis Cases reported under IDSP in P & L form during January 2019 - 2021



As shown in Fig. 20, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1100 in January 2019; 1567 in January 2020 and 607 in January 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2019; 11045 samples were tested for Leptospirosis, out of which 265 were found positive. In January 2020; out of 12318 samples, 505 were found to be positive and in January 2021, out of 11512 samples, 388 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 2.40%, 4.10% and 3.37% in January month of 2019, 2020 & 2021 respectively.

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

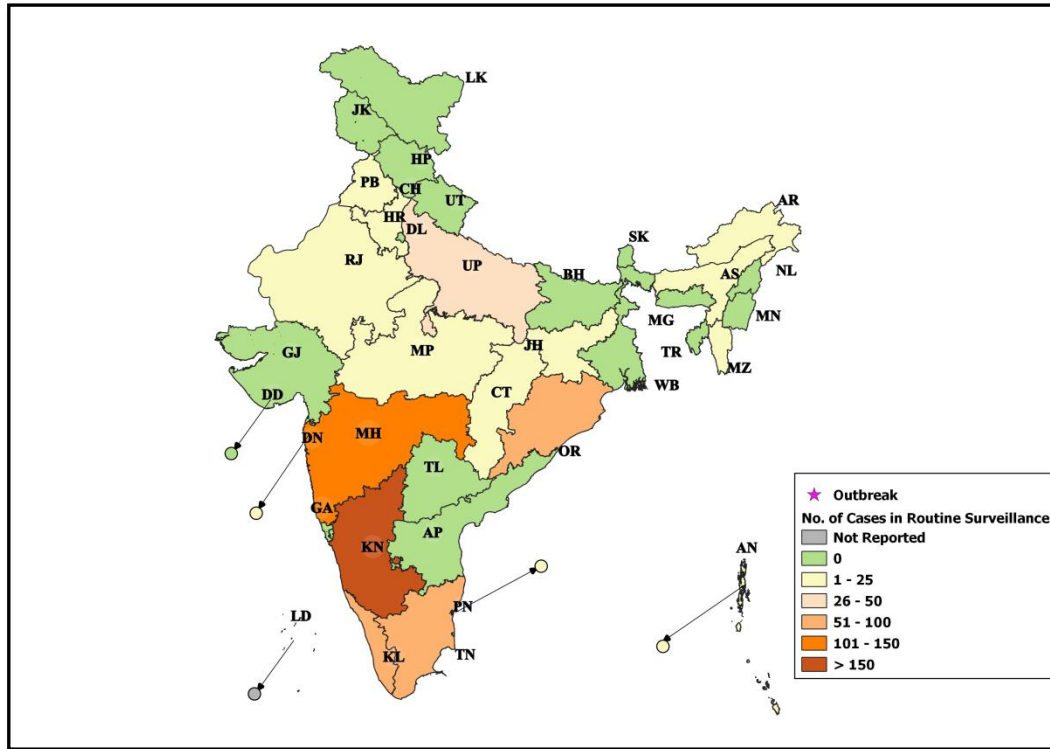


Fig. 22: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for January 2021

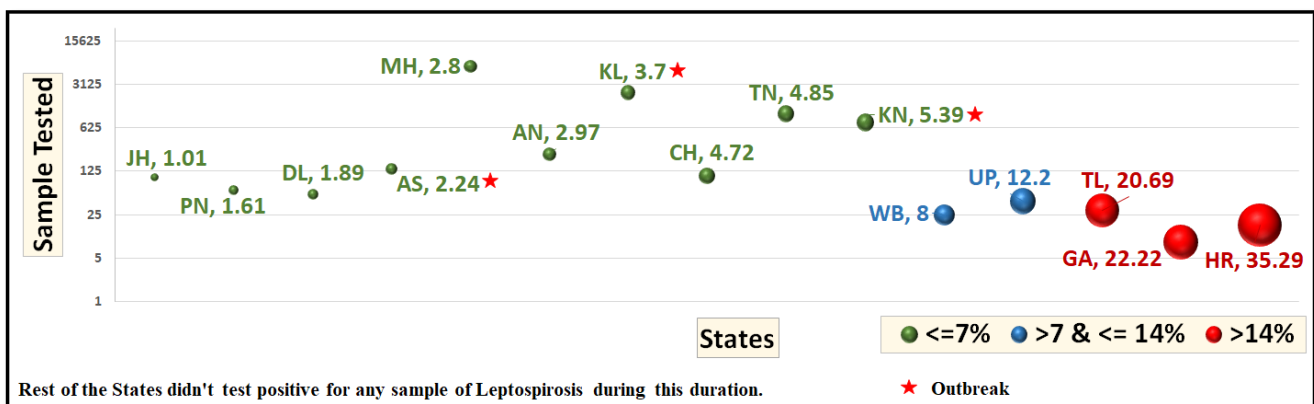
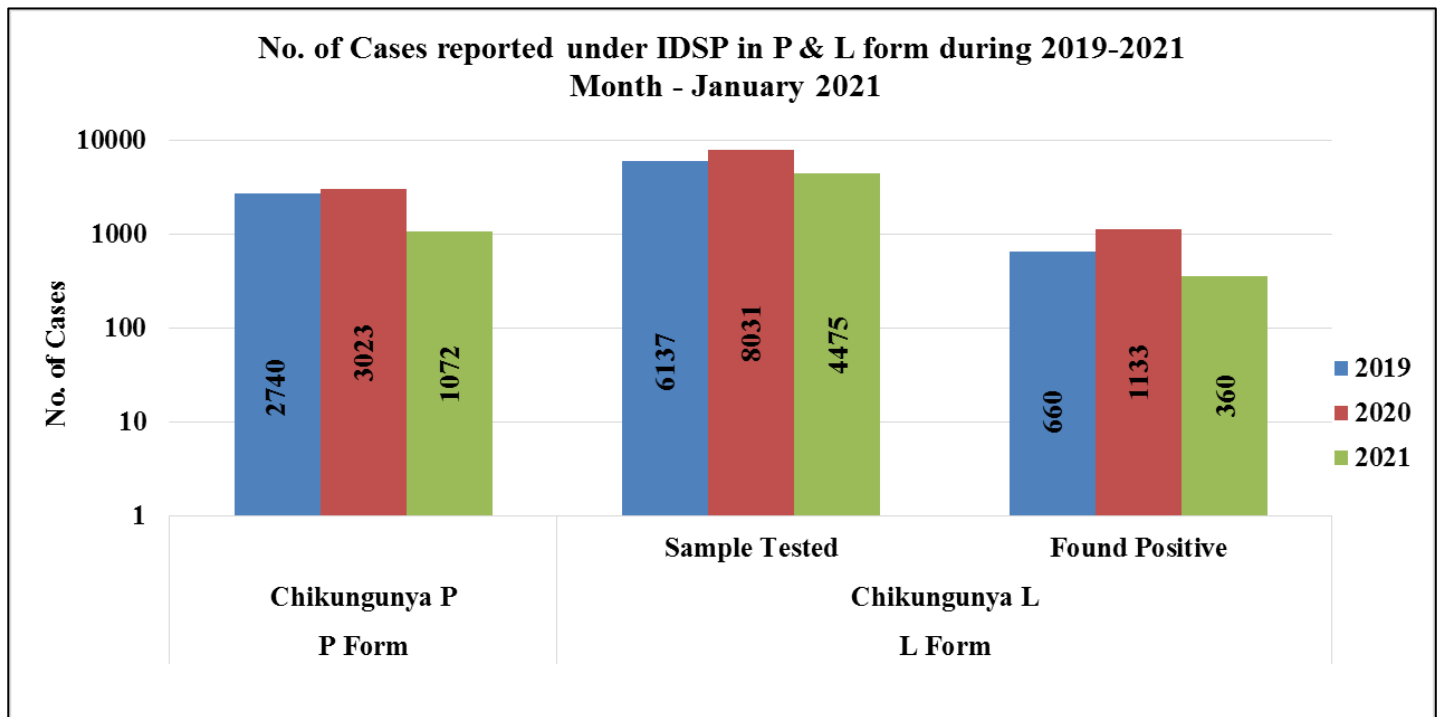


Fig. 23: No. of Chikungunya Cases reported under IDSP in P & L form during January 2019 - 2021



As shown in Fig. 23, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 2740 in January 2019; 3023 in January 2020 and 1072 in January 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in January 2019; 6137 samples were tested for Chikungunya, out of which 660 were found positive. In January 2020; out of 8031 samples, 1133 were found to be positive and in January 2021, out of 4475 samples, 360 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 10.75%, 14.11% and 8.04% in January month of 2019, 2020 & 2021 respectively.

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

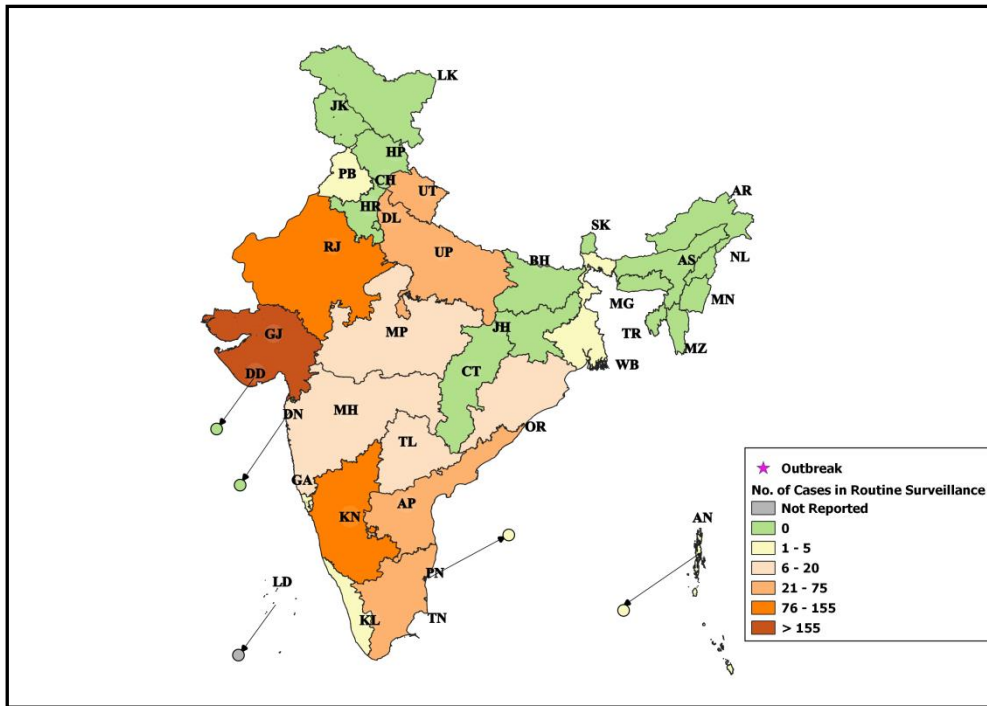


Fig. 25: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for January 2021

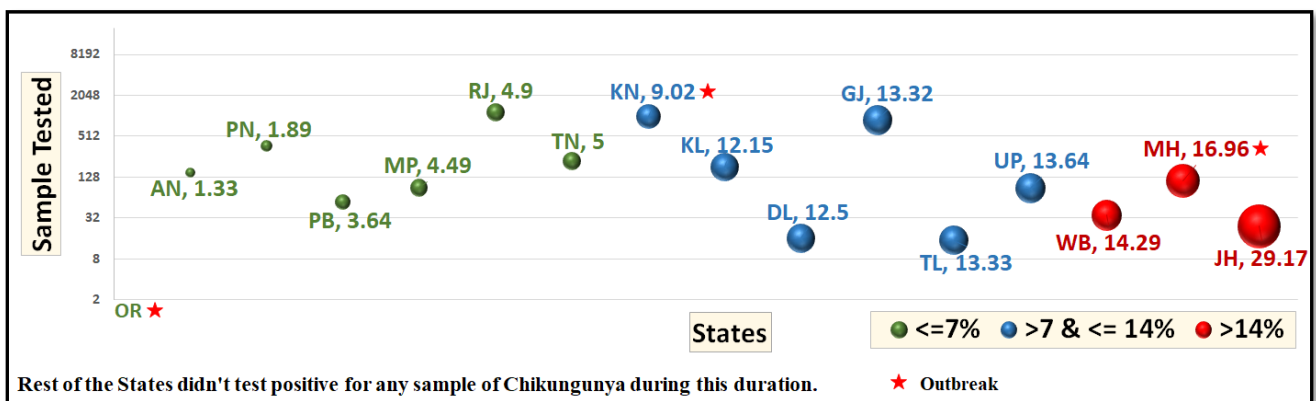
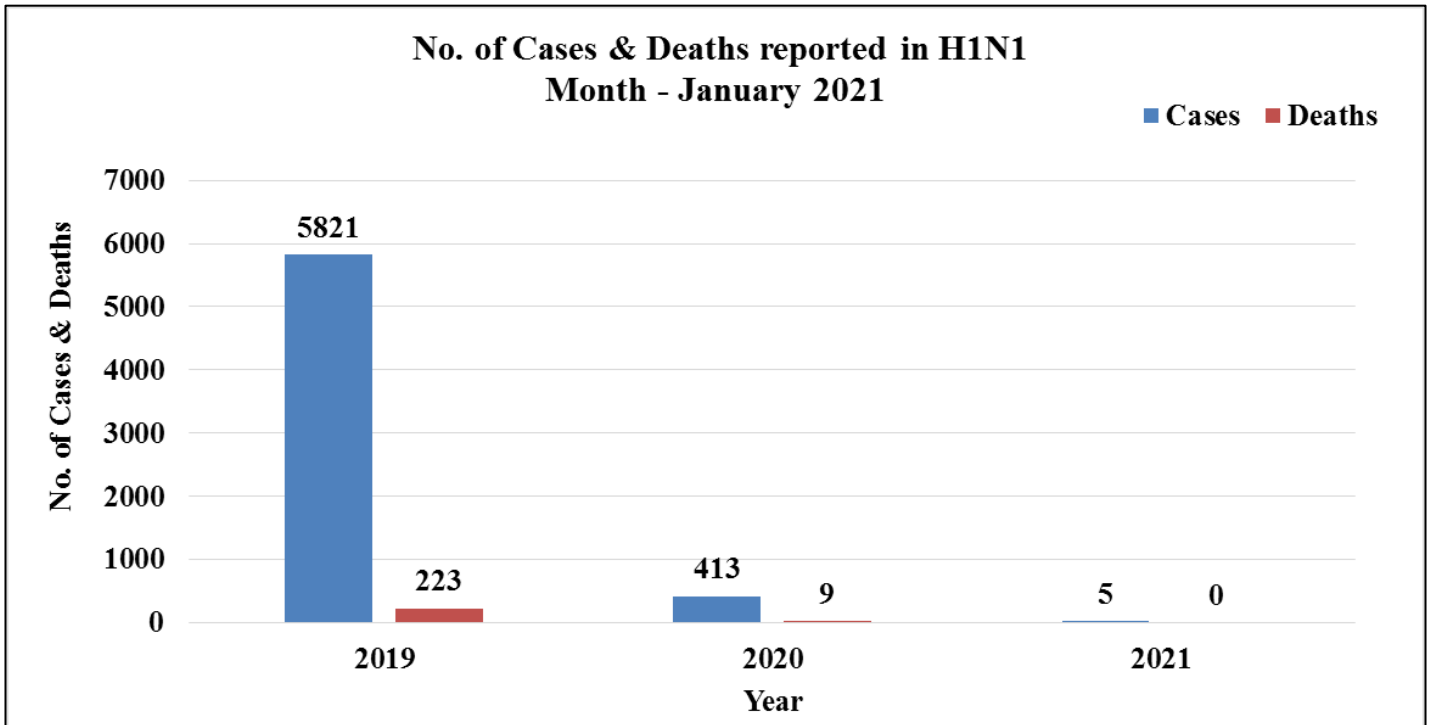
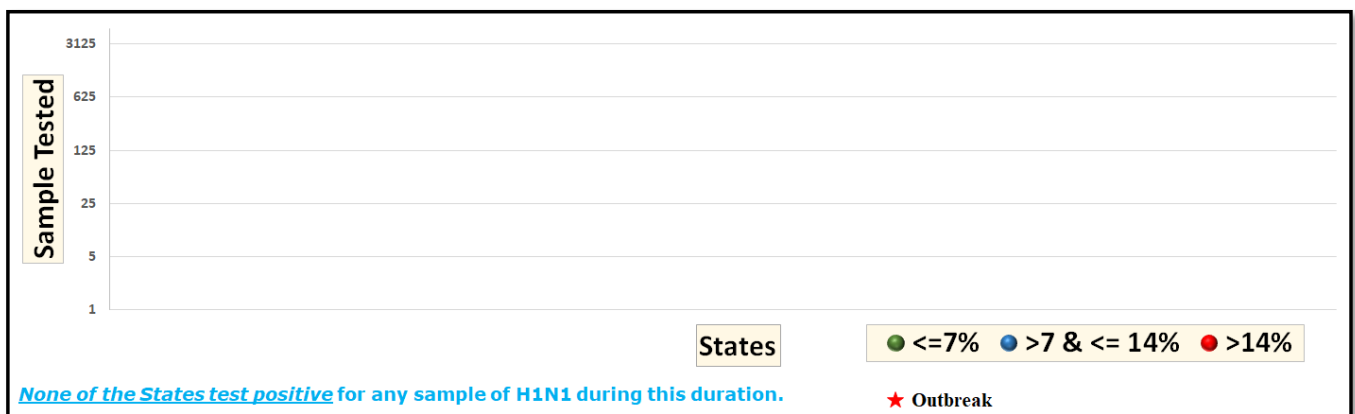


Fig. 26: H1N1 cases reported under IDSP in L Form during 2019-2021 in January 2021



As shown in Fig. 26, as reported in L form, in January 2019, there were 5821 cases and 223 deaths. In January 2020, there were 413 cases and 9 deaths; and in January 2021, there were 5 cases and 0 deaths. Case fatality rates for H1N1 were 3.83%, 2.18% and 0.00% in January month of 2018, 2019 & 2020 respectively.

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