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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report
From
Integrated Disease Surveillance Programme
National Health Mission

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ACUTE DIARRHEAL DISEASE OUTBREAK INVESTIGATION

P.H.C. BHAWANIGARH, DISTT. SANGRUR, PUNJAB

BACKGROUND

Bhawanigarh is a municipal council situated in Sangrur Tehsil of Sangrur District. It is divided into 13 wards. As per the Census of 2011, there are 4,498 families residing in the city. The total population of Bhawanigarh is 22,320 out of which 11,780 are males and 10,540 are females. Thus, the Average Sex Ratio of Bhawanigarh is 895.

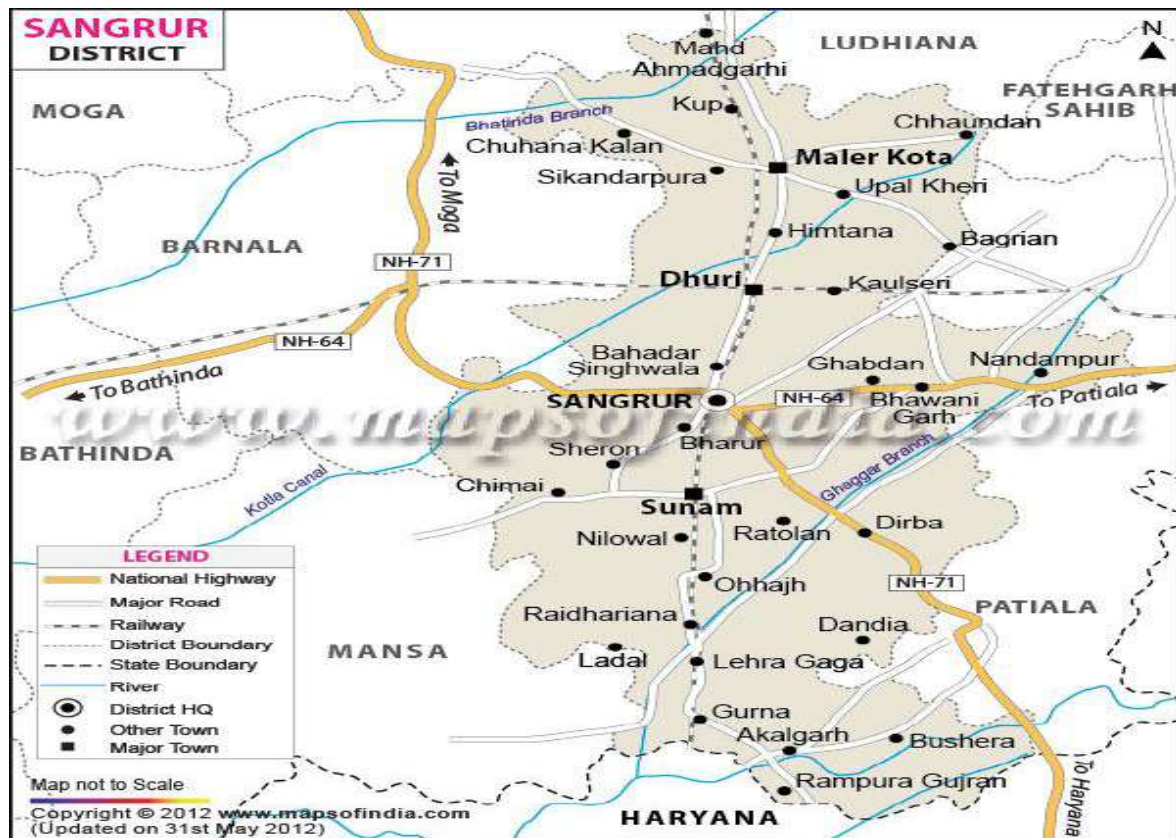


Fig.1 Map of district Sangrur

Source of Information – Information received from Medical Officer, SDH Bhawanigarh

Date of Start of Outbreak (reporting of 1st case) – 13-08-2021

Reporting to Health System – 13-08-2021

Date of start of investigation – 13-08-2021

Diarrhea definition: Diarrhea is usually defined in epidemiological studies 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.

It is normal for young infants to have up to 3 to 10 stools per day, although this varies depending upon the child's diet (breast milk versus formula; breastfed children usually have more frequent stools). Older infants, toddlers, and children normally have one to two bowel movements per day.

The consistency and color of a child's stool normally changes with age. Young infant stools may be yellow, green, or brown, and may be soft and/or appear to contain seeds or small curds. All children's stools can vary as a result of their diet. Development of stools that are runny, watery, or contain mucus is a significant change that should be monitored. The presence of visible blood in stool is never normal and always requires medical attention.

A prolonged history of diarrhea (one week or longer) is evaluated and treated differently than an acute case of diarrhea (lasting less than one week).

CAUSES OF DIARRHEA

Viral infection: Viral infection is the leading cause of diarrhea in children and is seen most commonly in the winter months in temperate climate. No specific treatment is available for viral causes of diarrhea. Children with diarrhea from viral infections are best treated with supportive measures (oral rehydration solution, limited diet, rest).

Bacterial infection: Bacterial infection is sometimes hard to distinguish from viral infection. Persistent high fever (higher than 40°C or 104°F) and diarrhea that is bloody or contains mucus are somewhat more common with bacterial infection

Parasitic infection: It can be seen in children who have recently ingested contaminated water or who have traveled to or lived in developing countries. Diarrhea from parasitic infections may last longer than two weeks.

Antibiotic-associated Diarrhea: A number of antibiotics can cause diarrhea in both children and adults. The diarrhea is usually mild and typically does not cause dehydration or weight loss.

CASE DEFINITION:

Any person between the ages of 1 year to 85 years suffering from acute onset of watery diarrhea (passage of 3 or more loose/watery stools in past 24 hours) with or without dehydration, lasts for more than 7 or more days.

Trigger: More than 10 houses with diarrhea in a village or urban ward or a single case of severe dehydration or death in a patient less than 5 years with diarrhea.

DETAILS OF INVESTIGATION

The outbreak of diarrhea in Gura Teg Bahadur College Road, Bhawanigarh was reported on 13-08-2021. Under the kind supervision of Civil Surgeon, Sangrur & SMO, PHC Bhawanigarh Block Rapid Response Team was deputed for immediate action in the affected area.

Action Taken by block health Team**Day 1 to Day 7: (13-08-2021 to 19-08-2021) :-****1. Survey:**

- House to house survey activity done in affected area by field staff.
- No. of Teams were 08.
- Houses covered during survey: 394(day 1) + 346(day 2) + 213(day 3) + 321(day 4) + 151(day 5) + 404(day6) + 327(day7) =2156
- Population covered =1651(day 1) + 1421(day 2) + 861(day 3) + 1351(day 4)+ 631(day 5) + 1692(day6) + 1345(day 7) =8952
- During survey, 14(day1) + 7(day2) + 7 (day3) + 2 (day4) = 30 active Cases were found who complained of loose stools, pain in abdomen and vomiting.
- Anti- Diarrheal drugs and paracetamol distributed to symptomatic patients.
- Injection Metoclopramide given to patients having vomiting = 05 (day 1) +4 (day 2) +2 (day 3) = 11 cases.
- ORS sachets and Chlorine pallets were distributed to all population, health education given to population regarding hygiene and boiled drinking water, home care and prevention. Most of the patients are cured.
- Identified possible cause of outbreak mixing of contaminated water with drinking water.
- SDM, Dhuri was informed about the problem contaminated water with drinking water and same was repaired by the department.

2. Environmental investigations methods:

- Examined the water sources in the area.
- Examined the water pipe lines and sewerage system of the area.
- Collection of Blood sample and Stool Sample: 12 blood samples collected and 05 stool samples collected on day 1 from Guru Teg Bahadur College Road Bhawanigarh.

3. Health Education & IEC Activity done regarding the personnel hygiene, sanitation, and use of potable water and to boil water before consumption.
4. Repair is being under taken by public health department.
5. After disease was notified, information gathered from the patients, food histories were reviewed to identify the common exposure.
6. ANM, Health workers and ASHA workers were instructed to closely monitor the situation
7. No fresh cases were reported on day 5, day 6 and day7 and situation was under control.

METHODOLOGY OF INVESTIGATION

- Six round of House to house survey conducted for persons who were suffering from Diarrhea.
- **Laboratory Methods:** 12 blood samples collected and 05 stool samples collected, 10 water samples collected for biological /contamination purpose.
- **Environmental investigations methods:** Examined the water sources in the area, Examined the water pipe lines and sewerage system of the area and Chlorination done by department.



Figure 1 Block Rapid Response Team: - information gathered from the patient, food histories were reviewed.



Figure 2 Health education/awareness by field staff

CONFIRMATION OF OUTBREAK:

The outbreak was confirmed as there is a clustering of acute diarrhea cases in the locality. Total of 30 cases of acute diarrhea were identified.

RESULT OF SAMPLES:

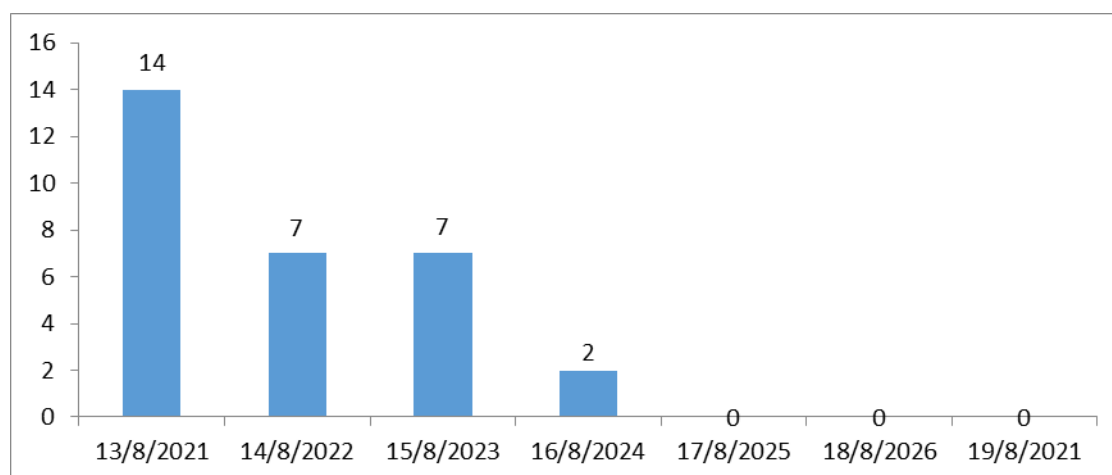
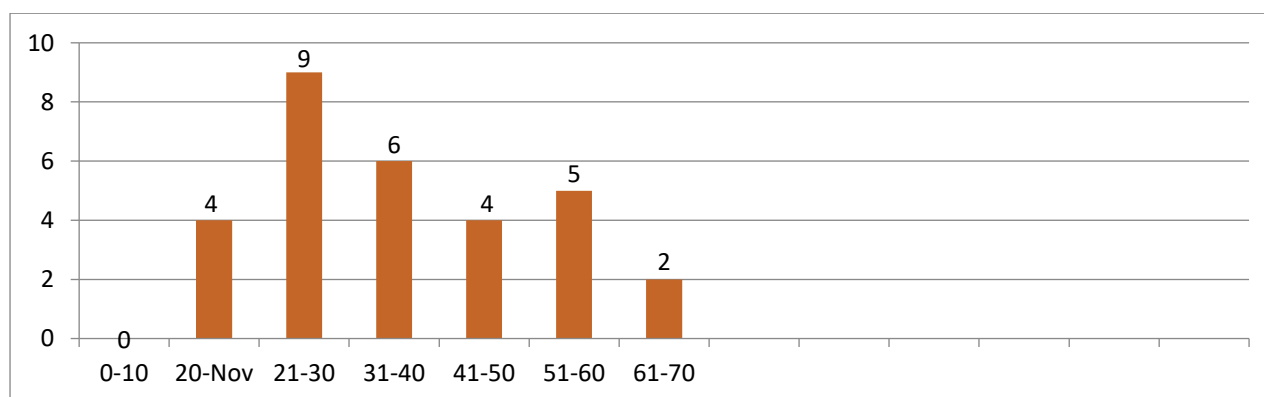
Blood samples: 12 tested negative for **Hepatitis 'A'** and **Hepatitis 'E'** by ELISA.

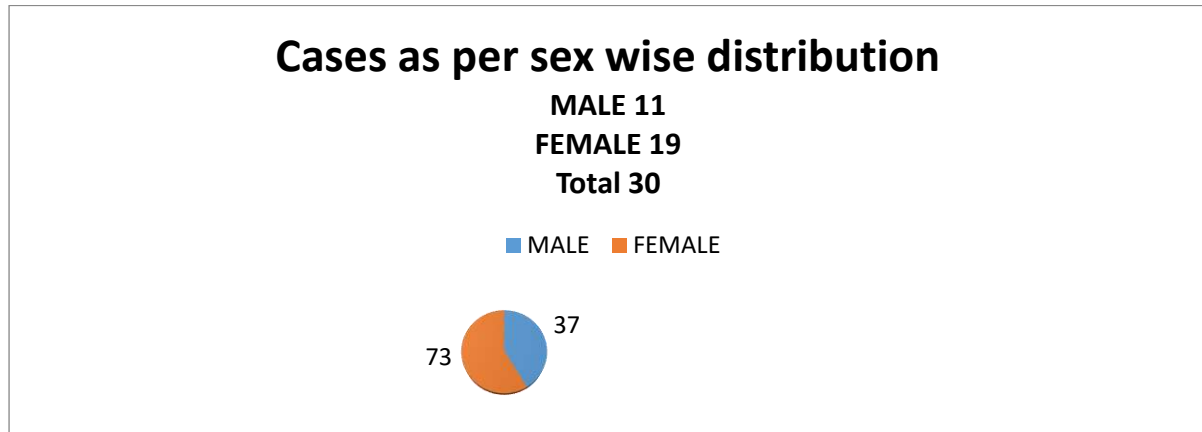
Water sample: 10 samples sent to State Bacteriological Lab for testing. All samples found non potable.

Stool sample: All 5 negative for *Vibrio Cholerae*.

DESCRIPTIVE EPIDEMIOLOGY

1. **Cases as per Time distribution:** with respect to date on which cases were found.

**Cases as per Person Distribution (w.r.t age)**

Cases as per sex wise distribution**CONTROL MEASURES TAKEN**

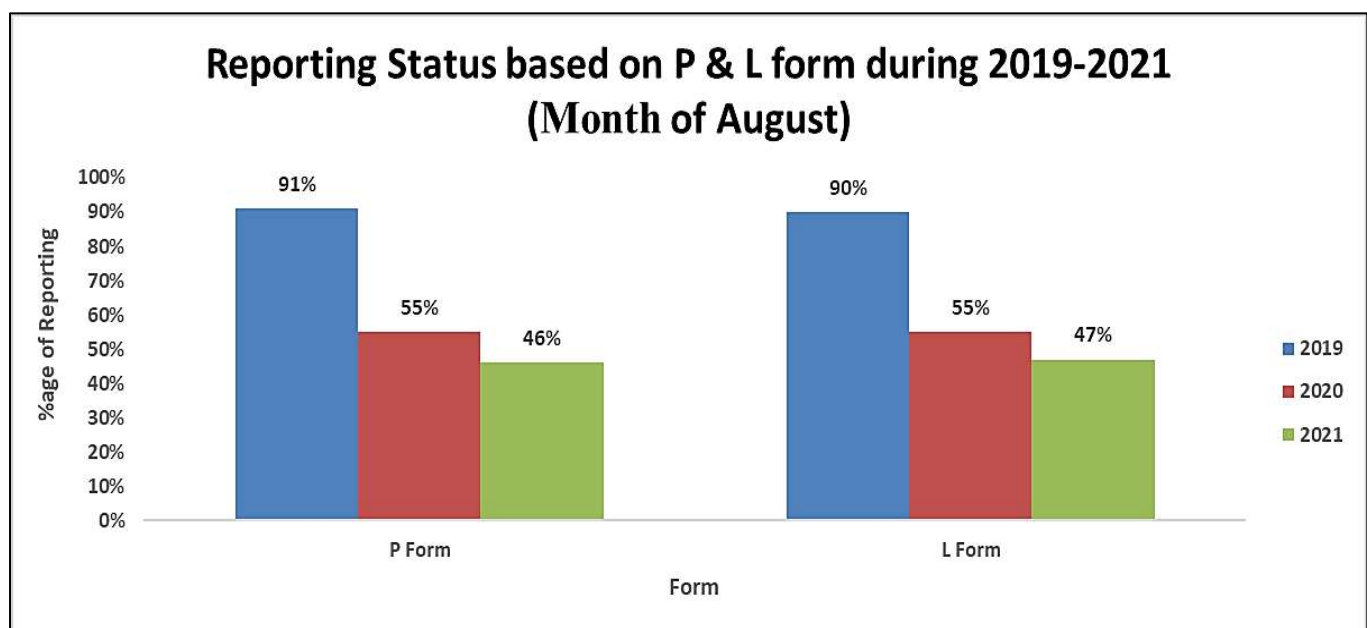
1. Rapid Response Team (RRT) was immediately sent for investigations.
2. Total of Six rounds House to house surveys were conducted in the affected area.
3. Total diarrhea cases reported: 83
4. Pamphlets on water borne diseases were distributed.
5. Re-sampling will be done after a gap of 15 days.
6. Health Education (IEC) given to all the inhabitants of the area. Information was shared about the effectiveness of ORS, the benefits of early reporting for prompt treatment, hygienic food habits and eating practices, hand washing before and after eating, benefits of cooked food and safe drinking water practices by chlorination and boiling of water.
7. Health workers were instructed to daily visit the area and inform about the status of old and new patients, if any.
8. Water supply department was informed about the situation. Letter was also issued to them regarding providing alternate potable water supply to the residents of the affected area. Letter was also issued to them regarding non-potable of samples.

RECOMMENDATIONS

1. Involvement of Public Health Department and Water Supply & Sewerage Departments is to be done in order to get the repair of all distribution points and to provide alternate potable drinking water to the residents.
2. Health Education (IEC) given to all the inhabitants of the area. Information was shared about the effectiveness of ORS, the benefits of early reporting for prompt treatment, hygienic food habits and eating practices, hand washing before and after eating, benefits of cooked food and safe drinking water practices by chlorination and boiling of water.
3. Rigorous steps to be taken to avoid open field defecation.
4. 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 2019 - 2021*

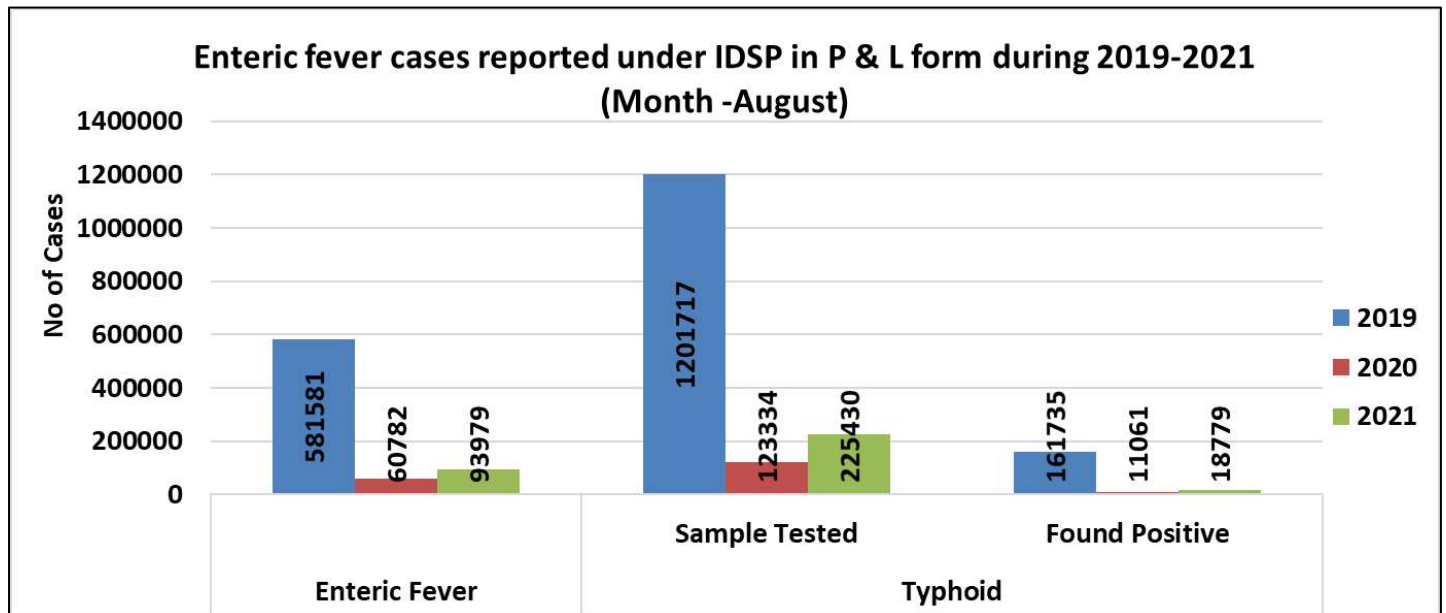
Fig. 5: RU-wise reporting based on P & L forms during August 2021



As shown in Fig 5, in August 2019, 2020 and 2021, the ‘P’ form reporting percentage (i.e. % RU reporting out of total in P form) was 91%, 55% and 46% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 90%, 55% and 47% 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 August 2021 compared to the same month in previous years for both P and L forms, thereby compromising on the quality of surveillance data.

Fig. 8: No. of Enteric Fever Cases reported under P & L form during August 2019 - 2021



As shown in Fig 8, number of presumptive enteric fever cases, as reported by States/UTs in ‘P’ form was 581581 in August 2019; 60782 in August 2020 and 93979 in August 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in August 2019; 1201717 samples were tested for Typhoid, out of which 161735 were found positive. In August 2020; out of 123334 samples, 11061 were found to be positive and in August 2021, out of 225430 samples, 18779 were found to be positive.

Sample positivity has been 13%, 9% and 8% in August 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. 9: State/UT wise Presumptive Enteric fever cases & outbreaks for August 2021

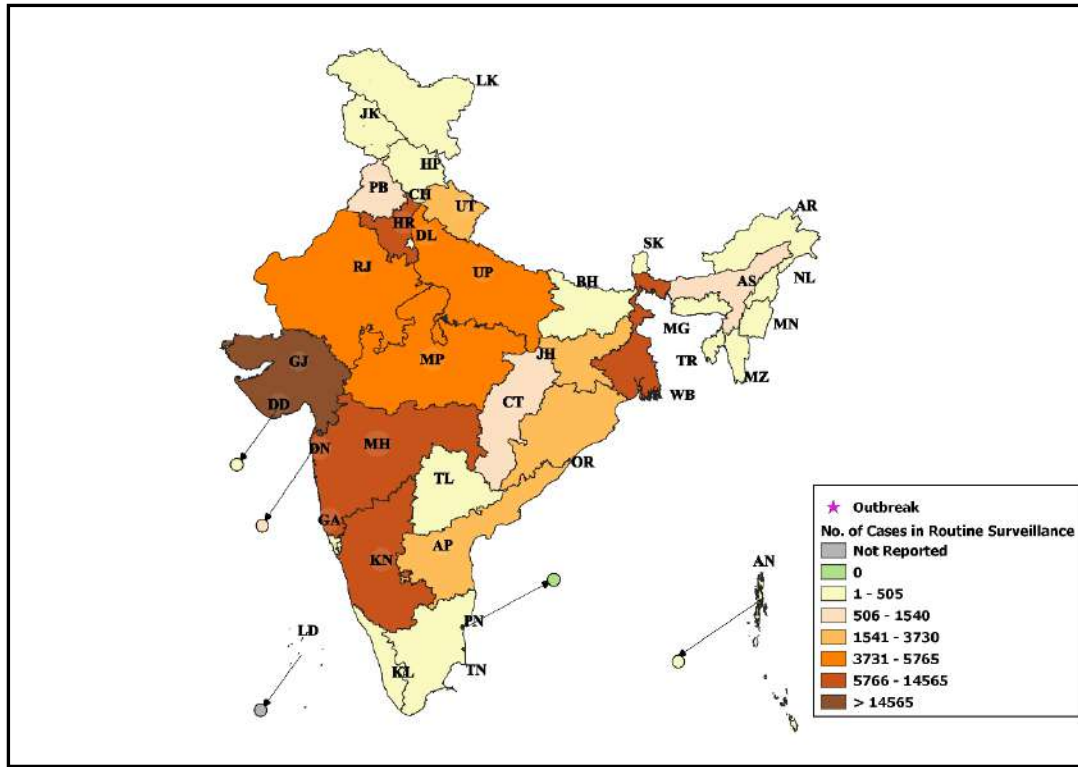


Fig. 10: State/UT wise Lab Confirmed Typhoid cases and outbreaks for August 2021

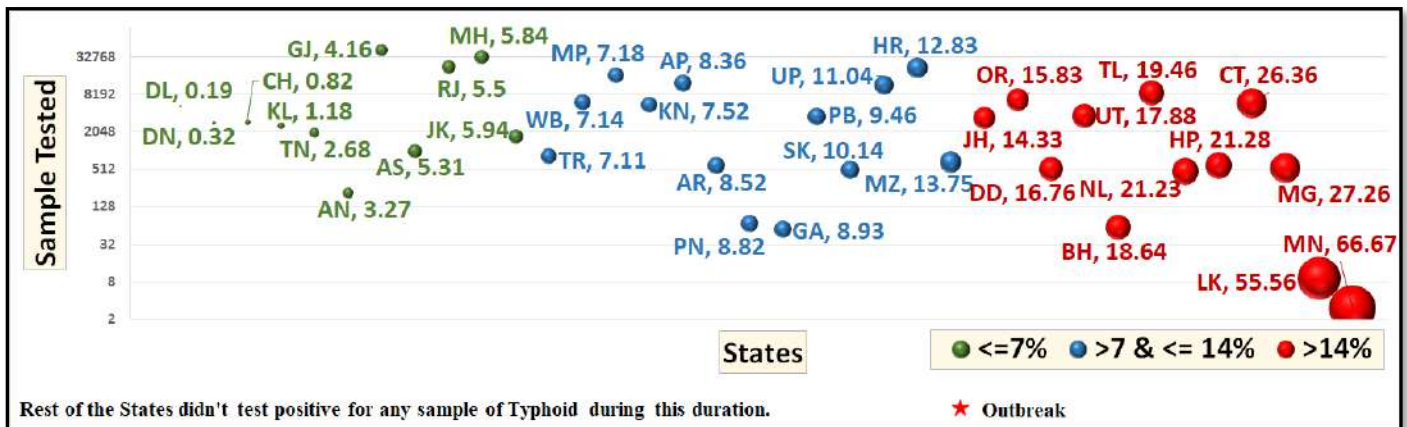
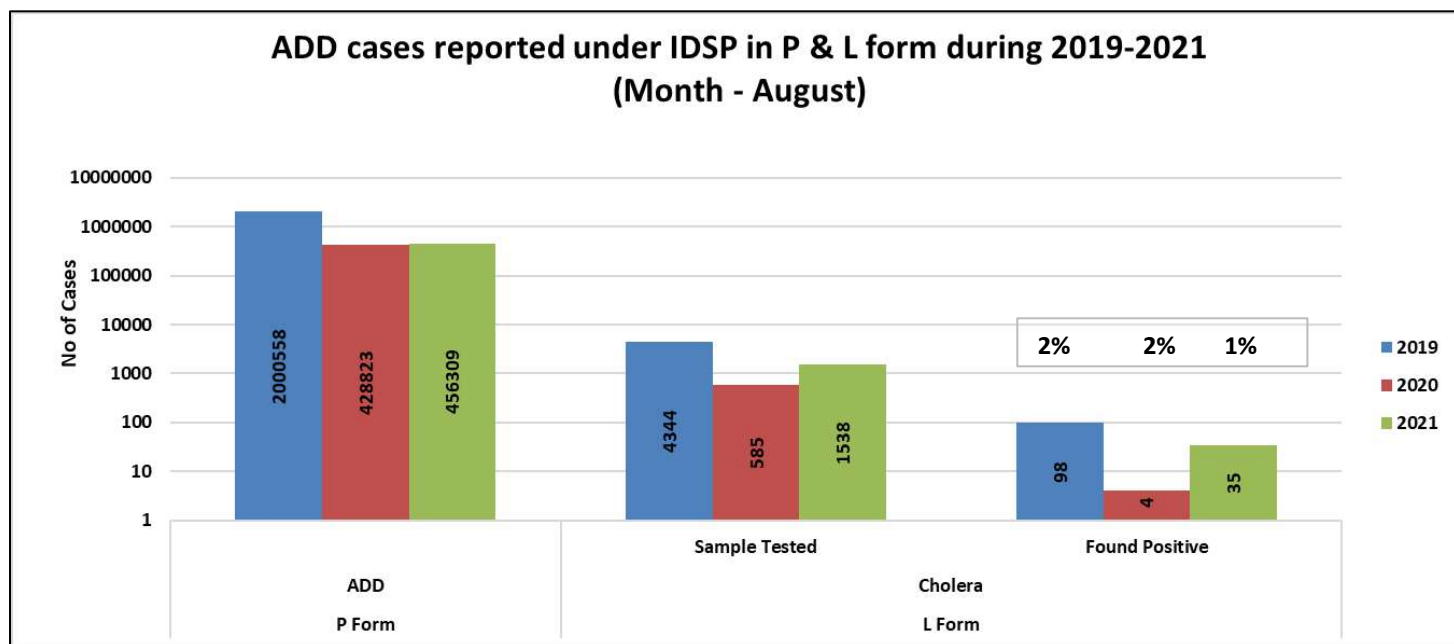


Fig. 11: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during August 2019 - 2021



As shown in Fig 11, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 2000558 in August 2019, 428823 in August 2020 and 456309 in August 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in August 2019, 4344 samples were tested for Cholera out of which 98 tested positive; in August 2020, out of 585 samples, 4 tested positive for Cholera and in August 2021, out of 1538 samples, 35 tested positive.

Sample positivity of samples tested for Cholera has been 2%, 2% and 1% in August month of 2019, 2020 & 2021 respectively.

Fig. 12: State/UT wise Presumptive ADD cases and outbreaks for August 2021

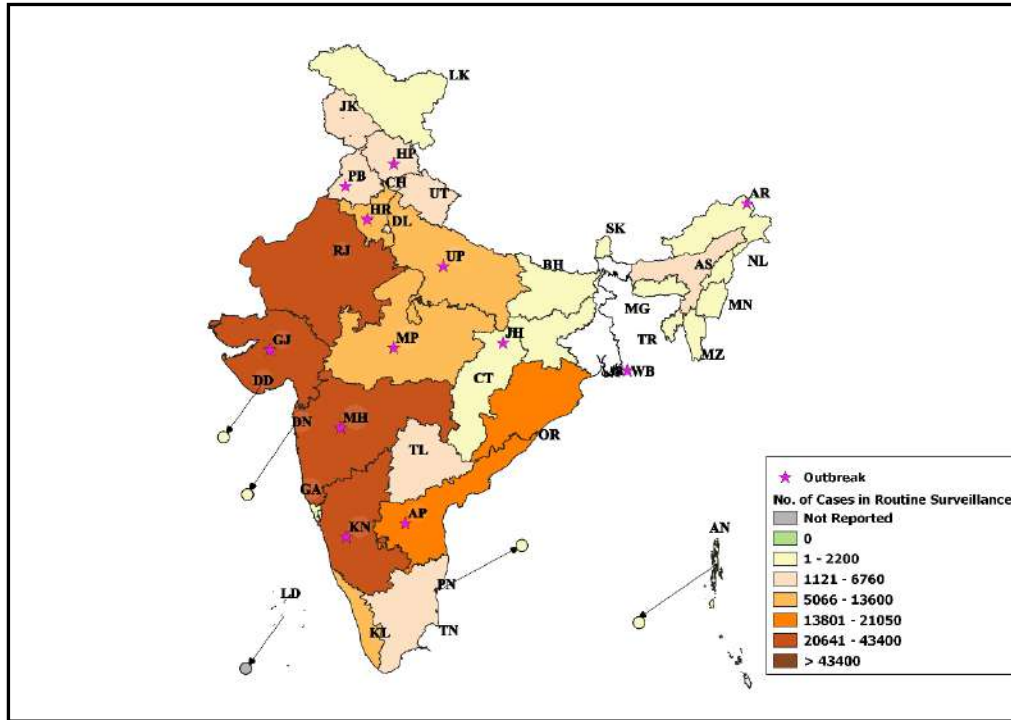


Fig. 13: State/UT wise Lab Confirmed Cholera cases and outbreaks for August 2021

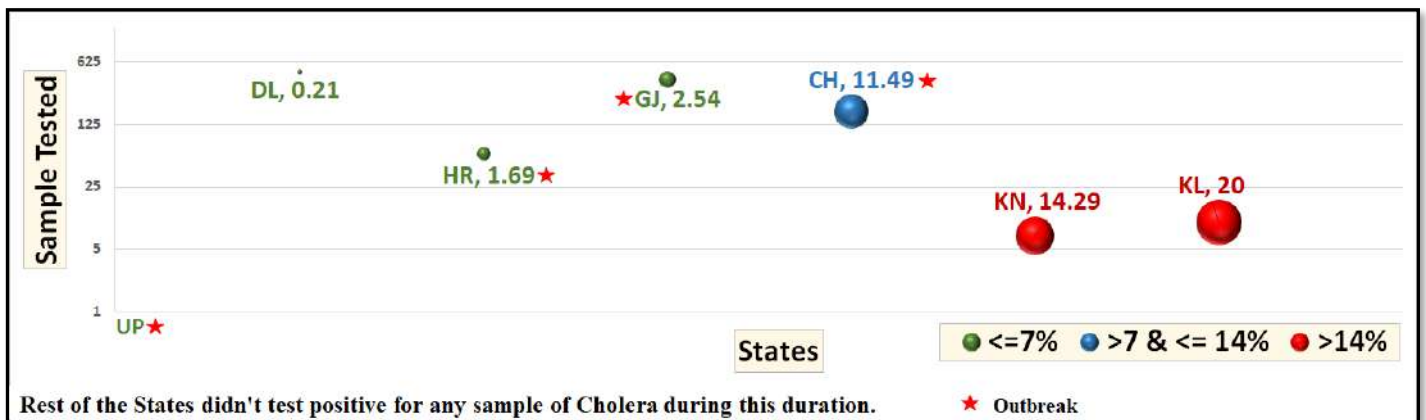
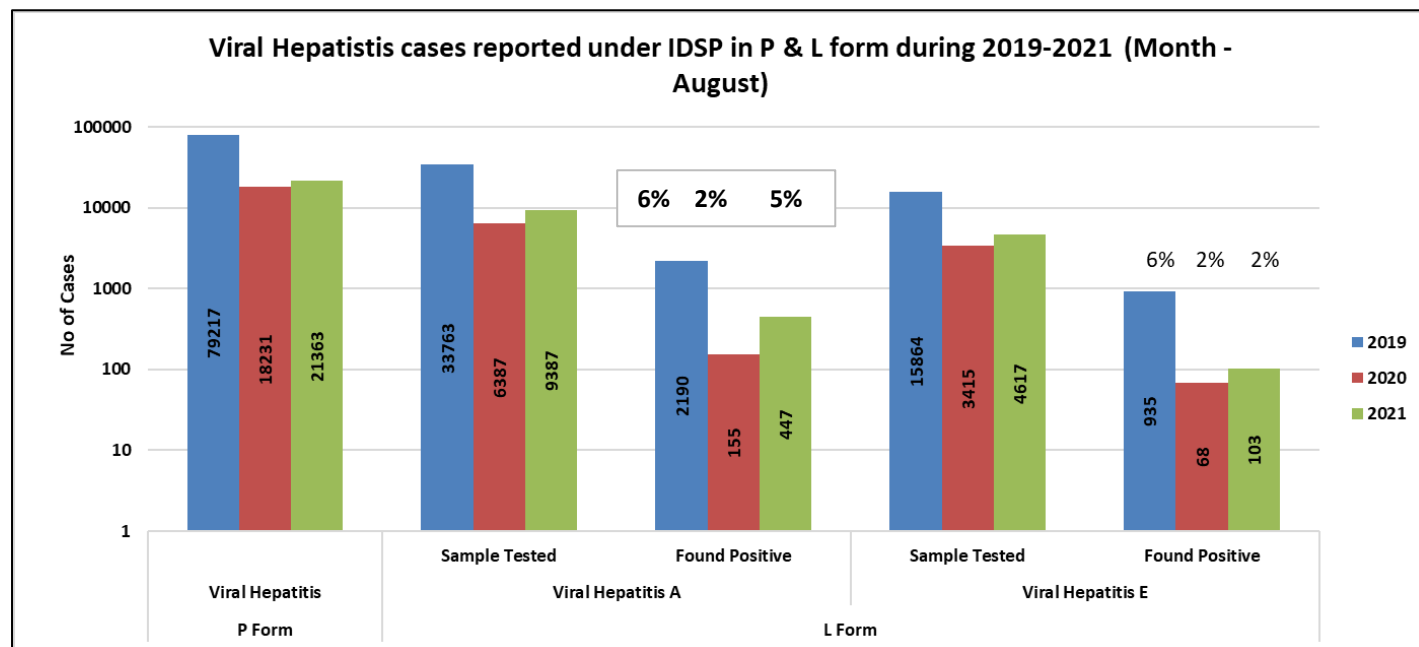


Fig. 14: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during August 2019 - 2021



As shown in Fig 14, number of presumptive Viral Hepatitis cases was 79217 in August 2019, 18231 in August 2020 and 21363 in August 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 August 2019; 33763 samples were tested out of which 2190 were found positive. In August 2020 out of 6387 samples, 155 were found to be positive and in August 2021, out of 9387 samples, 447 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 6%, 2% and 5% in August month of 2019, 2020 & 2021 respectively.

As reported in L form for Viral Hepatitis E, in August 2019; 15864 samples were tested out of which 935 were found positive. In August 2020; out of 3415 samples, 68 were found to be positive and in August 2021, out of 4617 samples, 103 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 6%, 2% and 2% in August month of 2019, 2020 & 2021 respectively.

Fig. 15: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for August 2021

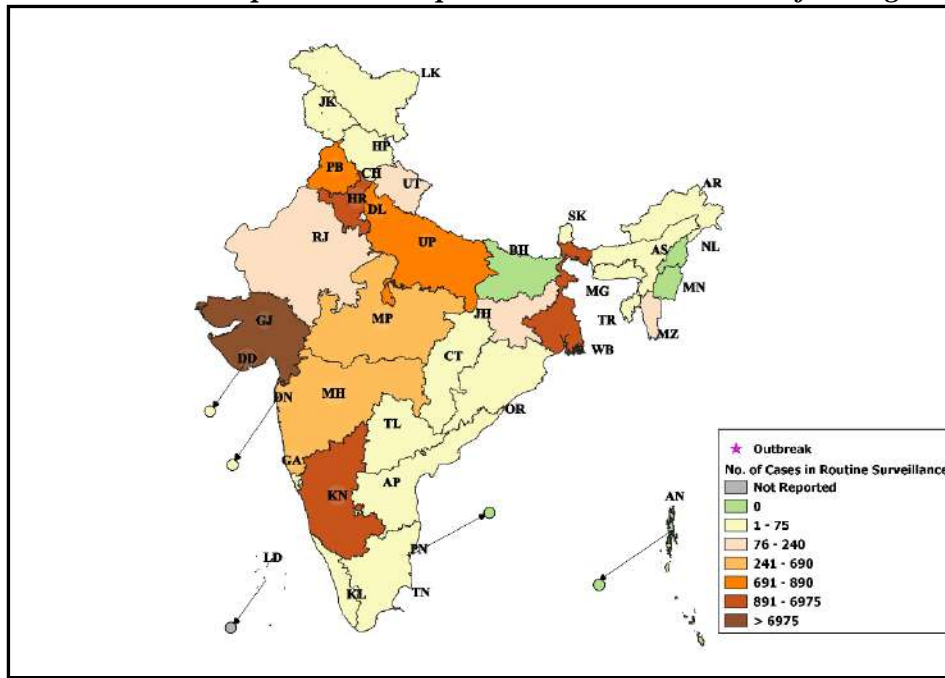


Fig. 16: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for August 2021

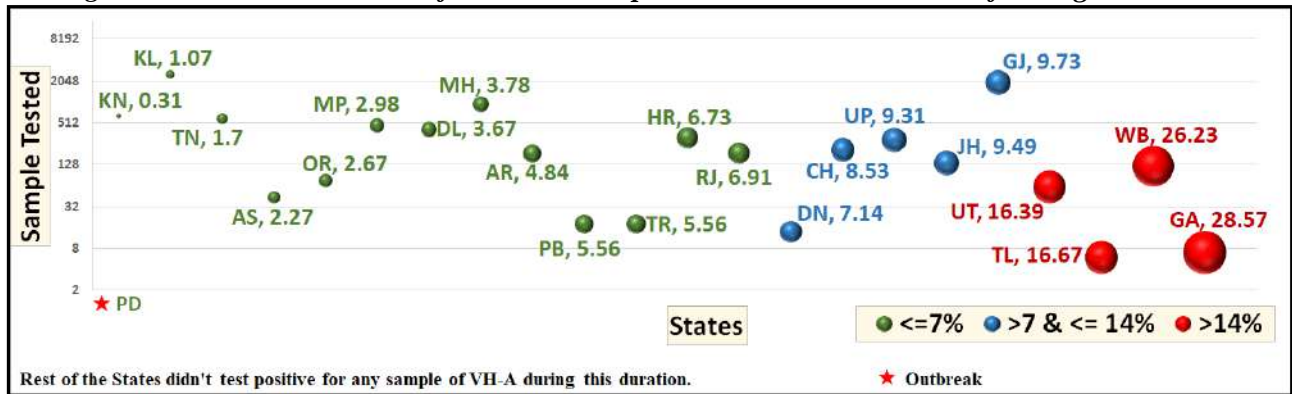


Fig. 17: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for August 2021

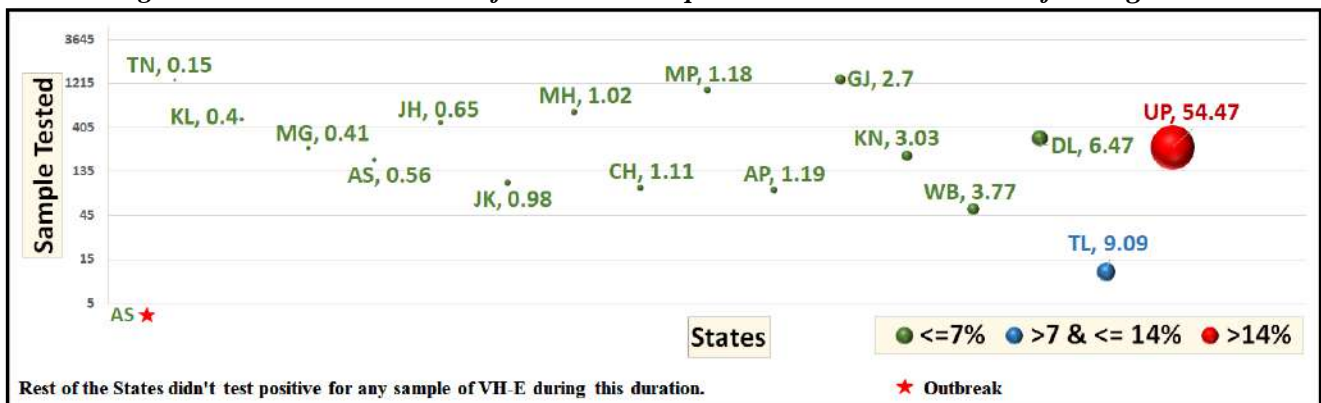
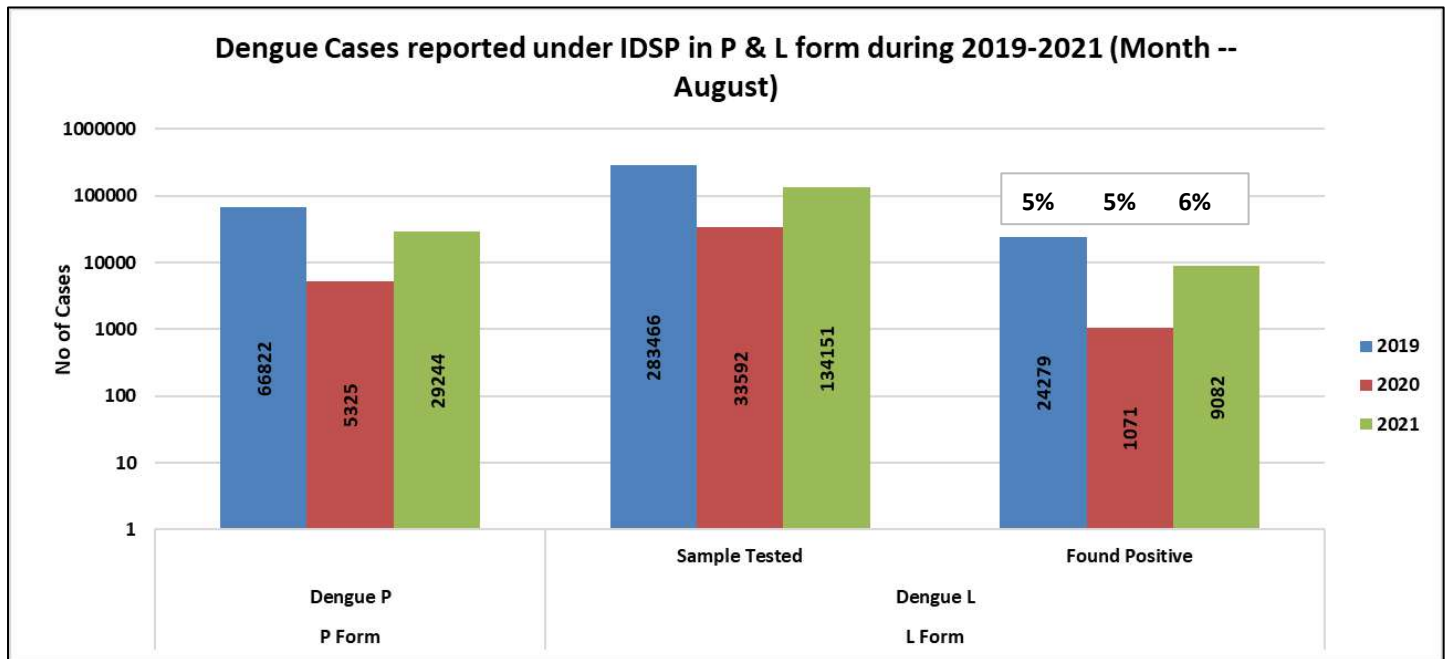


Fig. 18: No. of Dengue cases reported under IDSP in P & L form during August 2021



As shown in Fig 18, number of presumptive Dengue cases, as reported by States/UTs in ‘P’ form was 66822 in August 2019; 5325 in August 2020 and 29244 in August 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in August 2019; 283466 samples were tested for Dengue, out of which 24279 were found positive. In August 2020; out of 33592 samples, 1071 were found to be positive and in August 2021, out of 134151 samples, 9082 were found to be positive.

Sample positivity of samples tested for Dengue has been 5%, 5% and 6% in August month of 2019, 2020 & 2021 respectively.

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

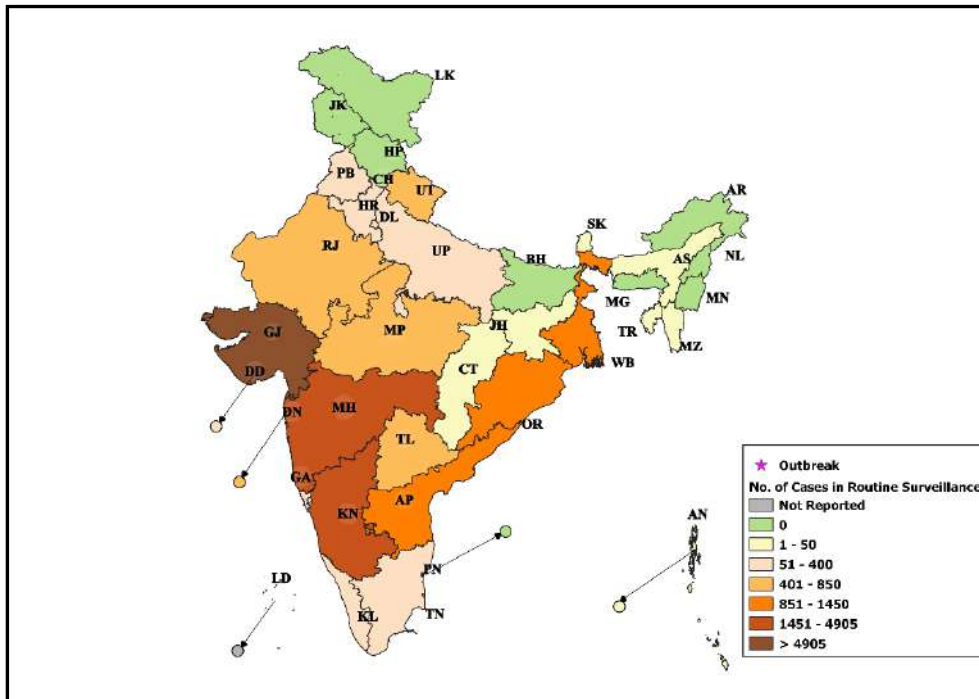


Fig. 20: State/UT wise Lab Confirmed Dengue cases and outbreaks for August 2021

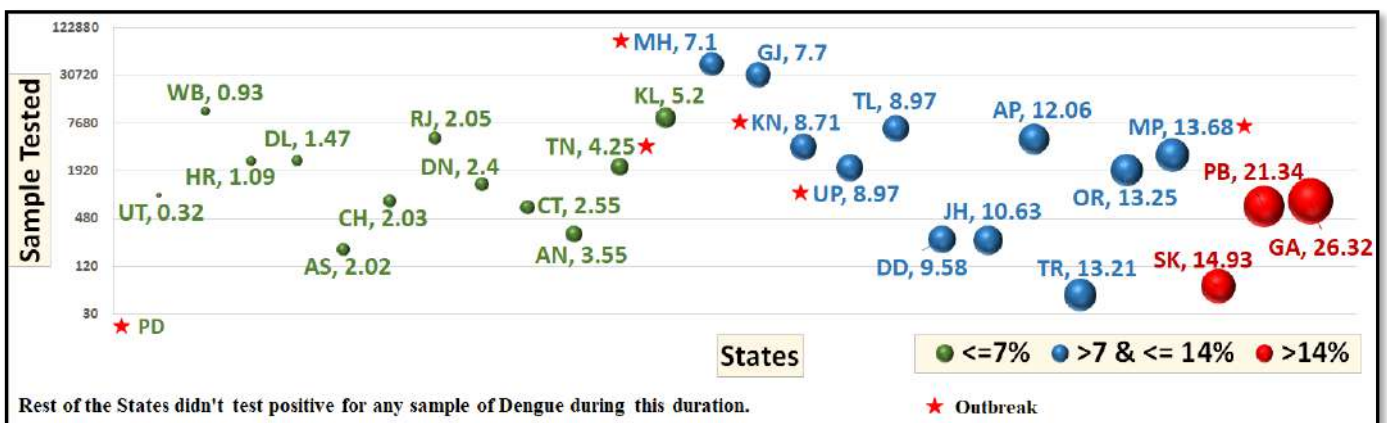
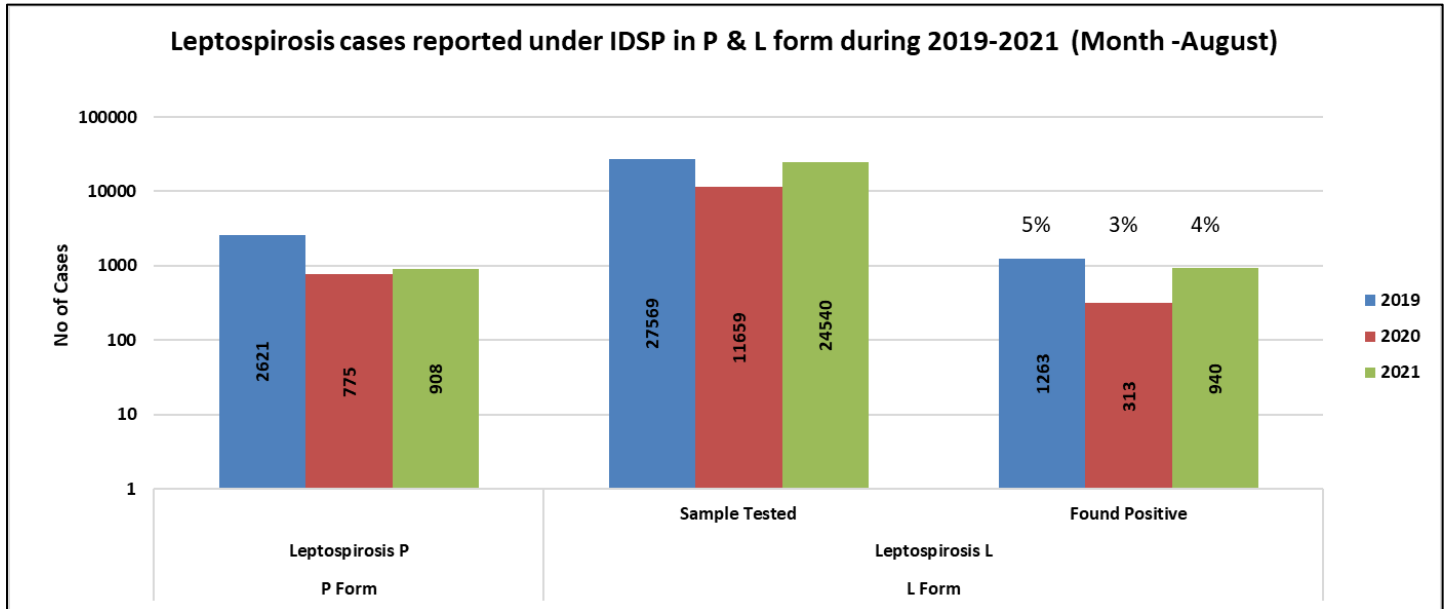


Fig. 21: No. of Leptospirosis Cases reported under IDSP in P & L form during August 2019 - 2021



As shown in Fig 21, number of presumptive Leptospirosis cases, as reported by States/UTs in ‘P’ form was 2621 in August 2019; 775 in August 2020 and 908 in August 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in August 2019; 27569 samples were tested for Leptospirosis, out of which 1263 were found positive. In August 2020; out of 11659 samples, 313 were found to be positive and in August 2021, out of 24540 samples, 940 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 5%, 3% and 4% in August month of 2019, 2020 & 2021 respectively.

Fig. 22: State/UT wise Presumptive Leptospirosis cases and outbreaks for August 2021

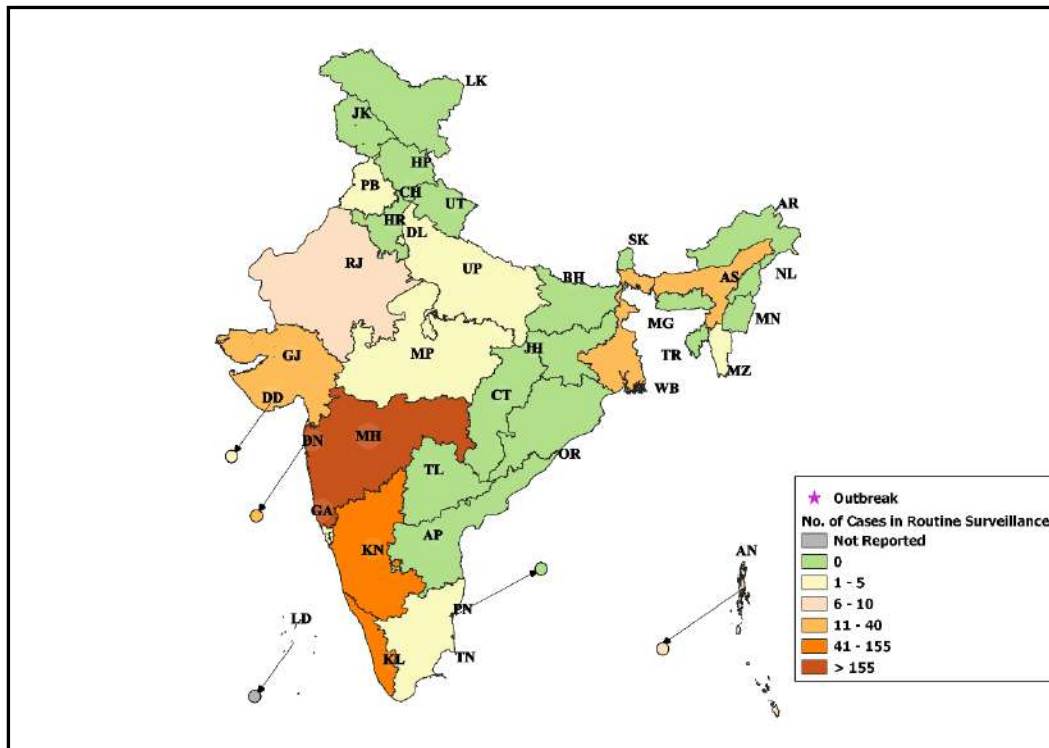


Fig. 23: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for August 2021

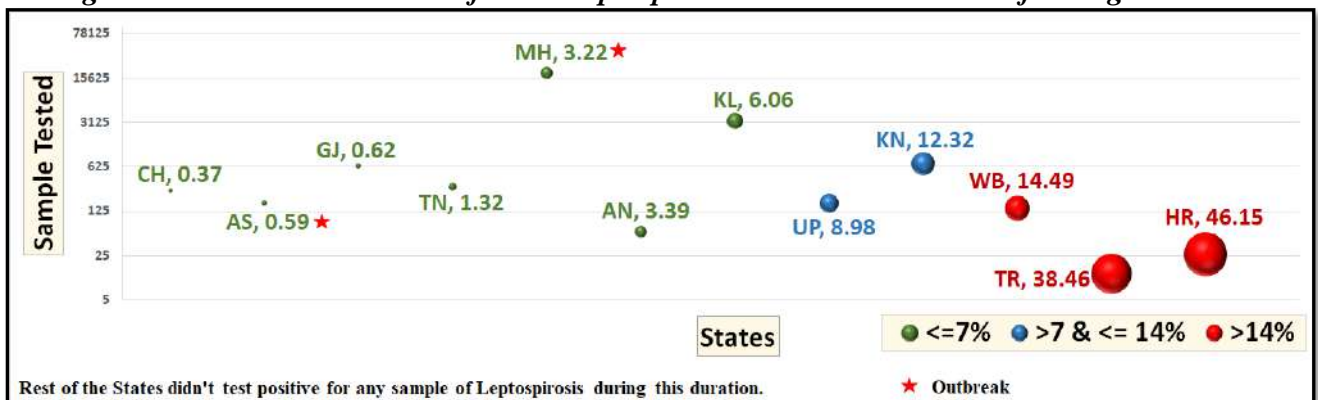
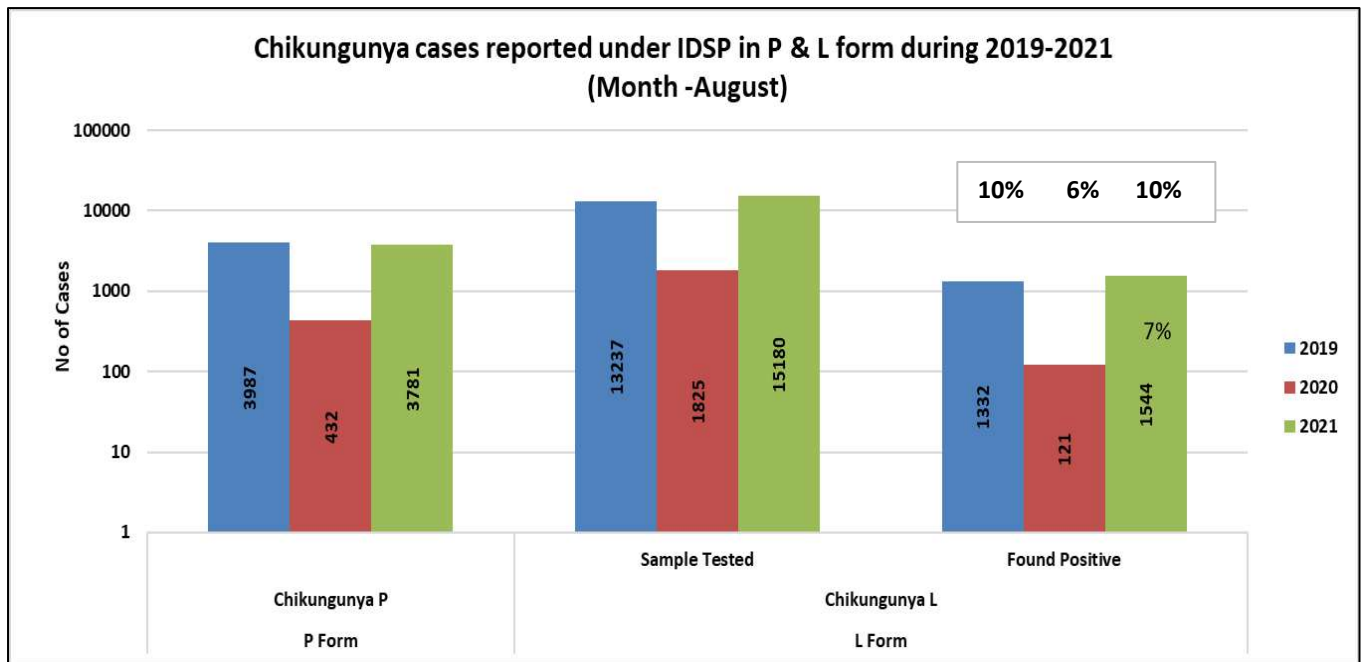


Fig. 24: No. of Chikungunya Cases reported under IDSP in P & L form during August 2019 - 2021



As shown in Fig 24, number of presumptive Chikungunya cases, as reported by States/UTs in ‘P’ form was 3987 in August 2019; 432 in August 2020 and 3781 in August 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in August 2019; 13237 samples were tested for Chikungunya, out of which 1332 were found positive. In August 2020; out of 1825 samples, 121 were found to be positive and in August 2021, out of 15180 samples, 1544 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 10%, 6% and 10% in August month of 2019, 2020 & 2021 respectively.

Fig. 25: State/UT wise Presumptive Chikungunya cases and outbreaks for August 2021

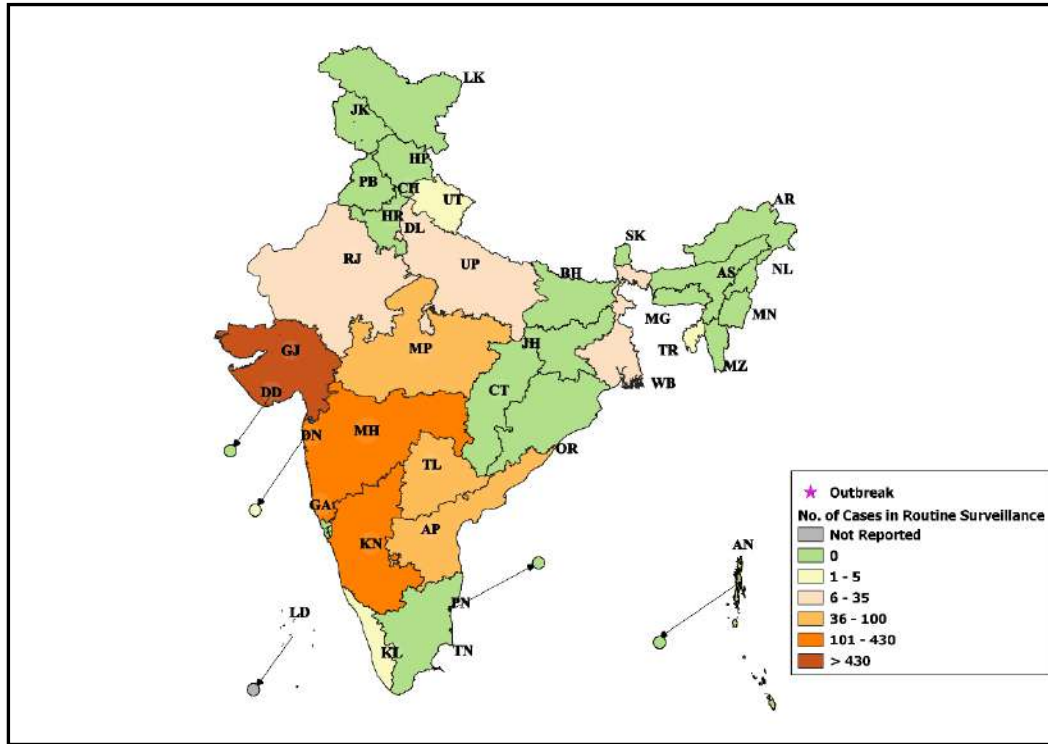


Fig. 26: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for August 2021

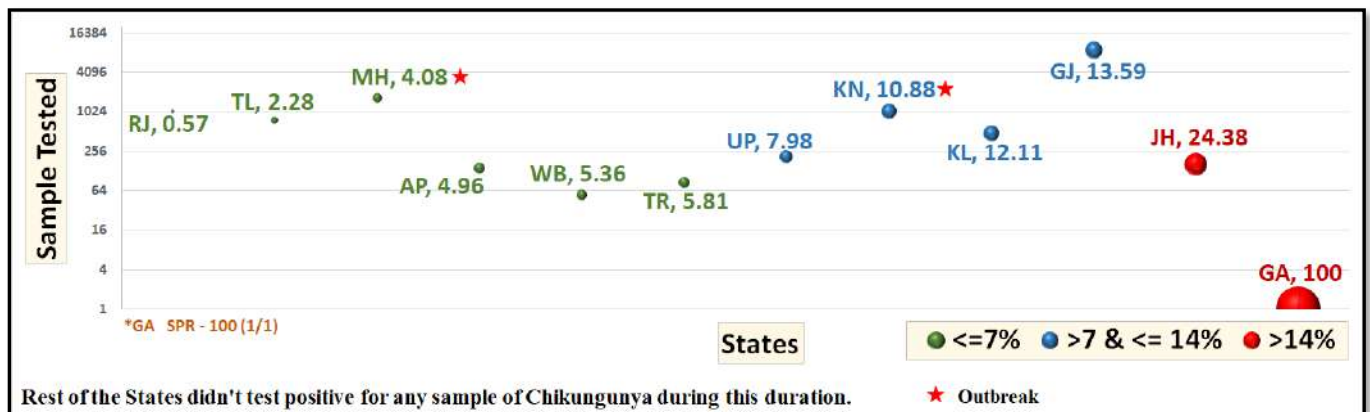
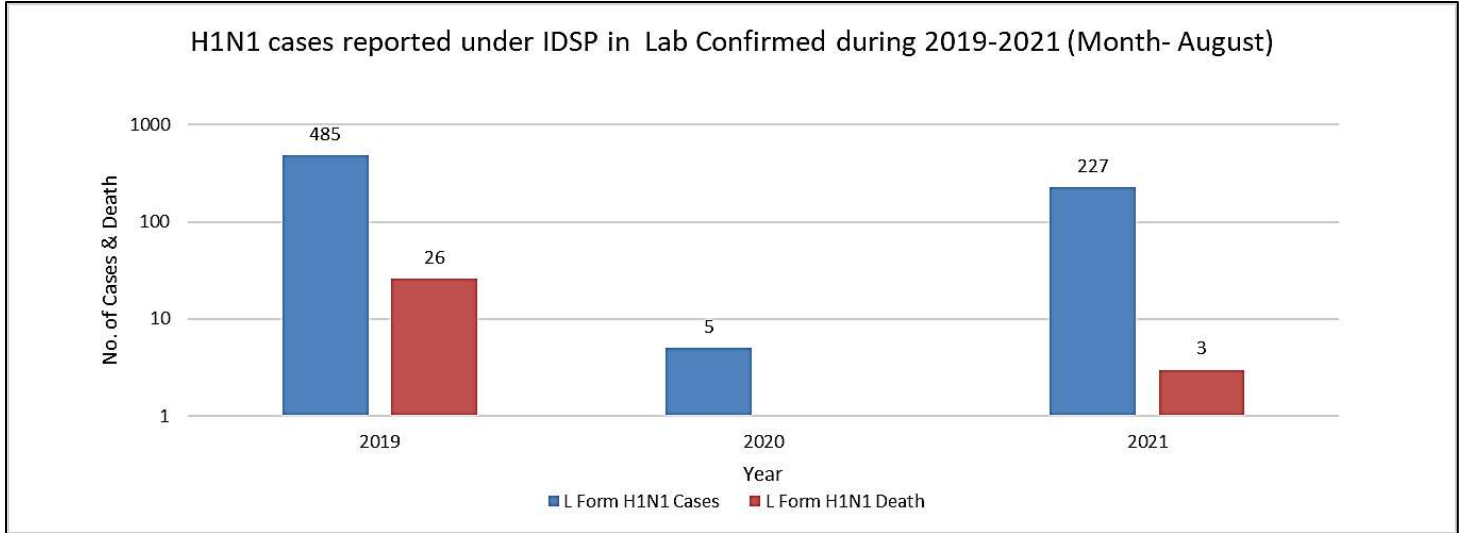


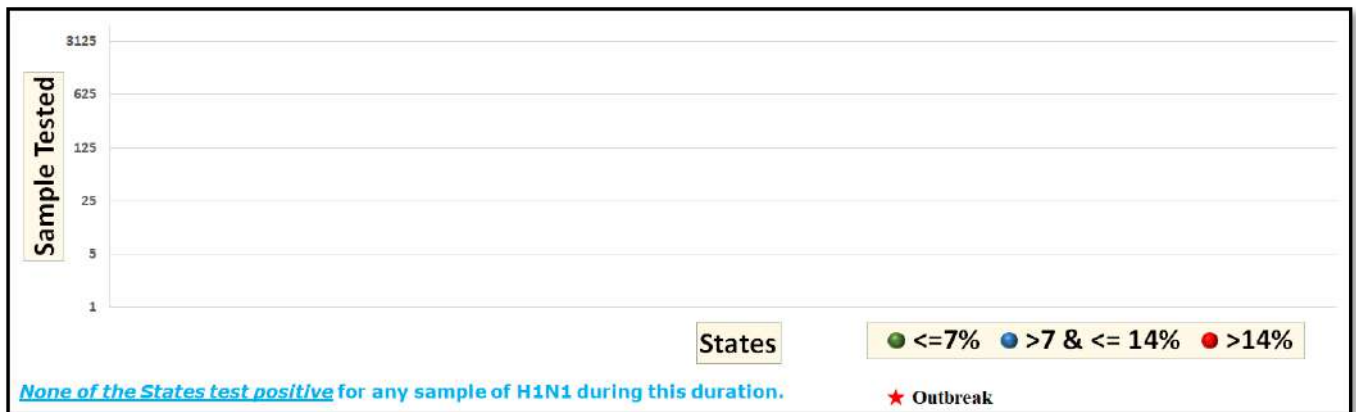
Fig. 27: H1N1 cases reported under IDSP in L Form during 2019-2021 in August 2021



As shown in Fig. 24, as reported in L form, in August 2019, there were 485 cases and 26 deaths. In August 2020, there were 5 cases and 0 deaths; and in August 2021, there were 227 cases and 3 deaths.

Case fatality rate for H1N1 were 5.4%, 0.00% and 1.3% in August month of 2018, 2019 & 2020 respectively.

Fig. 28: State/UT wise H1N1 cases and outbreaks for August 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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