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

BACKGROUND

Mattran is a medium size village located in Sangrur Tehsil of Sangrur district, Punjab. It has population of 896. The total population under PHC, Bhawanigarh is 22,320 out of which 11,780 are males and 10,540 are females as per 2011 census.

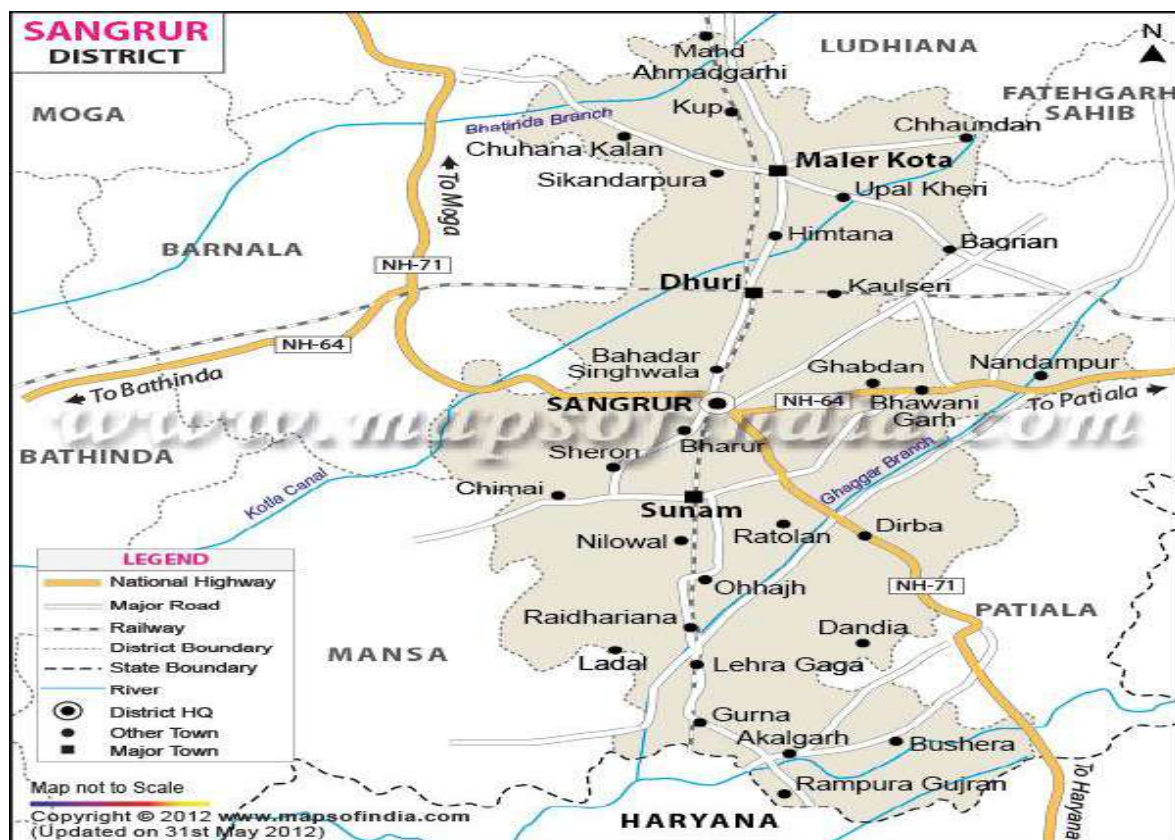


Fig.1 Map of district Sangrur

BACKGROUND INFORMATION

Source of Information – Information received from Health workers during their routine visit.

Date of Reporting to Health System – 23rd July' 2021

Date of start of investigation of the outbreak – 24th July' 2021

Team investigating the outbreak – RRT headed by Civil Surgeon, Sangrur

Definition of diarrhea: 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.

DETAILS OF INVESTIGATION

Under the supervision of Civil Surgeon, Sangrur & SMO PHC Bhawanigarh, Block Rapid response team was deputed for immediate action in the affected area.

Survey:

- House to house survey activity done in affected area by field staff. Six rounds of house to house survey conducted for persons who were suffering from Diarrhea.
- No. of Teams were 04.
- Houses covered during survey: 124(day1) +110(day2) +114(day3) +96(day4) +84(day5) +74(day6) +58(day7) =660
- Population covered: 751(day1) +381(day2) +512(day3) +397(day4) +313(day5) +297(day6) +226(day7) =2877
- During survey, 30(day1) +16(day2) +13(day3) +19(day4) +5(day5) = 83 active Cases were found who complained of loose stools, pain in abdomen and vomiting.
- Anti- Diarrheal drugs and paracetamol distributed to symptomatic patients.
- Injection metaclopramide given to patients having vomiting.
- 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, Bhawanigarh was informed about the problem contaminated water with drinking water and same was repaired by the department.

Environmental investigations methods:

- Examined the water sources in the area.
- Examined the water pipe lines and sewerage system of the area.

Immediate control measures undertaken:

- Health Education & IEC Activity done.
- Health education imparted regarding the personnel hygiene, sanitation, and use of potable water and to boil water before consumption.
- Repair is being under taken by public health department.

- After disease was notified, information gathered from the patient, food histories were reviewed to identify sources of common exposure.
- ANM, Health Workers, and ASHA workers were instructed to closely monitor the situation.
- No fresh cases were reported on day 6 and day 7 and situation was under control

LABORATORY INVESTIGATIONS

Samples collected: 12 blood samples collected and 10 stool samples collected. 10 water samples collected for biological /contamination purpose.

Environmental investigations: Water sources in the area examined. Water pipe lines and sewerage system of the area also examined. Chlorination done by Public Works Department.

CONFIRMATION OF OUTBREAK

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

RESULTS

Clinical Data: Based on clinical data, a tentative diagnosis of Gastroenteritis/Acute Diarrhea was made.

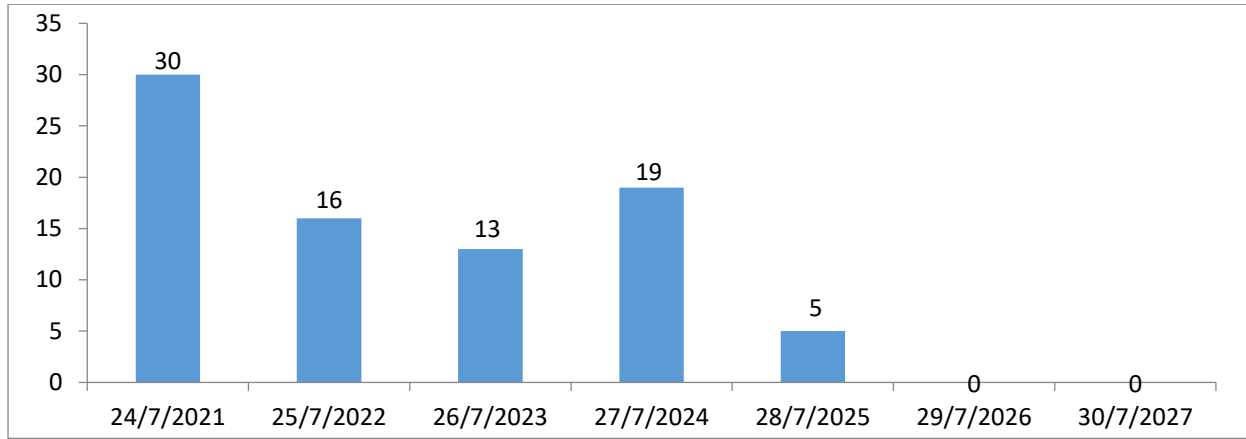
Epidemiological Data/ survey data: Total of 83 cases of acute diarrhea were identified.

Laboratory Results: All 12 blood samples tested negative for Hepatitis 'A' and Hepatitis 'E' by ELISA. In addition, 10 stool samples tested negative for *Vibrio cholerae*.

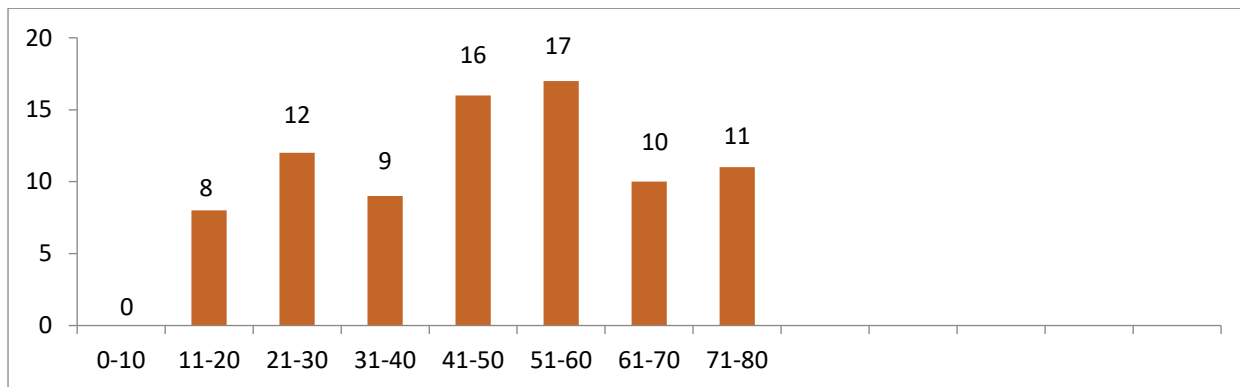
All 10 water samples found non-potable for human consumption.

DESCRIPTIVE EPIDEMIOLOGY

Cases as per Time distribution:



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



Cases as per sex wise distribution

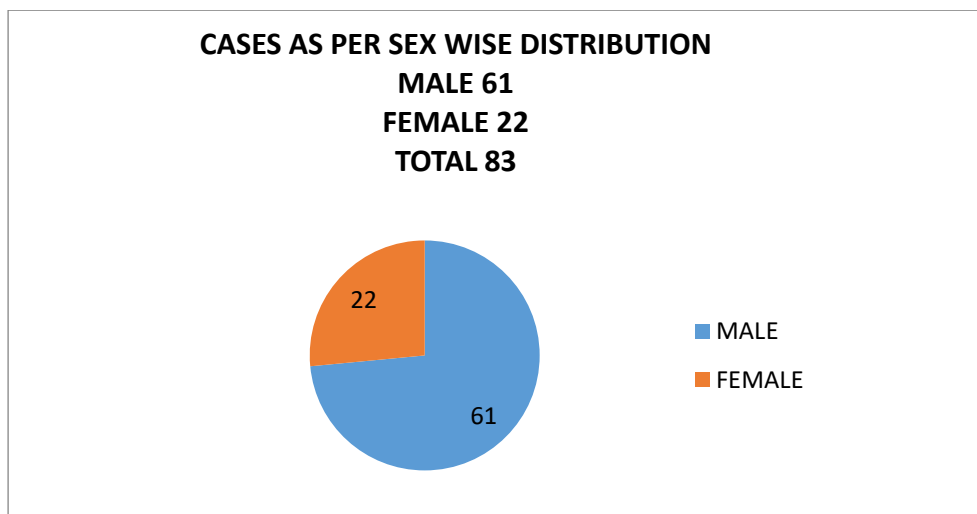




Fig. 2



Fig. 3



Fig. 4 (RRT members undertaking filed investigations)

CONTROL MEASURES TAKEN

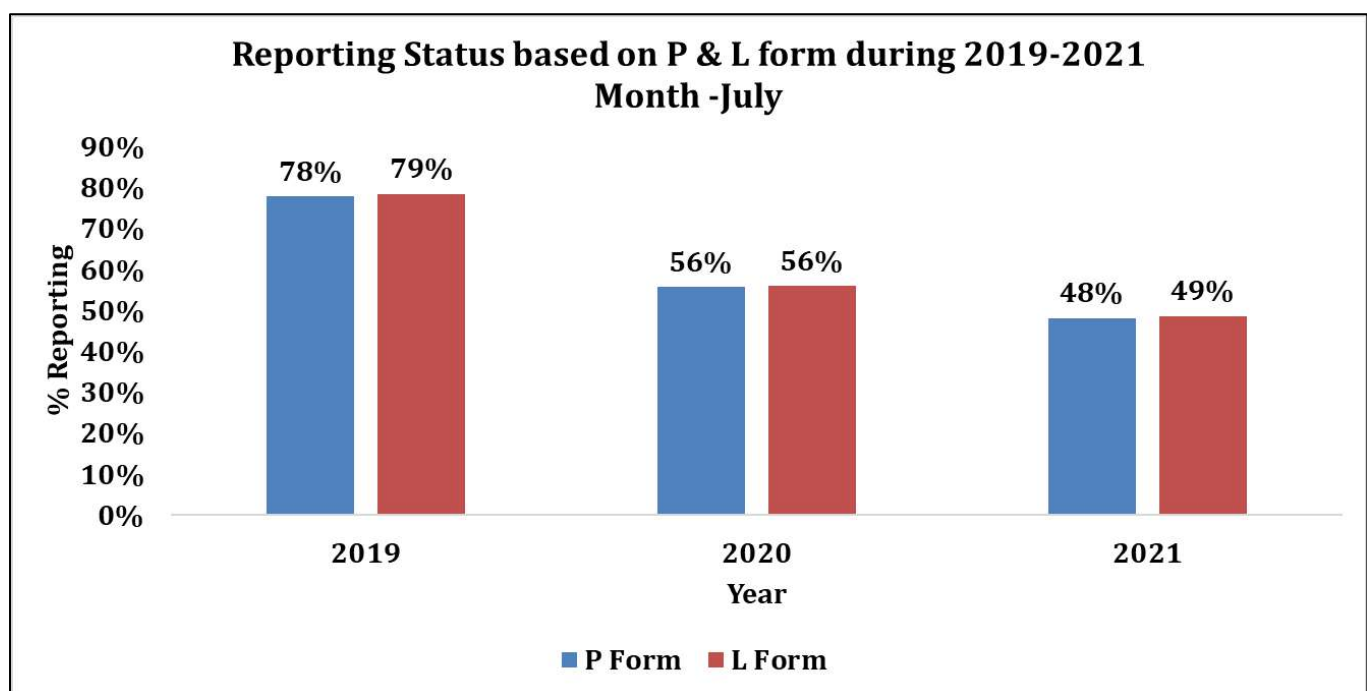
1. Rapid Response Team (RRT) was immediately sent for investigations.
2. Total of Six rounds House to house surveys were conducted in the affected area.
3. Total diarrhea cases reported: 83
4. Pamphlets on water borne diseases were distributed.
5. Re-sampling will be done after a gap of 15 days.
6. Health 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 July 2019 - 2021*

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



As shown in Fig 5, in July 2019, 2020 and 2021, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 78%, 56% and 48% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 79%, 56% 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 July 2021 compared to the same month in previous years for both P and L forms, thereby compromising on the quality of surveillance data.

Fig. 6: State/UT wise P form completeness % for July 2021

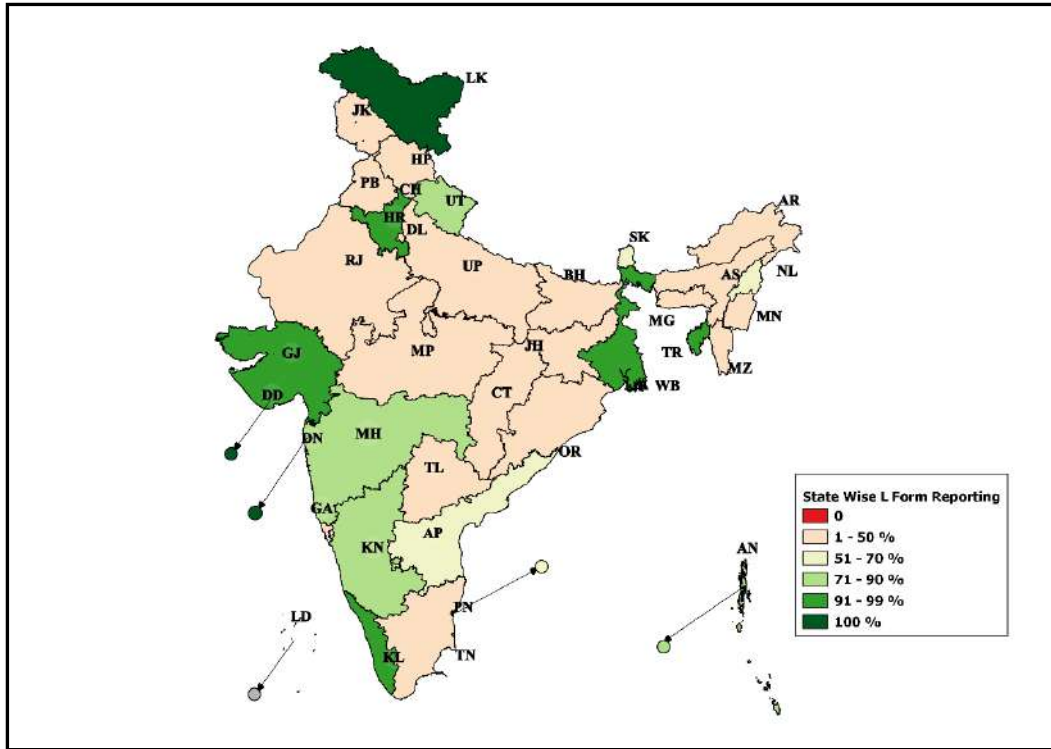


Fig. 7: State/UT wise L form completeness % for July 2021

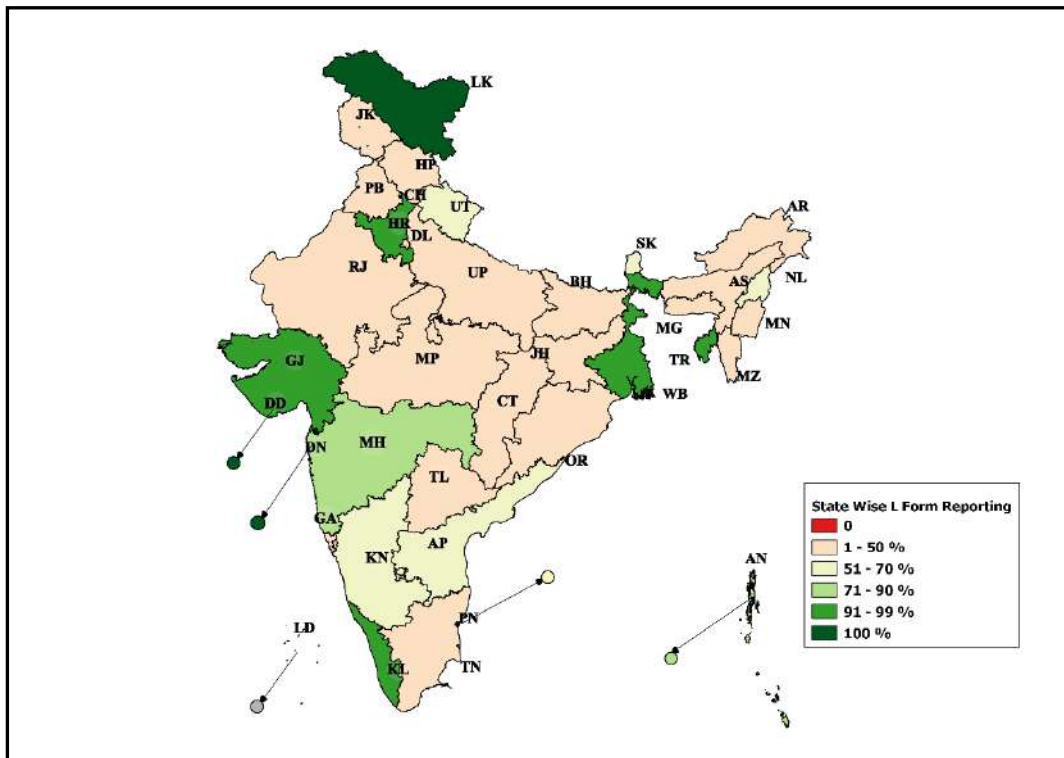
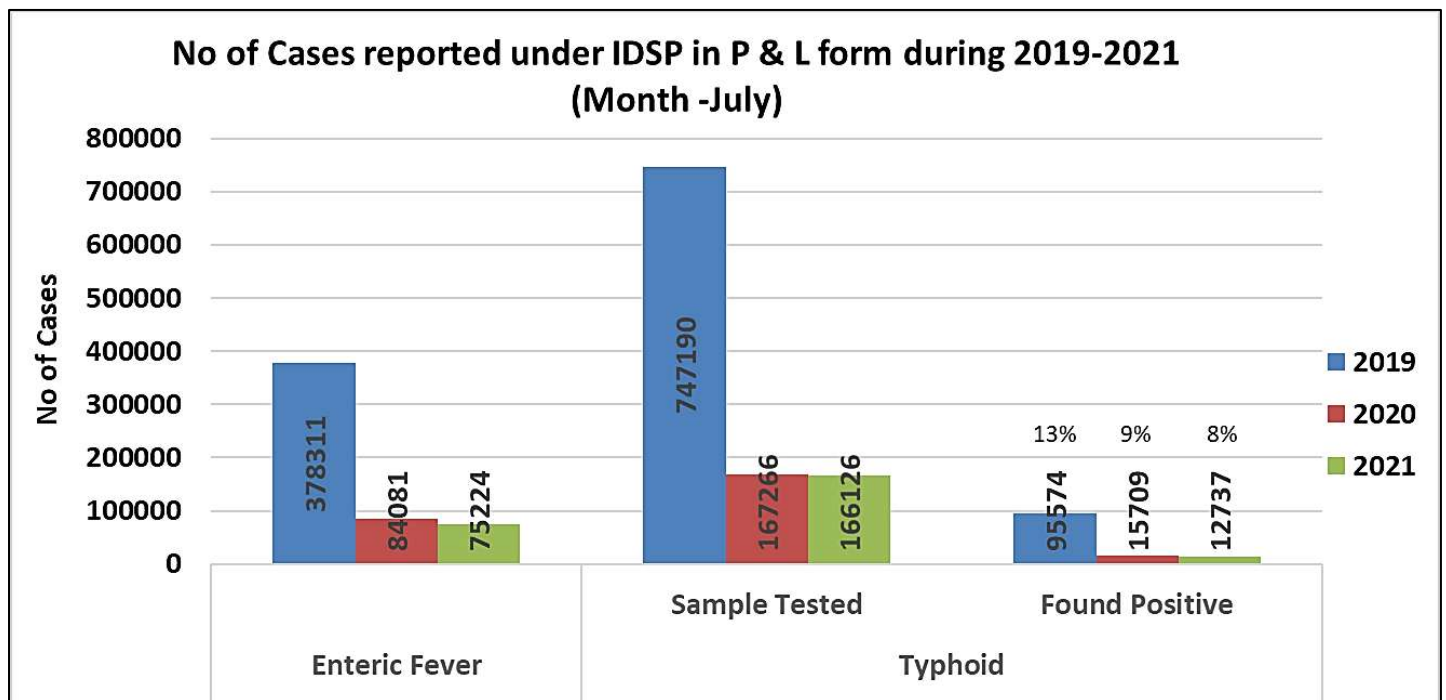


Fig. 8: No. of Enteric Fever Cases reported under P & L form during July 2019 - 2021



As shown in Fig 8, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 378311 in July 2019; 84081 in July 2020 and 75224 in July 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in July 2019; 747190 samples were tested for Typhoid, out of which 95574 were found positive. In July 2020; out of 167266 samples, 15709 were found to be positive and in July 2021, out of 75224 samples, 12737 were found to be positive.

Sample positivity has been 13%, 9% and 8% in July 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 July 2021

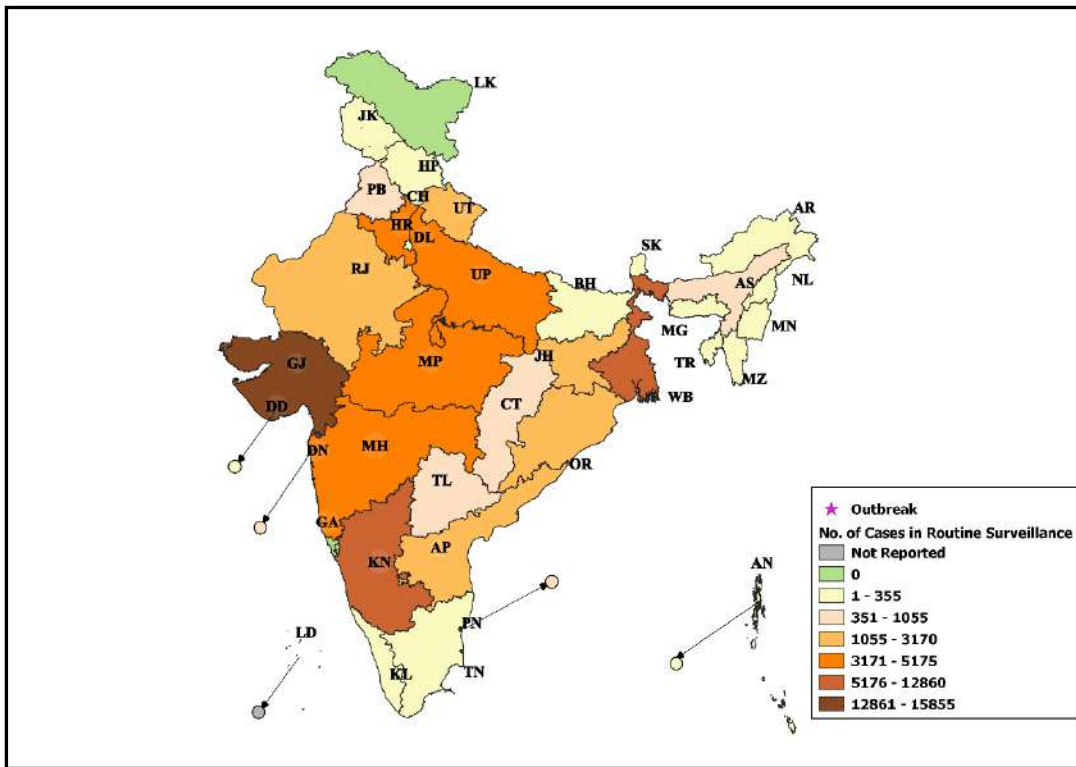
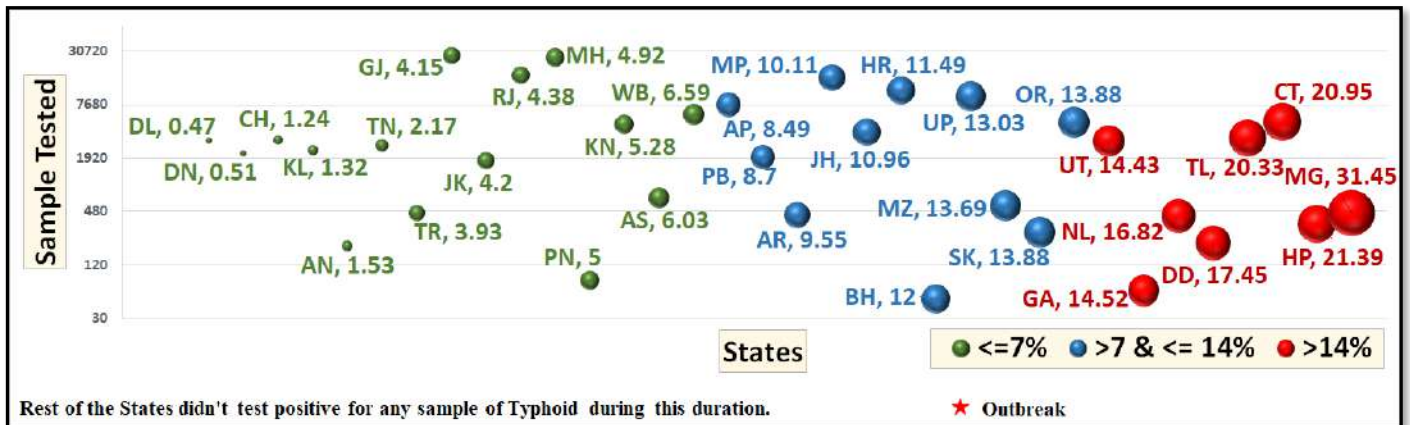


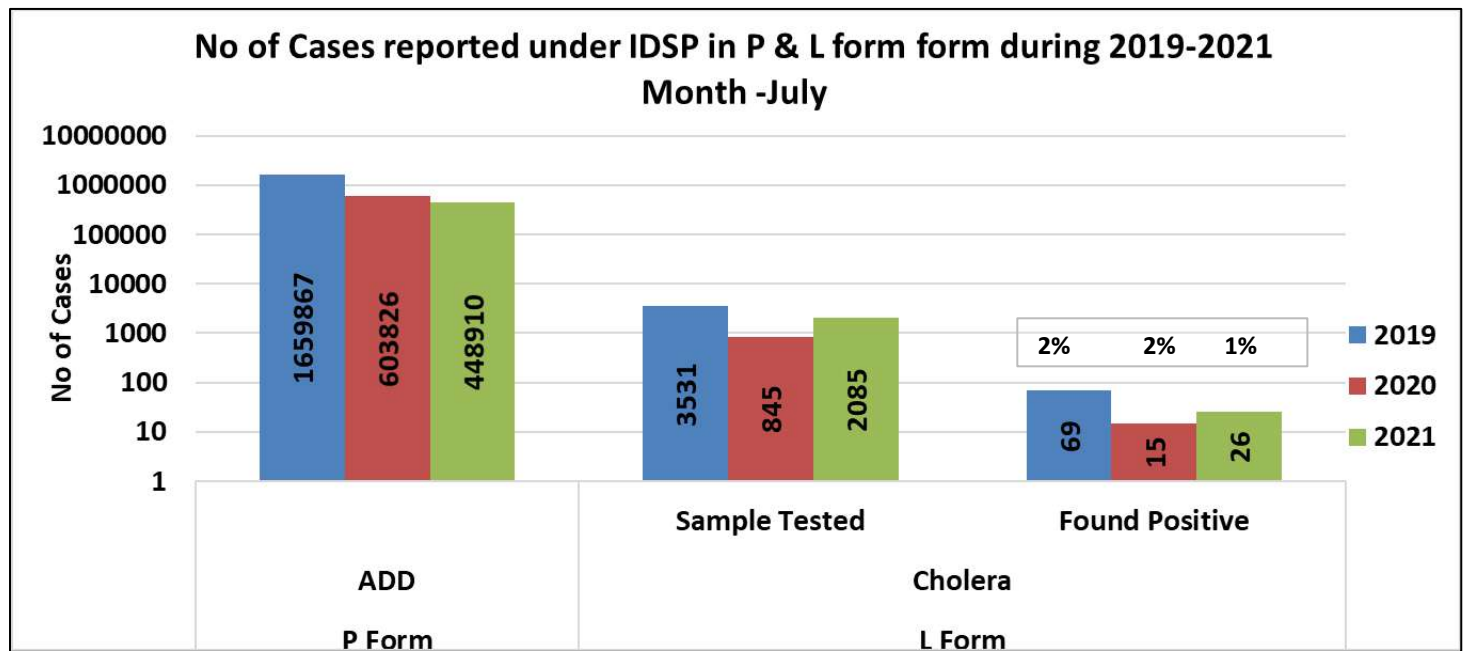
Fig. 10: State/UT wise Lab Confirmed Typhoid cases and outbreaks for July 2021



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

★ Outbreak

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



As shown in Fig 11, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1659867 in July 2019; 603826 in July 2020 and 448910 in July 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in July 2019, 3531 samples were tested for Cholera out of which 69 tested positive; in July 2020, out of 845 samples, 15 tested positive for Cholera and in July 2021, out of 2085 samples, 26 tested positive.

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

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

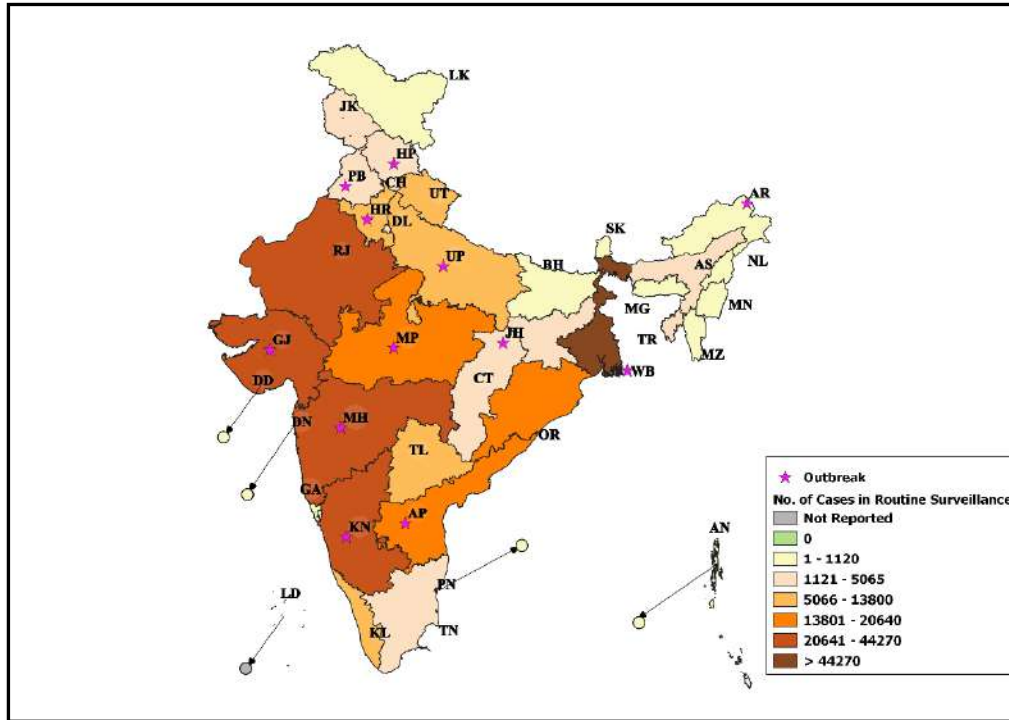


Fig. 13: State/UT wise Lab Confirmed Cholera cases and outbreaks for July 2021

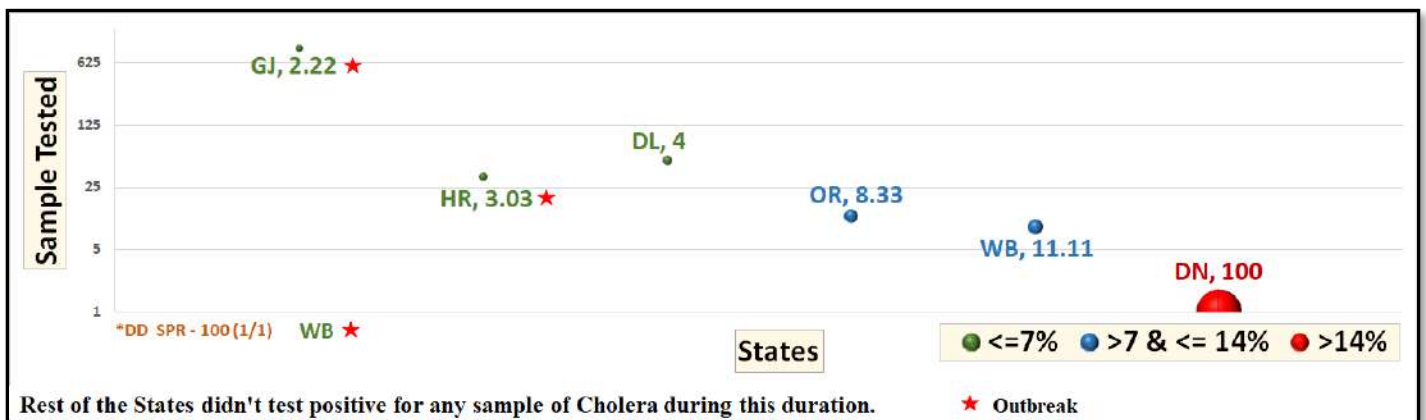
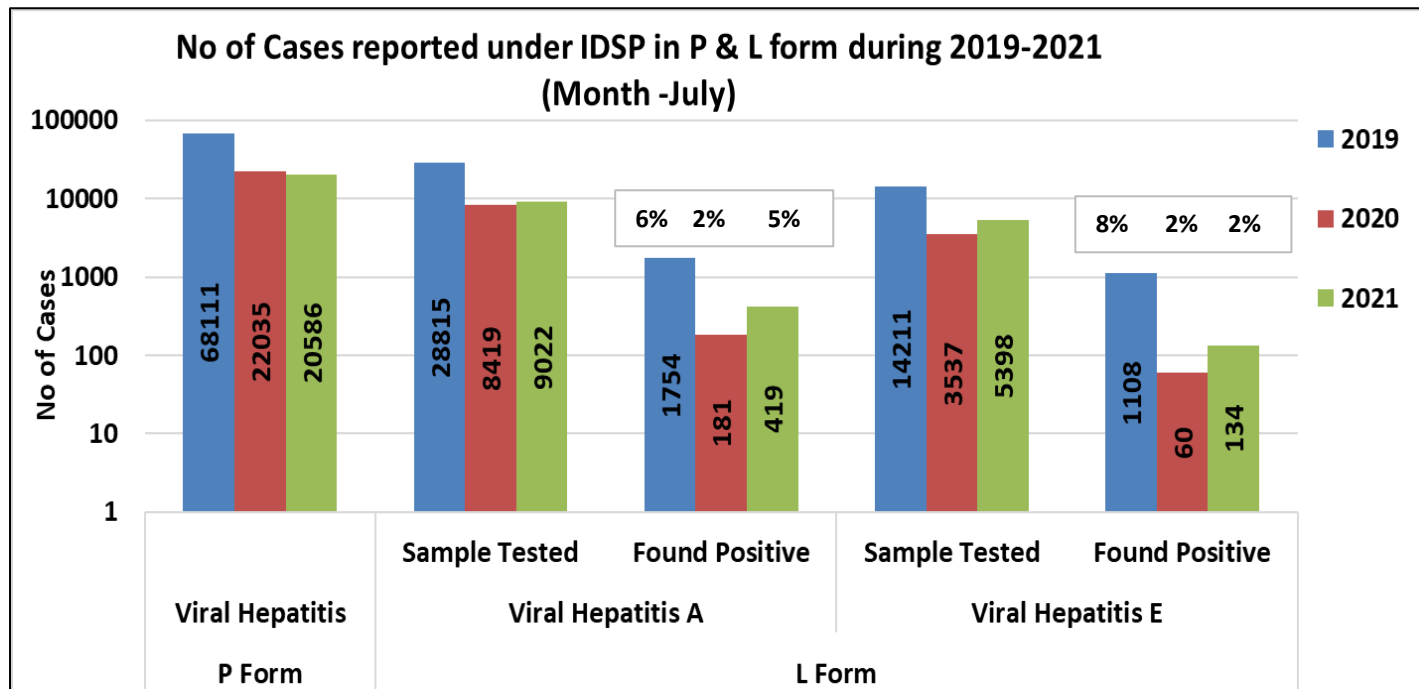


Fig. 14: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during July 2019 - 2021



As shown in Fig 14, the number of presumptive Viral Hepatitis cases was 68111 in July 2019, 22035 in July 2020 and 20586 in July 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 July 2019; 28815 samples were tested out of which 1754 were found positive. In July 2020 out of 8419 samples, 181 were found to be positive and in July 2021, out of 9022 samples, 419 were found to be positive.

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

As reported in L form for Viral Hepatitis E, in July 2019; 14211 samples were tested out of which 1108 were found positive. In July 2020; out of 3537 samples, 60 were found to be positive and in July 2021, out of 5398 samples, 134 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 8%, 2% and 2% in July month of 2019, 2020 & 2021 respectively.

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

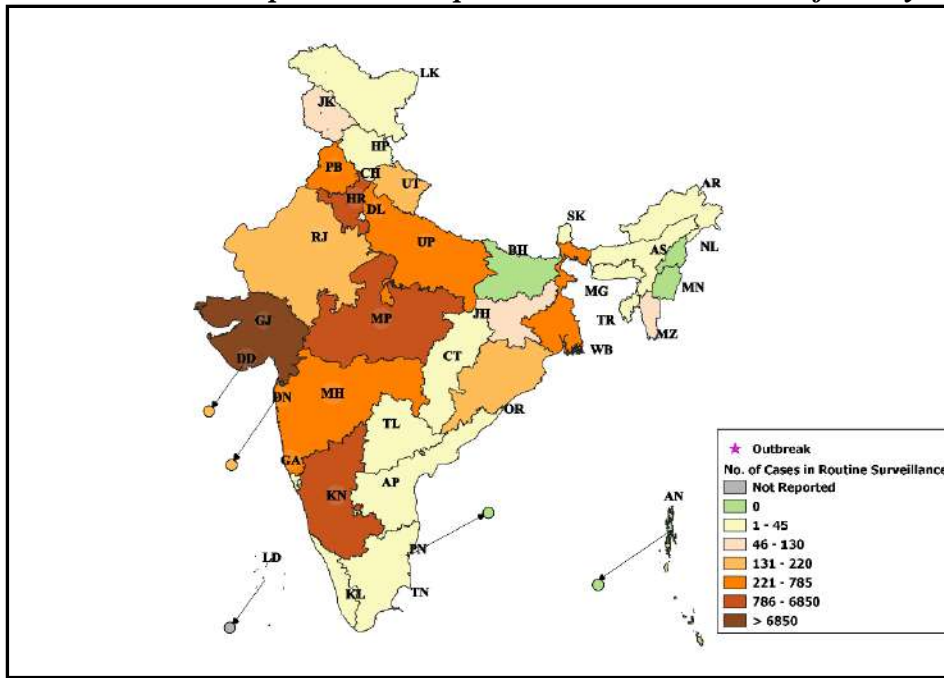


Fig. 16: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for July 2021

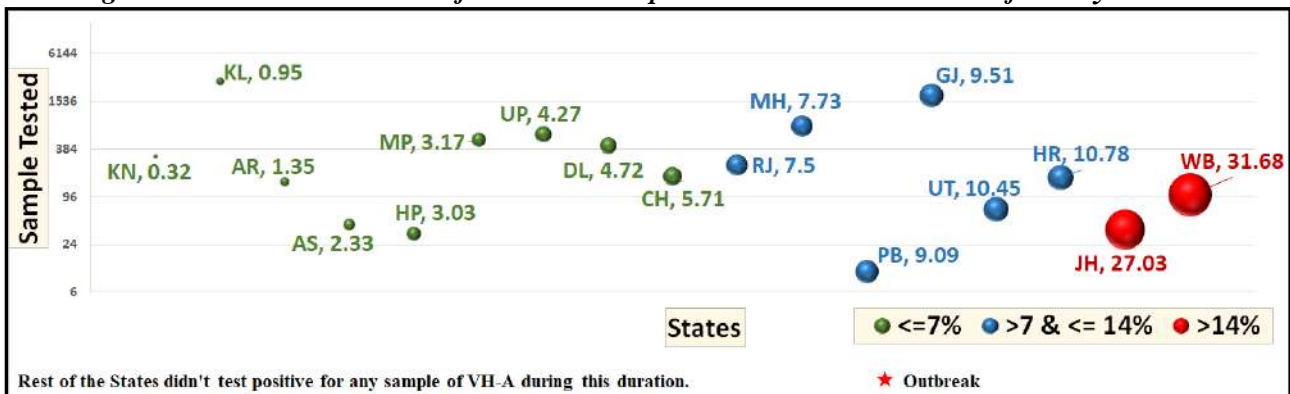


Fig. 17: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for July 2021

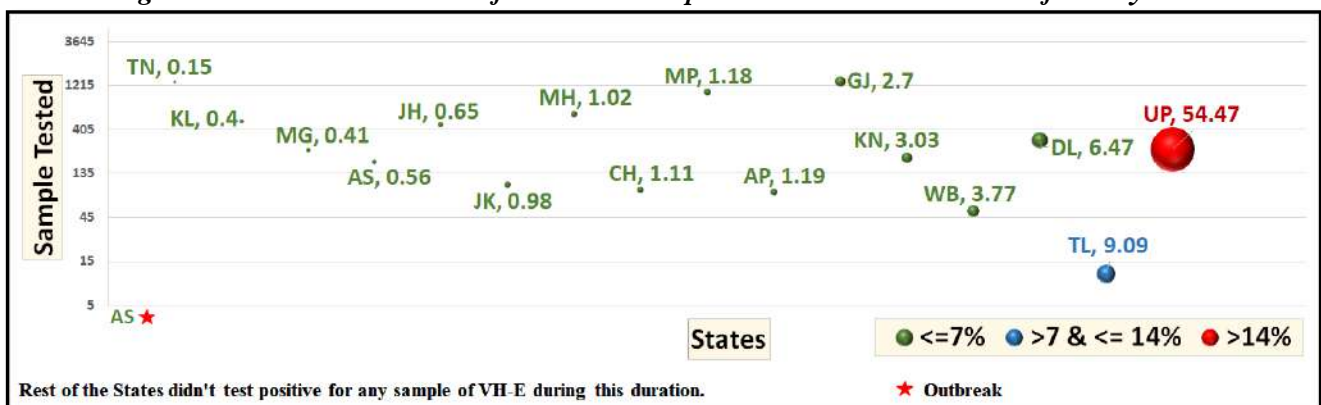
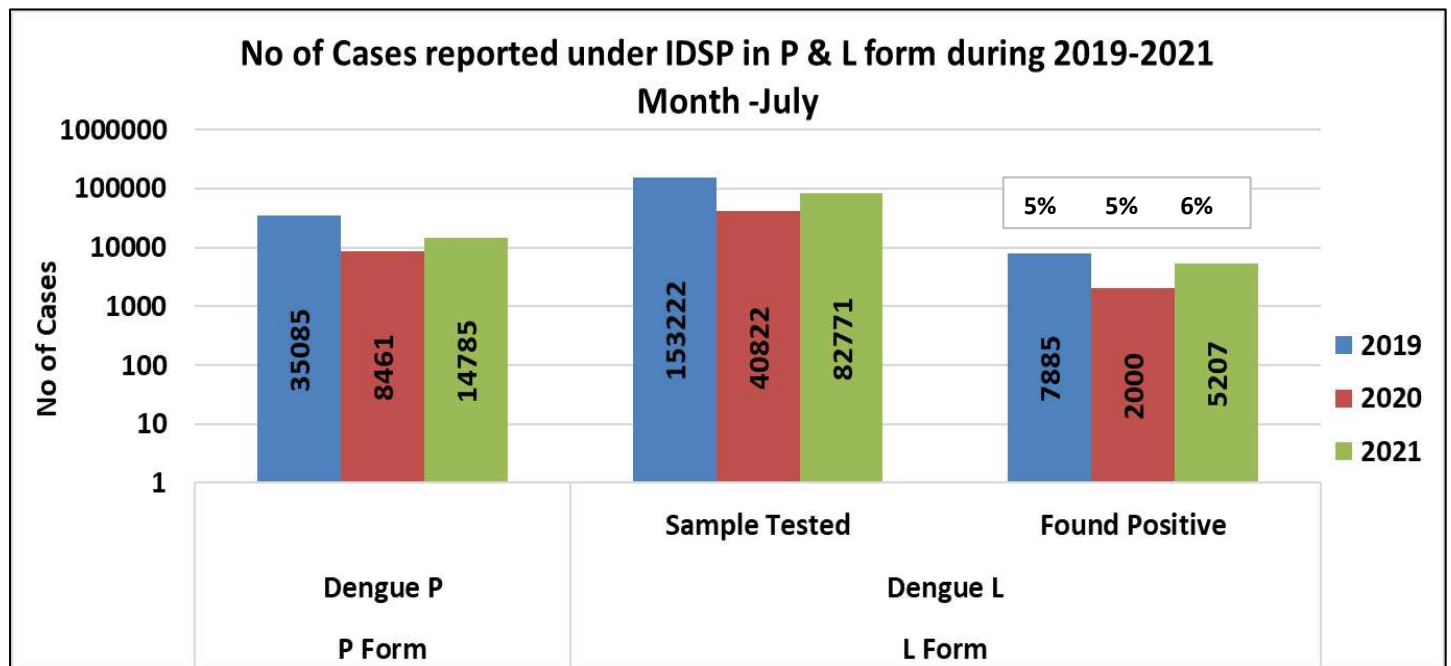


Fig. 18: No. of Dengue cases reported under IDSP in P & L form during July 2021



As shown in Fig 18, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 35085 in July 2019; 8461 in July 2020 and 14785 in July 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in July 2019; 153222 samples were tested for Dengue, out of which 7885 were found positive. In July 2020; out of 40822 samples, 2000 were found to be positive and in July 2021, out of 82771 samples, 5207 were found to be positive.

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

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

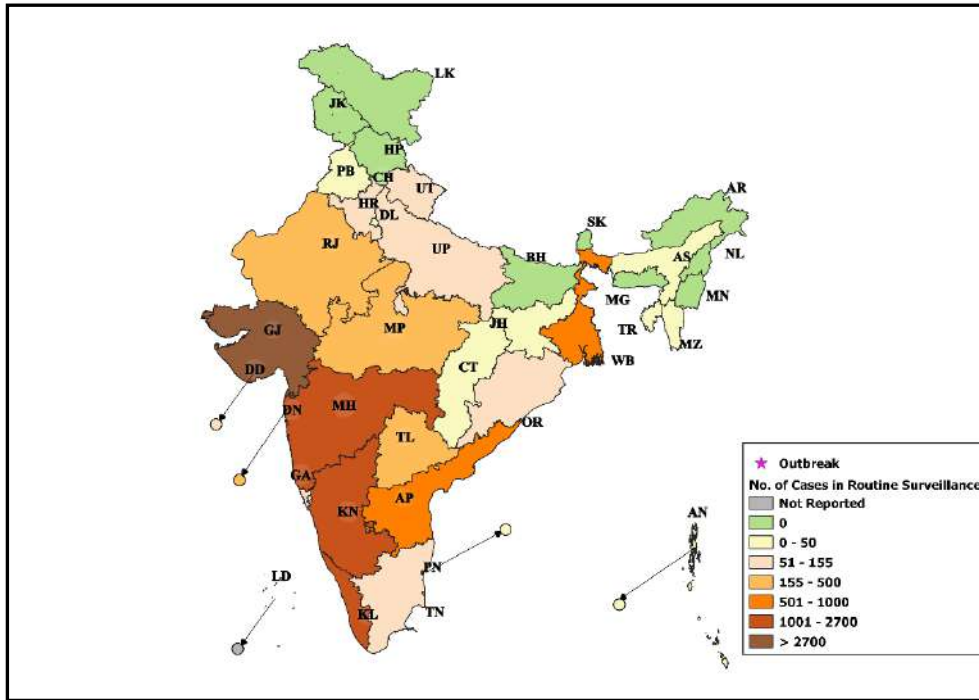


Fig. 20: State/UT wise Lab Confirmed Dengue cases and outbreaks for July 2021

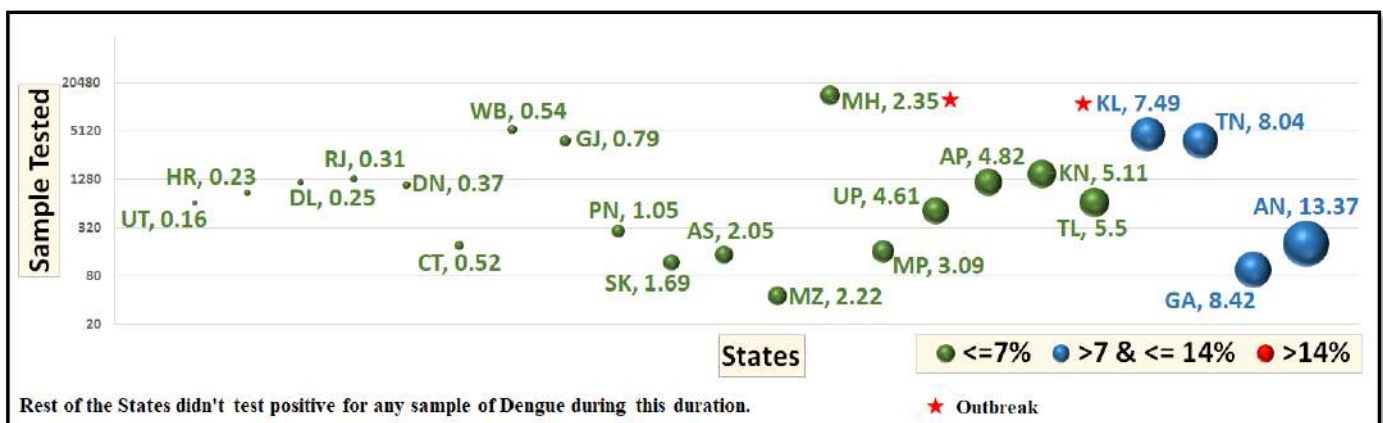
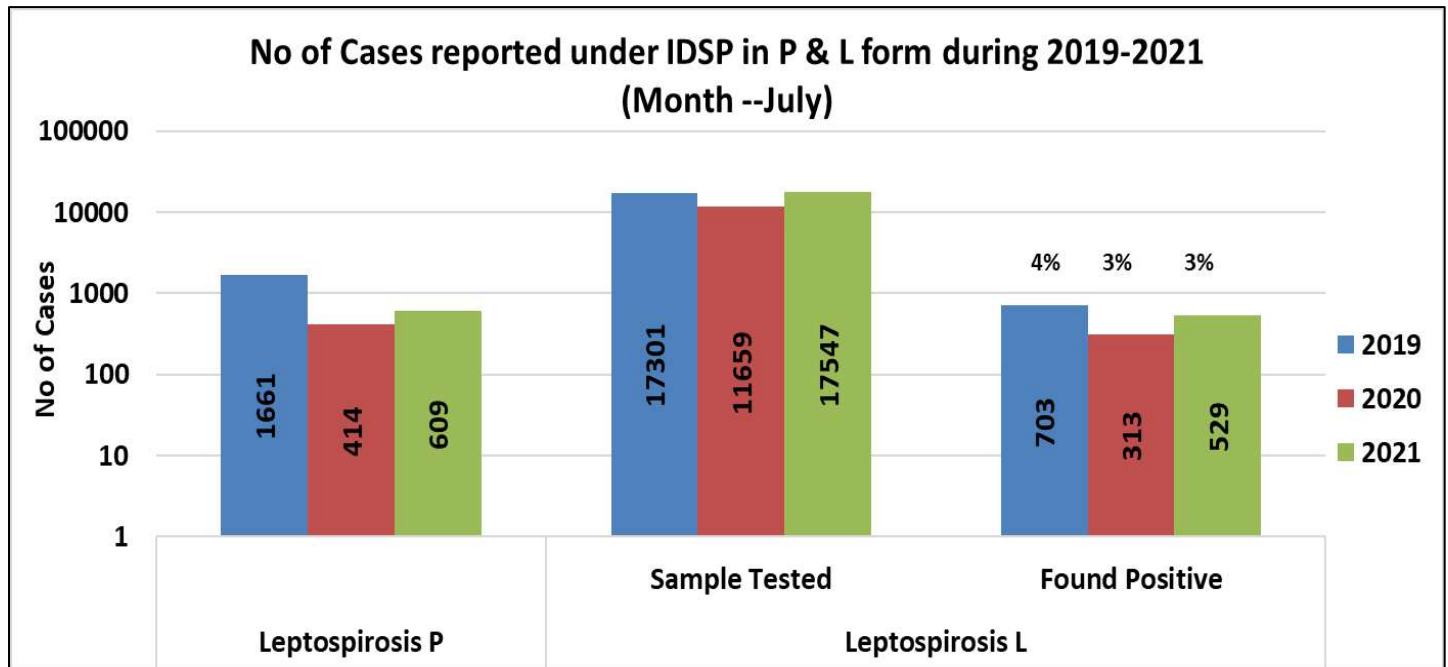


Fig. 21: No. of Leptospirosis Cases reported under IDSP in P & L form during July 2019 - 2021



As shown in Fig 21, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1661 in July 2019; 414 in July 2020 and 609 in July 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in July 2019; 17301 samples were tested for Leptospirosis, out of which 703 were found positive. In July 2020; out of 11659 samples, 313 were found to be positive and in July 2021, out of 17547 samples, 529 were found to be positive.

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

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

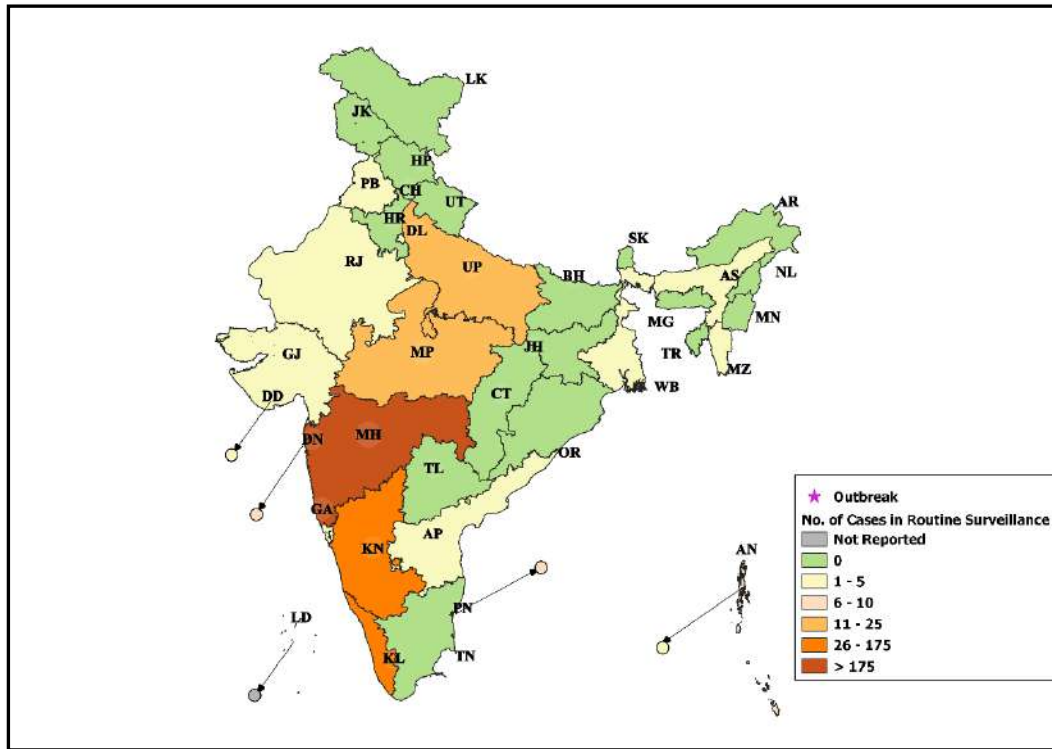


Fig. 23: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for July 2021

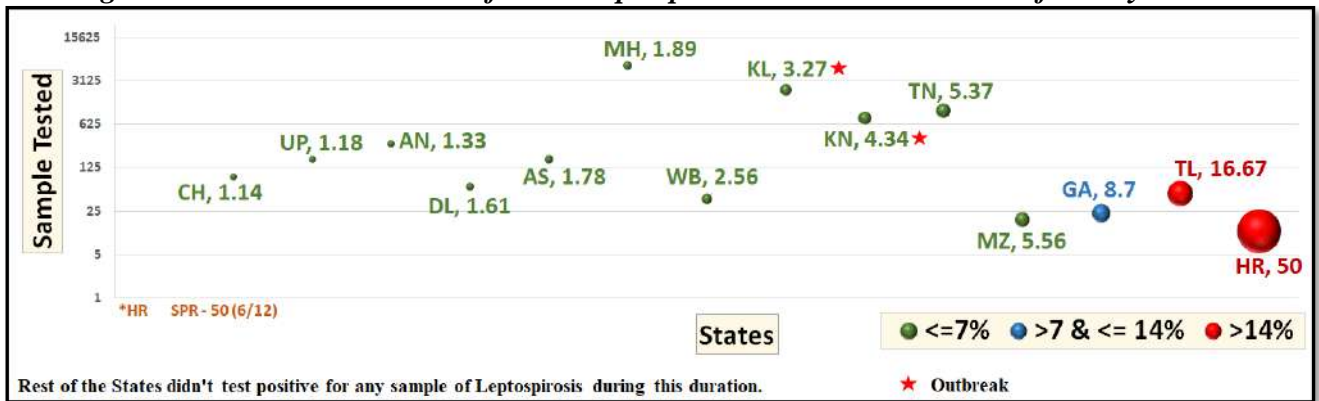
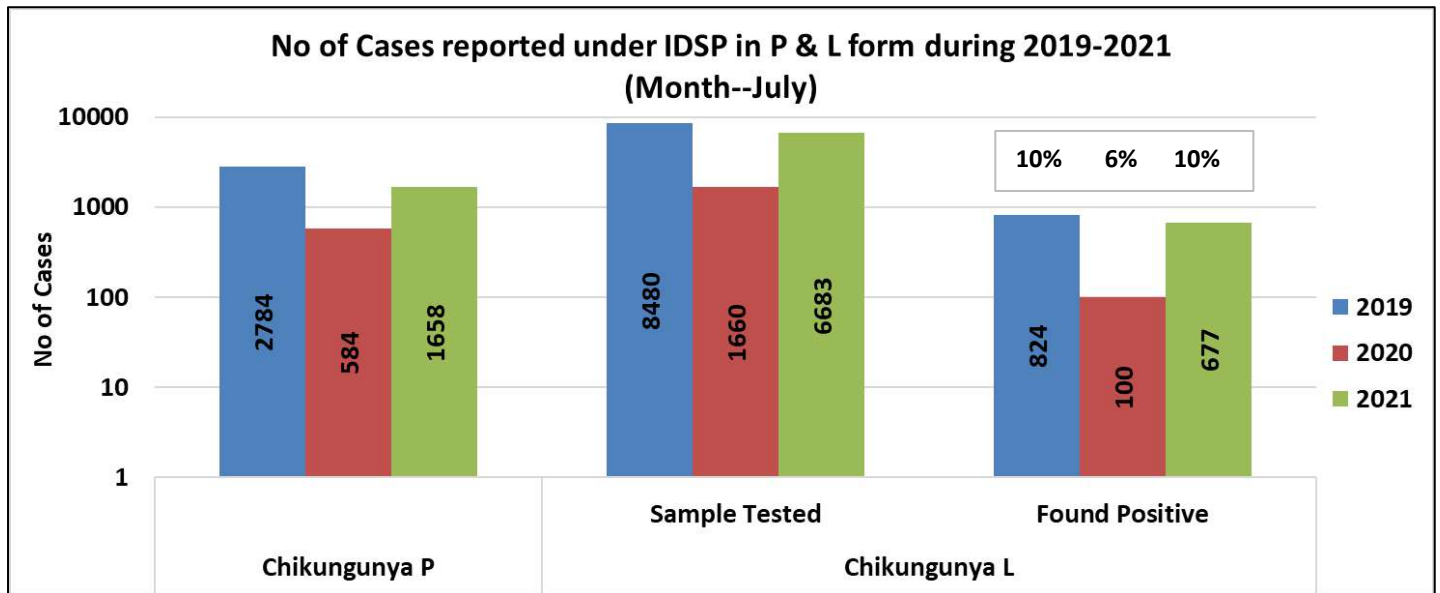


Fig. 24: No. of Chikungunya Cases reported under IDSP in P & L form during July 2019 - 2021



As shown in Fig 24, number of presumptive Chikungunya cases, as reported by States/UTs in ‘P’ form was 2784 in July 2019; 584 in July 2020 and 1658 in July 2021. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in July 2019; 8480 samples were tested for Chikungunya, out of which 824 were found positive. In July 2020; out of 1660 samples, 100 were found to be positive and in July 2021, out of 6683 samples, 677 were found to be positive.

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

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

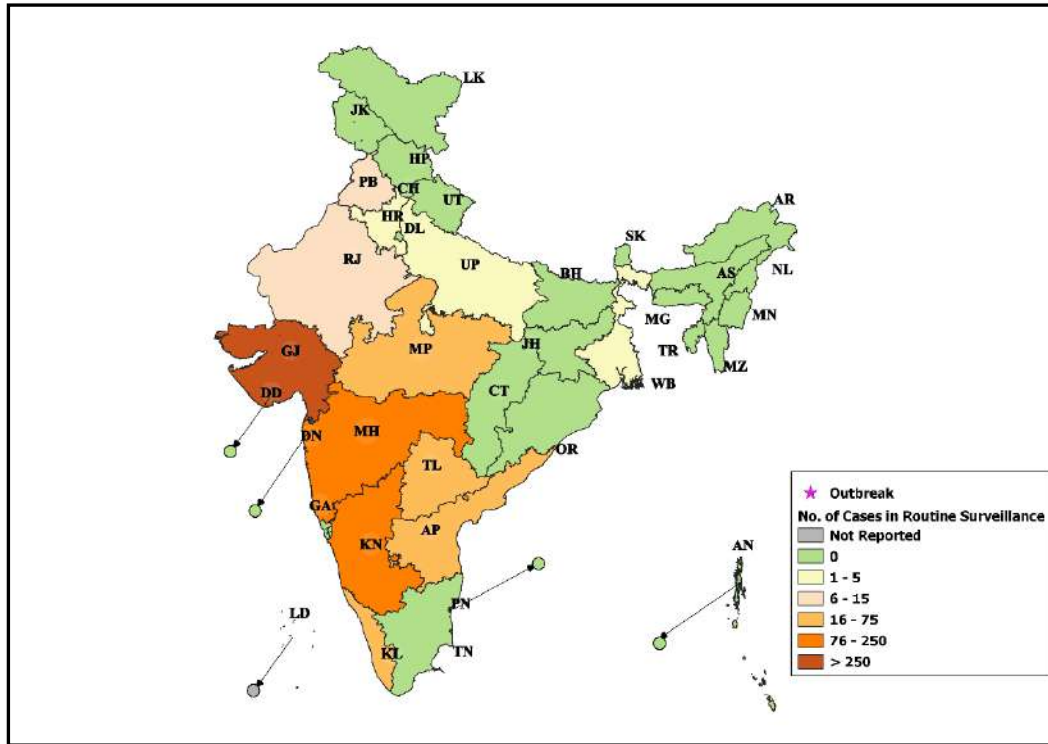


Fig. 26: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for July 2021

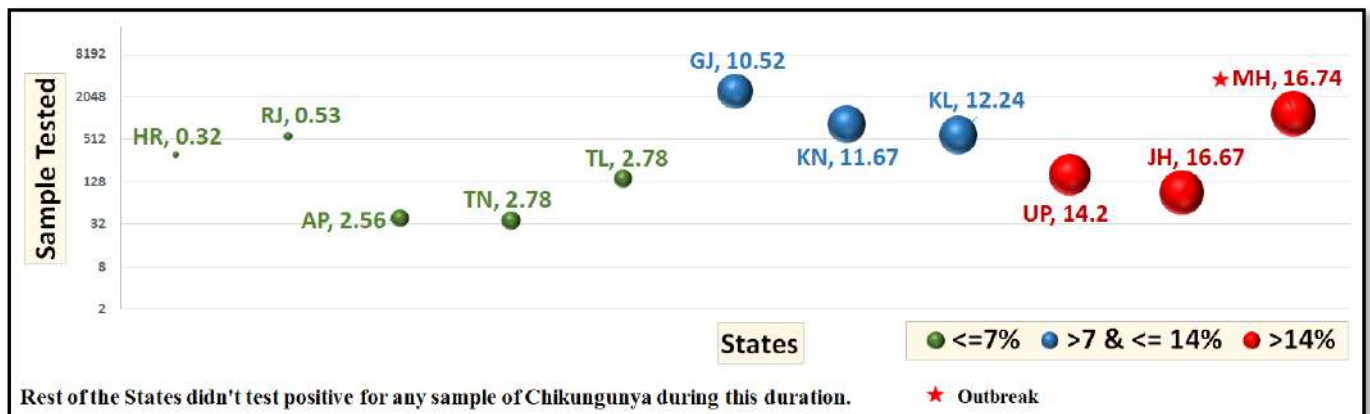
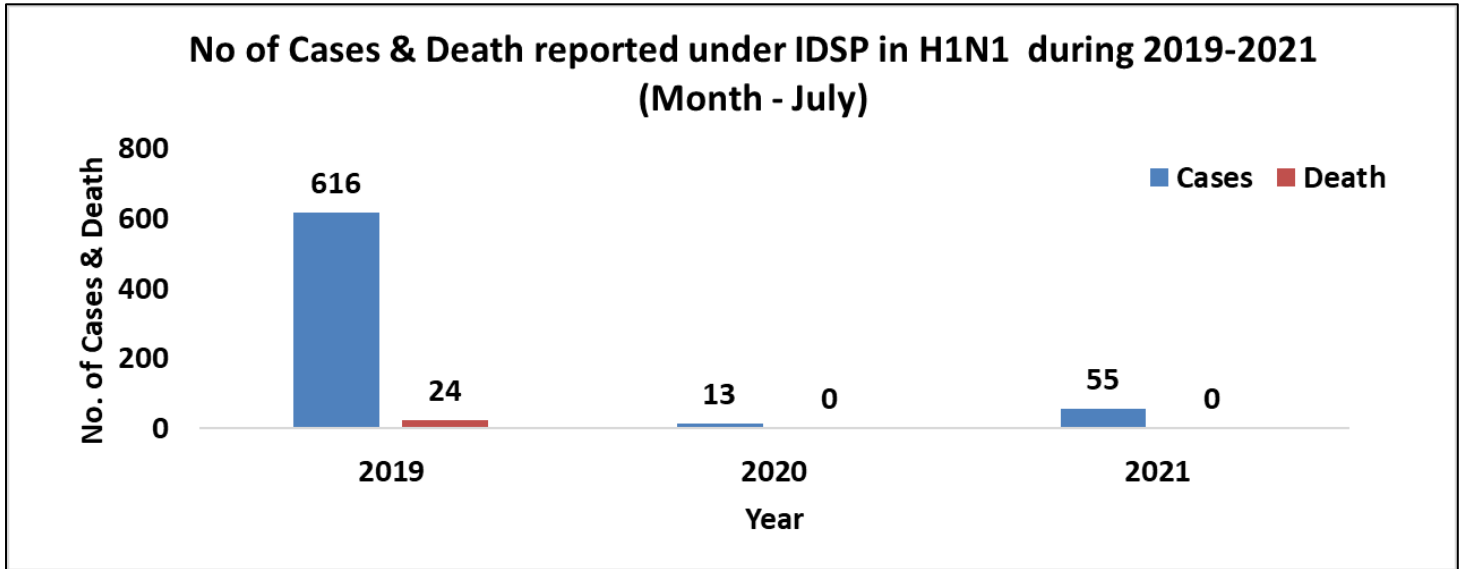


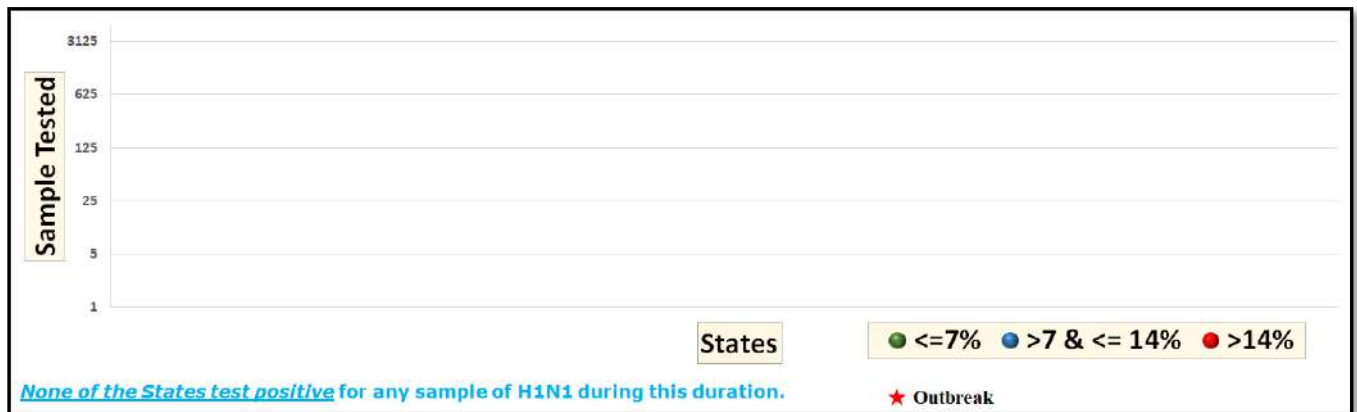
Fig. 27: H1N1 cases reported under IDSP in L Form during 2019-2021 in July 2021



As shown in Fig. 24, as reported in L form, in July 2019, there 616 cases and 24 deaths. In July 2020, there were 13 cases and 0 deaths; and in July 2021, there were 55 cases and 0 deaths.

Case fatality rate for H1N1 were 3.8%, 0.00% and 0.00% in July month of 2018, 2019 & 2020 respectively.

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