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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report

From

Integrated Disease Surveillance Programme

National Health Mission

In This Issue:

FINAL INVESTIGATION REPORT OF ACUTE DIARRHEAL DISEASE (ADD) OUTBREAK, BAROULI, PHC GHARAUN, DISTRICT SAS NAGAR, 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.

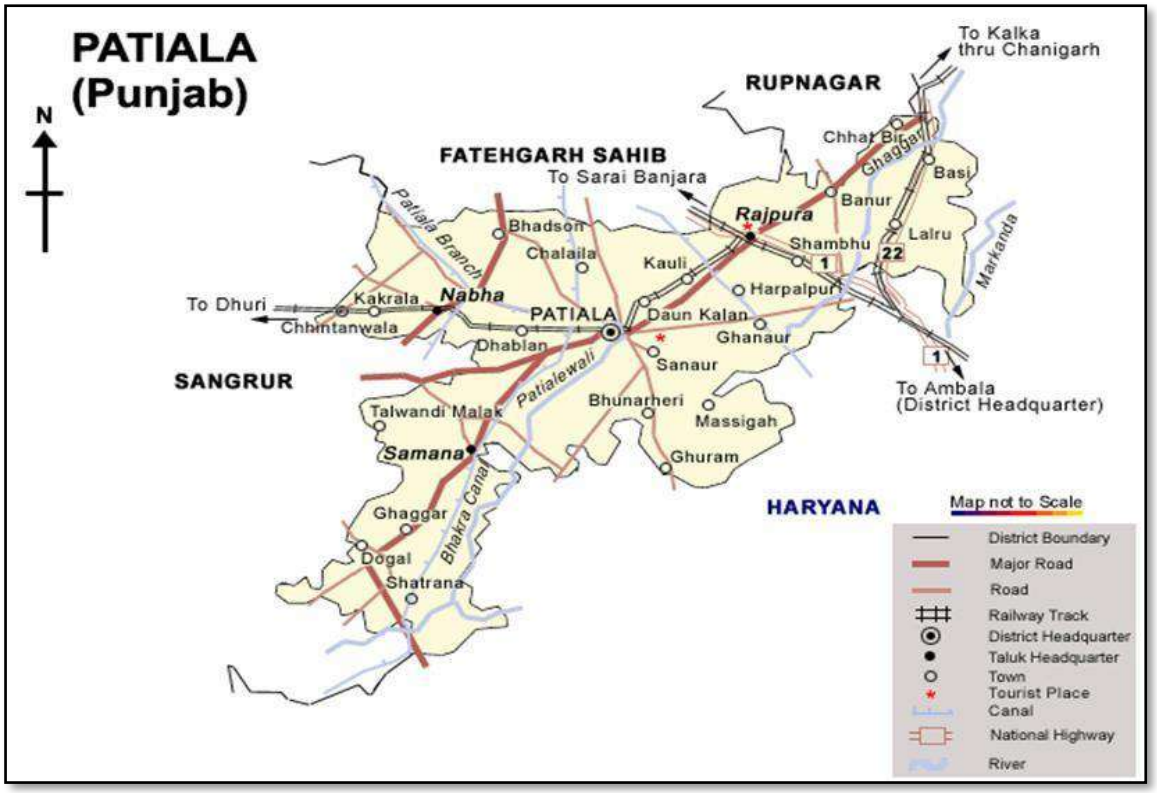


Figure 1: Map of Patiala district

(Rajpura is in North-East corner of district, adjacent to Fatehgarh Sahib)

Diarrhea is a leading cause of illness and death among children in developing countries. About 80% of deaths due to diarrhea occur in the first two years of life. The main cause of death from acute diarrhea is dehydration, which results from the loss of fluid and electrolytes in diarrheal stools.

Diarrhea 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 diarrhea in

India are Rotavirus, Enterotoxigenic Escherichia Coli, Shigella. The infectious agents that cause diarrhea are usually spread by the faecal-oral route, which includes the ingestion of fecal contaminated water or food and direct contact with infected faeces.

DETAILS OF INVESTIGATION:

- 10 cases of loose stools / vomiting were admitted from Shamdoo camp area were reported by SMO of Civil Hospital, Rajpura to District Surveillance Unit (DSU), Rajpura on 16/06/22 morning through telephonic call.
- Rapid Response Team (RRT) supervised by Epidemiologist IDSP and SMO Kalomajra rushed to site. Chlorine pellets and ORS/Zinc was distributed immediately.

Figure 2: IEC activities being conducted in the field

- Medical Camp was established in Angadwari centre in affected area round the clock for managing diarrhea cases.
- Immediately house-to-house survey was started. During house-to-house visits residents were advised to use boil or tanker water or chlorinated water for drinking / cooking purpose and to maintain hand hygiene before eating anything. It was observed that all residents in area go for feri on Tuesday/Saturday and most of them residing in Jhuggis (Kacha Makaan). No one is having legal sewerage and water connections. One large garbage dump backside of shoes factory is present in the area.
- Initially there was rumor of drinking Shabeel (Flavoured Water) by the residents but during case to case investigation we had found that the ADD was also present in those residents who did not drank

Shabeel.

- House to house teams include MPHS, MPHW, ANMs and ASHAs. IEC activities done regarding prevention and Chlorine pellets/ORS distributed by teams in affected area.
- IEC through announcements regarding prevention in area done by health teams.
- Immediately alternate water supply through tankers was arranged by XEN water supply. It was observed in area, all water connections were illegal. Plastic/rubber pipes are connected to water pipeline of water supply and taking water by tullu pumps. People are using hand pump water for drinking as well.

Figure 3: Photos of Outbreak site

- It was found that, one RO plant was installed four months back in the area but not in working position yet.
- 18 Stool samples and 23 water samples taken. Stool Samples sent to IDSP Lab, MKH Patiala and Department of Microbiology, Govt Medical College Patiala for investigation. Water Samples sent to State Public Health Lab, Kharar and Water testing Lab, Department of Microbiology, Punjab Agricultural University, Ludhiana for investigation

RESULTS:

It was confirmed from the stool culture result obtained from the GMC Microbiology Lab and IDSP Lab MKH that the acute diarrhea outbreak was due to the *E.Coli*, Growth of Vibrio Cholera not observed.

S.No	Name of Sample sent	Laboratory	Number of samples Tested	Results
1	Stool samples	Department of Microbiology, Govt Medical College Patiala & IDSP Lab MKH Patiala	21 samples	All 21 positive for *E.Coli* by culture. (No growth of *Vibrio Cholerae* found)
2	Water samples	State Public health lab. (SPHL) Kharar & Department of Microbiology PAU, Ludhiana	23 samples	Out of 23 samples, 14 samples failed for Bacterial/Chemical contamination.

DESCRIPTIVE EPIDEMIOLOGY:

Clinical case definition: Acute Watery diarrhea (passage of 3 or more loose or watery stools in the Past 24 hours) with or without dehydration

A) Person wise analysis:

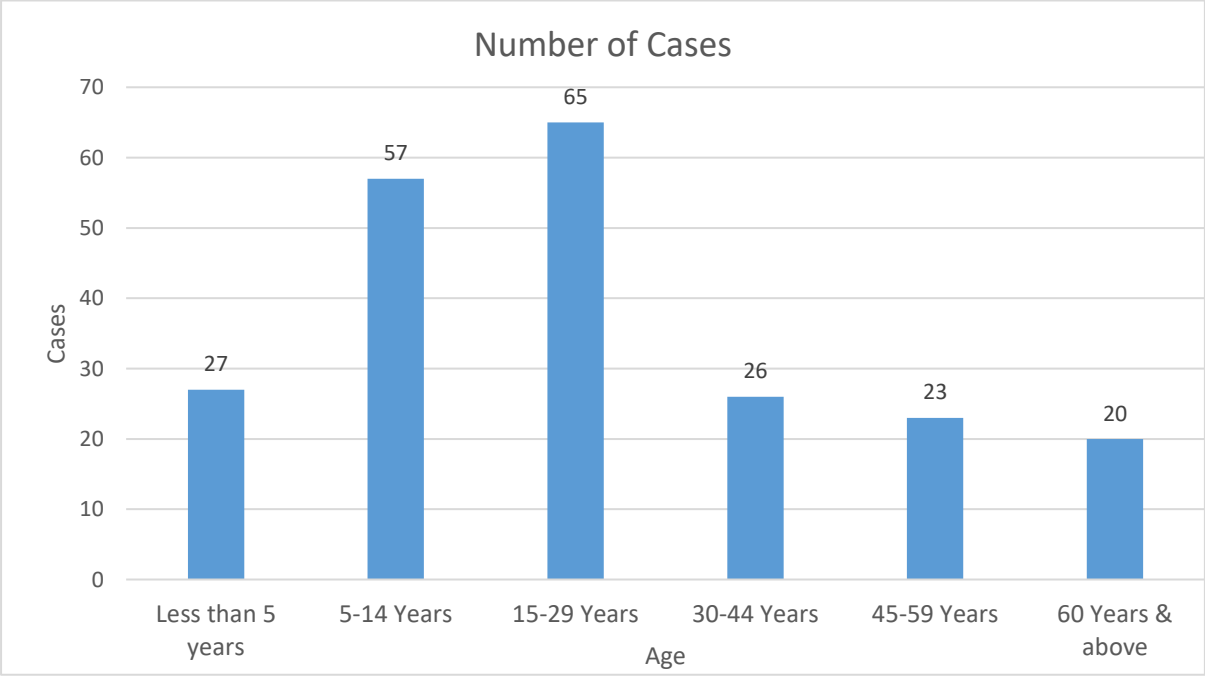


Figure 4: Person-wise breakup of the cases

B) Gender wise analysis:

Male 97 cases and Female 121 cases

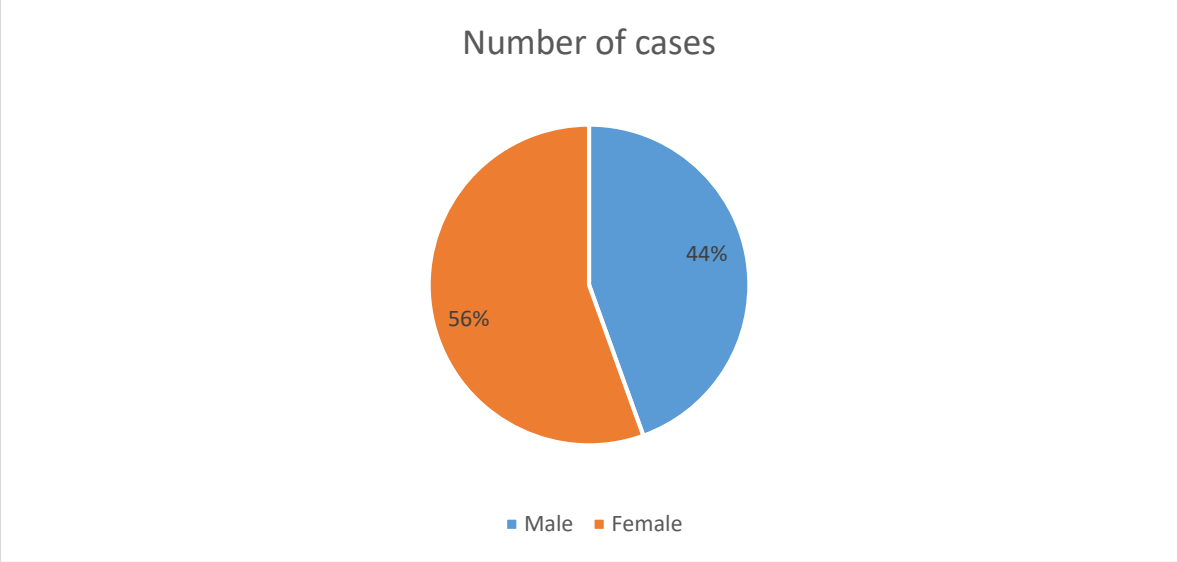


Figure 5: Gender-wise breakup of the cases

C) Date wise analysis:

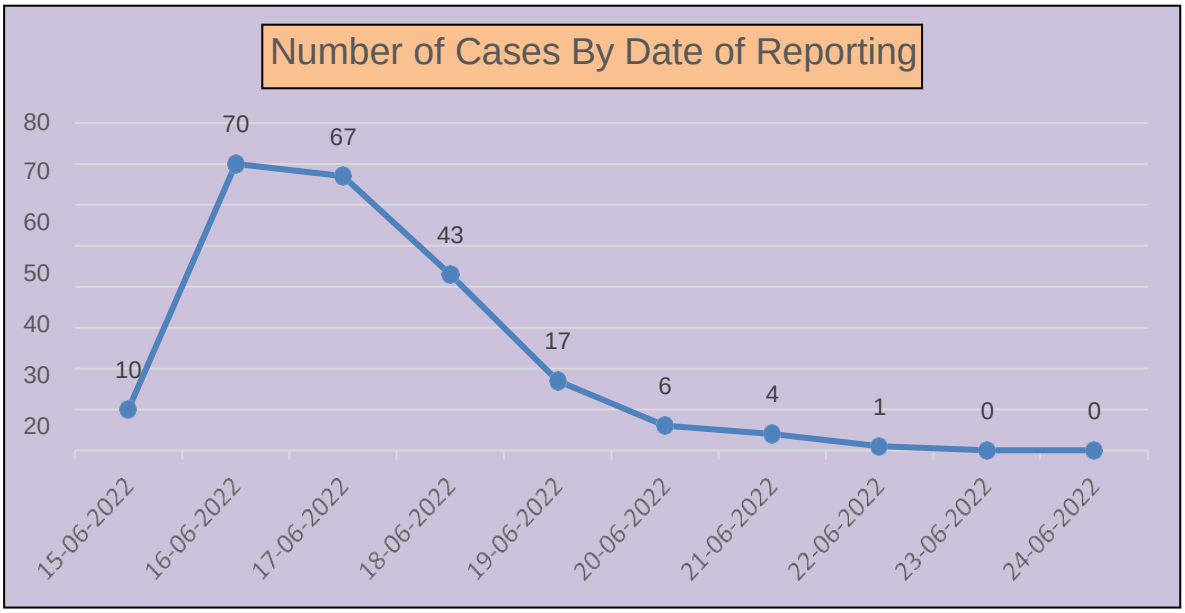


Figure 6: Date-wise breakup of the cases

D) Place Wise Analysis:

It was observed that all residents in go for feri on Tuesday/Saturday and most of them residing in Jhuggis (Kacha Makaan) since 1947. No one having legal sewerage and water connections. One large garbage dump backside of shoes factory in the area.

CONTROL MEASURES TAKEN:

a. Survey: House to house active survey was started and line listing of all the cases was prepared and free treatment was provided to all the patients who were suffering with the mild symptoms of diarrhea.
b. Medical Camp was established in area for managing diarrhea cases and free medicines and ORS packets was given to the affected patients.
c. Alternate water was supplied through water tankers to the affected locality by Water supply and sanitation department.
d. Removal of garbage from area was done by EO Rajpura and placed dustbins in the area.

Figure 7: Rapid response team conducting House to house survey

e. To prevent from vector borne diseases, larvicidal spray was done on stagnant water in the area.
f. Chlorine pellets were distributed by the health workers in the affected locality.
g. After three days of disease outbreak, RO plant was made functional by Water Supply & Sanitation department

h. IEC activities were done for sanitation and hygiene through announcements in area, miking in area and through small group meetings.

i. Nearby private hospitals/practitioners were sensitized about the disease outbreak and instruct them to report cases to health department teams.

j. We intimated Respected Deputy Commissioner, Patiala and SDM Rajpura about the situation in the affected area.

CONCLUSION

This was an ADD outbreak in Shamdoo Camp village block Kalomajra, Tehsil Rajpura, District Patiala caused by *E.coli*. The main cause behind the disease outbreak may be mixing of sewage water with drinking water. It may be due to unauthorized water and sewerage connections by plastic/rubber pipelines. Secondly, unhygienic practices by residents and unhygienic conditions in the area. Residents are still using hand pumps for drinking water which is may be one of the contributing reasons for this outbreak.

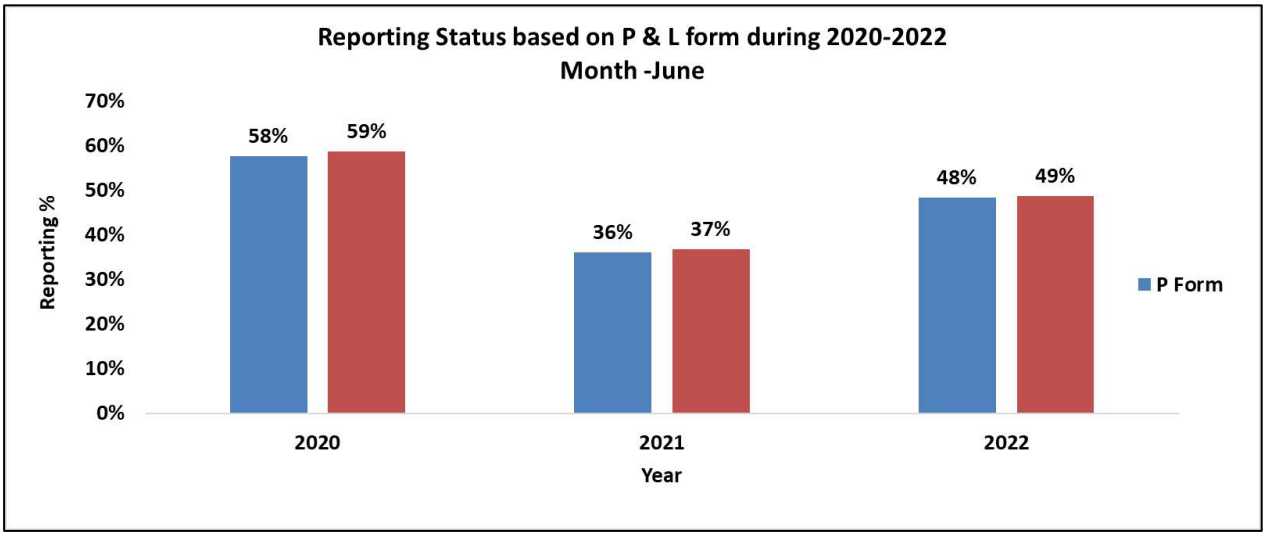
RECOMMENDATIONS:

1. Usage of oral rehydration therapy (ORT)- ORT is as effective as intravenous therapy in rehydrating and replacing electrolytes in children with some dehydration and should be the therapy of choice.
2. Intake of appropriate fluids to prevent or treat dehydration, a nutritious diet that does not cause diarrhea to worsen, supplementary vitamins and minerals, including zinc for 10-14 days and antimicrobial to treat diagnosed infections.
3. All severely malnourished children should receive broad spectrum antibiotics for infections.
4. Drinking water should be clean and stored in clean containers. Boiling water is preferred for drinking.
5. All family members should wash their hands thoroughly after defecation, after cleaning a child who has defecated, after disposing of a child's stool, before preparing food and before eating. Good hand washing requires use of soap or local substitute such as ashes or soil.
6. Raw food should not be eaten except fruits and vegetables that are peeled and eaten immediately. Eat food while it is still hot or reheat it thoroughly before eating and food should be protected from flies by means of fly screens.
7. Proper disposal of feces in a designated area helps prevent spread of diarrheal agents.
8. All infants should be immunized against measles at recommended age.
9. Health education must stress the importance of eating cooked, hot food and of proper safe and hygienic individual food handling techniques.

10. Programs to treat water at the household or community level with chlorine or other effective systems, hand washing with soap, and safe disposal of fecal waste should be developed and/or expanded.
11. Safe drinking water supplies should continue to be delivered and fecal waste should be collected and safely disposed of in areas of high population density

Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Cholera, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During June 2020 - 2022*

Fig. 8: RU-wise reporting based on P & L forms during June 2022



As shown in Fig. 8, in *June* 2020, 2021 and 2022, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 58%, 36% and 48% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 59%, 37% 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 increased in June 2022 compared to the same month in previous years for both P and L forms, thereby improving the quality of surveillance data.

Fig. 9: State/UT wise P form completeness % for June 2022

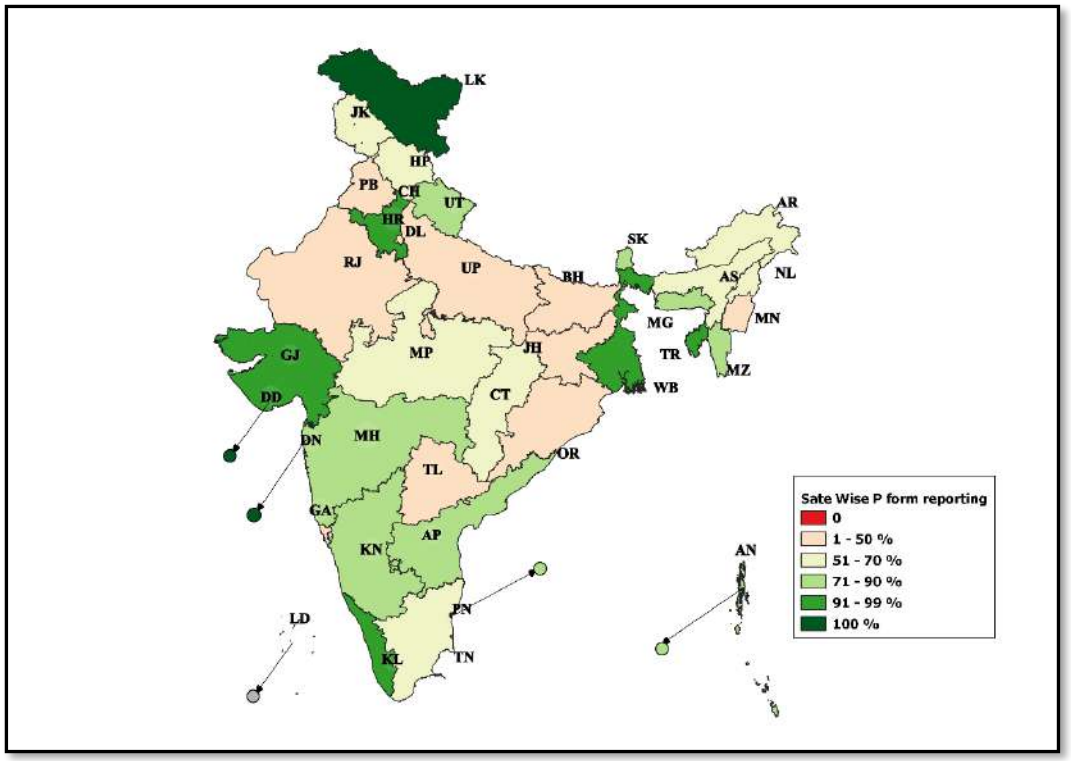


Fig.10: State/UT wise L form completeness % for June 2022

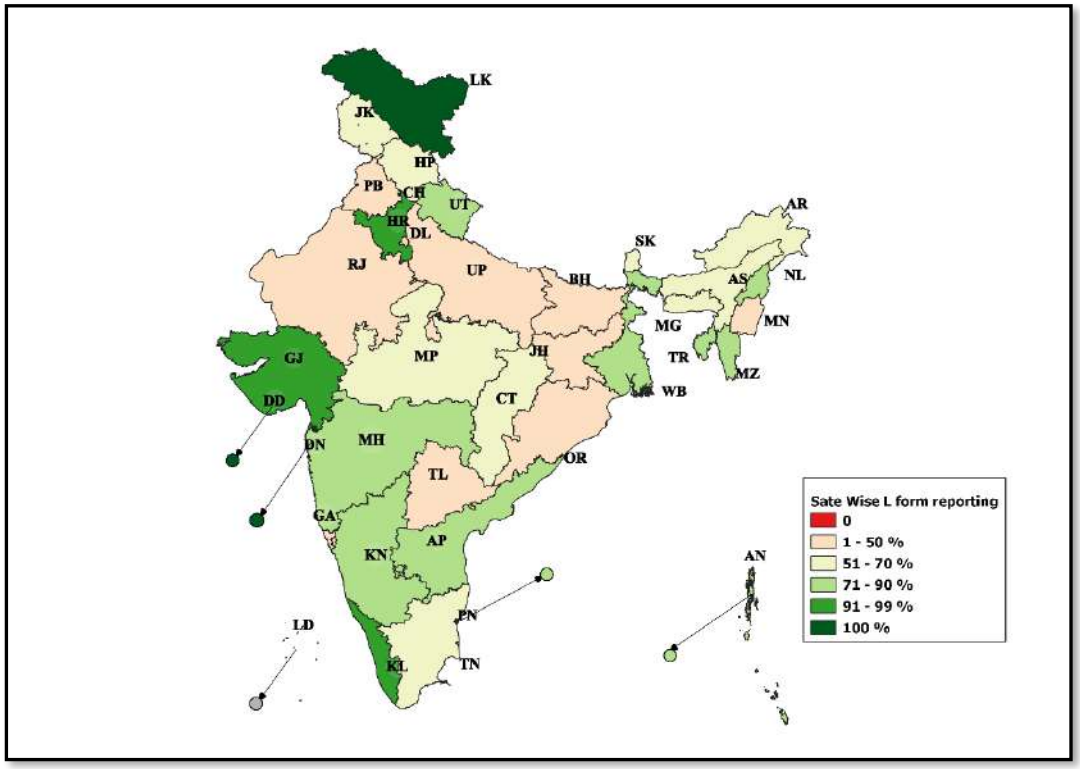
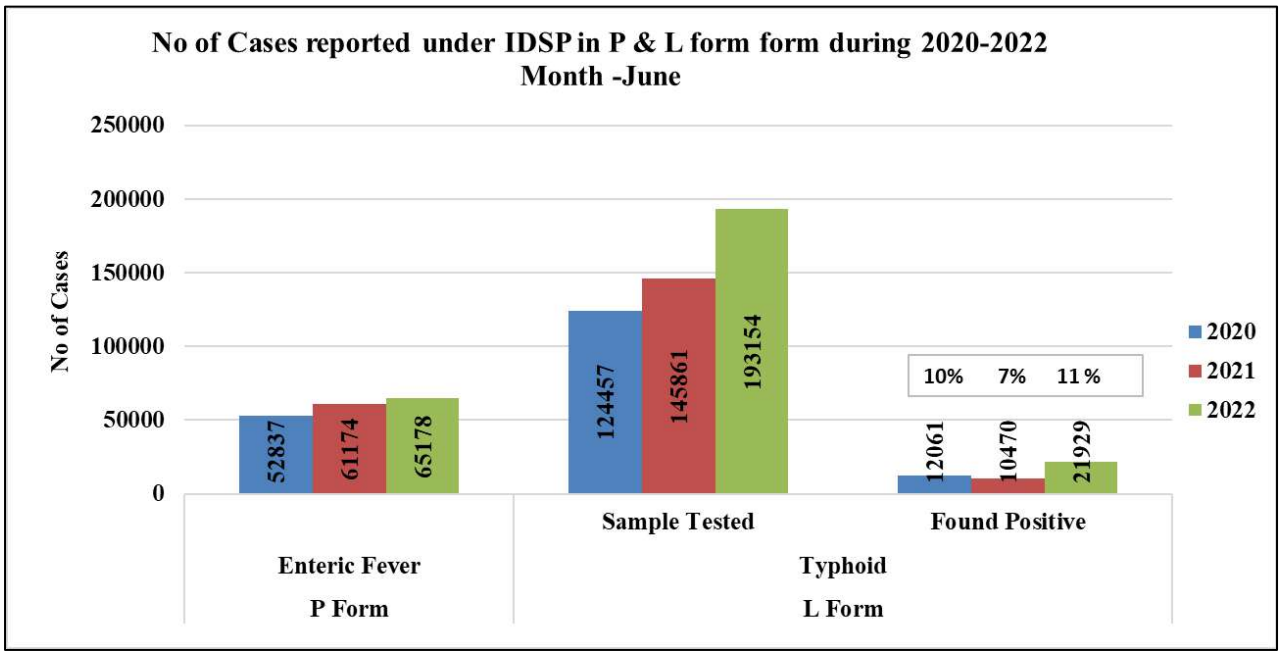


Fig. 11: No. of Enteric Fever Cases reported under P & L form during June 2020 - 2022



As shown in Fig. 11, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 52837 in *June* 2020; 61174 in *June* 2021 and 65178 in June 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in *June* 2020; 124457 samples were tested for Typhoid, out of which 12061 were found positive. In *June* 2021; out of 145861 samples, 10470 were found to be positive and in *June* 2022, out of 193154 samples, 21929 were found to be positive.

Sample positivity has been 10%, 7 % and 11 % in June month of 2020, 2021 & 2022 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.

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Fig. 12: State/UT wise Presumptive Enteric fever cases & outbreaks for June 2022

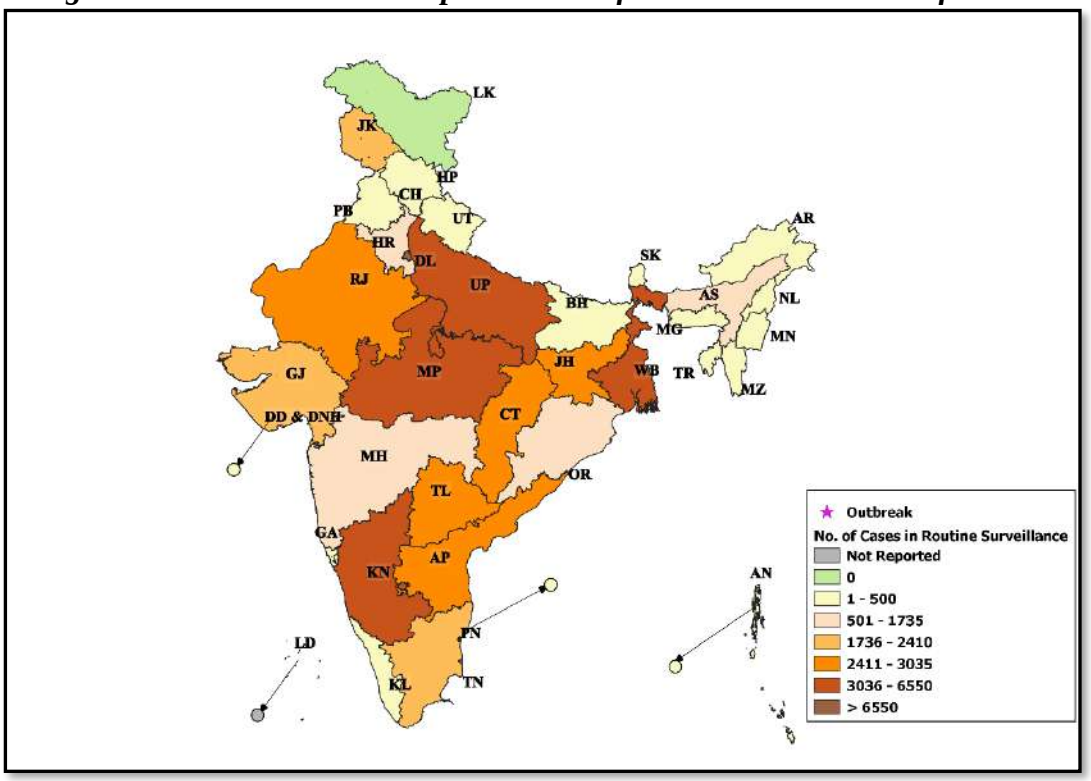

Fig. 13: State/UT wise Lab Confirmed Typhoid cases and outbreaks for June 2022

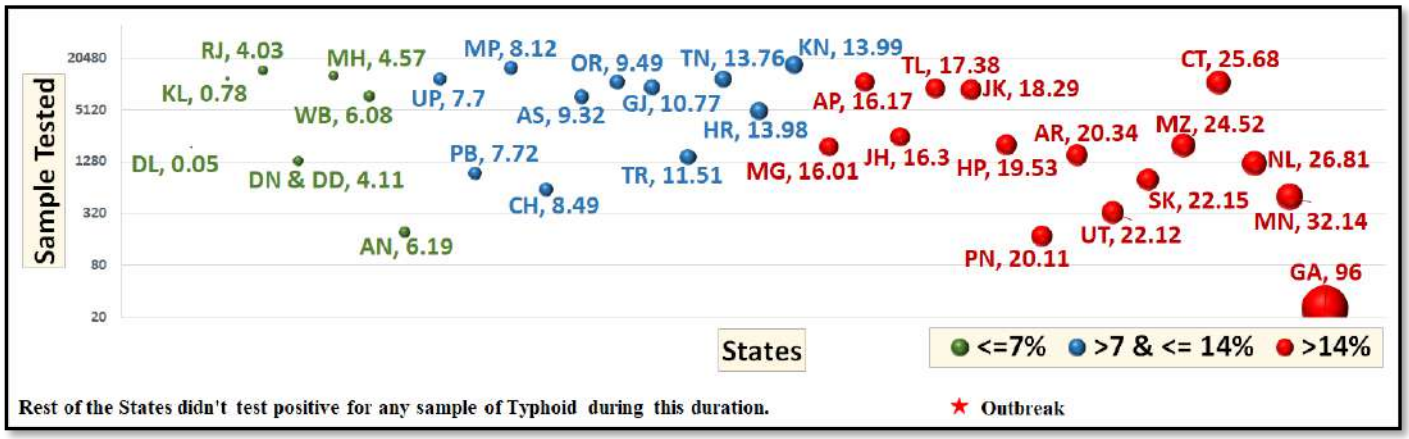

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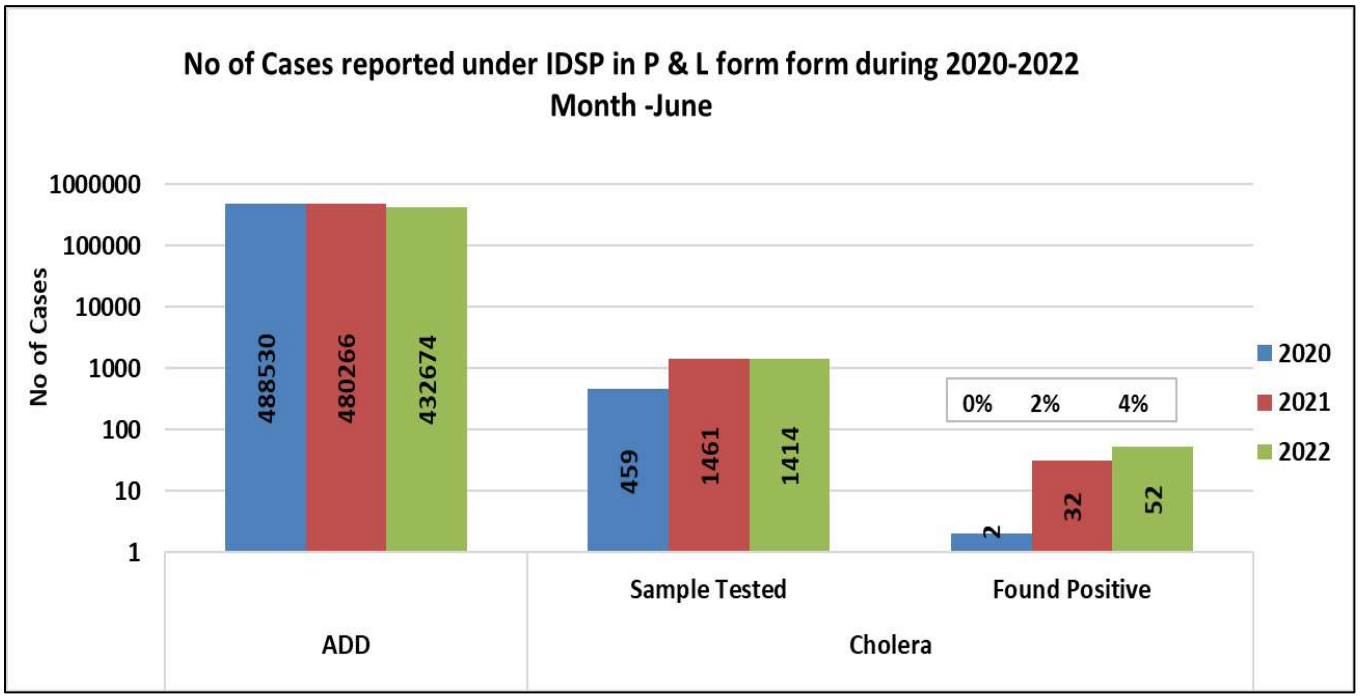
Fig. 14: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during June 2020 - 2022



As shown in Fig. 14, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was was 488530 in *June* 2020, 480266 in *June* 2021 and 432674 in *June* 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in *June* 2020, 459 samples were tested for Cholera out of which 2 tested positive; in *June* 2021, out of 1461 samples, 32 tested positive for Cholera and in *June* 2022, out of 1414 samples, 52 tested positive.

Sample positivity of samples tested for Cholera has been 0.4 %, 2% and 4% in June month of 2020, 2021 & 2022 respectively.

Fig. 15: State/UT wise Presumptive ADD cases and outbreaks for June 2022

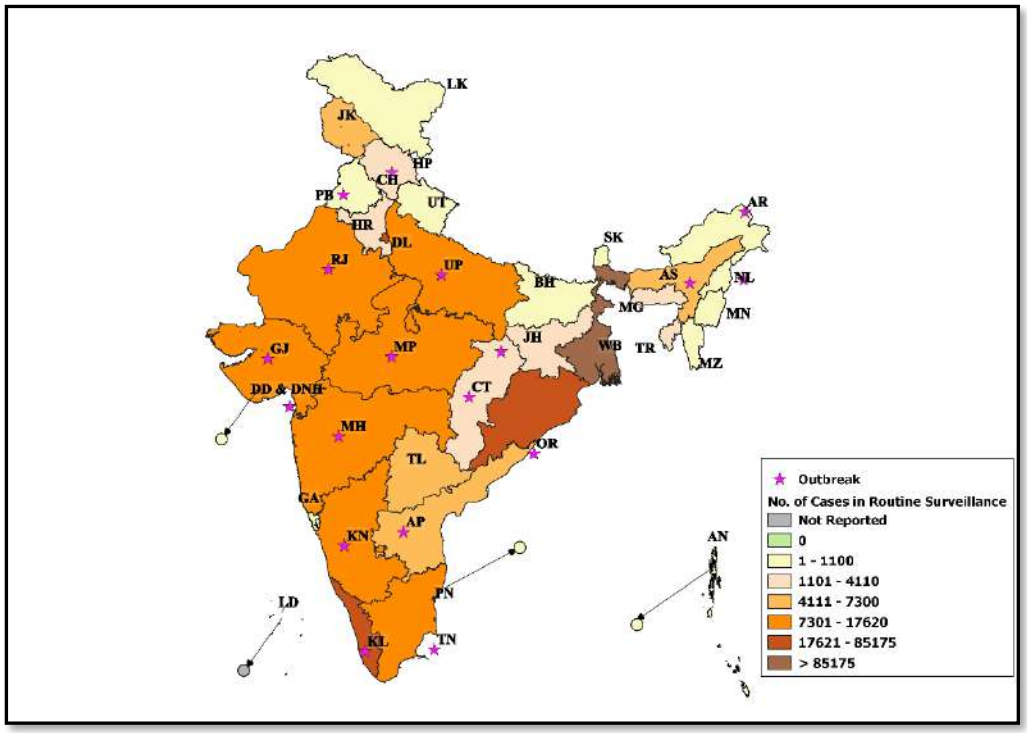


Fig. 16: State/UT wise Lab Confirmed Cholera cases and outbreaks for June 2022

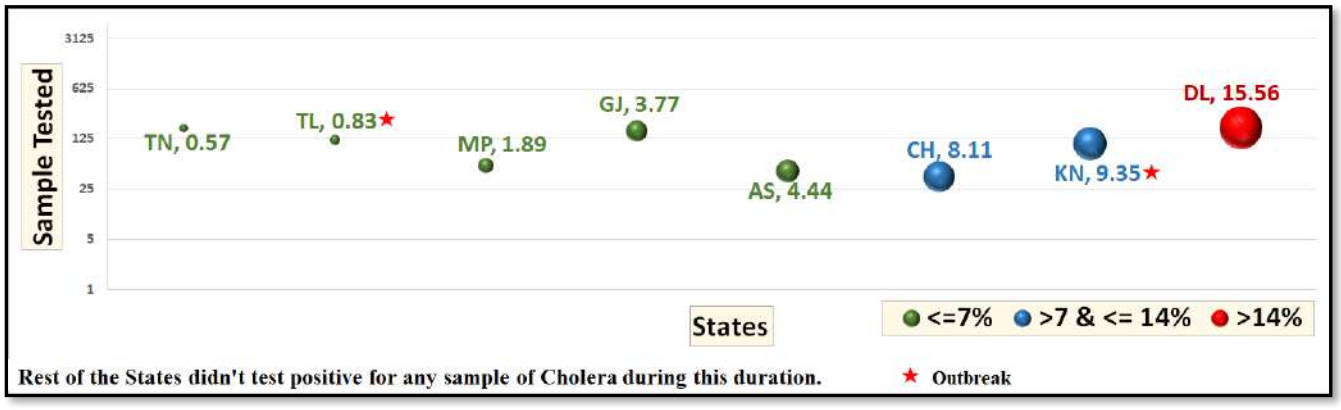


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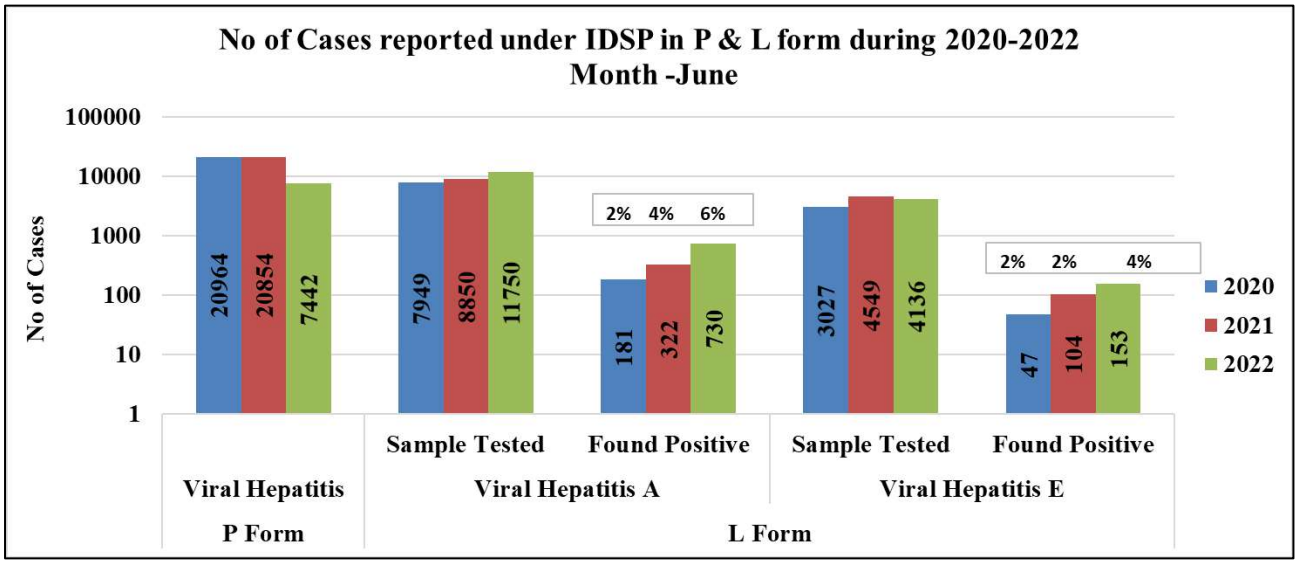
Fig. 17: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during June 2020 - 2022



As shown in Fig. 17, the number of presumptive Viral Hepatitis cases was 20964 in *June* 2020, 20854 in *June* 2021 and 7442 in *June* 2022. These presumptive cases were diagnosed on the basis of case definitions provided under IDSP.

As reported in L form for Viral Hepatitis A, in *June* 2020; 7949 samples were tested out of which 181 were found positive. In *June* 2021 out of 8850 samples, 322 were found to be positive and in *June* 2022, out of 11750 samples, 730 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 2 %, 4 % and 6 % in *June* month of 2020, 2021 & 2022 respectively.

As reported in L form for Viral Hepatitis E, in *June* 2020; 3027 samples were tested out of which 47 were found positive. In *June* 2021; out of 4549 samples, 104 were found to be positive and in *June* 2022, out of 4136 samples, 153 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 2 %, 2 % and 4 % in June month of 2020, 2021 & 2022 respectively.

Fig. 18: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for June 2022

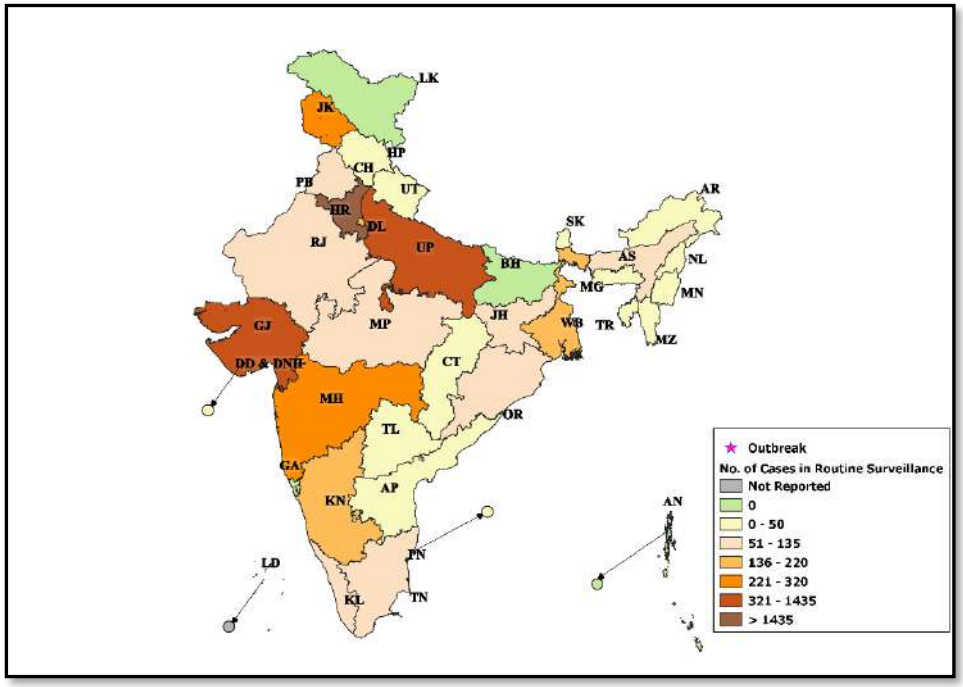


Fig. 19: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for June 2022

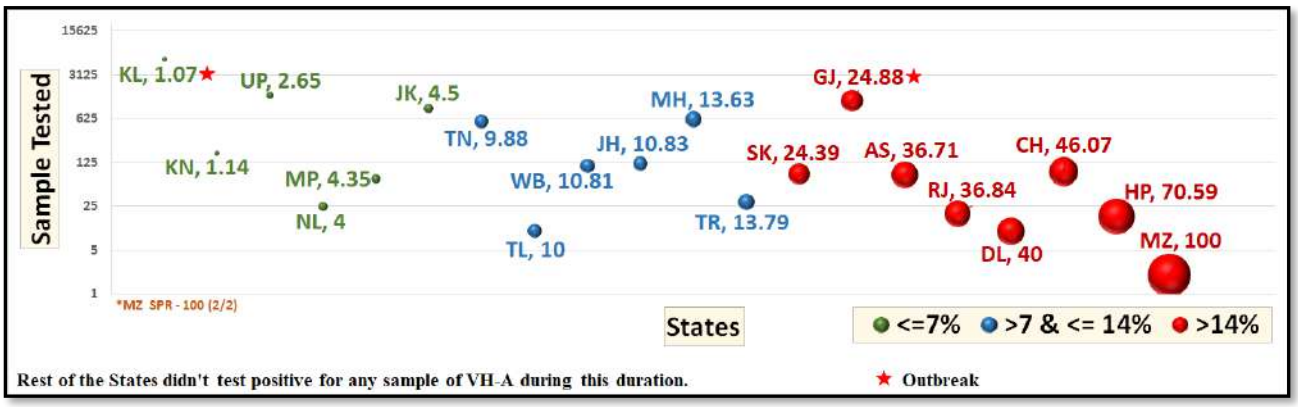


Fig. 20: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for June 2022

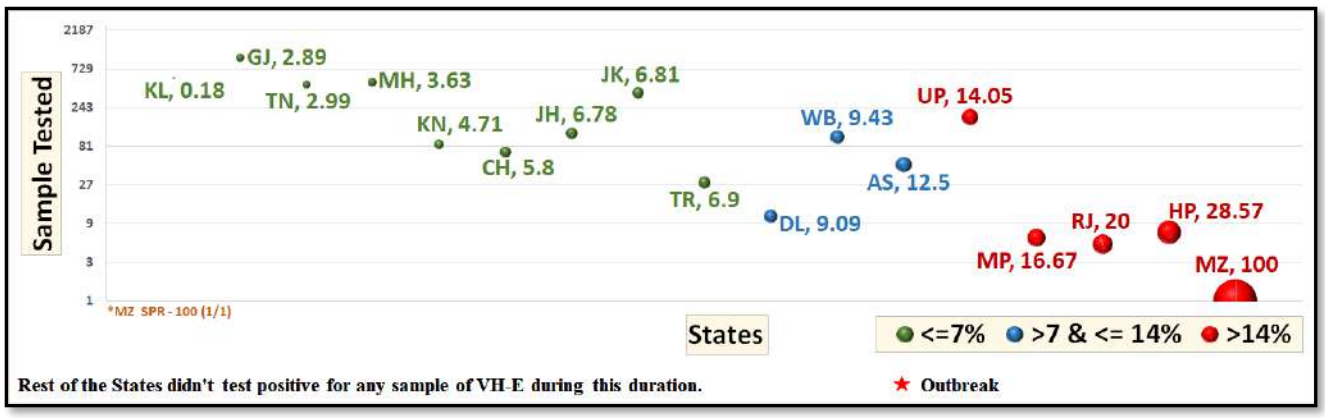
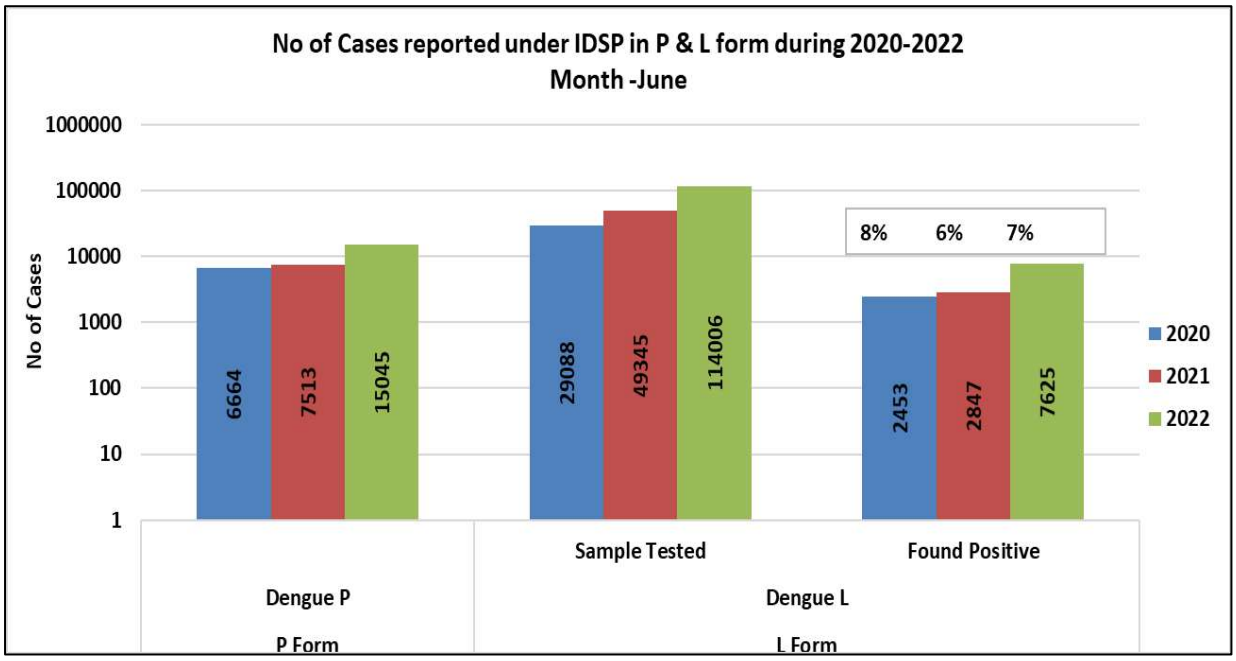


Fig. 21: No. of Dengue cases reported under IDSP in P & L form during June 2022



As shown in Fig. 21, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 6664 in *June* 2020; 7513 in *June* 2021 and 15045 in *June* 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in *June* 2020; 29088 samples were tested for Dengue, out of which 2453 were found positive. In *June* 2021; out of 49345 samples, 2847 were found to be positive and in *June* 2022, out of 114006 samples, 7625 were found to be positive.

Sample positivity of samples tested for Dengue has been 8 %, 6 % and 7 % in June month of 2020, 2021 & 2022 respectively.

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Fig. 22: State/UT wise Presumptive Dengue cases and outbreaks for June 2022

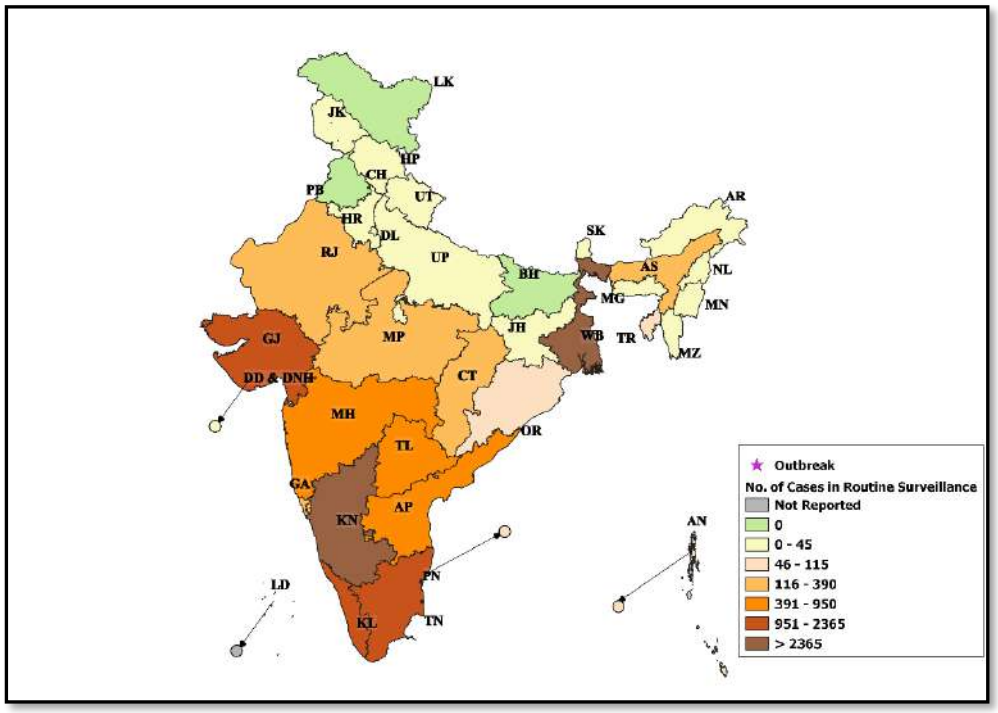


Fig. 23: State/UT wise Lab Confirmed Dengue cases and outbreaks for June 2022

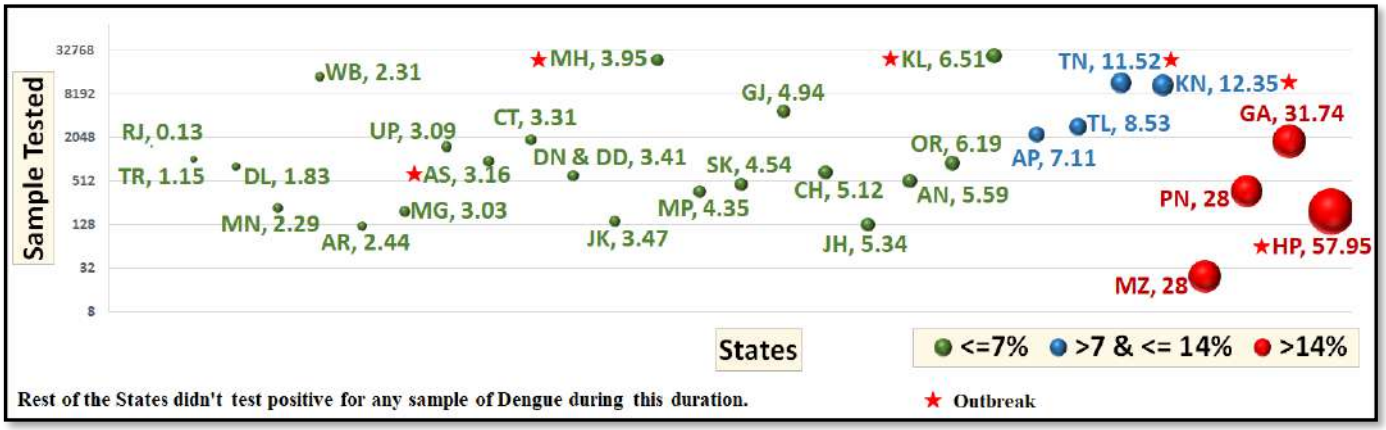
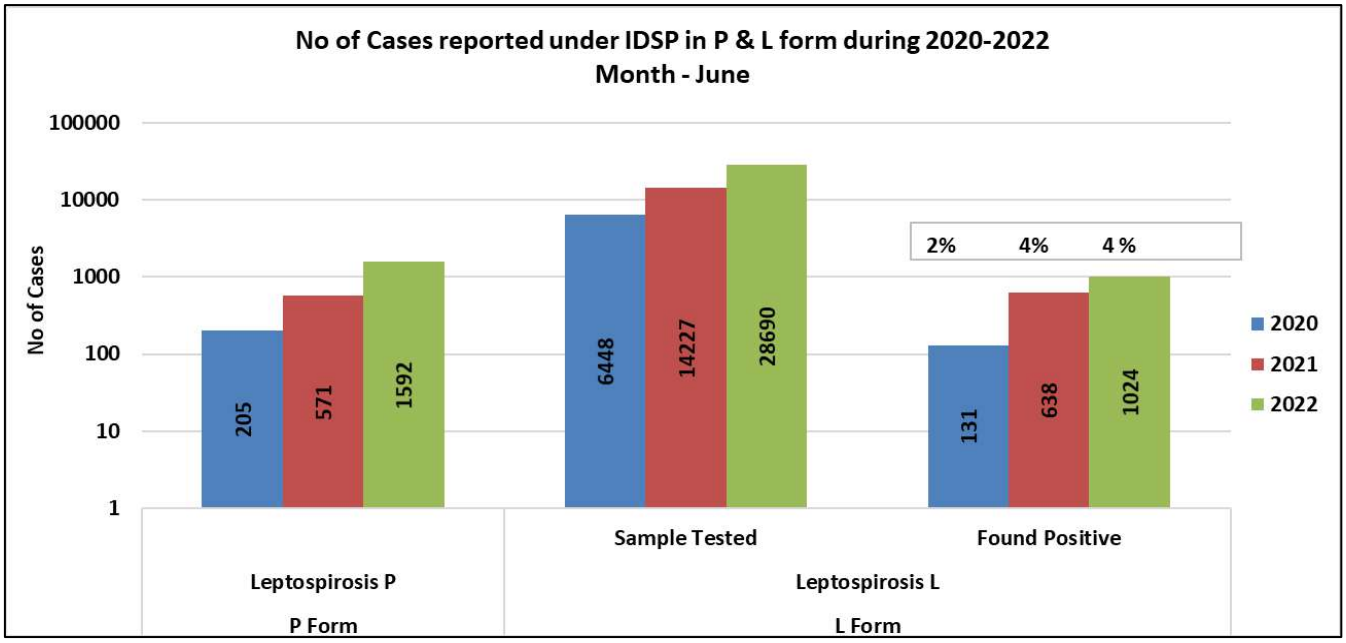


Fig. 24: No. of Leptospirosis Cases reported under IDSP in P & L form during June 2020 - 2022



As shown in Fig. 24, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 205 in *June* 2020; 571 in *June* 2021 and 1592 in *June* 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in *June* 2020; 6448 samples were tested for Leptospirosis, out of which 131 were found positive. In *June* 2021; out of 14227 samples, 638 were found to be positive and in *June* 2022, out of 28690 samples, 1024 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 2 %, 4 % and 4 % in June month of 2020, 2021 & 2022 respectively.

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Fig. 25: State/UT wise Presumptive Leptospirosis cases and outbreaks for June 2022

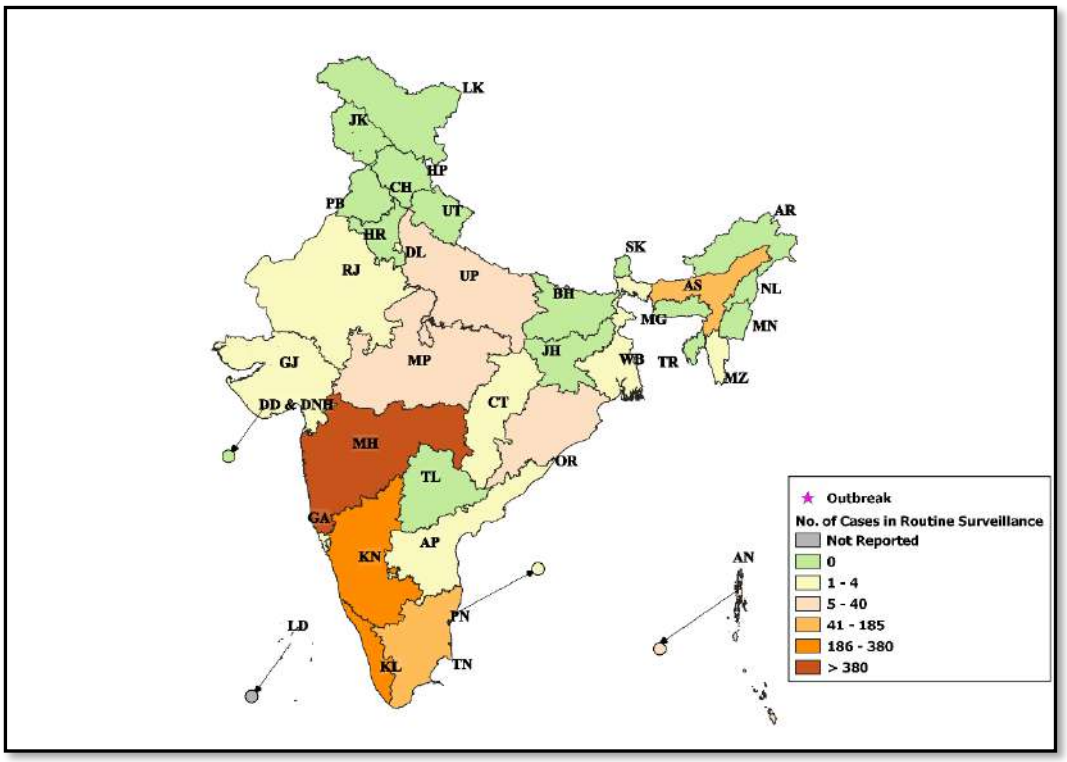

Fig. 26: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for June 2022

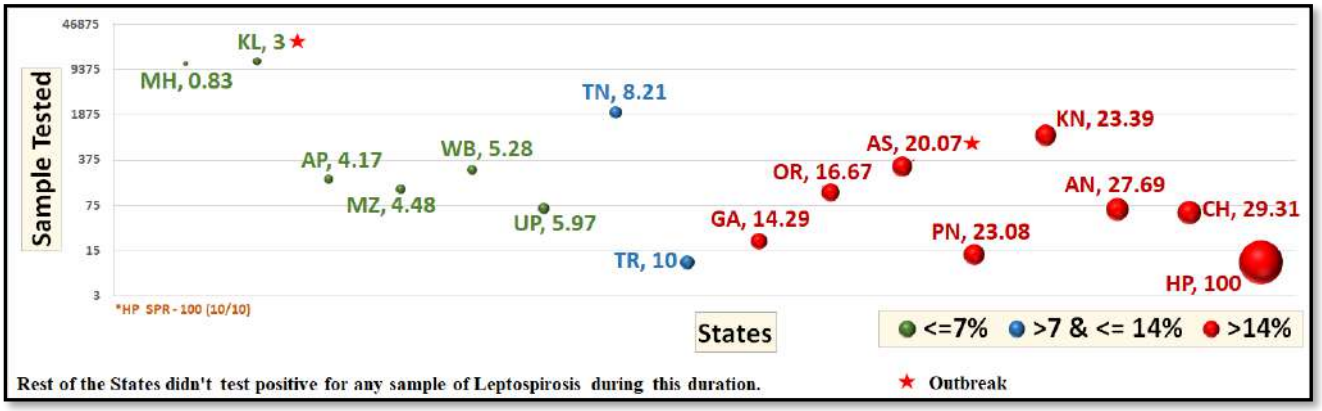

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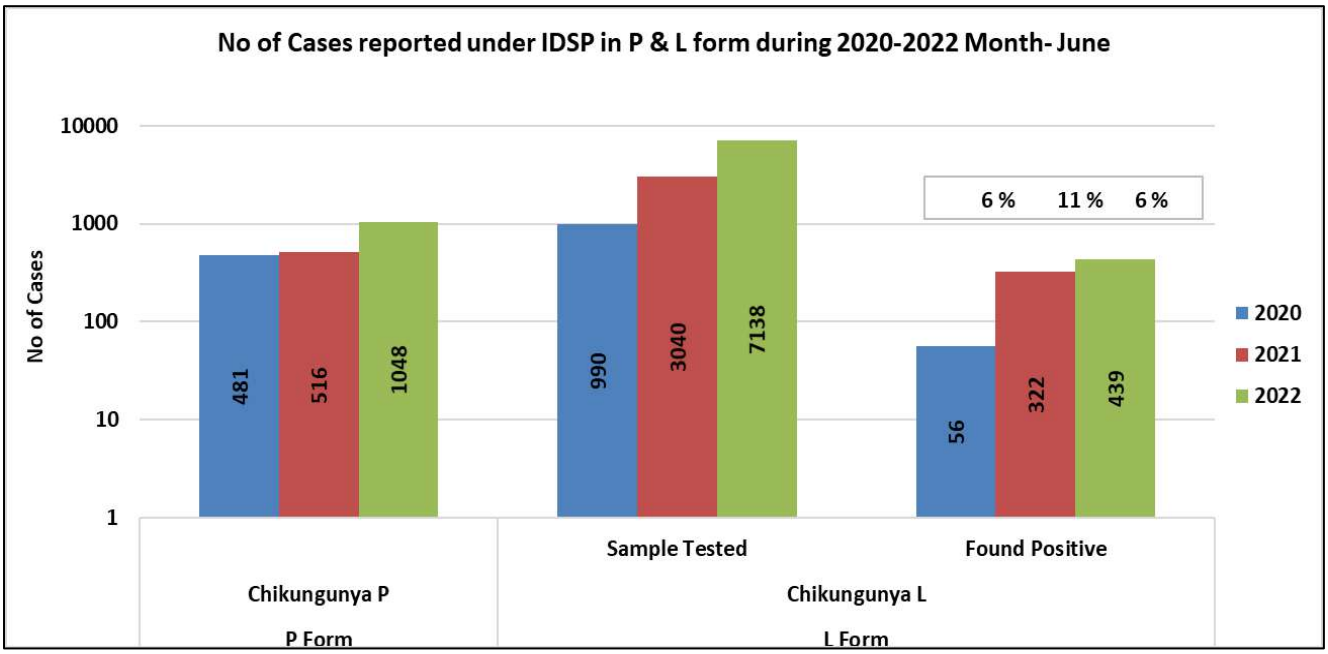
Fig. 27: No. of Chikungunya Cases reported under IDSP in P & L form during June 2020 - 2022



As shown in Fig. 27, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 481 in June 2020; 516 in June 2021 and 1048 in June 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2020; 990 samples were tested for Chikungunya, out of which 56 were found positive. In June 2021; out of 3040 samples, 322 were found to be positive and in June 2022, out of 7138 samples, 439 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 6 %, 11 % and 6 % in June month of 2020, 2021 & 2022 respectively.

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Fig. 28: State/UT wise Presumptive Chikungunya cases and outbreaks for June 2022

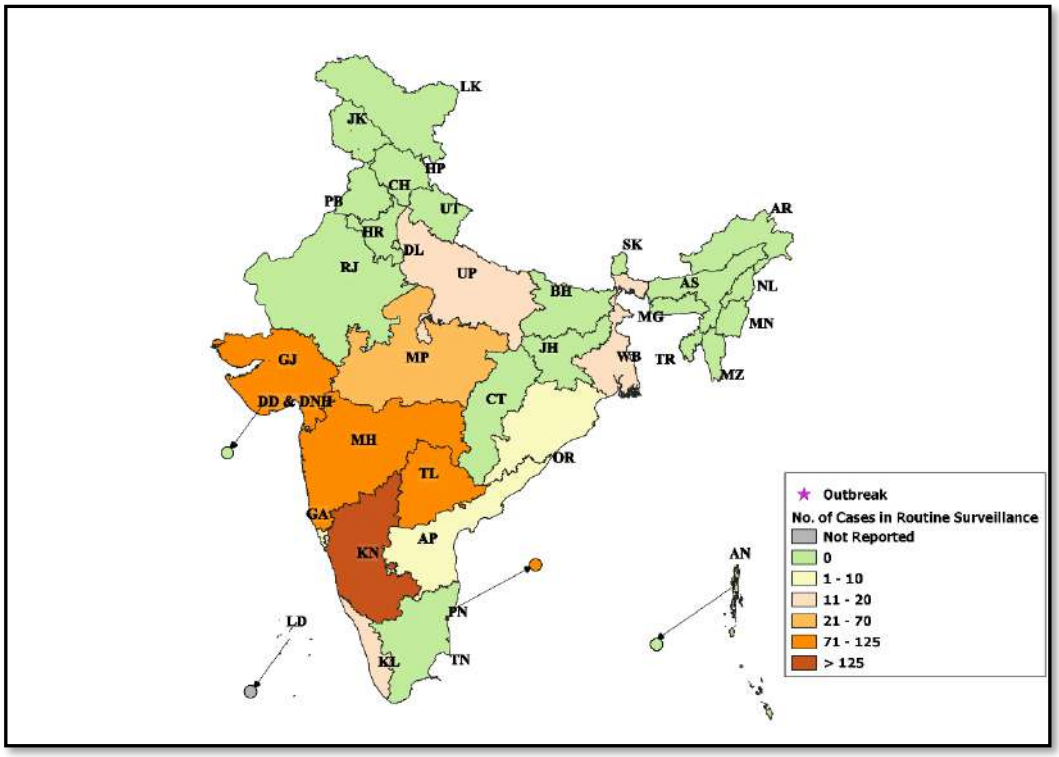


Fig. 29: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for June 2022

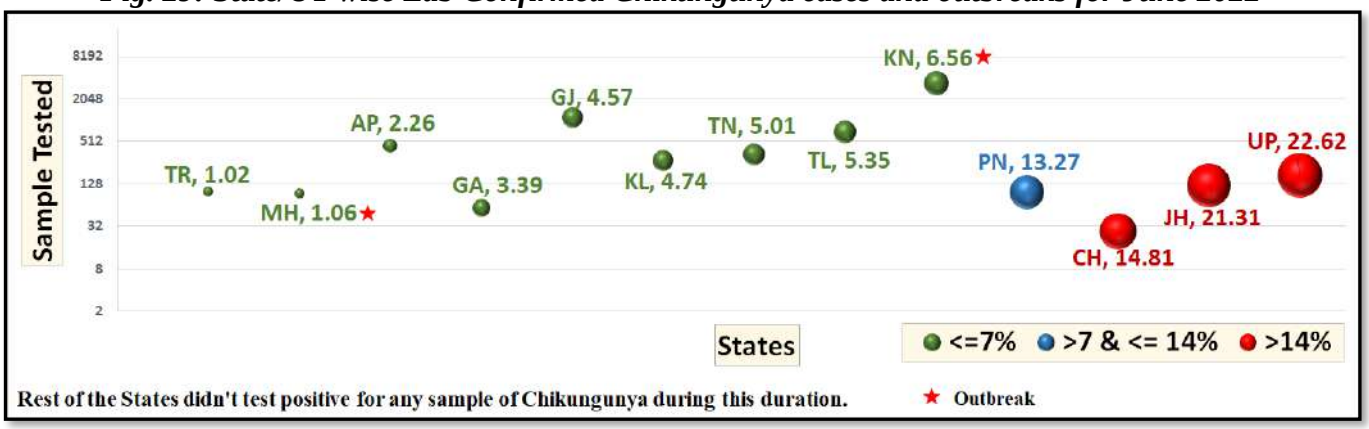
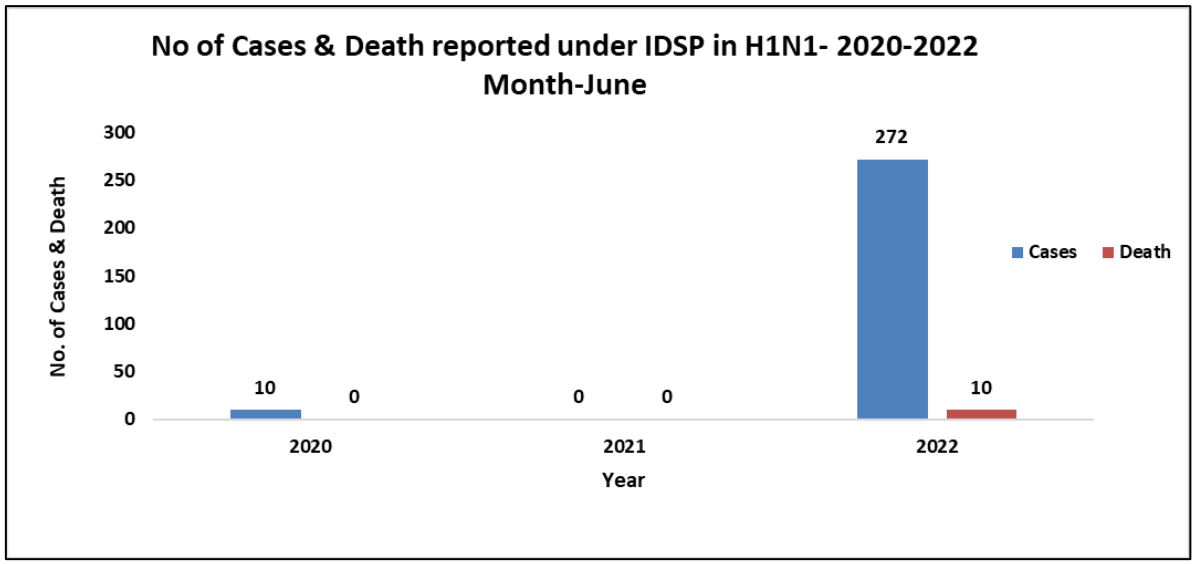


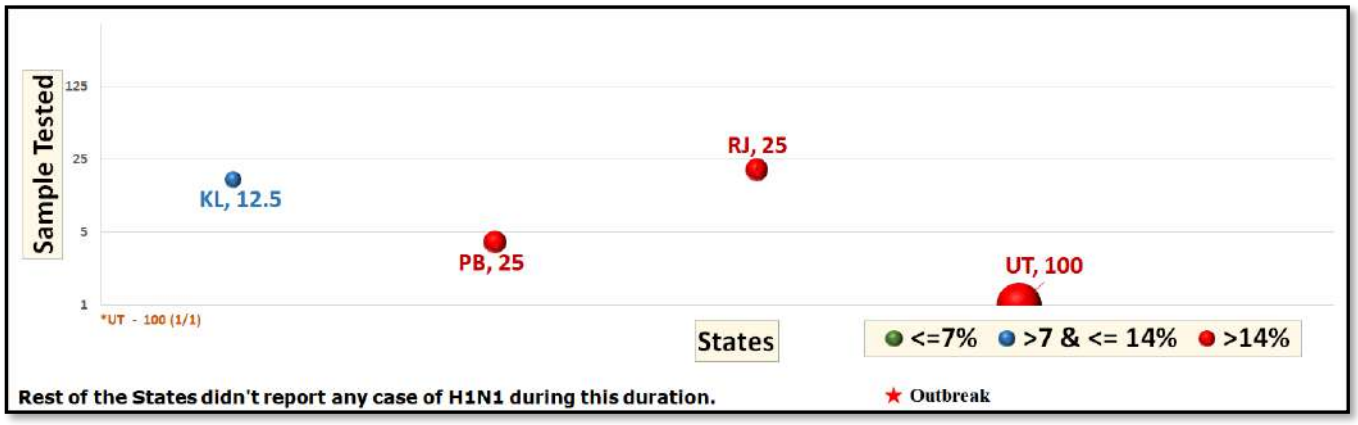
Fig. 30: H1N1 cases & deaths reported under IDSP in L Form during 2020-2022 in June



As shown in Fig. 30, as reported in L form, in June 2020, there were 33 cases and 2 deaths. In June 2021, there were 0 cases and 0 deaths; and in June 2022, there were 19 cases and 1 death.

Case fatality rate for H1N1 were 6.1 %, 0.00% and 5.3 %in June month of 2020, 2021 & 2022 respectively.

Fig. 31: State/UT wise H1N1 cases and outbreaks for June 2022



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: dirnicd@nic.in & idsp-npo@nic.in

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