

Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report

From

Integrated Disease Surveillance Programme

National Health Mission

In This Issue:

Pertussis Outbreak Kang Sabho Kaali Veyi Slum Area 02

Nakodar, Block Mehatpur District Jalandhar, Punjab

Surveillance Data (Maps & Charts) 09

Action from the Field 24

Glossary 24

**INVESTIGATION OF PERTUSSIS OUTBREAK AT KANG SABHO KAALI VEYI SLUM AREA
NAKODAR, BLOCK MEHATPUR DISTRICT JALANDHAR**

BACKGROUND

Mehatpur is a large village located in Nakodar Tehsil of Jalandhar district, Punjab with total 1186 families residing. It has population of 5804 of which 2943 are males while 2861 are females as per census of 2011. Mehatpur village has higher literacy rate compared to Punjab. In 2011, literacy rate of Mehatpur village was 80.73 % compared to 75.84 % of Punjab.



Fig. 1: Location of Jalandhar district

Pertussis is also known as Whooping cough. It is highly contagious disease of respiratory tract. It is caused by bacterium *Bordetella pertussis*. It is initially characterized by cough like symptoms with mild fever. It affects people of all ages and gender. It is Vaccine preventable disease and Diphtheria-Pertussis-tetanus is the vaccine available for prevention.

Case definition: The following is standard case definition used for Pertussis -

Probable Case: A cough illness lasting ≥ 2 weeks, with at least one of the following signs or symptoms-

- Paroxysms of coughing OR
- Inspiratory whoop OR
- Post-tussive Vomiting OR
- Apnea (with or without cyanosis)

Confirmatory case definition: Any cough illness of any duration with

- Isolation of *Bordetella pertussis*
- Positive polymerase chain reaction (PCR) for *Bordetella pertussis*

Details of investigation: The following was chronology of RRT investigation -

- 1) District Epidemiologist received an information of admission of 2 suspected cases of pertussis dated 19.4.2022 in PIMS hospital (private hospital) via WHO NPSP unit Jalandhar.
- 2) The District RRT immediately contacted the hospital to gather the information of two suspected cases which were 5 months old Male and Female twins from Kali Veyi, a slum area in village Kang Sabho Block Mehatpur District Jalandhar.
- 3) The twins were born prematurely and not vaccinated. Both were falling sick frequently after birth.
- 4) District RRT in collaboration with WHO NPSP unit Jalandhar planned to conducted the survey of the area in search of new and active cases. The standard case definitions (above) were used for this purpose.

Surveillance:

The community survey was conducted on dated 21.04.22 by the team of Epidemiologist along with SMO and FM from NPSP WHO. The survey observations were as follows –

- A total of 66 houses were surveyed in the slum area of Kali Bein at block Nakodar falling under PHC, Mehatpur.
- In 66 houses surveyed, total of 360 individuals were verified for Pertusis like illness.
- Out of these 360-individual verified, 5 close contacts (household, neighborhood, and school) were identified for persistent cough and other symptoms of PLI.
- The sample of two suspected cases of PLI admitted in PIMS were taken both for Virology and Serology on dated 19/04/22 and sent to PGIMER Chandigarh. 5 more PLI cases samples were taken on dated 21/04/22 and sent to PGIMER Chandigarh.



Fig. 2: RRT doing investigation on the field

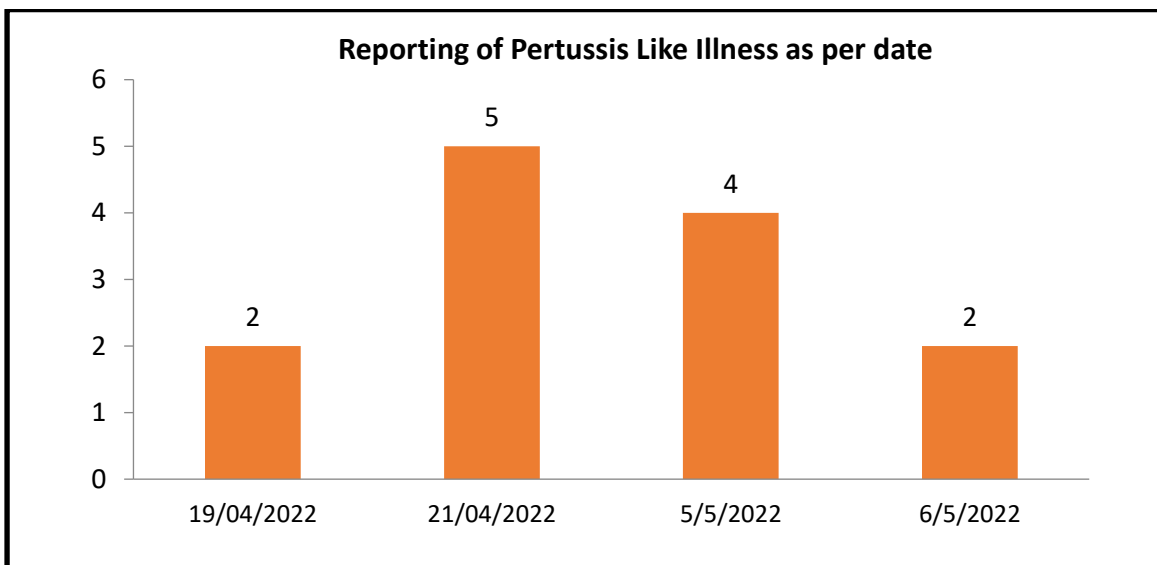


Fig. 3: Date-wise breakup of Pertussis Like Illness

Results:

Both samples (of twins) were declared Positive for pertussis by laboratory of PGIMER Chandigarh on date 20.04.22. One case was positive by ELISA and other one report confirmed was of Intermediate type.

It is pertinent here to mention that both cases were of four-month-old twins with premature delivery and without any vaccination for Pertussis. One of the twins admitted at PIMS Jalandhar was on oxygen for 4 days from the date of admission.

04 out of 05 samples were found reactive for Pertussis on dated 2.05.22.

Clinical presentation of all the reported cases of pertussis: -

Total number of reported cases (N) =7

Clinical Symptoms	No. (% age)
Duration of cough > 2 weeks	6(85%)
Paroxysms	6(85%)
Cough leading to vomiting	5(71%)
Whoop	5(71%)
Apnea	3(42%)
Cyanosis	1(14%)

Attack rate: -

Age	Total population of the children	Positive cases	Attack rate
0-5 yrs	51	3	5.88%
6-10yrs	48	2	4.16%
11-16yrs	20	1	5.00%

Vaccination status of all the reported cases: -

As shown in the figure no 4 the vaccination status of reported cases of pertussis is 43%

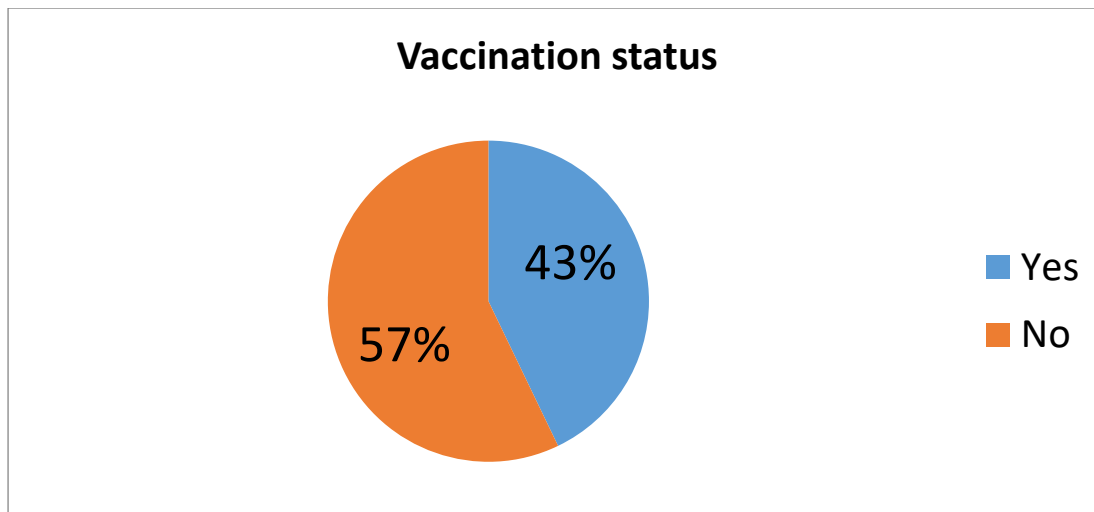


Figure 4: Vaccination status of reported cases

Descriptive epidemiology

Person wise distribution: In this outbreak of Pertussis, this disease affected the children upto age 15 years. The lowest affected age group is 4 month and maximum is 15 yrs. The median age is 6.5 yrs. Out of which maximum 67% were females and 33% were male children.

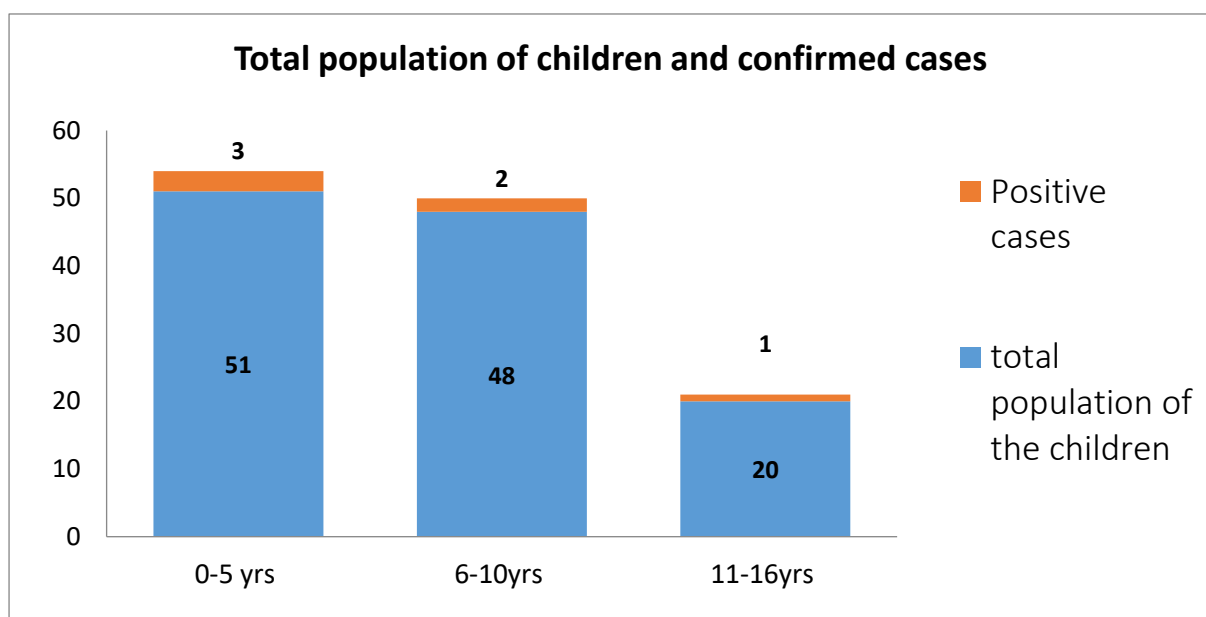


Figure 5: Person-wise breakup of confirmed cases

Gender wise distribution:

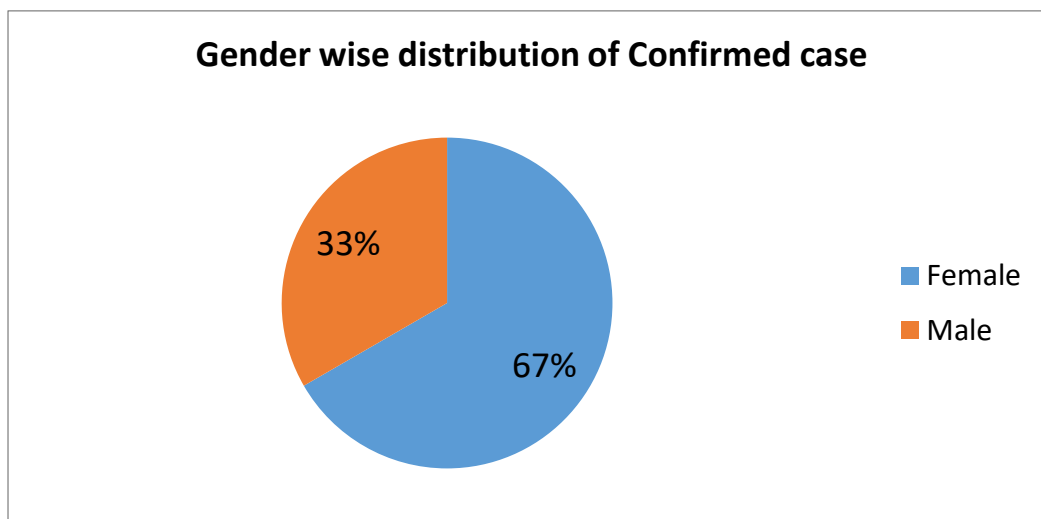


Figure 6: Gender-wise breakup of confirmed cases

Place Distribution:

All the cases were reported from the Kali veyi (drain) slum area of village Kang Sabho Block Mehatpur district Jalandhar. There was clustering of cases in the slums. All were the contacts of each other as they all live and play in the same area.

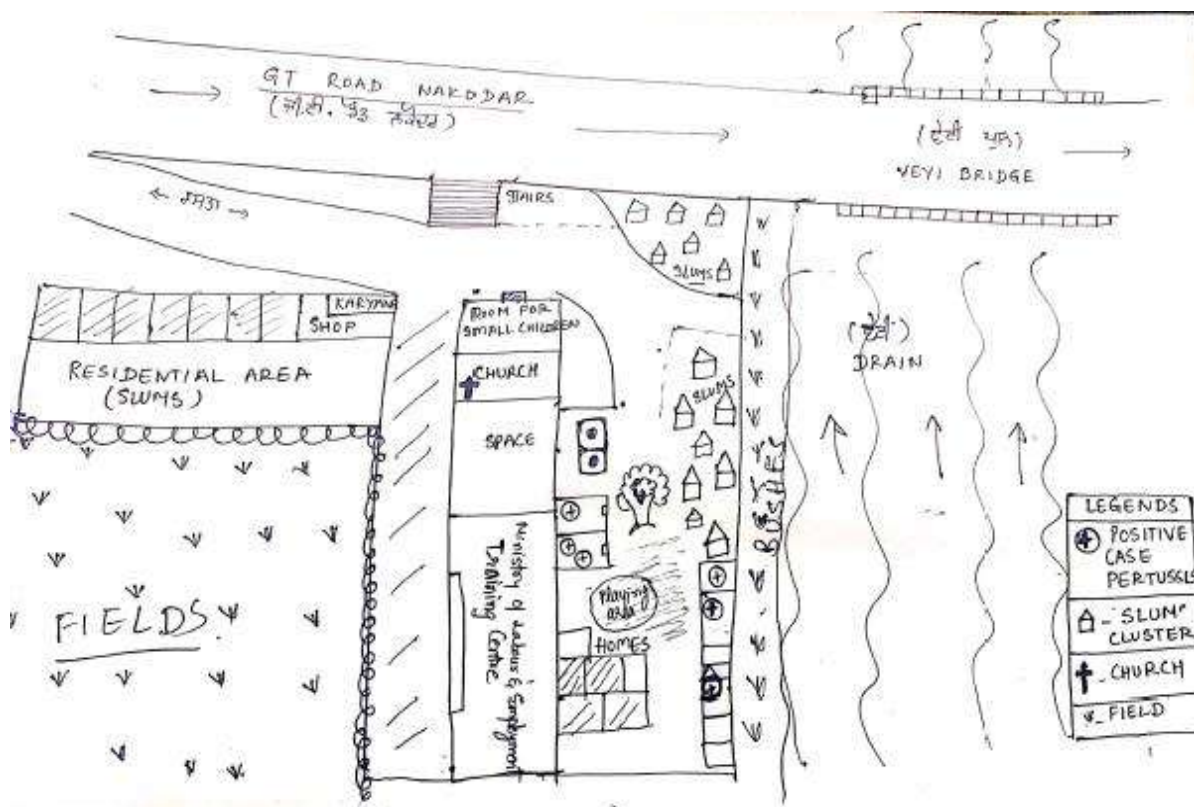


Figure 7: Spot map of cases

Public health measures taken by the health department: -

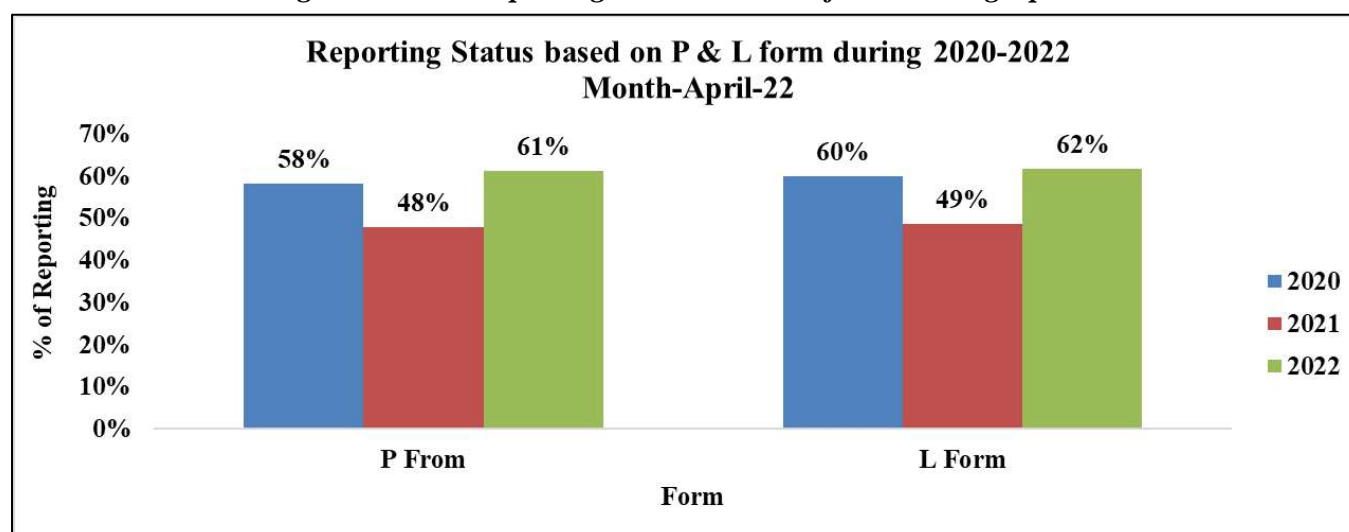
- 1) Extensive House to house survey was done in the area. As the area has slums and few *Pakka Makaans* so houses were counted as per the number of kaccha chullas.
- 2) Vaccination and medical camps were organized by the teams.
- 3) Antibiotics were given to all the contacts and symptomatic cases found during the camp and survey as per the pediatrician.
- 4) All the children under the age of 7 years were given DPT dose except those who had recently received during Routine immunization, while children above 7yrs upto 16 yrs were given shot of Td.
- 5) Awareness regarding the pertussis and other VPDs were given in detail by the MPHWF & MPHWM.
- 6) Parents/Guardians were motivated and counseled for routine immunization of all the children.
- 7) The head of the slum was instructed to provide the information regarding any migration (in and out) of children in the slums to ANM/ASHA of their area.

Limitations in public health measures found in the study:

- Majority of residents of slum were migratory but there was no reporting of migration of children who migrates in or out from the area.
- These people were occupied in begging at traffic lights etc. so they carry their little ones with them that leads to left out cases of immunization.
- Majority of the mothers were unaware of the vaccination status of their children.
- No Immunization card was available with most of the people.

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

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



As shown in Fig. 8, in April 2020, 2021 and 2022, the ‘P’ form reporting percentage (i.e. % RU reporting out of total in P form) 58 %, 48% and 61% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 60%, 49% and 62% 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 April 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 April 2022

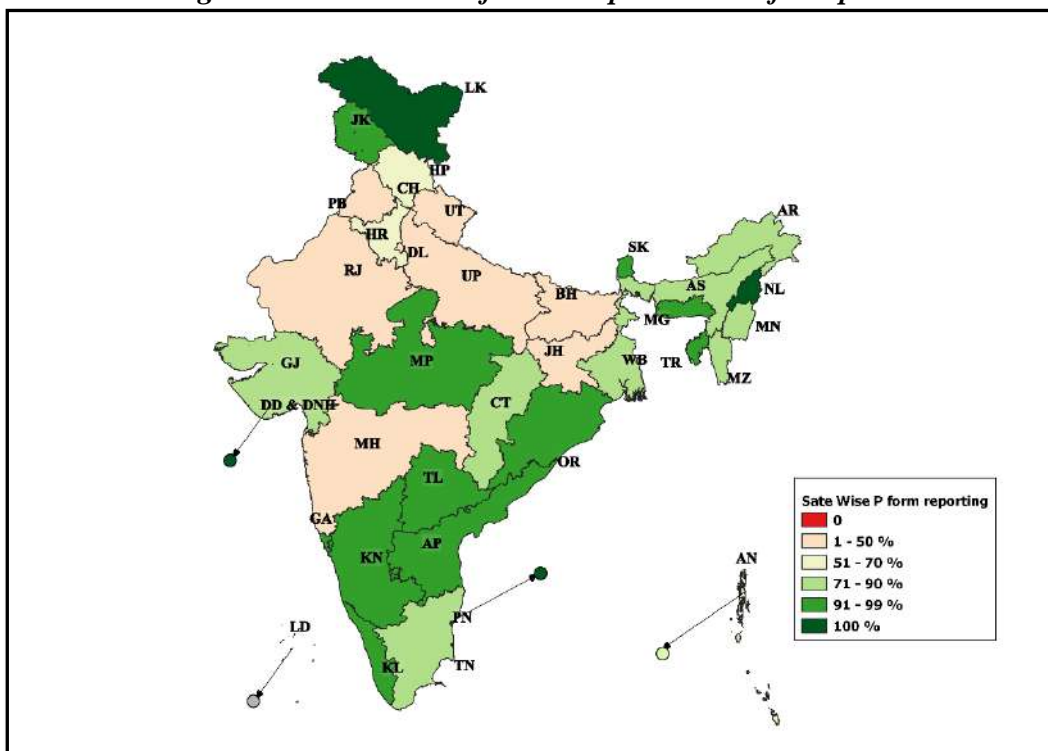


Fig. 10: State/UT wise L form completeness % for April 2022

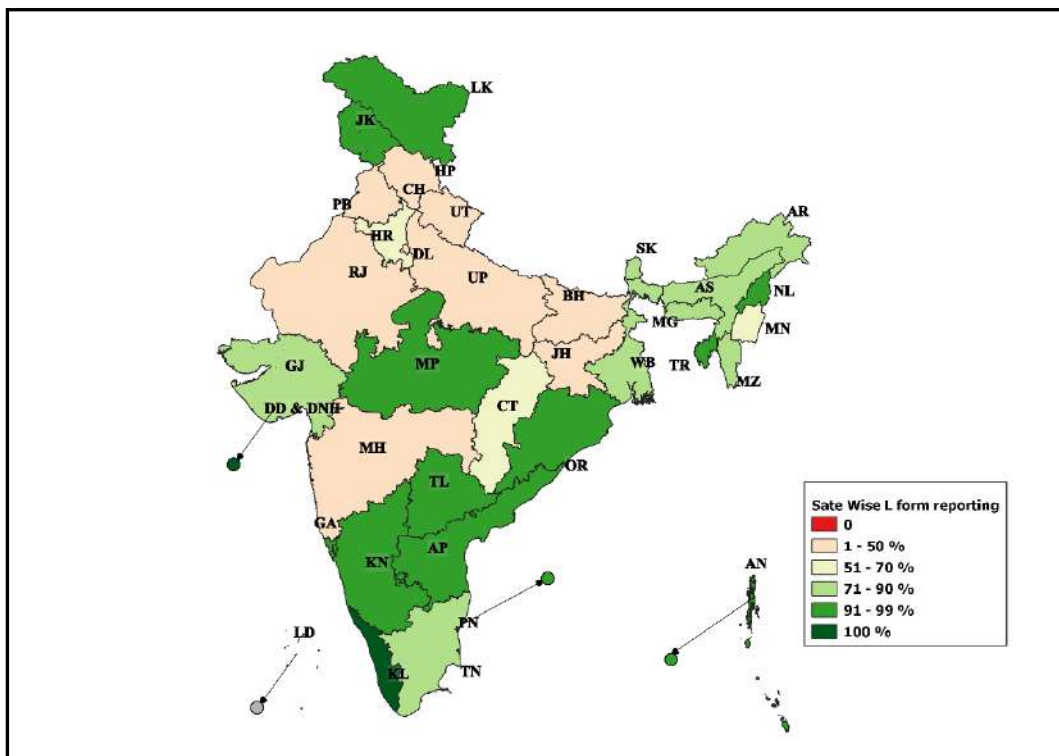
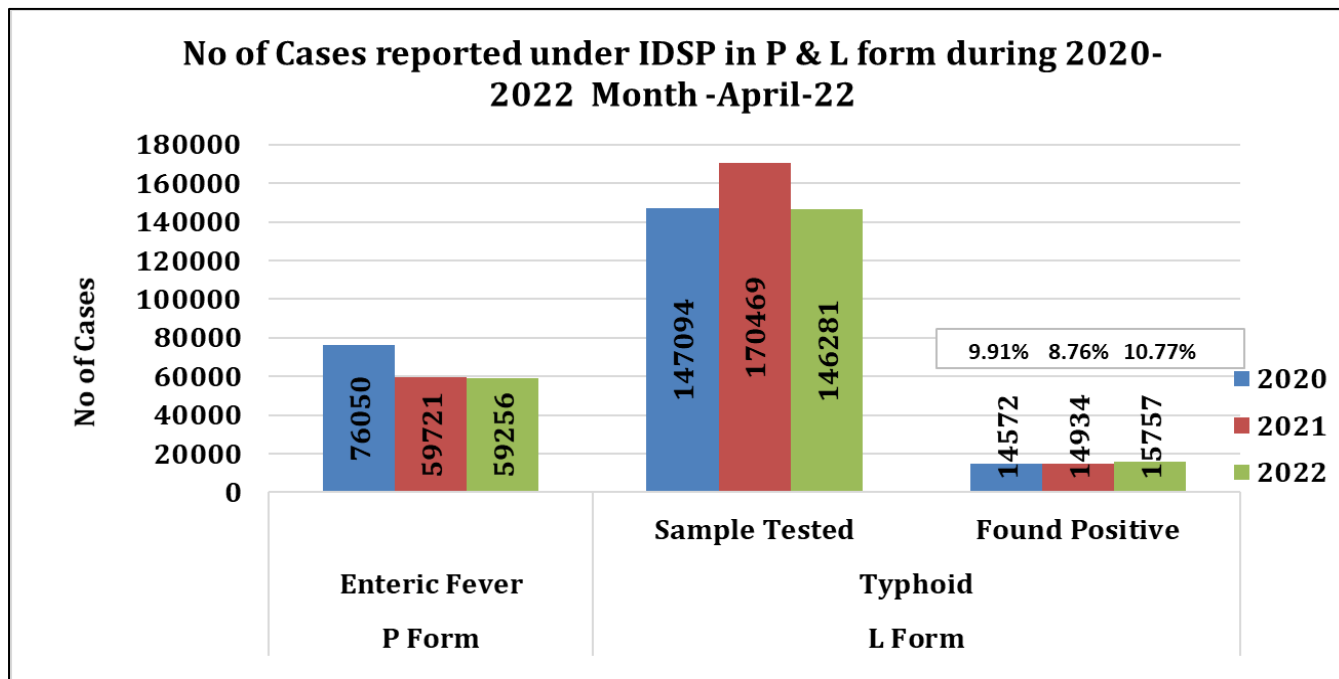


Fig. 11: No. of Enteric Fever Cases reported under P & L form during April 2020 - 2022



As shown in Fig. 11, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 76050 in April 2020; 59721 in April 2021 and 59256 in April 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2020; 147094 samples were tested for Typhoid, out of which 14572 were found positive. In April 2021; out of 170469 samples, 14934 were found to be positive and in April 2022, out of 146281 samples, 15757 were found to be positive.

Sample positivity has been 9.9 %, 8.8 % and 10.8% in April 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.

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

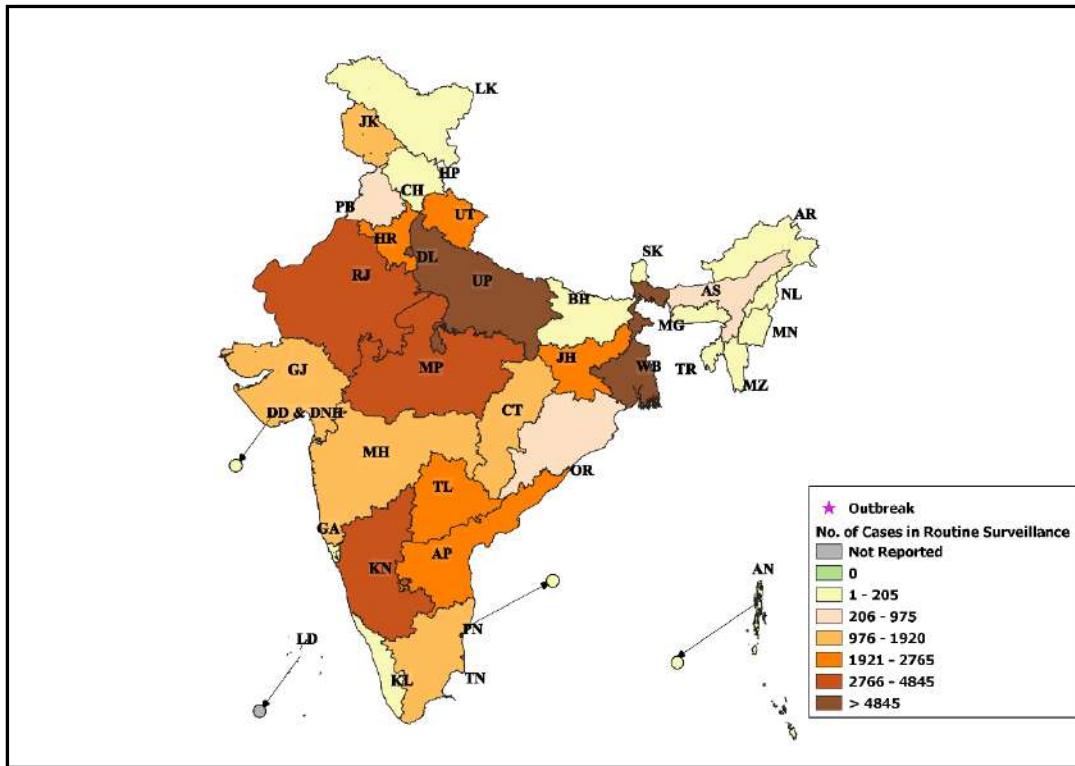


Fig. 13: State/UT wise Lab Confirmed Typhoid cases and outbreaks for April 2022

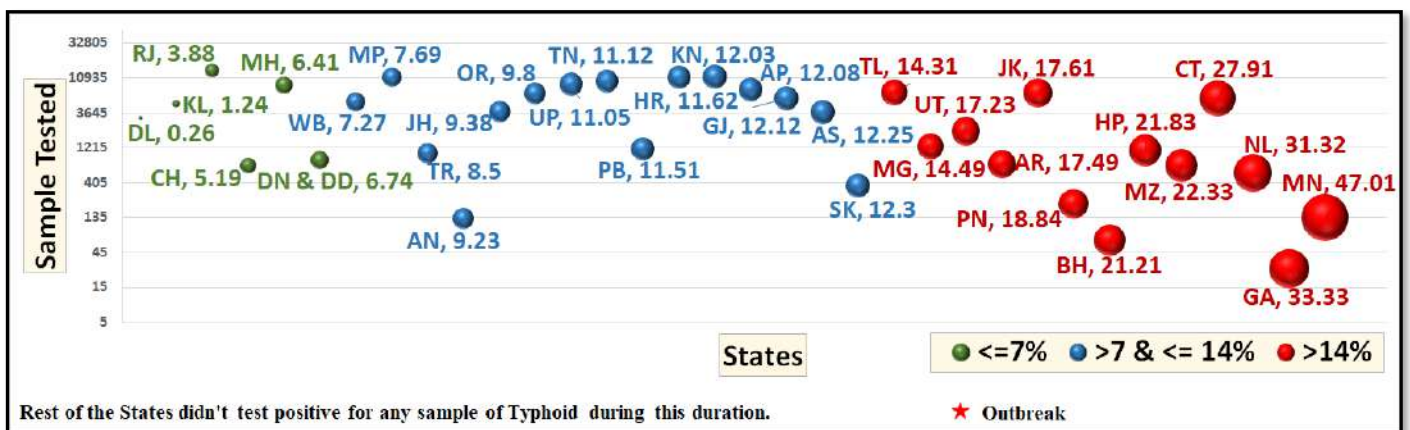
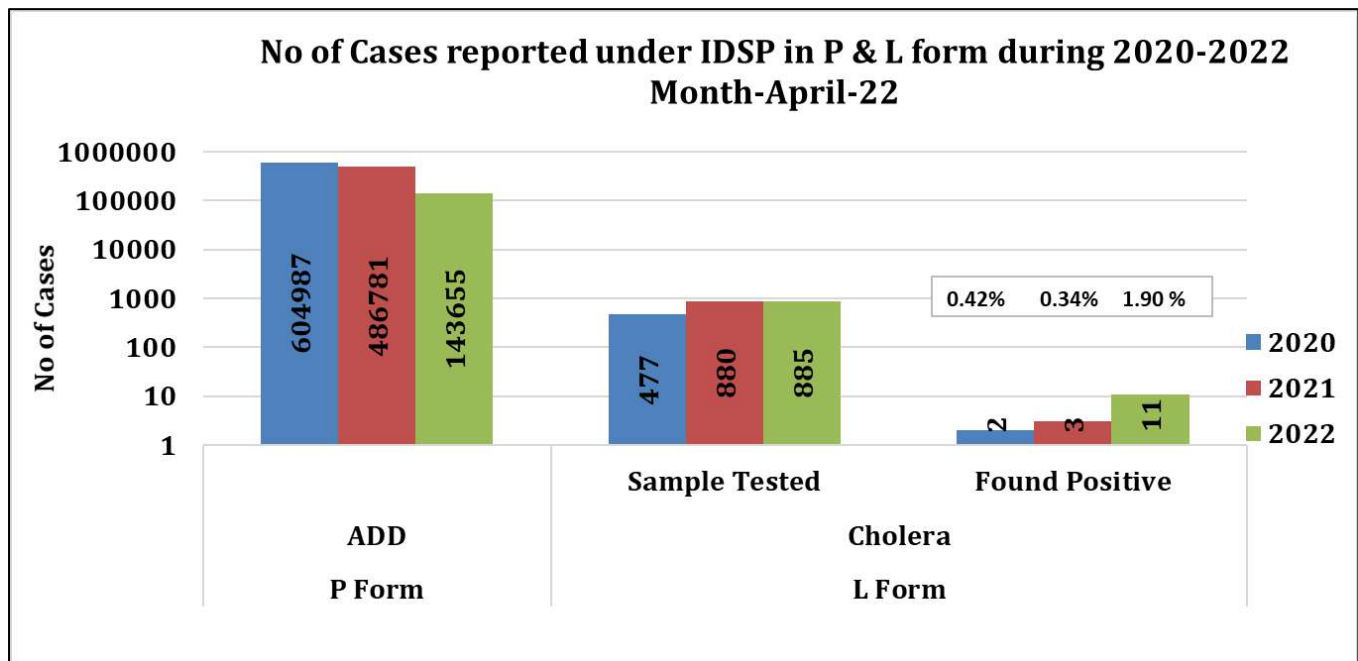


Fig. 14: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during April 2020 - 2022



As shown in Fig. 14, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 604987 in April 2020, 486781 in April 2021 and 143655 in April 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2020, 477 samples were tested for Cholera out of which 2 tested positive; in April 2021, out of 880 samples, 3 tested positive for Cholera and in April 2022, out of 885 samples, 11 tested positive.

Sample positivity of samples tested for Cholera has been 0.4 %, 0.3 % and 1.9 % in April month of 2020, 2021 & 2022 respectively.

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

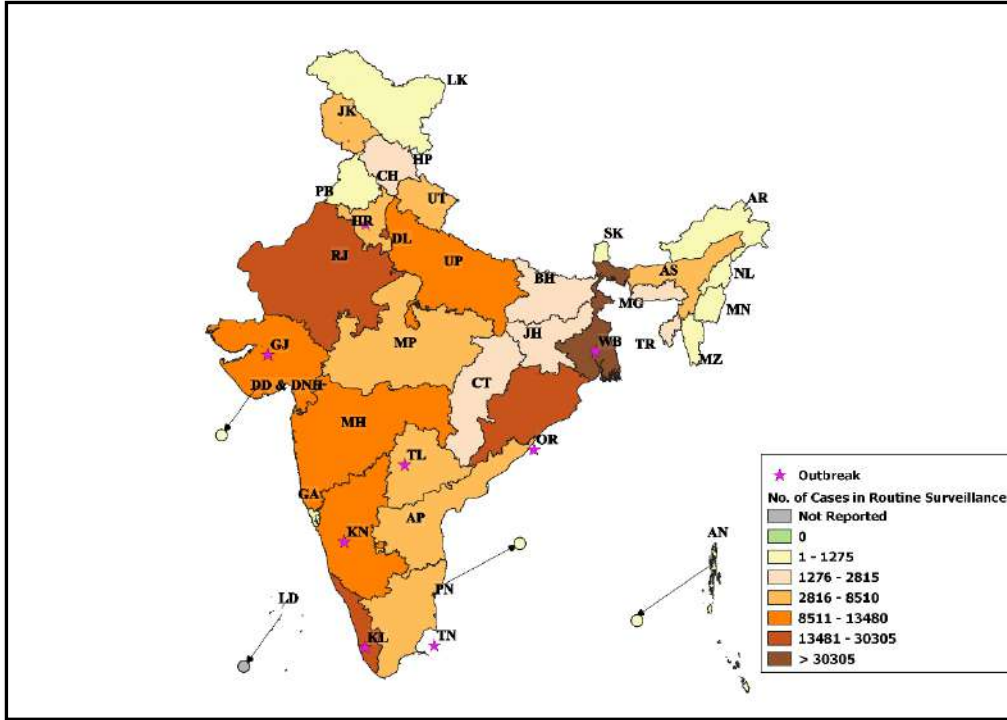


Fig. 16: State/UT wise Lab Confirmed Cholera cases and outbreaks for April 2022

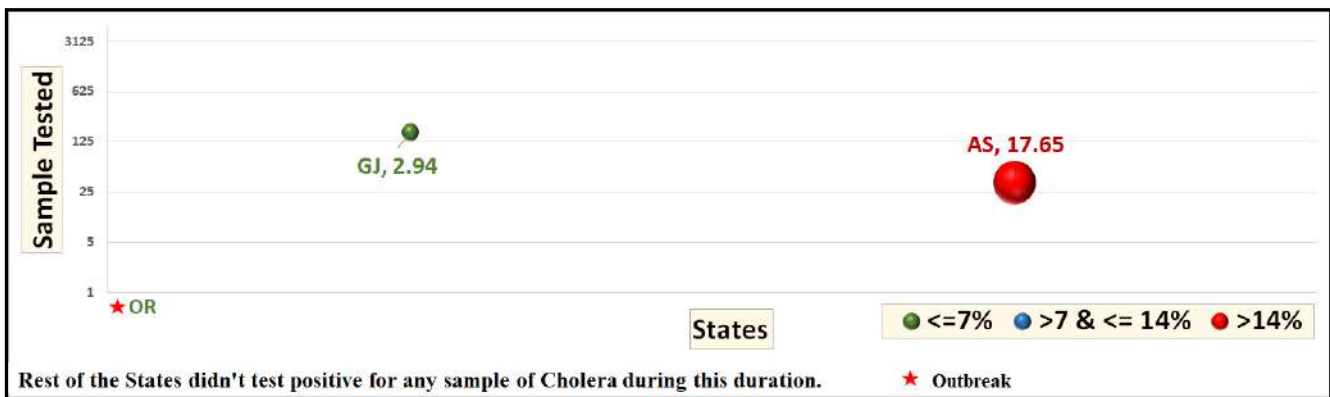
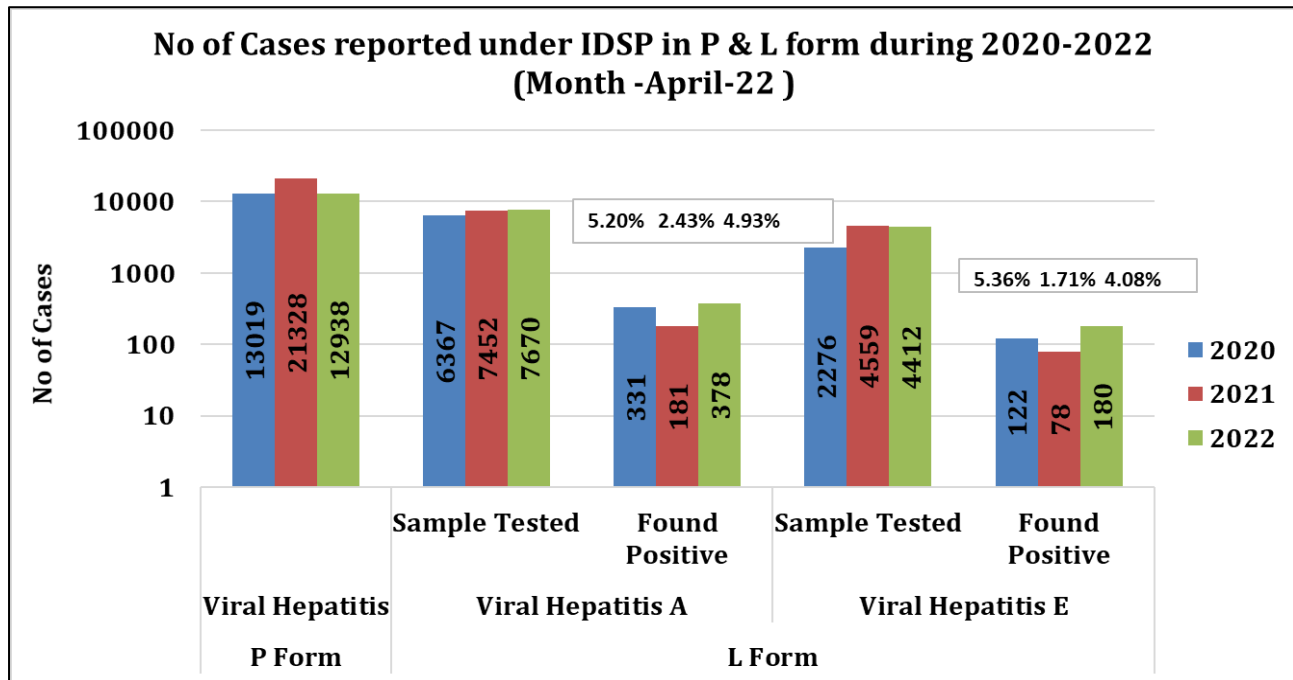


Fig. 17: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during April 2020 - 2022



As shown in Fig. 17, the number of presumptive Viral Hepatitis cases was 13019 in April 2020, 21328 in April 2021 and 12938 in April 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 April 2020; 6367 samples were tested out of which 331 were found positive. In April 2021 out of 7452 samples, 181 were found to be positive and in April 2022, out of 7670 samples, 378 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 5.2 %, 2.4% and 4.9 % in April month of 2020, 2021 & 2022 respectively.

As reported in L form for Viral Hepatitis E, in April 2020; 2276 samples were tested out of which 122 were found positive. In April 2021; out of 4599 samples, 78 were found to be positive and in April 2022, out of 4412 samples, 180 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 5.4 %, 1.7 % and 4.1 % in April month of 2020, 2021 & 2022 respectively.

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

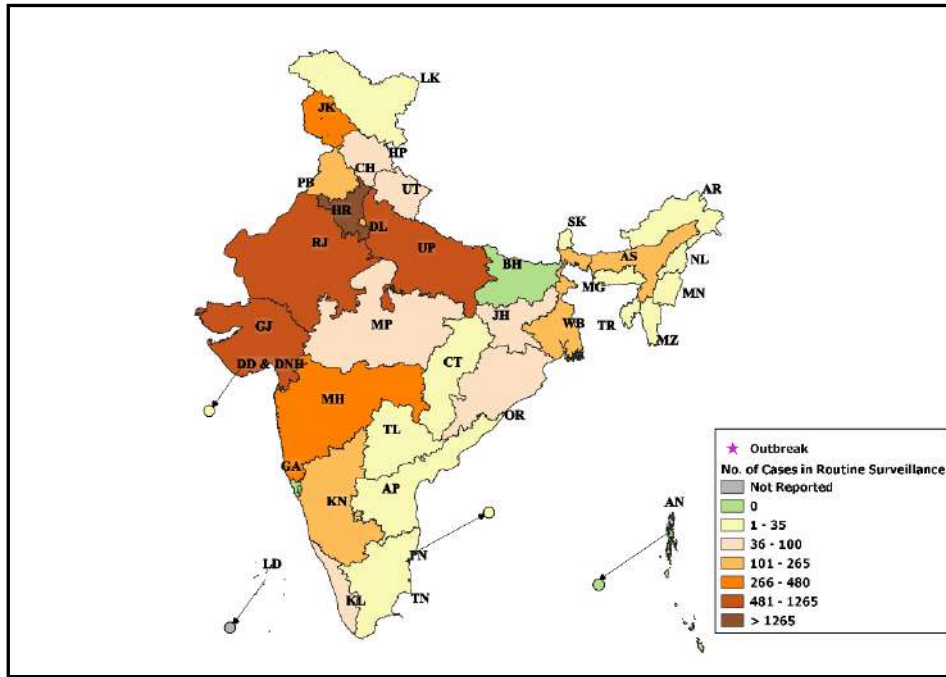


Fig. 19: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for April 2022

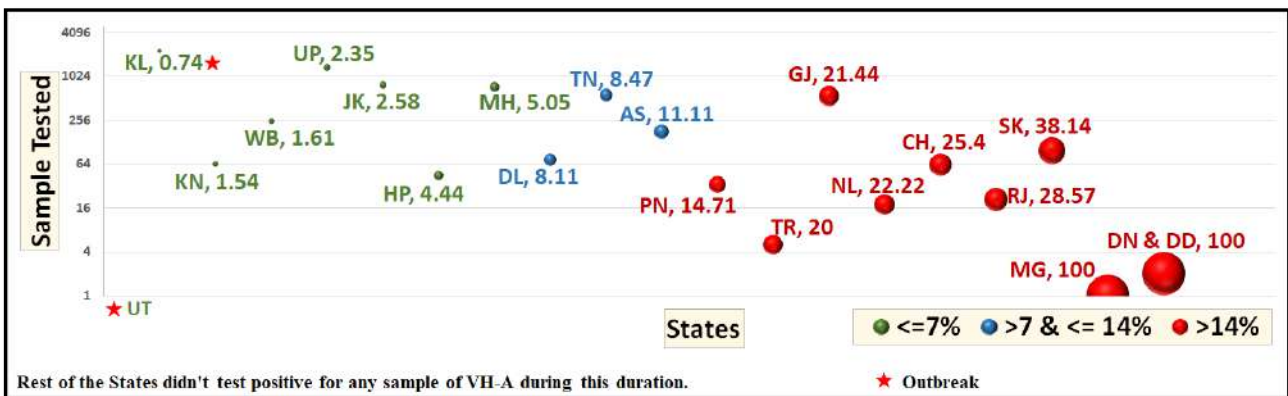


Fig. 20: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for April 2022

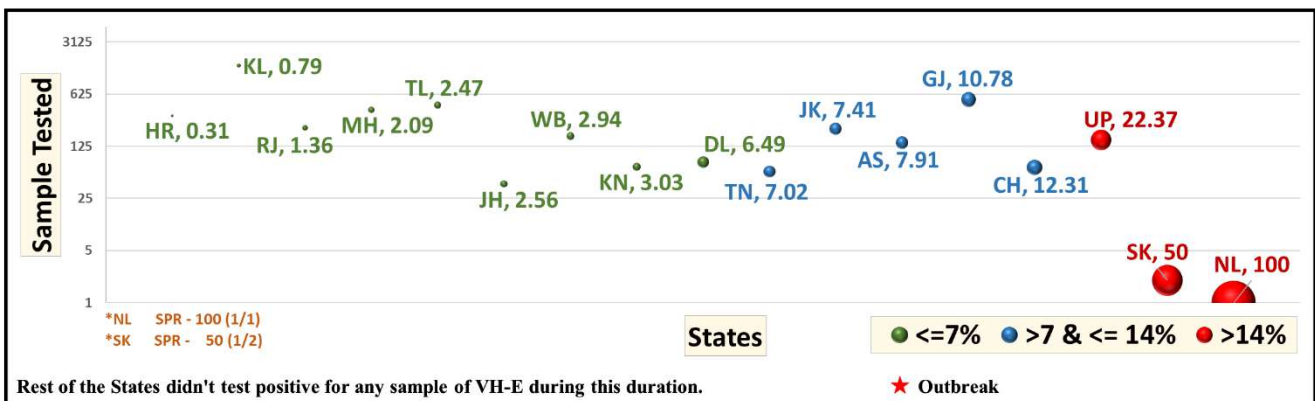
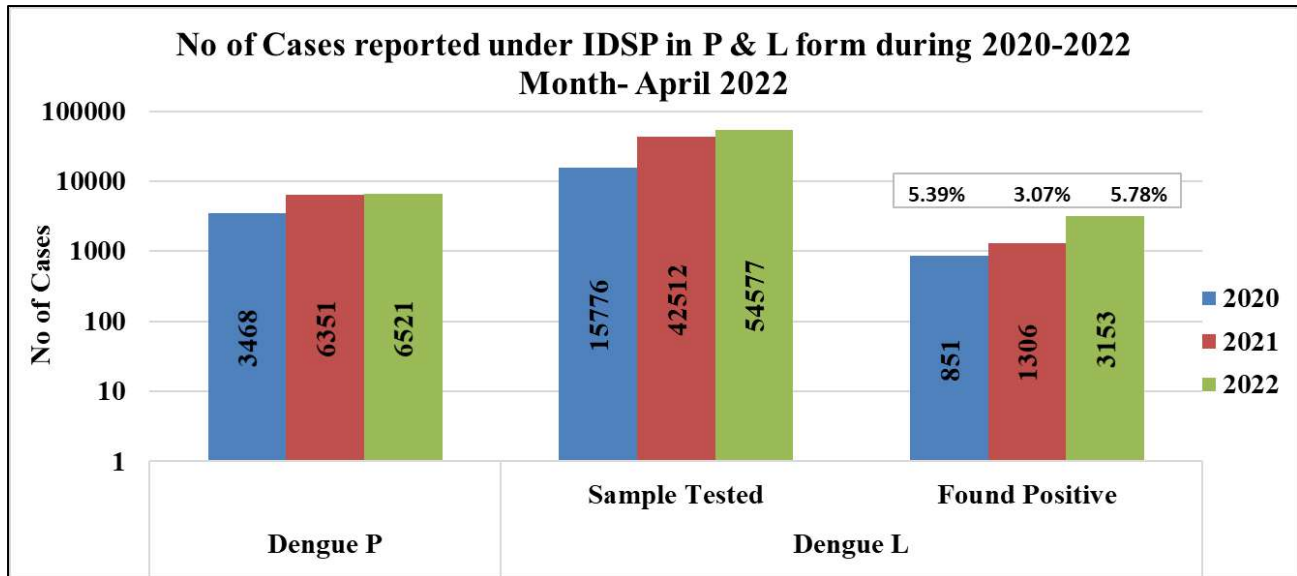


Fig. 21: No. of Dengue cases reported under IDSP in P & L form during April 2022



As shown in Fig. 21, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 3468 in April 2020; 6351 in April 2021 and 6521 in April 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2020; 15776 samples were tested for Dengue, out of which 851 were found positive. In April 2021; out of 42512 samples, 1306 were found to be positive and in April 2022, out of 54577 samples, 3153 were found to be positive.

Sample positivity of samples tested for Dengue has been 5.4%, 3.1 % and 5.8 % in April month of 2020, 2021 & 2022 respectively.

Fig. 23: State/UT wise Presumptive Dengue cases and outbreaks for April 2022

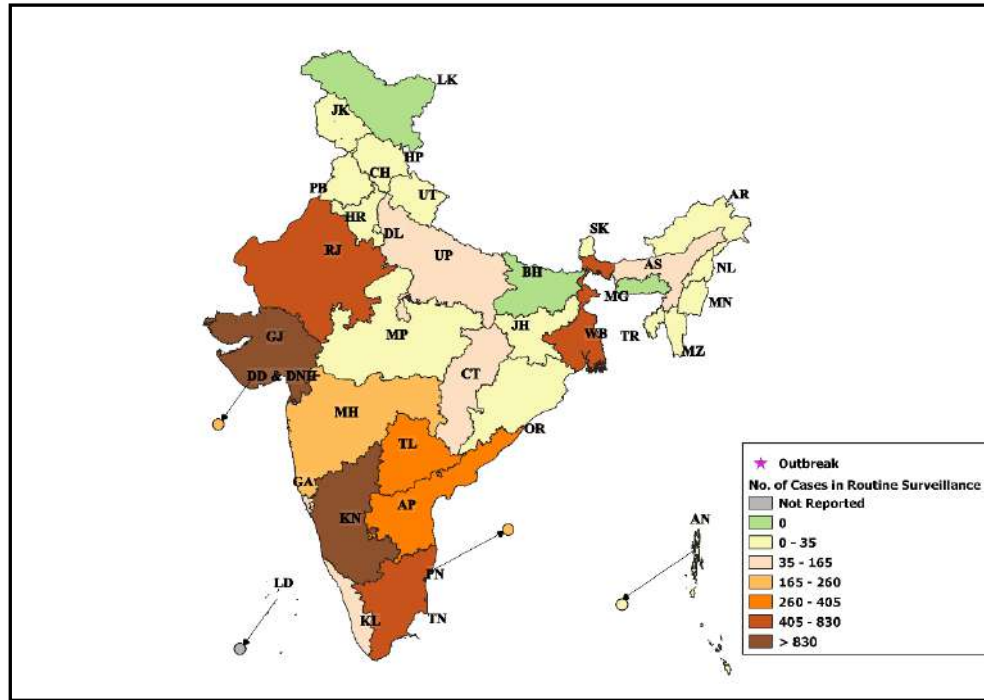


Fig. 22: State/UT wise Lab Confirmed Dengue cases and outbreaks for April 2022

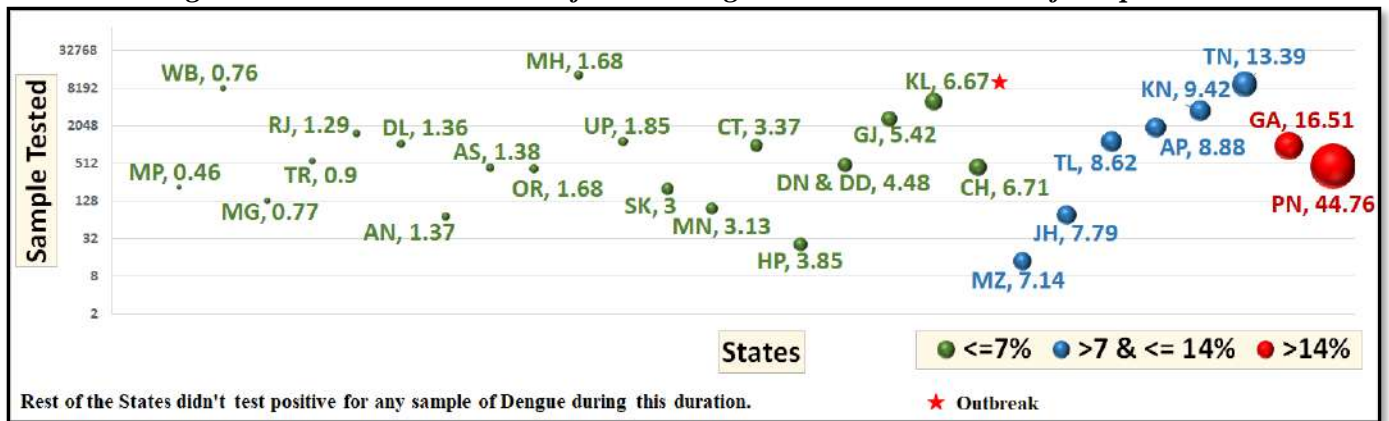
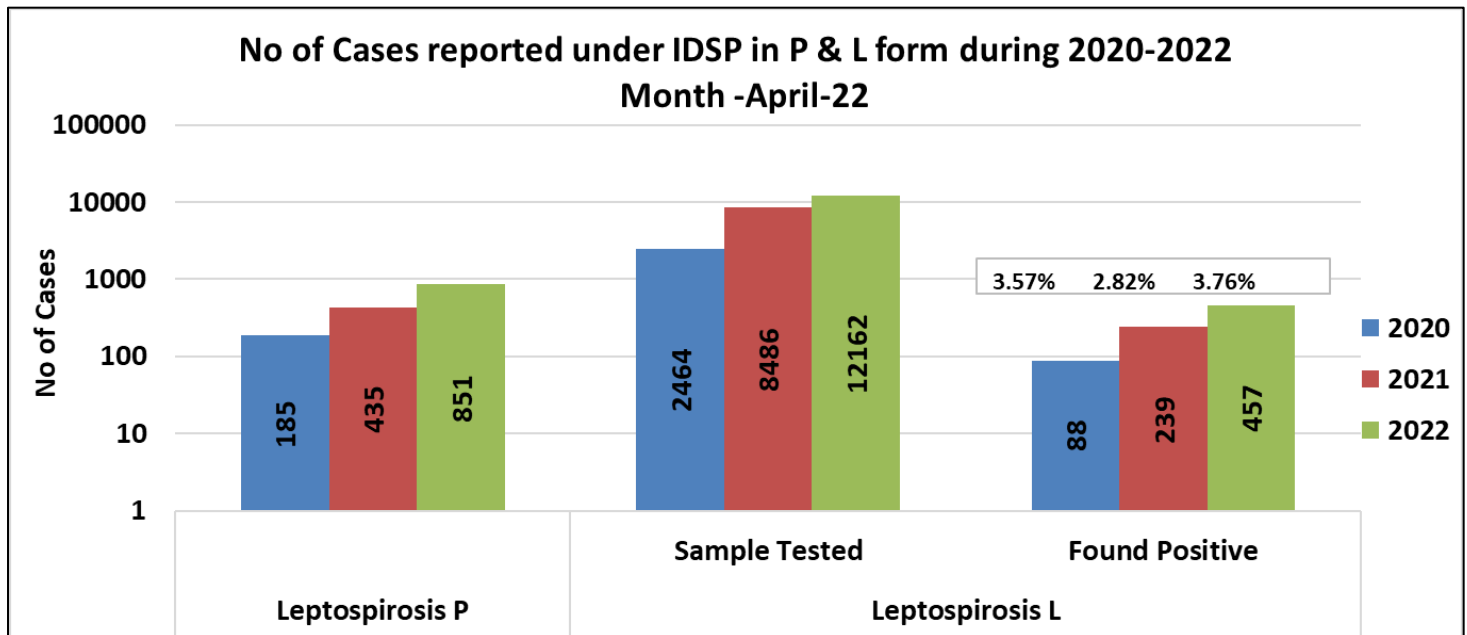


Fig. 24: No. of Leptospirosis Cases reported under IDSP in P & L form during April 2020 - 2022



As shown in Fig. 24, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 185 in April 2020; 435 in April 2021 and 851 in April 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2020; 2464 samples were tested for Leptospirosis, out of which 88 were found positive. In April 2021; out of 8486 samples, 239 were found to be positive and in April 2022, out of 12162 samples, 457 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 3.6 %, 2.8 % and 3.8 % in April month of 2020, 2021 & 2022 respectively.

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

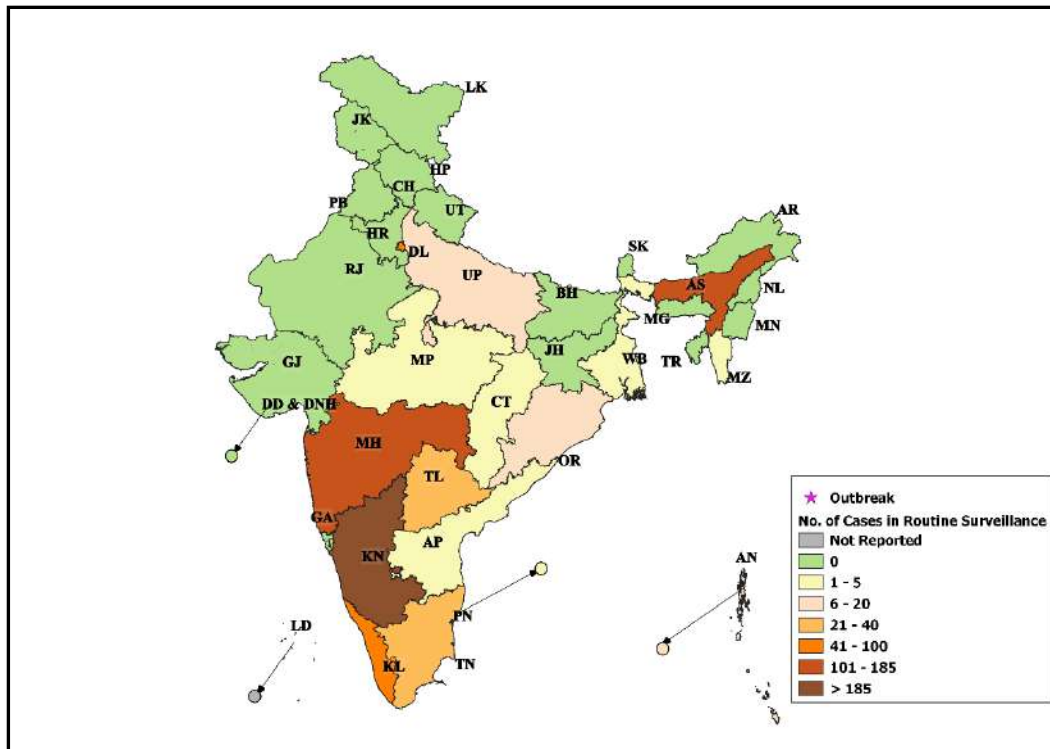


Fig. 26: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for April 2022

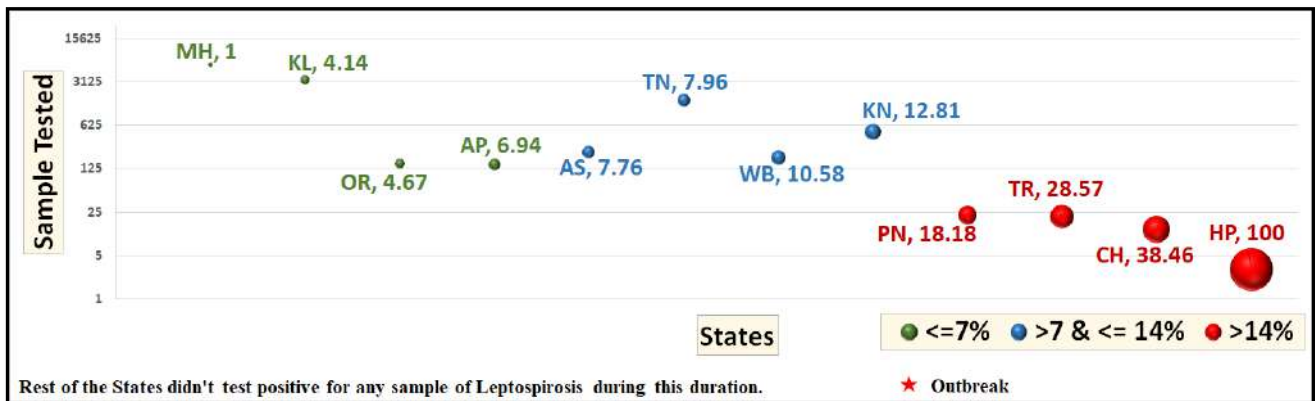
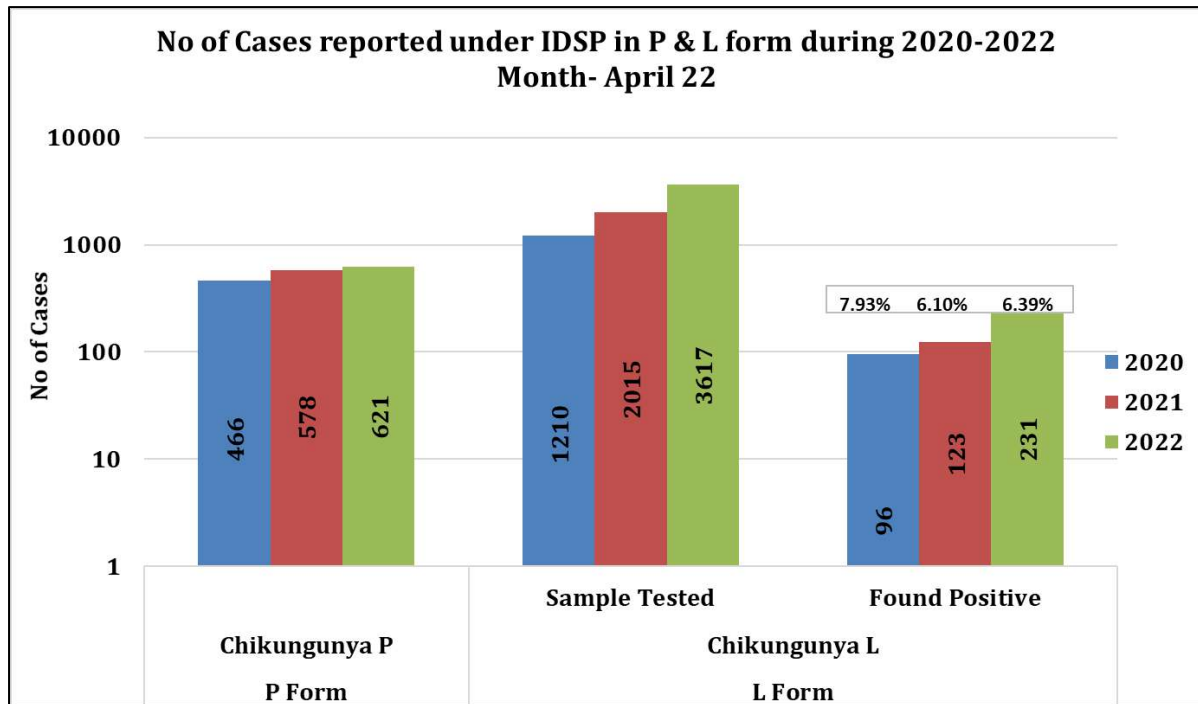


Fig. 27: No. of Chikungunya Cases reported under IDSP in P & L form during April 2020 - 2022



As shown in Fig. 27, number of presumptive Chikungunya cases, as reported by States/UTs in ‘P’ form was 466 in April 2020; 578 in April 2021 and 621 in April 2022. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2020; 1210 samples were tested for Chikungunya, out of which 96 were found positive. In April 2021; out of 2015 samples, 123 were found to be positive and in April 2022, out of 3617 samples, 231 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 7.9%, 6.1% and 6.4 % in April month of 2020, 2021 & 2022 respectively.

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

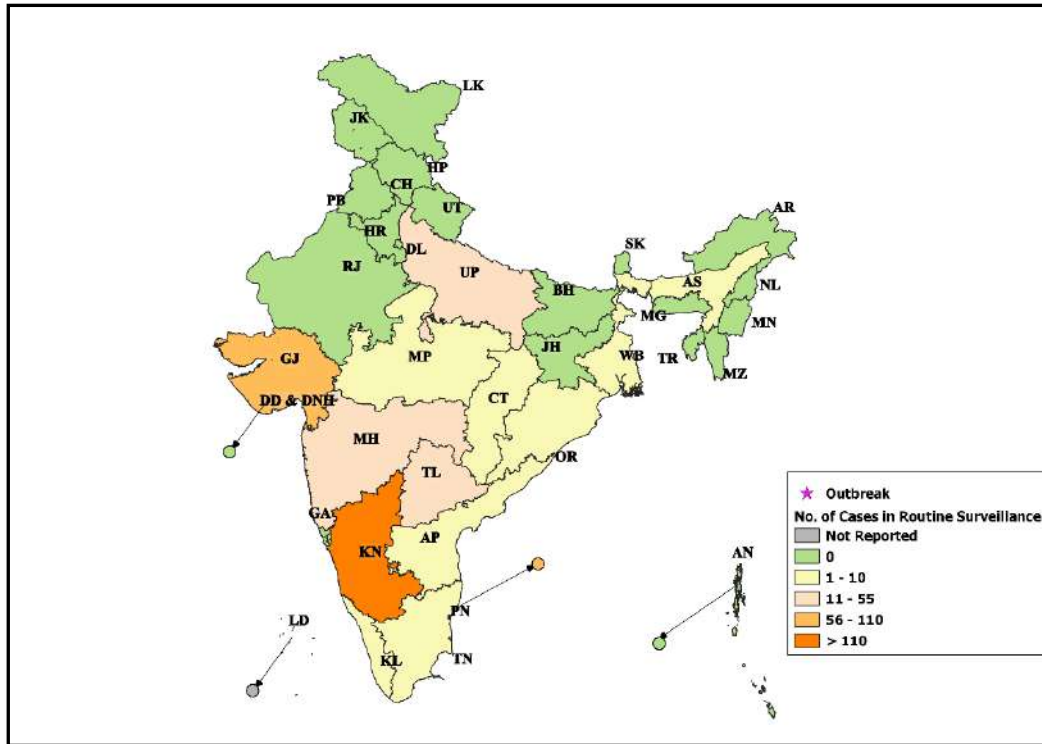


Fig. 29: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for April 2022

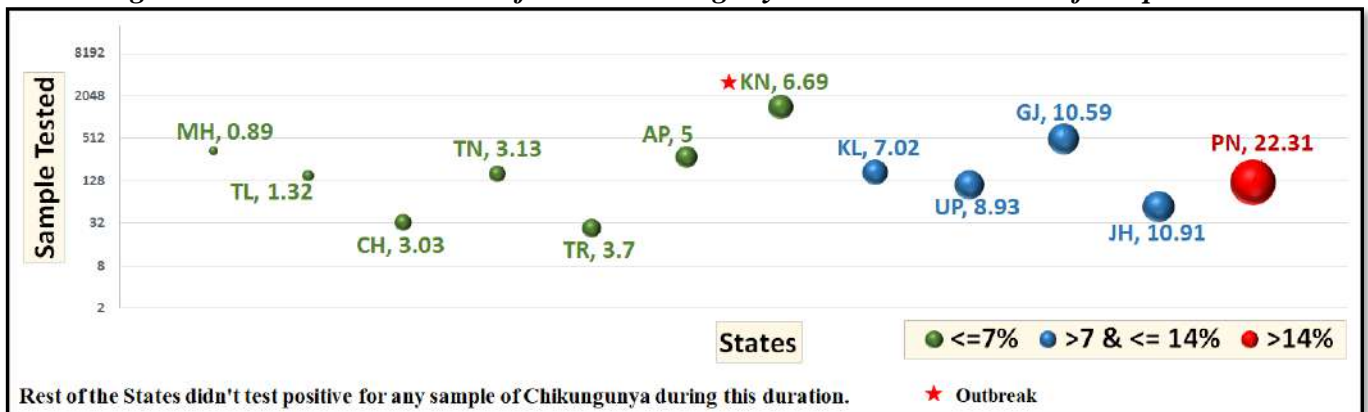
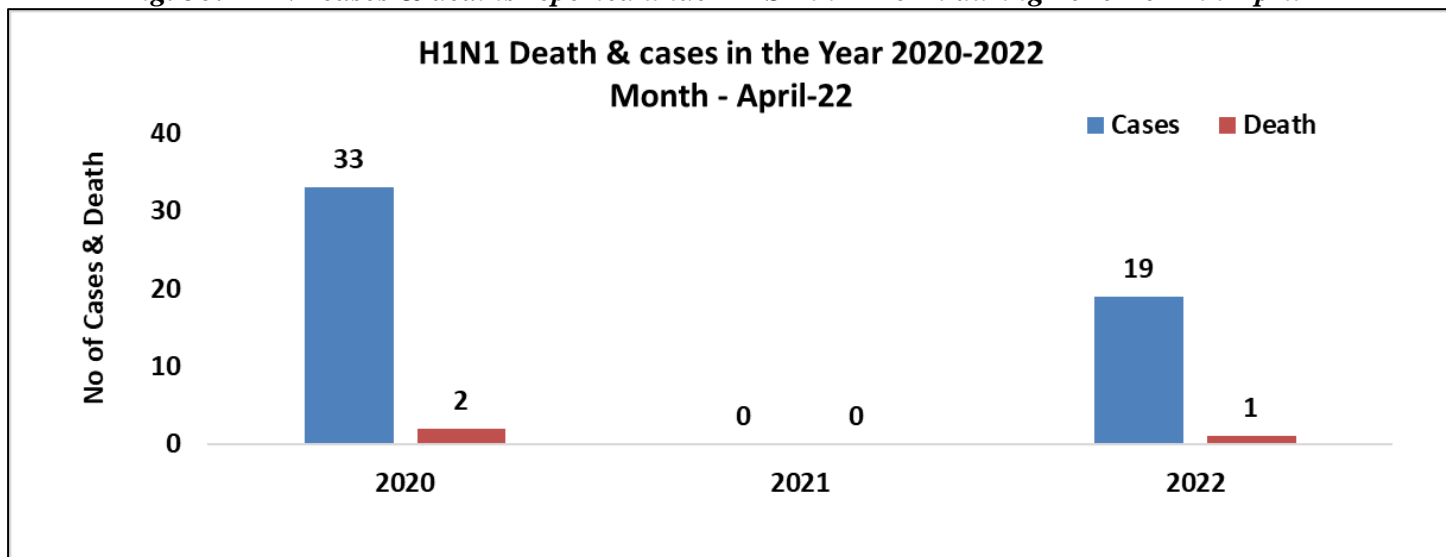


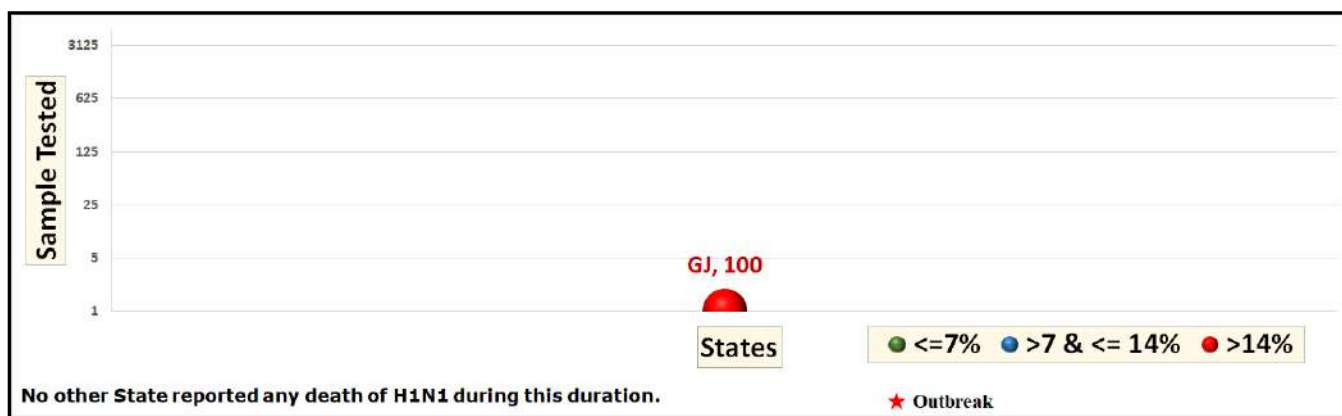
Fig. 30: H1N1 cases & deaths reported under IDSP in L Form during 2020-2022 in April



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

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

Fig. 31: State/UT wise H1N1 cases and outbreaks for April 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: dircid@nic.in & idsnp-npo@nic.in

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