Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report

From

Integrated Disease Surveillance Programme

National Health Mission

In This Issue:

HEPATITIS-E OUTBREAK INVESTIGATION

DISTRICT KURUKSHETRA, HARYANA

BACKGROUND:

About Hepatitis: Hepatitis viruses are broadly grouped into A, B, C, D and E. Hepatitis A is often an acute, short-term disease, while Hepatitis B, C, and D are most likely to be chronic. Hepatitis E is usually acute and can be particularly dangerous in pregnant women.

Suspected cases of jaundice were reported from village Pipli by Medical Officer-in-charge of Primary Health Center (PHC), Pipli to District IDSP Unit, Kurukshetra on 27.04.2020. It was reported that there is cluster of cases with clinical features like yellow-coloured urine, yellow-coloured skin and weakness suggesting possible outbreak of hepatitis.

On getting first-hand information of outbreak, a district RRT consisting of District Epidemiologist, Physician, Lab Incharge and Health Supervisor visited the reported area. Team conducted the outbreak investigation and EWS (Early Warning Signal) report was prepared and sent to State Surveillance Unit Haryana. Active surveillance was initiated in the area with help of frontline health workers of area for early identification of cases and management of outbreak.

Case Definitions: The team formalized a clinical & presumptive case definition to facilitate surveillance & tracing.

Clinical case definition: "Any person with a discrete onset of symptoms like fatigue, abdominal pain, loss of appetite, fever, intermittent nausea and vomiting with clinical evidence of jaundice".

*Presumptive Case Definition of IDSP***:** Any person having clinical evidence of jaundice with

• Signs and symptoms of acute hepatitis like malaise, fever, vomiting AND

• Bio-Chemical criteria of

Serum bilirubin of greater than 2.5 mg/dl, AND

More than tenfold rise in ALT/SGPT

Lab Criteria: A presumptive case with IgM antibody to hepatitis A/E virus (anti HAV/HEV IgM) in serum/plasma.

DETAILS OF INVESTIGATION:

Pipli Village has a population of 10584 (as per health survey 2019).

Team searched cases by defining a case: Any person having clinical evidence of jaundice withfollowing symptom was considered as suspected case -

- Signs and symptoms of acute hepatitis like malaise, fever, vomiting AND

- Bio-Chemical criteria of

▪ Serum bilirubin of greater than 2.5 mg/dl, AND

▪ More than tenfold rise in ALT/SGPT

Data was collected through door-to-door survey and an interviewer-administered questionnaire was used to gather information regarding:

1. The source of drinking water,

2. defecation habits,

3. knowledge of preventive measures,

4. awareness regarding visits and activities of health personnel during the outbreak.

Line listing of the cases according to age and gender was performed.

Blood samples of 12 patients were sent to Government Medical College Lab, Karnal, Haryana for serological tests for hepatitis A, B, C, and E.

The water supply pipelines and drains were examined.

Orthotolidine Test (OT) for residual chlorine was performed and Bacteriological samples of blood sent to Public Health Laboratory.

Data Management

− The data were entered in excel sheet and analyzed.

− Time, place, and person analysis were performed for all case patients.

− The typical water sourcehas been photographed and shown.

Fig. 1: Water sample collection for Bacteriological testing

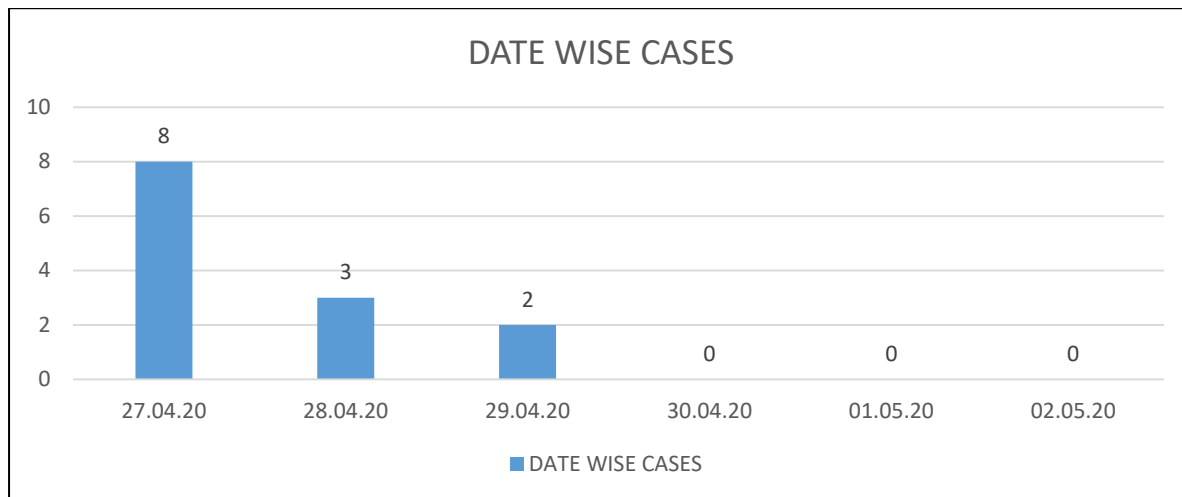*Fig. 2: Blood sampling for Hepatitis testing*

DESCRIPTIVE EPIDEMIOLOGY:

Time Distribution:

About 13 persons fit into the case definition. Maximum cases (61%) were reported on 27 April 2020 as depicted in figure below. No pregnant woman was reported as a case patient.
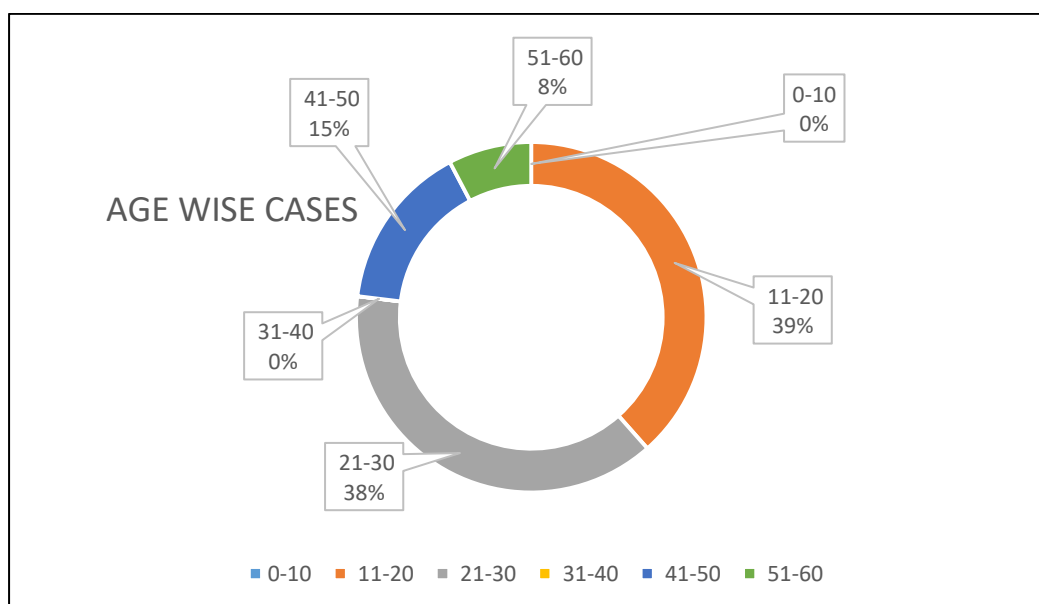
Fig. 3: Date wise Cases

Gender Distribution: Out of 13 cases, 7 were female.

Age Distribution: No cases were reported below 10 years of age and in age group of 31-40 years. Maximum number of cases belonged to 11-20 and 21-30 years of age (breakup below).

Fig. 4: Age wise Cases

Age Group	No. of Cases
0-10	0
Nov-20	5
21-30	5
31-40	0
41-50	2
51-60	1

LABORATORY DIAGNOSIS:

- Out of 13 suspected patients, 8 were found positive for Hepatitis-E by lab confirmation.

- The attack rate was calculated at 0.12%

- Out of 336 Orthotolidine Test (OT), 329 found fit and 7 found unfit; all 16 Bacteriological tests found potable.

INTERPRETATION:

Based on epidemiological investigations & lab results, this was confirmed as an outbreak of Viral Hepatitis E.

CONCLUSION:

HEV was confirmed as the major etiological agent in this outbreak that was transmitted by contaminated drinking water. The outbreak that affected the Pipli village was caused by waterborne viral hepatitis E.

The most likely source of the outbreak was drinking water contaminated with sewage due to leakages and rusted water pipelines. The recognition of early warning signals, timely investigation, and application of specific control measures helped to contain the outbreak.

Fig. 5: Identifying leakages in pipelines with PH Department

Fig. 6: Removal of leaked and rusted pipelines

CONTROL MEASURES:

- Halogen tablets were distributed in the area to improve the water quality.

- Team inspected all the available water sources in the village, interacted with Public health team & local leaders for proper water management.

- During the survey period, team also provided health education regarding hepatitis, and referred any new cases to the nearby primary health center for further management.

RECOMMENDATIONS: Based on findings in this investigation, recommendations given were as follows:

1. An alternative arrangement for water supply whenever in future there are complaints of getting dirty contaminated water.

2. Repair of the leakages in the water pipelines as early as possible.

3. Regular testing of residual chlorine from different distribution points of water supply.

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

Fig. 7: RU wise reporting based on P & L form during June 2018 – 2020
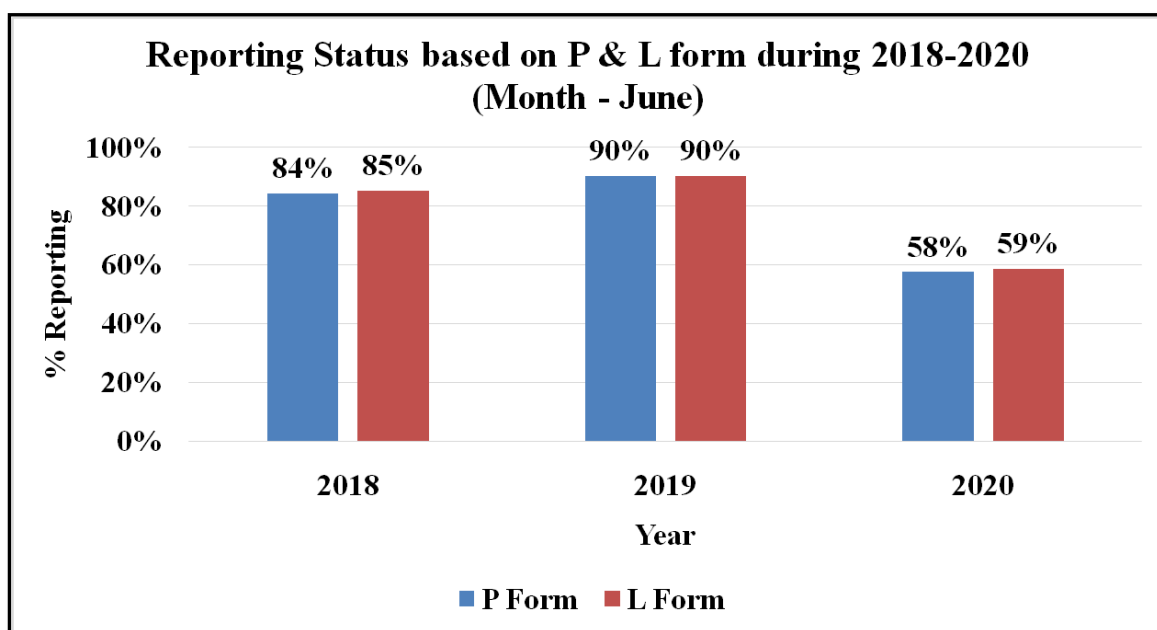
As shown in Fig 7, in June 2018, 2019 and 2020, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 84%, 90% and 58% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 85%, 90% and 59% respectively 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 slightly decreased in both P and L forms in the year 2020 because of ongoing CoVID-19 pandemic.

Fig. 8: State/UT wise P form completeness % for June 2020
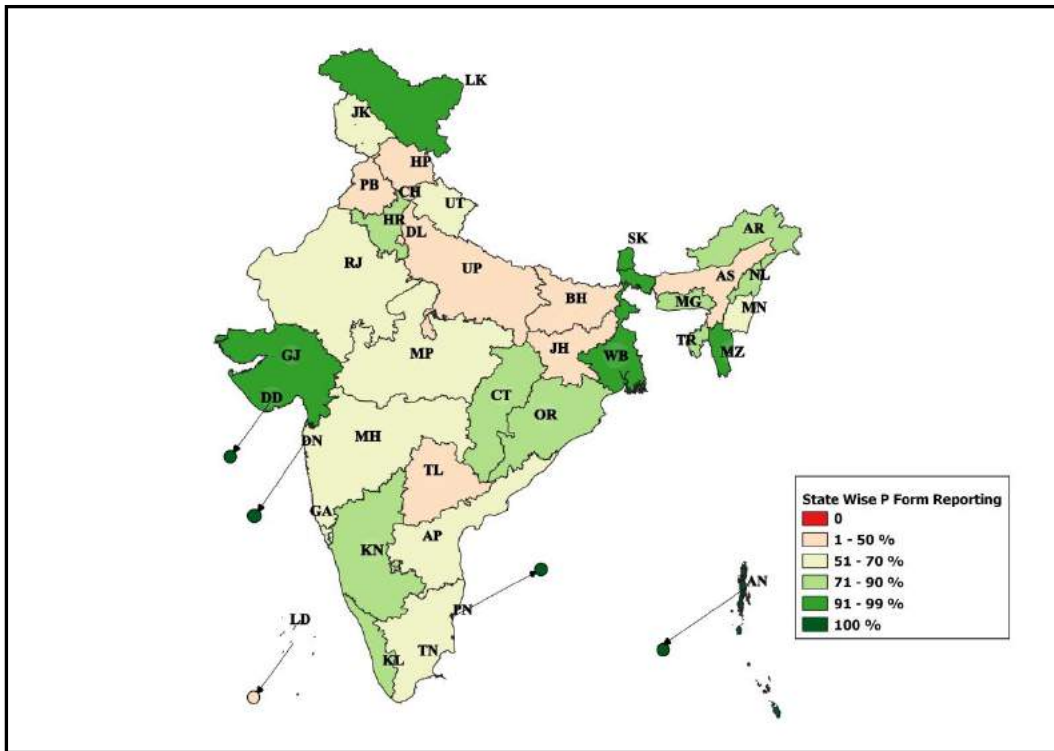
Fig. 9: State/UT wise L form completeness % for June 2020
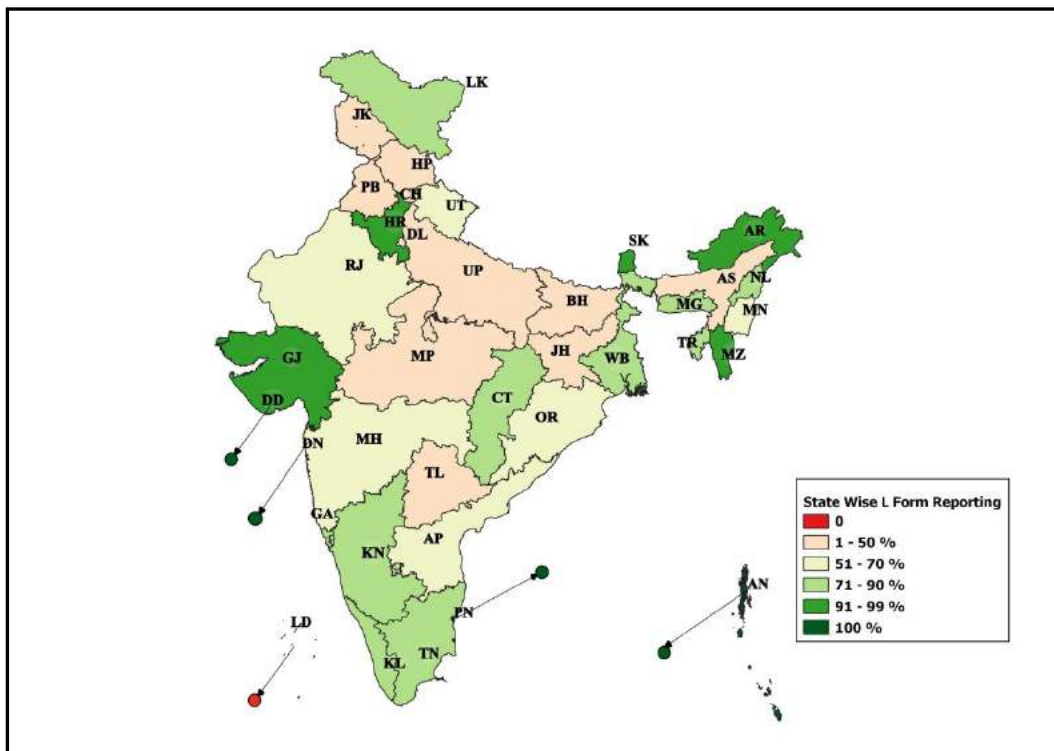
Fig. 10: No. of Enteric Fever Cases reported under P & L form during June 2018 - 2020
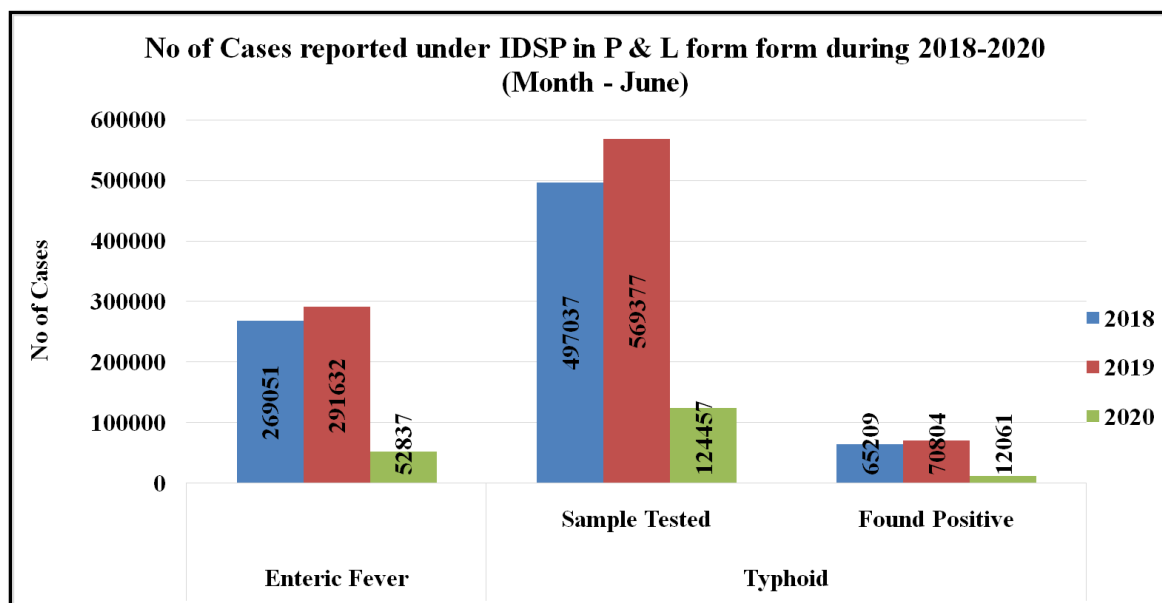
As shown in Fig. 10, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 269051 in June 2018; 291632 in June 2019 and 52837 in June 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2018; 497037 samples were tested for Typhoid, out of which 65209 were found positive. In June 2019; out of 569377 samples, 70804 were found to be positive and in June 2020, out of 124457 samples, 12061 were found to be positive.

Sample positivity has been 13%, 12% and 10% in June month of 2019, 2018 & 2020 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. 11: State/UT wise Presumptive Enteric fever cases and outbreaks for June 2020
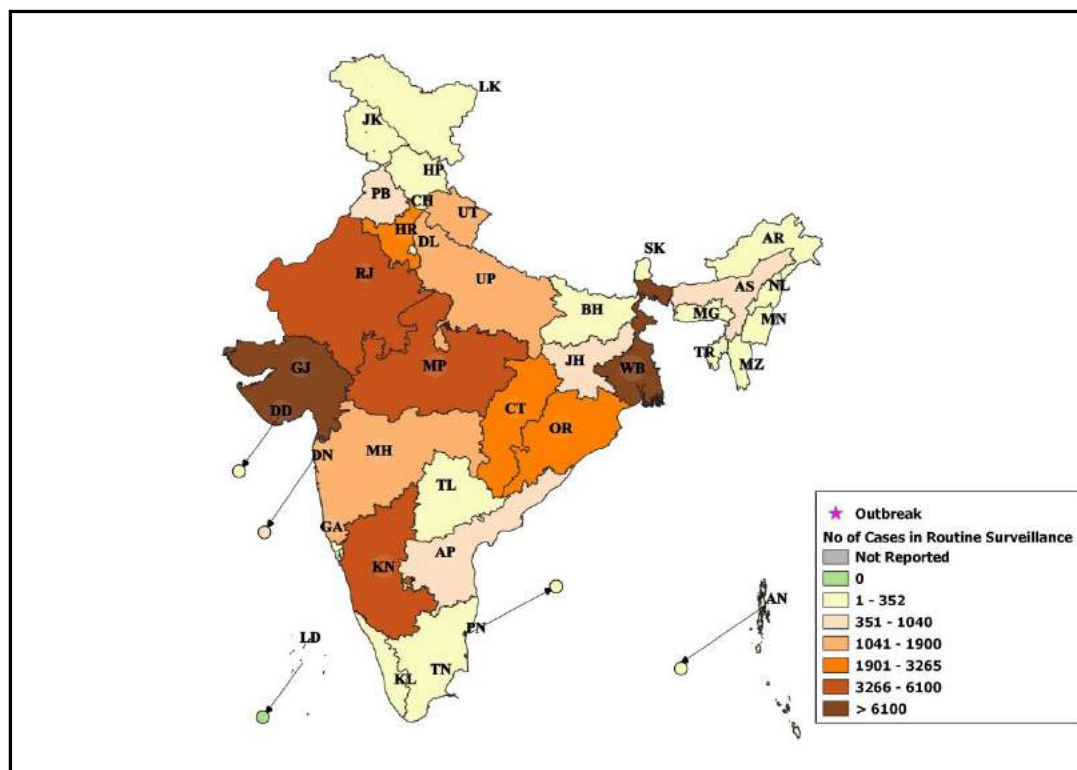
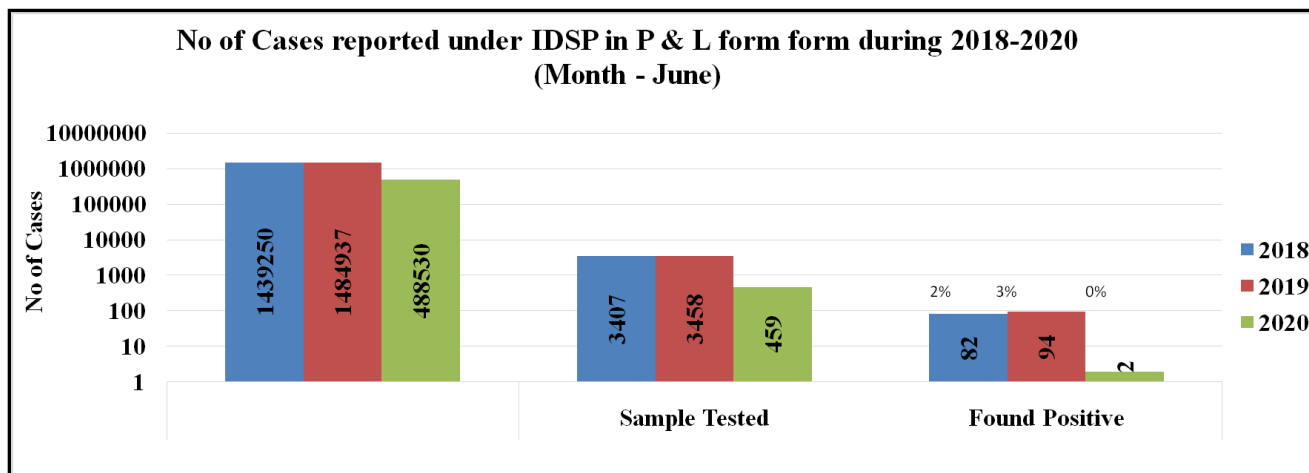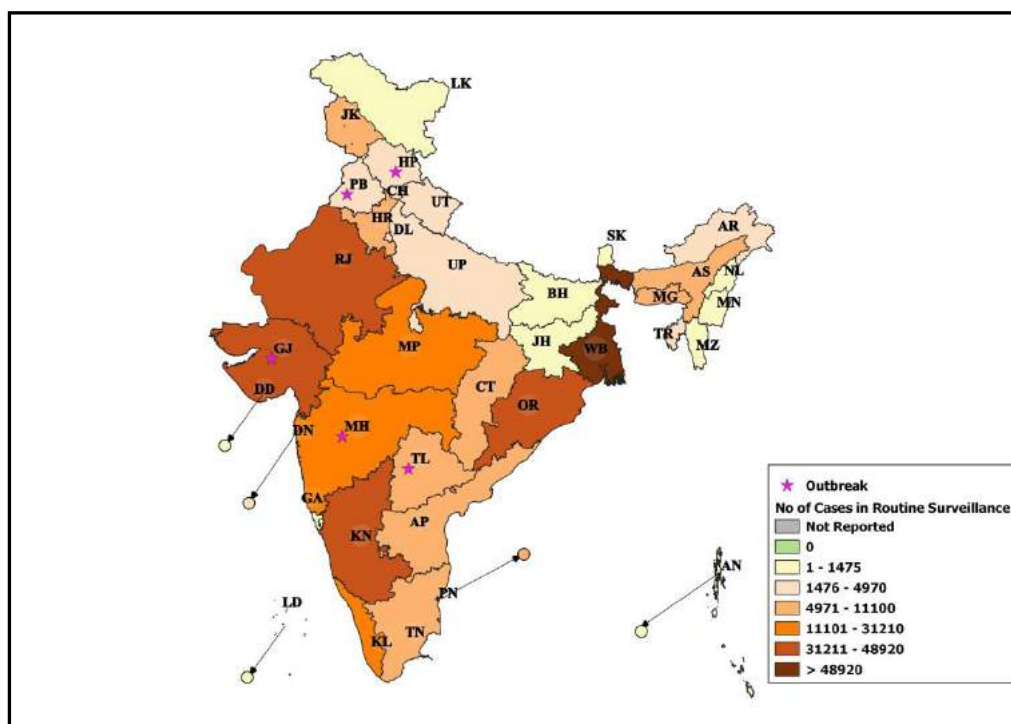*Fig. 12: State/UT wise Lab Confirmed Typhoid cases and outbreaks for June 2020*
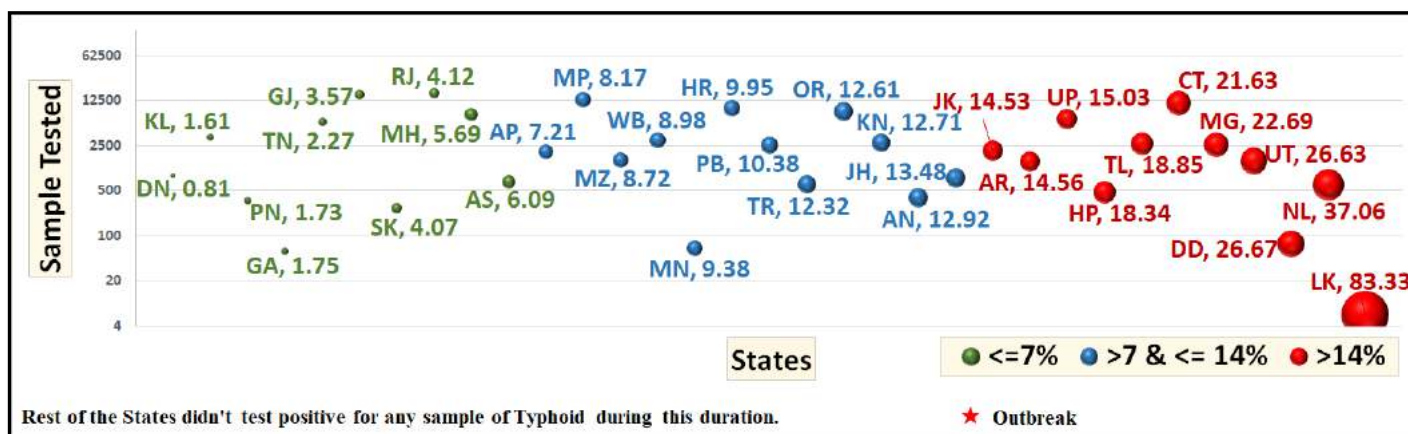
Fig. 13: No. of ADD Cases reported under IDSP in P Form during June 2018 - 2020

No of Cases reported under IDSP in P & L form form during 2018-2020
(Month - June)

As shown in Fig 13, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1439250 in June 2018; 1484937 in June 2019 and 488530 in June 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2018, 3407 samples were tested for Cholera out of which 82 tested positive; in June 2019, out of 3458 samples, 94 tested positive for Cholera and in June 2020, out of 459 samples, 02 tested positive.

Sample positivity of samples tested for Cholera has been 2.0%, 3.0% and 0% in June month of 2018, 2019 & 2020 respectively.

Fig. 14: State/UT wise Presumptive ADD cases and outbreaks for June 2020

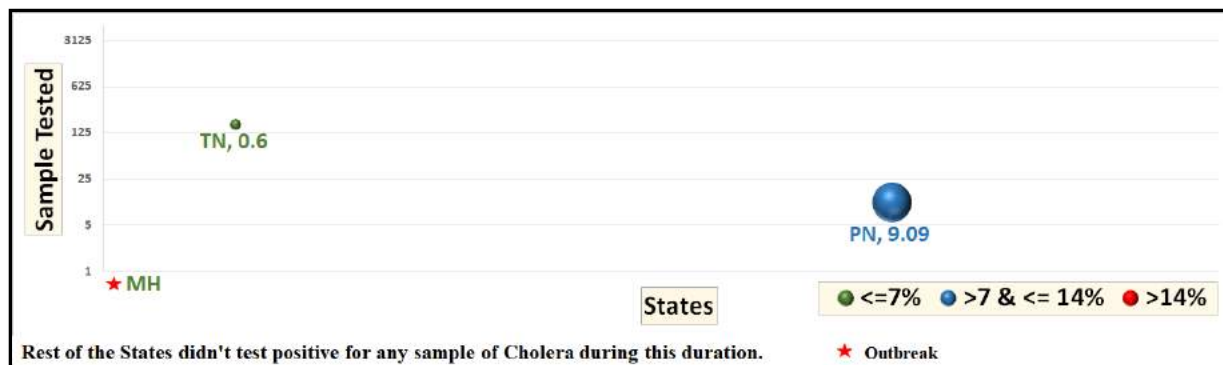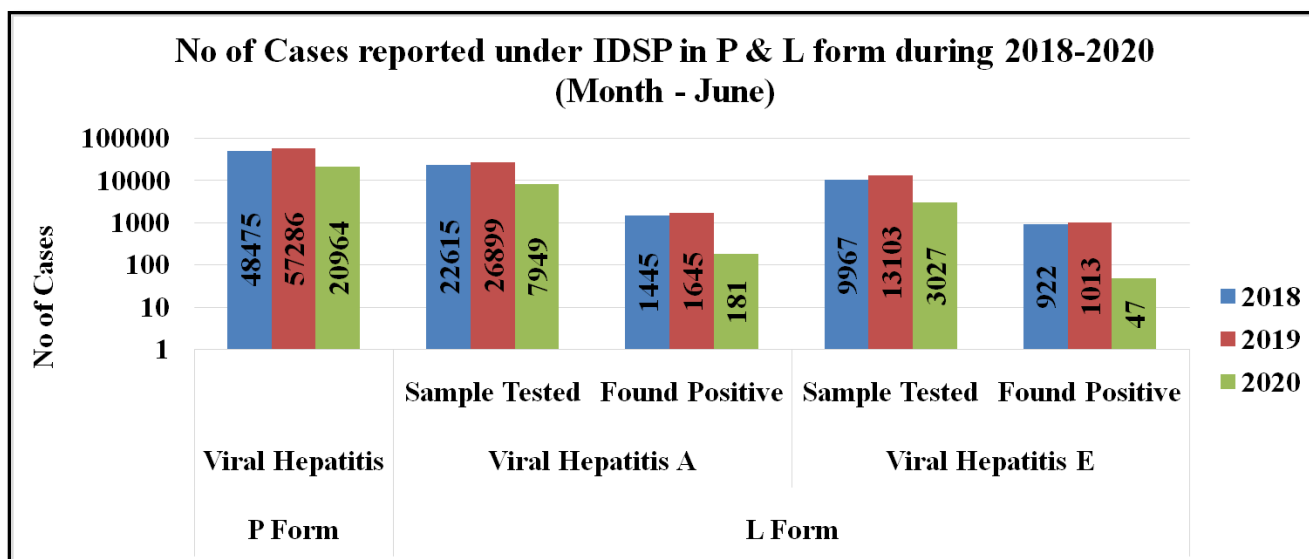*Fig. 15: State/UT wise Lab Confirmed Cholera cases and outbreaks for June 2020*

Fig. 16: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during June 2018 - 2020

As shown in Fig. 16, the number of presumptive Viral Hepatitis cases was 48475 in June 2018, 57286 in June 2019 and 20964 in June 2020. 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 2018; 22615 samples were tested out of which 1445 were found positive. In June2019 out of 26899samples, 1645 were found to be positive and in June 2020, out of 7949 samples, 181 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 6%, 6% and 2% in June month of 2018, 2019 & 2020 respectively.

As reported in L form for Viral Hepatitis E, in June 2018; 9967 samples were tested out of which 922 were found positive. In June 2019; out of 13103samples, 1013 were found to be positive and in June 2020, out of 3027 samples, 47 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 9%, 8% and 2% in June month of 2018, 2019 & 2020 respectively.

Fig. 17: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for June 2020
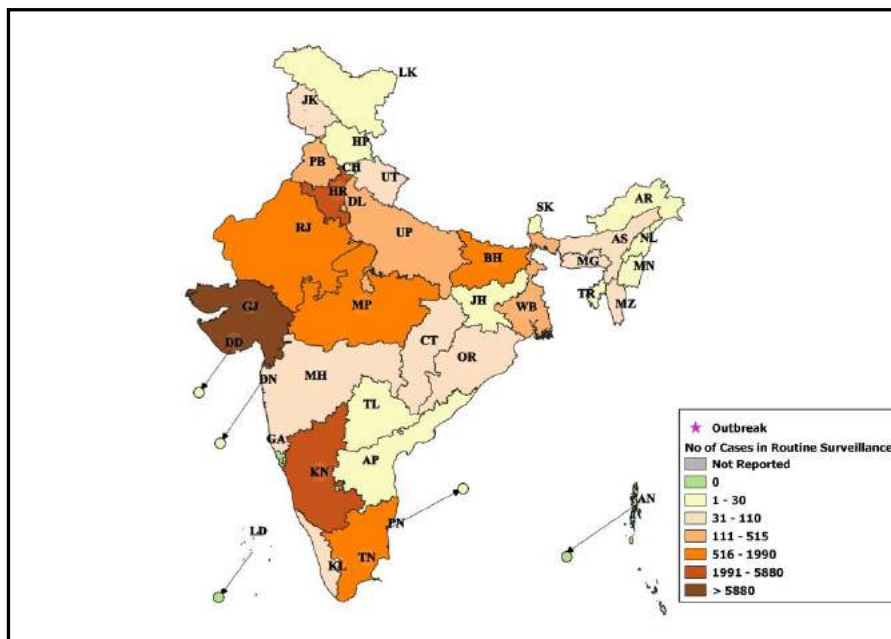

Fig. 18: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for June 2020
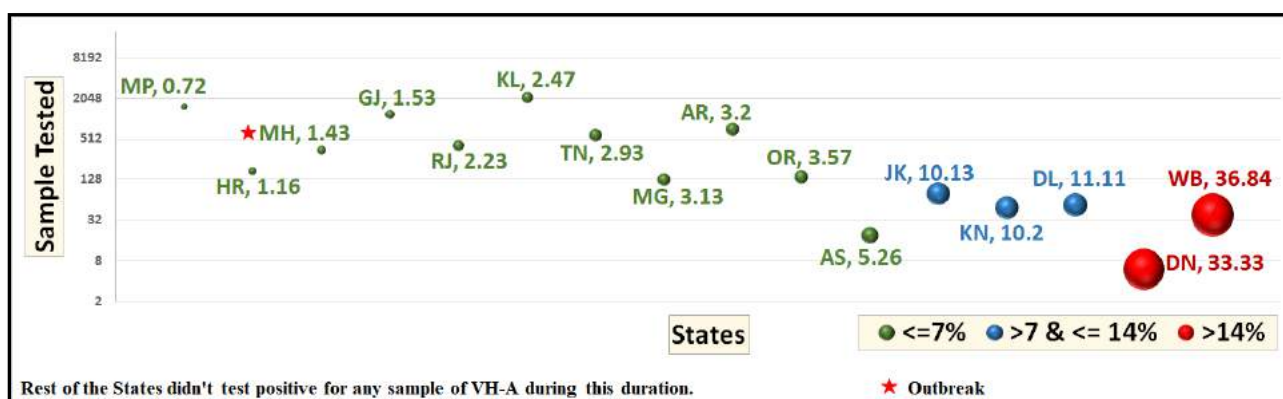

Fig. 19: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for June 2020
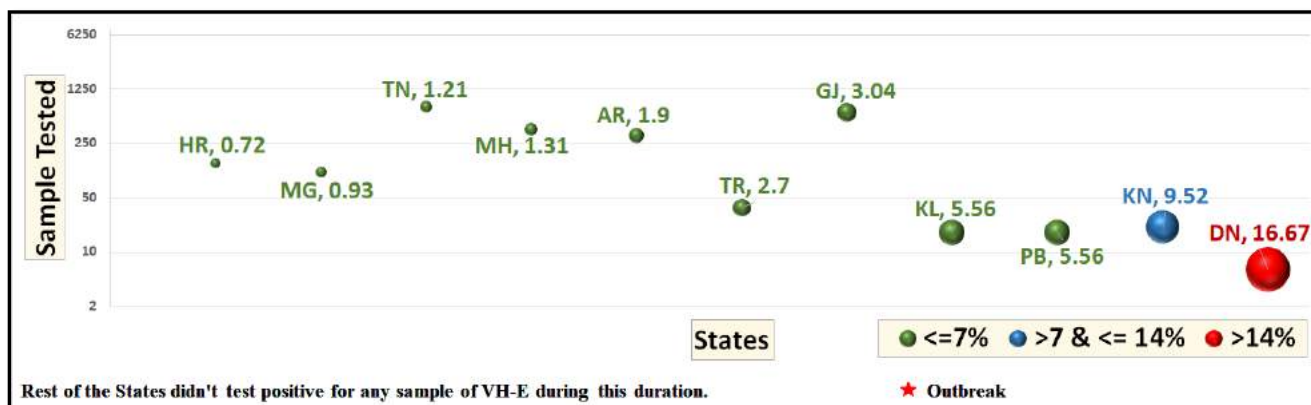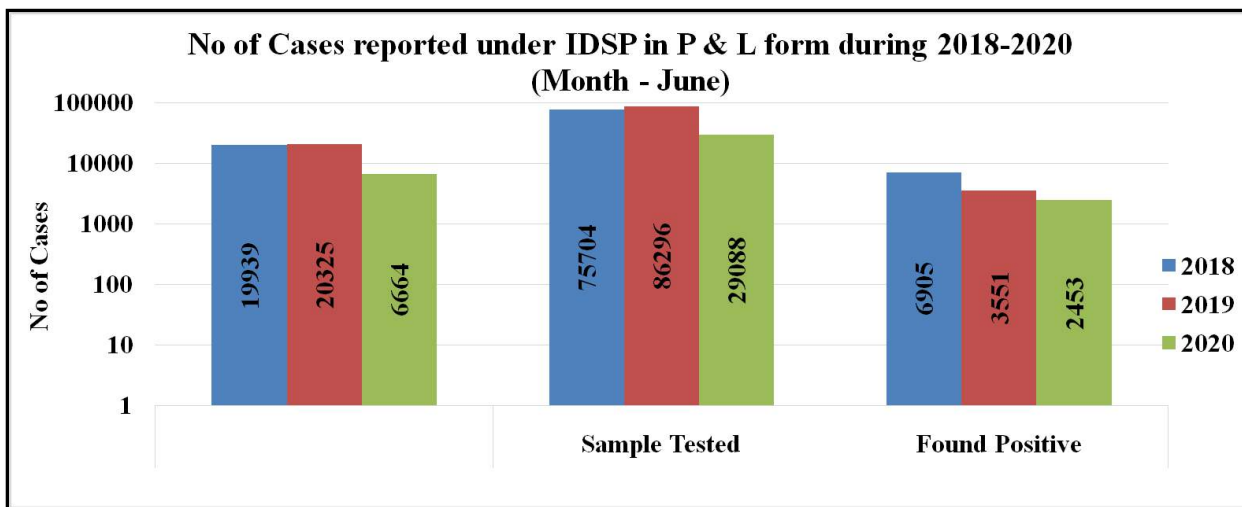
Fig. 20: No. of Dengue Cases reported under IDSP in P & L form during June 2018 - 2020

As shown in Fig. 20, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 19939 in June 2018; 20325 in June 2019 and 6664 in June 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2018; 75704 samples were tested for Dengue, out of which 6905 were found positive. In June 2019; out of 86296 samples, 3551 were found to be positive and in June 2020, out of 29088 samples, 2453 were found to be positive.

Sample positivity of samples tested for Dengue has been 9.12%, 4.11% and 8.43% in June month of 2018, 2019 & 2020 respectively.

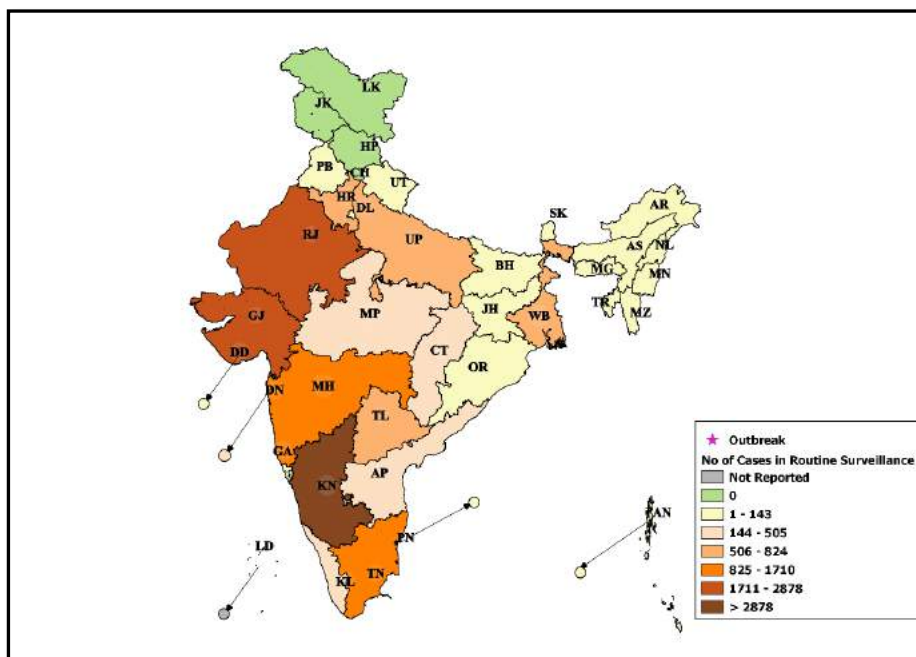*Fig. 21: State/UT wise Presumptive Dengue cases and outbreaks for June 2020*

Fig. 22: State/UT wise Lab Confirmed Dengue cases and outbreaks for June 2020
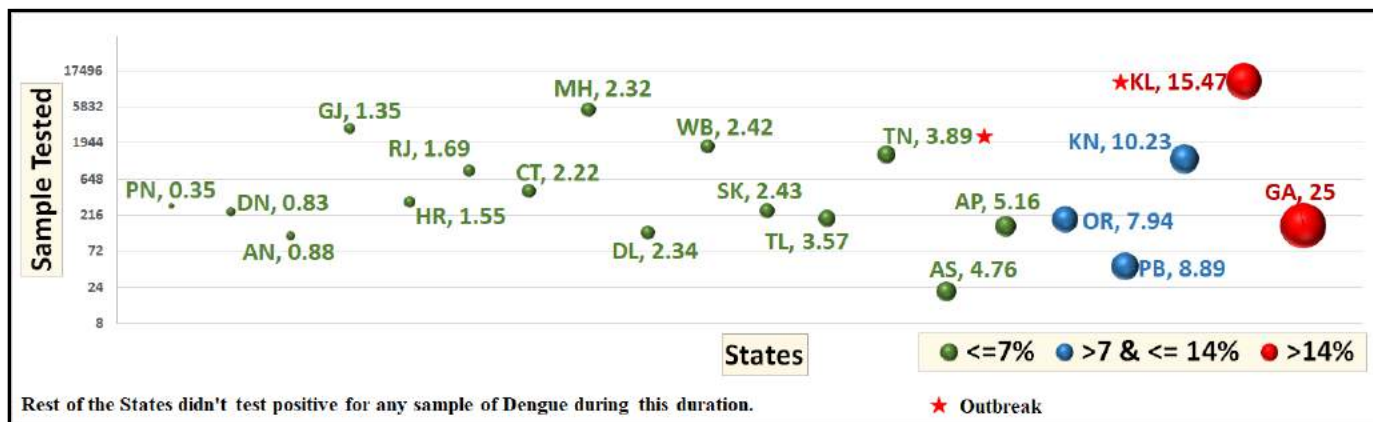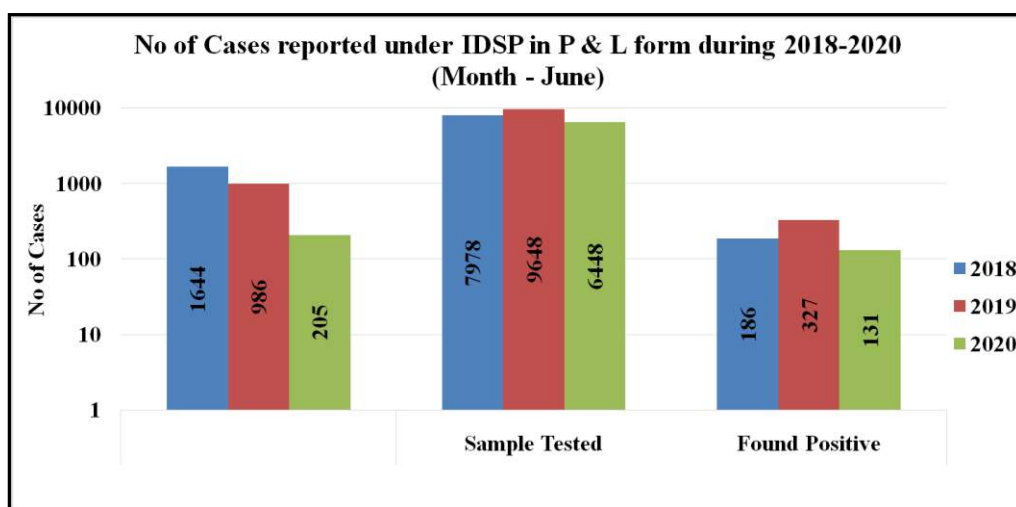

Fig. 23: No. of Leptospirosis Cases reported under IDSP in P & L form during June 2018 – 2020

As shown in Fig. 23, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1644 in June 2018; 986 in June 2019 and 205 in June 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2018; 7978 samples were tested for Leptospirosis, out of which 186 were found positive. In June 2019; out of 9648samples, 327 were found to be positive and in June 2020, out of 6448 samples, 131were found to be positive.

Sample positivity of samples tested for Dengue has been 2.33%, 3.39% and 2.03% in June month of 2018, 2019 & 2020 respectively.

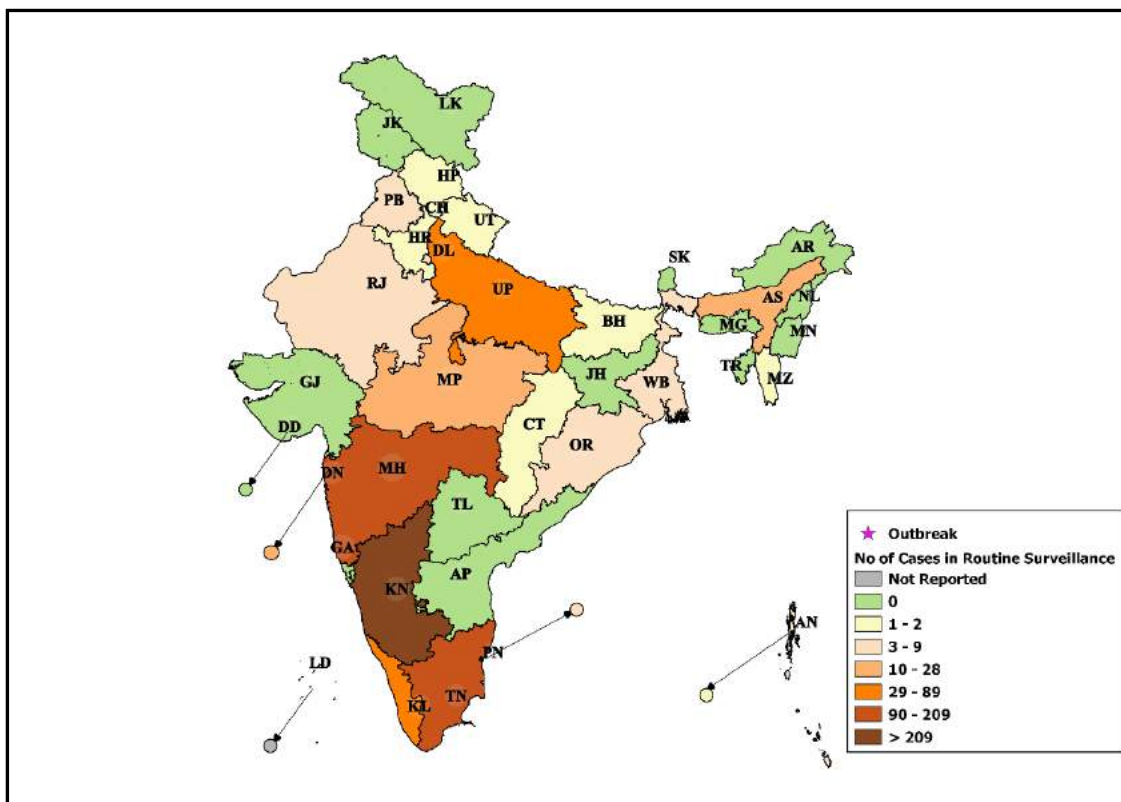*Fig. 24: State/UT wise Presumptive Leptospirosis cases and outbreaks for June 2020*

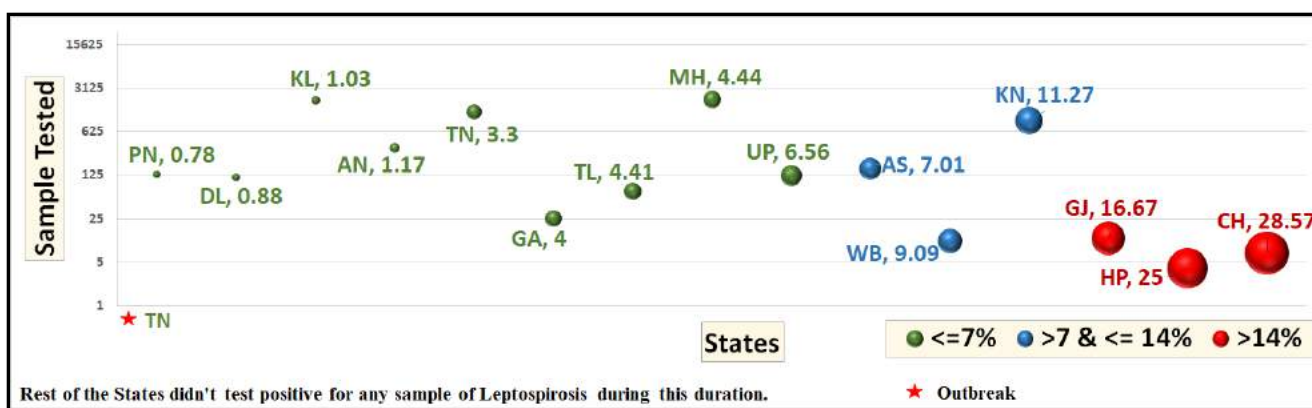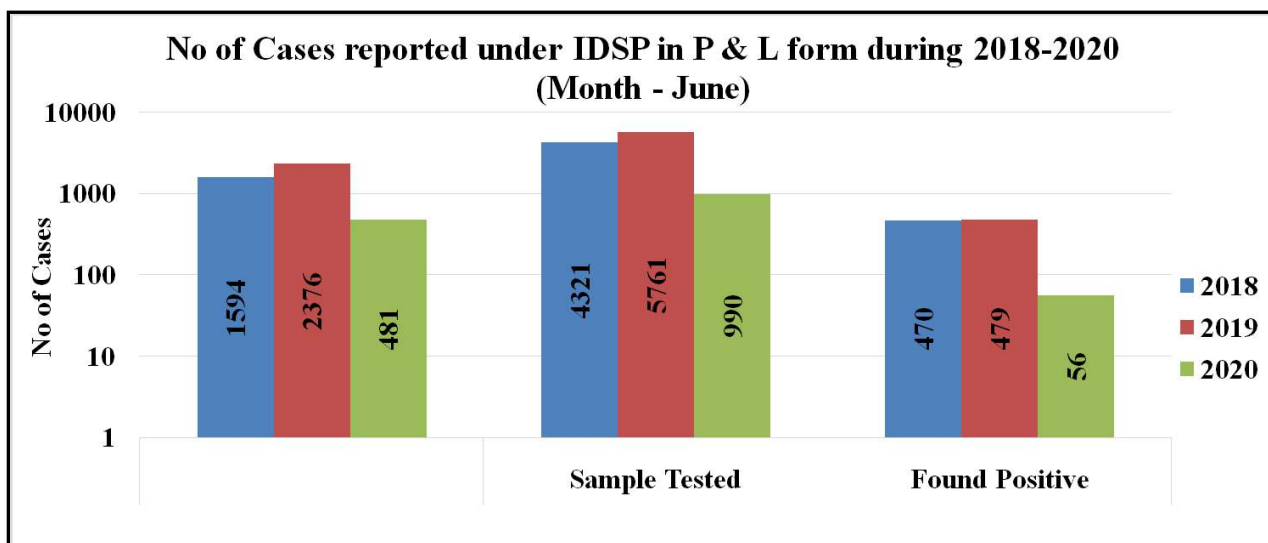*Fig. 25: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for June 2020*

Fig. 26: No. of Chikungunya Cases reported under IDSP in P & L form during June 2018 - 2020

As shown in Fig. 26, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 1594 in June 2018; 2376 in June 2019 and 481 in June 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in June 2018; 4321 samples were tested for Chikungunya, out of which 470 were found positive. In June 2019; out of 5761samples, 479 were found to be positive and in June 2020, out of 990samples, 56 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 10.88%, 8.31% and 5.66% in June month of 2018, 2019 & 2020 respectively.

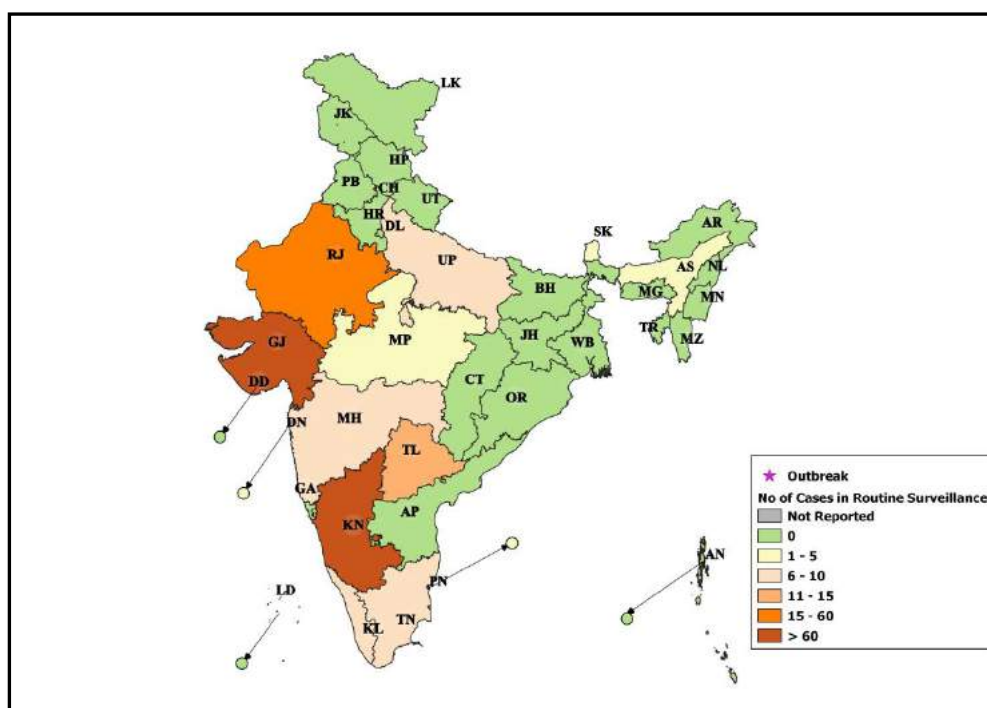*Fig. 27: State/UT wise Presumptive Chikungunya cases and outbreaks for June 2020*

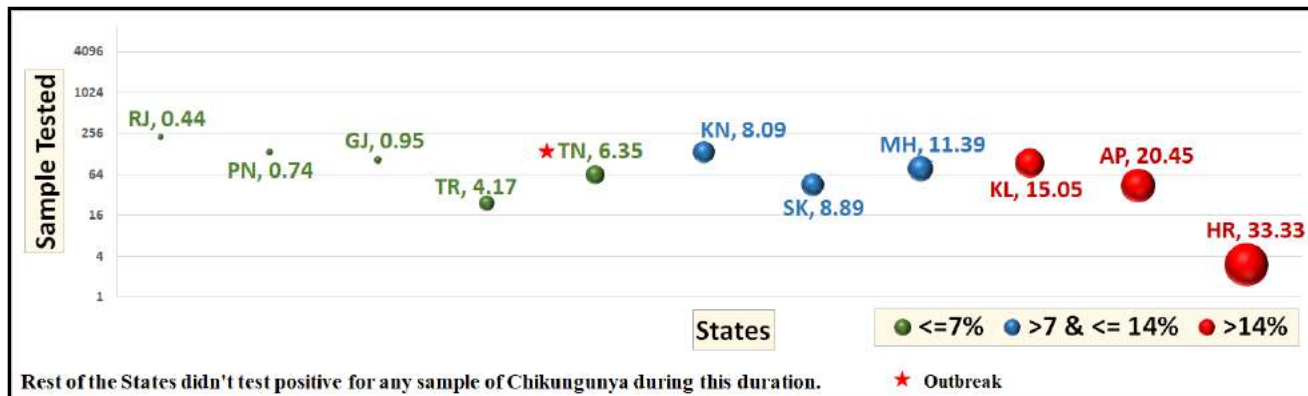*Fig. 28: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for June 2020*

Fig. 29: H1N1 cases reported under IDSP in L Form during 2018-2020 in June 2020
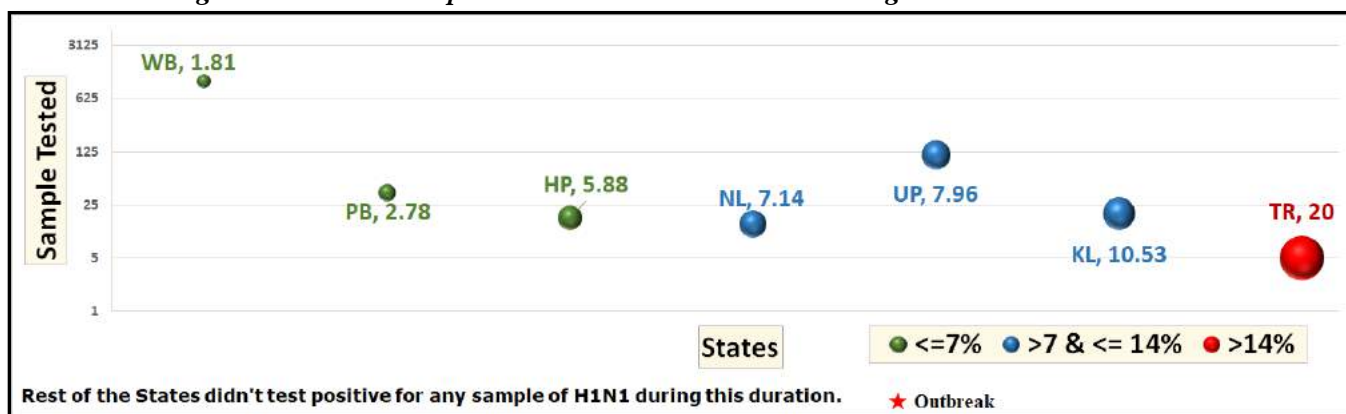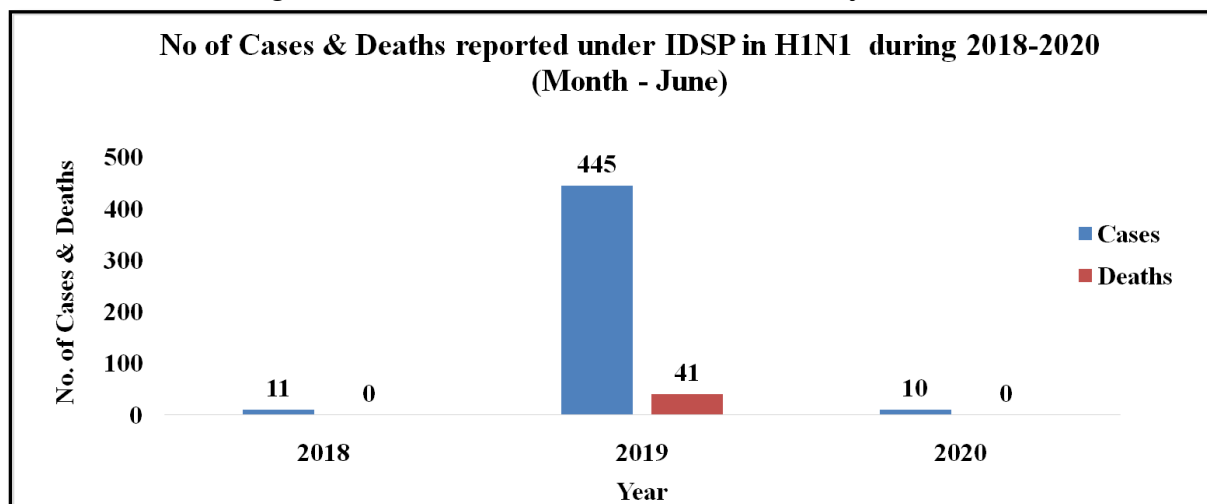

Fig. 30: State/UT wise H1N1 cases and outbreaks for June 2020

As shown in Fig. 30, as reported in L form, in June 2018, there were 11 cases and 0 deaths. In June 2019, there were 445 cases and 41 deaths; and in June 2020, there were 10 cases and 0 deaths.

Case fatality rates for H1N1 were 0%, 9.21% and 0% in June month of 2018, 2019 & 2020 respectively.

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.

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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