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Disease Alert

प्रकोप चेतावनी

Monthly Surveillance Report
From
Integrated Disease Surveillance Programme
National Health Mission

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EPIDEMIC DROPSY OUTBREAK INVESTIGATION**SONITPUR DISTRICT, ASSAM****BACKGROUND:**

An outbreak of Epidemic Dropsy was reported from Dhendai Tea Estate (TE) under PHC Rangapara of Sonitpur District, Assam on 6th August' 2020. The Tea Estate (TE) is located around 28 kms away from Tezpur town (District HQ).

The seeds of *Argemone Mexicana* contain 22–36 per cent of pale yellow non-edible oil, called Argemone oil or Katkar oil, which contains the toxic alkaloids – Sanguinarine and Di-Hydrosanguinarine. As a result, mustard can easily be adulterated with Argemone seeds, rendering it poisonous. Argemone oil is mixed with sunflower oil or sesame oil to increase the quantity sometimes. But, this adulteration can cause serious health conditions.

The Medical Officer of Dhendai TE informed the medical in-charge of PHC Rangapara about the incident, who in turn, immediately informed DSU-IDSP Sonitpur. On getting the report, DSU-IDSP immediately sent District Rapid Response Team (RRT) on the very next day for outbreak investigation. A preliminary investigation team consisting of Joint Director of Health Services Sonitpur, SDM&HO Public Health, DSO and Epidemiologist IDSP Sonitpur visited the area and confirmed the outbreak.

RRT along with a team of experts from Tezpur Medical College Hospital re-visited the affected area on 8th August' 2020 and took control measures.

DETAILS OF INVESTIGATION:

Based on the investigations, it was noticed that large clusters of affected cases were found in a very short time period. All the cases had chief complaint of extreme swelling particularly of the legs (oedema) along with certain associated symptoms like headache, dizziness, blurred vision and UTI. Three deaths occurred with similar symptoms as their family members but samples could not be collected regarding food or oil they had taken.

The samples were also obtained from nearby grocery market and sent for testing.

Place of the outbreak:

Village affected: Dhendai TE
Nearest Sub-center: Sonajuli SC
PHC: Rangapara
District: Sonitpur

Epidemiological Features:

Population: 1590
Occupation: Tea garden labourers
Source of drinking water: Water supply by PHE, Ring well and Tube well.
Onset of outbreak: 06/08/2020
No. of affected cases: 26; No. of deaths: 3 (suspected, based on interview with family)

Fig. 1: Image of foot of an affected person



Fig. 2: Image of foot of another affected person

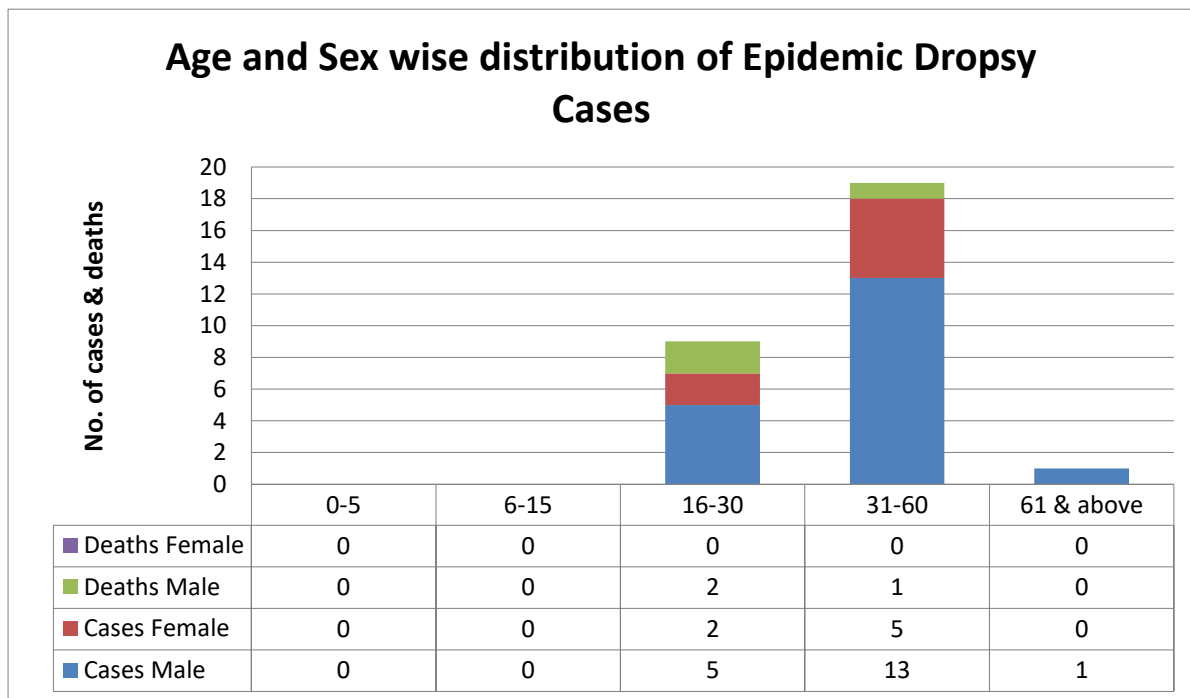


Descriptive Epidemiological Analysis:

Table1: Age and sex-wise distribution of cases & deaths

Age Group	Cases		Deaths	
	Male	Female	Male	Female
0-5	0	0	0	0
6-15	0	0	0	0
16-30	5	2	2	0
31-60	13	5	1	0
61 & above	1	0	0	0
Total	19	7	3	0

Fig. 3: Age and sex wise distribution of cases & deaths in Dhendai TE under Rangapara PHC



From the graph, it is evident that majority of the affected cases (about 70%) belong to 31-60 years age group. Additionally, males were more affected than females by about 73%.

Fig. 4: Spot Map of Area-wise distribution of cases & deaths at Dhendai TE under Rangapara TE, Sonitpur



From the spot-map, it is noticed that two large cluster of cases were seen within a defined geographical population in the locality.

Salient Epidemiological Observations:

1. The adulteration of mustard oil could be either from TE weekly market or nearby grocery shops.
2. Majority of affected cases were in 31-60 years age group and male population has been affected the most.
3. Three deaths cases reported with history of similar symptoms as the other affected members in household as per medical records at health facility.

Lab Results/Investigation:

- **Type of samples, number of samples taken and to which Lab sent:**
 - Blood & Urine: 23 samples sent to SRL, Tezpur Medical College for testing.
 - Mustard oil: 05 samples sent to Defence Research Laboratory, DRDO, Tezpur, Assam for adulteration test.
- **Results**
 - Blood & Urine: Routine examination of blood and urine exhibited no abnormality.
 - Mustard oil: The presence of Argemone oil was confirmed in all five samples.

Fig. 5: Actual photograph of samples provided to Defence Research Lab (DRL) Tezpur, Assam

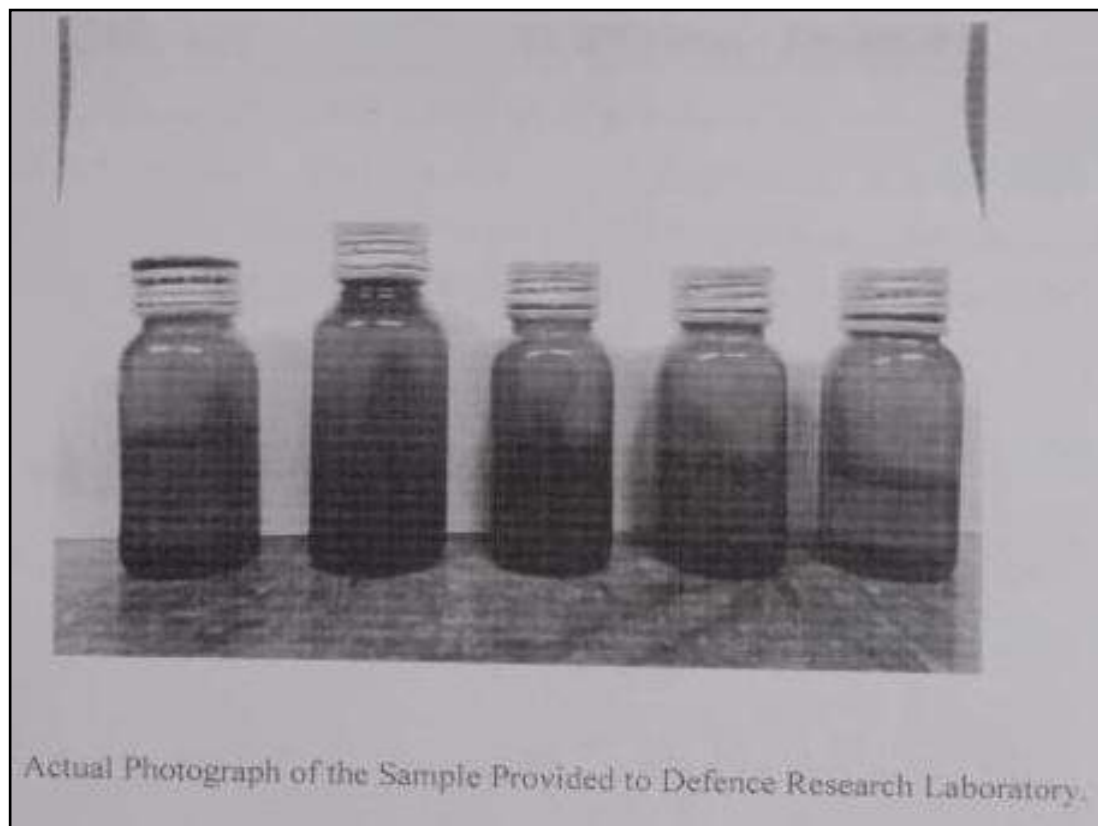
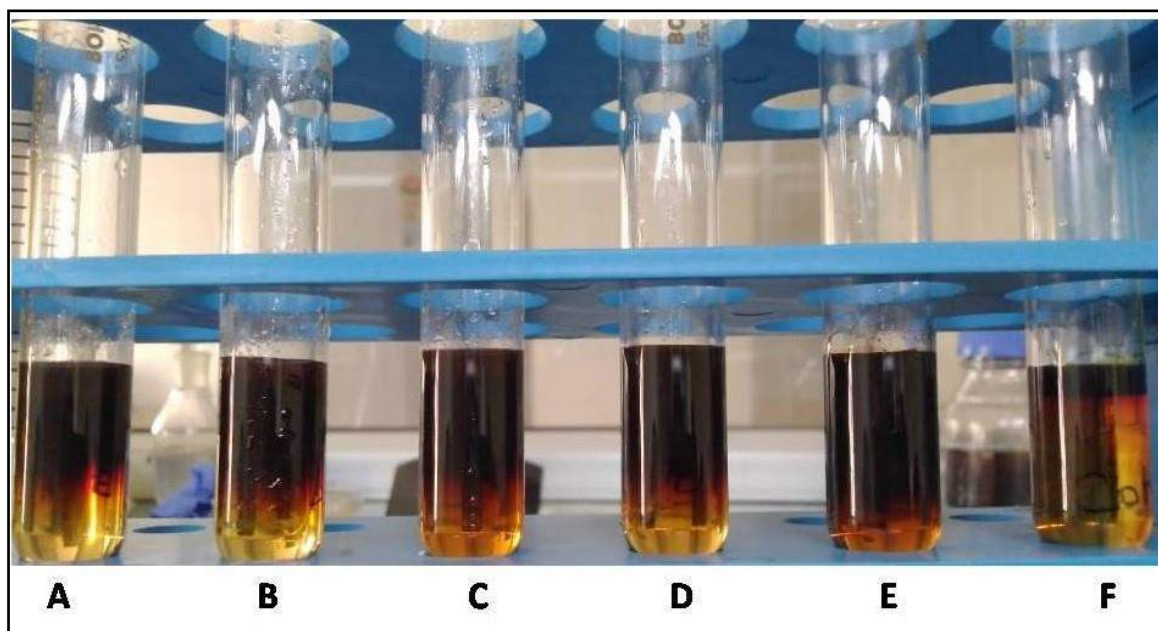


Fig. 6: Adulteration Test of Argemone in Mustard Oil at Defence Research Lab (DRL) Tezpur, Assam



TREATMENT:

All cases were treated appropriately through standard regimen of antibiotics along with symptomatic medication.

CONTROL MEASURES UNDERTAKEN:

1. Case specific investigations were performed.
2. Active case search was done in whole community.
3. Awareness activities were conducted on Food adulteration in the locality and need for contacting healthcare workers immediately on suspicion of disease.

CONCLUSIONS:

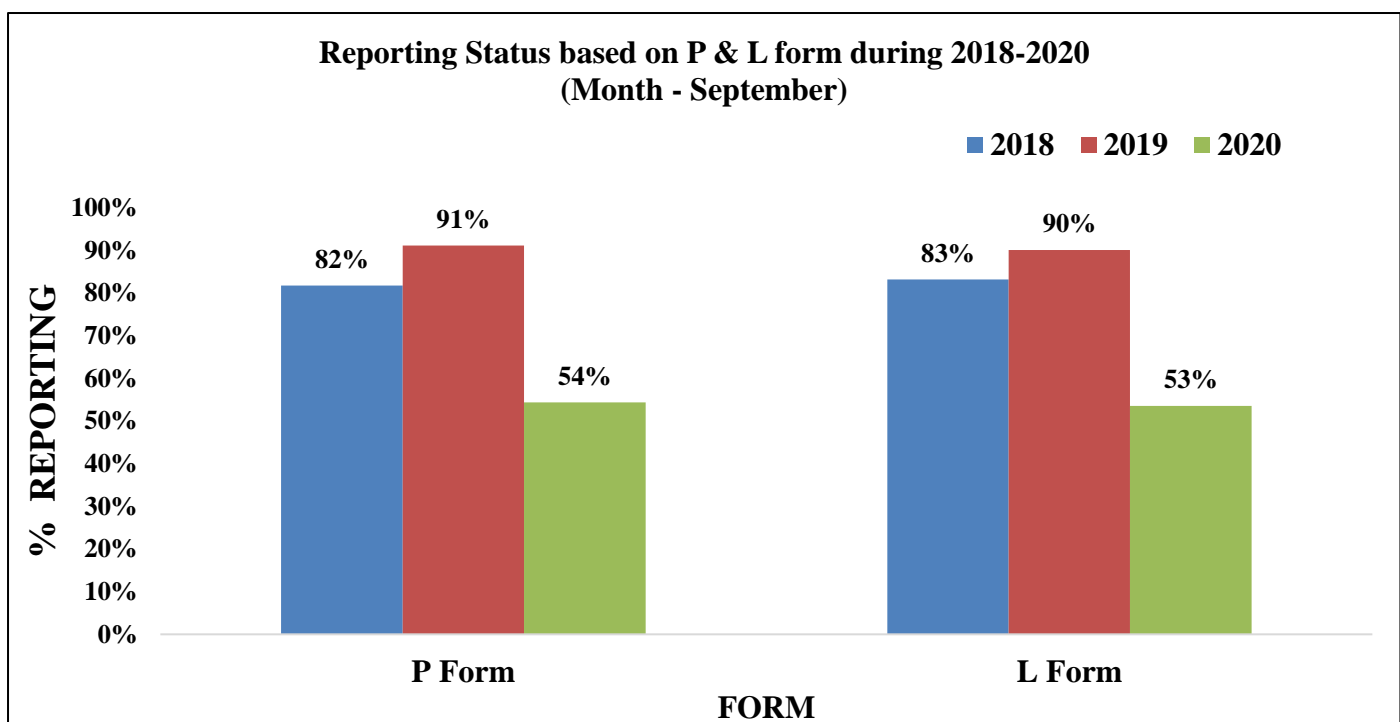
1. From the laboratory result it showed that the adulteration in mustard oil with Argemone oil is the cause of the outbreak.
2. Factors contributing to the outbreak: Late reporting to seek treatment due to ignorance, delayed referral to tertiary care health facility of death cases, Lack of periodical Food safety supervision/monitoring at TE and lack of consistent IEC activities for awareness generation.

RECOMMENDATIONS:

1. Inter-sectoral coordination between various concerned departments like Health Department with Food Safety Department need to be strengthened for early case detection and prompt management.
2. The use of adulterated mustard oil is not recommended for consumption because it may result in serious health issues.
3. Regular Food safety supervision/monitoring required.

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

Fig. 7: RU-wise reporting based on P & L forms during September 2020



As shown in Fig. 7, in September 2018, 2019 and 2020, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 82%, 91% and 54% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 83%, 90% and 53% 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 over the years in both P and L form, thereby improving the quality of surveillance data.

Fig. 8: State/UT wise P form completeness % for September 2020

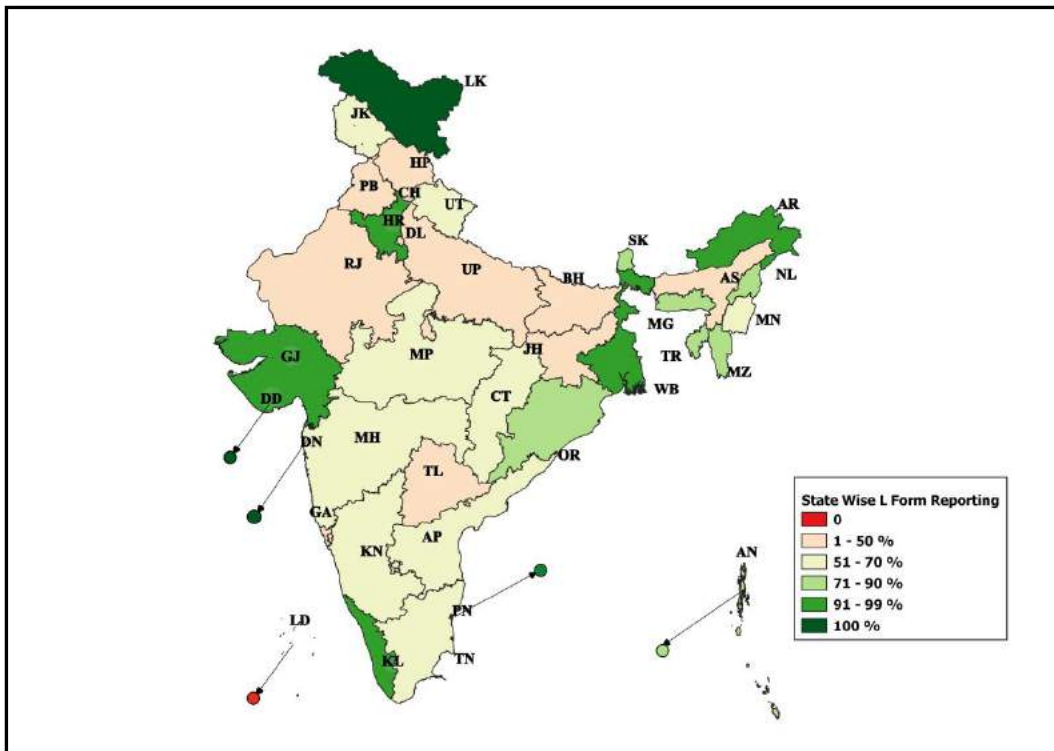


Fig. 9: State/UT wise L form completeness % for September 2020

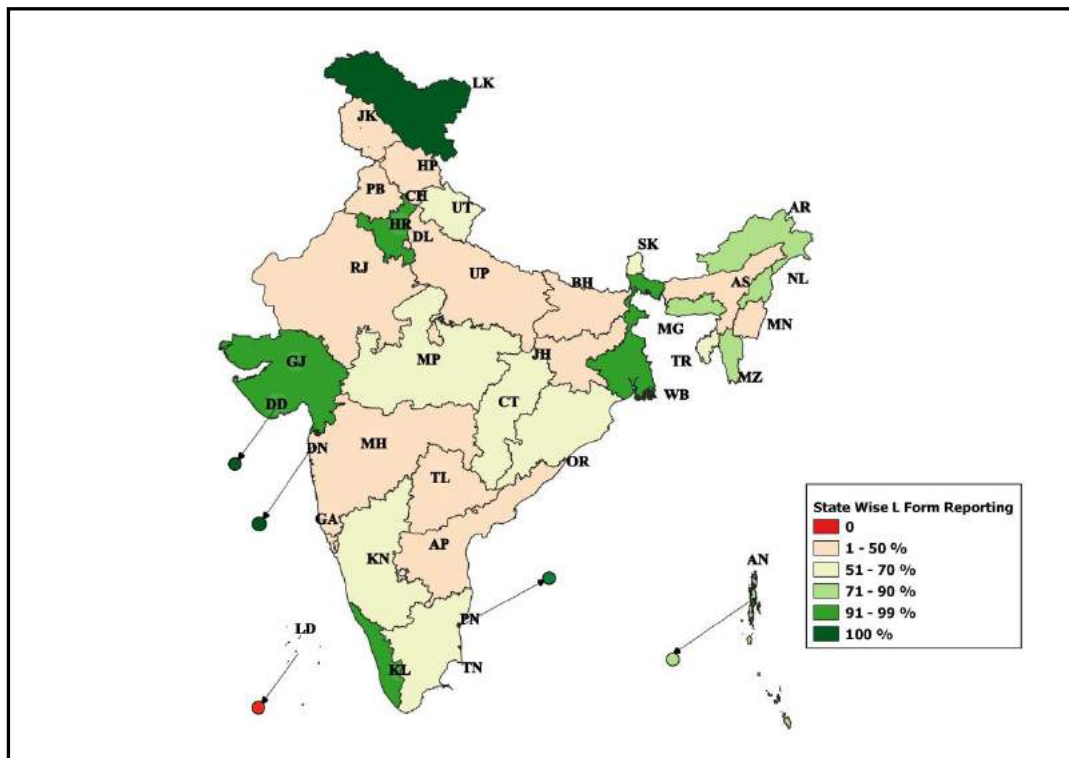
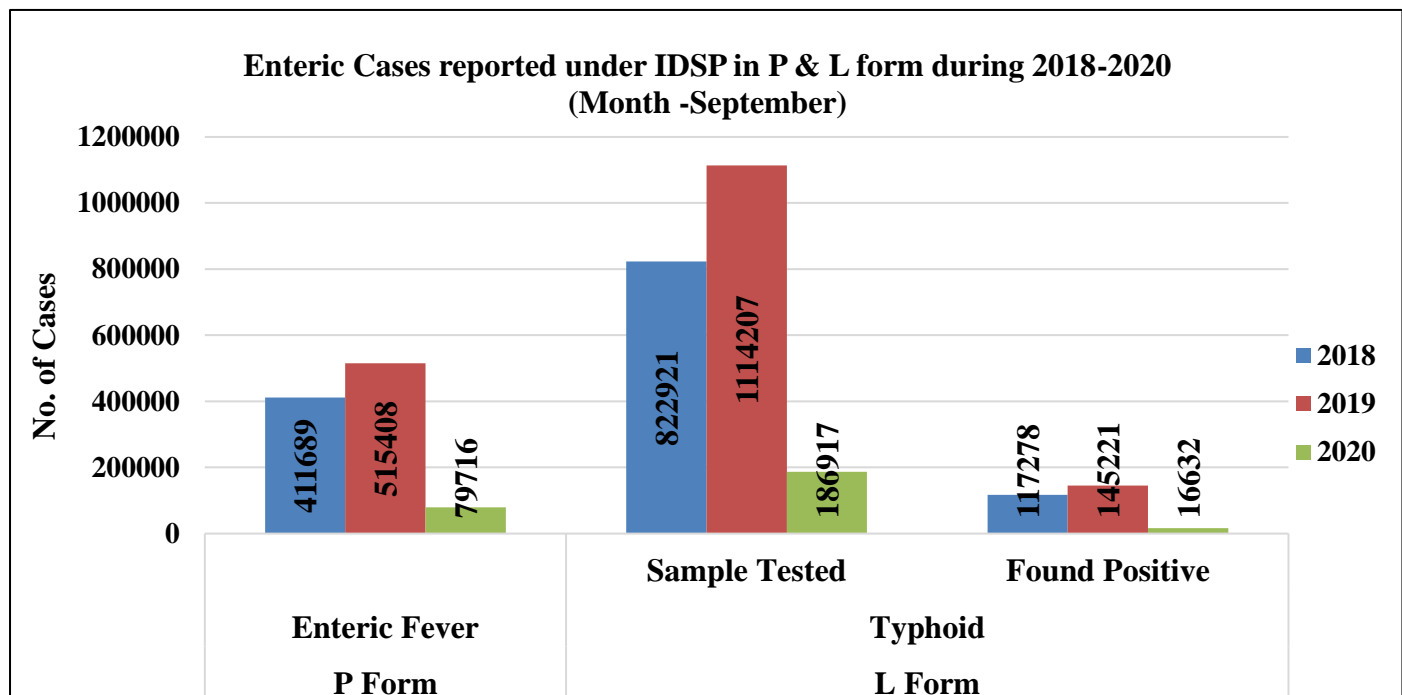


Fig. 10: No. of Enteric Fever Cases reported under P & L form during September 2018 - 2020



As shown in Fig. 10, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 411689 in September 2018; 515408 in September 2019 and 79716 in September 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in September 2018; 822921 samples were tested for Typhoid, out of which 117278 were found positive. In September 2019; out of 1114207 samples, 145221 were found to be positive and in September 2020, out of 186917 samples, 16632 were found to be positive.

Sample positivity has been 14.25%, 13.03% and 8.90% in September 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 & outbreaks for September 2020

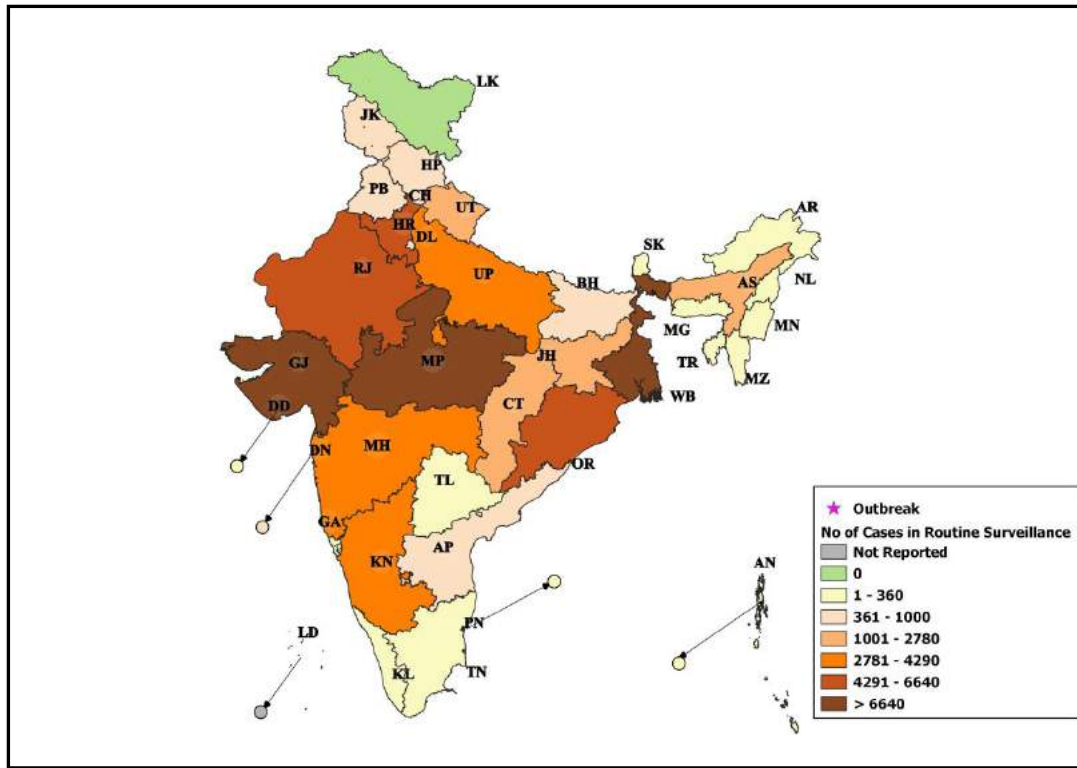


Fig. 12: State/UT wise Lab Confirmed Typhoid cases and outbreaks for September 2020

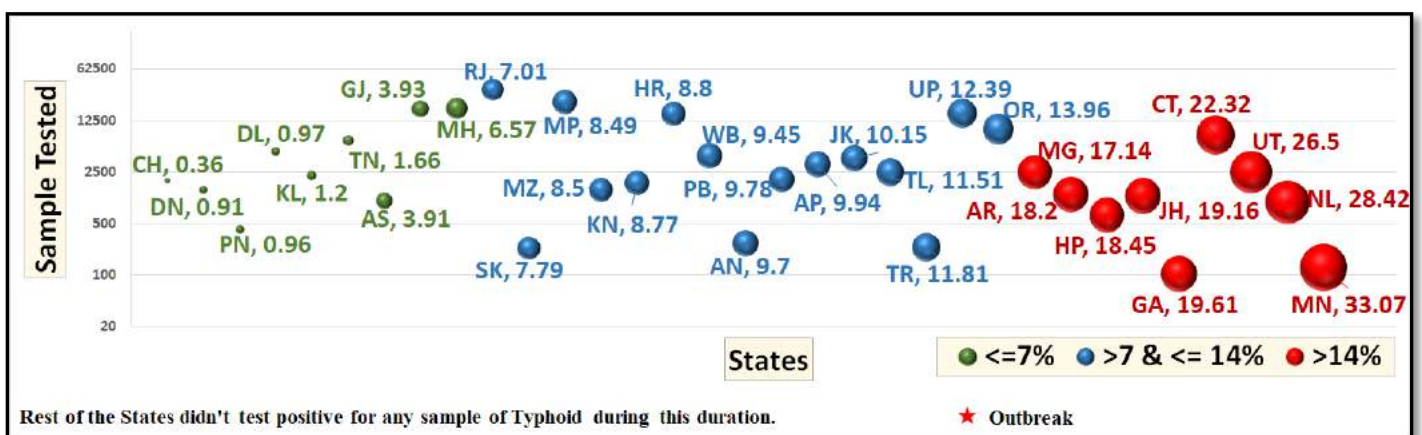
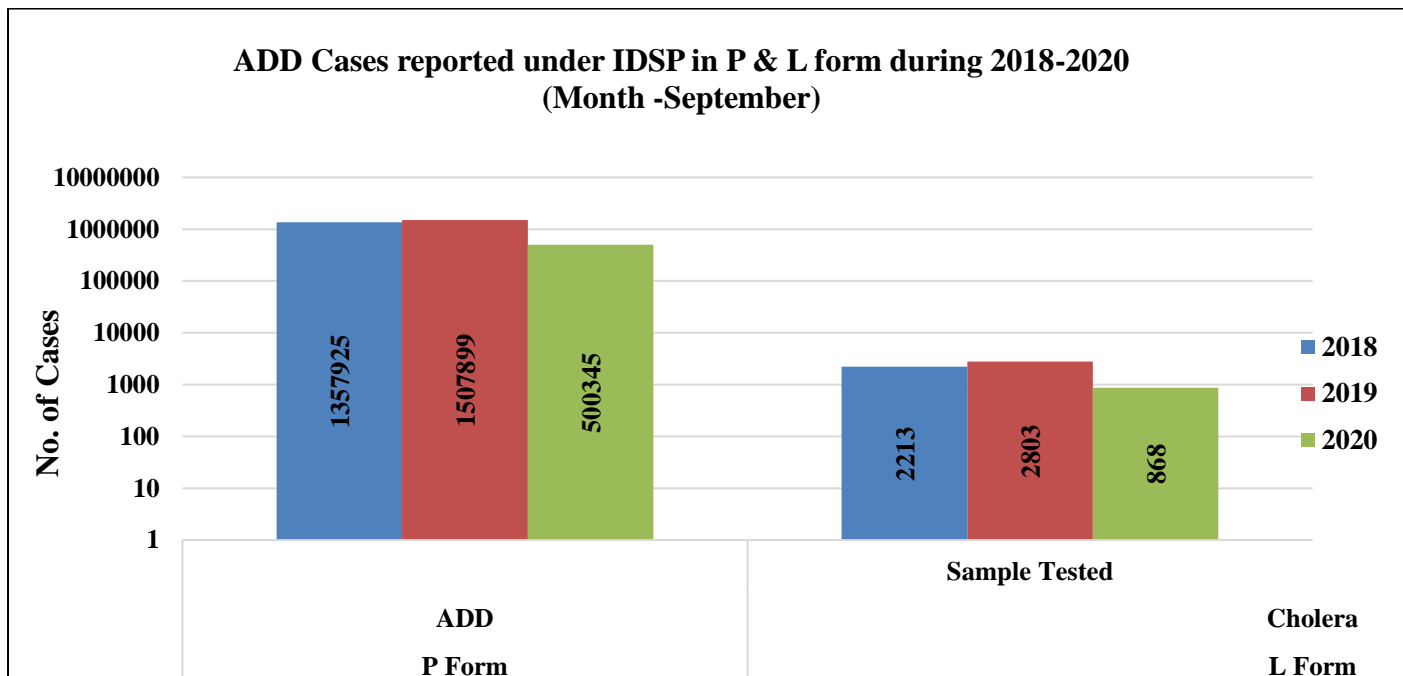


Fig. 13: No. of ADD Cases reported under IDSP in P Form & Lab confirmed Cholera cases in L form during September 2018 - 2020



As shown in Fig. 13, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1357925 in September 2018; 1507899 in September 2019 and 500345 in September 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in September 2018, 2213 samples were tested for Cholera out of which 45 tested positive; in September 2019, out of 2803 samples, 64 tested positive for Cholera and in September 2020, out of 868 samples, 8 tested positive.

Sample positivity of samples tested for Cholera has been 2.03%, 2.28% and 0.92% in September month of 2018, 2019 & 2020 respectively.

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

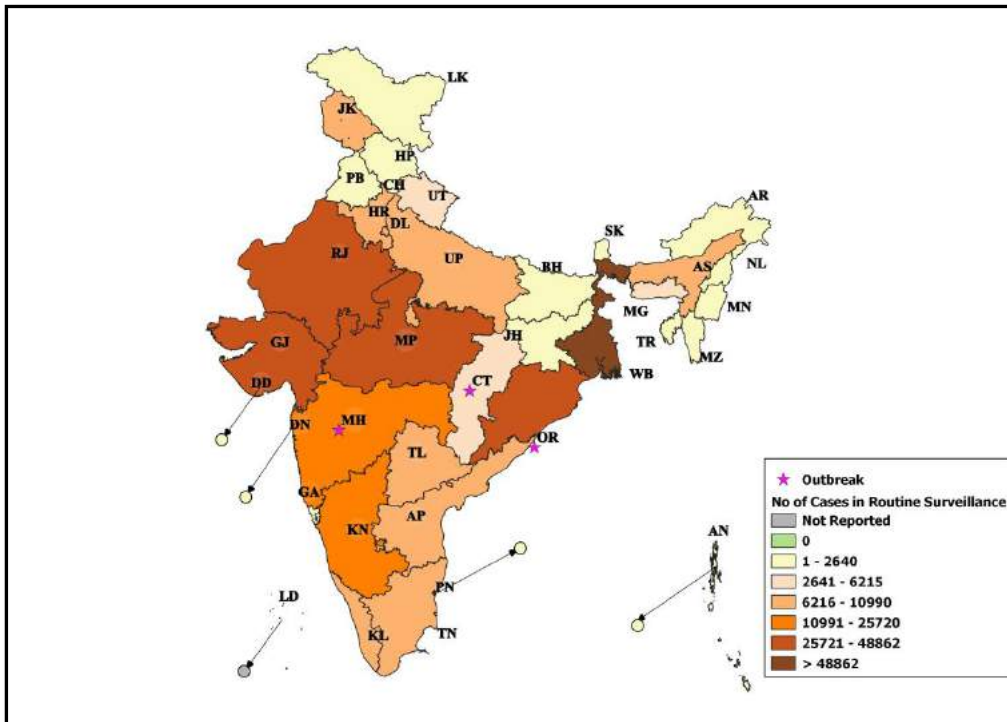


Fig. 15: State/UT wise Lab Confirmed Cholera cases and outbreaks for September 2020

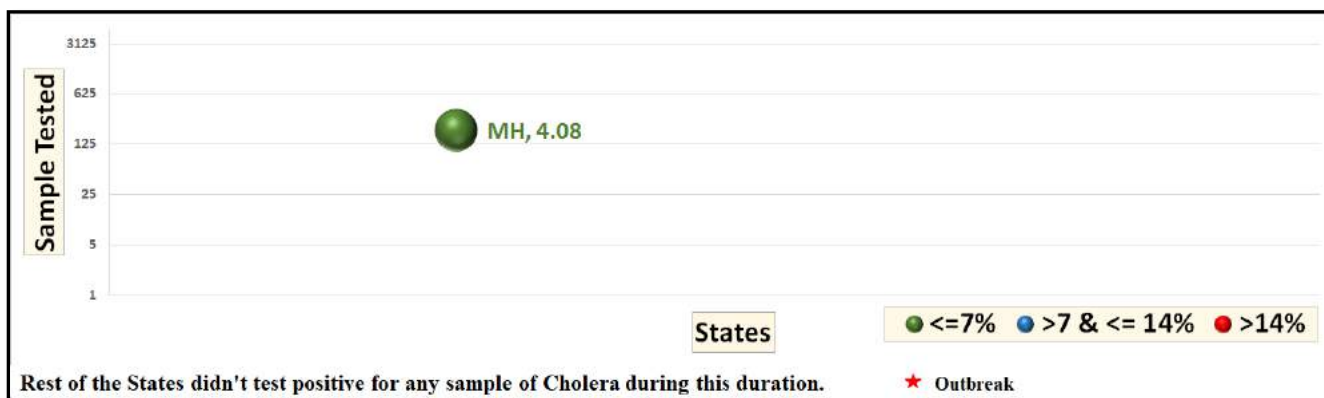
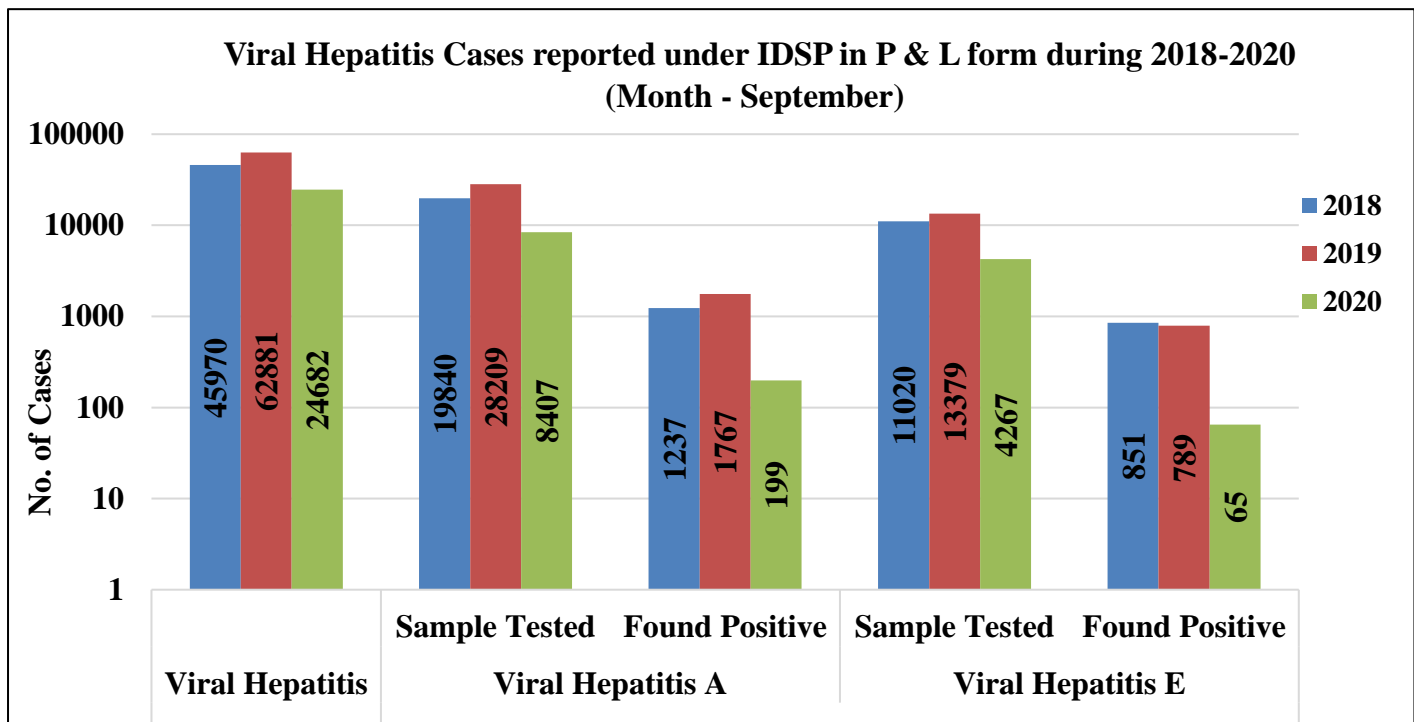


Fig. 16: No. of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during September 2018 - 2020



As shown in Fig. 16, the number of presumptive Viral Hepatitis cases was 45970 in September 2018, 62881 in September 2019 and 24682 in September 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 September 2018; 19840 samples were tested out of which 1237 were found positive. In September 2019 out of 28209 samples, 1767 were found to be positive and in September 2020, out of 8407 samples, 199 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 6.23%, 6.26% and 2.37% in September month of 2018, 2019 & 2020 respectively.

As reported in L form for Viral Hepatitis E, in September 2018; 11020 samples were tested out of which 851 were found positive. In September 2019; out of 13379 samples, 789 were found to be positive and in September 2020, out of 4267 samples, 65 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 7.72%, 5.90% and 1.52% in September month of 2018, 2019 & 2020 respectively.

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

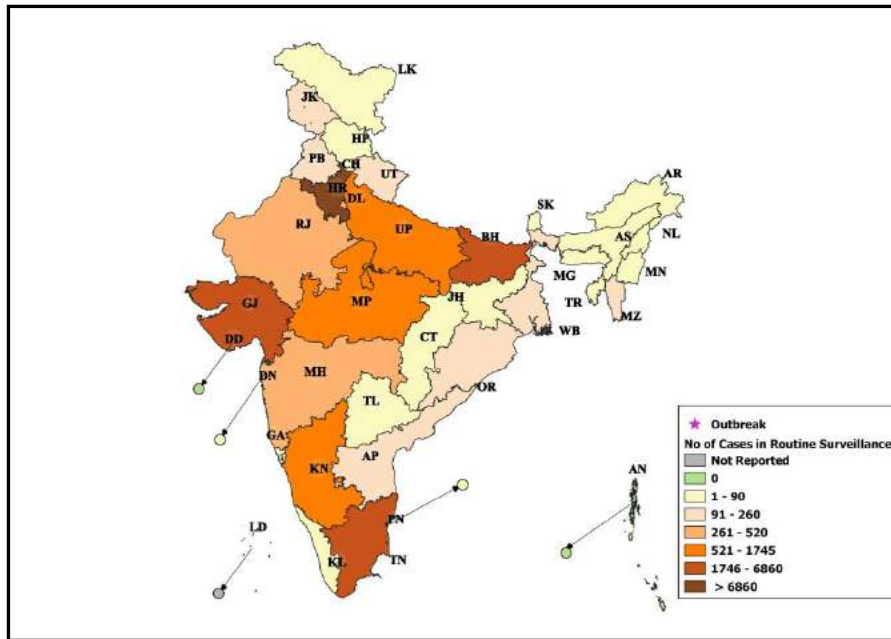


Fig. 18: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for September 2020

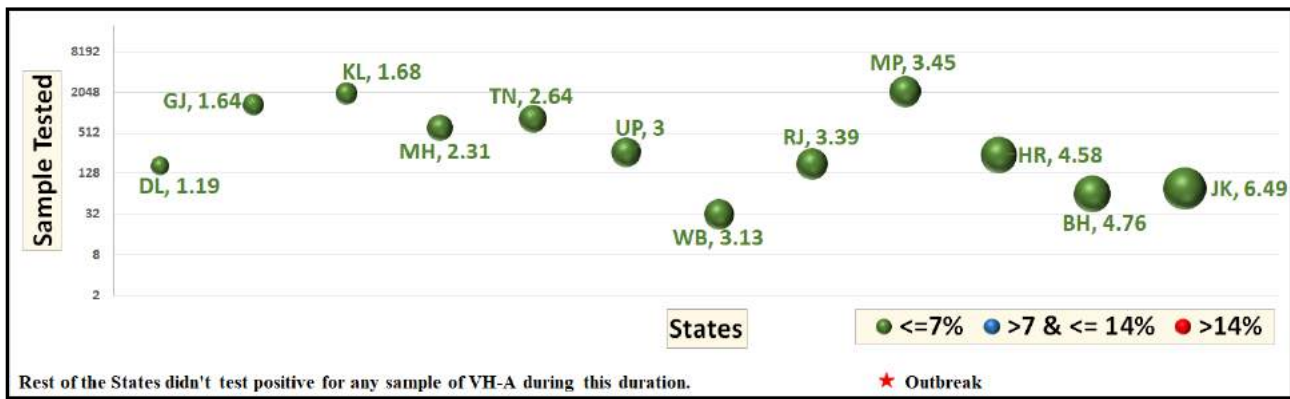


Fig. 19: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for September 2020

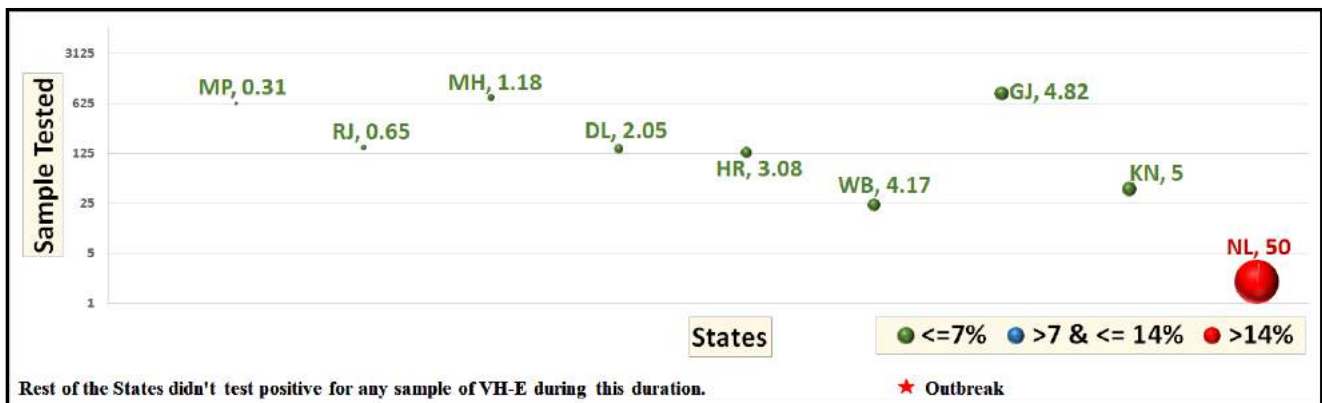
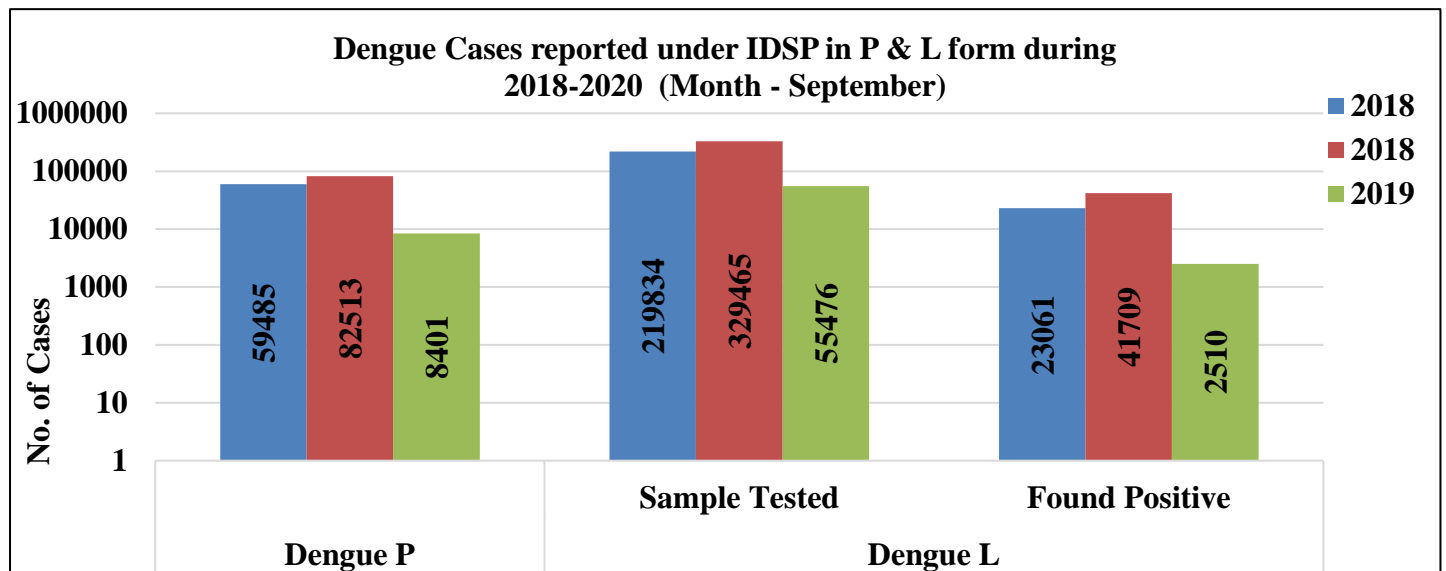


Fig. 20: No. of Dengue cases reported under IDSP in P & L form during September



As shown in Fig. 20, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 59485 in September 2018; 82513 in September 2019 and 8401 in September 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in September 2018; 219834 samples were tested for Dengue, out of which 23061 were found positive. In September 2019; out of 329465 samples, 41709 were found to be positive and in September 2020, out of 55476 samples, 2510 were found to be positive.

Sample positivity of samples tested for Dengue has been 10.49%, 12.66% and 4.52% in September month of 2018, 2019 & 2020 respectively.

Fig. 21: State/UT wise Lab Confirmed Dengue cases and outbreaks for September 2020

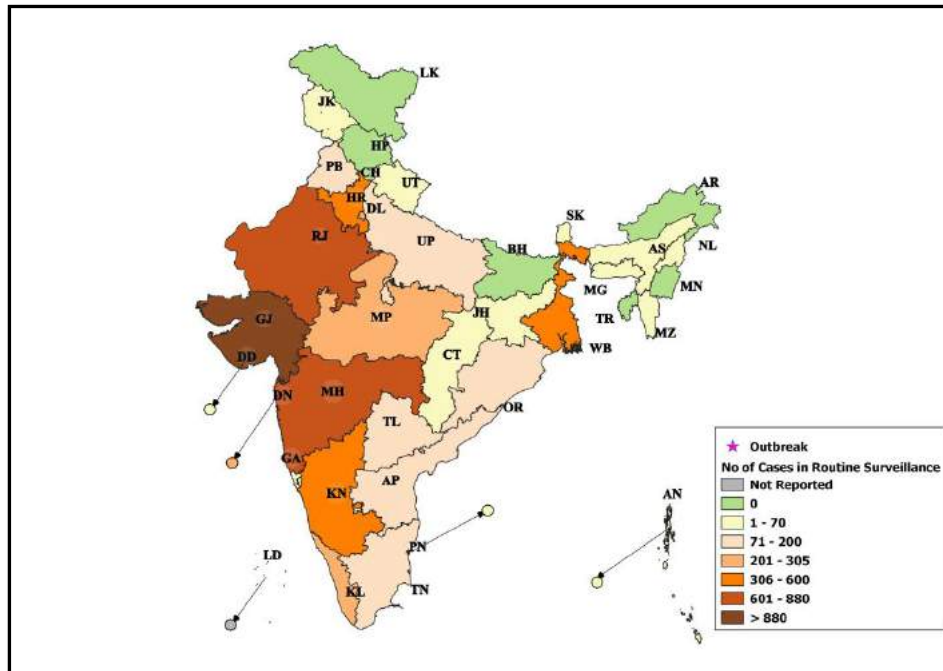


Fig. 22: State/UT wise Presumptive Dengue cases and outbreaks for September 2020

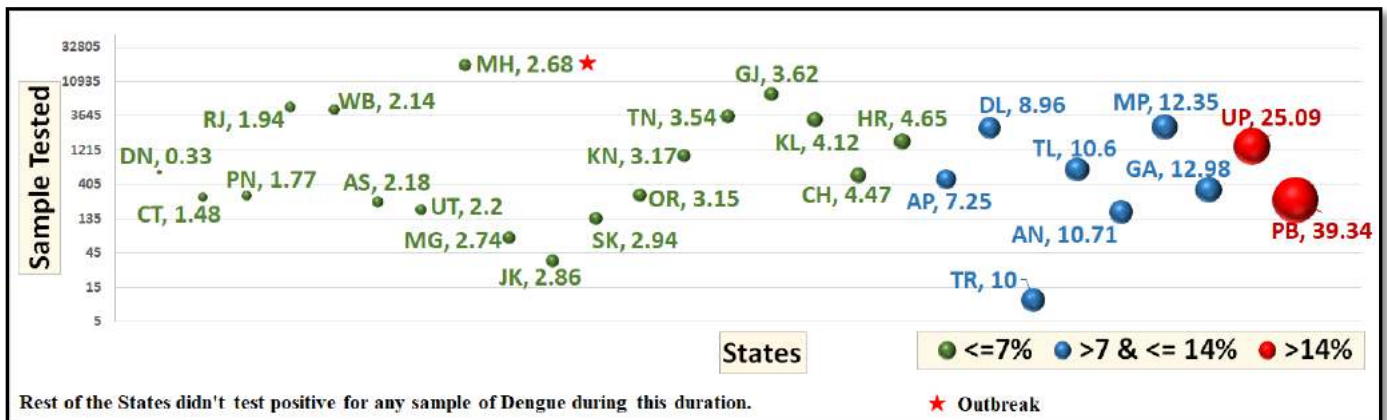
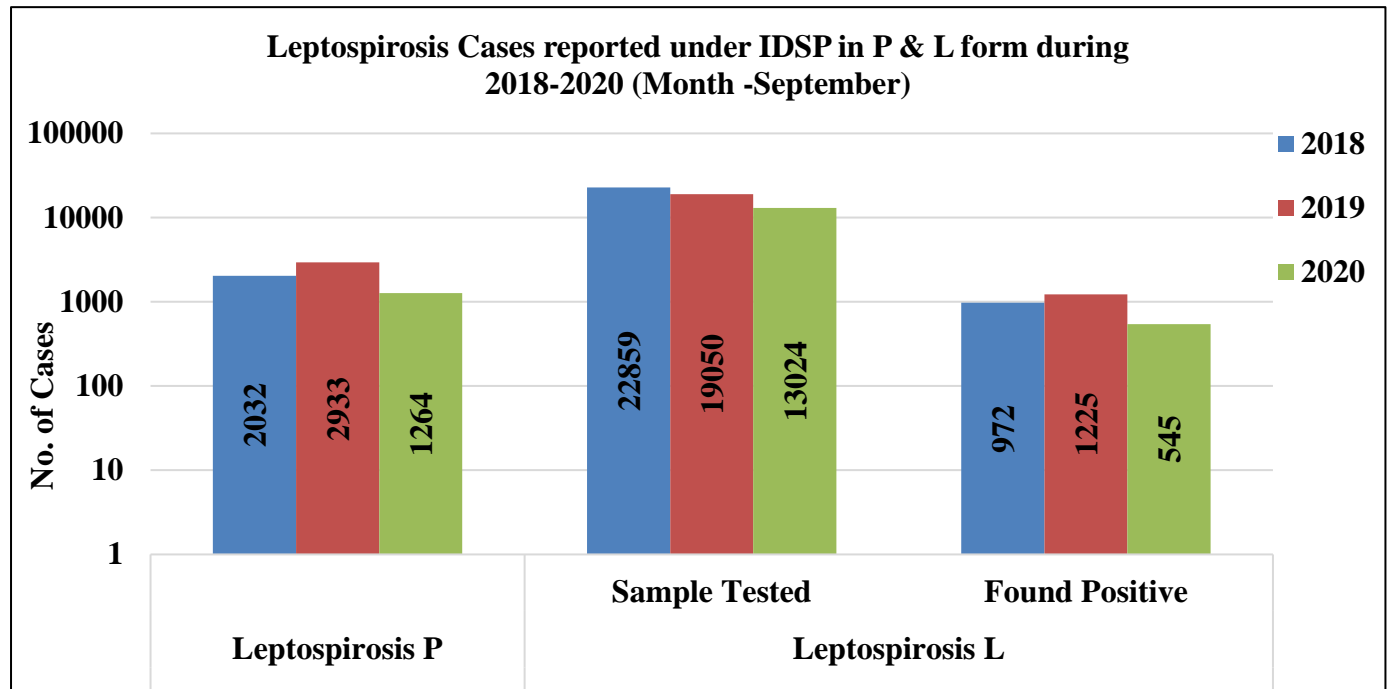


Fig. 23: No. of Leptospirosis Cases reported under IDSP in P & L form during August 2018 – 2020



As shown in Fig. 23, number of presumptive Leptospirosis cases, as reported by States/UTs in ‘P’ form was 2032 in September 2018; 2933 in September 2019 and 1264 in September 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in September 2018; 22859 samples were tested for Leptospirosis, out of which 972 were found positive. In September 2019; out of 19050 samples, 1225 were found to be positive and in September 2020, out of 13024 samples, 545 were found to be positive.

Sample positivity of samples tested for Dengue has been 4.25%, 6.43% and 4.18% in September month of 2018, 2019 & 2020 respectively.

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

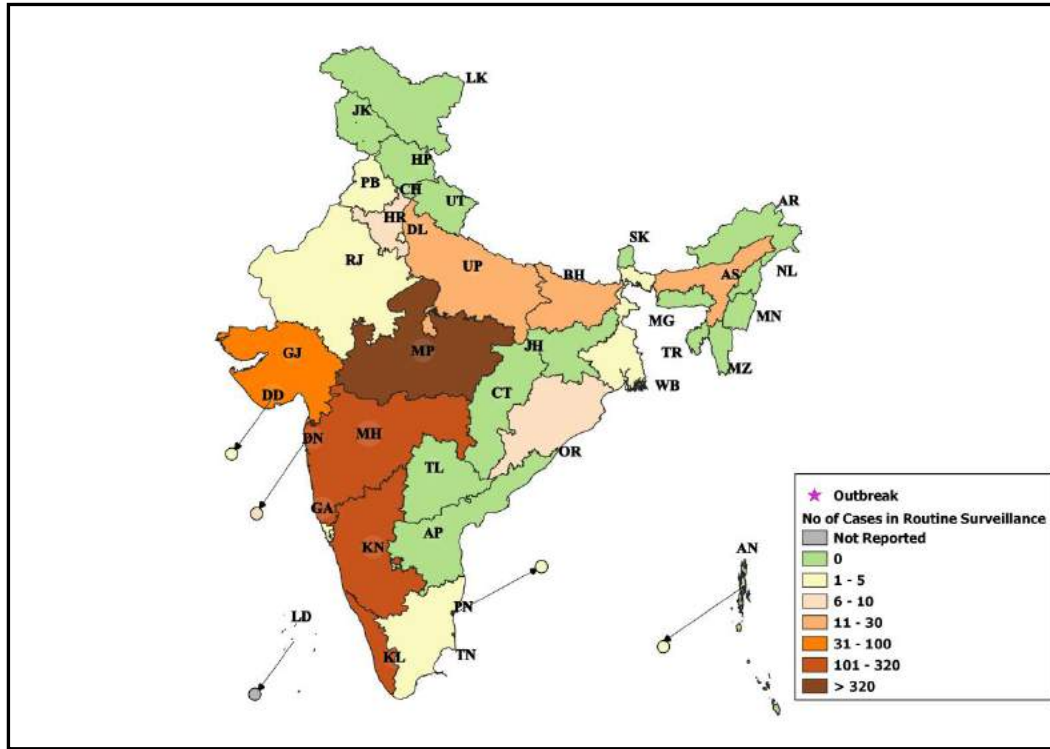


Fig. 25: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for September 2020

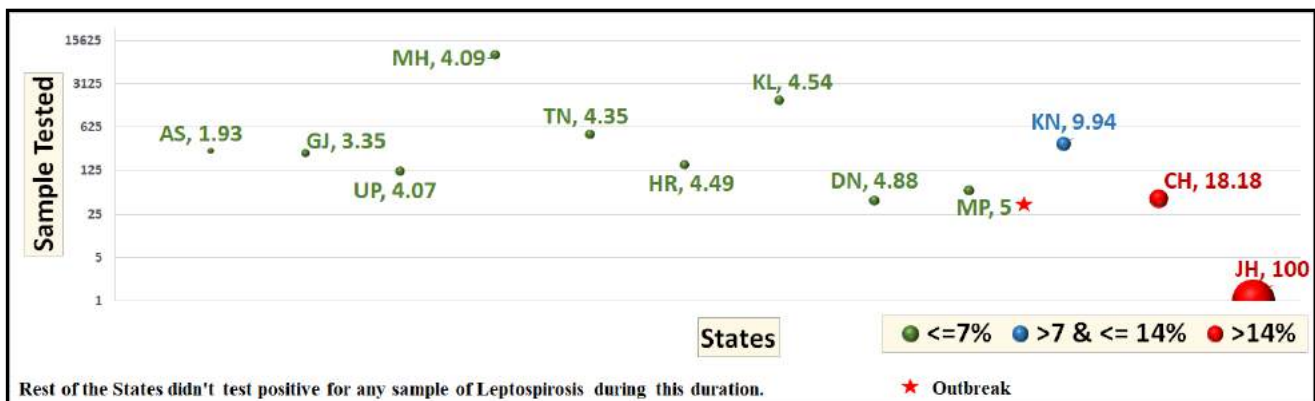
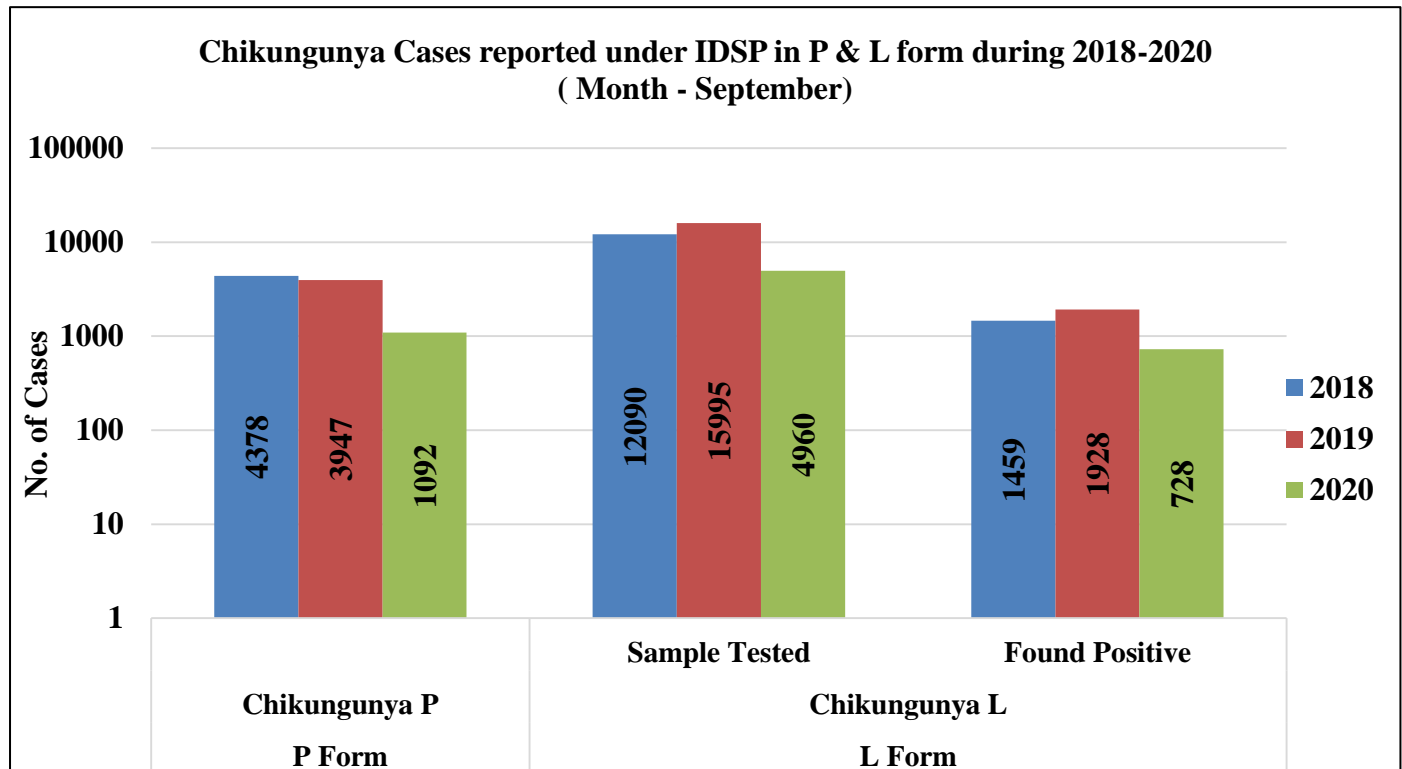


Fig. 26: No. of Chikungunya Cases reported under IDSP in P & L form during September 2018 - 2020



As shown in Fig. 26, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 4378 in September 2018; 3947 in September 2019 and 1092 in September 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in September 2018; 12090 samples were tested for Chikungunya, out of which 1459 were found positive. In September 2019; out of 15995 samples, 1928 were found to be positive and in September 2020, out of 4960 samples, 728 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 12.07%, 12.05% and 14.68% in September month of 2018, 2019 & 2020 respectively.

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

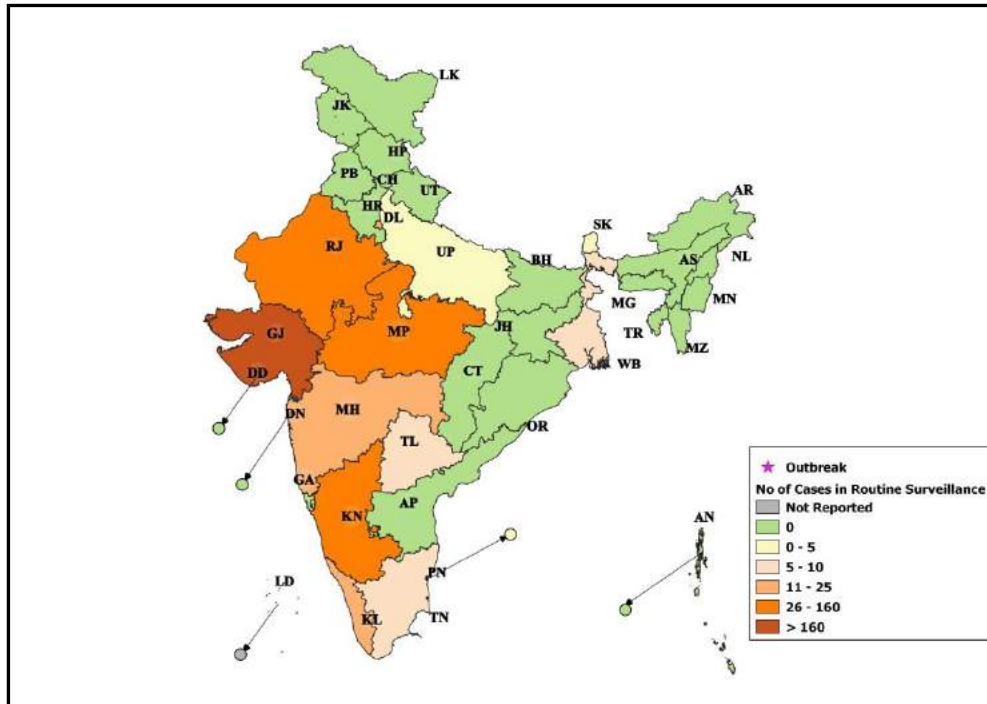


Fig. 28: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for September 2020

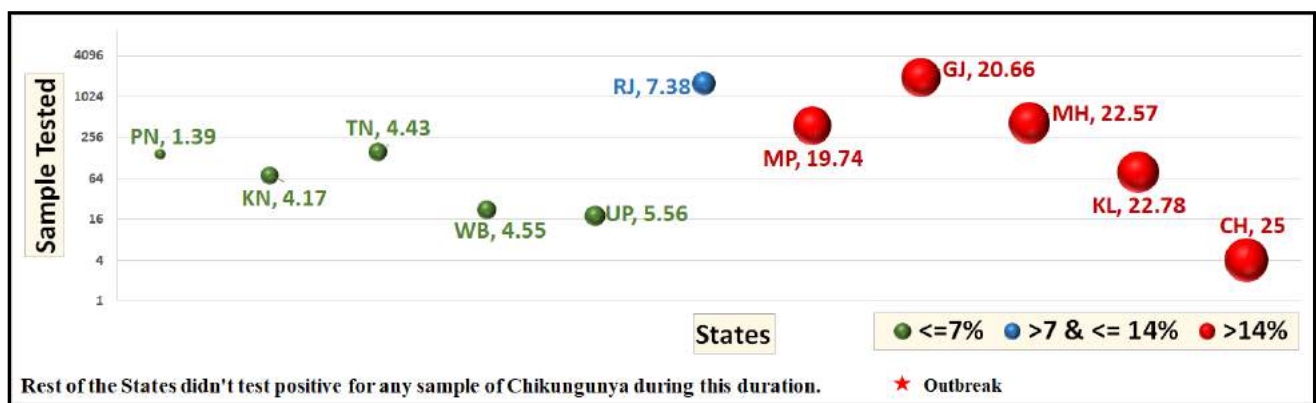


Fig. 29: State/UT wise H1N1 cases and outbreaks for September 2020

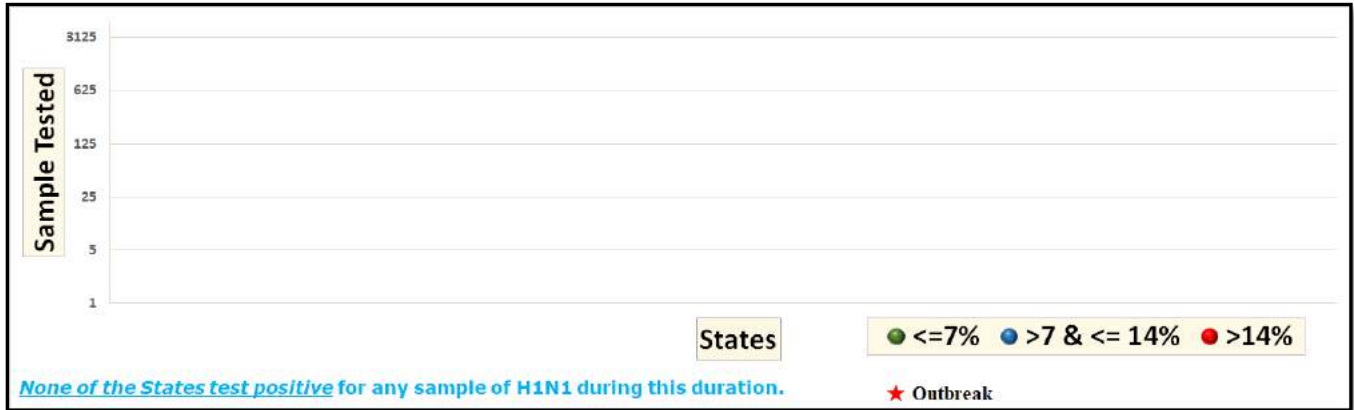
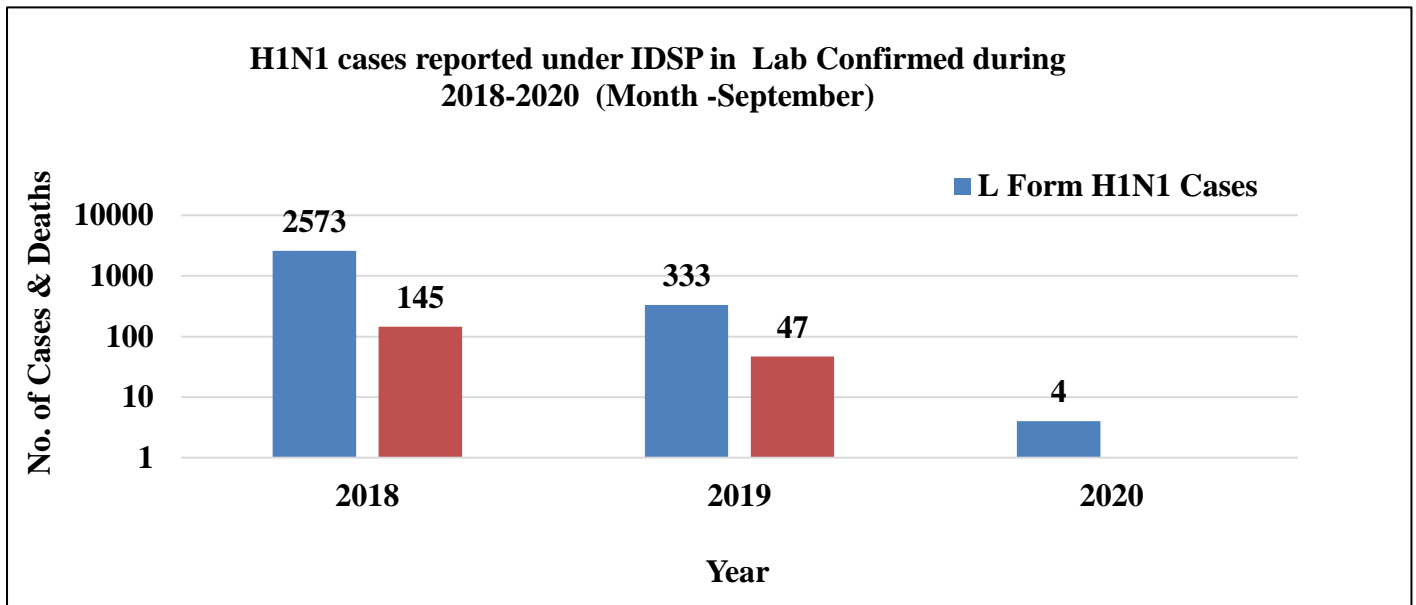


Fig. 30: H1N1 cases reported under IDSP in L Form during 2018-2020 in September 2020



As shown in Fig. 30, as reported in L form, in September 2018, there were 2573 cases and 145 deaths. In September 2019, there were 333 cases and 47 deaths; and in September 2020, there were 4 cases and 0 deaths.

Case fatality rates for H1N1 were 5.64%, 14.11% and 0.00% in September 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.

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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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