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Disease Alert

प्रकोप चेतावनी

A Monthly Surveillance Report
From
Integrated Disease Surveillance Programme

National Health Mission

In This Issue:

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DENGUE OUTBREAK

MUTHIALPET AND LAWSPET AREA, PUDUCHERRY

BACKGROUND:

Regarding Dengue Dengue is a mosquito-borne viral infection causing a severe flu-like illness and, sometimes causing a potentially lethal complication called severe dengue. The incidence of dengue has increased 30-fold over the last 50 years. Up to 50-100 million infections are now estimated to occur annually in over 100 endemic countries, putting almost half of the world's population at risk.

Dengue is an acute febrile illness caused by *Flavivirus*, which exists in four different serotypes, namely, DEN-1, DEN-2, DEN-3, and DEN-4.

Its transmission is effected through female *Aedes aegypti* and *Aedes albopictus* mosquitoes (vectors). This mosquito-borne disease not only causes high levels of morbidity and mortality, but also has a great economic impact, including loss in commercial and labour output, particularly, in tropical and subtropical countries. However, no part of the world is free from these diseases.

In 2011, the WHO classification guidelines for dengue were revised and dengue was divided into DF, DHF without shock or with shock (DSS), and expanded dengue syndrome. According to its severity, DHF is divided in to four grades: DHF grade I, DHF grade II – DHF, DHF grade III, and DHF grade IV – DSS.

The resurgence of dengue has been observed in India, and dengue outbreaks have been frequently reported from different parts of the country in both urban and rural populations.

Today, the disease is endemic in more than 100 countries in WHO's African, Americas, Eastern Mediterranean, South-East Asia and Western Pacific regions; the Americas, South-East Asia and Western Pacific regions are the most seriously affected.(4) It is endemic to Puducherry, presence of vector all-round the year and efforts are being made to reduce breeding sites where fresh water collects in small quantities, either man made or in nature.

Incubation period is 5-6 days after being bitten by an infective mosquito.

Dengue Fever is a severe, flu-like illness, Dengue Haemorrhagic Fever (DHF) is a more severe form of disease, which may cause death.

Dengue presents as abrupt onset of high fever with severe headache, retro - orbital pain, loss of sense of taste and appetite, nausea, Vomiting and measles like rash over chest and upper limbs.

In Dengue Haemorrhagic Fever and Shock Syndrome apart from the above, there is severe stomach pain, pale, cold and clammy skin, bleeding from nose, mouth and gums and skin rashes, frequent vomiting with or without blood, dryness of mouth, thirst, restlessness, sleeplessness, weak pulse and difficulty in breathing.

It affects all age groups and gender. Deaths are more in children due to DHS.

Period of communicability: Infected person with Dengue becomes infective to mosquitoes 6 to 12 hours before the onset of the disease and remains so upto 3 to 5 days.

Lab diagnosis of Dengue: The diagnosis is confirmed by ELISA by NS1Ag positivity or antibody test with IgM using kits provided by NVBDCP from NIV Pune.

Complication: The severe complications are DHS and Dengue shock syndrome.

Treatment: Symptomatic as per NVBDCP guidelines.

OUTBREAK OF DENGUE IN MUTHIALPET AND LAWSPET AREA, PUDUCHERRY:

Background of Outbreak:

Muthialpet and Lawspet have populations of 49464 and 91121 respectively.

Muthialpet and Lawspet are on the porous borders of Puducherry district and people from neighboring Tamil Nadu frequently cross Muthialpet to enter Puducherry. The PHCs also is visited by residents of neighboring districts of Tamil Nadu. There was increased number of fever cases reporting to PHC as indicated by Medical Officer in-charge from 01st January 2020. When these patients were tested for Dengue at Sentinel Labs including DPHL Puducherry, there was increased incidence.

Dengue Infections were common in this period of time and cases decline after the month of March with the onset of summer season. The RRT from the PHC along with IDSP team visited areas reporting these cases to undertake IEC, active case searches based on the syndrome, source reduction activities, fogging & indoor spraying, anti-adult and anti – larval activities. All fever cases were also tested for Dengue, till the reporting of cases was controlled.

Case Definition:

The RRT started search by preparing a Clinical Case Definition: It was –

Acute febrile illness of 2-7 days with any one of the following; Nausea, vomiting, rash, headache, retro orbital pain, myalgia or arthralgia. (NVBDCP 11.06.2019)

Lab confirmed cases: Criteria for lab conformed case was also formalized. It was in line with MoHFW - IDSP L form definition based on NVBDCP recommendations: -

A presumptive case with -

- *Demonstration of dengue virus antigen in serum sample by NS1-ELISA. OR*
- *Demonstration of IgM antibody titre by ELISA in single serum sample. OR*
- *IgG seroconversion in paired sera after 2 weeks with four fold increase of IgG titres.*

OR

Detection of viral nucleic acid by polymerase chain reaction (PCR).

OR

Isolation of the virus (Virus culture positive) from serum, plasma or leucocytes.

Case Classification:

Suspect Dengue: All fever cases considered as suspect cases, for early detection.

Presumptive case of Dengue: A case compatible with clinical description of dengue fever during outbreak AND/OR Non-ELISA based NS1 antigen/ IgM positive (RDT).

Confirmed case: A case that meets the clinical definition and is either lab confirmed or epidemiologically linked with a lab confirmed case.

LABORATORY DIAGNOSIS:

76 confirmed cases reported each from Muthialpet and Lawspet area.

Month	Muthialpet	Lawspet	Samples tested
Jan	45	50	3368
Feb	26	18	2463
March	5	8	1624
Total	76	76	7455

Testing was done at DPHL Puducherry, State Referral Lab - IGMCRI, JIPMER, RGGWCH, all designated SSH and Private Medical College PIMS.

DESCRIPTIVE EPIDEMIOLOGY:

Person Distribution:

Age and gender distribution in Muthialpet is as follows –

Age group	Male	Female	Total
0 - 1 Yrs	0	0	0
2 - 5 Yrs	1	0	1
6 - 19 Yrs	24	15	39
20 - 49 Yrs	17	18	35
50 - 60 Yrs	1	0	1
≥ 60 Yrs	0	0	0
TOTAL	**43**	**33**	**76**

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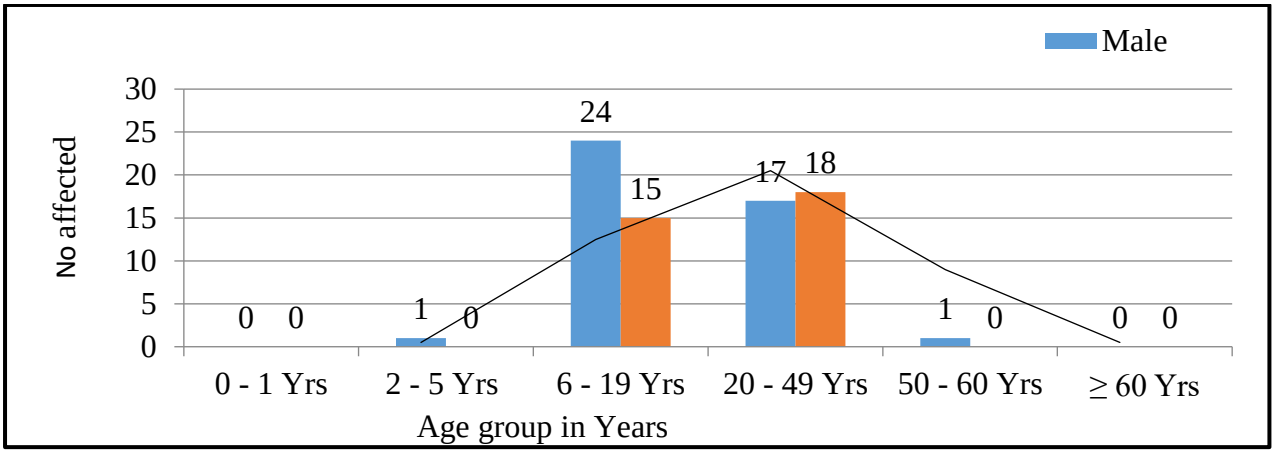
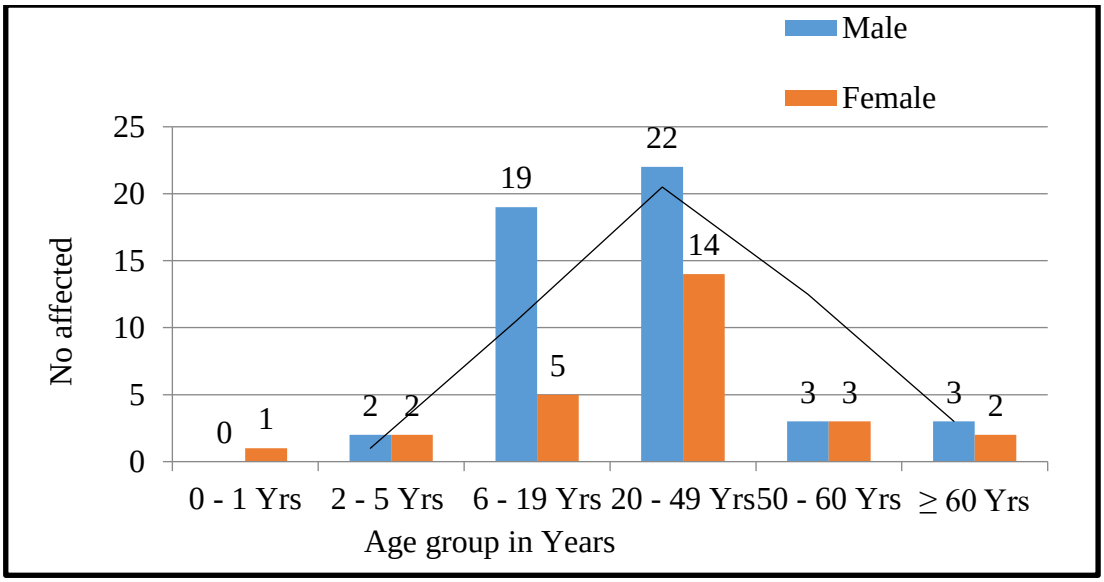
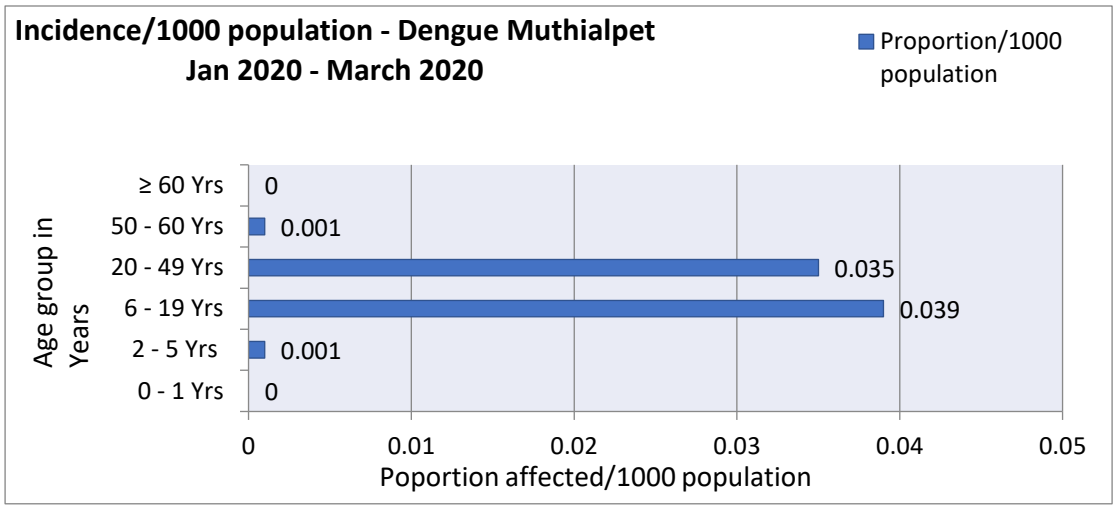


Age and gender distribution in Lawspet is as follows –

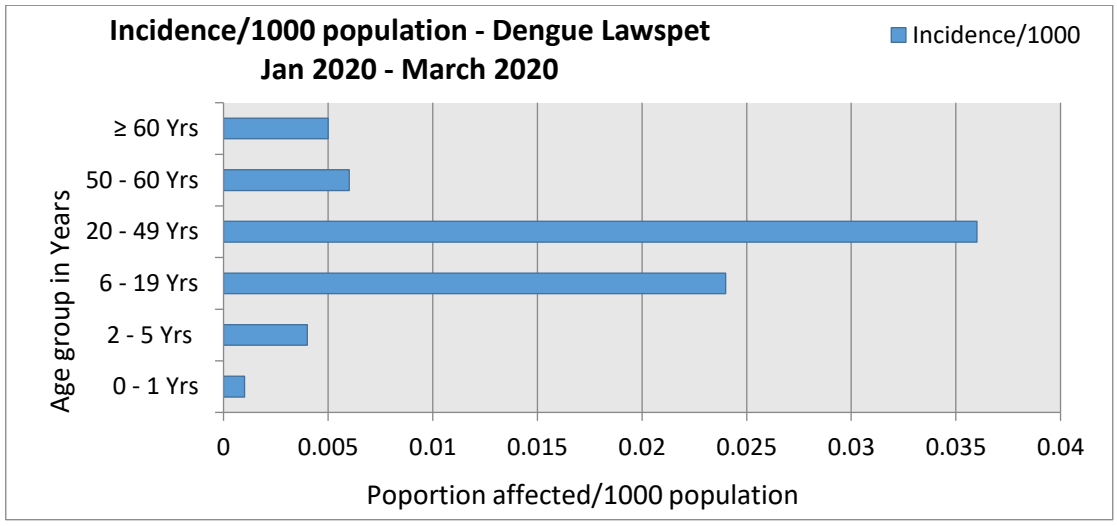
Age group	Male	Female	Total
0 - 1 Yrs	0	1	1
2 - 5 Yrs	2	2	4
6 - 19 Yrs	19	5	24
20 - 49 Yrs	22	14	36
50 - 60 Yrs	3	3	6
≥ 60 Yrs	3	2	5
TOTAL	49	27	76



Dengue Incidence/1000 Population, Muthialpet, Puducherry Jan – Mar 2020



Dengue Incidence/1000 Population, Lawspet, Puducherry Jan – Mar 2020



Interpretation: Most of the affected were children above 6 years and young adults, who actively go out for education/work.

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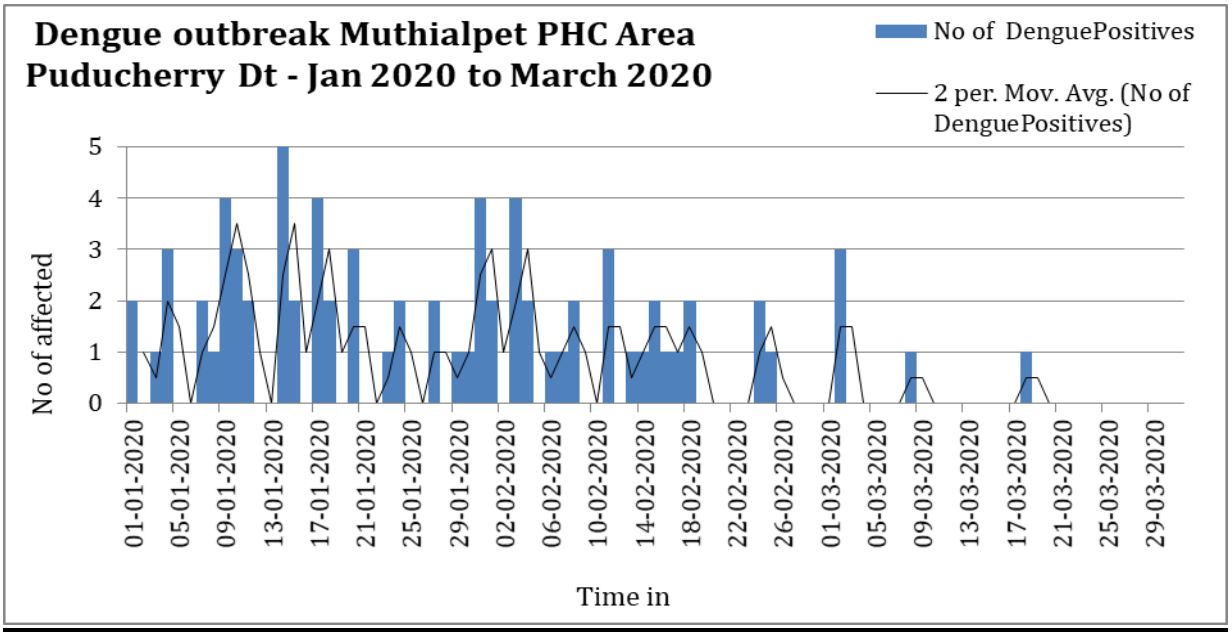
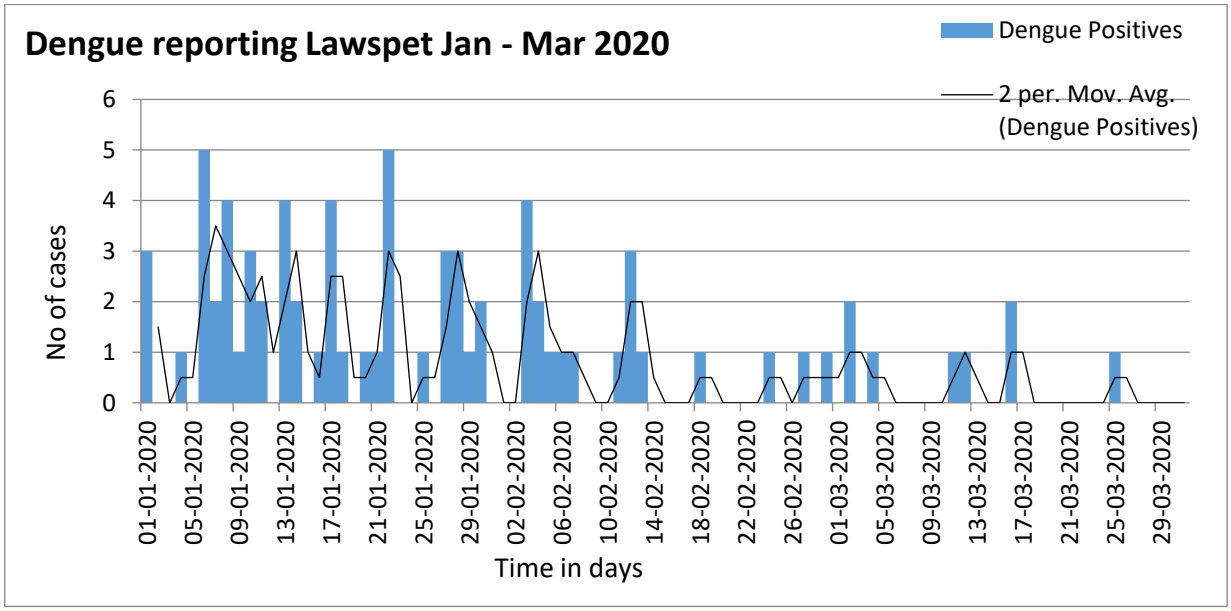
Time Distribution

Time trend of dengue reporting Jan - Mar 2020, Muthialpet, Puducherry



Time trend of dengue reporting Jan - Mar 2020, Lawspet, Puducherry



Interpretation: Most of dengue cases were detected in the month of January and reporting declined from 2nd week of February onwards. January being festive season increased movement of people and littering contributing to increased sources of *Aedes* mosquito, in spite of intense and interstate joint source reduction activities along the borders.

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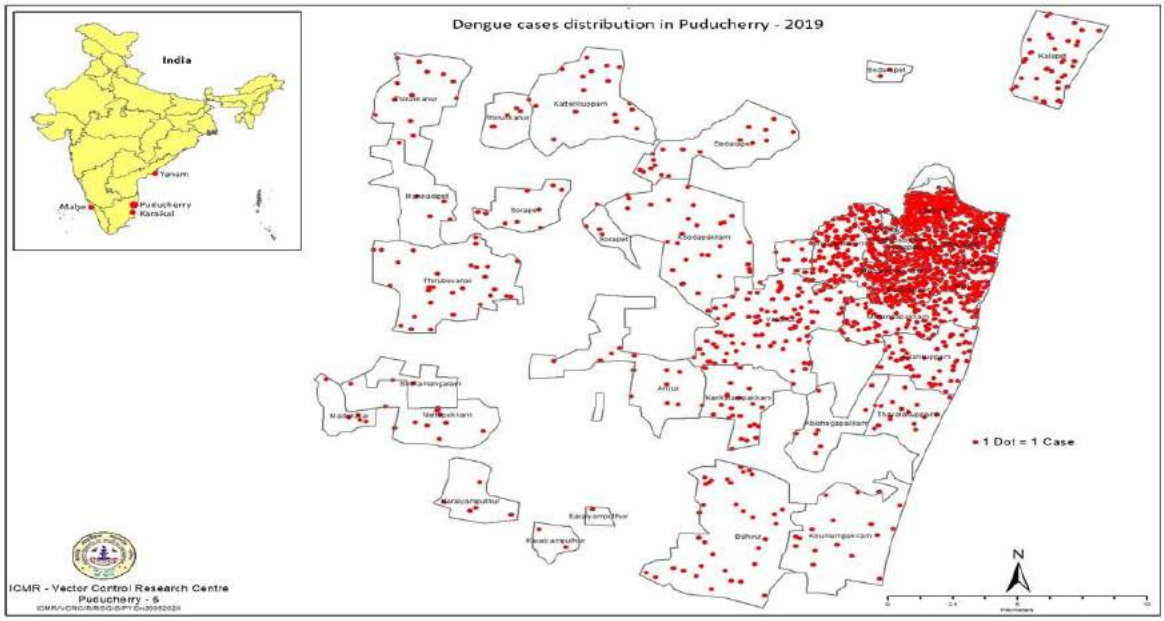
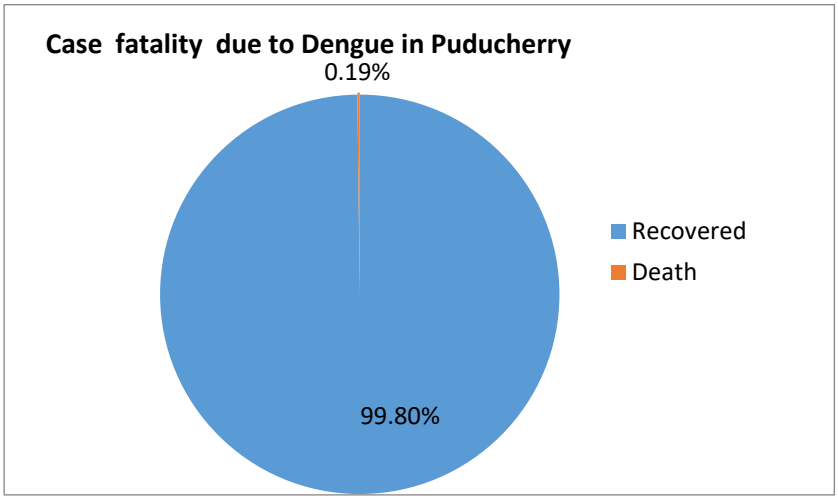
Place Distribution: Dengue cases in Puducherry Jan – Mar 2020



Interpretation: Though there were dengue positives reported from all over Puducherry the most affected areas are marked in dense red dots, Muthialpet and Lawspet, extremely porous interstate urban borders.

Case fatality

Totally 503 cases reported from all over Puducherry district in that period and there was 1 death due to Dengue Encephalitis (in Muthialpet area).



CONTROL MEASURES UNDERTAKEN:

1. Active case search: Active fever/ fever with rash/ fever with bleeding carried out for a period of 2 weeks after the reporting of the last dengue positive cases from that area.
2. Source reduction: Combined Mass Source reduction in prominent places in coordination with LAD, Municipalities and Commune Panchayats
3. Fogging activity:
   a. Indoor space spray at reported dengue incidence
   b. Intensified outdoor fogging at reported dengue foci
   c. Deployment of Domestic Breeding Checkers at PHC/CHC

4. IEC/BCC Activities:
   a. Encourage public to use appropriate clothing to prevent being bitten by mosquitoes.
   b. Promoting safe practices of using mosquito nets, Fumigate using natural ingredients like neem leaves and maintain environment clean and free from mosquito breeding sources.
   c. Awareness ads at Cinema Theatres, Cable TV networks, TV Screen at Bus Stand.
   d. Morning Prayer messages at Schools involving school teachers/ health care providers.
   e. Flex Banners/hoarding at prominent places

   and others.
5. Case Management:

   Affected managed symptomatically as per NVBDCP guidelines.

   Mosquito proof fever wards created in Government Tertiary care hospitals to manage dengue positives.

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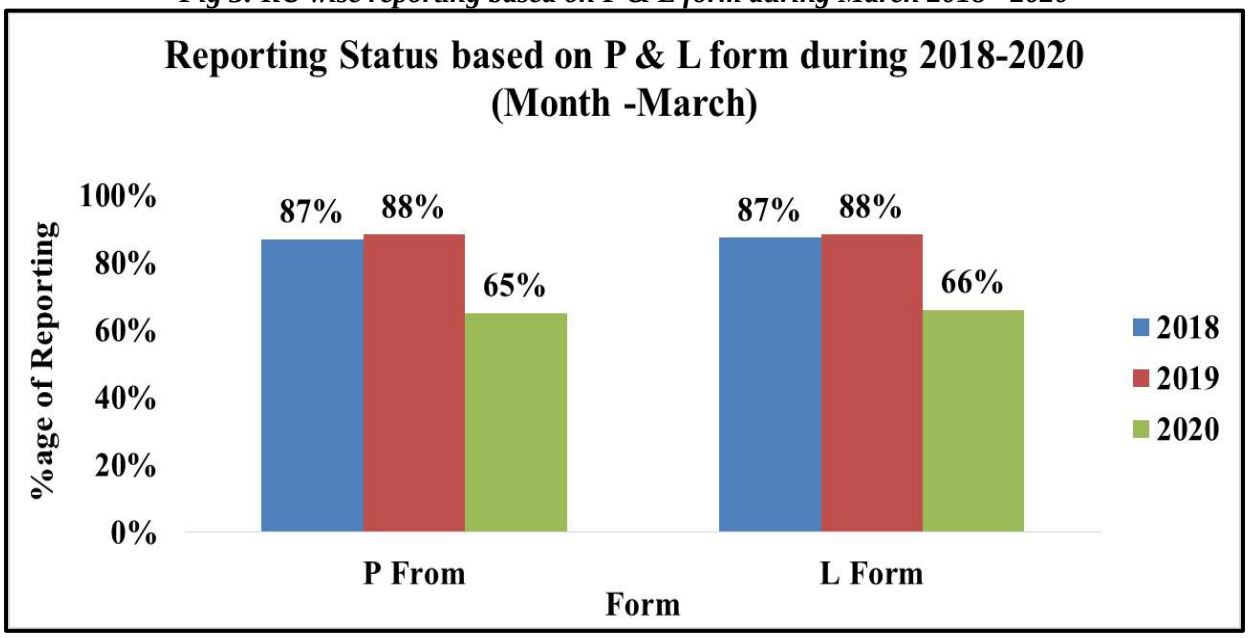
Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue Leptospirosis, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During March 2018 - 2020*

Data extracted from IDSP Portal (www.idsp.nic.in) as on September 5th , 2020.

Fig 3: RU wise reporting based on P & L form during March 2018 - 2020



As shown in Fig 1, in March 2018, 2019 and 2020, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 87%, 88% and 65% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 87%, 88% and 66% 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 4: State/UT wise P form completeness % for March 2020

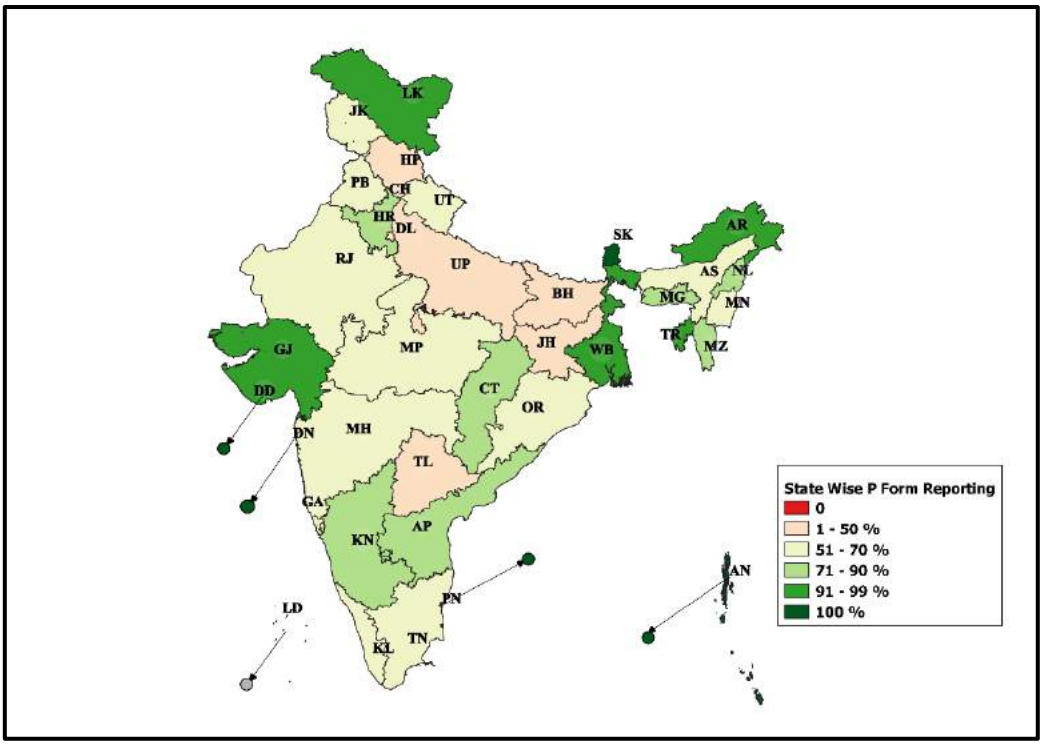
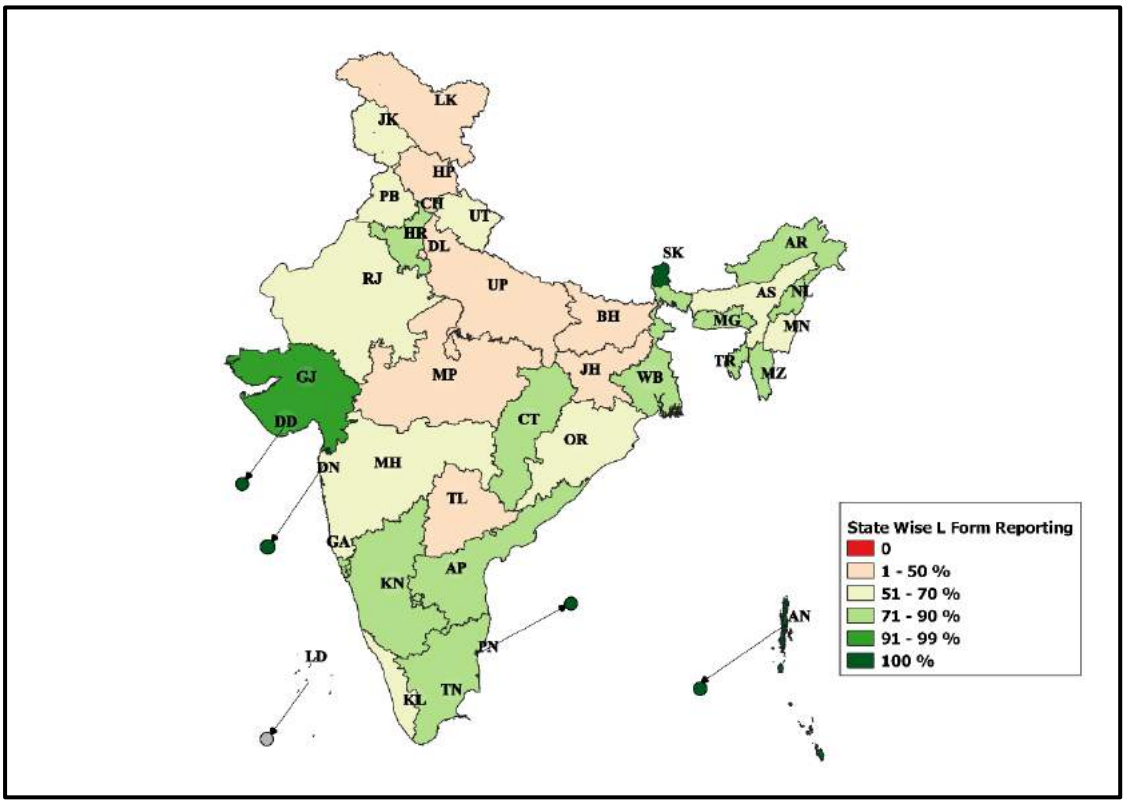


Fig 5: State/UT wise L form completeness % for March 2020



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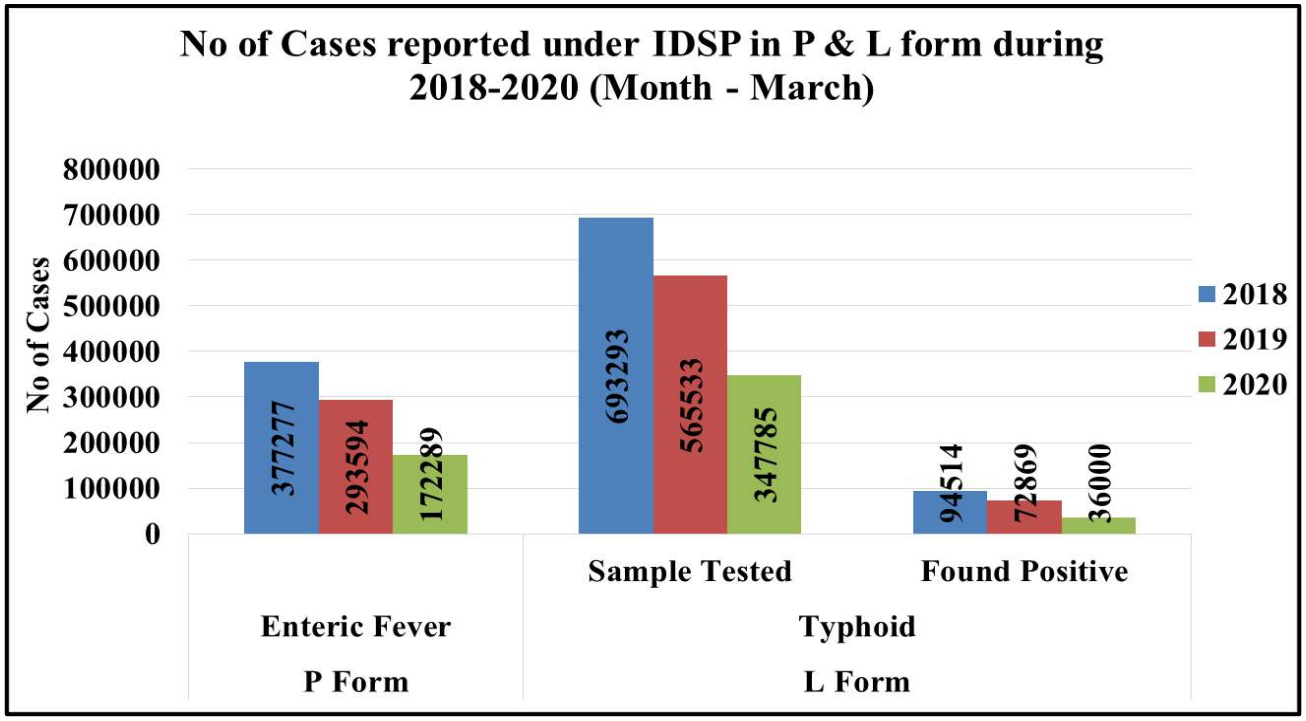

Fig 6: No. of Enteric Fever Cases reported under P & L form during March 2018 - 2020

As shown in Fig 3, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 377277 in March 2018; 293594 in March 2019 and 172289 in March 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in March 2018; 693293 samples were tested for Typhoid, out of which 94514 were found positive. In March 2019; out of 565533 samples, 72869 were found to be positive and in March 2020, out of 347785 samples, 36000 were found to be positive.

Sample positivity has been 13.63%, 12.89% and 10.35% in March 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.

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Fig 7: State/UT wise Presumptive Enteric fever cases and outbreaks for March 2020

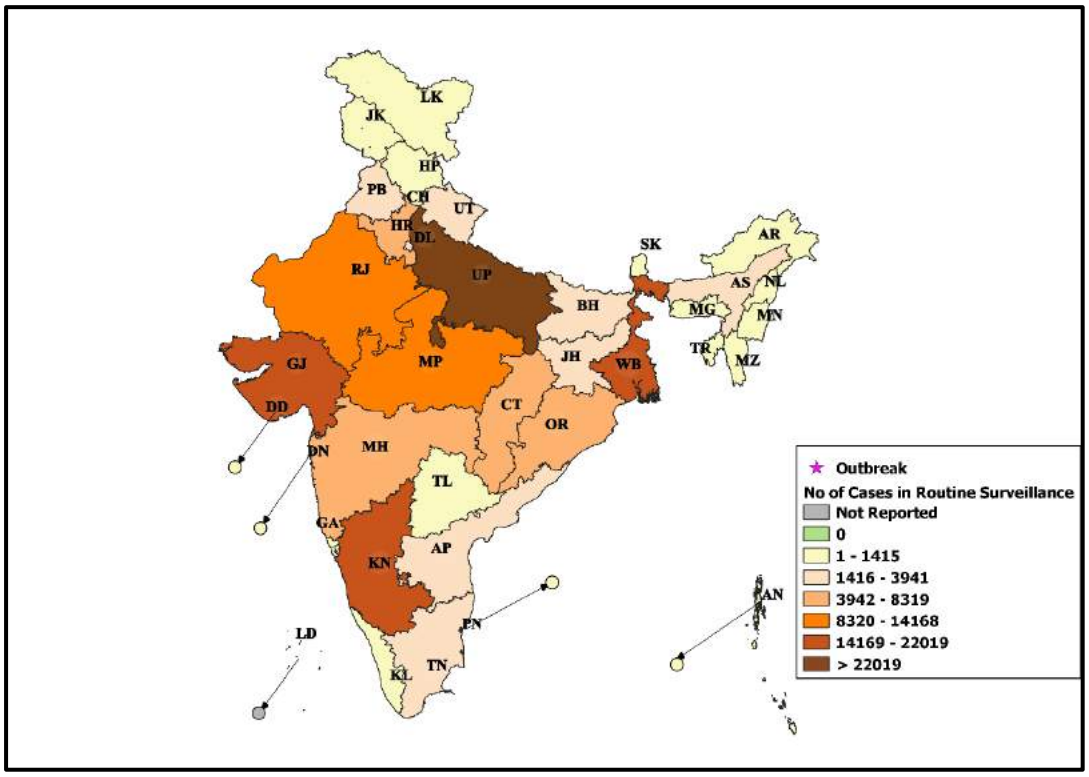

Fig 8: State/UT wise Lab Confirmed Typhoid cases and outbreaks for March 2020

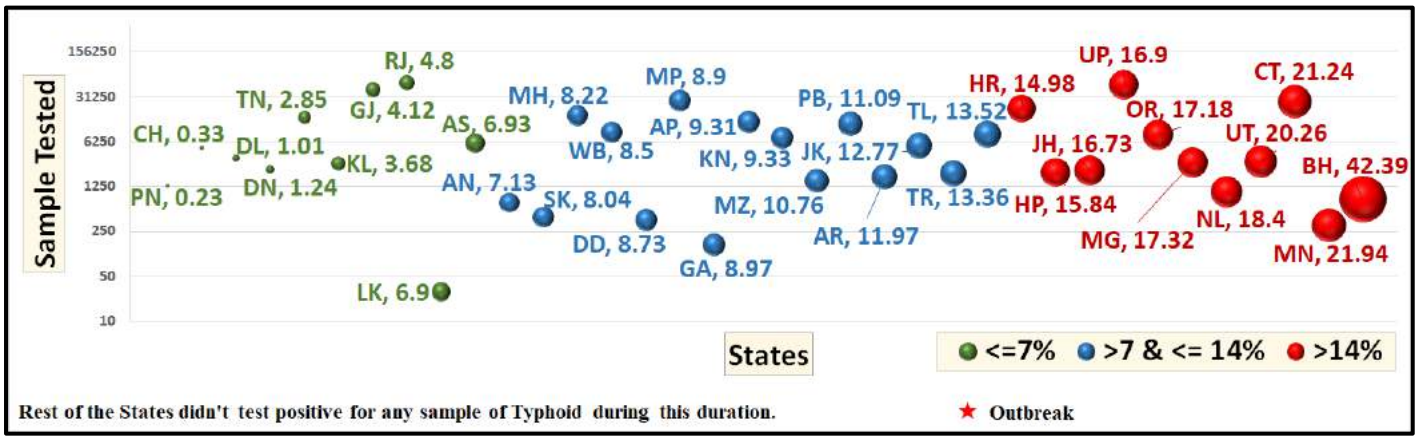

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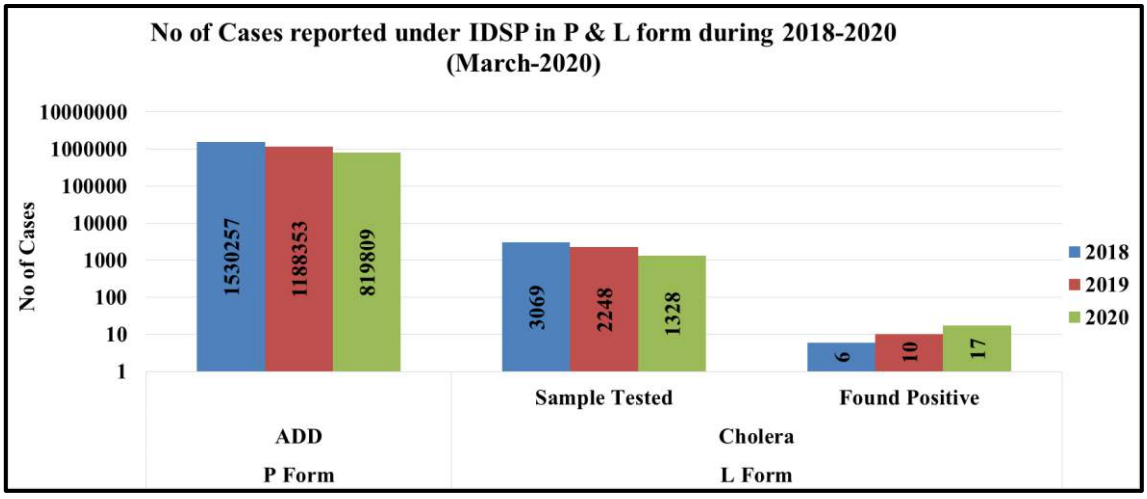
Fig. 9: No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during March 2018 - 2020



As shown in Fig 2, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1530257 in March 2018; 1188353 in March 2019 and 819809 in March 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in March 2018, 3069 samples were tested for Cholera out of which 6 tested positive; in March 2019, out of 2248 samples, 10 tested positive for Cholera and in March 2020, out of 1328 samples, 17 tested positive.

Sample positivity of samples tested for Cholera has been 0.20%, 0.44% and 1.28% in March month of 2018, 2019 & 2020 respectively.

Fig 10: State/UT wise Presumptive ADD cases and outbreaks for March 2020

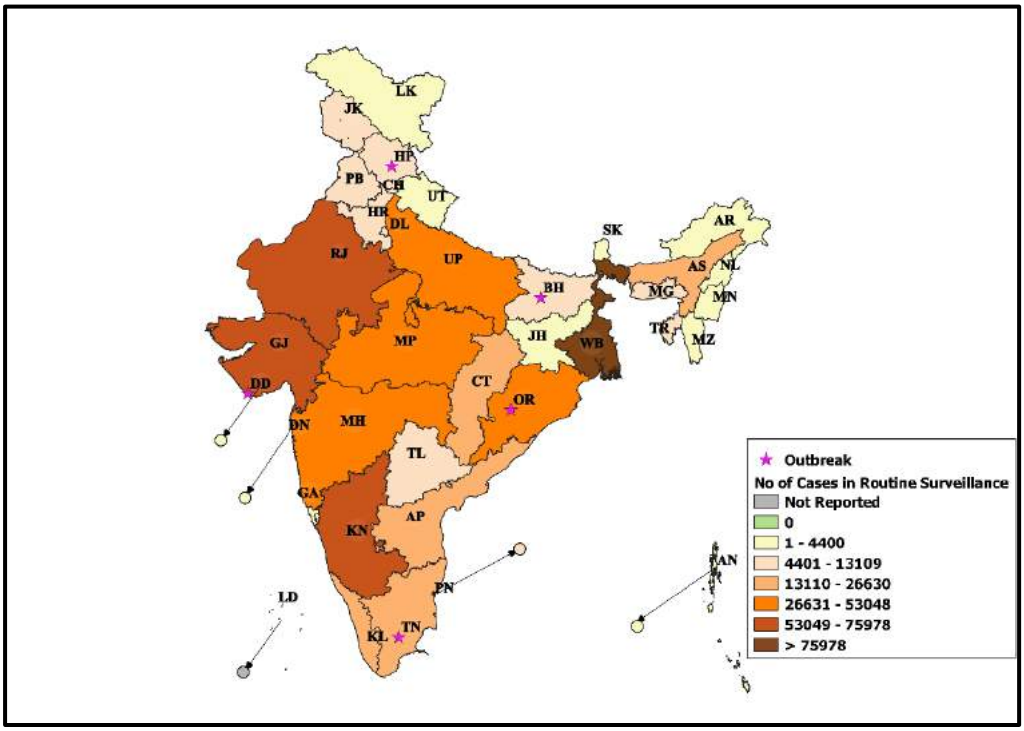


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Fig 11: State/UT wise Lab Confirmed Cholera cases and outbreaks for March 2020

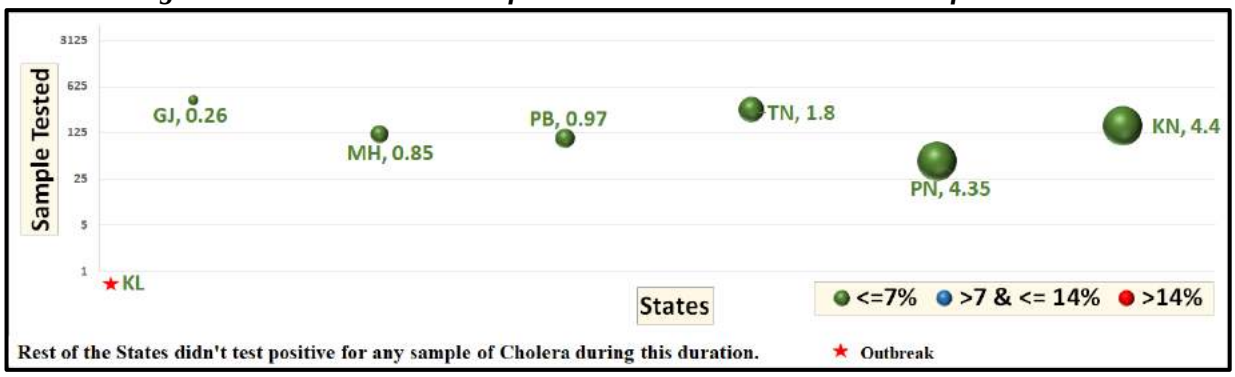
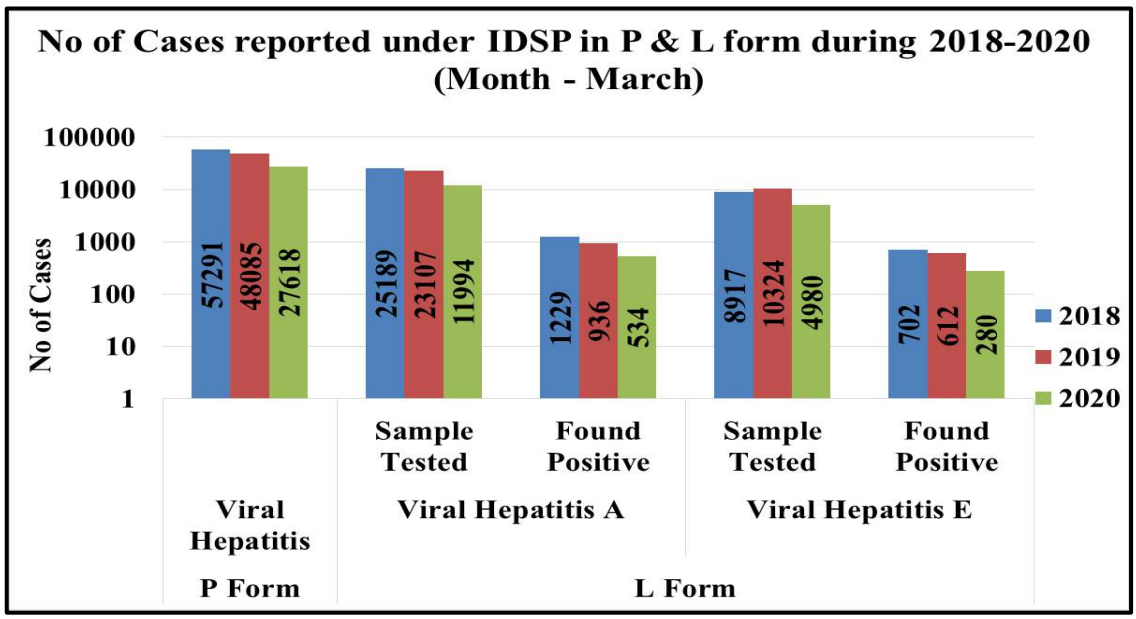


Fig 12: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during March 2018 - 2020



As shown in Fig 4, the number of presumptive Viral Hepatitis cases was 57291 in March 2018, 48085 in March 2019 and 27618 in March 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 March 2018; 25189 samples were tested out of which 1229 were found positive. In March 2019 out of 23107 samples, 936 were found to be positive and in March 2020, out of 11994 samples, 534 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 4.88%, 4.05% and 4.45% in March month of 2018, 2019 & 2020 respectively.

As reported in L form for Viral Hepatitis E, in March 2018; 8917 samples were tested out of which 702 were found positive. In March 2019; out of 10324 samples, 612 were found to be positive and in March 2020, out of 4980 samples, 280 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 7.87%, 5.93% and 5.62% in March month of 2018, 2019 & 2020 respectively.

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Fig 13: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for March 2020

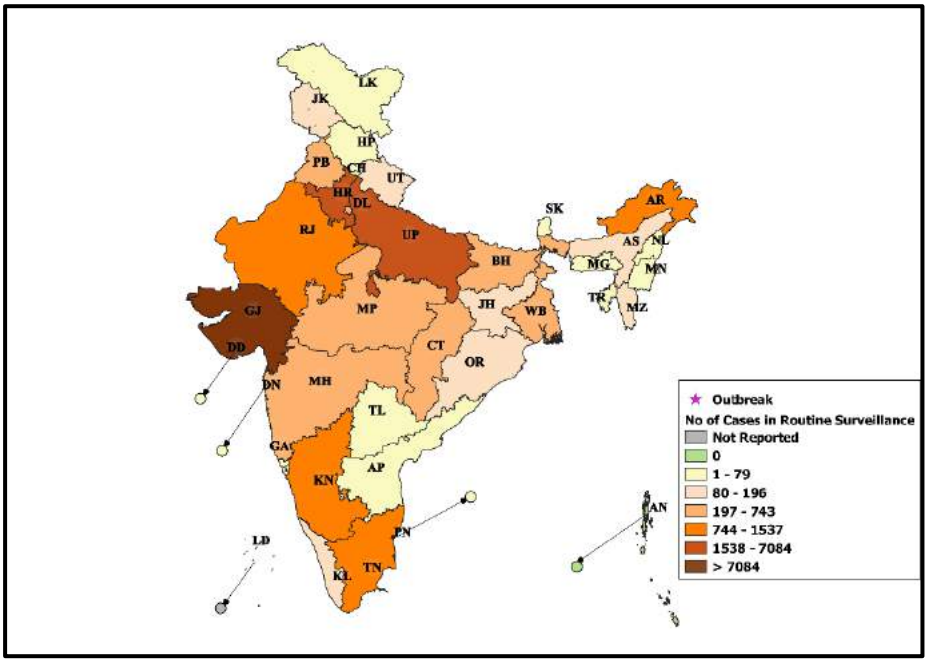

Fig 14: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for March 2020

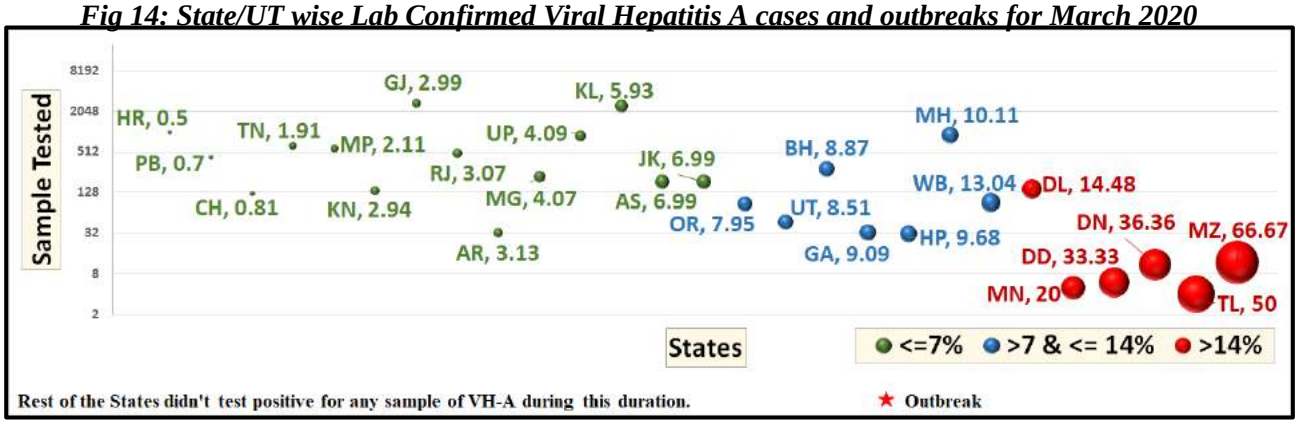

Fig 15: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for March 2020

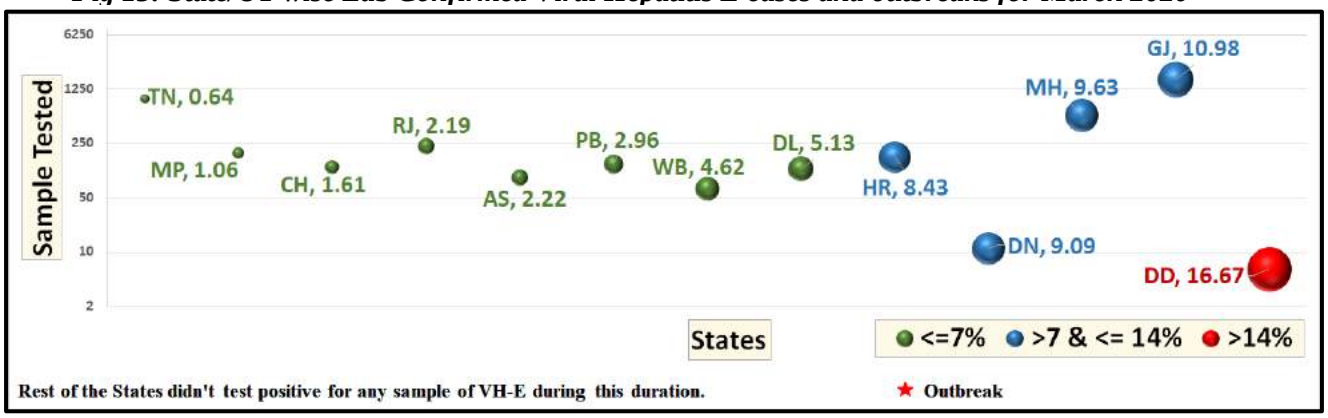

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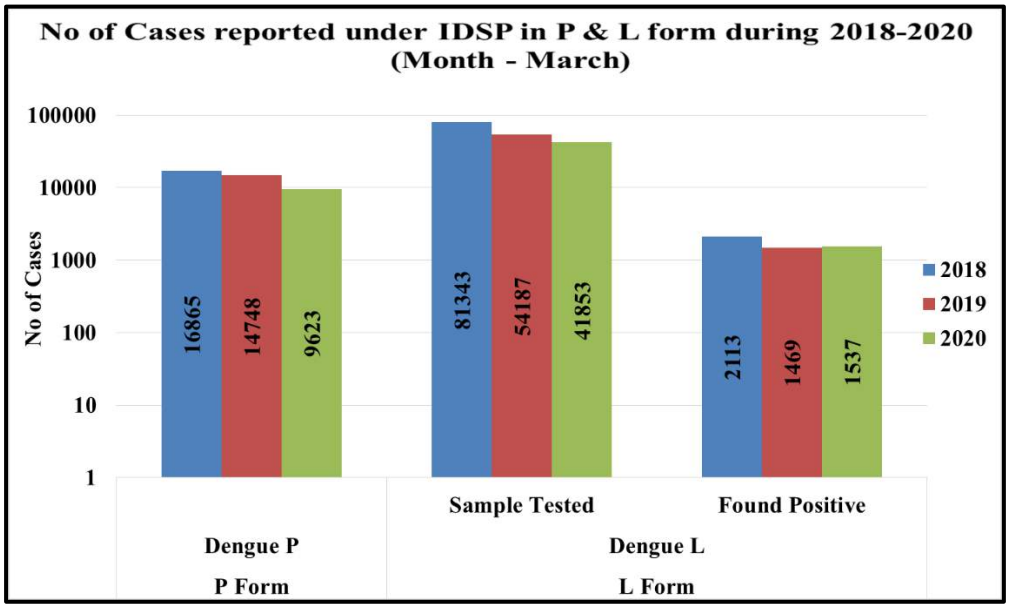
Fig 16: No. of Dengue Cases reported under IDSP in P & L form during March 2018 - 2020



As shown in Fig 5, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 16865 in March 2018; 14748 in March 2019 and 9623 in March 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in March 2018; 81343 samples were tested for Dengue, out of which 2113 were found positive. In March 2019; out of 54187 samples, 1469 were found to be positive and in March 2020, out of 41853 samples, 1537 were found to be positive.

Sample positivity of samples tested for Dengue has been 2.60%, 2.71% and 3.67% in March month of 2018, 2019 & 2020 respectively.

Fig 17: State/UT wise Presumptive Dengue cases and outbreaks for March 2020

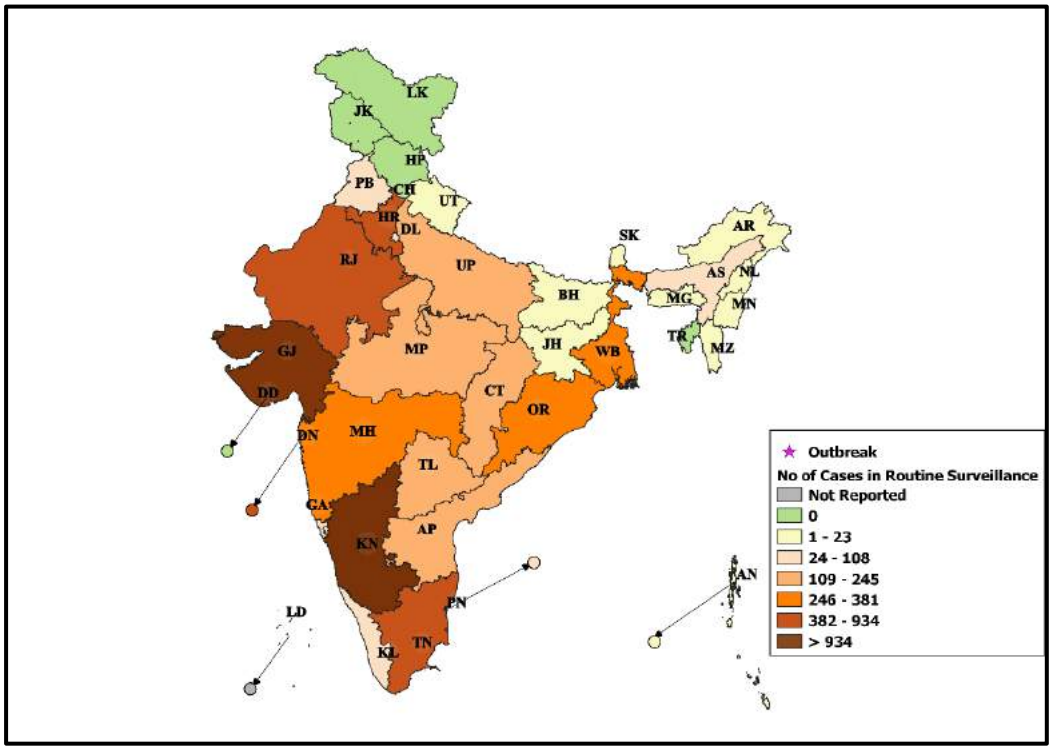


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Fig 18: State/UT wise Lab Confirmed Dengue cases and outbreaks for March 2020

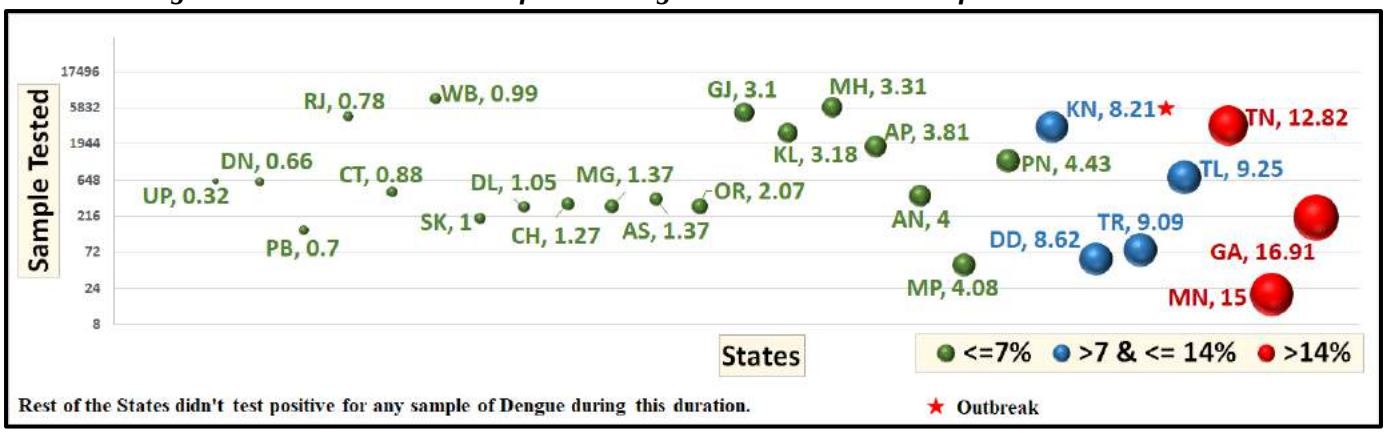
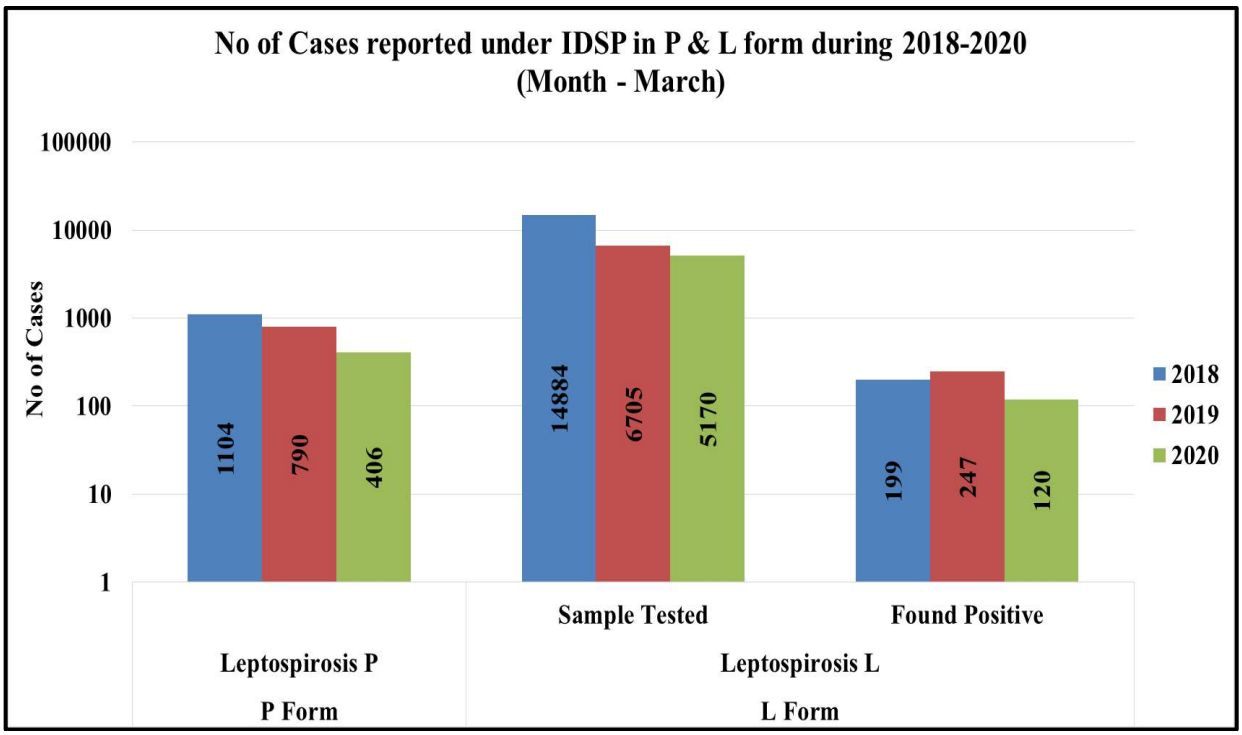


Fig 19: No. of Leptospirosis Cases reported under IDSP in P & L form during March 2018 – 2020



As shown in Fig 6, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 1104 in March 2018; 790 in March 2019 and 406 in March 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in March 2018; 14884 samples were tested for Leptospirosis, out of which 199 were found positive. In March 2019; out of 6705 samples, 247 were found to be positive and in March 2020, out of 5170 samples, 120 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 1.34%, 3.68% and 2.32% in March month of 2018, 2019 & 2020 respectively.

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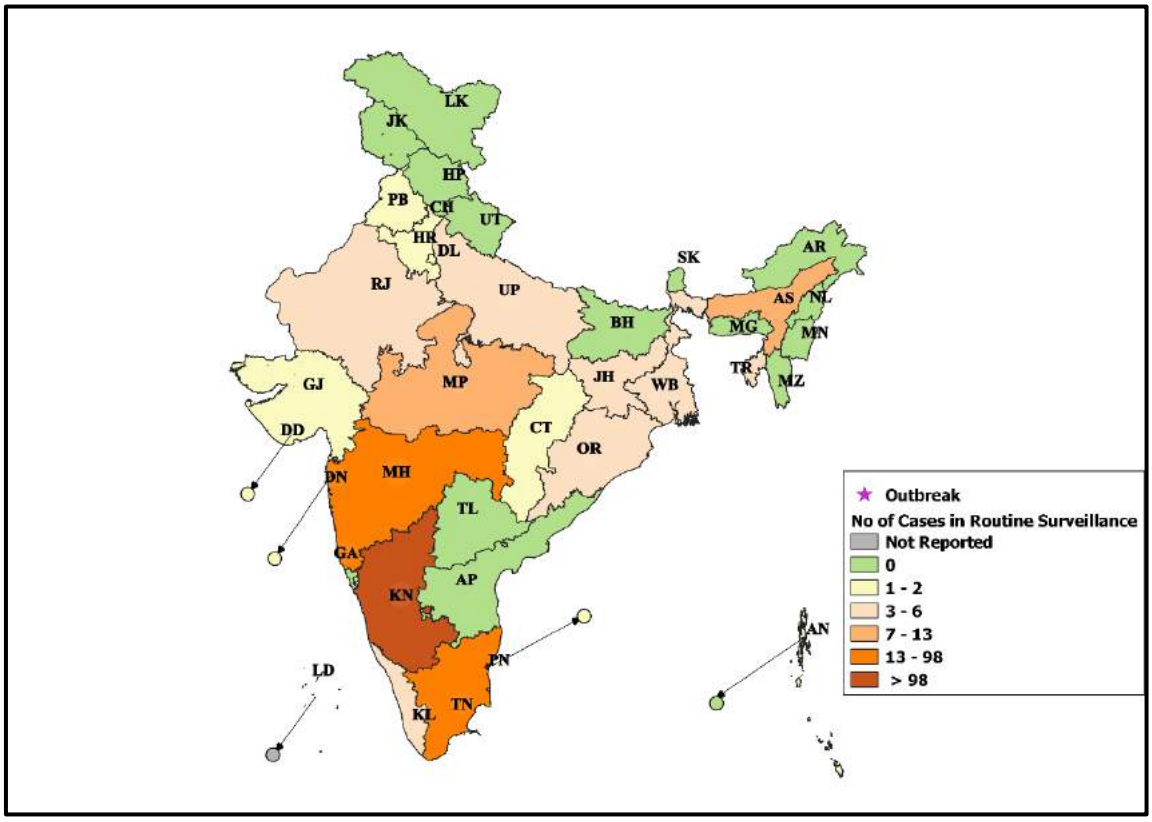

Fig 20: State/UT wise Presumptive Leptospirosis cases and outbreaks for March 2020

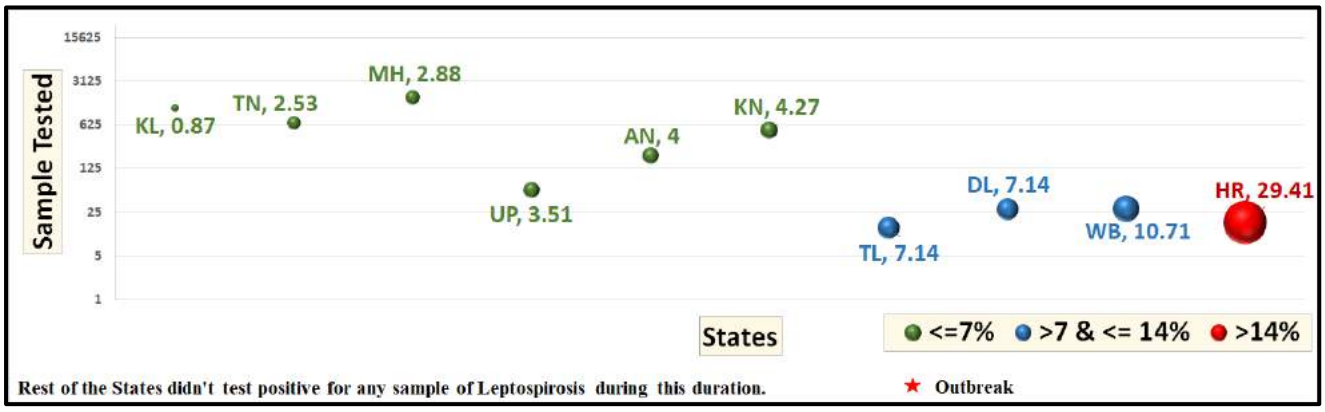

Fig 21: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for March 2020

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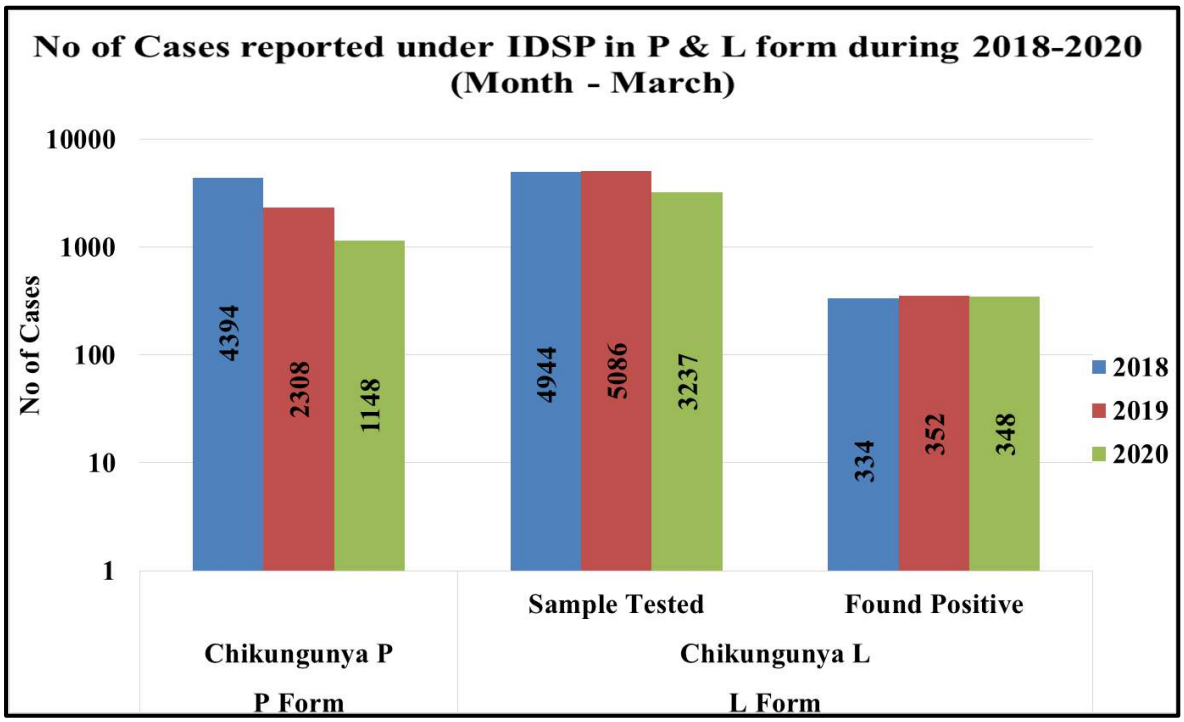
Fig. 22: No. of Chikungunya Cases reported under IDSP in P & L form during March 2018 - 2020



As shown in Fig 7, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 4394 in March 2018; 2308 in March 2019 and 1148 in March 2020. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in March 2018; 4944 samples were tested for Chikungunya, out of which 334 were found positive. In March 2019; out of 5086 samples, 352 were found to be positive and in March 2020, out of 3237 samples, 348 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 7.00%, 6.92% and 10.75% in March month of 2018, 2019 & 2020 respectively..

Fig 23: State/UT wise Presumptive Chikungunya cases and outbreaks for March 2020

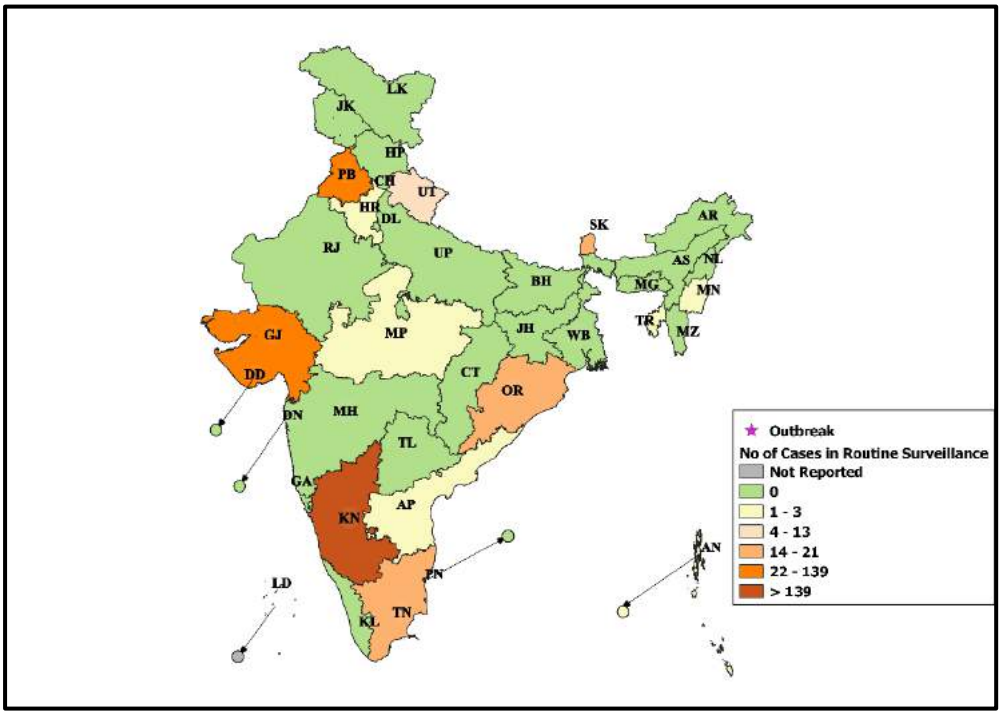


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Fig 24: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for March 2020

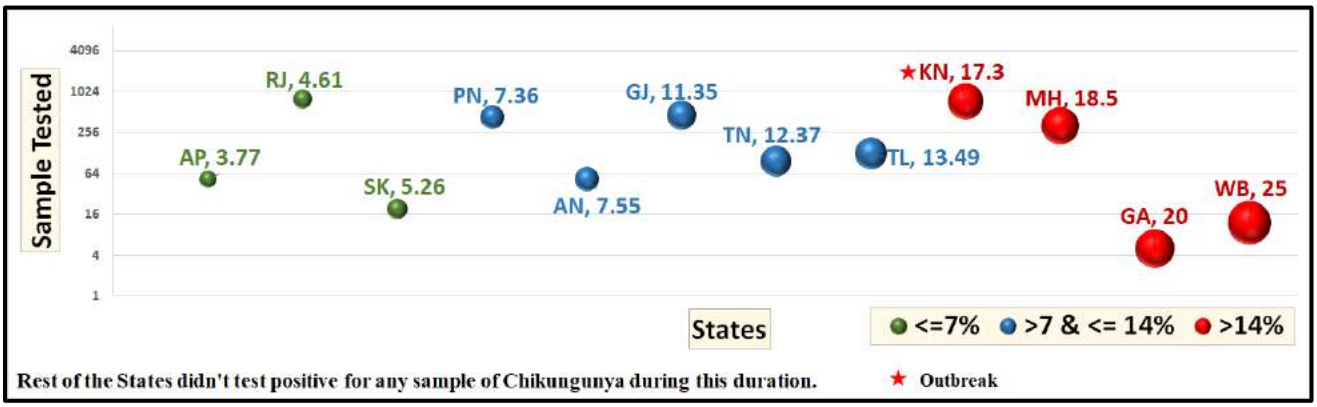
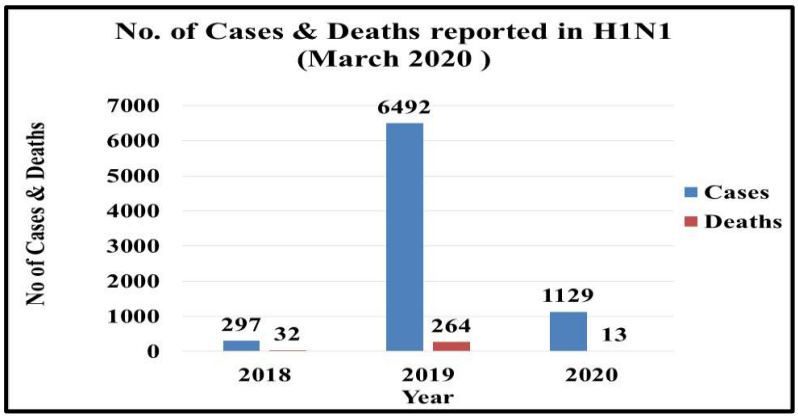


Fig 25: H1N1 cases reported under IDSP in L Form during 2018-2020 in March 2020



As shown in Fig.8, as reported in L form, in March 2018, there were 297 cases and 32 deaths. In March 2019, there were 6492 cases and 264 deaths; and in March 2020, there were 1129 cases and 13 deaths.

Case fatality rate for H1N1 were 10.77%, 4.07% and 1.15% in March month of 2018, 2019 & 2020 respectively.

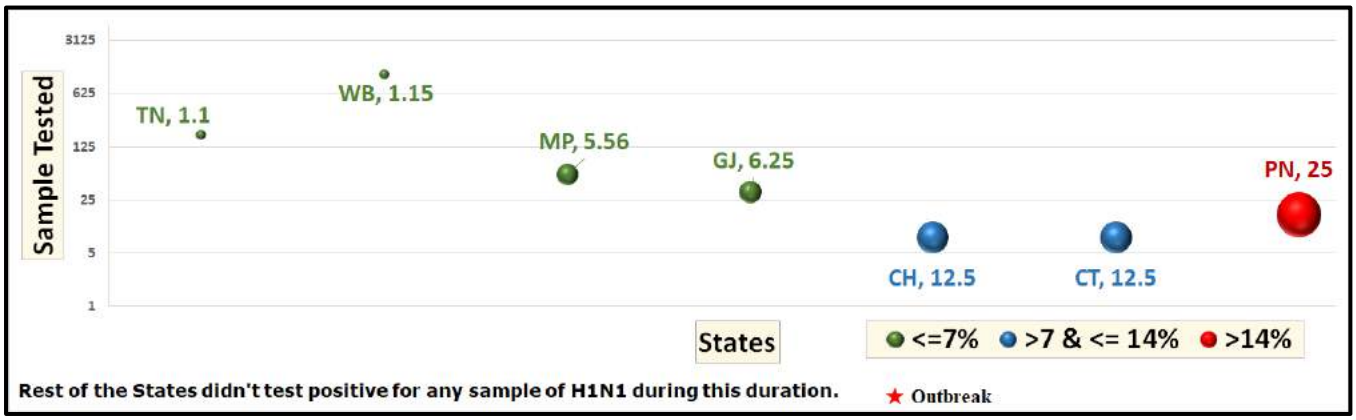


Fig 26: State/UT wise H1N1 cases and outbreaks for March 2020

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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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