1500276/2019/O/O NCDC

Issue - 4 Vol. 4

Disease Alert
प्रकोप चेतावनी

A monthly Surveillance Report from Integrated Disease Surveillance Programme
National Health Mission

April 2019

Inside

Chikungunya Outbreak Report from Devarakadra Mandal, Mahabubnagar District, Telangana

Background

Increased number of fever cases were reported from Gaddegudem Village, Subcenter Venkataipally, P.H.C & Mandal Devarakadra, Mahabubnagar District on 30th March' 2019 in morning.

In response, District DSU immediately dispatched a DEIT team to investigate the outbreak on 1st April. The DEIT team commenced outbreak investigations in the affected areas. A thorough epidemiological, entomological and environmental investigations were undertaken. This included detailed interview with treating medical officers and affected patients.

Details of Investigation

On interviewing medical officers, paramedical staff and affected cases, following points were found:-

1. Increased number of patients with complaints of fever, body pains, sudden onset of joint pains and joint swellings started presenting to P.H.C Devarakadra.
2. A medical camp had been organized at the Community Hall in Gaddegudem Village and patients were treated in the facility.

Fig. 1: Investigation of Patients at P.H.C Devarakadra, Mahabubnagar District, Telangana

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Descriptive Epidemiology

The date-wise breakup of 46 cases reported to PHC and medical camp is as follows

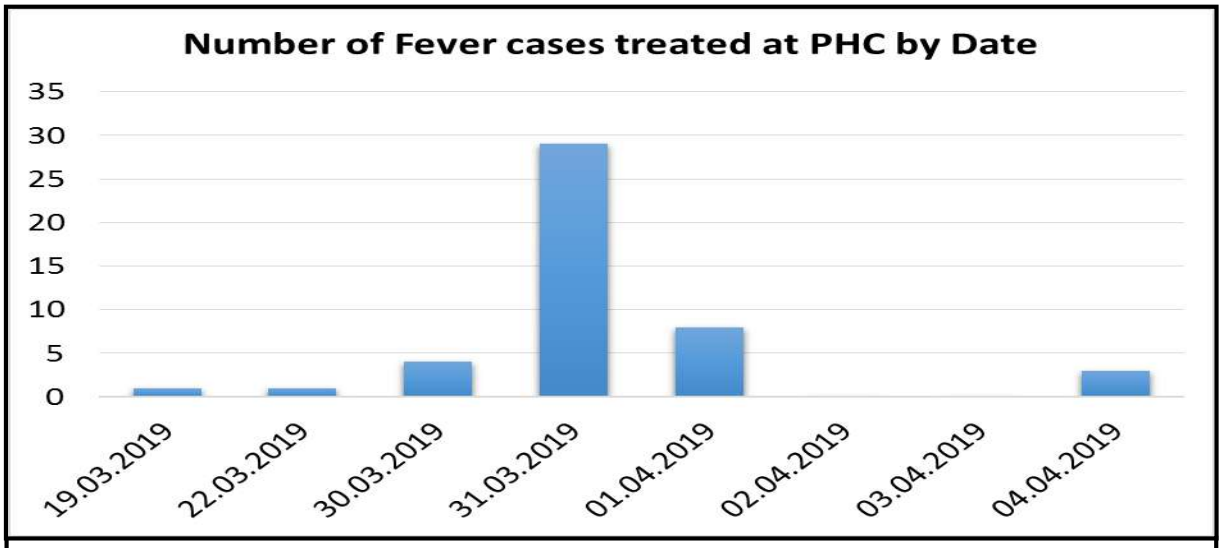


Fig. 2: Date Wise Distribution of Cases at Devarakadra, Mahabubnagar District, Telangana

As it is clear, maximum number of cases were reported in 31st March (63.04%). Nearly 91% of cases fall in 3 days, preceding & succeeding this date. Afterwards, the number of cases came down sharply perhaps due to institution of timely control measures.

Age & Sex wise distribution

The age & sex-wise distribution of 46 cases was as follows:

Table 1: Age & Sex wise distribution of Chikungunya Cases at Devarakadra, Mahabubnagar District, Telangana

Age Groups	Male	Female
0-20	0	3
>20-35	2	6
>36-50	3	7
>50-65	7	12
>65	3	3
Total	15 (33%)	31 (66%)

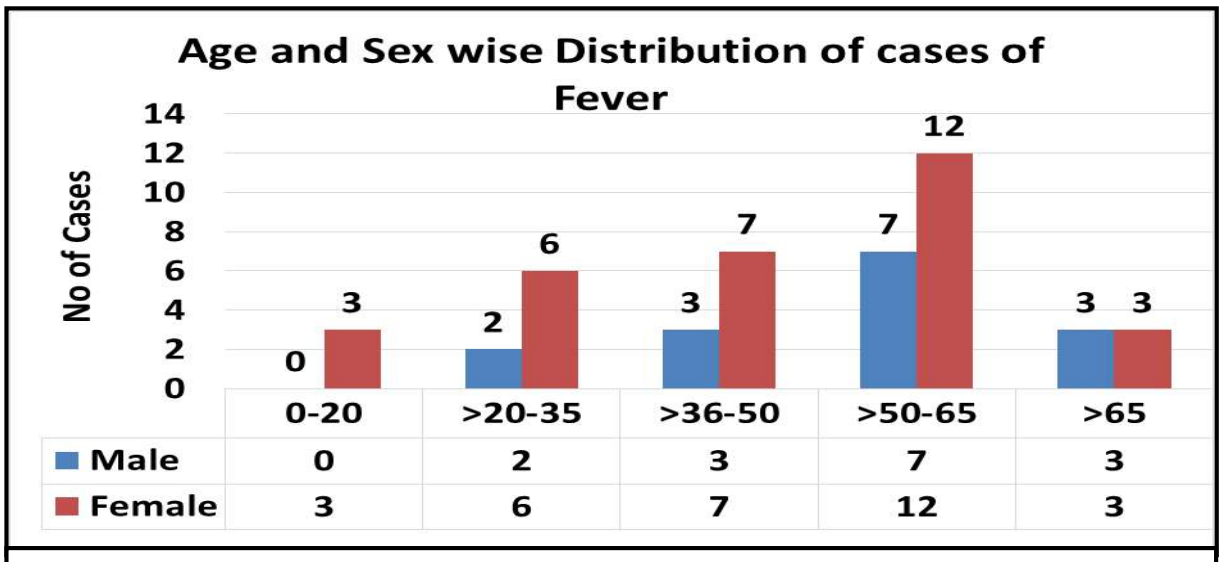


Fig. 3: Age & Sex wise distribution of Chikungunya Cases at Devarakadra, Mahabubnagar District, Telangana

Entomological Investigations

1. Active search conducted for mosquito breeding places in the village. The survey identified Aedes larva in 85 water sources in 151 houses.
2. Mosquito breeding was found in old bottles, containers and plastic in dumping sites. In addition to Aedes, other species of mosquito laevae were also present.

Fig. 4: Entomological investigations at Devarakadra, Mahabubnagar District, Telangana

Details of Laboratory Investigations

A total of 32 blood smears were taken for smear examination for malaria. In addition, 14 blood samples were collected for serological investigations for Dengue and Chikungunya. The samples were tested at Dist. Public Health Lab (IDSP), Mahabubnagar.

- Out of 14 samples tested, 6 were found positive for Chikungunya by IgM ELISA.
- All 14 samples tested negative for Dengue by IgM ELISA.
- The smear samples tested negative for malaria

Control Measures Taken

1. Medical camp continued from 31st March onwards till the end of epidemic.
2. **Anti Larval Operations** were done on successive days from 31st March to 2nd April. 151 Houses checked in which 85 sources found positive for Aedes breeding. All containers were removed, thoroughly cleaned and treated with abate.
3. **Pyrethrum** sprayed in all affected houses.
4. **Pot Chlorination** was done house to house.
5. **Fogging** was carried out.
6. **Health education** was given to affected population. It was emphasized to maintain the personal hygiene, in and around the surroundings and to clean the water containers once in a weekBCC activities done

Conclusions

It was concluded by DEIT that this was a Chikungunya outbreak in Gaddegudem Village, P.H.C & Mandal Devarakadra.

Fig. 5: General cleanliness drive being undertaken by the DEITat Devarakadra, Mahabubnagar District, Telangana

Recommendations

1. Reduce natural and man-made water containers where breeding of mosquitos may happen. Villagers were asked to empty the water containers regularly and store them upside down.
2. Regular drainage of water coolers to be done (at least once a week).
3. Fogging activities to be undertaken on a regular basis.
4. Measures should be undertaken to minimize mosquito bites by use of nets, repellents etc.
5. Long sleeved shirts and pants should be worn by men & children when going outside or to schools.
6. People should contact healthcare providers on developing fever, bodyache, muscle & joint pains etc. immediately.

Surveillance data of Enteric Fever, Acute Diarrhoeal Disease, Viral Hepatitis A & E, Dengue Leptospirosis, Dengue, Chikungunya, Leptospirosis and Seasonal Influenza A (H1N1) During April 2017 - 2019*

* Data extracted from IDSP Portal (www.idsp.nic.in) as on September 09, 2019.

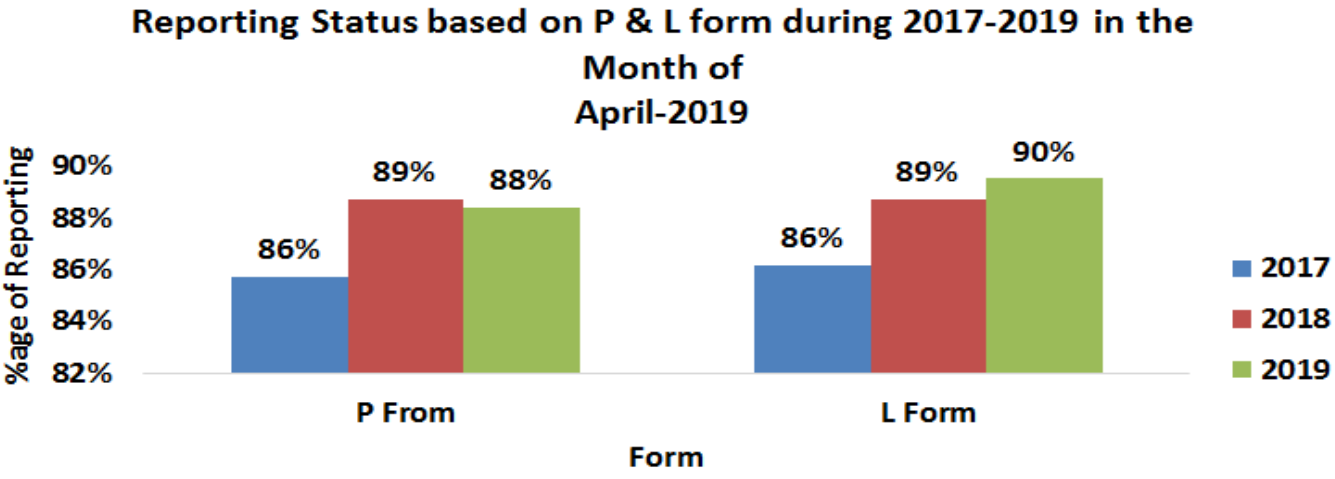


Fig. 6: RU wise reporting based on P & L form during April 2017 - 2019

As shown in Fig 6, in April 2017, 2018 and 2019, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 86%, 89% and 88% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 86%, 89% and 90% 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 7: State/UT wise P form completeness % for April 2019

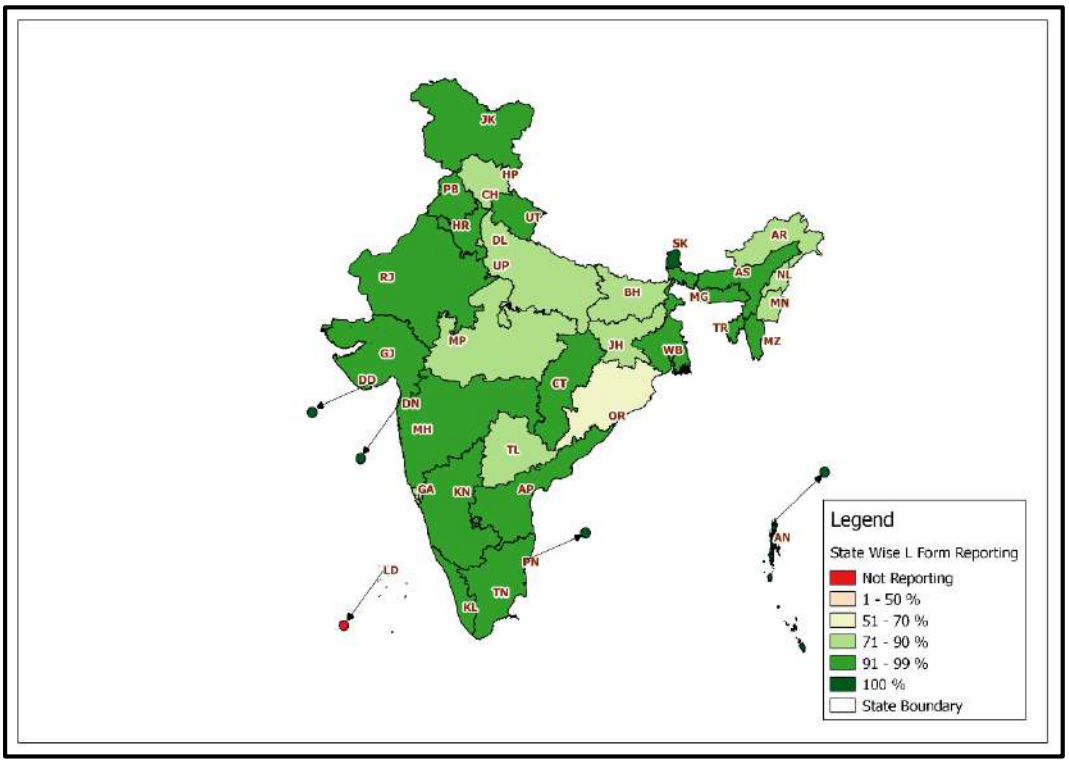
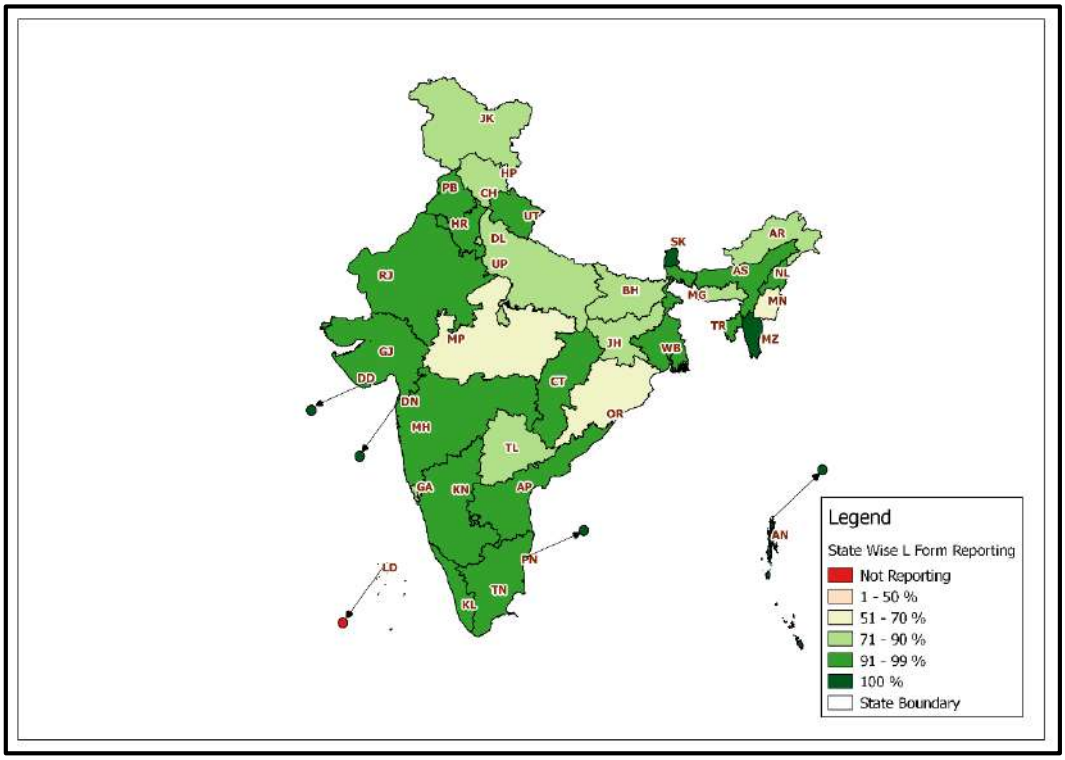


Fig 8: State/UT wise L form completeness % for April 2019



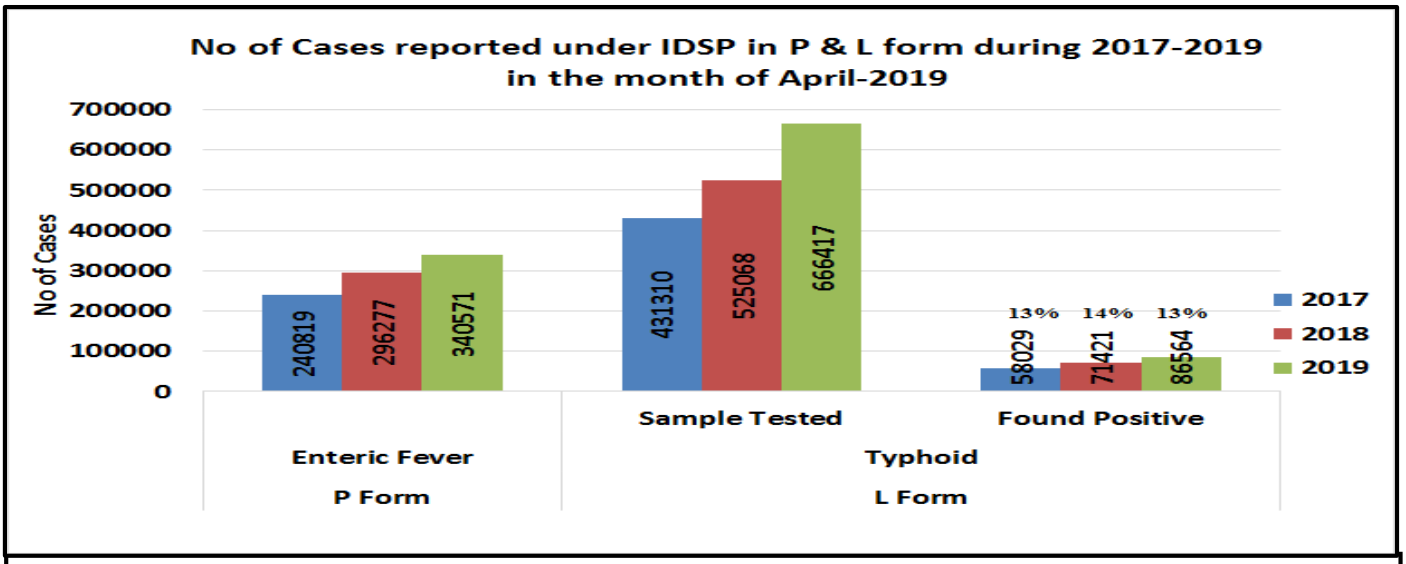


Fig. 9 No. of Enteric Fever Cases reported under P & L form during April 2017 - 2019

As shown in Fig 9, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 240819 in April 2017; 296277 in April 2018 and 340571 in April 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2017; 431310 samples were tested for Typhoid, out of which 58029 were found positive. In April 2018; out of 525068 samples, 71421 were found to be positive and in April 2019, out of 666417 samples, 86564 were found to be positive.

Sample positivity has been 13.45%, 13.60% and 13.00% in April month of 2017, 2018 & 2019 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 10: State/UT wise Presumptive Enteric fever cases and outbreaks for April 2019

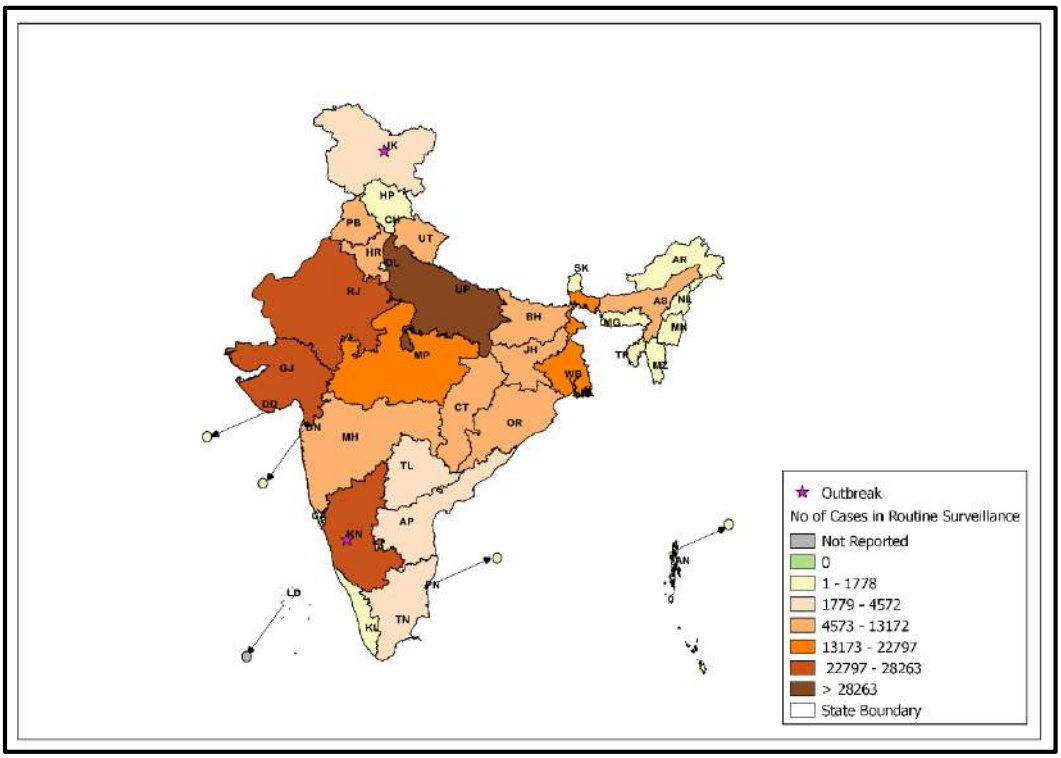
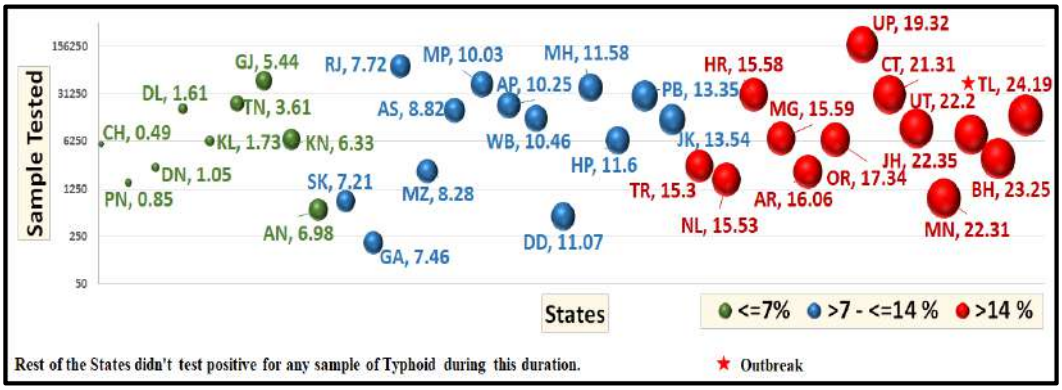


Fig 11: State/UT wise Lab Confirmed Typhoid cases and outbreaks for April 2019



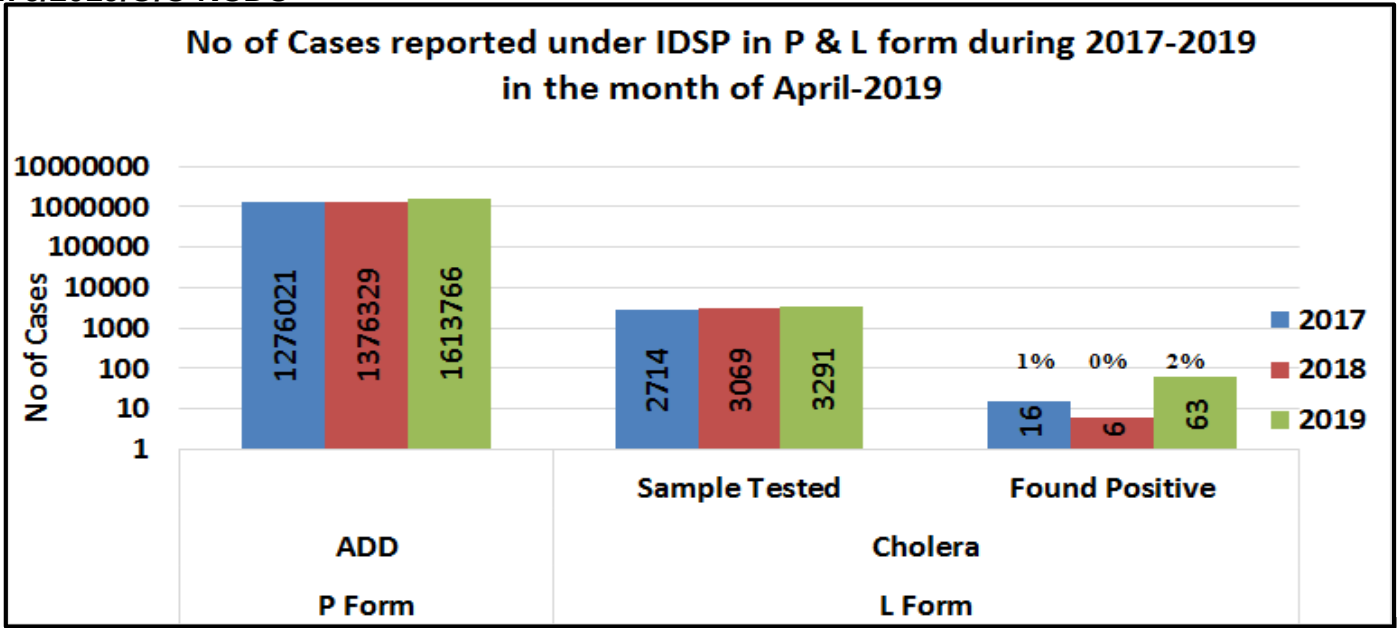


Fig. 12 No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during April 2017 - 2019

As shown in Fig 12, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1276021 in April 2017; 1376329 in April 2018 and 1613766 in April 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2017, 2714 samples were tested for Cholera out of which 16 tested positive; in April 2018, out of 3069 samples, 6 tested positive for Cholera and in April 2019, out of 3291 samples, 63 tested positive.

Sample positivity of samples tested for Cholera has been 0.58%, 0.19% and 1.91% in April month of 2017, 2018 & 2019 respectively.

Fig 13: State/UT wise Presumptive ADD cases and outbreaks for April 2019

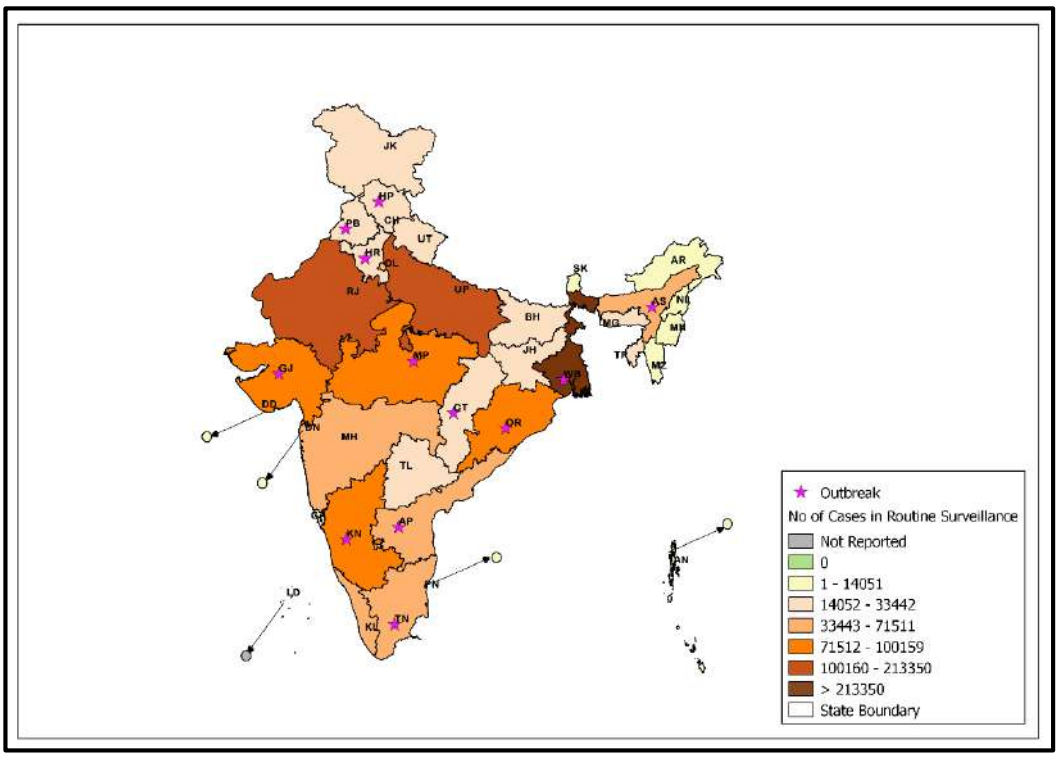
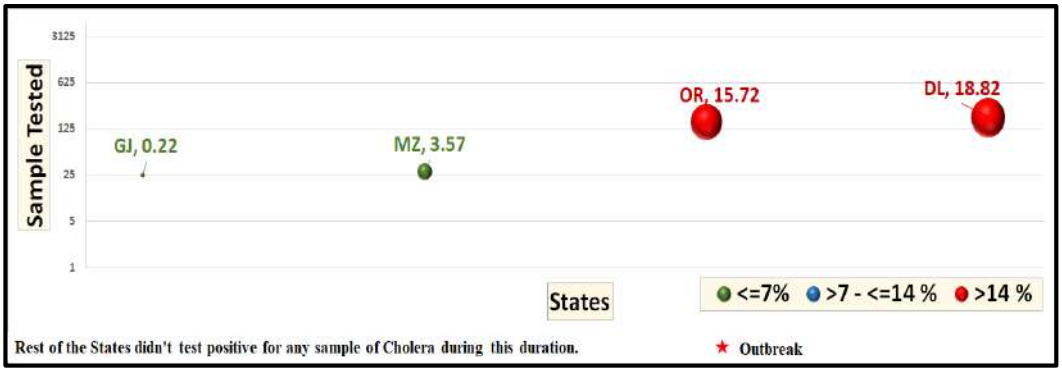


Fig 14: State/UT wise Lab Confirmed Cholera cases and outbreaks for April 2019



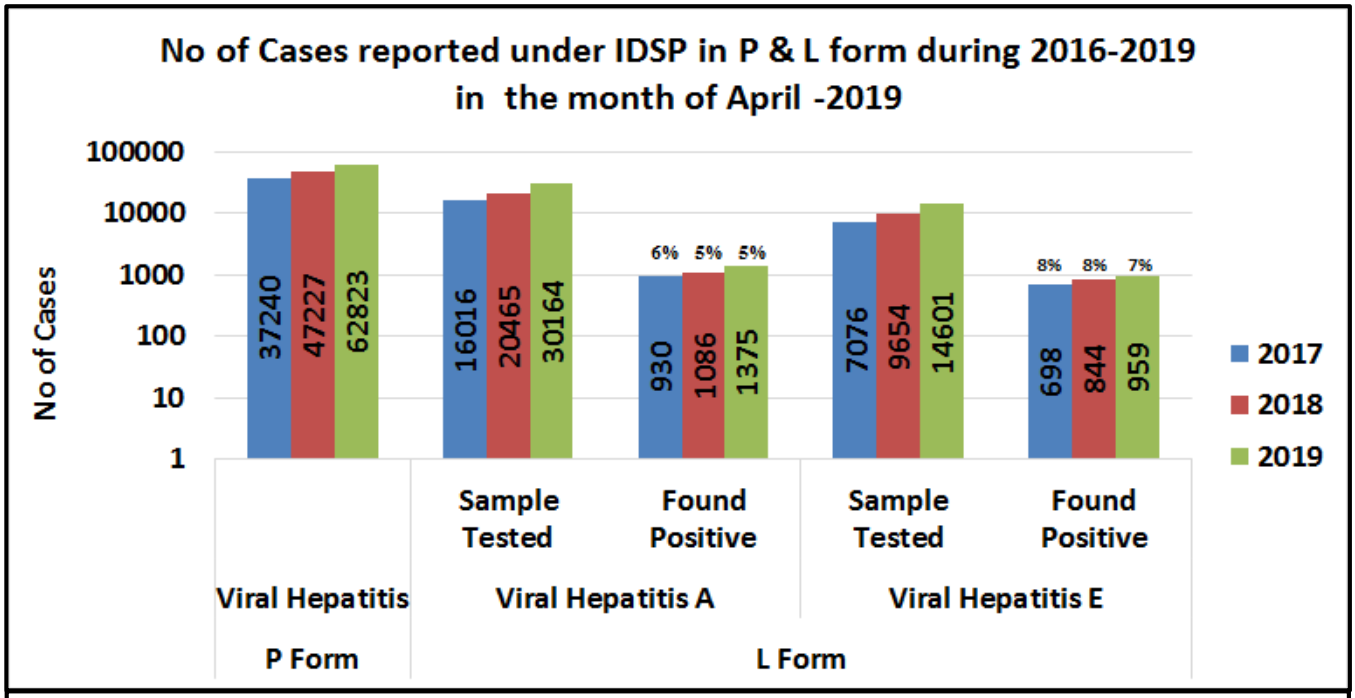


Fig 15: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during April 2017 - 2019

As shown in Fig 15, the number of presumptive Viral Hepatitis cases was 37240 in April 2017, 47227 in April 2018 and 62823 in April 2019. 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 2017; 16016 samples were tested out of which 930 were found positive. In April 2018 out of 20465 samples, 1086 were found to be positive and in April 2019, out of 30164 samples, 1375 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 5.81%, 5.31% and 4.56% in April month of 2017, 2018 & 2019 respectively.

As reported in L form for Viral Hepatitis E, in April 2017; 7076 samples were tested out of which 698 were found positive. In April 2018; out of 9654 samples, 844 were found to be positive and in April 2019, out of 14601 samples, 959 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 9.86%, 8.74% and 6.57% in April month of 2017, 2018 & 2019 respectively.

Fig 16: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for April 2019

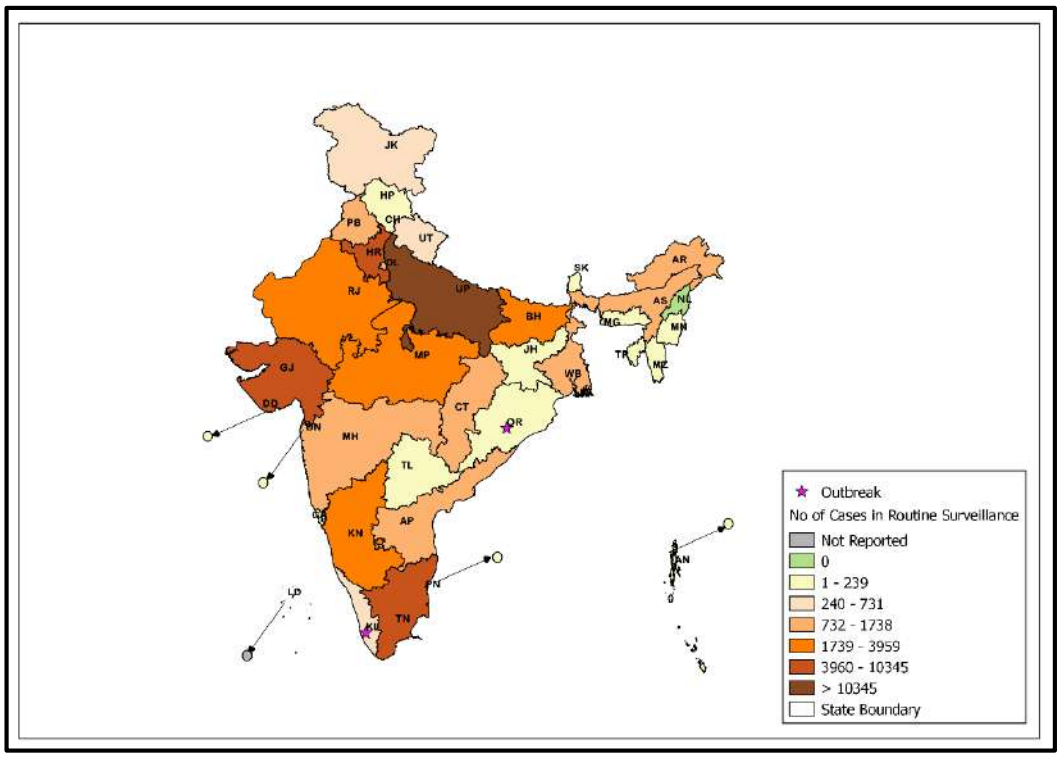


Fig 17: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for April 2019

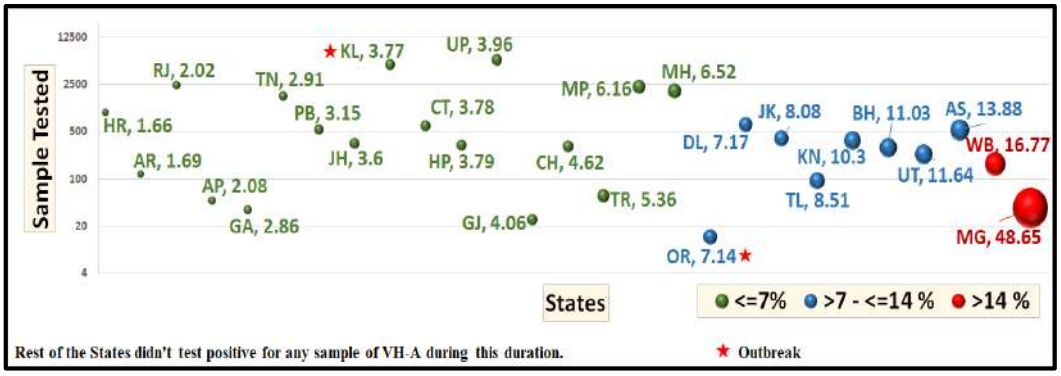
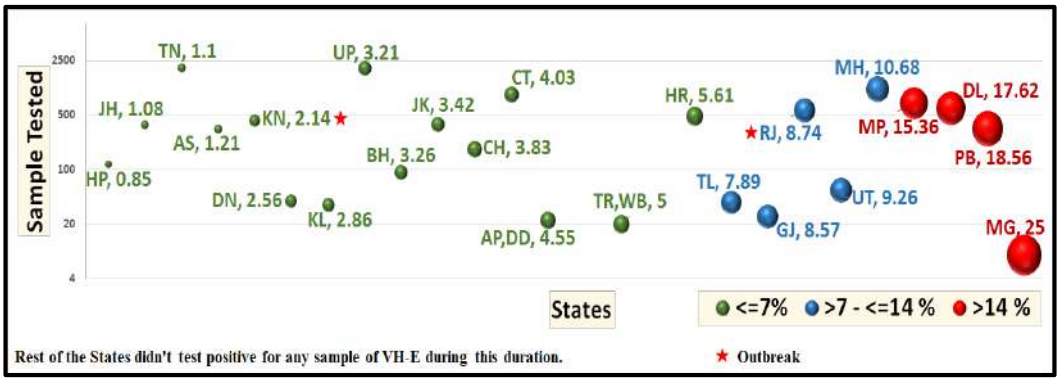


Fig 18: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for April 2019



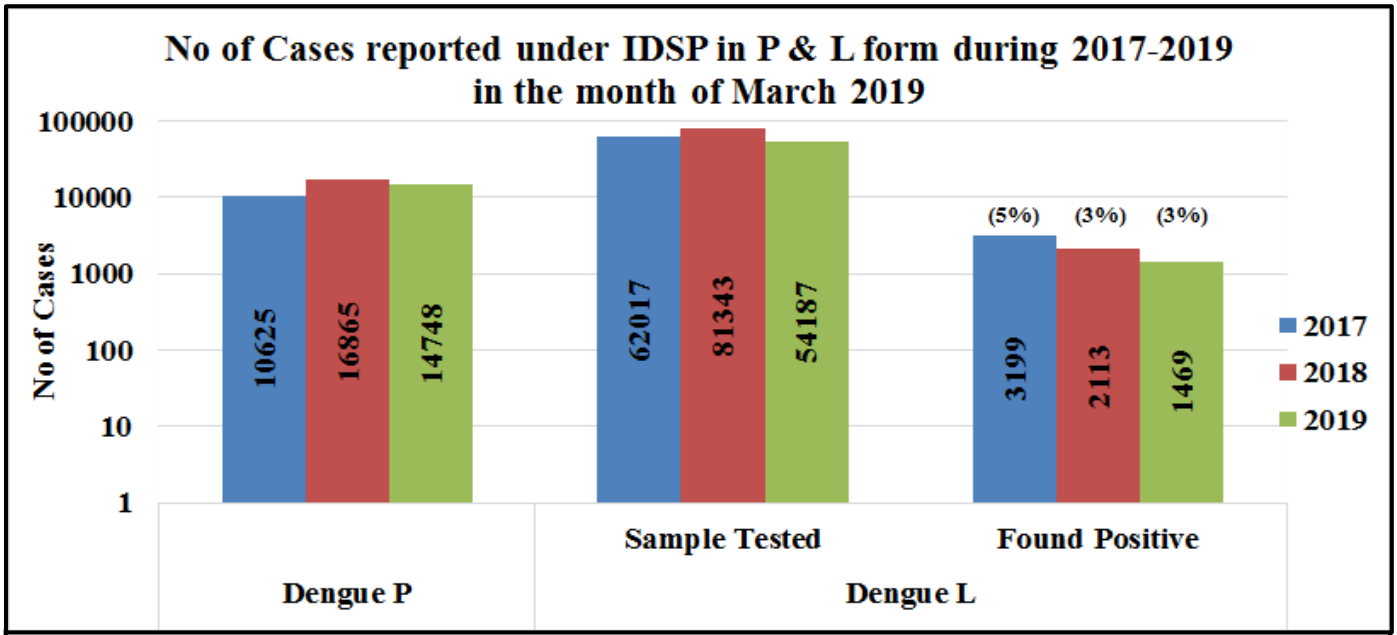


Fig 19: No. of Dengue Cases reported under IDSP in P & L form during April 2019

As shown in Fig 19, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 8941 in April 2017; 10305 in April 2018 and 17065 in April 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2017; 53729 samples were tested for Dengue, out of which 3704 were found positive. In April 2018; out of 55564 samples, 1643 were found to be positive and in April 2019, out of 63262 samples, 1936 were found to be positive.

Sample positivity of samples tested for Dengue has been 6.89%, 2.96% and 3.06% in April month of 2017, 2018 & 2019 respectively**.**

Fig 20: State/UT wise Presumptive Dengue cases and outbreaks for April 2019

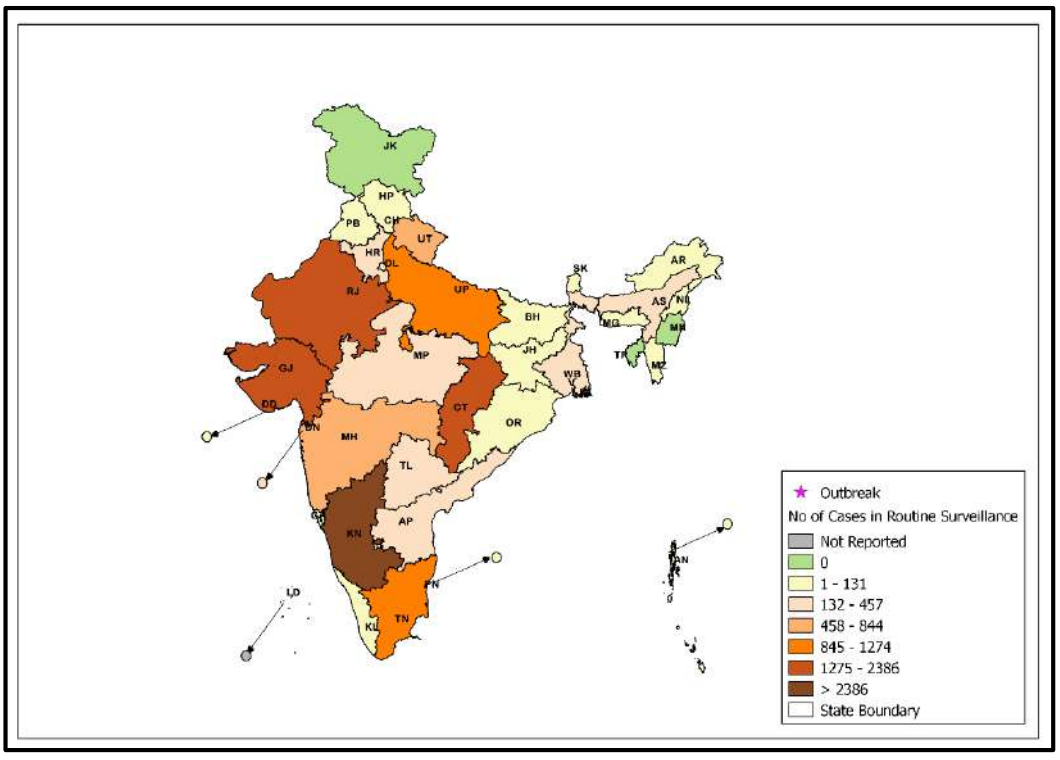
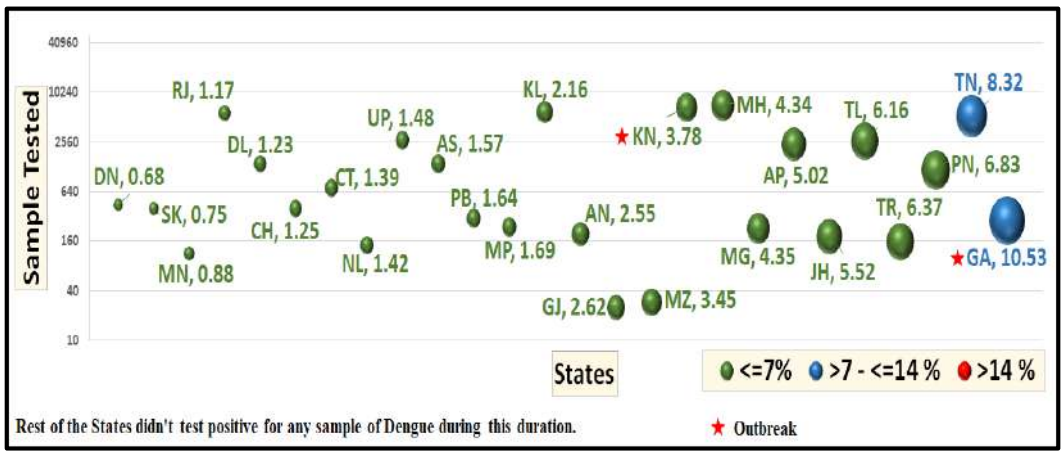


Fig 21: State/UT wise Lab Confirmed Dengue cases and outbreaks for April 2019



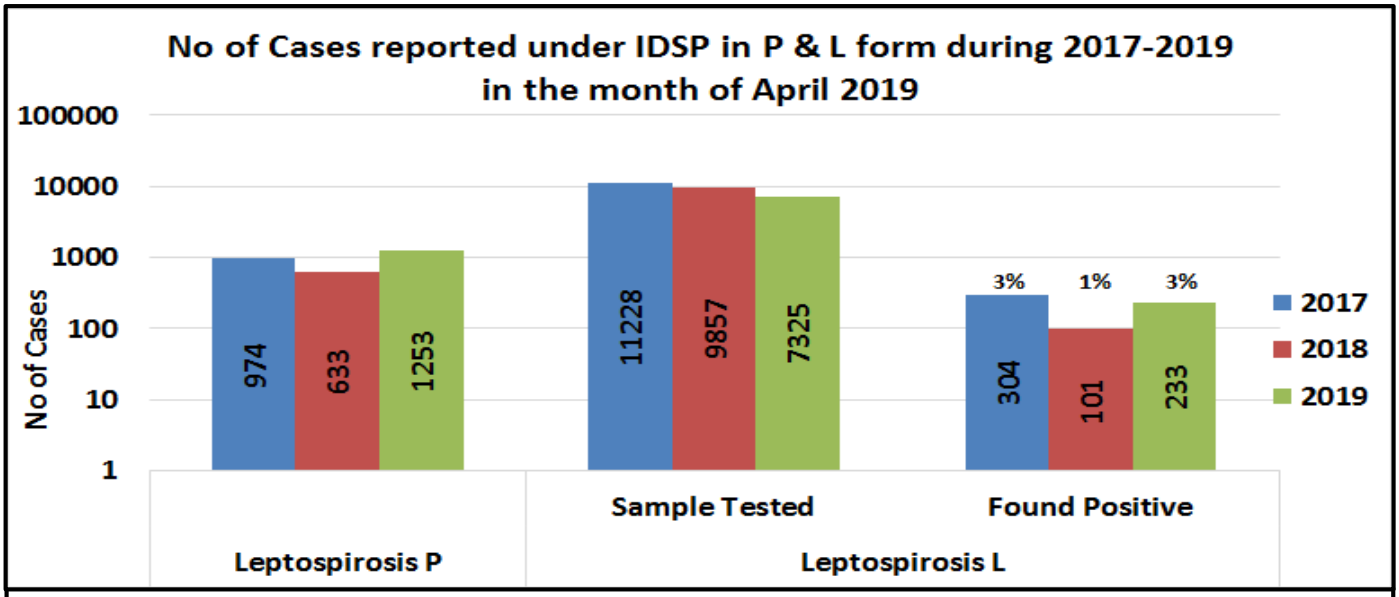


Fig 22: No. of Leptospirosis Cases reported under IDSP in P & L form during April 2016 – 2018

As shown in Fig 22, number of presumptive Leptospirosis cases, as reported by States/UTs in 'P' form was 974 in April 2017; 633 in April 2018 and 1253 in April 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2017; 11228 samples were tested for Leptospirosis, out of which 304 were found positive. In April 2018; out of 9857 samples, 101 were found to be positive and in April 2019, out of 7325 samples, 233 were found to be positive.

Sample positivity of samples tested for Dengue has been 2.70%, 1.02% and 3.18% in April month of 2017, 2018 & 2019 respectively.

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Fig 23: State/UT wise Presumptive Leptospirosis cases and outbreaks for April 2019

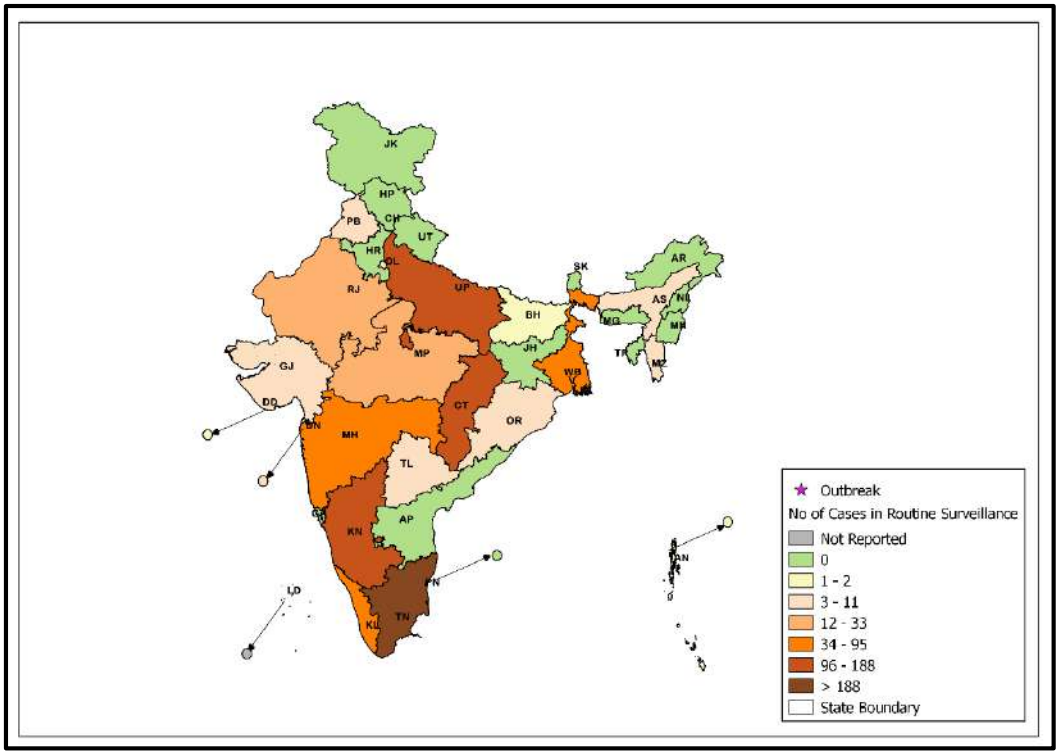
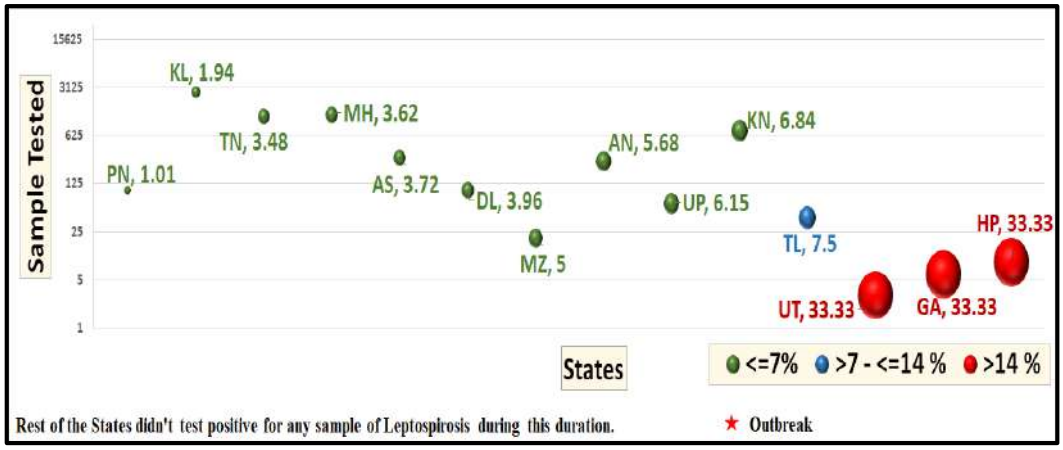


Fig 24: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for April 2019



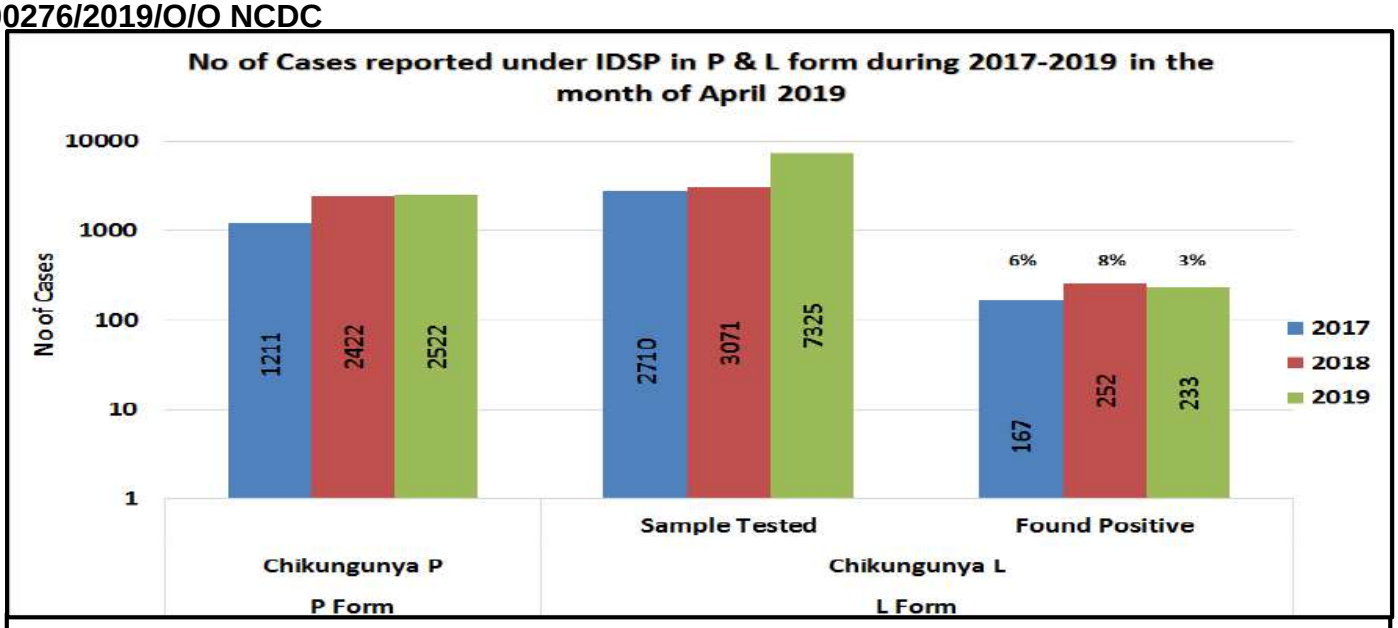


Fig. 25: No. of Chikungunya Cases reported under IDSP in P & L form during April 2017 - 2019

As shown in Fig 25, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 1211 in April 2017; 2422 in April 2018 and 2522 in April 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in April 2017; 2710 samples were tested for Chikungunya, out of which 167 were found positive. In April 2018; out of 3071 samples, 252 were found to be positive and in April 2019, out of 7325 samples, 233 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 6.16%, 8.20% and 3.18% in April month of 2017, 2018 & 2019 respectively.

Fig 26: State/UT wise Presumptive Chikungunya cases and outbreaks for April 2019

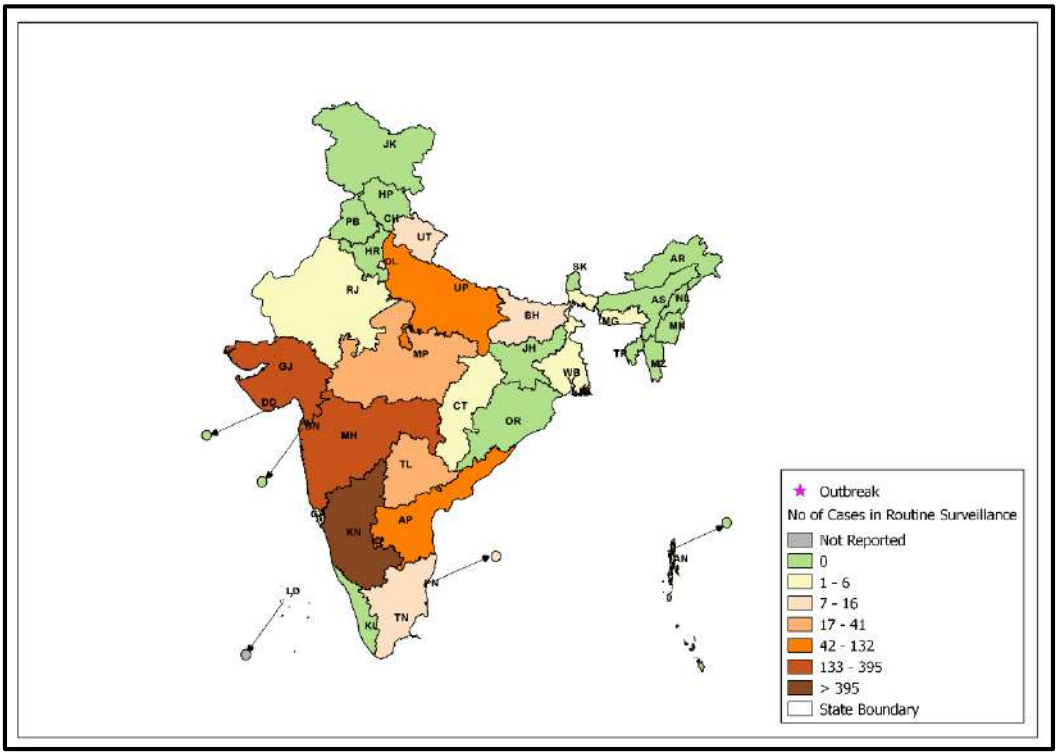


Fig 27: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for April 2019

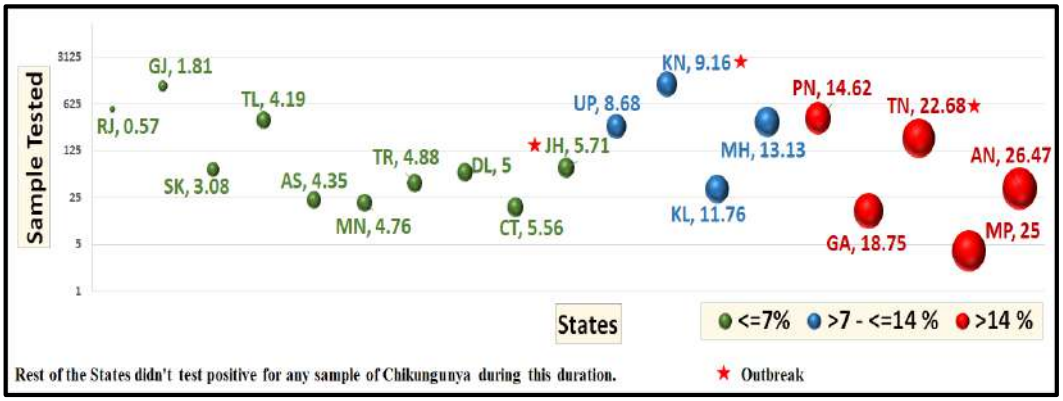
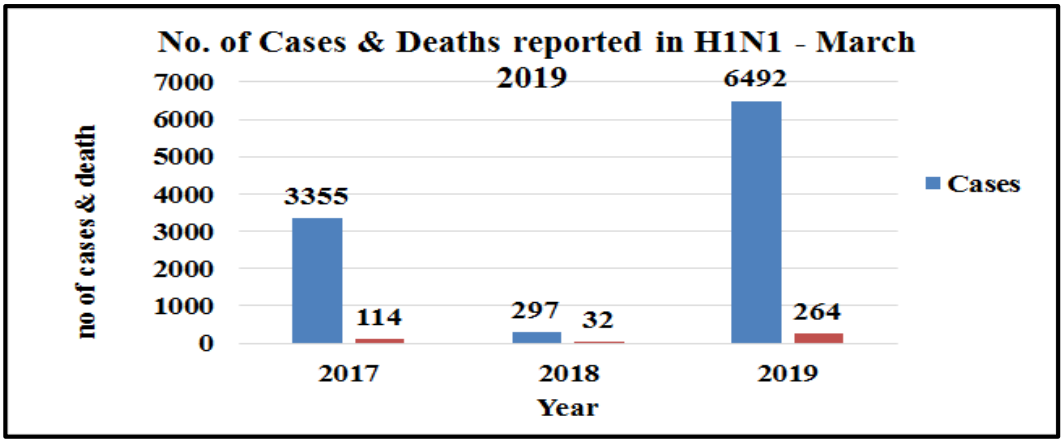


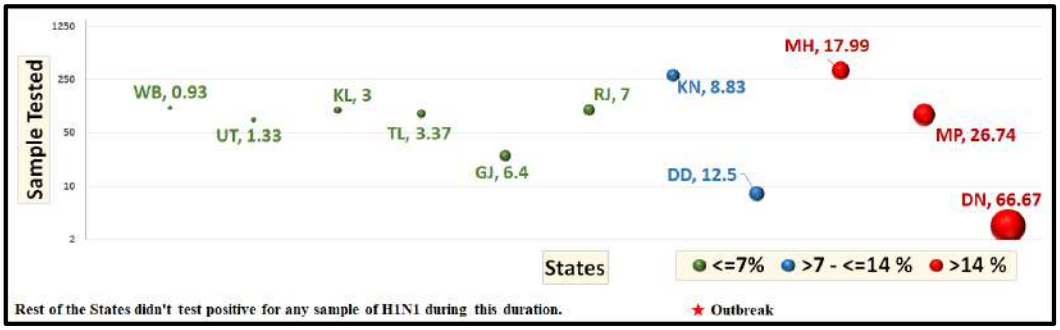
Fig 28: H1N1 cases reported under IDSP in L Form during 2017-2019 in April 2019



As reported in L form, in April 2017; there were 1861 cases and 130 deaths. In April 2018; there were 94 cases and 18 deaths and in April 2019, there were 1589 cases and 133 deaths.

Case fatality rate for H1N1 were 6.98%, 19.15% and 8.37% in April month of 2016, 2017 & 2018 respectively

Fig 29: State/UT wise H1N1 cases and outbreaks for April 2019



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.

Case definitions:

- **Enteric Fever: Presumptive**: The acute illness characterized by persistent high fever with any of the following clinical features: Headache, nausea, loss of appetite, toxic look, Constipation or sometimes diarrhoea, splenomegaly and/or significant titre in widal test.
  Confirmed: A case compatible with the clinical description of typhoid fever with confirmed positive culture (blood, bone marrow, stool, urine) of *S. typhi*/ S paratyphi.
- **ARI/ ILI:** An acute respiratory infection with fever of more than or equal to 38° C and cough; with onset within the last 10 days.
- **Acute Diarrheal Disease (Including Acute Gastroenteritis): Presumptive:** Passage of 3 or more loose watery stools (with or without vomiting) in the past 24 hours.
- **Confirmed Cholera**: A presumptive Acute Diarrheal case with Culture OR Polymerase chain reaction (PCR) test.
- **Viral Hepatitis**: **Presumptive**: 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 2.5mg/dl, AND more than tenfold rise in ALT/SGPT.
- **Lab Confirmed Hepatitis A:** A presumptive case with IgM antibodies to hepatitis A(anti HAV IgM) in serum/plasma.
- **Lab Confirmed Hepatitis E:** A presumptive case with IgM antibody to hepatitis E virus (anti HEV IgM) in serum/plasma.
- **Dengue**: **Presumptive**: Acute febrile illness of 2-7 days with any one of the following:
  - Nausea, vomiting, rash, headache, retro orbital pain, myalgia or arthralgia, or Non-ELISA based NS1 antigen/IgM positive. (RDT reports are considered as probable due to poor sensitivity and specificity of currently available RDTs).

  Lab Confirmed: 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.)

- **Leptospirosis Case Definition**: **Presumptive Leptospirosis**: A person having acute febrile illness with headache, myalgia and prostration associated with a history of exposure to infected animals or an environment contaminated with animal urine with:
  - Calf muscle tenderness
  - Conjunctival suffusion
  - Anuria or oliguria and/or proteinuria

- Jaundice
- Hemorrhagic manifestations
- Meningeal irritation
- Nausea, Vomiting, Abdominal pain, Diarrhoea

Lab Confirmed Leptospirosis: A presumptive case with -

- IgM ELISA positive OR
- Isolation of leptospires from clinical specimen OR
- Four fold or greater rise in the MAT titer between acute and convalescent phase serum specimens run in parallel OR
- PCR test

- **Chikungunya case definition: Presumptive Case Definition**: Any person:
  - With or without history of travel to or having left a known endemic area 15 days prior to the onset of symptoms AND Meeting the following clinical criteria:
  - Acute onset of fever
  - Arthralgia / arthritis
  - With or without skin rash.

Lab confirmed: A presumptive case with

- MAC ELISA- Presence of virus specific IgM antibodies in a single serum sample collected in acute or convalescent stage. Four-fold increase in IgG values in samples collected at least three weeks apart OR
- Virus isolation OR
- Presence of viral RNA by RT-PCR.

Acknowledgement:

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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

Prepared by: Central Surveillance Unit, IDSP under guidance of Director, NCDC