



Disease Alert

प्रकोप चेतावनी

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

October 2019

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CHOLERA OUTBREAK, BLOCK PHC PALDI, DISTRICT HOSHIARPUR, PUNJAB

BACKGROUND:

On 14th September, suspected cases of cholera were reported by Senior Medical Officer, Block PHC Paldi Hoshiarpur to IDSP Epidemiologist, Hoshiarpur. It was reported that 110 patients approached in medical camp set up in Bichhohi sub center having Acute Diarrhea. It was suspected that these patients may be suffering from Cholera. Ultimately, 123 suspected cholera cases were checked at the SC, out of which 11 were admitted in civil hospital, Hoshiarpur. One suspected death (5/F) was also reported.

On receiving the news, an RRT was formed consisting of DSU, IDSP staff, Health Inspector and other health staff.

INVESTIGATIONS UNDERTAKEN BY RRT:

The RRT visited the affected area and interviewed the affected patients, concerned MOs and SC staff. It was determined that the total population affected was about 4406 and number of houses was 752.

RRT, accompanied by executive engineer and SDO from municipal council also inspected the source of water supply and drainage system. During check breakage in water supply pipes was found in a few places.

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RRT was later joined by officials from State IDSP unit (State Epidemiologist and Microbiologist). The State team also noticed that water supply pipes had rusted and elsewhere open sewerage drains crossing the drinking water supply pipes were present.

The executive engineer and SDO informed that water supply in affected area was disconnected on 14th September for five days. During this time, water tankers were supplying chlorinated water in the affected areas.

Clinical Case Definition: RRT formed a case definition to identify all patients and form a chronology of events.

A suspected case of cholera was considered patients having the following symptoms –

- Frequent profuse watery stool/ rice watery stools.
- Vomiting
- Abdominal pain maybe present or absent.
- Muscle cramp after dehydration & shock symptoms etc.

LABORATORY DIAGNOSIS

- **Water Sample Test:** Total 08 water samples were collected from various parts of the affected areas and sent to the State public health lab. Kharar, Mohali. Out of them, 06 water samples were having bacteriological contamination.
- **Stool Sample Test:** Total 21 Stool samples were collected and sent to IDSP Microbiology Lab, Civil Hospital, Hoshiarpur. Out of them, 4 samples were confirmed positive for *Vibrio Cholerae*. Remaining 13 stools samples were found negative.

DESCRIPTIVE EPIDEMIOLOGY:

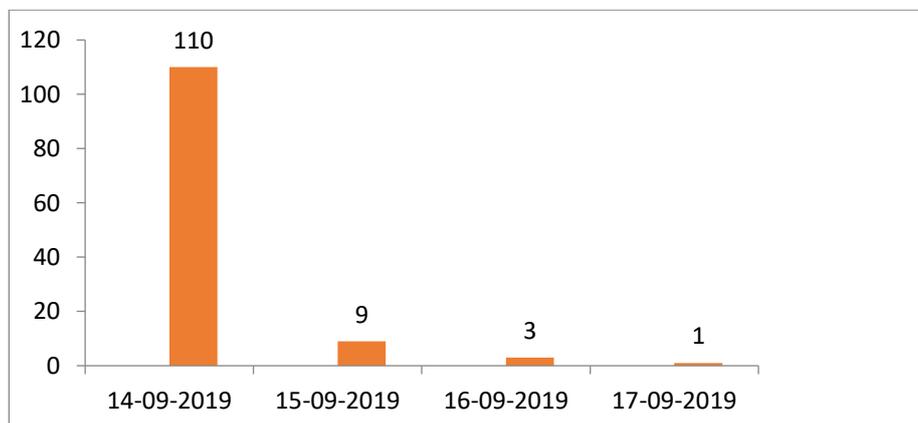
Based on investigation findings and lab results, it was clear that this is an outbreak of Cholera in the affected area. Analysis of data revealed the following aspects:-

Cases as per Person Distribution (w.r.t Age Groups)

<u>Regarding: Cholera Outbreak V.P.O:Bichhohi, Block PHC Paldi, Distt. Hoshiarpur 14.9.2019 to 19.9.2019</u>					
Date	No. of cases Till date	New Cases as on date	Cumulative Total	Admitted on date	Discharged on date
9/14/2019	0	110	110	4	0
9/15/2019	110	9	119	6	4
9/16/2019	119	3	122	2	3
9/17/2019	122	1	123	1	2
9/18/2019	123	0	123	0	4
9/19/2019	123	0	123	0	0
TOTAL	123	123	123	13	13

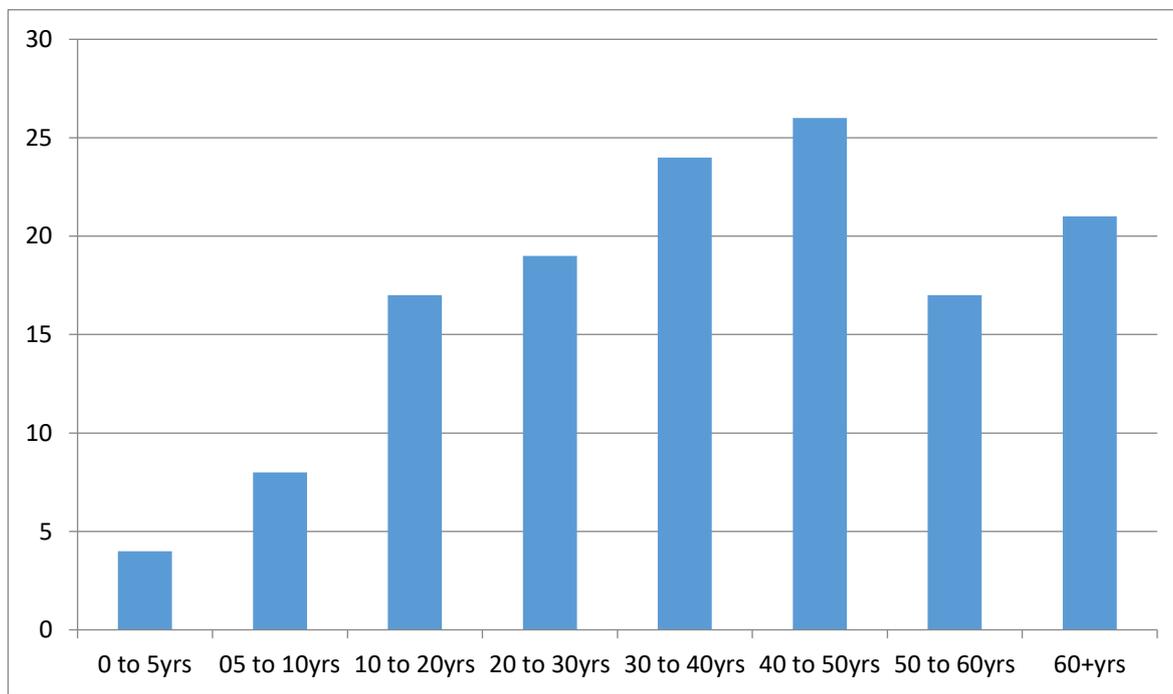
Date wise number of patients

Date	No. of cases
14-09-2019	110
15-09-2019	9
16-09-2019	3
17-09-2019	1
18-9-2019	0
19-9-2019	0



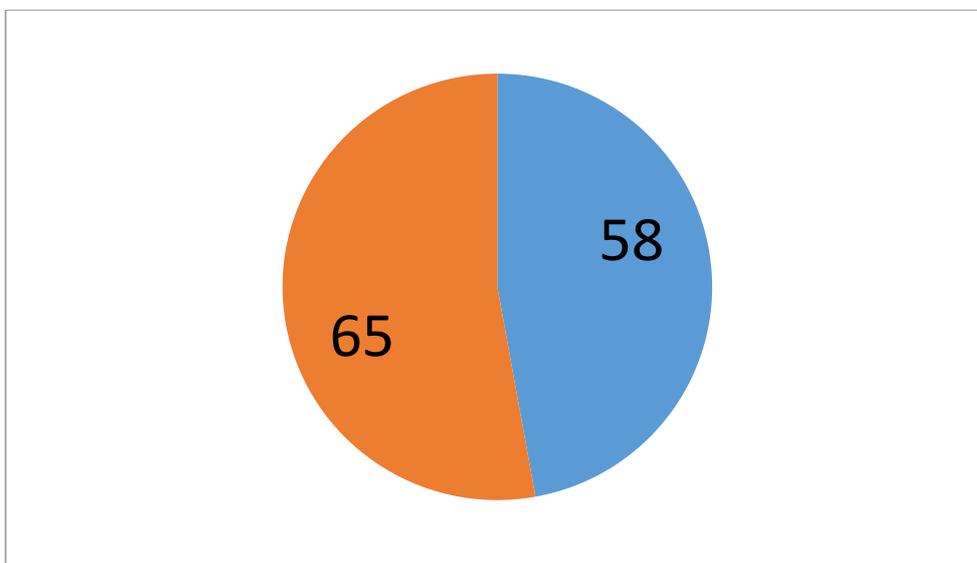
Age-wise distribution of Cases:-

Age Distribution	No. of patients	Percentage
0-5	4	3.25 %
05-10	8	6.5 %
10-20	17	13.82 %
20-30	19	15.44 %
30 to 40	24	19.5%
40 to 50	26	21.13%
50 to 60	17	13.8%
60 +	21	17.07%



Sex wise distribution:-

Sex	Numbers	Percentages
Male	58	47.15%
Female	65	52.85%

**CONTROL MEASURES:**

- From dated 14TH September to 17TH September, 4 Teams (each of 2 members) visited house to house for distributing chlorine tablets & ORS packets, detecting the new cases and imparting health education.
- 7100 chlorine tablets were distributed by the all health teams during House-to-House surveys in the affected area and adjacent areas during the outbreak.
- 290 ORS packets were also distributed by health teams during House-to-House surveys. Health education was given to each household.
- Advise to use boiled water for drinking given.
- Advise to use Chlorine tablet for disinfecting water.
- Washing of hands properly with soap & water before and after eating as well as after handling the vomits and stool of a person suffering from Acute Diarrhea.
- Proper food handling practices and cooking food properly.
- ASHA and ANM workers were instructed to monitor the situation and report similar cases.

RECOMMENDATIONS

Following are the recommendations for preventing similar situation in the future –

1. Replace rusted and broken drinking water pipes on immediate basis.
2. Maintain sufficient gap between drinking water supply pipeline and sewage canal or pipe.
3. Remove the garbage and nuisance material from the residential area.
4. Remove loose connections of drinking water taken by households.
5. Provision of chlorinated water to the community till satisfactory potable water connection is established.
6. Covering open sewerage main holes.
7. Clearing of blocked sewerage pipes.

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

Data extracted from IDSP Portal (www.idsp.nic.in) as on January 3rd, 2020.

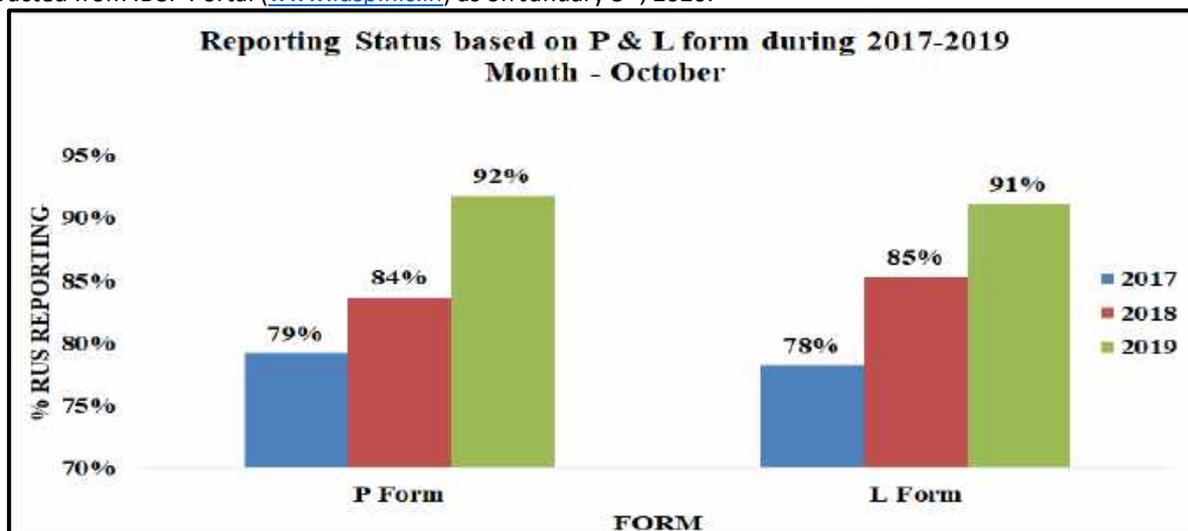


Fig 1: RU wise reporting based on P & L form during October 2017 - 2019

As shown in Fig 1, in October 2017, 2018 and 2019, the 'P' form reporting percentage (i.e. % RU reporting out of total in P form) was 79%, 84% and 92% respectively across India, for all disease conditions reported under IDSP in P form. Similarly, L form reporting percentage was 78%, 85% and 91% 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.

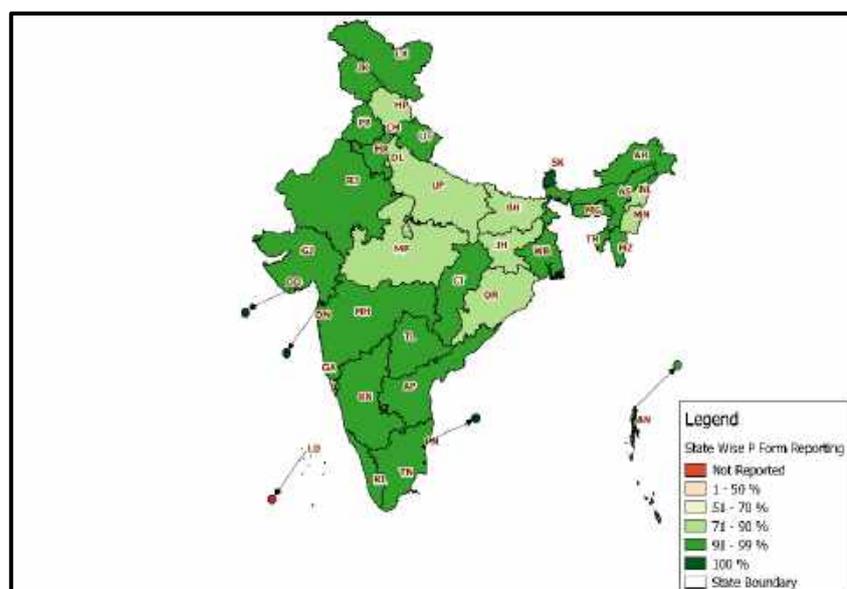


Fig 2: State/UT wise P form completeness % for October 2019

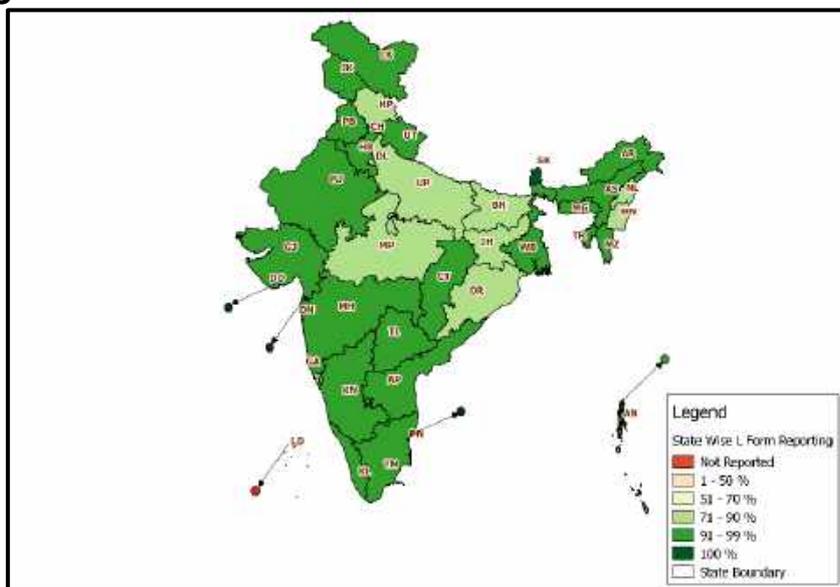


Fig 3: State/UT wise L form completeness % for October 2019

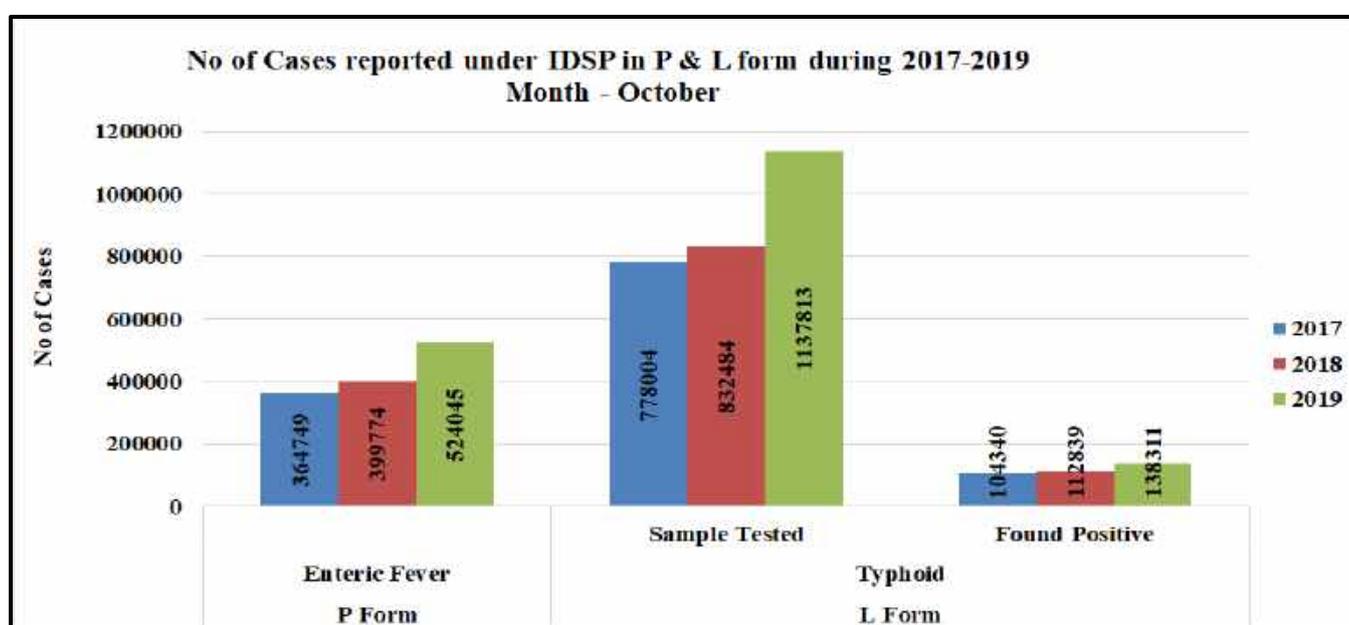


Fig 4: No. of Enteric Fever Cases reported under P & L form during October 2017 - 2019

As shown in Fig 4, number of presumptive enteric fever cases, as reported by States/UTs in 'P' form was 364749 in October 2017; 399774 in October 2018 and 524045 in October 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in October 2017; 778004 samples were tested for Typhoid, out of which 104340 were found positive. In October 2018; out of 832484 samples, 112839 were found to be positive and in October 2019, out of 1137813 samples, 138311 were found to be positive.

Sample positivity has been 13.41%, 13.55% and 12.16% in October 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.

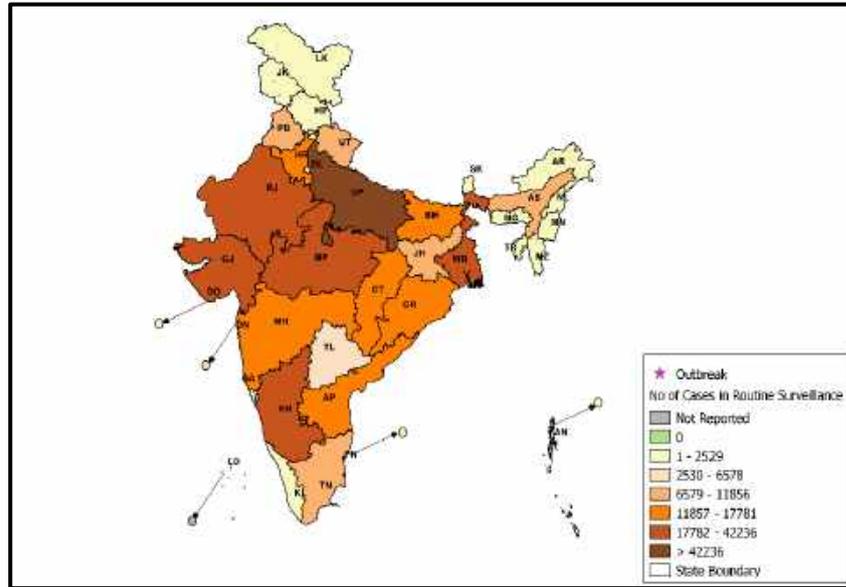
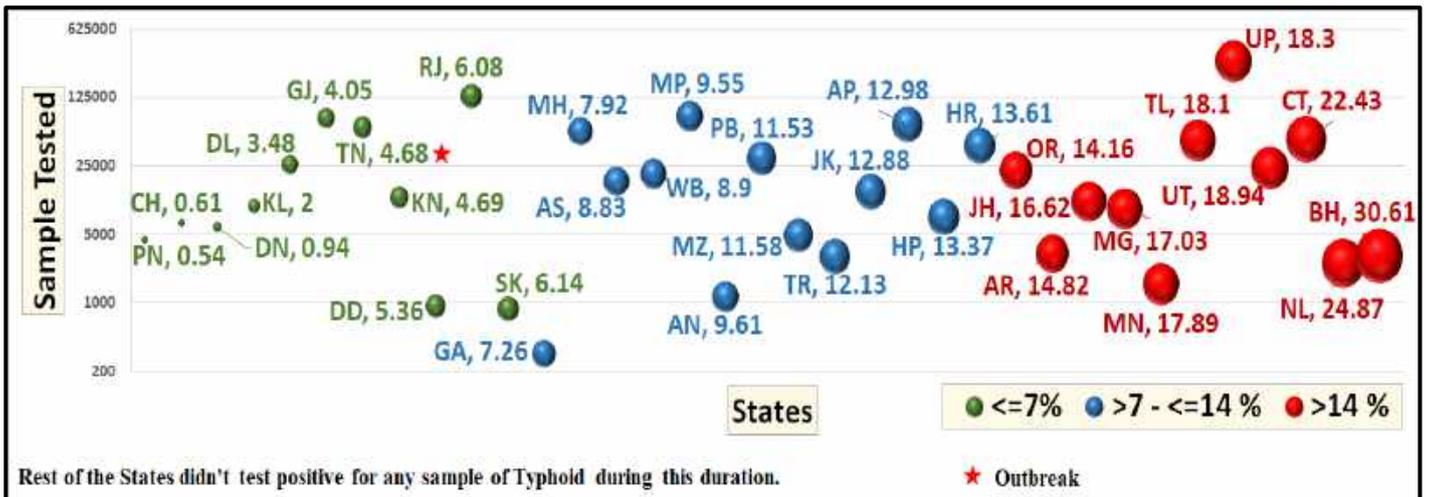


Fig 5: State/UT wise Presumptive Enteric fever cases and outbreaks for October 2019

Fig 6: State/UT wise Lab Confirmed Typhoid cases and outbreaks for October 2019



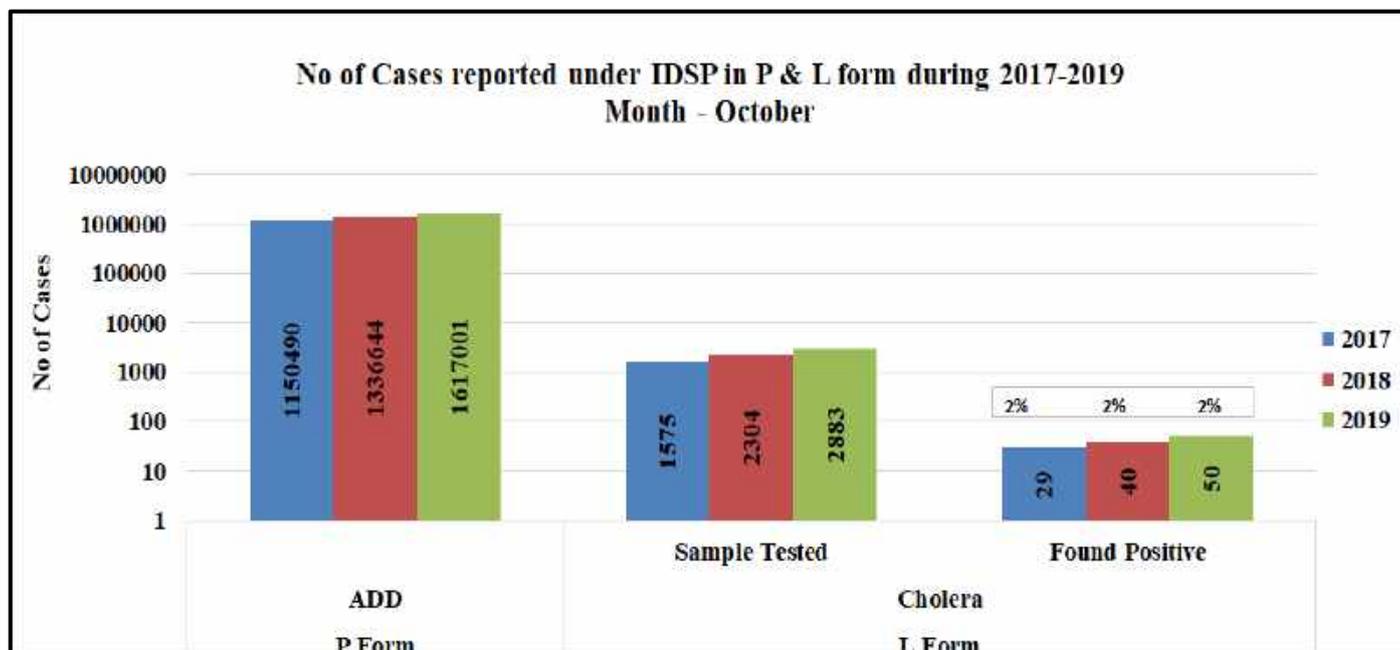


Fig. 7: No. of ADD Cases reported under IDSP in P Form & Cholera Cases in L form during October 2017 - 2019

As shown in Fig 2, number of Acute Diarrhoeal Disease cases, as reported by States/UTs in 'P' form was 1150490 in October 2017; 1336644 in October 2018 and 1617001 in October 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in October 2017, 1575 samples were tested for Cholera out of which 29 tested positive; in October 2018, out of 2304 samples, 40 tested positive for Cholera and in October 2019, out of 2883 samples, 50 tested positive.

Sample positivity of samples tested for Cholera has been 1.84%, 1.74% and 1.73% in October month of 2017, 2018 & 2019 respectively.

Fig 8: State/UT wise Presumptive ADD cases and outbreaks for October 2019

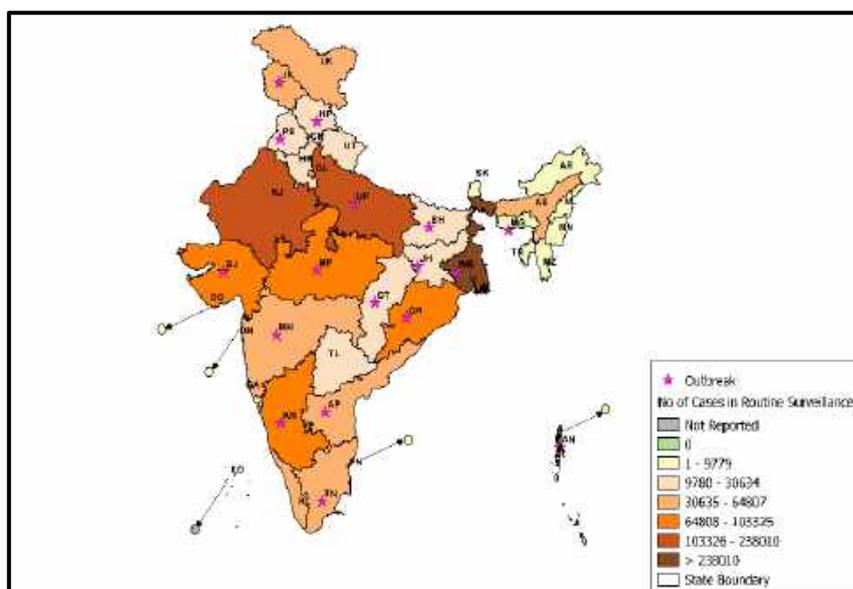




Fig 16: State/UT wise Lab Confirmed Cholera cases and outbreaks for October 2019

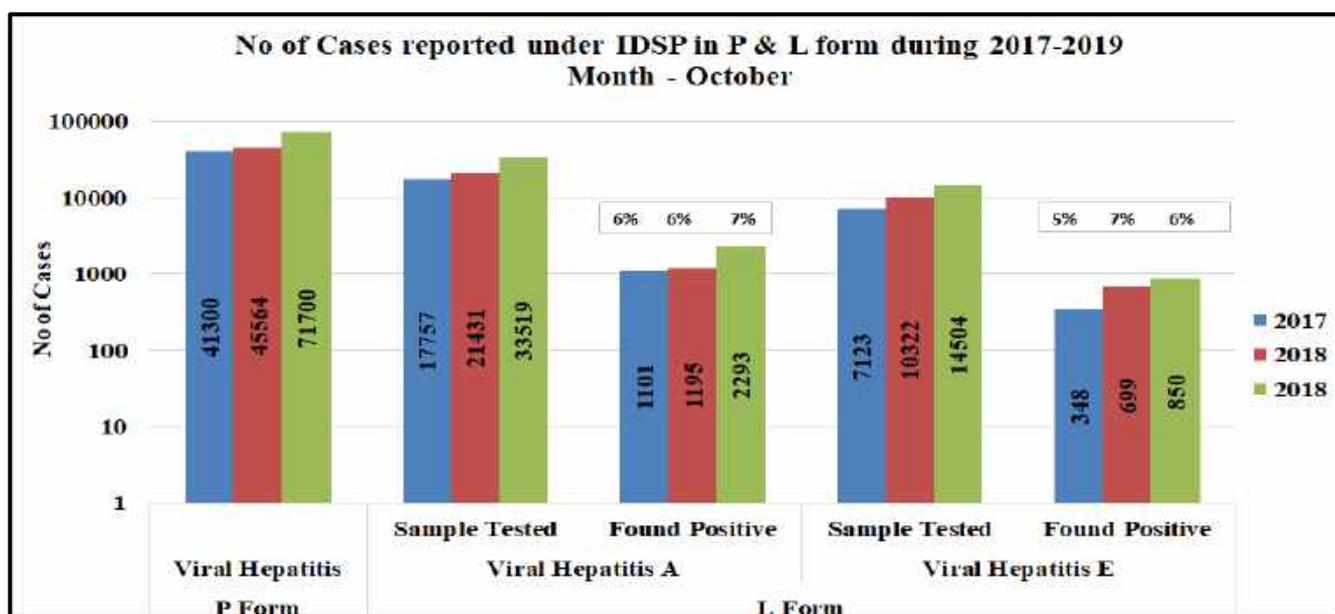


Fig 17: No of Viral Hepatitis Cases reported under IDSP in P form & Viral Hepatitis A & E cases reported under L form during October 2017 - 2019

As shown in Fig 4, the number of presumptive Viral Hepatitis cases was 41300 in October 2017, 45564 in October 2018 and 71700 in October 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 October 2017; 17757 samples were tested out of which 1101 were found positive. In October 2018 out of 21431 samples, 1195 were found to be positive and in October 2019, out of 33519 samples, 2293 were found to be positive.

Sample positivity of samples tested for Hepatitis A has been 6.20%, 5.58% and 6.84% in October month of 2017, 2018 & 2019 respectively.

As reported in L form for Viral Hepatitis E, in October 2017; 7123 samples were tested out of which 348 were found positive. In October 2018; out of 10322 samples, 699 were found to be positive and in October 2019, out of 14504 samples, 850 were found to be positive.

Sample positivity of samples tested for Hepatitis E has been 4.89%, 6.77% and 5.86% in October month of 2017, 2018 & 2019 respectively.

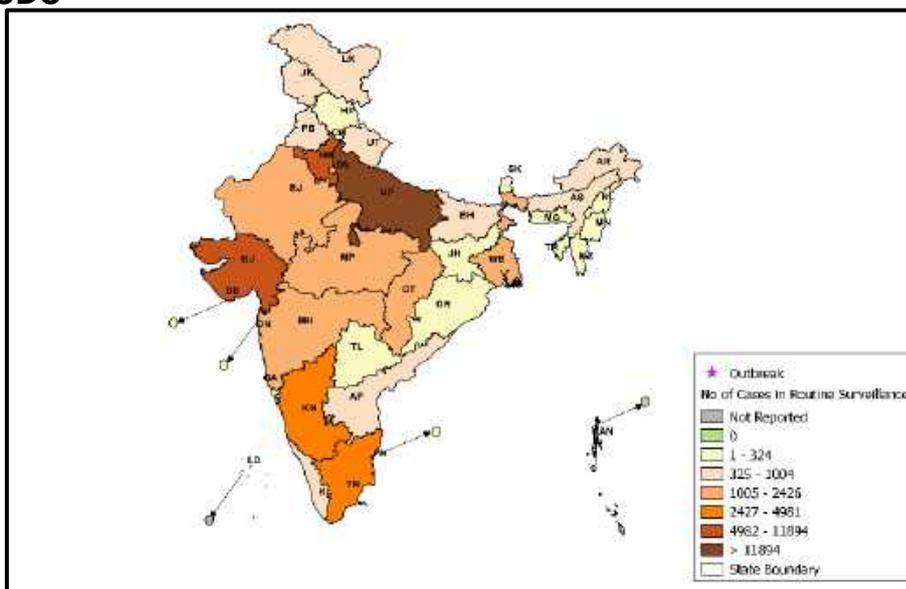


Fig 18: State/UT wise Presumptive Viral Hepatitis cases and outbreaks for October 2019

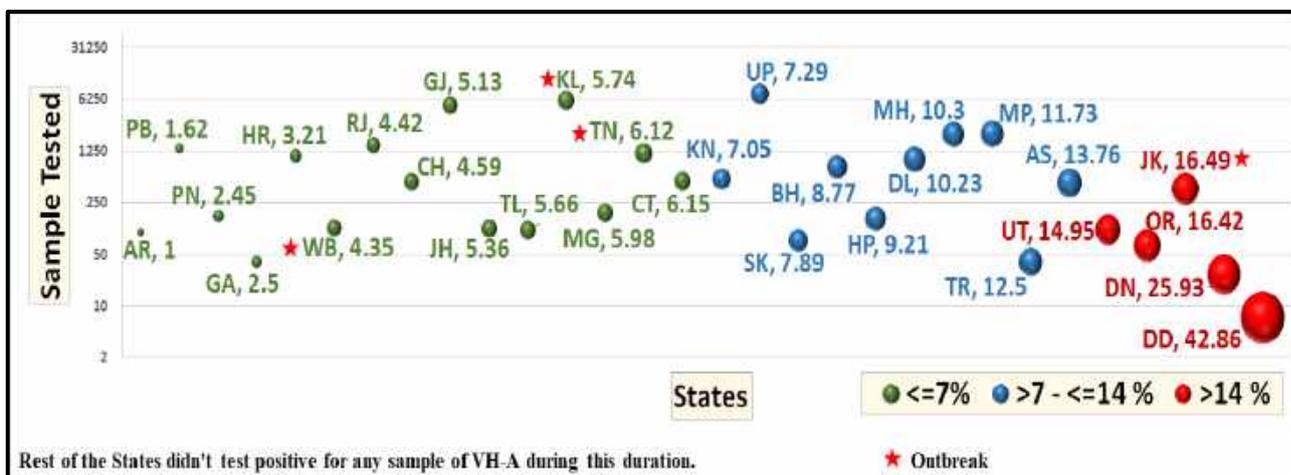


Fig 19: State/UT wise Lab Confirmed Viral Hepatitis A cases and outbreaks for October 2019

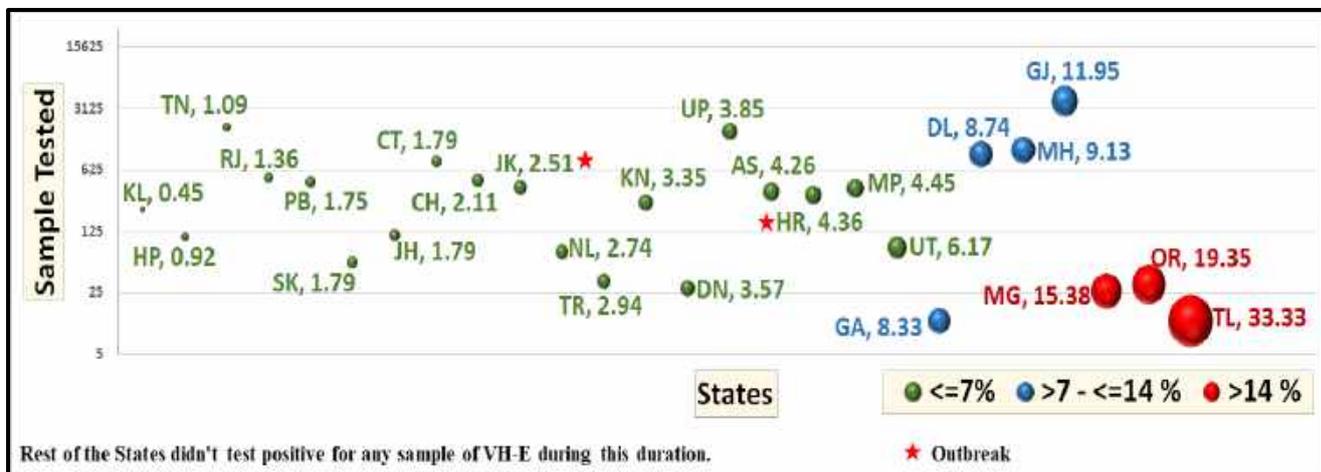


Fig 20: State/UT wise Lab Confirmed Viral Hepatitis E cases and outbreaks for October 2019

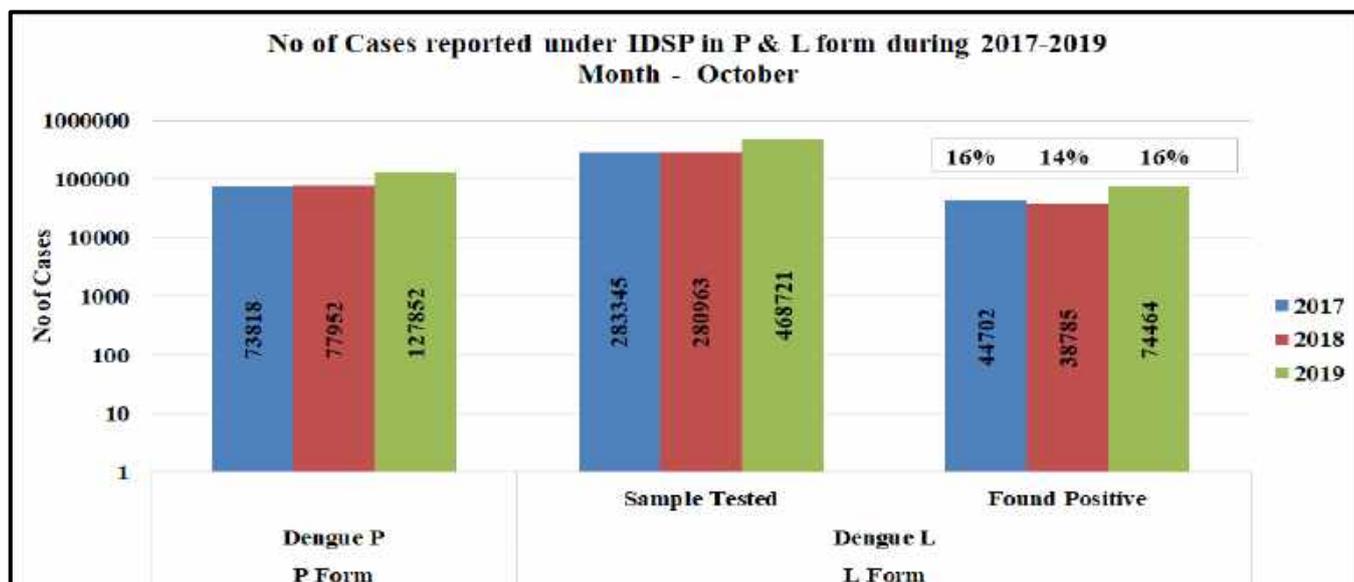


Fig 21: No. of Dengue Cases reported under IDSP in P & L form during October 2017 - 2019

As shown in Fig 5, number of presumptive Dengue cases, as reported by States/UTs in 'P' form was 73818 in October 2017; 77952 in October 2018 and 127852 in October 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in October 2017; 283345 samples were tested for Dengue, out of which 44702 were found positive. In October 2018; out of 280963 samples, 38785 were found to be positive and in October 2019, out of 468721 samples, 74464 were found to be positive.

Sample positivity of samples tested for Dengue has been 15.78%, 13.80% and 15.89% in October month of 2017, 2018 & 2019 respectively.

Fig 22: State/UT wise Presumptive Dengue cases and outbreaks for October 2019

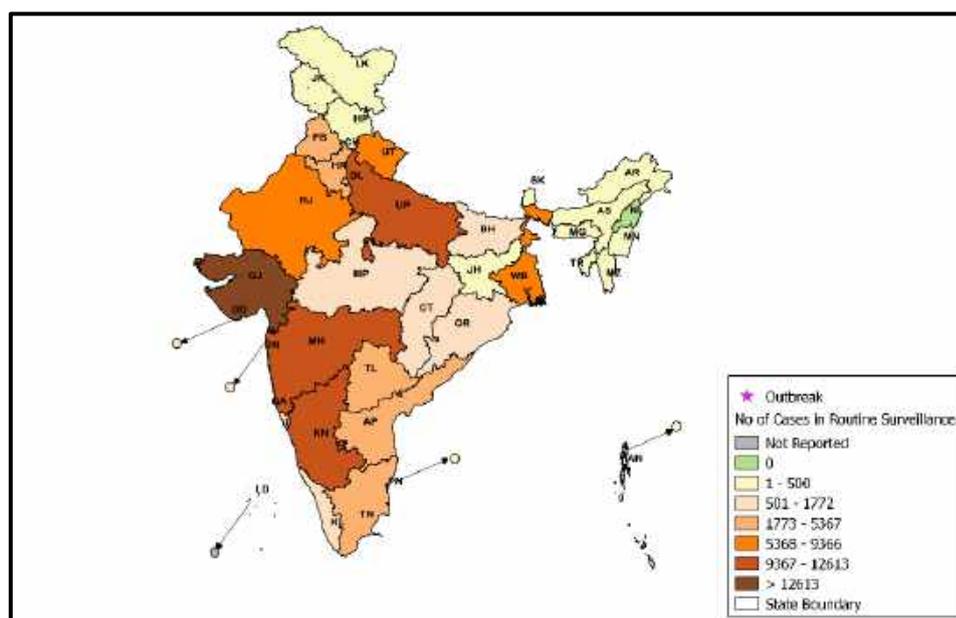
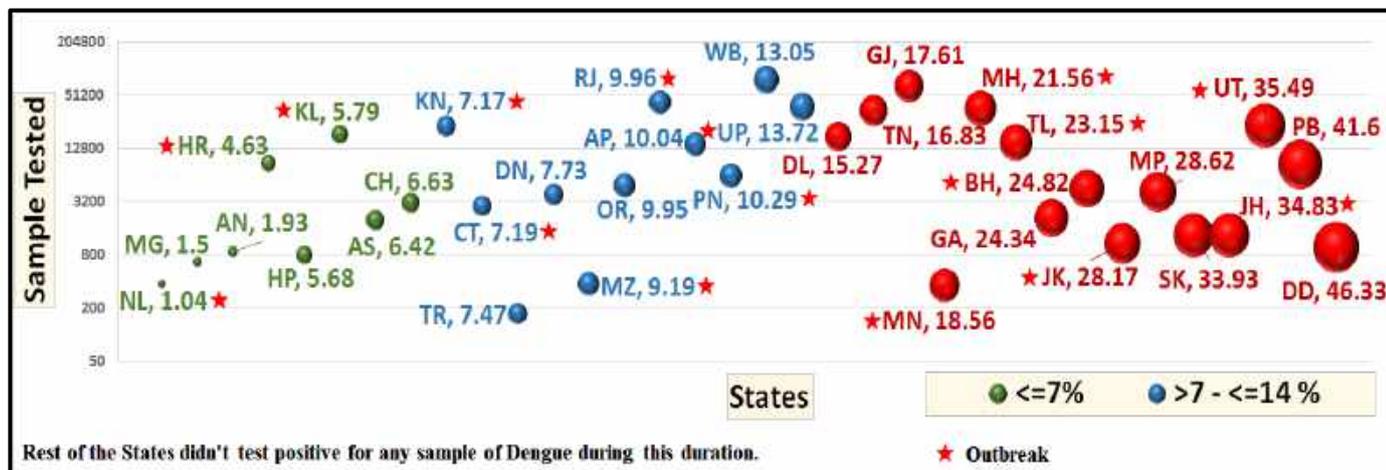


Fig 23: State/UT wise Lab Confirmed Dengue cases and outbreaks for October 2019



Rest of the States didn't test positive for any sample of Dengue during this duration.

★ Outbreak

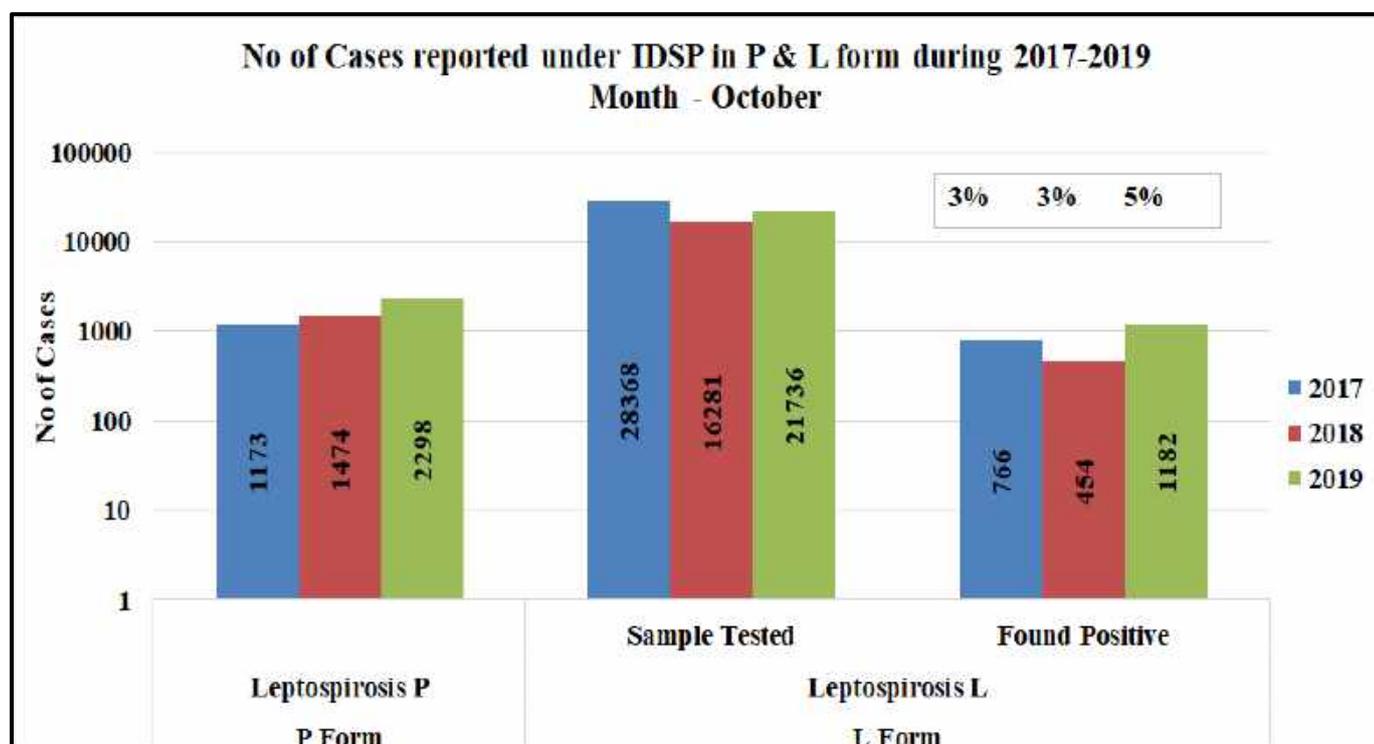


Fig 24: No. of Leptospirosis Cases reported under IDSP in P & L form during October 2017 – 2019

As shown in Fig 6, number of presumptive Leptospirosis cases, as reported by States/UTs in ‘P’ form was 1173 in October 2017; 1474 in October 2018 and 2298 in October 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in October 2017; 28368 samples were tested for Leptospirosis, out of which 766 were found positive. In October 2018; out of 16281 samples, 454 were found to be positive and in October 2019, out of 21736 samples, 1182 were found to be positive.

Sample positivity of samples tested for Leptospirosis has been 3%, 3% and 5% in October month of 2017, 2018 & 2019 respectively.

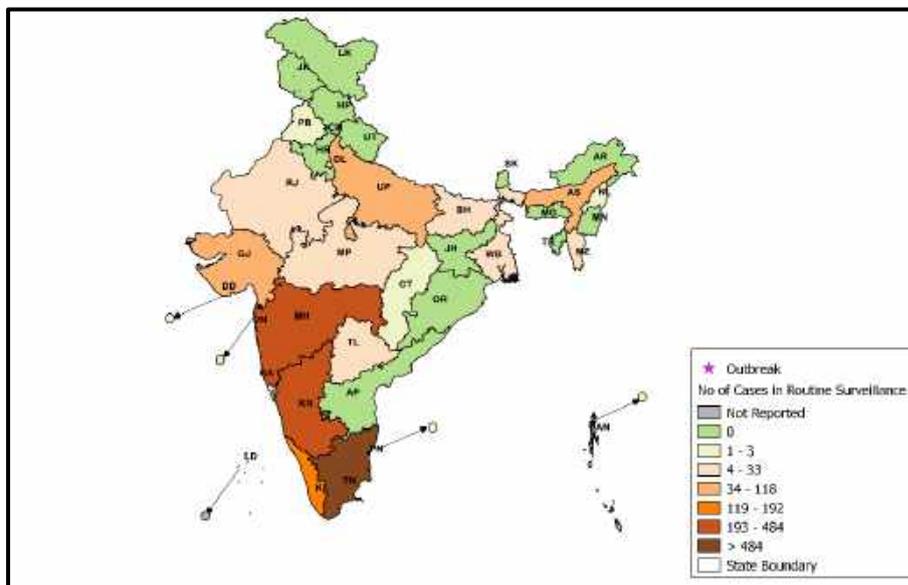
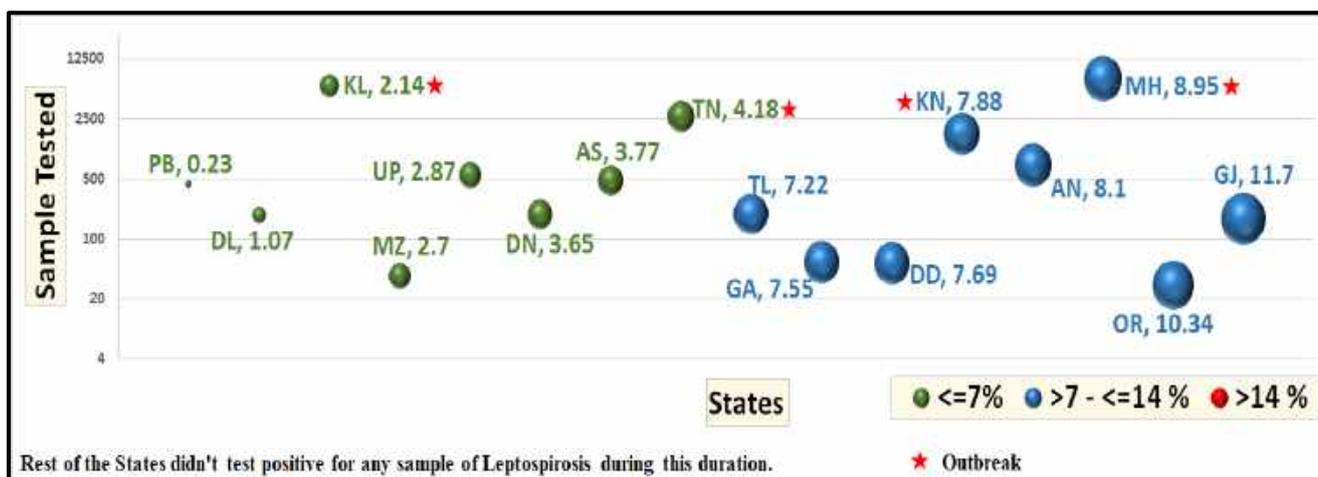


Fig 25: State/UT wise Presumptive Leptospirosis cases and outbreaks for October 2019

Fig 26: State/UT wise Lab Confirmed Leptospirosis cases and outbreaks for October 2019



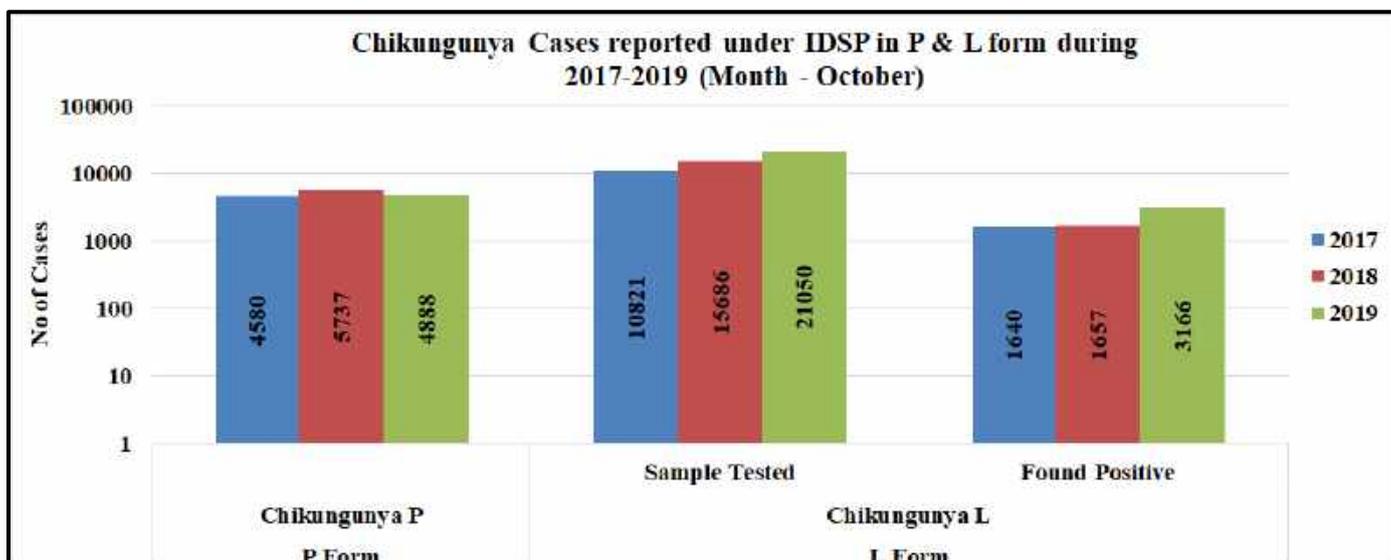


Fig. 27: No. of Chikungunya Cases reported under IDSP in P & L form during October 2017 - 2019

As shown in Fig 7, number of presumptive Chikungunya cases, as reported by States/UTs in 'P' form was 4580 in October 2017; 5737 in October 2018 and 4888 in October 2019. These presumptive cases are diagnosed on the basis of standard case definitions provided under IDSP.

As reported in L form, in October 2017; 10821 samples were tested for Chikungunya, out of which 1640 were found positive. In October 2018; out of 15686 samples, 1657 were found to be positive and in October 2019, out of 21050 samples, 3166 were found to be positive.

Sample positivity of samples tested for Chikungunya has been 15.16%, 10.56% and 15.04% in October month of 2017, 2018 & 2019 respectively.

Fig 28: State/UT wise Presumptive Chikungunya cases and outbreaks for October 2019

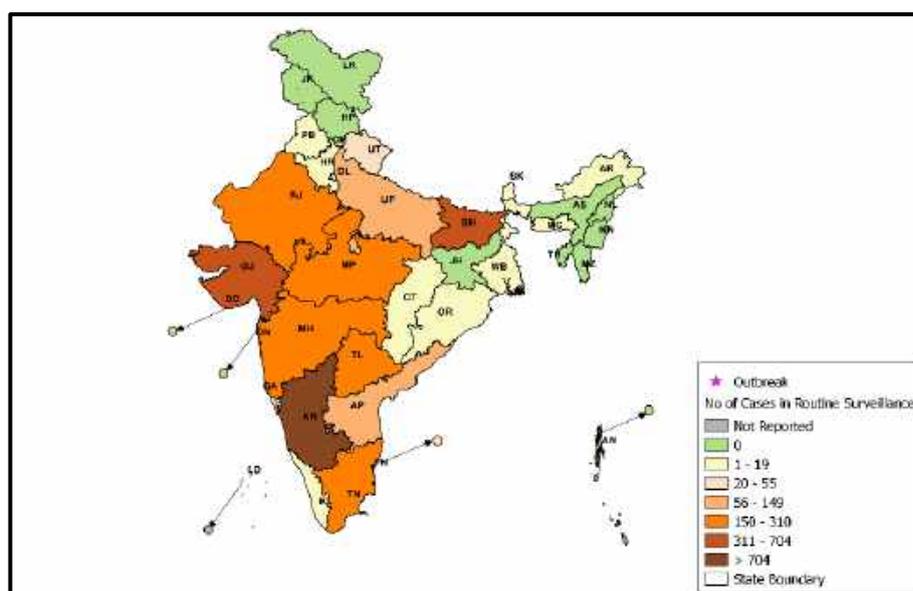


Fig 29: State/UT wise Lab Confirmed Chikungunya cases and outbreaks for October 2019

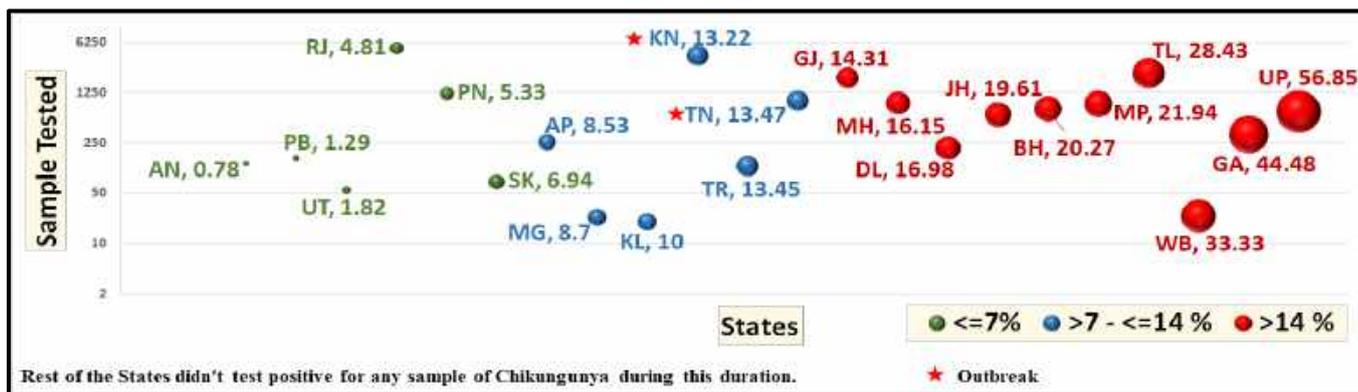
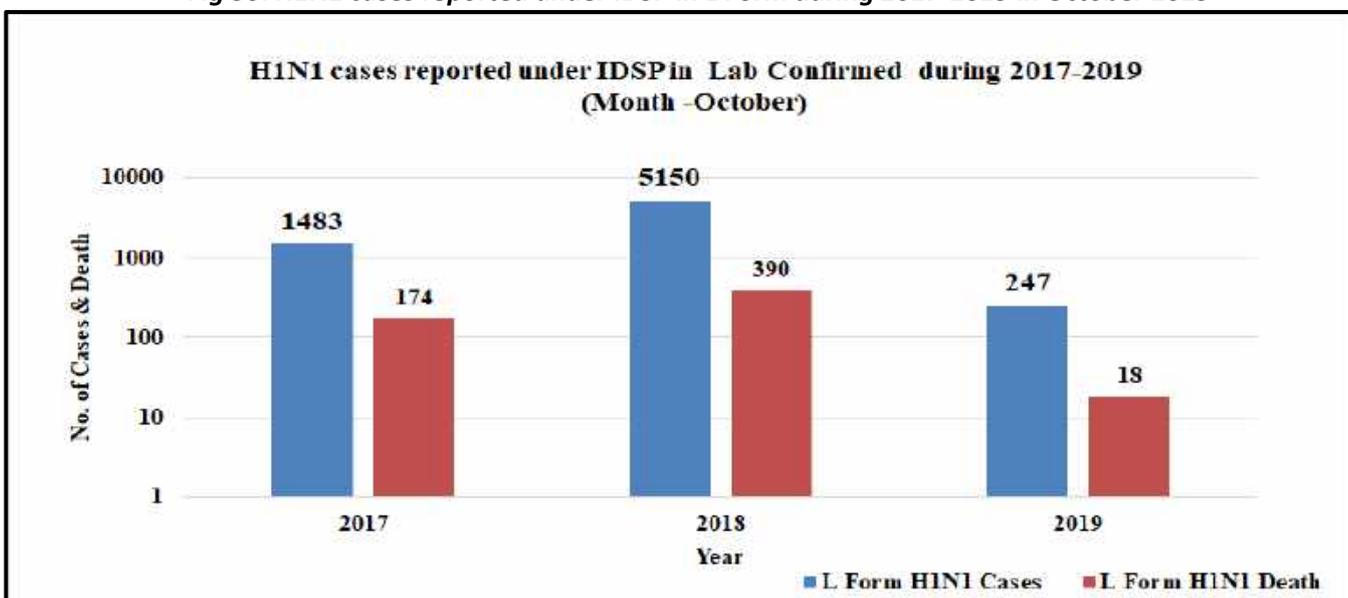


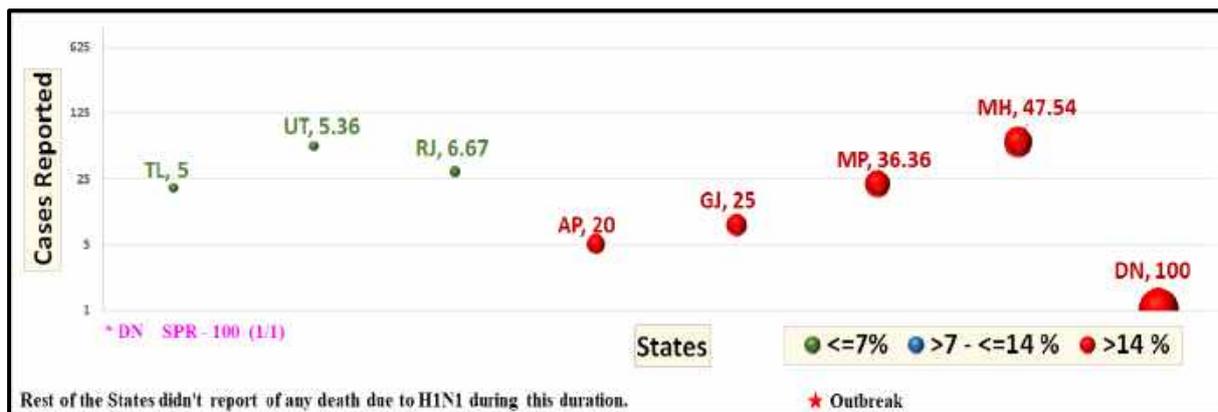
Fig 30: H1N1 cases reported under IDSP in L Form during 2017-2019 in October 2019



As reported in L form, in October 2017; there were 1483 cases and 174 deaths. In October 2018; there were 5150 cases and 390 deaths and in October 2019, there were 247 cases and 18 deaths.

Case fatality rate for H1N1 were 11.73%, 7.57% and 7.29% in October month of 2016, 2017 & 2018 respectively.

Fig 31: State/UT wise H1N1 cases and outbreaks for October 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

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

Lab Confirmed Leptospirosis: A presumptive case with -

- IgM ELISA positive OR
- Isolation of leptospire 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:

This Disease Alert from IDSP acknowledges the contribution of Dr. Sujeet K Singh, NPO Project Director - IDSP & Director NCDC; Dr. Himanshu Chauhan, Joint Director & Officer In-Charge, IDSP; Dr. Pranay Verma, Deputy Director, IDSP; Ms. Ritu Malik, Consultant (GIS), IDSP & Ms. Sujata Malhotra, Data Manager, IDSP.

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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