

WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 30 July 22-28, 2019

Date: August 05, 2019

Provincial Technical Officers and fellows of FELTP assigned at the Disease Surveillance and Response Units (DSRU's) are working with provincial and district health authorities on event based disease surveillance and outbreak response.

DSRUs are sharing the disease surveillance data, outbreak reports and activities of FELTP fellows to the Federal Disease Surveillance and Response Unit (FDSRU) at the Field Epidemiology and Disease Surveillance Division (FEDSD) National Institute of Health (NIH) Islamabad on weekly basis.

Table 2: Dengue cases reported by province / areas, total in 2017, 2018 and monthly updates, 2019

Month	KPK	Sindh	AJK	ICT	TDs - KP	Baluch	Punjab	Total
Jan-Dec 2017	18,857	2,884	6	120	406	86	579	22,938
Jan-Dec 2018	332	2088	1	0	175	69	539	3204
Jan-19	0	143	0	0	0	12	1	156
Feb-19	0	99	0	0	0	30	0	129
March-19	0	67	0	0	0	251	0	318
April-19	1	93	0	2	2	549	1	646
May-19	1	176	0	0	37	535	1	570
June-19	5	219	0	0	0	263	4	565
July-19	33	205	0	0	4	57	38	337
Total - 2019	40	1002	0	0	43	1697	45	2827

CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and **25** cases have been reported in 2019. During the last week **two** new CCHF case was reported.

Extensive Drug Resistant/Multi Drug Resistant - Typhoid Fever Surveillance, Sindh:

From November 1, 2016 to July 28, 2019 total of **14,297** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **9,822** were found as Extensive Drug Resistant Typhoid cases.

Table 3: Reported XDR Typhoid Fever cases in Sindh by year (Nov 2016 –July 28, 2019)

Year	Karachi	Hyderabad	Other Districts	Sindh Total
2016	0	12	0	12
2017	175	485	4	664
2018	3,712	891	207	4,810
2019 (July 28)	2750	985	601	4,336
Total	6637	2373	812	9,822

1. Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of **10317** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **6637** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to July 21, 2019.

In the week **30** of 2019, total **102** new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

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Table 1: Weekly and Cumulative Diseases Updates July 28, 2019

	Disease	New cases July 22-28, 2019	Total Cases in 2019
1	CCHF	2	25
2	Varicella	50	874
3	Dengue	104	2827
4	Chikungunya	0	0
5	Measles	158	5462
6	Diphtheria	4	239
7	suspected/confirmed Seasonal Influenza	0	81

Influenza Suspected/Confirmed:

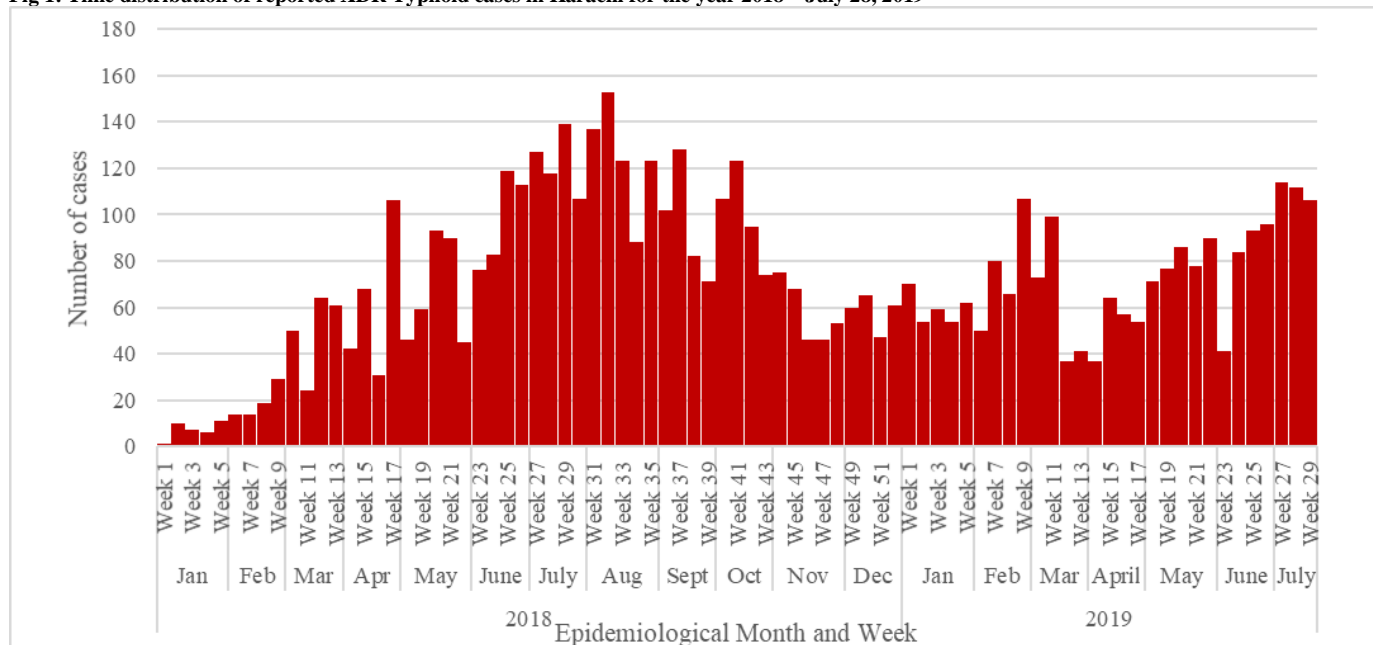
In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 30, 2019, no new case was reported.

Diphtheria Surveillance:

During 2018 total **464** suspected cases of Diphtheria were reported. Total **239** cases reported in 2019 and **four** new case reported last week.

Dengue Surveillance:

In 2018 total **3204** Dengue cases were reported, from Sindh (**2088**) Baluchistan (**69**), Punjab (**539**), KP (**332**) and Tribal Districts KP (**175**), AJK (**1**). In 2019 total **2827** cases have been reported so far. In week 30, 2019, Punjab (**38**), Sindh (**40**), KP (**21**), Baluchistan (**5**).

Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2018 – July 28, 2019

Following cases definitions were applied to categorize the Typhoid cases reported:

Non Resistant typhoid fever:

It is defined as Typhoid fever caused by Salmonella Typhi or Salmonella Paratyphi A, B or C strains which are sensitive to first and second line drugs (ampicillin, chloramphenicol, trimethoprim-sulfamethoxazole, cefixime and ceftriaxone). Any isolate sensitive to first line drugs but resistant to fluoroquinolone group will also be considered as Non-Resistant typhoid.

Multi-Drug Resistant (MDR) Typhoid fever:

It is defined as Typhoid fever caused by Salmonella Typhi or Salmonella Paratyphi A, B or C strains which are resistant to the first line recommended drugs for treatment such as chloramphenicol, ampicillin and trimethoprim-sulfamethoxazole. The strain may be sensitive or resistant to fluoroquinolone group.

Extensive Drug Resistant (XDR) Typhoid fever:

It is defined as typhoid fever caused by Salmonella Typhi strain which are resistant to first line drugs, fluoroquinolones and third-generation cephalosporin (Ceftriaxone)

The Technical Support Officer and the FELTP fellows of the Regional DSRU Karachi reached out to the major hospitals in the city and collected the Typhoid data from hospitals in whatever form it is available. They segregated and analyzed the data for the Drug resistance pattern.

The XDR Typhoid cases were reported mostly among the children and maximum number **1366** (21%) of the XDR cases were reported in the 1-2 years age group.

The overall attack rate was **33/100,000** population. Highest attack rate was found in 3-4 years age group i.e.96/100,000 followed by 1-2 years age group i.e. 89/100,000. Males had higher attack rate (39/100,000) as compared to females

Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to July 28, 2018

Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
0-11 Month	3.4	686,785	129	19
1-2Y	7.6	1,535,166	1366	89
3-4Y	6.7	1,353,370	1301	96
5-6Y	5.6	1,131,175	861	76
7-8Y	5.1	1,030,177	808	78
9-10Y	5.2	1,050,377	487	46
11-12Y	4.4	888,780	411	46
13-14Y	4.4	888,780	180	20
15-24	20.4	4,120,709	684	17
25-34Y	13	2,625,942	243	9
35-44Y	11	2,221,951	75	3
45-54Y	7.5	1,514,967	47	3
55-64Y	3.7	747,383	27	4
>65	1.99	401,971	18	4
Total	99.99	20,199,554	6637	33
Female	49	9,897,781	2646	27
Male	51	10,301,772	3991	39

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to July 28, 2019 in Karachi

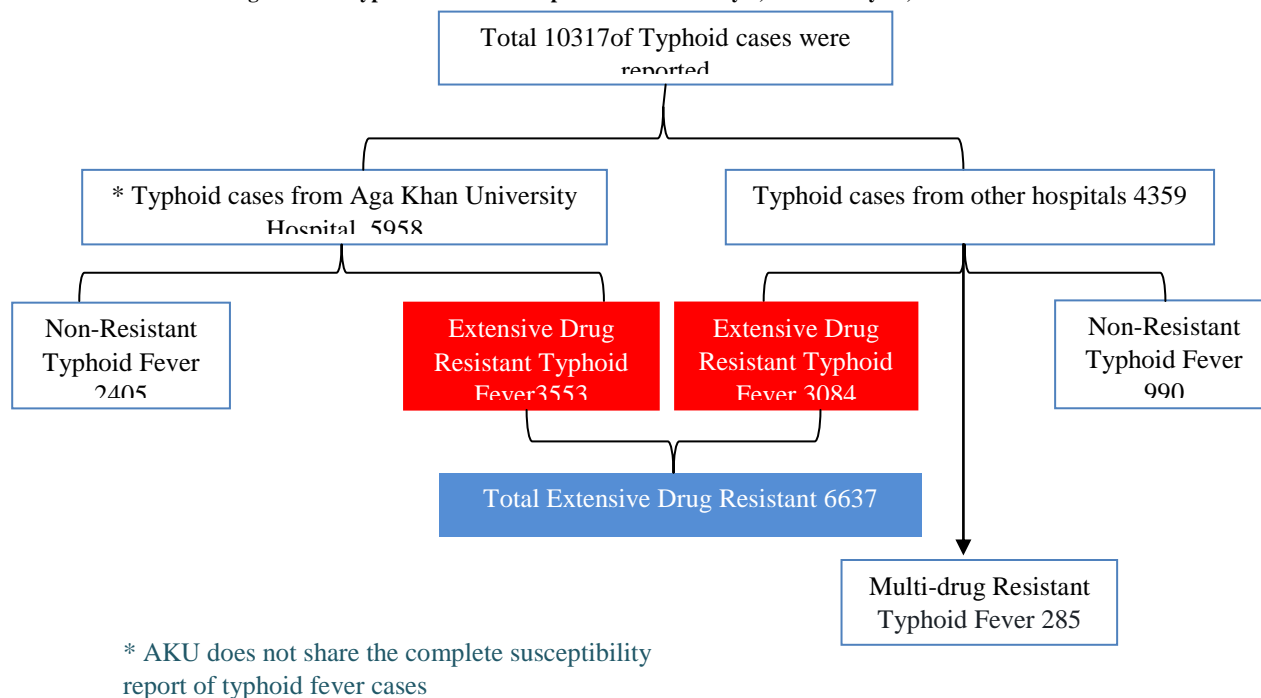
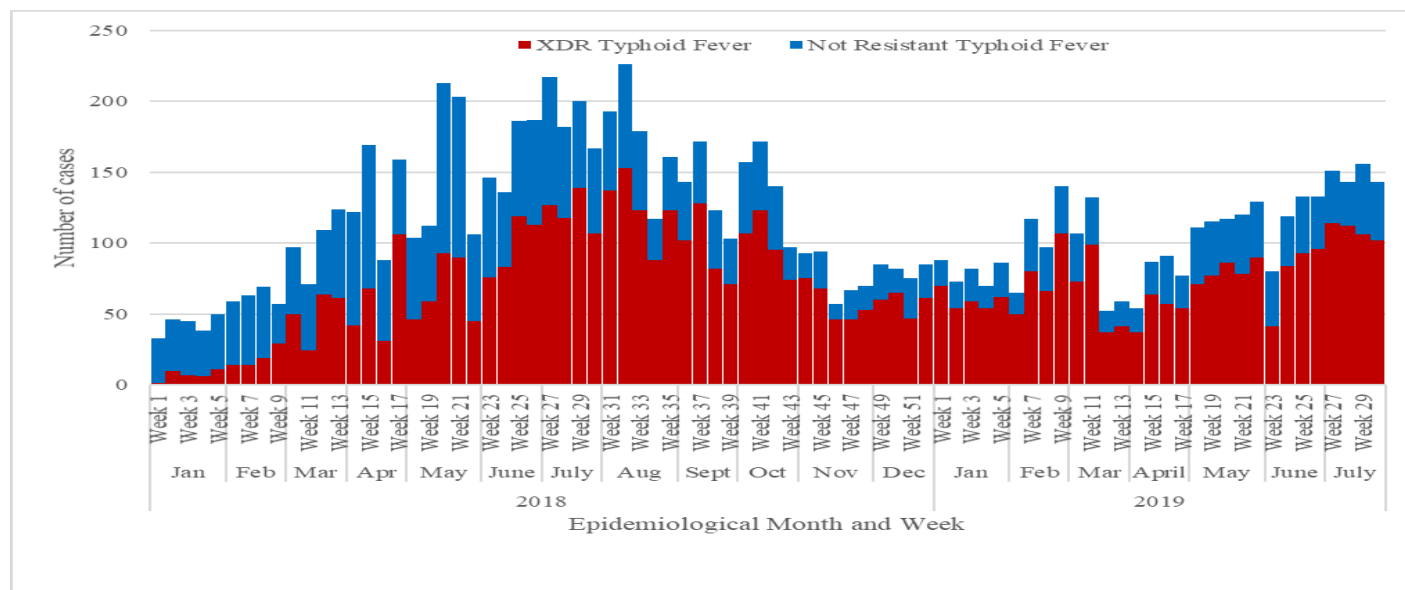


Fig 3: Time distribution of XDR and Non-Resistant Typhoid Fever cases reported from January 1, 2018 –July 28, 2019 in Karachi (n=10142)



The highest Incidence Rate of the cases was reported from 5 towns: Gulshan-e-Iqbal (AR=27.1/100,000), Saddar (16.6/100,000), North Nazimabad (AR 10.7/100,000), Malir (AR 10.1/100,000), Gulberg (AR 9.7/100,000) and Liyari (AR 8.1/100,000). While lowest Incidence was recorded in SITE town (AR=0.1/100,000).

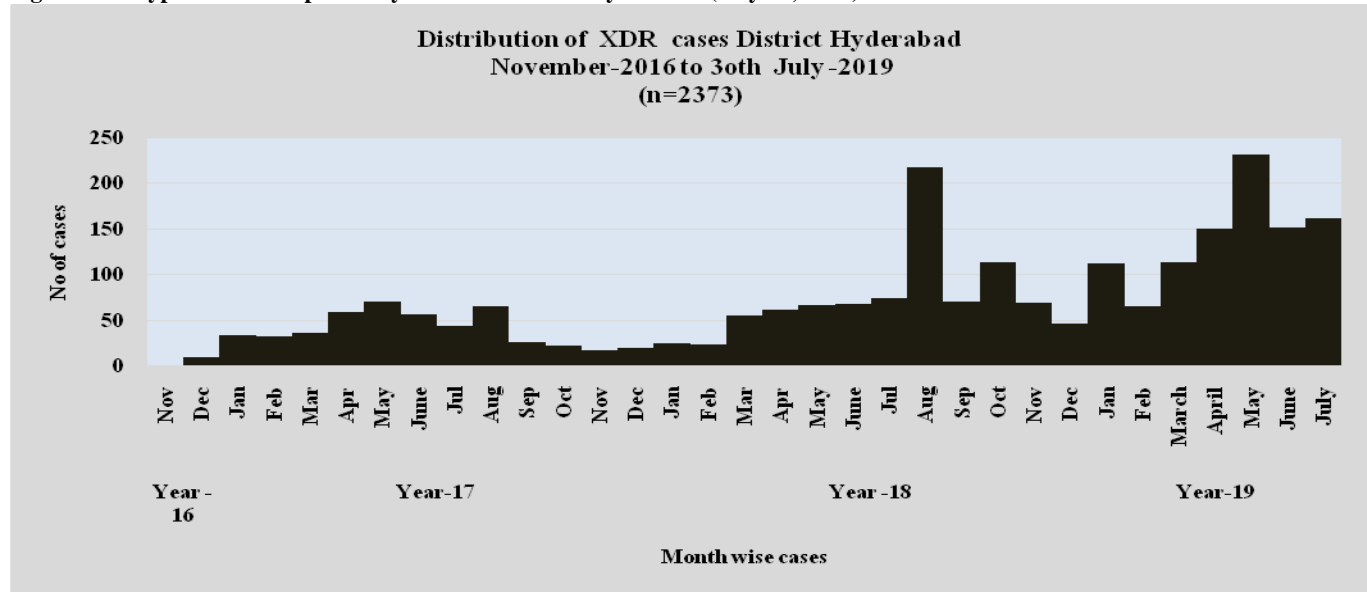
Reported by: *Dr Asif Syed TSO Karachi, Dr Anum Vigio and Dr. Ishfaq (fellows 10th Cohort)*

The PDSRU Hyderabad at DGHS Sindh, Hyderabad is following up for the XDR/MDR Typhoid cases in District Hyderabad.

From November 2016 to July 21, 2019, a total of **3980** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **3,185** are Extensive Drug Resistant (XDR) cases.

Among all reported XDR cases, **2373 (74.5 %)** were from District Hyderabad only.

2. Update on Extensive Drug Resistant Typhoid Fever in district Hyderabad:

Fig 4: XDR Typhoid cases reported by month in district Hyderabad (July 28, 2019)**Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 – July 28, 2019)**

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	2992	2373	74.5
Tando Allah Yar	13	9	0.3
Badin	109	75	2.4
Dadu	29	24	0.8
Kashmore	38	37	1.2
Ghotki	28	24	0.8
Mirpurkhas	255	209	6.6
Sukkur	59	53	1.7
Tharparkar	16	11	0.3
Sanghar	87	74	2.3
Nau sheroferoz	37	26	0.8
Shikarpur	28	27	0.8
Tando M Khan	1	1	0.0
Jamshoro	167	140	4.4
Umar Kot	5	5	0.2
Jacobabad	10	9	0.3
SBA	11	8	0.3
Larkana	35	28	0.9
Sujawal	4	2	0.1
Jacobabad	3	3	0.1
Thatha	9	8	0.3
Khairpur	44	39	1.2
Total	3980	3185	80.0

The most affected age group was 2-4 years (n=815) with Attack Rate 45.7.3/10,000 of population followed by 5-9 years

of age group (n=749) 25.4/10000. Overall attack rate is 10.8/10,000.

Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=2373)

Age Group	XDR	Population	Attack rate/10000
0-23 Month	183	118771	15.4
2-4 Year	815	178157	45.7
5-9 Year	749	294728	25.4
10-14 Year	347	266135	13.0
15-19 Year	91	248539	3.7
20-24 Year	75	213348	3.5
25-29 Year	42	175957	2.4
30-34 Year	20	136367	1.5
35-39 Year	17	118771	1.4
40-44 Year	9	94577	1.0
45-49 Year	4	87979	0.5
50-54 Year	10	59386	1.7
55-59 Year	6	59029	1.0
60-64 Year	2	52787	0.4
>65	3	94577	0.3
Total	2373	2199107	10.8
Male	1416	1112968	12.7
Female	957	1086139	8.8

Environment and water Assessment:

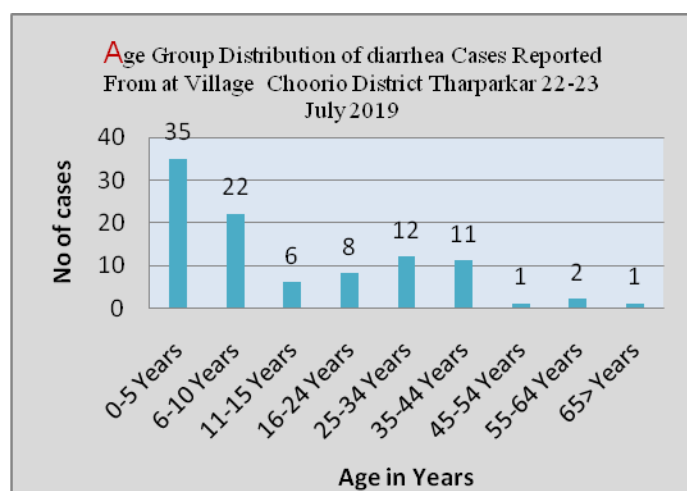
Out of 61 water sample taken; 39 showed E.coli in high quantity. Five samples showed the presence of Streptococci-I (Source: AKU team)

In 9 out of 13 (69 %) of the water samples from the cases household, coliforms and/ or thermo-tolerant E.coli were isolated from the household drinking water. On molecular analysis using PCR on extracted DNA from 55 water samples collected from community taps S. Typhi DNA was detected in 12 (21.8 %) samples.

Actions Taken:

- Total **210,000** children between 6 months to 10 years age in Hyderabad high risk areas have been vaccinated for Typhoid
- Sensitization sessions with general practitioners
- Chlorine tablets were distributed to household in the affected areas of Hyderabad district

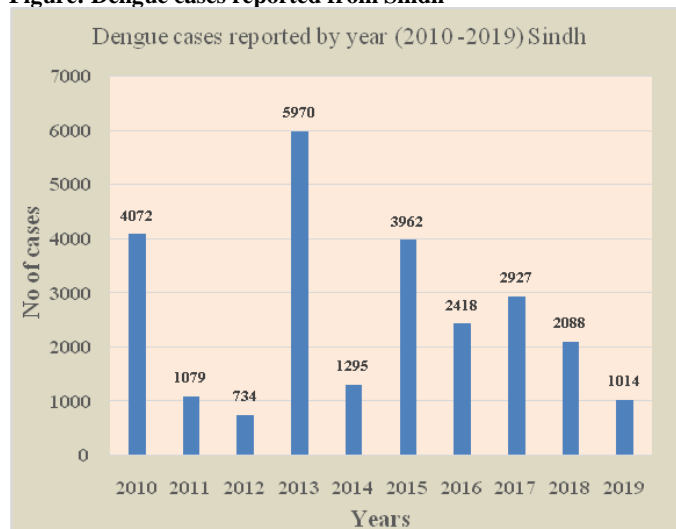
Reported by: *Dr Naveed Memon TSO Hyderabad, Dr Santosh, Dr Munaza (fellow, 11th cohort), Dr Mudassar (alumnus, 9th cohort)*



Update on Dengue Surveillance Sindh:

In week 30, **40** new Dengue cases were reported. Till week 30, 2019 total 1014 cases and one death had been reported from Sindh.

Figure: Dengue cases reported from Sindh

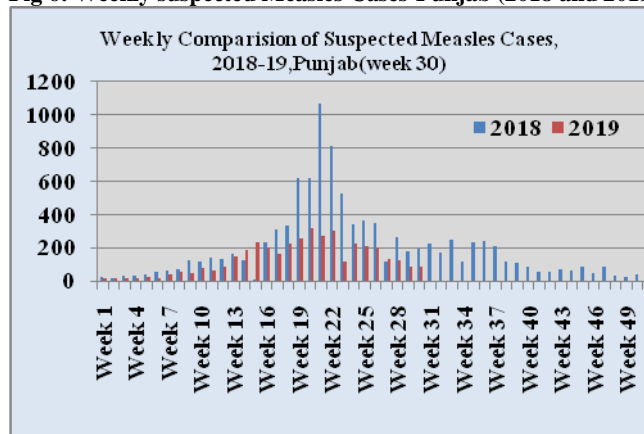


Update Measles Surveillance Report Punjab:

The PDSRU Punjab is regularly assisting with data analysis and information sharing with the health department officials. During the period from week 1-52, 2018 a total of **11,991** suspected Measles cases were reported. The highest number of suspected Measles cases (**n=1072**) was recorded during the week 21, 2018

In week 30, 2019, total **96** new cases of suspected Measles were reported.

Fig 6: Weekly suspected Measles Cases-Punjab (2018 and 2019)



Update /Follow-up Varicella Surveillance in Punjab:

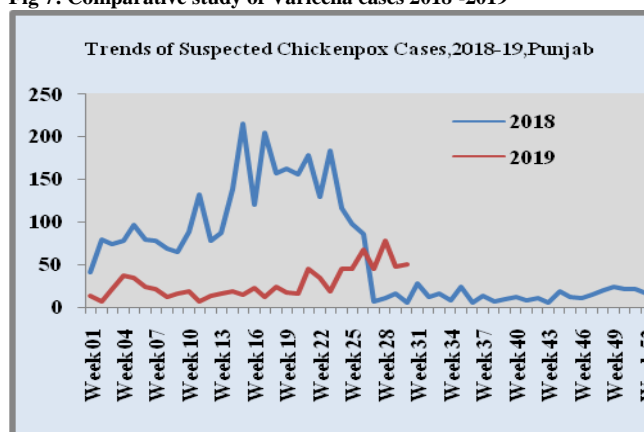
The total number of cases reported from Jan 01, 2018 till July 28, 2019 is **4,119**.

Table 7: Age specific attack rates of Varicella in Punjab in 2018-2019

Age Group	Total number of Cases (2019)	AR/100,000
0-4 Yrs.	1077	7.0
5-9 Yrs.	1381	8.6
10-14 Yrs.	701	4.9
15-19 Yrs.	282	2.2
20-24 Yrs.	218	2.0
25-29 Yrs.	136	1.6
30-34 Yrs.	119	1.8
35-Above	205	0.7
Total	4119	3.5

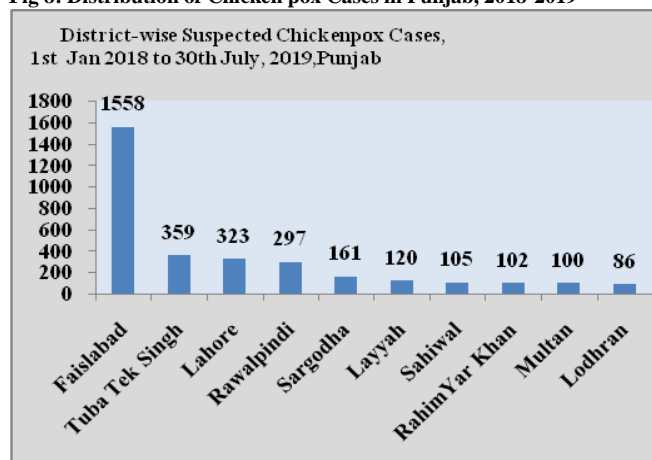
High attack rate was observed in children aged 5-9 yrs. (8.6 /100,000) followed by 0-4 yrs. age group (7.0/100,000).

Fig 7: Comparative study of Varicella cases 2018 -2019



The highest number of cases was reported from District Faisalabad. The cases are mostly from two locations (Thandiwallia and Jaharanwalla) in Faisalabad District.

Fig 8: Distribution of Chicken pox Cases in Punjab, 2018-2019



Reported by: Dr Mohsan Wattoo TSO Lahore,

Update on Dengue Fever Surveillance-KP:

Khyber Teaching Hospital reported 21 new cases of dengue fever as NS-1 positive. Majority of cases are resident of district Peshawar. Total number of cases this season is 43 with no fatalities. Response activities were carried out which focus on enhances disease and vector surveillance. Dr Kifayat is investigating the on-going dengue fever outbreak at UC Sarband of district Peshawar and complete report will be shared after investigation.

Update on Dengue Outbreak Baluchistan:

During the last week, 5 more dengue cases were reported from District Kech.

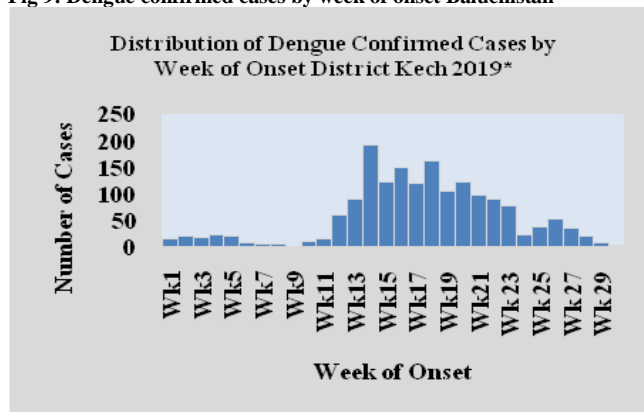
A total of 1705 confirmed cases of dengue have been recorded (Case Fatality Rate=1.76/1000 population). The mean age of dengue cases was 28 years with age range 1 years to 80 years. The male to female ratio was about 2:1. Majority of cases 55.4% (n=842) were among age group 16-30 years, followed by 26.1% (n=396) among 31-45 years age-group while 9.7% (n=147) were among ,1-15 years of age group. The overall attack rate was 7.98/1000 Population. The attack rate with affected age group is given in table below.

Table 9: Age wise attack rate of Dengue-Baluchistan

Age Group (Years)	Cases (n=1520)	Percentage (%)	Pop of that Age Group	Attack Rate/10000 Pop
< 1-15	147	9.6	88861	1.65
16-30	842	55.4	59390	14.18
31-45	396	26.1	33571	11.79
46-60	124	8.2	20523	6.04
61-75	9	0.6	9183	0.98
76-90	2	0.1	6782	0.29

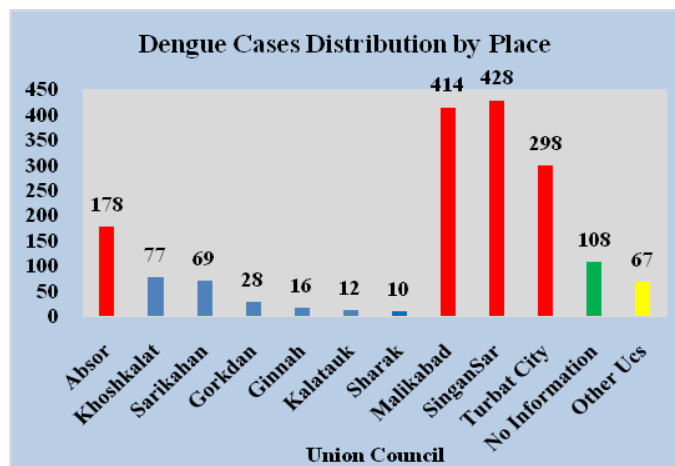
Serotyping was done on five samples from Gwadar and Kech district and all were reported DNV-1

Fig 9: Dengue confirmed cases by week of onset Baluchistan



Majority of confirmed Dengue case are reported from Union councils Singansar, Malikabad, Turbat city and Absor. For 108 cases the location was not mentioned while 67 cases were reported from other Union councils in the district. The villages where IRS and Larvicide activities has been done showing very low trend of cases, but positive cases are reporting from new villages.

Fig 10: Dengue cases by place (Union councils) Baluchistan



Actions taken so far to control Outbreak:

- FELTP, Department of Health and WHO mission conducted the field investigations and support district health team in controlling current outbreak at Kech, Gwadar and Lasbella.
- More than 50 Health Care workers have been trained on to identify and eliminate the Aedes breeding sites.
- Vector control Program Balochistan provided District Health Office NS1 and insecticides for IRS and Larviciding.
- Awareness sessions continuously conducted in the Community particularly for School and college students
- IRS and Larviciding activities still continue.
- Private hospitals are included in surveillance network and were reporting suspected and confirmed dengue cases on daily basis.

Acute Watery Diarrhea Outbreak Investigation in District Lasbela July, 2019:

Clustering of multiple cases of Acute Watery diarrhea (AWD) was reported from UC Wayario, District Lasbela on 17th July 2019.

The objectives of investigation were;

1. To confirm and assess the magnitude of AWD outbreak at Wayario
2. To identify/ assess the risk factors for AWD outbreak
3. To give recommendation for control and future prevention.

A Descriptive study was conducted from 17-18 July 2019 in Wayario. A case was defined as, “any person of any age group and gender resident of village Aqil, Saddiq and Sumali with 3 or more episodes of loose watery stools per day with or without symptoms of fever, abdominal cramps and vomiting from 16th to 20th July 2019”. Hospital records were reviewed and active case finding was done in affected areas. A structured questionnaire was used to collect demographics,

clinical presentations and risk factors information. The two water samples were collected and sent to laboratory for bacteriological examination and culture.

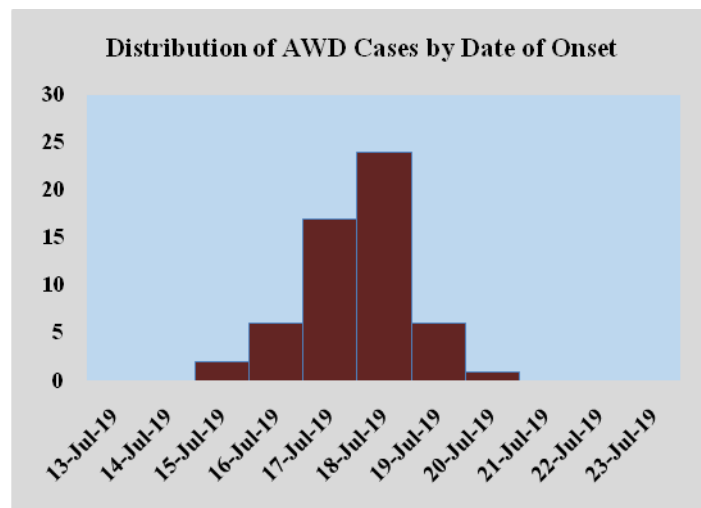
A total of 56 AWD cases identified. The mean age of AWD cases was 28 years with age range 03 years to 50 years. The male to female ratio was about 1:2.3. Majority of cases 55.4% (n=31) were among age group 16-30 years, followed by 28.6% (n=16) among 31-45 years age-group while 12.5% (n=07) were among ,1-15 years of age group. The overall attack rate was 4.2%. The attack rate with affected age group is given in table below.

Table 10: Age distribution of AWD cases-Lasbela

Age Group (Years)	Cases (n=56)	Percentage (%)	Pop. of Age Group	Attack Rate (%)
< 1-15	7	12.5	283	2.5
16-30	31	55.4	258	12.0
31-45	16	28.6	244	6.6
46-60	2	3.6	205	0.9

The prevalent symptoms were diarrhea (100%), vomiting (43%), fever (32%) and abdominal cramp (20%).

Figure 11: Epi-curve showing time distribution of cases of AWD-Lasbela



Action Taken:

- Three medical camps were established in affected areas
- The cases were provided antibiotics, zinc and rehydration therapy
- Stabilization Centre in a dedicated ward was established in DHQ Hospital Uthal Lasbela

- The water purification tablets were distributed in the community.
- Three (3) health education sessions about hygiene and safe drinking water were imparted

**Reported by Dr. Ehsan Ahmed Larik (TSO),
Dr. Jan Inayat (fellow 12th Cohort)**

Outbreak Investigation of AWD-Nagar Parker-Tharparker:

On July 23, 2019, unusual increase in diarrhea cases reported by medical officer at Taulka Hospital Nagarparkar

Objectives:

- To Know The Magnitude Of The Diarrhea Cases.
- To Identify The Risk Factors Associated With Diarrhea Cases.
- To implement Control measures and make recommendations.

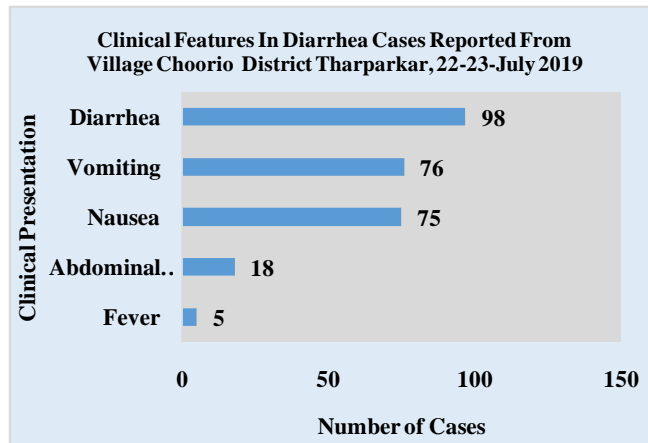
A case was defined as : Any person of any age having episodes of loose motions > 3 times or Vomiting in 24 hours, associated with any of the following signs/symptoms Nausea, abdominal cramps, blood in stool, fever, mucous in stool, residing in village Choorio UC Pheethapur during the last 07 days.Total n=98 Acute Diarrhea cases werereported by active case finding and passive surveillance.Among the total cases n=64 (65.3%) were Female and n=34 (34.6%) were male. Mean age was 15.6 Years with age range (1- 70 years). Most affected age group was 1-5 years of age with attack rate 86.5 per 1000 population followed by 6-10 Years n=22 (22.4%) with attack rate was 67.1 per 1000 population.

Figure 12: Age distribution of AWD cases-Tharparker

Age in Years	No of cases	Attack Rate /1000 population
0-5 Years	35	86.5
6-10 Years	22	67.1
11-15 Years	6	19.8
16-24 Years	8	17.1
25-34 Years	12	33.8
35-44 Years	11	45.8
45-54 Years	1	6.0
55-64 Years	2	15.7
65> Years	1	9.3
	48	19.2
Male	34	27.0
Female	64	51.6

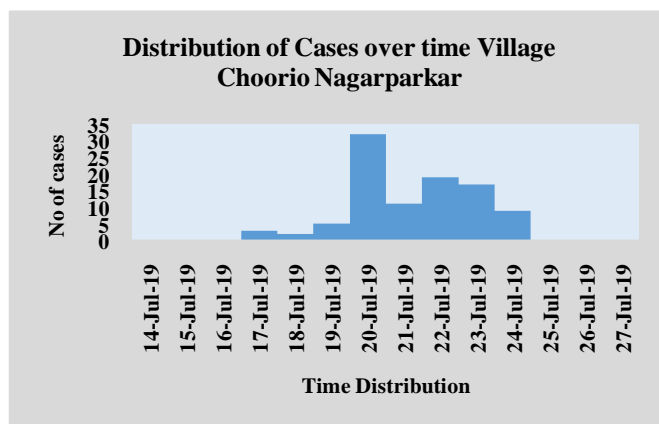
Females have high attack rate that is 51.6 per 1000 population. The overall attack rate was 19.2 per 1000 population. Median age was 8.5 Years.

Figure 12: Presenting complaints of AWD cases-Tharparker-2019



The Clinical Features revealed that all the cases had Diarrhea n=98 (100%) followed by Vomiting n=76(77.6%),Nausea n=75 (76.5%), abdominal Pain n=18(18.4%)and fever=5 (5.1%). Time distribution of cases shows the first case had a symptoms on 17th July and maximum number of cases reported on 20th July 2019. Five patients (5.1%) were hospitalized for further treatment.

Figure 13: Time distribution of AWD cases-Tharparker



Maximum number of cases n=97 (98.9%) affected people used Well-A for drinking water. Well-B is not being used due to its salty taste of water.

Sixty Five (65%) of affected people using open defecation with improper hand washing practices that was only 21%. Water samples has been collected and sent for bacteriological examination.

Actions taken:

Establish Medical Camps at Chooiro Village where all patients were treated with Intravenous fluid and Oral Rehydration Therapy

ORS distributed among whole village and severe dehydrated patients referred to THQ Nagarparkar to further treatment.

Stop for taking the drinking water from affected well.

Health Education sessions on imparted among the affected community on hygiene and Sanitation and boiling of water

Public health engineering department sensitized regarding provision of safe drinking water among the affected community.