



## WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 18 April 29-May 05, 2019

Date: May 8, 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	0	27	0	0	0	195	0	222
<b>Total - 2019</b>	<b>1</b>	<b>429</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1037</b>	<b>2</b>	<b>1471</b>

### CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and **8** cases have been reported in 2019. During the last week no new CCHF case was reported.

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

From November 1, 2016 to May 05, 2019 total of **10,799** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **7,187** were found as Extensive Drug Resistant Typhoid cases. The Drug Resistant cases are mostly reported from Karachi and District Hyderabad. The PDSRU Hyderabad and Regional DSRU Karachi are following up on the Drug Resistant cases in Sindh.

**Table 3: Reported XDR Typhoid Fever cases in Sindh by year (Nov 2016 – April 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 (May 05)	1164	384	153	1,701
<b>Total</b>	<b>5051</b>	<b>1,772</b>	<b>364</b>	<b>7,187</b>

### 1. Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of **8069** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **5051** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to May 05, 2019.

In the 18<sup>th</sup> week of 2019, total **71** new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

Inside Issues	Page No.
Diphtheria /Dengue/ CCHF Surveillance	1
XDR/MDR-Typhoid Surveillance Karachi / Hyderabad Sindh	1-5
Varicella and Measles surveillance Punjab	5-6
Measles Surveillance update KP	6
Dengue update Kech Balochistan	6-7

**Table 1: Weekly and Cumulative Diseases Updates May 05, 2019**

	Disease	New cases April 28-May 05, 2019	Total Cases in 2019
1	CCHF	0	8
2	Varicella	24	417
3	Dengue	222	1471
4	Chikungunya	0	0
5	Measles	275	2628
6	Diphtheria	5	173
7	suspected/confirmed Seasonal Influenza	0	81

### **Influenza Suspected/Confirmed:**

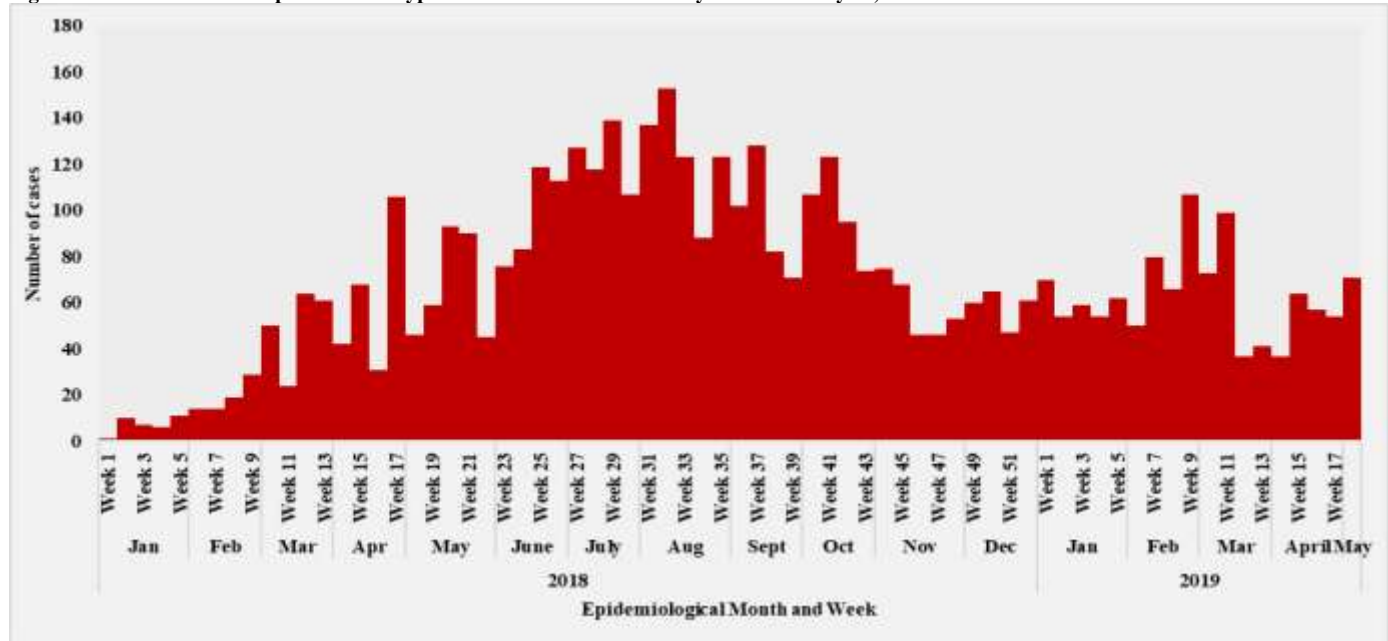
In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 18, 2019, no new case was reported.

### **Diphtheria Surveillance:**

During 2018 total **464** suspected cases of Diphtheria were reported. Total 173 cases reported in 2019 and five new cases 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 **1471** cases have been reported so far. In week 18, 2019, **222** new cases were reported from Sindh (27) and Baluchistan (195).

**Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2018 – May 05, 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.

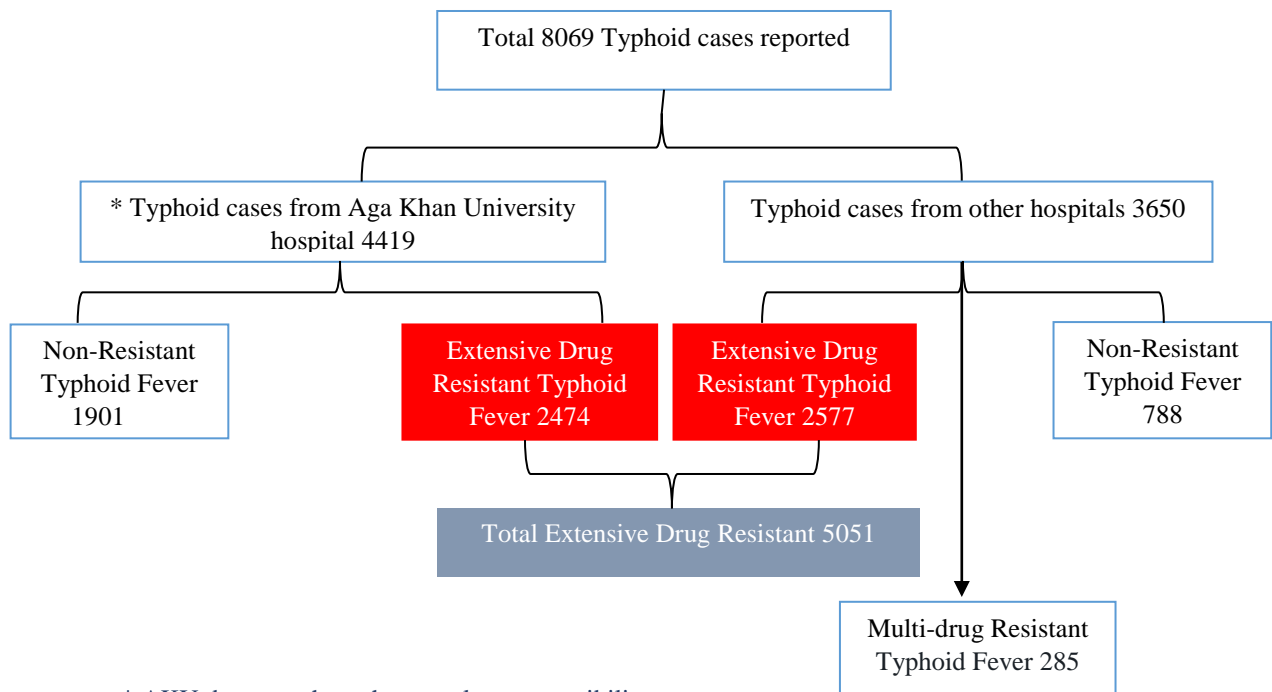
The XDR Typhoid cases were reported mostly among the children and maximum number **1055** (21%) of the XDR cases were reported in the 3-4 years age group.

The overall attack rate was **25/100,000** population. Highest attack rate was found in 3-4 years age group i.e. 78/100,000 followed by 1-2 years age group i.e. 67/100,000. Males had higher attack rate (30/100,000) as compared to females

**Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to May 05, 2018**

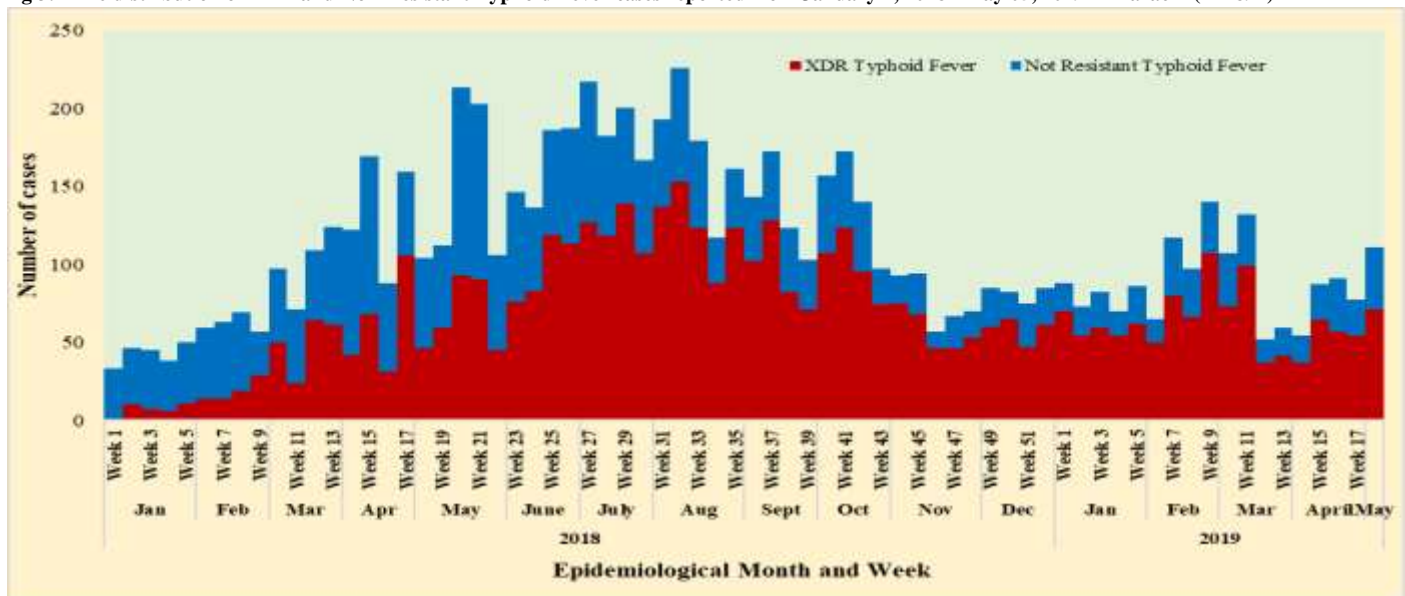
Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
0-11 Month	3.4	686,785	98	14
1-2Y	7.6	1,535,166	1030	67
3-4Y	6.7	1,353,370	1055	78
5-6Y	5.6	1,131,175	619	55
7-8Y	5.1	1,030,177	642	62
9-10Y	5.2	1,050,377	370	35
11-12Y	4.4	888,780	315	35
13-14Y	4.4	888,780	137	15
15-24	20.4	4,120,709	483	12
25-34Y	13	2,625,942	178	7
35-44Y	11	2,221,951	55	2
45-54Y	7.5	1,514,967	33	2
55-64Y	3.7	747,383	23	3
>65	1.99	401,971	13	3
<b>Total</b>	<b>99.99</b>	<b>20,199,554</b>	<b>5051</b>	<b>25</b>
<b>Female</b>	<b>49</b>	<b>9,897,781</b>	<b>2003</b>	<b>20</b>
<b>Male</b>	<b>51</b>	<b>10,301,772</b>	<b>3048</b>	<b>30</b>

**Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to May 05, 2019 in Karachi**



\* AKU does not share the complete susceptibility report of typhoid fever cases

**Fig 3: Time distribution of XDR and Non-Resistant Typhoid Fever cases reported from January 1, 2018 –May 05, 2019 in Karachi (n=7894)**



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).

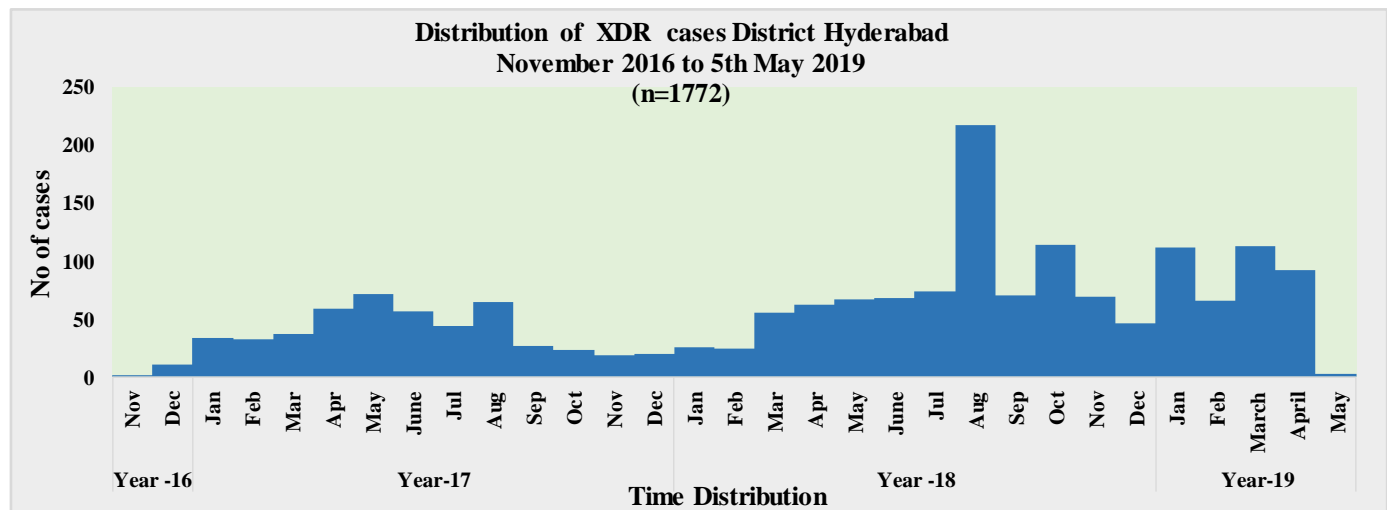
**Reported by: Dr Asif Syed TSO Karachi, Dr Anum Vigio and Dr. Ishfaq (fellows 10th Cohort)**

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

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

From November 2016 to April 21, 2019, a total of **2730** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **2,136** are Extensive Drug Resistant (XDR) cases.

Among all reported XDR cases, **1772 (83 %)** were from District Hyderabad only.

**Fig 4: XDR Typhoid cases reported by month in district Hyderabad (Nov 2016 –May 05, 2019)****Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 – May 05, 2019)**

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	2245	1772	83.0
Tando Allah Yar	10	7	0.3
Badin	72	43	2.0
Dadu	18	12	0.6
Kashmore	4	4	0.2
Ghotki	12	10	0.5
Mirpurkhas	154	121	5.7
Sukkur	24	21	1.0
Tharparkar	5	3	0.1
Sanghar	43	34	1.6
Nau sheroferoz	18	9	0.4
Shikarpur	15	14	0.7
Tando M Khan	1	1	0.0
Jamshoro	68	52	2.4
Umar Kot	4	4	0.2
Jacobabad	2	2	0.1
SBA	5	2	0.1
Larkana	19	15	0.7
Sujawal	2	2	0.1
Jacobabad	1	1	0.0
Thatha	4	4	0.2
Khairpur	4	3	0.1
<b>Total</b>	<b>2730</b>	<b>2136</b>	<b>78.4</b>

The most affected age group was 2-4 years (n=615) with Attack Rate 34.5/10,000 of population followed by 5-9 years of

age group (n=567) 19.1/10000. Overall attack rate is 7.9 /10,000.

**Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=1772)**

Age Group	XDR	Population	Attack rate/10000
0-23 Month	101	118771	8.5
2-4 Year	624	178157	35.0
5-9 Year	573	294728	19.4
10-14 Year	279	266135	10.5
15-19 Year	68	248539	2.7
20-24 Year	53	213348	2.5
25-29 Year	30	175957	1.7
30-34 Year	11	136367	0.8
35-39 Year	14	118771	1.2
40-44 Year	4	94577	0.4
45-49 Year	2	87979	0.2
50-54 Year	6	59386	1.0
55-59 Year	3	59029	0.5
60-64 Year	1	52787	0.2
>65	3	94577	0.3
<b>Total</b>	<b>1772</b>	<b>2199107</b>	
<b>Male</b>	<b>1059</b>	<b>1112968</b>	<b>9.5</b>
<b>Female</b>	<b>713</b>	<b>1086139</b>	<b>6.6</b>

#### 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:**

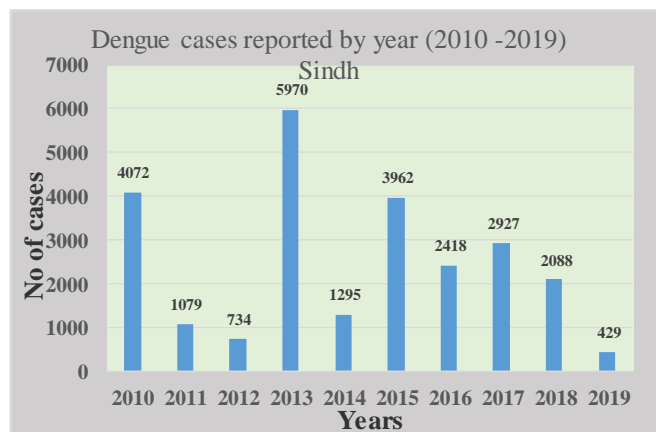
- Total **210,000** children between 6 months to 10 years age in Hyderabad high risk areas have been vaccinated for Typhoid
- Sensitization sessions with general practitioners
- Chlorine tablets were distributed to household in the affected areas of Hyderabad district

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

**Update on Dengue Surveillance Sindh:**

In first week of May, 27 new Dengue cases were reported. Till week 18, 2019 total 429 cases and one death had been reported from Sindh.

**Figure: Dengue cases reported from Sindh**

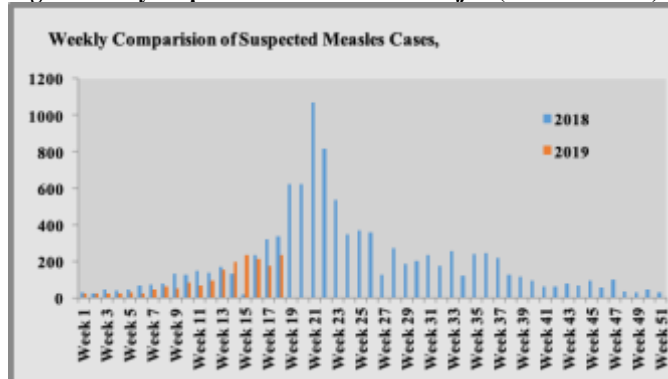


**Update Measles Surveillance Report Punjab:**

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 18, 2019, total **233** new cases of suspected Measles were reported.

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



**Update /Follow-up Varicella Surveillance in Punjab:**

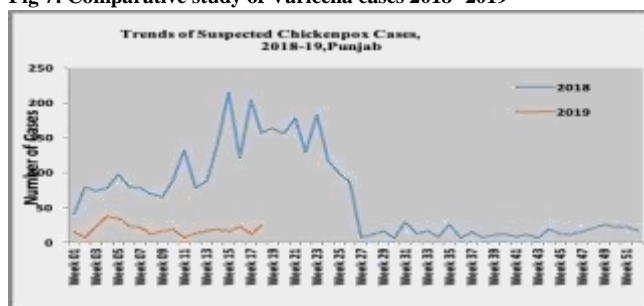
Twenty-four Varicella cases were reported from different districts of Punjab in week 18, 2019. The total number of cases reported from Jan 01, 2018 till May 05, 2019 is **3,683**.

**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.	962	6.6
5-9 Yrs.	1241	8.2
10-14 Yrs.	625	4.7
15-19 Yrs.	253	2.1
20-24 Yrs.	192	1.8
25-29 Yrs.	117	1.4
30-34 Yrs.	106	1.6
35-Above	187	0.6
<b>Total</b>	<b>3683</b>	<b>3.3</b>

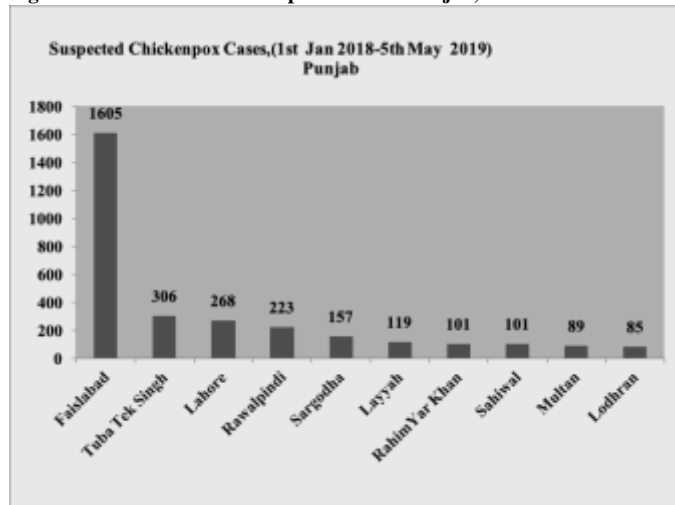
High attack rate was observed in children aged 5-9 yrs. (8.1/100,000) followed by 0-4 yrs. age group (6.6/100,000).

**Fig 7: Comparative study of Varicella cases 2018 -2019**



The highest number of cases were reported from District Faisalabad (**n=1605**). The cases are mostly from two locations (Thandiwallia and Jaharanwalla) in Faisalabad District.

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



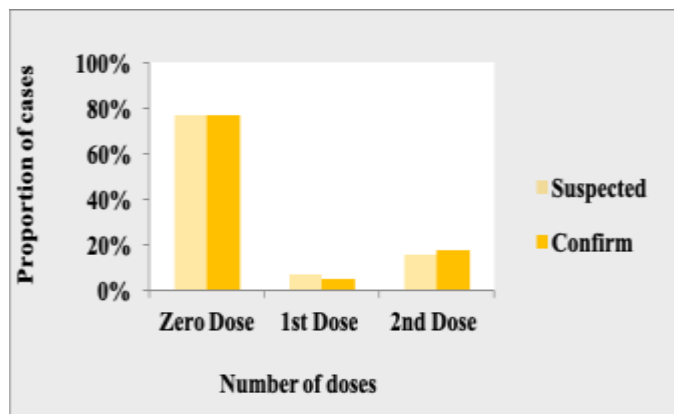
**Reported by:** *Dr Mohsan Wattoo TSO Lahore,*

**Update on Measles Surveillance KP:**

In current week, 42 suspected cases with six confirm cases reported across the province through online EPI MIS software. Suspected cases being reported sporadically from different health facilities of province. Total number of suspected cases are 526 with 64 Lab confirm cases. Clustering of cases not identified in any area.

Among positive cases 62% (n=21) cases being reported from district D I Khan. Overall, 79% (n=51) confirm cases were zero dose, 5% (n=4) received Measles 1 and 17% (n=9) received booster dose. Furthermore, among 64 lab confirmed cases aged more than 9 months, 68% (n=37) were zero dose as per information shared online by EPI staff of district. Overall among suspected cases, 77% (n=330) are zero dose. Further, among 398, suspected cases aged more than 9 months, 31% (n=125) were vaccinated against Measles.

**Fig 8: vaccination status of Measles cases-KP**



**Table 8: Summary statistics of Measles cases in KP**

Median age with Rang in Months (Lab Confirm)	18 Months (07 - 48)
Median age with Rang in Months (Suspected)	18 Months (0 - 360)
Proportion of Male & Female cases (Confirmed)	75% & 25%
Proportion of Male & Female cases (Suspected)	58% & 42%
No. of Lab confirmed cases	12% (n=64)
Measles Vaccination (Lab confirmed)	20% (n=13)
Measles Vaccination (Suspected)	19% (n=84)
Epi Linked positive cases	15% (n=10)

Case response activities were carried out in affected localities with mopping up vaccination.

**Update on Dengue Outbreak Baluchistan:**

After an upsurge of Dengue cases in district Kech and Gwadar a joint team of FELTP, WHO and Department of Health Balochistan conducted field investigation, initiated control interventions and monitoring the Dengue situation in Kech and Gwadar. During the last week, **195** more dengue cases were reported from District Kech.

The dengue was first time reported in 2011 from Gwadar and Kech districts with travel history of the patients to Karachi and other endemic areas of Pakistan. From 2014 onward, Dengue is endemic in the Coastal belt districts of Balochistan.

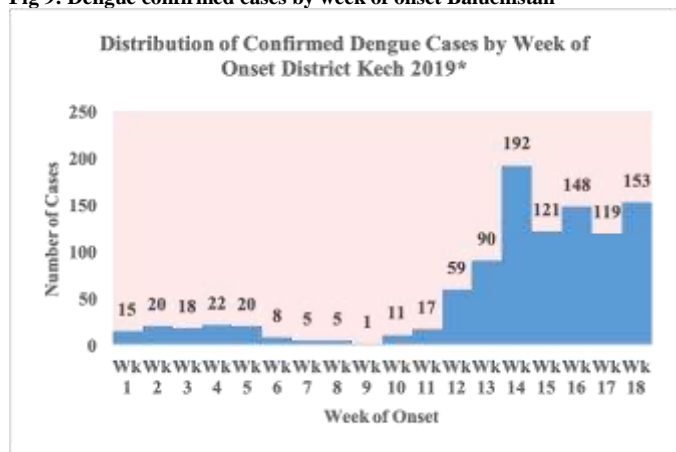
A total of 1024 confirmed cases of dengue have been recorded (Case Fatality Rate=2.93/1000 population). The mean age of dengue cases was 26 years with age range 1 years to 80 years. The male to female ratio was about 2:1. Majority of cases 54.5% (n=464) were among age group 15-29 years, followed by 25.6% (n=218) among 30-44 years' age-group while 10.1% (n=86) were among 1-14 years of age group. The overall attack rate was 4.8/1000 Population.

**Table 9: Age wise attack rate of Dengue-Baluchistan**

Age Group (Years)	Cases (n=670)	Percentage (%)	Pop of that Age Group	Attack Rate/10000 Pop
< 1-14	86	10.1	88861	9.68
15-29	464	54.5	59390	78.13
30-44	218	25.6	33571	64.94
45-59	71	8.3	20523	34.60
60-74	11	1.3	9183	11.98
75-89	1	0.1	6782	1.47

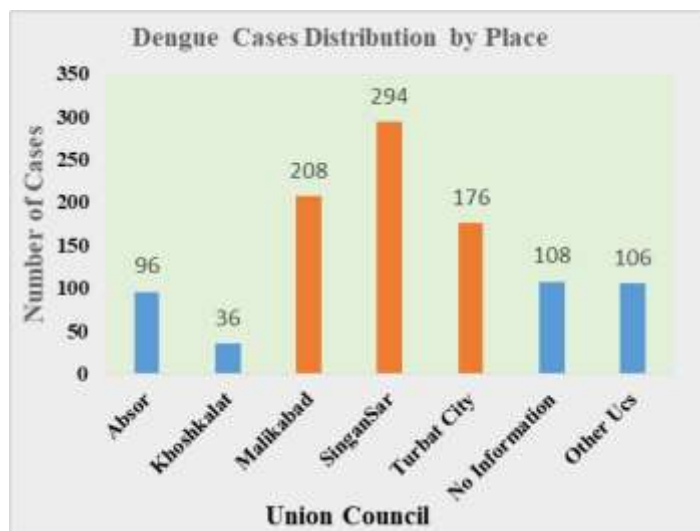
Serotyping was done on five samples from Gwadar and Kech district and all were reported DNV-1

**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 106 cases were reported from other Union councils in the district.

**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.

**Reported by Dr. Ehsan Ahmed Larik (TSO),**