



## WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 14 April 01-07, 2019

Date: April 11, 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	11	1	155
Feb-19	0	99	0	0	0	12	0	111
March-19	0	67	0	0	0	257	0	324
April-19	1	12	0	0	1	163	0	177
<b>Total - 2019</b>	<b>1</b>	<b>321</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>443</b>	<b>1</b>	<b>767</b>

### CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and 4 cases have been reported in 2019. During the last week one new CCHF case was reported from Karachi

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

From November 1, 2016 to March 24, 2019 total of **10,219** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **6,780** 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 07, 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 (April 06)	876	309	109	1,294
<b>Total</b>	<b>4,763</b>	<b>1,697</b>	<b>320</b>	<b>6,780</b>

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

A total of **7,646** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **4,763** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to April 7, 2019.

In the 14<sup>th</sup> week of 2019, total **37** new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

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**Table 1: Weekly and Cumulative Diseases Updates April 07, 2019**

Disease	New cases March-25-31, 2019	Total Cases in 2019
1 CCHF	0	4
2 Varicella	19	343
3 Dengue	177	767
4 Chikungunya	0	0
5 Measles	258	1329
6 Diphtheria	3	145
7 suspected/confirmed Seasonal Influenza	0	81

### Influenza Suspected/Confirmed:

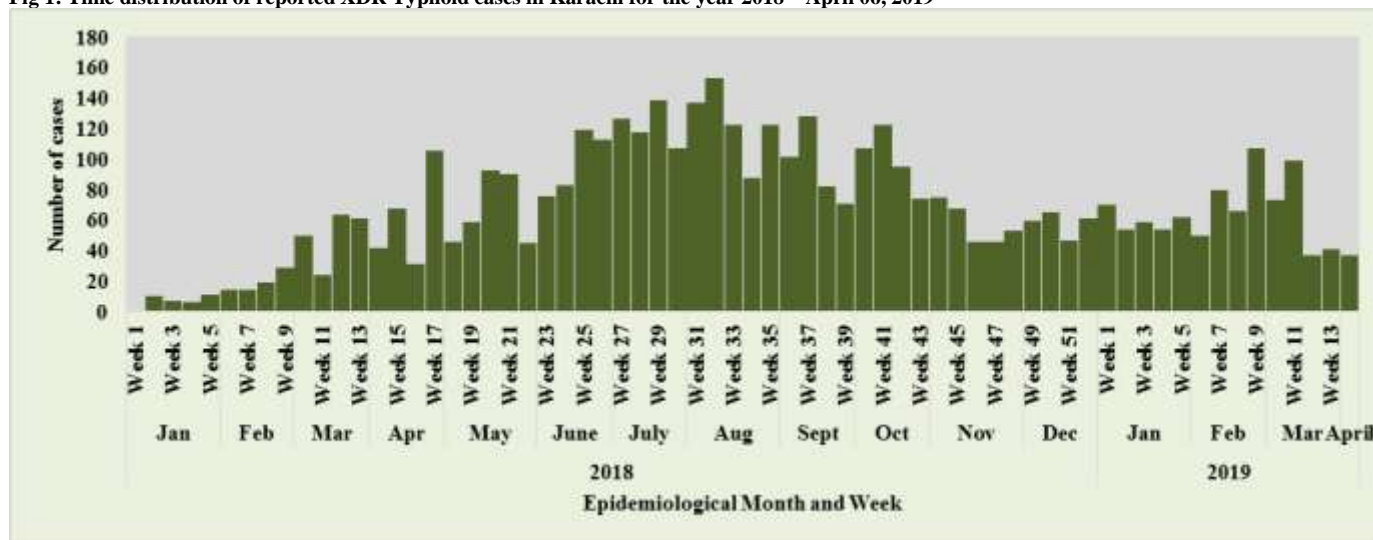
In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 14, 2019, no new case was reported.

### Diphtheria Surveillance:

During 2018 total **464** suspected cases of Diphtheria were reported. Last week 12, **three** new cases were reported.

### 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 **767** cases have been reported so far. In week 14, 2019, **177** new cases were reported from Sindh (**12**), Baluchistan (**163**), Merged Area (**1**) and KP (**1**).

**Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2018 – April 06, 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 **9395**(20.7%) of the XDR cases were reported in the 3-4 years age group.

The overall attack rate was **24/100,000** population. Highest attack rate was found in 3-4 years age group i.e. 74/100,000 followed by 1-2 years age group i.e. 63/100,000. Males had higher attack rate (28/100,000) as compared to females

**Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to April 06, 2018**

Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
<b>0-11 Month</b>	3.4	686,785	93	14
<b>1-2Y</b>	7.6	1,535,166	960	63
<b>3-4Y</b>	6.7	1,353,370	995	74
<b>5-6Y</b>	5.6	1,131,175	585	52
<b>7-8Y</b>	5.1	1,030,177	599	58
<b>9-10Y</b>	5.2	1,050,377	347	33
<b>11-12Y</b>	4.4	888,780	304	34
<b>13-14Y</b>	4.4	888,780	128	14
<b>15-24</b>	20.4	4,120,709	464	11
<b>25-34Y</b>	13	2,625,942	170	6
<b>35-44Y</b>	11	2,221,951	51	2
<b>45-54Y</b>	7.5	1,514,967	32	2
<b>55-64Y</b>	3.7	747,383	23	3
<b>&gt;65</b>	1.99	401,971	12	3
<b>Total</b>	<b>99.99</b>	<b>20,199,554</b>	<b>4763</b>	<b>24</b>
<b>Female</b>	<b>49</b>	<b>9,897,781</b>	<b>1881</b>	<b>19</b>
<b>Male</b>	<b>51</b>	<b>10,301,772</b>	<b>2882</b>	<b>28</b>

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to April 07, 2019 in Karachi

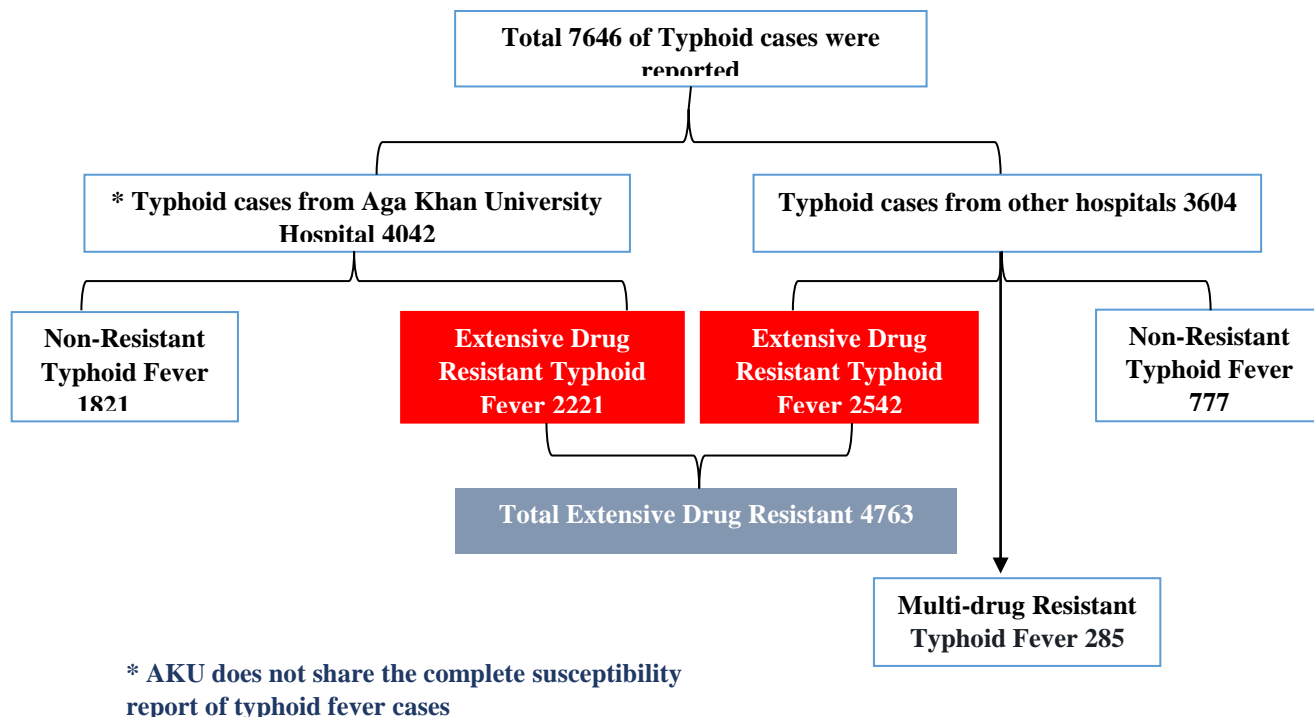
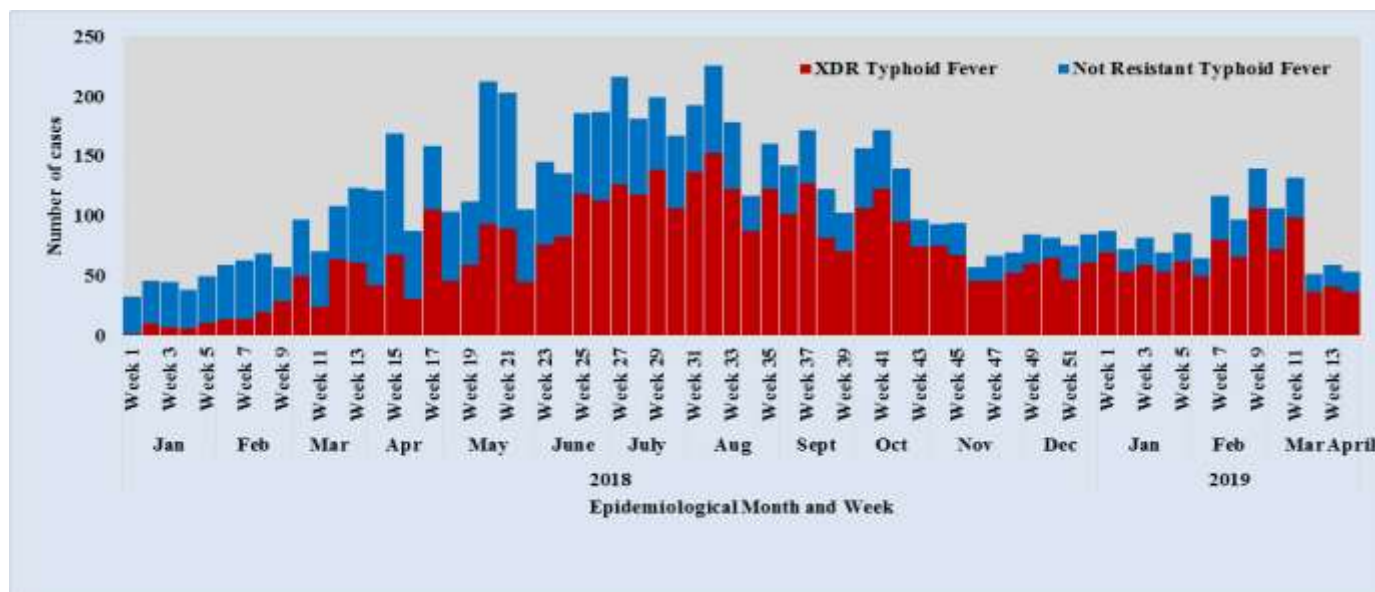


Fig 3: Time distribution of XDR and Non-Resistant Typhoid Fever cases reported from January 1, 2018 –April 07, 2019 in Karachi (n=7646)



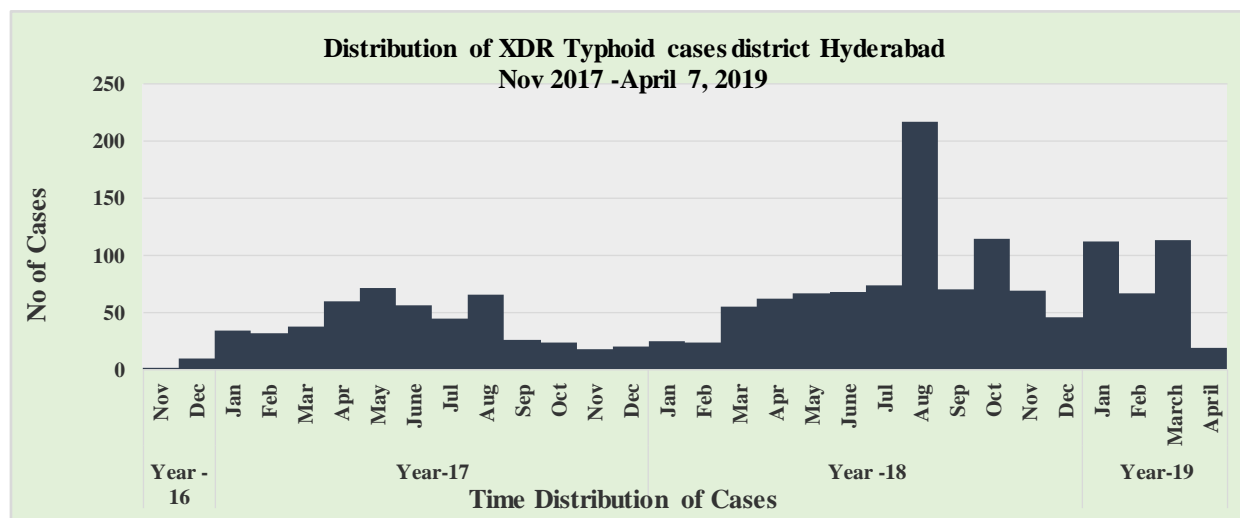
The highest Incidence Rate of the cases was reported from 5 towns: Gulshan-e-Iqbal (AR=27.1/100,000), Saddar (16.6/100,000), North Nazimabad (AR 10.7/100,000), Malir (AR 10.1/100,000), Gulberg (AR 9.7/100,000) and Liyari (AR 10.1/100,000). While lowest Incidence was recorded in SITE town (AR=0.1/100,000).

**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 7, 2019, a total of **2573** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **2,017** are Extensive Drug Resistant (XDR) cases.

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

**Fig 4: XDR Typhoid cases reported by month in district Hyderabad (Nov 2016 –April 06, 2019)**

Among all reported XDR cases, **1697 (84.8 %)** were from District Hyderabad only.

**Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 – April 06, 2019)**

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	2139	1697	84.1
Tando Allah Yar	9	6	0.3
Badin	69	42	2.1
Dadu	15	10	0.5
Kashmore	3	3	0.3
Ghotki	7	5	0.2
Mirpurkhas	144	113	5.2
Sukkur	19	18	0.9
Tharparkar	4	2	0.1
Sanghar	41	31	1.6
Nau sheroferoz	15	6	0.4
Shikarpur	11	10	0.2
Tando M Khan	1	1	0.2
Jamshoro	63	49	1.9
Umar Kot	3	3	0.1
Jacobabad	2	2	0.1
SBA	3	0	0.1
Larkana	15	10	0.4
Sujawal	1	2	0.1
Jacobabad	1	1	0.1
Thatha	4	4	0.1
<b>Total</b>	<b>2573</b>	<b>2017</b>	<b>78.6</b>

The most affected age group was 2-4 years (**n=560**) with Attack Rate 31.4/10,000 of population followed by 5-9 years of age group (**n=478**) 16.2/10000. Overall attack rate is **7.7** /10,000.

**Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=1697)**

Age Group	XDR	Population	Attack rate/10000
0-23 Month	141	118771	11.9
2-4 Year	560	178157	31.4
5-9 Year	478	294728	16.2
10-14 Year	276	266135	10.4
15-19 Year	76	248539	3.1
20-24 Year	70	213348	3.3
25-29 Year	31	175957	1.8
30-34 Year	23	136367	1.7
35-39 Year	16	118771	1.3
40-44 Year	6	94577	0.6
45-49 Year	5	87979	0.6
50-54 Year	9	59386	1.5
55-59 Year	2	59029	0.3
60-64 Year	1	52787	0.2
>65	3	94577	0.3
<b>Total</b>	<b>1697</b>	<b>2199107</b>	<b>7.7</b>
<b>Male</b>	<b>1014</b>	<b>1112968</b>	<b>9.1</b>
<b>Female</b>	<b>683</b>	<b>1086139</b>	<b>56.3</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:**

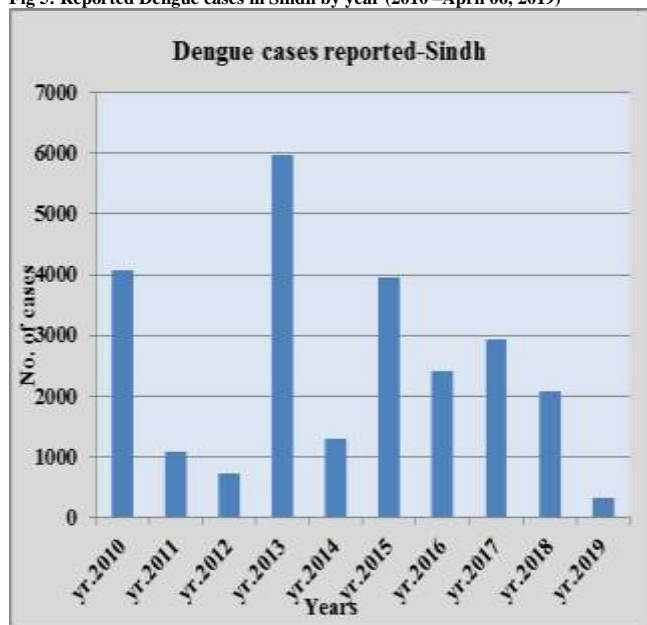
- Total **210,000** children between 6 months to 10 years age in Hyderabad high risk areas have been vaccinated for Typhoid
- Sensitization sessions with general practitioners
- Chlorine tablets were distributed to household in the affected areas of Hyderabad district

**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)*

**Dengue Surveillance in Sindh:**

In week 14, total **12** new Dengue cases were reported from Sindh. In 2018 total **2088** cases and two deaths were reported. Maximum number of cases was reported in 2013.

Fig 5: Reported Dengue cases in Sindh by year (2010 –April 06, 2019)



**CCHF Cases Report-Karachi:**

On 2nd April, a confirmed CCHF cases reported from Agha Khan University Hospital, a 55 years male, from Sehwan Sharif Sindh. On 26th March He has onset of symptoms and was

found positive on 31st March. Later in days his condition worsened and he expired on same day.

**Suspected Risk Factors:**

- Even though no known contact history with animals was found to the best of the attendant’s knowledge, there were stables present in the deceased neighboring areas.

**Recommendations**

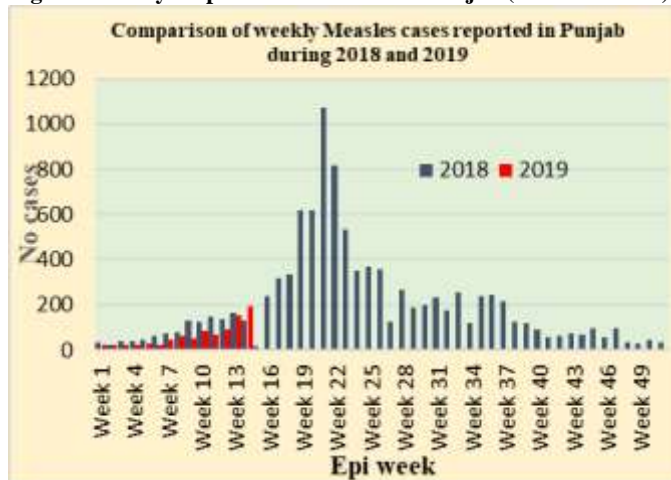
- Case definition circulation to all health care providers.
- Conduct Health Education campaign in affected area
- Strengthening of the surveillance system for CCHF
- Need to develop a link between JPMC and Health Department for timely reporting of any such future cases.
- Decontaminate ruminants and their stables in affected area

**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

During 2019 total **893** suspected Measles cases have been reported. In week 14, 2019, total **194** new cases of suspected Measles were reported.

Figure: Weekly suspected Measles cases-Punjab (2018 and 2019)



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

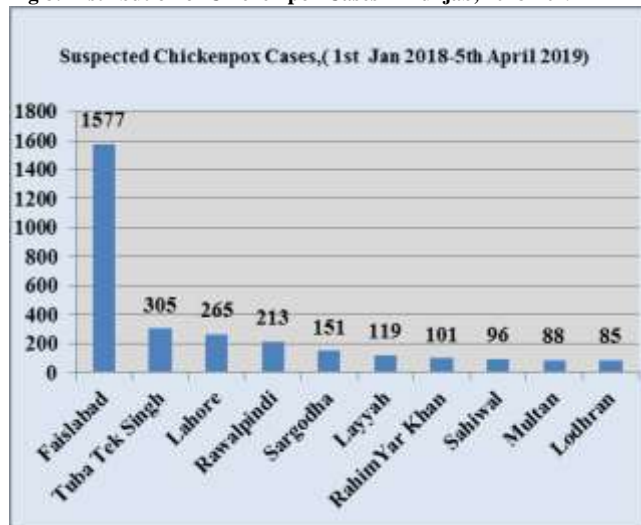
Nineteen Varicella cases were reported from different districts of Punjab in week 14, 2019. The total number of cases reported from Jan 01, 2018 till April 07, 2019 is **3,609**.

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

Age Group	Total number of Cases (2018)	AR/100,000
0-4 Yrs.	944	6.5
5-9 Yrs.	1219	8.0
10-14 Yrs.	612	4.6
15-19 Yrs.	249	2.1
20-24 Yrs.	187	1.8
25-29 Yrs.	113	1.4
30-34 Yrs.	103	1.6
35-Above	182	0.6
<b>Total</b>	<b>3,609</b>	<b>3.3</b>

High attack rate was observed in children aged 5-9 yrs. (8.0/100,000) followed by 0-4 yrs. age group (6.4/100,000).

The highest number of cases were reported from District Faisalabad (n=1577). The cases are mostly from two locations (Thandiwallia and Jaharanwalla) in Faisalabad District.

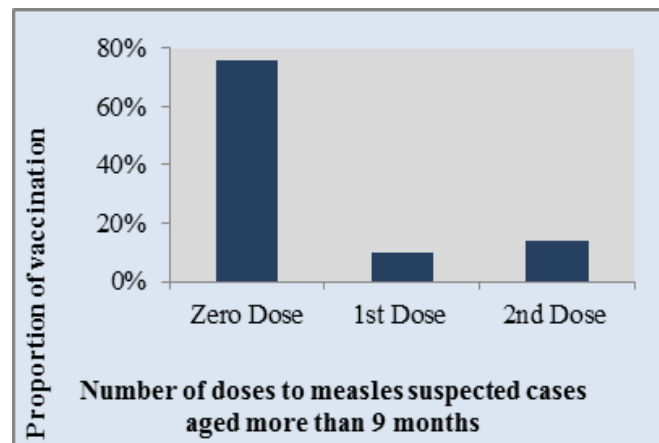
**Fig 8: Distribution of Chicken pox Cases in Punjab, 2018-2019**

Reported by: *Dr Mohsan Wattoo TSO Lahore,*

### Update on Measles Surveillance KP:

In current week, 22 suspected cases reported through online EPI MIS software. Cases being reported sporadically from different health facilities of province. Total number of suspected cases are 329 with 23 Lab confirm cases. Clustering of cases not identified in any area.

Among positive cases 56% (n=13) cases being reported from district D I Khan followed by district Mardan 21% (n=5). Overall, 73% (n=17) confirm cases were zero dose. Further, among 19, lab confirmed cases aged more than 9 months, 63% (n=12) were zero dose as per information shared online by EPI staff of district.

**Figure: vaccination status of Measles cases-KP**

Overall all among 335 suspected cases 74% are zero dose. Further, among 237 suspected cases aged more than 9 months, 22% (n=54) were vaccinated against Measles.

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

**Table: 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 (Confirm)	75% & 25%
Proportion of Male & Female cases (Suspected)	58% & 42%
No. of Lab confirm cases	6% (n=23)
Measles Vaccination (Lab confirm)	26% (n=6)
Measles Vaccination (Suspected)	17% (n=56)
H/O of travel in last 21 days	1% (n=1)

### Update on Diphtheria-KP:

In current week, two diphtheria cases reported from district Peshawar and Bannu. Total numbers of suspected diphtheria cases are 37 with no deaths. Majority of cases (63%) reported from three districts Peshawar, Bannu and Nowshera

All cases presented with rash, fever and adherent membrane tonsillitis. Samples were sent for lab confirmation. Summary statistics of cases is as under;

**Table: Summary statistics of Diphtheria cases**

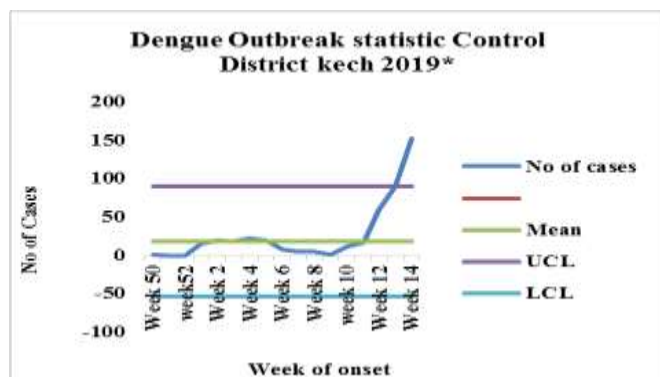
Median age with Range in Months	90 Months (19 - 196)
Proportion of male & female cases	55% (n=21) & 45% (n=16)
Routine Immunization Status	Zero dose
H/O Travel in last 21 days	4.5% (n=1)
Case fatality	Nil

**Update on Dengue Outbreak Baluchistan:**

During the last week, 163 more dengue cases were reported from District Kech.

The dengue is now endemic in costal belt of Balochistan. The dengue was first time reported in 2011 with travel history to Karachi and other endemic areas of Pakistan. After 2014, it endemic now in Costal belt of Balochistan.

**Figure: Dengue statistics in district Kech-Baluchistan**



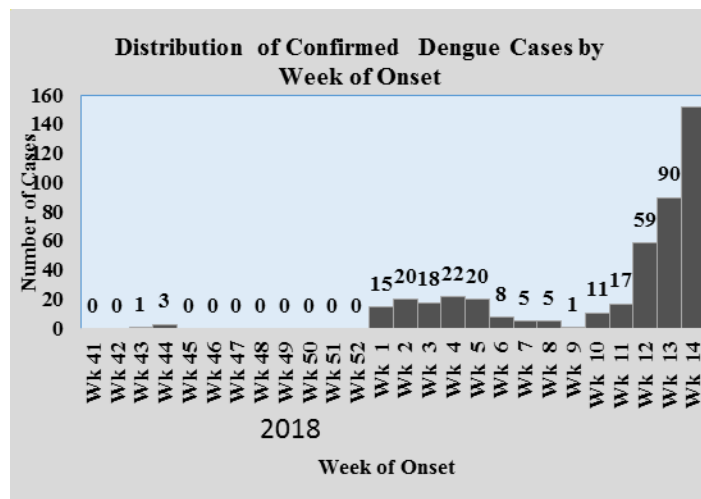
A total of 443 cases of confirmed dengue were identified (Case Fatality Rate=0.68%). The mean age of cases was 30 years with age range 2 years to 65 years. The male to female ratio was about 1.8:1. Majority of cases 51.3% (n=164) were among age group 15-29 years, followed by 28.1% (n=90) among 30-44 years age-group while 10.9% (n=35) were among 1-14 years of age group. The overall attack rate was 2.1/1000 Population.

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

Age Group (Years)	Cases (n=320)	Percentage (%)	Pop of that Age Group	Attack Rate/10000 Pop
< 1-14	35	10.9	88861	3.94
15-29	164	51.3	59390	27.61
30-44	90	28.1	33571	26.81
45-59	23	7.2	20523	11.21
60-74	8	2.5	9183	8.71

Among the total 443 cases, males 63.9% (n=283) were more affected than female 36.1% (n=160)

**Figure: Epi-Curve showing confirmed cases**



The index case reported on 43rd week 2018, then the cases started reporting from 1st week of 2019 and peak achieved on 14th week 2019 and last case reported on 7th April 2019.

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