

WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 39 Sept 23-29, 2019

Date: October 07, 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.

were reported from DSRUs and 71 cases have been reported in 2019. During the last week 4 new CCHF case were reported.

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
Aug-19	88	0	2	140	10	6	758	1004
Sept-19*	2513	1935	504	2705	235	297	2714	10903
Total - 2019	2641	2937	506	2845	278	2000	3517	14724

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

From November 1, 2016 to September 29, 2019 total of 16,153 Typhoid Fever cases were reported from different districts of Sindh province. Out of these 11,209 were found as Extensive Drug Resistant Typhoid cases.

Table 3: Reported XDR Typhoid Fever cases in Sindh by year (Nov 2016 –September 29, 2019)

Year	Karachi	Hyderabad	Other Districts	Sindh Total
2017	175	485	4	664
2018	3,712	891	207	4,810
2019 (September 29)	3627	1308	788	5,723
Total	7514	2696	999	11,209

1. Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of 11541 lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these 7514 were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to September 29, 2019.

In the week 39 of 2019, total 109 new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

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Table 1: Weekly and Cumulative Diseases Updates September 29, 2019

	Disease	Sept 23-29, 2019	Total Cases in 2019
1	CCHF	4	71
2	Varicella	14	1036
3	Dengue	4651	14724
4	Chikungunya	0	0
5	Measles	99	6152
6	Diphtheria	19	309
7	suspected/confirmed Seasonal Influenza	0	82

Influenza Suspected/Confirmed:

In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 39, 2019, no new case was reported.

Diphtheria Surveillance:

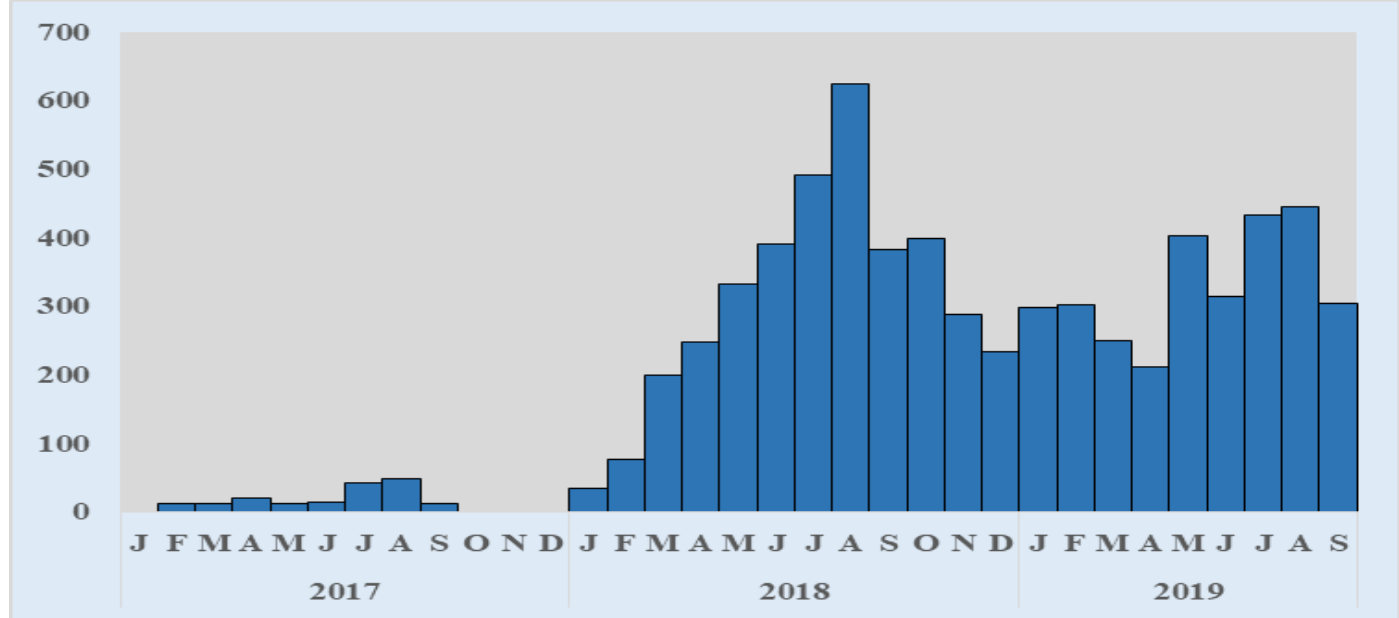
During 2018 total 464 suspected cases of Diphtheria were reported. Total 309 cases reported in 2019 and 19 new case reported last week.

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 12,168 cases have been reported so far. In week 39, 2019, Punjab (1054), KP (1229), Baluchistan (190), Merged Area (123), ICT (1056), Sindh (614), & AJK (385).

CCHF Surveillance:

In 2018 total 63 CCHF (suspected and confirmed) cases

Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2017 – September 29, 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.

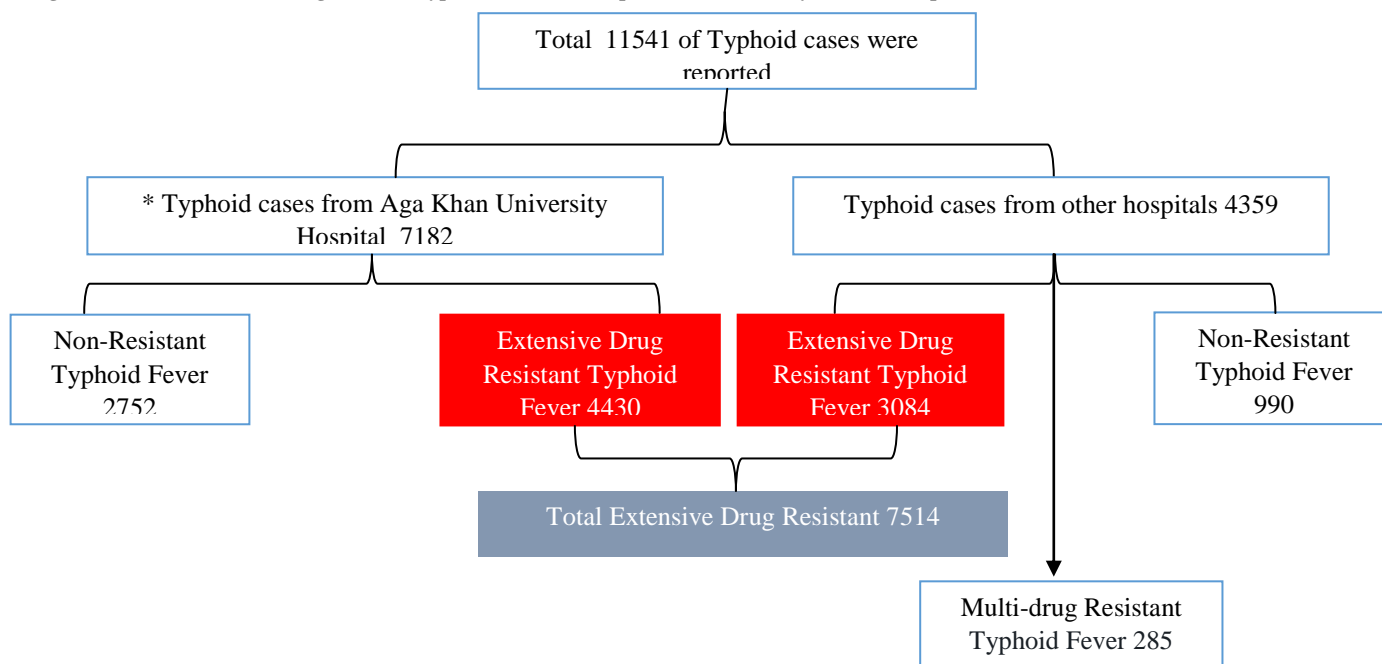
The XDR Typhoid cases were reported mostly among the children and maximum number **3114** (42%) of the XDR cases were reported in the 0-4 years age group.

The overall attack rate was **37/100,000** population. Highest attack rate was found in 0-4 years age group i.e. 114/100,000 followed by 5-9 years age group i.e. 82/100,000. Males had higher attack rate (46/100,000) as compared to females

Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to September 29, 2018

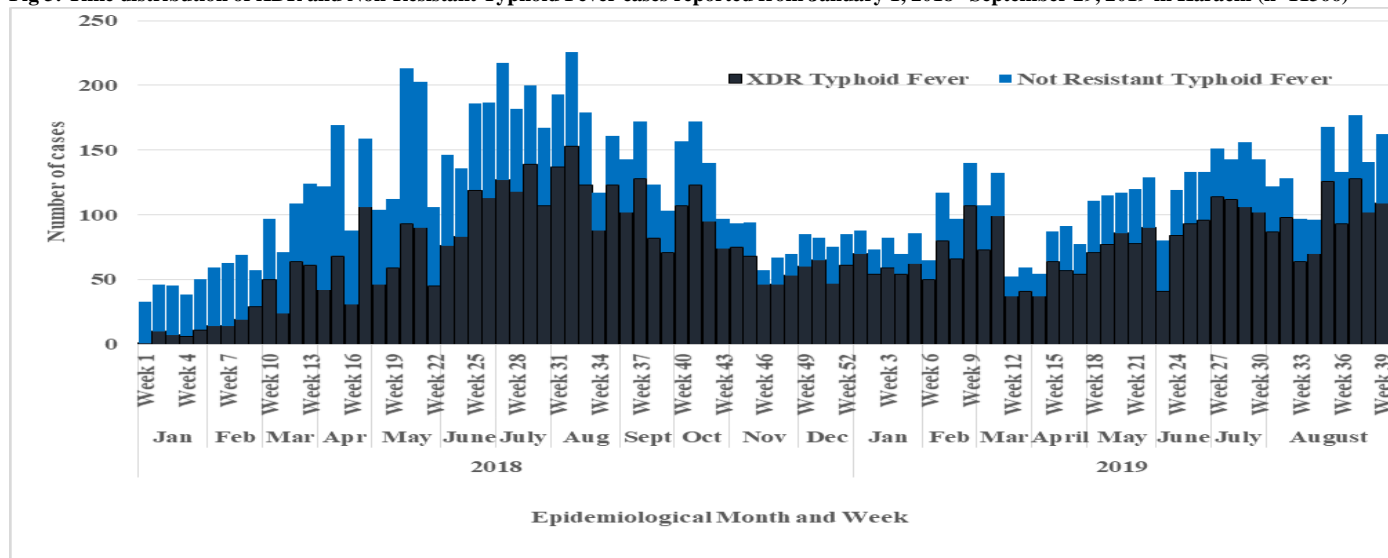
Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
0-4 Y	13.5	2726940	3114	114
5-9 Y	13.4	2706740	2223	82
10-14 Y	12.1	2444146	925	38
15-19 Y	11.3	2282550	483	21
20-24 Y	9.7	1959357	311	16
25-29 Y	8	1615964	193	12
30-34 Y	6.2	1252372	85	7
35-39 Y	5.4	1090776	47	4
40-44 Y	4.3	868581	36	4
45-49 Y	4	807982	29	4
50-54 Y	2.7	545388	22	4
55-59 Y	2.7	545388	15	3
60-64 Y	2.4	484789	17	4
>65	4.3	868581	14	2
Total	99.99	20,199,554	7514	37
Male	51	10301767	2998	46
Female	49	9897777	4516	29

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to September 29, 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 –September 29, 2019 in Karachi (n=11366)



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).

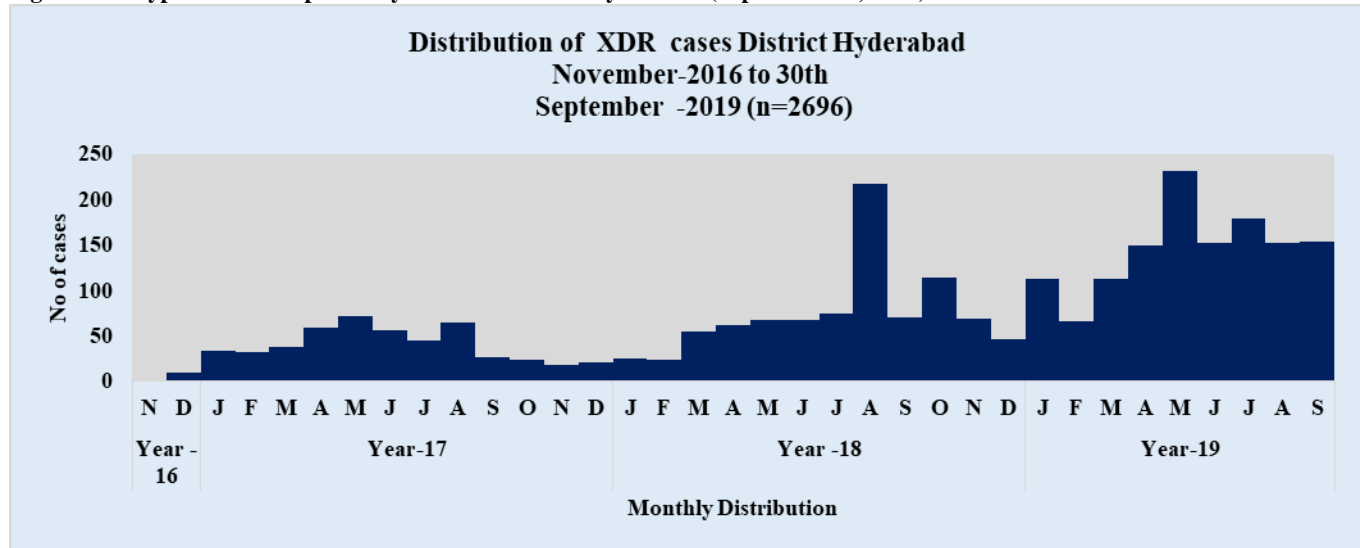
Reported by: *Dr Asif Syed TSO Karachi, Dr Anum Vigio and Dr. Ishfaqe (fellows 10th Cohort)*

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 September 29th, 2019, a total of **4612** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **3,695** are Extensive Drug Resistant (XDR) cases.

Among all reported XDR cases, **2696 (73 %)** were from District Hyderabad only.

Fig 4: XDR Typhoid cases reported by month in district Hyderabad (September 29, 2019)**Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 –September 29, 2019)**

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	3403	2696	73
Mirpurkhas	301	248	6.7
Jamshoro	208	173	4.7
Badin	117	82	2.2
Sanghar	116	100	2.7
Sukkur	70	61	1.7
Khairpur	55	46	1.2
Larkana	54	47	1.3
Kashmore	46	43	1.2
Nau sheroferoz	42	32	0.9
Ghotki	38	33	0.9
Dadu	35	27	0.7
Shikarpur	33	32	0.9
Tharparkar	18	13	0.4
Tando Allah Yar	17	11	0.3
SBA	16	13	0.4
Jacobabad	13	12	0.3
Thatha	12	11	0.3
Umar Kot	6	5	0.1
Sujawal	6	4	0.2
Mithiari	4	4	0.1
Tando M Khan	2	2	0.1
Total	4612	3695	80.2

age group (n=844) 28.6/10000. Overall attack rate is 12.2/10,000.

Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=2696)

Age Group	XDR	Population	Attack rate(10,000)
0-4 Y		295146	
	1137		38.5
5-9 Y		292960	
	844		28.8
10-14 Y		264538	
	376		14.2
15-19 Y		247048	
	111		4.5
20-24 Y		212068	
	93		4.4
25-29 Y		174901	
	51		2.9
30-34 Y		135548	
	27		2.0
35-39 Y		118058	
	19		1.6
40-44 Y		94009	
	11		1.2
45-49 Y		87451	
	6		0.7
50-54 Y		59029	
	10		1.7
55-59 Y		59029	
	6		1.0
60-64 Y		52470	
	2		0.4
>65		94009	
	3		0.3
Total	2696	2186266	12.3
Male	1605	1106469	14.5
Female	1091	1079797	10.1

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)

The most affected age group was 0-4 years (n=1137) with Attack Rate 38.5/10,000 of population followed by 5-9 years of

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

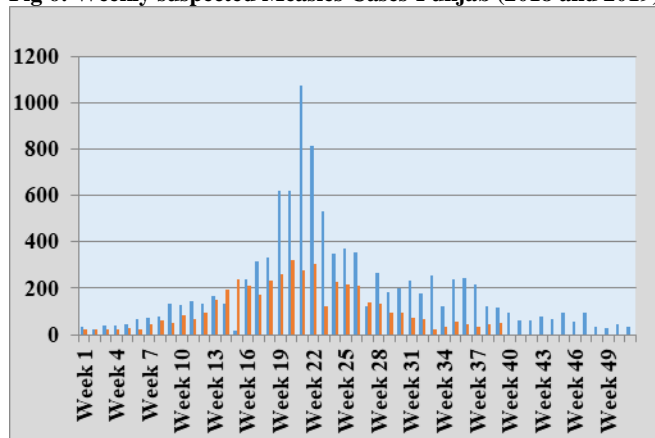
Reported by: *Dr Naveed Memon TSO Hyderabad, Dr Santosh, Dr Munaza (fellow, 11th cohort), Dr Mudassar (alumnus, 9th cohort)*

Update 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 39, 2019, total **48** 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 September 29, 2019 is **4,408**.

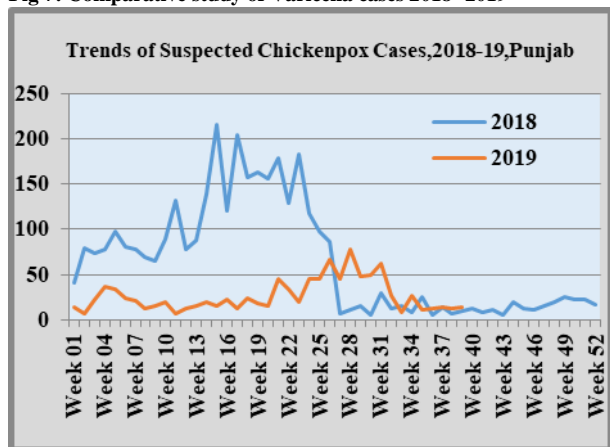
Table 7: Age specific attack rates of Varicella in Punjab in 2018-2019

Age Group	Total number of Cases (2019)	AR/100,000
0-4 Yrs.	1134	7.0
5-9 Yrs.	1534	8.6
10-14 Yrs.	724	4.9
15-19 Yrs.	295	2.2
20-24 Yrs.	226	2.0

25-29 Yrs.	150	1.6
30-34 Yrs.	128	1.8
35-Above	217	0.7
Total	4408	3.5

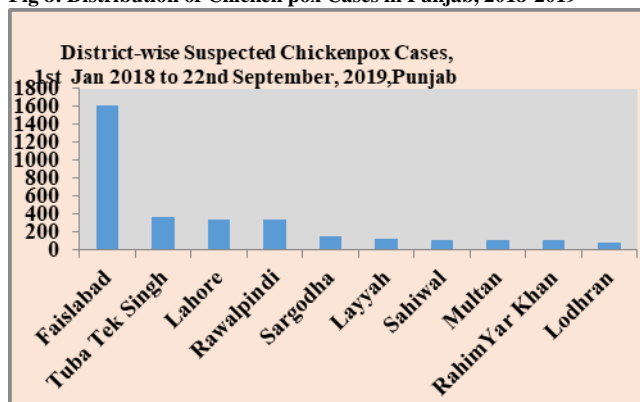
High attack rate was observed in children aged 5-9 yrs. (8.6 /100,000) followed by 0-4 yrs. age group (7.0/100,000).

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, Dr. Tahir Muneer, Dr. Shehzad Naseem (fellows 12th cohort)*

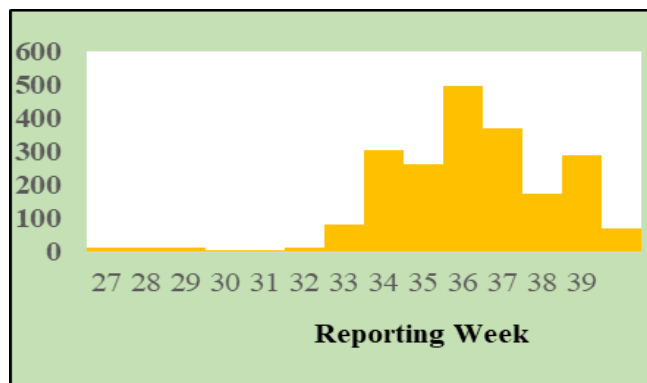
Update on Dengue Fever Surveillance-KP:

KP province and specifically district Peshawar experienced dengue fever epidemic in 2017 in which more than 24,000 people suffered from disease. After relatively quiet year of 2018, dengue fever emerged strongly across the province. Cases began to rise in the month of august with majority of disease burden shared by rural union councils of district Peshawar. Till to date total of 4,182 laboratory confirmed cases reported across the province and again 44% of disease burden shared by district Peshawar.

After the dengue fever epidemic of 2017, Dengue fever is endemic in district Peshawar considering the abundance of dengue fever risk factors which includes; Urban population,

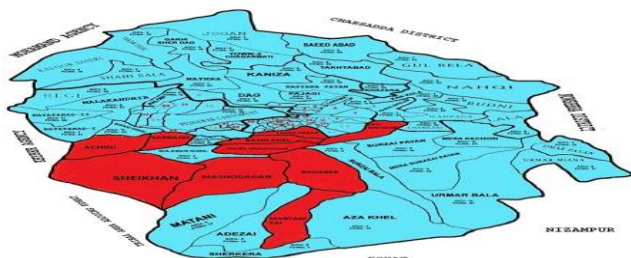
indoor storage of water and poor sanitation conditions. Since June, 2019 a total of 1,869 laboratory confirmed cases have been reported from different health facilities of district Peshawar including major teaching hospitals/MTIs. Cases started to rise in week 34 and achieved peak in week 36.

Fig 9: Epi curve showing no. of cases in reporting weeks-KP



Majority of cases (61%) emerged from 06 rural union councils of district. These areas were less affected in 2017 epidemic. In 2018, some 180 cases reported from these localities.

Fig 10: Spot map showing location of cases in KP



Among high risk areas, union council sheikh Mohammadi was most affected area with over-all attack rate of 8 per 100 populations. Shiek Mohammadi is the area where initial cases were identified in early august 2019.

Table 8: Geographical distribution of Dengue cases (AR) in KP

Name of UC	No. of cases / Population	Over-all Attack Rate / 1000 pop
Shiekh Mohammadi	401 / 46675	8
Sarband	144 / 62156	2
Shiekhan	143 / 65046	2
Badhbhaira	309 / 76800	3
Bazid Khyel	72 / 26422	3
Achini	75 / 63252	1

Age groups of 15 – 19 and 25 – 29 years were most affected. Male cases were slightly higher than females with median age of 25 years.

Table 9: Summary statistics of Dengue cases-KP

Total number of Suspected / Confirm cases	1869
Most affected UC (Shiekh Mohammadi)	AR 8/1000 Population
Median Age	25 years (4 - 92)
Most affected age groups in years	15 – 19, 25 – 29
Male female proportion	56% (1063) – 44% (806)

Action Taken:

- Provincial and district Dengue Response Unit were make operational across province for collection, analysis and interpretation of daily dengue related disease and vector data
- Standardized dengue fever prevention and control guidelines were shared with all stake holders with the special focus on involvement of multi sectors
- Dengue fever disease surveillance was enhanced in all government and private sector health facilities. Dengue fever is among 14 notifiable diseases as per Public Health Act KP 2017
- Indoor and outdoor vector surveillance activities were carried out in the affected localities.
- Line departments which includes local administration, local government, WSSP, education and oakaf department was taken on board for collaborative response activities
- Health awareness and communication sessions conducted in the community
- Dengue isolation wards were established in major health facilities
- Special anti-dengue campaign planned in high risk union councils in consultation with line departments and international partners starting from October 7th, 2019

Gapes Identified:

- Delayed operational activities at district level as incurred in Dengue Action Plan for KP Province, 2019, which shared with all stake holders in the month of January, 2019
- Lack of standardized use of dengue fever case definition and reporting protocols
- Inconsistent dengue fever case reporting across public and private sector health facilities
- Non availability of district epidemiologists and medical entomologists to guide disease and vector surveillance and response

Short Term Recommendation

- Special Anti-dengue campaign in high risk union councils with special focus on larvae identification & removal and disease prevention education
- Indoor and outdoor vector surveillance

Long term Recommendation

- Implementation of KP public health act 2017. Enhanced dengue fever disease surveillance from all public and private health facilities, Sentinel, syndromic and community based disease surveillance
- Allocation of more resources for well integrated disease surveillance and outbreak response. Proper arrangements for the induction of district level Epidemiologists and recruitment of medical entomologists
- A high level administrative and technical committee for oversight regarding implementation and progress status of dengue fever action plan
- Effective social mobilization strategies to involve communities in disease prevention and control

Reported by: *Dr Wasif Shah (TSO KP),*

Update on Dengue Surveillance in District Khyber-Merged Area:

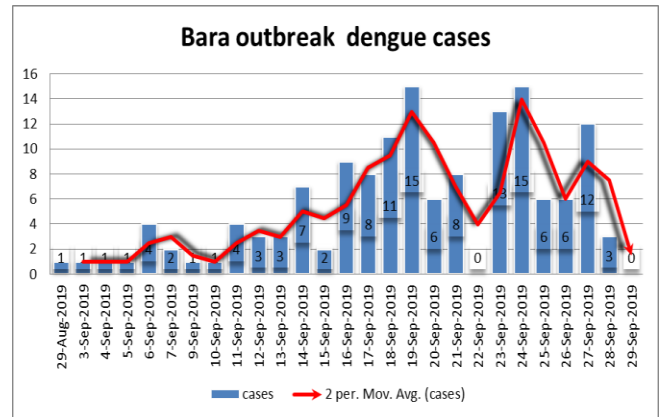
The first Major Dengue epidemic occurred in the District Khyber in the year 2018 and the Tehsil Jamrud was mainly affected where 227 cases of dengue were reported. Khyber district is adjacent to Peshawar and due to recurrent epidemics of dengue in Peshawar, Khyber is considered as a high risk zone for Dengue.

This year tehsil Barra is affected by the dengue reporting **143** cases of dengue till date and **55** cases this week (23rd to 29th sep) while the total number of dengue cases are **177** including **32** sporadic cases from tehsil jamrud and 2 from tehsil landi kotal.

Out of **143** cases **124** are males while **19** are females. 2 case is in under 5 years of age group, 22 cases are in age group from 6 to 15 years, 108 cases from 16 to 50, 11 cases from above 50 years of age. This shows that the prevalence is greater in age group of 16 to 50 years.

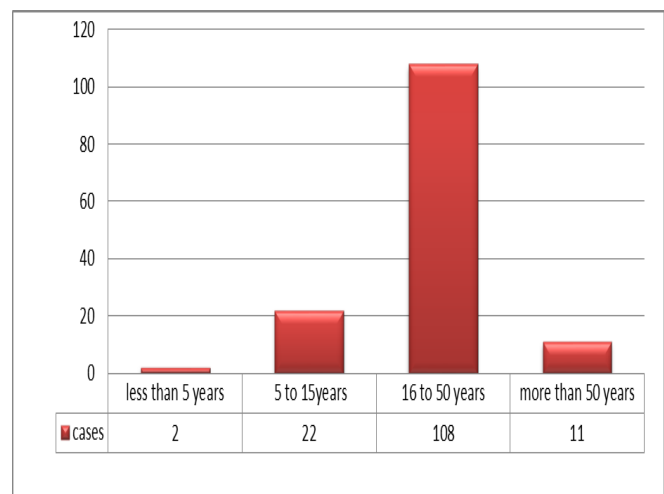
Attack rate for all cases in tehsil bara is 322 per 100,000 of population.

Fig 11: Epi Curve showing dengue cases reported from Khyber-2019



Maximum number of cases are present in 16 to 50 years of age.

Fig 12: Age distribution of Dengue cases Khyber-Merged Area



The following response activities are conducting by Dengue Taskforce Committee:

- Dengue fever surveillance
- Vector surveillance
- Community awareness sessions
- Awareness sessions in the hospital staff
- The ward staff were advised to ensure all preventive measures so that the disease may not spread
- Bed nets distribution among the dengue fever patients
- The patients were advised to stay inside the mosquito net, use mosquito repellents till recovery.
- IRS in the houses of the affected families

Reported by: *Dr. M Qasim Khan (TSO-Merged Area)*