



WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 47 Nov 18-24, 2019

Date: December 02, 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.

PDSRUs/RDSRUs. In week 47, 2019, no new case was reported.

Diphtheria Surveillance:

During 2018 total **464** suspected cases of Diphtheria were reported. Total **533** cases reported in 2019 including **24** new case reported last week.

Dengue Surveillance:

In 2018 total **3204** Dengue cases were reported, from Sindh (**2088**) while in 2019 total **24,314** cases have been reported so far. In week **47**, 2019, Punjab (**91**), KP (**37**), Baluchistan (**95**), Merged Area (**19**), No report received from ICT, KP, Sindh & AJK.

CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and **74** cases have been reported in 2019. During the last week **no** 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
Oct-19	2430	0	0	0	1083	346	4630	8489
Nov-19	132	0	0	0	113	295	561	1101
Total 2019	5166	2937	506	2845	1455	2546	8617	24,314

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Table 1: Weekly and Cumulative Diseases Updates Nov 24, 2019

Disease	Nov 18-24, 2019	Total Cases in 2019
1 CCHF	0	74
2 Varicella	15	1170
3 Dengue	242	24314
4 Chikungunya	0	0
5 Measles	50	6560
6 Diphtheria	24	533
7 suspected/confirmed Seasonal Influenza	0	82

Influenza Suspected/Confirmed: In 2018, 3221 Suspected/confirmed Influenza cases were reported from

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

From November 1, 2016 to Nov 24, 2019 total of **20,010** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **14,176** were found as Extensive Drug Resistant Typhoid cases.

Table 3: Reported XDR Typhoid Fever cases in Sindh by year (Nov 2016 –November 24, 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

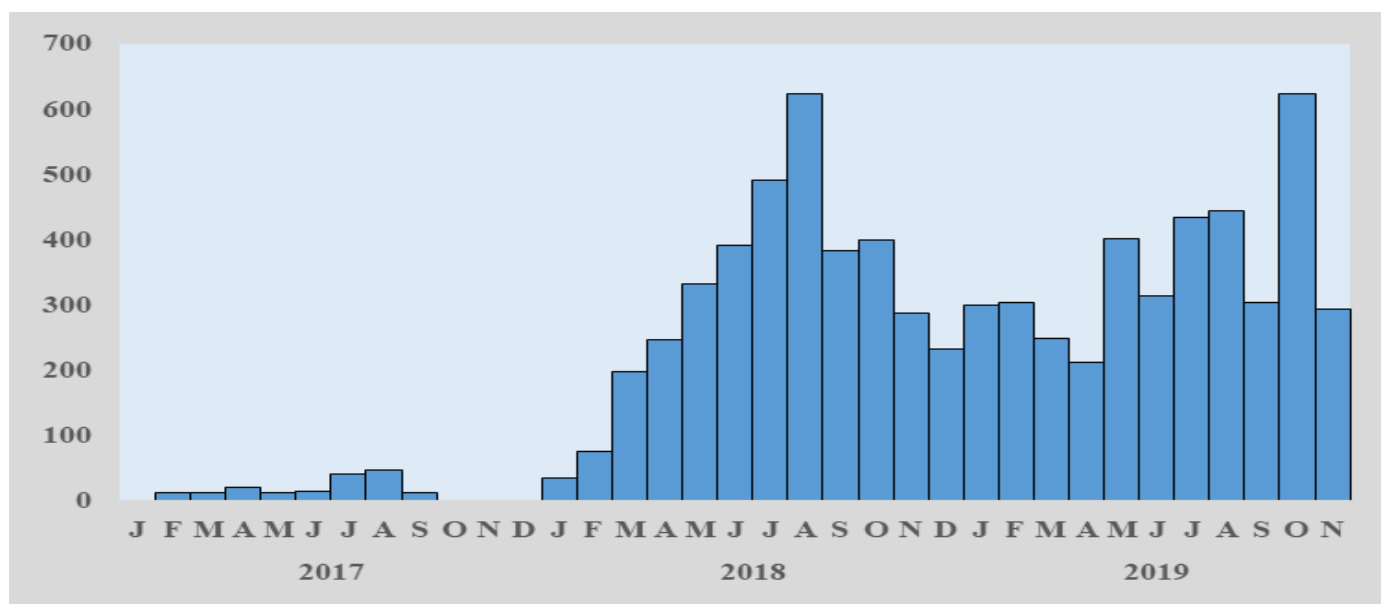
2019				
(November 24)	6232	1548	929	8,690
Total	10119	2936	1140	14,176

Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of **15773** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **10119** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to November 24, 2019.

In the week **47** of 2019, total **94** new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2017 – November 24, 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 **4386** (41%) of the XDR cases were reported in the 0-4 years age group.

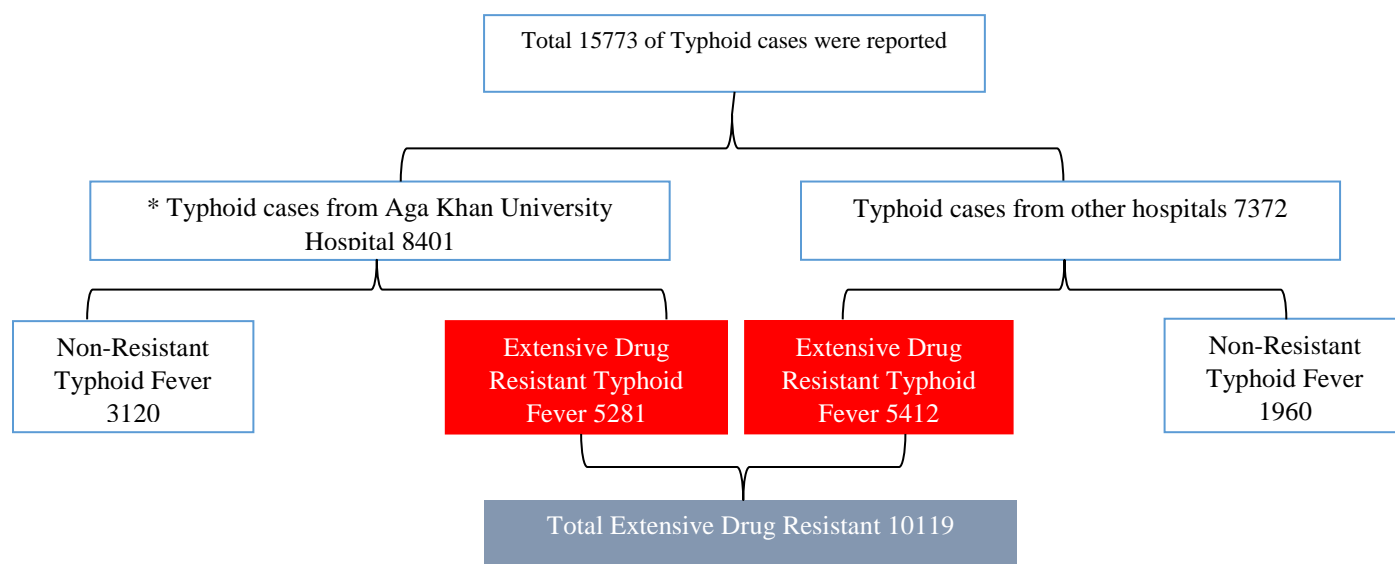
The overall attack rate was **53/100,000** population. Highest attack rate was found in 0-4 years age group i.e.161/100,000 followed by 5-9 years age group i.e. 118/100,000. Males had higher attack rate (64/100,000) as compared to females

15-19 Y	11.3	2282550	676	30
20-24 Y	9.7	1959357	459	23
25-29 Y	8	1615964	272	17
30-34 Y	6.2	1252372	119	10
35-39 Y	5.4	1090776	60	6
40-44 Y	4.3	868581	45	5
45-49 Y	4	807982	43	5
50-54 Y	2.7	545388	34	6
55-59 Y	2.7	545388	22	4
60-64 Y	2.4	484789	22	5
>65	4.3	868581	19	2
Total	100	20,199,554	10693	53
Male	51	10301767	4324	42
Female	49	9897777	6369	64

Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to November 24, 2018

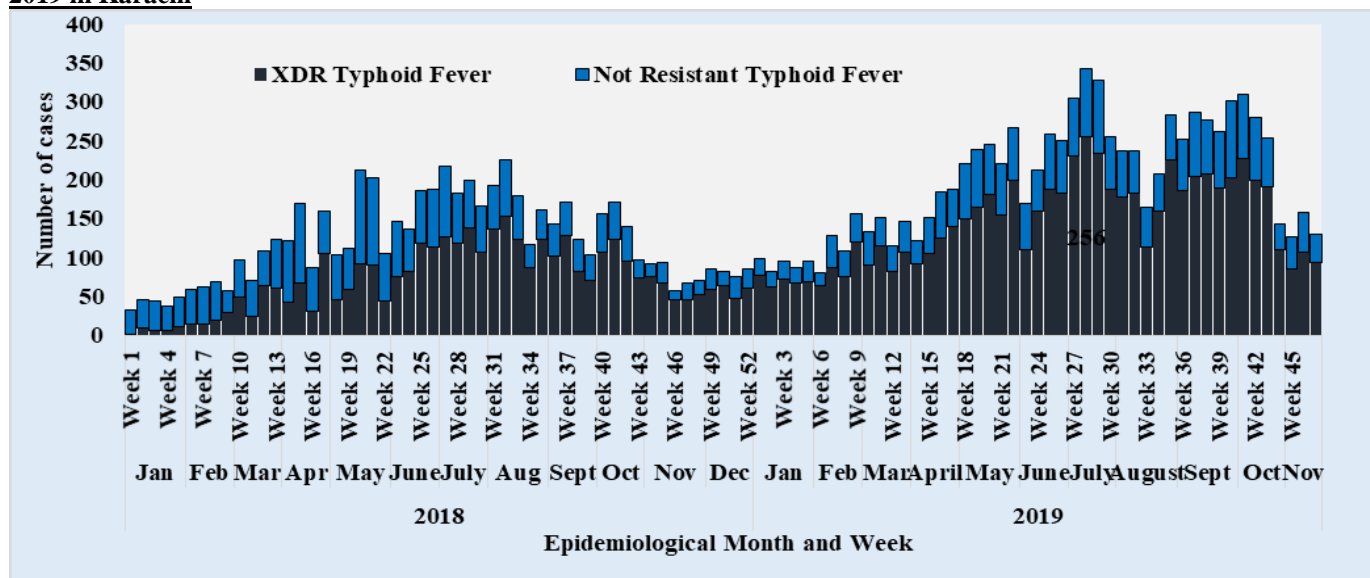
Age Group	Percentage of Population	Number of Population	Number of XDR Typhoid	Attack rate /100,000
0-4 Y	13.5	2726940	4386	161
5-9 Y	13.4	2706740	3182	118
10-14 Y	12.1	2444146	1354	55

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to November 24, 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 –November 24, 2019 in Karachi



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)*

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

Total 5128 Salmonella Typhoid cases reported from the November 2016 to 24th November 2019 from different districts of Sindh province excluding Karachi. Among these **4084** were of extensive drug resistant cases. Among the total Extensive Drug resistance cases **2936 (71.9%)** XDR-cases are from District Hyderabad.

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

Fig 4: XDR Typhoid cases reported by month in district Hyderabad (November 24, 2019)

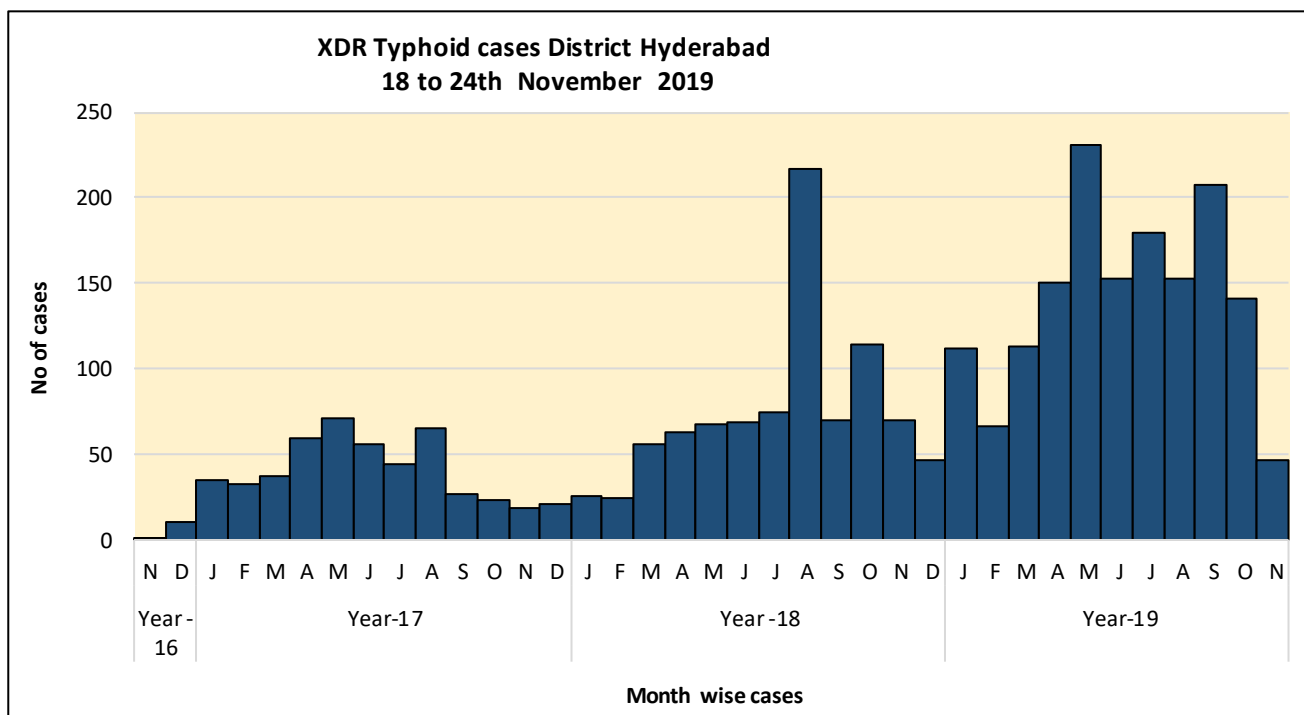


Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 –Nov 24, 2019)

Name of District	Total Typhoid cases	No of XDR cases	% XDR cases
Hyderabad	3719	2936	71.9
Tando Alha Yar	21	15	0.4
Badin	138	98	2.4
Dadu	39	33	0.8
Kashmore	55	51	1.2
Ghotki	45	40	1.0
Mirpurkhas	346	282	6.9
Sukkur	93	74	1.8
Tharparkar	23	15	0.4
Sanghar	130	112	2.7
Nau sheroferoz	49	36	0.9
Shikarpur	41	38	0.9
Tando M Khan	2	2	0.0
Jamshoro	236	190	4.7
Umar Kot	6	5	0.1
Jacobabad	13	13	0.3
SBA	17	14	0.3
Larkana	66	56	1.4
Sujawal	9	5	0.2
Matiari	4	3	0.1
Thatha	14	13	0.3
Khairpur	62	53	1.3
Total	5128	4084	79.6

The most affected age group was 0 to 4 years n=1230 with attack rate 42 per/10000 population followed by 5-9 years of age group n=902 with 31/ 10000 population. Over all attack rate is n=2936 with 13.4 /10000 population

Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=2936)

Age Group	XDR	Population	Attack rate/10000 population
0-4 Year	1230	295146	42
5-9 Year	902	292960	31
10-14 Year	416	264538	16
15-19 Year	124	247048	5.0
20-24 Year	109	212068	5.1
25-29 Year	62	174901	3.5
30-34 Year	30	135548	2.2
35-39 Year	23	118058	1.9
40-44 Year	16	94009	2.0
45-49 Year	9	87451	1.0
50-54 Year	1	59029	0.2
55-59 Year	8	59029	1.4

60-64 Year	3	52470	0.6
>65	3	94009	0.3
	2936	2186266	13.4
Male	1740	1106469	15.7
Female	1196	1079797	11.1
Total	2936	2186266	13.4

Water Analysis Report (PCR):

In 69 % (9/13) of the cases, coliforms and/ or thermo-tolerant E.coli were isolated from 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

- Health education was imparted to local community; Information, Education and Communication (IEC) Material distributed among the community in which safe hygiene practices including water and sanitation was communicated to the community
- School health education session carried out through health education teams.
- Mass immunization regarding typhoid vaccination: Polysaccharide vaccination was done through child survival program to the eligible children and conjugate typhoid vaccine campaign is being carried out in affected areas of district Hyderabad through collaboration of department of health and Aga khan Karachi

Sindh TCV Campaign – Report

The Department of Health, Sindh initiated the typhoid conjugate vaccine (TCV) campaign from 18-30th November 2019 by Expanded Program on Immunization (EPI) with support of EOC and UN partner staff. At the end of two weeks campaign the program aims to vaccinate over 10 million children aged between nine months and 15 years (**Table-7**)

TableNo.7: No. of children 09 months -15 years vaccinated

S #	Total Target	7,679,228
1	Number of children vaccinated (09months to 15yrs)	7,008,544
2	Children Vaccinated (09months to 2yrs)	539,477
3	Number of Children Vaccinated (2 year to 15 years)	6,469,067

Adverse event following immunization surveillance system**Department of Health, Sindh - Situation Report**

During the campaign, Regional Disease Surveillance and Response Unit (RDSRU) of FELTP established AEFI surveillance system with the help of National Stop Transmission of Polio program (NSTOP) with objective to monitor the AEFI incidence and provide the timely response. The assigned officer (NSTOP Officer) of program is working in 23 district of Sindh out of 29(**Table-8**)

Situation Update

- The overall attack rate was 17 per 100,000. The highest attack rate was found in District Matiari (AR=23/100,000) followed by in District Korangi (AR=16/100,000) and District Malir (AR=13/100,000).
- Out of the 472, 50 (11%) children had to be briefly hospitalized.
- The most reported clinical presentation was fever more than 38 (n=118, 25%), followed by rash (n=52, 11%), swelling on body or face (n=38, 8%) and severe local reaction (n=37, 8%).

Epidemiological Update

Over the first week of the campaign, the most number of AEFI cases were reported on Day 2, 19th November 2019 (n=105, 25%) followed by Day 3, 20th November 2019 (n=79, 20%)

Distribution of AEFI cases according to district

Majority of the AEFI cases were reported in Karachi Division with most of the cases being from District Karachi west (n=154) followed by District Korangi (n=123). (**Table 8**)

Table 8. Geographic distribution of adverse events found in AEFI case in Sindh from 18th-26th November 2019

District Name	Total Target	Vaccinated	Coverage (%)	No Of AEF
Badin	136101	139941	102.82	2
Dadu	222421	230141	103.47	9
Hyderabad	496902	466333	93.85	24
Sujawal	32404	36097	111.4	3
Jamshoro	204734	213901	104.48	17
Tando Allahyar	60043	61240	101.99	7
Thatta	80872	81611	100.91	1
Matiari	84946	82644	97.29	20
Tando Muhammad Khan	38429	41330	107.55	0
Karachi West	1092675	835284	76.44	154
Karachi East	615007	578841	94.12	54
Korangi	685963	628750	91.66	123

Karachi Central	590146	593176	100.51	47
Karachi South	361111	253462	70.19	29
Malir	562688	476326	84.65	101
Jacobabad	122124	108376	88.74	11
Larkana	334158	318061	95.18	6
Shikarpur	165883	168005	101.28	8
Kamber	128734	128649	99.93	10
Kashmore	96506	99793	103.41	2
Khairpur	256794	240029	93.47	25
Naushero Feroze	151669	148128	97.67	11
Shaheed Benazirabad	239985	217150	90.48	6
Sukkur	269926	249305	92.36	15
Ghotki	169605	172656	101.8	9
Mirpurkhas	161407	132479	82.08	7
Sanghar	153771	147256	95.76	13
Tharparkar	83365	80252	96.27	20
Umerkot	81539	80146	98.29	7
Total:	7679908	7009362	91.27	741

During the TCV campaign, a total of 7009362 were vaccinated, out of which a total of 741 AEFI were reported to the RDSRU. The overall attack rate for AEFI was 17/100,000. The highest attack rate was observed in 10-15 years age group. The attack rates in both genders was the same. Hospitalization rate was 11%. The most reported AEFI was fever more than 38, followed by rash, swelling on body or face and severe local reaction.

Update on HIV Outbreak Investigation among Children in Taluka Ratodero, Larkana-April-November 2019

The Local Print Media Published that local health care provider reported significant number of HIV Positive children from Taluka Ratodero District Larkano. In response to that DGHSS Hyderabad deputed a team of FELTP Fellows to investigate reported HIV cases and its associated risk factors and implementation of preventive measures to halt the spread of HIV outbreak. The objectives of the investigation were

- To know the magnitude and determinants of HIV/AIDS infection
- To explore the additional contacts and sites of potential transmission of HIV infection and determine the chain of transmission of Infection.
- Formulate appropriate effective recommendations to interrupt the HIV transmission

Methods:

All the reactive/positive cases were line listed and the collected data organized and analyzed. Laboratory based

Surveillance was initiated and on daily basis screening of high-risk population was carried out at Taluka Hospital Ratodero district Larkana to identify new additional Cases. The data were collected using a structured questionnaire. Demographic, Clinical and exposure/contact information was collected to determine the risk factors and to monitor the behavioral patterns of the population.

HIV-infected persons from two or more different households of the same house or street of Ratodero were identified as geographical clusters

- A family was defined as parents, their children and grandchildren.
- Two or more families having maternal or paternal relationship were considered relatives of each other.

Results:

Total **1185** HIV cases are reported so far from Ratodero larkana up to 23/11/2019; out of which 945 (79.6%) cases are children with males 584 (49.2%) and females 361(30.5%) while the total adults are 240 (20.2%) among which adult males were 62 (5.2%) and adult females were 178 (14.7%).

Table 9 : CDR of HIV in screening campaign-Larkana

MONTHS	WEEKS	SCREENED FOR HIV	HIV CASES	CDR%
Apr	Week 4	1295	67	4.7
May	Week 1	3807	124	2.2
	Week 2	4980	292	2.2
	Week 3	8089	160	2.2
	Week 4	4858	94	2.9
Jun	Week 1	2746	18	2.5
	Week 2	698	47	2.4
	Week 3	1629	34	3.7
	Week 4	1253	40	3.5
July	Week 1	1080	29	2.7
	Week 2	804	19	4.3
	Week 3	702	28	3.9
	Week 4	508	21	4.1
Aug	Week 1	510	9	3.4

	Week 2	387	4	12.2
	Week 3	293	20	4.6
	Week 4	282	16	7.7
Sep	Week 1	304	17	8.2
	Week 2	381	13	7.1
	Week 3	207	12	4.8
	Week 4	383	26	7.6
Oct	Week 1	250	18	4.6
	Week 2	339	11	3.2
	Week 3	279	11	3.9
	Week 4	362	9	2.4
Nov	Week 1	268	13	4.8
	Week 2	196	10	4.0
	Week 3	180	14	7.2
	Week 4	226	9	3.9
Total		37296	1185	3.17

The age group distribution among the reported HIV infection revealed most affected age group was 2-5 Year of child males n=436 (36.4%) followed by child females n=250 (20.9%) while the age group 6-12 Years child males n=94 (8.1%) and child females n=71 (6.1%) respectively. All cases were Reactive on Rapid Diagnostic test (RDT) by Sindh AIDS Control Program (SACP).

Fig 5: Age and Gender distribution of HIV cases Larkana

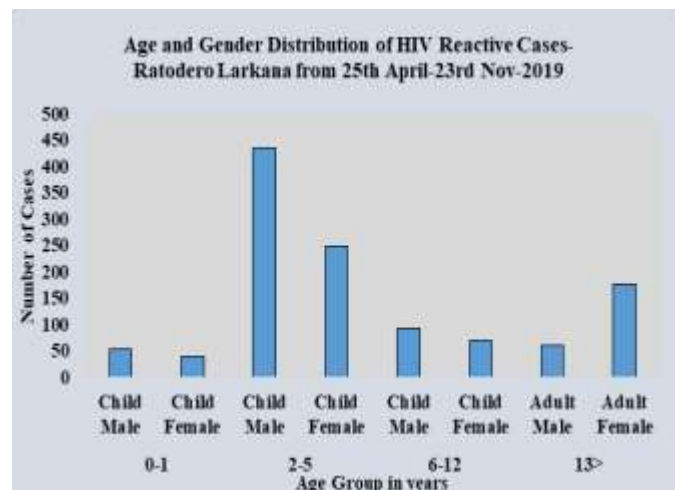


Table 10: Summary statistics of HIV cases-Larkana

Variables	Numbers
Total No. of Cases/Screened	1185/ 37296
Age Range	Age Range: < 1 Month to 70 years
Male to Female Ratio	Male: n=646(54.5%) Female n=539(45.4%)
Most affected age groups	2-5 Years n=686 (57.8%)
Over all Case Detection rate (CDR)	3.17%

Actions Taken:

- Established Screening Camp at THQ Hospital by SACP with the collaboration of PPHI Ratodero Larkana
- Establishment of HIV/AIDS ART Treatment Center at Shaikh Zaid children Hospital Larkano.
- Unauthorized laboratories, Blood banks and Clinics have been closed by Antiquary Team by Health Department and Health care commission with support of District Administration
Awareness and Health education sessions has been conducted in Communities about Spread and Transmission of HIV/AIDS.
- Developed the communication and coordination between District health authority and HIV program.
- Comprehensive analysis has been carried out by National and International experts to find out the reasons of upsurge of HIV Cases in Ratodero Larkana.

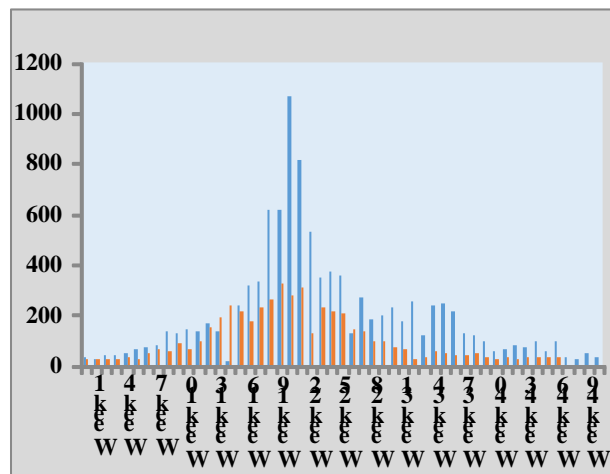
Way forward:

Further detailed epidemiological analysis would be carried out through Case control study.
Case management and follow up of all identified affected subjects through Sind Aids Control Program.
Adult Group > 15 Years should also be focused in screening to determine underlying burden of HIV in Ratodero

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

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 **47**, 2019, total **28** 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 November 24, 2019 is **4,557**.

Table 11: Age specific attack rates of Varicella in Punjab in 2018-2019

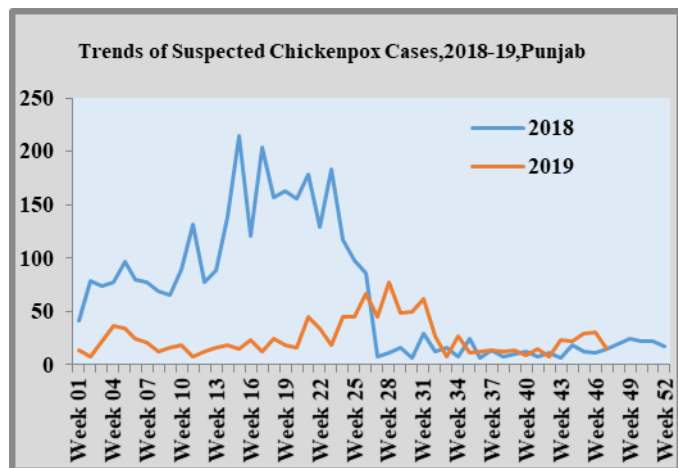
Age Group	Total number of Cases (2019)	AR/100,000
0-4 Yrs.	1172	7.0
5-9 Yrs.	1581	8.6
10-14 Yrs.	747	4.9
15-19 Yrs.	304	2.2
20-24 Yrs.	232	2.0
25-29 Yrs.	156	1.6
30-34 Yrs.	134	1.8
35-Above	231	0.7
Total	4557	3.5

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).

Update Measles Surveillance Report Punjab:

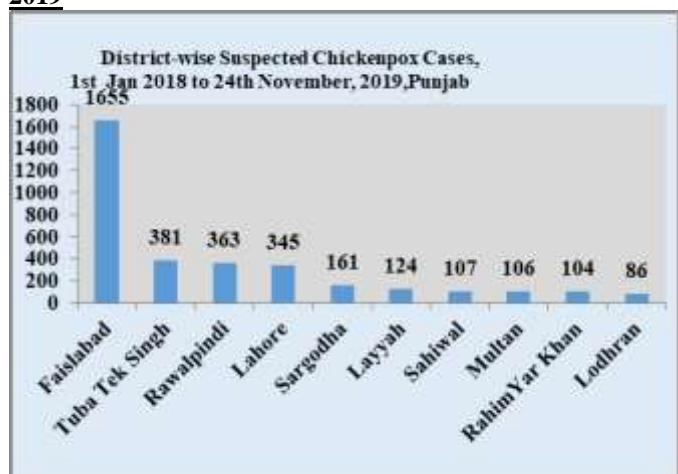
The PDSRU Punjab is regularly assisting with data analysis and information sharing with the health department officials.

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 Outbreak Investigation in district lasbela-Baluchistan:

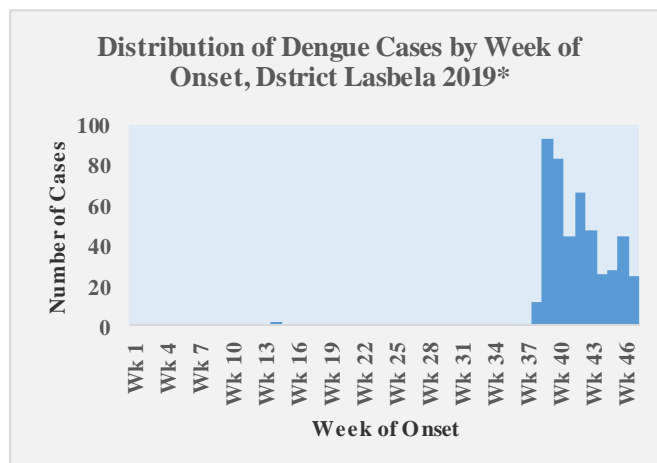
A total of 471 dengue cases have been identified. During current week, thirty-eight (38) new cases of dengue were reported. The mean age of dengue cases was 29 years with age range <1 year to 65 years. The male to female ratio was about 2:1. Majority of cases 47.6% (n=215) were among age group 16-30 years, followed by 33.4% (n=151) among 31-45 years age-group while 13.5% (n=61) were among, 1-15 years of age group. The overall attack rate was 28.45/10000 Population.

Table 12: Age group distribution of Dengue cases-Lasbela-Baluchistan

Age Group (Years)	Cases (n=452)	Percentage (%)	Pop. of Age Group	Attack Rate/10000 Pop
< 1-15	61	13.6	74728	8.16
16-30	215	47.6	50526	39.58
31-45	151	31.9	29323	34.08
46-60	23	05.5	18607	7.77
61-75	1	00.4	9295	0.89

The epidemiological curve showing index case reported on week 36th, 2019, then the cases started reporting from 37th week of 2019 and peak was reached on 39th week 2019. There is decreasing trend in dengue cases after 42nd week 2019 due to control measures and decrease in temperature.

Fig 9: Epi curve showing time distribution of Dengue cases



Among the total 471 cases, males 67.52% (n=318) were more affected than female 32.48% (n=153)

Majority of confirmed Dengue case are reported from Union councils Berot, Vindor and Patara.

Mosquito, Pupae & Larvae Survey:

The entomological surveillance was also conducted in areas where clustering of dengue cases found in September 2019. The table below shows results of container and breteau index.

Table 13: Breteau Index at Hub Town

Name of Locality	Number of Containers	Number of Containers Positive	Container Index
Zehri street	21	3	14.3
Adalat Road	28	7	25.0
Madina Colony	32	11	34.4
Mehmood Abad	34	14	41.2

Table 14: House Index at Hub Town

Name of Locality	Number of Houses inspected	Number of House Positive	House Index
Zehri street	26	3	11.5
Adalat Road	33	6	18.2
Madina Colony	35	9	25.7
Mehmood Abad	38	11	28.9

ACTION TAKEN:

1. FELTP, Department of Health and WHO mission visited and conducted dengue outbreak investigations at district Lasbela to support district health team in controlling current outbreak.
2. More than 100 Health Care workers have been trained on Aedes identification, detection and elimination including awareness sessions too.
3. The dengue cases management training of Health Care providers has been conducted at Hub and Uthal.
4. Awareness sessions (12) conducted in Community particularly for School and college students
5. An isolation wards for admission of dengue cases has been established with the all facilities at Jam Mir Ghulam Qadir Hospital Hub and DHQ Hospital Uthal.
6. Private hospitals are included in surveillance network and were reporting suspected and confirmed dengue cases on daily basis.

7. Weekly Epidemiological Report regularly shared with district and province Health Department for update and further necessary actions.
8. FELTP_PDSRU, WHO, VBD and Health Department working on short and long terms measures to control dengue outbreak.
9. Provincial Disease Surveillance and Response Unit (PDSRU) Quetta declared as Dengue Response Unit Balochistan.
10. District Focal person for dengue has been nominated.
11. The VBD program has provided 2000 NS1 kits and 200 LLINs for outbreak response activities in district Lasbela.
12. WHO has provided EIC Material and Combo RDT Kits for outbreak response activities in district Lasbela?
13. The multisectoral response is not yet in place and only health department is responding at the moment as other departments are not aware of their role in dengue response. In this connection the ADC was informed to notify multisector outbreak response team.
14. The DHQ hospital Uthal did not have facility of diagnosis of Dengue. The Combo RDT was provided and Laboratory technician was trained on RDT Kit use.
15. The action plan was finalized with district health authorities to implement in district Lasbela to control Dengue outbreak.
16. The dengue surveillance system established and made functional in district Lasbela.
17. Larviciding, IRS and Fogging (Shoulder & ULV) in Hot spot of Hub chowki conducted

Reported by: Dr Ehsan Ahmed Larik (TSO), Dr. Jan Inayat, Dr. Khair Mohammad & Dr. Zubair Bugti (Fellows 12th Cohort)

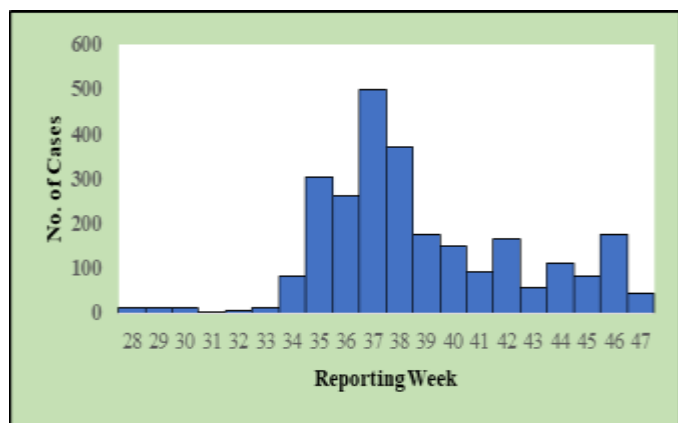
Update on Dengue Fever Surveillance-KP:

In current week, total of 37 dengue fever cases reported across the province. Majority of cases reported from district Peshawar. Total number of laboratory confirms cases are 6994.

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 2688 laboratory confirmed cases have been reported from different health facilities of district Peshawar including major teaching hospitals/MTIs. In current week 13 new cases reported. Cases started to rise in week 34 and achieved peak in week 36.

Reported by: Dr. Wasif Shah (TSO)

Fig 10: Epi curve showing Dengue fever cases reported in KP



Among high burden areas, Shiekh Mohammadi was most affected with over-all attack rate of 8 per 100 population.

Table 15: Summary statistics of Dengue Fever cases-KP

Total number of Suspected / Confirm cases	2688
Most affected UC (Shiekh Mohammadi)	AR 8/1000 Population
Median Age	25 years (4 - 92)
Male female proportion	51% – 49%

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.

Continuous response activities are being carried out across Peshawar specifically most affected union councils. Multi-sector response has been implemented involving all line-departments. Department of health is working on “Dengue Action Plan for 2019 – 2020” in consultation with all stake holders