



WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 23 June 03-09, 2019

Date: June 17, 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	176	0	0	37	535	1	570
June-19	0	41	0	0	0	113	0	154
Total - 2019	2	619	0	0	39	1490	3	2153

CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and 11 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 June 10, 2019 total of **11,882** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **7,923** 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 –June 10, 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 (June 10)	1536	599	302	2254
Total	5423	1,987	513	7,923

1. Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of **8630** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **5423** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to June 10, 2019.

In the 23rd week of 2019, total 41 new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

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Table 1: Weekly and Cumulative Diseases Updates June 10, 2019

	Disease	New cases June 03-10, 2019	Total Cases in 2019
1	CCHF	0	12
2	Varicella	19	534
3	Dengue	154	12153
4	Chikungunya	0	0
5	Measles	146	3919
6	Diphtheria	2	206
7	suspected/confirmed Seasonal Influenza	0	81

Influenza Suspected/Confirmed:

In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 23, 2019, no new case was reported.

Diphtheria Surveillance:

During 2018 total **464** suspected cases of Diphtheria were reported. Total 201 cases reported in 2019 and 2 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 **1815** cases have been reported so far. In week 23, 2019, **154** new cases were reported from Sindh (41) and Baluchistan (113).

Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2018 – June 10, 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.

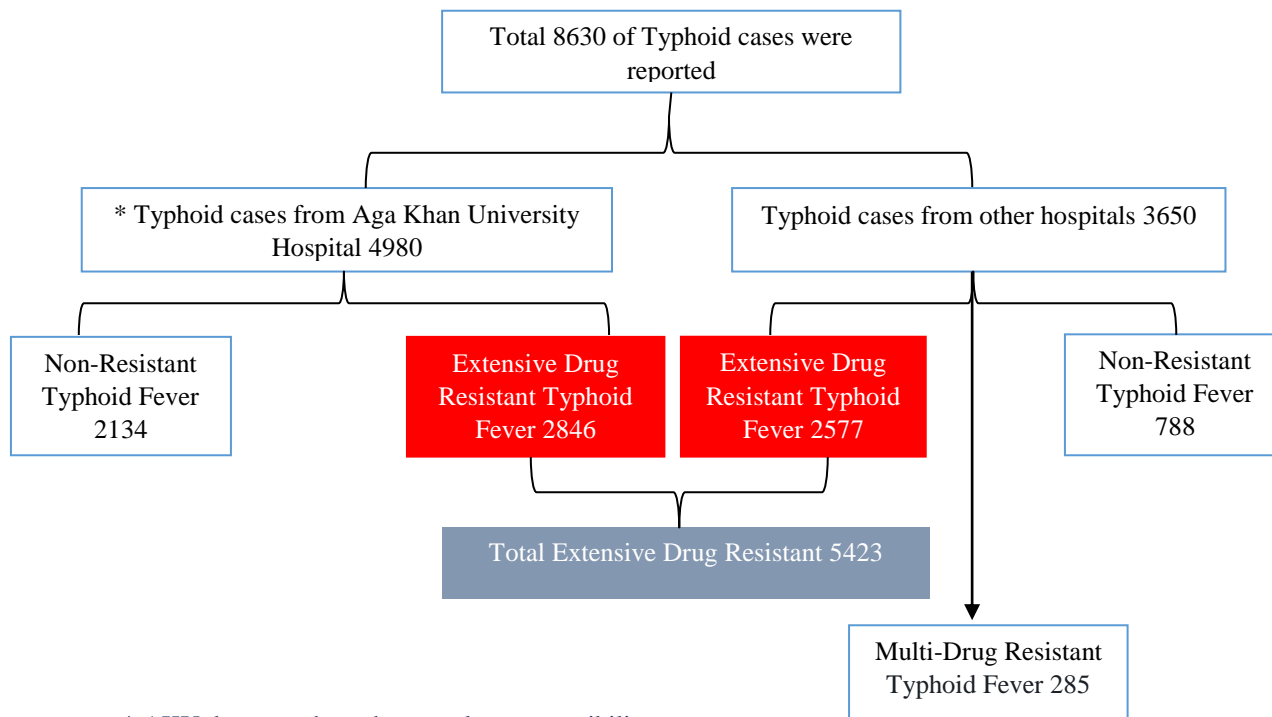
The XDR Typhoid cases were reported mostly among the children and maximum number **1116** (21%) of the XDR cases were reported in the 3-4 years age group.

The overall attack rate was **27/100,000** population. Highest attack rate was found in 3-4 years age group i.e.81/100,000 followed by 1-2 years age group i.e. 73/100,000. Males had higher attack rate (32/100,000) as compared to females

Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to June 10, 2018

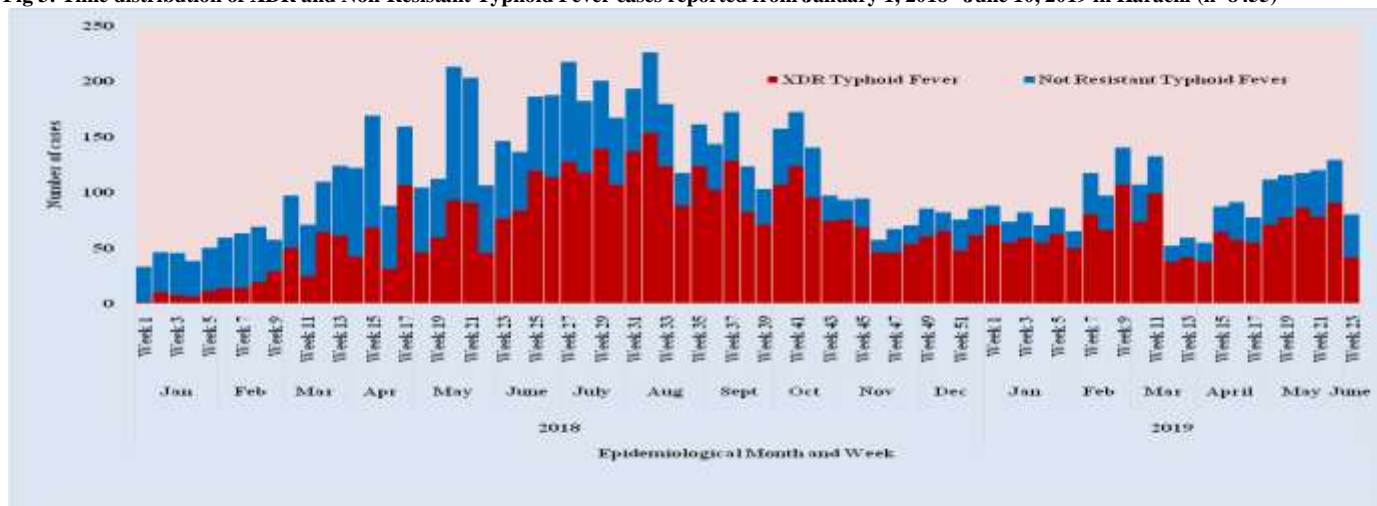
Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
0-11 Month	3.4	686,785	107	16
1-2Y	7.6	1,535,166	1116	73
3-4Y	6.7	1,353,370	1101	81
5-6Y	5.6	1,131,175	674	60
7-8Y	5.1	1,030,177	683	66
9-10Y	5.2	1,050,377	393	37
11-12Y	4.4	888,780	341	38
13-14Y	4.4	888,780	143	16
15-24	20.4	4,120,709	535	13
25-34Y	13	2,625,942	196	7
35-44Y	11	2,221,951	58	3
45-54Y	7.5	1,514,967	38	3
55-64Y	3.7	747,383	24	3
>65	1.99	401,971	14	3
Total	99.99	20,199,554	5423	27
Female	49	9,897,781	2138	22
Male	51	10,301,772	3285	32

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to June 10, 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 –June 10, 2019 in Karachi (n=8455)



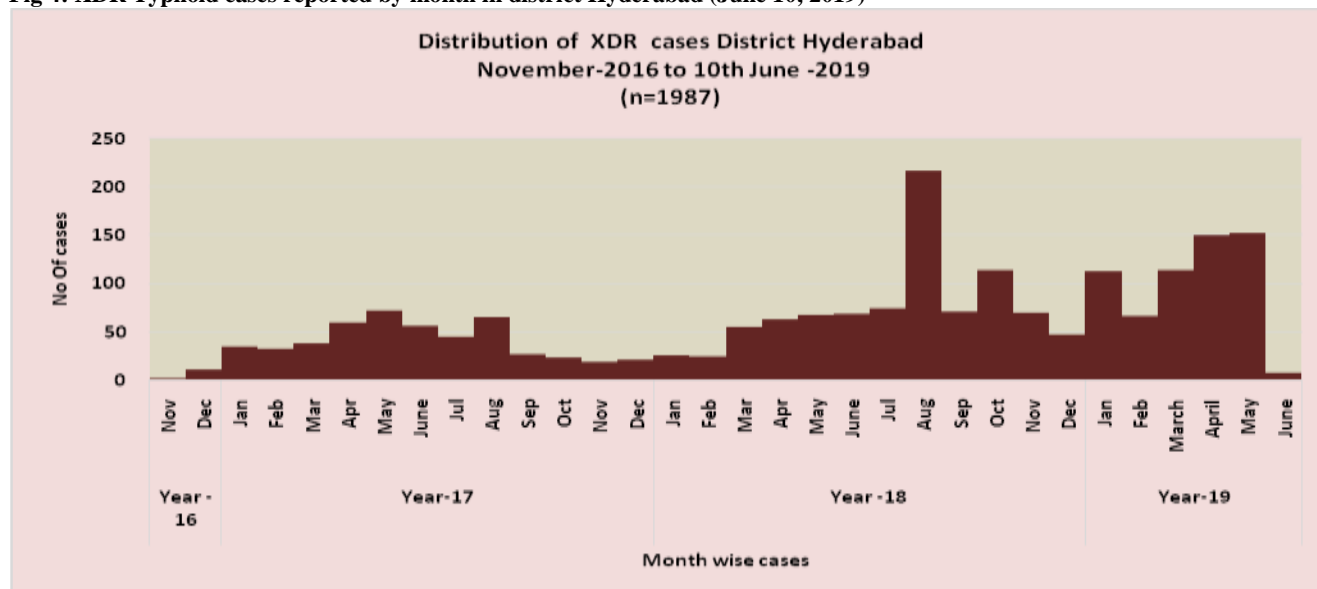
The highest Incidence Rate of the cases was reported from 5 towns: Gulshan-e-Iqbal (AR=27.1/100,000), Saddar (16.6/100,000), North Nazimabad (AR 10.7/100,000), Malir (AR 10.1/100,000), Gulberg (AR 9.7/100,000) and Liyari (AR 8.1/100,000). While lowest Incidence was recorded in SITE town (AR=0.1/100,000).

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 June 10, 2019, a total of **3152** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **2,500** are Extensive Drug Resistant (XDR) cases. Among all reported XDR cases, **1987 (79.8 %)** were from District Hyderabad only.

Fig 4: XDR Typhoid cases reported by month in district Hyderabad (June 10, 2019)**Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 – June 10, 2019)**

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	2510	1987	79.5
Tando Allah Yar	11	8	0.3
Badin	88	58	2.3
Dadu	22	17	0.7
Kashmore	13	13	0.5
Ghotki	17	15	0.6
Mirpurkhas	190	153	6.1
Sukkur	34	31	1.2
Tharparkar	5	3	0.1
Sanghar	58	49	2.0
Nau sheroferoz	24	14	0.6
Shikarpur	22	21	0.8
Tando M Khan	1	1	0.0
Jamshoro	96	79	3.2
Umar Kot	4	4	0.2
Jacobabad	2	2	0.1
SBA	10	7	0.3
Larkana	27	21	0.8
Sujawal	2	2	0.1
Jacobabad	1	1	0.0
Thatha	4	4	0.2
Khairpur	11	10	0.4
Total	3152	2500	79.3

The most affected age group was 2-4 years (n=691) with Attack Rate 35.9/10,000 of population followed by 5-9 years of age group (n=634) 20.3/10000. Overall attack rate is 9 /10,000.

Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=1948)

Age Group	XDR	Population	Attack rate/10000
0-23 Month	125	118771	10.5
2-4 Year	691	178157	38.8
5-9 Year	634	294728	21.5
10-14 Year	307	266135	11.5
15-19 Year	75	248539	3.0
20-24 Year	58	213348	2.7
25-29 Year	32	175957	1.8
30-34 Year	19	136367	1.4
35-39 Year	18	118771	1.5
40-44 Year	9	94577	1.0
45-49 Year	3	87979	0.3
50-54 Year	7	59386	1.2
55-59 Year	6	59029	1.0
60-64 Year	1	52787	0.2
>65	2	94577	0.2
Total	1987	2199107	10.7
Male	1188	1112968	7.4
Female	799	1086139	9.0

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:

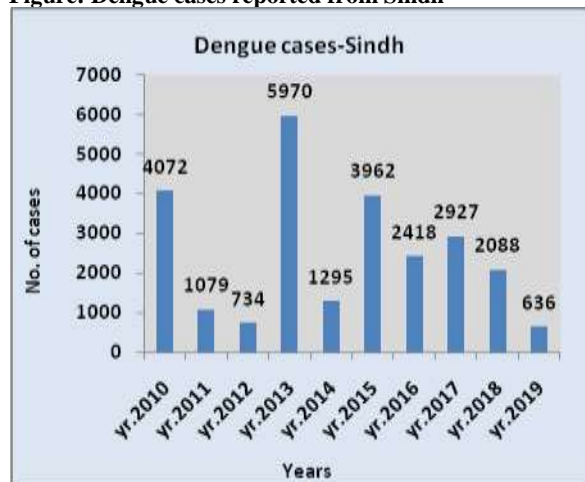
- Total **210,000** children between 6 months to 10 years age in Hyderabad high risk areas have been vaccinated for Typhoid
- Sensitization sessions with general practitioners
- Chlorine tablets were distributed to household in the affected areas of Hyderabad district

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 23, **41** new Dengue cases were reported. Till week 23, 2019 total 636 cases and one death had been reported from Sindh.

Figure: Dengue cases reported from Sindh

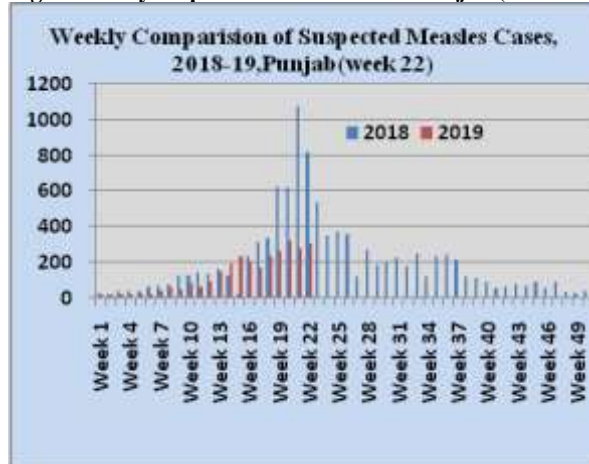


Update Measles Surveillance Report Punjab:

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 23, 2019, total **123** new cases of suspected Measles were reported.

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



Update /Follow-up Varicella Surveillance in Punjab:

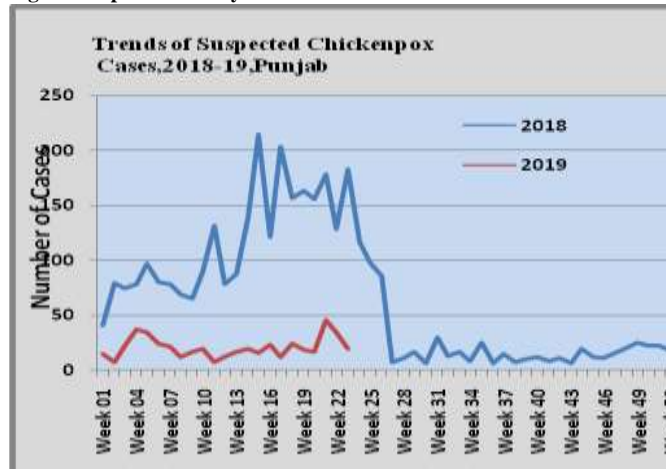
Nineteen Varicella cases were reported from different districts of Punjab in week 23, 2019. The total number of cases reported from Jan 01, 2018 till June 09, 2019 is **3,796**.

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.	993	6.8
5-9 Yrs.	1265	8.3
10-14 Yrs.	646	4.9
15-19 Yrs.	261	2.2
20-24 Yrs.	203	1.9
25-29 Yrs.	124	1.5
30-34 Yrs.	114	1.8
35-Above	190	0.6
Total	3815	3.5

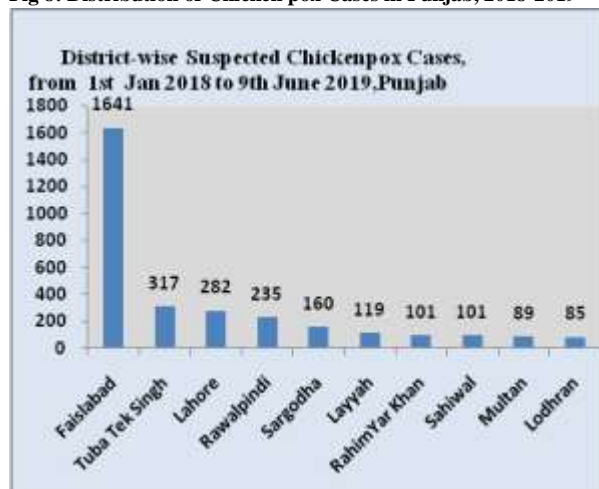
High attack rate was observed in children aged 5-9 yrs. (8.3/100,000) followed by 0-4 yrs. age group (6.8/100,000).

Fig 7: Comparative study of Varicella cases 2018 -2019



The highest number of cases were reported from District Faisalabad (n=1641). The cases are mostly from two locations (Thandiwallia and Jaharanwalla) in Faisalabad District.

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

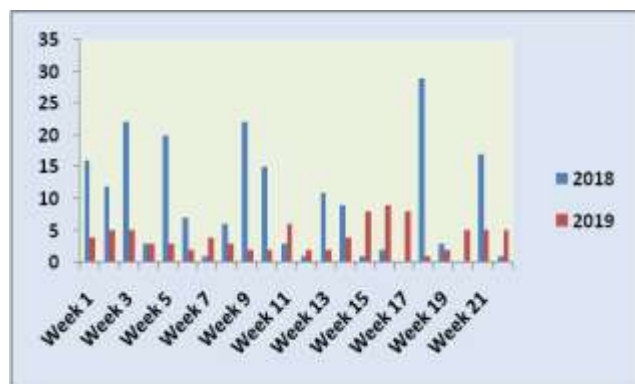


Reported by: *Dr Mohsan Wattoo TSO Lahore,*

Update on Measles Surveillance KP:

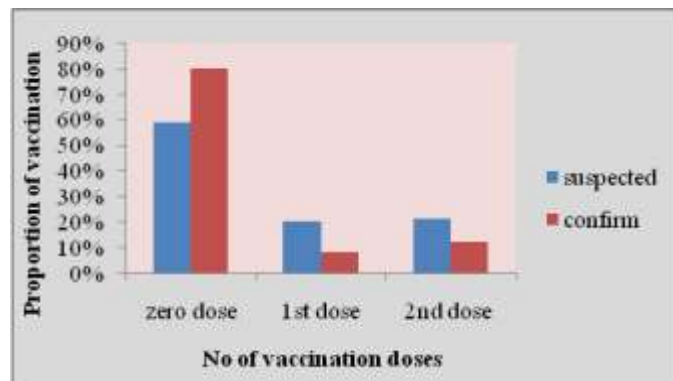
In current week, 21 suspected cases and 05 confirmed cases reported across province through online EPI MIS software. Suspected cases being reported sporadically from different health facilities of province. Total number of suspected cases are 674 with 87 Lab confirm cases. Clustering of cases not identified in any area.

Figure: Reported Measles cases-KP (2018-19)



Among positive cases 30% (n=29) cases being reported from district D I Khan. Overall, 80% (n=66) confirm cases were zero dose, 7% (n=6) received Measles 1 and 12% (n=10) received booster dose. Furthermore, among 66 lab confirmed cases aged more than 9 months, 75% (n=50) were zero dose as per information shared online by EPI staff of district. Overall among suspected cases, 62% (n=362) are zero dose. Further, among 440 suspected cases aged more than 9 months, 52% (n=230) were zero dose.

Fig 8: vaccination status of Measles cases-KP



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

Table 8: Summary statistics of Measles cases in KP
Median age with Rang in 18 Months (07 - 48) Months (Lab Confirm)

Median age with Rang in Months (Suspected)	18 Months (0 - 360)
Proportion of Male & Female cases (Confirm)	61% & 39%
Proportion of Male & Female cases (Suspected)	64% & 36%
No. of Lab confirm cases	13% (n=87)
Epi Linked positive cases	15% (n=10)

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, 113 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 1500 confirmed cases of dengue have been recorded (Case Fatality Rate=2/1000 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 56.8% (n=747) were among age group 16-29 years, followed by 23.8% (n=313) among 31-45 years age-group while 10.4% (n=137) were among 1-15 years of age group. The overall attack rate was 7/1000 Population.

Table 9: Age wise attack rate of Dengue-Baluchistan

Age Group (Years)	Cases (n=1315)	Percentage (%)	Pop of that Age Group	Attack Rate/10000 Pop
< 1-15	137	10.4	88861	1.54
16-30	747	56.8	59390	11.58
31-45	313	23.8	33571	9.32
46-60	107	8.1	20523	5.21
61-75	9	0.7	9183	0.98
76-90	2	0.2	6782	0.29

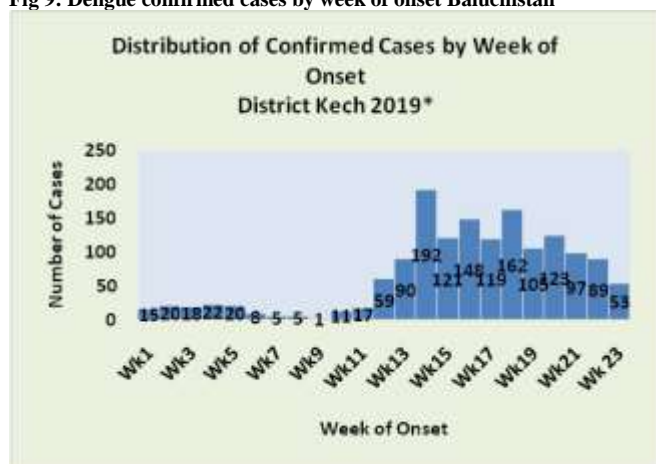
Actions taken so far to control Outbreak:

- 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.

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

Reported by Dr. Ehsan Ahmed Larik (TSO),

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 259 cases were reported from other Union councils in the district.

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

