

WEEKLY FIELD EPIDEMIOLOGY REPORT

Volume 2 Issue 34 August 19-25, 2019

Date: August 30, 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.

in 2019. During the last week **nine** 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	113	0	1	20	2	5	494*	635
Total - 2019	153	1002	1	20	45	1702	539	3462

*Late reporting of wk 32 (58), and wk 33 (197) cases.

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

From November 1, 2016 to August 25, 2019 total of **15,023** Typhoid Fever cases were reported from different districts of Sindh province. Out of these **10,365** were found as Extensive Drug Resistant Typhoid cases.

Table 3: Reported XDR Typhoid Fever cases in Sindh by year (Nov 2016 –August 25, 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 (August-25)	3069	1133	677	4,879
Total	6956	2521	888	10,365

1. Update on Extensive Drug Resistant Typhoid Fever Karachi:

A total of **10760** lab confirmed Typhoid cases were reported from ten hospitals of Karachi. Out of these **6956** were recorded as Extensive Drug Resistant (XDR) Typhoid Fever cases from January 1, 2017 to August 25, 2019.

In the week **34** of 2019, total **70** new XDR/MDR Typhoid Fever cases were reported from different hospitals in Karachi.

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Table 1: Weekly and Cumulative Diseases Updates August-25, 2019

	Disease	Aug-19-25, 2019	Total Cases in 2019
1	CCHF	9	47
2	Varicella	27	971
3	Dengue	309	3207
4	Chikungunya	0	0
5	Measles	48	5832
6	Diphtheria	1	242
7	suspected/confirmed Seasonal Influenza	0	81

Influenza Suspected/Confirmed:

In 2018, 3221 Suspected/confirmed Influenza cases were reported from PDSRUs/RDSRUs. In week 34, 2019, no new case was reported.

Diphtheria Surveillance:

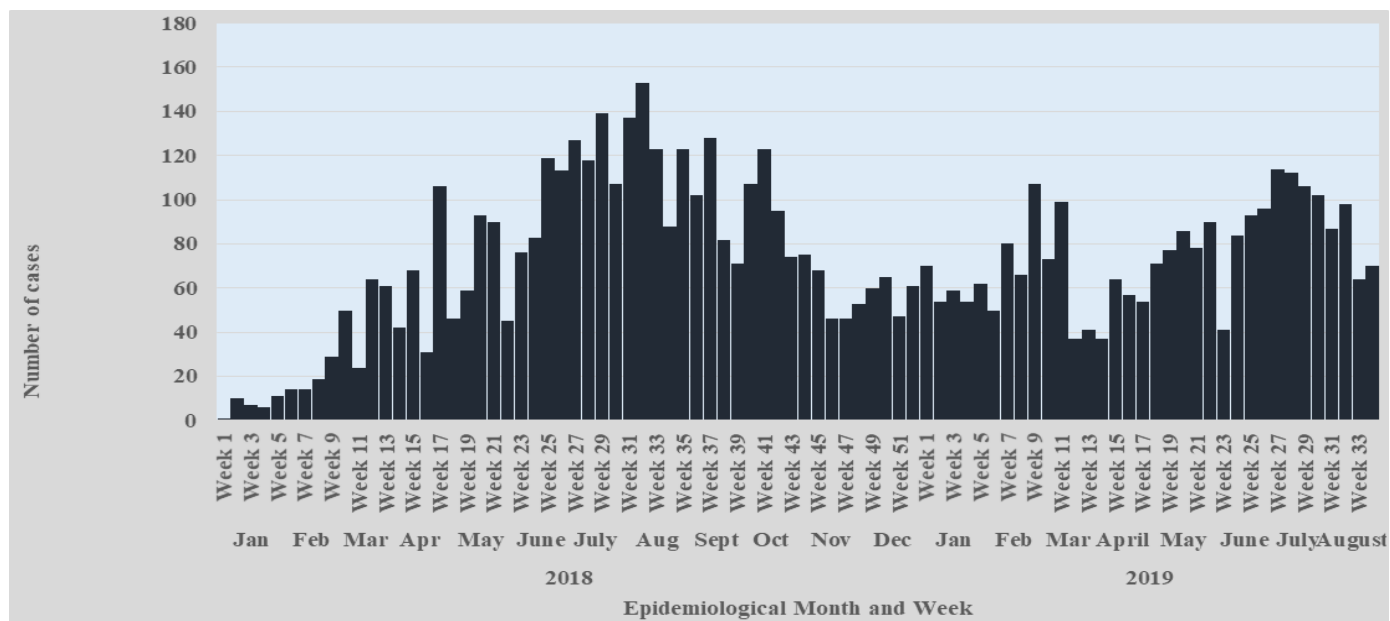
During 2018 total **464** suspected cases of Diphtheria were reported. Total **240** cases reported in 2019 and one new case reported last week.

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 **3462** cases have been reported so far. In week 34, 2019, Punjab (**201**), KP (**103**), Baluchistan (**2**), Merged Area (**2**), AJK (**1**), No report received from Sindh.

CCHF Surveillance:

In 2018 total **63** CCHF (suspected and confirmed) cases were reported from DSRUs and **47** cases have been reported

Fig 1: Time distribution of reported XDR Typhoid cases in Karachi for the year 2018 – August 25, 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 **1414** (21%) of the XDR cases were reported in the 1-2 years age group.

The overall attack rate was **34/100,000** population. Highest attack rate was found in 3-4 years age group i.e. 100/100,000 followed by 1-2 years age group i.e. 92/100,000. Males had higher attack rate (41/100,000) as compared to females

Table 4: Age and gender specific attack rates of XDR Typhoid reported from Karachi during January 1, 2017 to August 25, 2018

Age Group	Percentage of Population	Number of Population	XDR Typhoid	Attack rate /100,000
0-11 Month	3.4	686,785	140	20
1-2Y	7.6	1,535,166	1414	92
3-4Y	6.7	1,353,370	1347	100
5-6Y	5.6	1,131,175	917	81
7-8Y	5.1	1,030,177	847	82
9-10Y	5.2	1,050,377	511	49
11-12Y	4.4	888,780	437	49
13-14Y	4.4	888,780	193	22
15-24	20.4	4,120,709	721	17
25-34Y	13	2,625,942	254	10
35-44Y	11	2,221,951	79	4
45-54Y	7.5	1,514,967	50	3
55-64Y	3.7	747,383	27	4
>65	1.99	401,971	19	5
Total	99.99	20,199,554	6956	34
Female	49	9,897,781	2775	28
Male	51	10,301,772	4181	41

Fig 2: Number of XDR and drug sensitive Typhoid fever cases reported from January 1, 2017 to August 25, 2019 in Karachi

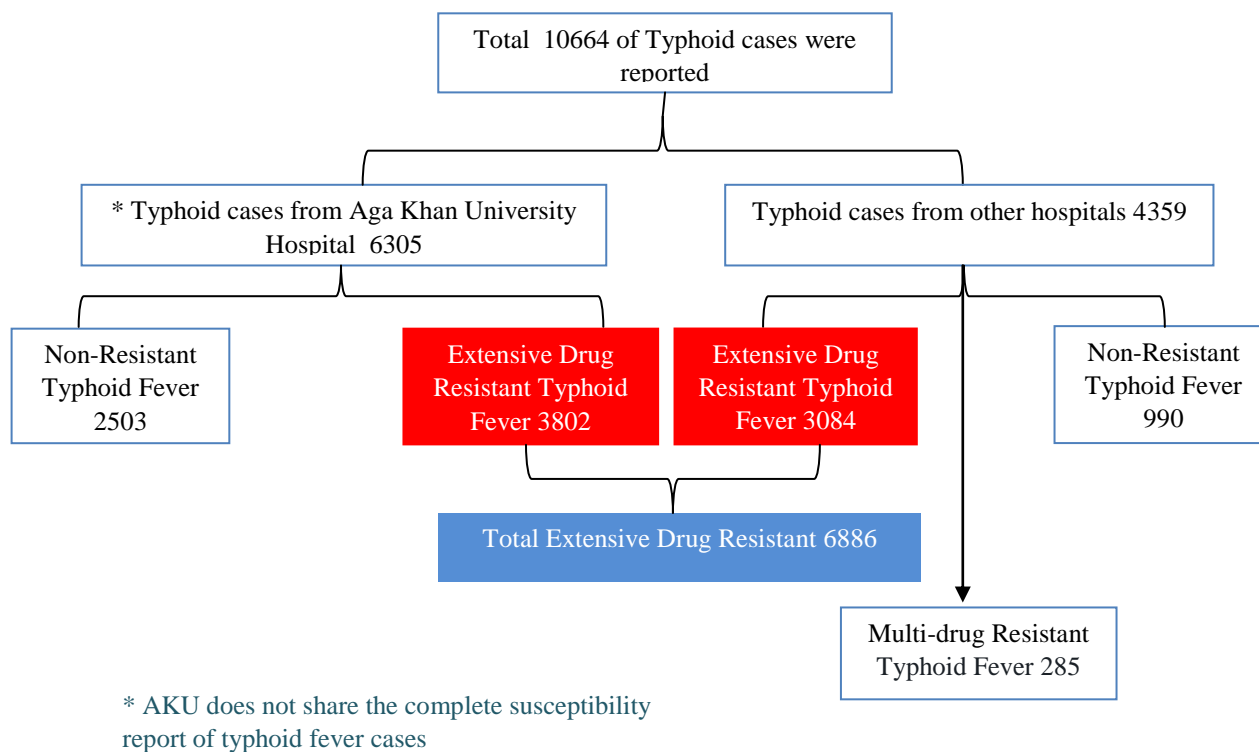
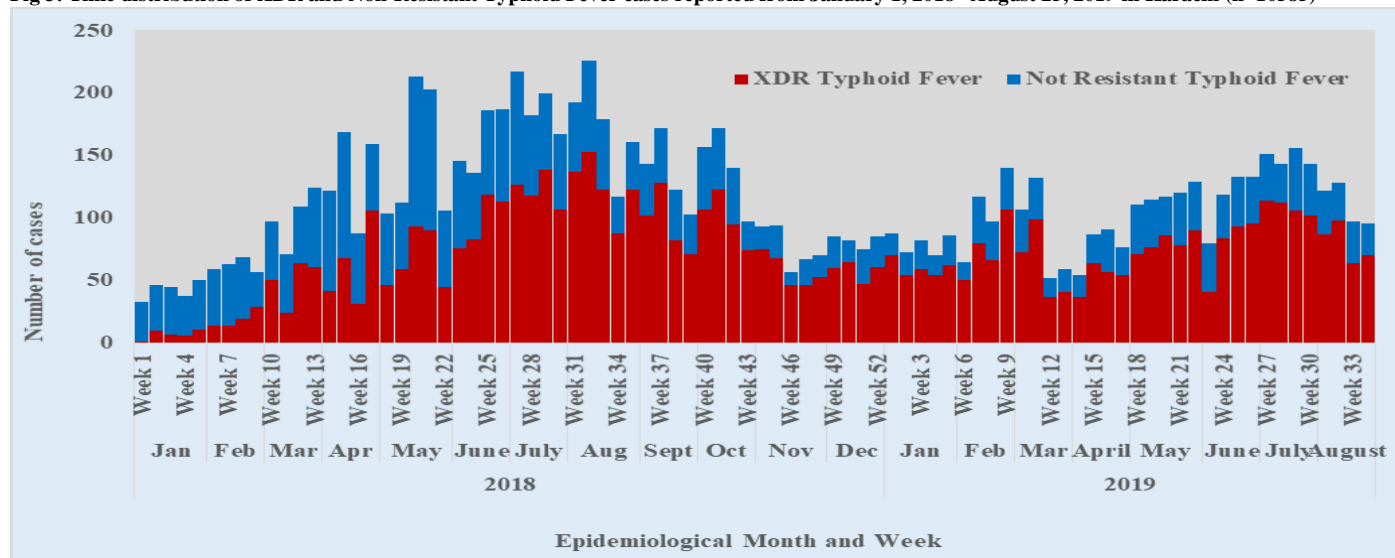


Fig 3: Time distribution of XDR and Non-Resistant Typhoid Fever cases reported from January 1, 2018 –August 25, 2019 in Karachi (n=10585)



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. Ishfaque (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 August 25, 2019, a total of **4263** Typhoid cases were reported at the PDSRU Hyderabad from different districts of Sindh province excluding Karachi. Out of these **3,409** are Extensive Drug Resistant (XDR) cases.

Among all reported XDR cases, **2,521 (74 %)** were from District Hyderabad only.

Fig 4: XDR Typhoid cases reported by month in district Hyderabad (August 25, 2019)

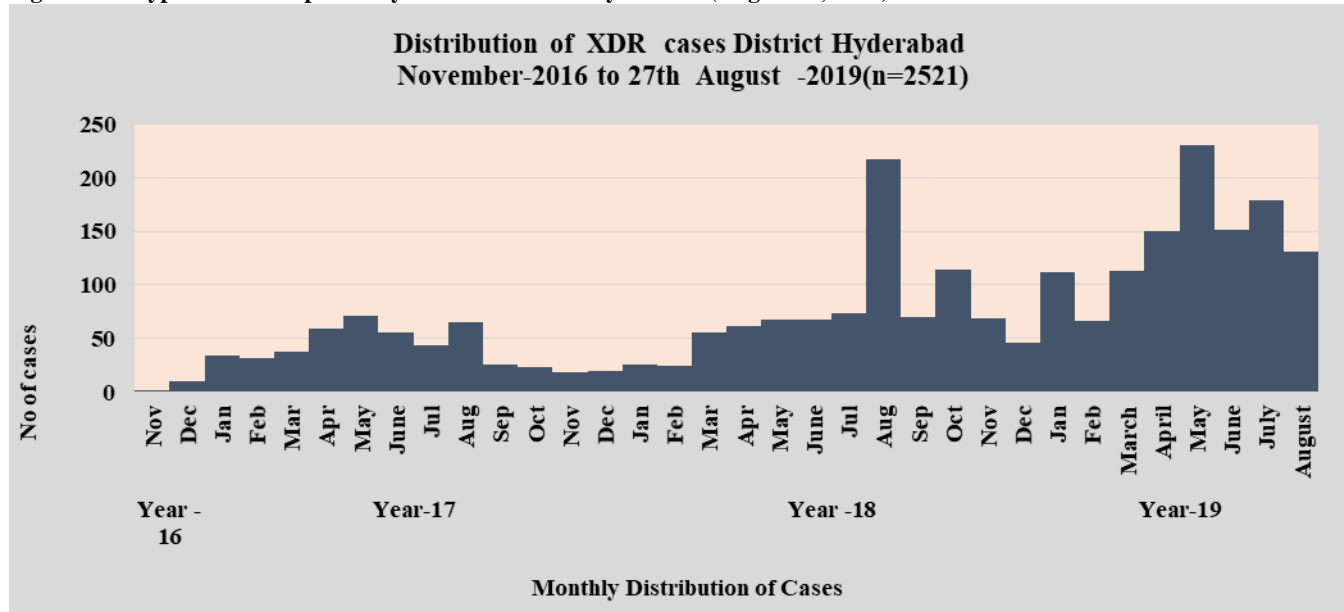


Table 5: District wise (excluding Karachi) total Typhoid and XDR Typhoid cases in Sindh (Nov 2016 – August 25, 2019)

Name of District	No of Typhoid Fever Cases	XDR cases	% XDR
Hyderabad	3177	2521	74.0
Tando Allah Yar	15	10	0.3
Badin	113	78	2.3
Dadu	31	24	0.7
Kashmore	40	39	1.1
Ghotki	34	27	0.8
Mirpurkhas	274	224	6.6
Sukkur	66	58	1.7
Tharparkar	18	12	0.4
Sanghar	103	87	2.6
Nau sheroferoz	40	29	0.9
Shikarpur	29	28	0.8
Tando M Khan	1	1	0.0
Jamshoro	185	155	4.5
Umar Kot	5	5	0.1
Jacobabad	11	10	0.3
SBA	12	9	0.3
Larkana	44	36	1.1
Sujawal	6	4	0.2
Jacobabad	3	3	0.1
Thatha	9	8	0.2
Khairpur	47	41	1.2
Total	4263	3409	80.0

The most affected age group was 2-4 years (n=853) with Attack Rate 46.9/10,000 of population followed by 5-9 years of age group (n=762) 25.9/10000. Overall attack rate is **11/10,000**.

Table 6: Age and gender specific attack rates XDR Typhoid reported from District Hyderabad (n=2521)

Age Group	XDR	Population	Attack rate/10000
0-23 Month	217	118771	18.3
2-4 Year	853	178157	47.9
5-9 Year	762	294728	25.9
10-14 Year	376	266135	14.1
15-19 Year	106	248539	4.3
20-24 Year	87	213348	4.1
25-29 Year	49	175957	2.8
30-34 Year	20	136367	1.5
35-39 Year	17	118771	1.4
40-44 Year	9	94577	1.0
45-49 Year	4	87979	0.5
50-54 Year	10	59386	1.7
55-59 Year	6	59029	1.0
60-64 Year	2	52787	0.4
>65	3	94577	0.3
Total	2521	2199107	11.5
Male	1508	1112968	135
Female	1013	1086139	9.3

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

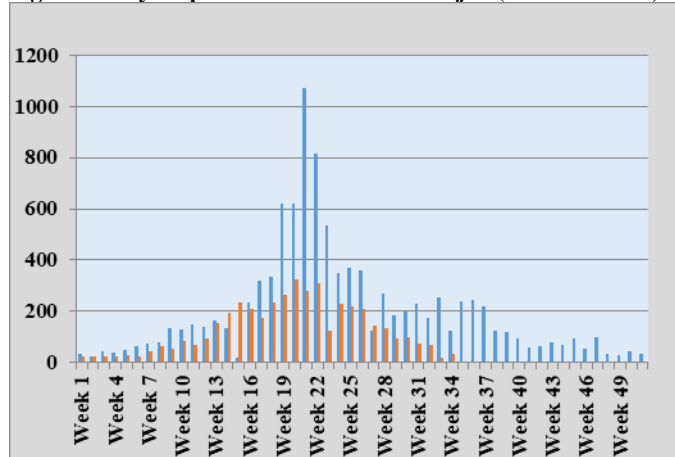
Reported by: *Dr Naveed Memon TSO Hyderabad, Dr Santosh, Dr Munaza (fellow, 11th cohort), Dr Mudassar (alumnus, 9th cohort)*

Update 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 34, 2019, total 33 new cases of suspected Measles were reported.

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



Update /Follow-up Varicella Surveillance in Punjab:

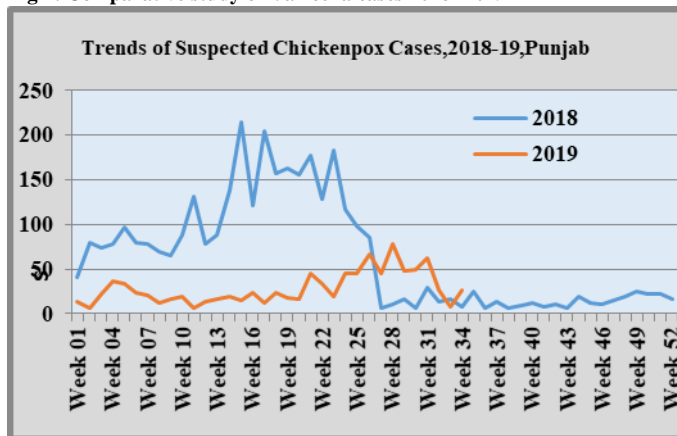
The total number of cases reported from Jan 01, 2018 till August 25, 2019 is **4,243**.

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.	1120	7.0
5-9 Yrs.	1411	8.6
10-14 Yrs.	714	4.9
15-19 Yrs.	292	2.2
20-24 Yrs.	220	2.0
25-29 Yrs.	146	1.6
30-34 Yrs.	125	1.8
35-Above	215	0.7
Total	4243	3.5

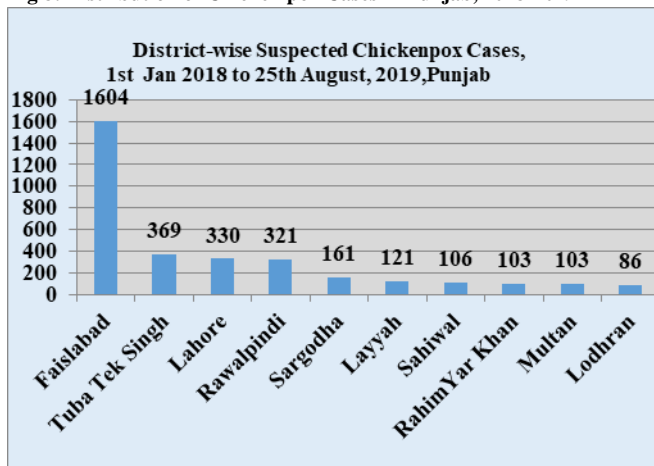
High attack rate was observed in children aged 5-9 yrs. (8.6 /100,000) followed by 0-4 yrs. age group (7.0/100,000).

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,*

Update on Dengue Surveillance-KP:

In current week 103 cases reported from district Peshawar specifically from three union councils Sarband, Sango and Shiekhan. Total number of cases this season are 121.

Update on Dengue Alert from Rural union councils of District Peshawar:

In last three weeks, 100 cases reported from rural union councils of district Peshawar. Most identified risk factor is the in house storage of water for domestic use. Response activities were carried out in the area with special focus for disease and vector surveillance.

Update on CCHF alerts from District Peshawar, Malakand, Khyber and North Waziristan:

After Eid Ul Adha, three laboratory confirm and four suspected cases from Khyber teaching and lady reading hospitals. Among each positive case of Peshawar and north waziristan expired. Also probable case from district Malakand also expired. All cases were potentially exposed to animal at Eid Ul Adha. Response activities are carried out in affected areas in coordination with livestock department. FELTP fellows of 12th cohort are leading the investigations and complete report will be shared after the completion of activity.

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

Suspected Measles Outbreak Investigation in UC Girdi Penaki 1&2, District Killa Abdullah-Baluchistan:

Eleven (11) new suspected measles cases were reported from Union Council Girdi Pinki 1, District Killa Abdulla during Epidemiological week 34. A total of 69 suspected Measles cases (overall AR= 3.1 %) including three death (CFR=4.3%) were identified. 66.6% (n=46) cases, out of total 69 were detected through the active search in community. Median age of the cases was 6 years with age range 8 months to 14 years. The male to female ratio was 1: 1.5.

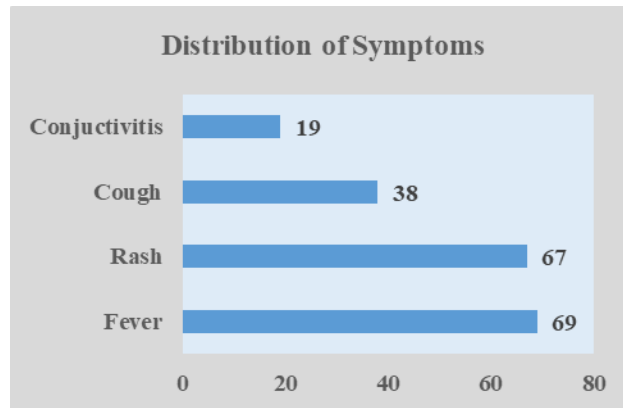
The attack rate with affected age group is given in table below

Table 7: Age groups and their attack rates in Measles Outbreak

Age Group (Years)	Cases (n=69)	Percentage (%)	Pop. of Age Group	Attack Rate (%)
< 1-4	30	43.5	504	5.9
5-8	22	31.8	597	3.7
9-12	14	20.3	582	2.4
13-16	3	4.3	534	0.6

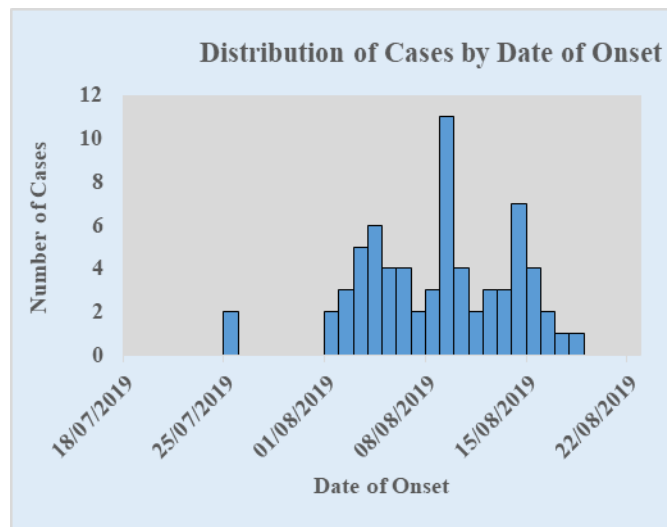
Majority of cases 43.5% (n=30) were among age group < 1-4 years, followed by 31.8% (n=22) among 5-8 years age-group while 20.3% (n=14) were among, 9-12 years of age group. The most frequent feature was fever (n=69) 100%, followed by rashes (n=67) 97%, cough (n=38) 55% and conjunctivitis (n=19) 27.5%.

Fig 9: Signs and symptoms of Measles cases



Epi curve shows the distribution of suspected measles cases with respect to the onset of symptoms. The first (index) case was reported on 26th July 2019. Then the cases started reporting from 1st August 2019, peak was achieved on 09 August 2019 and outbreak controlled on 19th Aug 2019 after appropriate measures.

Fig 9: Epi-Curve showing distribution of cases



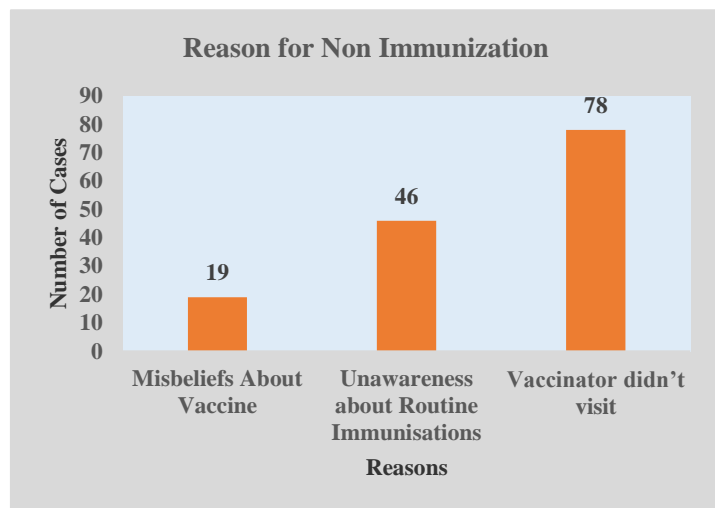
Routine Immunization: -

The RI survey showed that no child in area was vaccinated for any antigen except polio. but in Micro census book that house is register as refusal.

Reasons for No Routine Immunizations: -

The main reasons among the parents of the affected children for having no routine immunization were also assessed. Majority 54.5% (n=78) responded that vaccinator didn't visit to vaccinate their children (outreach), 32% (n=46) were unaware about routine vaccinations and 13% (n=19) were having miss concepts and misbeliefs regarding routine immunization.

Fig 10: Reasons for non-immunization among Measles Cases



Action Taken:

The District Health Officer with the support of PDSRU Quetta prepared a rapid response team with medical camp for necessary action at affected areas.

1. Seven (7) health education sessions were conducted, and community was informed about the preventive measures to be taken for measles.
2. Hand hygiene was stressed during the health education sessions.
3. Mop up activity was conducted in area and 830 children were vaccinated for different antigens.
4. Vitamin A and antibiotics were also given to measles cases.

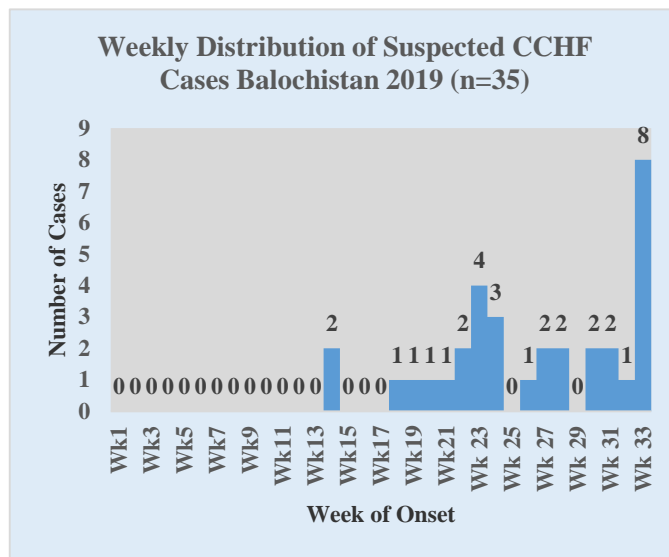
Analysis of Crimean Congo Haemorrhagic Fever (CCHF) reported Cases in Balochistan-2019*:

Provincial Disease Surveillance and Response Unit (PDSRU) Quetta doing the weekly surveillance analysis of suspected and confirmed CCHF cases in Balochistan.

The epidemiological analysis of the suspected CCHF cases revealed that a total of 35 cases have been reported in the year 2019. Majority of cases have been reported from Fatima Jinnah Chest and General Hospital Quetta.

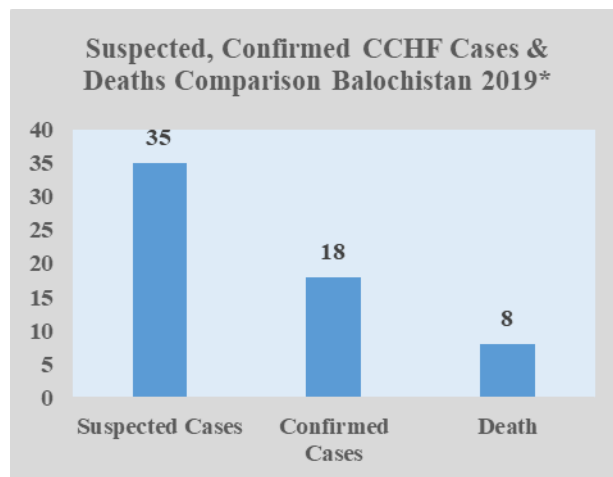
The below graph depicts reporting and occurrence of suspected CCHF cases from January 2019 till to date. The first case for the year reported on 14th week in the month of April 2019, peak was noted in 33th week in the month of August on the occasion of Eid Ul Azha

Fig 11: Distribution of CCHF cases-Baluchistan



Out of 35 suspected CCHF cases, 18 cases were Laboratory confirmed and 8 deaths (CFR=22.9%) have been reported.

Fig 12: Distribution of all reported CCHF cases in Baluchistan 2019



Among the total 35 suspected cases reported, 91.4% (n=32) were males. the median age was 35 years with age range 15 to 70 years. The case fatality rate was 22.9%. Majority of the cases 34.3% (n=12) were among age group 15 to 30 years of age, followed by 28.6% (n=10) from age group 30 to 45 years. The other age groups with number of cases and percentages given in table below.

Table 7: Age distribution of CCHF cases-Baluchistan

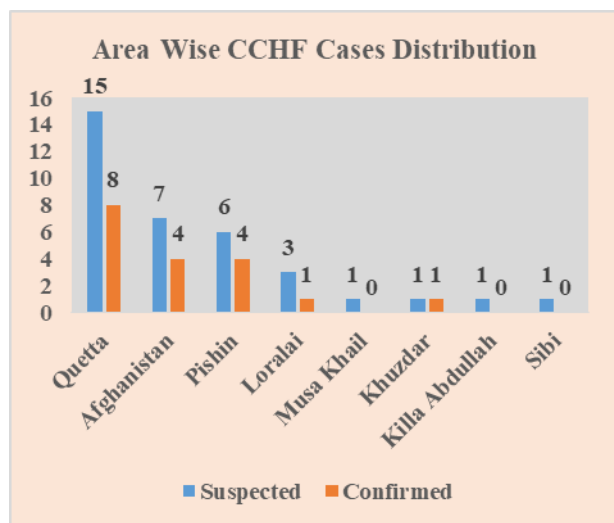
Age Group (Years)	Cases n=34	Percentage (%)
< 1-15	1	2.8
15-30	12	34.3
30-45	10	28.6
46-60	7	20
61+	4	11.4

- The Livestock department with support of Metropolitan Quetta has carried out spray at designated spaces and dipping at designated entry point.
- The FELTP Fellows are conducting surveillance activities and investigations on weekly/daily basis.

Reported by: Dr. Ehsan Ahmed Larik (TSO), Dr. Jan Inayat, Dr. Yar Muhammad (fellow 12th Cohort)

The graph below shows the distribution of CCHF cases among different areas of Balochistan and Afghanistan. Majority of the cases, 42.8% (n=15) reported from Quetta district, 17% (n=6) from Pishin district. Beside Balochistan province, 20% (n=7) cases have been reported from Afghanistan. Rest of districts with no. of case is give in graph below.

Fig 13: geographic distribution of CCHF cases-Baluchistan



Action Taken:

- A multisector (Health, Animal, Metropolitan, FELTP and WHO) meeting was held under the chair of Director Public Health for implementation of joint plan action at each district level.
- Awareness sessions and social mobilization activities have been carried out in Quetta, Pishin and Loralai.
- The advisory for prevention and control of CCHF was circulated with district Health Authorities.
- The trainings of forty (40) health care providers in high risk areas was carried out with support of WHO, FELTP and PPHI.