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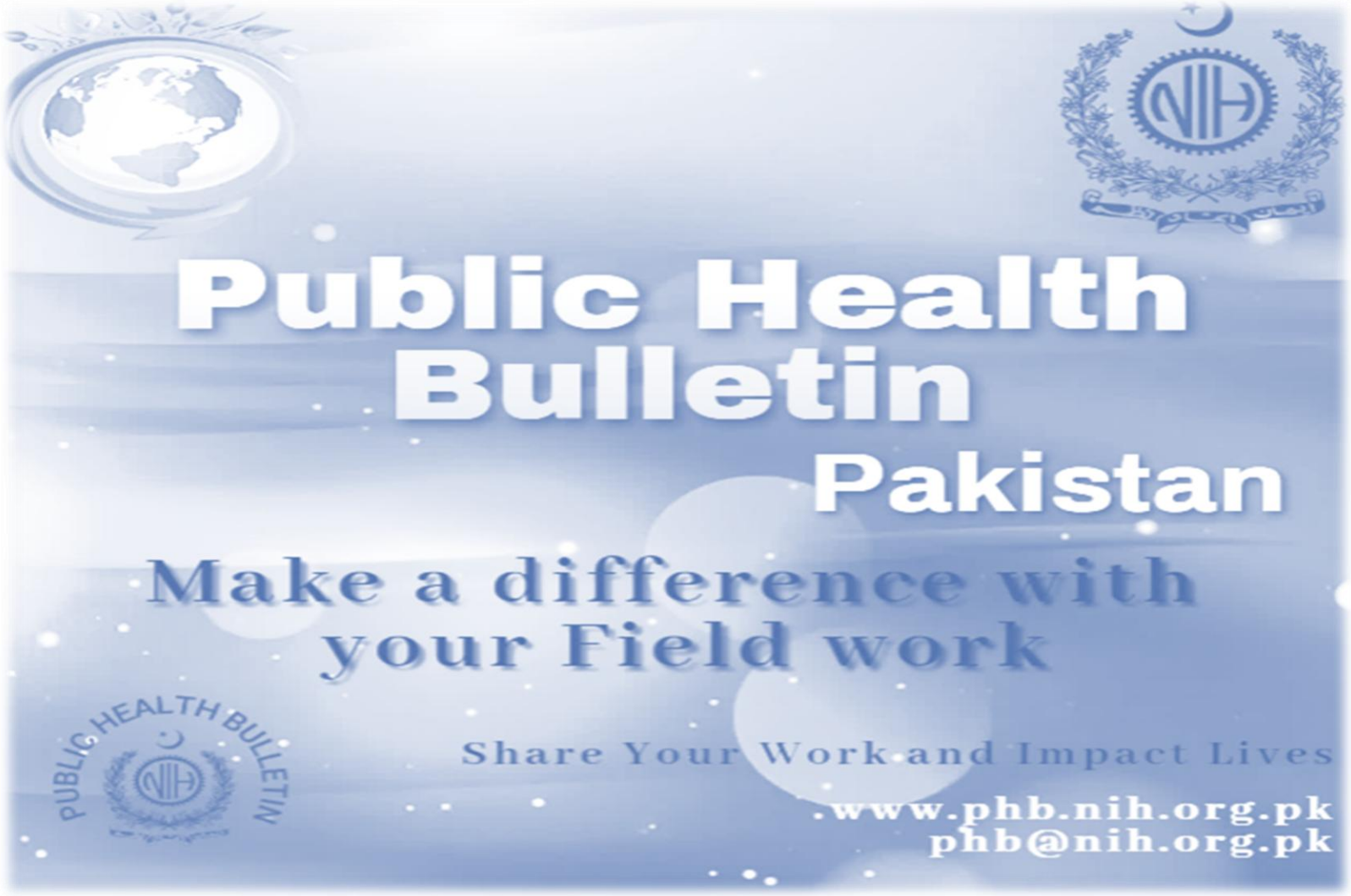
Integrated Disease Surveillance & Response (IDSR) Report

Center of Disease Control
National Institute of Health, Islamabad

http:/www.phb.nih.org.pk/

Integrated Disease Surveillance & Response (IDSR) Weekly Public Health Bulletin is your go-to resource for disease trends, outbreak alerts, and crucial public health information. By reading and sharing this bulletin, you can help increase awareness and promote preventive measures within your community.



Overview

IDSR Reports

Ongoing Events

Field Reports

Public Health Bulletin - Pakistan, Week 17, 2026

The Public Health Bulletin (PHB) provides timely, reliable, and actionable health information to the public and professionals. It disseminates key IDSR data, outbreak reports, and seasonal trends, along with actionable public health recommendations. Its content is carefully curated for relevance to Pakistan's priorities, excluding misinformation. The PHB also proactively addresses health misinformation on social media and aims to be a trusted resource for informed public health decision-making.

This Weeks Highlights include;

- *Letter to Editor on Livestock Markets and Slaughter Points: An Underutilized Surveillance Opportunity for Early Detection of Zoonotic Threats in Pakistan*
- *Knowledge hub on Malaria: What You Need to Know*

By transforming complex health data into actionable intelligence, the Public Health Bulletin continues to be an indispensable tool in our collective journey toward a healthier Pakistan.

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Stay informed. Stay prepared. Stay healthy.

Sincerely,
The Chief Editor

- *During Week 17, the most frequently reported cases were of Acute Diarrhea (Non-Cholera), followed by Malaria, ILI, ALRI <5 years, TB, Animal/ Dog Bite, B. Diarrhea, VH (B, C & D), Typhoid, SARI, and Measles.*
- *Twenty-one cases of AFP were reported from KP, twelve from Sindh, and three from AJK.*
- *Twenty-one suspected cases of HIV/ AIDS were reported from Sindh and ten from KP.*
- *Eight suspected cases of Brucellosis were reported from Sindh and four from KP.*
- *Among VPDs, there is an increase in the number of cases of Measles, Chickenpox, Pertussis, and NT this week.*
- *Among Respiratory diseases, there is an increase in the number of cases of TB this week.*
- *Among Water/food-borne diseases, there is an increase in the number of cases of Acute Diarrhea (Non-Cholera), B. Diarrhea, Typhoid, AVH (A & E), and AWD (S. Cholera) this week.*
- *Among Vector-borne diseases, there is an increase in the number of cases of Malaria, CL, Dengue, and Chikungunya this week.*
- *Among STDs, there is an increase in the number of suspected cases of HIV/AIDS, Gonorrhea, and Syphilis this week.*
- *Among Zoonotic/Other diseases, there is an increase in the number of cases of Animal/ Dog Bite and Brucellosis this week.*

IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 158 implemented districts is 82%.*
- *Sindh is the top reporting region with a compliance rate of 98%, followed by AJK 97%, GB 93%, KP 82%, and ICT 79%.*
- *In Week 15, the lowest compliance rate is observed in Balochistan, 44%.*

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2,277	1,870	82
Azad Jammu Kashmir	476	463	97
Islamabad Capital Territory	38	30	79
Balochistan	1,303	577	44
Gilgit Baltistan	405	375	93
Sindh	2,111	2,078	98
National	6,610	5,393	82

Public Health Actions

Federal, Provincial, Regional Health Departments and relevant programs may consider following public health actions to prevent and control diseases.

Malaria

- **Enhance Surveillance and Case Detection:** Strengthen malaria surveillance within IDSR through timely reporting, active case finding, and monitoring of transmission patterns in endemic and high-risk areas.
- **Improve Diagnosis and Treatment:** Ensure prompt diagnosis using Rapid Diagnostic Tests (RDTs) or microscopy and provide treatment according to national malaria treatment guidelines.
- **Implement Vector Control Measures:** Expand use of Long-Lasting Insecticidal Nets (LLINs), Indoor Residual Spraying (IRS), and environmental management to reduce mosquito breeding sites.
- **Protect High-Risk Populations:** Prioritize preventive interventions for pregnant women, children under five, and populations in endemic areas through bed net distribution and personal protection measures.
- **Strengthen Outbreak Preparedness:** Improve early warning systems, maintain rapid response capacity, and support investigation of malaria clusters and outbreaks.
- **Promote Community Awareness:** Educate communities on malaria transmission, use of mosquito nets and repellents, elimination of stagnant water, and early treatment-seeking behavior.

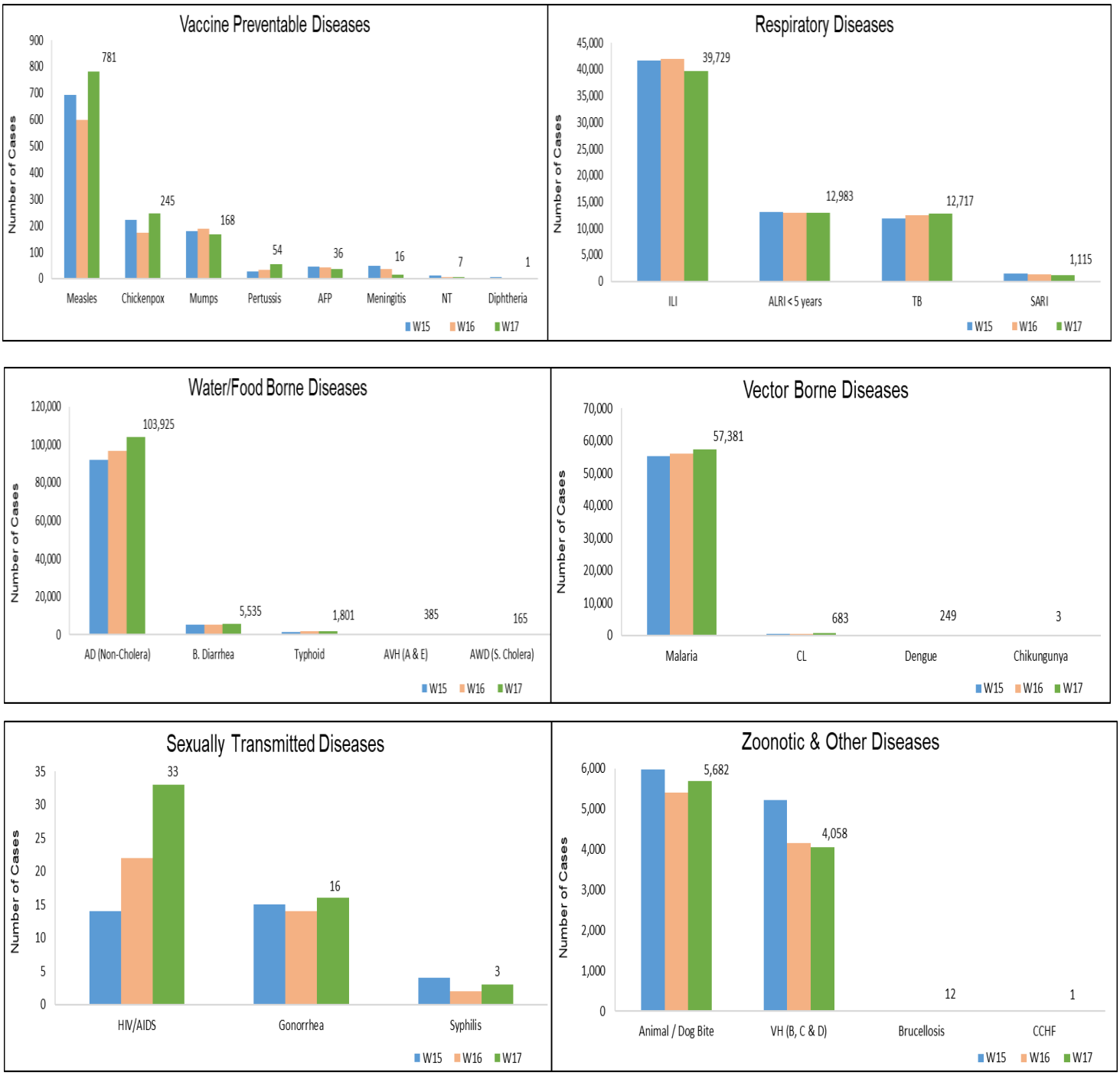
Dengue

- **Strengthen Surveillance and Early Detection:** Enhance dengue surveillance through IDSR by ensuring timely reporting of suspected and confirmed cases, monitoring seasonal trends, and improving outbreak detection.
- **Improve Laboratory Diagnosis and Case Management:** Strengthen laboratory capacity for dengue confirmation (NS1 antigen, IgM ELISA, PCR where available) and train healthcare workers on early recognition of warning signs and standard case management protocols.
- **Intensify Vector Surveillance and Control:** Conduct regular surveillance of *Aedes* mosquito populations and implement source reduction activities, larviciding, fogging (during outbreaks), and elimination of breeding sites.
- **Promote Community Participation:** Mobilize communities to remove stagnant water, improve household water storage practices, and support environmental sanitation activities.
- **Raise Public Awareness:** Conduct risk communication campaigns on dengue symptoms, mosquito bite prevention, early healthcare-seeking, and household vector control measures.

Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 17, Pakistan.

Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (Non-Cholera)	2,193	6,372	801	648	40,210	NR	53,701	103,925
Malaria	2	1,935	0	1	4,086	NR	51,357	57,381
ILI	1,768	5,068	360	1,653	3,239	NR	27,641	39,729
ALRI < 5 years	1,355	1,238	737	0	820	NR	8,833	12,983
TB	126	24	82	23	274	NR	12,188	12,717
Animal / Dog Bite	144	178	1	0	1,374	NR	3,985	5,682
B. Diarrhea	48	827	57	2	1,005	NR	3,596	5,535
VH (B, C & D)	15	35	1	1	185	NR	3,821	4,058
Typhoid	24	291	109	0	576	NR	801	1,801
SARI	149	431	112	0	276	NR	147	1,115
Measles	19	15	8	2	611	NR	126	781
CL	0	58	0	0	620	NR	5	683
AVH (A & E)	18	0	0	0	166	NR	201	385
Dengue	0	49	0	0	52	NR	148	249
Chickenpox/ Varicella	4	7	7	1	120	NR	106	245
Mumps	2	22	5	1	80	NR	58	168
AWD (S. Cholera)	16	132	2	0	7	NR	8	165
Pertussis	0	13	0	0	9	NR	32	54
AFP	3	0	0	0	21	NR	12	36
HIV/AIDS	1	1	0	0	10	NR	21	33
Gonorrhea	0	9	0	0	5	NR	2	16
Meningitis	0	0	4	0	9	NR	3	16
Brucellosis	0	0	0	0	4	NR	8	12
NT	0	0	0	0	7	NR	0	7
Chikungunya	0	0	0	0	0	NR	3	3
Syphilis	0	0	0	0	1	NR	2	3
CCHF	0	0	0	0	0	NR	1	1
Diphtheria	0	0	0	0	1	NR	0	1

Figure 1: Most frequently reported suspected cases during Week 17, Pakistan.



Sindh

- AD (Non-Cholera) cases were maximum followed by Malaria, ILI, TB, ALRI<5 Years, Animal/ Dog Bite, VH (B, C, D), B. Diarrhea, Typhoid and AVH (A & E).
- AD (Non-Cholera) cases were mostly from Badin, Mirpurkhas, and Khairpur whereas Malaria cases were from Khairpur, Badin, and Larkana.
- Twelve cases of AFP were reported from Sindh. They are suspected cases and need field verification.
- There is a decline in number of cases of ILI, ALRI<5 Years, VH (B, C, D), B. Diarrhea, Typhoid, AVH (A & E), SARI, Meningitis, and Gonorrhea, while an increase in the number of cases AD (Non-Cholera), Malaria, TB, Animal/ Dog Bite, Dengue, Measles, Chickenpox, Mumps, Pertussis, HIV/ AIDS, AFP, AWD (S. Cholera), Brucellosis, CL, and Chikungunya this week.

Table 2: District wise distribution of most frequently reported suspected cases during Week 17, Sindh.

Districts	AD (Non-Cholera)	Malaria	ILI	TB	ALRI < 5 years	Animal / Dog Bite	VH (B, C & D)	B. Diarrhea	Typhoid	AVH (A & E)
Badin	4,308	3,538	2,580	901	420	117	282	381	52	1
Dadu	2,250	2,463	584	558	875	281	61	384	91	24
Ghotki	1,373	2,624	26	535	365	319	650	119	2	2
Hyderabad	2,761	838	1,492	395	166	55	92	67	10	6
Jacobabad	820	1,900	776	281	306	238	115	99	11	0
Jamshoro	2,083	2,359	67	706	380	104	208	110	48	0
Kamber	1,845	2,978	0	834	287	257	103	129	19	0
Karachi Central	1,774	14	1,586	205	111	109	29	3	94	10
Karachi East	495	67	7	40	21	18	8	14	2	1
Karachi Keamari	740	20	419	16	28	9	0	19	3	2
Karachi Korangi	367	61	0	83	5	15	0	11	0	9
Karachi Malir	1,564	94	1,857	81	304	43	9	46	10	1
Karachi South	96	19	0	0	0	0	0	0	0	0
Karachi West	1,128	353	1,291	98	253	86	14	24	16	0
Kashmore	352	1,588	208	119	38	174	16	41	0	0
Khairpur	3,617	4,594	6,605	1,094	1,062	318	205	404	220	24
Larkana	2,040	3,314	0	743	281	117	27	286	8	0
Matiari	2,061	2,563	42	761	232	134	241	77	2	20
Mirpurkhas	3,691	2,081	3,459	810	455	207	33	149	16	4
Naushero Feroze	1,545	1,485	1,058	246	279	269	102	235	41	1
Sanghar	2,084	2,791	8	843	421	181	785	47	15	0
Shaheed Benazirabad	1,958	2,179	0	328	186	173	79	89	83	0
Shikarpur	1,339	1,615	4	297	158	223	72	198	6	1
Sujawal	2,623	1,108	0	157	352	65	60	68	0	0
Sukkur	1,454	1,407	1,933	412	348	158	89	142	5	0
Tando Allahyar	2,055	1,716	1,024	321	133	93	247	106	9	3
Tando Muhammad Khan	1,513	851	79	539	136	97	24	106	0	1
Tharparkar	2,147	1,986	1,069	417	636	0	54	104	5	22
Thatta	1,530	1,615	1,467	57	347	125	184	21	10	67
Umerkot	2,088	3,136	0	311	248	0	32	117	23	2
Total	53,701	51,357	27,641	12,188	8,833	3,985	3,821	3,596	801	201

Figure 2: Most frequently reported suspected cases during Week 17, Sindh.

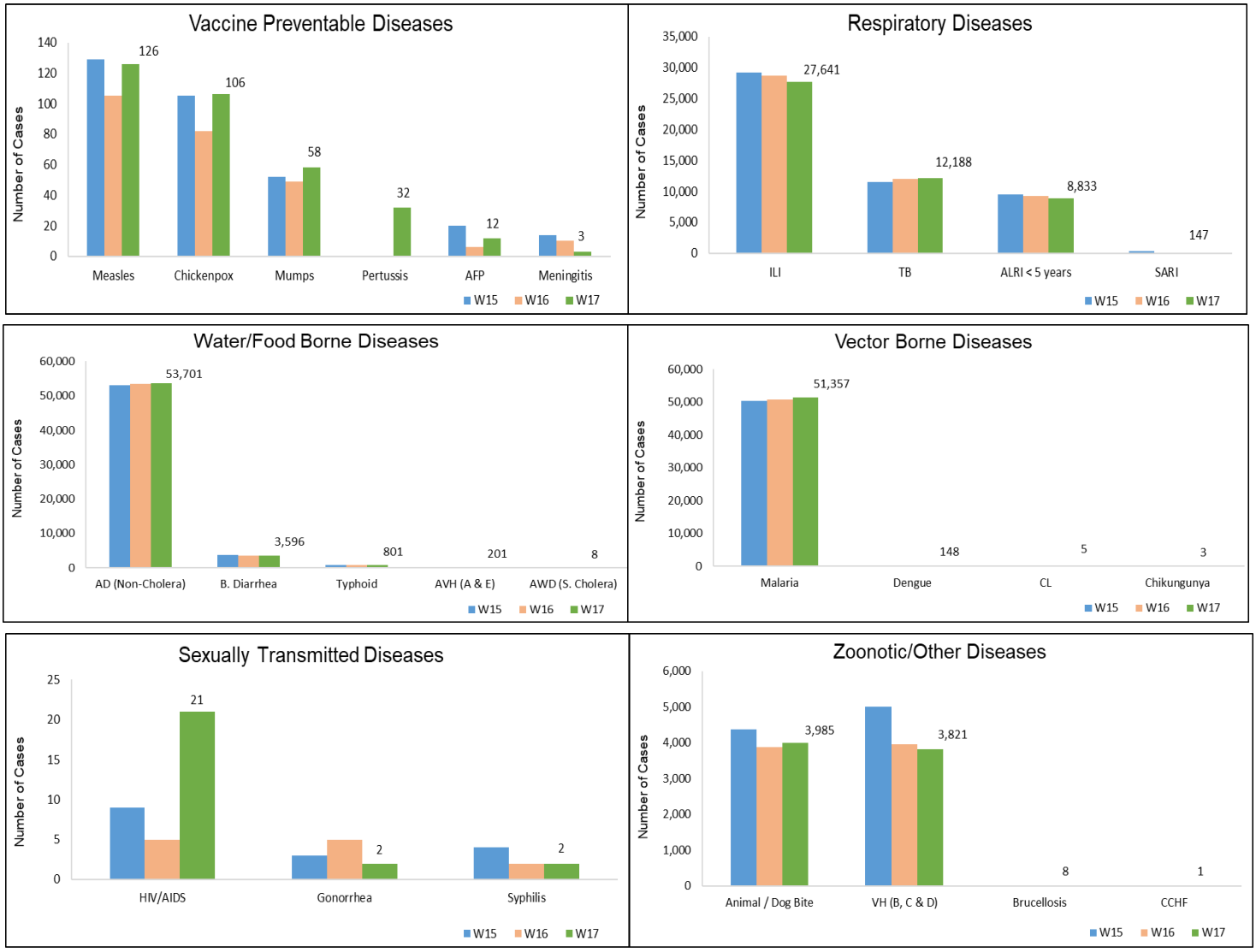
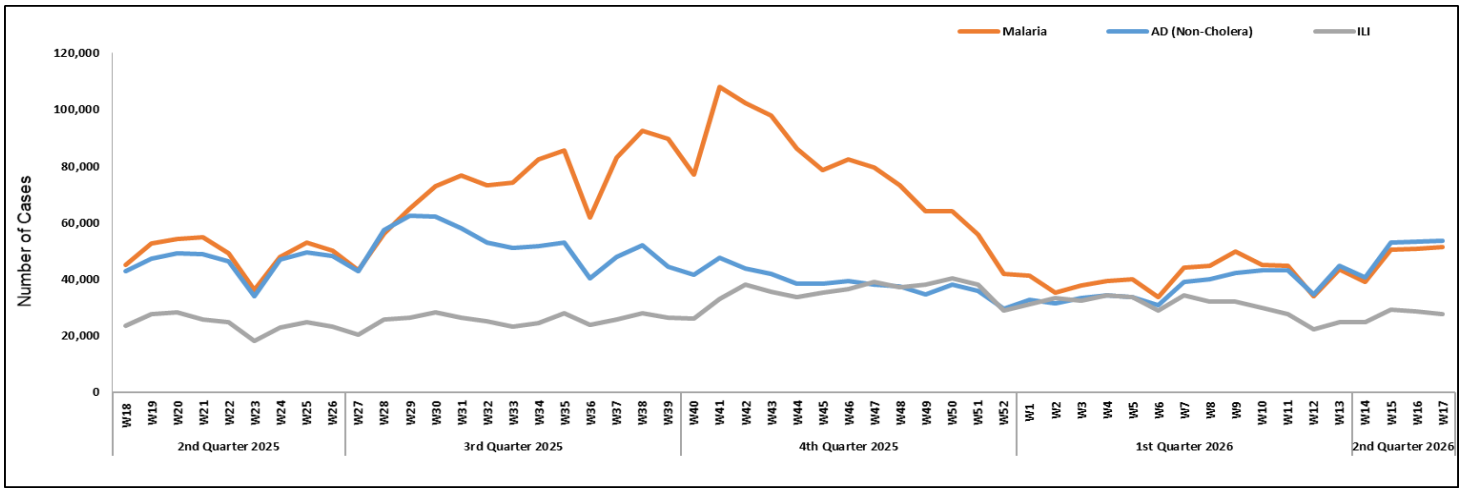


Figure 3: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Sindh.



Balochistan

- AD (Non-Cholera), ILI, Malaria, ALRI <5 years, B. Diarrhea, SARI, Typhoid, Animal/ Dog Bite, AWD (S. Cholera) and CL cases were the most frequently reported diseases from Balochistan province.
- AD (Non-Cholera) cases were mostly reported from Usta Muhammad, Gwadar, and Sibi while ILI cases were mostly reported from Gwadar, Quetta, and Kharan.
- One case of HIV/ AIDS was reported from Balochistan. Field investigation is required to confirm the case.
- ALRI <5 years, B. Diarrhea, SARI, Typhoid, Animal/ Dog Bite, CL, Dengue, TB, and Measles showed an increase in the number of cases. At the same time, a decline has been observed in the number of cases of AD (Non-Cholera), ILI, Malaria, AWD (S. Cholera), VH (B, C & D), Mumps, Pertussis, Gonorrhea, and Chickenpox.

Table 3: District wise distribution of most frequently reported suspected cases* during *Week 17, Balochistan.

Districts	AD (Non-Cholera)	ILI	Malaria	ALRI < 5 years	B. Diarrhea	SARI	Typhoid	Animal / Dog Bite	AWD (S. Cholera)	CL
Awaran	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barkhan	84	54	37	9	6	0	15	10	5	0
Chagai	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chaman	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dera Bugti	1	0	1	0	0	0	0	0	0	0
Duki	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Gwadar	727	1,158	71	NR	115	NR	82	1	NR	1
Harnai	189	71	70	141	92	0	0	1	0	17
Hub	233	39	67	9	17	0	10	0	0	2
Jaffarabad	140	5	77	2	11	0	3	3	0	0
Jhal Magsi	85	118	34	0	0	0	0	0	0	0
Kachhi (Bolan)	242	268	369	63	30	15	NR	13	21	NR
Kalat	29	1	8	15	6	0	10	0	0	0
Kech (Turbat)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Kharan	259	476	17	3	97	8	5	1	2	0
Khuzdar	46	51	14	4	3	4	6	0	0	0
Killa Abdullah	240	141	4	18	41	69	14	17	28	16
Killa Saifullah	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Kohlu	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lasbella	538	115	349	156	26	2	3	35	9	9
Loralai	272	414	40	64	47	65	20	3	0	1
Mastung	451	366	46	199	88	69	17	9	0	3
MusaKhel	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naseerabad	327	11	155	54	25	23	49	58	2	5
Nushki	164	0	3	1	62	0	0	0	18	0
Panjgur	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pishin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Quetta	528	798	4	96	39	49	7	0	1	2
Sherani	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sibi	687	471	413	106	45	65	29	3	32	0
Sohbat pur	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Surab	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Usta Muhammad	814	183	99	157	73	12	4	9	0	0
Washuk	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zhob	81	29	5	32	4	34	NR	1	10	2
Ziarat	235	299	52	109	0	16	17	14	4	0
Total	6,372	5,068	1,935	1,238	827	431	291	178	132	58

Figure 4: Most frequently reported suspected cases during Week 17, Balochistan.

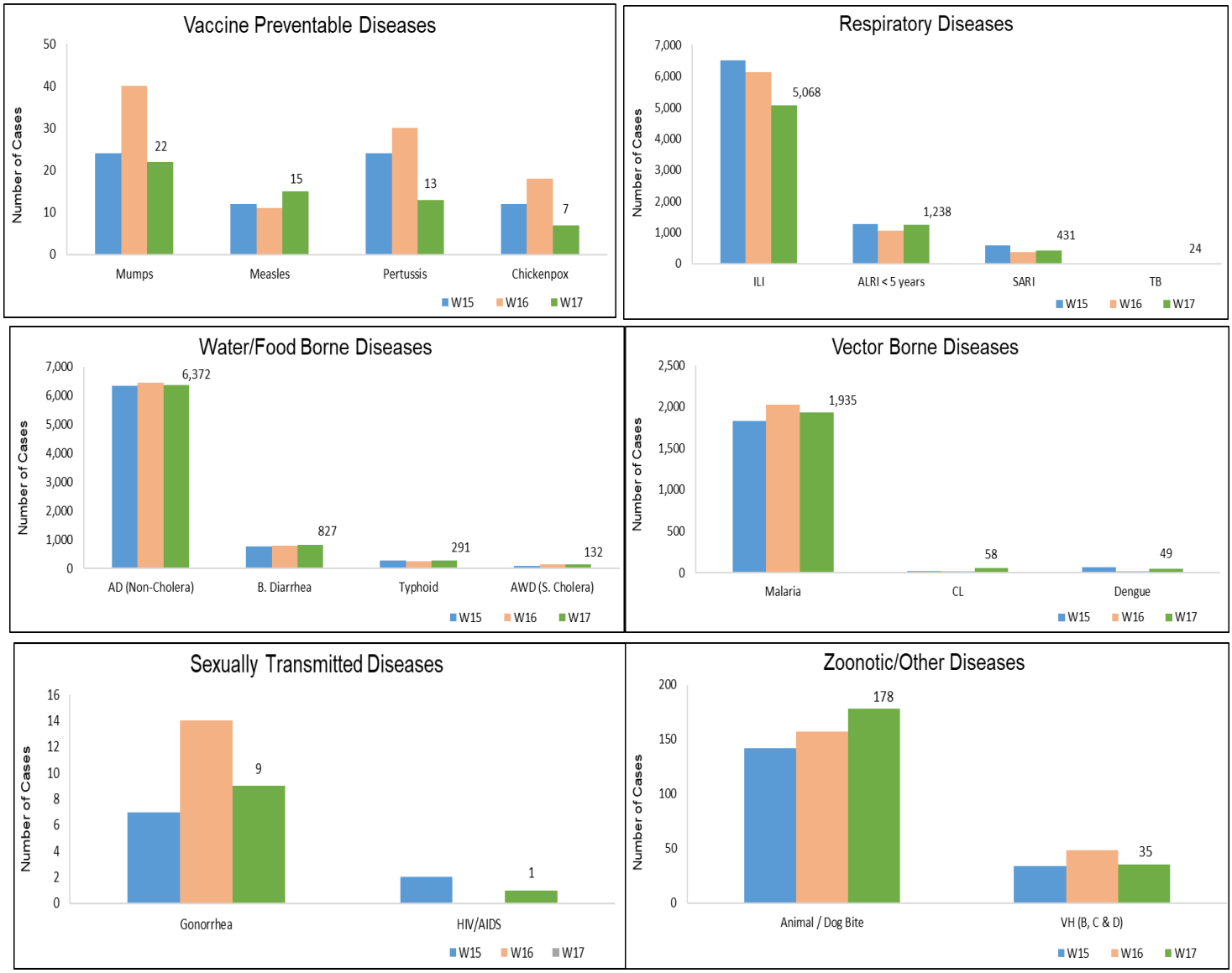
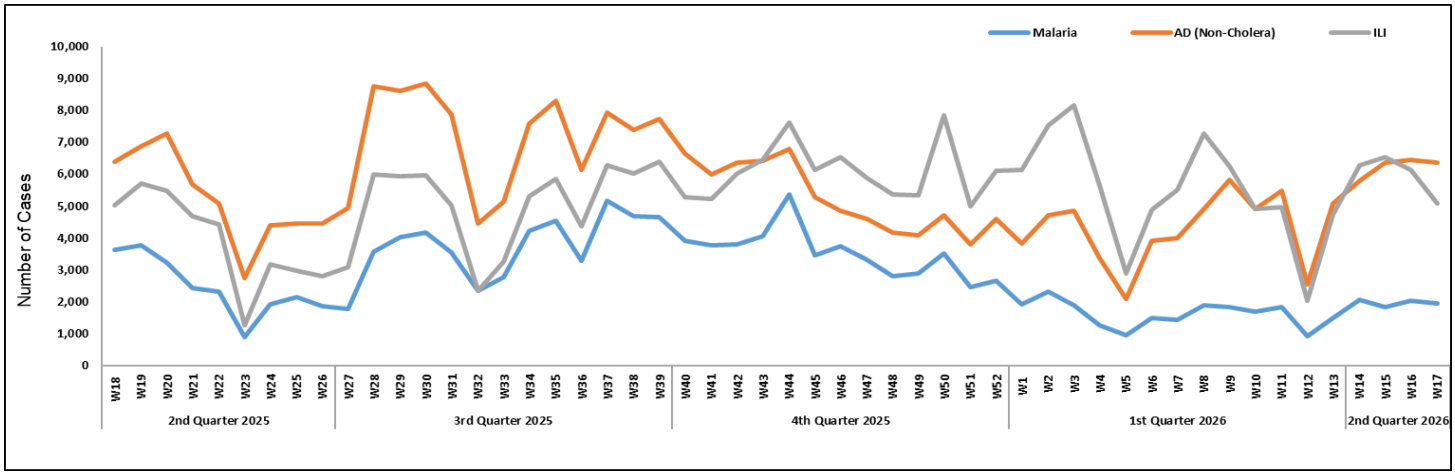


Figure 5: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Balochistan.



Khyber Pakhtunkhwa

- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, Animal/ Dog Bite, B. Diarrhea, ALRI<5 Years, CL, Measles, Typhoid, and SARI.
- AD (Non-Cholera), Malaria, Animal/ Dog Bite, B. Diarrhea, ALRI<5 Years, CL, Measles, Typhoid, TB, VH (B, C & D), AVH (A & E), Chickenpox, Dengue, HIV/ AIDS, Pertussis, NT, Gonorrhea, and AWD (S. Cholera) cases showed an increase in number while ILI, SARI, Mumps, AFP, Meningitis, and Diphtheria showed a decline in number this week.
- Twenty-one cases of AFP were reported from KP. All are suspected cases and need field verification.
- Ten cases of HIV/AIDS reported from KP. Field investigation is required.
- Four suspected cases of Brucellosis were reported from KP, which require field verification.

Table 4: District wise distribution of most frequently reported suspected cases during Week 17, KP.

Districts	AD (Non-Cholera)	Malaria	ILI	Animal / Dog Bite	B. Diarrhea	ALRI < 5 years	CL	Measles	Typhoid	SARI
Abbottabad	1,073	7	46	85	8	37	0	16	14	7
Bajaur	650	209	0	126	34	6	23	17	0	54
Bannu	922	993	4	1	14	5	8	97	92	0
Battagram	374	67	639	8	2	4	0	4	3	7
Buner	646	123	0	18	0	0	0	0	3	0
Charsadda	2,495	289	396	48	105	123	1	45	99	2
Chitral Lower	587	5	14	17	19	14	11	1	7	11
Chitral Upper	134	2	15	8	5	0	1	1	12	4
D.I. Khan	2,835	228	0	26	36	26	1	89	0	0
Dir Lower	2,208	50	0	77	69	5	0	27	23	0
Dir Upper	1,557	13	36	21	23	69	0	3	14	0
Hangu	523	94	2	24	63	0	30	0	2	0
Haripur	2,255	1	445	52	5	51	0	8	0	22
Karak	369	129	28	23	26	24	137	27	12	0
Khyber	746	237	17	47	83	46	275	5	30	6
Kohat	787	51	0	39	42	2	72	1	29	0
Kohistan Lower	111	0	0	0	4	0	0	0	6	0
Kohistan Upper	466	2	3	2	25	32	0	2	3	0
Kolai Palas	107	1	10	0	3	2	0	0	2	12
L & C Kurram	39	12	2	1	4	0	0	0	2	0
Lakki Marwat	653	190	8	88	5	5	2	7	17	0
Malakand	987	30	110	0	0	13	4	21	0	7
Mansehra	920	0	54	0	0	0	0	0	1	0
Mardan	2,296	108	7	23	65	116	2	27	34	2
Mohmand	61	81	0	3	11	0	11	0	2	0
North Waziristan	109	98	3	5	8	23	5	23	20	7
Nowshera	2,863	228	25	50	22	27	15	41	22	29
Orakzai	135	8	8	18	3	1	0	3	1	0
Peshawar	5,559	20	381	19	101	41	0	88	31	0
Shangla	1,321	469	0	75	20	13	0	4	25	0
South Waziristan (Lower)	46	56	60	15	18	11	12	10	5	27
SWU	34	14	2	0	0	1	0	0	1	0
Swabi	2,322	75	572	129	7	25	0	34	3	18
Swat	3,188	32	205	254	118	73	0	4	54	0
Tank	466	102	26	10	4	4	0	6	0	0
Tor Ghar	116	46	0	17	23	1	10	0	3	0
Upper Kurram	250	16	121	45	30	20	0	0	4	61
Total	40,210	4,086	3,239	1,374	1,005	820	620	611	576	276

Figure 6: Most frequently reported suspected cases during Week 17, KP.

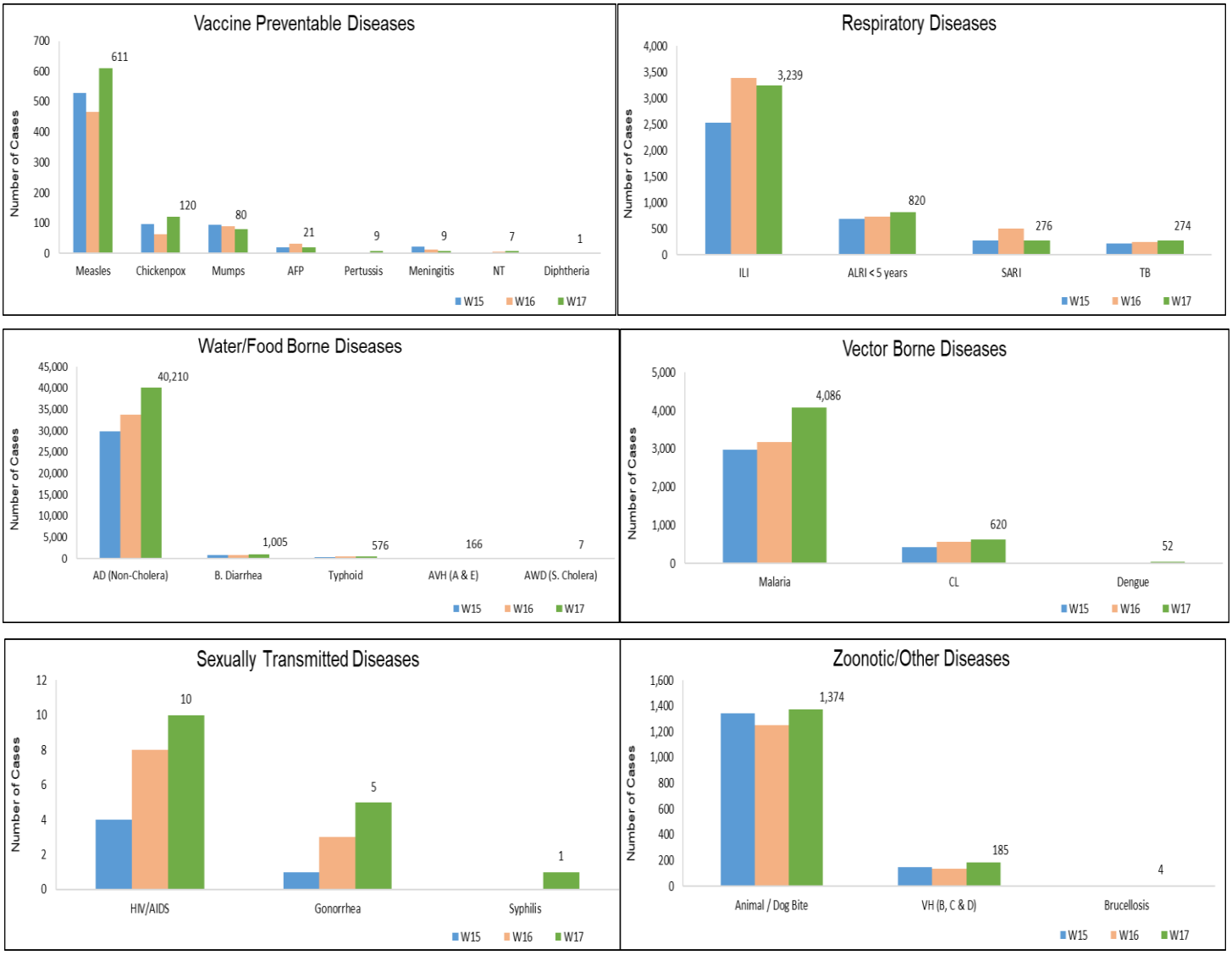
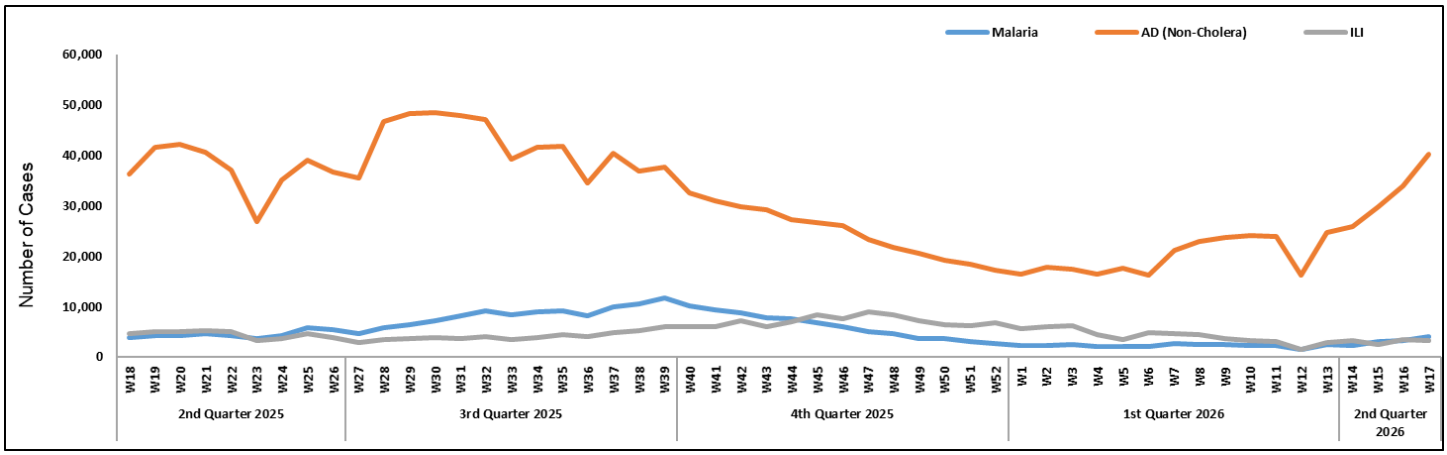


Figure 7: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, KP.



ICT, AJK & GB

ICT: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera), TB, B. Diarrhea, Measles, Mumps, Chickenpox, Malaria and VH (B, C & D). B. Diarrhea, and Mumps cases showed a decline in number while an increase in number was observed in ILI, AD (Non-Cholera), TB, Malaria, and VH (B, C & D) cases this week.

AJK: AD (Non-Cholera) cases were maximum followed by ILI, ALRI < 5years, SARI, Animal/ Dog Bite, TB, B. Diarrhea, Typhoid, Measles, and AVH (A & E) cases. An increase in number of suspected cases was observed for AD (Non-Cholera), ALRI < 5years, SARI, Animal/ Dog Bite, TB, B. Diarrhea, Typhoid, Measles, AWD (S. Cholera), and Malaria, while a decline in cases was observed for ILI, AVH (A & E), VH (B, C & D), Chickenpox, and Mumps this week.

GB: AD (Non-Cholera) cases were the most frequently reported disease, followed by ALRI <5 Years, ILI, SARI, Typhoid, TB, B. Diarrhea, Measles, Chickenpox/ Varicella, and Mumps cases. An increase in cases was observed for AD (Non-Cholera), ILI, SARI, Typhoid, B. Diarrhea, Chickenpox/ Varicella, Mumps, and Meningitis while a decline was observed in the number of cases of ALRI <5 Years, TB, AWD (S. Cholera), and VH (B, C & D) this week.

Figure 8: Most frequently reported suspected cases during Week 17, AJK.

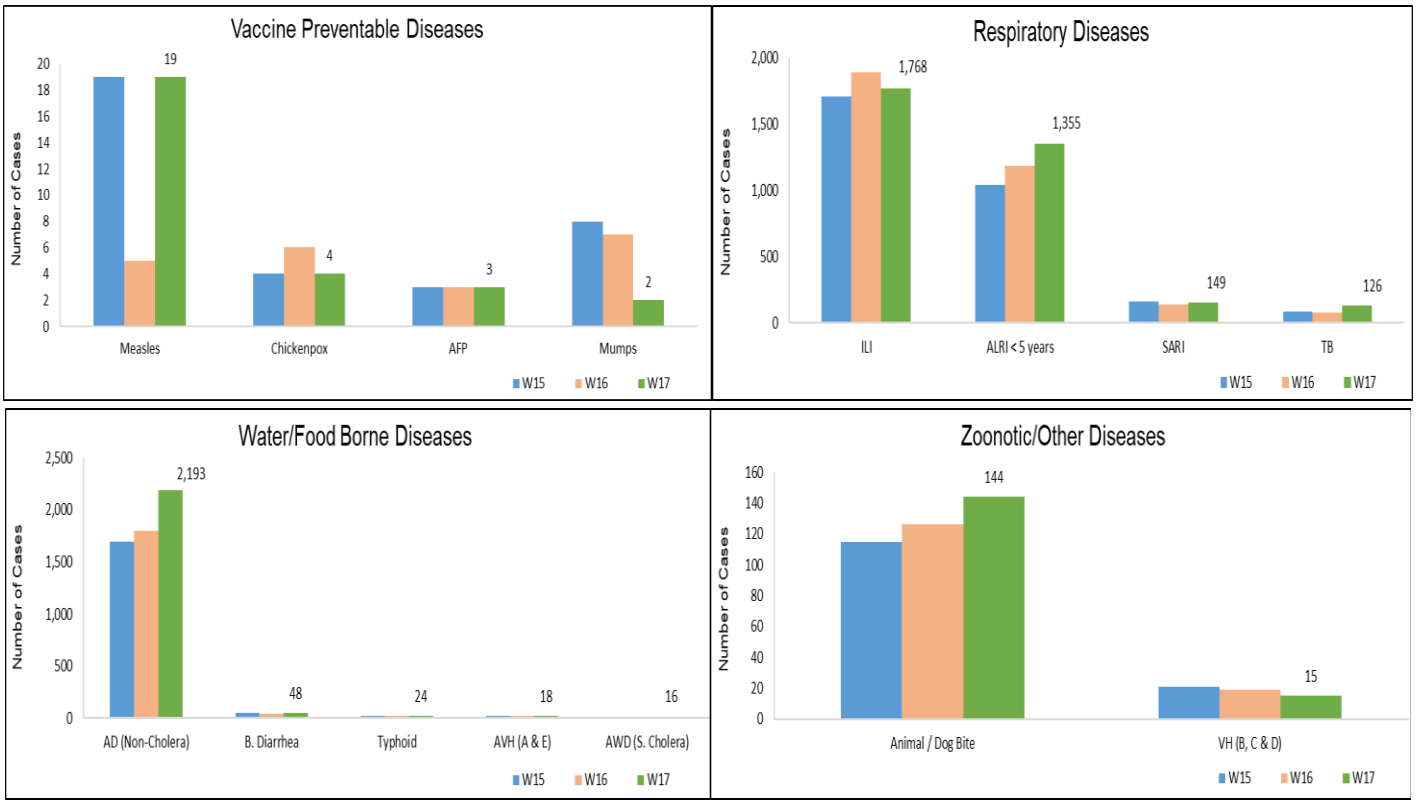


Figure 9: Week wise reported suspected cases of ILI and AD (Non-Cholera), AJK.

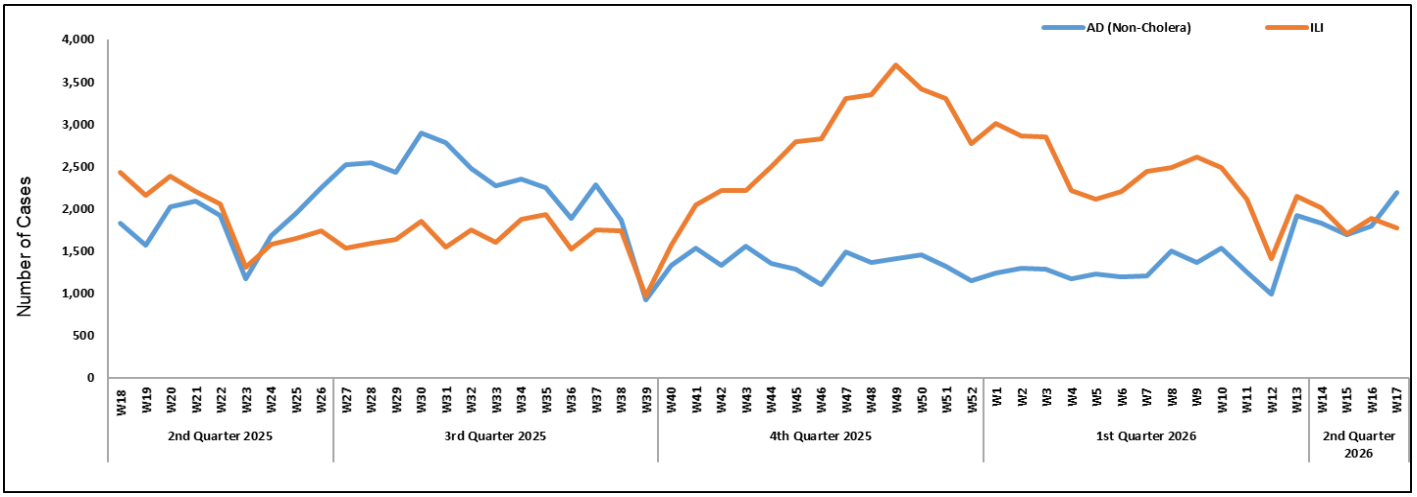


Figure 10: Most frequently reported suspected cases during Week 17, ICT.

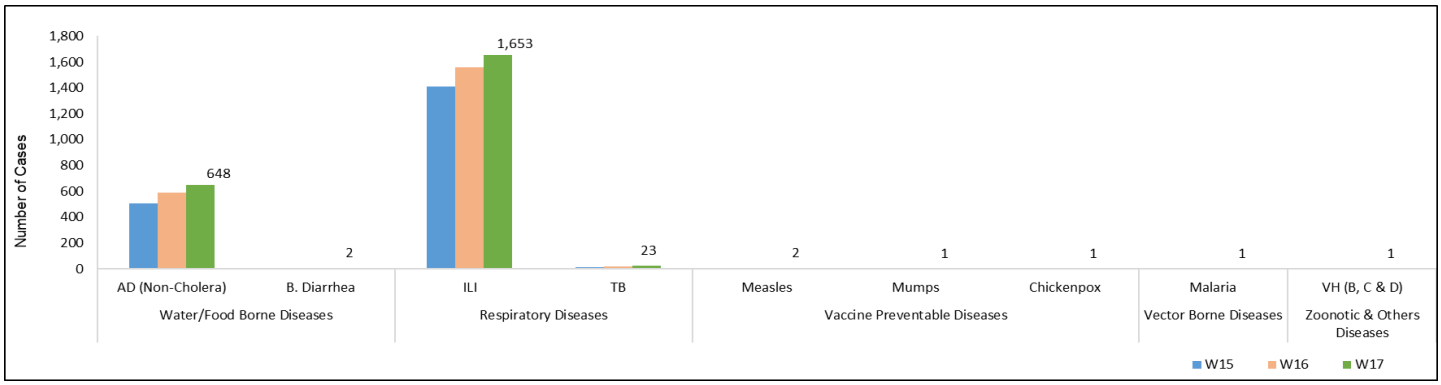


Figure 11: Week wise reported suspected cases of ILI, ICT.

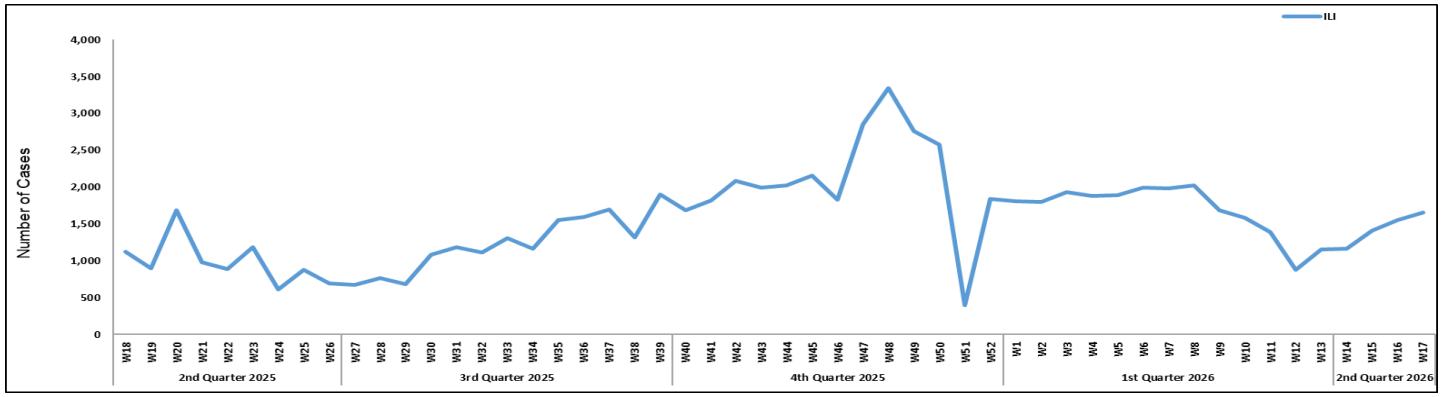


Figure 12: Most frequently reported suspected cases during Week 17, GB.

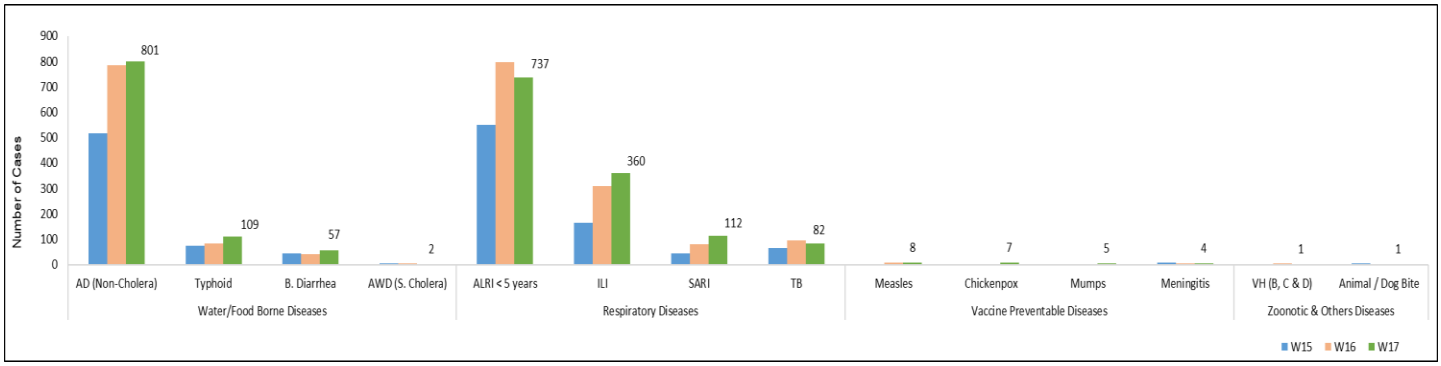


Figure 13: Week wise reported suspected cases of AD (Non-Cholera), GB.

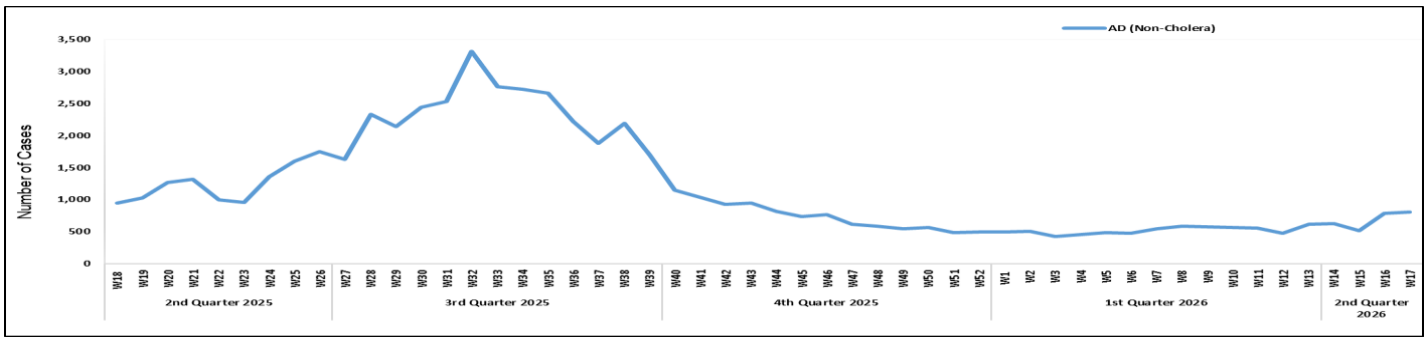


Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epi Week 17, Pakistan.

Diseases		Sindh		Balochistan		KPK		ISL		GB		Punjab		AJK	
		Total Test	Total Pos	Total Test	Total Pos	Total Test	Total Pos	Total Test	Total Pos	Total Test	Total Pos	Total Test	Total Pos	Total Test	Total Pos
AWD (S. Cholera)		62	3	-	-	-	-	-	-	-	-	-	-	-	-
Stool culture & Sensitivity		302	1	-	-	-	-	-	-	-	-	-	-	1	0
Malaria		6,675	297	1,184	117	-	-	-	-	182	0	-	-	54	1
CCHF		-	-	5	0	-	-	-	-	-	-	-	-	-	-
Dengue		1,637	106	37	1	-	-	-	-	-	-	-	-	28	0
VH (B)		16,444	396	755	43	-	-	-	-	1,323	16	-	-	769	3
VH (C)		16,524	1,520	766	33	-	-	-	-	1,411	4	-	-	769	7
VH (D)		156	42	45	4	-	-	-	-	-	-	-	-	-	-
VH (A)		131	48	-	-	-	-	-	-	-	-	-	-	-	-
VH (E)		64	13	-	-	-	-	-	-	-	-	-	-	-	-
Covid-19		1	0	3	1	-	-	-	-	-	-	-	-	7	0
TB		809	95	137	29	-	-	-	-	108	1	-	-	85	3
HIV/ AIDS		6,255	58	542	2	-	-	-	-	245	0	-	-	650	0
Syphilis		1,458	28	107	1	-	-	-	-	172	0	-	-	-	-
Typhoid		596	17	76	9	-	-	-	-	144	9	-	-	-	-
Diphtheria		5	1	-	-	-	-	-	-	-	-	-	-	-	-
ILI		4	1	3	1	-	-	-	-	-	-	-	-	-	-
Pneumonia (ALRI)		145	21	-	-	-	-	-	-	-	-	-	-	-	-
Meningitis		12	1	-	-	-	-	-	-	-	-	-	-	-	-
Measles		188	101	20	10	273	105	20	11	1	0	237	84	27	6
Rubella (CRS)		2	0	-	-	-	-	-	-	-	-	-	-	-	-
Leishmaniosis (cutaneous)		1	0	49	33	-	-	-	-	1	1	-	-	2	2
Chickenpox		7	3	-	-	-	-	-	-	-	-	-	-	-	-
Mpox		73	3	-	-	-	-	-	-	-	-	-	-	-	-
SARI		22	10	-	-	-	-	-	-	-	-	-	-	-	-
Covid-19	ILI	-	-	-	-	-	-	-	-	-	-	6	0	-	-
	SARI	-	-	-	-	23	0	25	0	-	-	31	0	-	-
Influenza A	ILI	-	-	-	-	-	-	-	-	-	-	6	0	-	-
	SARI	-	-	-	-	23	0	25	0	-	-	31	0	-	-
Influenza B	ILI	-	-	-	-	-	-	-	-	-	-	6	0	-	-
	SARI	-	-	-	-	23	0	25	0	-	-	31	0	-	-
RSV	ILI	-	-	-	-	-	-	-	-	-	-	6	0	-	-
	SARI	-	-	-	-	23	0	25	0	-	-	31	0	-	-

- The National Influenza Centre (NIC) comprises twelve Laboratory-Based sentinel surveillance sites strategically located at major tertiary care hospitals across Pakistan providing comprehensive geographical coverage. These sites collect samples from individuals with Influenza-Like Illness (ILI) and Severe Acute Respiratory Infections (SARI), which are then analyzed for high-impact Respiratory pathogens with epidemic and pandemic potential, including Influenza, SARS-CoV-2, and Respiratory Syncytial Virus.

Figure 14: District wise Influenza sentinel sites, Pakistan.

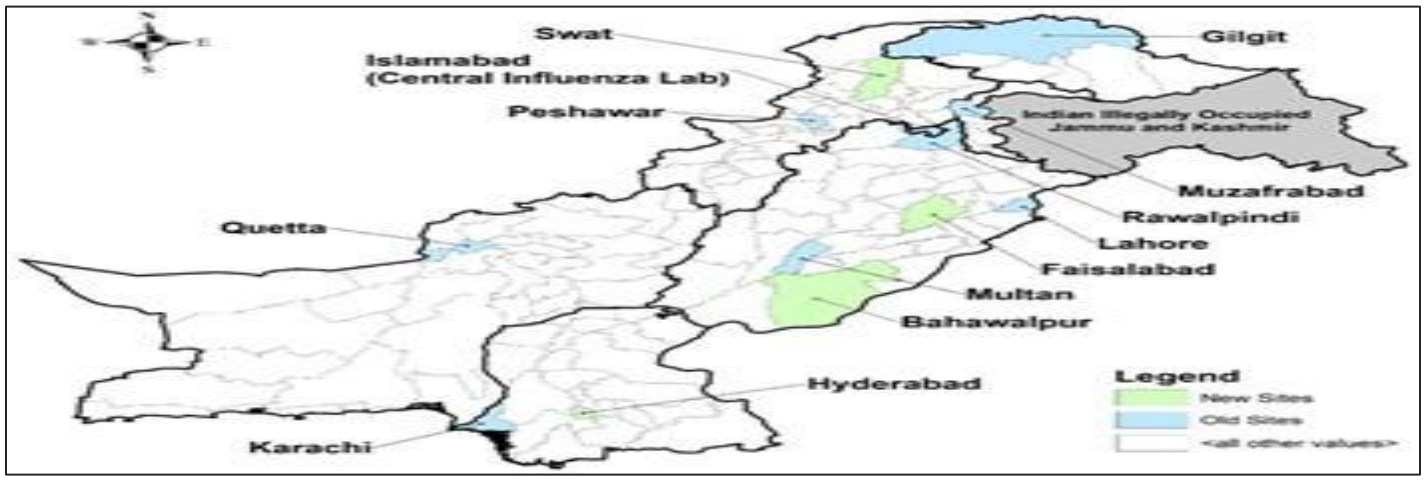


Figure 15: Distribution of suspected samples of ILI and positive cases of Influenza A, Influenza B, COVID-19 and RSV, Week 17, Pakistan.

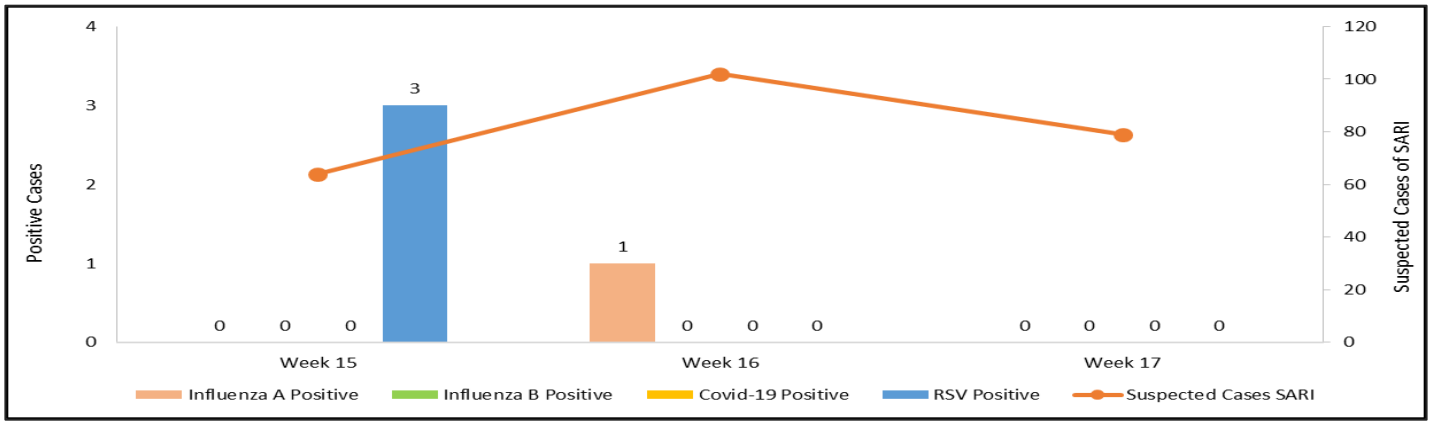


Figure 16: Distribution of suspected samples of SARI and positive cases of Influenza A, Influenza B, COVID-19 and RSV, Week 17, Pakistan.

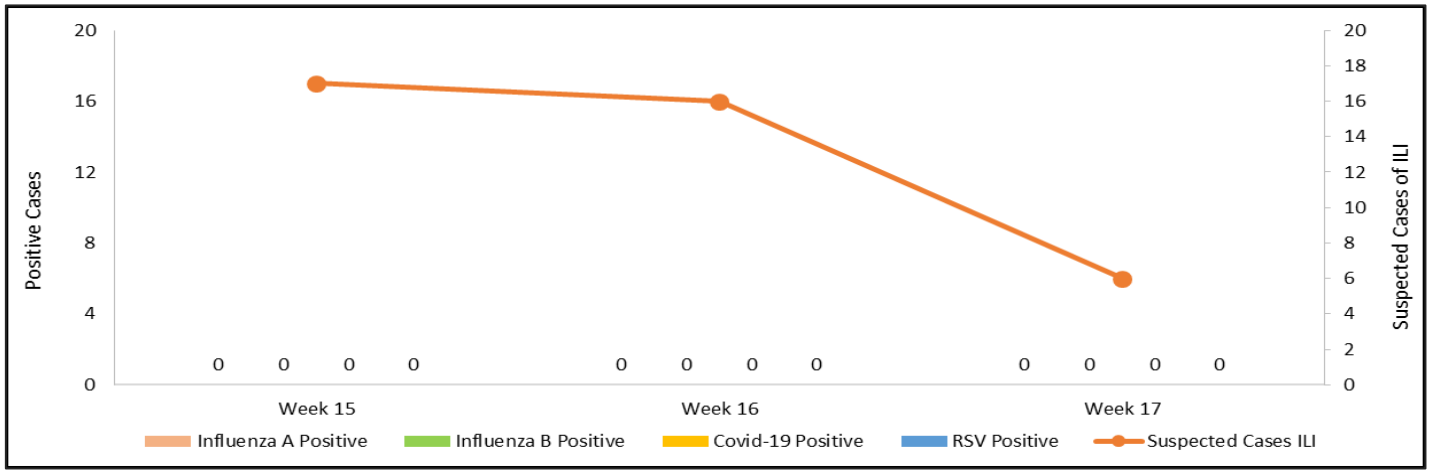


Table 6: Compliance of IDSR reporting districts Week 17, Pakistan.

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	103	93%
	Bannu	241	129	54%
	Battagram	59	44	75%
	Buner	34	34	100%
	Bajaur	44	43	98%
	Charsadda	61	61	100%
	Chitral Upper	31	31	100%
	Chitral Lower	37	36	97%
	D.I. Khan	115	113	98%
	Dir Lower	63	62	98%
	Dir Upper	56	50	89%
	Hangu	23	19	83%
	Haripur	72	72	100%
	Karak	36	36	100%
	Khyber	53	42	79%
	Kohat	61	61	100%
	Kohistan Lower	13	11	85%
	Kohistan Upper	22	17	77%
	Kolai Palas	10	10	100%
	Lakki Marwat	70	69	99%
	Lower & Central Kurram	42	16	38%
	Upper Kurram	38	38	100%
	Malakand	41	41	100%
	Mansehra	133	129	97%
	Mardan	82	71	87%
	Nowshera	57	57	100%
	North Waziristan	12	10	83%
	Peshawar	157	130	83%
	Shangla	37	34	92%
	Swabi	65	65	100%
	Swat	77	74	96%
	South Waziristan (Upper)	93	37	40%
	South Waziristan (Lower)	29	29	100%
	Tank	34	33	97%
	Torghar	13	13	100%
	Mohmand	68	41	60%
	Orakzai	69	9	13%
Azad Jammu Kashmir	Mirpur	41	41	100%
	Bhimber	85	83	98%
	Kotli	60	60	100%
	Muzaffarabad	45	45	100%
	Poonch	46	46	100%
	Haveli	39	39	100%
	Bagh	54	54	100%
	Neelum	39	39	100%
	Jhelum Velley	29	29	100%

	Sudhnooti	27	27	100%
Islamabad Capital Territory	ICT	24	23	96%
	CDA	14	7	50%
Balochistan	Gwadar	26	24	92%
	Kech	44	0	0%
	Khuzdar	74	6	8%
	Killa Abdullah	26	26	100%
	Lasbella	55	55	100%
	Pishin	65	0	0%
	Quetta	56	24	43%
	Sibi	36	35	97%
	Zhob	39	14	36%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	0	0%
	Kohlu	75	0	0%
	Chagi	36	0	0%
	Kalat	41	40	98%
	Harnai	17	17	100%
	Kachhi (Bolan)	35	18	51%
	Jhal Magsi	28	28	100%
	Sohbat pur	25	0	0%
	Surab	32	0	0%
	Mastung	45	45	100%
	Loralai	33	29	88%
	Killa Saifullah	28	0	0%
	Ziarat	29	26	90%
	Duki	31	0	0%
	Nushki	29	29	100%
	Dera Bugti	45	1	2%
	Washuk	46	0	0%
	Panjgur	38	0	0%
	Awaran	23	0	0%
	Chaman	25	0	0%
	Barkhan	20	18	90%
	Hub	33	30	91%
	Musakhel	41	0	0%
	Usta Muhammad	34	34	100%
Gilgit Baltistan	Hunza	32	32	100%
	Nagar	20	20	100%
	Ghizer	38	38	100%
	Gilgit	44	44	100%
	Diamer	62	60	97%
	Astore	55	55	100%
	Shigar	23	23	100%
	Skardu	54	54	100%
	Ganche	29	24	83%
	Kharmang	25	25	100%

Sindh	Hyderabad	72	72	100%
	Ghotki	64	64	100%
	Umerkot	65	65	100%
	Naushahro Feroze	102	102	100%
	Tharparkar	273	268	98%
	Shikarpur	59	59	100%
	Thatta	50	50	100%
	Larkana	67	67	100%
	Kamber Shadadkot	71	71	100%
	Karachi-East	21	17	81%
	Karachi-West	20	20	100%
	Karachi-Malir	35	29	83%
	Karachi-Kemari	22	21	95%
	Karachi-Central	12	11	92%
	Karachi-Korangi	18	18	100%
	Karachi-South	6	4	67%
	Sujawal	55	55	100%
	Mirpur Khas	106	106	100%
	Badin	123	123	100%
	Sukkur	63	62	98%
	Dadu	90	90	100%
	Sanghar	100	100	100%
	Jacobabad	44	44	100%
	Khairpur	168	168	100%
	Kashmore	59	59	100%
	Matiari	42	42	100%
	Jamshoro	74	74	100%
	Tando Allahyar	54	54	100%
	Tando Muhammad Khan	41	41	100%
	Shaheed Benazirabad	122	122	100%

Table 7: Compliance of IDSR reporting Tertiary care hospitals Week 17, Pakistan.

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
AJK	Mirpur	2	2	100%
	Bhimber	1	1	100%
	Kotli	1	1	100%
	Muzaffarabad	2	2	100%
	Poonch	2	2	100%
	Haveli	1	1	100%
	Bagh	1	1	100%
	Neelum	1	1	100%
	Jhelum Vellay	1	1	100%
	Sudhnooti	1	1	100%
Sindh	Karachi-South	3	2	67%
	Sukkur	1	1	100%
	Shaheed Benazirabad	1	1	100%
	Karachi-East	1	1	100%
	Karachi-Central	1	1	100%
KP	Peshawar	3	0	0%
	Swabi	1	0	0%
	Nowshera	1	1	100%
	Mardan	1	1	100%
	Abbottabad	1	1	100%
	Swat	1	0	0%

Letter to Editor

Livestock Markets and Slaughter Points: An Underutilized Surveillance Opportunity for Early Detection of Zoonotic Threats in Pakistan

Dear Editor,

Pakistan continues to experience recurrent public health threats emerging at the human–animal–environment interface, including outbreaks of Crimean-Congo Hemorrhagic Fever, brucellosis, rabies, avian influenza, and increasing concerns regarding antimicrobial resistance (AMR). The country has made notable progress in strengthening integrated disease surveillance and promoting intersectoral collaboration through the One Health approach. Nevertheless, an important surveillance opportunity remains largely underrecognized: livestock markets, animal aggregation sites, and slaughter points.

Livestock markets constitute dynamic environments where animals from multiple districts and provinces congregate, often under conditions that are favorable for pathogen transmission and amplification. These locations facilitate close interaction among traders, transporters, butchers, veterinarians, animal handlers, and the general public, creating multiple pathways for zoonotic exposure. Despite their epidemiological significance, surveillance activities in such settings are generally confined to veterinary inspection, animal movement management, or administrative oversight, with limited integration into public health early warning systems.

The importance of this issue becomes even more pronounced during Eid al-Adha, one of the largest annual livestock movement events in Pakistan. In the weeks preceding the festival, millions of animals are transported from rural and peri-rural areas to urban centers, leading to the establishment of temporary cattle markets and animal holding areas. These temporary environments create dense animal congregation points with extensive human–animal interaction, increasing opportunities for zoonotic transmission and occupational exposure.

The Eid period is particularly relevant in the context of diseases such as CCHF, where exposure to infected animals and ticks among animal handlers, transporters, slaughter workers and general public may increase risk. Temporary slaughtering sites, informal slaughter practices, backyard processing, and improper disposal of animal waste further add environmental and public health dimensions that often remain outside routine surveillance frameworks.

Apparently, systematic event-based surveillance targeting unusual animal morbidity, mortality events, abortion clusters, ectoparasite infestations, behavioral abnormalities, or illness among high-risk occupational groups remain limited. Consequently, valuable early warning signals may go undetected until human cases appear within healthcare settings.

Establishing sentinel surveillance mechanisms at selected livestock markets and slaughter facilities by livestock department in collaboration with health departments under the one health umbrella could provide a practical and scalable solution. Such systems may include standardized reporting tools, rapid risk assessment procedures, digital notification platforms, syndromic reporting formats, and predefined thresholds for investigation. Integration of human health, veterinary, wildlife, and environmental sectors would further support operationalization of the One Health framework.

In addition, these sites provide opportunities for integrated monitoring of vector populations, antimicrobial use practices in animals, environmental contamination, waste management systems, and occupational health risks. Engagement of municipal authorities, veterinary personnel, frontline public health

workers, and community informants may enhance sensitivity and timeliness of signal detection.

Pakistan has demonstrated increasing commitment toward strengthening One Health governance and preparedness capacities. However, surveillance activities remain predominantly healthcare-centered, focusing largely on detection after human illness occurs. Expanding surveillance into livestock markets and slaughter environments may shift the approach toward earlier risk recognition and prevention.

Given the predictable seasonal nature of livestock movement and recurring events such as Eid-ul-Adha, these settings represent not merely commercial spaces but strategic surveillance assets. Incorporating them into national surveillance architecture may improve early detection of zoonotic threats, strengthen preparedness, and contribute meaningfully to national and global health security objectives.

Knowledge Hub

Malaria: What You Need to Know

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female *Anopheles* mosquitoes. It is preventable and curable, yet remains a significant global health challenge. On this **World Malaria Day**, we stand united in the global effort to eradicate a disease that remains a significant health challenge. While malaria is entirely preventable and curable, it continues to threaten lives worldwide. By raising awareness and taking action, we can move closer to a malaria-free future.

What is Malaria?

Malaria is caused by *Plasmodium* parasites. These microscopic parasites enter the human bloodstream after a mosquito bite, travel to the liver to multiply, and then infect red blood cells.

There are five species of *Plasmodium* that cause malaria in humans:

- ***P. falciparum:*** Found primarily in Africa; it is the most dangerous species and the most likely to cause severe, fatal malaria.
- ***P. vivax:*** Found in many regions outside Africa; it can remain dormant in the liver and cause relapses months or years later.
- ***P. malariae, P. ovale, and P. knowlesi:*** Less common species that typically cause less severe disease.

How It Spreads

- **Mosquito-to-human:** The primary mode of transmission. When a female *Anopheles* mosquito bites a person already infected with malaria, it ingests the parasites. The parasites then develop within the mosquito and are injected into the next person the mosquito bites.
- **Other modes (rare):** Because the parasite lives in red blood cells, malaria can also be transmitted through blood transfusions, organ transplants, or from a mother to her fetus during pregnancy (congenital malaria).

Signs & Symptoms

Symptoms usually appear **10 to 30 days** after the bite. Early symptoms can be mild and often resemble the flu, making it difficult to recognize.

- **Classic Symptoms:**
  - High fever, often occurring in cyclical patterns.
  - Shaking chills.
  - Profuse sweating.
  - Headache, muscle aches, and fatigue.
  - Nausea and vomiting.
- **Severe Malaria:** If not treated promptly, malaria can progress to severe illness, characterized by:
  - Extreme fatigue and confusion (cerebral malaria).
  - Severe anemia (due to destruction of red blood cells).
  - Difficulty breathing.

- Kidney or liver failure.

Prevention

Prevention focuses on protecting against mosquito bites and, in high-risk areas, using preventative medication.

- **Bite Prevention:**
  - **Insect Repellent:** Use EPA-registered repellents (DEET, Picaridin).
  - **Bed Nets:** Sleep under **insecticide-treated bed nets (ITNs)**.
  - **Clothing:** Wear long-sleeved shirts and long pants, especially from dusk to dawn, when *Anopheles* mosquitoes are most active.
- **Chemoprophylaxis:** Travelers to endemic regions should consult a doctor to receive appropriate antimalarial medication to take before, during, and after their trip.
- **Vaccination:** The RTS,S/AS01 and R21/Matrix-M vaccines are recommended for children living in regions with moderate-to-high *P. falciparum* transmission.

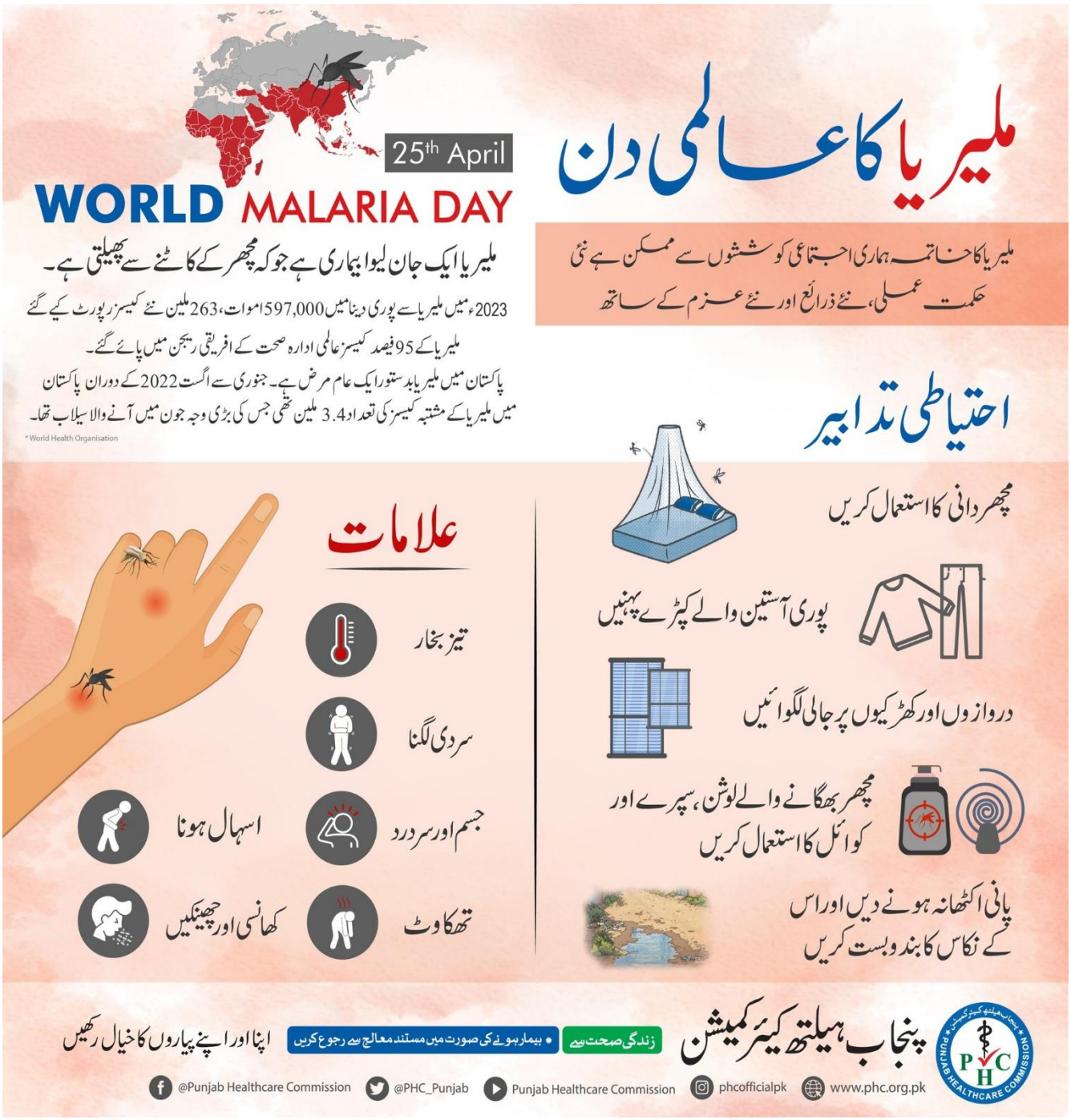
Diagnosis and Treatment

- **Diagnosis:** If you have symptoms and have traveled to a malaria-risk area, seek medical help immediately. Diagnosis is performed via a **blood smear (microscopy)** or a **Rapid Diagnostic Test (RDT)** to identify the presence of the parasite.
- **Treatment:** Malaria is treated with prescription antimalarial drugs. The choice of medication depends on the parasite species, the severity of the illness, and where the infection was acquired (as some parasites are resistant to specific drugs). It is critical to finish the **entire course** of medication even if you start feeling better.

More Information

For authoritative guidance, travel health advice, and epidemiological data, visit:

- **Centers for Disease Control and Prevention (CDC):** https://www.cdc.gov/malaria/index.html
- **World Health Organization (WHO):** https://www.who.int/news-room/fact-sheets/detail/malaria
- **Public Health Agency of Canada (PHAC):** https://www.canada.ca/en/public-health/services/diseases/malaria.html
- **UK Health Security Agency (UKHSA) / NHS:** https://www.nhs.uk/conditions/malaria/



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UK Health Security Agency

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CDC U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION