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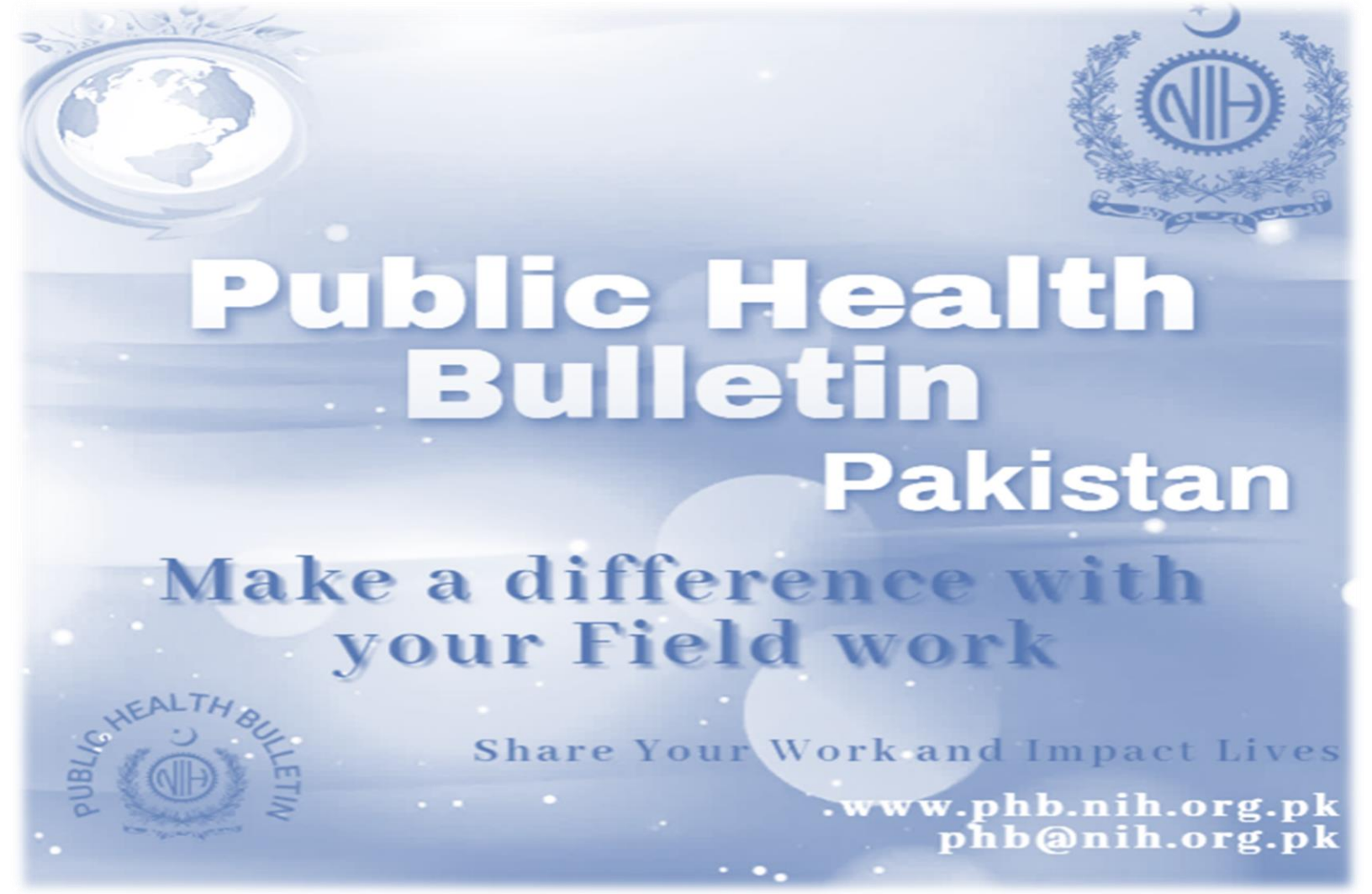
Integrated Disease Surveillance & Response (IDSR) Report

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.



Public Health Bulletin - Pakistan, Week 09, 2025

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;

- *Strengthening Disease Surveillance: NIH Completes IDSRS Training for Islamabad and AJK Officers*
- *Diphtheria Case Investigation in Tehsil Khal, Karajol, District Dir – Lower*
- *Knowledge hub on Vector-Borne Diseases: Climate Change and Shifting Risks*

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.

Subscribe to the Weekly Bulletin today!

Stay informed. Stay prepared. Stay healthy.

Sincerely,
The Chief Editor

Note: All reported cases in this report are suspected cases

- *During Week 09, the most frequently reported cases were of Acute Diarrhea (Non-Cholera) followed by Malaria, ILI, TB, ALRI <5 years, dog bite, B. Diarrhea, VH (B, C & D), Typhoid and SARI.*
- *Thirty-six cases of AFP reported from KP, twelve from Punjab, six from Sindh and two from AJK.*
- *Fifteen suspected cases of HIV/ AIDS reported from Punjab, four from KP and three from Sindh.*
- *Three suspected cases of Brucellosis reported from KP.*
- *Among VPDs, there is an increase in number of cases of Measles this week.*
- *Among food/ water-borne diseases, there is an increase in number of cases of AD (Non-cholera) and B. Diarrhea this week.*
- *Among vector-borne diseases, there is an increase in number of cases of Malaria this week.*
- *Among other diseases, there is an increase in number of cases of VH (B, C & D) this week.*

IDSR compliance attributes

- ***The national compliance rate for IDSR reporting in 158 implemented districts is 83%***
- ***Sindh is the top reporting regions with a compliance rate of 96%, followed by AJK 94%, GB 92% and KP 77%.***
- ***The lowest compliance rate was observed in ICT 70% and Balochistan 60%.***

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2315	1806	77
Azad Jammu Kashmir	404	377	94
Islamabad Capital Territory	36	23	70
Balochistan	1308	768	60
Gilgit Baltistan	405	376	92
Sindh	2098	2031	96
National	6566	5381	83

Public Health Actions

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

ILI (Influenza like illness)

- **Surveillance and Reporting:** Strengthen Integrated Disease Surveillance and Response (IDSR) to monitor ILI trends and detect potential outbreaks.
- **Vaccination:** Ensure routine influenza vaccination for high-risk children to reduce seasonal flu burden.
- **Hand and Respiratory Hygiene:** Promote hand washing with soap, use of tissues or elbows when coughing/sneezing, and proper disposal of respiratory secretions.
- **Environmental Sanitation:** Improve air circulation in homes, schools, and daycare centers to reduce viral transmission.
- **School and Daycare Infection Control:** Encourage sick children to stay home, implement temperature screenings, and disinfect shared surfaces frequently.
- **Community Engagement:** Educate caregivers on symptom recognition, early medical consultation, and home-based supportive care. Conduct awareness programs via TV, radio, and community health workers on flu prevention and treatment.

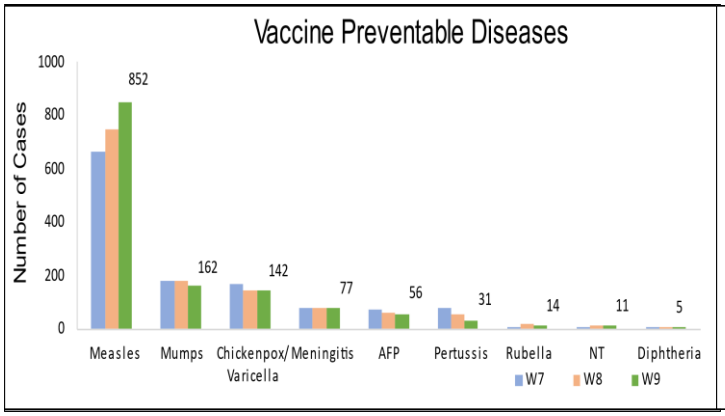
ALRI < 5 Years

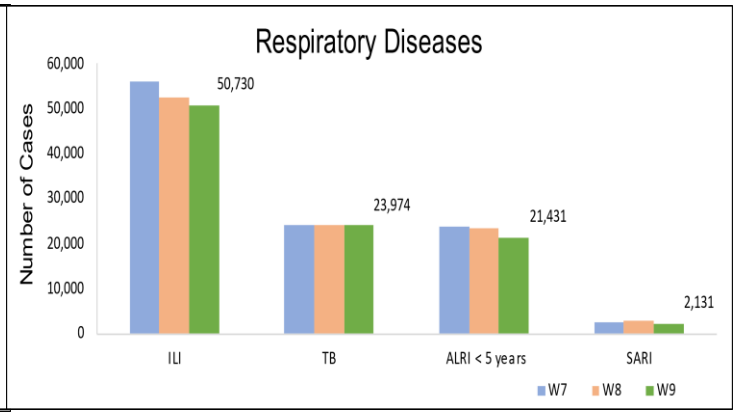
- **Surveillance and Reporting:** Strengthen Integrated Disease Surveillance and Response (IDSR) to monitor ALRI trends and detect potential outbreaks.
- **Pneumococcal and Homophiles Influenza Type B (Hib) Vaccination:** Ensure universal coverage of PCV and Hib vaccines to prevent severe bacterial pneumonia.
- **Improve Indoor Ventilation:** Promote clean cooking fuels and improved ventilation to minimize exposure to smoke, a significant risk factor for ALRI.
- **Safe Water and Sanitation**: Improve access to clean drinking water and proper sanitation to prevent infections that may lead to ALRI.
- **Access to Essential Medicines:** Ensure timely availability of antibiotics (for bacterial pneumonia) and oxygen therapy for severe cases.
- **Strengthening Referral Systems:** Establish efficient referral pathways from community health centers to tertiary hospitals for severe cases.

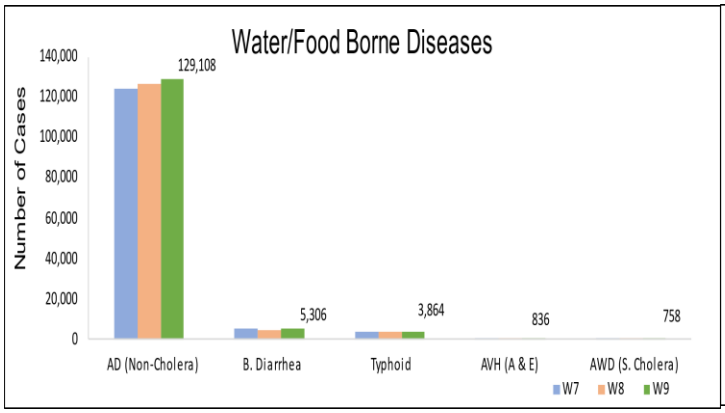
Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 09, Pakistan.

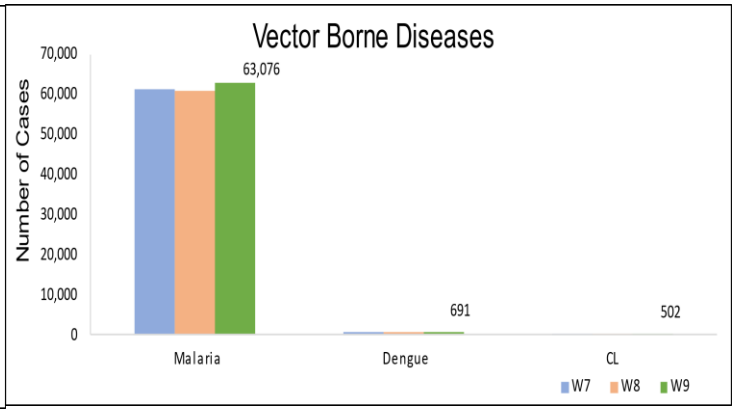
Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (non-cholera)	867	5,028	474	256	17,663	65,207	39,613	129,108
Malaria	0	3,323	0	0	3,414	2,379	53,960	63,076
ILI	1,975	7,585	394	1,256	5,748	4	33,768	50,730
TB	42	155	49	14	353	11,312	12,049	23,974
ALRI < 5 years	983	2,169	997	5	1,384	2,463	13,430	21,431
Dog Bite	116	134	5	0	719	5,453	3,278	9,705
B. Diarrhea	23	1,002	44	2	840	488	2,907	5,306
VH (B, C & D)	13	66	1	0	97	3	4,923	5,103
Typhoid	12	333	85	1	624	1,900	909	3,864
SARI	349	620	148	3	879	0	132	2,131
Measles	18	23	9	0	518	189	95	852
AVH (A & E)	63	24	2	0	257	0	490	836
AWD (S. Cholera)	6	88	0	0	42	617	5	758
Dengue	0	0	0	0	0	660	31	691
CL	1	61	0	0	431	5	4	502
Mumps	3	21	5	0	63	0	70	162
Chickenpox/ Varicella	5	13	0	1	27	4	92	142
Meningitis	4	0	2	0	8	55	8	77
AFP	2	0	0	0	36	12	6	56
Gonorrhea	0	16	0	0	12	0	13	41
Pertussis	0	21	1	0	7	1	1	31
HIV/AIDS	0	0	0	0	4	15	3	22
Syphilis	0	0	0	0	0	0	19	19
Rubella	0	9	0	0	0	5	0	14
NT	0	0	0	0	11	0	0	11
Diphtheria (Probable)	0	2	0	0	2	1	0	5
Brucellosis	0	0	0	0	3	0	0	3
Leprosy	0	0	0	0	2	0	0	2

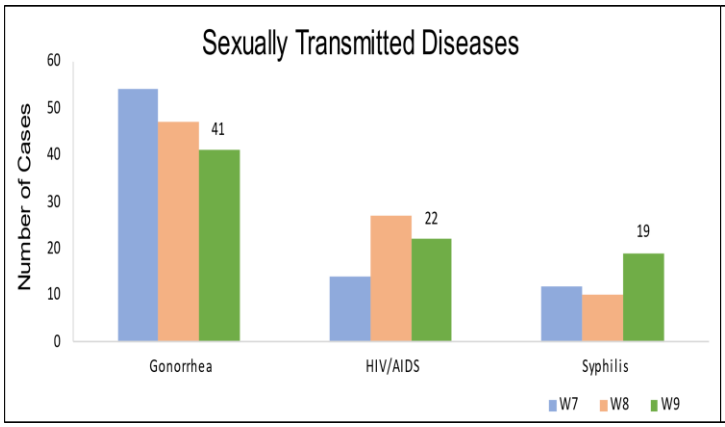
Figure 1: Most frequently reported suspected cases during Week 09, Pakistan.

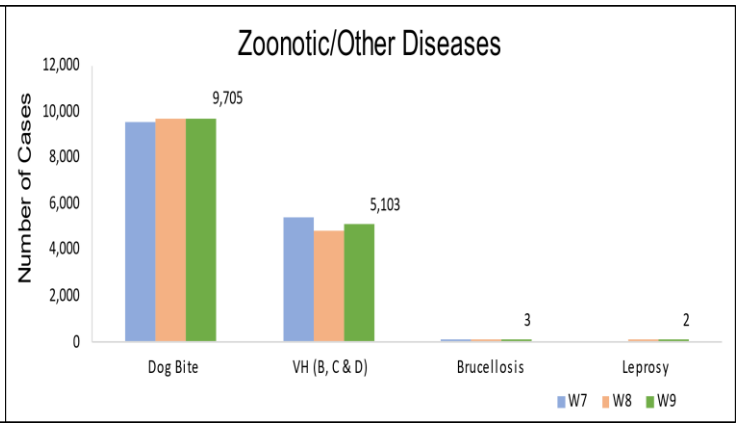












Sindh

- Malaria cases were maximum followed by AD (Non-Cholera), ILI, ALRI<5 Years, TB, VH (B, C, D), dog bite, B. Diarrhea, Typhoid and AVH (A & E).
- Malaria cases are mostly from Larkana, Khairpur and Sanghar whereas AD (Non-Cholera) cases are from Dadu, Badin and Mirpurkhas.
- Six cases of AFP reported from Sindh. All are suspected cases and need field verification.
- Three suspected cases of HIV/ AIDS reported from Sindh. Field investigation required to verify the cases.

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Table 2: District wise distribution of most frequently reported suspected cases during Week 09, Sindh

Districts	Malaria	AD (non-cholera)	ILI	ALRI < 5 years	TB	VH (B, C & D)	Dog Bite	B. Diarrhea	Typhoid	AVH (A & E)
Badin	2,994	2,900	2,911	722	1,109	314	151	129	67	1
Dadu	3,652	3,130	344	1,755	468	71	343	466	114	55
Ghotki	670	488	110	520	190	123	150	39	0	0
Hyderabad	870	2,011	1,894	185	237	71	11	8	9	1
Jacobabad	746	614	763	543	127	159	224	87	37	0
Jamshoro	2,525	1,348	255	354	574	298	115	122	32	6
Kamber	3,411	1,364	0	328	765	136	300	109	26	0
Karachi Central	3	801	1,334	22	30	6	0	13	124	17
Karachi East	27	440	540	31	14	3	14	7	2	0
Karachi Keamari	10	462	455	56	24	0	12	2	2	2
Karachi Korangi	31	388	1	2	34	1	4	4	3	0
Karachi Malir	237	1,333	2,985	257	89	14	41	37	22	0
Karachi South	0	63	1	0	0	0	0	0	0	0
Karachi West	365	827	1,173	195	90	38	165	26	24	4
Kashmore	1,825	390	676	146	219	11	64	18	1	0
Khairpur	4,446	2,206	6,690	983	1,044	292	242	258	134	9
Larkana	5,197	1,532	95	697	907	89	40	270	11	6
Matiari	3,014	1,519	1	381	675	558	60	59	0	2
Mirpurkhas	2,474	2,850	3,716	856	933	339	122	96	8	5
Naushero Feroze	1,479	1,126	1,367	576	323	33	229	163	63	0
Sanghar	4,288	1,863	104	914	1,284	926	210	112	33	0
Shaheed Benazirabad	1,726	1,434	6	255	329	85	176	60	93	0
Shikarpur	2,624	975	4	244	263	575	237	130	1	0
Sujawal	702	874	0	108	105	5	54	74	10	0
Sukkur	1,962	1,659	2,267	290	489	166	143	147	11	0
Tando Allahyar	2,125	1,177	1788	305	561	340	80	150	9	1
Tando Muhammad Khan	667	647	26	132	252	0	11	69	0	0
Tharparkar	2,968	2,371	2582	1,249	550	86	2	112	31	45
Thatta	1,118	1,345	1,680	694	33	146	78	34	13	332
Umerkot	1,804	1,476	0	630	331	38	0	106	29	4
Total	53,960	39,613	33,768	13,430	12,049	4,923	3,278	2,907	909	490

Figure 2: Most frequently reported suspected cases during Week 09 Sindh

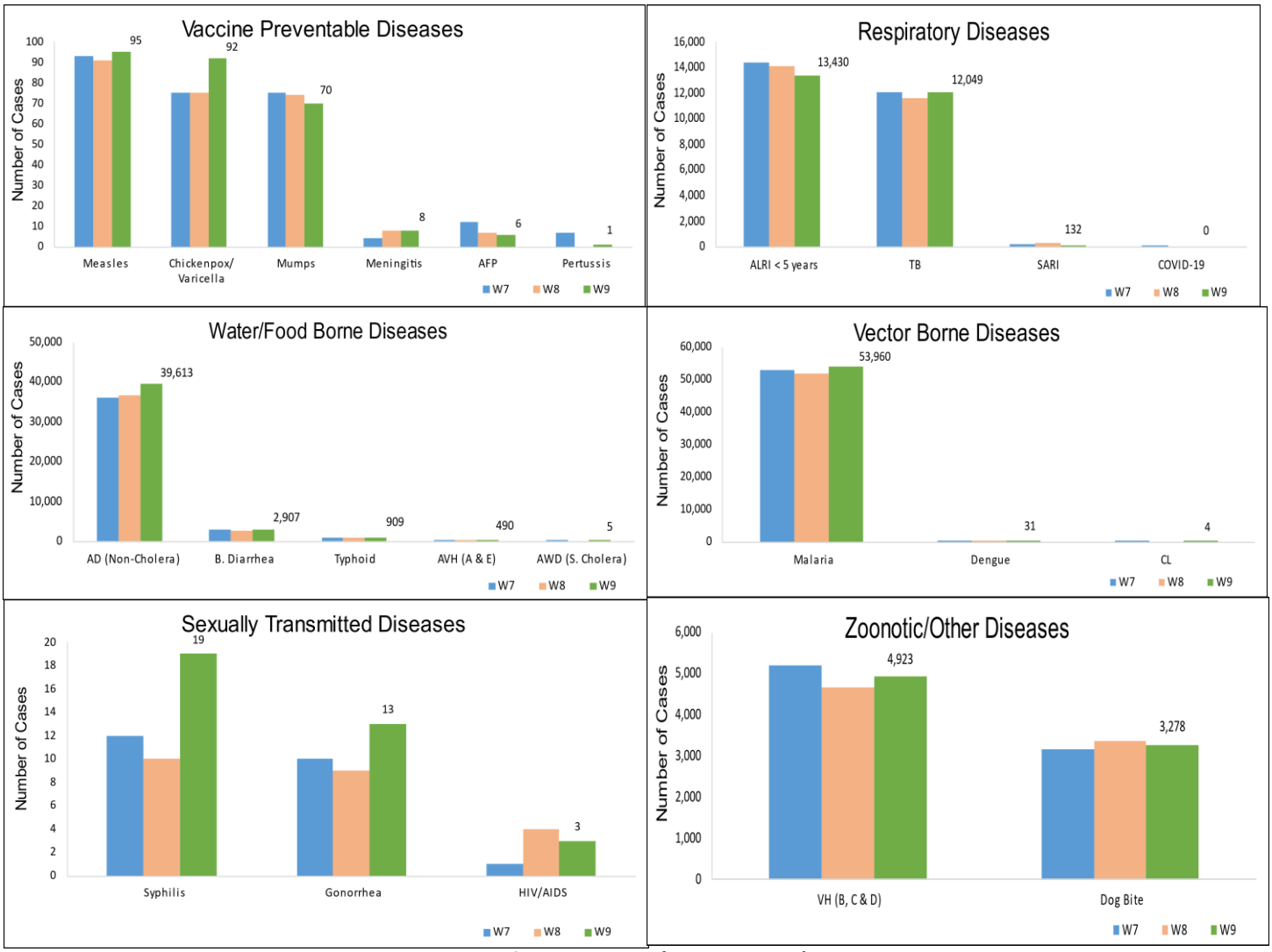
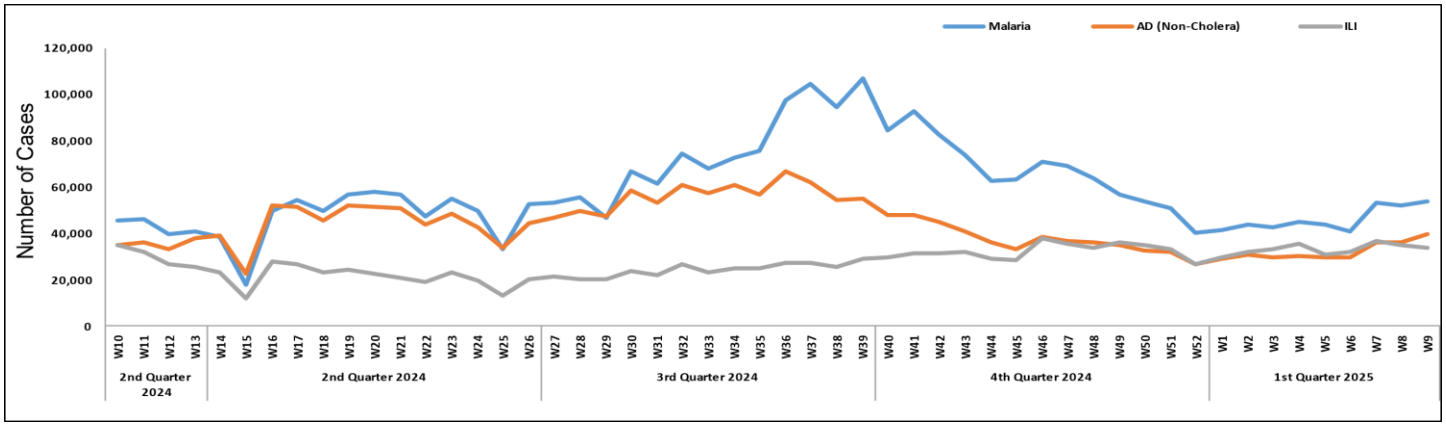


Figure 3: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Sindh



Balochistan

- ILI, AD (Non-Cholera), Malaria, ALRI <5 years, B. Diarrhea, SARI, Typhoid, TB, dog bite and AWD (S. Cholera) cases were the most frequently reported diseases from Balochistan province.
- ILI cases are mostly reported from Gwadar, Kech (Turbat) and Quetta while AD (Non-Cholera) cases are mostly reported from Usta Muhammad, Kech (Turbat) and Jaffarabad.
- ILI, AD (Non-Cholera), Malaria, Typhoid, Mumps, Chickenpox and Rubella showed an increase in cases while ALRI <5 years, SARI and dog bite showed a decline in cases this week.

Table 3: District wise distribution of most frequently reported suspected cases during Week 09, Balochistan

Districts	ILI	AD (non-cholera)	Malaria	ALRI < 5 years	B. Diarrhea	SARI	Typhoid	TB	Dog Bite	AWD (S. Cholera)
Barkhan	8	13	5	3	0	0	11	0	5	2
Chagai	243	90	22	0	44	0	11	0	0	0
Dera Bugti	85	48	30	76	4	6	0	0	0	0
Gwadar	1,053	250	132	21	50	1	7	0	0	3
Harnai	11	89	57	154	39	0	0	0	0	0
Hub	100	128	81	22	14	3	8	0	1	0
Jaffarabad	198	465	700	49	83	14	6	62	43	0
Jhal Magsi	477	250	389	226	1	1	8	5	9	0
Kachhi (Bolan)	26	51	32	8	28	27	3	0	0	14
Kalat	0	0	0	0	0	0	0	0	0	0
Kech (Turbat)	932	357	259	28	66	4	NR	NR	NR	NR
Kharan	551	108	19	8	53	0	2	0	0	0
Khuzdar	330	222	66	7	58	26	28	NR	NR	NR
Killa Abdullah	51	48	7	44	25	62	13	4	1	13
Killa Saifullah	0	121	188	215	49	26	16	0	4	0
Kohlu	313	175	81	8	28	49	39	NR	NR	NR
Lasbella	108	305	291	111	41	0	18	1	20	0
Loralai	297	94	10	54	21	57	5	0	0	0
Mastung	144	146	30	73	40	42	12	3	12	3
MusaKhel	59	25	77	20	4	4	5	2	0	9
Naseerabad	0	263	214	33	6	48	62	36	19	0
Nushki	0	110	3	0	31	19	0	0	0	0
Panjgur	37	81	43	39	6	3	0	0	0	15
Pishin	652	266	22	116	79	39	21	1	2	25
Quetta	774	352	3	234	25	67	13	0	0	0
Sibi	92	33	12	2	5	3	0	0	0	2
Sohbat pur	46	174	164	129	58	19	17	3	6	0
Surab	160	45	6	0	0	0	0	0	0	0
Usta Muhammad	248	478	257	174	56	6	8	1	12	0
Washuk	370	173	100	7	74	3	8	0	0	2
Zhob	220	68	23	308	14	91	12	37	0	0
Total	7,585	5,028	3,323	2,169	1,002	620	333	155	134	88

Figure 4: Most frequently reported suspected cases during Week 09, Balochistan

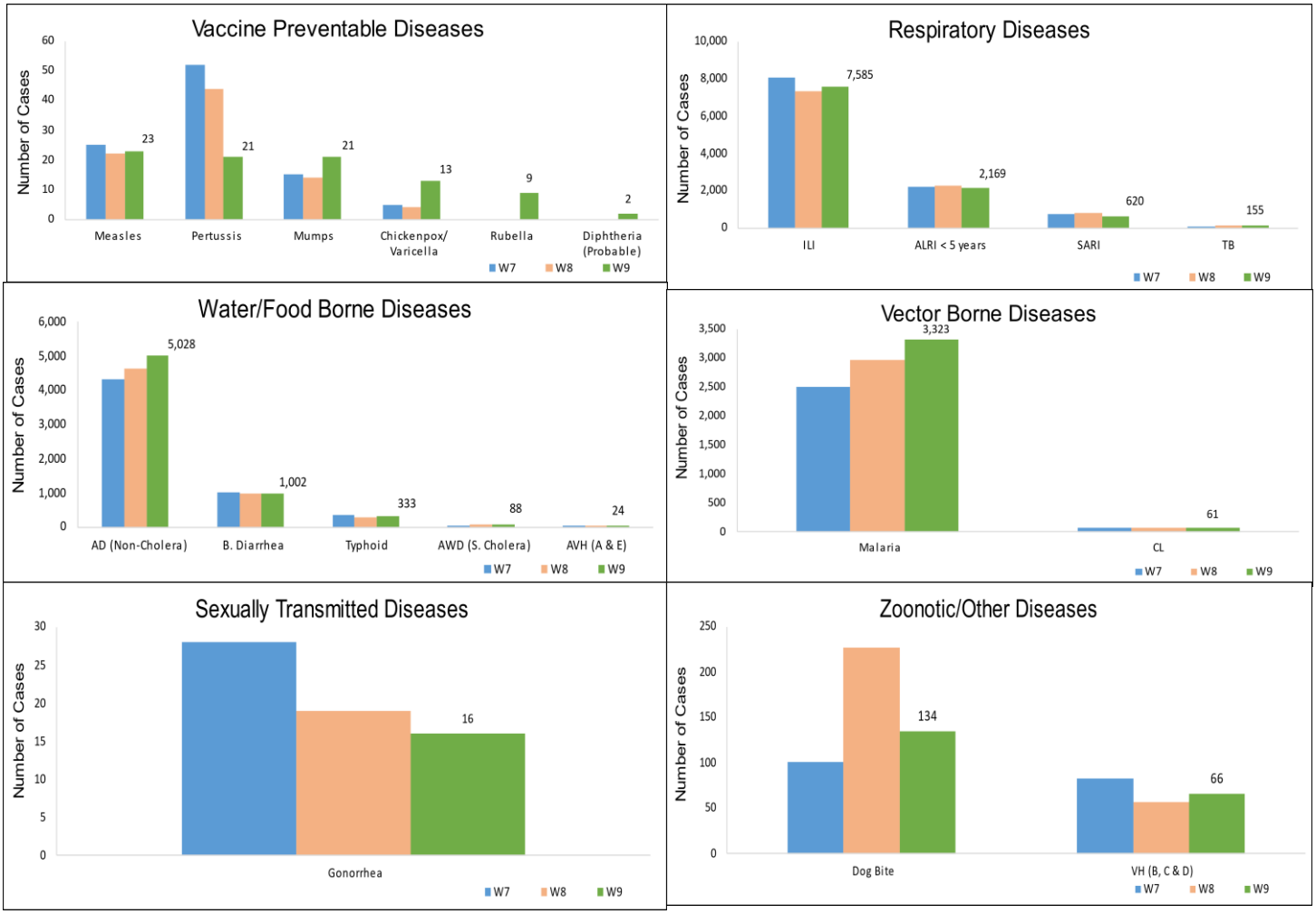
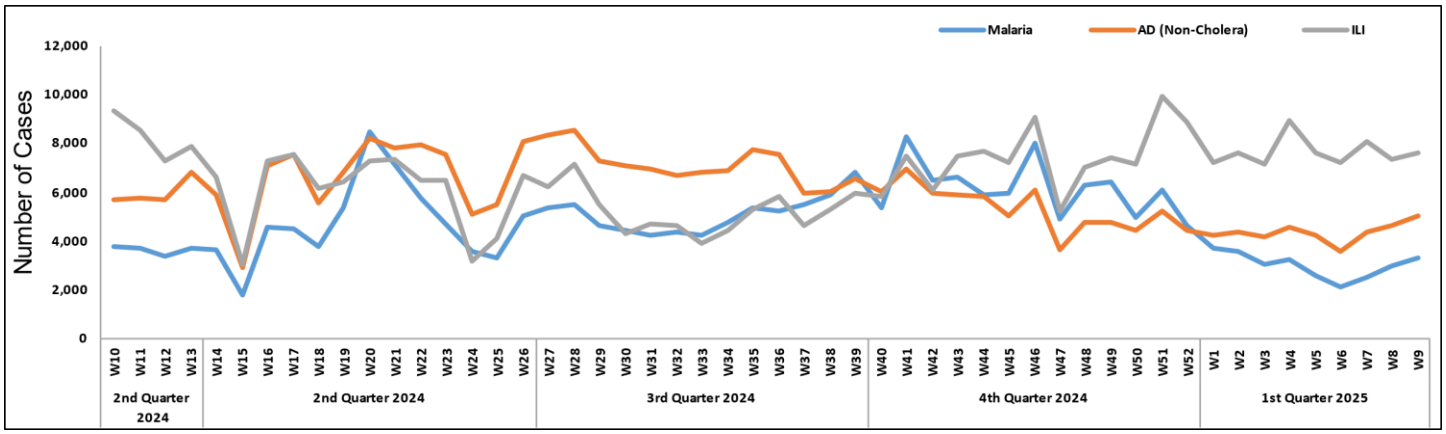


Figure 5: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Balochistan



Khyber Pakhtunkhwa

- Cases of AD (Non-Cholera) were maximum followed by ILI, Malaria, ALRI<5 Years, SARI, dog bite, B. Diarrhea, Typhoid, Measles and TB cases.
- AD (Non-Cholera), Malaria, ALRI<5 Years, SARI and Measles cases showed an increase in number while ILI, dog bite, B. Diarrhea and TB cases showed a decline in number this week.
- Forty-two cases of AFP reported from KP. All are suspected cases and need field verification.
- Three cases of HIV/AIDs reported from KP. Field investigation is required.
- Seven suspected cases of Brucellosis reported from KP. They require field verification.

Table 4: District wise distribution of most frequently reported suspected cases during Week 09, KP

Districts	AD (non-cholera)	ILI	Malaria	ALRI < 5 years	SARI	Dog Bite	B. Diarrhea	Typhoid	Measles	TB
Abbottabad	601	40	0	30	3	55	13	14	18	7
Bajaur	336	72	127	28	104	48	73	8	23	11
Bannu	756	7	1,345	16	4	1	30	80	49	21
Battagram	185	533	5	4	0	8	5	0	3	46
Buner	142	0	191	0	0	0	0	0	1	0
Charsadda	1,567	1,736	331	688	30	4	51	73	38	16
Chitral Lower	219	202	7	22	19	10	9	2	1	5
Chitral Upper	59	10	3	5	7	1	1	8	0	2
D.I. Khan	1,192	0	103	37	0	7	18	1	78	33
Dir Lower	773	0	266	17	0	54	64	10	14	7
Dir Upper	538	78	1	30	4	7	0	3	6	25
Hangu	61	139	37	0	0	0	3	1	0	0
Haripur	513	328	0	90	30	21	0	2	3	0
Karak	234	63	54	48	92	40	16	1	17	5
Khyber	720	102	83	593	328	63	93	118	12	45
Kohat	344	58	7	3	12	14	23	6	2	0
Kohistan Lower	79	0	1	0	0	0	2	0	5	0
Kohistan Upper	250	0	5	21	1	0	21	0	0	21
Kolai Palas	52	10	2	4	10	0	6	5	0	1
L & C Kurram	10	5	0	0	0	1	9	1	0	0
Lakki Marwat	599	21	105	6	0	39	4	6	3	11
Malakand	493	15	5	32	22	0	44	40	17	2
Mansehra	555	329	0	4	2	0	4	7	0	3
Mardan	731	0	7	80	15	64	8	21	19	2
Mohmand	136	164	135	2	147	12	17	6	16	3
North Waziristan	41	0	22	3	11	0	4	10	15	6
Nowshera	961	38	46	127	10	78	11	19	10	22
Orakzai	70	22	6	0	0	77	3	4	10	0
Peshawar	2,703	580	31	140	41	11	62	44	69	15
SD Tank	17	3	13	0	0	0	4	0	0	0
Shangla	173	0	204	9	0	42	5	18	6	4
South Waziristan (Lower)	13	13	4	0	82	0	0	1	0	0
SWU	27	38	19	0	11	0	0	0	1	0
Swabi	793	732	16	115	82	178	5	27	15	42
Swat	1,456	152	0	153	0	24	24	46	8	7
Tank	593	121	95	28	0	3	0	20	2	5
Tor Ghar	35	0	12	23	18	1	15	5	2	3
Upper Kurram	134	296	8	12	207	6	39	9	0	4
Total	18,163	5,907	3,296	2,370	1,292	869	686	616	463	374

Figure 6: Most frequently reported suspected cases during Week 09, KP

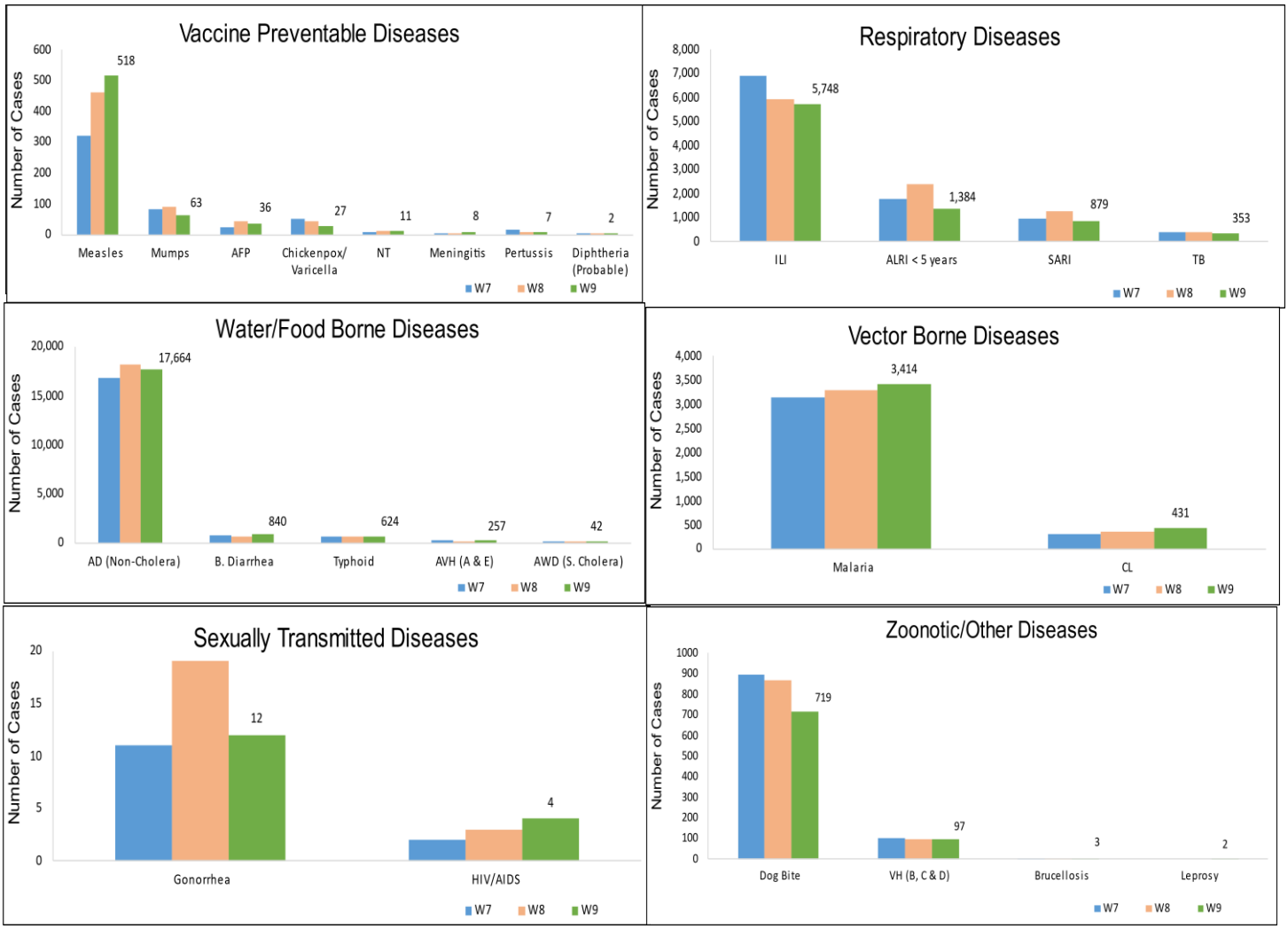
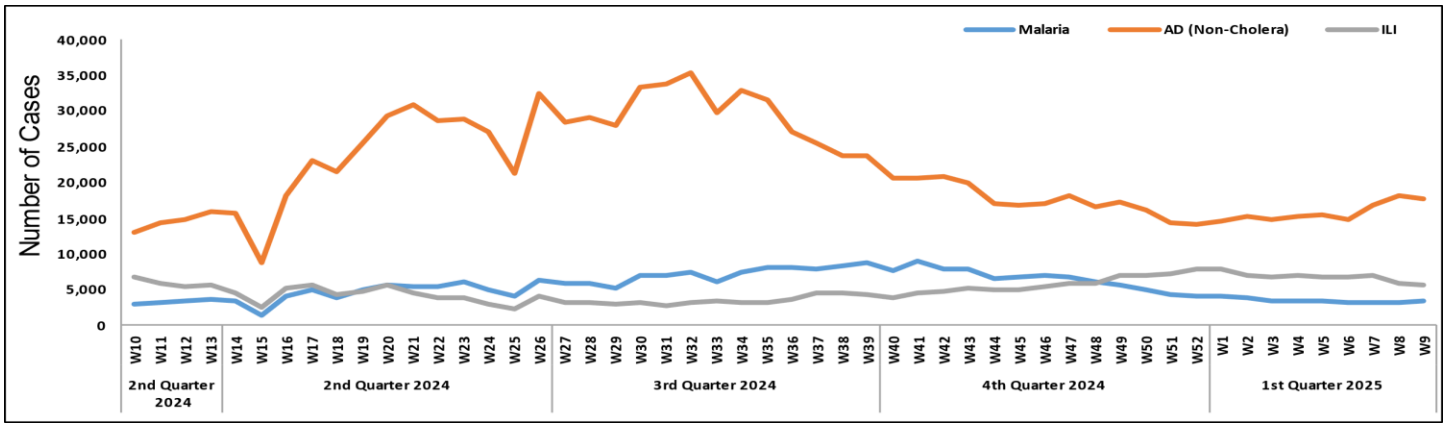


Figure 7: Week wise reported suspected cases Malaria, AD (Non-Cholera) & ILI, KP



PUNJAB

- AD (non-cholera) cases were maximum followed by TB, dog bite, ALRI<5 Years, Malaria, Typhoid, Dengue, AWD (S. Cholera) and B. Diarrhea cases.
- TB and Malaria showed a decline in number of cases while dog bite, Dengue and Measles showed an increase in cases this week.
- Fifteen cases of HIV/AIDs reported from Punjab. All are suspected cases and need field verification.
- Twelve suspected cases of AFP reported from Punjab. They require field verification.

Figure 8: Most frequently reported suspected cases during Week 09, Punjab

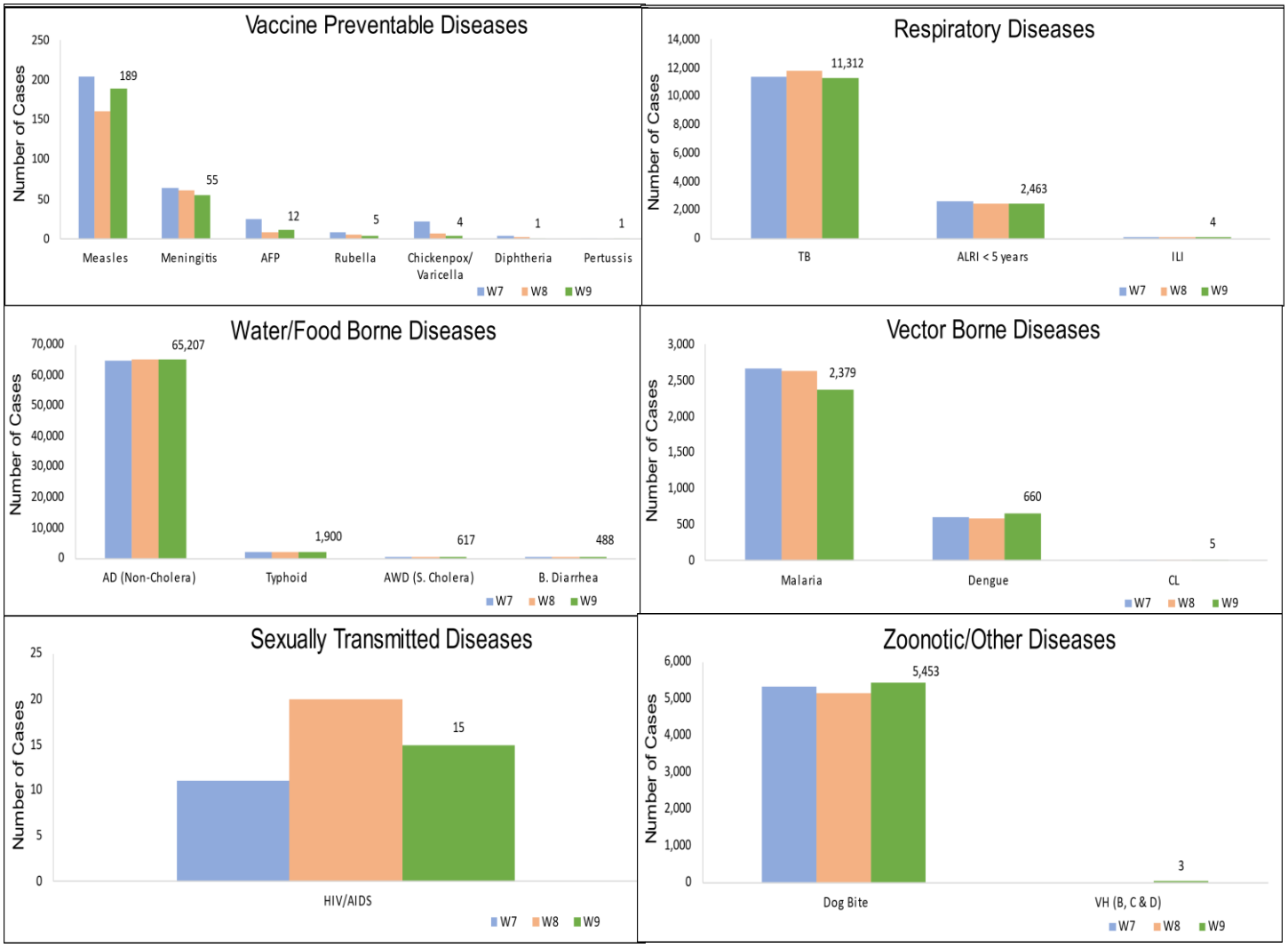
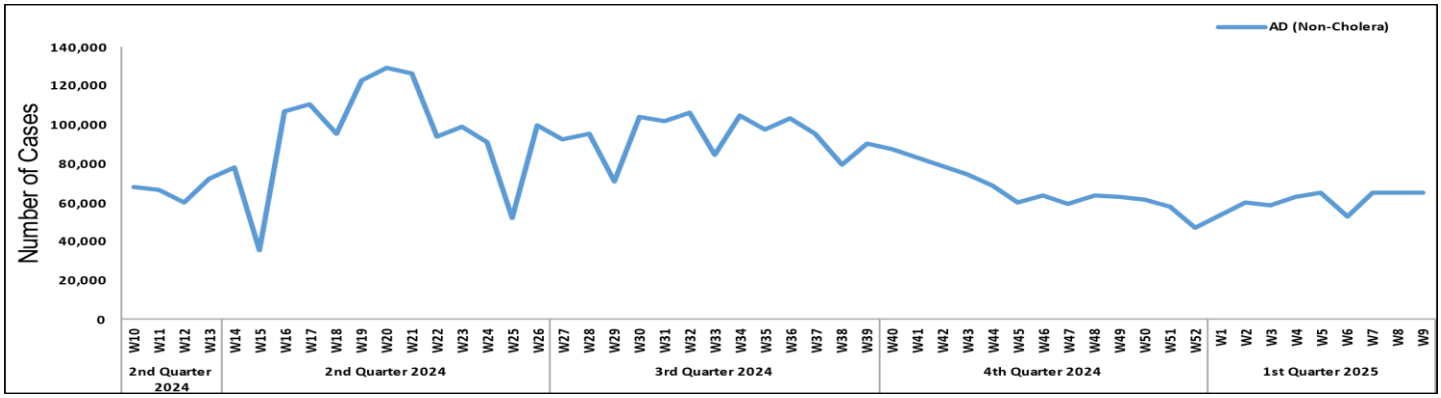


Figure 9: Week wise reported suspected cases of AD (Non-Cholera), Punjab



ICT, AJK & GB

ICT: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera) and TB. ILI cases showed a decline in number this week

AJK: ILI cases were maximum followed by ALRI < 5years, AD (Non-Cholera), SARI, dog bite, AVH (A & E), TB, B. Diarrhea, Measles and VH (B, C & D) cases. A decline in cases observed for ILI, ALRI < 5years, TB and B. Diarrhea while an increase in cases observed for SARI, AVH (A & E), dog bite and Measles this week. Two cases of AFP reported from AJK. They are suspected cases and need field verification.

GB: ALRI <5 Years cases were the most frequently reported diseases followed by AD (Non-Cholera), ILI, SARI, Typhoid, B. Diarrhea, TB and AWD (S. Cholera) cases. An increase in cases observed for ALRI <5 years, AD (Non-Cholera), Typhoid, B. Diarrhea and TB while a decline in cases observed for ILI and SARI this week.

Figure 10: Most frequently reported suspected cases during Week 09, AJK

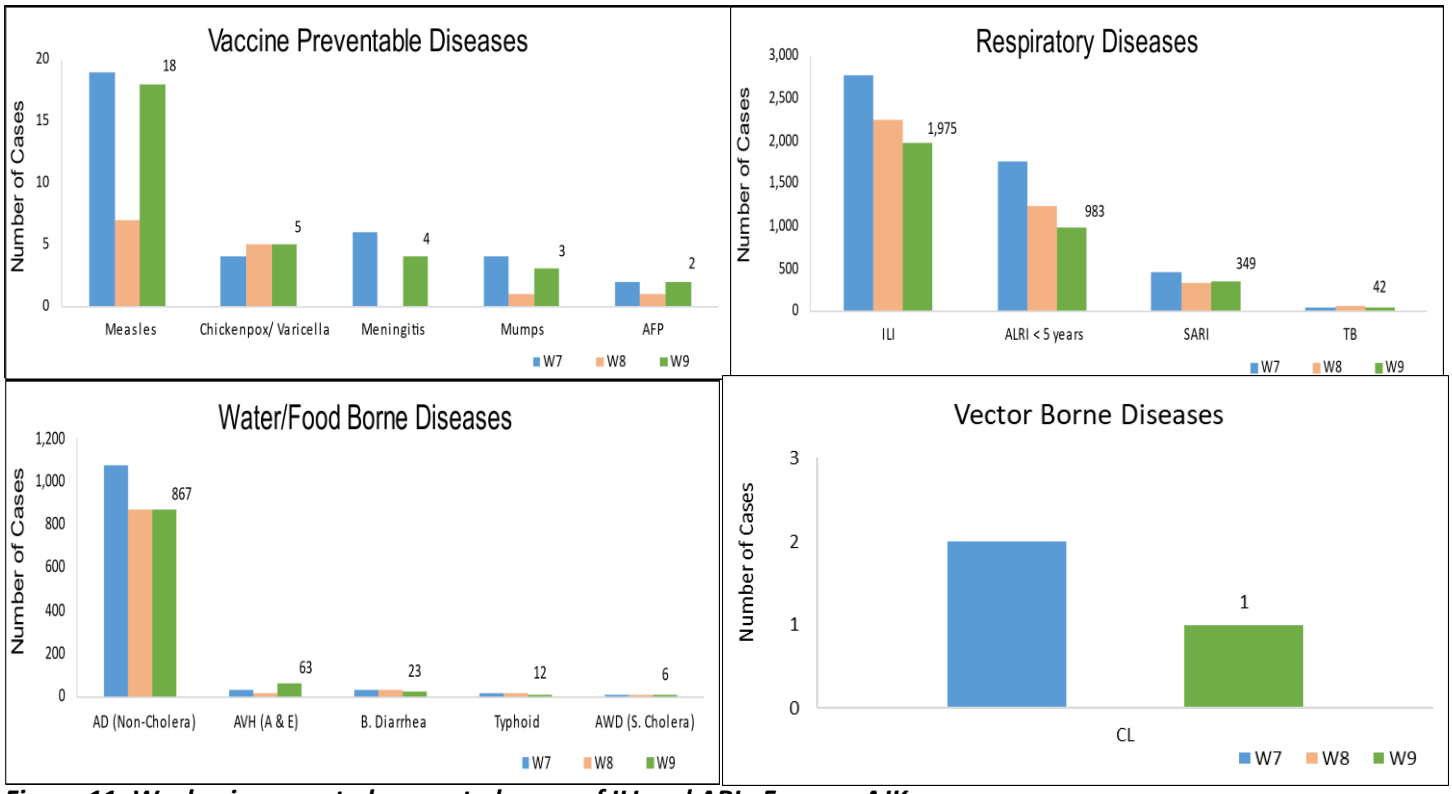


Figure 11: Week wise reported suspected cases of ILI and ARI <5 years, AJK

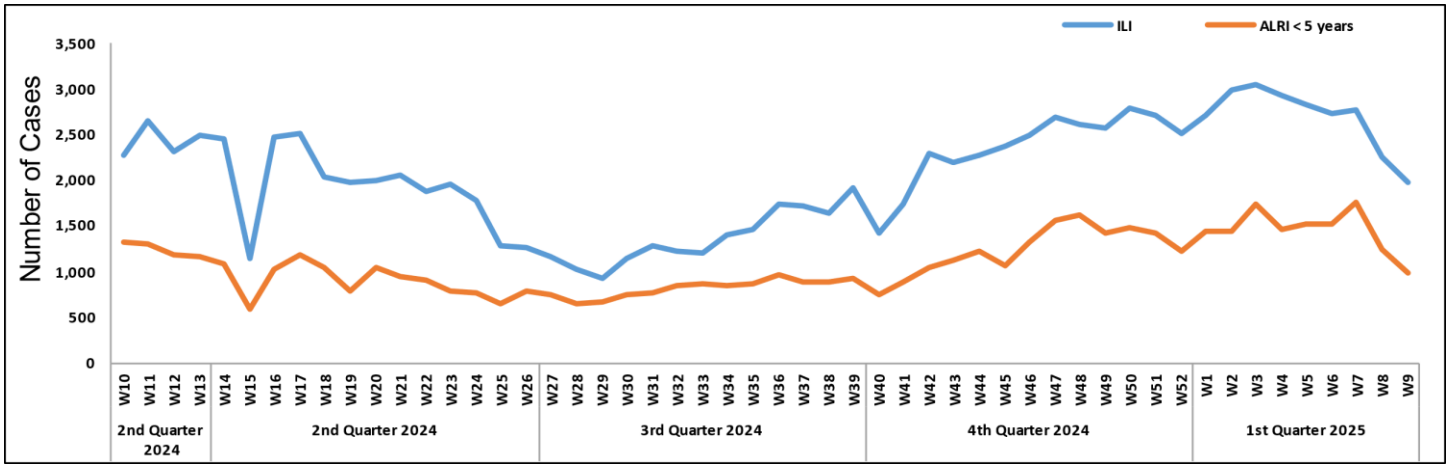


Figure 12: Most frequently reported suspected cases during Week 09, ICT

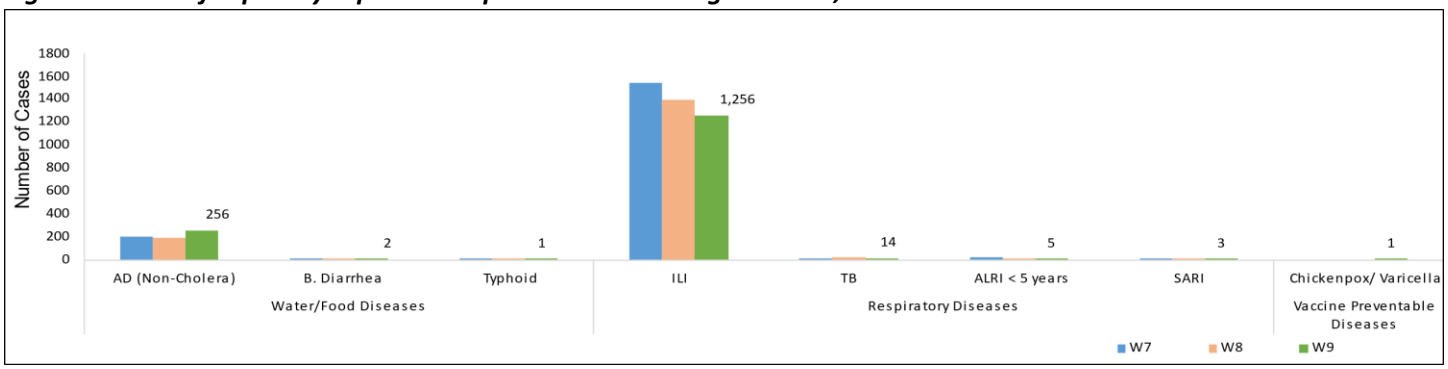


Figure 13: Week wise reported suspected cases of ILI, ICT

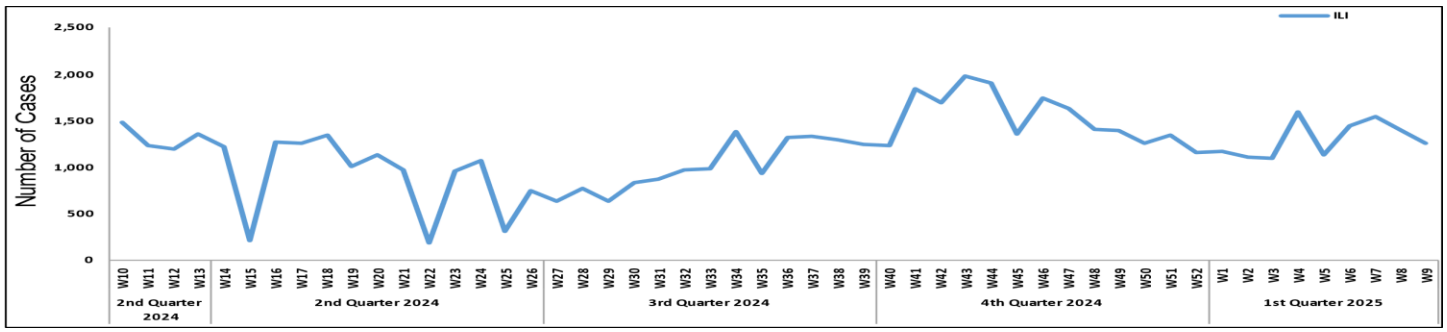


Figure 14: Most frequent cases reported during Week 09, GB

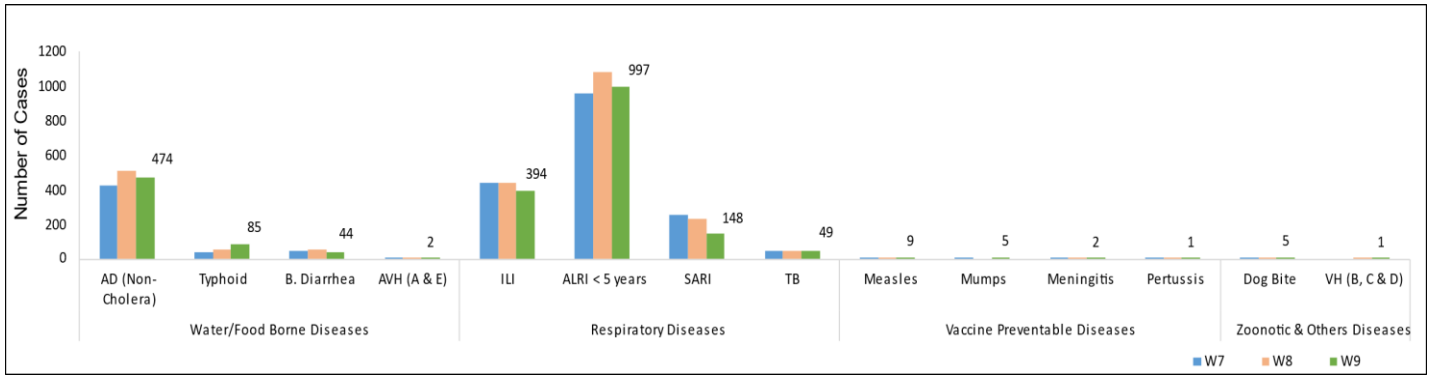


Figure 15: Week wise reported suspected cases of ALRI <5 years, GB

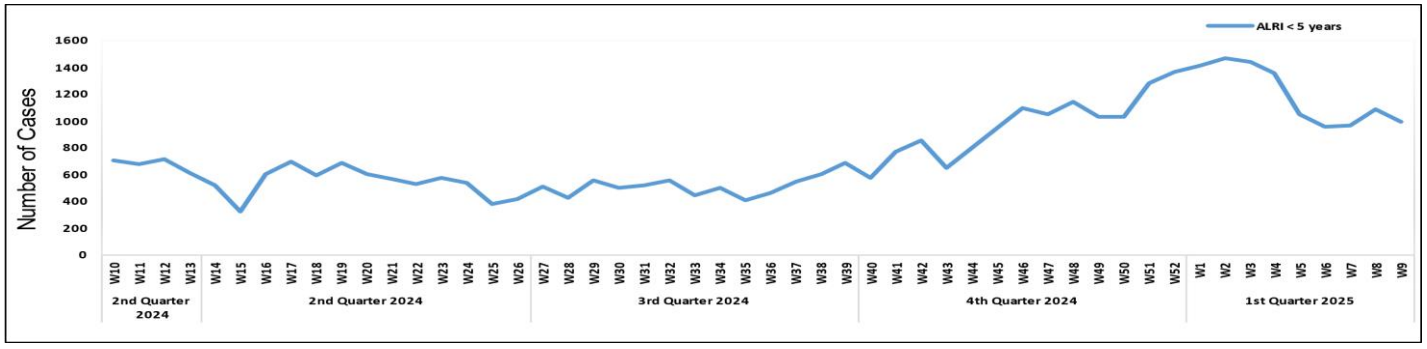


Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 09

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	Tota l Pos	Total Test	Total Pos	Total Test	Total Pos
AWD (S. Cholera)		195	2	-	-	0	0	-	-	-	-	-	-	0	0
AD (non-cholera)		268	2	-	-	3	0	-	-	-	-	-	-	0	0
Malaria		12,125	419	-	-	247	3	-	-	-	-	-	-	43	0
CCHF		0	0	4	0	0	0	-	-	-	-	-	-	0	0
Dengue		1,737	36	-	-	4	0	3	0	-	-	-	-	0	0
VH (B)		13,358	444	153	130	400	13	-	-	-	-	-	-	358	2
VH (C)		14,070	1,526	80	30	402	3	-	-	-	-	-	-	358	1
VH (D)		403	156	145	14	1	0	-	-	-	-	-	-	0	0
VH (A)		183	66	-	-	1	0	-	-	-	-	-	-	0	0
VH (E)		118	19	-	-	0	0	-	-	-	-	-	-	0	0
Covid-19		58	0	12	0	48	6	1	0	-	-	-	-	0	0
Chikungunya		10	0	1	0	0	0	-	-	-	-	-	-	0	0
TB		639	72	-	-	29	0	-	-	-	-	-	-	43	2
HIV/ AIDS		5,156	32	-	-	353	0	-	-	-	-	-	-	275	0
Syphilis		1,301	36	-	-	8	0	-	-	-	-	-	-	0	0
B. Diarrhea		175	1	-	-	0	0	-	-	-	-	-	-	0	0
Typhoid		998	12	-	-	82	4	-	-	-	-	-	-	0	0
Diphtheria		1	0	-	-	0	0	-	-	-	-	-	-	0	0
ILI		35	8	8	0	48	6	-	-	-	-	-	-	0	0
Leishmaniasis (cutaneous)		0	0	-	-	11	1	-	-	-	-	-	-	0	0
Leishmaniasis (Visceral)		0	0	-	-	2	0	-	-	-	-	-	-	0	0
Pneumonia (ALRI)		237	53	-	-	0	0	-	-	-	-	-	-	0	0
Measles		295	135	61	27	346	163	21	9	10	6	245	66	38	20
Rubella		295	1	61	1	346	9	21	0	10	1	245	2	38	0
Covid-19	Out of SARI	3	0	0	0	46	0	111	34	0	0	239	0	0	0
	Out of ILI	2	0	0	0	2	0	42	0	0	0	145	1	0	0
Influenza A	Out of SARI	3	0	0	0	46	0	111	4	0	0	239	20	0	0
	Out of ILI	2	0	0	0	2	0	42	2	0	0	145	20	0	0
Influenza B	Out of SARI	3	0	0	0	46	0	111	5	0	0	239	20	0	0
	Out of ILI	2	0	0	0	2	0	42	2	0	0	145	22	0	0
RSV	Out of SARI	3	0	0	0	46	0	111	0	0	0	239	2	0	0
	Out of ILI	2	0	0	0	2	0	42	7	0	0	145	0	0	0

Table 6: IDSR reporting districts Week 09, 2024

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	105	95%
	Bannu	238	142	60%
	Battagram	59	33	56%
	Buner	34	29	85%
	Bajaur	44	43	98%
	Charsadda	59	58	98%
	Chitral Upper	34	30	88%
	Chitral Lower	35	35	100%
	D.I. Khan	113	113	100%
	Dir Lower	74	74	100%
	Dir Upper	37	25	68%
	Hangu	22	19	86%
	Haripur	72	72	100%
	Karak	36	36	100%
	Khyber	53	41	77%
	Kohat	61	59	97%
	Kohistan Lower	11	10	91%
	Kohistan Upper	20	12	60%
	Kolai Palas	10	8	80%
	Lakki Marwat	70	69	99%
	Lower & Central Kurram	42	4	10%
	Upper Kurram	41	29	71%
	Malakand	42	34	81%
	Mansehra	133	103	77%
	Mardan	80	71	89%
	Nowshera	55	53	96%
	North Waziristan	13	6	46%
	Peshawar	155	131	85%
	Shangla	37	32	86%
	Swabi	64	61	95%
	Swat	77	76	99%
	South Waziristan (Upper)	93	37	40%
	South Waziristan (Lower)	42	16	38%
	Tank	34	32	94%
	Torghar	14	13	93%
	Mohmand	68	63	93%
	SD Peshawar	5	0	0%
	SD Tank	58	9	16%
	Orakzai	69	14	20%
	Mirpur	37	37	100%
	Bhimber	42	20	48%
	Kotli	60	60	100%
	Muzaffarabad	45	44	98%

Azad Jammu Kashmir	Poonch	46	45	98%
	Haveli	39	39	100%
	Bagh	40	40	100%
	Neelum	39	0	0%
	Jhelum Velley	29	29	100%
Islamabad Capital Territory	Sudhnooti	27	27	100%
	ICT	21	21	100%
Balochistan	CDA	15	8	53%
	Gwadar	25	25	100%
	Kech	44	33	75%
	Khuzdar	74	39	53%
	Killa Abdullah	26	13	50%
	Lasbella	55	55	100%
	Pishin	69	43	62%
	Quetta	55	35	64%
	Sibi	36	20	56%
	Zhob	39	31	79%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	0	0%
	Kohlu	75	46	61%
	Chagi	36	21	58%
	Kalat	41	40	98%
	Harnai	17	14	82%
	Kachhi (Bolan)	35	6	17%
	Jhal Magsi	28	28	100%
	Sohbat pur	25	25	100%
	Surab	32	24	75%
	Mastung	45	45	100%
	Loralai	33	16	48%
	Killa Saifullah	28	26	93%
	Ziarat	29	0	0%
	Duki	31	0	0%
	Nushki	32	29	91%
	Dera Bugti	45	31	69%
	Washuk	46	36	78%
	Panjgur	38	8	21%
	Awaran	23	0	0%
	Chaman	24	0	0%
	Barkhan	20	9	45%
	Hub	33	31	94%
	Musakhel	41	12	29%
Gilgit Baltistan	Usta Muhammad	34	34	100%
	Hunza	32	32	100%
	Nagar	25	20	80%
	Ghizer	38	38	100%
	Gilgit	40	40	100%
	Diamer	62	62	100%

	Astore	54	54	100%
	Shigar	27	25	93%
	Skardu	52	52	100%
	Ganche	29	28	97%
Sindh	Kharmang	46	25	54%
	Hyderabad	73	70	96%
	Ghotki	64	64	100%
	Umerkot	43	43	100%
	Naushahro Feroze	107	96	90%
	Tharparkar	276	267	97%
	Shikarpur	61	60	98%
	Thatta	52	52	100%
	Larkana	67	65	97%
	Kamber Shadadkot	71	71	100%
	Karachi-East	24	19	79%
	Karachi-West	20	20	100%
	Karachi-Malir	37	34	92%
	Karachi-Kemari	18	18	100%
	Karachi-Central	12	8	67%
	Karachi-Korangi	18	18	100%
	Karachi-South	6	4	67%
	Sujawal	55	50	91%
	Mirpur Khas	106	102	96%
	Badin	124	124	100%
	Sukkur	64	63	98%
	Dadu	90	88	98%
	Sanghar	100	99	99%
	Jacobabad	44	44	100%
	Khairpur	170	167	98%
	Kashmore	59	59	100%
	Matiari	42	42	100%
	Jamshoro	75	74	99%
	Tando Allahyar	54	54	100%
	Tando Muhammad Khan	41	41	100%
	Shaheed Benazirabad	125	122	98%

Table 7: IDSR reporting Tertiary care hospital Week 09, 2024

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	1	0	0%
	Sukkur	1	0	0%
	Shaheed Benazirabad	1	1	100%
	Karachi-East	1	1	100%
	Karachi-Central	1	1	0%

Strengthening Disease Surveillance: NIH Completes IDSRS Training for Islamabad and AJK Officers

The National Institute of Health (NIH) successfully supported the completion of the Integrated Disease Surveillance and Response System (IDSRS) orientation and training program for officers from Azad Jammu & Kashmir (AJK) and Islamabad. The training, held from March 18 to 20, 2025, aimed to enhance the surveillance capabilities of health professionals, ensuring they are well-equipped to detect and respond to public health threats effectively. Participants engaged in interactive sessions designed to strengthen their technical skills and understanding of disease surveillance frameworks, fostering a proactive approach to public health challenges.

Led by experienced NIH facilitators, the training provided a comprehensive learning experience, unlocking the potential of IDSRS officers and empowering them with critical competencies for their roles. The facilitators shared their expertise on surveillance methodologies, data analysis, and response strategies, enabling participants to contribute more effectively to Pakistan's disease surveillance infrastructure. Through case studies and hands-on exercises, the officers gained practical insights into implementing IDSRS strategies in their respective regions, reinforcing their ability to lead disease prevention and control initiatives.

The certificate awarding ceremony marked the successful conclusion of the training, where the Special Secretary of the Ministry of National Health Services, Regulations & Coordination (MoNHSR&C) and the CEO of NIH commended the dedication and hard work of the IDSRS-NIH team. They acknowledged the institute's pivotal role in building the capacity of public health professionals, emphasizing the importance of such initiatives in strengthening Pakistan's health security framework. The event underscored NIH's commitment to enhancing disease surveillance and response capabilities, ensuring a robust public health system across the country

Notes from the field:

Diphtheria Case Investigation in Tehsil Khal, Karajol, District Dir – Lower

Introduction

Diphtheria, caused by Corynebacterium diphtheriae, is a vaccine-preventable bacterial infection that primarily affects the respiratory tract, potentially leading to severe complications such as airway obstruction and myocarditis. Globally, its incidence has decreased significantly due to the diphtheria-tetanus-pertussis (DTP) vaccine, yet it persists in low- and middle-income countries with disrupted healthcare systems. In Pakistan, diphtheria remains a public health challenge due to low immunization coverage and limited healthcare access, particularly in rural areas. In Khyber Pakhtunkhwa (KP), including District Dir – Lower, suboptimal vaccination rates, refugee populations, and geographical barriers contribute to its continued prevalence, necessitating targeted public health interventions.

Objectives

The objectives of this investigation were:

- To investigate the reported diphtheria case in Tehsil Khal, Karajol, District Dir – Lower, focusing on the affected area (UC - Khal).
- To conduct active case finding in the affected area to identify additional cases.
- To identify risk factors contributing to diphtheria occurrence, such as vaccination status and awareness levels.
- To provide recommendations for prevention and control of future outbreaks.

Methods

This investigation employed a case investigation study design with active case finding. The investigation was conducted on December 17, 2024. A suspected case was defined as any person in UC - Khal presenting with acute onset of fever, sore throat, difficulty swallowing, and/or tonsillar/pharyngeal/nasal pseudo membrane between December 4 and 16, 2024. Data were collected using a pretested questionnaire through interviews and immunity profiling. Active case finding was conducted, and health facility records were reviewed. No laboratory samples were collected due to the absence of active cases during the investigation. Additionally, a cluster sampling of 30 households was performed to assess vaccination status, with data analyzed descriptively.

Results

The investigation identified no active suspected or confirmed cases of diphtheria during the active case search. The index case was a 36-month-old unvaccinated female who presented with symptoms on December 9, 2024, and expired on December 15, 2024, after referral to a tertiary care hospital. Clinical symptoms were reported only for the index case, including fever, sore throat, and difficulty swallowing, consistent with diphtheria. Risk factors identified included lack of vaccination (index case and 2/30 children in cluster sampling) and low parental awareness, with 96% of mothers and 4% of fathers having no formal education. Vaccination campaigns administered pentavalent (PENTA) to 21 individuals, measles & rubella (MR) to 67, and tetanus and diphtheria (TD) to 69.

Discussion

The absence of additional diphtheria cases during the active search suggests that the index case may have been an isolated incident, with no ongoing community transmission in Tehsil Khal. However, the unvaccinated status of the 36-month-old female who died highlights the severe consequences of vaccine-preventable diseases and underscores the critical role of immunization. The identification of unvaccinated children (2/30) in the cluster sampling and widespread parental illiteracy indicate significant vulnerabilities to future outbreaks. The lack of

laboratory confirmation for the index case is a limitation, preventing definitive classification. These findings align with regional challenges in KP, where low vaccination coverage and healthcare access perpetuate diphtheria risk. Recommendations include strengthening healthcare infrastructure, conducting regular mass vaccination campaigns, enhancing public awareness through education, and improving immunization monitoring to address vaccine hesitancy and coverage gaps.

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Knowledge Hub

Vector-Borne Diseases: Climate Change and Shifting Risks

Vector-borne diseases (VBDs) are a pressing global health challenge, infecting millions and claiming numerous lives annually. These diseases are transmitted by organisms—known as vectors—such as mosquitoes, ticks, and fleas, which carry pathogens like viruses, bacteria, and parasites to humans. Well-known examples include malaria, dengue fever, Zika virus, Lyme disease, and West Nile virus. As climate change accelerates, altering temperature, precipitation, and weather patterns worldwide, the risks associated with VBDs are shifting in complex and often unpredictable ways. This article explores the intersection of climate change and vector-borne diseases, examining how environmental shifts influence disease transmission, highlighting specific examples, and addressing the public health implications of these evolving risks.

Introduction to Vector-Borne Diseases

Vector-borne diseases arise when pathogens are transmitted to humans through the bites of infected vectors. These vectors thrive in specific environmental conditions, making their distribution and activity highly sensitive to changes in climate. Common vectors and the diseases they spread include:

- **Mosquitoes**: Transmit malaria (*Anopheles*), dengue fever, Zika virus, and West Nile virus (*Aedes* and *Culex* species).
- **Ticks**: Spread Lyme disease and tick-borne encephalitis (*Ixodes* species).
- **Fleas**: Carry plague and other infections.

Historically concentrated in tropical and subtropical regions, VBDs are increasingly appearing in new areas due to environmental changes, human activity, and climate shifts. Understanding these diseases is the first step in addressing the growing challenges posed by a warming world.

How Climate Change Affects Vectors and Diseases

Climate change impacts vector-borne diseases through three primary mechanisms: temperature, precipitation, and extreme weather events.

Temperature

Vectors are ectothermic, meaning their life cycles, behaviors, and survival depend on external temperatures. Rising global temperatures can:

- Speed up vector development and reproduction, increasing population sizes.

- Boost biting rates, raising the frequency of pathogen transmission.
- Shorten the incubation period of pathogens within vectors, making infections more efficient.
- Extend vector activity seasons, prolonging disease transmission windows.

However, excessively high temperatures can harm vectors, potentially reducing disease risk in some regions.

Precipitation and Humidity

Rainfall patterns influence the availability of breeding sites:

- Increased rainfall creates more standing water, ideal for mosquito reproduction.
- Droughts, while reducing water overall, can lead to stagnant pools that still support vector breeding.
- Higher humidity enhances vector survival, particularly for mosquitoes and ticks.

Extreme Weather Events

Events like floods, hurricanes, and droughts disrupt ecosystems and human settlements:

- Flooding can displace vectors and create new breeding sites, potentially triggering disease outbreaks.
- Droughts may concentrate water in small areas, inadvertently supporting mosquito populations.

These climatic shifts interact with local conditions, making the effects on disease transmission highly variable across regions.

Shifting Risks and Emerging Threats

Climate change is reshaping the landscape of vector-borne diseases in several ways:

- **Geographic Expansion**: Vectors like the Asian tiger mosquito (*Aedes albopictus*), a carrier of dengue and Zika, have spread to Europe and North America. Ticks carrying Lyme disease are similarly moving into new northern territories.
- **Extended Transmission Seasons**: Warmer climates lengthen the periods when vectors are active, increasing opportunities for disease spread.
- **Emerging Diseases**: As vectors and pathogens adapt to new environments, novel diseases may arise, or existing ones could become more severe.

These shifts challenge regions unaccustomed to VBDs, where infrastructure and expertise may be lacking to manage outbreaks effectively.

Public Health Implications and Response

The evolving threat of vector-borne diseases demands a robust and proactive response:

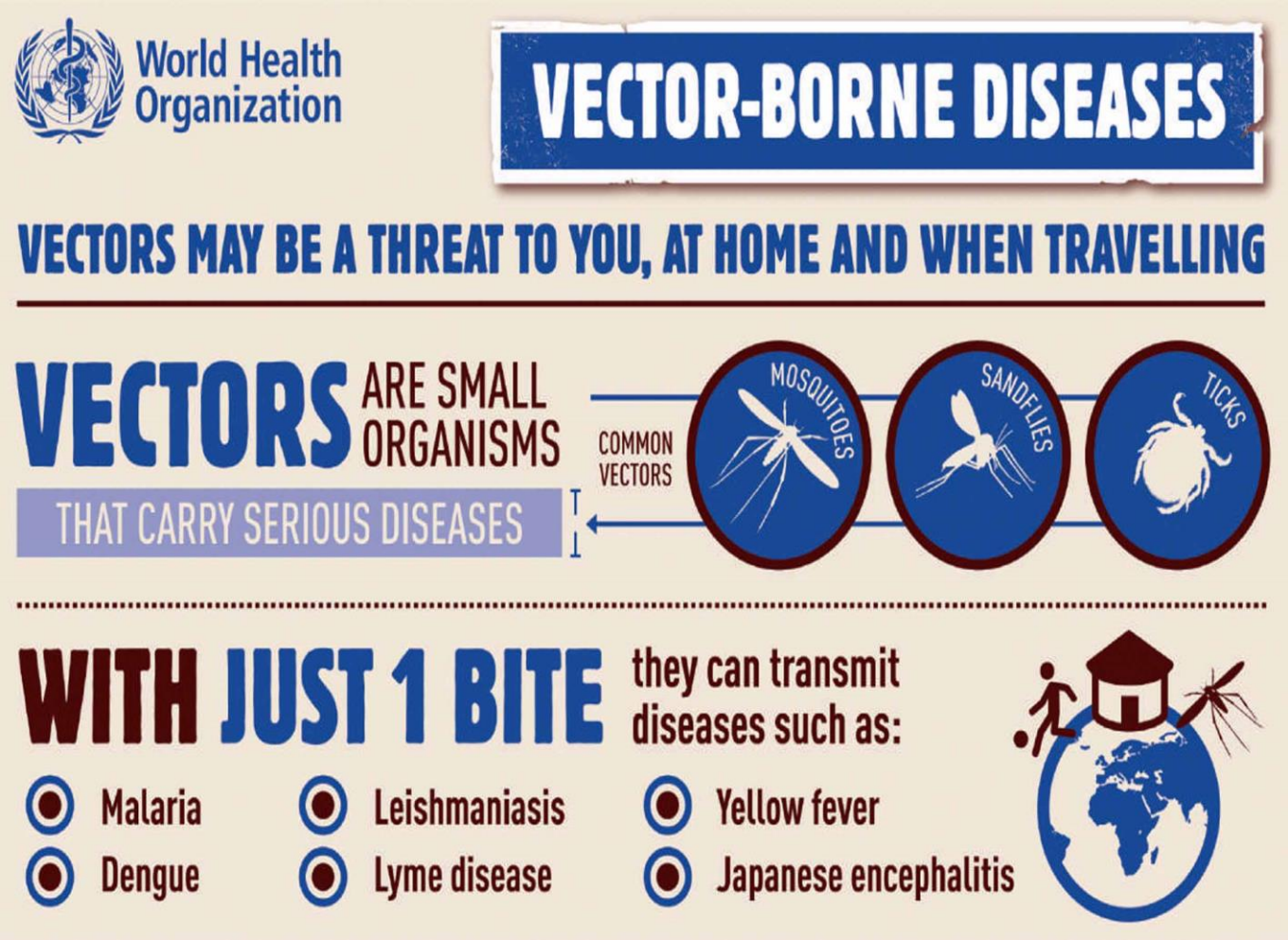
- **Surveillance and Monitoring**: Tracking vector populations, disease incidence, and environmental changes is critical for early detection and intervention. Advanced technologies, like satellite imagery and predictive modeling, can enhance these efforts.
- **Adaptation Strategies**: Effective vector control—such as insecticides, biological controls (e.g., introducing natural predators), and community education (e.g., removing standing water)—can reduce risks. Public awareness campaigns on protective measures, like repellents and bed nets, are also vital.
- **International Collaboration**: VBDs transcend borders, necessitating global cooperation. Sharing data, funding research, and building capacity in vulnerable regions are key steps to managing these threats.

Addressing climate change itself—through reducing greenhouse gas emissions—is a long-term strategy to mitigate risks. However, adaptation to current and future shifts remains essential to safeguard public health.

Conclusion

Climate change is transforming the dynamics of vector-borne diseases, driving their spread to new regions, altering their seasonality, and intensifying their impact. While these changes are complex and influenced by multiple factors, the trend signals heightened risks, particularly for vulnerable populations. Public health systems must prioritize surveillance, bolster adaptation

measures, and foster international collaboration to confront this growing challenge. As the planet continues to warm, our strategies for preventing and controlling vector-borne diseases must evolve in tandem, ensuring resilience in the face of shifting risks.



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