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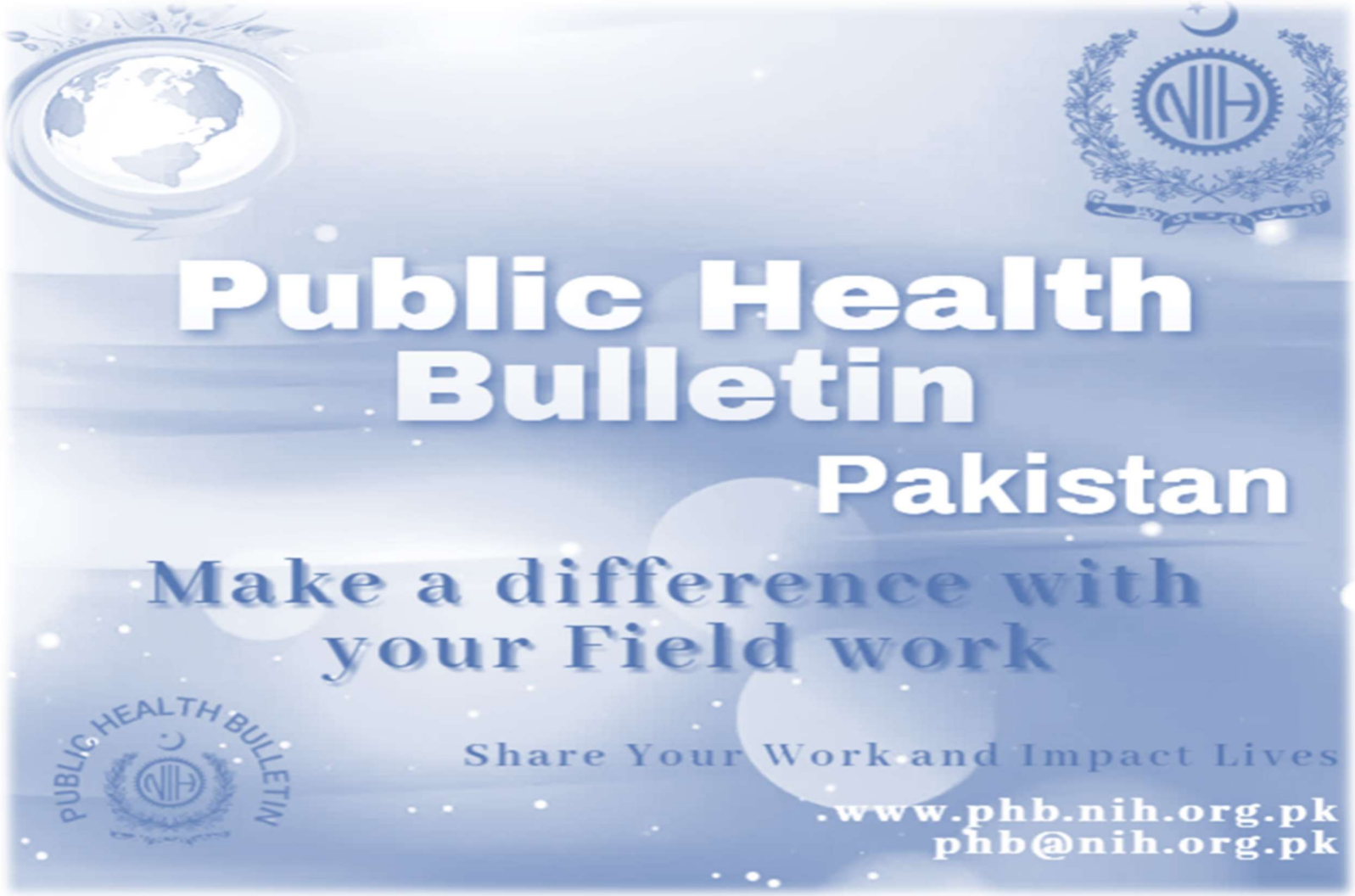
Integrated Disease Surveillance & Response (IDSR) Report

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 49, 2024

Evolving from a basic disease registry, Pakistan's Public Health Bulletin has become an indispensable tool for safeguarding public health. By meticulously tracking disease trends, the Bulletin serves as an early warning system, enabling timely interventions to prevent outbreaks.

Beyond data compilation, this week's bulletin also includes updates on strengthening IPC: a collaborative effort for Global Health Security by NIH, Outbreak Investigation of Chikungunya in Peshawar and a knowledge review on Bloody diarrhea

Stay well-informed about public health matters. Subscribe to the Weekly Bulletin today! By equipping everyone with knowledge, the Public Health Bulletin empowers Pakistanis to build a healthier nation.

Sincerely,
The Chief Editor

- *During week 49, 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.*
- *Ninety-eight cases of AFP reported from KP, twenty-three from Punjab, seven from Sindh, three from AJK and one from GB. All are suspected cases and need field verification.*
- *Nineteen suspected cases of HIV/ AIDS reported from Punjab, seven from Sindh and three from KP. Field investigation required to verify the cases.*
- *Ten suspected cases of Brucellosis reported from KP. Field investigation required to verify the cases.*

IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 158 implemented districts* is 76%
- *AJK and Gilgit Baltistan are the top reporting regions with a compliance rate of 94% and 91%, followed by ICT 78% KPK 76%.*
- *The lowest compliance rate was observed in Sindh 70% and Balochistan 60%.*

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2320	1759	76
Azad Jammu Kashmir	404	378	94
Islamabad Capital Territory	36	28	78
Balochistan	1307	691	60
Gilgit Baltistan	405	367	91
Sindh	2903	2001	70
National	7375	5224	76

Public Health Actions

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

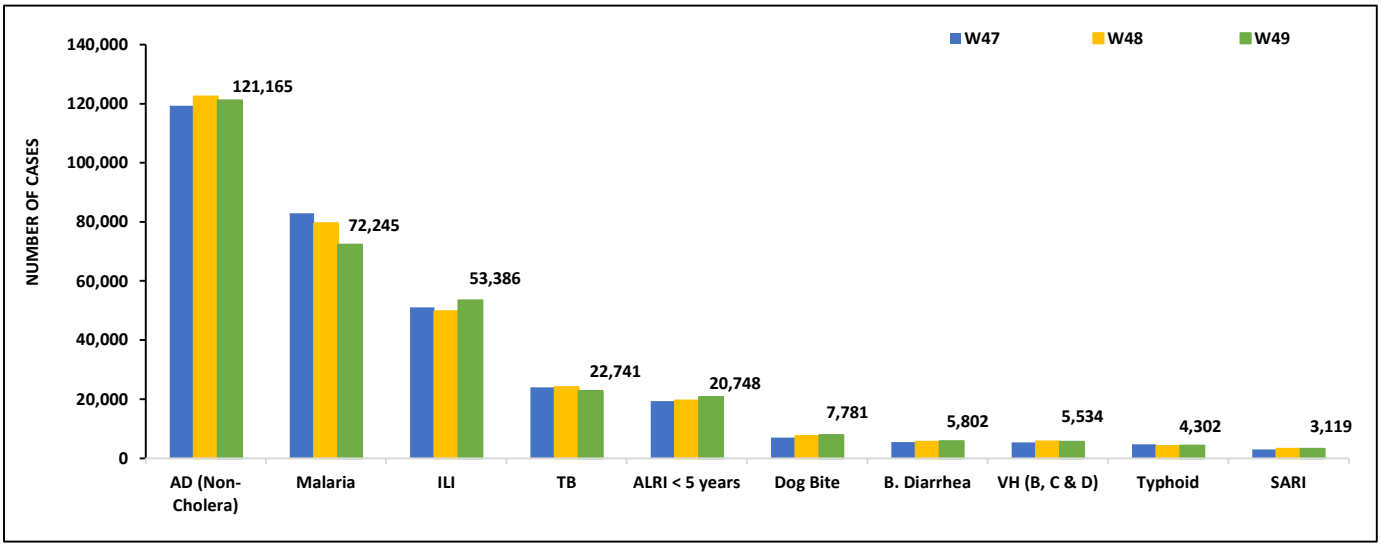
Diphtheria

- **Enhance Case Detection and Reporting:** Strengthen diphtheria surveillance in IDSR by training healthcare workers on case identification, laboratory confirmation, and timely reporting.
- **Strengthen Immunization Coverage:** Increase routine immunization with the DTP vaccine, focusing on reaching unvaccinated children in underserved areas and marginalized communities through outreach and catch-up campaigns.
- **Expand Community Awareness:** Conduct community education on diphtheria prevention, emphasize early care-seeking behavior, and ensure availability of diphtheria antitoxin (DAT) in high-risk regions

Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 49, Pakistan.

Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (Non-Cholera)	999	4,747	546	234	17,118	62,883	34,638	121,165
Malaria	3	6,392	2	0	5,734	3,228	56,886	72,245
ILI	2,614	7,423	442	1,391	7,007	0	34,509	53,386
TB	61	138	82	11	595	10,809	11,045	22,741
ALRI < 5 years	1,454	1,808	1,031	9	1,756	1,298	13,392	20,748
Dog Bite	70	112	5	0	692	4,229	2,673	7,781
B. Diarrhea	37	1,058	41	2	870	670	3,124	5,802
VH (B, C & D)	19	86	1	0	253	0	5,175	5,534
Typhoid	21	490	64	0	1,066	1,750	911	4,302
SARI	309	498	312	1	1,730	0	269	3,119
Dengue	9	2	2	0	78	1,175	66	1,332
AVH (A & E)	32	11	11	0	257	0	730	1,041
AWD (S. Cholera)	12	90	8	0	64	560	56	790
Measles	11	9	2	0	222	147	45	436
CL	1	55	0	0	152	0	2	210
Chikungunya	0	1	0	0	0	0	197	198
Mumps	12	16	2	0	102	1	60	193
Chickenpox/ Varicella	14	2	17	1	76	22	27	159
AFP	3	0	1	0	98	23	7	132
Meningitis	7	0	0	0	5	54	22	88
Gonorrhea	0	41	0	0	9	0	15	65
Pertussis	1	23	9	0	4	1	9	47
Leprosy	0	0	0	0	31	0	0	31
Diphtheria (Probable)	0	0	0	0	13	4	13	30
HIV/AIDS	0	0	0	0	3	19	7	29
NT	0	0	0	0	11	2	11	24
Syphilis	0	0	0	0	0	0	22	22
Brucellosis	0	0	0	0	10	0	0	10

Figure 1: Most frequently reported suspected cases during Week 49, Pakistan.



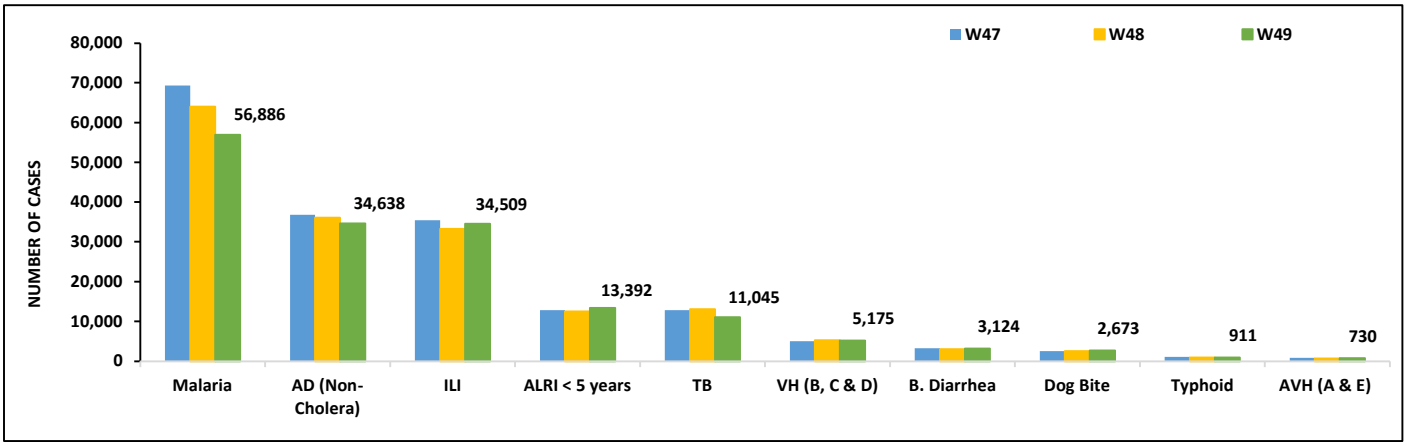
Sindh

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

Table 2: District wise distribution of most frequently reported suspected cases during Week 49, Sindh

Districts	Malaria	AD (Non-Cholera)	ILI	TB	ALRI < 5 years	VH (B, C & D)	B. Diarrhea	Dog Bite	Typhoid	AVH (A&E)
Badin	1,739	1,731	3,108	556	752	254	168	98	27	7
Dadu	4,913	1,772	610	1,218	448	68	447	327	123	46
Ghotki	1,187	585	72	526	251	237	65	172	1	36
Hyderabad	574	1,353	2,151	172	100	30	0	0	10	0
Jacobabad	1,737	761	791	447	109	177	122	216	28	0
Jamshoro	2,818	1,260	449	425	451	139	77	58	51	3
Kamber	3,877	2,014	0	369	862	162	106	234	11	0
Karachi Central	25	543	1,706	13	18	7	5	1	47	6
Karachi East	49	338	724	26	24	1	11	16	2	0
Karachi Keamari	1	387	313	24	0	0	5	0	2	1
Karachi Korangi	12	198	0	1	15	0	1	0	1	1
Karachi Malir	293	941	2,777	174	177	44	32	28	12	10
Karachi South	32	68	1	0	0	0	0	0	0	0
Karachi West	280	828	1,201	161	135	131	28	33	29	4
Kashmore	3,263	535	745	209	305	65	35	178	0	0
Khairpur	5,238	2,159	7,413	1,257	983	117	364	201	171	3
Larkana	5,724	1,751	10	719	834	75	351	48	19	0
Matiari	1,812	1,237	7	406	543	198	59	51	8	0
Mirpurkhas	2,559	2,317	4,248	989	612	263	122	88	19	4
Naushero Feroze	2,076	1,099	1,313	454	439	27	132	202	138	0
Sanghar	3,473	1,566	70	826	1014	1,538	91	128	44	2
Shaheed Benazirabad	1,816	1,486	16	361	441	228	58	136	96	1
Shikarpur	3,055	1,022	3	259	248	649	187	157	6	0
Sujawal	895	1,281	0	487	189	28	170	39	4	0
Sukkur	3,026	1,093	1,700	825	475	112	108	109	3	0
Tando Allahyar	1,408	839	1,277	239	466	270	101	38	2	0
Tando Muhammad Khan	623	751	3	211	430	76	72	2	2	0
Tharparkar	1,823	1,907	1,950	812	368	93	87	0	18	29
Thatta	1,162	1,402	1,851	565	36	92	55	113	14	575
Umerkot	1,396	1,414	0	661	320	94	65	0	23	2
Total	56,886	34,638	34,509	13,392	11,045	5,175	3,124	2,673	911	730

Figure 2: Most frequently reported suspected cases during Week 49 Sindh



UK Health Security Agency

World Health Organization

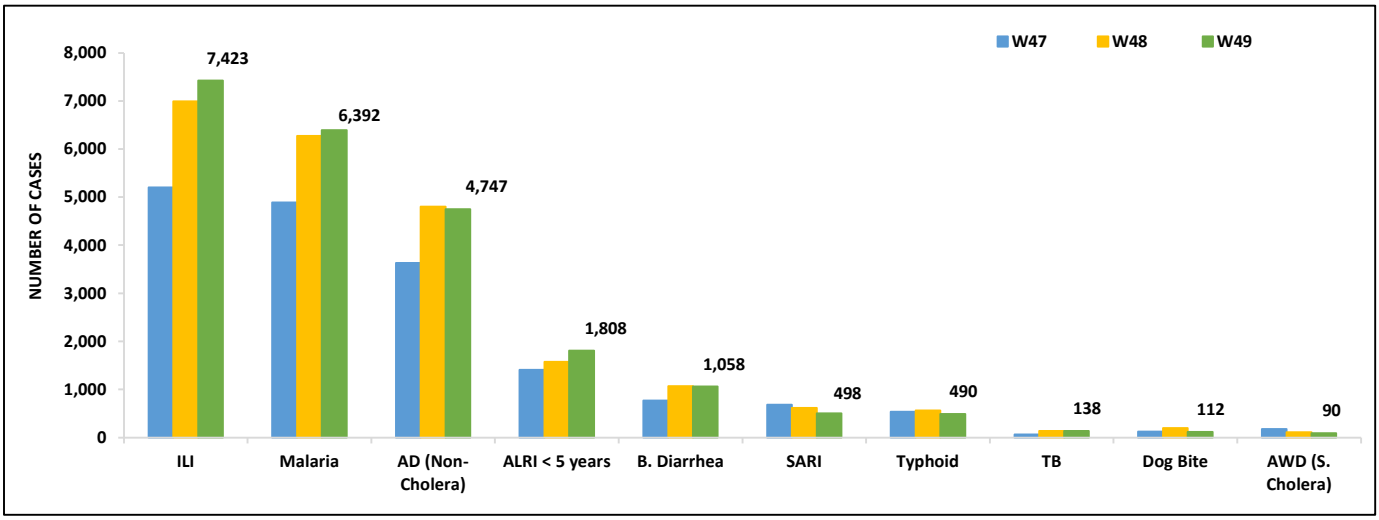
USAID

- ILI, Malaria, AD (Non-Cholera), 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 Pishin while Malaria cases are mostly reported from Jhal Magsi, Jaffarabad and Lasbella.

Table 3: District wise distribution of most frequently reported suspected cases during Week 49, Balochistan

Districts	AD (Non-Cholera)	Malaria	ILI	B. Diarrhea	ALRI < 5 years	Typhoid	SARI	AWD (S.Cholera)	TB	CL
Barkhan	80	35	66	38	3	2	10	2	1	1
Chagai	254	64	121	0	40	0	18	0	2	1
Dera Bugti	80	134	43	37	19	13	20	0	0	0
Gwadar	1,664	229	542	9	90	2	34	0	0	0
Harnai	13	67	79	212	72	0	0	0	4	8
Hub	17	153	69	4	10	0	1	0	0	0
Jaffarabad	230	832	330	39	57	26	8	84	24	0
Jhal Magsi	466	1,008	293	213	2	4	19	8	14	1
Kalat	9	19	30	40	16	4	30	0	0	0
Kech (Turbat)	1,272	566	313	26	45	2	4	1	1	1
Kharan	418	38	114	10	55	15	2	0	0	8
Khuzdar	344	154	185	3	109	45	22	0	0	3
Killa Saifullah	0	107	125	164	33	4	6	0	0	0
Kohlu	470	105	190	18	74	104	65	NR	NR	NR
Lasbella	97	676	359	80	42	17	21	1	19	0
Loralai	322	21	119	26	34	54	18	0	9	0
MusaKhel	70	91	31	14	13	4	7	0	1	13
Naseerabad	22	607	351	23	14	2	91	11	23	3
Panjgur	150	168	164	83	39	20	10	0	0	25
Pishin	540	15	256	105	83	22	26	0	3	17
Quetta	47	18	23	87	15	45	6	0	1	5
Sibi	12	188	79	47	14	23	25	0	0	0
Sohbat pur	63	651	264	114	82	31	31	5	1	2
Surab	215	38	58	0	0	0	0	0	0	0
Usta Muhammad	211	341	431	171	48	3	5	0	9	2
Washuk	178	27	33	0	25	0	5	0	0	0
Zhob	134	39	74	239	14	53	3	26	0	0
Ziarat	45	1	5	6	10	3	3	0	0	0
Total	7,423	6,392	4,747	1,808	1,058	498	490	138	112	90

Figure 3: Most frequently reported suspected cases during Week 49, Balochistan

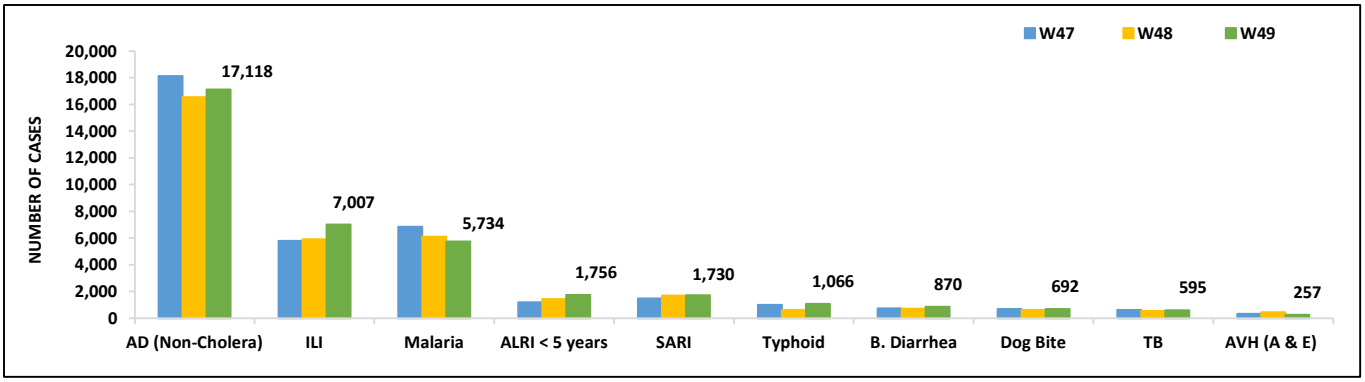


- Cases of AD (Non-Cholera) were maximum followed by ILI, Malaria, ALRI<5 Years, SARI, Typhoid, B. Diarrhea, dog bite, TB and AVH (A & E) cases.
- Ninety-eight cases of AFP, Three suspected cases of HIV/ AIDS, Ten suspected cases of Brucellosis reported from KP. They require field verification. All are suspected cases and need field verification.

Table 4: District wise distribution of most frequently reported suspected cases during Week 49, KP

Districts	AD (Non-Cholera)	Malaria	ILI	B.Diarrhea	SARI	ALRI <5 Years	Typhoid	Dog Bite	TB	AVH (A&E)
Abbottabad	671	322	95	204	272	477	6	82	230	3
Bajaur	365	9	210	28	63	0	56	48	12	28
Bannu	598	7	1,649	14	5	105	27	2	23	0
Battagram	170	771	29	NR	2	0	NR	13	42	NR
Buner	143	30	192	0	0	4	0	11	1	0
Charsadda	1,521	1,000	448	500	7	96	163	33	17	45
Chitral Lower	355	177	9	16	27	6	19	10	5	0
Chitral Upper	97	16	1	2	12	4	4	0	1	1
D.I. Khan	1,172	0	615	12	0	0	14	18	47	0
Dir Lower	913	2	198	92	0	47	86	99	11	25
Dir Upper	613	137	9	24	2	2	4	8	10	3
Hangu	69	93	78	0	0	3	0	0	2	0
Haripur	413	160	2	58	45	9	1	0	25	15
Karak	301	106	153	21	192	3	17	11	6	2
Khyber	379	116	146	34	24	23	97	18	7	2
Kohat	410	128	145	7	108	7	25	15	0	0
Kohistan Lower	94	13	4	8	0	0	2	0	0	0
Kohistan Upper	387	12	16	26	0	0	14	0	0	0
Kolai Palas	87	10	3	5	8	4	7	0	1	0
L & C Kurram	2	6	0	0	0	0	6	0	0	0
Lakki Marwat	553	10	449	34	0	4	20	18	7	0
Malakand	382	0	27	38	14	3	41	0	3	7
Mansehra	362	349	5	8	231	0	1	0	2	0
Mardan	621	0	10	74	0	16	8	66	7	0
Mohmand	103	179	274	10	140	6	29	11	1	3
North Waziristan	25	15	22	2	17	6	0	1	1	0
Nowshera	783	67	99	6	12	30	16	6	13	15
Orakzai	16	15	2	0	0	0	8	3	0	0
Peshawar	2,389	1,386	42	106	227	47	63	1	11	2
SD Tank	9	3	8	0	0	0	1	0	0	0
Shangla	567	1	326	36	26	39	5	46	50	3
SWA	41	181	40	10	42	11	2	7	6	0
South Waziristan (Lower)	11	28	0	0	0	2	1	0	0	0
Swabi	678	1,009	54	185	62	29	4	90	31	29
Swat	1,261	211	20	154	0	44	79	56	7	71
Tank	407	182	301	19	0	28	4	0	13	0
Tor Ghar	43	0	45	4	37	6	16	10	2	3
Upper Kurram	107	256	8	19	155	5	24	9	1	0
Total	17,118	7,007	5,734	1,756	1,730	1,066	870	692	595	257

Figure 4: Most frequently reported suspected cases during Week 49, KP



ICT, AJK & GB

ICT: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera) and TB.

AJK: ILI cases were maximum followed by ALRI < 5years, AD (Non-Cholera), SARI, dog bite, TB, B. Diarrhea, AVH (A & E), Typhoid and VH (B, C & D) cases. Three suspected cases of AFP reported from AJK. Field investigation required to verify the cases.

GB: ALRI <5 Years cases were the most frequently reported diseases followed by AD (Non-Cholera), ILI, SARI, TB, Typhoid and B. Diarrhea cases. One suspected case of AFP reported from GB. Field verifiction is needed.

Figure 5: Most frequently reported suspected cases during Week 49, ICT

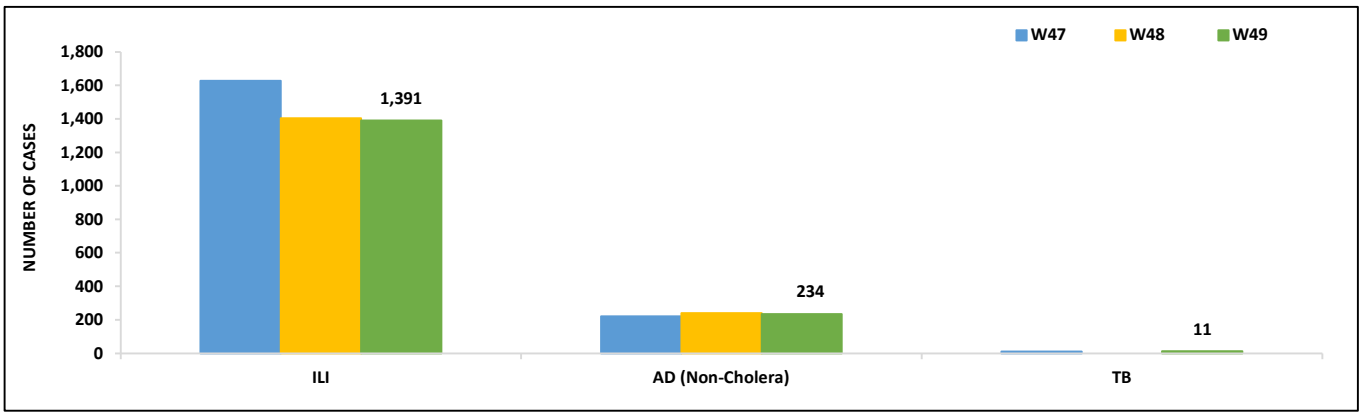


Figure 6: Week wise reported suspected cases of ILI, ICT

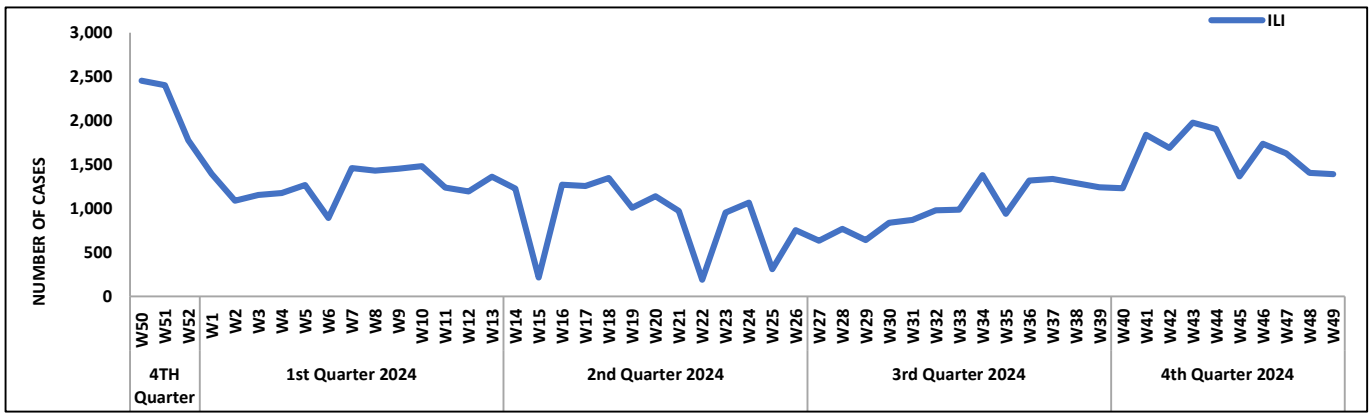


Figure 7: Most frequently reported suspected cases during Week 49, AJK

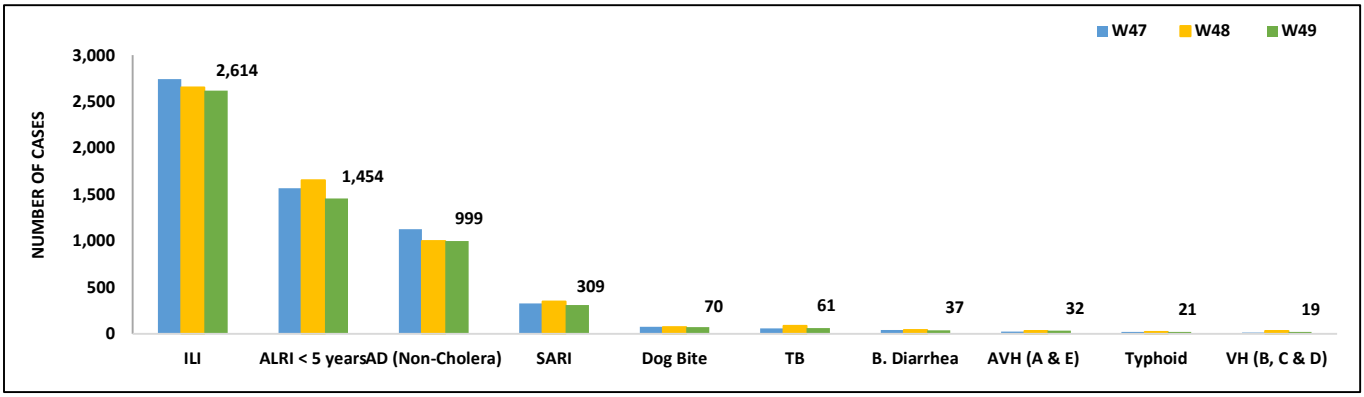


Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK

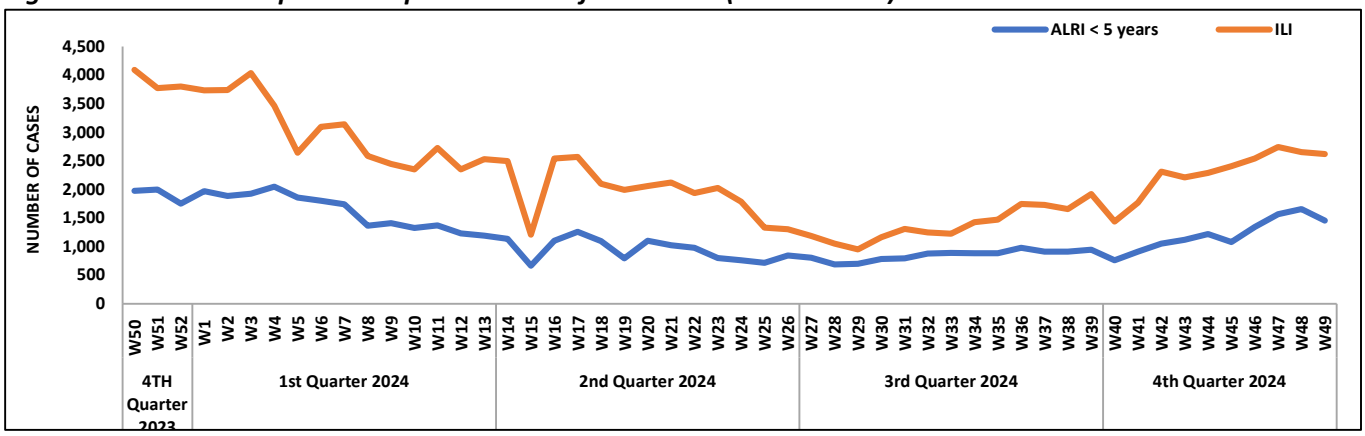


Figure 9: Most frequent cases reported during Week 49, GB

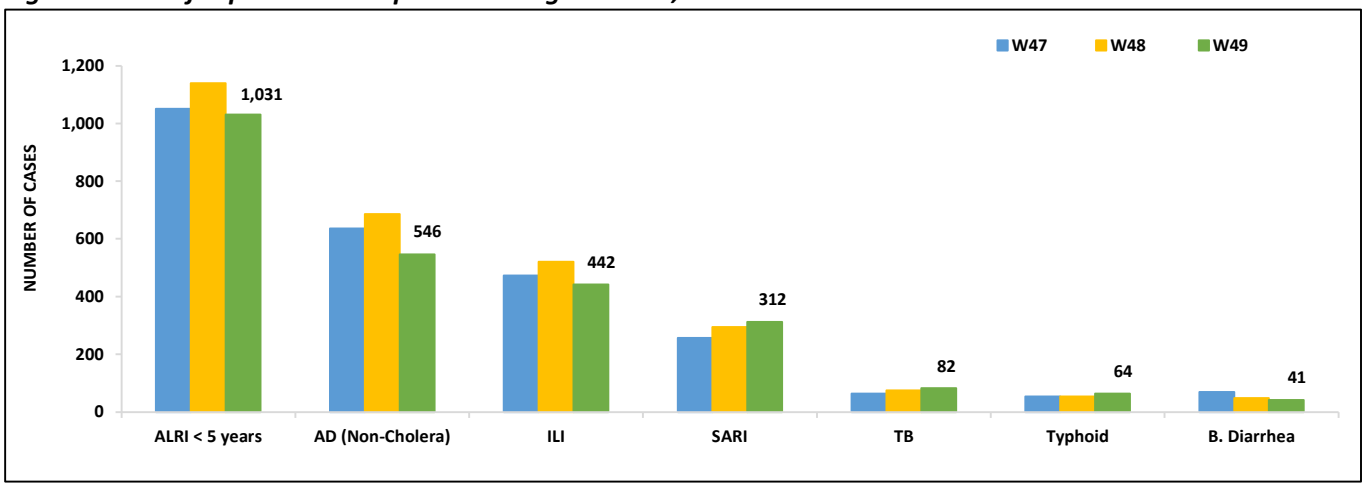
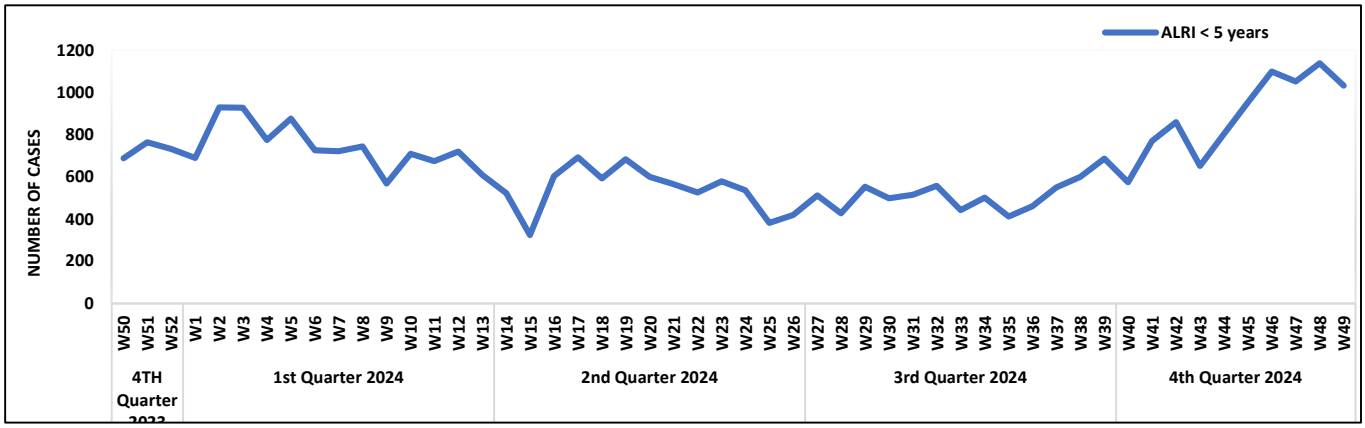


Figure 10: Week wise reported suspected cases of ALRI <5 years, GB



Punjab

- AD (Non-Cholera) cases were maximum followed by TB, dog bite, Malaria, Typhoid, ALRI<5 Years, B.Diarrhea , AWD (S. Cholera) and Measles cases.
- Twenty-three cases of AFP reported from Punjab. All are suspected cases and need field verification.
- Nineteen suspected cases of HIV/ AIDS reported from Punjab. Field investigation required to verify the cases.

Figure 11: Most frequently reported suspected cases during Week 49, Punjab.

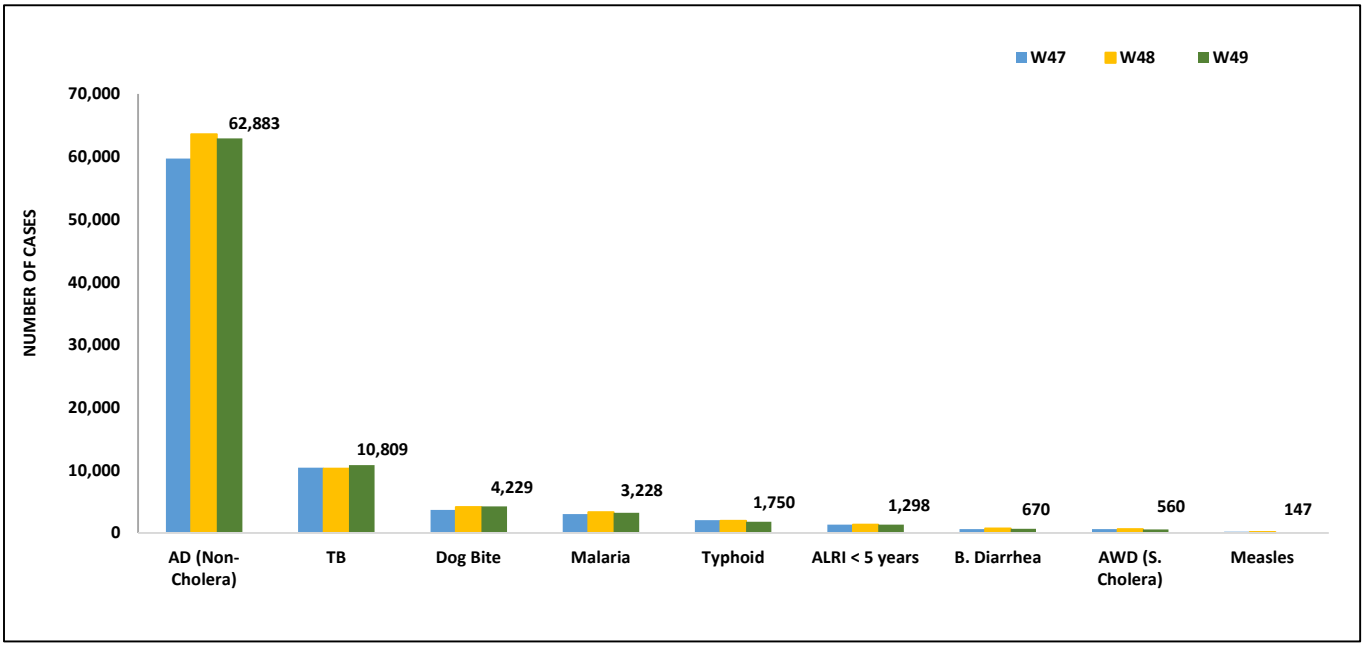


Figure 12: Week wise reported suspected cases of AD (Non-Cholera), Punjab.

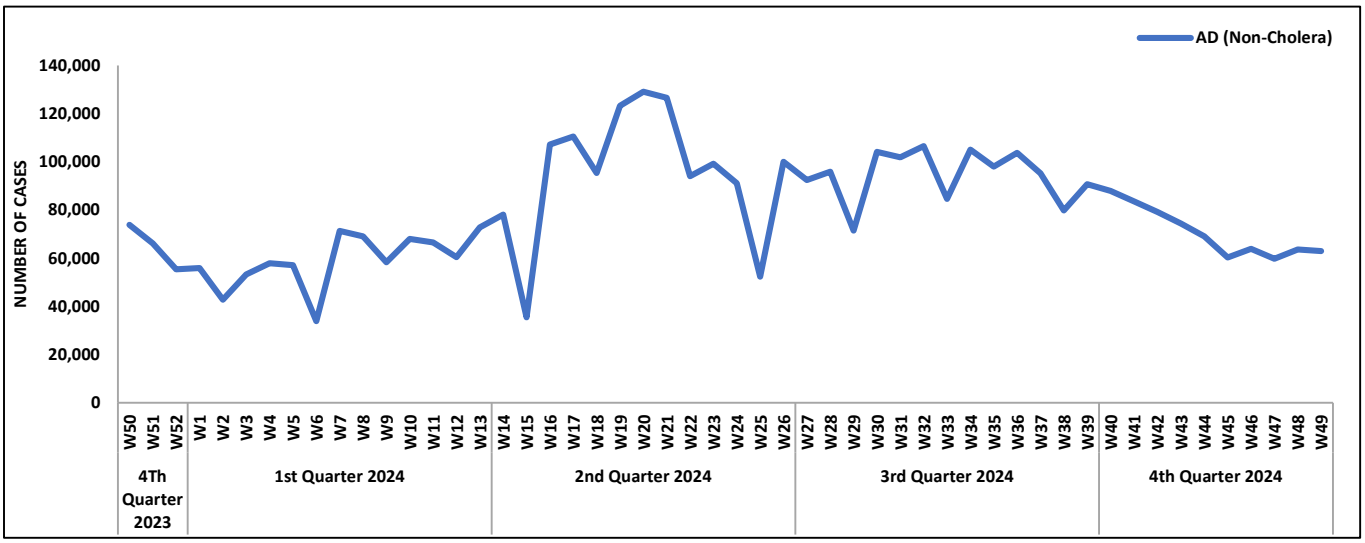


Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 49

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)		10	0	-	-	0	0	-	-	-	-	-	-	15	0
AD (Non-Cholera)		85	0	-	-	0	0	-	-	-	-	-	-	34	0
Malaria		945	81	-	-	0	0	-	-	-	-	-	-	74	26
CCHF		-	-	4	0	0	0	0	0	-	-	-	-	0	0
Dengue		759	29	-	-	0	0	11	1	-	-	-	-	28	2
VH (B)		2,867	61	20	14	0	0	-	-	128	0	-	-	740	3
VH (C)		2,867	182	36	9	0	0	-	-	128	0	-	-	821	26
VH (A & E)		-	-	-	-	0	0	-	-	-	-	-	-	232	12
Covid-19		-	-	11	0	0	0	4	0	-	-	-	-	15	0
Chikungunya		-	-	-	-	0	0	0	0	-	-	-	-	0	0
TB		-	-	-	-	0	0	-	-	-	-	-	-	162	6
Syphilis		-	-	-	-	0	0	-	-	-	-	-	-	6	0
B. Diarrhea		-	-	-	-	0	0	-	-	-	-	-	-	6	0
Typhoid		532	6	-	-	0	0	-	-	-	-	-	-	0	0
Diptheria (Probabale)		-	-	-	-	0	0	-	-	-	-	-	-	0	0
Pertussis		-	-	-	-	0	0	-	-	-	-	-	-	0	0
M-POX		-	-	-	-	0	0	0	0	-	-	-	-	0	0
Leishmaniansis (cutaneous)		-	-	-	-	0	0	-	-	-	-	-	-	3	0
Measles		114	59	42	19	266	101	13	9	3	1	195	79	12	2
Rubella		114	2	42	0	266	5	13	0	3	0	195	4	12	1
Covid-19	Out of SARI	15	0	0	0	49	0	40	1	18	0	115	0	0	0
	Out of ILI	0	0	0	0	6	0	31	0	21	0	60	1	0	0
Influenza A	Out of SARI	15	0	0	0	49	1	40	0	18	0	115	6	0	0
	Out of ILI	0	0	0	0	6	0	31	0	21	0	60	5	0	0
Influenza B	Out of SARI	15	0	0	0	49	3	40	3	18	1	115	4	0	0
	Out of ILI	0	0	0	0	6	0	31	2	21	0	60	2	0	0
RSV	Out of SARI	15	0	0	0	49	0	40	0	18	0	115	0	0	0
	Out of ILI	0	0	0	0	6	0	31	0	21	0	60	0	0	0

IDSR Reports Compliance

- Out of 158 IDSR implemented districts, compliance is low from KP and Balochistan. Green color highlights >50% compliance while red color highlights <50% compliance

Table 6: IDSR reporting districts Week 49, 2024

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	98	88%
	Bannu	238	130	55%
	Battagram	63	37	59%
	Buner	34	33	97%
	Bajaur	44	42	95%
	Charsadda	59	59	100%
	Chitral Upper	34	26	76%
	Chitral Lower	35	34	97%
	D.I. Khan	114	113	99%
	Dir Lower	74	73	99%
	Dir Upper	37	33	89%
	Hangu	22	12	55%
	Haripur	72	65	90%
	Karak	35	35	100%
	Khyber	52	22	42%
	Kohat	61	61	100%
	Kohistan Lower	11	11	100%
	Kohistan Upper	20	20	100%
	Kolai Palas	10	10	100%
	Lakki Marwat	70	69	99%
	Lower & Central Kurram	42	8	19%
	Upper Kurram	41	27	66%
	Malakand	42	30	71%
	Mansehra	136	104	76%
	Mardan	80	76	95%
	Nowshera	55	51	93%
	North Waziristan	13	4	31%
	Peshawar	154	135	88%
	Shangla	37	35	95%
	Swabi	64	57	89%
	Swat	77	73	95%
	South Waziristan	135	50	37%
	Tank	34	31	91%
	Torghar	14	14	100%
	Mohmand	68	65	96%
	SD Peshawar	5	0	0%
	SD Tank	58	6	10%

	Orakzai	69	10	14%
Azad Jammu Kashmir	Mirpur	37	37	100%
	Bhimber	42	20	48%
	Kotli	60	60	100%
	Muzaffarabad	45	44	98%
	Poonch	46	46	100%
	Haveli	39	39	100%
	Bagh	40	40	100%
	Neelum	39	36	92%
	Jhelum Vellay	29	29	100%
	Sudhnooti	27	27	100%
Islamabad Capital Territory	ICT	21	20	95%
	CDA	15	8	53%
Balochistan	Gwadar	25	23	92%
	Kech	44	23	52%
	Khuzdar	74	40	54%
	Killa Abdullah	26	0	0%
	Lasbella	55	34	62%
	Pishin	69	45	65%
	Quetta	55	9	16%
	Sibi	36	9	25%
	Zhob	39	22	56%
	Jaffarabad	16	15	94%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	0	0%
	Kohlu	75	49	65%
	Chagi	36	22	61%
	Kalat	41	40	98%
	Harnai	17	15	88%
	Kachhi (Bolan)	35	0	0%
	Jhal Magsi	28	28	100%
	Sohbat pur	25	25	100%
	Surab	32	29	91%
	Mastung	45	0	0%
	Loralai	33	24	73%
	Killa Saifullah	28	27	96%
	Ziarat	29	4	14%
	Duki	31	0	0%
	Nushki	32	0	0%
	Dera Bugti	45	28	62%
	Washuk	46	11	24%
	Panjgur	38	21	55%
	Awaran	23	0	0%
	Chaman	24	0	0%
	Barkhan	20	17	85%
	Hub	33	14	42%
	Musakhel	41	21	51%
	Usta Muhammad	34	34	100%
	Hunza	32	32	100%

Gilgit Baltistan	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%
	Kharmang	46	25	54%
Sindh	Hyderabad	74	64	86%
	Ghotki	64	64	100%
	Umerkot	43	43	100%
	Naushahro Feroze	107	106	99%
	Tharparkar	276	237	86%
	Shikarpur	59	59	100%
	Thatta	52	50	96%
	Larkana	67	67	100%
	Kamber Shadadkot	71	71	100%
	Karachi-East	23	19	83%
	Karachi-West	20	20	100%
	Karachi-Malir	37	23	62%
	Karachi-Kemari	18	16	89%
	Karachi-Central	11	7	64%
	Karachi-Korangi	18	15	83%
	Karachi-South	4	4	100%
	Sujawal	55	54	98%
	Mirpur Khas	106	106	100%
	Badin	124	124	100%
	Sukkur	64	63	98%
	Dadu	90	88	98%
	Sanghar	100	100	100%
	Jacobabad	44	44	100%
	Khairpur	170	168	99%
	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	119	95%

Table 7: IDSR reporting Tertiary care hospital Week 49, 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	0	0%

Strengthening Infection Prevention and Control: A Collaborative Effort for Global Health Security

On December 12, 2024, the National Institute of Health (NIH), in collaboration with the World Health Organization (WHO), organized a pivotal one-day consultative meeting. The event marked a significant milestone in global health cooperation, focusing on the critical domain of infection prevention and control (IPC). Held with the participation of a distinguished panel of IPC experts from the WHO Eastern Mediterranean Region (EMRO), the meeting aimed to address pressing needs in the healthcare infrastructure of Pakistan.

A Unified Vision for Enhanced IPC Standards

The primary objective of the consultative meeting was to refine and modernize Pakistan's National IPC guidelines. Recognizing the vital role of infection prevention in safeguarding public health, the gathering emphasized the development of a standardized and comprehensive IPC training curriculum for healthcare professionals. This initiative seeks to empower medical practitioners, nurses, and allied health workers with the necessary skills and knowledge to effectively combat infectious diseases.

Key Themes and Strategic Outcomes

During the consultative session, experts engaged in detailed discussions on the following key themes:

- **Standardization of Guidelines**: The revision and harmonization of IPC protocols to create uniformity across healthcare settings.
- **Comprehensive Training Programs**: Designing a curriculum that addresses the specific challenges faced by healthcare workers in diverse environments, from urban hospitals to rural clinics.
- **Strengthening Surveillance Systems**: Enhancing mechanisms for monitoring and evaluating IPC practices to ensure their effectiveness.
- **Capacity Building and Resource Allocation**: Identifying and addressing gaps in infrastructure, equipment, and workforce training.

The consultative meeting served as a platform for the exchange of insights and best practices, fostering a collaborative spirit among national and regional stakeholders. By addressing these focal areas, the NIH-WHO partnership aims to build a robust IPC system capable of responding to both endemic and emerging health threats.

Aligning with Global Health Priorities

The consultative meeting underscores the shared commitment of the NIH and WHO to advancing public health objectives in Pakistan and beyond. By integrating international standards and regional expertise, this initiative

not only strengthens Pakistan's IPC capabilities but also contributes to the larger goal of global health security. Effective IPC measures are essential in mitigating the spread of infectious diseases, protecting vulnerable populations, and reducing the burden on healthcare systems.

Notes from the field:

Chikungunya Outbreak in Displaced Afghan Population, Shamshato Camp Peshawar Pakistan, November 2024: Vector-Borne Disease Dynamics in Humanitarian Settings

Dr. Mussawir Manzoor (Fellow FETP 16th Cohort)

Dr. Arsalan Khan (Fellow FETP 16th Cohort)

Introduction:

Chikungunya is a viral disease caused by the chikungunya virus (CHIKV) and is transmitted to humans through the bite of infected Aedes mosquitoes, particularly Aedes aegypti and Aedes albopictus. These mosquitoes also spread dengue and Zika viruses. This disease is commonly found in tropical and subtropical regions, where outbreaks can occur rapidly. The global context shows that approximately 460,000 Chikungunya cases have been reported worldwide in 2024, with 170 associated deaths, according to the European Centre for Disease Prevention and Control (ECDC). Countries such as Brazil and India lead in case number.

In Pakistan, Chikungunya has been a persistent issue since its first detection in 2016, aggravated by the tropical climate and inadequate mosquito control measures. In 2024, the Chikungunya virus has emerged as a significant public health concern in Khyber Pakhtunkhwa (KP), Pakistan, with the first outbreak reported in Mansherra in the month of August. On December 19, 2024, the Provincial-Disease-Surveillance-and-Response-Unit received a report from a local physician regarding an increase case of high fever, arthralgia, and body aches among the Afghan refugee population residing in Shamshato Camp. After verification, the FETP team was deployed to investigate the outbreak

Objectives:

1. To identify the cause of the outbreak.
2. To assess the magnitude of the outbreak.
3. To analyze the contributing risk factors linked with the outbreak.

Methods:

Descriptive epidemiology followed by unmatched case-control was conducted from 10th Oct to 26th Nov 2024. A case was defined as a person of any age residing in Afghan Refugee Camp having fever, joint pain, body aches with or without rash from 10th Oct 2024 to 26th Nov 2024 not caused by any other medical conditions. Active and passive search was done for the cases. One control against each case was randomly selected from the neighborhood. In personal interview was conducted with case and control by using structured questionnaire. Total sample (n=43) were collected and send for lab testing. Vector surveillance was also done in the camp. Adjusted odd ratio (AOR) with 95% confidence interval was computed with p value 0.05.

Results:

A total of 416 suspected chikungunya` cases were identified with overall attack-rate: 5 per 100. The mean age 25 (range 1-88), and the male-to-female ratio was 1.2:1. The predominate affected age group was 10-19 years (n=128 cases: attack-rate 07 per 100). The first case was reported on dated 11th Oct 2024 peak of cases was observed on 1st Nov 2024 (n=32) and last case was seen on dated 2nd Dec 2024. Presence of mosquito larvae in homes (AOR: 3.9, 95% CI: 2.3-6.6), limited use of mosquito nets/repellents (AOR: 4.0, 95% CI: 2.0-8.5) showed significant association on multilogistic regression analysis. While coverage of water storage (AOR: 0.3, 95% CI: 0.2-0.5) showed preventive significance. Laboratory results confirmed 14 out of 43 samples tested positive for chikungunya virus. Larval sampling identified Anopheles larvae. Extended temperatures of 20–30°C facilitated Aedes mosquito breeding.

Discussion:

The higher incidence among the younger age group (10–19 years) is consistent with findings from similar outbreaks, where children and young adults are often more exposed to outdoor activities and, consequently, mosquito bites (Simon et al., 2022). The male-to-female ratio of 1.2:1 indicates a slight predominance in males, which could be attributed to gender-specific exposure patterns, such as outdoor work or recreational activities (Weaver & Lecuit, 2015).

The temporal analysis of the outbreak, with a peak on November 1, 2024, suggests rapid transmission facilitated by favorable climatic conditions. The extended temperature range of 20–30°C, known to promote Aedes mosquito breeding and viral replication, mirrors findings from outbreaks in similar tropical regions (WHO, 2023). The detection of Anopheles larvae, while unexpected, emphasizes the need for comprehensive entomological assessments in outbreak investigations.

The identification of mosquito larvae in homes (AOR: 3.9) and limited use of mosquito nets or repellents (AOR: 4.0) as significant risk factors align with previous studies that have established the pivotal role of household environments in chikungunya transmission (CDC, 2022). Conversely, the protective effect of covering water storage containers (AOR: 0.3) reinforces the importance of community-level water management practices in reducing breeding sites for Aedes mosquitoes (PAHO, 2021).

The refugee population in Shamshato Camp faced heightened vulnerability due to overcrowding, inadequate infrastructure, and limited access to preventive measures. These factors are well-documented in the literature as exacerbating the spread of vector-borne diseases in displaced populations (Kraemer et al., 2019).

The laboratory confirmation of chikungunya virus in 14 out of 43 samples underscores the importance of integrating diagnostic capabilities into outbreak investigations. However, the detection of only 32.6% positivity among suspected cases raises questions about the potential overlap with other febrile illnesses, such as dengue or malaria, common in the region (ECDC, 2024). The presence of Aedes larvae, combined with high temperatures, provides clear evidence of the ecological drivers of this outbreak.

Conclusion:

The current outbreak highlights the vulnerability of the Afghan refugee population due to poor preventive measures and environmental conditions conducive to mosquito breeding. Integrated vector management activities, strengthen the vector and diseases surveillance with community education and engagement is highly recommended

Recommendations:

Following a thorough investigation, it is recommended that:

- Extensive and intensive efforts be made for eliminating mosquitoes, vectors, and larvae in the areas that have been affected. Regular indoor and outdoor surveillance activities must be carried out for effective control of mosquito populations.
- District Entomologists and the Deputy District Health Officer must carry out supervisory inspections during vector removal campaigns to ensure all control measures are being executed properly.
- Health care staff should also organize health education sessions in the most affected areas to spread information regarding Chikungunya prevention and control approaches.

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Knowledge Hub

Bloody Diarrhea

Introduction:

Bloody diarrhea, characterized by the presence of blood in stool, is a clinical symptom that can result from a variety of infectious and non-infectious causes. It is a serious health concern due to its potential to indicate severe gastrointestinal infections, particularly those caused by pathogenic bacteria. The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) provide significant insight into the global epidemiology, causes, and management of bloody diarrhea. This review synthesizes key information from both organizations to offer an overview of bloody diarrhea, its etiology, clinical presentation, and public health implications.

1. Causes of Bloody Diarrhea:

According to the WHO and CDC, the most common causes of bloody diarrhea are bacterial infections, although viral and parasitic causes also exist. Some of the leading pathogens include:

A. Bacterial Infections:

- **Shigella:** This pathogen is one of the primary causes of dysentery, leading to bloody diarrhea. Shigella invades the epithelial cells of the colon, causing inflammation and ulceration, which results in blood and mucus in the stool. It is highly contagious and often spreads through contaminated food and water.
- **Enterohemorrhagic Escherichia coli (EHEC):** The most notable strain, E. coli O157:H7, produces toxins that damage the intestinal lining, leading to bloody diarrhea and, in some cases, hemolytic uremic syndrome (HUS). Contaminated meat, particularly undercooked beef, is a common source.
- **Campylobacter:** This bacterium, typically contracted from poultry, can lead to bloody diarrhea through its ability to invade the gut lining. Campylobacter infections can sometimes lead to more serious complications such as Guillain-Barré syndrome.
- **Salmonella:** Non-typhoidal Salmonella strains can lead to bloody diarrhea, often associated with contaminated poultry, eggs, or other food items.

B. Viral Infections:

While viruses are less commonly associated with bloody diarrhea, certain cases may present with mild to moderate blood due to secondary bacterial infections or viral-induced colitis. Examples include:

- **Rotavirus:** Primarily a cause of diarrhea in children, though it is less likely to cause bloody stools unless there is concurrent bacterial infection.
- **Adenovirus:** Another viral agent that can contribute to gastroenteritis, sometimes presenting with bloody diarrhea, particularly in immunocompromised individuals.

C. Parasitic Infections:

Certain protozoa and helminths can cause bloody diarrhea, although these are less common.

- **Entamoeba histolytica:** This protozoan parasite causes amoebic dysentery, leading to bloody diarrhea due to the invasion of the intestinal mucosa. It is prevalent in areas with poor sanitation and hygiene.
- **Strongyloides stercoralis and Schistosoma:** These parasites, while less common, may also contribute to bloody stools in endemic areas.

2. Clinical Presentation:

The symptoms of bloody diarrhea depend on the underlying cause but generally include:

- Abdominal cramping and pain

- Tenesmus (the feeling of needing to pass stool even when the bowels are empty)
- Fever and chills (common in bacterial infections)
- Blood and mucus in the stool (indicative of infection or inflammation of the colon)
- Dehydration due to fluid loss from diarrhea

In severe cases, complications such as hemolytic uremic syndrome (from EHEC), sepsis, or electrolyte imbalances can arise, necessitating urgent medical attention.

3. Diagnosis:

Accurate diagnosis is essential for effective treatment. WHO and CDC guidelines emphasize the following diagnostic approaches:

- **Stool Cultures and Microscopy:** These are the gold standard for identifying bacterial pathogens like Shigella, Salmonella, and E. coli. Microscopic examination can also detect parasitic organisms.
- **Polymerase Chain Reaction (PCR):** This method is increasingly used for rapid identification of specific pathogens, especially for E. coli strains and Shigella.
- **Serologic Tests:** These can be used to identify specific antibodies or antigens related to certain pathogens.
- **Stool Blood Tests:** A positive fecal occult blood test may suggest bloody diarrhea, but it must be confirmed with further testing.

4. Management and Treatment:

The treatment for bloody diarrhea varies based on the cause:

- **Rehydration:** Regardless of the cause, the initial management of bloody diarrhea involves rehydration to prevent dehydration. Oral rehydration solutions (ORS) are recommended, and intravenous fluids may be necessary for severe cases.
- **Antibiotics:** For bacterial infections such as Shigella, Salmonella, and Campylobacter, antibiotics may be prescribed. However, for infections caused by EHEC, antibiotics should generally be avoided due to the risk of exacerbating complications like HUS.
- **Antiparasitic Medications:** For parasitic infections, such as Entamoeba histolytica, appropriate anti-protozoal medications like metronidazole are used.
- **Symptomatic Care:** In viral infections, symptomatic treatment is provided, as most viral causes of diarrhea are self-limiting.

WHO and CDC guidelines emphasize the importance of appropriate antibiotics and cautious use to prevent resistance. Antibiotics should not be prescribed indiscriminately, and their use should be based on clear diagnostic evidence.

5. Prevention and Control:

Preventing bloody diarrhea largely involves measures aimed at reducing the transmission of pathogens, particularly in regions where foodborne illnesses are common.

- **Improved Sanitation and Hygiene:** Proper handwashing, safe water sources, and effective sewage systems are crucial for preventing the spread of gastrointestinal infections.
- **Food Safety:** Cooking meat to appropriate temperatures, washing fruits and vegetables thoroughly, and avoiding the consumption of raw or undercooked food can help prevent infections like those caused by E. coli, Salmonella, and Campylobacter.
- **Vaccination:** Vaccines for rotavirus and other pathogens, such as Shigella, are being studied and have shown promise in reducing the incidence of gastrointestinal infections.
- **Education:** Public health campaigns focused on food safety, hand hygiene, and the importance of safe drinking water are key to reducing the global burden of bloody diarrhea.

6. Global Impact:

According to the WHO, diarrhea is one of the leading causes of morbidity and mortality worldwide, particularly in children under five years of age in low- and middle-income countries. Bloody diarrhea, often resulting from bacterial infections, is a major contributor to these statistics. The CDC also highlights the public health burden of bacterial enteric diseases in the United States and globally, noting that outbreaks and sporadic cases of EHEC, Shigella, and Campylobacter continue to pose significant challenges to health systems.

Key Takeaways:

Bloody diarrhea remains a critical public health concern, particularly in areas with inadequate sanitation and healthcare access. Both the WHO and CDC emphasize the importance of early diagnosis, appropriate treatment, and preventive measures such as vaccination, sanitation improvements, and food safety practices. Addressing the underlying causes of bloody diarrhea through public health initiatives is essential for reducing its global impact and preventing the associated morbidity and mortality.

Sources:

1. **World Health Organization (WHO)**:
    - Diarrheal Disease: https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease
    - Foodborne Disease: https://www.who.int/news-room/fact-sheets/detail/foodborne-illnesses
    - Global Burden of Disease Study on Diarrheal Diseases: https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death
2. **Centers for Disease Control and Prevention (CDC)**:
    - Diarrhea: https://www.cdc.gov/diarrhea/index.html
    - Bloody Diarrhea: https://www.cdc.gov/enteric/enteric-diseases.html
    - Shigella and Other Diarrheal Diseases: https://www.cdc.gov/shigella/index.html
    - Foodborne Illnesses: https://www.cdc.gov/foodsafety/foodborne-germs.html

Five keys to safer food

Keep clean

- Wash your hands before handling food and often during food preparation
- Wash your hands after going to the toilet
- Wash and sanitize all surfaces and equipment used for food preparation
- Protect kitchen areas and food from insects, pests and other animals

Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.

Separate raw and cooked

- Separate raw meat, poultry and seafood from other foods
- Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- Store food in containers to avoid contact between raw and prepared foods

Why?

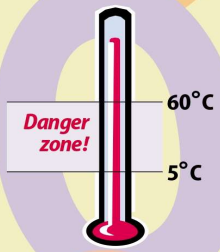
Raw food, expecially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

Cook thoroughly

- Cook food thoroughly, especially meat, poultry, eggs and seafood
- Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



Keep food at safe temperatures

- Do not leave cooked food at room temperature for more than 2 hours
- Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- Keep cooked food piping hot (more than 60°C) prior to serving
- Do not store food too long even in the refrigerator
- Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.

Use safe water and raw materials

- Use safe water or treat it to make it safe
- Select fresh and wholesome foods
- Choose foods processed for safety, such as pasteurized milk
- Wash fruits and vegetables, especially if eaten raw
- Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

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Food Safety
World Health Organization

Knowledge = Prevention

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