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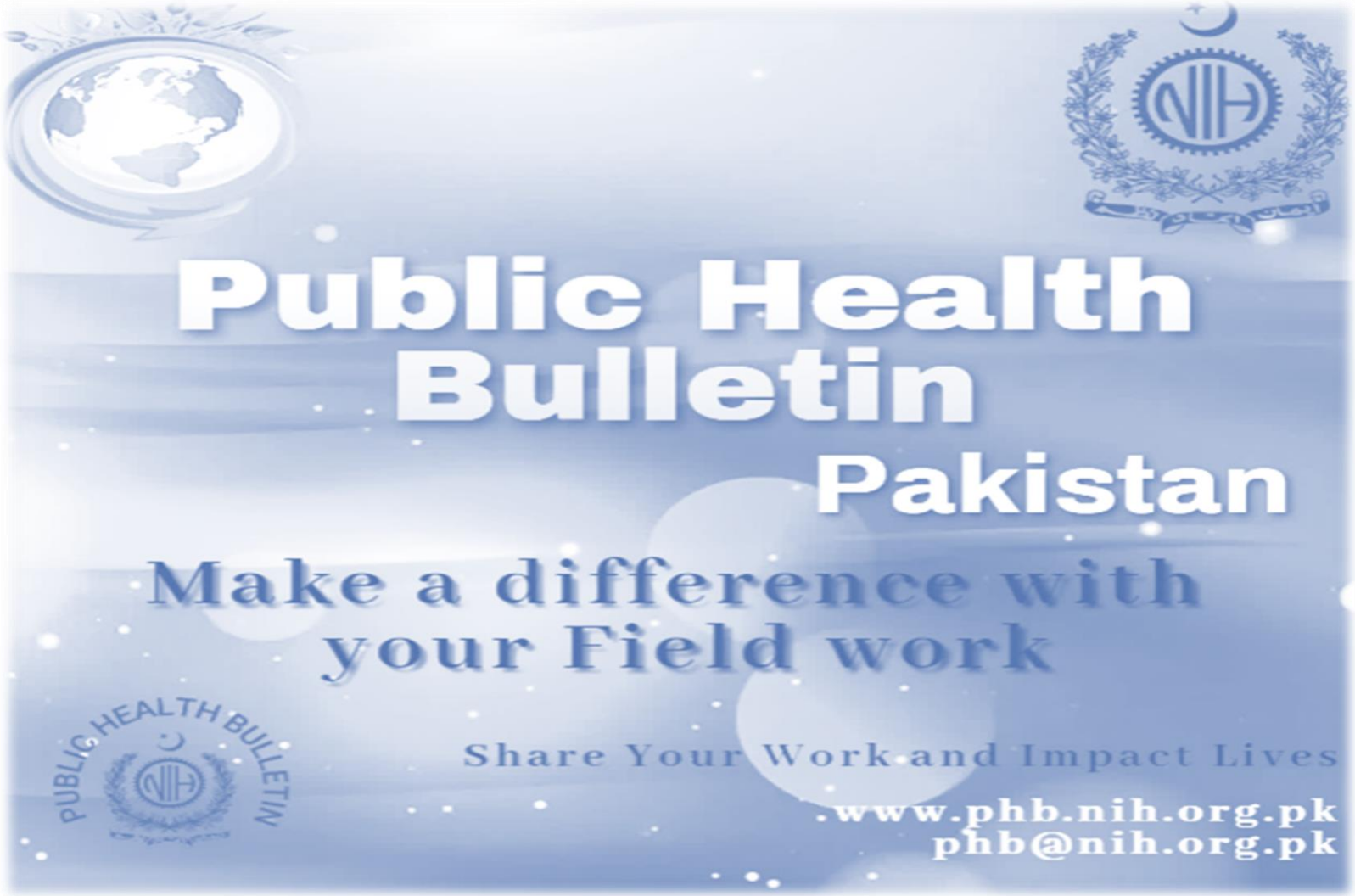
Integrated Disease Surveillance & Response (IDSR) Report

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 45, 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 a three day review Workshop on national mortality surveillance implementation plan in Pakistan by NIH, Outbreak Investigation of Diphtheria in Balochistan and a knowledge review on AMR

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Sincerely,
The Chief Editor

- *During week 45, 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-one cases of AFP reported from KP, twelve from Punjab, seven from Sindh, six from GB, three from AJK and two from Balochistan. All are suspected cases and need field verification.*
- *Sixteen suspected cases of HIV/ AIDS reported from KP, nine from Punjab, two from Sindh and one from Balochistan. Field investigation required to verify the cases.*
- *Eleven suspected cases of Brucellosis reported from KP and eight from Sindh. Field investigation required to verify the cases.*
- *There is a decrease in number of cases reported for Acute Diarrhea (Non-Cholera), TB, dog bite, B. Diarrhea and Typhoid cases while an increasing trend observed for Malaria, ILI, ALRI <5 years, VH (B, C & D) and SARI cases this week.*

IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 158 implemented districts* is 81%
- *Gilgit Baltistan and Sindh are the top reporting regions with a compliance rate of 95% and 94%, followed by AJK 93% and ICT 81%*
- *The lowest compliance rate was observed in KPK 75% and Balochistan 70%.*

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	*2319*	*1749*	*75*
Azad Jammu Kashmir	*405*	*378*	*93*
Islamabad Capital Territory	*36*	*29*	*81*
Balochistan	*1308*	*835*	*70*
Gilgit Baltistan	*407*	*385*	*95*
Sindh	*2094*	*1974*	*94*
National	*6569*	*5350*	*81*

Public Health Actions

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

ALRI in children < five years

- **Enhance Surveillance:** Strengthen the surveillance of ALRI cases at public health facilities and incorporate data from private sector as well, especially during flu seasons.
- **Strengthen Lab Systems:** Enhance the capacity of laboratory systems to easily detect the circulating strains in the population.
- **Promote Hygiene Practices:** Launch health education campaigns on proper respiratory hygiene (covering coughs, frequent hand washing).
- **Enhance vaccination:** Vaccination in high risk groups (asthmatics, children < 5) for ALRI is advised.

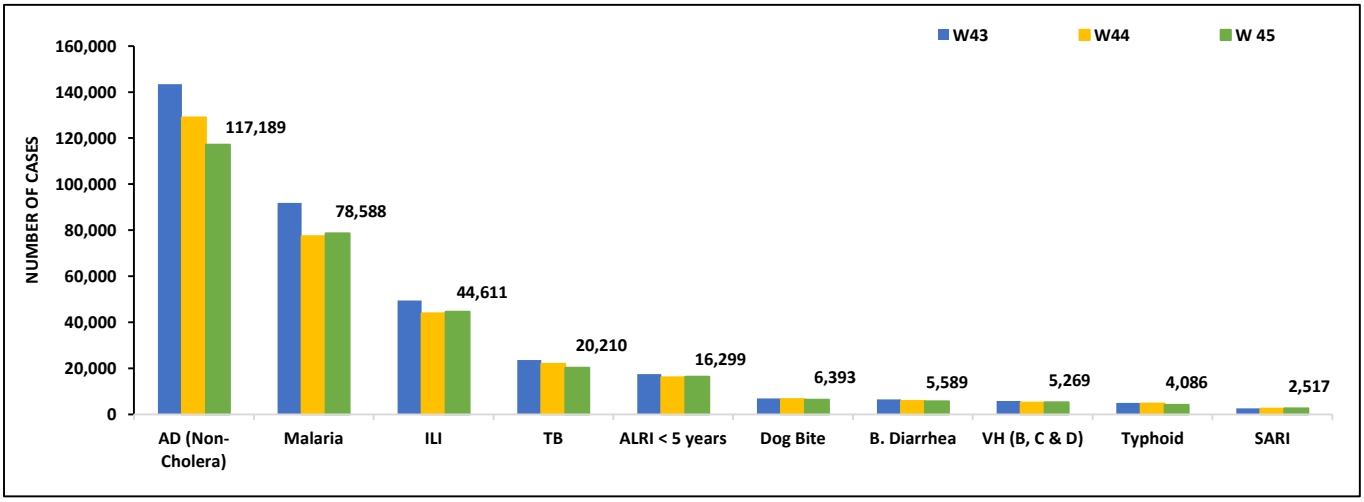
Brucellosis

- **Strengthen Surveillance and Diagnosis**: Increase detection and reporting of brucellosis cases, particularly in livestock-related regions.
- **Multi sectorial collaboration**: Multi sectorial collaboration between human and animal health departments.
- **Control of Livestock Diseases:** Implement vaccination and disease management programs in livestock populations.
- **Ongoing Community Education:** Promote continuous education on brucellosis prevention, especially in rural areas with high livestock exposure for control of disease at animal interface.
- **Improve Diagnostic Capacity**: Provision of diagnostics and training for healthcare providers in detecting and managing brucellosis.

Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 45, Pakistan.

Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (Non-Cholera)	1,114	5,043	729	290	16,810	60,192	33,011	117,189
Malaria	10	5,942	1	3	6,731	2,695	63,206	78,588
ILI	2,406	7,197	357	1,362	4,887	0	28,402	44,611
TB	57	103	75	13	356	8,823	10,783	20,210
ALRI < 5 years	1,084	1,472	950	9	963	1,088	10,733	16,299
Dog Bite	87	131	2	0	466	3,711	1,996	6,393
B.Diarrhea	24	1,186	54	3	822	650	2,850	5,589
VH (B, C & D)	6	194	4	1	78	0	4,986	5,269
Typhoid	18	537	48	0	655	1,803	1,025	4,086
Dengue	27	9	94	16	443	1,922	78	2,589
SARI	143	693	236	1	1,196	0	248	2,517
AWD (S. Cholera)	30	119	10	0	72	925	25	1,181
AVH (A&E)	21	18	9	0	309	0	196	553
Measles	9	19	4	0	225	214	66	537
Chikungunya	0	0	0	0	0	0	336	336
CL	0	75	0	0	156	2	11	244
Mumps	5	67	4	0	76	0	78	230
Chickenpox/ Varicella	3	5	10	1	44	7	6	76
Gonorrhea	0	49	0	0	11	0	10	70
Meningitis	5	10	1	0	2	42	2	62
AFP	3	2	6	0	31	12	7	61
Pertussis	0	37	0	0	8	0	1	46
Diphtheria (Probable)	0	2	0	0	14	6	6	28
HIV/AIDS	0	1	0	0	16	9	2	28
Brucellosis	0	0	0	0	11	0	8	19
NT	0	9	0	0	6	1	1	17
VL	0	1	0	0	0	0	10	11
Syphilis	0	2	0	0	2	0	7	11
Leprosy	0	0	0	0	2	0	8	10
Rubella (CRS)	0	9	0	0	0	0	0	9

Figure 1: Most frequently reported suspected cases during Week 45, Pakistan.



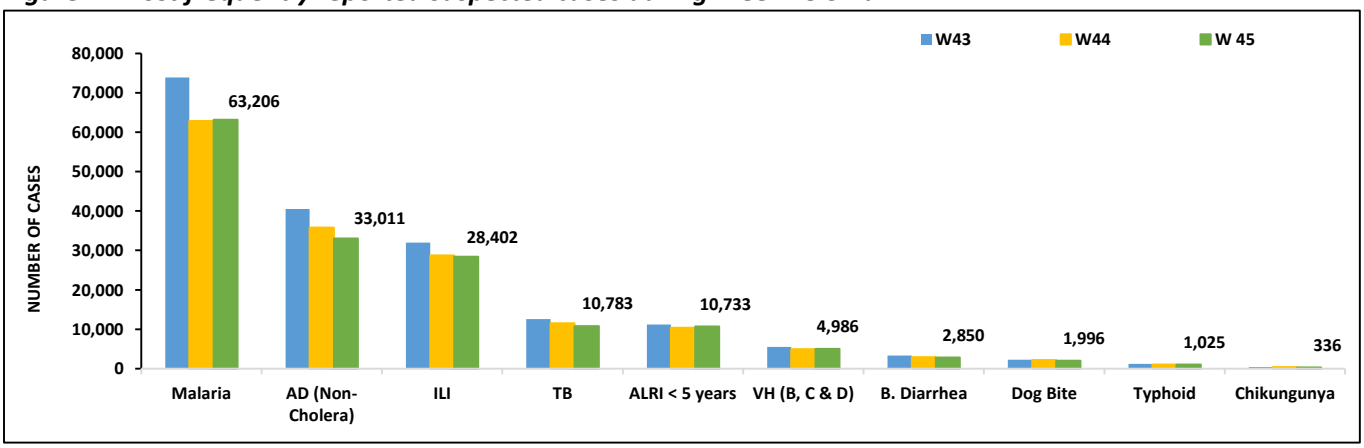
Sindh

- Malaria cases were maximum followed by AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite, Typhoid and Chikungunya.
- Malaria cases are mostly from Larkana, Khairpur and Kamber whereas AD (Non-Cholera) cases are from Khairpur, Badin and Mirpurkhas.
- Seven cases of AFP, Two suspected cases of HIV/ AIDS and Eight suspected cases of Brucellosis reported from Sindh. All are suspected cases and need field verification.
- There is a decrease in numbr of cases reorted observed for AD (Non-Cholera), ILI, TB, B. Diarrhea, dog bite and Chikungunya cases while an increasing trend observed for Malaria, ALRI<5 Years and VH (B, C, D) cases this week.

Table 2: District wise distribution of most frequently reported suspected cases during Week 45, Sindh

Districts	Malaria	AD (Non-Cholera)	ILI	TB	ALRI < 5 years	VH (B, C & D)	B. Diarrhea	Dog Bite	Typhoid	AVH (A&E)
Badin	2,327	1,983	2,734	718	418	434	148	124	89	0
Dadu	4,719	1,863	347	423	889	55	407	225	91	0
Ghotki	1,902	775	45	339	454	211	69	90	2	0
Hyderabad	309	849	278	42	36	26	0	0	11	0
Jacobabad	1,673	702	803	106	301	231	105	133	39	0
Jamshoro	2,812	1,511	168	458	324	350	90	65	35	0
Kamber	5,348	1,556	0	801	252	141	104	163	13	0
Karachi Central	43	497	1,554	18	20	5	13	0	90	189
Karachi East	28	266	314	9	18	5	0	9	3	102
Karachi Keamari	3	361	200	0	54	0	7	0	4	16
Karachi Korangi	40	257	0	24	1	0	4	0	2	3
Karachi Malir	501	1,266	3,109	143	348	60	40	52	27	21
Karachi South	30	64	1	0	0	0	0	1	0	5
Karachi West	232	791	1,143	132	180	106	28	41	28	0
Kashmore	2,201	368	709	270	206	25	39	82	4	0
Khairpur	5,944	2,333	6,585	1,048	1,113	221	348	157	200	0
Larkana	6,712	1,722	9	856	542	75	361	33	7	0
Matiari	1,746	1,073	3	503	327	196	43	55	6	0
Mirpurkhas	3,019	1,864	4,781	617	792	225	70	48	23	0
Naushero Feroze	2,270	1,169	781	501	416	24	141	157	99	0
Sanghar	3,551	1,685	56	1,151	575	1,258	72	138	60	0
Shaheed Benazirabad	1,742	1,476	3	337	242	64	49	83	112	0
Shikarpur	3,285	1,096	0	279	250	623	171	137	4	0
Sujawal	877	1,026	0	309	309	65	88	32	5	0
Sukkur	3,747	1,068	1,791	432	625	160	113	112	5	0
Tando Allahyar	1,971	824	1,200	506	195	267	98	39	5	0
Tando Muhammad Khan	1,133	816	4	54	61	3	24	0	4	0
Tharparkar	2,527	1,591	1,372	321	697	62	92	0	16	0
Thatta	638	883	412	27	599	48	63	20	12	0
Umerkot	1,876	1,276	0	359	489	46	63	0	29	0
Total	63,206	33,011	28,402	10,783	10,733	4,986	2,850	1,996	1,025	336

Figure 2: Most frequently reported suspected cases during Week 45 Sindh

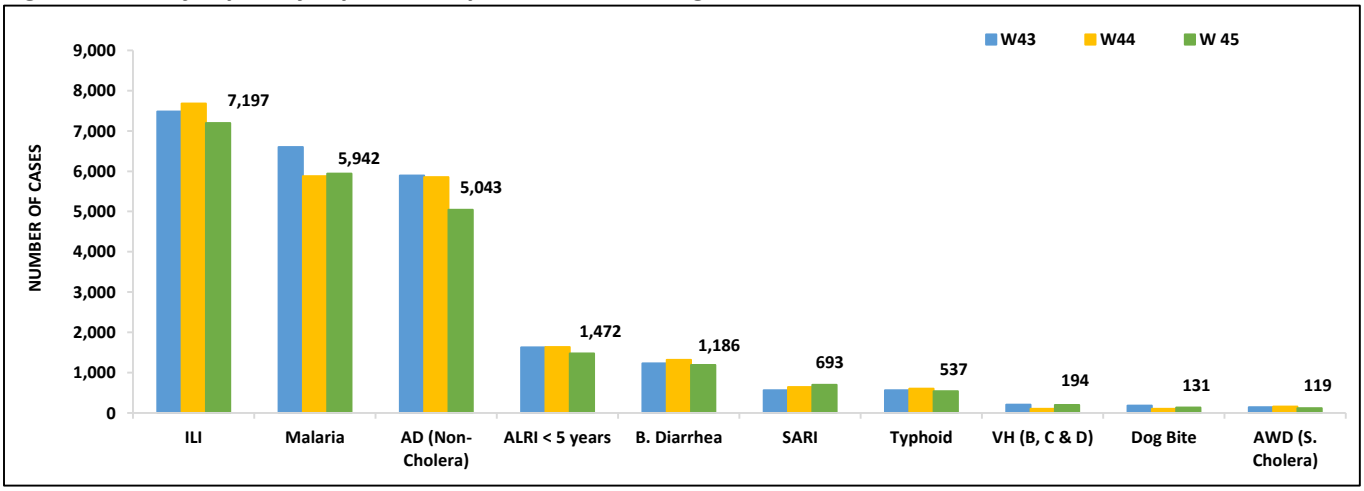


- ILI, Malaria, AD (Non-Cholera), ALRI <5 years, B. Diarrhea, SARI, Typhoid, VH (B, C & D), dog bite and AWD (S. Cholera) cases were the most frequently reported diseases from Balochistan province.
- ILI cases are mostly reported from Kech (Turbat), Quetta and Pishin while Malaria cases are mostly reported from Jhal Magsi, Sohbat Pur and Naseerabad.
- Two cases of AFP, One suspected case of HIV/ AIDS reported from Sindh. They are suspected cases and need field verification.

Table 3: District wise distribution of most frequently reported suspected cases during Week 45, Balochistan

Districts	AD (Non-Cholera)	Malaria	ILI	B. Diarrhea	ALRI < 5 years	Typhoid	SARI	AWD (S.Cholera)	TB	CL
Barkhan	81	120	116	18	7	3	34	3	15	0
Chagai	339	201	147	0	52	0	15	0	3	20
Chaman	110	29	53	10	28	33	20	0	0	3
Dera Bugti	72	173	59	31	16	0	20	0	0	0
Duki	46	45	67	16	41	13	4	0	16	0
Gwadar	19	16	6	5	0	1	0	2	0	5
Hub	23	118	62	0	15	0	0	0	0	0
Jaffarabad	58	271	191	31	62	22	4	0	2	0
Jhal Magsi	289	808	245	56	0	0	25	0	10	1
Kalat	0	0	0	0	0	0	0	0	0	0
Kech (Turbat)	1,011	412	245	6	36	NR	1	3	NR	NR
Kharan	416	91	126	0	54	4	6	0	0	0
Khuzdar	544	281	285	2	137	50	73	0	6	21
Killa Saifullah	0	136	137	110	42	0	25	0	0	0
Kohlu	406	134	155	10	61	54	48	NR	NR	2
Lasbella	40	570	297	89	23	1	12	3	10	5
Loralai	298	44	128	46	23	100	13	0	0	0
Mastung	182	75	168	94	43	55	49	41	11	1
Musakhel	48	127	31	9	14	8	10	7	0	7
Naseerabad	50	581	302	67	25	0	45	102	40	1
Nushki	46	51	116	0	35	0	0	0	0	0
Panjgur	217	185	218	139	51	19	12	0	0	28
Pishin	609	56	338	50	169	64	26	0	7	11
Quetta	771	31	352	163	29	100	35	2	0	10
Sherani	56	7	19	2	7	13	2	0	0	0
Sibi	536	156	201	26	11	44	14	0	0	0
Sohbat pur	23	643	225	144	62	14	18	11	7	0
Surab	166	63	62	0	0	0	0	0	0	0
Usta Muhammad	180	246	413	160	36	8	8	20	4	3
Washuk	341	178	179	6	80	7	12	0	0	1
Zhob	220	94	100	182	27	80	6	0	0	0
Total	7,197	5,942	5,043	1,472	1,186	693	537	194	131	119

Figure 3: Most frequently reported suspected cases during Week 45, Balochistan

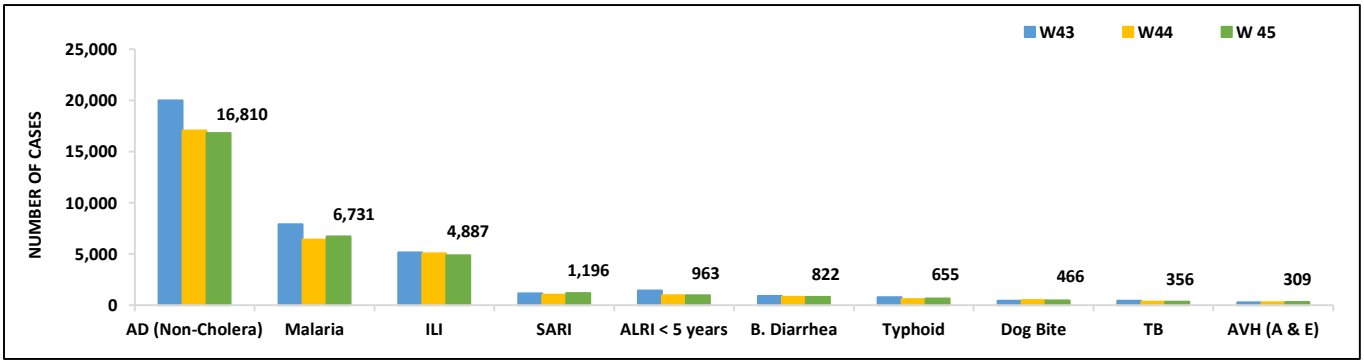


- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, SARI, ALRI<5 Years, B. Diarrhea, Typhoid, dog bite, TB and AVH (A & E) cases.
- AD (Non-Cholera) ILI and dog bite cases showed a decreasing trend while Malaria, SARI, B. Diarrhea, Typhoid and AVH (A & E) cases showed an increasing trend this week.
- Thirty-one cases of AFP, Sixteen suspected cases of HIV/ AIDS and Eleven suspected cases of Brucellosis reported from KP. All are suspected cases and need field verification.

Table 4: District wise distribution of most frequently reported suspected cases during Week 45, KP

Districts	AD (Non-Cholera)	Malaria	ILI	B.Diarrhea	SARI	ALRI <5 Years	Typhoid	Dog Bite	TB	AVH (A&E)
Abbottabad	287	36	106	3	46	3	44	4	13	0
Bajaur	869	250	61	58	34	73	6	21	13	82
Bannu	659	1,550	10	9	18	46	89	8	18	3
Battagram	58	48	330	NR	NR	NR	0	14	NR	NR
Buner	209	175	0	0	0	0	5	6	1	0
Charsadda	805	247	624	0	82	23	75	2	6	9
Chitral Lower	185	10	104	19	15	10	7	7	3	2
Chitral Upper	98	1	14	8	16	2	8	3	2	2
D.I. Khan	935	670	0	0	14	15	0	14	40	0
Dir Lower	1,072	250	0	0	81	60	43	32	10	26
Dir Upper	829	10	88	0	5	2	4	0	12	3
Hangu	46	152	0	0	0	2	0	0	4	0
Haripur	544	8	142	3	27	1	5	0	12	16
Karak	233	227	130	154	15	15	5	8	6	0
Khyber	367	248	69	39	25	113	57	21	8	7
Kohat	338	222	108	95	14	18	3	7	0	1
Kohistan Lower	106	5	0	27	5	13	4	0	0	0
Kohistan Upper	351	14	8	0	9	13	10	0	18	0
Kolai Palas	61	3	10	11	3	1	1	0	0	0
L & C Kurram	32	19	38	0	0	18	4	1	0	0
Lakki Marwat	536	435	2	0	24	20	9	56	4	0
Malakand	554	47	43	21	31	69	30	0	2	40
Mansehra	347	5	201	85	6	3	14	4	1	0
Mardan	304	22	0	0	41	1	0	3	6	0
Mohmand	139	340	162	173	2	17	5	7	1	2
North Waziristan	43	15	0	14	8	27	4	0	0	0
Nowshera	1,013	137	47	14	2	25	5	7	5	13
Orakzai	157	28	16	0	2	12	10	8	0	0
Peshawar	2,045	101	983	133	93	125	59	2	13	7
SD Tank	10	12	3	0	0	0	0	0	0	0
Shangla	833	564	0	20	27	9	39	49	90	4
SWA	52	69	173	79	31	20	14	6	2	0
Swabi	860	90	780	51	125	9	7	100	23	31
Swat	1,315	56	201	0	124	15	50	62	7	53
Tank	346	589	197	0	13	6	30	4	34	0
Tor Ghar	39	56	0	7	2	7	0	1	0	8
Upper Kurram	133	20	237	173	23	29	9	9	2	0
Total	16,810	6,731	4,887	1,196	963	822	655	466	356	309

Figure 4: Most frequently reported suspected cases during Week 45, KP



ICT, AJK & GB

ICT: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera) and TB. ILI and AD (Non-Cholera) cases showed a decreasing trend while TB cases showed an increasing trend this week.

AJK: ILI cases were maximum followed by AD (Non-Cholera), ALRI <5 years, SARI, dog bite, TB, AWD (S. Cholera), Dengue, B. Diarrhea and AVH (A & E) cases. A decreasing trend observed for AD (Non-Cholera), ALRI <5 years, SARI, TB, AWD (S. Cholera), B. Diarrhea and AVH (A & E) cases this week. 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, B. Diarrhea and Typhoid cases. A decreasing trend observed for AD (Non-Cholera), SARI, TB and B. Diarrhea cases while an increasing trend observed for ALRI <5 Years, ILI and Typhoid cases this week. Six suspected cases of AFP reported from GB. Field investigation required to verify the cases..

Figure 5: Most frequently reported suspected cases during Week 45, ICT

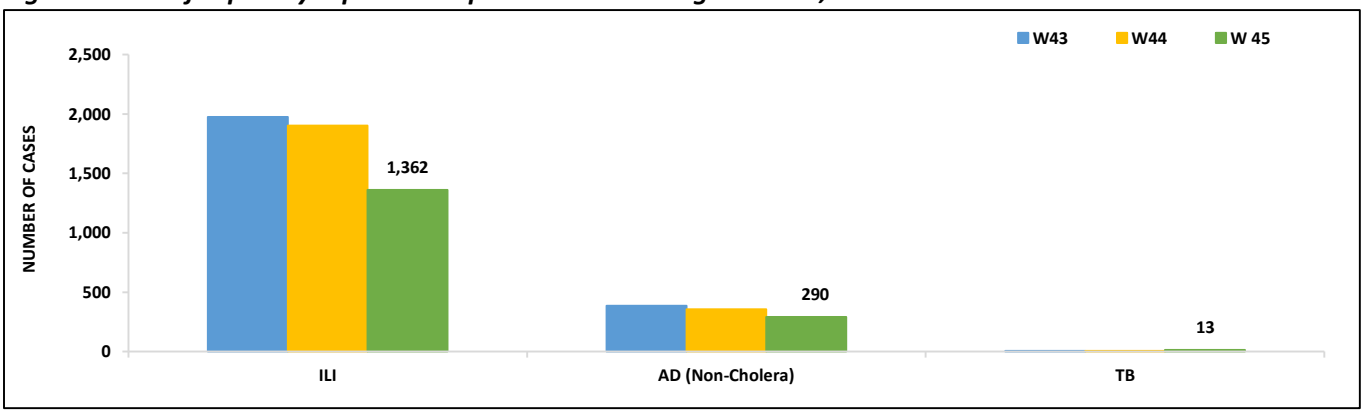


Figure 6: Week wise reported suspected cases of ILI, ICT

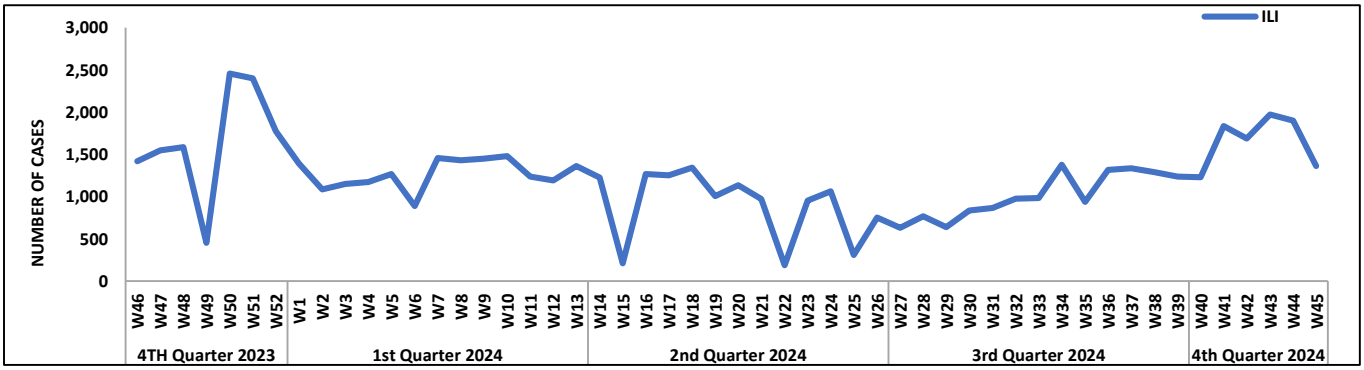


Figure 7: Most frequently reported suspected cases during Week 45, AJK

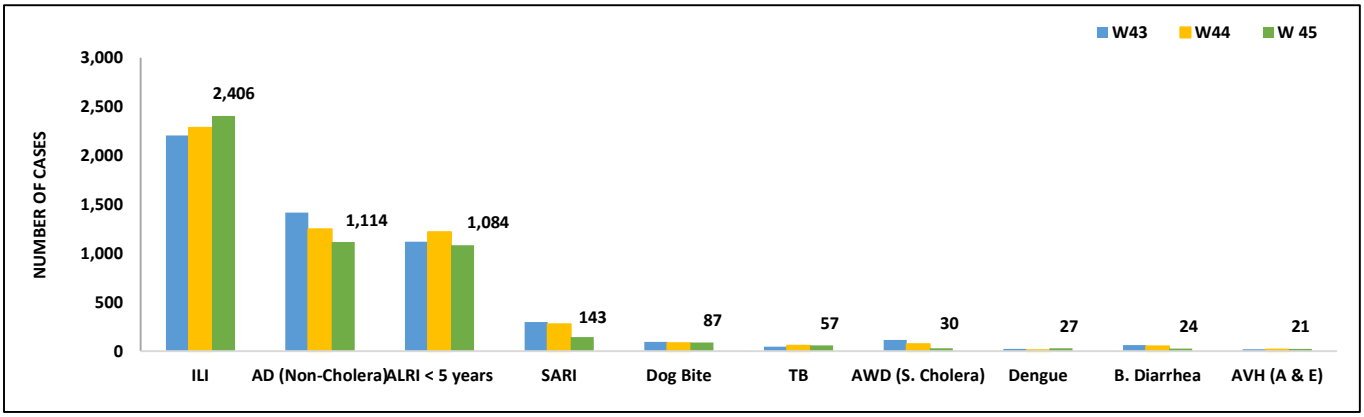


Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK

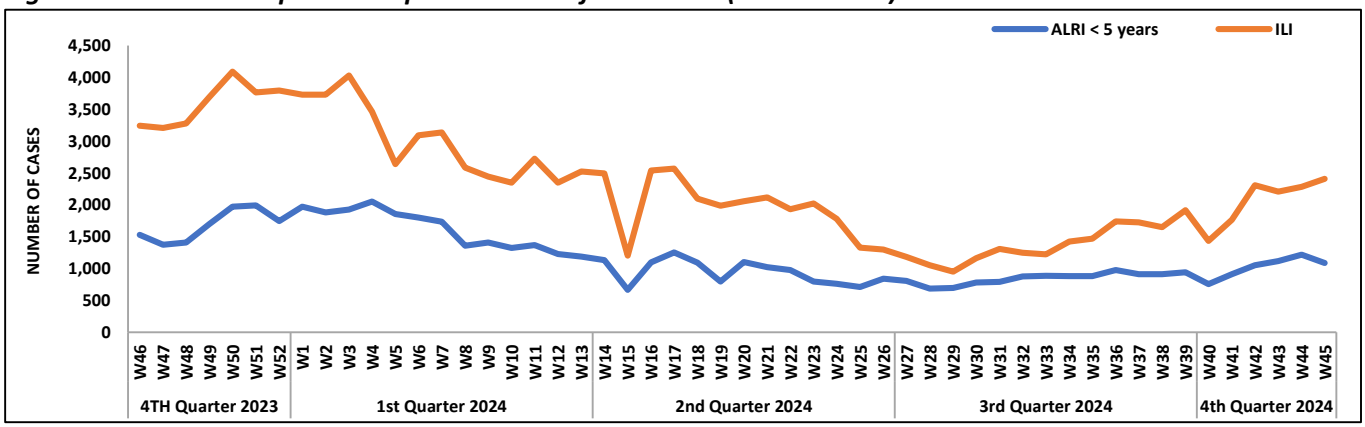


Figure 9: Most frequent cases reported during Week 45, GB

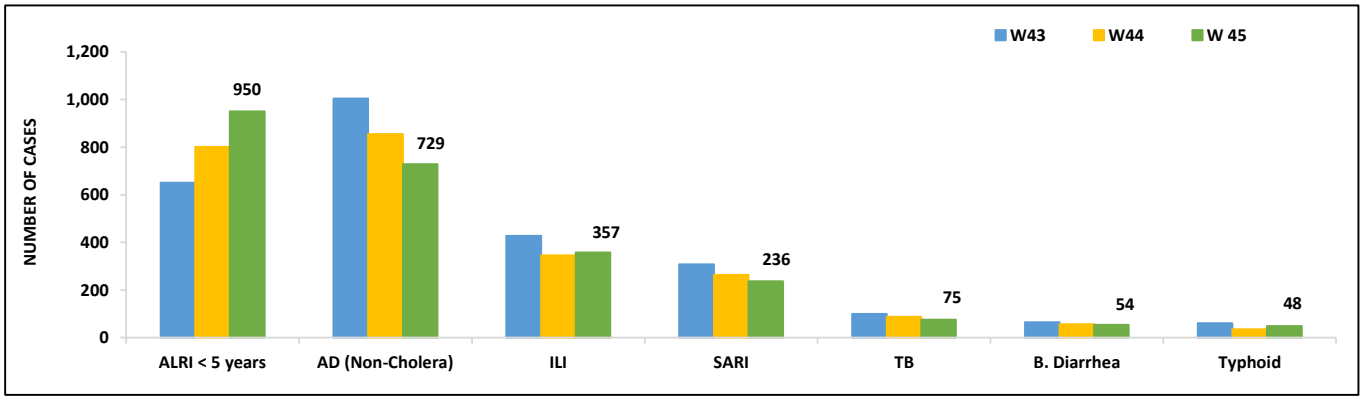
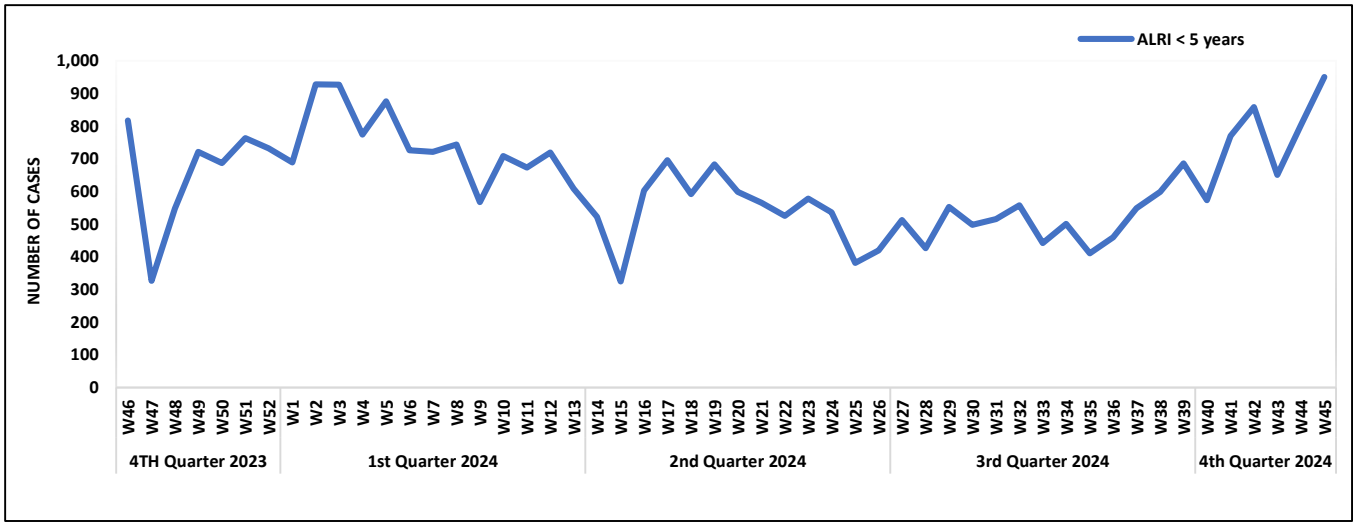


Figure 10: Week wise reported suspected cases of ALRI <5 years, GB



Punjab

- AD (Non-Cholera) cases were maximum followed by TB, dog bite, Malaria, Typhoid, ALRI<5 Years, AWD (S. Cholera), B. Diarrhea and Measles cases.
- AD (Non-Cholera), TB, dog bite, Malaria, Typhoid, ALRI<5 Years, AWD (S. Cholera), B. Diarrhea and Measles cases showed a decreasing trend this week.
- Ten cases of AFP and Two suspected cases of HIV/ AIDS reported from Punjab. Field investigation required to verify the cases.

Figure 11: Most frequently reported suspected cases during Week 45, Punjab.

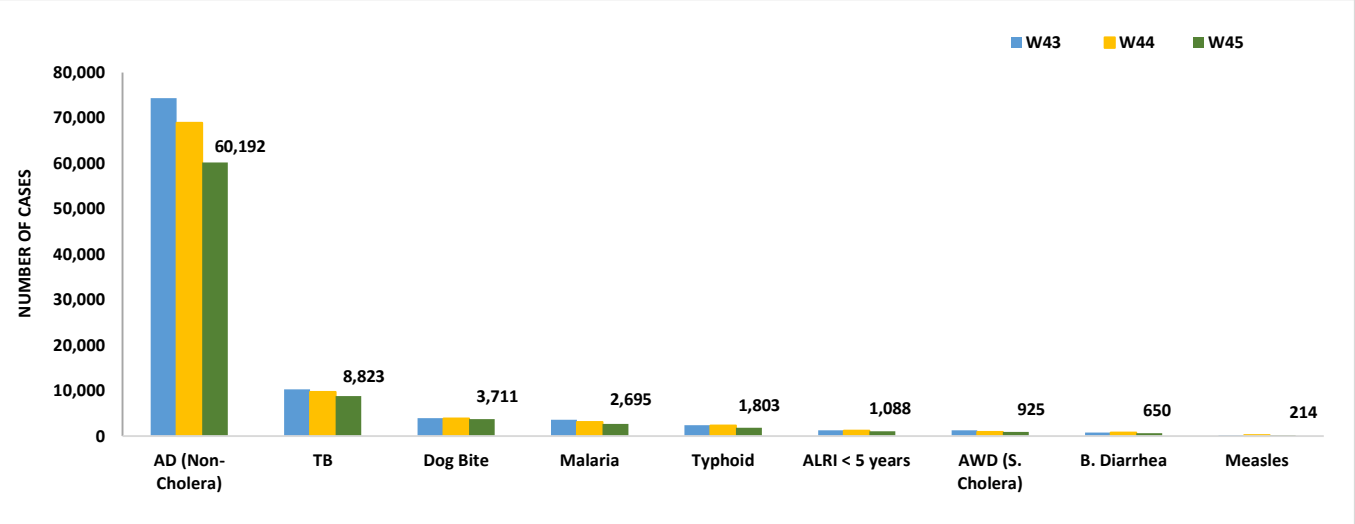


Figure 12: Week wise reported suspected cases of AD (Non-Cholera), Punjab.

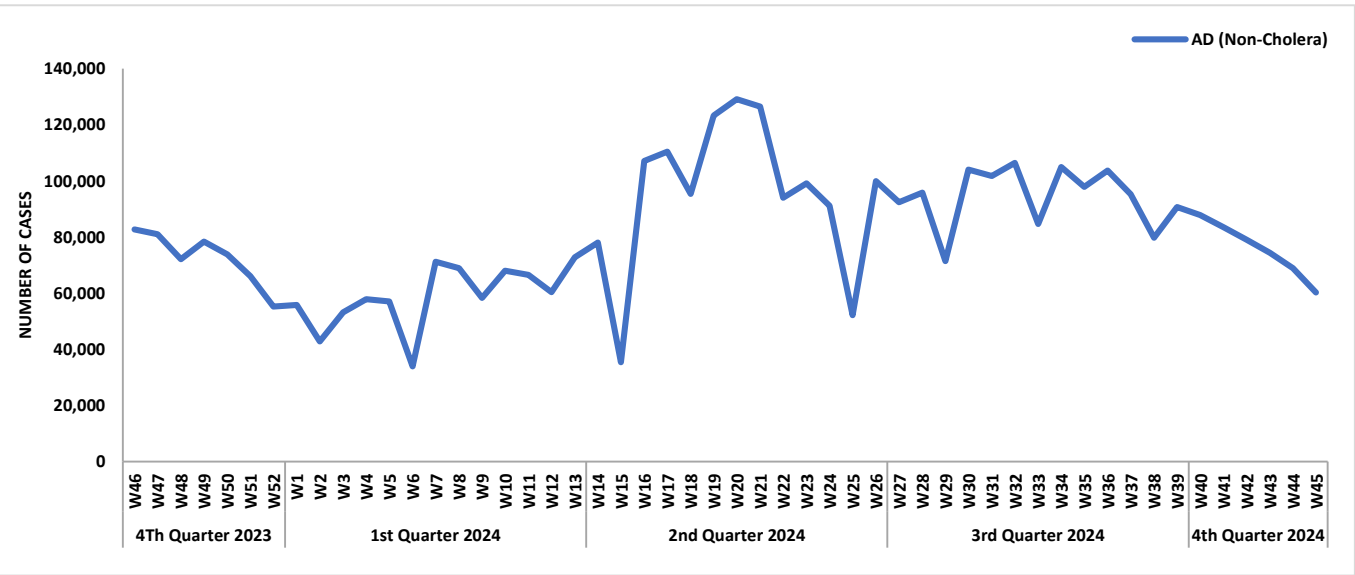


Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 45

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)		14	0	-	-	1	0	-	-	-	-	-	-	0	0
AD (Non-Cholera)		73	0	-	-	-	-	-	-	-	-	-	-	0	0
Malaria		954	71	-	-	-	-	-	-	-	-	-	-	235	9
CCHF		-	-	6	0	-	-	0	0	-	-	-	-	0	0
Dengue		895	41	-	-	-	-	65	11	-	-	-	-	242	23
VH (B)		2,698	91	-	-	-	-	-	-	103	1	-	-	1,427	14
VH (C)		2,697	248	90	29	-	-	-	-	103	0	-	-	1,433	37
VH (A&E)		-	-	-	-	2	0	-	-	-	-	-	-	0	0
Covid-19		-	-	16	0	3	0	-	-	-	-	-	-	5	0
HIV		-	-	-	-	-	-	-	-	-	-	-	-	0	0
TB		-	-	-	-	-	-	-	-	-	-	-	-	141	4
Syphilis		-	-	-	-	-	-	-	-	-	-	-	-	10	0
Typhoid		461	9	-	-	-	-	-	-	-	-	-	-	1	0
Diptheria (Probabale)		-	-	-	-	3	1	-	-	-	-	-	-	0	0
Pertussis		-	-	-	-	-	-	-	-	-	-	-	-	0	0
M-POX		-	-	0	0	1	0	1	0	-	-	-	-	0	0
Measles		66	24	35	28	236	106	4	2	1	0	169	54	5	3
Rubella		66	3	35	0	236	4	4	0	1	0	169	2	5	0
B.Diarrhea		-	-	-	-	-	-	-	-	-	-	-	-	0	0
Chikungunya		-	-	0	0	-	-	-	-	-	-	-	-	0	0
Covid-19	Out of SARI	6	0	0	0	41	0	30	1	11	0	92	3	0	0
	Out of ILI	0	0	0	0	1	0	58	0	3	0	105	3	0	0
Influenza A	Out of SARI	6	2	0	0	41	5	30	0	11	0	92	3	0	0
	Out of ILI	0	0	0	0	1	0	58	0	3	0	105	5	0	0
Influenza B	Out of SARI	6	0	0	0	41	0	30	0	11	1	92	2	0	0
	Out of ILI	0	0	0	0	1	0	58	0	3	0	105	3	0	0
RSV	Out of SARI	6	0	0	0	41	0	30	0	11	0	92	0	0	0
	Out of ILI	0	0	0	0	1	0	58	0	3	0	105	0	0	0

- 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 45, 2024

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	106	95%
	Bannu	238	138	58%
	Battagram	63	13	21%
	Buner	34	29	85%
	Bajaur	44	36	82%
	Charsadda	59	59	100%
	Chitral Upper	34	28	82%
	Chitral Lower	35	34	97%
	D.I. Khan	114	112	98%
	Dir Lower	74	71	96%
	Dir Upper	37	32	86%
	Hangu	22	10	45%
	Haripur	72	68	94%
	Karak	35	35	100%
	Khyber	52	18	35%
	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	13	31%
	Upper Kurram	41	27	66%
	Malakand	42	30	71%
	Mansehra	136	110	81%
	Mardan	80	73	91%
	Nowshera	55	51	93%
	North Waziristan	13	3	23%
	Peshawar	153	130	85%
	Shangla	37	37	100%
	Swabi	64	58	91%
	Swat	77	69	90%
	South Waziristan	135	54	40%
	Tank	34	29	85%
	Torghar	14	12	86%
	Mohmand	68	65	96%
	SD Peshawar	5	0	0%
	SD Tank	58	5	9%
	Orakzai	69	14	20%
	Mirpur	37	37	100%
	Bhimber	42	20	48%
	Kotli	60	60	100%

Azad Jammu Kashmir	Muzaffarabad	45	44	98%
	Poonch	46	46	100%
	Haveli	40	40	100%
	Bagh	40	40	100%
	Neelum	39	39	100%
	Jhelum Vellay	29	29	100%
	Sudhnooti	27	27	100%
Islamabad Capital Territory	ICT	21	21	100%
	CDA	15	8	53%
Balochistan	Gwadar	26	1	4%
	Kech	44	24	55 %
	Khuzdar	74	66	89%
	Killa Abdullah	26	0	0%
	Lasbella	55	55	100%
	Pishin	69	54	78%
	Quetta	55	35	64%
	Sibi	36	20	56%
	Zhob	39	27	69%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	9	60%
	Kohlu	75	45	60%
	Chagi	36	26	72%
	Kalat	41	40	98%
	Harnai	17	0	0%
	Kachhi (Bolan)	35	0	0%
	Jhal Magsi	28	28	100%
	Sohbat pur	25	25	100%
	Surab	32	27	84%
	Mastung	45	45	100%
	Loralai	33	29	88%
	Killa Saifullah	28	26	93%
	Ziarat	29	0	0%
	Duki	31	14	45%
	Nushki	32	29	91%
	Dera Bugti	45	32	71%
	Washuk	46	33	72%
	Panjgur	38	24	63%
	Awaran	23	0	0%
	Chaman	24	24	100%
	Barkhan	20	19	95%
	Hub	33	13	39%
	Musakhel	41	7	17%
	Usta Muhammad	34	34	100%
Gilgit Baltistan	Hunza	32	32	100%
	Nagar	25	20	80%
	Ghizer	40	40	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	40	54%
	Ghotki	64	64	100%
	Umerkot	43	43	100%
	Naushahro Feroze	107	96	90%
	Tharparkar	276	230	83%
	Shikarpur	60	59	98%
	Thatta	52	45	87%
	Larkana	67	67	100%
	Kamber Shadadkot	71	71	100%
	Karachi-East	23	19	83%
	Karachi-West	20	20	100%
	Karachi-Malir	37	31	84%
	Karachi-Kemari	18	17	94%
	Karachi-Central	11	7	64%
	Karachi-Korangi	18	17	94%
	Karachi-South	4	4	100%
	Sujawal	55	41	75%
	Mirpur Khas	106	103	97%
	Badin	125	117	94%
	Sukkur	64	63	98%
	Dadu	90	88	98%
	Sanghar	100	100	100%
	Jacobabad	44	44	100%
	Khairpur	169	167	99%
	Kashmore	59	59	100%
	Matiari	42	41	98%
	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 45, 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	1	100%
	Shaheed Benazirabad	1	1	100%
	Karachi-East	1	1	100%
	Karachi-Central	1	0	0%

National Workshop on Implementation of Mortality Surveillance System in Pakistan

The Center for Disease Control (CDC), National Institute of Health (NIH), Islamabad, in collaboration with the UK Health Security Agency (UKHSA), successfully convened a three-day national workshop in Islamabad from November 18th to 20th, 2024. The primary objective of this workshop was to review the implementation plan for establishing a Mortality Surveillance System in Pakistan.

The workshop brought together a diverse group of stakeholders, including senior health authorities, public health professionals, and disease surveillance focal persons from all provincial and regional health departments, as well as senior officials from provincial healthcare commissions.

The workshop focused on reviewing the strategic framework, operational workflows, and key activities necessary for establishing an effective Mortality Surveillance System in Pakistan. Participants engaged in extensive discussions on integrating diverse data sources and aligning the system with practical approaches for implementation considerations.

Participants actively contributed to the discussions, providing valuable feedback and reaffirming their commitment to advancing this initiative. The establishment of a strong Mortality surveillance system will significantly contribute to improving disease prevention and control efforts nationwide and provide a comprehensive overview of prevalent causes of death.

Dr. Muhammad Salman, CEO of NIH, expressed his appreciation for the dedication and efforts of all participants and assured NIH's full support to provincial and regional health authorities and stakeholders in operationalizing this system. This collaborative effort marks a significant step forward in strengthening Pakistan's health system and enhancing its capacity to detect and respond to potential public health threats in the country.

Notes from the field:

Diphtheria Outbreak Investigation in Abdul Wahab Bugti village, Union Council Sanhri, District Sohbatpur from October 16 to October 20, 2024.

Dr. Rasheed Fellow 16th Cohort
Dr. Shahzada Kamran PDSRU Balochistan

Introduction

Diphtheria is a bacterial disease caused by Corynebacterium diphtheriae, primarily affecting the upper respiratory tract, and can lead to severe complications, including myocarditis and neuropathy. Without proper treatment, diphtheria can be fatal in approximately 30% of cases, particularly among unvaccinated individuals and young children. Risk

factors for diphtheria transmission include overcrowding, malnutrition, weakened health infrastructure, disruption of health services (such as during natural disasters), and interruptions in routine immunization services.

This report outlines the investigation of a diphtheria outbreak in Abdul Wahab Bugti village, Union Council Sanhri, District Sohbatpur, Balochistan, Pakistan. Following the death of an index case suspected of diphtheria, a team of public health experts conducted an investigation from October 16 to October 20, 2024.

Objectives

1. To assess the vaccination status of children in Abdul Wahab Bugti village.
2. To conduct active case searches for identification of symptomatic children and confirm the presence of diphtheria cases based on clinical assessment and laboratory testing.
3. To identify potential risk factors associated with the outbreak.
4. To provide recommendations for future prevention.

Methods

A cross-sectional study was conducted in this outbreak investigation to assess the prevalence of diphtheria cases and the vaccination status of children in Abdul Wahab Bugti village. The study was carried out from October 16 to October 20, 2024, in Abdul Wahab Bugti village, located in Union Council Sanhri, District Sohbatpur, Balochistan, Pakistan.

The investigation focused on children aged 0-12 years residing in Abdul Wahab Bugti village and neighboring areas. Symptomatic children were assessed using the WHO's standard case definition for probable diphtheria. Specifically, children exhibiting symptoms consistent with diphtheria, such as fever, sore throat, swollen neck, and weakness, were targeted for examination.

Data collection for the outbreak investigation involved administering structured questionnaires to caregivers of identified diphtheria cases, which gathered demographic data, immunization history, and potential risk factors, including vaccination status, recent travel history, and health-seeking behaviors. Community engagement was essential, with interviews from local leaders providing important information on the outbreak, including additional cases and deaths. Pediatricians conducted clinical assessments on symptomatic children to confirm diphtheria cases, with laboratory testing as needed. Ethical considerations were emphasized, with informed consent obtained from caregivers, ensuring confidentiality and voluntary participation. The study protocol received approval from relevant health authorities to comply with ethical standards.

Descriptive statistical analysis was conducted to check vaccination status, age distribution, and clinical symptoms, aiming to identify patterns related to diphtheria cases, vaccination coverage, malnutrition, and healthcare access.

Results

The index case was confirmed through laboratory testing, revealing diphtheria-related complications and belonging to Abdul Wahab Bugti village. A total of 17 active cases were identified during the outbreak investigation with total eight deaths in the same and neighboring villages. The median age of the affected children ranged from 5 to 12 years, with 66% cases above the age of 5 years and 34% of cases being under 5 years of age. Notably, all reported cases were zero-dose children who had not received the Pentavalent 1 vaccine. Over 95% of household clusters lacked vaccination cards or had never vaccinated their children. Risk factor analysis revealed presence of malnutrition, poor health-seeking behavior, and inadequate healthcare services as critical contributing factors to the outbreak

Discussion

The outbreak investigation in Abdul Wahab Bugti village revealed that the primary contributing factor to the diphtheria outbreak was the significantly low vaccination coverage among children. All identified cases were zero-dose children who had not received the Pentavalent 1 vaccine, which includes protection against diphtheria, tetanus, and pertussis. This finding is consistent with previous studies demonstrating that unvaccinated children are at a heightened risk of contracting diphtheria and suffering severe complications, including mortality(1).

In addition to low vaccination rates, the investigation identified several contributory factors exacerbating the outbreak, including malnutrition, poor health-seeking behavior, overcrowding, and inadequate primary healthcare services. Malnutrition has been widely recognized as a critical risk factor that can weaken immune responses, making affected individuals more susceptible to infectious diseases(2).

Overall, this outbreak serves as a critical reminder of the vulnerabilities present in under-immunized populations and the need for comprehensive public health strategies that address both vaccination coverage and the social determinants of health. Increased immunization rates, coupled with efforts to improve nutrition, healthcare access, and community education, are essential to mitigating the risk of diphtheria and other vaccine-preventable diseases in the future（5).

Conclusion

The diphtheria outbreak in Abdul Wahab Bugti village was primarily attributed to low vaccination rates within the community. To prevent future outbreaks, it is essential to increase immunization coverage, improve healthcare access, and ensure prompt management and referral of moderate to severe cases. Additionally, addressing underlying issues such as malnutrition, poor health-seeking behavior, and social and economic disparities is vital for improving the overall health and well-being of the population. Community engagement and education will play crucial roles in enhancing awareness and promoting vaccination compliance, ultimately mitigating the risk of diphtheria and other vaccine-preventable diseases.

Recommendations

To effectively address the diphtheria outbreak in Abdul Wahab Bugti village and prevent future occurrences, the following recommendations are proposed:

1. **Surveillance and Monitoring**: Strengthen surveillance systems to monitor vaccination coverage and detect any new cases of diphtheria or other vaccine-preventable diseases promptly.
2. **Enhanced Vaccination Campaigns**: Implement targeted vaccination drives to increase the coverage of the Pentavalent vaccine among unvaccinated children in the affected areas.
3. **Community Awareness and Education**: Conduct community engagement programs to educate residents about the importance of vaccination and preventive health measures.
4. **Nutrition Support Programs**: Implement nutrition support initiatives to address malnutrition among children and vulnerable populations in the community.
5. **Improving Sanitation and Hygiene**: Enhance sanitation facilities within the community, including access to clean drinking water and proper waste disposal systems.
6. **Inter-sectorial Collaboration**: Enhance collaboration between health, education, and community development sectors to create a comprehensive approach to public health challenges. Engage local leaders and community organizations in the planning and implementation of health initiatives to ensure cultural relevance and community buy-in.

By implementing these recommendations, it is possible to enhance the overall health status of the population in Abdul Wahab Bugti village, reduce the risk of future diphtheria outbreaks, and improve the resilience of the community against infectious diseases.

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Knowledge hub

Antimicrobial Resistance (AMR): A Global Health Crisis

Antimicrobial resistance (AMR) is one of the most urgent public health threats of the 21st century. It occurs when bacteria, viruses, fungi, and parasites evolve to resist the effects of the drugs that are intended to kill them. This resistance compromises the effectiveness of antibiotics, antivirals, antifungals, and antiparasitic medications, making infections harder to treat, more expensive to manage, and increasingly deadly. According to the World Health Organization (WHO), AMR is responsible for an estimated 700,000 deaths annually worldwide. If current trends continue, this number could rise to 10 million deaths per year by 2050, surpassing cancer as the leading cause of death globally (WHO, 2023).

The Impact of AMR on Public Health

AMR affects the treatment of common infections such as pneumonia, urinary tract infections, and tuberculosis (TB), as well as more complex conditions like sepsis and surgical infections. The increasing resistance to antibiotics has led to longer hospital stays, the need for more expensive drugs, and higher mortality rates.

AMR Week, observed globally in November, is a key platform for raising awareness about antimicrobial resistance (AMR).

The 2024 theme, "Educate. Advocate. Act Now," emphasizes the need to educate society, advocate for policy changes, and take immediate action against AMR.

In Pakistan, where AMR awareness is limited, this week provides an opportunity to inform the public, healthcare professionals, and policymakers about the risks of AMR. Public campaigns can correct misconceptions about antibiotics, while healthcare workers must be educated on proper antibiotic prescription and use to help reduce AMR

Key Drivers of AMR

Several factors contribute to the rise of AMR, including:

- **Overuse and Misuse of Antibiotics**: The over-prescription and improper use of antibiotics in humans and animals, including self-medication, significantly contribute to AMR. The CDC reports that 30% of outpatient antibiotic prescriptions are unnecessary, accelerating the development of resistant bacteria.
- **Inadequate Infection Prevention and Control**: Poor infection control in healthcare settings, such as inadequate sanitation and improper sterilization of medical instruments, leads to the spread of resistant pathogens, particularly in hospitals where healthcare-associated infections (HCAIs) are common.
- **Antibiotics in Agriculture**: The use of antibiotics in livestock for growth promotion or disease prevention fosters the development of resistant bacteria, which can spread to humans through meat consumption or contact with contaminated environments.
- **Global Travel and Trade**: The movement of people, animals, and goods across borders facilitates the spread of resistant pathogens, making AMR a global health challenge

The Global Response to AMR

WHO's Global Action Plan on AMR (2015) focuses on five key areas:

1. **Awareness and Understanding**: Educating the public on AMR risks and proper antibiotic use.
2. **Surveillance and Research**: Monitoring resistance trends and developing new antibiotics and vaccines.
3. **Reducing Antibiotic Use**: Ensuring antibiotics are prescribed only when necessary and correctly.
4. **Infection Prevention**: Strengthening hygiene and infection control in healthcare settings.
5. **Regulation and Rational Use**: Regulating antibiotic use in healthcare and agriculture.

CDC's Antibiotic Resistance Solutions Initiative includes:

1. **Tracking and Reporting**: Monitoring antibiotic resistance patterns through the National Antimicrobial Resistance Monitoring System (NARMS).
2. **Preventing Infections**: Promoting vaccination, hygiene, and proper wound care to reduce the need for antibiotics.
3. **Improving Antibiotic Use**: Implementing stewardship programs to ensure appropriate antibiotic prescribing.
4. **Developing New Antibiotics**: Supporting the development of new antibiotics and alternative treatments to address resistant infections.

What Can Be Done to Address AMR?

Combating AMR requires a multifaceted approach involving individuals, healthcare providers, governments, and industries. Here are some strategies to reduce the spread of AMR:

1. **For Individuals**:
   - Avoid self-medicating and only take antibiotics when prescribed by a healthcare provider.
   - Complete the full course of antibiotics as prescribed, even if you feel better before finishing the medication.
   - Practice good hygiene, including regular hand washing and safe food handling, to prevent infections.
   - Get vaccinated to prevent infections that may require antibiotics.
2. **For Healthcare Providers**:
   - Follow evidence-based guidelines for antibiotic prescribing.
   - Implement infection prevention and control measures to reduce the spread of resistant bacteria.
   - Educate patients about the risks of AMR and the importance of adhering to prescribed treatments.
3. **For Policymakers and Governments**:
   - Strengthen regulations on the sale and distribution of antibiotics to ensure they are used appropriately.
   - Invest in AMR surveillance systems and research into new antibiotics and alternatives.
   - Promote global collaboration to address the spread of resistant pathogens, particularly through international travel and trade.
4. **For the Agricultural Industry**:
   - Reduce the use of antibiotics in livestock and poultry farming, especially for growth promotion or disease prevention in healthy animals.
   - Implement better hygiene and biosecurity measures in farms to prevent the spread of infections.

Key Takeaways

AMR is a complex, global health issue that requires urgent action. The WHO and CDC have made significant strides in raising awareness and developing strategies to combat this growing threat. However, much more needs to be done at every level of society—from individuals to governments—to slow the spread of resistance and ensure that antibiotics remain effective for future generations. Through education, advocacy, and collective action, we can work together to combat AMR and protect the effectiveness of antimicrobial therapies.

Citations:

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World Health Organization

Misusing and overusing ANTIBIOTICS puts us all at risk

Taking antibiotics when they are not needed accelerates emergence of antibiotic resistance, one of the biggest threats to global health

Antibiotic resistant infections can lead to longer hospital stays, higher medical costs and more deaths

Overuse of antibiotics can cause bacteria to become resistant, meaning current treatments will no longer work

You can help reduce antibiotic resistance

Always follow the advice of a qualified health care professional when taking antibiotics

Antibiotic resistant infections can affect anyone, of any age, in any country

It is the bacteria itself not the person or the animal – that becomes resistant to antibiotics

When bacteria become resistant to antibiotics, common infections will no longer be treatable

National Institute of Health
Ministry of National Health Services, Regulations & Coordination
Government of Pakistan

UK Health Security Agency

World Health Organization

USAID