

**PUBLIC HEALTH BULLETIN-PAKISTAN**

# **Integrated Disease Surveillance & Response (IDSR) Report**

**Center of Disease Control  
National Institute of Health, Islamabad**

**Vol. 4 | Week 13**  
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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**

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## Public Health Bulletin - Pakistan, Week 13, 2024

### Overview

Pakistan's Public Health Pulse: A Snapshot from Week 13

This edition of the Public Health Bulletin provides a comprehensive overview of Pakistan's health situation in Week 13, serving as a valuable resource for both healthcare professionals and the general public.

### IDSR Reports

The report dives into the most prevalent illnesses reported during this period, including acute diarrhea, malaria, influenza-like illnesses, and respiratory infections in young children. It also tracks trends in tuberculosis, viral hepatitis, typhoid, and dog bites. This data empowers stakeholders, from doctors to public health officials, to tailor preventive measures and address areas of greatest concern.

### Ongoing Events

This week's data revealed an increase in cases of acute non-cholera diarrhea, malaria, and tuberculosis compared to the previous week. Meanwhile, other monitored illnesses, remained relatively stable.

### Field Reports

The Public Health Bulletin extends a warm invitation to Pakistan's field epidemiologists to contribute their expertise to future editions. Sharing their insights is crucial for strengthening Pakistan's public health infrastructure and ensuring a healthier future for all citizens.

This issue also features in-depth investigations: "Investigative Report of Melioidosis Case - Swabi District, Khyber Pakhtunkhwa, Pakistan" and "Outbreak Investigation of Measles Cases and Deaths in Village Muhammad Moosa Muridani, District Jamshoro, Pakistan."

**With the joyous Eid season approaching, the bulletin concludes with some key steps to ensure a healthy and vibrant celebration.** Prioritizing your well-being and that of your loved ones is paramount.

By working together – healthcare professionals, public health officials, and the public alike – we can significantly improve Pakistan's overall health landscape.

Sincerely,

The Chief Editor



- During week 13, the most frequently reported cases were of Acute Diarrhea (Non-Cholera) followed by Malaria, ILI, ALRI <5 years, TB, B. Diarrhea, VH (B, C & D), Typhoid, dog bite and SARI.
- Sixteen cases of AFP reported from KP and thirteen from Sindh. All are suspected cases and need field verification.
- Three suspected cases of HIV/ AIDS reported from Balochistan, two each from Sindh and KP. Field investigation required to verify the cases.
- Nine cases of Brucellosis reported from Balochistan and three from KP. These are suspected cases and require field verification.
- There is an increasing trend observed for Acute Diarrhea (Non-Cholera), Malaria and TB cases while almost the same trend for ILI, ALRI <5 years, B. Diarrhea, VH (B, C & D), Typhoid and dog bite cases this week.

## IDSR compliance attributes

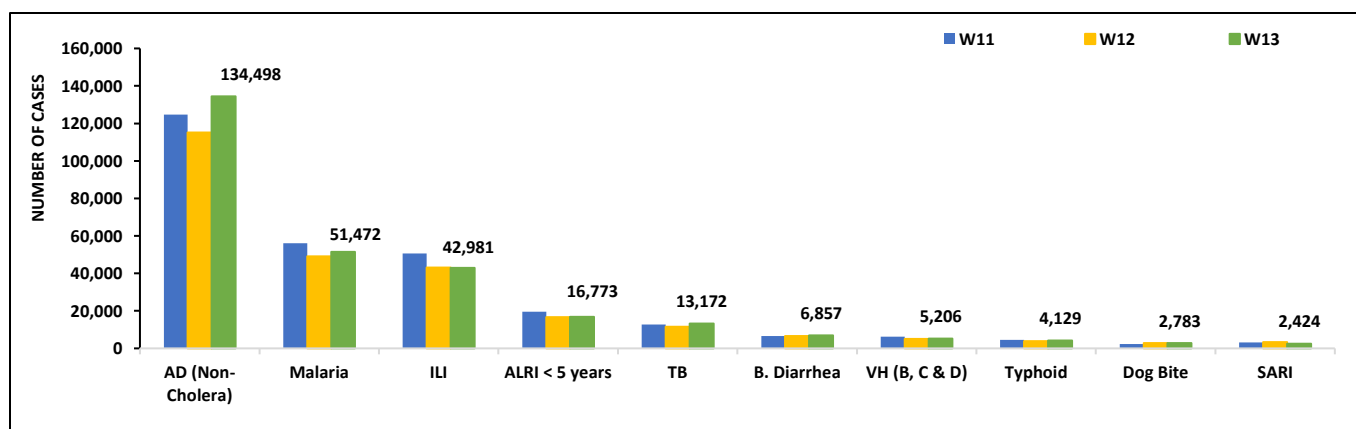
- The national compliance rate for IDSR reporting in 149 implemented districts is 79%
- Gilgit Baltistan and AJK are the top reporting regions with a compliance rate of 100%, followed by Sindh 94%, ICT 83% and Baluchistan 78%
- The lowest compliance rate was observed in KPK.

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2740	1672	61
Azad Jammu Kashmir	382	382	100
Islamabad Capital Territory	35	29	83
Balochistan	1220	955	78
Gilgit Baltistan	374	374	100
Sindh	2086	1970	94
National	6837	5381	79

**Table 1: Province/Area wise distribution of most frequently reported suspected cases during week 13, Pakistan.**

Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (Non-Cholera)	1,334	6,677	395	329	15,277	72,744	37,742	134,498
Malaria	5	3,596	0	1	3,534	3,149	41,187	51,472
ILI	2,523	7,831	389	1,361	5,648	41	25,188	42,981
ALRI < 5 years	1,186	1,947	605	11	1,602	NR	11,422	16,773
TB	41	167	54	9	413	NR	12,488	13,172
B.Diarrhea	56	1,621	36	6	610	1,392	3,136	6,857
VH (B, C & D)	12	90	1	0	80	NR	5,023	5,206
Typhoid	28	586	35	1	489	1,903	1,087	4,129
Dog Bite	68	117	0	0	250	NR	2,348	2,783
SARI	331	769	241	2	934	NR	147	2,424
Measles	16	22	12	0	414	NR	223	687
CL	0	139	0	0	342	8	2	491
AVH(A&E)	18	17	1	0	120	NR	321	477
Mumps	11	54	3	0	70	NR	231	369
AWD (S. Cholera)	21	212	56	0	33	NR	10	332
Chickenpox/ Varicella	2	14	0	4	78	15	123	236
Pertussis	1	78	0	0	37	NR	0	116
Gonorrhoea	0	64	0	0	10	NR	15	89
Dengue	0	26	0	0	1	NR	57	84
AFP	2	3	0	0	16	NR	13	34
Meningitis	4	1	1	0	4	NR	14	24
Syphilis	0	8	0	0	0	NR	12	20
Brucellosis	0	9	0	0	3	NR	0	12
HIV/AIDS	1	3	0	0	2	NR	2	8
Diphtheria (Probable)	0	2	0	0	4	NR	0	6
Chikungunya	0	4	0	0	0	NR	0	4
NT	0	1	0	0	3	NR	0	4
VL	0	0	0	0	3	NR	0	3
Rubella (CRS)	0	3	0	0	0	NR	0	3
Leprosy	0	0	1	0	0	NR	0	1

**Figure 1: Most frequently reported suspected cases during week 13, Pakistan.**

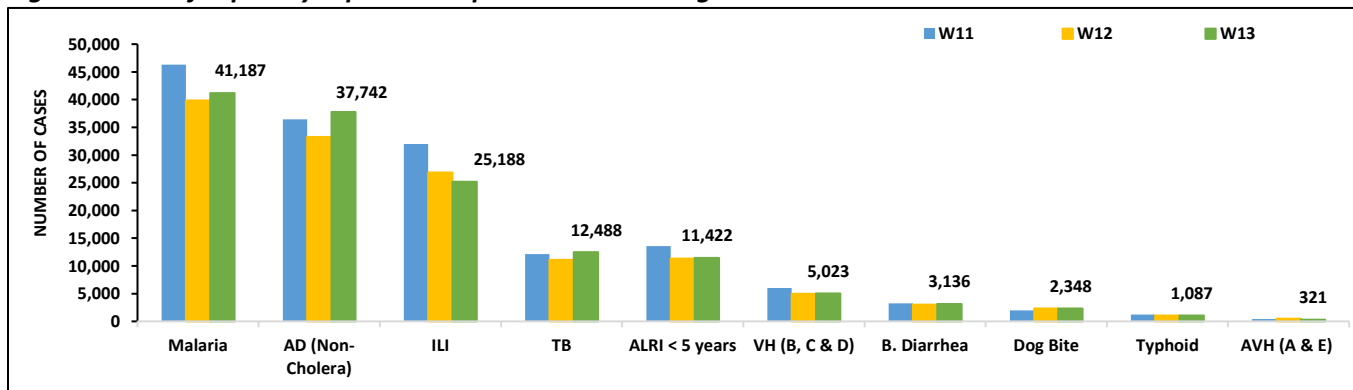


- Malaria cases were maximum followed by AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite, Typhoid and AVH (A & E). Malaria cases are from Larkana, Khairpur and Kamber whereas AD (Non-Cholera) cases are mostly from Khairpur, Badin and Tharparkar.
- Thirteen cases of AFP reported from Sindh. All are suspected cases and need field verification.
- Two suspected cases of HIV/ AIDS reported from Sindh. Field investigation required to verify the cases.
- There is an increasing trend observed for Malaria, AD (Non-Cholera), TB, B. Diarrhea and Typhoid cases while an almost same trend for ALRI<5 Years, VH (B, C, D), Typhoid and AVH (A & E) cases this week.

**Table 2: District wise distribution of most frequently reported suspected cases during week 13, Sindh**

Districts	Malaria	AD (Non-Cholera)	ILI	TB	ALRI < 5 years	VH (B, C & D)	B. Diarrhea	Dog Bite	Typhoid	AVH(A&E)
Badin	2,174	2,519	488	811	651	107	160	65	29	3
Dadu	2,075	1,396	121	425	709	6	351	577	93	23
Ghotki	443	564	0	205	421	301	72	231	0	14
Hyderabad	297	1,327	2,138	293	243	31	41	0	19	0
Jacobabad	625	990	398	154	585	167	102	142	22	0
Jamshoro	1,547	1,480	44	358	189	86	71	11	21	5
Kamber	3,903	1,596	0	959	451	318	149	97	34	0
Karachi Central	74	928	1,843	618	140	240	10	3	38	32
Karachi East	79	601	206	8	61	0	8	4	4	0
Karachi Keamari	3	158	60	0	2	0	1	0	2	3
Karachi Korangi	54	218	115	1	2	0	1	0	1	1
Karachi Malir	47	924	2,392	47	274	26	42	23	28	4
Karachi South	25	106	36	0	0	0	0	0	0	0
Karachi West	109	1,056	2,198	164	78	132	59	109	56	35
Kashmore	1,265	594	904	320	168	70	48	206	15	0
Khairpur	4,043	2,765	4,643	1100	1,557	252	516	140	312	1
Larkana	5,562	2,127	5	948	767	358	312	0	4	0
Matiari	913	1,772	9	680	326	249	105	52	7	0
Mirpurkhas	2,051	2,047	3,194	668	527	194	121	44	53	8
Naushero Feroze	947	585	968	372	164	175	62	149	55	0
Sanghar	2,146	1,319	1	1199	480	794	23	100	25	1
Shaheed Benazirabad	1,330	1,948	0	402	471	87	72	161	113	0
Shikarpur	1,910	1,188	2	186	160	625	122	87	4	0
Sujawal	1,179	968	0	113	237	94	72	32	7	94
Sukkur	1,503	1,477	1,727	507	402	162	151	33	33	0
Tando Allahyar	1,355	1,017	314	469	292	122	112	39	7	2
Tando Muhammad Khan	882	974	0	490	204	62	77	0	3	0
Tharparkar	2,048	2,284	2,140	530	881	162	127	7	44	35
Thatta	1,409	1,388	1,242	43	443	175	59	36	19	59
Umerkot	1,189	1,426	0	418	537	28	90	0	39	1
<b>Total</b>	<b>41,187</b>	<b>37,742</b>	<b>25,188</b>	<b>12,488</b>	<b>11,422</b>	<b>5,023</b>	<b>3,136</b>	<b>2,348</b>	<b>1,087</b>	<b>321</b>

**Figure 2: Most frequently reported suspected cases during week 13 Sindh**

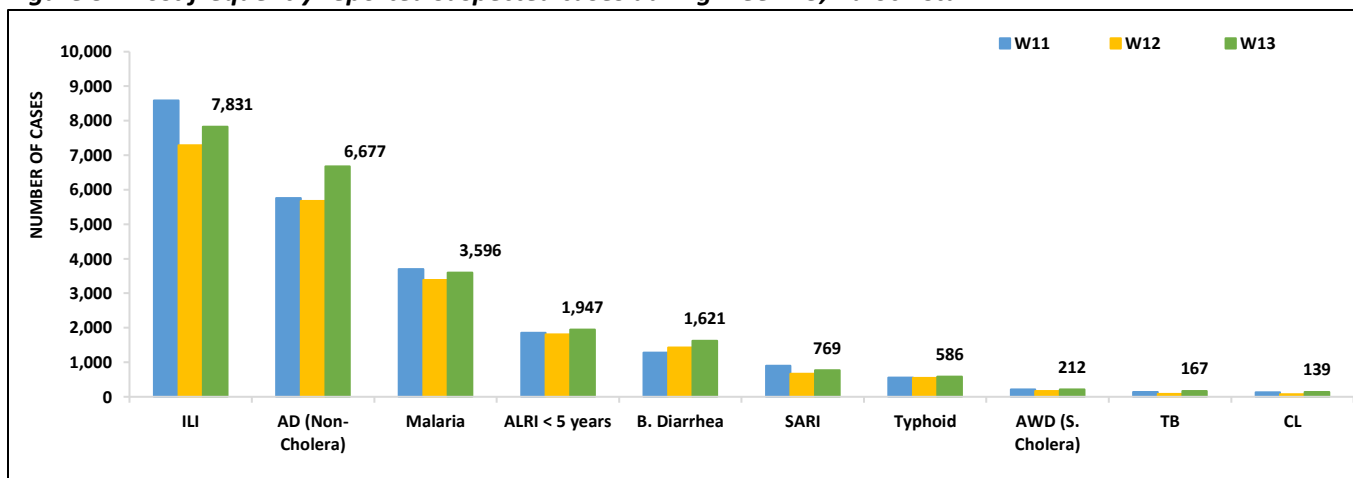


- ILI, AD (Non-Cholera), Malaria, ALRI <5 years, B. Diarrhea, SARI, Typhoid, AWD (S. Cholera), TB and CL cases were the most frequently reported diseases from Balochistan province.
- ILI cases are mostly reported from Gwadar, Kech (Turbat) and Quetta while AD (Non-Cholera) cases are mostly reported from Gwadar, Kech (Turbat) and Jaffarabad.
- Three cases of HIV/AIDS and Nine cases of Brucellosis reported from Balochistan this week. These are suspected cases and require field verification.

**Table 3: District wise distribution of most frequently reported suspected cases during week 13, Balochistan**

Districts	ILI	AD Non-Cholera)	Malaria	ALRI < 5 years	B. Diarrhea	SARI	Typhoid	AWD (S.Cholera)	TB	CL
Awaran	34	10	13	0	14	1	0	19	0	0
Barkhan	58	113	55	69	9	0	40	4	2	0
Chagai	261	145	22	0	64	5	24	11	0	0
Chaman	145	97	4	8	65	23	24	1	3	2
Dera Bugti	84	90	165	74	74	52	37	0	0	0
Duki	57	98	28	19	72	31	10	13	5	4
Gwadar	1,145	851	101	1	115	0	6	0	0	1
Harnai	22	83	45	178	84	0	6	14	4	0
Hub	101	226	146	23	39	0	9	0	4	5
Jaffarabad	146	420	238	88	72	22	7	0	90	26
Jhal Magsi	185	416	408	15	10	2	21	7	7	1
Kachhi (Bolan)	0	15	13	0	11	0	26	0	0	0
Kalat	5	18	14	12	8	0	23	0	0	0
Kech (Turbat)	1,073	554	196	87	88	1	2	NR	NR	NR
Kharan	345	199	32	0	69	8	2	1	0	0
Khuzdar	103	122	60	3	31	8	5	0	0	3
Killa Saifullah	0	118	108	145	63	19	7	0	0	7
Kohlu	490	235	121	35	132	144	46	28	0	0
Lasbela	70	318	298	95	31	8	6	0	0	17
Loralai	337	179	40	54	56	124	21	0	0	0
Mastung	177	133	44	78	21	12	13	4	1	3
Naseerabad	22	328	198	33	12	0	54	0	8	5
Nushki	13	118	10	0	45	4	0	13	0	0
Panjgur	76	183	110	68	52	7	8	21	1	0
Pishin	226	50	3	33	40	2	8	0	1	10
Quetta	928	267	12	43	69	35	18	22	1	24
Sherani	91	32	5	3	19	55	8	6	0	7
Sibi	650	348	213	67	43	66	35	37	3	4
Sohbat pur	28	210	449	207	66	24	37	7	10	11
Surab	140	61	16	0	5	4	55	0	0	0
Usta Muhammad	168	343	328	192	27	25	13	0	2	0
Washuk	272	121	31	5	70	4	1	0	0	0
Zhob	246	93	62	310	41	69	12	1	25	0
Ziarat	97	79	8	0	0	2	0	0	0	1

**Figure 3: Most frequently reported suspected cases during week 13, Balochistan**

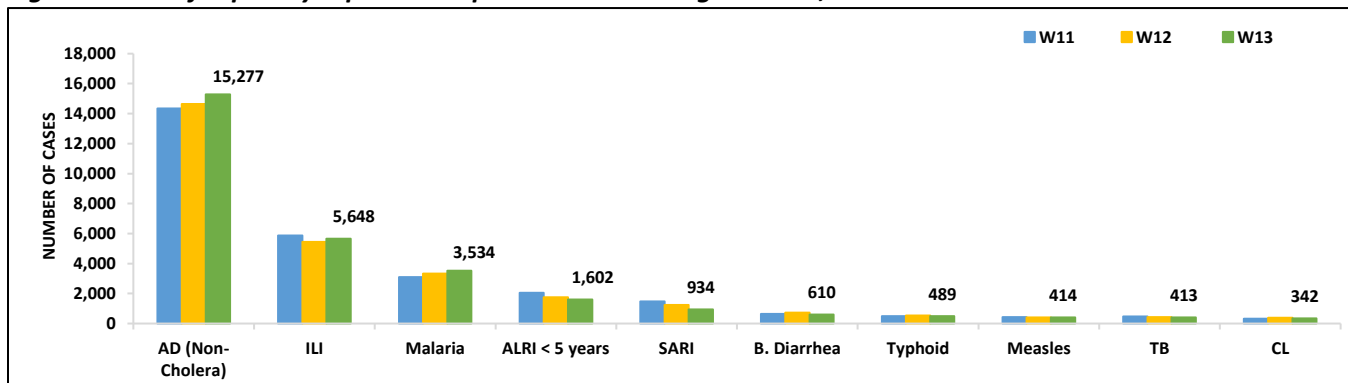


- Cases of AD (Non-Cholera) were maximum followed by ILI, Malaria, ALRI<5 Years, SARI, B. Diarrhea, Typhoid, Measles, TB and CL cases. AD (Non-Cholera), ILI and Malaria cases showed an increasing trend while ALRI<5 Years, SARI, B. Diarrhea and Typhoid cases showed a decreasing trend this week.
- Sixteen cases of AFP reported from KP. All are suspected cases and need field verification.
- Two suspected cases of HIV/ AIDS and Three cases of Brucellosis reported from KP. Field investigation required to verify the cases.

**Table 4: District wise distribution of most frequently reported suspected cases during week 13, KP**

Districts	AD (Non-Cholera)	ILI	Malaria	ALRI <5 Years	SARI	B. Diarrhea	Typhoid	Measles	TB	CL
Abbottabad	418	73	0	27	25	2	9	4	21	0
Bajaur	147	38	66	5	18	14	1	2	0	9
Bannu	841	12	1,375	34	0	17	87	13	22	3
Battagram	87	262	0	0	0	0	0	0	0	0
Buner	236	0	195	68	0	0	0	0	1	0
Charsadda	541	552	341	100	24	8	13	9	0	0
Chitral Lower	178	68	2	39	18	17	27	5	10	6
Chitral Upper	69	11	4	15	5	9	6	0	4	0
D.I. Khan	948	0	122	18	0	16	0	77	33	0
Dir Lower	736	1	249	164	0	107	48	19	25	5
Dir Upper	258	77	1	9	7	4	36	9	16	6
Hangu	128	200	212	7	30	9	4	0	1	2
Haripur	720	452	5	56	19	3	33	7	46	0
Karak	226	27	118	29	0	0	7	83	11	76
Khyber	164	132	43	25	14	44	12	11	10	10
Kohat	59	94	36	7	3	1	1	2	0	0
Kohistan Lower	118	0	0	4	0	3	0	2	1	0
Kohistan Upper	431	10	1	4	20	8	16	3	16	0
Kolai Palas	58	0	0	1	12	3	1	0	0	0
L & C Kurram	5	53	8	0	0	2	0	0	0	0
Lakki Marwat	390	21	101	26	0	10	6	3	13	0
Malakand	391	102	3	32	29	42	11	6	2	29
Mansehra	663	556	1	49	75	7	10	2	11	0
Mardan	549	4	7	365	1	23	2	4	10	1
Mohmand	143	74	128	3	25	15	4	9	0	101
Nowshera	1,150	118	60	8	17	15	11	57	5	12
Orakzai	13	20	19	0	0	7	1	0	0	0
Peshawar	2,350	622	31	79	69	70	64	29	43	25
SD Peshawar	1	0	0	0	0	0	0	0	0	0
SD Tank	26	0	52	0	0	6	0	0	0	0
Shangla	221	0	133	9	0	2	13	1	21	0
SWA	28	307	30	76	60	11	3	4	0	14
Swabi	922	1,053	29	219	90	16	14	28	60	0
Swat	1,481	199	19	61	3	72	0	3	20	0
Tank	420	233	102	28	0	0	43	16	6	40
Tor Ghar	56	0	40	8	17	20	2	0	1	3
Upper Kurram	105	277	1	27	353	27	4	6	4	0
<b>Total</b>	<b>15,277</b>	<b>5,648</b>	<b>3,534</b>	<b>1,602</b>	<b>934</b>	<b>610</b>	<b>489</b>	<b>414</b>	<b>413</b>	<b>342</b>

**Figure 4: Most frequently reported suspected cases during week 13, KP**



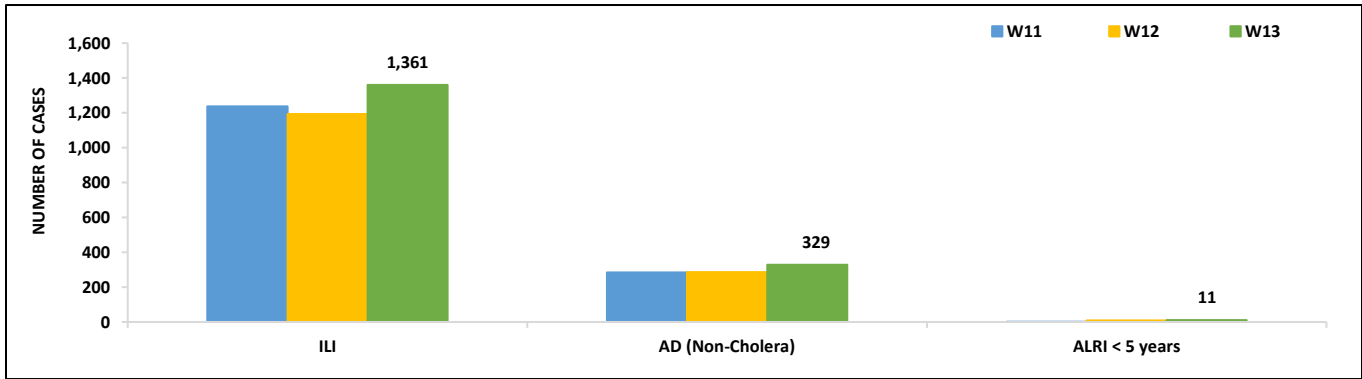
**ICT:** The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera) and ALRI < 5 Years. ILI, AD (Non-Cholera) and ALRI < 5 Years showed an increasing trend in cases this week.

**AJK:** ILI cases were maximum followed by AD (Non-Cholera), ALRI < 5 years, SARI, dog bite, B. Diarrhea, TB, Typhoid, AWD (S. Cholera) and AVH (A & E) cases. Cases of AD (Non-Cholera), ALRI < 5 years, dog bite, B. Diarrhea, TB, Typhoid, AWD (S. Cholera) and AVH (A & E) showed a decreasing trend while cases of ILI and SARI showed an increasing trend this week.

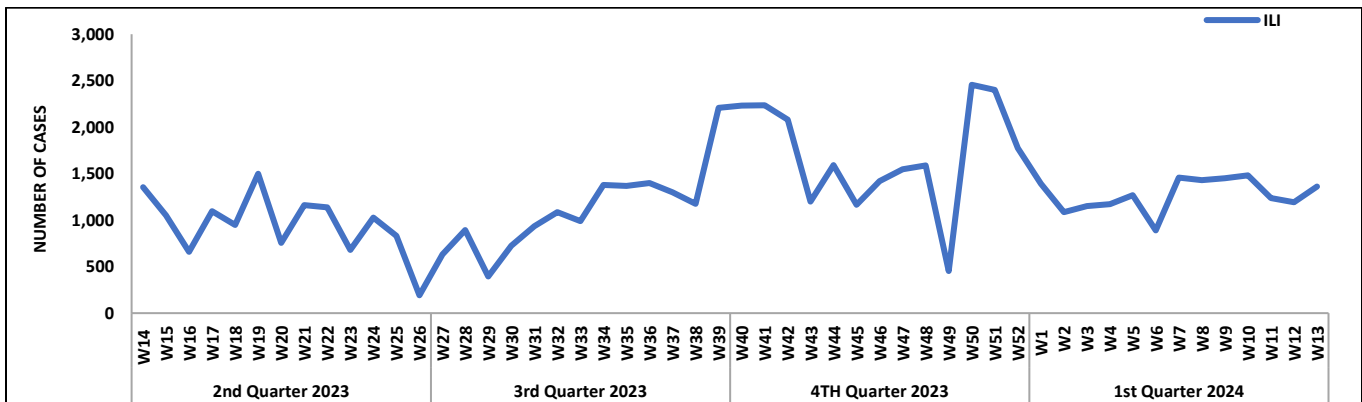
**GB:** ALRI < 5 Years cases were the most frequently reported diseases followed by AD (Non-Cholera), ILI, SARI, AWD (S. Cholera), TB, B. Diarrhea and Typhoid cases. Decreasing trend for ALRI < 5 Years, AD (Non-Cholera) and SARI cases while an increasing trend for ILI, TB, B. Diarrhea and Typhoid cases observed this week.

# ICT, AJK & GB

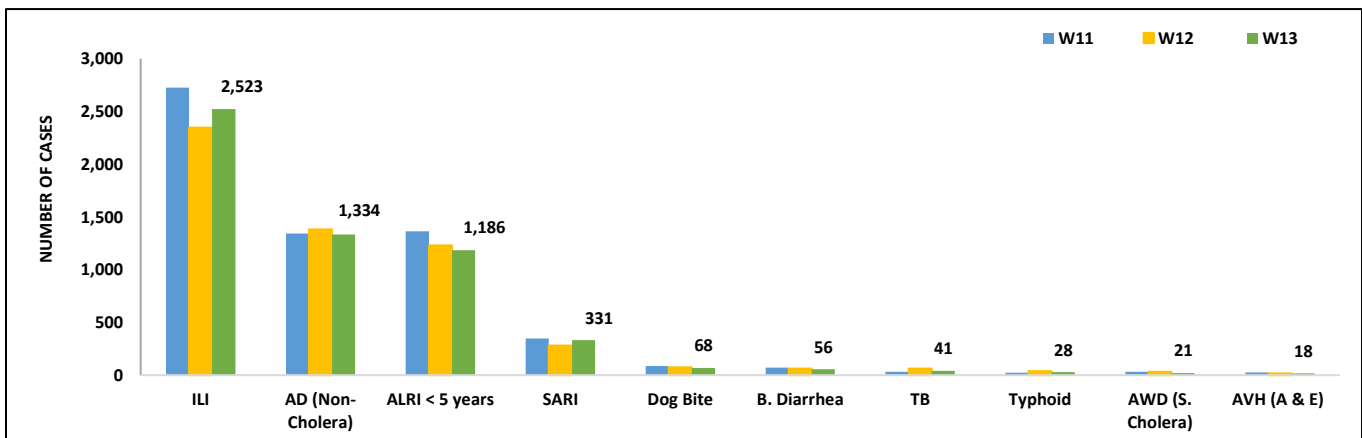
**Figure 5: Week wise reported suspected cases of ILI, ICT**



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

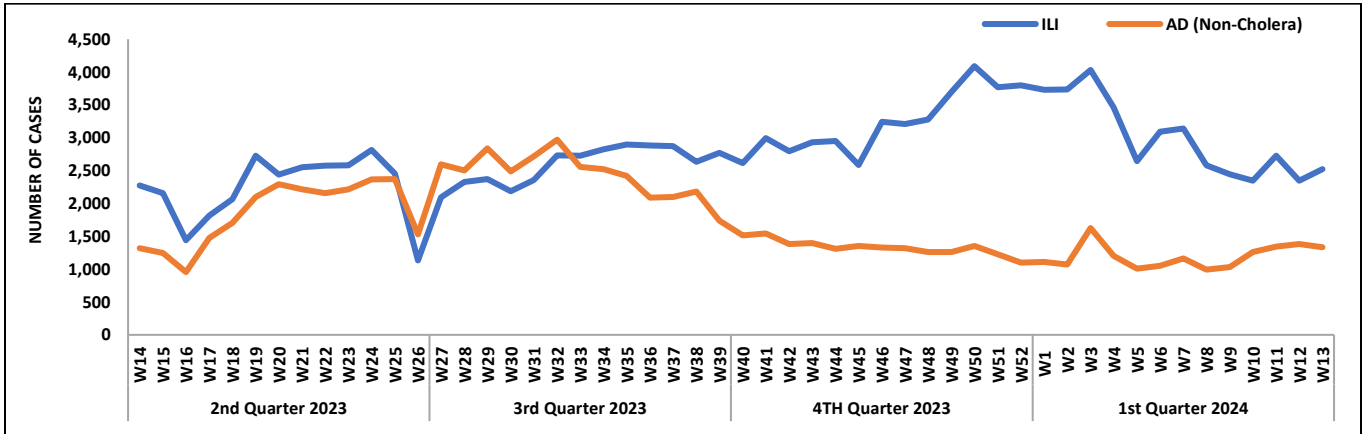


**Figure 7: Most frequently reported suspected cases during week 13, AJK**

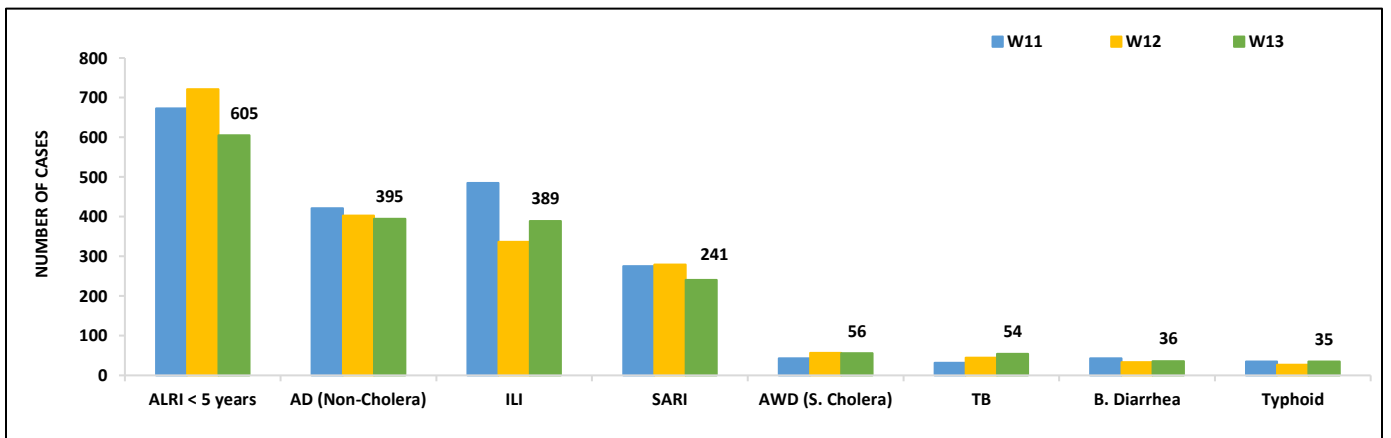




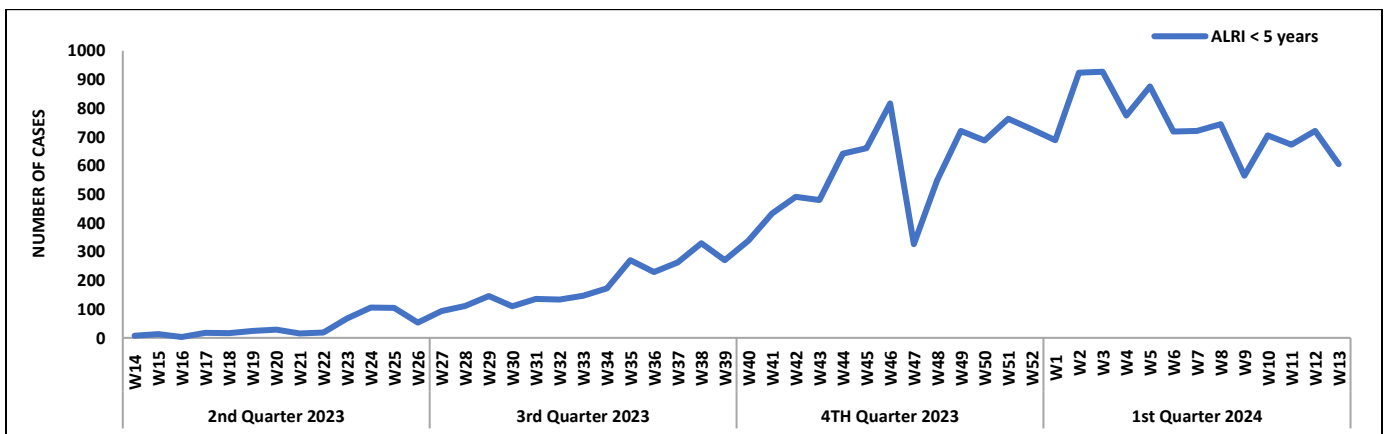
**Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK**



**Figure 9: Most frequent cases reported during Week 13, GB**

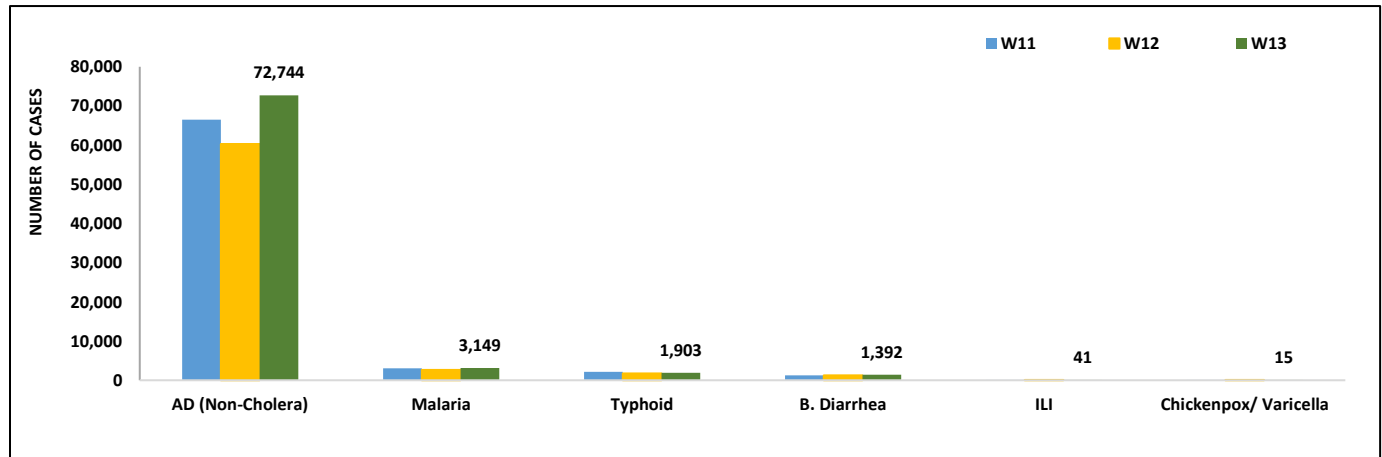


**Figure 10: Week wise reported suspected cases of ALRI, GB**



- Cases of AD (Non-Cholera) were maximum followed by Malaria, Typhoid, B. Diarrhea, ILI and Chickenpox. AD (Non-Cholera) and Malaria cases showed an increasing trend while ILI and Chickenpox cases showed a decreasing trend this week.

**Figure 11: District wise distribution of most frequently reported suspected cases during week 13, Punjab**



**Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 13**

Diseases	Sindh		Balochistan		KPK		ISL		GB	
	Total Test	Total Positive	Total Test	Total Positive	Total Test	Total Positive	Total Test	Total Positive	Total Test	Total Positive
AWD (S. Cholera)	126	0	-	-	0	0	0	0	-	-
AD (Non-Cholera)	126	0	-	-	0	0	1	0	-	-
Malaria	3,603	116	-	-	0	0	0	0	-	-
CCHF	0	0	4	1	0	0	0	0	-	-
Dengue	340	11	-	-	0	0	0	0	-	-
VH (B)	2,835	76	0	0	0	0	23	0	82	0
VH (C)	3,004	235	0	0	0	0	27	0	82	0
VH (A&E)	0	0	0	0	0	0	0	0	-	-
Covid-19	0	0	57	0	26	2	112	6	-	-
HIV	107	0	-	-	0	0	5	0	-	-
Diphtheria	0	0	-	-	0	0	8	0	-	-
Influenza A	1	0	0	0	15	0	10	0	0	0
TB	228	3	-	-	0	0	-	-	-	-
Syphilis	120	4	-	-	0	0	-	-	-	-
Pertussis	0	0	-	-	0	0	10	0	-	-
Typhoid	407	2	-	-	0	0	9	0	-	-
Mumps	0	0	-	-	0	0	0	0	-	-
Measles	0	0	-	-	-	-	0	0	-	-

# IDSR Reports Compliance

- Out OF 149 IDSR implemented districts, compliance is low from KPK. Green color showing >50% compliance while red color is <50% compliance

**Table 6: IDSR reporting districts Week 13, 2024**

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	110	104	95%
	Bannu	234	136	58%
	Battagram	63	16	25%
	Buner	34	23	68%
	Bajaur	44	30	68%
	Charsadda	59	53	90%
	Chitral Upper	34	28	82%
	Chitral Lower	35	34	97%
	D.I. Khan	114	107	94%
	Dir Lower	74	74	100%
	Dir Upper	52	44	85%
	Hangu	22	20	91%
	Haripur	72	56	78%
	Karak	35	35	100%
	Khyber	64	15	23%
	Kohat	61	61	100%
	Kohistan Lower	11	11	100%
	Kohistan Upper	20	20	100%
	Kolai Palas	10	10	100%
	Lakki Marwat	70	70	100%
	Lower & Central Kurram	40	5	13%
	Upper Kurram	42	19	45%
	Malakand	42	34	81%
	Mansehra	136	98	72%
	Mardan	80	75	94%
	Nowshera	55	55	100%
	North Waziristan	380	0	0%
	Peshawar	153	127	83%
	Shangla	65	11	17%
	Swabi	63	61	97%
	Swat	76	75	99%
	South Waziristan	134	53	40%
	Tank	34	32	94%
Torghar	14	14	100%	
Mohmand	86	35	41%	
SD Peshawar	5	1	20%	
SD Tank	58	8	14%	
Orakzai	68	22	23%	
FATA	Mirpur	37	37	100%
	Bhimber	20	20	100%
	Kotli	60	60	100%
	Muzaffarabad	45	45	100%
	Poonch	46	46	100%
	Haveli	39	39	100%



<b>Azad Jammu Kashmir</b>	Bagh	40	39	98%
	Neelum	39	39	95%
	Jhelum Vellay	29	29	100%
	Sudhnooti	27	27	100%
<b>Islamabad Capital Territory</b>	ICT	21	20	95%
	CDA	14	8	57%
<b>Balochistan</b>	Gwadar	25	25	100%
	Kech	40	33	83%
	Khuzdar	20	20	100%
	Killa Abdullah	20	3	15%
	Lasbella	55	55	100%
	Pishin	62	9	15%
	Quetta	43	17	40%
	Sibi	36	34	94%
	Zhob	39	30	77%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	15	100%
	Kohlu	75	67	89%
	Chagi	35	27	71%
	Kalat	41	40	98%
	Harnai	17	17	100%
	Kachhi (Bolan)	35	35	100%
	Jhal Magsi	26	26	100%
	Sohbat pur	25	25	100%
	Surab	32	32	100%
	Mastung	45	44	98%
	Loralai	33	28	85%
	Killa Saifullah	28	27	96%
	Ziarat	29	22	76%
	Duki	31	29	94%
	Nushki	32	31	97%
	Dera Bugti	45	33	73%
	Washuk	46	19	41%
	Panjgur	38	20	53%
	Awaran	23	5	22%
	Chaman	24	23	96%
	Barkhan	20	20	100%
Hub	33	32	97%	
Musakhel	41	0	0%	
Usta Muhammad	34	34	100%	
<b>Gilgit Baltistan</b>	Hunza	32	32	100%
	Nagar	20	20	100%
	Ghizer	40	40	100%
	Gilgit	40	40	100%
	Diامر	62	62	100%
	Astore	54	54	100%



	Shigar	27	27	100%
	Skardu	52	52	100%
	Ganche	29	29	100%
	Kharmang	18	18	100%
Sindh	Hyderabad	73	61	84%
	Ghotki	64	64	100%
	Umerkot	43	43	100%
	Naushahro Feroze	107	62	58%
	Tharparkar	282	266	94%
	Shikarpur	60	60	100%
	Thatta	52	52	100%
	Larkana	67	67	100%
	Kamber Shadadkot	71	71	100%
	Karachi-East	23	21	91%
	Karachi-West	20	20	100%
	Karachi-Malir	37	18	49%
	Karachi-Kemari	18	7	39%
	Karachi-Central	11	9	82%
	Karachi-Korangi	18	15	83%
	Karachi-South	4	4	100%
	Sujawal	54	54	100%
	Mirpur Khas	106	105	99%
	Badin	124	120	97%
	Sukkur	64	64	100%
	Dadu	90	88	98%
	Sanghar	100	100	100%
	Jacobabad	44	44	100%
	Khairpur	169	168	99%
	Kashmore	59	59	100%
	Matiali	42	42	100%
	Jamshoro	68	68	100%
	Tando Allahyar	54	54	100%
	Tando Muhammad Khan	40	40	100%
	Shaheed Benazirabad	124	124	100%

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### Public Health Bulletin Pakistan

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### *A note from Field Activities.*

#### Investigative Report of Melioidosis Case - Swabi District, Khyber Pakhtunkhwa, Pakistan

Source: DHIS-2 Reports

<https://dhis2.nih.org.pk/dhis-web-event-reports/>

#### Introduction

Melioidosis, caused by the bacterium *Burkholderia pseudomallei*, is a serious infectious disease prevalent in tropical regions. This report details the investigation of a Melioidosis case in Swabi District, Khyber Pakhtunkhwa, Pakistan, highlighting its emerging public health significance.

#### Case Investigation

Following a confirmed Melioidosis diagnosis at Bacha Khan Medical Complex (BKMC), Swabi, on March 25th, 2024, a prompt investigation was

initiated under the Khyber Pakhtunkhwa Director Public Health's guidance. The investigation aimed to comprehensively assess the case and its potential public health implications.

#### Objectives

- Gather a detailed history of the patient's illness and symptom development.
- Investigate potential sources of infection and travel history.
- Identify close contacts to assess their health status and rule out disease transmission.

#### Methodology

The investigation employed a multi-pronged approach to gather comprehensive data on the Melioidosis case. Firstly, a thorough review of the patient's medical records at BKMC, Swabi, was conducted. This review encompassed the detailed illness history documented by healthcare professionals, along with any diagnostic tests and



investigations performed. This provided a foundation for understanding the patient's clinical presentation and the course of the disease.

Secondly, face-to-face interviews were conducted with key individuals involved in the patient's care. This included attending physicians who directly diagnosed and treated the patient, nurses who provided bedside care, and any available patient attendants who could offer additional insights into the patient's symptoms and daily activities. Through these interviews, the investigative team aimed to gain a more nuanced understanding of the patient's experience, potential risk factors, and any additional details that may not have been explicitly documented in the medical records.

Finally, active contact tracing was initiated to identify individuals who may have been exposed to the patient and potentially at risk of contracting Melioidosis. This process utilized a standardized case definition, a set of criteria established by public health authorities to identify probable or confirmed cases of the disease. The case definition likely included factors like close contact with the patient, shared living spaces, or exposure to similar environmental risks. By employing active contact tracing, the investigation aimed to identify individuals who might require further evaluation, testing, and potentially preventative measures to mitigate the risk of a possible outbreak.

## Case Definition

A Melioidosis case typically involves clinical, laboratory, and epidemiological criteria:

- **Clinical Criteria:** Fever, cough, respiratory symptoms, skin lesions, abscesses, or septicemia; radiological evidence of pneumonia, lung nodules, or abscesses; other clinical manifestations depending on the affected organ system.
- **Laboratory Criteria:** Isolation of *Burkholderia pseudomallei* from clinical specimens or detection of antibodies against it using serological tests.
- **Epidemiological Criteria:** History of exposure to risk factors like residing in or traveling to endemic areas, occupational exposure to soil or water, or contact with contaminated water/soil.

## Contact Definition

- **Close Contacts:** Individuals with prolonged or intimate contact with a confirmed case, such as household members, caregivers, or healthcare workers providing direct patient care.
- **Occupational Contacts:** Individuals sharing a workplace with a confirmed case, particularly in settings with *Burkholderia pseudomallei* exposure risk (e.g., agricultural workers, construction workers, laboratory personnel).
- **Casual Contacts:** Individuals with brief or incidental contact with a confirmed case (e.g., social contacts, those sharing a space for a short period).

## Study Area

The investigation focused on Bacha Khan Medical Complex (BKMC) in Swabi, the only tertiary care hospital serving the designated region. Visits were conducted at this public sector facility to gather information. Key personnel contacted during the investigation included Dr. Amjad Mehboob, the BKMC Hospital Director; Dr. Arif, the Deputy District Health Officer for Swabi; Dr. Shah Nawaz, the Medical Officer Incharge at RHC Kabgani; Dr. Ibrahim, a Medical Officer at RHC Kabgani; and Mr. Rehan and Mr. Naeem, both EPI Technicians at RHC Kabgani.

## Findings

**Patient:** A 32-year-old male laborer from Mohalla Mohammad Zai, Village Takel, Tehsil Topi, District Swabi.

Following his work in Malaysia, Patient experienced symptoms including high fever, night sweats, and gastrointestinal discomfort. Notably, a significant number of his colleagues who worked on the same construction project in Malaysia exhibited similar symptoms, suggesting a potential shared source of exposure.

Patient's travel history reveals his return from Malaysia on March 17th, 2024, landing in Lahore at 8:40 AM. He was diagnosed with Melioidosis in Malaysia on March 4th, 2024, along with 150 coworkers, 20 of whom were from Pakistan (primarily North Waziristan and Punjab).



He received extensive treatment in Malaysia, including intravenous antibiotics for six days followed by oral antibiotics for three months with outpatient follow-up. His IgM Melioidosis test was positive, while blood culture showed no growth. Tests for hepatitis B, HIV, and VDRL were negative, with normal chest X-ray and ultrasound abdomen results. The patient opted for discharge from the Malaysian hospital to continue treatment in Pakistan.

In the contact tracing efforts, all seven identified close contacts of the patient were successfully located and interviewed in detail to assess any signs or symptoms they might be experiencing. Thankfully, none of these close contacts reported any symptoms at the time of the interview. Additionally, hospital staff who interacted with the patient were thoroughly informed about the potential transmission modes of Melioidosis. These staff members were also oriented and trained to strictly adhere to established infection prevention and control guidelines to minimize the risk of nosocomial transmission (spread of infection within a healthcare setting) to themselves and other patients. It is important to note that the investigation is ongoing, and contacts from the flight the patient traveled on are being actively traced and investigated according to the established protocols to ensure a comprehensive assessment of potential transmission risks.

## Conclusion

This observation prompts a thorough examination of potential environmental factors, with initial indications implicating canal water contaminated by *Burkholderia pseudomallei* as a plausible cause. Such findings underscore the imperative to elucidate the precise mode of transmission, shedding light on a potential epidemiological link and necessitating comprehensive investigation to mitigate further spread and determine suitable preventive measures

## Recommendations

To effectively prevent nosocomial transmission, a multi-pronged approach is recommended.

Firstly, designated isolation rooms or wards should be established within all public and private sector hospitals. This physical separation will

minimize the risk of exposure for other patients and healthcare workers.

Secondly, stringent biosafety measures must be implemented to prevent hospital-acquired infections. These measures may include protocols for proper hand hygiene, disinfection of surfaces and equipment, and safe handling of medical waste.

Thirdly, all medical and paramedical staff, as well as patient attendants, should wear appropriate Personal Protective Equipment (PPE) whenever interacting with suspected or confirmed Melioidosis cases. This includes disposable gowns, gloves, masks, and eye protection, depending on the specific procedures being performed. Finally, thorough decontamination of all used items is crucial. Autoclaving, a high-pressure steam sterilization process, should be used to eliminate any remaining bacteria on medical equipment and instruments before final incineration.

By implementing these comprehensive recommendations, healthcare facilities can significantly reduce the risk of Melioidosis transmission within their walls and protect the health of both patients and staff.

## *A note from Field Activities.*

### Outbreak Investigation of Measles Cases and Deaths in Village Muhammad Moosa Muridani, District Jamshoro, Pakistan

**Dr. Hirra Naz Baloch**  
**FELTP Fellow-15th Cohort,**  
**Sindh**

#### Introduction

On March 28th, 2024, social media reports surfaced regarding two deaths and ten suspected measles cases in Village Muhammad Moosa Muridani, Taluka Manjhand (Sun) District Jamshoro, Pakistan. Following verification and confirmation, a team from the Provincial Disease Surveillance and Response Unit (PDSRU) and Field Epidemiology Training Program (FETP) fellows deployed by the Directorate General Health Services (DGHS) was sent to investigate the outbreak.





## Objectives

The investigation aimed to:

1. Investigate reported cases and ensure proper treatment.
2. Investigate and confirm reported deaths, identifying the cause.
3. Identify risk factors associated with the deaths in Tehsil Manjhand.
4. Actively search for additional cases or deaths.
5. Recommend preventive and control measures to prevent future Vaccine-Preventable Disease (VPD)-related deaths.

## Methodology

Following verification of the social media reports, a team from the Provincial Disease Surveillance and Response Unit (PDSRU), comprised of Field Epidemiology Training Program (FETP) fellows, was deployed by the Directorate General Health Services (DGHS) to investigate the outbreak in collaboration with the District Health Officer (DHO) and the Integrated Disease Surveillance and Response (IDSR) focal person and their team. This collaborative approach ensured a comprehensive response.

The investigation team prioritized identifying the deceased individuals' residences. Face-to-face interviews (verbal autopsies) were conducted with parents or relatives using standardized questionnaires to gather detailed information on the patients' medical history, the course of their measles illness, and the circumstances surrounding their deaths. This approach aimed to elucidate potential contributing factors.

To gain a thorough understanding of the outbreak, a descriptive study design was employed within the town committee setting. This design enabled the team to characterize the measles outbreak in the affected village. Data collection utilized a multi-pronged approach. Firstly, a pretested structured questionnaire was administered, likely to caregivers or relatives, to gather information on the patients' demographics, symptom presentation, vaccination history, and potential exposures to measles. Secondly, a review of hospital records was conducted to obtain clinical details and treatment provided to confirmed cases. Thirdly, active case

searching was implemented using a measles case definition to identify any additional suspected cases within the community. This active search may have involved visiting households, community centers, or healthcare facilities to screen for individuals exhibiting measles symptoms. Finally, face-to-face interviews, potentially using the same questionnaire or a verbal autopsy tool adapted for the deceased children's families, were conducted to understand the circumstances surrounding their deaths and gather medical history relevant to measles complications.

The collected data was then subjected to rigorous analysis using descriptive statistics. This analysis included calculating attack rates (the incidence of the disease within a specific population over a defined period) and determining frequencies and percentages for various characteristics, such as age group and gender distribution among the confirmed cases

## Findings

The investigation identified a total of 21 confirmed measles cases in the affected village. Notably, active case searching identified 11 cases, highlighting its effectiveness in capturing the full extent of the outbreak.

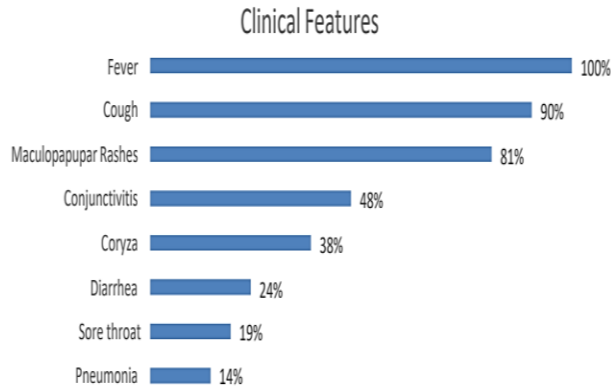
Children aged 0-4 years were disproportionately affected, accounting for nearly half (48%) of confirmed cases. This finding underscores the critical need for timely measles vaccination at the recommended age to protect young children, who are most susceptible to severe complications.

Furthermore, the investigation revealed a female predominance in the outbreak, with a male-to-female ratio of 2:1. While the reasons for this gender disparity require further investigation, it is a noteworthy observation. The median age of the cases was five years old, with a standard deviation of  $\pm 3.4$  years. This indicates that a significant portion of the affected population fell within the age group below ten years.

The most prevalent clinical features observed among the cases were fever (present in 100% of cases), cough (reported in 90% of cases), and maculopapular rashes (affecting 81% of cases). These symptoms are characteristic of measles infection.



Other commonly reported signs and symptoms included conjunctivitis (48%) and coryza (38%). It is important to note that some children also experienced secondary infections, highlighting potential complications associated with measles.



Hospitalization was required for three patients (14% of cases), indicating the potential severity of measles, particularly in those with weakened immune systems or underlying health conditions. The case fatality rate, thankfully, remained at 5% (one death out of 21 cases).

Laboratory confirmation of the outbreak is ongoing. Five blood samples were sent to the National Institute of Health (NIH) in Islamabad for definitive diagnosis. These results are still pending.

The investigation in Village Muhammad Moosa Muridani, Taluka Manjhand, District Jamshoro revealed concerning deficiencies in routine immunization coverage. None of the children identified in the measles outbreak had received recommended vaccinations, and only a handful (2-3) were immunized against measles specifically. This lack of coverage is likely due to the absence of lady health supervisors/workers in the entire UC. Vaccinations were reportedly provided by a single vaccinator on a monthly basis, but without a defaulter list or outreach plan, their efforts appeared haphazard. Furthermore, no social mobilization or outreach activities to promote vaccination were conducted within the union council. These combined factors significantly contributed to the measles outbreak.

A significant contributing factor to the outbreak appears to be poor vaccination coverage. The investigation revealed that most of the affected

children had not received any measles vaccination doses, leaving them susceptible to the highly contagious virus. This underscores the critical importance of promoting and strengthening routine childhood immunization programs to ensure adequate protection against measles and other vaccine-preventable diseases.



### Conclusion and Recommendations

The investigation identified low vaccination coverage as the main probable cause of the measles outbreak in the affected village. This suggests a lack of routine immunization throughout the area. To prevent future outbreaks of vaccine-preventable diseases (VPDs), coordinated efforts are essential. Collaboration among stakeholders like the District Health Officer (DOH), World Health Organization (WHO), and UNICEF is crucial to strengthen routine immunization programs and ensure adequate vaccine coverage within the community. Targeted behavior change communication sessions should be conducted to address vaccine hesitancy and educate the community on the importance of immunization. Additionally, an accelerated mop-up immunization activity should be implemented to ensure all children in the village are vaccinated against measles and other VPDs. Strengthening routine immunization services in Village Moosa Muridani is also crucial. This



may involve appointing additional lady health workers to improve outreach, address vaccine hesitancy, and strengthen the link between the community and the healthcare system.

## *Knowledge Hub*

### **Celebrate a Healthy and Joyous Eid!**

Eid Mubarak! As you gather with cherished family and friends to celebrate this momentous occasion, prioritizing your well-being and that of your loved ones is paramount. Here are some essential steps to ensure a healthy and vibrant Eid:

#### **Maintain Rigorous Food Safety Practices:**

Meticulous hygiene is crucial throughout food preparation and serving. Frequent handwashing with soap and water is an absolute necessity. Ensure all food items are cooked thoroughly to eliminate any potential pathogens that could lead to foodborne illnesses. By adhering to these practices, you can safeguard yourself and your guests from preventable discomfort.

#### **Embrace Moderation:**

Eid celebrations are synonymous with an abundance of delectable treats. While indulging in these culinary delights is certainly part of the joyful experience, practicing portion control is key. Opt for smaller servings to maintain a healthy dietary balance and avoid overindulgence. Remember, a balanced approach allows you to savor the flavors of the season without compromising your well-being.

#### **Prioritize Hydration:**

The festive season can be a whirlwind of activity, leading to dehydration, especially during warmer weather. To maintain optimal energy levels and overall health, make a conscious effort to consume plenty of water throughout the day. Staying

hydrated ensures your body functions at its peak, allowing you to fully embrace the joyous spirit of Eid.

#### **Maintain a Regular Sleep Schedule:**

Adequate sleep is the cornerstone of good health and well-being. Disruptions to your sleep routine can leave you feeling fatigued and hinder your ability to fully enjoy the festivities. Throughout Eid, strive to maintain a consistent sleep schedule to ensure you feel refreshed and energized to celebrate with loved ones.

#### **Incorporate Physical Activity:**

While Eid celebrations often revolve around delicious food, don't neglect the importance of physical activity. Short walks or light exercise sessions can significantly boost your energy levels and prevent feelings of sluggishness, especially after enjoying rich meals. Engaging in physical activity is not only beneficial for your physical health but can also contribute to an overall sense of well-being.

#### **Frequent Handwashing is Key:**

Frequent handwashing with soap and water remains one of the most effective and readily available means of preventing the spread of germs. This practice is especially crucial during gatherings, when the risk of transmission can be higher. By making handwashing a regular habit, you can significantly reduce the risk of illness and safeguard the health of yourself and your loved ones.

Following these simple yet impactful recommendations can ensure a healthy and joyous Eid celebration for you and your loved ones. May your Eid be filled with blessings, happiness, and vibrant well-being!



PUBLIC HEALTH BULLETIN







# Eid

## MUBARAK

May this joyous occasion bring you and your loved ones blessings, good health, and enduring happiness.

From the team at PHB Pakistan

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