Vol. 5 | Week 44
27th OCTOBER– 02nd NOVEMBER
10th November, 2025

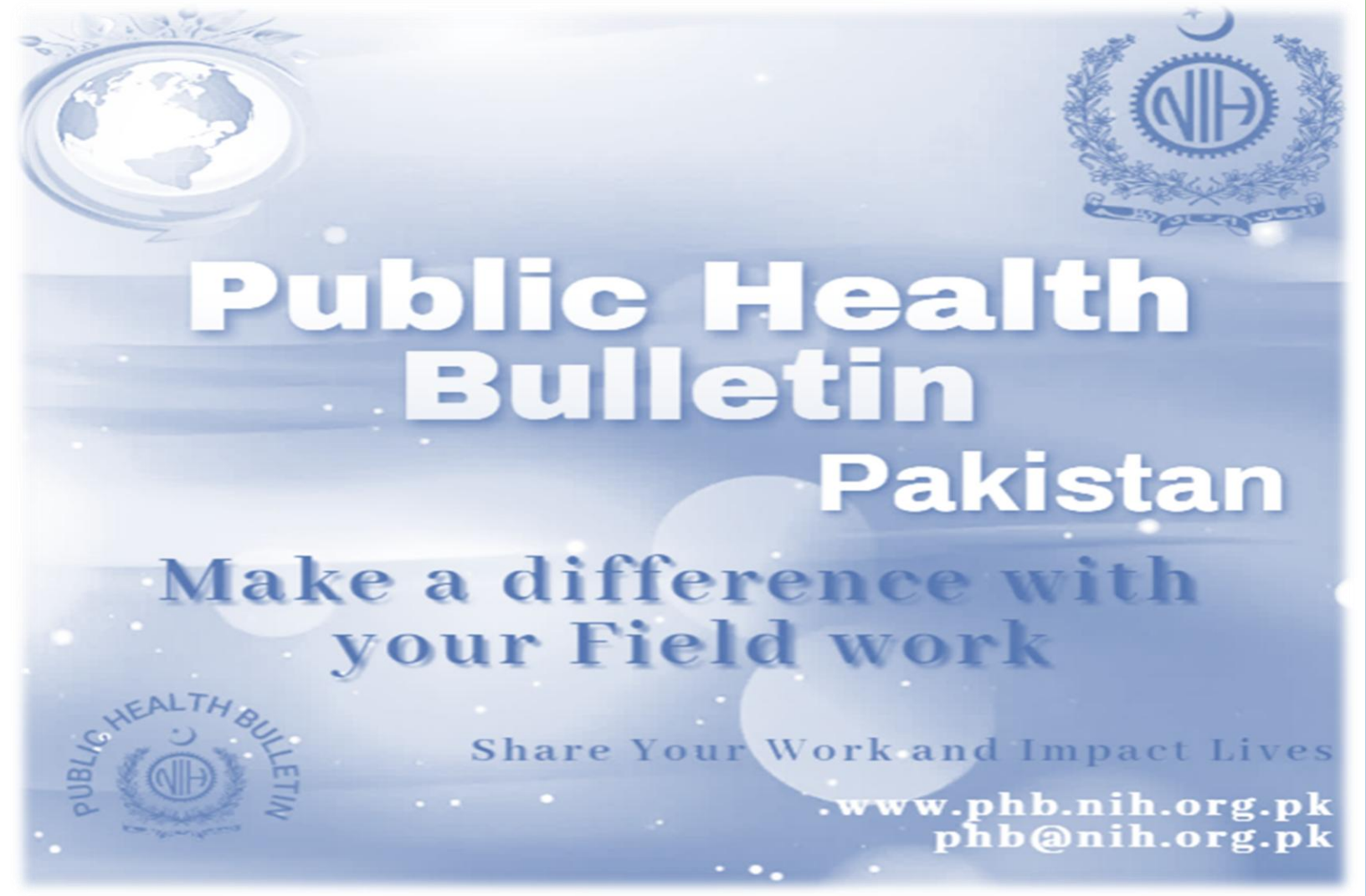
PUBLIC HEALTH BULLETIN-PAKISTAN

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 44, 2025

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

This Weeks Highlights include;

- *Strengthening Digital Health through Institutional Collaboration*
- *Measles Outbreak Investigation in Islamabad: UC Kuri - Jhagyot, 2025*
- *Knowledge hub on Smog: What you need to know*

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

Subscribe to the Weekly Bulletin today!

Stay informed. Stay prepared. Stay healthy.

Sincerely,
The Chief Editor

Note: All reported cases in this report are suspected cases

- *During Week 44, the most frequently reported cases were of Malaria, followed by Acute Diarrhea (Non-Cholera), ILI, ALRI <5 years, TB, B. Diarrhea, VH (B, C & D), Dog Bite, Typhoid, Dengue and SARI.*
- *Twenty-eight cases of AFP were reported from KP and twenty-three from Sindh.*
- *Nine suspected cases of HIV/ AIDS were reported from Sindh and two from KP.*
- *Among VPDs, there is an increase in the number of cases of Mumps, Chickenpox, Pertussis, AFP, Diphtheria and Rubella (CRS) this week.*
- *Among Respiratory diseases, there is an increase in the number of cases of ILI, ALRI < years and TB this week.*
- *Among Water/food-borne diseases, there is an increase in the number of cases of AWD (S. Cholera) this week.*
- *Among Vector-borne diseases, there is an increase in the number of cases of Dengue and Chikungunya this week.*
- *Among STDs, there is an increase in the number of cases of HIV/AIDs this week.*
- *Among Zoonotic/Other diseases, there is an increase in the number of cases of dog bite this week.*
- *Field investigation is required for verification of the alerts and for prevention and control of the outbreaks.*

IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 158 implemented districts is 75%*
- *Sindh is the top reporting region with a compliance rate of 96%, followed by GB 89%, AJK 87%, and ICT 74%.*
- *The lowest compliance rate was observed in KP 63% and Balochistan 59%.*

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2704	1707	63
Azad Jammu Kashmir	469	410	87
Islamabad Capital Territory	38	28	74
Balochistan	1308	770	59
Gilgit Baltistan	417	372	89
Sindh	2111	2028	96
National	7047	5315	75

Public Health Actions

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

Influenza-Like Illness (ILI)

- **Strengthen Surveillance and Reporting:** Enhance ILI surveillance under IDSR and sentinel sites to monitor seasonal trends and detect unusual increases or potential outbreaks.
- **Improve Laboratory Diagnosis:** Expand influenza testing capacity using RT-PCR at designated laboratories for viral strain identification and timely sharing of data with national and global networks.
- **Promote Infection Prevention and Control (IPC):** Reinforce hand hygiene, respiratory etiquette, and mask use among healthcare workers and the public, especially during outbreaks or flu season.
- **Encourage Vaccination:** Promote annual influenza vaccination for healthcare workers, elderly populations, and individuals with chronic illnesses as per national guidelines.
- **Raise Community Awareness:** Conduct public health education on recognizing symptoms, seeking timely medical care, and avoiding self-medication with antibiotics.

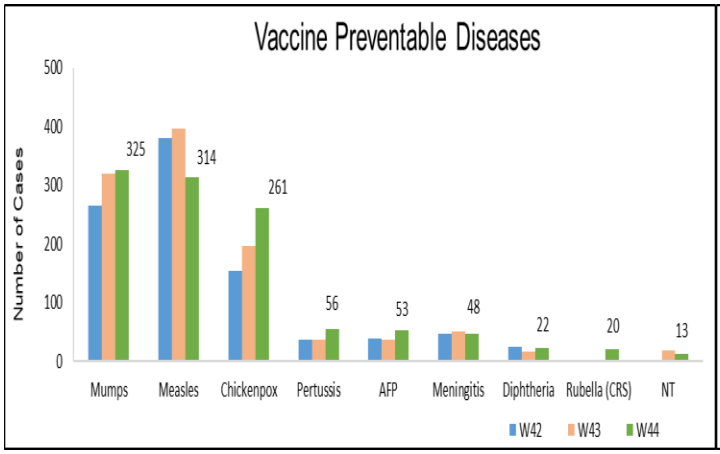
Acute Lower Respiratory Infection (ALRI)

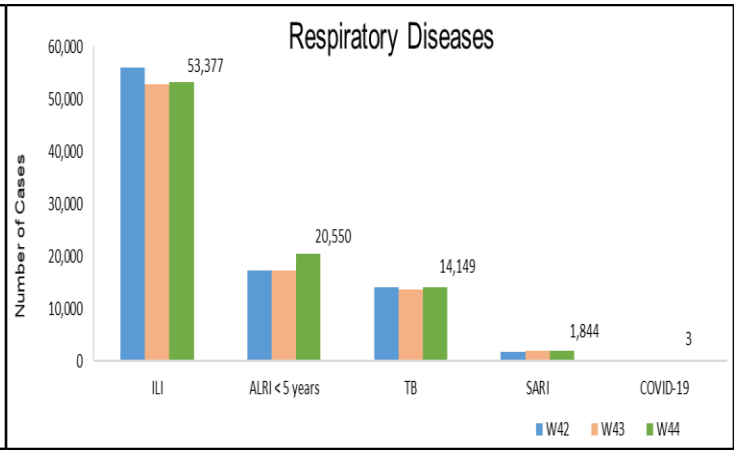
- **Enhance Case Detection and Reporting:** Strengthen ALRI surveillance in healthcare facilities, especially for children under five, through timely reporting and use of standardized case definitions.
- **Improve Clinical Management:** Ensure availability of essential medicines, oxygen therapy, and trained healthcare workers for early diagnosis and appropriate management to reduce morbidity and mortality.
- **Promote Preventive Measures:** Advocate exclusive breastfeeding for six months, adequate nutrition, and immunization against measles, pertussis, and pneumococcal infections.
- **Reduce Environmental Risk Factors:** Address indoor air pollution through improved ventilation, promotion of clean cooking fuels, and reduction of exposure to tobacco smoke.
- **Community Awareness and Education:** Educate caregivers to recognize danger signs (fast breathing, chest indrawing) and seek prompt care from qualified health facilities.

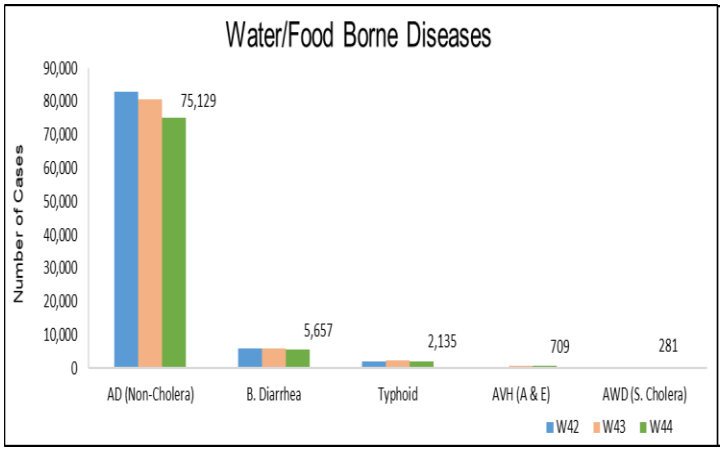
Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 44, Pakistan.

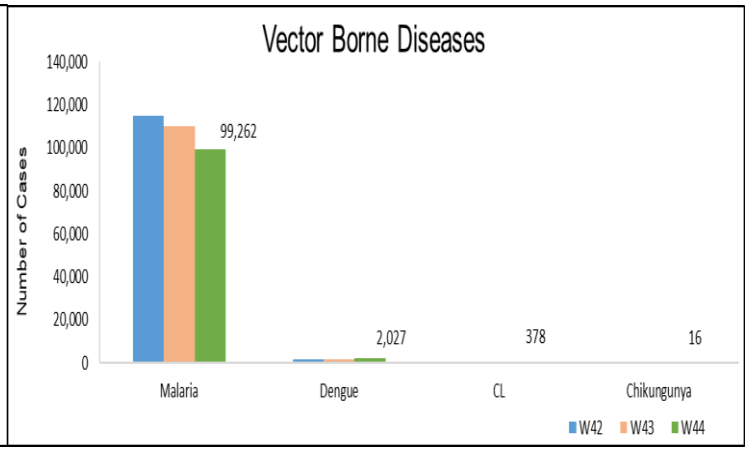
Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
Malaria	3	5358	6	0	7600	NR	86295	99262
AD (Non-Cholera)	1357	6801	818	331	27306	NR	38516	75129
ILI	2495	7627	333	2021	6998	NR	33903	53377
ALRI < 5 years	1340	2078	879	13	1811	NR	14429	20550
TB	129	111	120	15	314	NR	13460	14149
B. Diarrhea	48	1242	46	0	832	NR	3489	5657
VH (B, C & D)	10	125	3	0	161	NR	4358	4657
Dog Bite	107	229	7	0	891	NR	3167	4401
Typhoid	19	414	112	0	724	NR	866	2135
Dengue	310	12	31	1	835	NR	838	2027
SARI	325	758	193	0	459	NR	109	1844
AVH (A & E)	18	10	3	0	239	NR	439	709
CL	1	84	0	0	287	NR	6	378
Mumps	13	62	8	0	192	NR	50	325
Measles	8	8	11	0	239	NR	48	314
AWD (S.Cholera)	5	198	8	0	66	NR	4	281
Chickenpox/ Varicella	11	6	92	6	130	NR	16	261
HIV/AIDS	0	0	0	0	2	NR	9	11
Pertussis	0	45	2	0	8	NR	1	56
AFP	1	0	1	0	28	NR	23	53
Meningitis	3	2	1	0	20	NR	22	48
Syphilis	0	0	0	0	16	NR	13	29
Gonorrhea	0	15	0	0	5	NR	5	25
Diphtheria (Probable)	0	3	0	0	6	NR	13	22
Rubella (CRS)	0	11	0	0	0	NR	9	20
Chikungunya	0	0	0	0	1	NR	15	16
NT	0	0	0	0	12	NR	1	13
COVID-19	0	0	0	0	3	NR	0	3

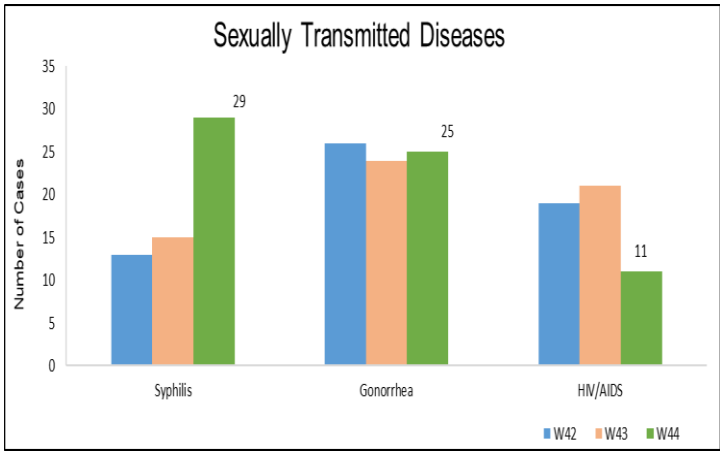
Figure 1: Most frequently reported suspected cases during Week 44, Pakistan.

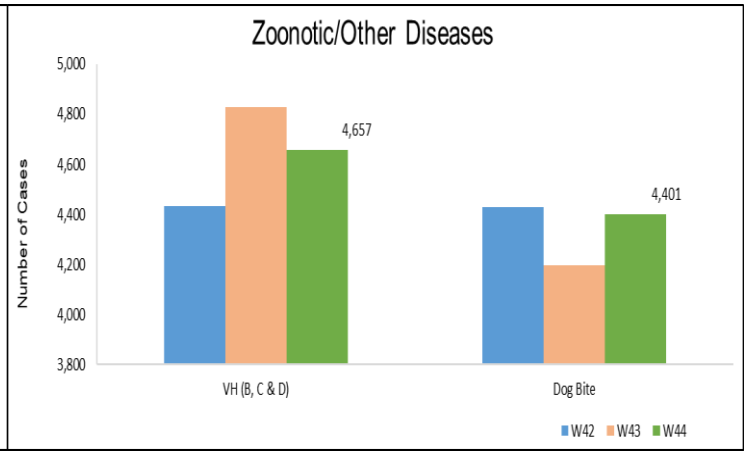












Sindh

- Malaria cases were maximum followed by AD (Non-Cholera), ILI, ALRI<5 Years, TB, VH (B, C, D), B. Diarrhea, Dog Bite, Typhoid and Dengue.
- Malaria cases are mostly from Khairpur, Larkana and Sanghar whereas AD (Non-Cholera) cases are from Khairpur, Dadu and Hyderabad.
- Twenty-three cases of AFP reported from Sindh. They are suspected cases and need field verification.
- There is a decline in number of cases of Malaria, AD (Non-Cholera), ILI, VH (B, C, D), B. Diarrhea, Typhoid, AVH (A & E), Measles, Meningitis, Chickenpox and AWD (S. Cholera) while an increase in number of cases ALRI<5 Years, TB, Dog Bite, Dengue, SARI, Mumps, AFP, Rubella, Chickenpox and CL this week.

Table 2: District wise distribution of most frequently reported suspected cases during Week 44, Sindh

Districts	Malaria	AD (Non-Cholera)	ILI	ALRI < 5 years	TB	VH (B, C & D)	B. Diarrhea	Dog Bite	Typhoid	Dengue
Badin	3394	1925	2639	825	939	339	189	126	46	2
Dadu	5480	2279	852	1337	753	75	391	440	134	0
Ghotki	5071	945	60	861	579	541	107	154	0	2
Hyderabad	1949	2188	2252	222	383	368	60	50	3	315
Jacobabad	2217	706	1395	496	256	198	102	185	37	5
Jamshoro	5379	1620	115	413	682	129	108	87	50	147
Kamber	4929	1608	0	301	847	56	109	207	25	0
Karachi Central	50	1817	2313	162	190	22	2	50	96	32
Karachi East	73	193	1	10	2	0	3	1	1	2
Karachi Keamari	16	545	299	16	17	0	2	1	2	7
Karachi Korangi	184	389	44	8	50	0	5	0	2	46
Karachi Malir	89	1002	3552	222	95	8	41	38	14	86
Karachi South	14	93	0	0	0	0	0	0	0	9
Karachi West	266	822	1149	176	71	19	17	67	31	0
Kashmore	1954	227	1039	230	124	11	57	143	0	0
Khairpur	8017	2783	6588	1488	1246	256	311	236	167	4
Larkana	6765	1510	9	253	848	22	277	49	2	0
Matiari	4199	1404	18	249	756	128	59	67	7	27
Mirpurkhas	3957	1989	4264	556	871	27	136	138	11	6
Naushero Feroze	1890	1307	974	766	256	49	421	189	35	0
Sanghar	6347	1812	151	634	1228	1275	83	229	29	4
Shaheed Benazirabad	3516	1524	0	262	408	67	102	122	90	0
Shikarpur	3569	1127	5	170	302	244	157	173	4	0
Sujawal	1443	1497	8	653	105	9	174	66	7	0
Sukkur	3699	1224	2151	2042	476	46	135	133	4	0
Tando Allahyar	3086	890	1234	217	509	222	85	34	8	1
Tando Muhammad Khan	1330	907	102	201	714	48	109	87	0	0
Tharparkar	2880	1483	1226	664	405	26	95	1	13	130
Thatta	2061	1391	1459	585	49	166	68	94	9	13
Umerkot	2471	1309	4	410	299	7	84	0	39	0
Total	86295	38516	33903	14429	13460	4358	3489	3167	866	838

Figure 2: Most frequently reported suspected cases during Week 44 Sindh

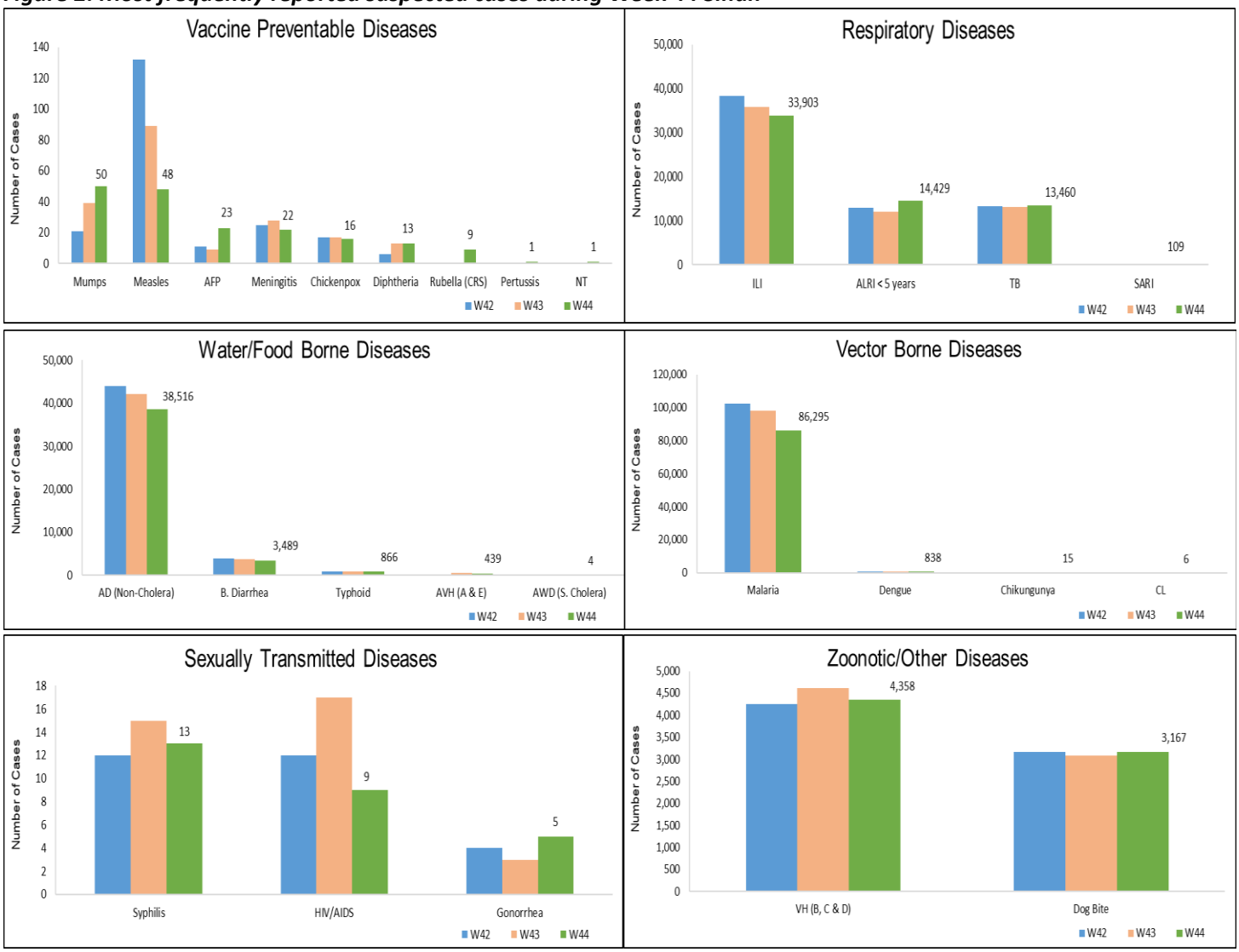
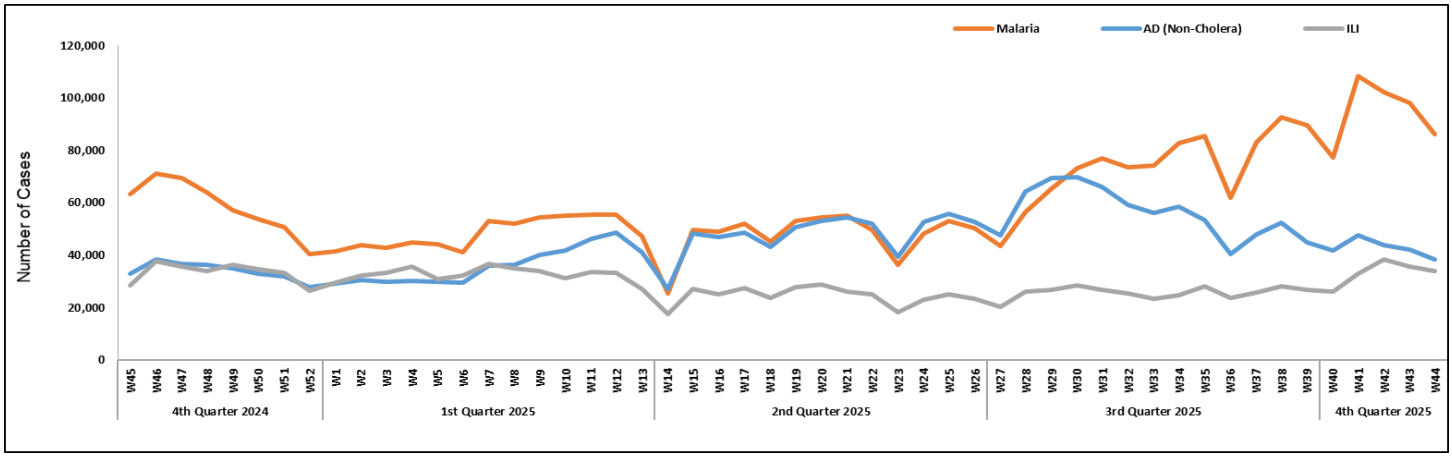


Figure 3: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Sindh



Balochistan

- ILI, AD (Non-Cholera), Malaria, ALRI <5 years, B. Diarrhea, SARI, Typhoid, Dog Bite, AWD (S. Cholera) and VH (B, C & D) 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) Usta Muhammad, Jaffarabad and Kech (Turbat) cases are mostly reported from Quetta, Kharan and Gwadar.
- ILI, AD (Non-Cholera), Malaria, B. Diarrhea, SARI, Dog Bite, AWD (S. Cholera), VH (B, C & D), TB, CL, Pertussis, Dengue, Rubella, Diphtheria and Meningitis showed an increase in the number of cases. At the same time, a decline has been observed in the number of cases of ALRI <5 years, Mumps, AVH (A & E), Measles and Chickenpox.

Table 3: District wise distribution of most frequently reported suspected cases during Week 44, Balochistan

Districts	ILI	AD (Non-Cholera)	Malaria	ALRI < 5 years	B. Diarrhea	SARI	Typhoid	Dog Bite	AWD (S.Cholera)	VH (B, C & D)
Awaran	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barkhan	41	87	80	38	6	0	28	25	7	1
Chagai	308	186	63	0	63	0	14	0	11	1
Chaman	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dera Bugti	0	31	45	42	2	0	8	0	0	0
Duki	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Gwadar	1192	302	175	9	66	0	24	3	1	2
Harnai	4	189	84	177	54	0	0	0	0	0
Hub	43	102	151	3	13	0	0	0	0	0
Jaffarabad	233	563	988	13	94	101	15	61	0	76
Jhal Magsi	93	143	154	27	1	0	2	0	0	0
Kachhi (Bolan)	249	250	323	0	58	100	0	0	61	0
Kalat	0	0	0	0	0	0	0	0	0	0
Kech (Turbat)	1080	548	810	88	84	0	4	0	0	2
Kharan	651	209	50	0	67	60	7	0	3	0
Khuzdar	186	99	57	0	19	9	18	0	0	0
Killa Abdullah	207	198	18	8	71	85	27	8	54	0
Killa Saifullah	15	346	229	400	70	48	32	0	6	0
Kohlu	90	37	36	18	23	0	14	0	0	0
Lasbella	79	352	725	158	25	2	10	10	0	8
Loralai	423	226	50	78	44	68	25	3	0	0
Mastung	190	131	53	39	19	60	14	0	0	0
MusaKhel	56	94	217	31	29	14	20	0	12	4
Naseerabad	23	335	178	41	7	20	50	56	0	12
Nushki	0	157	1	0	40	10	0	0	0	0
Panjgur	26	56	90	44	11	0	0	0	0	0
Pishin	560	241	30	85	109	40	25	6	16	0
Quetta	798	450	27	157	32	52	16	0	16	1
Sherani	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sibi	512	373	270	83	19	60	15	0	10	0
Sohbat pur	0	246	191	187	98	0	17	1	0	3
Surab	81	26	0	0	0	0	0	0	0	0
Usta Muhammad	195	660	201	224	83	8	22	24	0	15
Washuk	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zhob	40	79	18	63	1	17	2	0	0	0
Ziarat	252	85	44	65	34	4	5	32	1	0
Total	7627	6801	5358	2078	1242	758	414	229	198	125

Figure 4: Most frequently reported suspected cases during Week 44, Balochistan

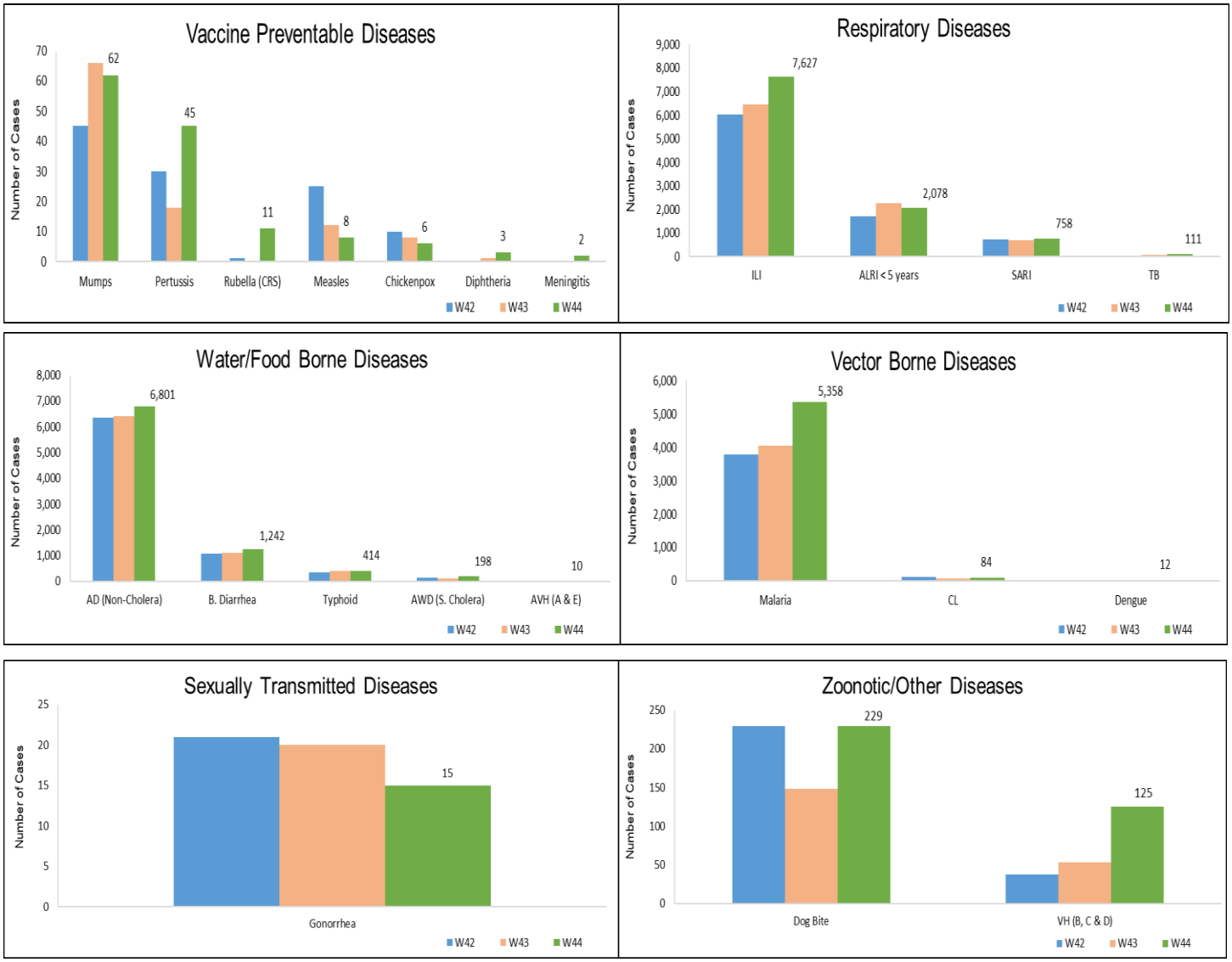
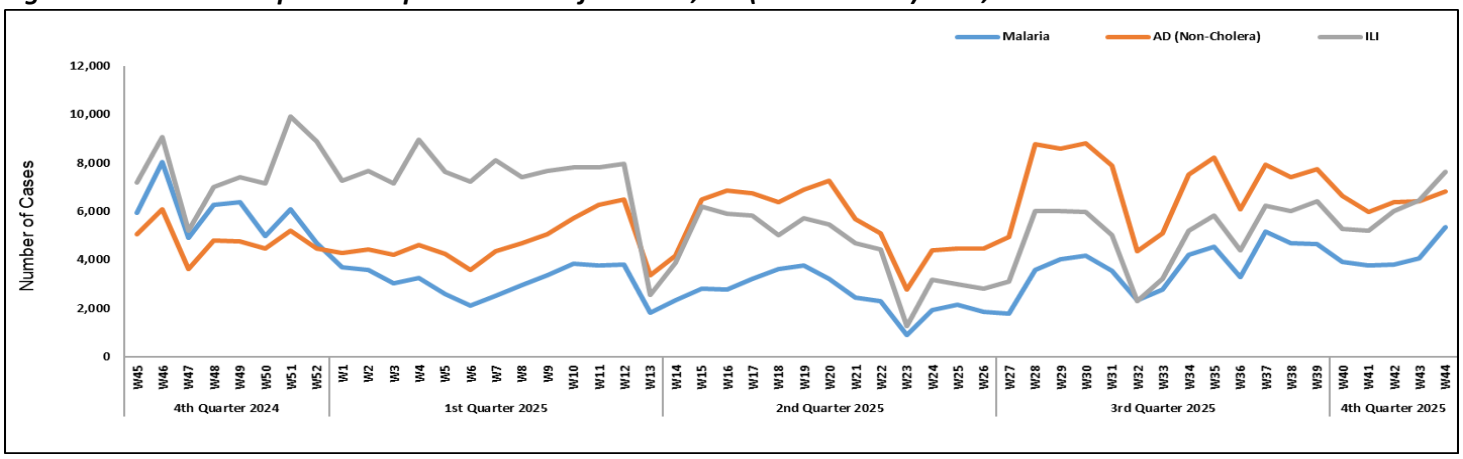


Figure 5: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Balochistan



Khyber Pakhtunkhwa

- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, ALRI<5 Years, Dog Bite, Dengue, B. Diarrhea, Typhoid, SARI and TB.
- ILI, ALRI<5 Years, Dog Bite, Dengue, B. Diarrhea, Typhoid, AVH (A & E), Mumps, VH (B, C & D), Chickenpox, AWD (S. Cholera), AFP, Meningitis and Diphtheria cases showed an increase in number while AD (Non-Cholera), Malaria, SARI, CL, Measles, NT, Pertussis and COVID-19 showed a decline in number this week.
- Twenty-eight cases of AFP reported from KP. All are suspected cases and need field verification.
- Two cases of HIV/AIDs reported from KP. A field investigation is required.
- Twelve suspected cases of NT reported from KP. They require field verification.

Table 4: District wise distribution of most frequently reported suspected cases during Week 44, KP

Districts	AD (Non-Cholera)	Malaria	ILI	ALRI < 5 years	Dog Bite	Dengue	B. Diarrhea	Typhoid	SARI	TB
Abbottabad	717	0	333	63	89	19	2	11	10	15
Bajaur	769	300	93	22	82	9	56	12	52	11
Bannu	881	1168	4	12	2	12	17	94	0	24
Battagram	224	70	802	0	0	0	0	0	0	0
Buner	197	247	0	0	11	0	0	4	0	0
Charsadda	1796	462	2202	937	12	118	109	108	7	7
Chitral Lower	578	18	63	17	11	4	18	9	15	7
Chitral Upper	85	1	45	3	0	0	5	16	9	5
D.I. Khan	1919	871	0	12	13	0	40	0	0	9
Dir Lower	1549	121	1	12	62	41	57	27	0	1
Dir Upper	873	26	26	59	10	4	14	8	2	5
Hangu	189	158	166	0	3	7	4	1	0	5
Haripur	1014	19	435	40	10	69	9	35	10	18
Karak	441	357	87	27	16	22	6	5	0	6
Khyber	399	555	43	65	28	0	115	55	6	11
Kohat	517	289	0	3	40	3	7	11	0	0
Kohistan Lower	87	9	0	0	3	1	4	0	0	0
Kohistan Upper	350	30	15	0	0	78	20	3	0	0
Kolai Palas	70	1	5	5	0	0	13	1	0	1
L & C Kurram	42	19	2	15	3	0	17	9	0	0
Lakki Marwat	690	643	2	5	74	16	3	10	0	7
Malakand	608	52	50	0	0	0	0	7	22	7
Mansehra	728	4	343	24	5	49	11	1	10	8
Mardan	1175	158	37	38	21	34	47	50	2	7
Mohmand	99	248	63	1	8	22	11	2	78	2
North Waziristan	96	121	15	30	1	10	6	25	28	5
Nowshera	2360	367	14	36	10	24	20	23	7	22
Orakzai	88	17	11	0	0	0	4	0	0	0
Peshawar	4103	90	570	84	5	215	73	45	5	17
Shangla	784	534	0	14	107	2	6	18	2	59
South Waziristan (Lower)	75	63	171	43	18	2	1	22	67	15
South Waziristan (Upper)	41	18	30	3	0	0	0	1	16	0
Swabi	939	133	685	68	127	28	17	40	73	25
Swat	1993	100	508	148	116	43	72	56	0	7
Tank	646	313	46	7	0	1	13	0	0	7
Tor Ghar	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Upper Kurram	184	18	131	18	4	2	35	15	38	1
Total	27306	7600	6998	1811	891	835	832	724	459	314

Figure 6: Most frequently reported suspected cases during Week 44, KP

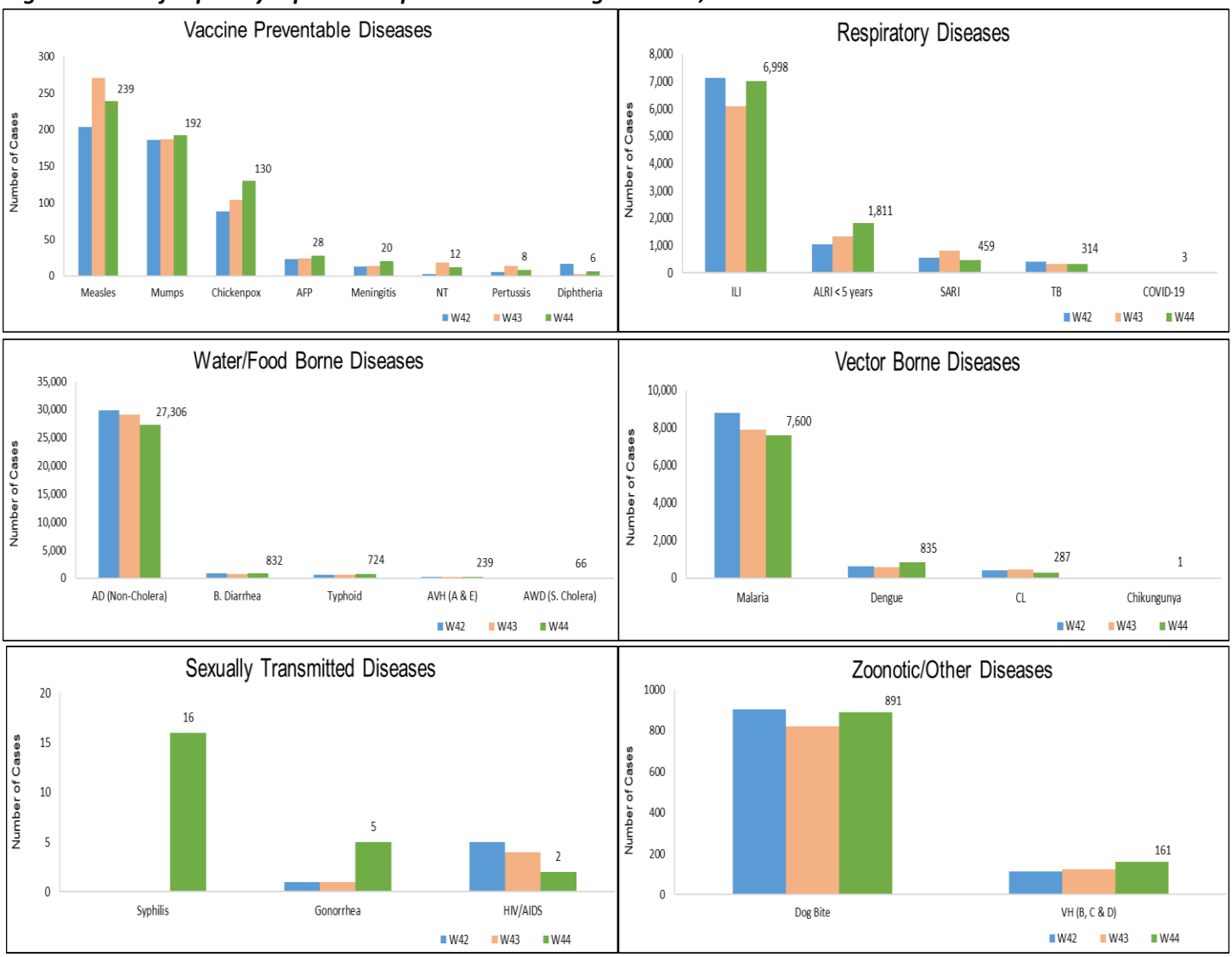
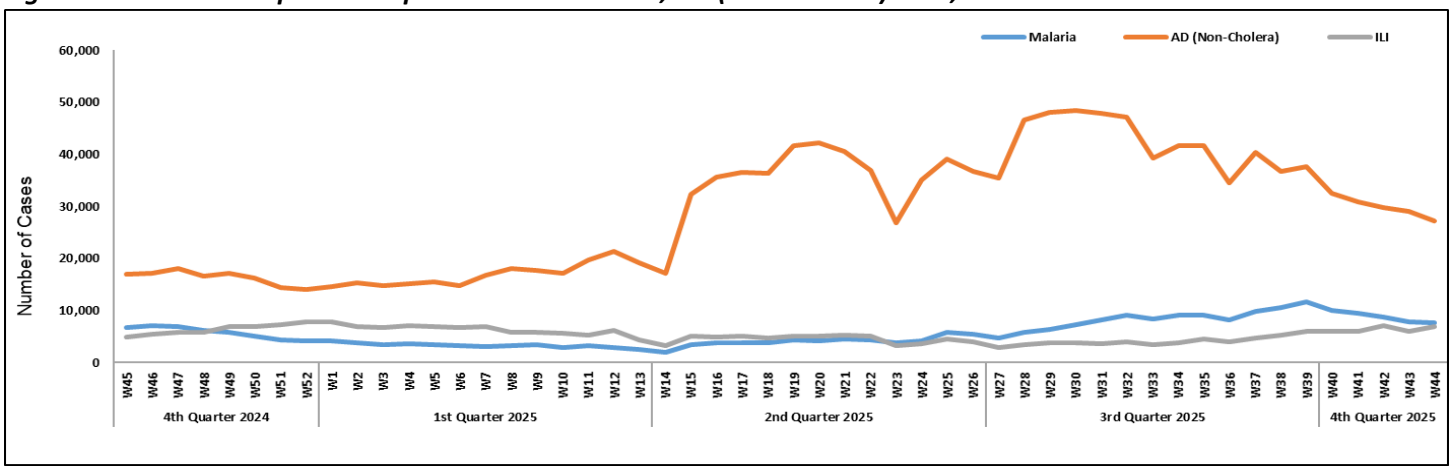


Figure 7: Week wise reported suspected cases Malaria, AD (Non-Cholera) & ILI, KP



ICT, AJK & GB

ICT: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera), TB, ALRI < 5years, Chickenpox and Dengue. AD (Non-Cholera) cases showed a decline in number while an increase in number was observed in ILI, TB, ALRI < 5years, Chickenpox and Dengue cases this week.

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

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

Figure 8: Most frequently reported suspected cases during Week 44, AJK ss

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

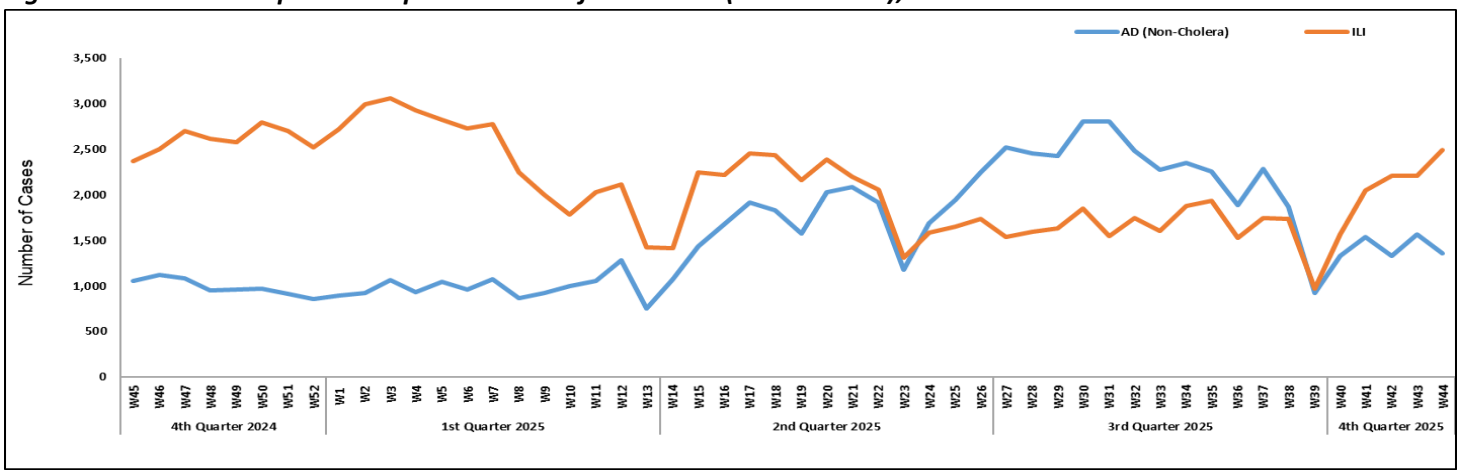


Figure 10: Most frequently reported suspected cases during Week 44, ICT

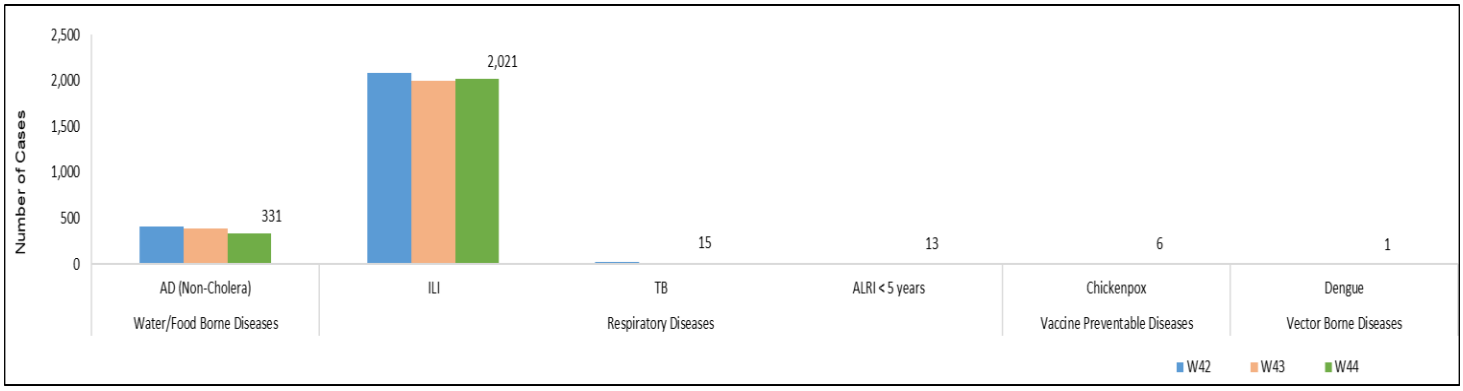


Figure 11: Week wise reported suspected cases of ILI, ICT

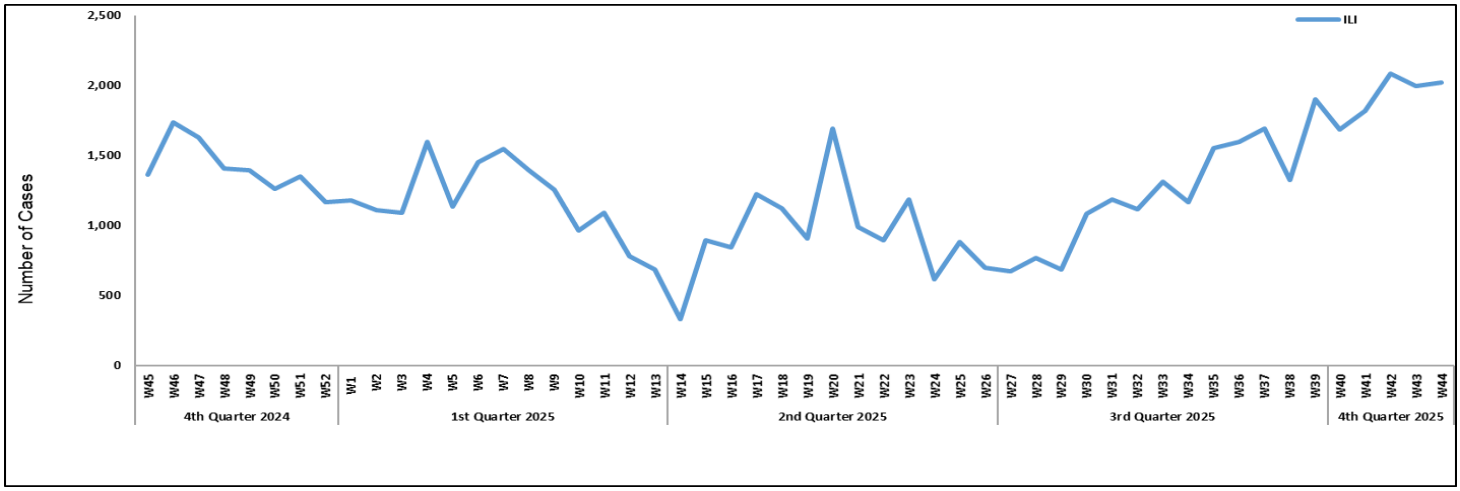


Figure 12: Most frequently reported suspected cases during Week 44, GB

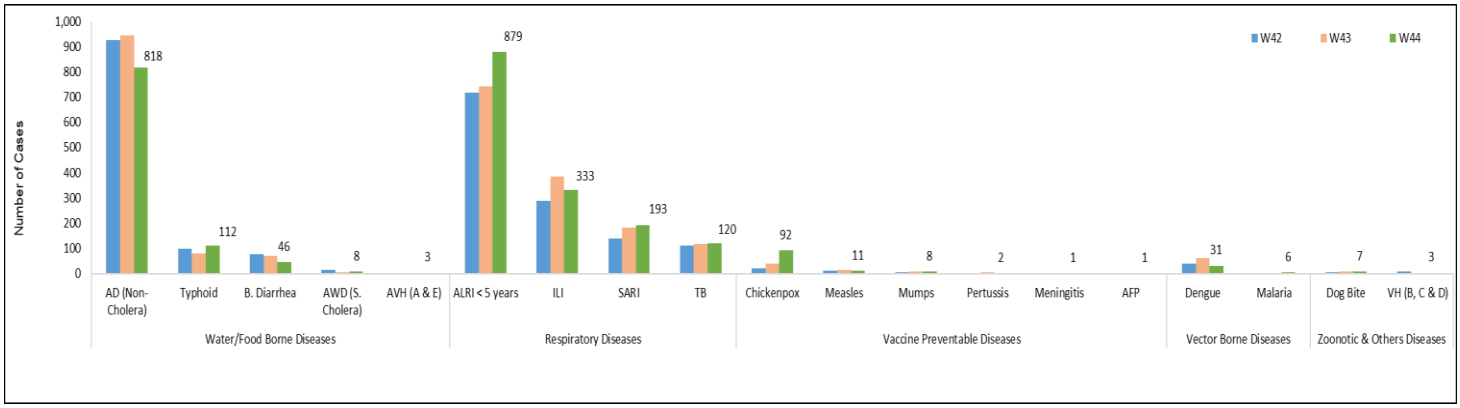


Figure 13: Week wise reported suspected cases of AD (Non-Cholera), GB

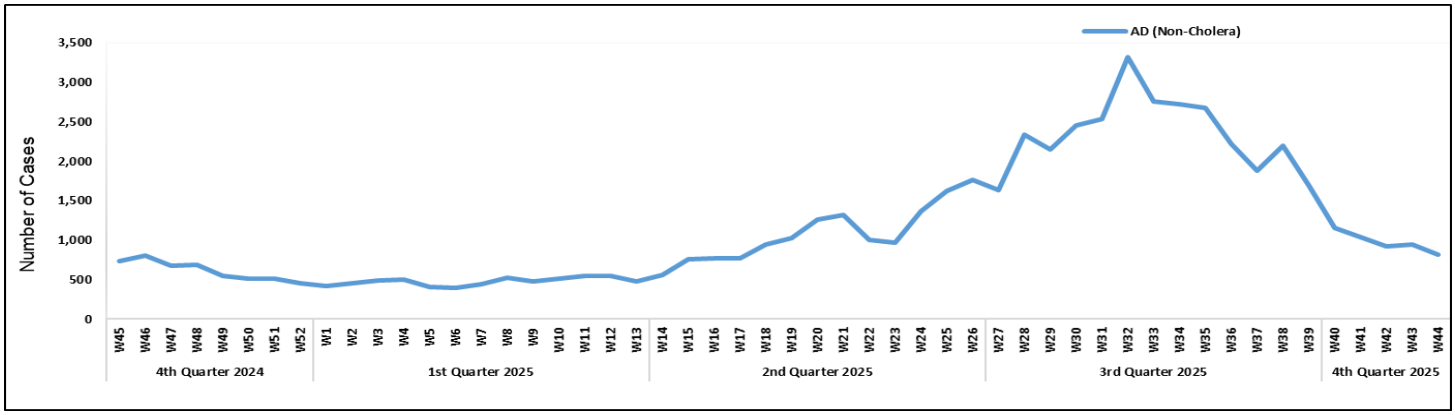


Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epi Week 44

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)	145	0	-	-	0	0	-	-	0	0	-	-	0	0
Stool culture & Sensitivity	273	4	-	-	0	0	-	-	0	0	-	-	0	0
Malaria	19,887	719	-	-	8,054	5	-	-	127	2	-	-	0	0
CCHF	0	0	4	0	0	0	-	-	0	0	-	-	0	0
Dengue	14,910	3,244	-	-	8,360	129	-	-	0	0	-	-	0	0
VH (B)	10,312	233	48	30	24	9	-	-	998	16	-	-	92	0
VH (C)	10,477	882	45	21	79	19	-	-	1,062	10	-	-	92	0
VH (D)	184	49	-	-	0	0	-	-	0	0	-	-	0	0
VH (A)	209	84	-	-	0	0	-	-	2	0	-	-	0	0
VH (E)	160	16	-	-	0	0	-	-	8	0	-	-	0	0
Covid-19	56	5	2	0	32	0	-	-	0	0	-	-	0	0
TB	441	44	-	-	73	4	-	-	44	0	-	-	33	3
HIV/ AIDS	4,163	28	-	-	385	2	-	-	183	0	-	-	28	0
Syphilis	1,021	20	-	-	0	0	-	-	126	0	-	-	0	0
Typhoid	2,901	44	-	-	0	0	-	-	187	28	-	-	0	0
Diphtheria	9	3	-	-	0	0	-	-	0	0	-	-	0	0
ILI	27	4	-	-	32	0	-	-	0	0	-	-	0	0
Pneumonia (ALRI)	552	61	-	-	0	0	-	-	0	0	-	-	0	0
Meningitis	39	0	-	-	0	0	-	-	0	0	-	-	0	0
Measles	121	52	14	9	210	89	14	10	0	0	340	86	24	10
Rubella (CRS)	9	4	-	-	0	0	-	-	0	0	-	-	0	0
Leishmaniansis (cutaneous)	2	0	-	-	6	1	-	-	0	0	-	-	0	0
Chikungunya	25	0	-	-	3	0	-	-	0	0	-	-	0	0
Gonorrhea	136	0	-	-	0	0	-	-	0	0	-	-	0	0
Brucellosis	1	0	-	-	0	0	-	-	0	0	-	-	0	0

Table 6: IDSR reporting districts Week 44, 2025

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	103	93%
	Bannu	238	127	53%
	Battagram	59	24	41%
	Buner	34	18	53%
	Bajaur	44	37	84%
	Charsadda	59	58	98%
	Chitral Upper	34	30	88%
	Chitral Lower	35	35	100%
	D.I. Khan	114	113	99%
	Dir Lower	74	61	82%
	Dir Upper	37	34	92%
	Hangu	22	17	77%
	Haripur	72	70	97%
	Karak	36	36	100%
	Khyber	53	43	81%
	Kohat	61	61	100%
	Kohistan Lower	11	5	45%
	Kohistan Upper	20	8	40%
	Kolai Palas	10	10	100%
	Lakki Marwat	70	69	99%
	Lower & Central Kurram	42	6	14%
	Upper Kurram	41	30	73%
	Malakand	42	26	62%
	Mansehra	133	74	56%
	Mardan	80	62	78%
	Nowshera	56	53	95%
	North Waziristan	13	11	85%
	Peshawar	156	133	85%
	Shangla	37	29	78%
	Swabi	64	62	97%
	Swat	77	72	94%
	South Waziristan (Upper)	93	93	100%
	South Waziristan (Lower)	42	29	69%
	Tank	34	33	97%
	Torghar	14	0	0%
	Mohmand	68	26	38%
	Orakzai	69	9	13%
Azad Jammu Kashmir	Mirpur	37	37	100%
	Bhimber	92	48	52%
	Kotli	60	60	100%
	Muzaffarabad	45	44	98%
	Poonch	46	46	100%
	Haveli	39	39	100%
	Bagh	54	54	100%

	Neelum	39	26	67%
	Jhelum Velley	29	29	100%
	Sudhnooti	27	27	100%
Islamabad Capital Territory	ICT	23	23	100%
	CDA	15	5	33%
Balochistan	Gwadar	26	23	88%
	Kech	44	35	80%
	Khuzdar	74	14	19%
	Killa Abdullah	26	25	96%
	Lasbella	55	55	100%
	Pishin	69	33	48%
	Quetta	55	28	51%
	Sibi	36	33	92%
	Zhob	39	11	28%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	0	0%
	Kohlu	75	13	17%
	Chagi	36	25	69%
	Kalat	41	40	98%
	Harnai	17	17	100%
	Kachhi (Bolan)	35	18	51%
	Jhal Magsi	28	28	100%
	Sohbat pur	25	25	100%
	Surab	32	13	41%
	Mastung	45	45	100%
	Loralai	33	26	79%
	Killa Saifullah	28	24	86%
	Ziarat	29	14	48%
	Duki	31	0	0%
	Nushki	32	29	91%
	Dera Bugti	45	28	62%
	Washuk	46	0	0%
	Panjgur	38	5	13%
	Awaran	23	0	0%
	Chaman	24	0	0%
	Barkhan	20	20	100%
	Hub	33	14	42%
	Musakhel	41	17	41%
	Usta Muhammad	34	34	100%
Gilgit Baltistan	Hunza	32	32	100%
	Nagar	25	20	80%
	Ghizer	38	38	100%
	Gilgit	44	44	100%
	Diamer	62	52	84%
	Astore	55	55	100%
	Shigar	27	25	93%
	Skardu	53	52	98%
	Ganche	29	29	100%

	Kharmang	46	25	54%
Sindh	Hyderabad	72	72	100%
	Ghotki	64	64	100%
	Umerkot	62	62	100%
	Naushahro Feroze	107	101	94%
	Tharparkar	276	240	87%
	Shikarpur	60	59	98%
	Thatta	52	50	96%
	Larkana	67	62	93%
	Kamber Shadadkot	71	71	100%
	Karachi-East	21	14	67%
	Karachi-West	20	20	100%
	Karachi-Malir	35	27	77%
	Karachi-Kemari	22	21	95%
	Karachi-Central	12	11	92%
	Karachi-Korangi	18	18	100%
	Karachi-South	6	4	67%
	Sujawal	55	54	98%
	Mirpur Khas	106	105	99%
	Badin	124	123	99%
	Sukkur	64	63	98%
	Dadu	90	84	93%
	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	53	98%
	Tando Muhammad Khan	41	41	100%
	Shaheed Benazirabad	122	122	100%

Table 7: IDSR reporting Tertiary care hospital Week 44, 2025

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	1	50%
	Poonch	2	2	100%
	Haveli	1	1	100%
	Bagh	1	1	100%
	Neelum	1	0	0%
	Jhelum Vellay	1	1	100%
	Sudhnooti	1	1	100%
Sindh	Karachi-South	3	1	33%
	Sukkur	1	0	0%
	Shaheed Benazirabad	1	0	0%
	Karachi-East	1	1	100%
	Karachi-Central	1	0	0%
KP	Peshawar	3	0	0%
	Swabi	1	0	0%
	Nowshera	1	1	100%
	Mardan	1	1	100%
	Abbottabad	1	1	100%
	Swat	1	1	100%

Strengthening Digital Health through Institutional Collaboration

Dear Editor,

The National Health Data Center (NHDC) at the National Institute of Health (NIH), Islamabad, has recently extended temporary server space to the Health Department of Balochistan province. Though seemingly a technical measure, this initiative reflects a forward-looking commitment to inter-provincial collaboration, and the digital transformation of Pakistan's public health system.

In recent years, the role of digital infrastructure in health governance has become indispensable. Timely, reliable, and integrated data systems are now central to disease surveillance, outbreak response, and strategic planning. Provinces such as Balochistan, where health systems face unique geographic and resource-related constraints, have often encountered barriers in establishing sustainable data storage and digital reporting mechanisms. By providing server space, NHDC has helped bridge this critical gap ensuring that data from the province can be securely stored, efficiently managed, and effectively utilized for decision-making at both provincial and national levels.

This collaboration also strengthens the foundations of Pakistan's Integrated Disease Surveillance and Response (IDSR) system, which relies heavily on seamless data flow between provincial and federal entities. Improved digital connectivity between Balochistan and NHDC will enable more accurate and timely sharing of surveillance data, contributing to early warning, rapid response, and informed resource allocation. Moreover, such initiatives foster a culture of cooperation and mutual technical support among national health institutions an essential ingredient for resilient and equitable health systems.

Beyond the operational benefits, this act symbolizes a broader vision for Pakistan's health sector: one that embraces digitalization not as an isolated goal, but as a unifying force for collaboration and efficiency. It underscores the principle that the country's digital health advancement must progress inclusively strengthening all provinces simultaneously, particularly those with limited infrastructure.

The NHDC's gesture should thus be recognized as more than temporary assistance; it represents a strategic and enabling action toward national health system strengthening. It sets a precedent for how digital resources can be shared to overcome infrastructural disparities, optimize health intelligence, and ensure that every region contributes meaningfully to the country's public health data landscape.

As Pakistan moves forward with its Digital Health Policy and continues to build capacities under the International Health Regulations (IHR 2005), such partnerships will be vital. They demonstrate that sustainable digital transformation in health is not only about technology it is about collaboration, equity, and the shared pursuit of a stronger, more responsive national health system.

Bilal Barkatullah Qureshi

Lead Software Engineer/ MIS

IDSRS Pakistan

Notes from the field:

Measles Outbreak Investigation in Islamabad: UC Kuri - Jhagyot, 2025

Dr Nimra Gillani (Med Epidemiologist IDSRS - FETP)

Rukhsana Sarwar (Statistical Assistant – FETP)

Dr Waheeda Khan Bhettani
(Pathologist PHLD NIH)

Introduction:

Measles is a highly contagious viral infection, caused by measles virus that spreads through respiratory droplets from coughs and sneezes. It can also be spread by touching contaminated surfaces and then touching the face. These droplets can infect other people for up to two hours. Measles poses a significant public health threat due to its high morbidity and mortality rates. With a basic reproduction number (R0) of 12-18, Measles is highly infectious, meaning 1 infected individual can potentially transmit the disease to 12-18 others (1)

Globally, measles continues to cause significant morbidity and mortality, with an estimated 107,500 deaths in 2023, mostly among unvaccinated or under-vaccinated children under five years of age (2)

In the Eastern Mediterranean Region (EMRO), measles remains endemic, with periodic outbreaks due to suboptimal vaccine uptake. In 2023 alone, the EMRO reported 123,776 confirmed measles cases and 563 related deaths (3)

Pakistan is among the top five countries worldwide with the highest measles burden, driven largely by gaps in routine immunization coverage despite the availability of effective vaccines (4).

On July 2, 2025, during a routine surveillance visit to Rural Health Center (RHC) Tarlai, the surveillance team identified a confirmed measles case in a four-year-old child whose records indicated the case was reported on June 16, 2025. Review of health facility records revealed a confirmed case. The findings fueled the team to initiate an outbreak investigation.

Objectives:

- To determine the magnitude of the outbreak
- To identify the risk factors associated with measles transmission
- To recommend preventive and control measures to stop its transmission

Methodology

A descriptive outbreak investigation followed by case control study was conducted from 15th May to 15th July 2025 in Union Council Kuri in Jhagiot-Pir Sohawa. A suspected case was defined as "any individual having age <15 years and residing near Sultan Marriage Hall in UC Kuri- with fever≥38°C, generalized non - vesicular maculopapular rash, and at least one of the following symptoms: cough, coryza, or conjunctivitis, with symptom onset during 15th May and 15th July, 2025". A confirmed case was "either epidemiologically linked to another confirmed case or laboratory confirmed via IgM or PCR testing".

Data were collected using a structured questionnaire adopted from the case investigation form of the Integrated Disease Surveillance and Response (IDSR) system for measles, which recorded clinical signs and symptoms, immunization status, demographic details, travel and treatment histories, and information for contact tracing.

Active case finding was conducted through door to door visits and Health Facility record reviews. A 30-household cluster survey was conducted to assess measles vaccination coverage and missed immunization. Laboratory investigations included serological testing (IgM/IgG).3 samples were collected and sent to NIH.

A case control study was conducted using (1:2) case to control ratio. Controls were sex and age matched and selected from asymptomatic individuals residing in the same community.

Informed consent was obtained from all participants or their guardians before interviews.

Confidentiality of collected information was maintained throughout the investigation.

Descriptive analysis summarized the distribution of cases by time, place and person. Analytical analysis was conducted using **OpenEpi (Version 3)** to calculate odds ratios (OR) and 95% confidence intervals (CI) for key exposure: vaccination status. Chi-square and Fisher's exact tests were used to assess statistical significance, with a **p-value < 0.05 considered statistically significant**.

Results:

A total of 18 confirmed measles cases were identified during the outbreak period from May 15th to July 15th, 2025, including the index case. Females accounted for 56% of the total cases. The mean age of cases was 5.5 years (Range 9 months - 15years). The SD was 4, indicating wide spread in the age data (group indicates both toddlers and teenagers). The overall attack rate was 26 per 100,000 population. Clinically, 100% of the cases were presented with fever & rash, 33% had cough; 22% had diarrhea, 11% experienced coryza & conjunctivitis while only 6% had complains of sore throat. The primary risk factor identified for measles infection in the village was lack of vaccination. The data revealed that 72% of the cases were zero dose while 17%of cases had received only the first dose of the Measles Rubella (MR-1) vaccine but had missed the second dose MR-2. Risk factor analysis shows that being unvaccinated (OR = 16) 95% (CI): 3.15 – 81.26 was the most significant risk factor associated with measles infection during the outbreak. In this study, the association between lack of vaccination and measles infection was highly significant (p = 0.0002,). Out of three samples sent to NIH, only one was positive.

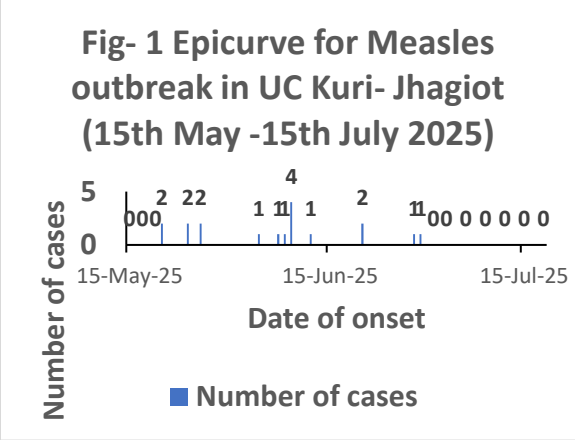
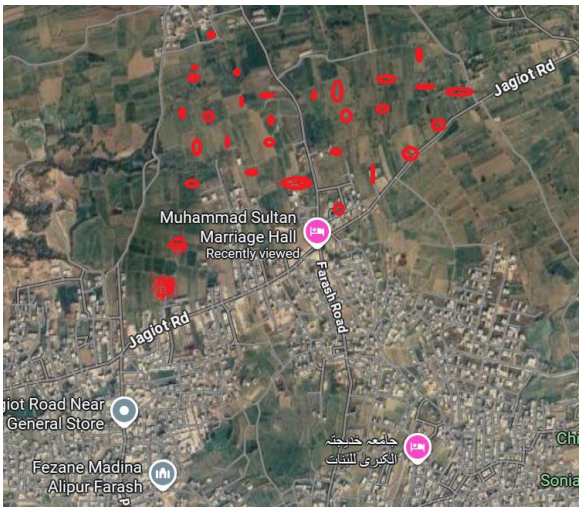
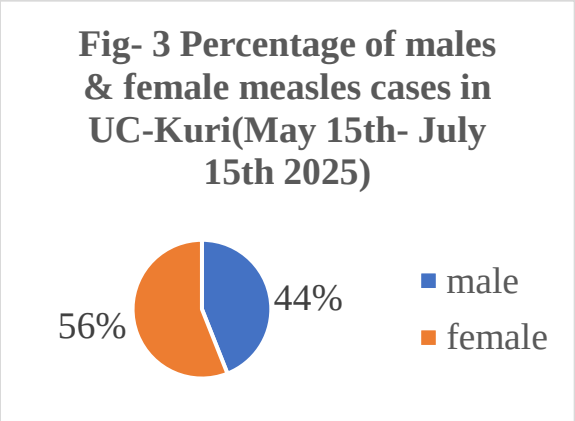
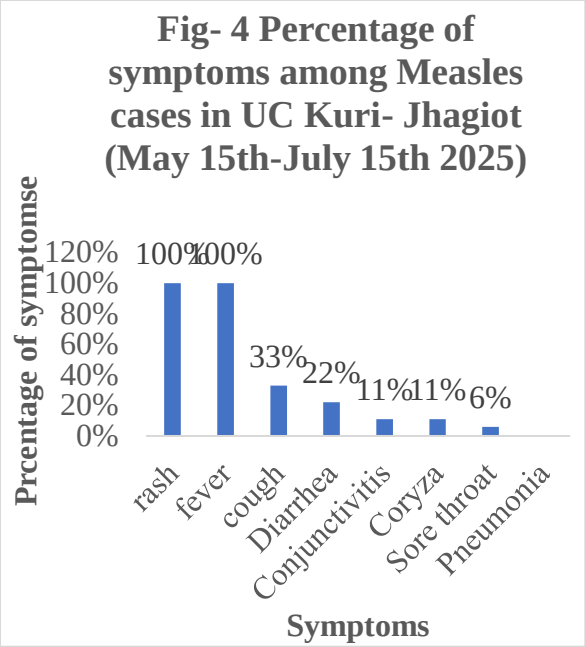


Fig- 2 Spot Map of UC -Kuri Jhagiot- Pir Sohawa







Discussion:

This measles outbreak in Union Council Kuri, Jhagiot–Pir Sohawa, highlights persistent immunity gaps in a high-risk population despite the availability of safe and effective vaccines. The epidemiological pattern of predominantly affected children under five years of age is consistent with findings from other outbreaks in Pakistan and the Eastern Mediterranean Region, where low routine immunization coverage remains a major factor for measles transmission (5)

The high odds ratio for unvaccinated status highlights vaccination as the most significant protective factor, reinforcing WHO's position that achieving and sustaining ≥95% coverage with two doses of measles-containing vaccine is essential to interrupt transmission. The findings of poor routine immunization performance in catchment area and no LHW coverage align with evidence from similar settings showing that marginalized, underserved, or geographically hard-to-reach communities have disproportionately lower coverage and higher outbreak risk (6)

Conclusion:

The outbreak investigation in UC Kuri revealed that unvaccinated children under 5 years were predominantly affected, highlighting the area's low immunization coverage as a contributing factor. Epidemiological analysis confirmed that being unvaccinated was the most significant risk factor. While it was contained through proper public health actions, the persistent risk of future outbreaks remains due to underlying vulnerabilities in routine immunization coverage.

Recommendations:

- Conduct mop-up vaccination activities in affected areas
- Ensure prompt isolation of Measles cases in healthcare facilities
- Enhance active Measles surveillance through IDSR system for early detection & response
- Provide regular training for healthcare providers on Measles diagnosis, treatment & prevention
- Promote multisectoral collaboration for unified response to Measles outbreaks

References:

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4. Rana MS, Usman M, Alam MM, Ikram A, Salman M, Umair M. The world's largest measles-Rubella vaccination campaign in Pakistan: Time to invest in routine immunization. Hum Vaccines Immunother. 2022 Nov 30;18(5):2080444.

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Knowledge Hub

Smog: What You Need to Know

Smog is a severe form of **air pollution** that significantly reduces visibility and poses major health risks. The word "smog" is a combination of "smoke" and "fog." Modern smog is a complex mix of pollutants formed by emissions from vehicles and industry reacting with sunlight.

Types of Smog and Key Pollutants

Smog is classified based on its chemical composition:

1. Photochemical Smog (Modern Smog)

- **Formation:** Forms when **Nitrogen Oxides** and **Volatile Organic Compounds (VOCs)** primarily from car exhaust and industrial sources react with **sunlight** and heat.
- **Key Pollutants of Concern:**
  - **Ground-Level Ozone:** A powerful irritant and the main toxic component. Unlike stratospheric ozone, which protects the Earth, ground-level ozone is harmful to breathe.
  - **Particulate Matter** Tiny solid or liquid particles suspended in the air (particles less than 2.5 micrometers in diameter) is particularly dangerous because it can penetrate deep into the lungs and enter the bloodstream.

2. Sulfurous Smog (London Smog)

- **Formation:** Created by high concentrations of **sulfur oxides** and particulate matter from burning coal and heavy oils. It is usually intensified by high humidity and cold temperatures.

Sources of Precursor Pollutants

The primary sources of the compounds that create modern photochemical smog are:

- **Mobile Sources:** Exhaust from all types of vehicles is the largest source of and VOCs in urban areas.
- **Stationary Sources:** Emissions from power plants, refineries, and factories.
- **Area Sources:** Vapors released from chemical solvents, paints, gasoline refueling, and commercial enterprises.

Health and Environmental Impacts

The severity of smog's impact is tied directly to the concentration of ozone and particulate matter.

Pollutant	Primary Health Impact	Mechanism of Harm
Ozone	**Respiratory System Damage**	Chemically reacts with lung tissue, causing inflammation, reduced lung function, and triggering asthma attacks.
Particulate Matter	**Cardiopulmonary Damage**	Small particles penetrate the lungs, causing long-term damage,

Pollutant	Primary Health Impact	Mechanism of Harm
		entering the bloodstream, and increasing the risk of heart attacks, strokes, and premature death.

- **Vulnerability:** Children, the elderly, outdoor workers, and people with pre-existing heart or lung conditions are at the highest risk.

Measuring Smog Severity: The Air Quality Index (AQI)

The **Air Quality Index (AQI)** is a color-coded tool used by governments to communicate how clean or polluted the air is and what associated health effects might be a concern. The AQI measures the levels of key pollutants, including ozone.

AQI Range	Color Code	Level of Concern	Public Health Action
0 to 50	Green	Good	None.
101 to 150	Orange	Unhealthy for Sensitive Groups	Sensitive groups should limit prolonged outdoor exertion.
151 to 200	Red	Unhealthy	Everyone may begin to experience health effects; sensitive groups should avoid
			all outdoor activity.
301 to 500	Maroon/Dark Purple	Hazardous	Emergency alert. The entire population is likely to be affected.

Prevention and Mitigation

Effective smog control requires coordinated efforts to reduce the emission of precursor pollutants.

- **Transportation Policies:** Promoting electric and hybrid vehicles, and investing in high-efficiency public transit systems.
- **Industrial Controls:** Implementing and enforcing strict emission standards on factories and power plants, including requiring the use of scrubbers and catalytic converters.
- **Public Action:** Limiting driving, avoiding high-polluting activities (like using gasoline-powered lawn tools), and staying indoors during periods of high AQI, especially on sunny afternoons when ozone levels peak.

More Information

For additional authoritative information on smog, air pollution, and its health effects, please visit:

- **World Health Organization (WHO):** https://www.who.int/air-pollution
- **Centers for Disease Control and Prevention (CDC):** https://www.cdc.gov/air/air-quality.html
- **U.S. Environmental Protection Agency (EPA):** https://www.epa.gov/air-quality
- **Public Health Agency of Canada (PHAC):** https://www.canada.ca/en/public-

health/services/health-risks-safety/environmental-public-health/air-quality.html

- **UK Health Security Agency (UKHSA) / National Health Service (NHS):** https://www.nhs.uk/conditions/air-pollution/

سموگ آلودگی وگرد وغبار کی ایک قسم ہے۔ یہ فضاء میں موجود نائٹروجن آکسائیڈ اور سورج کی روشنی کے کیمیائی عمل سے وجود میں آتی ہے۔ موسمی بارش نہ ہونے کے سبب گرد وغبار، صنعتی آلودگی اور ٹریفک کا دھواں ہوا میں جمع ہو جاتا ہے اور فضا کو آلودہ کرتا ہے۔ اسے فضائی آلودگی یا سموگ بھی کہتے ہیں۔

اثرات

- فضائی آلودگی (سموگ) سانس کے ذریعے جسم میں داخل ہو کر خطرناک امراض میں مبتلا کر سکتی ہے
- دمہ اور سانس کے مریض فضائی آلودگی (سموگ) سے زیادہ متاثر ہوتے ہیں

علامات

- نزلہ زکام
- کھانسی
- بخار
- گلے کی خارش
- آنکھوں میں سوزش

علامات ظاہر ہونے کی صورت میں فوراً ڈاکٹر سے رجوع کریں۔

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UK Health Security Agency

World Health Organization

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