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

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Public Health Bulletin - Pakistan, Week 21, 2024

The Public Health Bulletin has revolutionized public health information access in Pakistan. No longer a mere list of illnesses, it has become a comprehensive resource empowering both healthcare professionals and citizens alike.

Moving beyond basic reporting, the Bulletin delves into detailed analysis of prevalent diseases. This includes malaria, influenza-like illness (ILI), tuberculosis (TB), acute lower respiratory infections in children under five (ALRI <5), B. diarrhea, dog bites, viral hepatitis (B, C, and D), typhoid fever, and acute watery diarrhea (AWD) including suspected cholera. Stakeholders can leverage this valuable data to tailor preventive measures and address emerging threats proactively.

The Bulletin also functions as an early warning system, identifying trends in disease prevalence. Recent data suggests a slight decrease in malaria, ILI, TB, and ALRI <5 cases over the past week, while acute diarrhea (non-cholera), dog bites, and AWD (including suspected cholera) show a slight increase. This allows for swift public health interventions to prevent the spread of diseases like acute flaccid paralysis and brucellosis.

For those seeking in-depth information, the Bulletin offers a wealth of resources. This week's edition features a report on the recent scabies outbreak investigation in Mardan, a commentary analyzing the alarming rise in vaping, and an epidemiological abstract evaluating the COVID-19 surveillance system in Peshawar. Additionally, the Bulletin provides advisories for public health threats like Crimean-Congo hemorrhagic fever (CCHF) and heatstroke. The Knowledge Hub section delves deeper into the devastating impact of smoking on human health.

By staying informed through the Public Health Bulletin and utilizing its insights, everyone can contribute to a healthier Pakistan.

Sincerely,
The Chief Editor

- *During week 21, the most frequently reported cases were of Acute Diarrhea (Non-Cholera) followed by Malaria, ILI, TB, ALRI <5 years, B. Diarrhea, dog bite, VH (B, C & D), Typhoid and AWD (S. Cholera).*

- *Twenty-eight cases of AFP reported from KP, seven from Sindh, four from Punjab, three from GB, two from Balochistan and one from AJK. All are suspected cases and need field verification.*

- *Fifteen suspected cases of HIV/ AIDS reported from Punjab, eight from Sindh, two from KP and one from Balochistan. Field investigation required to verify the cases.*

- *Seven cases of Brucellosis reported from KP and five from Balochistan. These are suspected cases and require field verification.*

- *Two suspected cases of CCHF reported from Punjab. Field investigation required to verify the cases.*

- *There is a slightly decreasing trend observed for Malaria, ILI, TB and ALRI <5 years while a slightly increasing trend for Acute Diarrhea (Non-Cholera), Dog bite and AWD (S. Cholera) cases this week.*

IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 149 implemented districts is 78%*
- *Gilgit Baltistan and AJK are the top reporting regions with a compliance rate of 99% and 98%, followed by Sindh 90% and ICT 86%*
- *The lowest compliance rate was observed in KPK.*

Region	Expected Reports	Received Reports	Compliance (%)
Khyber Pakhtunkhwa	2740	1656	60
Azad Jammu Kashmir	382	373	98
Islamabad Capital Territory	35	30	86
Balochistan	1206	956	79
Gilgit Baltistan	374	371	99
Sindh	2085	1919	92
National	6822	5305	78

Pakistan

Table 1: Province/Area wise distribution of most frequently reported suspected cases during week 21, Pakistan.

Diseases	AJK	Balochistan	GB	ICT	KP	Punjab	Sindh	Total
AD (Non-Cholera)	2282	7,816	1074	541	30,487	126,513	50,079	218,792
Malaria	10	7,131	1	6	5,386	3,194	56,666	72,394
ILI	2,116	7,336	424	972	4,287	5	20,114	35,254
TB	46	179	68	9	484	9,734	10,705	21,225
ALRI < 5 years	1,020	1,693	568	5	1,508	821	8,809	14,424
B.Diarrhea	103	2028	91	9	1,552	1,793	3,765	9,341
Dog Bite	109	119	14	0	622	5,587	1,940	8,391
VH (B, C & D)	11	107	3	2	245	0	5,015	5,383
Typhoid	38	774	45	2	772	2,166	1,295	5,092
AWD (S. Cholera)	53	341	145	8	121	3,081	17	3,766
SARI	212	824	229	2	1,063	0	153	2,483
Dengue	0	523	0	0	20	757	107	1,407
AVH (A&E)	10	52	13	0	336	0	655	1,066
Measles	21	36	10	1	503	299	192	1,062
CL	1	148	0	0	372	4	1	526
Mumps	6	57	10	0	78	0	232	383
Chickenpox/ Varicella	0	24	4	2	90	34	71	225
Chikungunya	1	1	0	0	0	0	152	154
Gonorrhea	0	95	0	0	19	0	14	128
Pertussis	2	76	5	0	22	0	3	108
Meningitis	0	4	1	0	13	21	16	55
AFP	1	2	3	0	28	4	7	45
Diphtheria (Probable)	0	22	0	0	14	3	0	39
Syphilis	1	5	0	0	3	0	20	29
HIV/AIDS	0	1	0	0	2	15	8	26
Brucellosis	0	5	0	0	7	0	0	12
VL	0	1	0	0	5	0	0	6
NT	0	0	0	0	4	0	1	5
CCHF	0	0	0	0	0	2	0	2
Rubella (CRS)	0	2	0	0	0	0	0	2
Leprosy	0	0	0	0	0	0	1	1

*Figure 1: Most frequently reported suspected cases during week 21, Pakistan.*

Sindh
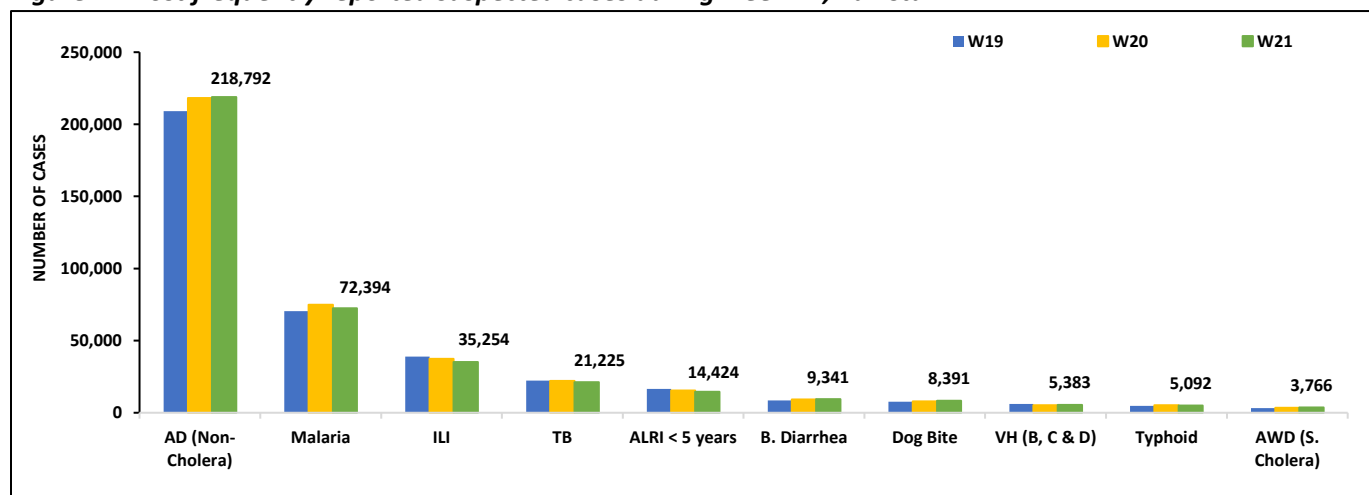
- Malaria cases were maximum followed by AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite, Typhoid and AVH (A & E).
- Malaria cases are mostly from Larkana, Khairpur and Kamber whereas AD (Non-Cholera) cases are from Dadu, Khairpur and Badin.
- Eight suspected cases of HIV/ AIDS and Seven cases of AFP reported from Sindh. All are suspected cases and need field verification.
- There is a slightly decreasing trend observed for Malaria, ILI, ALRI<5 Years, B. Diarrhea and AVH (A & E) cases whereas a slightly increasing trend for AD (Non-Cholera) cases this week.

Table 2: District wise distribution of most frequently reported suspected cases during week 21, Sindh

Districts	Malaria	AD (Non-Cholera)	ILI	TB	ALRI < 5 years	VH (B, C & D)	B. Diarrhea	Dog Bite	Typhoid	AVH (A&E)
Badin	4,080	3,299	394	708	489	232	235	64	50	2
Dadu	3,824	4,238	340	468	956	72	480	213	115	21
Ghotki	1,398	1,475	0	189	339	321	170	204	1	27
Hyderabad	157	981	495	32	6	38	0	0	15	0
Jacobabad	1,167	1,050	310	109	491	166	168	118	82	1
Jamshoro	1,792	2,934	24	395	152	148	80	15	41	3
Kamber	4,131	1,863	0	940	329	169	185	161	30	0
Karachi Central	60	1,145	820	252	47	70	10	0	49	1
Karachi East	59	505	191	17	10	3	8	9	7	0
Karachi Keamari	4	227	70	0	0	0	1	0	2	3
Karachi Korangi	56	330	45	4	1	2	2	0	2	1
Karachi Malir	288	2,059	2,713	119	234	74	60	55	34	6
Karachi South	55	113	4	0	0	0	3	1	0	0
Karachi West	177	1,296	1,885	146	129	113	64	139	49	21
Kashmore	1,377	632	408	234	124	23	72	145	4	1
Khairpur	5,251	3,476	4,405	1013	882	121	628	155	409	8
Larkana	6,276	2,507	0	931	419	104	377	4	21	0
Matiari	1,501	2,112	0	509	289	291	87	31	8	6
Mirpurkhas	3,369	2,890	2,136	644	526	249	93	49	19	4
Naushero Feroze	973	636	695	326	135	60	76	116	54	0
Sanghar	3,839	1,565	0	993	384	1,276	21	122	32	1
Shaheed Benazirabad	1,737	2,159	0	405	334	132	82	102	159	0
Shikarpur	2,031	1,334	2	222	140	729	158	52	1	0
Sujawal	1,712	668	0	120	301	81	51	39	1	81
Sukkur	1,589	1,417	1,001	275	189	64	154	17	13	0
Tando Allahyar	1,362	2,116	671	451	164	128	145	61	8	6
Tando Muhammad Khan	1,557	1,437	0	319	105	0	76	0	1	0
Tharparkar	2,394	1,949	1,411	439	861	110	116	0	34	49
Thatta	2,382	1,935	2,094	32	374	114	110	68	31	411
Umerkot	2,068	1,731	0	413	399	125	53	0	23	2
Total	**56,666**	**50,079**	**20,114**	**10,705**	**8,809**	**5,015**	**3,765**	**1,940**	**1,295**	**655**

Figure 2: Most frequently reported suspected cases during week 21 Sindh
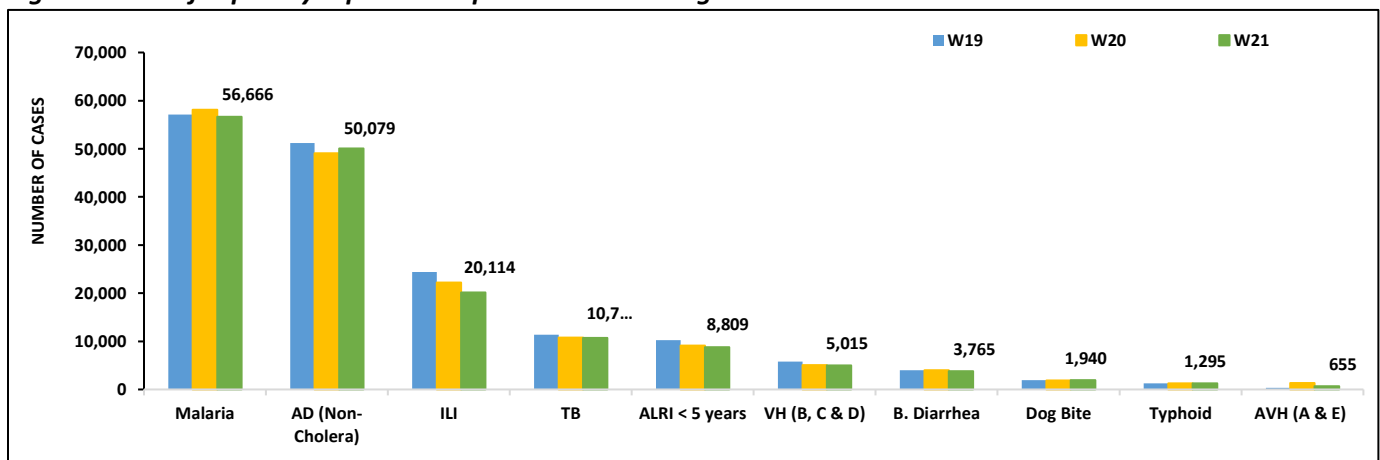
Figure 2: Most frequently reported suspected cases during week 21 Sindh
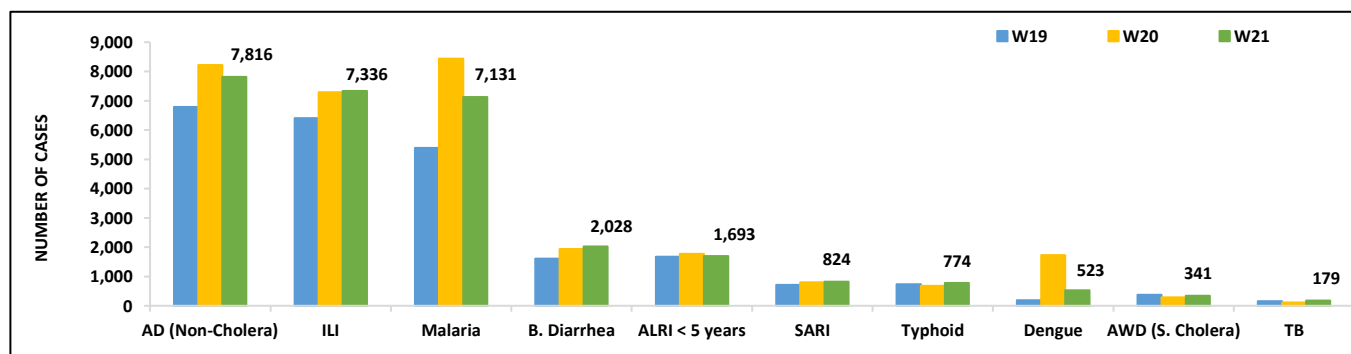
- AD (Non-Cholera), ILI, Malaria, B. Diarrhea, ALRI <5 years, SARI, Typhoid, Dengue, AWD (S. Cholera) and TB cases were the most frequently reported diseases from Balochistan province.
- AD (Non-Cholera) cases are mostly reported from Gwadar, Quetta and Kech (Turbat) while ILI cases are mostly reported from Quetta, Kech (Turbat) and Gwadar.
- AD (Non-Cholera), Malaria, ALRI <5 years and Dengue cases showed a decreasing trend while ILI, B. Diarrhea, SARI, Typhoid, AWD (S. Cholera) and TB cases showed an increasing trend this week.
- Five cases of Brucellosis, two cases of AFP and One suspected case of HIV/ AIDS reported from Balochistan. All are suspected cases and need field verification.

Table 3: District wise distribution of most frequently reported suspected cases during week 21, Balochistan

Districts	AD Non-Cholera)	ILI	Malaria	B. Diarrhea	ALRI < 5 years	SARI	Typhoid	Dengue	AWD (S.Cholera)	TB
Awaran	18	21	60	12	3	1	6	0	10	0
Barkhan	83	53	120	11	33	4	62	0	0	19
Chagai	243	268	64	72	0	0	25	0	10	0
Chaman	202	129	47	104	25	27	43	0	33	0
Dera Bugti	48	20	81	38	9	8	19	0	0	1
Duki	164	62	21	80	29	19	14	0	10	1
Gwadar	592	977	243	75	0	0	34	207	0	0
Harnai	78	8	77	74	139	0	7	0	12	1
Hub	405	37	239	52	6	0	5	5	2	8
Jaffarabad	208	126	1114	62	45	37	3	0	0	72
Jhal Magsi	340	329	535	8	19	5	10	0	6	9
Kachhi (Bolan)	83	22	105	33	12	70	15	0	6	0
Kalat	34	3	24	7	5	2	21	0	0	0
Kech (Turbat)	531	1002	890	78	120	122	1	309	2	NR
Kharan	188	378	53	63	0	15	4	0	7	0
Khuzdar	81	115	102	27	1	3	5	0	0	1
Killa Abdullah	146	79	24	77	22	14	25	0	0	4
Killa Saifullah	242	0	177	111	141	8	47	0	6	0
Kohlu	152	221	99	87	18	56	28	0	27	1
Lasbella	378	74	450	27	90	NR	9	2	0	1
Loralai	228	291	53	55	33	111	25	0	2	0
Mastung	209	136	141	45	66	24	11	0	17	3
Naseerabad	237	27	322	14	16	0	35	0	0	1
Nushki	229	23	19	59	0	0	0	0	2	0
Panjgur	115	82	140	70	115	18	16	0	8	3
Pishin	443	397	36	249	51	28	38	0	95	5
Quetta	549	1184	27	99	76	33	70	0	22	1
Sherani	29	71	16	13	21	38	15	0	5	0
Sibi	150	305	358	45	110	71	48	0	30	0
Sohbat pur	250	8	691	68	155	18	32	0	4	10
Surab	52	191	7	0	0	0	51	0	0	0
Usta Muhammad	710	94	571	67	85	28	6	0	0	0
Washuk	122	132	21	48	0	0	3	0	0	0
Zhob	116	183	78	44	222	46	19	0	1	37
Ziarat	161	253	99	51	23	18	22	0	24	1
Total	7,816	7,336	7,131	2,028	1,693	824	774	523	341	179

**Figure 3: Most frequently reported suspected cases during week 21, Balochistan**

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

Table 4: District wise distribution of most frequently reported suspected cases during week 21, KP

Districts	AD (Non-Cholera)	Malaria	ILI	B. Diarrhea	ALRI <5 Years	SARI	Typhoid	Dog Bite	Measles	TB
Abbottabad	1,184	39	96	17	53	32	31	24	14	31
Bajaur	685	323	33	51	229	48	2	16	26	25
Bannu	843	1,720	4	25	14	5	76	2	38	29
Battagram	117	0	144	0	0	0	0	0	0	0
Buner	639	294	0	2	0	0	15	0	0	0
Charsadda	1,758	320	402	248	66	3	66	0	29	2
Chitral Lower	272	15	50	21	22	15	12	11	3	6
Chitral Upper	152	9	13	6	7	6	17	3	1	4
D.I. Khan	1,853	330	0	25	14	0	0	3	88	40
Dir Lower	1,094	202	3	84	97	0	95	13	9	12
Dir Upper	463	14	63	4	8	0	7	0	6	16
Haripur	1,738	30	320	37	79	24	35	13	30	27
Karak	350	212	37	0	17	0	13	42	27	10
Khyber	381	178	15	106	30	18	56	36	6	11
Kohat	57	57	22	0	2	2	1	1	3	0
Kohistan Lower	259	3	0	7	4	0	0	0	0	0
Kohistan Upper	733	3	35	12	18	0	20	2	2	21
Kolai Palas	62	5	0	16	9	5	3	0	0	3
L & C Kurram	19	0	57	2	0	0	0	0	0	0
Lakki Marwat	779	215	0	20	2	0	12	28	7	7
Malakand	909	18	67	62	28	27	10	0	14	4
Mansehra	865	5	514	15	85	41	29	0	9	21
Mardan	1,386	21	11	26	255	0	0	6	3	11
Mohmand	272	179	60	56	4	23	6	8	8	3
NWA	3	3	0	7	3	15	1	0	7	0
Nowshera	2,808	80	45	54	2	5	27	16	36	5
Orakzai	53	26	10	11	0	0	1	0	2	0
Peshawar	4,774	87	658	323	86	61	108	0	65	34
SD Peshawar	0	1	0	0	0	0	0	0	0	0
SD Tank	18	37	0	0	0	0	1	0	0	0
Shangla	646	433	0	4	16	0	6	31	3	75
SWA	77	168	187	28	64	148	56	15	4	3
Swabi	2,091	55	935	40	259	128	21	235	51	59
Swat	2,495	49	110	47	20	0	20	95	4	18
Tank	212	75	0	0	0	0	0	1	1	0
Tor Ghar	93	150	0	30	7	14	7	10	1	3
Upper Kurram	347	30	396	166	8	443	18	11	6	4
Total	**30,487**	**5,386**	**4,287**	**1,552**	**1,508**	**1,063**	**772**	**622**	**503**	**484**

Figure 4: Most frequently reported suspected cases during week 21, KP
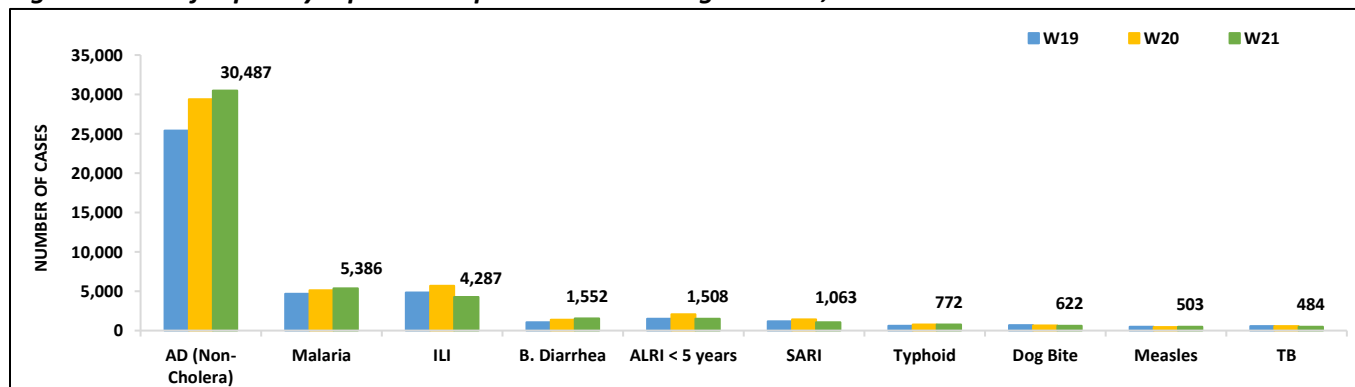
ICT, AJK & GB

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

AJK: AD (Non-Cholera) cases were maximum followed by ILI, ALRI <5 years, SARI, Dog bite, B. Diarrhea, AWD (S. Cholera), TB, Typhoid and Measles cases. Cases of AD (Non-Cholera), ILI, Dog bite, B. Diarrhea, and Measles showed an increasing trend while ALRI <5 years, AWD (S. Cholera), TB and Typhoid showed a decreasing trend this week. One case of AFP reported from AJK. It is a suspected case and needs field verification.

GB: AD (Non-Cholera) cases were the most frequently reported diseases followed by ALRI <5 Years, ILI, SARI, AWD (S. Cholera), B. Diarrhea, TB and Typhoid cases. Increasing trend for AD (Non-Cholera), AWD (S. Cholera), B. Diarrhea and Typhoid cases while decreasing trend for ALRI <5 Years, ILI, SARI and TB cases observed this week. Three suspected cases of AFP reported from GB. They need field verification.

Figure 5: Most frequently reported suspected cases during week 21, ICT
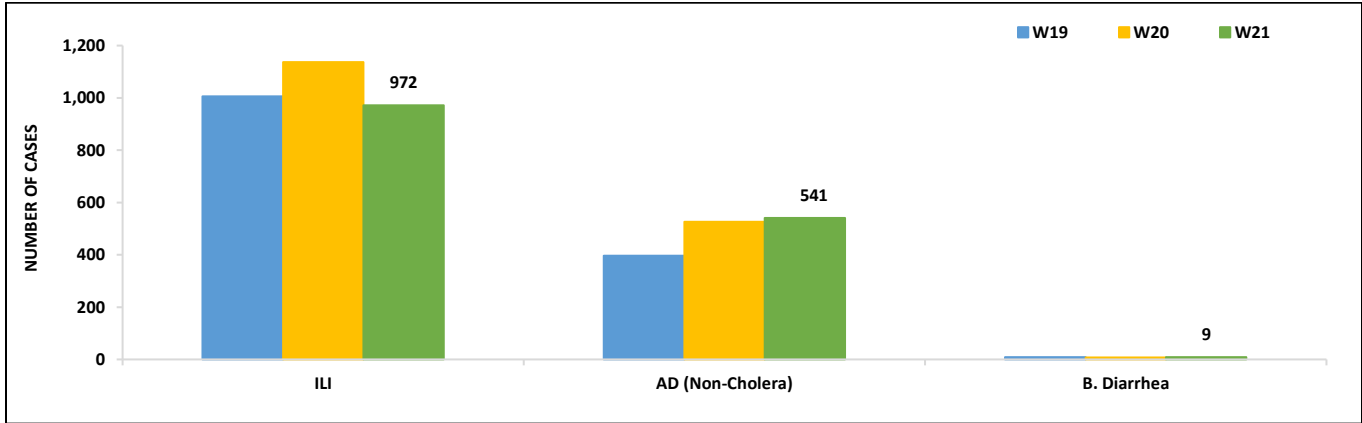
Figure 6: Week wise reported suspected cases of ILI, ICT
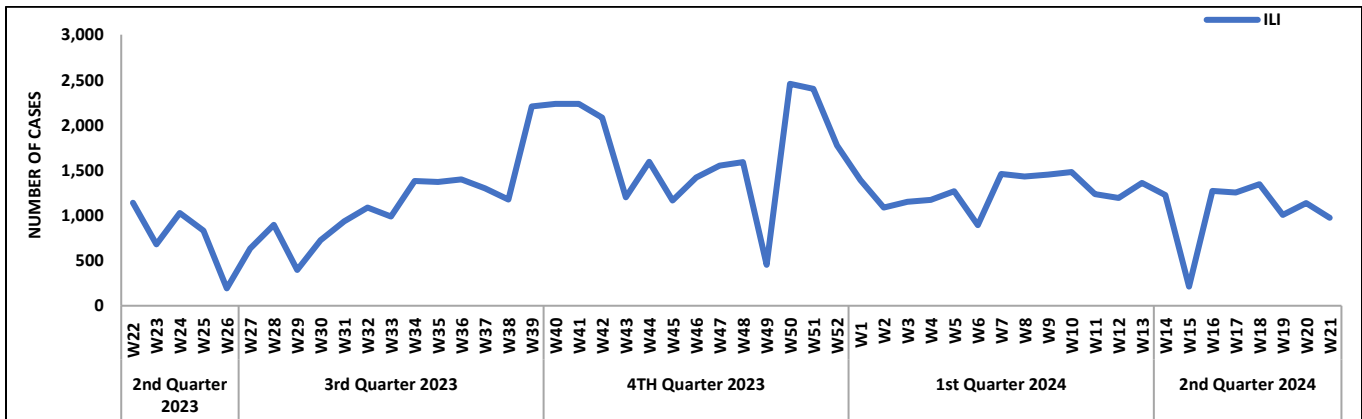
Figure 7: Most frequently reported suspected cases during week 21, AJK
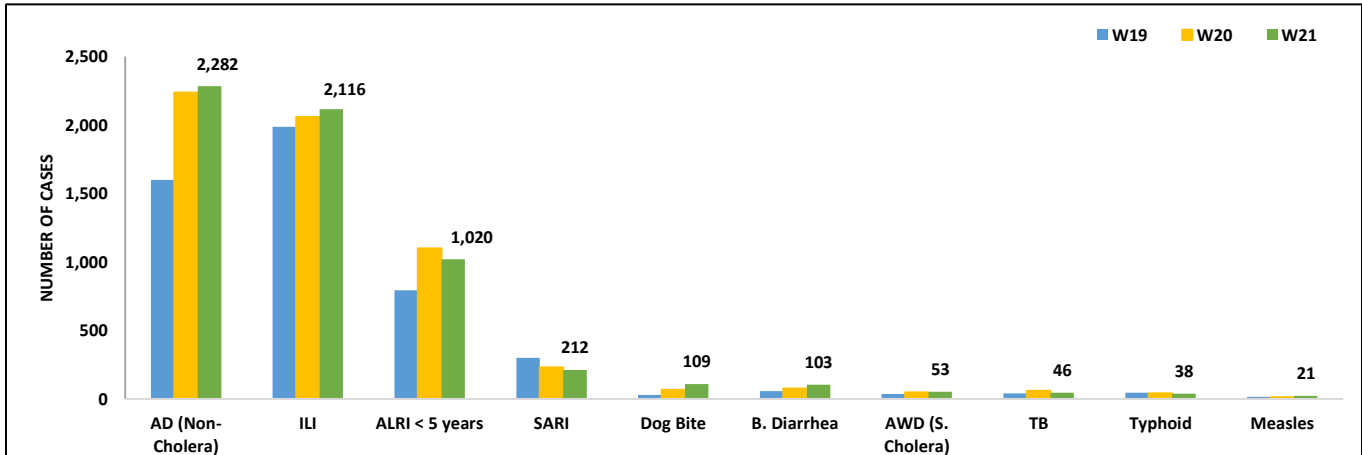
Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK
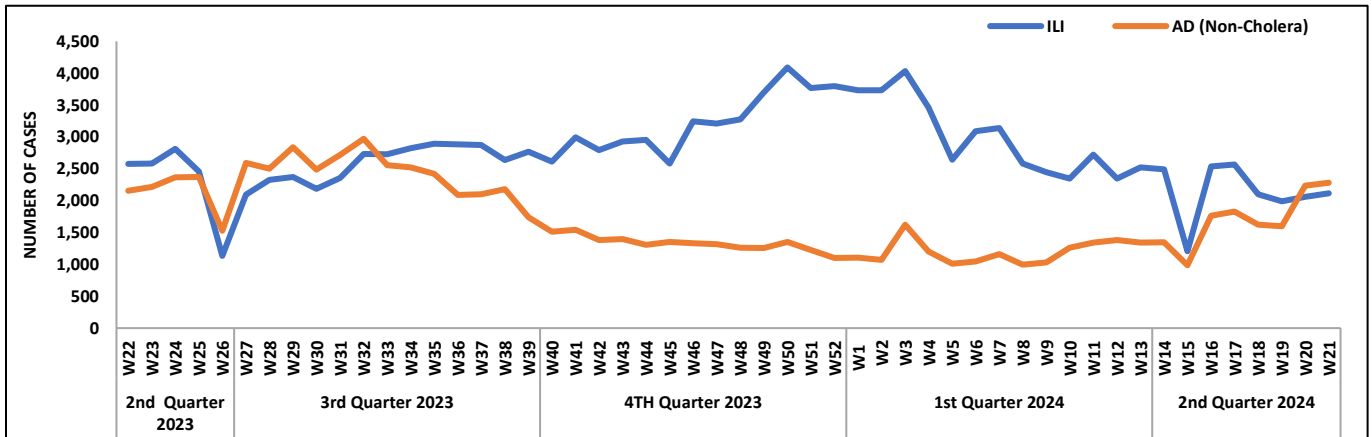
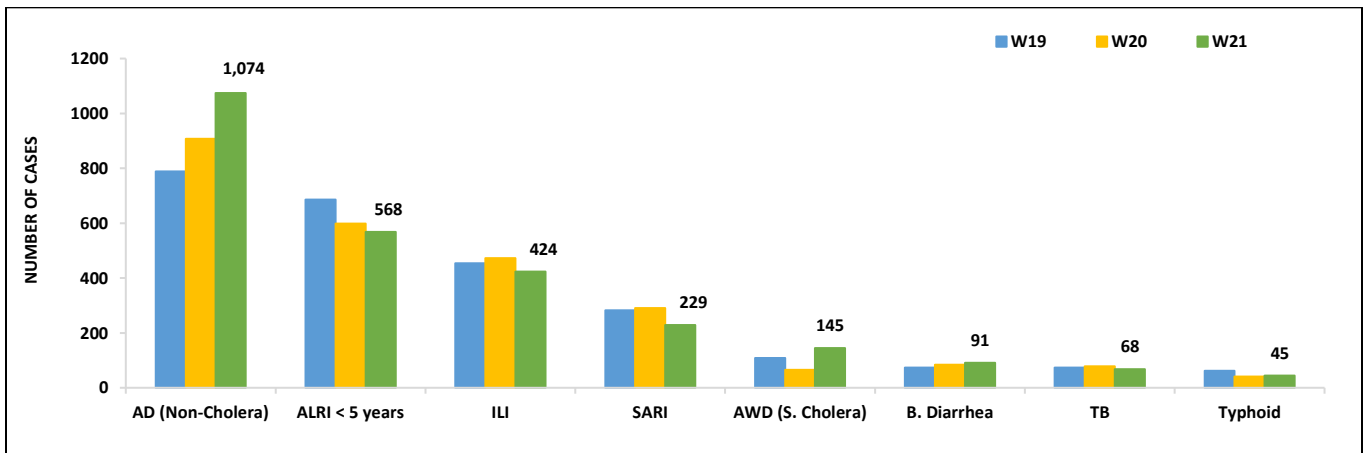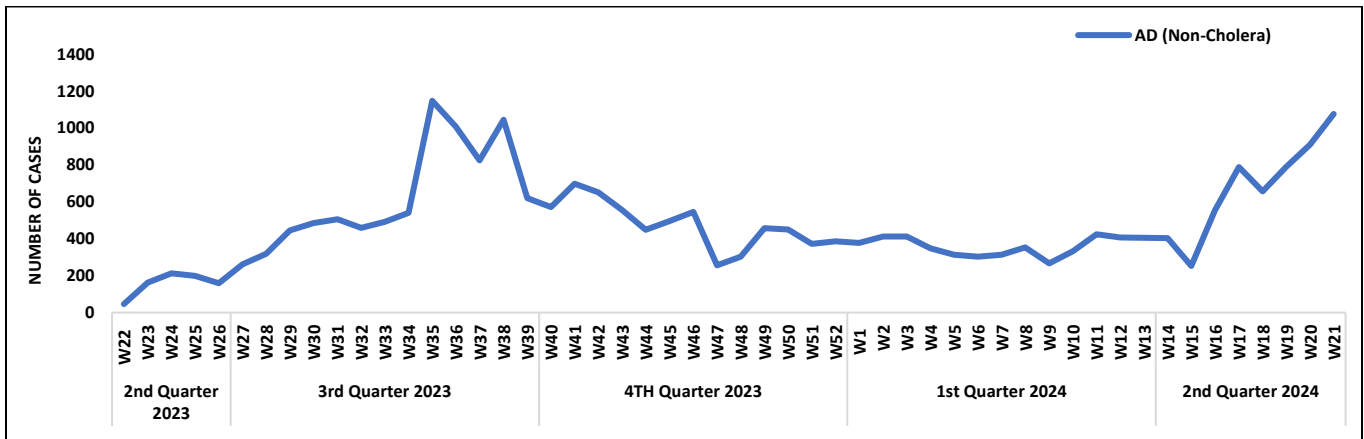**Figure 9: Most frequent cases reported during Week 21, GB**

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

Punjab

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

Figure 11: Most frequently reported suspected cases during week 21, Punjab.
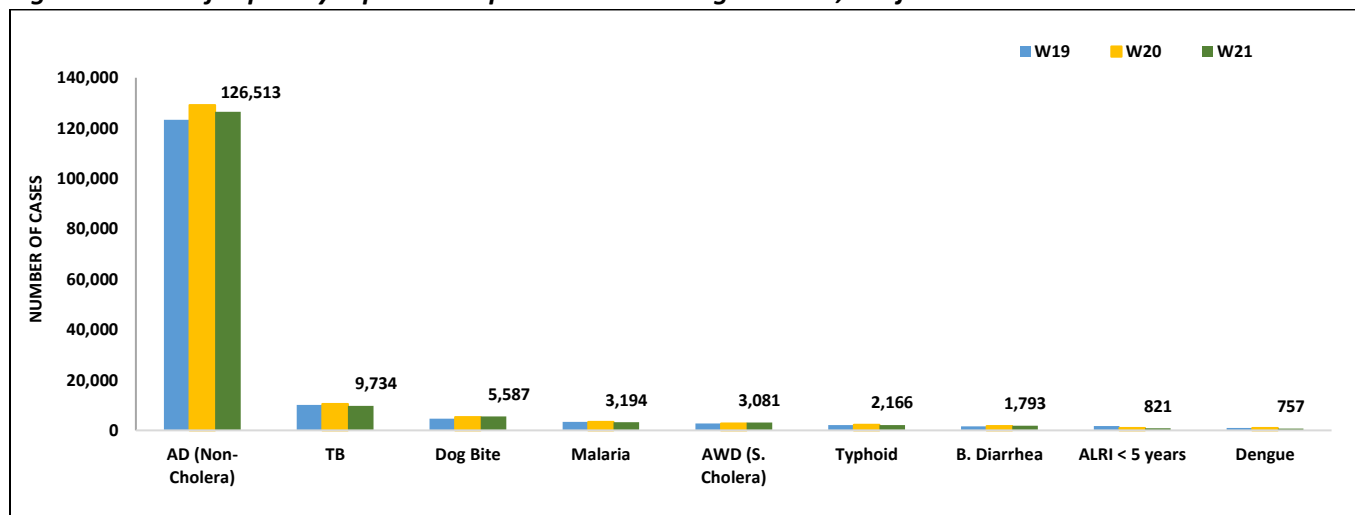
Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 21

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)	3	0	-	-	4	0	-	-	-	-
AD (Non-Cholera)	71	1	-	-	-	-	-	-	-	-
Malaria	3,205	172	-	-	-	-	-	-	-	-
CCHF	-	-	3	0	1	0	2	0	-	-
Dengue	778	13	-	-	1	0	7	0	-	-
VH (B)	3,404	90	0	0	-	-	-	-	221	10
VH (C)	3,475	308	0	0	-	-	-	-	164	1
VH (A&E)	-	-	-	-	4	1	-	-	-	-
Covid-19	-	-	22	0	-	-	13	0	350	0
HIV	105	0	-	-	-	-	-	-	-	-
Diphtheria	-	-	-	-	1	1	-	-	-	-
Influenza A	0	0	0	0	0	0	14	0	0	0
TB	65	0	-	-	-	-	-	-	-	-
Syphilis	82	0	-	-	-	-	-	-	-	-
Pertussis	-	-	-	-	-	-	-	-	-	-
Typhoid	-	-	-	-	-	-	-	-	-	-
Mumps	-	-	-	-	-	-	0	0	-	-
Measles	-	-	-	-	-	-	-	-	-	-
Chikungunya	-	-	-	-	-	-	2	0	-	-

IDSR Reports Compliance

- Out OF 158 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 21, 2024

Provinces/Regions	Districts	Total Number of Reporting Sites	Number of Reported Sites for current week	Compliance Rate (%)
Khyber Pakhtunkhwa	Abbottabad	111	104	94%
	Bannu	234	124	53%
	Battagram	63	15	24%
	Buner	34	29	85%
	Bajaur	44	26	59%
	Charsadda	59	53	90%
	Chitral Upper	34	28	82%
	Chitral Lower	35	35	100%
	D.I. Khan	114	108	95%
	Dir Lower	74	73	99%
	Dir Upper	53	40	75%
	Hangu	22	0	0%
	Haripur	72	66	92%
	Karak	35	35	100%
	Khyber	64	17	27%
	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	3	8%
	Upper Kurram	42	25	60%
	Malakand	42	34	81%
	Mansehra	136	98	72%
	Mardan	80	75	94%
	Nowshera	55	55	100%
	North Waziristan	380	1	0%
	Peshawar	151	127	84%
	Shangla	65	14	22%
	Swabi	63	62	98%
	Swat	77	74	96%
	South Waziristan	134	54	40%
	Tank	34	31	91%
	Torghar	14	14	100%
	Mohmand	86	40	47%
	SD Peshawar	5	1	20%
	SD Tank	58	4	7%
	Orakzai	68	19	28%
	Mirpur	37	36	97%
	Bhimber	20	20	100%
	Kotli	60	60	100%
	Muzaffarabad	45	45	100%
	Poonch	46	46	100%
	Haveli	39	39	100%

Province/Region	District	Total	Achieved	Percentage
Azad Jammu Kashmir	Bagh	40	40	100%
	Neelum	39	38	97%
	Jhelum Vellay	29	22	76%
	Sudhnooti	27	27	100%
Islamabad Capital Territory	ICT	21	21	100%
	CDA	14	9	64%
Balochistan	Gwadar	25	25	100%
	Kech	40	33	83%
	Khuzdar	20	18	90%
	Killa Abdullah	18	14	78%
	Lasbella	55	55	100%
	Pishin	48	35	73%
	Quetta	43	28	65%
	Sibi	36	36	100%
	Zhob	39	26	67%
	Jaffarabad	16	16	100%
	Naserabad	32	32	100%
	Kharan	30	30	100%
	Sherani	15	14	93%
	Kohlu	75	33	44%
	Chagi	35	25	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	45	100%
	Loralai	33	24	73%
	Killa Saifullah	28	27	96%
	Ziarat	29	22	76%
	Duki	31	31	100%
	Nushki	32	29	91%
	Dera Bugti	45	16	36%
	Washuk	46	13	28%
	Panjgur	38	19	50%
	Awaran	23	14	61%
	Chaman	25	23	92%
	Barkhan	20	20	100%
	Hub	33	32	97%
	Musakhel	41	12	29%
	Usta Muhammad	34	34	100%
Gilgit Baltistan	Hunza	32	30	94%
	Nagar	20	20	100%
	Ghizer	40	40	100%
	Gilgit	40	39	98%
	Diamer	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	37	51%
	Ghotki	64	64	100%
	Umerkot	43	43	100%
	Naushahro Feroze	107	62	58%
	Tharparkar	282	242	86%
	Shikarpur	60	60	100%
	Thatta	52	52	100%
	Larkana	67	66	99%
	Kamber Shadadkot	71	71	100%
	Karachi-East	23	19	83%
	Karachi-West	20	20	100%
	Karachi-Malir	37	37	100%
	Karachi-Kemari	18	6	33%
	Karachi-Central	11	7	64%
	Karachi-Korangi	18	13	72%
	Karachi-South	4	4	100%
	Sujawal	54	54	100%
	Mirpur Khas	106	99	93%
	Badin	124	120	97%
	Sukkur	63	63	100%
	Dadu	90	88	98%
	Sanghar	100	100	100%
	Jacobabad	44	43	98%
	Khairpur	169	164	97%
	Kashmore	59	59	100%
	Matiari	42	42	100%
	Jamshoro	68	68	100%
	Tando Allahyar	54	54	100%
	Tando Muhammad Khan	40	40	100%
	Shaheed Benazirabad	122	122	100%

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Polio Resurgence: Renewed Vigilance and Collaboration Needed

A serious setback in Pakistan's fight against polio has emerged with the confirmation of a new case of wild poliovirus type 1 (WPV1) in Shikarpur district, Sindh province. This unfortunate development marks the fourth polio case reported in the country this year, raising concerns about the continued vulnerability of children to this crippling disease.

The affected child, a 2.5-year-old from Birkhan UC, Shikarpur, experienced paralysis on May 11th, highlighting the devastating and irreversible impact of polio. Genetic sequencing of the virus isolated from the child's stool samples revealed a connection to the imported YB3A cluster. This strain, eradicated from Pakistan in mid-2021, remains active in Afghanistan, suggesting cross-border transmission as the likely source of reintroduction.

The government has swiftly responded by deploying teams from the National and Provincial Polio Emergency Operations Centres to conduct a thorough investigation into this case. Additionally, a large-scale vaccination campaign is being launched across 66 districts, commencing on June 3rd. This initiative aims to vaccinate over 16.5 million children and bolster their immunity against poliovirus.

This latest case serves as a stark reminder of the importance of sustained vaccination efforts, particularly targeting underprivileged and malnourished children who are more susceptible to the virus due to weak immune systems. The Pakistan Polio Programme urges all segments of society, including parents, religious leaders, teachers, and community elders, to play a vital role in ensuring complete vaccination coverage for all children under five years of age.

By working together, Pakistan can effectively combat this debilitating disease and safeguard the health of its future generations.

A note from Field Activities.

Scabies Outbreak Investigation in UC Gujar Garhi, District Mardan, Khyber Pakhtunkhwa, April – May, 2024

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Introduction

Millions worldwide suffer from scabies, a contagious skin condition caused by the tiny mite Sarcoptes scabiei, var. hominis, the human itch mite. This highly contagious condition is particularly prevalent in hot, densely populated areas and low-income settings. While scabies can lead to serious complications if left untreated, prompt management can effectively control its spread.

Background

District Mardan, Pakistan, with a population exceeding 2.7 million, has historically experienced scabies outbreaks. This report investigates a recent scabies outbreak in UC Gujar Garhi, Mardan, which began in the 20th epidemiological week with 80 reported cases. The outbreak escalated to 101 cases by May 26th, prompting the formation of a multidisciplinary team to investigate its cause, extent, and implement control measures.

Objectives

1. To Assess the magnitude and severity of the scabies outbreak in UC Gujar Garhi.

2. To Implement effective control measures to manage the outbreak.
3. To Develop strategies for long-term prevention of future outbreaks.

Methodology

This cross-sectional, descriptive study aimed to assess scabies outbreak among residents of UC Gujar Garhi, Tehsil Mardan, Pakistan. Data collection occurred between April 26th and May 26th, 2024. A multifaceted approach was employed, utilizing interviews with both confirmed and suspected scabies cases to gain insights into their experiences and perspectives. Additionally, self-designed questionnaires collected key demographic and health information from participants. Medical records from healthcare facilities were reviewed to supplement clinical data. Line listings facilitated the identification and recruitment of participants within the study area. While clinical diagnosis served as the primary method for scabies identification, this study acknowledges the limitation of not incorporating confirmatory biopsies. Data analysis was performed using Microsoft Excel for efficient organization and summarization.

Case Definitions

- **Suspected Case:** Individuals residing in UC Gujar Garhi exhibiting symptoms like a rash or lesions with intense nocturnal itching, typically affecting specific body areas (finger webs, wrists, elbows, etc.).
- **Confirmed Case:** Individuals diagnosed with scabies based on clinical presentation or skin scraping biopsy.
- **Alert Threshold:** Twice the average number of scabies cases reported over the preceding three weeks for a particular location.
- **Outbreak Threshold:** A cluster of cases exceeding the alert threshold in a single location, indicating a significant increase in scabies incidence.

Results

The outbreak investigation identified 101 scabies cases among a population of 49,571 in UC Gujar Garhi District. The affected individuals ranged widely in age, from 1 to 80 years old, with a median age of 28 years. Children aged 0-9 (n=20) and adults aged 30-39 (n=17) were particularly impacted. With 13 males and 80 females affected (1:6), the attack rate was significantly higher for females (3.1 per 100,000) compared to males (0.5 per 100,000), Consistent symptomatology, characterized by rashes and lesions, was observed in all cases.

The investigation also revealed localized clusters of infection, suggesting person-to-person transmission within these areas. Poor hygiene practices and overcrowded living conditions emerged as potential contributing factors. Additionally, a scarcity of medication hampered timely treatment and control efforts and lack of community awareness regarding scabies transmission and prevention measures allowed the outbreak to flourish.

Public Health Response

A robust response strategy was implemented to control the outbreak:

- **Case Identification and Isolation:** Prompt identification and isolation of individuals with scabies symptoms prevented further transmission.
- **Contact Tracing:** Meticulous contact tracing identified and examined close contacts of confirmed cases for early detection and treatment.
- **Treatment Provision:** Essential scabicide medications were administered to all confirmed cases and their contacts to eradicate the scabies mite.
- **Environmental Sanitation:** Extensive cleaning, fumigation, and disinfection of living spaces were undertaken to eliminate the mites from the environment. Emphasis was placed on personal hygiene and proper laundering techniques to prevent infestation.

Conclusion

The scabies outbreak investigation in UC Gujar Garhi District identified 101 cases with a higher attack rate in females. The investigation revealed person-to-person transmission within localized clusters, highlighting the importance of hygiene practices and adequate living conditions in outbreak control. Additionally, a scarcity of medication and a lack of community awareness about scabies transmission and prevention contributed to the outbreak's spread.

Recommendations:

To prevent future outbreaks, a multi-pronged approach is recommended:

1. **Community Engagement:** Foster active participation through meetings with local leaders and health committees. This collaborative approach enhances intervention effectiveness and sustainability.

2. **Targeted Interventions:** Identify and prioritize high-risk populations (overcrowded housing, migrant workers, limited healthcare access) and deliver tailored outreach and support services.
3. **School-Based Prevention:** Integrate scabies prevention and hygiene practices into the school curriculum to instil lifelong habits of cleanliness and empower children as agents of change.
4. **Digital Health Tools:** Leverage mobile apps or SMS platforms to disseminate health education, facilitate consultations, and monitor treatment adherence, particularly in remote areas.
5. **Robust Surveillance:** Implement robust systems to monitor trends, track outbreaks, and identify emerging hotspots for timely interventions and resource allocation.
6. **Healthcare Provider Training:** Invest in training for healthcare providers at all levels to improve diagnosis, management, and adherence to standardized treatment protocols.

Commentary.

Alarming Rise of Vaping in Pakistan: A Public Health Crisis

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The Deceptive Allure of Vaping: A Growing Threat to Pakistani Youth

In 2003, electronic cigarettes, or vapes, burst onto the scene with a promise of revolution. Marketed as a safer alternative to traditional cigarettes, these battery-powered devices offered a seemingly cleaner way to deliver nicotine – a highly addictive stimulant found in tobacco[1]. Users inhaled a flavored vapor instead of smoke, creating an illusion of reduced harm. However, this initial hype surrounding vaping's safety has been rapidly eroded by a growing body of scientific evidence.

Mounting research now paints a concerning picture. Far from being a harmless alternative, vaping exposes users to a complex cocktail of chemicals and additives. These can irritate the lungs, damage delicate tissues, and potentially contribute to a range of health problems. The long-term consequences of inhaling these unknown substances remain largely unclear, posing a significant threat to public health.

This commentary delves deeper into the alarming rise of youth vaping in Pakistan, exploring the growing prevalence of this practice among adolescents, the concerning health risks associated with it, and the factors that contribute to its popularity. By understanding the scope of the problem, we can then propose solutions to mitigate this growing public health crisis and safeguard the health of Pakistan's future generation.

Vaping's Grip on Pakistani Youth

The global e-cigarette and vape market are experiencing tremendous growth, with a projected compound annual growth rate of 30.6% from 2023 to 2030[2]. This boom extends to Southeast Asian countries, including Pakistan, which is emerging as a major vaping business hub. According to estimates, revenue from e-cigarettes in Pakistan is expected to reach $77.2 million by 2024, reflecting a growth rate of 1.39% [3].

A troubling lack of awareness regarding the contents and health risks of vaping devices is further amplifying this concerning trend. A 2017 cross-sectional study conducted by medical students in Karachi revealed that many participants were using these devices without fully understanding the potential consequences [4]. This highlights the urgent need for educational campaigns to bridge the knowledge gap and discourage youth from vaping.

Beyond the lack of awareness, the appeal of flavored e-liquids further exacerbates the issue. The wide variety of flavors, often mimicking fruits and candy, makes vaping particularly attractive to adolescents. However, recent research paints a grim picture of the potential dangers lurking within these seemingly harmless flavors [5].

Studies have shown that the chemicals and additives present in e-liquids can have a multitude of detrimental effects on the body. These substances can damage the body's cells at a fundamental level, reduce antioxidant defenses that protect against

cellular damage, and contribute to a range of health problems[5]. This includes increased risk of cardiovascular diseases, respiratory issues like chronic obstructive pulmonary disease (COPD), and even oral health complications such as gum disease and oral cancer [5].

The potential long-term consequences of vaping, particularly for adolescents whose bodies are still developing, remain a cause for serious concern. With continued research, a clearer picture of these effects is likely to emerge. However, the current body of evidence necessitates immediate action to curb the rising trend of youth vaping in Pakistan.

A Gateway to Further Risk?

Studies suggest a concerning link between baseline e-cigarette use and the resurgence of marijuana consumption among individuals with a history of marijuana use[6]. This phenomenon, known as the "gateway effect," suggests that e-cigarette use may act as a stepping stone for individuals to transition back to more harmful substances like marijuana. This highlights the critical need for comprehensive regulations on vaping products. These regulations should not only address the health risks associated with vaping itself but also consider the potential for it to act as a gateway to more addictive and dangerous drugs.

Pakistan at a Crossroads: Vaping and the Shadow of Cigarettes

Pakistan stands at a critical juncture, facing a situation eerily reminiscent of the past widespread acceptance of cigarettes. Decades ago, the dangers of smoking were not fully understood, leading to a public health crisis that continues to this day[7]. Similarly, the long-term health effects of vaping remain unclear. However, unlike cigarettes, there is still an opportunity to act decisively before a full-blown vaping epidemic takes hold in Pakistan.

The lack of restrictions on vaping in Pakistan is particularly concerning. Unlike many other countries, e-cigarettes are readily available, with no limitations on use, advertisement, promotion, sponsorship, or even packaging[8]. This free rein creates a perfect storm, making vaping devices all the more enticing to a vulnerable youth population. The

deceptive allure of flavoured liquids further compounds the problem. These pleasant-tasting options mask the harmful chemicals within, making vaping seem less hazardous and more appealing to young people [8].

Fortunately, Pakistan can learn from the proactive measures taken by other nations. Countries like India and China have recognized the potential dangers of vaping and implemented decisive actions. India has taken a particularly strong stance with a complete ban on electronic smoking in 2019[9]. In China, e-cigarettes existed in a regulatory grey area before 2018, followed by a stepwise tightening: minimum age sales ban (2018), online sales ban (2019), classification as tobacco products (2021), and a nationwide flavored e-cigarette ban in October 2022.[10] Some Asian countries/territories, such as Singapore, Thailand and Hong Kong SAR, have banned the sale of e-cigarettes of any flavour.[11] These examples serve as a blueprint for Pakistan to emulate in its fight against the growing threat of youth vaping.

Combating the Vaping Epidemic

A multi-pronged approach is crucial to address the concerning rise of youth vaping in Pakistan. Here's a breakdown of key areas for intervention:

Government Regulations and Policies:

- **Public Awareness Campaigns:** Launch targeted public awareness campaigns utilizing various media channels (television, radio, social media) to educate the public, particularly youth, about the health risks associated with vaping [12]. These campaigns can leverage testimonials from former vape users and healthcare professionals to create a compelling narrative.
- **Vaping Restrictions:** Implement comprehensive restrictions on vaping, including a ban on the sale and marketing of flavored e-liquids, which are particularly attractive to young people[13]. Additionally, consider restricting vaping in public places such as restaurants, parks, and workplaces, aligning with existing smoke-free air laws[14].
- **Taxation and Pricing Strategies:** Increase taxes on vaping products to deter use, particularly among price-sensitive demographics like youth[15]. This strategy can generate revenue that can be directed

towards public health initiatives and research on vaping's long-term effects.

Individual and Community Action:

- **Social Media Campaigns:** Encourage and support social media campaigns led by youth groups, health organizations, and influencers to raise awareness about the dangers of vaping and promote a healthy lifestyle[16]. These campaigns can utilize creative content and interactive elements to engage a younger audience.

- **Healthcare Professional Education and Intervention:** Integrate vaping cessation counselling into routine medical consultations. Train healthcare professionals to identify signs of vaping use, discuss the associated health risks, and offer support and resources to those seeking to quit[17].

- **School-Based Programs:** Implement educational programs within the school curriculum to educate students about the dangers of vaping and equip them with refusal skills to resist peer pressure[18]. These programs can also promote healthy lifestyle choices and encourage physical activity.

Research and Knowledge Building:

- **Longitudinal Studies:** Conduct longitudinal studies specifically focused on the Pakistani population to understand the long-term health consequences of vaping in this particular demographic. This research can inform future policy decisions and public health interventions.

- **Collaboration and Knowledge Sharing:** Foster international collaboration with countries like India and China, which have implemented successful vaping bans and regulations, to learn from their experiences and adapt best practices for the Pakistani context.

By implementing these comprehensive measures and fostering a collaborative effort between government, healthcare professionals, educational institutions, and the general public, Pakistan can effectively curb the rise of youth vaping and safeguard the health of its future generations.

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Abstarct.

COVID-19 Surveillance System Evaluation of District Peshawar, Khyber Pakhtunkhwa, Pakistan, 2022

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Background: Robust surveillance systems are critical for monitoring and responding to public health emergencies. This study evaluates the COVID-19 surveillance system in District Peshawar, Pakistan, within the context of the global pandemic caused by SARS-CoV-2.

Methods: A descriptive study was conducted in District Peshawar from November to December 2022. The evaluation employed the Centre for Disease Control and Prevention (CDC) guidelines, assessing the system's attributes against criteria such as simplicity, flexibility, representativeness, timeliness, data quality, acceptability, sensitivity, positive predictive value, and stability.

Results: The evaluation revealed strengths in several key areas. The system achieved high scores for representativeness (86%), ensuring capture of data from diverse populations. Timeliness (78%) and sensitivity (99.972%) were also noteworthy, reflecting prompt case detection and minimal false-positive rates. However, weaknesses were identified in other attributes. Simplicity (76%) and flexibility (47%) indicated a structured but potentially complex process with limited adaptability. Acceptability (72%) and data quality (82%) were deemed moderate, suggesting room for improvement in stakeholder cooperation and data accuracy. Notably, stability (77%) highlighted vulnerability due to financial constraints.

Conclusion: The COVID-19 surveillance system in District Peshawar demonstrated strengths in capturing diverse data, timely case detection, and low false-positive rates. However, the system's complexity, limited adaptability, and financial sustainability present challenges. Recommendations include enhancing testing strategies, strengthening laboratory capacity, improving contact tracing efforts, securing financial resources, investing in capacity building for personnel, and conducting regular system evaluations to ensure continuous improvement.

Keywords: COVID-19, Surveillance System, Evaluation, Public Health, District Peshawar, SARS-CoV-2, Pandemic Response, Data Quality, Epidemiological Patterns

Knowledge Hub

Unveiling the Shadow Lurking Behind the Smoke: The Devastating Impact of Smoking

Cigarettes, once cloaked in a veil of enticing flavors and social acceptance, conceal a far grimmer reality. Smoking is a highly addictive and destructive habit that inflicts a heavy burden on health, silently wreaking havoc on nearly every organ in body. This article delves into the dark side of smoking, unveiling the devastating diseases it can cause and urging you to consider a smoke-free future, a future brimming with health and vitality.

A Catalogue of Cancers: A Grim Toll

Smoking stands as the leading culprit behind preventable cancer deaths worldwide. The insidious carcinogens (cancer-causing agents) harbored within tobacco smoke wreak havoc on DNA, triggering uncontrolled cell growth and the formation of tumors. While the lungs bear the brunt of this assault, succumbing to lung cancer at a significantly higher rate in smokers compared to non-smokers, the dangers extend far beyond the respiratory system. Smoking significantly amplifies risk of developing cancers of the mouth, throat, larynx (voice box), esophagus (food pipe), bladder, kidneys, pancreas, stomach, cervix, and even certain types of leukemia.

Beyond the Lungs: A Cardiovascular Onslaught

Smoking doesn't just target lungs; it launches a multi-pronged attack on heart and blood vessels, paving the way for a multitude of cardiovascular diseases. The noxious chemicals in cigarettes elevate blood pressure, constrict arteries through a process known as atherosclerosis (plaque buildup), and significantly increase the risk of blood clots forming within them. This unholy trinity translates to a dramatically heightened risk of suffering heart attacks, strokes, and peripheral artery disease (PAD),

a condition that reduces blood flow to the legs and feet, significantly impacting mobility and overall well-being.

A Breath Stolen: Chronic Obstructive Pulmonary Disease (COPD)

Smoking is the primary culprit behind COPD, a progressive lung disease that makes the simple act of breathing an increasingly difficult struggle. The airways become inflamed and narrowed, while the air sacs in the lungs are damaged, all leading to a relentless cycle of chronic coughing, shortness of breath, and wheezing. In severe cases, COPD can significantly limit daily activities and drastically diminish quality of life.

A Multitude of Other Health Problems: A Far-Reaching Detriment

The detrimental effects of smoking cast a long shadow, extending far beyond these major diseases. It weakens immune system, leaving you more susceptible to a range of infections [4]. It can exacerbate diabetes, contribute to osteoporosis (weakening of bones), and increase risk of developing eye diseases like macular degeneration and cataracts. Perhaps most alarmingly, smoking during pregnancy can inflict harm on the developing foetus, increasing the risk of premature birth, low birth weight, and the devastating sudden infant death syndrome (SIDS).

The Road to a Smoke-Free Life: Reclaiming Health

Quitting smoking is the single most important step you can take to improve health and prevent these debilitating diseases. The path to a smoke-free life may seem daunting, but you are not alone. Numerous resources and support groups are available to empower you on journey. Talk to doctor about smoking cessation programs, medications that can aid the process, and nicotine replacement therapies that can help manage withdrawal symptoms. Remember, quitting smoking is not just a sacrifice; it's an investment in a longer, healthier, and more vibrant life.

Quitting smoking is a marathon, not a sprint, but it's absolutely achievable with the right approach. Here are some tips to help you on a smoke-free journey:

Set a Quit Date and Stick to It: Pick a date in the near future and mark it on calendar. This provides a clear target and a sense of urgency.

Tell Support System: Inform family, friends, and colleagues about decision to quit. Their encouragement and understanding can be a powerful motivator.

Identify Triggers: Recognize situations or emotions that make you crave a cigarette. It could be social gatherings, stress, or boredom. Develop coping mechanisms like taking a brisk walk, chewing gum, or deep breathing exercises to manage these triggers.

Cleanse Environment: Remove all cigarettes, lighters, and ashtrays from home, car, and workplace. This eliminates temptation and reinforces commitment.

Explore Nicotine Replacement Therapy (NRT): Consider using NRT products like patches, gum, lozenges, or inhalers. These provide controlled doses of nicotine to help manage withdrawal symptoms. Consult a doctor to determine the most suitable option for you.

Find Healthy Distractions: Replace smoking with healthier alternatives that occupy hands and mind. Take up a new hobby, exercise regularly, or spend time in nature.

Quitting smoking is a life-changing decision. By following these tips and staying committed, you can become smoke-free and breathe easier, both literally and figuratively

Join a Support Group: Connecting with others who are also quitting can provide invaluable support and share experiences. Online forums or local support groups can be a great resource.

Reward self: Celebrate milestones! Acknowledge progress and reward self for staying smoke-free. This reinforces positive behaviour.

Don't Get Discouraged by Slips: A slip-up doesn't mean you've failed. Analyse what triggered it and recommit to goal. Remember, quitting is a process, and setbacks are a normal part of the journey.

Seek Professional Help: Don't hesitate to seek professional help from a doctor or therapist. They can provide personalized guidance, address underlying issues, and prescribe medications to aid quit attempt.

Remember the Benefits: Keep the positive outcomes in mind. Quitting smoking improves health, saves money, and boosts energy levels. Visualize the healthier, happier you and let that image fuel motivation.

Advisory for Prevention and Control of Crimean Congo Haemorrhagic Fever (CCHF)

Background:

Crimean-Congo haemorrhagic fever (CCHF) is caused by a tick-borne virus (Nairovirus) of the Bunyaviridae family. The virus causes severe viral haemorrhagic fever outbreaks in humans, with a case fatality rate of 10-40%. Globally, three billion people are at risk of CCHF, with 10,000 to 15,000 infections and five hundred fatalities reported annually. Since the diagnosis of the first human case of CCHF in Pakistan in 1976, sporadic cases have continued to occur in various geographical regions of the country. Though Balochistan remains the most affected province due to unregulated/ unchecked cross-border animal transportation, but cases have been reported from other parts of the country every year. During the year 2023, a total of 101 confirmed cases of CCHF have been reported across the country with 25% case fatality.

Purpose:

In the wake of high disease transmission and risk due to anticipated increased human-animals interaction during upcoming Eid-ul-Azha, it is imperative to be vigilant about the situation and take necessary steps to interrupt the transmission of CCHF. The objective of this advisory is to sensitize human and animal health care authorities and other relevant stakeholders to further strengthen and improve the level of preparedness for the prevention and control of CCHF.

Case Definition:

Suspected: Any person with sudden onset of fever over 38° C or more for > 3 days and less than 10 days. especially in CCHF endemic area and with a contact history (History of contact with confirmed patient, animal, raw meat, tick bite, or visit to cattle markets.

Probable: Suspected case with history of febrile illness of 10 days or less with epidemiological link to CCHF endemic areas and ANY two of the following: thrombocytopenia less than 50,000/mm³ petechial or purpuric rash, epistaxis, hematemesis, hemoptysis, blood in urine and/or stool, ecchymosis, and gum bleeding.

Confirmed: Suspected/probable case with laboratory confirmation of CCHF (PCR)

Reservoir: Ticks, especially of the Hyalomma genus are both reservoir and vector for the CCHF virus. Numerous wild and domestic animals, such as cattle, goats, sheep, rats, and hares, serve as amplifying hosts for the virus. Birds are generally resistant except for ostriches.

Mode of Transmission:

The CCHF virus is transmitted to people either by tick bites or through contact with infected animal blood or tissues during and immediately after slaughter. Transmission to humans occurs through contact with infected ticks or animal blood. CCHF can be transmitted from an infected person to another person by contact with infectious blood, secretions, aerosol, or body fluids. Hospital- acquired CCHF infections can also occur due to poor IPC practices, improper sterilization of medical equipment, reuse of injection needles, and use of contaminated medical supplies.

Incubation period:

Following infection by a tick bite, the incubation period is usually 1-3 days, with a maximum of 9 days. The incubation period following contact with infected blood or tissues is usually 5-6 days, with a documented maximum of 13 days.

Risk Groups

Animal herders, livestock workers, and slaughterhouse workers, veterinarians in endemic areas are at risk of CCHF. Healthcare workers in hospitals and endemic areas are at risk of infection due to unprotected contact with infectious blood and body fluids.

Clinical presentation:

The onset of CCHF is sudden with initial signs and symptoms including headache, high-grade fever, back pain, joint pain, abdominal pain, diarrhea, and vomiting. Red eyes, flushed face, red throat, and petechiae (red spots) on the palate with bleeding from gums are common. Symptoms may also include jaundice and in severe cases, changes in mood and altered sensorium which may be replaced by drowsiness and lethargy after two to four days of illness. As the disease progresses, large areas of severe bruising, severe nosebleeds, and uncontrolled bleeding at injection sites can be seen, beginning on about the fourth day of illness and lasting for about two weeks. In patients who recover, improvement generally begins on the ninth or tenth day after the onset of illness.

The presenting complaints, signs, and symptoms of CCHF cases may mimic Dengue Haemorrhagic Fever (DHF). Considering its transmission dynamics (human-to-human) and high mortality, it is imperative to exclude CCHF through a careful epidemiological history/ clinical examination of the patient while strictly observing infection control measures.

Treatment:

General supportive care with treatment of symptoms is the main approach for managing CCHF patients. Early initiation of treatment with antiviral drug ribavirin has apparent benefits, both oral and intravenous formulations seem to be effective.

Preventive and Control measures:

There is currently no safe and effective vaccine available for human use. In the absence of vaccine, the only way to reduce infection in people is by reducing risk factors and educating community on preventive measures. Public health advice should focus on several aspects.

A) Reducing the risk of infection in community:

1. Reducing the risk of infection transmission from tick-to-human while visiting high risk areas:

- Wear protective clothing (long sleeves, long trousers).
- Wear light coloured clothing to allow easy detection of ticks on the clothes. • Regularly examine clothing and skin for ticks; if found, remove them safely.
- Use approved acaricides on clothing.
- Use approved insect repellent on the skin. Insect repellents are the most effective in warding off ticks in human populations.
- Avoid visiting areas where ticks are abundant and seasons (warmer temperatures) when they are most active.

II. Reducing the risk of infection transmission from animal-to-human:

- Wear gloves and other protective clothing while handling animals or their tissues in
- endemic areas, notably during slaughtering, butchering and culling procedures in slaughterhouses or at home. •
- Quarantine animals (Possibly 30 days) before they enter slaughterhouses or routinely treat animals with acaricides prior to slaughter.
- Inject Ivermectin to animals with ticks, 24-30 days before slaughtering.

III. Reducing the risk of infection transmission from human-to-human in community:

- Avoid close physical contact with CCHF-infected people.

- Wear gloves and protective equipment when taking care of ill people. • Wash hands with soap regularly after caring for or visiting ill people.
- Observe safe burial practices by avoiding contact with mucus membranes & body fluids of deceased patient and use of appropriate PPEs while touching deceased person.

B) Controlling infection in health-care settings:

- Health-care workers caring for patients should adopt standard precautions regardless of diagnosis. These include basic hand hygiene, use of personal protective equipment, safe injection practices and environmental cleaning & disinfection.
- Samples of suspected CCHF cases should be collected, triple packaged and transported by a trained health staff and handled in suitably equipped labs.

C) Controlling vector in livestock:

- CCHF infections are usually asymptomatic in animals and no vaccines is available for use in animals.
- Furthermore, tick vectors are numerous and widespread, so tick control with acaricides (chemicals intended to kill ticks) is an important option for well-managed livestock production facilities.
- The bird Lalli/Mynah (important in picking and eating ticks from skin of animals is a natural method which could help control populations of ticks) must not be shot or killed and be put under endangered species.
- Liquid formulation of acaricides should be sprayed on animal herds for prevention of tick infestation and can be injected in cracks and crevices of the area.
- Lime powder or acaricides can be applied on farm premises to reduce the tick population and prevent re-infection of the animals.

Laboratory Diagnosis and NIH Support:

- Physicians should provide maximum clinical information especially possible contact history, date of onset of symptoms and sample collection when requesting for lab testing. Clinical summary must accompany the sample and packaged in a separate plastic zipper bag in the second layer of triple package.
- Lab tests for CCHF should be recommended to those who fulfill criteria of suspected case definition, details are also available at NIH website (www.nih.org.pk). Testing suspected patient samples presents an extreme biohazard risk and should only be conducted
- under maximum biological containment conditions. Safe disposal of lab waste should be followed
- strictly.
- Sample from suspected CCHF patients should be collected by trained phlebotomist with full
- preventive measures using appropriate personal protective equipment (PPEs). Recommended samples for testing are 3-5 cc venous blood in vacutainer or serum separator vial.
- **CCHF can be diagnosed by:**
  - Reverse transcriptase polymerase chain reaction (RT-PCR) assay
  - Enzyme-linked immunosorbent assay (ELISA)
- Suspected human CCHF samples must immediately be transported in triple package maintaining cold
- chain to Provincial Public Health Reference Laboratories (PPHRLs) or Department of Virology, Public
- Health Laboratories Division, NIH, Islamabad. For any further assistance in this context, the CDC (051-9255237 and Fax No. 051-9255099) and Virology Department of Public Health Laboratories Division (051-9255082), NIH may be contacted.

National Institute of Health: Advisories

Advisory for Prevention and Treatment of Heat/Sun Stroke

Introduction:

In the recent years, Pakistan is experiencing severe climate changes due to global warming including heat wave. Each year the vulnerability and impact of heat wave is increasing in the country which may results in increased morbidity and mortality due to heat stroke. It is pertinent to take immediate necessary measures in this regard. Avoiding exposure to direct sunlight and rehydration can prevent the complications of heatstroke.

Objectives:

The objective of this advisory is to sensitize health care authorities to take in time appropriate actions for preparedness and prevention of heatstroke.

Background:

Heat stroke is a medical emergency and is a form of hyperthermia in which the body temperature is elevated dramatically and can be fatal if not promptly and properly treated. The body's temperature rises rapidly, the sweating mechanism fails and the body becomes unable to cool down. Consequently, the body temperature can rise to 106°F or higher within 10 to 15 minutes.

The body normally generates heat as a result of metabolism, and is usually able to dissipate the heat by radiation of heat through the skin or by evaporation of sweat. However, in high environmental temperature, humidity or vigorous physical exertion under the sun, the body may not be able to sufficiently dissipate the heat and the body temperature rises. Another cause of heat stroke is dehydration. A dehydrated person may not be able to sweat fast enough to dissipate heat, which also causes the body temperature to rise.

Clinical presentation:

Common signs and symptoms of heat stroke include profuse sweating or the absence of sweating, with hot red or flushed dry skin, weakness/lethargy, chills, throbbing headache, high body temperature, hallucinations, confusion/dizziness and slurred speech. Heat stroke can cause death or permanent organ damage or disability if not properly treated in time. Infants, elderly persons, individuals with certain comorbidities, athletes, pregnant females and outdoor workers are at high risk for heat stroke.

Management:

Victims of heat stroke must receive immediate treatment. The following steps are recommended:

i.   If a person shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The most critical step is the lowering of the temperature of the patients. The patients should be moved to shady area, unnecessary clothing should be removed and cool tepid water should be applied to the skin while soaking remaining clothes with water.

ii.   Notify the emergency services immediately as severe cases often require hospitalization and Intravenous re-hydration.

iii. Promote sweat evaporation by placing the patient before fan and ice packs under the armpits and groin.

iv.   If the patient is able to drink liquids, he/ she should be given plenty of cool water or other cool beverages that do not contain alcohol or caffeine.

v.   Maintain intravenous fluids and hospitalize if required.

vi.   Monitor body temperature with a thermometer and continue cooling efforts until the body temperature drops to 101°F to 102°F. Antipyretics may be given once the body temperature drops to 101°F or below.

Preventive measures:

Heat/sun stroke is a preventable condition. Following common preventive measures can be taken by the health authorities including:

a. Public should be educated through awareness messages to drink plenty of water while limiting time in direct sunlight in hot/humid weather or in places with high environmental temperatures, avoid becoming dehydrated and to refrain from vigorous physical activities in hot and humid weather.
b. Public should be made aware of early signs/symptoms of dehydration and subsequent evolving signs and symptoms of heat/sun stroke such as muscle cramps, nausea, vomiting, light-headedness and even heart palpitations.
c. Persons working under the sun should prevent dehydration and heat stroke by taking time out of the sun and drinking plenty of water/ fluids. The patients should avoid use of alcohol and caffeine containing soft drinks and/or tea), which may exacerbate dehydration.
d. Public should be encouraged to consume salty foods, wear hats and light-colored, lightweight and loose clothes during the hot/humid environmental conditions.

The health authorities should arrange first aid points in case of emergency situation at prominent points with sufficient essential medical supplies. The hospital should establish "Heat Stroke Centres" and stockpile enough medical supplies including intravenous fluids during or before anticipated heat wave in the area.