# 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.



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# Public Health Bulletin - Pakistan.

## Overview

## IDSR Reports

## Ongoing Events

## Field Reports

### Public Health Bulletin - Pakistan, Week 24, 2024

Pakistan's Public Health Bulletin is no longer just a list of illnesses; it's a game-changer for public health information. This comprehensive resource empowers both healthcare professionals and citizens.

Detailed analyses delve deep into common diseases like malaria, influenza, tuberculosis, and childhood respiratory infections. The Bulletin doesn't stop there, keeping a watchful eye on diarrhea, dog bites, hepatitis, typhoid, and even potential cholera outbreaks. This invaluable data empowers stakeholders to design targeted prevention plans and proactively address emerging health threats before they escalate.

Think of the Bulletin as an early warning system. By meticulously tracking disease prevalence, it identifies trends that might otherwise go unnoticed. This allows for swift public health interventions, potentially stopping the spread of illnesses like polio and brucellosis in their tracks.

Craving in-depth information? Look no further. This week's edition exemplifies the Bulletin's commitment to comprehensive reporting. It features a diverse range of insightful reports, including an editorial note on the National Workshop charting a course for multi-hazard public health risk assessment. Additionally, outbreak investigations tackle a mysterious cattle disease in Michini Mohmand District, a recent measles outbreak in Jhang District, and a suspected pertussis outbreak in Killi Adam Zai, Balochistan. Rounding out the edition, a letter to the editor urges action on rising hepatitis prevalence in Rawalpindi, while another delves into the complexities of the South Punjab HIV/AIDS epidemic. Don't miss a thought-provoking commentary celebrating the Bulletin's first year as a triumph in public health communication, or a timely advisory on preventing primary amebic meningoencephalitis (PAM)/Naegleriasis.

Knowledge is power, and the Public Health Bulletin equips everyone with the tools to build a healthier Pakistan. By staying informed with its insights, we can all play a vital role in safeguarding public health and creating a safer, healthier future for the nation.

Sincerely,
The Chief Editor

# Overview

- *During week 24, the most frequently reported cases were of Acute Diarrhea (Non-Cholera) followed by Malaria, ILI, TB, ALRI <5 years, dog bite, B. Diarrhea, VH (B, C & D), Typhoid and AWD (S. Cholera).*

- *Eleven cases of AFP reported from KP, seven from Punjab, six from Sindh, five from AJK and one from Balochistan. All are suspected cases and need field verification.*

- *Seven suspected cases of HIV/ AIDS reported from Sindh and four from Punjab. Field investigation required to verify the cases.*

- *Four cases of Brucellosis reported from KP, three from Sindh and two from Balochistan. These are suspected cases and require field verification.*

- *There is a decreasing trend observed for AD (Non-cholera), Malaria, ILI, ALRI <5 years, dog bite, B. Diarrhea, Typhoid and AWD (S. Cholera) cases this week.*

## *IDSR compliance attributes*

- *The national compliance rate for IDSR reporting in 149 implemented districts is 69%*

- *Gilgit Baltistan and AJK are the top reporting regions with a compliance rate of 99%, followed by Sindh 92% and ICT 80%*

- *The lowest compliance rates were observed in Balochistan & KPK.*

| Region | Expected Reports | Received Reports | Compliance (%) |
|---|---|---|---|
| Khyber Pakhtunkhwa | 2740 | 1430 | 52 |
| Azad Jammu Kashmir | 382 | 379 | 99 |
| Islamabad Capital Territory | 35 | 28 | 80 |
| Balochistan | 1206 | 602 | 50 |
| Gilgit Baltistan | 374 | 369 | 99 |
| Sindh | 2085 | 1909 | 92 |
| National | 6822 | 4717 | 69 |

# Pakistan

Table 1: Province/Area wise distribution of most frequently reported suspected cases during week 24, Pakistan.

| Diseases | AJK | Balochistan | GB | ICT | KP | Punjab | Sindh | Total |
|---|---|---|---|---|---|---|---|---|
| AD (Non-Cholera) | 1881 | 5,089 | 1407 | 471 | 25,587 | 91,117 | 42,513 | 168,065 |
| Malaria | 58 | 3,564 | 0 | 2 | 4,215 | 3,335 | 49,665 | 60,839 |
| ILI | 1,781 | 3,145 | 374 | 1059 | 2,804 | 11 | 19,666 | 28,840 |
| TB | 43 | 87 | 65 | 5 | 338 | 9,534 | 10,177 | 20,249 |
| ALRI < 5 years | 758 | 813 | 534 | 0 | 1,186 | 782 | 7,464 | 11,537 |
| Dog Bite | 88 | 71 | 0 | 1 | 356 | 5,047 | 1,804 | 7,367 |
| B.Diarrhea | 93 | 1052 | 119 | 7 | 1,228 | 1,009 | 3,539 | 7,047 |
| VH (B, C & D) | 9 | 67 | 4 | 0 | 87 | 0 | 5,011 | 5,178 |
| Typhoid | 30 | 377 | 47 | 2 | 414 | 1,884 | 882 | 3,636 |
| AWD (S. Cholera) | 146 | 130 | 103 | 4 | 76 | 1,857 | 3 | 2,319 |
| Measles | 32 | 22 | 19 | 0 | 244 | 1,564 | 169 | 2,050 |
| SARI | 180 | 279 | 208 | 0 | 1,009 | 0 | 63 | 1,739 |
| Dengue | 0 | 1 | 0 | 3 | 31 | 873 | 99 | 1,007 |
| AVH (A&E) | 42 | 14 | 0 | 0 | 271 | 0 | 377 | 704 |
| Mumps | 11 | 13 | 4 | 0 | 57 | 0 | 224 | 309 |
| CL | 2 | 68 | 0 | 0 | 195 | 5 | 1 | 271 |
| Chikungunya | 0 | 0 | 0 | 0 | 0 | 0 | 225 | 225 |
| Chickenpox/ Varicella | 0 | 8 | 5 | 2 | 60 | 52 | 40 | 167 |
| Gonorrhea | 0 | 49 | 0 | 0 | 0 | 0 | 6 | 55 |
| VL | 0 | 40 | 0 | 0 | 1 | 0 | 3 | 44 |
| Meningitis | 2 | 1 | 0 | 0 | 0 | 33 | 7 | 43 |
| Pertussis | 0 | 11 | 0 | 0 | 16 | 0 | 11 | 38 |
| AFP | 5 | 1 | 0 | 0 | 11 | 7 | 6 | 30 |
| Syphilis | 0 | 0 | 0 | 0 | 0 | 1 | 19 | 20 |
| Leprosy | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 |
| HIV/AIDS | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 11 |
| Rubella (CRS) | 0 | 2 | 0 | 0 | 0 | 0 | 8 | 10 |
| Brucellosis | 0 | 2 | 0 | 0 | 4 | 0 | 3 | 9 |
| Diphtheria (Probable) | 0 | 0 | 1 | 0 | 4 | 0 | 4 | 9 |
| NT | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 4 |

Figure 1: Most frequently reported suspected cases during week 24, Pakistan.



Figure 1: Most frequently reported suspected cases during week 24, Pakistan.

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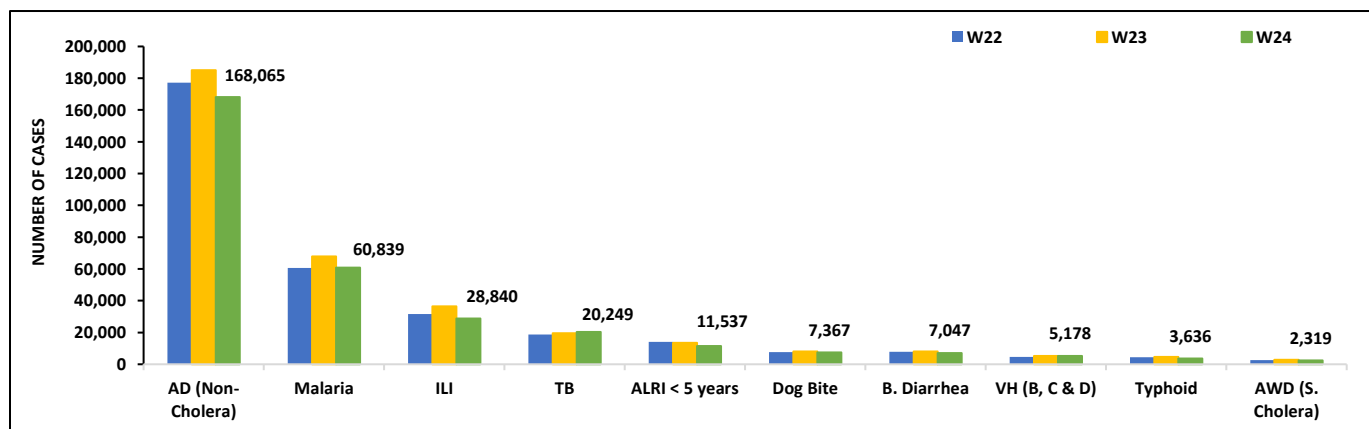
- Malaria cases were maximum followed by AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite, Typhoid and AVH (A & E).
- Malaria cases are mostly from Larkana, Khairpur and Kamber whereas AD (Non-Cholera) cases are from Khairpur, Badin and Mirpurkhas.
- Six cases of AFP, seven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

### Table 2: District wise distribution of most frequently reported suspected cases during week 24, Sindh

| Districts | Malaria | AD (Non-Cholera) | ILI | TB | ALRI < 5 years | VH (B, C & D) | B. Diarrhea | Dog Bite | Typhoid | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Badin | 3,564 | 2,868 | 342 | 655 | 491 | 120 | 185 | 69 | 64 | 10 |
| Dadu | 2,466 | 1,984 | 10 | 401 | 727 | 17 | 336 | 3 | 54 | 3 |
| Ghotki | 1,230 | 1,594 | 0 | 259 | 215 | 343 | 286 | 200 | 0 | 16 |
| Hyderabad | 412 | 1,384 | 1,790 | 29 | 110 | 51 | 20 | 0 | 14 | 0 |
| Jacobabad | 961 | 808 | 328 | 127 | 368 | 182 | 118 | 133 | 60 | 8 |
| Jamshoro | 1,297 | 2,184 | 50 | 370 | 126 | 170 | 55 | 29 | 30 | 5 |
| Kamber | 4,120 | 1,857 | 0 | 912 | 259 | 140 | 164 | 149 | 17 | 0 |
| Karachi Central | 52 | 1,515 | 1,349 | 559 | 115 | 268 | 27 | 0 | 80 | 0 |
| Karachi East | 51 | 396 | 118 | 16 | 8 | 0 | 8 | 11 | 1 | 1 |
| Karachi Keamari | 2 | 301 | 103 | 0 | 11 | 0 | 1 | 2 | 1 | 2 |
| Karachi Korangi | 25 | 263 | 21 | 2 | 0 | 3 | 3 | 0 | 4 | 3 |
| Karachi Malir | 346 | 1,706 | 2,417 | 105 | 233 | 47 | 56 | 49 | 31 | 5 |
| Karachi South | 49 | 100 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Karachi West | 157 | 1,070 | 1,839 | 143 | 150 | 129 | 68 | 133 | 31 | 20 |
| Kashmore | 1,359 | 485 | 544 | 171 | 138 | 294 | 70 | 89 | 4 | 1 |
| Khairpur | 5,031 | 3,861 | 3,794 | 859 | 788 | 101 | 777 | 179 | 204 | 3 |
| Larkana | 6,009 | 1,828 | 0 | 883 | 355 | 91 | 301 | 5 | 10 | 0 |
| Matiari | 1,506 | 1,786 | 3 | 460 | 273 | 324 | 63 | 33 | 4 | 3 |
| Mirpurkhas | 3,079 | 2,789 | 2,146 | 656 | 425 | 182 | 86 | 44 | 40 | 4 |
| Naushero Feroze | 1,099 | 769 | 721 | 299 | 150 | 55 | 117 | 119 | 55 | 0 |
| Sanghar | 2,551 | 1,173 | 9 | 913 | 368 | 747 | 24 | 142 | 22 | 1 |
| Shaheed Benazirabad | 1,636 | 2,149 | 1 | 376 | 292 | 102 | 72 | 149 | 82 | 0 |
| Shikarpur | 2,116 | 1,055 | 3 | 218 | 90 | 772 | 137 | 104 | 2 | 0 |
| Sujawal | 1,182 | 331 | 0 | 65 | 69 | 3 | 52 | 0 | 1 | 0 |
| Sukkur | 1,879 | 1,239 | 1,122 | 323 | 205 | 70 | 161 | 24 | 6 | 0 |
| Tando Allahyar | 1,766 | 1,440 | 336 | 460 | 212 | 375 | 128 | 80 | 9 | 2 |
| Tando Muhammad Khan | 758 | 961 | 7 | 166 | 52 | 13 | 49 | 0 | 8 | 0 |
| Tharparkar | 2,025 | 1,865 | 1,397 | 407 | 706 | 246 | 110 | 3 | 31 | 36 |
| Thatta | 1,527 | 1,437 | 1,215 | 17 | 167 | 143 | 23 | 55 | 9 | 246 |
| Umerkot | 1,410 | 1,315 | 0 | 326 | 360 | 23 | 42 | 0 | 7 | 8 |
| Total | 49,665 | 42,513 | 19,666 | 10,177 | 7,464 | 5,011 | 3,539 | 1,804 | 882 | 377 |

## Figure 2: Most frequently reported suspected cases during week 24 Sindh
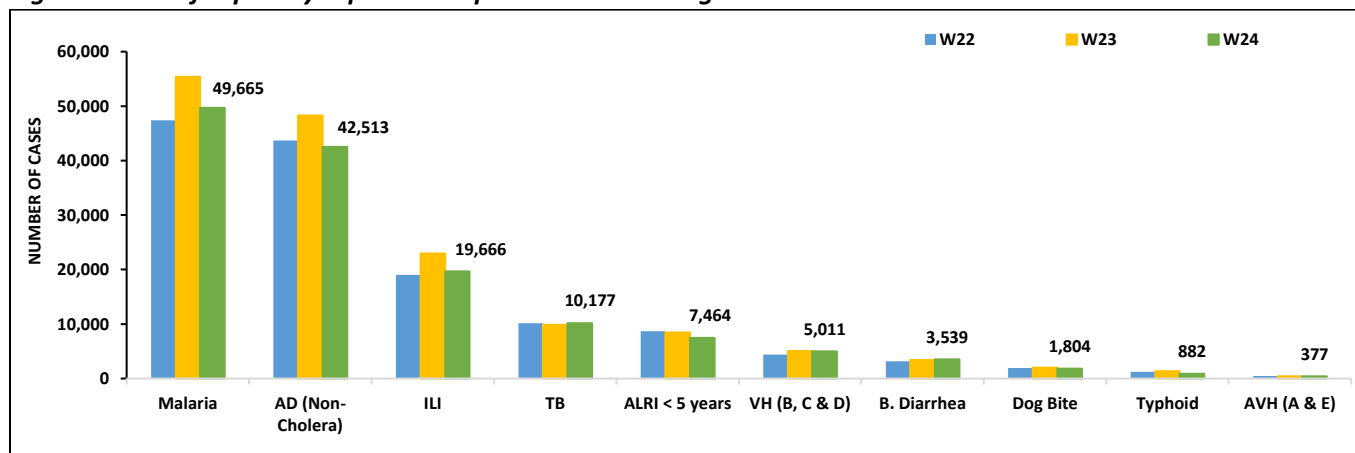


Figure 2: Most frequently reported suspected cases during week 24 Sindh
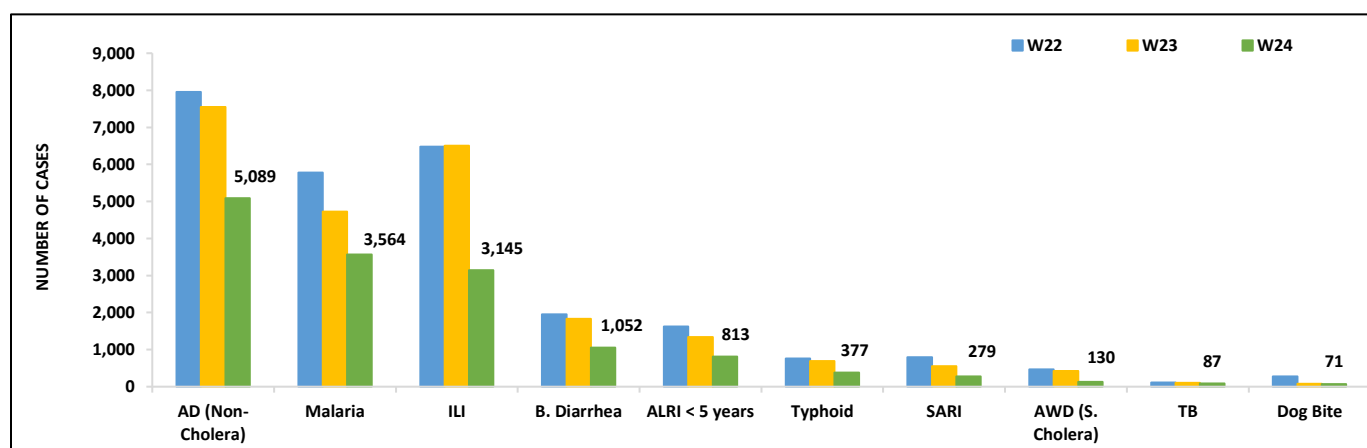
- AD (Non-Cholera), ILI, Malaria, B. Diarrhea, ALRI <5 years, Typhoid, SARI, AWD (S. Cholera), CL and Measles cases were the most frequently reported diseases from Balochistan province.
- AD (non-cholera) cases are mostly reported from Usta Muhammad, Quetta and Gwadar while ILI cases are mostly reported from Gwadar, Quetta and Kohlu.
- AD (Non-Cholera), Malaria, B. Diarrhea, ALRI <5 years, Typhoid, SARI, AWD (S. Cholera) and CL cases showed a decreasing trend this week.
- Six cases of AFP, Eleven suspected case of HIV/ AIDS, and Nine suspected cases of CCHF, Five cases of Brucellosis reported from Balochistan. All are suspected cases and need field verification

*Table 3: District wise distribution of most frequently reported suspected cases during week 24, Balochistan*

| Districts | AD Non-Cholera) | ILI | Malaria | B. Diarrhea | ALRI < 5 years | Typhoid | SARI | AWD (S.Cholera) | CL | Measles |
|---|---|---|---|---|---|---|---|---|---|---|
| Awaran | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Barkhan | 139 | 55 | 62 | 9 | 41 | 37 | 9 | 32 | 2 | 1 |
| Chagai | 159 | 66 | 210 | 60 | 2 | 15 | 3 | 13 | 0 | 0 |
| Duki | 165 | 58 | 66 | 80 | 18 | 10 | 29 | 18 | 1 | 1 |
| Dera Bugti | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Gwadar | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Harnai | 71 | 50 | 12 | 75 | 142 | 2 | 0 | 12 | 4 | 2 |
| Hub | 211 | 180 | 32 | 33 | 7 | 3 | 0 | 0 | 18 | 6 |
| Jaffarabad | 718 | 893 | 89 | 89 | 34 | 5 | 15 | 0 | 42 | 19 |
| Jhal Magsi | 273 | 350 | 361 | 18 | 26 | 4 | 3 | 0 | 5 | 12 |
| Kalat | 44 | 33 | 1 | 3 | 11 | 14 | 1 | 0 | 1 | 0 |
| Kharan | 161 | 69 | 272 | 57 | 4 | 3 | 2 | 3 | 0 | 0 |
| Khuzdar | 316 | 244 | 291 | 83 | 4 | 34 | 16 | 12 | 0 | 2 |
| Killa Abdullah | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Killa Saifullah | 250 | 221 | 3 | 114 | 113 | 45 | 13 | 1 | 0 | 2 |
| Kohlu | 59 | 61 | 105 | 47 | 10 | 9 | 27 | 1 | 1 | 0 |
| Lasbella | 306 | 290 | 63 | 30 | 61 | 3 | 3 | 0 | 0 | NR |
| Loralai | 250 | 64 | 299 | 54 | 27 | 27 | 94 | 4 | 0 | 4 |
| Mastung | 162 | 99 | 120 | 41 | 44 | 16 | 9 | 8 | 1 | 6 |
| Naseerabad | 267 | 144 | 0 | 18 | 23 | 28 | 1 | 0 | 0 | 4 |
| Nushki | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Panjgur | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Pishin | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Quetta | 512 | 10 | 613 | 104 | 60 | 28 | 21 | 17 | 2 | 0 |
| Sibi | 58 | 44 | 265 | 11 | 6 | 0 | 7 | 9 | 0 | 0 |
| Sohbat pur | 193 | 240 | 7 | 45 | 70 | 22 | 16 | 0 | 10 | 8 |
| Surab | 57 | 0 | 173 | 0 | 0 | 58 | 0 | 0 | 0 | 0 |
| Usta Muhammad | 718 | 393 | 101 | 81 | 110 | 14 | 10 | 0 | 0 | 4 |
| Sibi | 58 | 44 | 265 | 11 | 6 | 0 | 7 | 9 | 0 | 0 |
| Washuk | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Zhob | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Ziarat | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Total | 5,089 | 3,564 | 3,145 | 1,052 | 813 | 377 | 279 | 130 | 87 | 71 |

*Figure 3: Most frequently reported suspected cases during week 24, Balochistan*
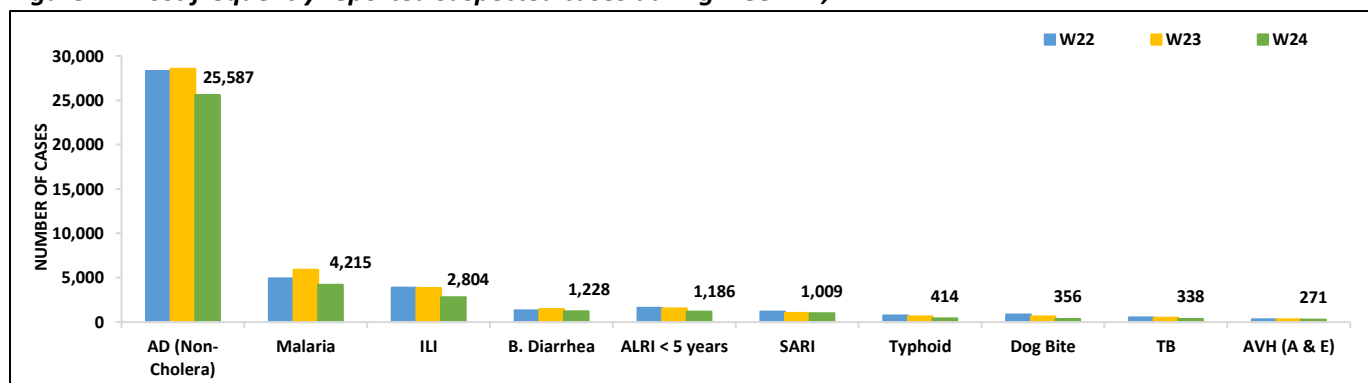
- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, B. Diarrhea, ALRI<5 Years, SARI, Typhoid, dog bite, TB and AVH (A & E) cases.
- AD (Non-Cholera), Malaria, ILI, B. Diarrhea, ALRI<5 Years, SARI, Typhoid, dog bite, TB and AVH (A & E) cases showed a decreasing trend this week.
- Eleven cases of AFP and Four suspected cases of Brucellosis reported from KP. All are suspected cases and need field verification.

*Table 4: District wise distribution of most frequently reported suspected cases during week 24, KP*

| Districts | AD (Non-Cholera) | Malaria | ILI | B.Diarrhea | ALRI <5 Years | SARI | Typhoid | Dog Bite | TB | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Abbottabad | 853 | 12 | 46 | 5 | 13 | 5 | 20 | 2 | 19 | 0 |
| Bajaur | 1,104 | 301 | 16 | 84 | 192 | 44 | 8 | 30 | 38 | 45 |
| Bannu | 836 | 1,483 | 3 | 19 | 23 | 7 | 56 | 2 | 33 | 33 |
| Battagram | 58 | 0 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buner | 575 | 310 | 0 | 3 | 0 | 0 | 17 | 0 | 1 | 0 |
| Charsadda | 1,591 | 189 | 301 | 141 | 131 | 1 | 37 | 8 | 2 | 35 |
| Chitral Lower | 377 | 6 | 25 | 36 | 10 | 20 | 8 | 7 | 8 | 2 |
| Chitral Upper | 112 | 6 | 17 | 9 | 6 | 12 | 8 | 0 | 3 | 0 |
| D.I. Khan | 1,670 | 371 | 0 | 28 | 8 | 0 | 0 | 2 | 43 | 0 |
| Dir Lower | 1,183 | 133 | 3 | 93 | 77 | 0 | 14 | 12 | 1 | 0 |
| Dir Upper | 460 | 5 | 58 | 5 | 10 | 0 | 5 | 0 | 22 | 6 |
| Haripur | 1,194 | 7 | 125 | 21 | 44 | 15 | 14 | 4 | 29 | 35 |
| Karak | 346 | 157 | 7 | 0 | 18 | 0 | 7 | 29 | 11 | 0 |
| Khyber | 107 | 69 | 0 | 33 | 42 | 16 | 6 | 0 | 0 | 0 |
| Kohistan Lower | 165 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kohistan Upper | 680 | 56 | 68 | 32 | 19 | 0 | 14 | 1 | 1 | 0 |
| Kolai Palas | 91 | 2 | 0 | 7 | 2 | 1 | 1 | 0 | 0 | 0 |
| L & C Kurram | 6 | 0 | 78 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lakki Marwat | 600 | 229 | 7 | 11 | 3 | 0 | 9 | 43 | 13 | 0 |
| Malakand | 1,199 | 21 | 23 | 29 | 27 | 22 | 16 | 0 | 0 | 26 |
| Mansehra | 487 | 2 | 152 | 16 | 10 | 15 | 15 | 0 | 8 | 9 |
| Mardan | 1,020 | 19 | 0 | 26 | 313 | 0 | 0 | 1 | 6 | 0 |
| Mohmand | 259 | 177 | 93 | 69 | 3 | 64 | 16 | 4 | 1 | 0 |
| Nowshera | 2,118 | 78 | 16 | 52 | 2 | 13 | 8 | 7 | 7 | 0 |
| Orakzai | 12 | 11 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peshawar | 3,050 | 46 | 313 | 188 | 35 | 44 | 42 | 3 | 10 | 0 |
| SD Peshawar | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SD Tank | 13 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shangla | 693 | 85 | 0 | 4 | 6 | 0 | 1 | 49 | 62 | 0 |
| SWA | 56 | 34 | 9 | 8 | 10 | 30 | 2 | 0 | 1 | 0 |
| Swabi | 1,341 | 59 | 673 | 37 | 143 | 42 | 33 | 78 | 4 | 23 |
| Swat | 2,655 | 53 | 327 | 147 | 35 | 39 | 24 | 62 | 7 | 57 |
| Tank | 281 | 113 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 |
| Tor Ghar | 109 | 145 | 0 | 32 | 2 | 9 | 16 | 2 | 4 | 0 |
| Upper Kurram | 285 | 30 | 320 | 73 | 2 | 610 | 16 | 10 | 4 | 0 |
| Total | 25,587 | 4,215 | 2,804 | 1,228 | 1,186 | 1,009 | 414 | 356 | 338 | 271 |

*Figure 4: Most frequently reported suspected cases during week 24, KP*
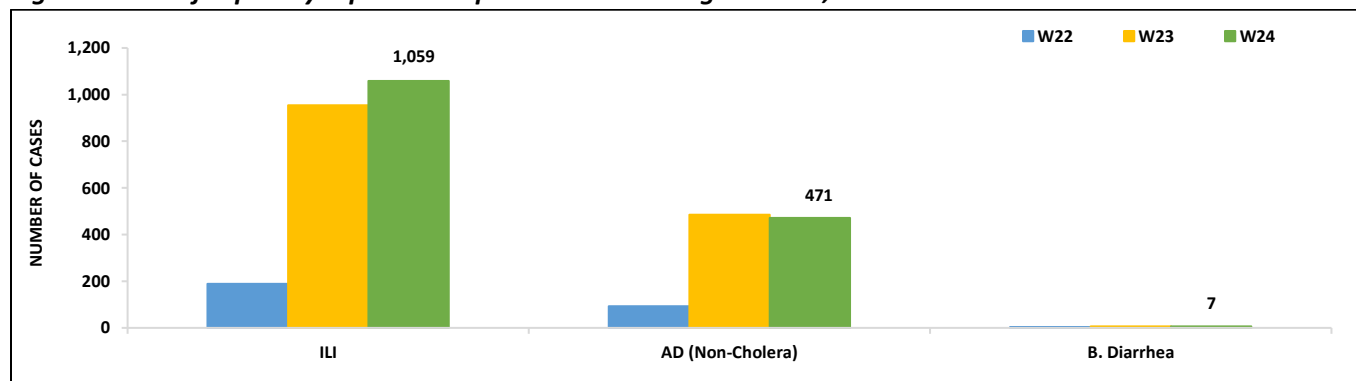
**ICT**: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera) and B. Diarrhea. ILI, AD (Non-Cholera) and B. Diarrhea showed an increasing trend in cases this week.

**AJK:** AD (Non-Cholera) cases were maximum followed by ILI, ALRI <5 years, SARI, AWD (S. Cholera), B. Diarrhea, dog bite, Malaria, TB and AVH (A & E) cases. Cases of AD (Non-Cholera), ILI, ALRI <5 years, B. Diarrhea, dog bite, Malaria, TB and AVH (A & E) cases showed a decreasing trend while cases SARI and AWD (S. Cholera) showed an increasing trend this week. Five cases of AFP reported from AJK. These are suspected cases and need field verification.

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

**Figure 5: Most frequently reported suspected cases during week 24, ICT**



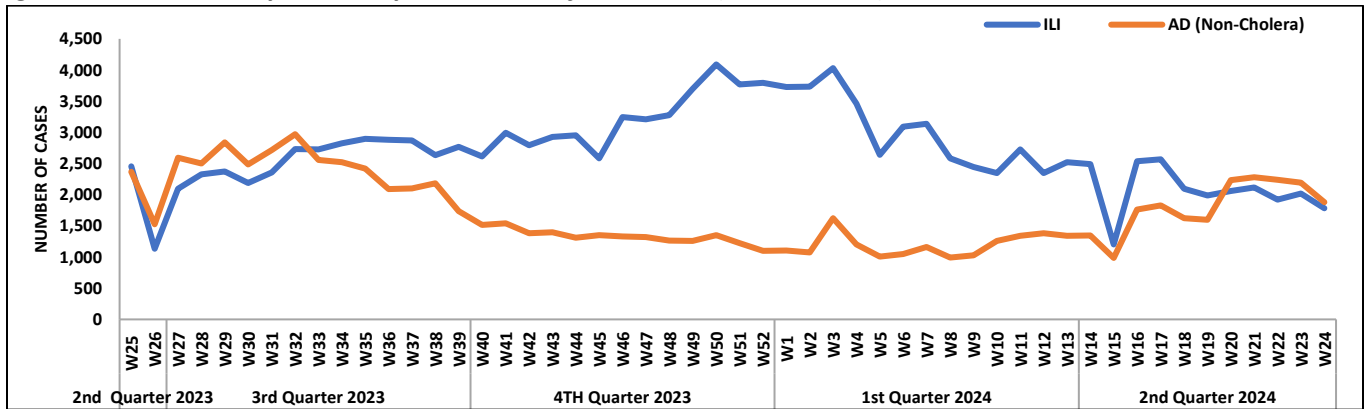**Figure 6: Week wise reported suspected cases of ILI, ICT**
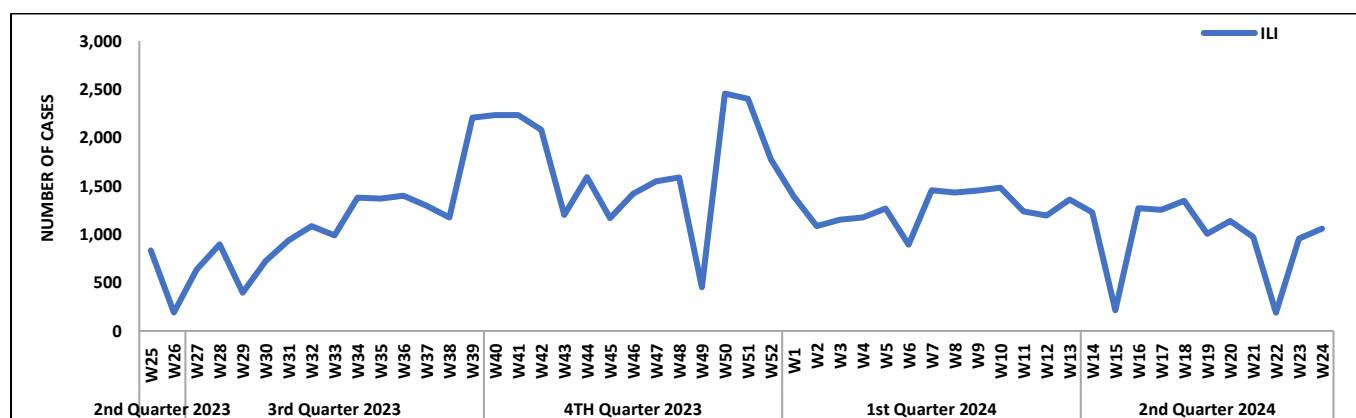


**Figure 7: Most frequently reported suspected cases during week 24, AJK**
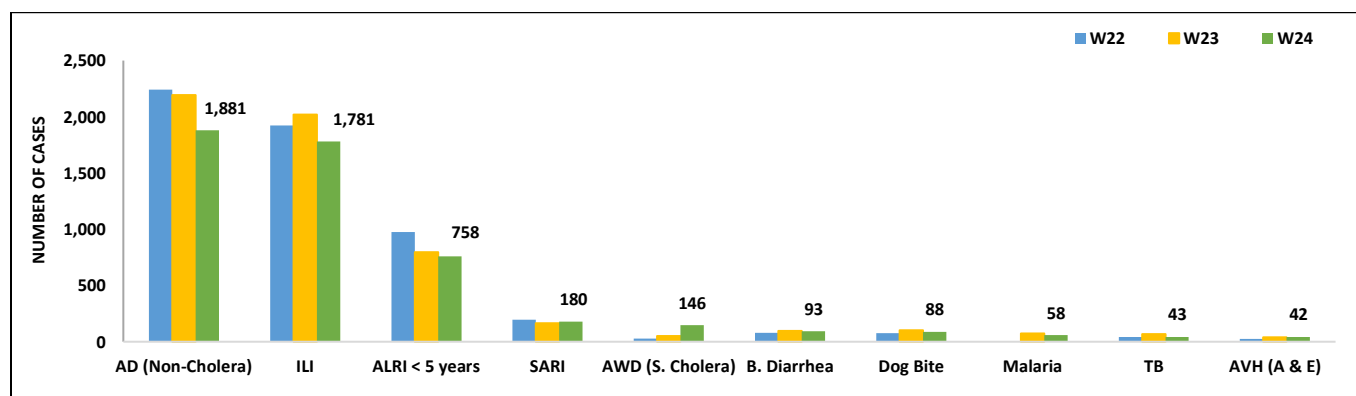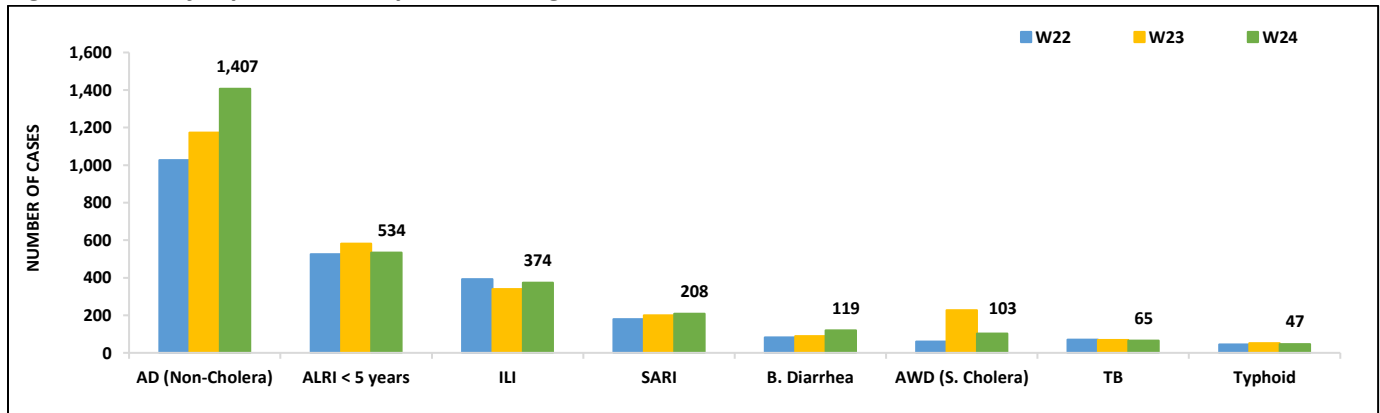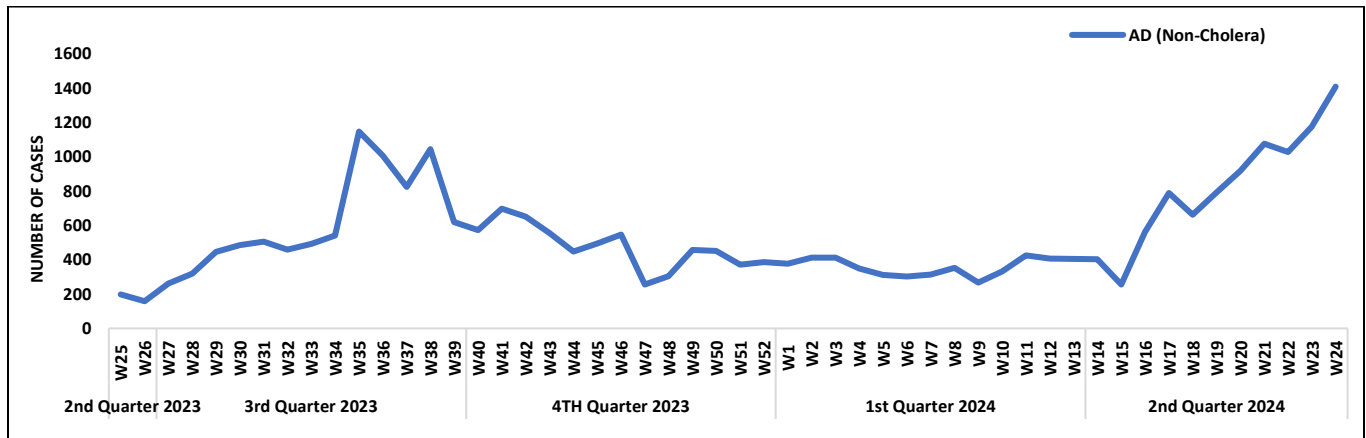
**Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK**



**Figure 9: Most frequent cases reported during Week 24, GB**



**Figure 10: Week wise reported suspected cases of AD (Non-Cholera), GB**

# Punjab

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

**Figure 11: Most frequently reported suspected cases during week 24, Punjab.**
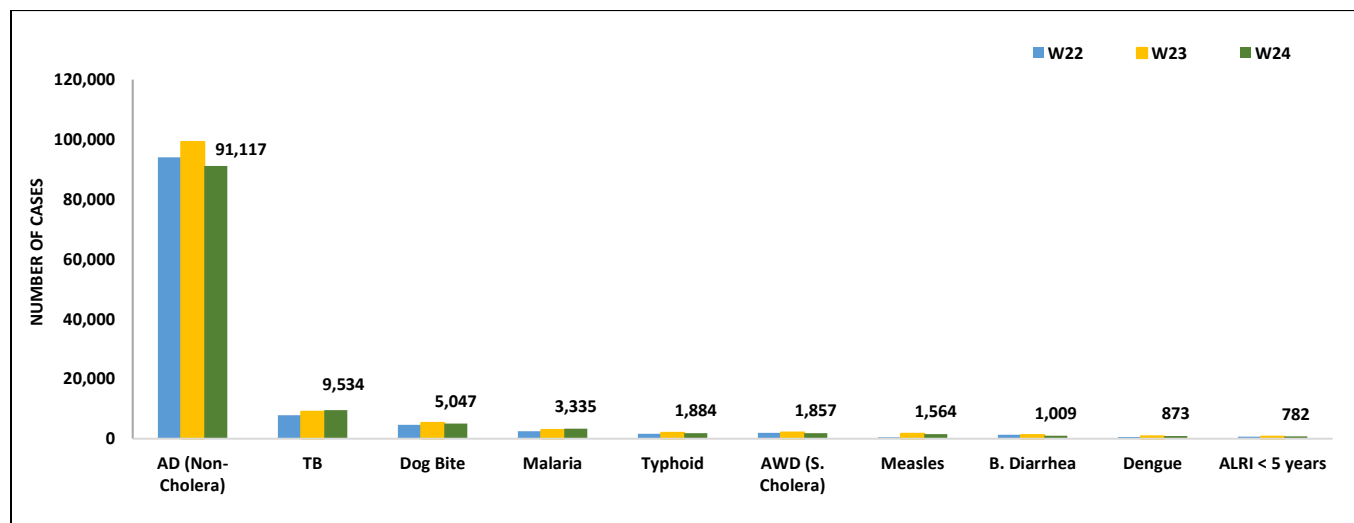


**Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 24**

| 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) | 10 | 0 | - | - | 1 | 0 | - | - | - | - |
| AD (Non-Cholera) | 84 | 0 | - | - | - | - | - | - | - | - |
| Malaria | 2,171 | 113 | - | - | - | - | - | - | - | - |
| CCHF | - | - | 5 | 0 | - | - | 0 | 0 | - | - |
| Dengue | 835 | 33 | | | - | - | 8 | 0 | - | - |
| VH (B) | 2,480 | 52 | 0 | 0 | - | - | - | - | - | - |
| VH (C) | 2,580 | 184 | 0 | 0 | - | - | - | - | - | - |
| VH (A&E) | 82 | 0 | - | - | 2 | 0 | - | - | - | - |
| Covid-19 | - | - | 0 | 0 | 0 | 0 | 1 | 0 | - | - |
| HIV | 305 | 0 | - | - | - | - | - | - | - | - |
| Diphtheria | - | - | - | - | 1 | 0 | - | - | - | - |
| Influenza A | 0 | 0 | 0 | 0 | 2 | 0 | 30 | 0 | 0 | 0 |
| TB | 61 | 0 | - | - | - | - | - | - | - | - |
| Syphilis | 92 | 0 | - | - | - | - | - | - | - | - |
| Pertussis | - | - | - | - | - | - | - | - | - | - |
| Typhoid | 489 | 10 | - | - | - | - | - | - | - | - |

# 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 24, 2024*

| Provinces/Regions | Districts | Total Number of Reporting Sites | Number of Reported Sites for current week | Compliance Rate (%) |
|---|---|---|---|---|
| Khyber Pakhtunkhwa | Abbottabad | 111 | 100 | 90% |
| | Bannu | 234 | 117 | 50% |
| | Battagram | 63 | 12 | 19% |
| | Buner | 34 | 26 | 76% |
| | Bajaur | 44 | 19 | 43% |
| | Charsadda | 59 | 52 | 88% |
| | Chitral Upper | 34 | 28 | 82% |
| | Chitral Lower | 35 | 35 | 100% |
| | D.I. Khan | 114 | 108 | 95% |
| | Dir Lower | 74 | 74 | 100% |
| | Dir Upper | 53 | 39 | 74% |
| | Hangu | 22 | 0 | 0% |
| | Haripur | 72 | 62 | 86% |
| | Karak | 35 | 35 | 100% |
| | Khyber | 64 | 11 | 17% |
| | Kohat | 61 | 0 | 0% |
| | Kohistan Lower | 11 | 11 | 100% |
| | Kohistan Upper | 20 | 20 | 100% |
| | Kolai Palas | 10 | 10 | 100% |
| | Lakki Marwat | 70 | 70 | 100% |
| | Lower & Central Kurram | 40 | 2 | 5% |
| | Upper Kurram | 42 | 19 | 45% |
| | Malakand | 42 | 33 | 79% |
| | Mansehra | 136 | 56 | 41% |
| | Mardan | 80 | 73 | 91% |
| | Nowshera | 55 | 50 | 91% |
| | North Waziristan | 380 | 0 | 0% |
| | Peshawar | 151 | 113 | 75% |
| | Shangla | 65 | 9 | 14% |
| | Swabi | 63 | 54 | 86% |
| | Swat | 77 | 64 | 83% |
| | South Waziristan | 134 | 39 | 29% |
| | Tank | 34 | 29 | 95% |
| | Torghar | 14 | 13 | 93% |
| | Mohmand | 86 | 36 | 42% |
| | SD Peshawar | 5 | 1 | 20% |
| | SD Tank | 58 | 2 | 3% |
| | Orakzai | 68 | 8 | 12% |
| | Mirpur | 37 | 37 | 100% |
| | Bhimber | 20 | 20 | 100% |
| | Kotli | 60 | 60 | 100% |
| | Muzaffarabad | 45 | 45 | 100% |
| | Poonch | 46 | 46 | 100% |
| | Haveli | 39 | 38 | 97% |

| Province/Region | District | | | |
|---|---|---|---|---|
| Azad Jammu Kashmir | Bagh | 40 | 38 | 95% |
| | Neelum | 39 | 39 | 100% |
| | Jhelum Vellay | 29 | 29 | 59% |
| | Sudhnooti | 27 | 27 | 100% |
| Islamabad Capital Territory | ICT | 21 | 21 | 100% |
| | CDA | 14 | 7 | 50% |
| Balochistan | Gwadar | 25 | 0 | 0% |
| | Kech | 40 | 0 | 0% |
| | Khuzdar | 74 | 60 | 81% |
| | Killa Abdullah | 24 | 0 | 0% |
| | Lasbella | 55 | 49 | 89% |
| | Pishin | 69 | 0 | 0% |
| | Quetta | 43 | 25 | 58% |
| | Sibi | 36 | 20 | 56% |
| | Zhob | 39 | 0 | 0% |
| | Jaffarabad | 16 | 16 | 100% |
| | Naserabad | 32 | 31 | 97% |
| | Kharan | 30 | 30 | 100% |
| | Sherani | 15 | 0 | 0% |
| | Kohlu | 75 | 16 | 21% |
| | Chagi | 35 | 24 | 69% |
| | Kalat | 41 | 39 | 95% |
| | Harnai | 17 | 17 | 100% |
| | Kachhi (Bolan) | 35 | 0 | 0% |
| | Jhal Magsi | 26 | 24 | 92% |
| | Sohbat pur | 25 | 19 | 76% |
| | Surab | 32 | 32 | 100% |
| | Mastung | 45 | 45 | 100% |
| | Loralai | 33 | 27 | 82% |
| | Killa Saifullah | 28 | 27 | 96% |
| | Ziarat | 29 | 0 | 0% |
| | Duki | 31 | 31 | 100% |
| | Nushki | 32 | 0 | 0% |
| | Dera Bugti | 45 | 0 | 0% |
| | Washuk | 46 | 0 | 0% |
| | Panjgur | 38 | 0 | 0% |
| | Awaran | 23 | 0 | 0% |
| | Chaman | 25 | 0 | 0% |
| | Barkhan | 20 | 17 | 85% |
| | Hub | 33 | 19 | 58% |
| | Musakhel | 41 | 0 | 0% |
| | Usta Muhammad | 34 | 34 | 100% |
| Gilgit Baltistan | Hunza | 32 | 31 | 97% |
| | Nagar | 20 | 20 | 100% |
| | Ghizer | 40 | 40 | 100% |
| | Gilgit | 40 | 37 | 93% |
| | Diamer | 62 | 62 | 100% |
| | Astore | 54 | 54 | 100% |

| | | | |
|---|---|---|---|
| | Shigar | 27 | 27 | 100% |
| | Skardu | 52 | 52 | 100% |
| | Ganche | 29 | 28 | 97% |
| | Kharmang | 18 | 18 | 100% |
| | Hyderabad | 73 | 59 | 81% |
| | Ghotki | 64 | 64 | 100% |
| | Umerkot | 43 | 31 | 72% |
| | Naushahro Feroze | 107 | 76 | 71% |
| | Tharparkar | 282 | 243 | 86% |
| | Shikarpur | 60 | 59 | 98% |
| | Thatta | 52 | 27 | 52% |
| | Larkana | 67 | 64 | 96% |
| | Kamber Shadadkot | 71 | 71 | 100% |
| | Karachi-East | 23 | 17 | 74% |
| | Karachi-West | 20 | 20 | 100% |
| | Karachi-Malir | 37 | 37 | 100% |
| | Karachi-Kemari | 18 | 12 | 67% |
| | Karachi-Central | 11 | 10 | 91% |
| | Karachi-Korangi | 18 | 16 | 89% |
| | Karachi-South | 4 | 4 | 100% |
| | Sujawal | 54 | 34 | 63% |
| | Mirpur Khas | 106 | 105 | 99% |
| | Badin | 124 | 121 | 98% |
| Sindh | Sukkur | 63 | 63 | 100% |
| | Dadu | 88 | 86 | 98% |
| | Sanghar | 100 | 99 | 99% |
| | Jacobabad | 44 | 43 | 98% |
| | Khairpur | 169 | 162 | 96% |
| | Kashmore | 59 | 59 | 100% |
| | Matiari | 42 | 42 | 100% |
| | Jamshoro | 70 | 70 | 100% |
| | Tando Allahyar | 54 | 54 | 100% |
| | Tando Muhammad Khan | 40 | 39 | 98% |
| | Shaheed Benazirabad | 122 | 122 | 100% |

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## NIH Takes Proactive Stance: National Workshop Charts Course for Multi-Hazard Public Health Risk Assessment.

The National Institutes of Health (NIH) recently unveiled a significant initiative aimed at bolstering the nation's preparedness for public health emergencies. This proactive approach involves convening a two-day national workshop to strategize a "National Strategic Multi-Hazard Public Health Risk Assessment.

The workshop signifies a critical shift towards a more comprehensive understanding of potential public health threats. Traditionally, public health preparedness often focuses on individual hazards like infectious diseases or natural disasters. However, the NIH's initiative recognizes the interconnectedness of these threats. The workshop aims to create a "multi-hazard" framework, encompassing a broad spectrum of potential hazards including:

- **Natural Disasters:** Earthquakes, floods, hurricanes, wildfires.
- **Infectious Diseases:** Emerging and re-emerging pathogens, pandemics.
- **Chemical Threats:** Accidental spills, industrial accidents, deliberate attacks.
- **Bioterrorism:** Intentional release of biological agents.
- **Technological Threats:** Cyberattacks on critical infrastructure, radiation accidents.

By taking this holistic approach, the NIH aims to create a more complete picture of potential vulnerabilities across the public health landscape. This will allow for Targeted Resource Allocation, Improved Emergency Response and Planning resulting in Enhanced Public Health System Resilience.

While specific details about the workshop, such as the risk assessment models employed and the prioritization of various hazards, remain under discussions, the overall initiative represents a positive development.

Public health preparedness is paramount in today's world. Emerging infectious diseases, increasingly extreme weather events, and evolving technological threats necessitate a proactive approach. The NIH's initiative to systematically assess and evaluate public health risks signifies a vital step towards protecting the nation's health and well-being.

Further developments surrounding this national risk assessment are worth monitoring closely. This initiative has the potential to significantly improve the nation's ability to respond to a wide range of public health threats, ensuring a safer and healthier future for all.

## *A note from Field Activities.*

### Outbreak Investigation Report Regarding Mysterious Disease of Cattle at Safarai, Michini Mohmand District, Aug-Sept 2023

**Dr. Midrar Ullah**
Deputy Director, FETP Fellow
Directorate of Epidemiology, L&DD (Ext), Khyber Pakhtunkhwa, Peshawar

**Dr Majid Salim**
TSO, PDSRU, DGHS, KP

### Introduction

Anthrax is a bacterial infection primarily affecting herbivores and humans. Caused by the spore-forming gram-positive bacterium Bacillus anthracis, this disease poses a significant threat due to the hardiness of its spores. These spores can persist in the environment for extended periods, even though harsh climatic variations. When suitable conditions arise, dormant spores can germinate and trigger outbreaks.

Clinically, Anthrax presents as a per acute (rapidly developing) disease in animals, often leading to sudden death. This can make early diagnosis challenging, with the only initial information available to farmers being the sudden demise of their livestock.

## Background and Significance

On August 19th, 2023, a concerning report arrived at the Department of Livestock & Dairy Development (L&DD) Extension. A phone call alerted them to a mysterious disease, causing high mortality rates among cattle in the villages of Safarai, Mohmand district. Recognizing the urgency of the situation, the Director General (Extension) of L&DD Khyber Pakhtunkhwa immediately directed a thorough investigation. Led by an epidemiologist, a technical team was assembled, comprised of experts from the Disease Investigation Laboratory (DIL) and a field veterinarian. The team visited Safarai villages in Mohmand district and conducted a comprehensive outbreak investigation.

Livestock serves as a vital livelihood source for approximately 100-150 households in the village. The livestock population consists primarily of 800 goats/sheep and 250-300 cattle, which are particularly at risks. This investigation also included collecting biological samples from infected animals for further analysis to identify the cause of the disease.

## Methods

In preparation for field work, the team prioritized the safety of its members by acquiring Personal Protective Equipment (PPE) compliant with WHO guidelines for Risk Group III pathogens. To gain a deeper understanding of the situation and potential risks, a thorough review of relevant literature was conducted. Additionally, confirmation of the outbreak was established through communication with the District Director of Livestock and the Circle In-Charge. Finally, to ensure efficient sample collection and analysis, necessary arrangements were made for sample collection kits and logistical support.

The outbreak investigation itself involved several key steps. First, the team interviewed residents and farmers of the affected village, to gather information on the disease situation, including the number of livestock and any recent outbreaks in nearby areas. This was followed by a visit to the affected area where a detailed investigation was conducted. Finally, biological samples were collected from infected animals and sent to the Disease Investigation Laboratory (DIL) in Peshawar for analysis.

## Results

An investigation into a sudden die-off of cattle in Safarai village revealed an outbreak of Anthrax. Interviews with seven farmers identified a total of 38 cattle in their herds.

The disease exhibited a peracute (very rapid) course. Thirteen cattle became sick and died within four days of showing symptoms (August 18th-19th). In most cases, animals appeared healthy the night before and were found dead the following morning. Some animals exhibited a brief period of illness with coughing, difficulty breathing, frothy discharge from the mouth and nostrils, and rapid bloating after death.

Females were more heavily impacted, with ten out of thirteen cases involving cows. Laboratory analysis confirmed Anthrax in four animals. The remaining eight carcasses were disposed of during the course of the investigation. One suspected cow survived with early management for the disease.

Significantly, all confirmed Anthrax cases involved grazing cattle. This finding suggests that grazing animals were more susceptible due to the potential ingestion of contaminated soil.

Anthrax is a zoonotic disease, it can jump from animals to humans. In humans, anthrax manifests in three main forms: cutaneous (skin), gastrointestinal (gut), and inhalational (lungs). The most common form, cutaneous anthrax, arises from contact with infected animals or animal products containing spores. This can occur in veterinarians, farmers handling sick animals, or butchers processing infected livestock. Additionally, contaminated wool or hides can also transmit the disease.

*The investigation found no evidence of cutaneous or systemic anthrax symptoms in any of the interviewed farmers. An active case search for human infections was also conducted in the village, revealing no suspected case.*

The investigation revealed a concerning lack of awareness among livestock farmers regarding the

zoonotic nature of Anthrax. Many farmers were unaware that the disease can be transmitted from animals to humans. This knowledge gap, coupled with financial constraints, unfortunately led some farmers to slaughter Anthrax-infected animals. This practice not only poses a health risk to the farmers themselves, but also increases the potential for further spread of the disease.

## Actions Taken to Control the Anthrax Outbreak in Safarai Village

Following the identification of Anthrax, a swift response was implemented to contain the outbreak and protect both livestock and public health. Here's a breakdown of the key actions taken:

**1. Livestock Confinement and Movement Restriction:**

- Farmers were advised to confine their animals within their homesteads. This vital step helped prevent the spread of Anthrax spores to new areas through animal movement. Contaminated animals can shed spores through their feces and other bodily fluids, posing a risk to other livestock they encounter. Restricting movement also facilitated easier monitoring of animal health.

**2. Vaccination Campaign:**

- Farmers were advised to vaccinate their healthy cattle against Bacillus anthracis, the bacterium causing Anthrax. Vaccination is a highly effective preventive measure that protects animals from developing the disease if they encounter spores. The report mentions a request to the District Director of Livestock to organize a vaccination campaign. This suggests that vaccines may not have been readily available to all farmers initially. A coordinated campaign would ensure wider coverage and faster protection for the livestock population.

**3. Public Awareness Raising:**

- An awareness-raising session was conducted to educate farmers about Anthrax. This session likely covered crucial information such as:
  - Signs and symptoms of Anthrax in animals.
  - The zoonotic potential of Anthrax and the risk of transmission to humans.

  - Safe handling practices for potentially infected animals and carcasses.
  - Importance of biosecurity measures on farms to prevent future outbreaks.
  - Reporting procedures for any suspected Anthrax cases.

By implementing these actions promptly, the investigation team effectively contained the outbreak. The focus on animal confinement, vaccination, and public education demonstrates a well-rounded approach to mitigating the spread of the disease and protecting both animal and human health.

The implemented control measures have been successful in containing the outbreak. As of August 20th, 2023, no new mortalities have been reported, and the remaining animals are healthy and being kept in confinement as a precaution.

## Conclusion

The investigation provides compelling evidence for a rapid and deadly Anthrax outbreak among grazing cattle in Safarai village. The link between grazing and Anthrax infection highlights the importance of prompt diagnosis and proper carcass disposal to control the spread of the disease.

The outbreak of Anthrax in Safarai village was effectively controlled through prompt investigation, vaccination of animals, and farmer education. However, strengthening disease reporting mechanisms and promoting farmer awareness about zoonotic diseases are crucial for future prevention.

## Recommendations

- Delay in reporting to the relevant authorities should be avoided.
- Vaccination within the affected area can minimize disease spread.
- Sick animals should be treated with antibiotics and vaccinated after recovery.
- Animal movement should be restricted for at least 15-20 days post-vaccination.
- Disease reporting mechanisms need strengthening for early detection and response.
- In prone areas, annual vaccination of susceptible animals is recommended.
- Farmer education on zoonosis, vaccination, carcass disposal, biosafety, and biosecurity is crucial.

# Outbreak Investigation of Suspected Pertussis in Killi Adam Zai, District Killa Abdullah, Balochistan, Pakistan (June 1st-4th, 2024)

**Dr. Olas Yar**
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PDSRU Quetta

**Dr. Malik Noman Zafar**
FELTP Frontline Fellow
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## Introduction:

On May 30th, 2024, the Provincial Disease Surveillance and Response Unit (PDSRU) in Balochistan, Quetta, received reports of suspected pertussis cases in Killi Adam Zai, Killa Abdullah district, via DHIS2 and telephone communication from a healthcare facility. Initial reports indicated six suspected cases and one death. Following verification and confirmation, a PDSRU team was deployed to investigate the outbreak in the affected village.

## Methods:

The outbreak investigation was carried out by a team from the Provincial Disease Surveillance and Response Unit (PDSRU) working alongside the District Health Officer (DHO) of Killa Abdullah district. To gather comprehensive data, the team employed a multifaceted approach. This included utilizing semi-structured questionnaires to collect detailed information from participants. Additionally, they reviewed existing hospital records for relevant case details. Furthermore, an active case search was conducted to identify any additional suspected cases within the community. To gain a deeper understanding of the deceased individual's illness and circumstances surrounding the death, face-to-face interview (verbal autopsy) was conducted with parents. Finally, the collected data was analyzed using frequencies and percentages to identify trends and patterns within the outbreak.

## Results:

The investigation identified a total of 20 suspected pertussis cases, with active case finding uncovering 13 previously unknown cases. The median age of cases was 4 years old (SD ±3.4). Children aged 3-5 years bore the brunt of the outbreak (60%), followed by those under 3 years (25%) and over 5 years (15%). Females were disproportionately impacted compared to males, with a ratio of 3:2. Worryingly, most children lacked any prior routine immunizations, highlighting poor vaccination coverage in the village.

Six samples were collected from suspected cases and sent to a public health laboratory for confirmation. Analysis of the data revealed an attack rate of 3.8%, with the most common clinical features being cough, fever, and vomiting. Vaccination history revealed zero prior routine immunizations for all suspected cases, including the deceased individual.

## Public Health Actions:

- Medical camps were organized, and cases were managed according to standard guidelines.
- Mop-up immunization activities were conducted.
- Active case search continued to identify new cases.
- Vaccination coverage efforts were initiated.
- Health awareness sessions were conducted in the community.

## Conclusion:

The investigation suggests that low routine immunization coverage in the affected village was likely the main causes of the pertussis outbreak. The entire area lacked adequate routine immunization coverage. Collaborative efforts among stakeholders (DOH, WHO, UNICEF) are crucial to prevent future outbreaks of vaccine-preventable diseases (VPDs) in the region.

## Recommendations:

- Conduct targeted behavior change communication sessions and implement accelerated mop-up immunization activities.
- Strengthen routine immunization programs in Killi Adam Zai, Killa Abdullah district.
- Appoint lady health workers in the area to promote behavior change within the community and strengthen the link between the population and the healthcare system.

# Outbreak Investigation of Measles in UC 49 & 75, Tehsil and District Jhang - June 12th-16th, 2024

**Dr. Javaria Altaf**
**Dr. Faizan Arshad**
FETP 15th cohort DGHS LAHORE

**Dr. Mohsan Watto**
TSO, PDSRU, DGHS, Punjab

## Introduction:

Measles is a highly contagious viral disease-causing fever, cough, and a red-brown rash. It spreads through airborne droplets from coughs and sneezes. Complications, especially in young children and adults over 30, can include blindness, pneumonia, and death. Vaccination is the best way to prevent measles.

## Background:

A recent surge in measles cases prompted an investigation in Jhang District. On June 11th, eleven measles cases were reported in Tehsil Jhang, with 9 confirmed by lab testing and hospitalized with complications. These originated from UC 49 & 75 in rural Jhang. An investigation team led by Dr. M Mohsan Wattoo (Epidemiologist) was dispatched to the affected area with DGHS office approval.

## Methods:

A descriptive study analyzed data from EPID week 19 (May 2nd-5th) to EPID week 25 (June 16th). An outbreak investigation and active case finding were conducted in UCs Moza Laghari (UC 75) & Kot Khaira (UC 49) from June 12th to 16th, where 9 confirmed cases originated.

**Case Definitions**:

- **Suspected:** Resident of Moza Laghari or Kot Khaira with fever ≥40°C, maculopapular rash, and cough, coryza, or conjunctivitis after May 1st, 2024.
- **Probable:** Any of the above with an epidemiological link to a confirmed case.
- **Confirmed:** Detection of measles-specific IgM antibody in serum and measles RNA by PCR in a respiratory specimen.

A comprehensive house-to-house survey was conducted using a structured questionnaire on illness status, symptoms, vaccination coverage, and reasons for non-vaccination.

## Results:

A distinct temporal pattern emerged from the analysis of measles cases reported between EPID week 19 to EPID week 25 (May 2nd - June 16th). The number of cases exhibited a steady rise, culminating in a peak of 21 cases in EPID week 22 (May 28th-June 3rd). This pattern is indicative of ongoing transmission and the potential for outbreaks.

A total of 40 measles cases were identified. Active case finding identified 29 cases in addition to the 11 reported through routine channels. Cases were distributed across UC 75 (24 cases) and UC 49 (16 cases). The gender distribution was relatively even with 21 males and 19 females affected. The mean age of cases was 32 months, with a median age of 24 months. Interestingly, the modal ages were 24, 48, and 60 months, suggesting possible pockets of unvaccinated children across different age groups. Children aged 0-9 months and 10-19 months were most affected by the outbreak. Notably, 11 cases required hospitalization due to complications such as pneumonia and gastroenteritis.

Attack rates were calculated for each affected Union Council (UC). UC 75 had a higher attack rate of 4 cases per 1000 population compared to UC 49 with an attack rate of 2.5 per 1000 population.

Field surveillance revealed suboptimal vaccination coverage. MR 1 (first measles-rubella dose) coverage was only 65%, and MR 2 (second dose) coverage was even lower at 47.5%. This low vaccination rate is likely a major contributing factor to the measles outbreak.

Social determinants of health appeared to play a role, as the majority of cases originated from low socioeconomic backgrounds with limited parental knowledge regarding measles complications and vaccine safety.

## Public Health Response:

- A rapid response team from Tehsil and District Jhang visited the affected areas. Activities included:
- Outbreak Response immunization in affected union concils
- Health awareness sessions in schools and UCs
- Alerts generated to relevant line departments
- Establishment of a surveillance team for routine immunization monitoring

The DGHS Punjab response team conducted the following:

- Initial information gathering, outbreak investigation & active surveillance
- Visited schools and households of cases and contacts
- Compiled a list of close contacts for follow-up
- Conducted awareness sessions for schools, parents, and communities
- Distributed disease awareness pamphlets
- Generated a response report for higher health department authorities

## Recommendations:

- Identify and isolate individuals with active symptoms, and conduct contact tracing.
- Raise awareness of vaccine availability and routine immunization.
- Disseminate accurate information about measles, its symptoms, complications, and prevention.
- Address misconceptions and promote measles awareness.
- Train healthcare professionals on recognizing measles symptoms, diagnosis, and reporting procedures.
- Implement enhanced surveillance measures to monitor virus spread and identify new cases.
- Provide support and resources for vulnerable populations.

# Letter to Editor

## Death Anxiety, Social Support, and Medication Adherence: A Multifaceted Analysis of the South Punjab HIV/AIDS Epidemic

**Sadia Rao**
**DHA, Rawalpindi**

The Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) epidemic continues to pose a significant challenge to public health efforts in Pakistan, with South Punjab emerging as a region of particular concern. People living with HIV/AIDS (PLWHA) in this region often experience heightened death anxiety, a natural fear of mortality significantly amplified by their diagnosis. This heightened anxiety can pose a significant barrier to medication adherence, a critical factor in managing the virus and preventing the progression to AIDS.

Our recent investigation aimed to shed light on the complex interplay between death anxiety, social support structures, and medication adherence among PLWHAs in South Punjab. The study revealed a compelling correlation: individuals with strong social support networks, particularly those with supportive romantic partners, exhibited a demonstrably higher rate of medication adherence.

This finding suggests that social support serves as a buffering mechanism, mitigating the negative effects of death anxiety on treatment compliance.

Interestingly, the research also unearthed a seemingly counterintuitive trend. Participants with lower levels of formal education displayed slightly higher levels of social support and medication adherence compared to their more educated counterparts. However, this group also reported marginally higher levels of death anxiety.

These findings illuminate the intricate interplay between social support, educational attainment, and mental health within the context of the South Punjab HIV/AIDS epidemic. While social support evidently emerges as a critical factor for medication adherence regardless of educational

background, death anxiety appears to pose a more significant challenge for those with limited formal education.

Further research is warranted to delve deeper into these nuances. Gaining a more comprehensive understanding of the specific social support networks and coping mechanisms employed by PLWHAs with lower levels of education could yield valuable insights for developing targeted interventions. Additionally, exploring the underlying reasons behind the higher levels of death anxiety reported in this group is crucial to address their specific needs and improve their overall well-being.

This study serves as a powerful testament to the importance of integrating mental health services into existing HIV/AIDS treatment programs. By fostering robust social support networks and proactively addressing death anxiety, healthcare professionals can create a more holistic approach to managing HIV/AIDS in South Punjab. Ultimately, this comprehensive approach has the potential to significantly improve medication adherence and health outcomes for PLWHAs in the region.

# Letter to Editor

## A Wake-Up Call: Hepatitis Prevalence in Rawalpindi Demands Urgent Action

**Dr. Anser Ishaq**
Program director
LHEAP, Rawalpindi

A recent screening program conducted by the Localised Hepatitis Elimination and Prevention Project (LHEAP) has revealed an alarming situation in Rawalpindi. A staggering 3.6% of the screened population across nine union councils tested positive for hepatitis B or C. This represents the highest prevalence rate recorded in the past eleven months, highlighting a critical public health issue.

The most concerning aspect is the lack of awareness among those infected. The majority of positive cases were unaware of their status, emphasizing the need for expanded screening efforts. Notably, the Fauji Colony area near Pirwadhai witnessed the highest prevalence rate, reaching a concerning 7%.

While the LHEAP project deserves recognition for its role in identifying these cases, the bigger picture demands a more comprehensive response. The project's free screening and treatment services, including the dedicated healthcare unit and expanded screening facilities, are commendable steps. However, to effectively combat this widespread issue, a multi-pronged approach is necessary.

Firstly, public awareness campaigns are crucial. Educating the population about hepatitis transmission, risk factors, and the importance of screening is vital for early detection and treatment.

Secondly, expanding free screening programs beyond the current nine union councils to encompass the entire district is essential to identify and address the full scope of the problem.

Finally, implementing programs to promote adherence to treatment regimens for those diagnosed with hepatitis is critical for successful outcomes.

The fight against hepatitis in Rawalpindi requires a collective effort from healthcare institutions, public health officials, and the community at large. By implementing these recommendations, we can significantly reduce the prevalence of this disease and safeguard the health of our citizens.

# Commentary

## One Year of the Pakistan Public Health Bulletin: A Triumph in Public Health Communication

**Dr. Waqar Ahmed**
Safetynet, NIH, Islamabad

The National Institutes of Health (NIH) celebrates a successful first year for the Pakistan Public Health Bulletin (PHB). Launched in June 2023, the PHB emerged from a collaborative effort initiated in 2021 by the NIH and the US Centers for Disease Control and Prevention (US-CDC). The CDC's critical training and logistical support – including personnel

recruitment and IT resources – laid a strong foundation for the program. Building on this collaboration, the PHB has become a cornerstone of public health communication in Pakistan. Afterward, UK Health Security Agency (UKHSA), World Health Organization (WHO), SafetyNet Inc., and other valued partners also joined hands with NIH-Pakistan for strengthening of PHB.

The PHB has now become an indispensable resource for public health professionals. It bridges the gap between raw data and actionable insights by transforming complex information from weekly Integrated Disease Surveillance and Response (IDSR) reports into a user-friendly format. The bulletin boasts a visually appealing layout, engaging editorials that provide context and analysis, and clear graphical summaries that make understanding surveillance data effortless. The PHB website goes beyond simply presenting information. It empowers citizens by serving as a knowledge hub. Here, they can access a wealth of public health educational messages, allowing them to take charge of their health and make informed decisions about disease prevention and health promotion

The PHB's success story isn't just about statistics; it's about fostering a strong collaborative spirit, The NIH, along with its partners, has ensured the bulletin's content is not only accurate and timely but also diverse and relevant. The PHB incorporates a rich tapestry of information sources, encompassing crucial surveillance data, cutting-edge research findings, and expert perspectives from a wide range of public health professionals. From Vaccination Superintendents on the ground to Health Managers overseeing regional programs, the PHB features insights from those on the frontline of public health. It doesn't stop there; the bulletin also includes the valuable perspectives from Professor of Pediatrics, offering a deep understanding of child health issues, and even the Health Minister, providing a state-level perspective. This blend of voices from diverse backgrounds – from the field, academia, and government – allows the PHB to address public health concerns from a holistic standpoint, ensuring a comprehensive and well-rounded view of Pakistan's public health landscape. Furthermore, senior and associate editors work hand-in-hand with partners like SafetyNet Inc. to guarantee the highest production standards and rigorous quality control. This collaborative approach ensures that the information presented in the PHB is accurate, clear,

and adheres to best practices in public health communication.

The first year of the PHB stands as a compelling example of what can be achieved through collaboration. By providing timely, accurate information and fostering knowledge sharing, the PHB empowers stakeholders at all levels to make informed decisions and safeguard public health for all citizens. The NIH, along with its partners, remains dedicated to this collaborative effort. The future holds exciting prospects for further strengthening Pakistan's public health infrastructure through initiatives like the PHB, including expanding its reach to underserved communities, developing targeted public health communication campaigns, and leveraging technology to enhance surveillance and data analysis capabilities. The PHB serves as a model for collaborative public health communication, paving the way for a healthier and more resilient future for Pakistan.

# Knowledge Hub

## Malaria: A Global Scourge Demanding Unrelenting Efforts.

Malaria, a mosquito-borne parasitic infection, continues to cast a long shadow over global public health. Millions fall victim annually, with hundreds of thousands succumbing to this preventable disease, particularly in tropical and subtropical regions.

### Understanding the Enemy: The Malaria Lifecycle

Caused by Plasmodium parasites transmitted through the bite of infected Anopheles mosquitoes, malaria has a complex yet insidious lifecycle within the human body. Following a bite, the parasites mature in the liver before invading red blood cells, wreaking havoc by systematically destroying them. This destruction triggers the hallmark symptoms of malaria:

- **High Fevers:** Often recurring in a cyclical pattern, these fevers can be debilitating and accompanied by chills and profuse sweating.

- **Crippling Headaches and Muscle Aches:** The widespread pain caused by malaria can

significantly impact daily activities and overall well-being.

- **Profound Fatigue and Weakness:** The parasite's destruction of red blood cells diminishes the body's oxygen-carrying capacity, resulting in profound tiredness.

## The Burden of Malaria in Pakistan

Pakistan faces a significant burden of malaria, with the disease considered endemic (consistently present) across all provinces. Estimates suggest over 2 million cases occur annually, disproportionately affecting the warm and humid southern regions like Sindh and Balochistan. These regions provide ideal breeding grounds for the very mosquitoes that transmit malaria.

## Combating the Malaria Threat: A Multi-Pronged Approach

Fortunately, malaria is both preventable and treatable. Implementing a multifaceted approach is crucial for successful control:

- **Preventing Mosquito Bites: The Cornerstone of Defense**

    o **Insect Repellents:** Applying repellents containing DEET or picaridin to exposed skin significantly deters mosquito bites.

    o **Protective Clothing:** Wearing long-sleeved shirts, pants, and closed-toe shoes, particularly at dusk and dawn when mosquito activity peaks, offers additional protection.

    o **Treated Bed Nets:** Sleeping under insecticide-treated nets (ITNs) is a highly effective method of preventing mosquito bites, especially during sleep.

- **Early Diagnosis and Treatment: Prompt Action Saves Lives**

    o Rapid medical attention is crucial if malaria is suspected. Early diagnosis through rapid diagnostic tests and prompt administration of effective antimalarial medications

can prevent the disease from progressing to severe stages.

- **Vector Control: Disrupting the Mosquito Life Cycle**

    o **Indoor Residual Spraying (IRS):** Applying long-lasting insecticides to the walls of homes inside and out kills adult mosquitoes that rest on these surfaces.

    o **Environmental Management:** Eliminating mosquito breeding grounds by clearing stagnant water sources and promoting proper drainage plays a vital role in long-term control efforts.

## Individual and Community Action: A Collective Responsibility

By taking individual actions and actively supporting community-level interventions, we can significantly impact the fight against malaria:

- Seek testing if symptoms like fever, chills, and muscle aches present.
- Complete prescribed antimalarial medication regimens as directed by healthcare professionals.
- Utilize insect repellents and sleep under ITNs.
- Advocate for and support initiatives that distribute ITNs and conduct IRS campaigns.

Through unwavering collective action and unwavering commitment, we can control malaria and achieve a world free from this devastating disease. Let us not falter in our efforts to eradicate this preventable scourge.

# National Institute of Health: Advisories

**Subject: Advisory for the Prevention and Control of Primary Amebic Meningo-encephalitis (PAM)/ Naegleriasis**

**Introduction:**

The Primary Amoebic Meningoencephalitis (PAM) also called Naegleriasis is an infectious disease of the central nervous system caused by the free-living amoeba Naegleria fowleri. A rare but is almost invariably fatal disease that was very first detected in Australia in 1965. Deaths related to PAM have regularly been reported from tertiary care hospitals of Karachi during summers since 2008.

High temperatures associated with poor chlorinated water during early summer pose a risk of Naegleria Fowleri infection especially in areas where the cases have been reported previously. To mitigate the risks associated with the hot season ahead, it is imperative to undertake immediate and long-term preventive measures in mega cities particularly Karachi. Vigilant surveillance is also imperative to pick the suspected cases for early disease confirmation and ensuring aggressive measures to interrupt further transmission.

**Objectives:**

The objective of this advisory is to alert the public health authorities, water and sanitation agencies and other relevant stakeholders to undertake necessary steps for prevention and control of PAM across Pakistan especially areas where cases are being reported every year.

**Background:**

N. fowleri (also known as brain eating amoeba) is a single-celled, thermophilic, free-living pathogen found widely in freshwater environments i.e. warm bodies of fresh water, such as lakes, rivers, hot springs and even in soil. Despite lower incidence, the PAM disease is also widely distributed in tropical areas and mostly occurs during hot summer months. Most cases of PAM arise from freshwater sources (lakes, pools) but an increasing number are now linked to drinking water systems.

The infection results from water containing N. fowleri entering the nasal cavity, followed by migration of the amoebae to the brain via the olfactory nerve. Within the brain, N. fowleri causes extensive inflammation, hemorrhage, and necrosis, leading to death in 3 to 7 days.

**Clinical presentation**:

Incubation period ranges from 02 to 15 days with median 07 days, The Clinical features of PAM are quite similar to meningitis with initial presentation of sudden onset of frontal or temporal headache, high grade fever, nuchal rigidity, anorexia, vomiting, irritability and restlessness. Other symptoms such as photophobia, neurological abnormalities, including altered mental status, ataxia, cranial nerve palsy, hallucinations, delirium and coma usually occur late in the clinical course leading to death in 3-8 days.

**Diagnosis:**

The diagnosis is based on history, clinical examination, signs and symptoms. CSF sample may be collected for microscopy and advanced referral testing. Because of the rarity of the infection and difficulty in initial detection, about 75% of case diagnoses are made after the death of the patient.
**Laboratory confirmation:**

PAM infection can be confirmed the through below mentioned laboratory procedures:

| Laboratory test | Findings |
| --- | --- |
| Direct Visualization | Naegleria fowleri organisms in cerebrospinal fluid (CSF), biopsy, or tissue specimens. Wet mount On CSP should be requested specifically |
| Antigen Detection | Naegleria fowleri antigen in CSF, biopsy, or tissue specimens through immunohistochemistry or indirect immunofluorescence |
| Polymerase Chain Reaction (PCR) | Amplification of DNA from the amoebae in CSF or tissue |
| Amoeba Culture | The amebae can be grown in culture to increase the likelihood of detecting the amoeba by direct visualization or PCR |

Suspected environmental water can be tested by using above mentioned laboratory procedures for detection of Naegleria Fowleri.

**Case Management**:
- Suspected cases should immediately be reported to health authorities for respective measures.
- Rapid diagnosis and intensive supportive care may provide the likelihood of survival. In few such documented cases, the combination of 3 drugs; **Amphotericin B** (IV/Intrathecal), Rifampicin (Oral 10 mg/ Kg/day) and **Fluconazole** (IV/ oral 10 mg/ kg/ day) was used along with **steroids**.

- Azithromycin has both in vitro and in vivo efficacy against Naegleria fowleri and may be tried as an adjunct to Amphotericin B. Recently, Miltefosine has also shown some in vitro ameba- killing activity against free-living amebae, including Naegleria fowleri.

**Prevention & Control measures**:
- Naegleria fowleri cannot survive in clean, cool and chlorinated water. Chlorine kills Naegleria fowleri and is the most effective way to disinfect swimming pools and reticulated water systems.
- Community education and raising awareness assumes significance in known endemic areas. Key recommended messages may include:
    - Avoid jumping or diving into warm fresh water or thermal pools and keeping the head above water in spas, thermal pools and warm fresh water.
    - Empty and clean small collapsible wading pools daily.
    - Ensure swimming pools and spas are adequately chlorinated and well maintained. If using un-chlorinated water, don't allow water to go up in nose when bathing, showering or washing the face.
    - Potentially contaminated water should not be used for any form of nasal irrigation or nasal lavage.

**Advise for water utilities**:
- Water supplies at risk including reticulated raw and drinking water, lakes, dams, bores, tanks, reservoirs, pipelines, and swimming pools that are poorly maintained, under or unchlorinated.
- Proper design, management and cleaning of assets (e.g. pipes and storage tanks) is required to minimize the sediment (which may harbor Naegleria cysts) and reduce water stagnation (which may lead to loss of disinfectant residual).

**Chlorination:**
- Water supplies at risk of N. fowleri must ensure adequate primary disinfection and maintain a chlorine residual of at least 0.5 mg/L at all times, in all parts of the distribution system.
- Regularly monitor the water temperature and chlorine residual throughout the distribution system. Periodic testing for Naegleria fowleri can be carried out in at risk systems.

**Disease Surveillance and Notification:**

Surveillance and notification of PAM infection should be enhanced with the dissemination of standard case definitions and diagnostics to areas of transmission and areas at risk.

**Risk Communications**:

Symptoms of N. fowleri infection are clinically similar to viral & bacterial meningitis and these conditions are much more common than amoebic meningoencephalitis. Making clinicians. aware about the disease may therefore, improve case detection and provide insight into human or environmental determinants of infection and allow improved assessment of treatment. effectiveness.

**Health Education**:

Awareness and education in the affected areas must also be undertaken to educate people on requisite preventive measures. Households should also be warned of the potential risk, if adequate disinfection cannot be maintained throughout the distribution system

The situation may please be continuously monitored and updates along with the actions taken be kindly communicated to the NIH regularly on phone no. +92-51-9255237, Fax: +92-51- 9255575, E-mail: eic.nih@gmail.com.

www.phb.nih.org.pk

# WORLD VITILIGO DAY

**June 25th , 2024**

*learning to live with vitiligo*

PAKISTAN

Vitiligo is a chronic skin condition that causes patches of skin to lose pigment or color. This happens when melanocytes – skin cells that make pigment  – are attacked and destroyed, causing the skin to turn a milky-white color.

Vitiligo can affect peopleof all races and ethnicities, but it is more common in people with darker skin. The exact cause of vitiligo is unknown, but it is thought to be an autoimmune disorder.

There is no cure for vitiligo, but there are treatments that can help to slow the progression of the disease and improve the appearance of the affected skin.

Vitiligo can be a challenging condition to live with, but it is important to remember that it is not contagious and it does not pose any health risks. There are many resources available to help people with vitiligo cope with the condition and live a full and productive life.

If you or someone you know has vitiligo, there are a few things you can do to help:

- Educate yourself about the condition: The more you know about vitiligo, the better equipped you will be to cope with it.
- Seek support: There are many support groups and online forums for people with vitiligo. These groups can provide you with emotional support and practical advice.
- Be patient: Vitiligo is a chronic condition, so it is important to be patient with yourself and with the treatment process.

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