PUBLIC HEALTH BULLETIN-PAKISTAN

Vol. 4 | Week 28
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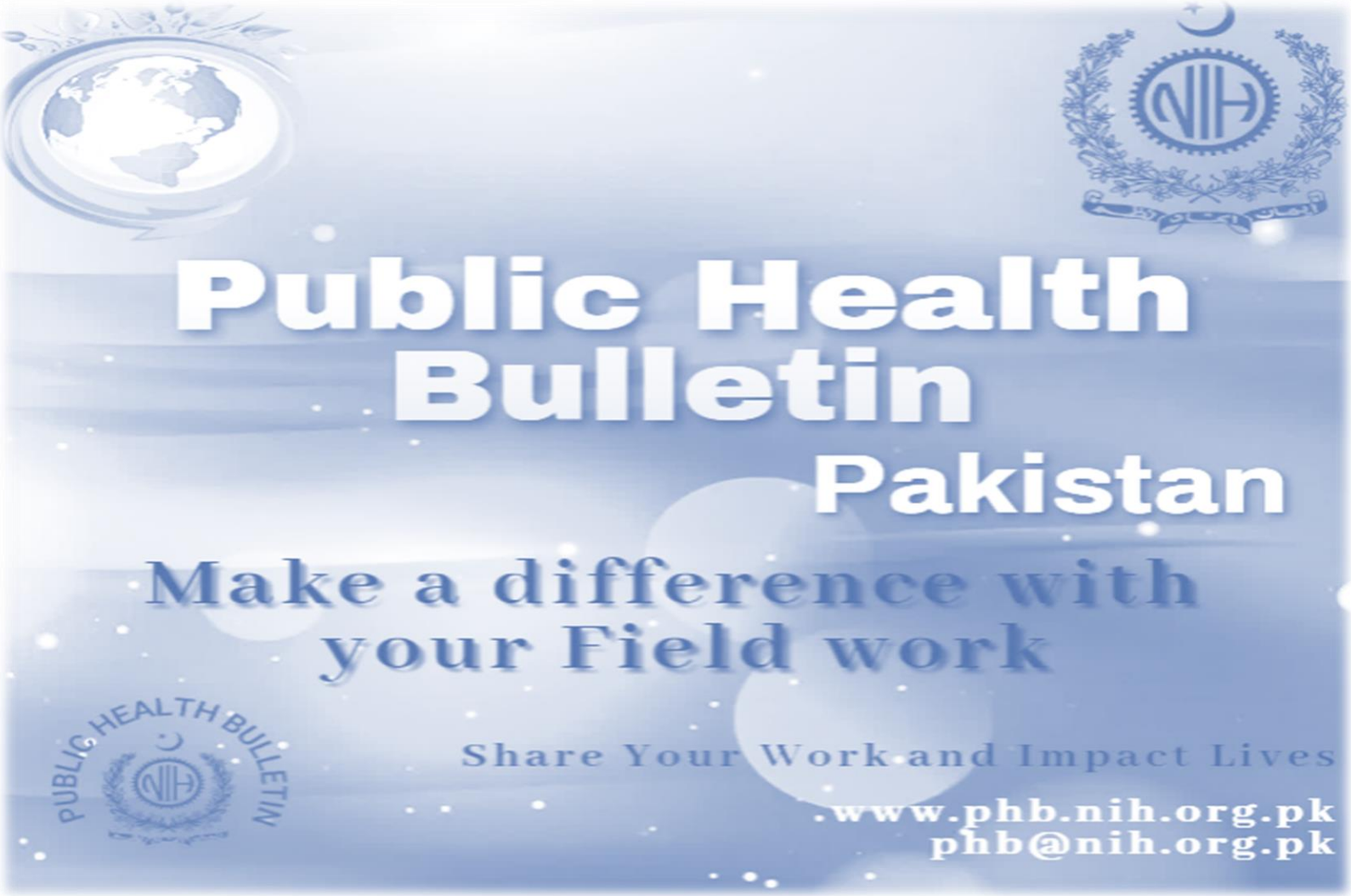
08th Jul – 14th Jun

# Integrated Disease Surveillance & Response (IDSR) Report

Center of Disease Control
National Institute of Health, Islamabad

http:/www.phb.nih.org.pk/

Integrated Disease Surveillance & Response (IDSR) Weekly Public Health Bulletin is your go-to resource for disease trends, outbreak alerts, and crucial public health information. By reading and sharing this bulletin, you can help increase awareness and promote preventive measures within your community.



**Public Health Bulletin - Pakistan, Week 28, 2024**



Pakistan's Public Health Bulletin has evolved far beyond its initial purpose as a simple list of illnesses. Today, it serves as a powerful resource, empowering both healthcare professionals and citizens with a wealth of public health information.

This comprehensive document delves deeply into prevalent diseases such as malaria, influenza, tuberculosis, and childhood respiratory infections. But its reach extends far wider, actively monitoring a broad spectrum of health concerns including diarrhea, dog bites, hepatitis, typhoid, and even potential cholera outbreaks. This critical data serves as the cornerstone for targeted prevention plans, enabling stakeholders to proactively address emerging health threats before they become widespread.

Think of the Bulletin as an early warning system for diseases. 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 before they erupt into major outbreaks.

The Bulletin goes beyond just presenting numbers. It offers insightful reports from field activities, as exemplified by this week's edition featuring reports on Alarming Resurgence of Polio in Balochistan, building stronger vaccination programs, MDR Typhoid Outbreak of KPK, and investigating and respond to recent dengue case in Rawalpindi.

The Public Health Bulletin goes beyond informing, fostering knowledge sharing through a dedicated Knowledge Hub section (featuring " Preventing Viral Hepatitis: It's Time for Action" this week). It also tackles real-world issues, like The Interplay of Monsoon, Floods, and Malaria in Pakistan and burden of viral hepatitis through featured commentary.

By equipping everyone with knowledge, the Public Health Bulletin empowers Pakistanis to build a healthier nation.

Sincerely,
The Chief Editor

- *During week 28, 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-three cases of AFP reported from KP, thirteen from Sindh, nine from Punjab, seven from AJK, five from Balochistan and one from GB. All are suspected cases and need field verification.*
- *Seven suspected cases of HIV/ AIDS reported from Sindh and five from KP. Field investigation required to verify the cases.*
- *Two suspected cases of CCHF reported from Punjab. Field investigation required to verify the cases.*
- *There is an increasing trend observed for AD (Non-cholera), Malaria, TB, ALRI <5 years, B. Diarrhea and AWD (S. Cholera) cases while a decreasing trend for ILI, dog bite and Typhoid cases this week.*

## *IDSR compliance attributes*

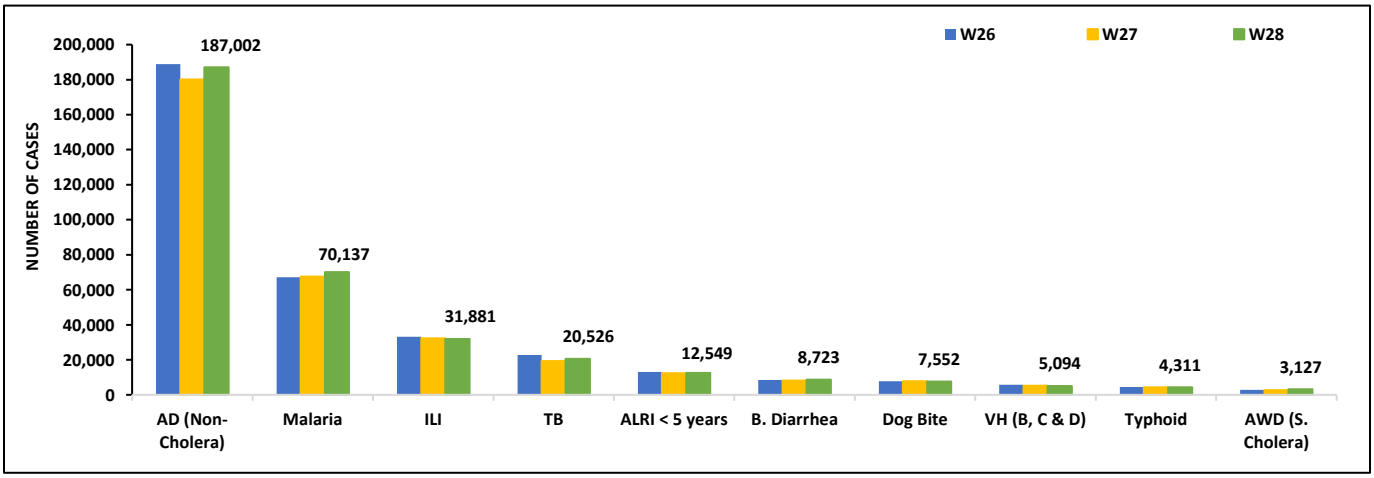
- *The national compliance rate for IDSR reporting in 149 implemented districts* is 82%
- *Gilgit Baltistan and AJK are the top reporting regions with a compliance rate of 99% and 97%, followed by Sindh 92% and Balochistan 84%*
- *The lowest compliance rate was observed in KPK.*

| *Region* | Expected Reports | Received Reports | Compliance (%) |
|---|---|---|---|
| ***Khyber Pakhtunkhwa*** | *2350* | *1574* | *67* |
| ***Azad Jammu Kashmir*** | *382* | *372* | *97* |
| ***Islamabad Capital Territory*** | *35* | *26* | *74* |
| ***Balochistan*** | *1206* | *1015* | *84* |
| ***Gilgit Baltistan*** | *374* | *371* | *99* |
| ***Sindh*** | *2084* | *1911* | *92* |
| ***National*** | *6431* | *5269* | *82* |

***Table 1: Province/Area wise distribution of most frequently reported suspected cases during week 28, Pakistan.***

| Diseases | AJK | Balochistan | GB | ICT | KP | Punjab | Sindh | Total |
|---|---|---|---|---|---|---|---|---|
| AD (Non-Cholera) | 2447 | 8,450 | 2008 | 504 | 28,613 | 95,844 | 49,136 | 187,002 |
| Malaria | 45 | 5,450 | 1 | 5 | 5,775 | 3,179 | 55,682 | 70,137 |
| ILI | 1,050 | 7,137 | 343 | 846 | 3,072 | 4 | 19,429 | 31,881 |
| TB | 31 | 116 | 90 | 8 | 376 | 9,563 | 10,342 | 20,526 |
| ALRI < 5 years | 684 | 1407 | 426 | 0 | 1,155 | 685 | 8,192 | 12,549 |
| B.Diarrhea | 87 | 2042 | 115 | 2 | 1,843 | 959 | 3,675 | 8,723 |
| Dog Bite | 88 | 143 | 5 | 0 | 386 | 5,177 | 1,753 | 7,552 |
| VH (B, C & D) | 11 | 73 | 1 | 1 | 81 | 0 | 4,927 | 5,094 |
| Typhoid | 27 | 744 | 91 | 3 | 674 | 1,807 | 965 | 4,311 |
| AWD (S. Cholera) | 27 | 251 | 72 | 12 | 175 | 2,565 | 25 | 3,127 |
| SARI | 257 | 535 | 186 | 3 | 1,189 | 0 | 113 | 2,283 |
| Measles | 30 | 50 | 5 | 0 | 229 | 709 | 156 | 1,179 |
| Dengue | 0 | 48 | 0 | 0 | 44 | 704 | 67 | 863 |
| AVH (A&E) | 25 | 24 | 1 | 0 | 233 | 0 | 214 | 497 |
| CL | 0 | 129 | 0 | 0 | 211 | 7 | 0 | 347 |
| Mumps | 8 | 39 | 4 | 1 | 53 | 0 | 187 | 292 |
| Chickenpox/ Varicella | 12 | 10 | 18 | 1 | 91 | 68 | 38 | 238 |
| Gonorrhea | 0 | 88 | 0 | 0 | 0 | 0 | 75 | 163 |
| Pertussis | 0 | 74 | 5 | 0 | 14 | 0 | 1 | 94 |
| Meningitis | 4 | 3 | 0 | 0 | 5 | 39 | 12 | 63 |
| AFP | 7 | 5 | 1 | 0 | 23 | 9 | 13 | 58 |
| Chikungunya | 0 | 1 | 0 | 0 | 0 | 0 | 32 | 33 |
| Diphtheria (Probable) | 0 | 3 | 0 | 0 | 4 | 12 | 0 | 19 |
| Syphilis | 0 | 1 | 0 | 0 | 0 | 3 | 12 | 16 |
| HIV/AIDS | 0 | 0 | 0 | 0 | 5 | 0 | 7 | 12 |
| NT | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 6 |
| Rubella (CRS) | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| CCHF | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |

***Figure 1: Most frequently reported suspected cases during week 28, Pakistan.***



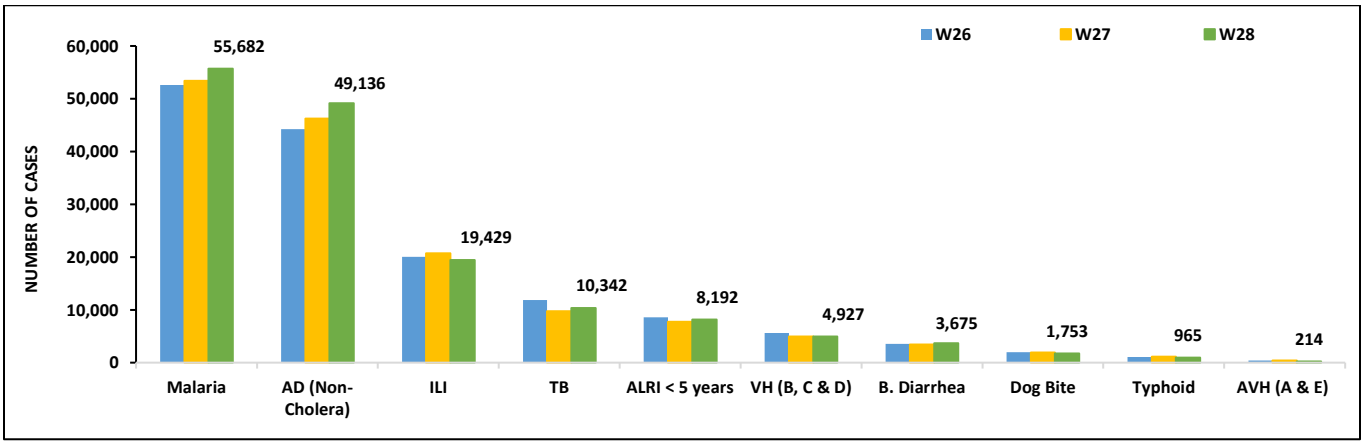
## Sindh

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

***Table 2: District wise distribution of most frequently reported suspected cases during week 28, Sindh***

| Districts | Malaria | AD (Non-Cholera) | ILI | TB | ALRI < 5 years | VH (B, C & D) | B. Diarrhea | Dog Bite | Typhoid | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Badin | 3,861 | 3,548 | 326 | 710 | 571 | 190 | 232 | 86 | 87 | 15 |
| Dadu | 3,681 | 3,075 | 181 | 461 | 682 | 31 | 521 | 147 | 92 | 16 |
| Ghotki | 1,877 | 1,402 | 0 | 270 | 350 | 359 | 102 | 159 | 0 | 6 |
| Hyderabad | 128 | 634 | 1 | 28 | 8 | 14 | 0 | 0 | 10 | 0 |
| Jacobabad | 713 | 766 | 128 | 142 | 376 | 166 | 141 | 126 | 42 | 0 |
| Jamshoro | 1,610 | 2,463 | 81 | 420 | 171 | 115 | 85 | 21 | 53 | 4 |
| Kamber | 4,575 | 2,619 | 0 | 819 | 256 | 127 | 209 | 154 | 29 | 0 |
| Karachi Central | 2 | 853 | 487 | 6 | 0 | 7 | 2 | 0 | 57 | 2 |
| Karachi East | 56 | 448 | 109 | 10 | 18 | 1 | 4 | 3 | 12 | 0 |
| Karachi Keamari | 0 | 293 | 106 | 0 | 28 | 0 | 0 | 2 | 1 | 2 |
| Karachi Korangi | 43 | 350 | 152 | 4 | 6 | 0 | 2 | 0 | 0 | 1 |
| Karachi Malir | 397 | 1,882 | 2,975 | 91 | 230 | 42 | 76 | 44 | 28 | 4 |
| Karachi South | 36 | 85 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Karachi West | 138 | 1,161 | 1,756 | 167 | 271 | 150 | 70 | 137 | 35 | 19 |
| Kashmore | 1,325 | 567 | 571 | 174 | 113 | 24 | 54 | 85 | 12 | 0 |
| Khairpur | 4,880 | 2,650 | 4,756 | 909 | 781 | 190 | 372 | 146 | 169 | 4 |
| Larkana | 5,971 | 2,498 | 3 | 803 | 221 | 103 | 336 | 24 | 25 | 1 |
| Matiari | 1,626 | 2,172 | 1 | 521 | 234 | 370 | 85 | 34 | 13 | 2 |
| Mirpurkhas | 2,408 | 2,910 | 2,452 | 588 | 411 | 185 | 164 | 41 | 9 | 9 |
| Naushero Feroze | 1,099 | 823 | 759 | 333 | 183 | 56 | 83 | 114 | 79 | 0 |
| Sanghar | 3,088 | 1,530 | 9 | 1010 | 344 | 1,308 | 56 | 66 | 22 | 3 |
| Shaheed Benazirabad | 1,664 | 1,957 | 5 | 407 | 194 | 63 | 81 | 144 | 69 | 0 |
| Shikarpur | 2,058 | 1,363 | 2 | 210 | 111 | 914 | 136 | 54 | 1 | 0 |
| Sujawal | 1,526 | 1,851 | 0 | 59 | 109 | 62 | 137 | 45 | 5 | 60 |
| Sukkur | 1,954 | 1,313 | 1,037 | 297 | 199 | 37 | 149 | 26 | 6 | 0 |
| Tando Allahyar | 1,965 | 1,878 | 571 | 498 | 238 | 188 | 158 | 46 | 7 | 2 |
| Tando Muhammad Khan | 1,692 | 1,557 | 0 | 533 | 162 | 54 | 85 | 0 | 1 | 0 |
| Tharparkar | 2,585 | 2,648 | 1,881 | 482 | 893 | 68 | 221 | 0 | 45 | 57 |
| Thatta | 2,675 | 2,125 | 1,076 | 43 | 627 | 57 | 47 | 49 | 20 | 5 |
| Umerkot | 2,049 | 1,715 | 0 | 347 | 405 | 46 | 67 | 0 | 36 | 2 |
| Total | 55,682 | 49,136 | 19,429 | 10,342 | 8,192 | 4,927 | 3,675 | 1,753 | 965 | 214 |

***Figure 2: Most frequently reported suspected cases during week 28 Sindh***



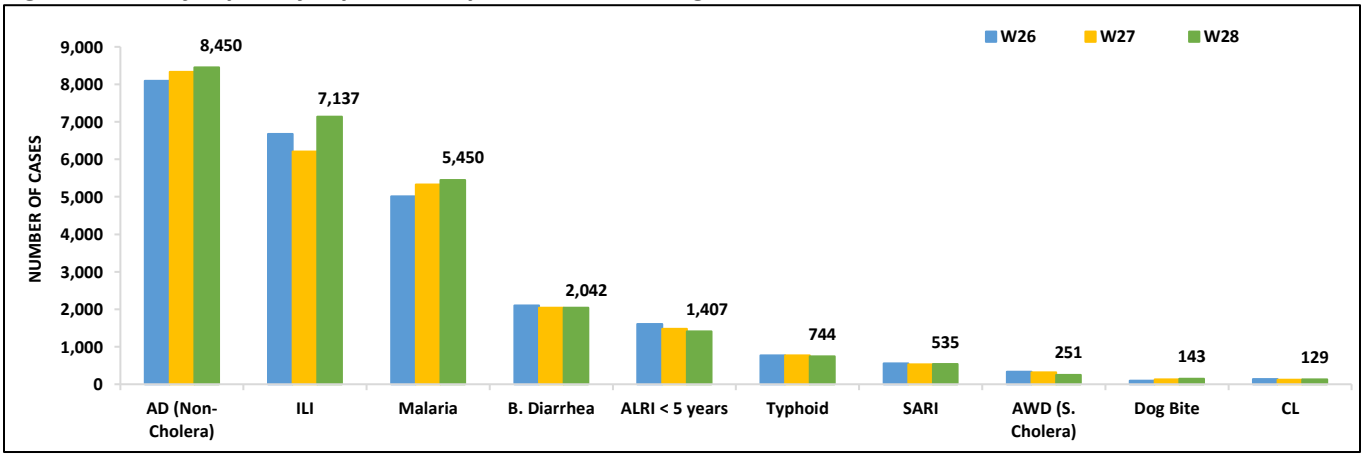
# Balochistan

- AD (Non-Cholera), ILI, Malaria, B. Diarrhea, ALRI <5 years, Typhoid, SARI, AWD (S. Cholera), dog bite and CL cases were the most frequently reported diseases from Balochistan province.
- AD (Non-Cholera) cases are mostly reported from Usta Muhammad, Jaffarabad and Quetta while ILI cases are mostly reported from Quetta, Gwadar and Kech (Turbat).
- AD (Non-Cholera), ILI, Malaria, SARI, dog bite and CL cases showed an increasing trend while B. Diarrhea, ALRI <5 years, Typhoid and AWD (S. Cholera) cases showed a decreasing trend this week.
- Five cases of AFP reported from Balochistan. They need field verification.

***Table 3: District wise distribution of most frequently reported suspected cases during week 28, Balochistan***

| Districts | AD Non-Cholera) | ILI | Malaria | B. Diarrhea | ALRI < 5 years | Typhoid | SARI | AWD (S.Cholera) | Dog Bite | CL |
|---|---|---|---|---|---|---|---|---|---|---|
| Awaran | 10 | 45 | 51 | 15 | 3 | 26 | 7 | 11 | 0 | 0 |
| Barkhan | 106 | 70 | 79 | 12 | 29 | 32 | 7 | 0 | 1 | 2 |
| Chagai | 126 | 197 | 32 | 64 | 1 | 12 | 4 | 5 | 1 | 0 |
| Chaman | 181 | 175 | 72 | 78 | 17 | 13 | 27 | 34 | 1 | 4 |
| Dera Bugti | 72 | 41 | 142 | 43 | 18 | 8 | 12 | 0 | 0 | 4 |
| Duki | 84 | 47 | 28 | 47 | 8 | 10 | 12 | 3 | 6 | 0 |
| Gwadar | 559 | 1,024 | 250 | 96 | 0 | 32 | 0 | 0 | 0 | 0 |
| Harnai | 93 | 28 | 70 | 75 | 139 | 1 | 0 | 8 | 14 | 0 |
| Hub | 287 | 82 | 241 | 64 | 12 | 4 | 0 | 0 | 31 | 5 |
| Jaffarabad | 791 | 63 | 936 | 81 | 39 | 12 | 10 | 0 | 18 | 3 |
| Jhal Magsi | 245 | 283 | 357 | 5 | 55 | 6 | 0 | 0 | 22 | 0 |
| Kalat | 53 | 2 | 52 | 21 | 12 | 34 | 2 | 0 | 0 | 2 |
| Kech (Turbat) | 446 | 931 | 620 | 90 | 5 | 2 | 3 | NR | NR | 2 |
| Kharan | 173 | 306 | 54 | 62 | 3 | 4 | 0 | 6 | 0 | 0 |
| Khuzdar | 398 | 447 | 286 | 125 | 14 | 48 | 23 | 40 | 2 | 1 |
| Killa Abdullah | 285 | 86 | 47 | 96 | 23 | 84 | 26 | 12 | 4 | 11 |
| Killa Saifullah | 64 | 0 | 39 | 23 | 19 | 8 | 0 | 4 | 0 | 0 |
| Kohlu | 219 | 284 | 151 | 99 | 21 | 53 | 57 | 3 | NR | NR |
| Lasbella | 407 | 68 | 336 | 36 | 72 | 4 | 3 | 0 | 6 | 0 |
| Loralai | 295 | 317 | 77 | 68 | 35 | 35 | 87 | 4 | 9 | 0 |
| Musakhel | 22 | 7 | 84 | 7 | 0 | 6 | 0 | 14 | 2 | 0 |
| Naseerabad | 299 | 17 | 150 | 23 | 44 | 60 | 1 | 0 | 4 | 7 |
| Panjgur | 159 | 27 | 175 | 46 | 68 | 3 | 12 | 20 | 0 | 0 |
| Pishin | 474 | 364 | 69 | 267 | 65 | 59 | 49 | 0 | 1 | 21 |
| Quetta | 716 | 1,244 | 22 | 158 | 101 | 57 | 62 | 50 | 0 | 24 |
| Sherani | 26 | 62 | 21 | 19 | 15 | 11 | 24 | 8 | 0 | 14 |
| Sibi | 50 | 47 | 22 | 12 | 0 | 2 | 2 | 2 | 0 | 3 |
| Sohbat pur | 340 | 3 | 293 | 91 | 132 | 34 | 22 | 2 | 6 | 4 |
| Surab | 57 | 172 | 84 | 0 | 6 | 27 | 0 | 0 | 0 | 0 |
| Usta Muhammad | 874 | 96 | 357 | 54 | 80 | 10 | 9 | 2 | 1 | 2 |
| Washuk | 150 | 222 | 46 | 58 | 0 | 1 | 0 | 2 | 0 | 0 |
| Zhob | 174 | 203 | 135 | 46 | 357 | 14 | 68 | 0 | 7 | 20 |
| Ziarat | 215 | 177 | 72 | 61 | 14 | 32 | 6 | 21 | 7 | 0 |
| Total | 8,450 | 7,137 | 5,450 | 2,042 | 1,407 | 744 | 535 | 251 | 143 | 129 |

***Figure 3: Most frequently reported suspected cases during week 28, Balochistan***

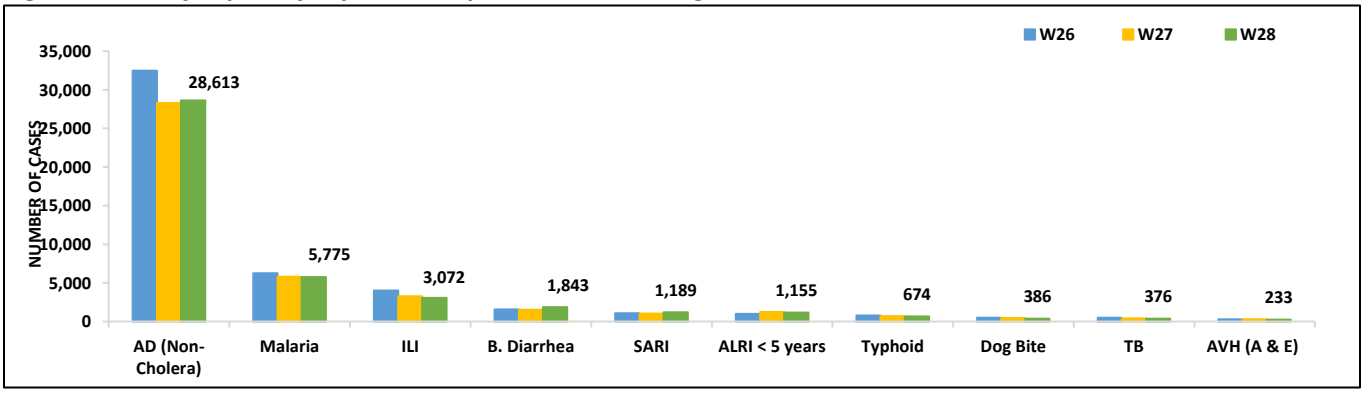


- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, B. Diarrhea, SARI, ALRI<5 Years, Typhoid, dog bite, TB and AVH (A & E) cases.
- AD (Non-Cholera), B. Diarrhea and SARI cases showed an increasing trend while ILI, ALRI<5 Years, dog bite, TB and AVH (A & E) cases showed a decreasing trend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

***Table 4: District wise distribution of most frequently reported suspected cases during week 28, KP***

| Districts | AD (Non-Cholera) | Malaria | ILI | B.Diarrhea | SARI | ALRI <5 Years | Typhoid | Dog Bite | TB | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Abbottabad | 1,159 | 19 | 132 | 16 | 6 | 6 | 17 | 2 | 20 | 6 |
| Bajaur | 1,102 | 132 | 22 | 148 | 92 | 189 | 4 | 18 | 13 | 48 |
| Bannu | 829 | 1,510 | 3 | 40 | 18 | 24 | 79 | 4 | 26 | 7 |
| Battagram | 163 | 172 | 309 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buner | 470 | 277 | 0 | 1 | 0 | 0 | 1 | 14 | 0 | 0 |
| Charsadda | 1,054 | 200 | 264 | 93 | 0 | 30 | 64 | 2 | 0 | 33 |
| Chitral Lower | 904 | 15 | 33 | 40 | 11 | 11 | 9 | 20 | 7 | 0 |
| Chitral Upper | 176 | 6 | 18 | 1 | 5 | 2 | 11 | 5 | 1 | 1 |
| D.I. Khan | 1,035 | 335 | 0 | 27 | 0 | 8 | 4 | 7 | 51 | 0 |
| Dir Lower | 1,979 | 118 | 3 | 72 | 0 | 59 | 41 | 13 | 3 | 5 |
| Dir Upper | 1,414 | 23 | 52 | 14 | 0 | 28 | 23 | 1 | 17 | 6 |
| Hangu | 71 | 21 | 0 | 8 | 0 | 0 | 0 | 0 | 2 | 0 |
| Haripur | 1,045 | 15 | 81 | 19 | 3 | 24 | 8 | 6 | 14 | 28 |
| Karak | 265 | 170 | 6 | 0 | 0 | 11 | 0 | 16 | 6 | 0 |
| Khyber | 257 | 203 | 18 | 66 | 30 | 27 | 41 | 25 | 9 | 6 |
| Kohat | 304 | 117 | 39 | 2 | 0 | 22 | 16 | 10 | 7 | 0 |
| Kohistan Lower | 184 | 11 | 3 | 19 | 16 | 3 | 1 | 1 | 0 | 0 |
| Kohistan Upper | 477 | 18 | 2 | 25 | 12 | 19 | 10 | 1 | 14 | 0 |
| Kolai Palas | 98 | 5 | 0 | 2 | 15 | 0 | 1 | 0 | 0 | 0 |
| L & C Kurram | 28 | 15 | 52 | 28 | 3 | 0 | 3 | 2 | 0 | 0 |
| Lakki Marwat | 579 | 188 | 1 | 19 | 0 | 3 | 8 | 20 | 7 | 0 |
| Malakand | 1,087 | 76 | 0 | 421 | 7 | 15 | 36 | 0 | 3 | 35 |
| Mansehra | 517 | 1 | 200 | 0 | 33 | 0 | 6 | 0 | 1 | 0 |
| Mardan | 839 | 32 | 0 | 24 | 0 | 178 | 0 | 0 | 7 | 0 |
| Mohmand | 129 | 193 | 74 | 82 | 71 | 3 | 10 | 5 | 2 | 0 |
| North Waziristan | 58 | 26 | 0 | 15 | 50 | 42 | 0 | 1 | 0 | 0 |
| Nowshera | 1,566 | 122 | 36 | 40 | 2 | 4 | 8 | 5 | 0 | 5 |
| Orakzai | 34 | 26 | 28 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| Peshawar | 3,064 | 47 | 509 | 173 | 42 | 152 | 58 | 23 | 21 | 27 |
| SD Peshawar | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SD Tank | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shangla | 1,518 | 1,110 | 3 | 28 | 2 | 35 | 39 | 27 | 59 | 2 |
| SWA | 128 | 147 | 124 | 20 | 60 | 57 | 70 | 9 | 1 | 0 |
| Swabi | 1,525 | 80 | 528 | 34 | 31 | 109 | 44 | 91 | 61 | 21 |
| Swat | 3,900 | 64 | 218 | 233 | 50 | 72 | 18 | 48 | 19 | 1 |
| Tank | 170 | 86 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| Tor Ghar | 152 | 132 | 0 | 39 | 15 | 1 | 1 | 0 | 0 | 2 |
| Upper Kurram | 326 | 57 | 314 | 88 | 615 | 21 | 41 | 10 | 5 | 0 |
| Total | 28,613 | 5,775 | 3,072 | 1,843 | 1,189 | 1,155 | 674 | 386 | 376 | 233 |

***Figure 4: Most frequently reported suspected cases during week 28, KP***



## ICT, AJK & GB

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

*AJK:* AD (Non-Cholera) cases were maximum followed by ILI, ALRI <5 years, SARI, dog bite, B. Diarrhea, Malaria, TB, Measles and AWD (S. Cholera) cases. A decreasing trend observed for AD (Non-Cholera), ILI, ALRI <5 years, dog bite, B. Diarrhea, Malaria, TB, Measles and AWD (S. Cholera) cases this week. Seven cases of AFP reported from AJK. All 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, Typhoid, TB and AWD (S. Cholera) cases. Decreasing trend observed for ALRI <5 Years, SARI, B. Diarrhea and AWD (S. Cholera) cases while increasing trend observed for AD (Non-Cholera), ILI and Typhoid cases this week.

***Figure 5: Most frequently reported suspected cases during week 28, ICT***

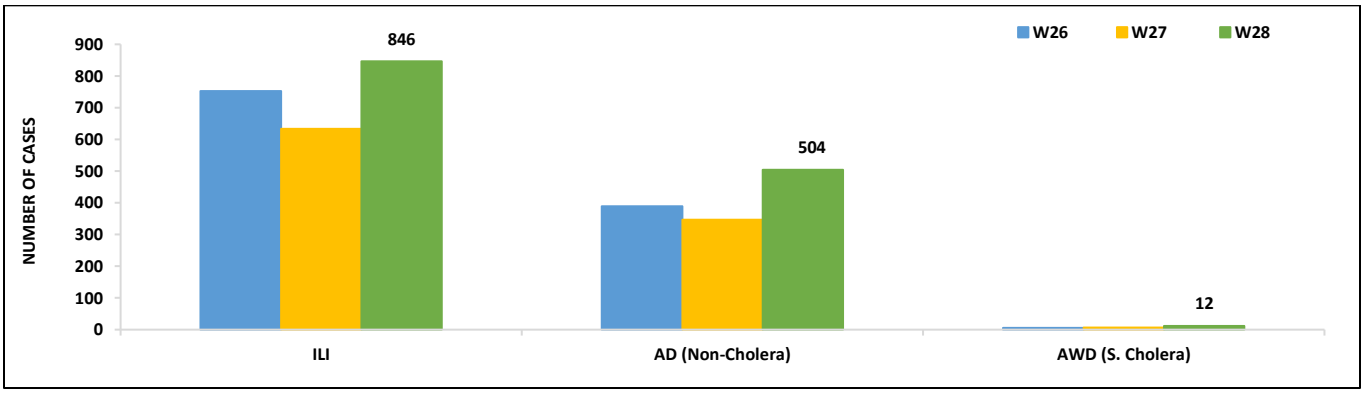



***Figure 6: Week wise reported suspected cases of ILI, ICT***

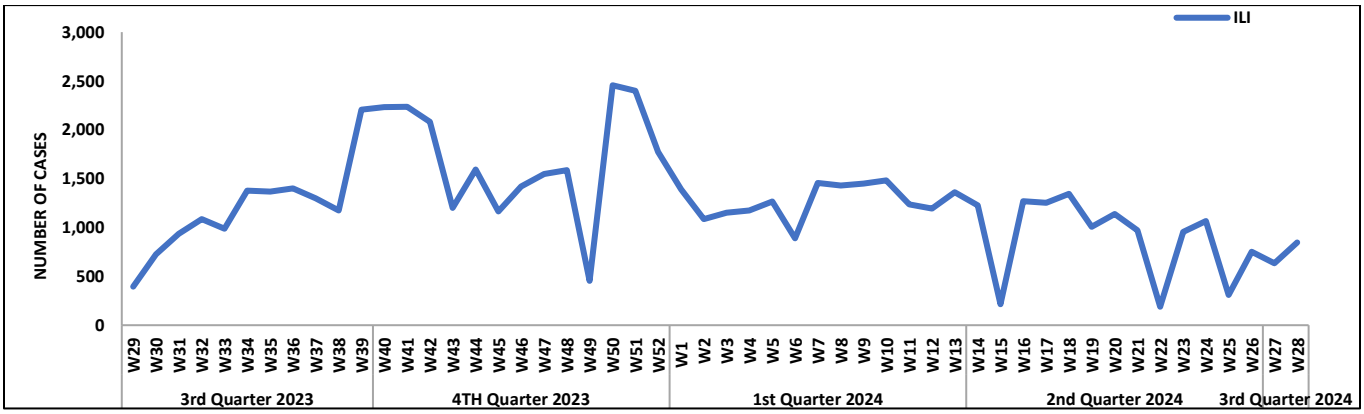



***Figure 7: Most frequently reported suspected cases during week 28, AJK***

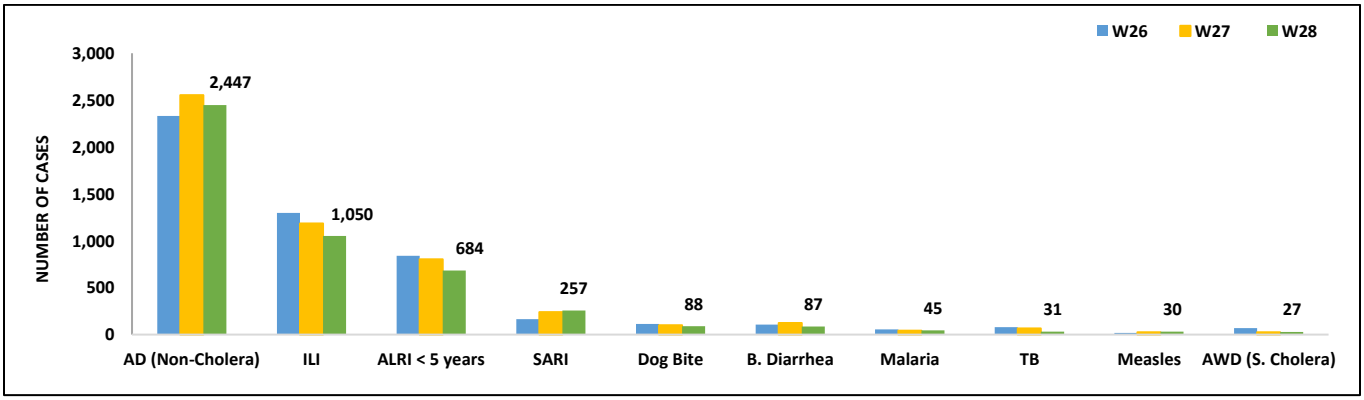


*Figure 8: Week wise reported suspected cases of ILI and AD (Non-Cholera) AJK*

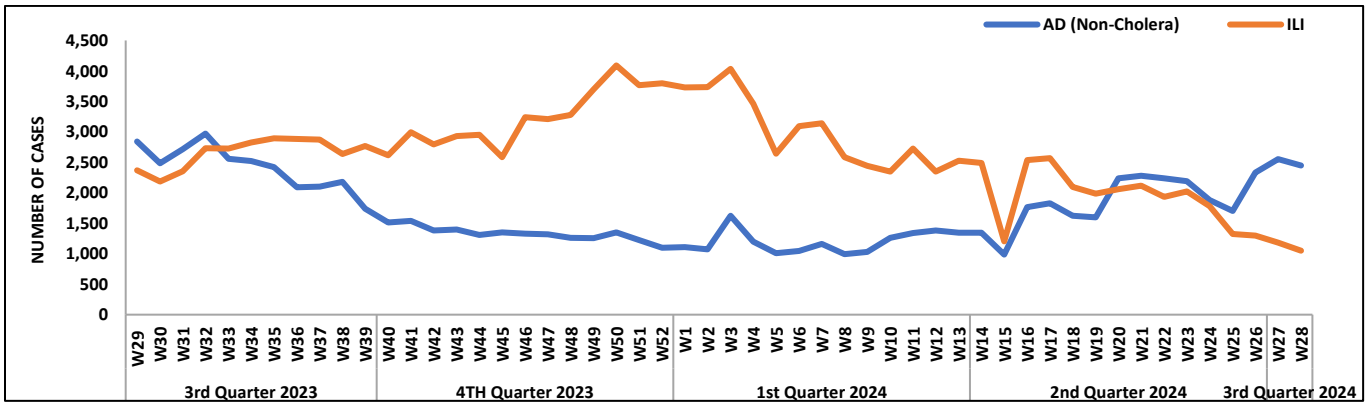



*Figure 9: Most frequent cases reported during Week 28, GB*

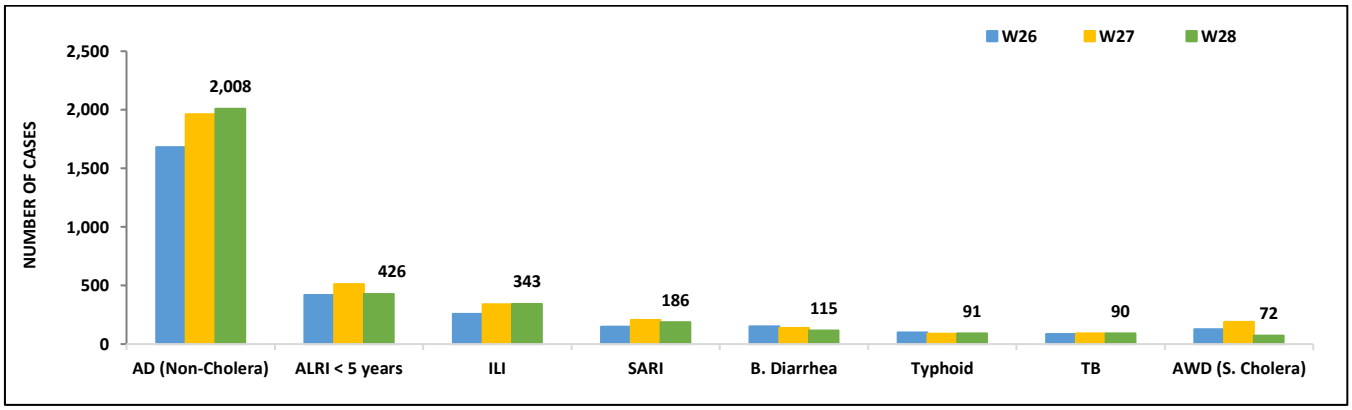
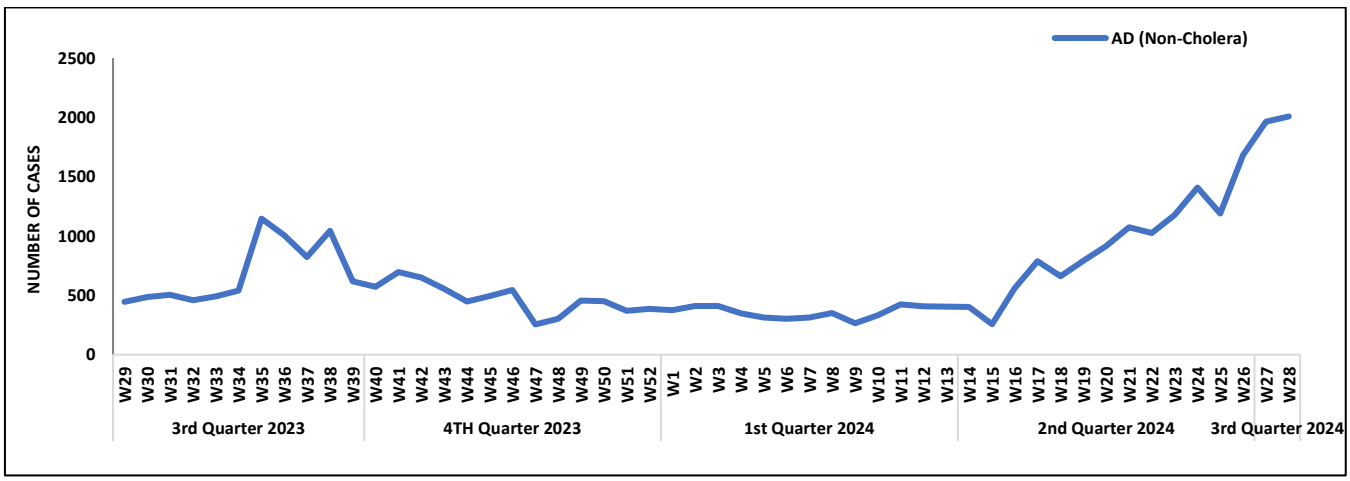



*Figure 10: Week wise reported suspected cases of AD (Non-Cholera), GB*



## Punjab

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

***Figure 11: Most frequently reported suspected cases during week 28, Punjab.***

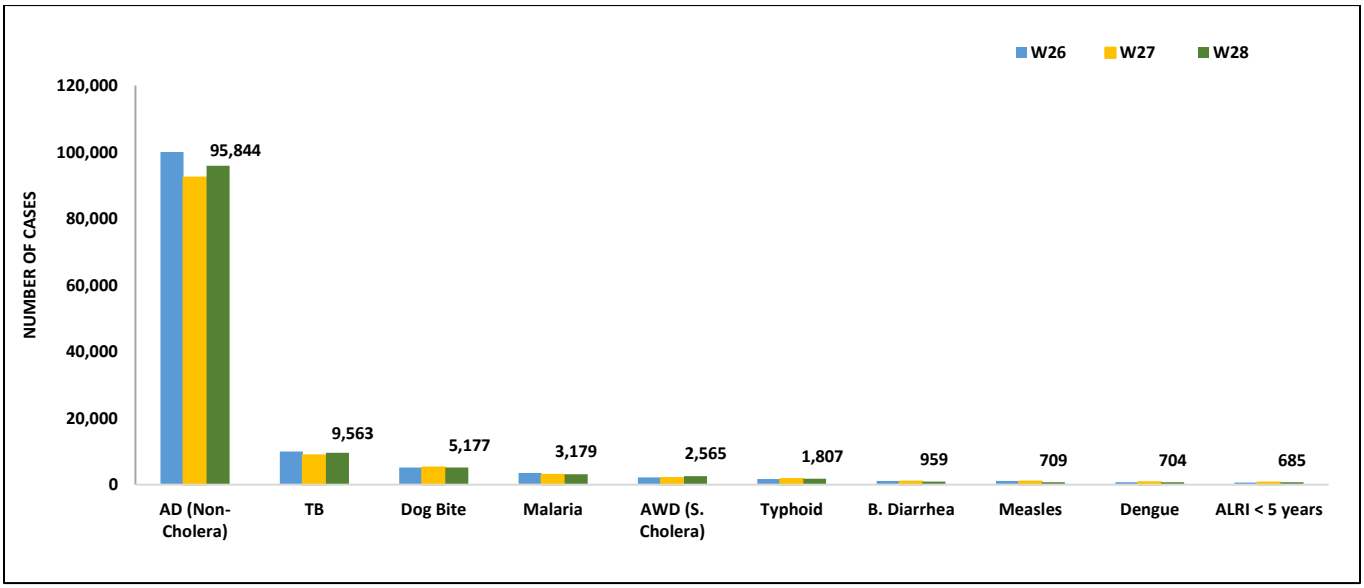



***Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 28***

| 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) | 2 | 0 | - | - | 10 | 0 | - | - | - | - |
| AD (Non-Cholera) | 102 | 0 | - | - | - | - | - | - | - | - |
| Malaria | 2,122 | 89 | - | - | - | - | - | - | - | - |
| CCHF | - | - | 12 | 1 | 5 | 1 | 9 | 1 | - | - |
| Dengue | 215 | 8 | 0 | 0 | - | - | 3 | 0 | - | - |
| VH (B) | 3,029 | 74 | 81 | 66 | - | - | - | - | - | - |
| VH (C) | 3,296 | 191 | 179 | 54 | - | - | - | - | - | - |
| VH (A&E) | 78 | 0 | - | - | - | - | - | - | - | - |
| Covid-19 | - | - | 8 | 0 | 1 | 0 | 0 | 0 | - | - |
| HIV | 180 | 0 | - | - | - | - | - | - | - | - |
| Influenza A | 0 | 0 | 0 | 0 | 22 | 0 | 30 | 0 | 2 | 0 |
| TB | 49 | 0 | - | - | - | - | - | - | - | - |
| Syphilis | 197 | 0 | - | - | - | - | - | - | - | - |
| Typhoid | 527 | 3 | - | - | - | - | - | - | - | - |
| MPox | - | - | - | - | - | - | 1 | 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 28, 2024***

| Provinces/Regions | Districts | Total Number of Reporting Sites | Number of Reported Sites for current week | Compliance Rate (%) |
|---|---|---|---|---|
| Khyber Pakhtunkhwa | Abbottabad | 111 | 105 | 95% |
| | Bannu | 239 | 121 | 51% |
| | Battagram | 63 | 16 | 25% |
| | Buner | 34 | 28 | 82% |
| | Bajaur | 44 | 32 | 73% |
| | Charsadda | 59 | 55 | 93% |
| | Chitral Upper | 34 | 27 | 79% |
| | Chitral Lower | 35 | 34 | 97% |
| | D.I. Khan | 114 | 102 | 89% |
| | Dir Lower | 74 | 72 | 97% |
| | Dir Upper | 53 | 47 | 89% |
| | Hangu | 22 | 14 | 64% |
| | Haripur | 72 | 57 | 79% |
| | Karak | 35 | 35 | 100% |
| | Khyber | 52 | 13 | 25% |
| | 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 | 42 | 16 | 38% |
| | Upper Kurram | 41 | 20 | 49% |
| | Malakand | 42 | 28 | 67% |
| | Mansehra | 136 | 44 | 32% |
| | Mardan | 80 | 74 | 93% |
| | Nowshera | 55 | 51 | 93% |
| | North Waziristan | 12 | 4 | 33% |
| | Peshawar | 151 | 97 | 64% |
| | Shangla | 39 | 34 | 87% |
| | Swabi | 63 | 60 | 95% |
| | Swat | 77 | 73 | 95% |
| | South Waziristan | 134 | 53 | 40% |
| | Tank | 34 | 28 | 82% |
| | Torghar | 14 | 14 | 100% |
| | Mohmand | 86 | 33 | 38% |
| | SD Peshawar | 5 | 1 | 20% |
| | SD Tank | 58 | 3 | 5% |
| | Orakzai | 68 | 11 | 16% |
| | Mirpur | 37 | 37 | 100% |
| | Bhimber | 20 | 19 | 95% |
| | Kotli | 60 | 59 | 98% |
| | Muzaffarabad | 45 | 43 | 96% |
| | Poonch | 46 | 46 | 100% |
| | Haveli | 39 | 36 | 92% |

| | | | | |
|---|---|---|---|---|
| **Azad Jammu Kashmir** | Bagh | 40 | 37 | 93% |
| | Neelum | 39 | 39 | 100% |
| | Jhelum Vellay | 29 | 29 | 100% |
| | Sudhnooti | 27 | 27 | 100% |
| **Islamabad Capital Territory** | ICT | 21 | 20 | 95% |
| | CDA | 14 | 6 | 43% |
| **Balochistan** | Gwadar | 25 | 25 | 100% |
| | Kech | 44 | 40 | 91% |
| | Khuzdar | 74 | 69 | 93% |
| | Killa Abdullah | 26 | 21 | 81% |
| | Lasbella | 55 | 55 | 100% |
| | Pishin | 69 | 42 | 61% |
| | Quetta | 43 | 31 | 72% |
| | Sibi | 36 | 20 | 56% |
| | Zhob | 39 | 30 | 77% |
| | Jaffarabad | 16 | 16 | 100% |
| | Naserabad | 32 | 32 | 100% |
| | Kharan | 30 | 30 | 100% |
| | Sherani | 15 | 15 | 100% |
| | Kohlu | 75 | 55 | 73% |
| | Chagi | 35 | 25 | 71% |
| | Kalat | 41 | 40 | 98% |
| | Harnai | 17 | 17 | 100% |
| | Kachhi (Bolan) | 35 | 35 | 100% |
| | Jhal Magsi | 26 | 22 | 85% |
| | Sohbat pur | 25 | 25 | 100% |
| | Surab | 32 | 32 | 100% |
| | Mastung | 45 | 0 | 0% |
| | Loralai | 33 | 30 | 91% |
| | Killa Saifullah | 28 | 27 | 96% |
| | Ziarat | 29 | 18 | 62% |
| | Duki | 31 | 21 | 68% |
| | Nushki | 32 | 0 | 0% |
| | Dera Bugti | 45 | 32 | 71% |
| | Washuk | 46 | 31 | 67% |
| | Panjgur | 38 | 16 | 42% |
| | Awaran | 23 | 13 | 57% |
| | Chaman | 25 | 24 | 96% |
| | Barkhan | 20 | 19 | 95% |
| | Hub | 33 | 33 | 100% |
| | Musakhel | 41 | 40 | 98% |
| | Usta Muhammad | 34 | 34 | 100% |
| **Gilgit Baltistan** | Hunza | 32 | 31 | 97% |
| | 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 | 28 | 97% |
| | Kharmang | 18 | 18 | 100% |
| **Sindh** | Hyderabad | 73 | 25 | 34% |
| | Ghotki | 64 | 63 | 98% |
| | Umerkot | 43 | 42 | 98% |
| | Naushahro Feroze | 107 | 93 | 87% |
| | Tharparkar | 282 | 242 | 86% |
| | Shikarpur | 59 | 59 | 100% |
| | Thatta | 52 | 52 | 100% |
| | Larkana | 67 | 59 | 88% |
| | Kamber Shadadkot | 71 | 71 | 100% |
| | Karachi-East | 23 | 17 | 74% |
| | Karachi-West | 20 | 20 | 100% |
| | Karachi-Malir | 37 | 37 | 100% |
| | Karachi-Kemari | 18 | 14 | 78% |
| | Karachi-Central | 11 | 7 | 64% |
| | Karachi-Korangi | 18 | 18 | 100% |
| | Karachi-South | 4 | 4 | 100% |
| | Sujawal | 54 | 50 | 93% |
| | Mirpur Khas | 106 | 102 | 96% |
| | Badin | 124 | 120 | 97% |
| | Sukkur | 63 | 63 | 100% |
| | Dadu | 88 | 86 | 98% |
| | Sanghar | 100 | 100 | 100% |
| | Jacobabad | 44 | 44 | 100% |
| | Khairpur | 169 | 155 | 92% |
| | Kashmore | 59 | 48 | 81% |
| | Matiari | 42 | 36 | 86% |
| | Jamshoro | 70 | 69 | 99% |
| | Tando Allahyar | 54 | 54 | 100% |
| | Tando Muhammad Khan | 40 | 40 | 100% |
| | Shaheed Benazirabad | 122 | 121 | 99% |

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# Alarming Resurgence of Polio in Balochistan.

The detection of wild poliovirus type 1 (WPV1) in Pakistan, with a particular concentration in Balochistan, signals a grave public health crisis. Recent findings of WPV1 in both a child and environmental samples across multiple districts underscore the urgent need for decisive action. This report outlines the recent polio cases, the virus's genetic characteristics, and the government's ongoing efforts to eradicate polio through comprehensive vaccination programs.

## Recent Polio Cases and Viral Analysis

A confirmed case of paralysis due to wild poliovirus type 1 (WPV1) was identified in a 1.5-year-old child residing in Zhob district, Balochistan province. Genetic sequencing linked this viral isolate to a previously documented WPV1 case in Killa Abdullah, indicating ongoing viral transmission. As of 2024, Balochistan has borne the brunt of Pakistan's polio cases, accounting for seven of the country's total nine confirmed instances.

Environmental surveillance initiatives detected WPV1 in sewage samples collected from multiple districts, including Hangu, Karachi Keamari, Chaman, Pishin, Hyderabad, Jamshoro, and Lahore. Genomic analysis of these viral isolates revealed a consistent genetic lineage, designated as the YB3A cluster, indicative of widespread dissemination of this specific WPV1 strain within the country.

## A Comprehensive Response to the Polio Outbreak

The Pakistan Polio Program has implemented a comprehensive approach to combat the resurgence of polio. To date in 2024, six vaccination campaigns, including two nationwide initiatives, have reached over 40 million children under five years old. Strategic efforts are underway to identify and vaccinate children who may have been missed in previous immunization drives, aiming to enhance overall coverage.

To eradicate polio in Balochistan, the government has instituted a multi-faceted approach. Key strategies involve intensified surveillance, community engagement to promote vaccination, ensuring the safety of healthcare personnel, improving healthcare facilities, and international collaboration.

Active community participation is crucial for success. By identifying potential polio cases, advocating for vaccination, facilitating healthcare access, and ensuring complete immunization, communities can significantly impact polio eradication efforts. Empowering local leaders to champion vaccination is essential for fostering trust and addressing vaccine-related concerns.

## Conclusion

Polio remains a formidable public health challenge, particularly affecting young children. Despite concerted global efforts, Pakistan continues to grapple with persistent poliovirus transmission. The detection of WPV1 in both human and environmental specimens underscores the imperative for sustained, comprehensive vaccination campaigns to interrupt viral circulation. By prioritizing

immunization, enhancing surveillance, and implementing robust prevention strategies, the nation strives to safeguard its children from the debilitating effects of polio and ultimately achieve a polio-free future.

## A Milestone in Pakistan's Immunization Journey

The recent graduation of the first cohort of the FETP-NSTOP Immunization Course marks a significant stride in Pakistan's quest to strengthen its immunization program. The intensive eight-week training, undertaken by thirty dedicated EPI coordinators and focal persons from Balochistan, Khyber Pakhtunkhwa, and Sindh, is a testament to the government's commitment to bolstering immunization services at the grassroots level.

The course, a collaborative effort between the Federal Directorate of Immunization (FDI), National Institute of Health (NIH), National School of Tropical Medicine (NSTOP), US Centers for Disease Control and Prevention (CDC), and Integralglobal, is a model of inter-agency cooperation. By equipping frontline health workers with the necessary skills and knowledge, this initiative holds the potential to significantly improve immunization coverage across the country.

The presence of Dr. Muhammad Ahmad Kazi, Director General Health/FDI, at the graduation ceremony underscores the government's prioritization of immunization. His call for intensified efforts is a clarion call to action for the graduating cohort. These newly trained professionals are now poised to be catalysts for change in their respective districts.

As Pakistan strives to achieve herd immunity and protect its children from vaccine-preventable diseases, initiatives like the FETP-NSTOP Immunization Course are indispensable. By investing in the capacity of its healthcare workforce, the country is not only safeguarding the health of its citizens but also laying the foundation for a healthier future.

The successful completion of this first cohort is a promising beginning. It is imperative to sustain this momentum by expanding the program to reach more health workers and by ensuring ongoing support and mentorship for the graduates. With continued dedication and collaboration, Pakistan can make significant progress towards its immunization goals.

# Notes from field activities

## Typhoid Outbreak Investigation: UC Tajori, Lakki Marwat May-June, 2024

Source: DHIS-2 Reports
https://dhis2.nih.org.pk/dhis-web-event-reports/

### Introduction:

An outbreak of Multi-Drug Resistant (MDR) Typhoid fever was reported in UC Tajori, Lakki Marwat district, Pakistan, in May, 2024. This report details the investigation conducted by a team comprising Dr. Ahmed Dawar Afridi, Dr. Safdar Irfan Marwat (Fellows, FETP 14th Cohort), Dr. Nisar (PH Coordinator), and Dr. Kiffayat (LHW Coordinator).

### Objectives

The primary objectives of this investigation were to establish a robust typhoid surveillance system in UC Tajori, conduct active case finding for early detection, quantify the extent of the outbreak, identify associated risk factors, recommend preventive measures, and conduct environmental surveillance to limit disease transmission.

### Methods:

A cross-sectional study was conducted among residents of UC Tajori, Lakki Marwat, from April to June 2024 to investigate the typhoid outbreak. Individuals meeting the suspected case

definition of a fever exceeding 38°C for at least three days, without an alternative diagnosis, were included. Those with recent arrival to the area were excluded. Cases were classified as suspected, probable, or confirmed based on epidemiological linkage and laboratory results. An outbreak was defined as a cluster of at least six cases, including one confirmed case, within a single location.

## Results:

A total of 65 cases were identified during the study period, with five confirmed as MDR typhoid exhibiting resistance to commonly used antibiotics. Active case finding yielded 16 additional suspected cases pending laboratory confirmation. Water samples were collected for analysis but results are pending.

Epidemiological data revealed a mean age of 18 years among affected individuals, with a peak incidence in the under-15 age group. Females were disproportionately affected, constituting 62% of cases. The predominant symptoms were fever and body aches, with vomiting less frequently reported. Pond water consumption, residence in Baigan Village, and poor hygiene practices emerged as potential risk factors. A significant proportion of cases (68%) resided in areas with open drainage systems, and 37 cases belonged to Low-income households.

## Conclusion

The investigation highlights a disproportionate burden of typhoid among vulnerable populations in UC Tajori. Factors such as reliance on contaminated water sources, poor socioeconomic conditions, and suboptimal hygiene practices have contributed to the outbreak. Children under 15 years of age were particularly susceptible to the disease. These findings emphasize the need for comprehensive interventions targeting water quality improvement, sanitation, and health education to prevent future outbreaks.

## Recommendations:

To effectively control the typhoid outbreak and prevent recurrence, a multi-sectoral approach is essential. Immediate measures include chlorination of water sources, improved water and sanitation infrastructure, and rigorous hygiene promotion. Strengthening community engagement and collaboration among government departments is crucial. Regular monitoring of water quality and antimicrobial resistance patterns is imperative. Additionally, regulating antibiotic use, ensuring food safety, and mass vaccination in the affected area are recommended. Comprehensive investigation of every suspected case is vital for outbreak control.

# Response to Laboratory Confirmed Dengue Case UC 79A Dhok Munshi Rawalpindi, July, 2024

***Dr. Sajjad Mahmood***
***DC (EP&C) DHA,***
***Rawalpindi***

## Introduction

Dengue, a mosquito-borne viral disease transmitted by the Aedes aegypti mosquito, is a growing public health concern. This report outlines the response activities undertaken following the confirmation of a dengue case in UC 79 A Dhok Munshi, on July 13-14, 2024. The primary objective was to identify and eliminate potential mosquito breeding sites to prevent further disease transmission.

## Methodology

To effectively identify and eliminate potential dengue breeding sites, a comprehensive house-to-house survey was conducted in the vicinity of the confirmed dengue case. This meticulous inspection involved a thorough examination of residential premises to detect containers holding stagnant water, which serve as breeding grounds for the Aedes aegypti mosquito. In addition to indoor

surveillance, a systematic outdoor survey was conducted to identify and eliminate breeding sites in public areas such as parks, schools, construction sites, and other potential hotspots. This combined approach aimed to comprehensively address the mosquito breeding problem and reduce the risk of further dengue transmission.

## Results

A comprehensive house-to-house survey was initiated within the vicinity of the confirmed dengue case, targeting an initial 50 residences. This meticulous inspection process identified 11 properties with potential mosquito breeding sites, such as stagnant water containers, discarded tires, or overgrown vegetation. To expand the surveillance effort, a larger-scale operation was launched, deploying ten teams for indoor inspections and four teams for outdoor surveillance. This intensified campaign covered a total of 285 houses and 482 outdoor locations, resulting in the detection of 26 additional residential properties and three public areas with active breeding sites. These identified hotspots included a cattle farm, an under-construction building, a school, vacant land, a parking area, and a junkyard.

Upon confirmation of these breeding sites, prompt action was taken to eliminate them. Larvicides, specifically designed to target mosquito larvae, were applied to stagnant water bodies. Simultaneously, physical removal of potential breeding containers was carried out to prevent their reuse. To complement these control measures, public awareness campaigns were initiated to educate residents about the importance of proper waste disposal, regular cleaning of water storage containers, and the elimination of potential mosquito breeding sites within their premises. This community-based approach aimed to foster a sense of ownership and responsibility for dengue prevention.

## Conclusion

The rapid response to the confirmed dengue case in UC 79A Dhoke Munshi highlights the importance of timely and effective vector control measures. The identification of multiple breeding sites emphasizes the need for sustained surveillance and community engagement to prevent further dengue transmission.

***No new dengue cases have been reported in the area since the implementation of intensive surveillance, vector control measures, and community engagement activities.***

## Recommendations

To prevent a resurgence of dengue cases, ongoing surveillance activities are crucial. Regular monitoring of the area is essential to detect any new outbreaks promptly. Larvicide application to identified breeding sites should be continued to disrupt the mosquito life cycle. Engaging the community through awareness campaigns about dengue prevention and control measures is vital for long-term success. Furthermore, collaboration with municipal authorities and other relevant stakeholders is essential for effective vector control and the implementation of sustainable prevention strategies.

# Commentary

## The Burden of Hepatitis in Pakistan: A Call for Action.

***Dr. Maryam Tanveer***
***Scientific Officer,***
***NIH, Islamabad***

As World Hepatitis Day approaches, with the theme "It's time for action," the stark reality of hepatitis in Pakistan demands immediate attention. The insidious nature of this disease, often progressing

silently until it manifests as severe liver damage, underscores the urgent need for comprehensive prevention and control measures.

**A significant hepatitis epidemic is impacting Pakistan.** The World Health Organization's 2022 report places the country among the top five nations globally burdened by hepatitis B and C infections. This alarming statistic underscores the immense public health challenge posed by these viral diseases, which are silently affecting millions of Pakistanis.

**Hepatitis in Pakistan presents a complex epidemiological profile.** The disease spectrum encompasses a range of viral etiologies, each with distinct transmission dynamics and clinical manifestations. Hepatitis A and E, primarily transmitted via the fecal-oral route, are acute infections commonly affecting children and young adults, particularly in regions with inadequate sanitation and hygiene. In contrast, hepatitis B and C are blood-borne viruses that can establish chronic infections, leading to severe liver complications including cirrhosis and hepatocellular carcinoma. The hepatitis D virus is a satellite virus requiring the presence of hepatitis B for replication, exacerbating liver disease progression. While the initial phases of hepatitis may be asymptomatic, the insidious nature of these infections often delays diagnosis, allowing for disease progression and the development of chronic sequelae.

Hepatitis, a silent yet pervasive public health challenge, demands a concerted and comprehensive response. In alignment with the World Hepatitis Day 2024 theme, "It's time for action," Pakistan must prioritize hepatitis prevention, diagnosis, and treatment to mitigate its devastating impact. This necessitates a multi-sectoral approach that encompasses public awareness, education, and behavior change communication. Robust vaccination programs targeting vulnerable populations, including infants, healthcare workers, and individuals at high risk, are crucial for establishing herd immunity. Early disease detection through expanded screening initiatives is essential for timely intervention and prevention of chronic liver disease. Furthermore, ensuring access to affordable and effective antiviral therapies is paramount for improving patient outcomes and reducing morbidity. Through collaborative efforts between government agencies, healthcare providers, and communities, Pakistan can strive towards a future free from the burden of hepatitis.

## LHEAP: A Model for Hepatitis Care in Rawalpindi

The Localized Hepatitis Elimination and Prevention Project (LHEAP) has emerged as a pioneering initiative in the fight against hepatitis in Rawalpindi. Its "doorstep model" of care, characterized by free screening and treatment services, represents a significant step forward in addressing the disease's burden. By bringing healthcare directly to the community, LHEAP has successfully identified a concerningly high prevalence of hepatitis B and C in the region.

The project's impact extends beyond case detection. By providing comprehensive care, including access to antiviral therapy, LHEAP is not only mitigating the spread of the disease but also improving the quality of life for affected individuals. The project's focus on high-risk populations and its data-driven approach to program implementation are commendable strategies that have contributed to its success.

However, as with any public health intervention, LHEAP's impact is limited by the scope of its operations. Expanding the project's reach to cover a larger geographic area and increasing its capacity to handle a greater volume of patients are essential for maximizing its impact. Additionally, integrating LHEAP's model into the broader public health infrastructure can ensure sustainability and scalability.

The LHEAP project in Rawalpindi serves as a blueprint for effective hepatitis care in Pakistan. By offering free screening and treatment, it has

demonstrated significant progress in identifying and managing the disease. To eliminate hepatitis, replicating and scaling up LHEAP's model is essential. This necessitates sustained commitment, strong political will, and robust community engagement.

The time for half-measures is over. It is imperative to act decisively and comprehensively to prevent hepatitis from inflicting further damage on the health and well-being of Pakistan's population. The government, in collaboration with NGOs and healthcare providers, must expedite efforts to scale up prevention, diagnosis, and treatment services across Pakistan. The "It's time for action" mantra must translate into concrete steps, including increased budgetary allocations for hepatitis control programs, training healthcare professionals, and strengthening surveillance systems

# The Interplay of Monsoon, Floods, and Malaria in Pakistan: A Public Health Imperative

***Dr. Hamza Ikram***
***Scientific Officer,***
***NIH, Islamabad***

Pakistan's monsoon season has undergone a marked transformation in recent years, characterized by increasingly intense and unpredictable rainfall patterns. These extreme weather events have led to a surge in flooding incidents, causing widespread devastation and loss of life. The complex interplay between climate change, hydrological patterns, and ecological conditions has created an environment highly conducive to the transmission of vector-borne diseases, particularly malaria.

Historical data unequivocally demonstrates a strong correlation between heightened rainfall, flooding events, and subsequent spikes in malaria cases. The catastrophic floods of 2022 serve as a stark reminder of this association, with a fourfold increase in reported malaria cases compared to the preceding year. This dramatic surge underscores the urgent need to address the underlying factors driving malaria transmission in the context of a changing climate.

## Public Health Implications of Malaria Following Floods

The confluence of factors associated with monsoon-induced floods in Pakistan creates an environment highly conducive to malaria transmission. The proliferation of stagnant water bodies, a direct consequence of flooding, provides ideal breeding grounds for the Anopheles mosquito, the primary vector for malaria. This surge in vector population, coupled with the displacement of human populations into overcrowded and often unsanitary conditions within temporary shelters, significantly increases the risk of malaria transmission.

Moreover, the weakened immune status of individuals exposed to the hardships of flood-related disasters, including malnutrition and exposure to contaminated environments, further exacerbates the vulnerability of affected populations to malaria infection. The diversion of resources towards immediate flood relief efforts can also lead to a diversion of attention and financial resources away from malaria prevention and control programs, potentially compromising the overall public health response.

These interconnected factors underscore the complex and multifaceted nature of the public health challenge posed by malaria in the aftermath of floods in Pakistan. A comprehensive and coordinated approach is essential to mitigate the potential impact of this disease on affected communities.

## A Comprehensive Strategy to Combat Malaria in Flood-Prone Areas

To effectively mitigate the impact of malaria in flood-prone regions, a multi-faceted public health response is imperative. Key strategic interventions include:

- **Early Warning Systems and Preparedness:** Strengthening early warning systems to predict flood occurrences is crucial for proactive measures. Developing comprehensive preparedness plans, including resource mobilization and community engagement, can significantly reduce the impact of floods and subsequent malaria outbreaks.
- **Vector Control:** Implementing integrated vector management strategies is essential. This involves a combination of approaches, such as indoor residual spraying, distribution of long-lasting insecticidal nets, larval source management, and environmental modification to reduce mosquito breeding sites.
- **Surveillance and Response:** Establishing a robust surveillance system to monitor malaria incidence, identify hotspots, and detect early warning signs of outbreaks is crucial. Rapid response teams equipped with necessary resources should be in place to effectively contain outbreaks.
- **Health Promotion and Education:** Conducting mass awareness campaigns on malaria prevention, including symptoms, transmission, and preventive measures, is vital. Empowering communities with knowledge and skills to protect themselves is essential.
- **Emergency Preparedness and Response:** Developing contingency plans for mass drug administration, case management, and the provision of essential healthcare services in flood-affected areas is crucial. Ensuring adequate stockpiles of antimalarial drugs and medical supplies is essential for effective response.
- **Intersectoral Collaboration:** Fostering strong partnerships between health, disaster management, and other relevant sectors is vital for a coordinated and effective response. Collaboration ensures optimal resource utilization and addresses the complex determinants of malaria transmission.

Furthermore, public awareness campaigns aimed at promoting preventive behaviors, such as early symptom recognition and seeking prompt medical care, are vital. Ensuring access to quality malaria treatment and strengthening healthcare systems in flood-affected areas are also key components of an effective response.

The convergence of climate change, environmental factors, and socioeconomic vulnerabilities has created a complex challenge for Pakistan. Addressing the interplay between monsoons, floods, and malaria requires a long-term perspective, incorporating climate adaptation strategies, disaster preparedness, and sustainable development initiatives. By investing in prevention, early warning systems, and robust response capabilities, Pakistan can significantly reduce the burden of malaria and protect the health and well-being of its population.

# Knowledge Hub

## Preventing Viral Hepatitis: It's Time for Action

Viral hepatitis, a silent yet insidious disease, poses a significant global health threat. Characterized by inflammation of the liver, it can lead to severe complications, including cirrhosis, liver failure, and cancer. World Hepatitis Day serves as a crucial reminder of the urgent need to address this preventable disease.

Prevention is the cornerstone of combating viral hepatitis. Vaccination stands as the most effective shield against hepatitis A and B, providing long-lasting immunity. Routine immunization programs for infants and children have significantly reduced the incidence of these diseases in many countries. However, gaps in vaccination coverage persist, particularly in low- and middle-income countries. Ensuring equitable access to vaccines is essential to eliminate hepatitis A and B as public health threats.

Beyond vaccination, practicing safe hygiene is paramount. Hepatitis A and E are often transmitted through contaminated food and water. Proper handwashing, safe food preparation, and avoiding consumption of raw or undercooked food can significantly reduce the risk of infection. Safe sexual practices, including consistent condom use, are crucial for preventing hepatitis B and C transmission. Additionally, preventing the sharing of needles and other injecting drug equipment is vital to curb the spread of these blood-borne viruses.

Early detection and treatment are essential for managing hepatitis B and C. These viruses can lead to chronic infections, increasing the risk of liver complications. Regular blood tests can identify hepatitis B and C infections, allowing for timely intervention. While there is no cure for hepatitis C, antiviral medications have shown remarkable success in achieving sustained virologic response. For hepatitis B, treatment can help suppress the virus and prevent liver damage.

Hepatitis is a serious liver disease that can silently wreak havoc on your body. Often asymptomatic in its early stages, it can progress to irreversible liver damage, including cirrhosis and cancer. Don't let this silent threat catch you off guard. Protect yourself by adopting preventive measures such as vaccination, practicing safe sex, avoiding needle sharing, maintaining good hygiene, and seeking timely medical attention if symptoms arise. Early detection and appropriate treatment are crucial for managing hepatitis and preventing severe complications.

*World Hepatitis Day 2024 theme urges immediate action to prevent, detect, and treat hepatitis, safeguarding lives and building a healthier future.*


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