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25th May, 2026

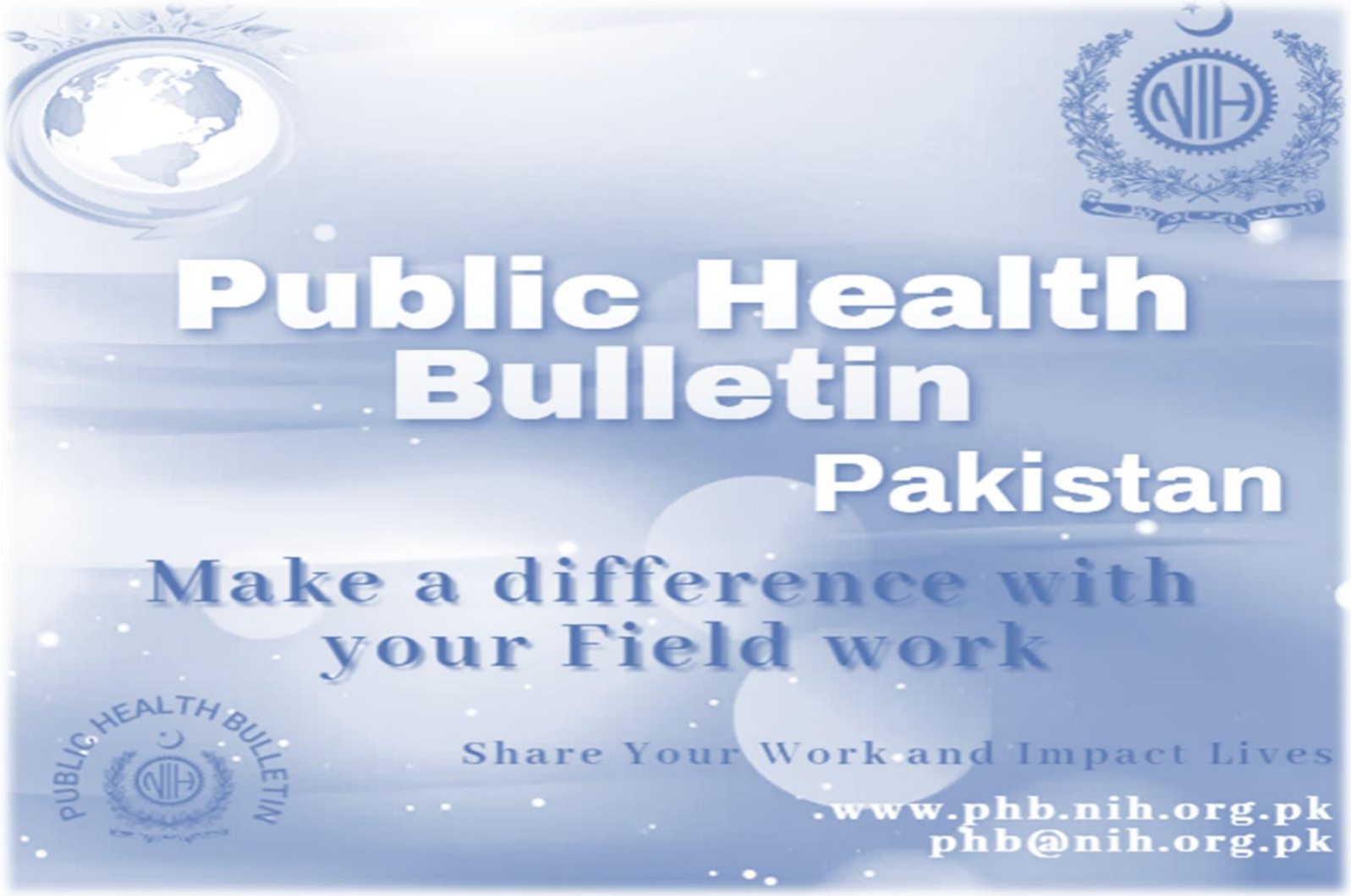
*PUBLIC HEALTH BULLETIN-PAKISTAN*

# Integrated Disease Surveillance & Response (IDSR) Report

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

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

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



**Public Health Bulletin - Pakistan, Week 20, 2026**

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

*This Weeks Highlights include;*

- *Strengthening One Health Governance: CDC-NIH Hosts Provincial Workshop in Gilgit*
- *Measles Outbreak Investigation Report, Pishin District, Balochistan (October–December 2024).*
- *Knowledge hub on Understanding HIV/AIDS: A Public Health Priority*

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

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*Stay informed. Stay prepared. Stay healthy.*

*Sincerely,*
*The Chief Editor*

*Note: All reported cases in this report are suspected cases*

- *During Week 20, the most frequently reported cases were of Acute Diarrhea (Non-Cholera) followed by Malaria, ILI, ALRI <5 years, TB, B. Diarrhea, Dog Bite, VH (B, C & D), Typhoid, SARI, and Measles.*
- *Twenty-one cases of AFP were reported from KP, thirteen from Sindh, eight from AJK, and two from Balochistan.*
- *Eleven suspected cases of HIV/ AIDS reported from KP and ten from Sindh, two from Balochistan and one from AJK.*
- *Among VPDs, there is an increase in the number of cases of Mumps, AFP and Meningitis this week.*
- *Among Respiratory diseases, there is an increase in the number of cases of ALRI <5 years and TB this week.*
- *Among Water/food-borne diseases, there is an increase in the number of cases of AD (non-cholera), B. Diarrhea and Typhoid this week.*
- *Among Vector-borne diseases, there is an increase in the number of cases of Malaria this week.*
- *Among Zoonotic/Other diseases, there is an increase in the number of cases of dog bite this week.*
- *Field investigation is required for verification of the alerts and for prevention and control of the outbreaks.*

## IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 158 implemented districts is 80%*
- *Sindh is the top reporting region with a compliance rate of 98%, followed by AJK 91%, and GB 82%.*
- *The lowest compliance rate was observed in KP 77%, Balochistan 50%, and ICT 18%.*

| Region | Expected Reports | Received Reports | Compliance (%) |
|---|---|---|---|
| Khyber Pakhtunkhwa | 2,277 | 1,759 | 77 |
| Azad Jammu Kashmir | 476 | 435 | 91 |
| Islamabad Capital Territory | 38 | 7 | 18 |
| Balochistan | 1,303 | 649 | 50 |
| Gilgit Baltistan | 405 | 334 | 82 |
| Sindh | 2,111 | 2,074 | 98 |
| National | 6,610 | 5,258 | 80 |

# Public Health Actions

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

## Dengue

- **Strengthen Surveillance and Early Detection:** Enhance dengue surveillance through IDSR by ensuring timely reporting of suspected and confirmed cases, monitoring seasonal trends, and improving outbreak detection.
- **Improve Laboratory Diagnosis and Case Management:** Strengthen laboratory capacity for dengue confirmation (NS1 antigen, IgM ELISA, PCR where available) and train healthcare workers on early recognition of warning signs and standard case management protocols.
- **Intensify Vector Surveillance and Control:** Conduct regular surveillance of *Aedes* mosquito populations and implement source reduction activities, larviciding, fogging (during outbreaks), and elimination of breeding sites.
- **Promote Community Participation:** Mobilize communities to remove stagnant water, improve household water storage practices, and support environmental sanitation activities.
- **Strengthen Outbreak Preparedness and Response:** Maintain rapid response teams, ensure availability of essential supplies, and implement timely vector control measures during outbreaks.
- **Raise Public Awareness:** Conduct risk communication campaigns on dengue symptoms, mosquito bite prevention, early healthcare-seeking, and household vector control measures.

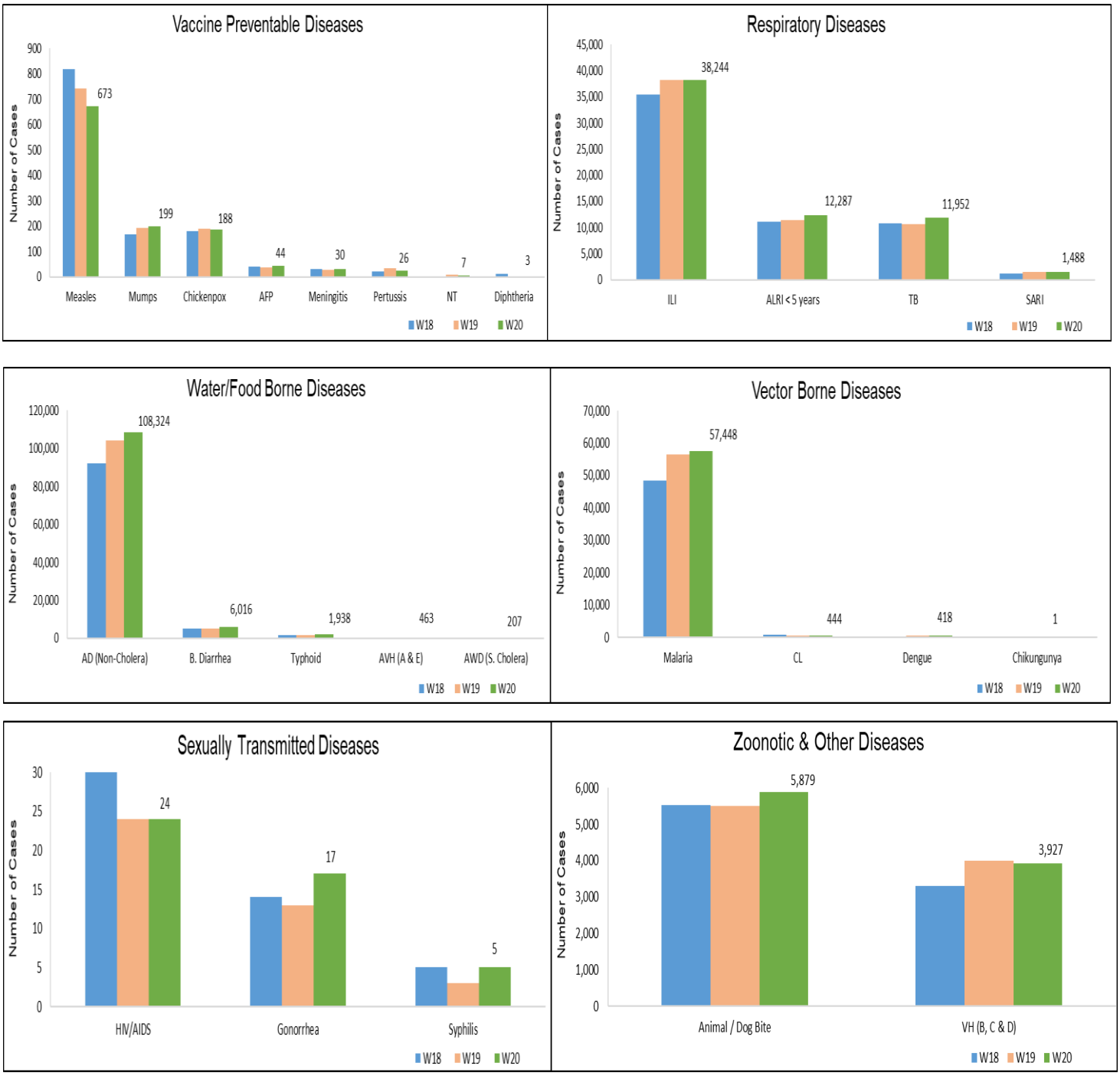
## Chikungunya

- **Strengthen Surveillance and Case Detection:** Enhance chikungunya surveillance through IDSR by training healthcare workers on standard case definitions, improving timely reporting, and monitoring disease trends, particularly during monsoon and post-monsoon seasons.
- **Improve Laboratory Diagnosis:** Strengthen laboratory capacity for confirmation of chikungunya through RT-PCR and serological testing (IgM ELISA) to support outbreak detection and response. outbreaks.
- **Promote Community-Based Prevention:** Engage communities in eliminating mosquito breeding sites by removing stagnant water, properly covering water storage containers, and improving environmental sanitation.
- **Raise Public Awareness and Risk Communication:** Conduct awareness campaigns on mosquito bite prevention, recognition of symptoms, early healthcare-seeking, and community participation in vector control activities.

***Table 1: Province/Area wise distribution of most frequently reported suspected cases during Week 20, Pakistan.***

| Diseases | AJK | Balochistan | GB | ICT | KP | Punjab | Sindh | Total |
|---|---|---|---|---|---|---|---|---|
| AD (Non-Cholera) | 2,287 | 7,619 | 1,064 | 90 | 43,371 | NR | 53,893 | 108,324 |
| Malaria | 0 | 2,241 | 0 | 0 | 5,456 | NR | 49,751 | 57,448 |
| ILI | 2,134 | 5,978 | 247 | 241 | 3,270 | NR | 26,374 | 38,244 |
| ALRI < 5 years | 1,246 | 1,331 | 817 | 0 | 771 | NR | 8,122 | 12,287 |
| TB | 101 | 20 | 101 | 12 | 316 | NR | 11,402 | 11,952 |
| B. Diarrhea | 49 | 1,101 | 58 | 0 | 1,186 | NR | 3,622 | 6,016 |
| Animal / Dog Bite | 113 | 156 | 5 | 0 | 1,646 | NR | 3,959 | 5,879 |
| VH (B, C & D) | 41 | 31 | 4 | 20 | 144 | NR | 3,687 | 3,927 |
| Typhoid | 31 | 371 | 119 | 3 | 507 | NR | 907 | 1,938 |
| SARI | 265 | 484 | 70 | 0 | 433 | NR | 236 | 1,488 |
| Measles | 5 | 17 | 9 | 2 | 525 | NR | 115 | 673 |
| AVH (A & E) | 28 | 13 | 20 | 0 | 152 | NR | 250 | 463 |
| CL | 0 | 50 | 0 | 0 | 391 | NR | 3 | 444 |
| Dengue | 3 | 99 | 0 | 0 | 49 | NR | 267 | 418 |
| AWD (S. Cholera) | 8 | 146 | 7 | 0 | 38 | NR | 8 | 207 |
| Mumps | 8 | 33 | 6 | 4 | 97 | NR | 51 | 199 |
| Chickenpox/ Varicella | 5 | 10 | 9 | 0 | 107 | NR | 57 | 188 |
| AFP | 8 | 2 | 0 | 0 | 21 | NR | 13 | 44 |
| Meningitis | 4 | 0 | 5 | 0 | 11 | NR | 10 | 30 |
| Pertussis | 0 | 13 | 0 | 0 | 13 | NR | 0 | 26 |
| HIV/AIDS | 1 | 2 | 0 | 0 | 11 | NR | 10 | 24 |
| Gonorrhea | 0 | 15 | 0 | 0 | 1 | NR | 1 | 17 |
| NT | 0 | 0 | 0 | 0 | 7 | NR | 0 | 7 |
| Syphilis | 0 | 0 | 0 | 0 | 0 | NR | 5 | 5 |
| Diphtheria (Probable) | 0 | 0 | 0 | 0 | 3 | NR | 0 | 3 |
| Rubella (CRS) | 0 | 1 | 0 | 0 | 1 | NR | 0 | 2 |
| Chikungunya | 0 | 0 | 0 | 0 | 0 | NR | 1 | 1 |

***Figure 1: Most frequently reported suspected cases during Week 20, Pakistan.***



## Sindh

- AD (non-cholera) cases were maximum followed by Malaria, ILI, TB, ALRI<5 Years, Dog Bite, VH (B, C, D), B. Diarrhea, Typhoid and Dengue
- Malaria cases are mostly from Umerkot, Khairpur and Badin whereas ILI cases are from Khairpur, Mirpurkhas and Badin.
- Thirteen cases of AFP reported from Sindh. They are suspected cases and need field verification.
- There is a decline in number of cases of Measles, Chicken pox, AFP, Meningitis, SARI and VH (B, C &D) while an increase in number of cases of Mumps, TB, ILI, ALRI <5 years, AD (non-cholera), B. Diarrhea, Typhoid, Malaria, Dengue and Dog bite this week.

***Table 2: District wise distribution of most frequently reported suspected cases during Week 20, Sindh.***

| Districts | AD (Non-Cholera) | Malaria | ILI | TB | ALRI < 5 years | Animal / Dog Bite | VH (B, C & D) | B. Diarrhea | Typhoid | Dengue |
|---|---|---|---|---|---|---|---|---|---|---|
| Badin | 4,357 | 3,402 | 2,573 | 830 | 924 | 98 | 234 | 357 | 75 | 0 |
| Dadu | 2,419 | 2,657 | 422 | 504 | 752 | 299 | 60 | 406 | 111 | 0 |
| Ghotki | 1,539 | 2,767 | 0 | 493 | 395 | 294 | 640 | 151 | 2 | 0 |
| Hyderabad | 2,777 | 832 | 1,186 | 293 | 128 | 80 | 106 | 70 | 7 | 3 |
| Jacobabad | 830 | 1,807 | 725 | 325 | 286 | 295 | 132 | 115 | 19 | 0 |
| Jamshoro | 2,208 | 1,915 | 87 | 622 | 300 | 117 | 149 | 104 | 38 | 10 |
| Kamber | 1,992 | 2,594 | 0 | 759 | 226 | 286 | 62 | 159 | 18 | 0 |
| Karachi Central | 2,188 | 33 | 1,793 | 316 | 101 | 121 | 16 | 1 | 96 | 4 |
| Karachi East | 447 | 76 | 17 | 20 | 16 | 13 | 3 | 5 | 0 | 0 |
| Karachi Keamari | 717 | 11 | 419 | 19 | 16 | 13 | 0 | 14 | 1 | 0 |
| Karachi Korangi | 383 | 57 | 2 | 66 | 2 | 13 | 1 | 10 | 2 | 0 |
| Karachi Malir | 1,429 | 51 | 1,831 | 59 | 132 | 45 | 11 | 30 | 7 | 0 |
| Karachi South | 98 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Karachi West | 1,051 | 261 | 1,694 | 87 | 184 | 94 | 21 | 37 | 27 | 0 |
| Kashmore | 438 | 1,619 | 247 | 136 | 84 | 121 | 6 | 51 | 4 | 0 |
| Khairpur | 3,523 | 3,686 | 6,823 | 948 | 1,047 | 269 | 239 | 325 | 242 | 0 |
| Larkana | 2,110 | 3,045 | 0 | 719 | 263 | 90 | 32 | 312 | 4 | 0 |
| Matiari | 1,700 | 2,516 | 26 | 719 | 197 | 149 | 339 | 81 | 1 | 0 |
| Mirpurkhas | 3,454 | 1,912 | 2,608 | 677 | 284 | 192 | 67 | 164 | 16 | 0 |
| Naushero Feroze | 1,530 | 1,657 | 1,057 | 343 | 281 | 261 | 115 | 239 | 62 | 0 |
| Sanghar | 1,811 | 2,940 | 15 | 742 | 251 | 176 | 533 | 53 | 10 | 0 |
| Shaheed Benazirabad | 1,880 | 2,173 | 0 | 279 | 146 | 174 | 99 | 93 | 77 | 0 |
| Shikarpur | 1,455 | 1,603 | 5 | 262 | 218 | 306 | 101 | 197 | 4 | 0 |
| Sujawal | 3,110 | 936 | 0 | 152 | 83 | 72 | 67 | 66 | 14 | 0 |
| Sukkur | 1,618 | 1,182 | 1,887 | 315 | 189 | 164 | 47 | 126 | 6 | 0 |
| Tando Allahyar | 1,870 | 1,764 | 753 | 471 | 123 | 100 | 261 | 92 | 10 | 0 |
| Tando Muhammad Khan | 1,387 | 690 | 0 | 473 | 144 | 24 | 0 | 121 | 12 | 0 |
| Tharparkar | 2,145 | 2,183 | 879 | 412 | 609 | 0 | 50 | 104 | 8 | 247 |
| Thatta | 1,646 | 1,486 | 1,325 | 29 | 400 | 93 | 193 | 51 | 11 | 1 |
| Umerkot | 1,781 | 3,884 | 0 | 332 | 341 | 0 | 103 | 88 | 23 | 2 |
| Total | 53,893 | 49,751 | 26,374 | 11,402 | 8,122 | 3,959 | 3,687 | 3,622 | 907 | 267 |

***Figure 2: Most frequently reported suspected cases during Week 20, Sindh.***

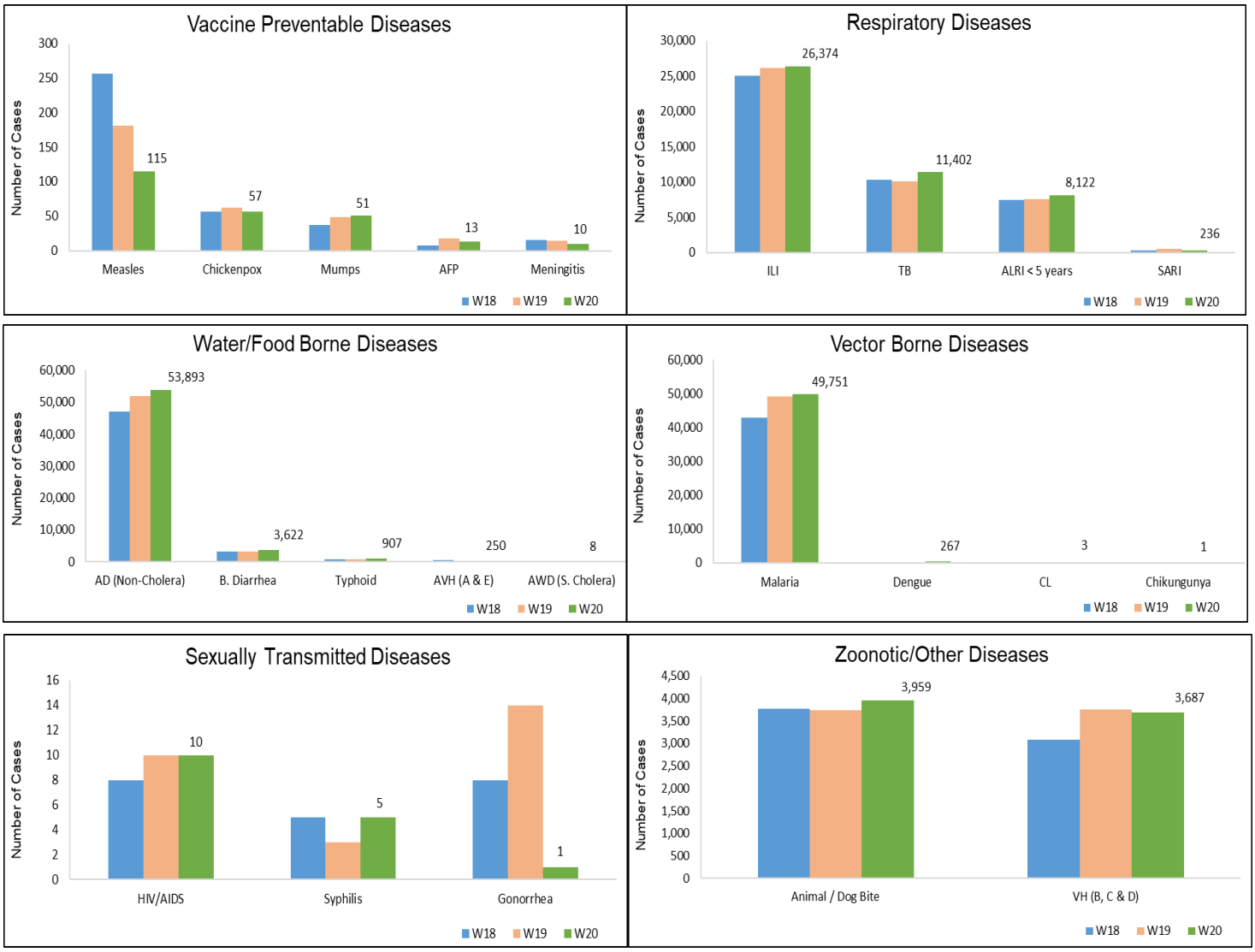
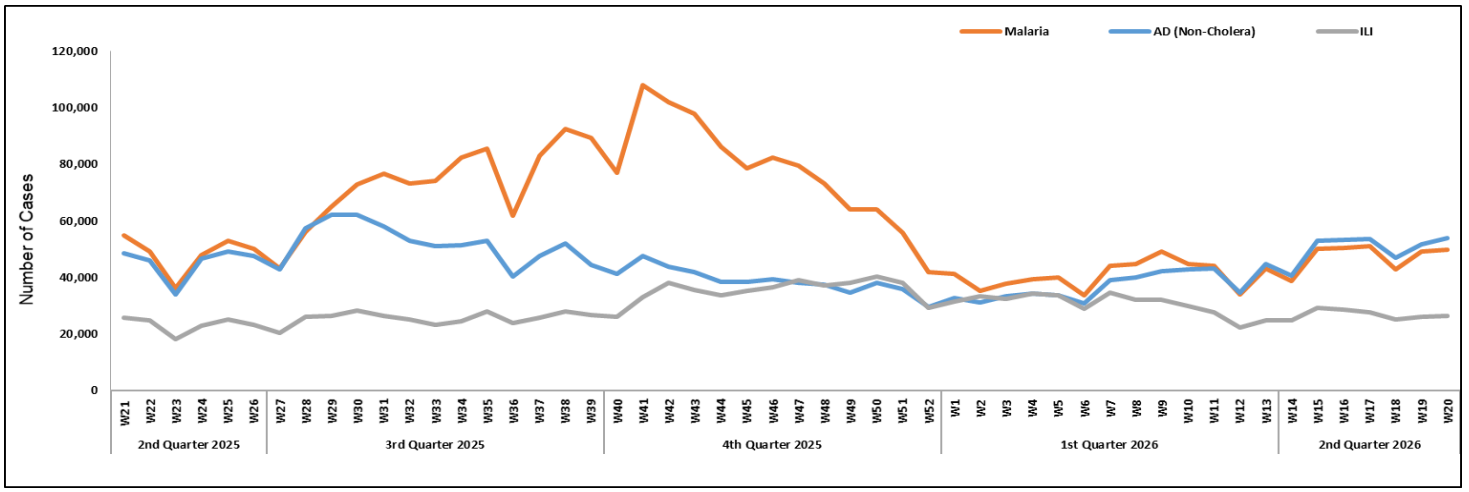



***Figure 3: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Sindh.***



# Balochistan

- AD (Non-Cholera), ILI, Malaria, ALRI <5 years, B. Diarrhea, SARI, Typhoid, Dog Bite, AWD (S. Cholera) and Dengue cases were the most frequently reported diseases from Balochistan province.
- ILI cases are mostly reported from Gwadar, Quetta and Pishin while AD (Non-Cholera) cases are mostly reported from Usta Muhammad, Gwadar and Pishin.
- Two cases of AFP reported from Balochistan. Field investigation is required to confirm the cases.
- Measles, AFP, ILI, ALRI<5 years, SARI, AD (non-cholera), B. Diarrhea, Typhoid, AWD (S. Cholera), HIVAIDS and Dog bite showed an increase in the number of cases. At the same time, a decline has been observed in the number of cases of Mumps, Pertussis, Chickenpox, Rubella, Malaria, Dengue, CL and VH (B, C & D).

***Table 3: District wise distribution of most frequently reported suspected cases* during *Week 20, Balochistan.***

| Districts | AD (Non-Cholera) | ILI | Malaria | ALRI < 5 years | B. Diarrhea | SARI | Typhoid | Animal / Dog Bite | AWD (S. Cholera) | Dengue |
|---|---|---|---|---|---|---|---|---|---|---|
| Awaran | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Barkhan | 131 | 63 | 67 | 18 | 7 | 3 | 50 | 9 | 1 | 0 |
| Chagai | 211 | 273 | 51 | 0 | 59 | 0 | 10 | 0 | 0 | 0 |
| Chaman | 50 | 259 | 9 | 0 | 25 | 0 | 31 | 0 | 7 | 0 |
| Dera Bugti | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Duki | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Gwadar | 800 | 1,225 | 137 | 32 | 107 | NR | 50 | 2 | NR | 37 |
| Harnai | 141 | 9 | 92 | 191 | 57 | 0 | 0 | 0 | 0 | 0 |
| Hub | 120 | 28 | 62 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| Jaffarabad | 201 | 63 | 216 | 37 | 23 | 2 | 4 | 8 | 0 | 0 |
| Jhal Magsi | 150 | 133 | 66 | 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kachhi (Bolan) | 192 | 212 | 192 | 61 | 23 | 7 | NR | 16 | 14 | NR |
| Kalat | 4 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kech (Turbat) | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Kharan | 252 | 459 | 30 | 2 | 84 | 24 | 6 | 0 | 4 | 0 |
| Khuzdar | 153 | 139 | 43 | 0 | 37 | 7 | 29 | 0 | 0 | 0 |
| Killa Abdullah | 308 | 146 | 6 | 18 | 52 | 91 | 17 | 25 | 41 | 0 |
| Killa Saifullah | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Kohlu | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Lasbella | 540 | 77 | 369 | 197 | 21 | 2 | 9 | 16 | 0 | 61 |
| Loralai | 319 | 384 | 45 | 20 | 48 | 18 | 26 | 4 | 2 | 0 |
| Mastung | 437 | 279 | 60 | 72 | 65 | 46 | 24 | 1 | 0 | 0 |
| MusaKhel | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Naseerabad | 446 | 6 | 267 | 58 | 26 | 38 | 45 | 58 | 2 | 0 |
| Nushki | 174 | 0 | 0 | 4 | 34 | 0 | 0 | 0 | 0 | 0 |
| Panjgur | 62 | 9 | 45 | 29 | 7 | 0 | 0 | 0 | 0 | 0 |
| Pishin | 631 | 641 | 29 | 117 | 210 | 76 | 22 | 5 | 4 | 0 |
| Quetta | 584 | 687 | 6 | 102 | 22 | 35 | 7 | 0 | 10 | 0 |
| Sherani | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Sibi | 486 | 387 | 250 | 89 | 34 | 66 | 23 | 6 | 23 | 0 |
| Sohbat pur | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Surab | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Usta Muhammad | 902 | 130 | 139 | 117 | 61 | 3 | 1 | 5 | 0 | 0 |
| Washuk | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Zhob | 36 | 26 | 2 | 23 | NR | 18 | NR | NR | 12 | NR |
| Ziarat | 289 | 342 | 58 | 117 | 98 | 48 | 17 | 1 | 25 | 0 |
| Total | 7,619 | 5,978 | 2,241 | 1,331 | 1,101 | 484 | 371 | 156 | 146 | 99 |

***Figure 4: Most frequently reported suspected cases during Week 20, Balochistan.***

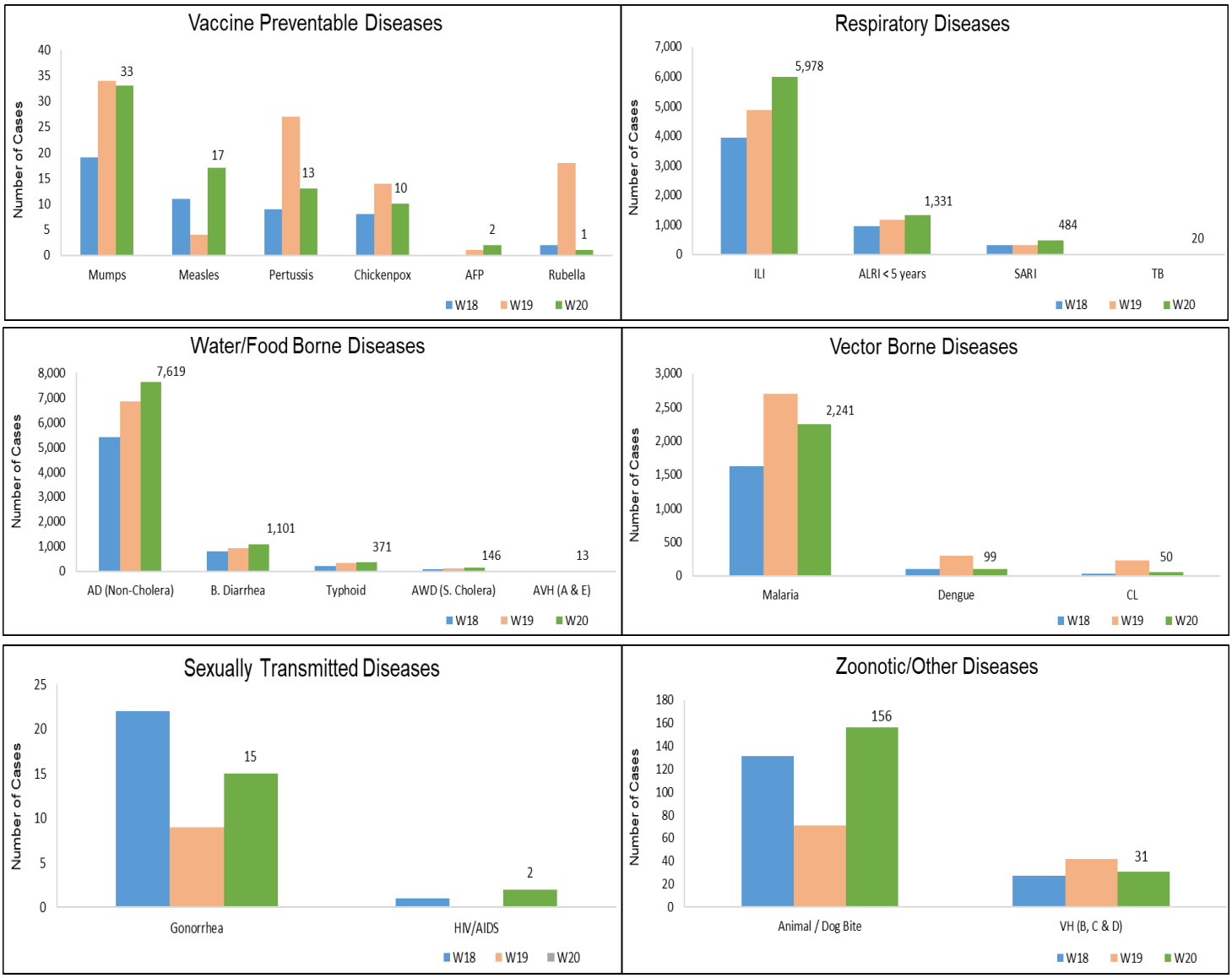
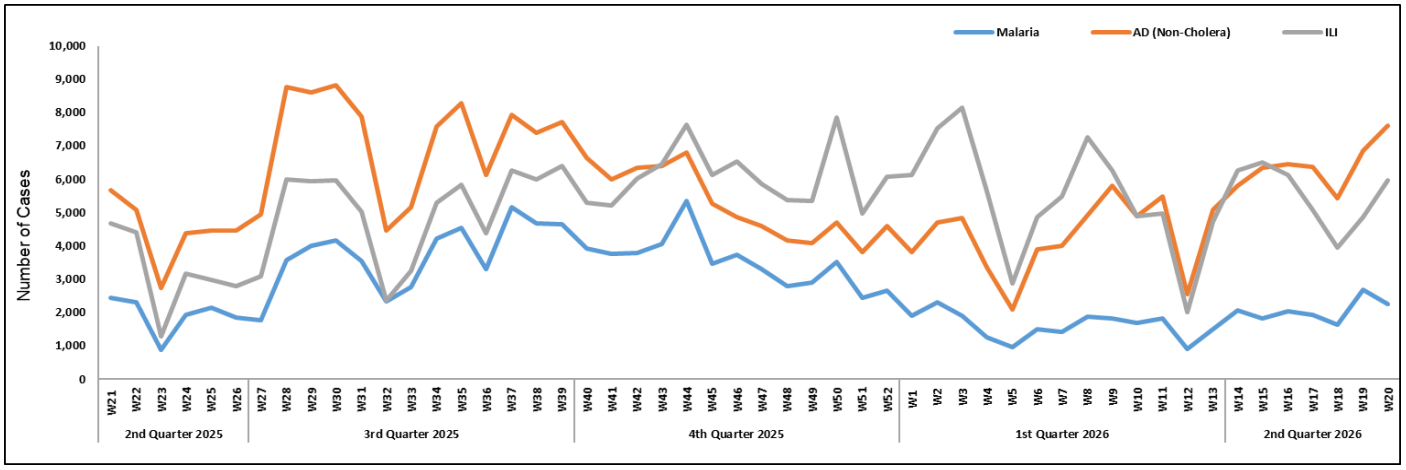



***Figure 5: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, Balochistan.***



## Khyber Pakhtunkhwa

- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI Dog bite, B. Diarrhea, ALRI<5 years, Measles Typhoid, SARI, and CL.
- Chicken pox, Pertussis, Meningitis, NT, AFP, ILI, ALRI<5years, AD (non-cholera), Malaria, HIV/AIDs and dog bite cases showed an increase in number while Mumps, SARI, TB and VH (B, C & D) showed a decline in number this week.
- Twenty-one cases of AFP reported from KP. All are suspected cases and need field verification.
- Eleven cases of HIV/AIDs reported from KP. Field investigation is required.

***Table 4: District wise distribution of most frequently reported suspected cases during Week 20, KP.***

| Districts | AD (Non-Cholera) | Malaria | ILI | Animal / Dog Bite | B. Diarrhea | ALRI < 5 years | Measles | Typhoid | SARI | CL |
|---|---|---|---|---|---|---|---|---|---|---|
| Abbottabad | 1,095 | 14 | 57 | 68 | 3 | 31 | 14 | 12 | 24 | 0 |
| Bajaur | 1,017 | 242 | 3 | 111 | 52 | 11 | 18 | 4 | 30 | 25 |
| Bannu | 992 | 1,062 | 4 | 2 | 14 | 7 | 108 | 94 | 0 | 12 |
| Battagram | 470 | 57 | 602 | 5 | 3 | 3 | 0 | 3 | 4 | 0 |
| Buner | 473 | 122 | 0 | 43 | 0 | 0 | 1 | 1 | 0 | 0 |
| Charsadda | 2,031 | 361 | 258 | 41 | 75 | 114 | 23 | 67 | 0 | 0 |
| Chitral Lower | 808 | 13 | 27 | 5 | 37 | 11 | 3 | 8 | 12 | 7 |
| Chitral Upper | 193 | 5 | 13 | 5 | 4 | 12 | 0 | 10 | 2 | 1 |
| D.I. Khan | 2,936 | 367 | 0 | 44 | 33 | 23 | 89 | 2 | 0 | 3 |
| Dir Lower | 2,090 | 78 | 0 | 84 | 97 | 8 | 30 | 25 | 0 | 8 |
| Dir Upper | 1,618 | 10 | 31 | 21 | 39 | 49 | 11 | 19 | 0 | 0 |
| Hangu | 359 | 100 | 1 | 30 | 24 | 0 | 1 | 5 | 0 | 8 |
| Haripur | 2,137 | 4 | 261 | 76 | 3 | 49 | 4 | 0 | 0 | 0 |
| Karak | 665 | 167 | 21 | 48 | 45 | 36 | 26 | 4 | 0 | 149 |
| Khyber | 717 | 334 | 25 | 46 | 157 | 79 | 3 | 73 | 2 | 32 |
| Kohat | 866 | 82 | 0 | 23 | 62 | 0 | 0 | 9 | 0 | 33 |
| Kohistan Lower | 96 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 |
| Kohistan Upper | 394 | 13 | 0 | 1 | 22 | 0 | 1 | 0 | 0 | 0 |
| Kolai Palas | 92 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| L & C Kurram | 54 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Lakki Marwat | 794 | 222 | 0 | 108 | 8 | 0 | 5 | 9 | 0 | 1 |
| Malakand | 1,505 | 39 | 168 | 0 | 0 | 12 | 7 | 2 | 18 | 0 |
| Mansehra | 889 | 2 | 128 | 0 | 26 | 0 | 0 | 12 | 9 | 0 |
| Mardan | 2,615 | 216 | 1 | 19 | 88 | 65 | 8 | 2 | 0 | 3 |
| Mohmand | 146 | 104 | 125 | 21 | 12 | 0 | 4 | 1 | 117 | 51 |
| North Waziristan | 80 | 108 | 4 | 0 | 10 | 16 | 14 | 17 | 9 | 1 |
| Nowshera | 2,701 | 304 | 27 | 103 | 27 | 26 | 23 | 6 | 10 | 23 |
| Orakzai | 188 | 14 | 6 | 14 | 9 | 0 | 0 | 0 | 0 | 0 |
| Peshawar | 6,492 | 33 | 457 | 19 | 116 | 15 | 78 | 30 | 0 | 0 |
| Shangla | 1,268 | 927 | 0 | 251 | 2 | 7 | 6 | 10 | 0 | 0 |
| South Waziristan (Lower) | 157 | 108 | 126 | 25 | 70 | 33 | 11 | 10 | 113 | 27 |
| SWU | 27 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swabi | 2,716 | 86 | 552 | 142 | 40 | 28 | 30 | 4 | 70 | 0 |
| Swat | 3,815 | 35 | 252 | 240 | 56 | 97 | 6 | 42 | 0 | 0 |
| Tank | 503 | 145 | 21 | 3 | 2 | 5 | 0 | 0 | 0 | 0 |
| Tor Ghar | 163 | 63 | 0 | 12 | 24 | 18 | 1 | 4 | 0 | 7 |
| Upper Kurram | 209 | 15 | 90 | 36 | 21 | 16 | 0 | 21 | 9 | 0 |
| Total | 43,371 | 5,456 | 3,270 | 1,646 | 1,186 | 771 | 525 | 507 | 433 | 391 |

***Figure 6: Most frequently reported suspected cases during Week 20, KP.***

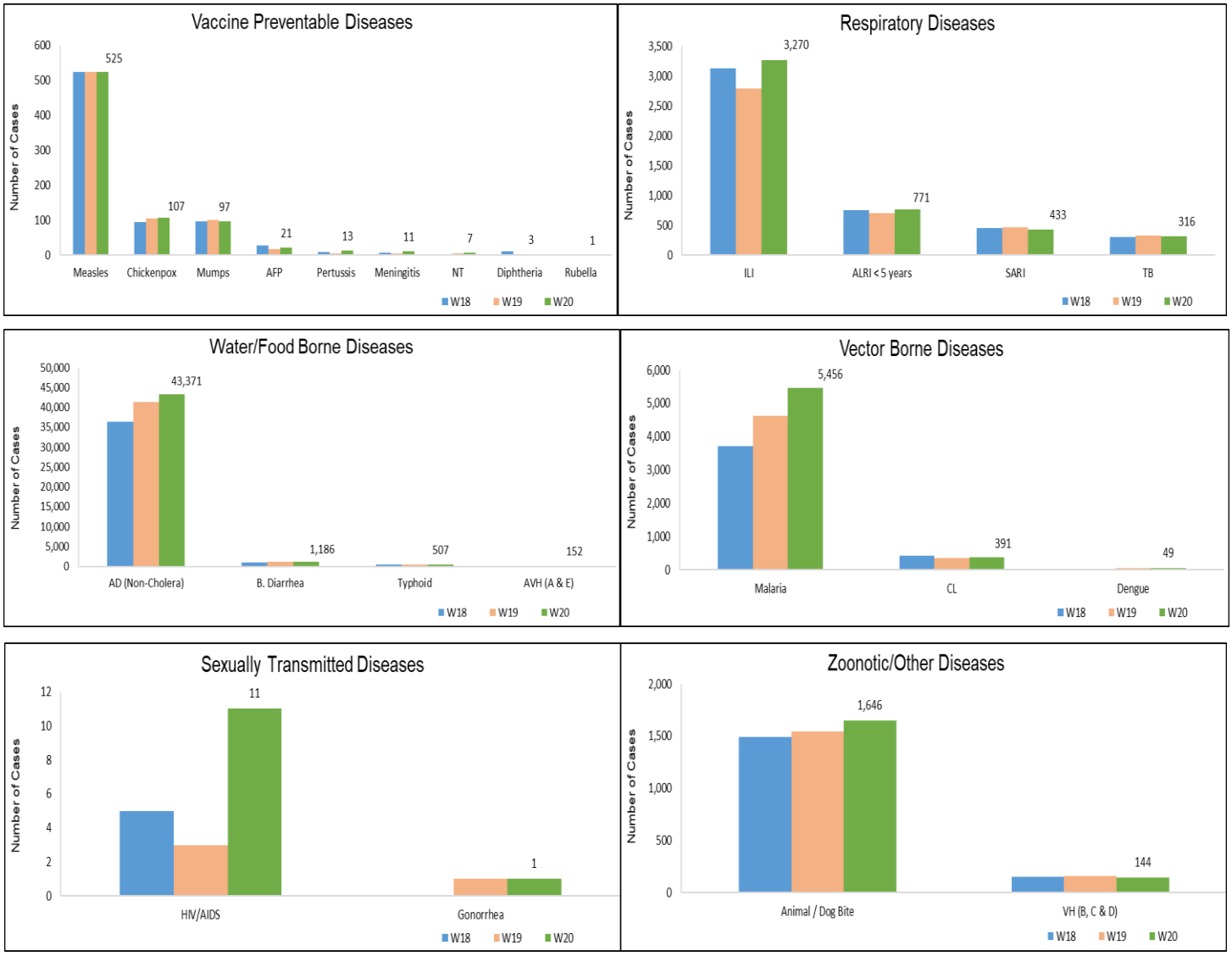
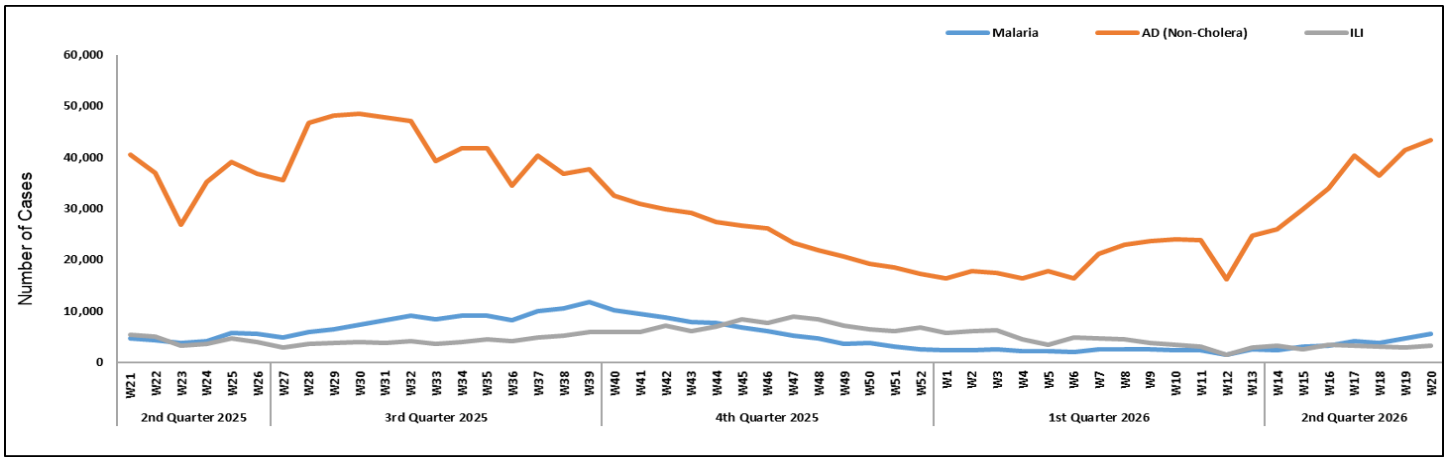



***Figure 7: Week wise reported suspected cases of Malaria, AD (Non-Cholera) & ILI, KP.***



## ICT, AJK & GB

*ICT*: The most frequently reported cases from Islamabad were ILI followed by AD (Non-Cholera), VH (B, C & D), TB and Mumps. ILI and AD (Non-Cholera) cases showed a decline in number this week.

*AJK:* AD (non-cholera) cases were maximum followed by ILI, ALRI < 5years, SARI, Dog Bite cases. An increase in number of suspected cases was observed for AFP, Mumps, Chickenpox, SARI, AD (non- cholera), B. diarrhea, and VH (B, C &D), while a decline in cases was observed for Measles, ILI, ALRI<5years, TB, AVH (A& E), and dog bite cases this week.

*GB:* AD (non-cholera) cases were the most frequently reported disease, followed by ALRI<5years, ILI, Typhoid, TB and SARI cases. An increase in cases was observed for AD (non-cholera), Typhoid, B. Diarrhea, AVH (A & E), Chicken pox, and ALRI<5years, while a decline was observed in the number of cases of ILI, TB, SARI, and Measles this week.

***Figure 8: Most frequently reported suspected cases during Week 20, AJK.***

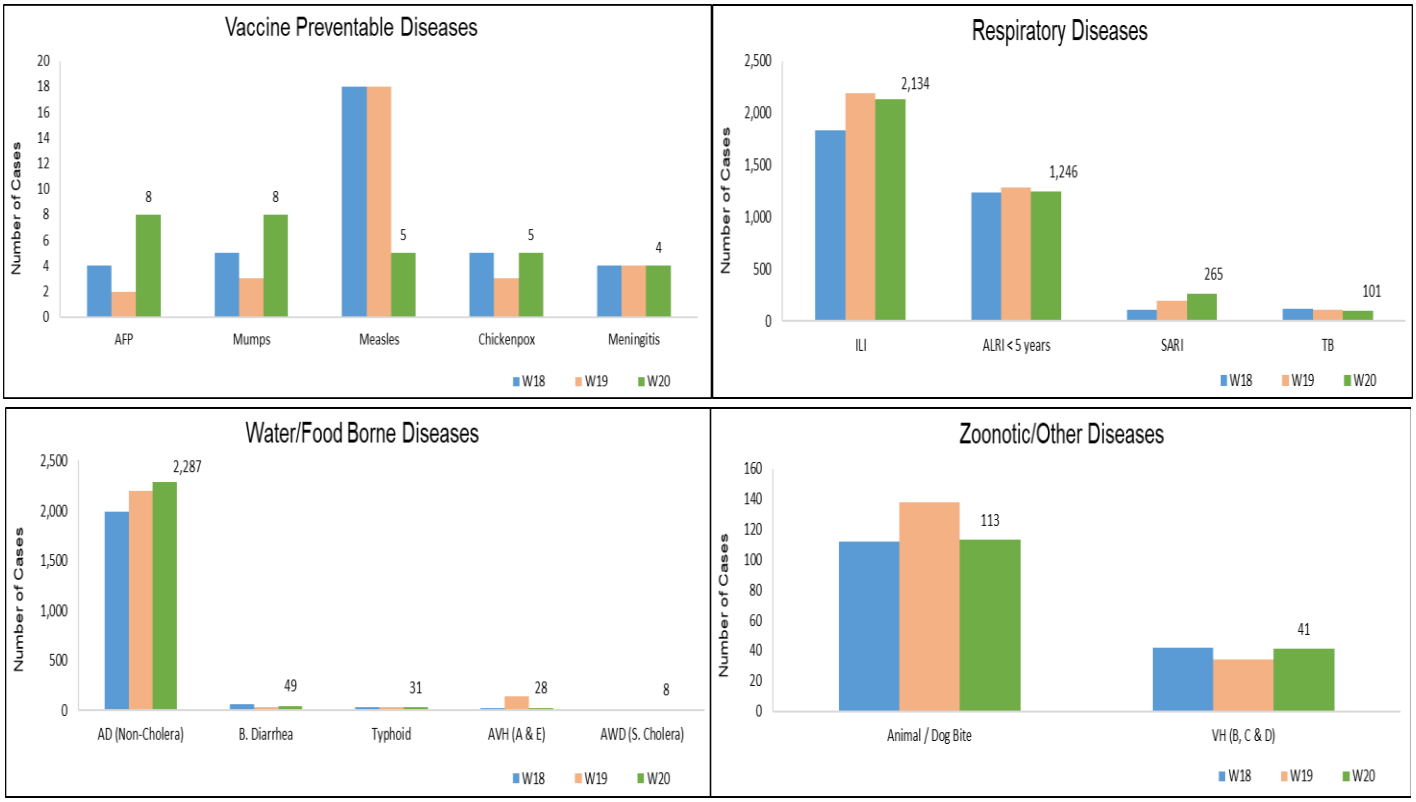



***Figure 9: Week wise reported suspected cases of ILI and AD (Non-Cholera), AJK.***

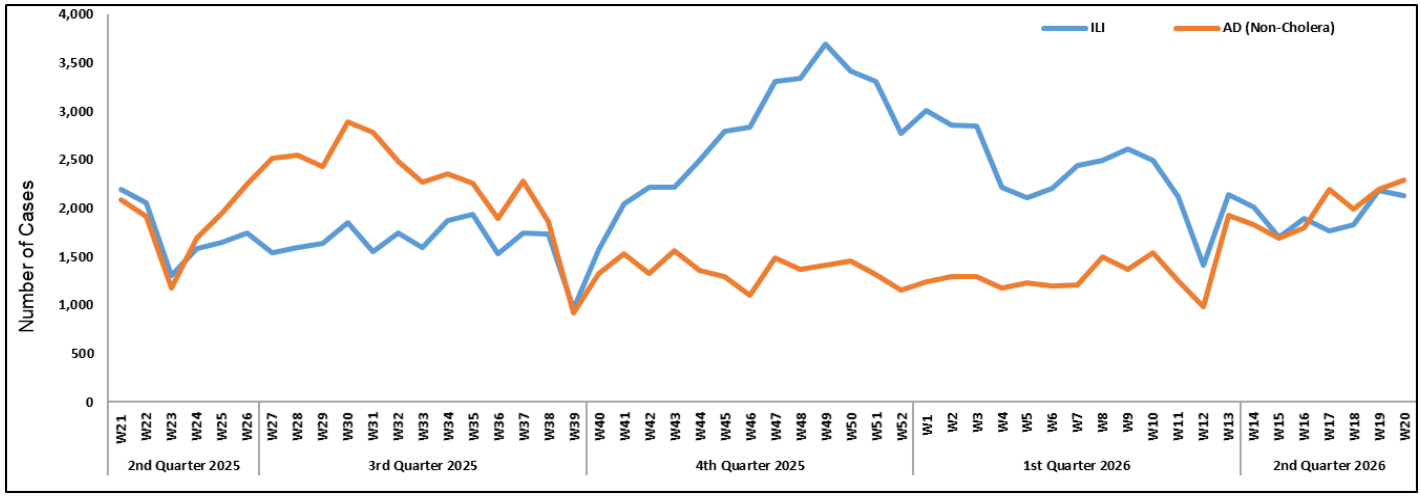


***Figure 10: Most frequently reported suspected cases during Week 20, ICT.***

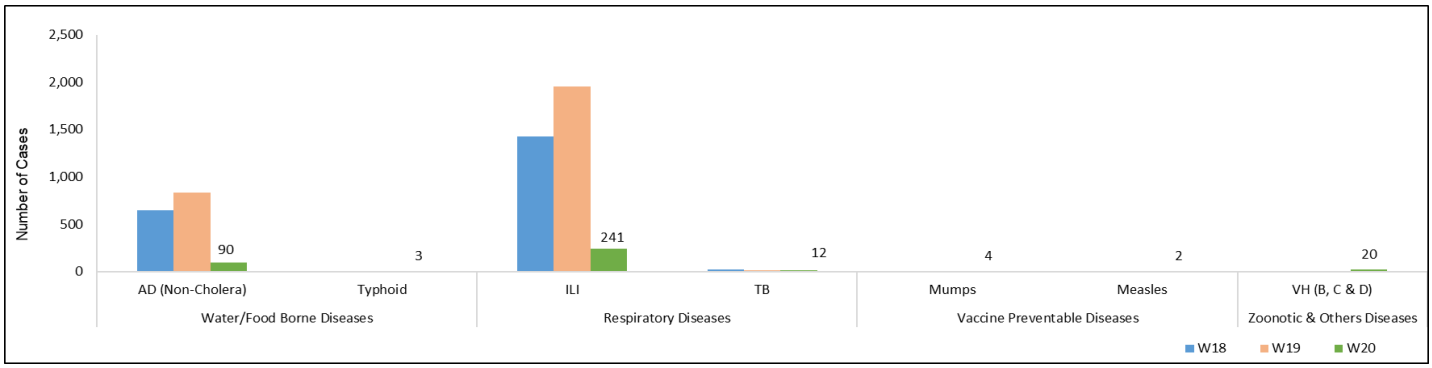



***Figure 11: Week wise reported suspected cases of ILI, ICT.***

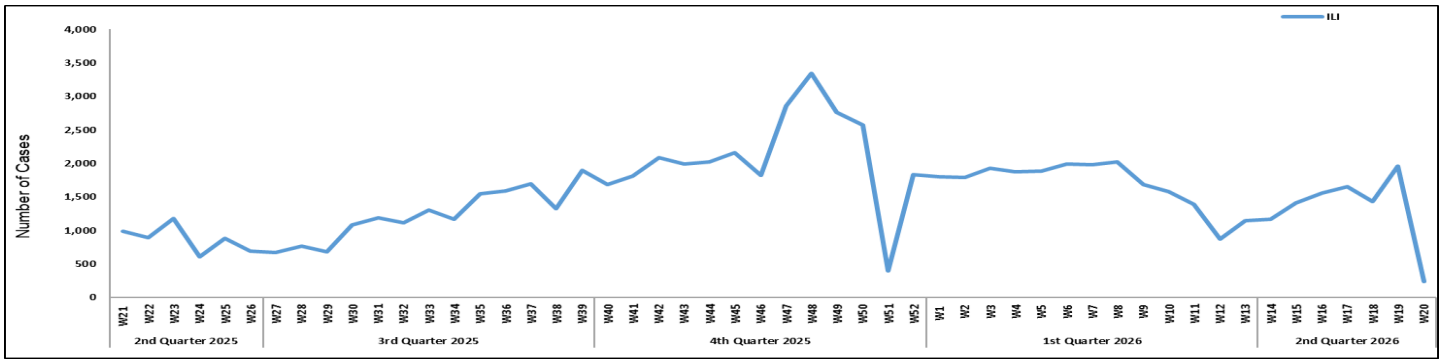



***Figure 12: Most frequently reported suspected cases during Week 20, GB.***

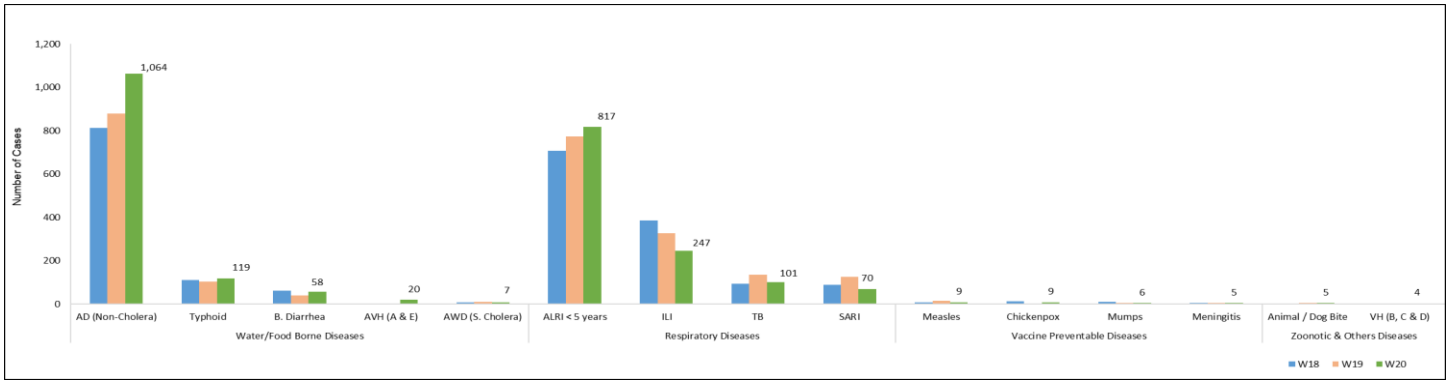



***Figure 13: Week wise reported suspected cases of AD (Non-Cholera), GB.***

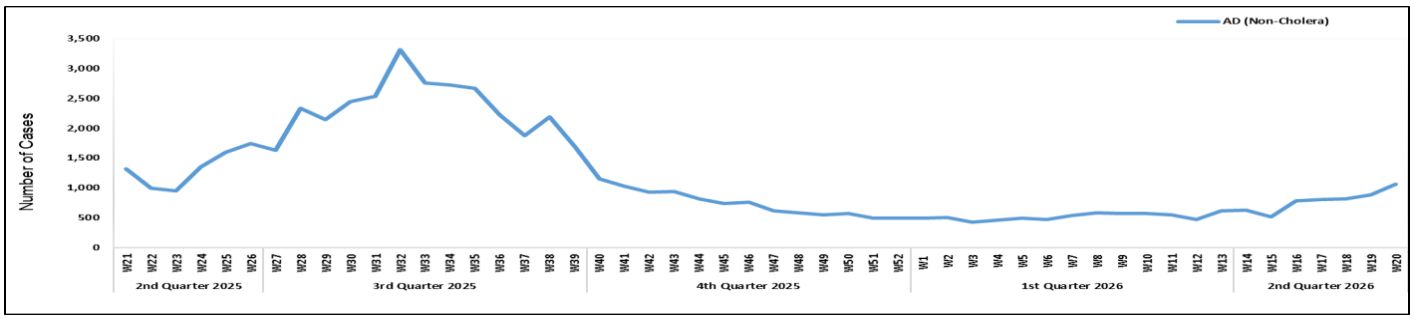


***Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epi Week 20, Pakistan.***

| Diseases | | Sindh | | Balochistan | | KPK | | ISL | | GB | | Punjab | | AJK | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total Test | Total Pos | Total Test | Total Pos | Total Test | Total Pos | Total Test | Total Pos | Total Test | Total Pos | Total Test | Total Pos | Total Test | Total Pos |
| AWD (S. Cholera) | | 29 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stool culture & Sensitivity | | 218 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Malaria | | 5,360 | 271 | 1,575 | 122 | 129 | 24 | - | - | 285 | 1 | - | - | 14 | 1 |
| CCHF | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Dengue | | 1,093 | 80 | 611 | 55 | 4 | 0 | - | - | - | - | - | - | 10 | 2 |
| VH (B) | | 11,525 | 220 | 882 | 152 | 82 | 3 | - | - | 1,252 | 16 | - | - | 236 | 4 |
| VH (C) | | 11,912 | 897 | 808 | 64 | 83 | 2 | - | - | 1,250 | 4 | - | - | 236 | 7 |
| VH (D) | | 241 | 73 | 64 | 8 | - | - | - | - | - | - | - | - | - | - |
| VH (A) | | 505 | 112 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| VH (E) | | 87 | 26 | - | - | - | - | - | - | - | - | - | - | - | - |
| Covid-19 | | 1 | 0 | - | - | - | - | - | - | - | - | - | - | 5 | 0 |
| TB | | 665 | 76 | 145 | 11 | 15 | 3 | - | - | 190 | 0 | - | - | 25 | 3 |
| HIV/ AIDS | | 3,018 | 33 | 583 | 1 | 20 | 0 | - | - | 322 | 0 | - | - | 237 | 1 |
| Syphilis | | 1,026 | 32 | 150 | 0 | 8 | 0 | - | - | 247 | 1 | - | - | - | - |
| Typhoid | | 163 | 9 | 42 | 2 | - | - | - | - | 266 | 10 | - | - | - | - |
| Diphtheria | | 4 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| ILI | | 8 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Pneumonia (ALRI) | | 123 | 25 | - | - | - | - | - | - | - | - | - | - | - | - |
| Meningitis | | 15 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Measles | | 385 | 187 | 36 | 19 | 346 | 146 | 10 | 4 | 4 | 1 | 556 | 97 | 40 | 13 |
| Rubella (CRS) | | - | - | - | - | 3 | 3 | - | - | - | - | - | - | - | - |
| Leishmaniosis (cutaneous) | | - | - | 2 | 1 | 3 | 2 | - | - | 2 | 0 | - | - | - | - |
| Chikungunya | | - | - | 3 | 0 | - | - | - | - | - | - | - | - | - | - |
| Mpox | | 17 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| SARI | | 21 | 9 | - | - | - | - | - | - | - | - | - | - | - | - |
| Covid-19 | ILI | - | - | - | - | 5 | 0 | - | - | 1 | 0 | 12 | 0 | 1 | 0 |
| | SARI | - | - | - | - | 27 | 0 | 5 | 0 | 4 | 0 | 38 | 0 | 17 | 0 |
| Influenza A | ILI | - | - | - | - | 5 | 0 | - | - | 1 | 0 | 12 | 0 | 1 | 0 |
| | SARI | - | - | - | - | 27 | 0 | 5 | 0 | 4 | 0 | 38 | 0 | 17 | 0 |
| Influenza B | ILI | - | - | - | - | 5 | 0 | - | - | 1 | 0 | 12 | 0 | 1 | 0 |
| | SARI | - | - | - | - | 27 | 0 | 5 | 0 | 4 | 0 | 38 | 0 | 17 | 0 |
| RSV | ILI | - | - | - | - | 5 | 0 | - | - | 1 | 0 | 12 | 0 | 1 | 0 |
| | SARI | - | - | - | - | 27 | 0 | 5 | 0 | 4 | 0 | 38 | 0 | 17 | 0 |

- The National Influenza Centre (NIC) comprises twelve Laboratory-Based sentinel surveillance sites strategically located at major tertiary care hospitals across Pakistan providing comprehensive geographical coverage. These sites collect samples from individuals with Influenza-Like Illness (ILI) and Severe Acute Respiratory Infections (SARI), which are then analyzed for high-impact Respiratory pathogens with epidemic and pandemic potential, including Influenza, SARS-CoV-2, and Respiratory Syncytial Virus.

***Figure 14: District wise Influenza sentinel sites, Pakistan.***

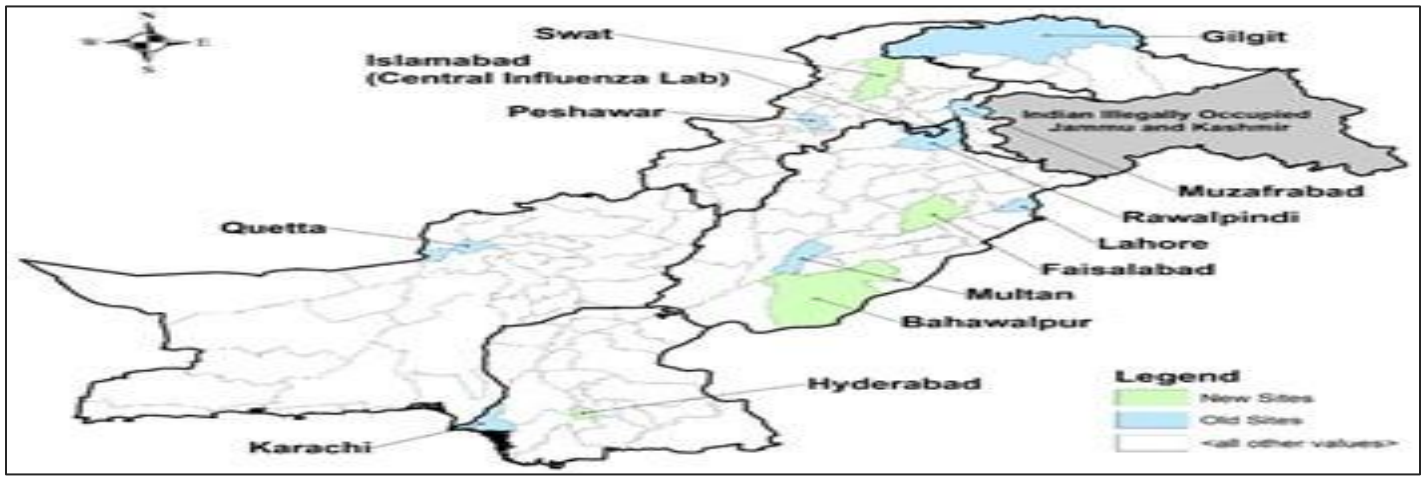



***Figure 15: Distribution of suspected samples of ILI and positive cases of Influenza A, Influenza B, COVID-19 and RSV, Week 20, Pakistan.***

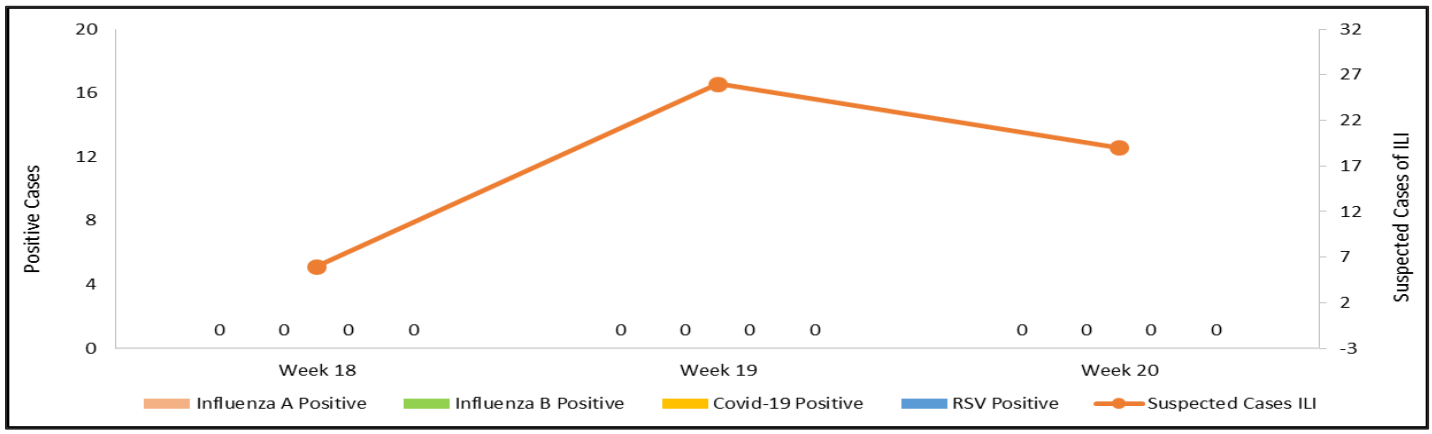



***Figure 16: Distribution of suspected samples of SARI and positive cases of Influenza A, Influenza B, COVID-19 and RSV, Week 20, Pakistan.***

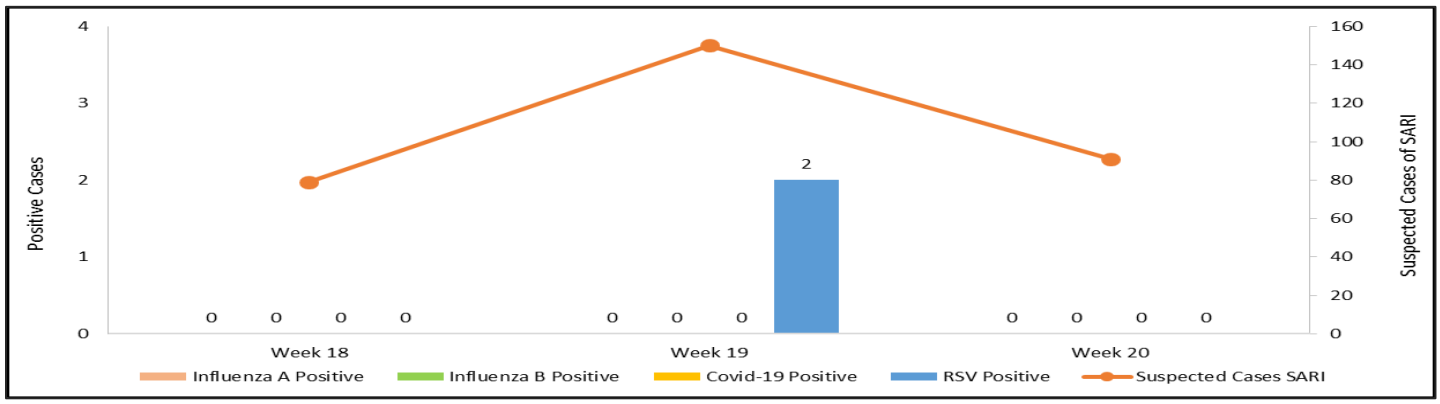


**Table 6: Compliance of IDSR reporting districts Week 20, Pakistan.**

| Provinces/Regions | Districts | Total Number of Reporting Sites | Number of Reported Sites for current week | Compliance Rate (%) |
|---|---|---|---|---|
| Khyber Pakhtunkhwa | Abbottabad | 111 | 103 | 93% |
| | Bannu | 241 | 127 | 53% |
| | Battagram | 59 | 44 | 75% |
| | Buner | 34 | 20 | 59% |
| | Bajaur | 44 | 43 | 98% |
| | Charsadda | 61 | 60 | 98% |
| | Chitral Upper | 31 | 31 | 100% |
| | Chitral Lower | 37 | 37 | 100% |
| | D.I. Khan | 115 | 114 | 99% |
| | Dir Lower | 63 | 59 | 94% |
| | Dir Upper | 56 | 36 | 64% |
| | Hangu | 23 | 20 | 87% |
| | Haripur | 72 | 72 | 100% |
| | Karak | 36 | 36 | 100% |
| | Khyber | 53 | 41 | 77% |
| | Kohat | 61 | 61 | 100% |
| | Kohistan Lower | 13 | 9 | 69% |
| | Kohistan Upper | 22 | 18 | 82% |
| | Kolai Palas | 10 | 9 | 90% |
| | Lakki Marwat | 70 | 69 | 99% |
| | Lower & Central Kurram | 42 | 6 | 14% |
| | Upper Kurram | 38 | 31 | 82% |
| | Malakand | 41 | 35 | 85% |
| | Mansehra | 133 | 89 | 67% |
| | Mardan | 82 | 72 | 88% |
| | Nowshera | 57 | 52 | 91% |
| | North Waziristan | 12 | 9 | 75% |
| | Peshawar | 157 | 135 | 86% |
| | Shangla | 37 | 37 | 100% |
| | Swabi | 65 | 64 | 98% |
| | Swat | 77 | 73 | 95% |
| | South Waziristan (Upper) | 93 | 35 | 38% |
| | South Waziristan (Lower) | 29 | 27 | 93% |
| | Tank | 34 | 33 | 97% |
| | Torghar | 13 | 13 | 100% |
| | Mohmand | 68 | 31 | 46% |
| | Orakzai | 69 | 8 | 12% |
| Azad Jammu Kashmir | Mirpur | 41 | 41 | 100% |
| | Bhimber | 85 | 68 | 80% |
| | Kotli | 60 | 60 | 100% |
| | Muzaffarabad | 45 | 45 | 100% |
| | Poonch | 46 | 46 | 100% |
| | Haveli | 39 | 32 | 82% |
| | Bagh | 54 | 53 | 98% |

| | | | | |
|---|---|---|---|---|
| | Neelum | 39 | 39 | 100% |
| | Jhelum Velley | 29 | 27 | 93% |
| | Sudhnooti | 27 | 27 | 100% |
| **Islamabad Capital Territory** | ICT | 24 | 2 | 8% |
| | CDA | 14 | 5 | 36% |
| **Balochistan** | Gwadar | 26 | 24 | 92% |
| | Kech | 44 | 0 | 0% |
| | Khuzdar | 74 | 14 | 19% |
| | Killa Abdullah | 26 | 25 | 96% |
| | Lasbella | 55 | 55 | 100% |
| | Pishin | 65 | 35 | 54% |
| | Quetta | 56 | 23 | 41% |
| | Sibi | 36 | 34 | 94% |
| | Zhob | 39 | 12 | 31% |
| | Jaffarabad | 16 | 16 | 100% |
| | Naserabad | 32 | 32 | 100% |
| | Kharan | 30 | 30 | 100% |
| | Sherani | 15 | 0 | 0% |
| | Kohlu | 75 | 0 | 0% |
| | Chagi | 36 | 23 | 64% |
| | Kalat | 41 | 40 | 98% |
| | Harnai | 17 | 15 | 88% |
| | Kachhi (Bolan) | 35 | 17 | 49% |
| | Jhal Magsi | 28 | 28 | 100% |
| | Sohbat pur | 25 | 0 | 0% |
| | Surab | 32 | 0 | 0% |
| | Mastung | 46 | 46 | 100% |
| | Loralai | 33 | 27 | 82% |
| | Killa Saifullah | 28 | 0 | 0% |
| | Ziarat | 29 | 26 | 90% |
| | Duki | 31 | 0 | 0% |
| | Nushki | 29 | 29 | 100% |
| | Dera Bugti | 45 | 0 | 0% |
| | Washuk | 46 | 0 | 0% |
| | Panjgur | 38 | 3 | 8% |
| | Awaran | 23 | 0 | 0% |
| | Chaman | 25 | 24 | 96% |
| | Barkhan | 20 | 20 | 100% |
| | Hub | 33 | 17 | 52% |
| | Musakhel | 41 | 0 | 0% |
| | Usta Muhammad | 34 | 34 | 100% |
| **Gilgit Baltistan** | Hunza | 32 | 32 | 100% |
| | Nagar | 20 | 20 | 100% |
| | Ghizer | 38 | 0 | 0% |
| | Gilgit | 44 | 44 | 100% |
| | Diamer | 62 | 58 | 94% |
| | Astore | 55 | 55 | 100% |
| | Shigar | 23 | 21 | 91% |
| | Skardu | 54 | 52 | 96% |
| | Ganche | 29 | 27 | 93% |

| | | | | |
|---|---|---|---|---|
| | Kharmang | 25 | 25 | 100% |
| **Sindh** | Hyderabad | 72 | 70 | 97% |
| | Ghotki | 64 | 64 | 100% |
| | Umerkot | 65 | 65 | 100% |
| | Naushahro Feroze | 102 | 102 | 100% |
| | Tharparkar | 273 | 271 | 99% |
| | Shikarpur | 59 | 59 | 100% |
| | Thatta | 50 | 49 | 98% |
| | Larkana | 67 | 67 | 100% |
| | Kamber Shadadkot | 71 | 71 | 100% |
| | Karachi-East | 21 | 17 | 81% |
| | Karachi-West | 20 | 20 | 100% |
| | Karachi-Malir | 35 | 29 | 83% |
| | Karachi-Kemari | 22 | 20 | 91% |
| | Karachi-Central | 12 | 11 | 92% |
| | Karachi-Korangi | 18 | 18 | 100% |
| | Karachi-South | 6 | 4 | 67% |
| | Sujawal | 55 | 55 | 100% |
| | Mirpur Khas | 106 | 106 | 100% |
| | Badin | 123 | 123 | 100% |
| | Sukkur | 63 | 63 | 100% |
| | Dadu | 90 | 90 | 100% |
| | Sanghar | 100 | 100 | 100% |
| | Jacobabad | 44 | 44 | 100% |
| | Khairpur | 168 | 168 | 100% |
| | Kashmore | 59 | 59 | 100% |
| | Matiari | 42 | 42 | 100% |
| | Jamshoro | 74 | 74 | 100% |
| | Tando Allahyar | 54 | 54 | 100% |
| | Tando Muhammad Khan | 41 | 37 | 90% |
| | Shaheed Benazirabad | 122 | 122 | 100% |

**Table 7: Compliance of IDSR reporting Tertiary care hospitals Week 20, Pakistan.**

| Provinces/Regions | Districts | Total Number of Reporting Sites | Number of Reported Sites for current week | Compliance Rate (%) |
|---|---|---|---|---|
| AJK | Mirpur | 2 | 2 | 100% |
| | Bhimber | 1 | 1 | 100% |
| | Kotli | 1 | 1 | 100% |
| | Muzaffarabad | 2 | 2 | 100% |
| | Poonch | 2 | 2 | 100% |
| | Haveli | 1 | 1 | 100% |
| | Bagh | 1 | 1 | 100% |
| | Neelum | 1 | 1 | 100% |
| | Jhelum Vellay | 1 | 0 | 0% |
| | Sudhnooti | 1 | 1 | 100% |
| Sindh | Karachi-South | 3 | 2 | 67% |
| | Sukkur | 1 | 1 | 100% |
| | Shaheed Benazirabad | 1 | 1 | 100% |
| | Karachi-East | 1 | 1 | 100% |
| | Karachi-Central | 1 | 1 | 100% |
| KP | Peshawar | 3 | 0 | 0% |
| | Swabi | 1 | 0 | 0% |
| | Nowshera | 1 | 1 | 100% |
| | Mardan | 1 | 0 | 100% |
| | Abbottabad | 1 | 1 | 100% |
| | Swat | 1 | 1 | 100% |

## NOTES FROM FIELD

# Outbreak Investigation Report of the First Confirmed Dengue Case in Gandi Khan Khel, Lakki Marwat, Khyber Pakhtunkhwa, Pakistan, 2026

### Introduction

Dengue fever is an acute viral disease caused by four serotypes of the dengue virus (DENV-1 to DENV-4) and is transmitted primarily by Aedes aegypti and Aedes albopictus mosquitoes. Globally, an estimated 390 million dengue infections occur annually, with approximately half of the world's population living in areas at risk of transmission. The burden of dengue has increased substantially over recent decades due to rapid urbanization, population growth, climate variability, and expansion of vector habitats. In the World Health Organization Eastern Mediterranean Region, dengue outbreaks have been reported from several countries including Pakistan. Pakistan has experienced recurrent dengue epidemics, particularly in Punjab and Khyber Pakhtunkhwa provinces, resulting in considerable morbidity and pressure on healthcare systems. Lakki Marwat district possesses environmental conditions favorable for Aedes breeding, including water storage practices and inadequate waste management. On 25 May 2026, the first confirmed dengue case was detected in Gandi Khan Khel, prompting an epidemiological investigation and response.

### Objectives

1. To determine the magnitude and geographical distribution of dengue cases in the affected area.
2. To describe the demographic characteristics of affected individuals.
3. To assess the presence of additional dengue cases through active surveillance and case finding.
4. To identify environmental and entomological risk factors associated with dengue transmission.
5. To recommend evidence-based measures for dengue prevention and control.

### Methods

A descriptive outbreak investigation was conducted following notification of a laboratory-confirmed dengue case through the Integrated Disease Surveillance and Response System (IDSRS). The study population included the confirmed case, household contacts, neighboring residents, and community members residing within the defined investigation radius around the index case's residence in Sardari Kalai, near Kali Wal Hotel, Gandi Khan Khel, Lakki Marwat District, Khyber Pakhtunkhwa.

The investigation was conducted from 25 May 2026 onwards following notification of the case. A suspected case was defined according to the national dengue surveillance guidelines as “any person residing in Sardari Kalai, , Lakki Marwat District, having an acute febrile illness with 2 or more of the following: headache, retro-orbital pain, myalgia, arthralgia or hemorrhagic rash. A confirmed case was with laboratory confirmation through dengue-specific testing”.

Data were collected using a standardized dengue case investigation form capturing demographic characteristics, clinical presentation, travel history, environmental exposures, and risk factors. Active case finding was conducted through house-to-house visits in the affected locality. Family members, neighbors, and other close contacts were screened for fever and dengue-compatible symptoms. Hospital and health facility records were reviewed to identify any additional suspected dengue cases.

Laboratory confirmation was based on dengue serology testing, which demonstrated positive Dengue IgM antibodies. Entomological surveys were conducted around the residence and surrounding areas to identify potential mosquito breeding sites and assess the presence of Aedes vectors. Environmental assessments were performed to evaluate sanitation conditions,

waste management practices, and water storage behaviors.

Data were compiled and analyzed descriptively. Frequencies and proportions were calculated for demographic, epidemiological, environmental, and laboratory variables. Attack rates were calculated where applicable using available population data.

## Results

A total of one laboratory-confirmed dengue case was identified during the investigation. No additional suspected or confirmed dengue cases were detected through active case finding, household screening, or health facility record reviews. The overall outbreak size remained limited to a single confirmed case.

The confirmed case was a 25-year-old male resident of Sardari Kalai, near Kali Wal Hotel, Gandi Khan Khel, Lakki Marwat. The affected area was confined to Gandi Khan Khel locality.

Clinical assessment indicated that the patient met the national case definition for dengue fever and was laboratory confirmed by Dengue IgM testing. The patient had no history of recent travel, suggesting local acquisition of infection. Following diagnosis, the patient received appropriate treatment and was advised home isolation for seven days.

Environmental assessment identified multiple risk factors that could facilitate dengue transmission. 5 potential mosquito breeding sites were observed around the residence, including uncovered water storage containers, stagnant water collections, and discarded tires capable of retaining rainwater. Poor waste management practices were also documented.

Entomological investigations confirmed the presence of Aedes mosquito vectors and/or larvae in the affected locality, indicating favorable conditions for dengue transmission. Community awareness regarding dengue prevention and vector control measures was found to be inadequate.

Laboratory investigation confirmed dengue infection in the index case through positive Dengue IgM serology. No additional laboratory-confirmed dengue cases were identified during the investigation period.

In response to the investigation findings, vector control measures including source reduction, environmental cleanup activities, larviciding, and targeted fogging were implemented. Community health education sessions were conducted, healthcare facilities were placed on alert, and enhanced surveillance was initiated. No evidence of ongoing transmission was detected during the response period.

## Discussion

This investigation documented the first laboratory-confirmed dengue case reported from Gandi Khan Khel, Lakki Marwat, in 2026. Prompt notification through the IDSRS facilitated rapid epidemiological investigation and implementation of control measures. The absence of travel history suggests that the infection was likely acquired locally, indicating the presence of conditions conducive to dengue transmission within the community.

The environmental and entomological assessments identified several established risk factors for dengue transmission, including stagnant water collections, uncovered water storage containers, discarded tires, and the presence of Aedes mosquito vectors. Similar findings have been reported in dengue outbreak investigations conducted elsewhere in Pakistan, where poor environmental sanitation and inadequate vector control measures contributed significantly to disease transmission.

Active case search and health facility record reviews did not identify additional suspected or confirmed cases, suggesting that transmission was limited at the time of investigation. The rapid implementation of source reduction activities, vector control interventions, community awareness campaigns, and enhanced surveillance may have contributed to preventing secondary transmission.

The investigation highlights the importance of maintaining robust surveillance systems capable of early detection and rapid response to arboviral diseases. Continued vigilance remains

necessary because the presence of competent vectors and favorable environmental conditions may increase the risk of future dengue transmission, particularly during the monsoon season.

## Conclusion

A laboratory-confirmed dengue case was identified and investigated in Gandi Khan Khel, Lakki Marwat, during May 2026. Environmental and entomological assessments revealed conditions favorable for dengue transmission, including mosquito breeding sites and the presence of Aedes vectors. No additional cases were identified through active surveillance, and no evidence of ongoing transmission was detected. Prompt implementation of vector control measures, community sensitization activities, and enhanced surveillance likely contributed to containment of the event.

## Recommendations

1. Sustain enhanced dengue surveillance in Gandi Khan Khel and surrounding areas to ensure early detection of additional cases.
2. Continue active case finding and routine monitoring during high-risk transmission periods, particularly the monsoon season.
3. Conduct regular entomological surveillance to monitor vector density and identify emerging breeding sites.
4. Strengthen community-based source reduction activities through routine environmental sanitation campaigns.
5. Promote safe water storage practices and proper disposal of waste materials capable of collecting rainwater.
6. Intensify risk communication and community awareness programs focusing on dengue symptoms, prevention, and early healthcare seeking behavior.
7. Ensure healthcare facilities remain alert for suspected dengue cases and continue timely reporting through the IDSRS.
8. Maintain adequate supplies of dengue diagnostic kits, treatment guidelines, and vector control materials.
9. Strengthen intersectoral collaboration between health authorities, local government departments, and community leaders for sustainable vector control.
10. Conduct periodic monitoring and evaluation of dengue prevention and response activities.

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# KNOWLEDGE HUB

## Dengue: What You Need to Know

Dengue is a fast-spreading, mosquito-borne viral disease that affects millions of people globally each year. It thrives in tropical and subtropical climates, particularly in urban and semi-urban settings. While many cases are mild, dengue can progress to a severe, life-threatening illness if not monitored closely.

### What is Dengue?

Dengue is caused by the **dengue virus (DENV)**, an RNA virus belonging to the *Flaviviridae* family. There are four distinct, but closely related, serotypes of the virus: **DENV-1, DENV-2, DENV-3, and DENV-4**.

Infection with one serotype provides lifelong immunity against *that specific serotype*. However, it only provides temporary cross-immunity to the others. A subsequent infection with a different serotype significantly increases the risk of developing **severe dengue**.

### How It Spreads

The virus is transmitted to humans through the bites of infected female mosquitoes, primarily the ***Aedes aegypti*** mosquito, and secondarily, ***Aedes albopictus***.

- **Daytime Biters:** Unlike malaria-carrying mosquitoes, *Aedes* mosquitoes are most active during the day, with peak biting times in the early morning and just before sunset.
- **Urban Breeders:** These mosquitoes prefer to lay eggs in artificial, clean water containers located in and around human dwellings.

Dengue is **not contagious** from person to person through casual contact.

### Signs & Symptoms

Symptoms typically appear **4 to 10 days after a mosquito bite** and generally last for 2 to 7 days. Dengue is often colloquially known as **"breakbone fever"** due to the severe joint and muscle pain it causes.

### Common Symptoms

- Sudden onset of **high fever**.
- Severe headache, especially **pain behind the eyes** (retro-orbital pain).
- Severe joint, muscle, and bone aches.
- Nausea, vomiting, and loss of appetite.
- Swollen glands.
- A skin rash that typically appears 3 to 4 days after the onset of the fever.

### The Critical Phase & Warning Signs

As the fever begins to drop (usually 3 to 7 days after symptoms start), patients enter what is known as the **critical phase**. This is when a small percentage of patients experience a sudden worsening of the disease, leading to severe dengue (formerly known as Dengue Hemorrhagic Fever).

**Warning Signs of Severe Dengue:** If any of these signs appear, seek emergency medical care immediately:

- Severe abdominal pain or tenderness.
- Persistent vomiting (at least 3 times in 24 hours).
- Bleeding from the nose, gums, or under the skin (bruising).
- Vomiting blood or finding blood in the stool.
- Rapid breathing or difficulty breathing.
- Extreme fatigue, restlessness, or confusion.

Severe dengue causes plasma leakage (fluid escaping from blood vessels), severe bleeding, and organ impairment, which can lead to life-threatening **dengue shock syndrome (DSS)**.

### Prevention and Vector Control

Because there is no specific antiviral cure for dengue, management relies heavily on preventing mosquito bites and controlling the mosquito population (vector control).

**1. Integrated Vector Management (WASH & Source Reduction)**

- **Eliminate Standing Water:** Regularly empty, clean, turn over, or cover domestic water storage containers (buckets, barrels, flower pots, coolers, and old tires) to destroy mosquito breeding habitats.
- **Larviciding:** Apply appropriate larvicides to water storage containers that cannot be emptied.

**2. Personal Protection**

- **Repellents:** Apply EPA-registered insect repellents (containing DEET, Picaridin, or IR3535) to exposed skin.
- **Clothing:** Wear long-sleeved shirts, long pants, socks, and hats, particularly during peak daytime biting hours.
- **Household Barriers:** Use window and door screens, and sleep under insecticide-treated bed nets if sleeping during the day.

**3. Vaccination**

Dengue vaccines (such as Qdenga and Dengvaxia) are available in several countries. Eligibility depends heavily on age, local disease prevalence, and whether an individual has had a confirmed previous dengue infection. Consult your local health authority for specific guidelines.

### Diagnosis and Treatment

- **Diagnosis:** Confirmed via blood tests. During the first few days of illness, the virus can be detected using an **NS1 antigen test** or **PCR**. Later in the illness, antibody tests (**IgM/IgG**) are used. A **Complete Blood Count (CBC)** is regularly performed to monitor platelet counts and hematocrit levels.
- **Treatment:** There is no specific antiviral treatment. Management is supportive:
    - **Hydration:** Ensure adequate oral rehydration with clean water, oral rehydration salts (ORS), or juices to counter fluid loss from fever and vomiting.
    - **Fever Management:** Use **acetaminophen (paracetamol)** to manage pain and lower fever.
    - **CRITICAL WARNING: Avoid Aspirin, Ibuprofen, and other Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)** like naproxen. These medications thin the blood and can drastically increase the risk of severe internal bleeding.

### More Information

For epidemiological updates, clinical guidelines, and global travel advice, visit:

- **World Health Organization (WHO) - Dengue:** https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue
- **Centers for Disease Control and Prevention (CDC) - Dengue:** https://www.cdc.gov/dengue/index.html
- **European Centre for Disease Prevention and Control (ECDC):** https://www.ecdc.europa.eu/en/dengue-fever


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UK Health Security Agency

World Health Organization

CDC U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION