# 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.

## Overview

## IDSR Reports

## Ongoing Events

## Field Reports

**Public Health Bulletin - Pakistan, Week 30, 2024**

Transformed from a static list of ailments, Pakistan's Public Health Bulletin now empowers both healthcare professionals and citizens. This comprehensive resource offers a wealth of public health information, delving deeply into prevalent diseases like malaria, influenza, and childhood respiratory infections.

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 delves deeper than mere statistics, offering comprehensive reports on critical public health issues. This edition highlights the persistent polio outbreak, NIH's advancements in emergency management and disease surveillance, a groundbreaking workshop on public health risk assessment in Balochistan, the importance of breastfeeding, a cholera outbreak investigation, the launch of an IPC e-learning program, and a critical analysis of Pakistan's lung cancer epidemic, along with a dedicated knowledge hub on the subject

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

Sincerely,
The Chief Editor

- *During week 30, 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-seven cases of AFP reported from KP, eleven from AJK, four from Sindh, three each from Punjab and GB and two from Balochistan. All are suspected cases and need field verification.*

- *Ten suspected cases of HIV/ AIDS reported from KP, seven from Sindh and two from Punjab. Field investigation required to verify the cases.*

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

- *Thirteen suspected cases of Brucellosis reported from KP and one each from Sindh and AJK. Field investigation required to verify the cases.*

- *There is an increasing trend observed for AD (Non-cholera), Malaria, ILI, TB, ALRI <5 years, B. Diarrhea, dog bite, VH (B, C & D), Typhoid and AWD (S. Cholera) cases this week.*

## IDSR compliance attributes

- *The national compliance rate for IDSR reporting in 149 implemented districts is 83%*

- *Gilgit Baltistan and AJK are the top reporting regions with a compliance rate of 99%, followed by Sindh 94% and ICT 83%*

- *The lowest compliance rate was observed in KPK.*

| Region | Expected Reports | Received Reports | Compliance (%) |
|---|---|---|---|
| Khyber Pakhtunkhwa | 2350 | 1740 | 74 |
| Azad Jammu Kashmir | 382 | 379 | 99 |
| Islamabad Capital Territory | 35 | 29 | 83 |
| Balochistan | 1206 | 850 | 70 |
| Gilgit Baltistan | 374 | 372 | 99 |
| Sindh | 2085 | 1956 | 94 |
| National | 6432 | 5326 | 83 |

# Pakistan

Table 1: *Province/Area wise distribution of most frequently reported suspected cases during week 30, Pakistan.*

| Diseases | AJK | Balochistan | GB | ICT | KP | Punjab | Sindh | Total |
|---|---|---|---|---|---|---|---|---|
| AD (Non-Cholera) | 2,713 | 7,096 | 2,712 | 530 | 33,248 | 104,019 | 57,591 | 207,909 |
| Malaria | 75 | 4,464 | 3 | 3 | 6,880 | 3,246 | 66,661 | 81,332 |
| ILI | 1,161 | 4,302 | 356 | 837 | 3,235 | 0 | 23,768 | 33,659 |
| TB | 77 | 141 | 121 | 7 | 531 | 9,748 | 12,213 | 22,838 |
| ALRI < 5 years | 778 | 1,335 | 499 | 0 | 1,186 | 667 | 7,781 | 12,246 |
| B.Diarrhea | 129 | 1,613 | 166 | 7 | 1,513 | 1,009 | 3,995 | 8,432 |
| Dog Bite | 100 | 90 | 1 | 0 | 555 | 5,317 | 1,924 | 7,987 |
| VH (B, C & D) | 14 | 118 | 1 | 1 | 115 | 0 | 5,817 | 6,066 |
| Typhoid | 41 | 697 | 98 | 1 | 700 | 1,905 | 1,072 | 4,514 |
| AWD (S. Cholera) | 51 | 245 | 146 | 0 | 189 | 2,514 | 36 | 3,181 |
| SARI | 170 | 467 | 205 | 1 | 1,188 | 0 | 137 | 2,168 |
| Dengue | 0 | 2 | 1 | 1 | 18 | 862 | 57 | 941 |
| Measles | 34 | 37 | 9 | 0 | 234 | 483 | 128 | 925 |
| AVH (A&E) | 43 | 32 | 1 | 0 | 308 | 0 | 456 | 840 |
| CL | 1 | 87 | 0 | 0 | 253 | 4 | 3 | 348 |
| Mumps | 7 | 34 | 4 | 0 | 51 | 0 | 133 | 229 |
| Chickenpox/ Varicella | 11 | 23 | 10 | 1 | 76 | 17 | 21 | 159 |
| Gonorrhea | 0 | 69 | 0 | 0 | 0 | 0 | 40 | 109 |
| Pertussis | 2 | 78 | 0 | 0 | 11 | 0 | 2 | 93 |
| Meningitis | 1 | 2 | 3 | 0 | 3 | 68 | 13 | 90 |
| Chikungunya | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 84 |
| AFP | 11 | 2 | 3 | 0 | 27 | 3 | 4 | 50 |
| Syphilis | 0 | 2 | 0 | 0 | 0 | 0 | 18 | 20 |
| HIV/AIDS | 0 | 0 | 0 | 0 | 10 | 2 | 7 | 19 |
| Brucellosis | 1 | 0 | 0 | 0 | 13 | 0 | 1 | 15 |
| Diphtheria (Probable) | 0 | 3 | 0 | 0 | 6 | 0 | 0 | 9 |
| NT | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 7 |
| Rubella (CRS) | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| CCHF | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| VL | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |

Figure 1: *Most frequently reported suspected cases during week 30, Pakistan.*
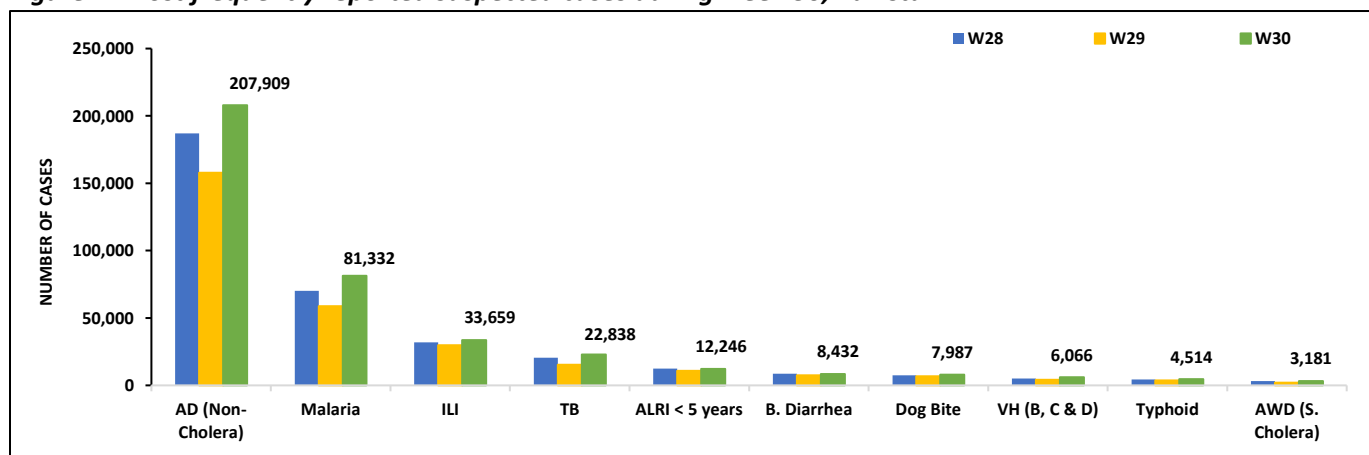
- Malaria cases were maximum followed by AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite, Typhoid and AVH (A & E).
- Malaria cases are mostly from Larkana, Badin and Khairpur whereas AD (Non-Cholera) cases are from Badin, Thatta and Mirpurkhas.
- Four cases of AFP, Seven suspected cases of HIV/ AIDS and One suspected case of Brucellosis reported from Sindh. All are suspected cases and need field verification.
- There is an increasing trend observed for Malaria, AD (Non-Cholera), ILI, TB, ALRI<5 Years, VH (B, C, D), B. Diarrhea, dog bite and Typhoid cases this week.

*Table 2: District wise distribution of most frequently reported suspected cases during week 30, Sindh*

| Districts | Malaria | AD (Non-Cholera) | ILI | TB | ALRI < 5 years | VH (B, C & D) | B. Diarrhea | Dog Bite | Typhoid | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Badin | 5,677 | 4,254 | 475 | 910 | 531 | 225 | 274 | 83 | 105 | 5 |
| Dadu | 3,781 | 3,031 | 162 | 448 | 614 | 36 | 538 | 134 | 115 | 19 |
| Ghotki | 1,940 | 1,540 | 0 | 263 | 389 | 405 | 97 | 129 | 0 | 8 |
| Hyderabad | 243 | 2,225 | 1,838 | 43 | 124 | 49 | 0 | 0 | 8 | 0 |
| Jacobabad | 522 | 827 | 396 | 121 | 198 | 163 | 106 | 105 | 46 | 0 |
| Jamshoro | 1,214 | 2,412 | 88 | 415 | 116 | 93 | 80 | 44 | 22 | 4 |
| Kamber | 4,699 | 2,511 | 0 | 790 | 260 | 131 | 165 | 183 | 12 | 0 |
| Karachi Central | 11 | 1,420 | 1,136 | 5 | 62 | 7 | 72 | 25 | 25 | 5 |
| Karachi East | 47 | 421 | 123 | 12 | 12 | 5 | 6 | 2 | 3 | 1 |
| Karachi Keamari | 0 | 282 | 81 | 0 | 36 | 0 | 1 | 0 | 0 | 0 |
| Karachi Korangi | 46 | 356 | 16 | 8 | 0 | 0 | 2 | 0 | 0 | 1 |
| Karachi Malir | 473 | 2,167 | 3,090 | 142 | 204 | 56 | 68 | 43 | 48 | 6 |
| Karachi South | 43 | 111 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Karachi West | 174 | 984 | 1,546 | 171 | 251 | 140 | 81 | 151 | 35 | 12 |
| Kashmore | 1,378 | 628 | 377 | 236 | 155 | 32 | 62 | 152 | 4 | 0 |
| Khairpur | 4,823 | 2,688 | 4,519 | 1,084 | 787 | 206 | 424 | 120 | 204 | 4 |
| Larkana | 6,947 | 2,503 | 2 | 949 | 235 | 106 | 370 | 8 | 22 | 1 |
| Matiari | 1,829 | 2,329 | 1 | 684 | 205 | 383 | 91 | 44 | 8 | 1 |
| Mirpurkhas | 3,138 | 3,557 | 2,482 | 723 | 373 | 283 | 204 | 38 | 61 | 7 |
| Naushero Feroze | 2,579 | 1,483 | 1,086 | 513 | 323 | 31 | 114 | 149 | 120 | 2 |
| Sanghar | 3,520 | 1,598 | 37 | 1,084 | 337 | 1,201 | 41 | 99 | 23 | 1 |
| Shaheed Benazirabad | 2,214 | 2,321 | 3 | 565 | 236 | 117 | 90 | 144 | 90 | 1 |
| Shikarpur | 2,334 | 1,401 | 2 | 212 | 121 | 1,440 | 141 | 45 | 3 | 0 |
| Sujawal | 3,353 | 1,815 | 0 | 103 | 135 | 3 | 101 | 0 | 2 | 69 |
| Sukkur | 2,538 | 1,456 | 1,077 | 496 | 277 | 147 | 229 | 35 | 4 | 0 |
| Tando Allahyar | 2,133 | 2,220 | 730 | 533 | 213 | 168 | 220 | 68 | 14 | 3 |
| Tando Muhammad Khan | 2,170 | 2,035 | 0 | 674 | 150 | 36 | 132 | 0 | 2 | 0 |
| Tharparkar | 3,670 | 3,010 | 2,265 | 565 | 717 | 188 | 166 | 0 | 51 | 66 |
| Thatta | 2,669 | 3,910 | 2,234 | 48 | 282 | 96 | 69 | 123 | 13 | 237 |
| Umerkot | 2,496 | 2,096 | 0 | 416 | 438 | 70 | 51 | 0 | 32 | 3 |
| **Total** | 66,661 | 57,591 | 23,768 | 12,213 | 7,781 | 5,817 | 3,995 | 1,924 | 1,072 | 456 |

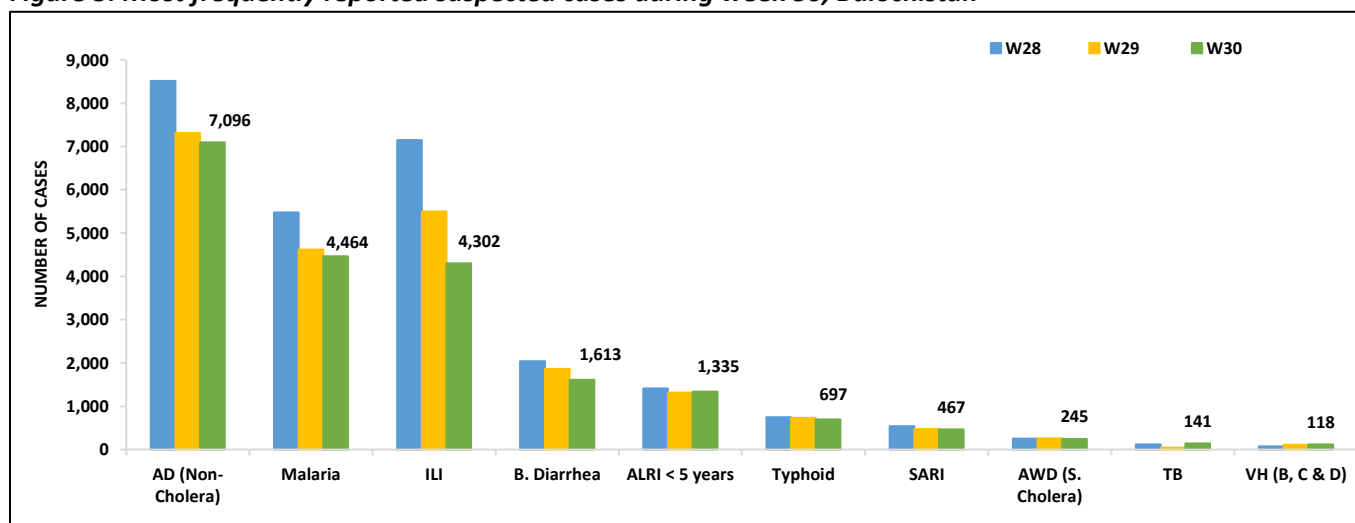*Figure 2: Most frequently reported suspected cases during week 30 Sindh*
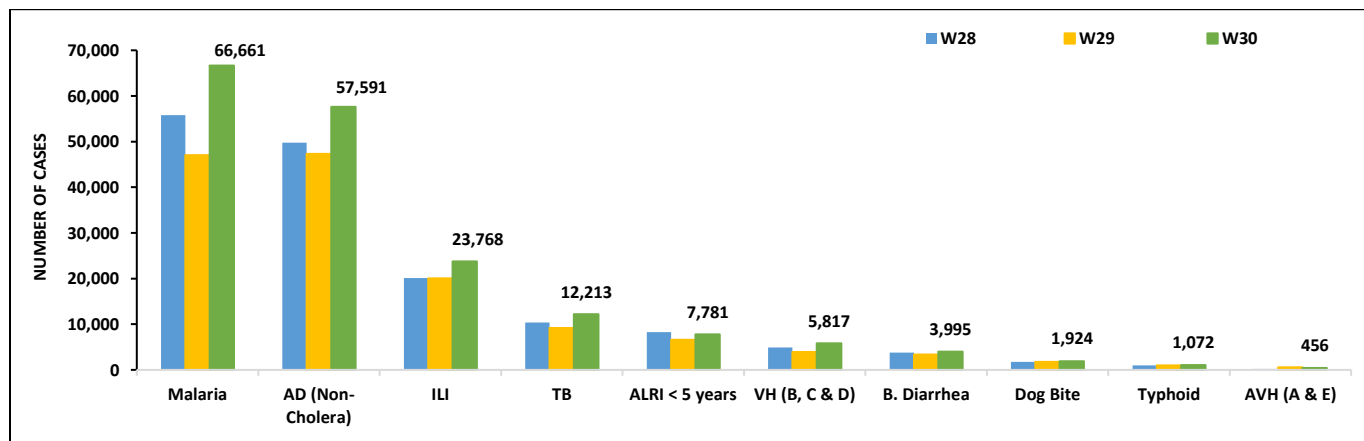
# Balochistan

- AD (Non-Cholera), Malaria, ILI, B. Diarrhea, ALRI <5 years, Typhoid, SARI, AWD (S. Cholera), TB and VH (B, C & D) cases were the most frequently reported diseases from Balochistan province.
- AD (Non-Cholera) cases are mostly reported from Usta Muhammad, Quetta and Pishin while Malaria cases are mostly reported from Jaffarabad, Usta Muhammad and Lasbella.
- AD (Non-Cholera), Malaria, ILI, B. Diarrhea, Typhoid and AWD (S. Cholera) cases showed a decreasing trend while ALRI <5 years, TB and VH (B, C & D) cases showed an increasing trend this week. Two cases of AFP reported from Balochistan. All are suspected cases and need field verification.

*Table 3: District wise distribution of most frequently reported suspected cases during week 30, Balochistan*

| Districts | AD Non-Cholera) | Malaria | ILI | B. Diarrhea | ALRI < 5 years | Typhoid | SARI | AWD (S.Cholera) | TB | VH (B,C & D) |
|---|---|---|---|---|---|---|---|---|---|---|
| Awaran | 11 | 50 | 56 | 18 | 13 | 3 | 5 | 26 | 0 | 1 |
| Barkhan | 123 | 100 | 48 | 4 | 46 | 46 | 4 | 4 | 13 | 0 |
| Chagai | 133 | 55 | 218 | 66 | 0 | 18 | 0 | 25 | 0 | 0 |
| Chaman | 131 | 28 | 113 | 50 | 31 | 33 | 30 | 32 | 1 | 1 |
| Dera Bugti | 103 | 159 | 16 | 55 | 19 | 37 | 4 | 0 | 0 | 0 |
| Harnai | 107 | 56 | 19 | 59 | 127 | 5 | 0 | 9 | 2 | 0 |
| Hub | 219 | 224 | 4 | 23 | 2 | 4 | 0 | 0 | 5 | 22 |
| Jaffarabad | 573 | 854 | 48 | 80 | 35 | 3 | 10 | 1 | 40 | 21 |
| Jhal Magsi | 282 | 317 | 276 | 10 | 45 | 2 | 7 | 0 | 13 | 0 |
| Kalat | 75 | 59 | 3 | 12 | 19 | 40 | 2 | 0 | 0 | 0 |
| Kharan | 151 | 58 | 305 | 76 | 0 | 3 | 4 | 0 | 0 | 0 |
| Khuzdar | 258 | 145 | 288 | 79 | 30 | 19 | 12 | 11 | 0 | 0 |
| Killa Saifullah | 237 | 192 | 2 | 29 | 74 | 17 | 0 | 0 | 0 | 0 |
| Kohlu | 248 | 197 | 258 | 106 | 21 | 61 | 33 | 1 | NR | 2 |
| Lasbella | 405 | 350 | 79 | 23 | 84 | 10 | 10 | 0 | 0 | 7 |
| Loralai | 268 | 72 | 314 | 65 | 61 | 43 | 117 | 4 | 0 | 0 |
| Mastung | 241 | 129 | 76 | 67 | 39 | 20 | 20 | 8 | 4 | 23 |
| Musakhel | 25 | 100 | 17 | 14 | 0 | 14 | 0 | 7 | 2 | 6 |
| Naseerabad | 270 | 171 | 20 | 41 | 40 | 56 | 1 | 0 | 0 | 0 |
| Nushki | 236 | 28 | 0 | 50 | 0 | 0 | 0 | 10 | 0 | 0 |
| Pishin | 590 | 88 | 424 | 273 | 73 | 54 | 61 | 62 | 5 | 0 |
| Quetta | 666 | 51 | 908 | 115 | 80 | 78 | 51 | 37 | 0 | 0 |
| Sherani | 28 | 20 | 54 | 13 | 8 | 11 | 26 | 4 | 0 | 0 |
| Sohbat pur | 303 | 215 | 0 | 59 | 115 | 26 | 11 | 1 | 5 | 20 |
| Surab | 77 | 109 | 158 | 1 | 1 | 57 | 0 | 0 | 0 | 0 |
| Usta Muhammad | 900 | 434 | 98 | 60 | 96 | 15 | 7 | 0 | 1 | 15 |
| Washuk | 209 | 87 | 292 | 114 | 4 | 6 | 8 | 2 | 0 | 0 |
| Zhob | 227 | 116 | 208 | 51 | 272 | 16 | 44 | 1 | 50 | 0 |
| Total | 7,096 | 4,464 | 4,302 | 1,613 | 1,335 | 697 | 467 | 245 | 141 | 118 |

*Figure 3: Most frequently reported suspected cases during week 30, Balochistan*
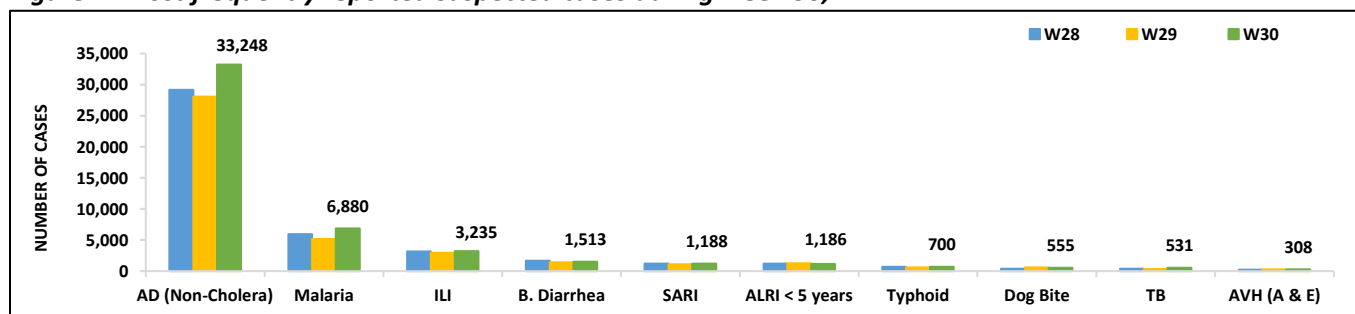
- Cases of AD (Non-Cholera) were maximum followed by Malaria, ILI, B. Diarrhea, SARI, ALRI<5 Years, Typhoid, dog bite, TB and AVH (A & E) cases.
- AD (Non-Cholera), Malaria, ILI, B. Diarrhea, SARI, Typhoid, TB and AVH (A & E) cases showed an increasing trend this week.
- Twenty-seven cases of AFP, ten suspected cases of HIV/ AIDS, and Thirteen suspected cases of Brucellosis reported from KP. All are suspected cases and need field verification.

*Table 4: District wise distribution of most frequently reported suspected cases during week 30, KP*

| Districts | AD (Non-Cholera) | Malaria | ILI | B.Diarrhea | SARI | ALRI <5 Years | Typhoid | Dog Bite | TB | AVH (A&E) |
|---|---|---|---|---|---|---|---|---|---|---|
| Abbottabad | 1,045 | 20 | 35 | 10 | 1 | 9 | 33 | 3 | 11 | 0 |
| Bajaur | 1,297 | 238 | 25 | 130 | 67 | 280 | 8 | 46 | 16 | 43 |
| Bannu | 897 | 1,598 | 3 | 26 | 15 | 17 | 98 | 0 | 26 | 6 |
| Battagram | 207 | 234 | 372 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buner | 606 | 283 | 0 | 0 | 0 | 0 | 5 | 11 | 0 | 0 |
| Charsadda | 1,324 | 205 | 225 | 108 | 1 | 40 | 88 | 3 | 0 | 39 |
| Chitral Lower | 717 | 24 | 77 | 24 | 15 | 7 | 7 | 9 | 8 | 0 |
| Chitral Upper | 235 | 4 | 7 | 5 | 8 | 7 | 5 | 0 | 1 | 0 |
| D.I. Khan | 1,229 | 312 | 0 | 17 | 0 | 6 | 0 | 11 | 43 | 2 |
| Dir Lower | 2,174 | 197 | 3 | 74 | 0 | 61 | 21 | 24 | 12 | 11 |
| Dir Upper | 1,142 | 16 | 35 | 6 | 0 | 25 | 6 | 0 | 16 | 3 |
| Hangu | 117 | 95 | 0 | 13 | 0 | 12 | 2 | 0 | 1 | 0 |
| Haripur | 1,132 | 22 | 90 | 14 | 4 | 38 | 10 | 7 | 98 | 48 |
| Karak | 292 | 179 | 25 | 0 | 0 | 16 | 3 | 33 | 11 | 0 |
| Khyber | 295 | 238 | 30 | 73 | 21 | 4 | 43 | 23 | 19 | 10 |
| Kohat | 445 | 121 | 65 | 0 | 0 | 16 | 25 | 12 | 3 | 0 |
| Kohistan Lower | 148 | 12 | 2 | 9 | 0 | 3 | 0 | 0 | 0 | 0 |
| Kohistan Upper | 547 | 40 | 0 | 24 | 6 | 43 | 10 | 5 | 24 | 0 |
| Kolai Palas | 106 | 7 | 4 | 2 | 1 | 2 | 1 | 0 | 1 | 0 |
| L & C Kurram | 52 | 8 | 52 | 18 | 38 | 4 | 8 | 2 | 0 | 0 |
| Lakki Marwat | 621 | 249 | 0 | 18 | 0 | 4 | 5 | 32 | 8 | 0 |
| Malakand | 1,267 | 89 | 29 | 277 | 10 | 35 | 22 | 0 | 2 | 27 |
| Mansehra | 1,199 | 0 | 320 | 12 | 44 | 21 | 23 | 0 | 10 | 3 |
| Mardan | 725 | 24 | 0 | 10 | 0 | 238 | 0 | 1 | 14 | 0 |
| Mohmand | 141 | 252 | 87 | 48 | 84 | 5 | 16 | 7 | 0 | 0 |
| North Waziristan | 104 | 30 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 3 |
| Nowshera | 1,995 | 106 | 32 | 40 | 8 | 0 | 10 | 15 | 8 | 3 |
| Orakzai | 46 | 25 | 8 | 8 | 0 | 1 | 5 | 24 | 0 | 0 |
| Peshawar | 3,830 | 74 | 623 | 131 | 39 | 62 | 62 | 12 | 27 | 30 |
| SD Peshawar | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SD Tank | 40 | 81 | 3 | 8 | 0 | 1 | 2 | 0 | 0 | 0 |
| Shangla | 1,981 | 1,331 | 27 | 53 | 6 | 13 | 25 | 69 | 82 | 6 |
| SWA | 195 | 158 | 113 | 17 | 44 | 41 | 35 | 4 | 2 | 0 |
| Swabi | 2,201 | 87 | 457 | 32 | 73 | 75 | 50 | 94 | 44 | 36 |
| Swat | 4,290 | 57 | 156 | 220 | 0 | 72 | 29 | 77 | 32 | 32 |
| Tank | 217 | 279 | 12 | 2 | 0 | 3 | 13 | 12 | 9 | 0 |
| Tor Ghar | 110 | 150 | 0 | 32 | 5 | 5 | 2 | 0 | 0 | 6 |
| Upper Kurram | 270 | 35 | 318 | 51 | 698 | 18 | 28 | 19 | 2 | 0 |
| Total | 33,248 | 6,880 | 3,235 | 1,513 | 1,188 | 1,186 | 700 | 555 | 531 | 308 |

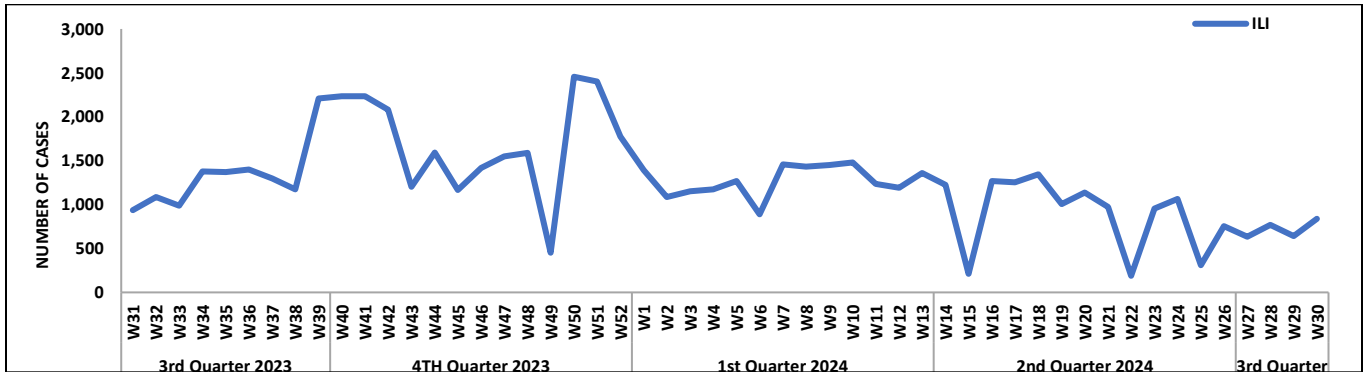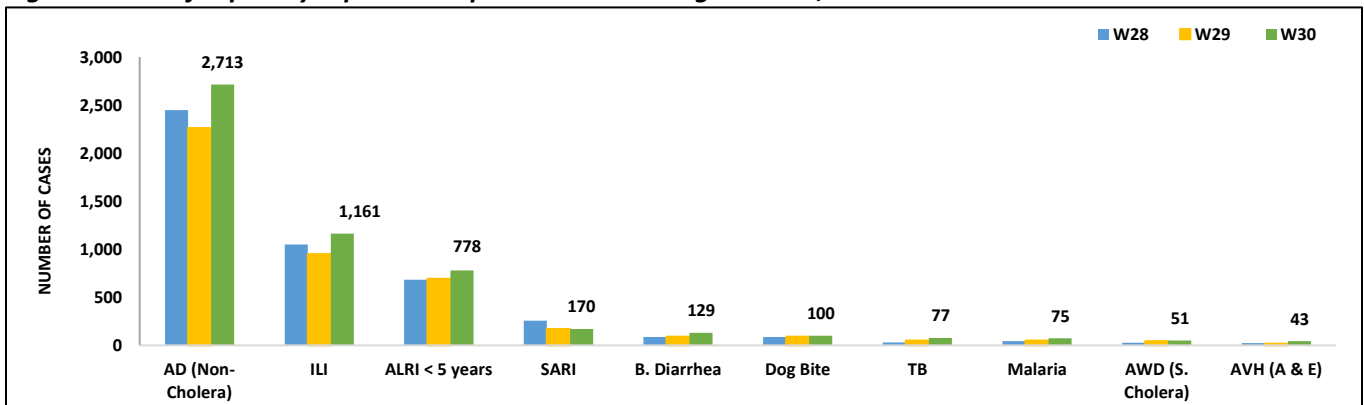*Figure 4: Most frequently reported suspected cases during week 30, KP*

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

**AJK:** AD (Non-Cholera) cases were maximum followed by ILI, ALRI <5 years, SARI, B. Diarrhea, dog bite, TB, Malaria, AWD (S. Cholera) and AVH (A & E) cases. An increasing trend observed for AD (Non-Cholera), ILI, ALRI <5 years, B. Diarrhea, dog bite, TB, Malaria and AVH (A & E) cases this week. Eleven cases of AFP reported from AJK. All are suspected cases and need field verification. One suspected case of Brucellosis reported from AJK. Field investigation required to verify the case.

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

**Figure 5: Most frequently reported suspected cases during week 30, ICT**
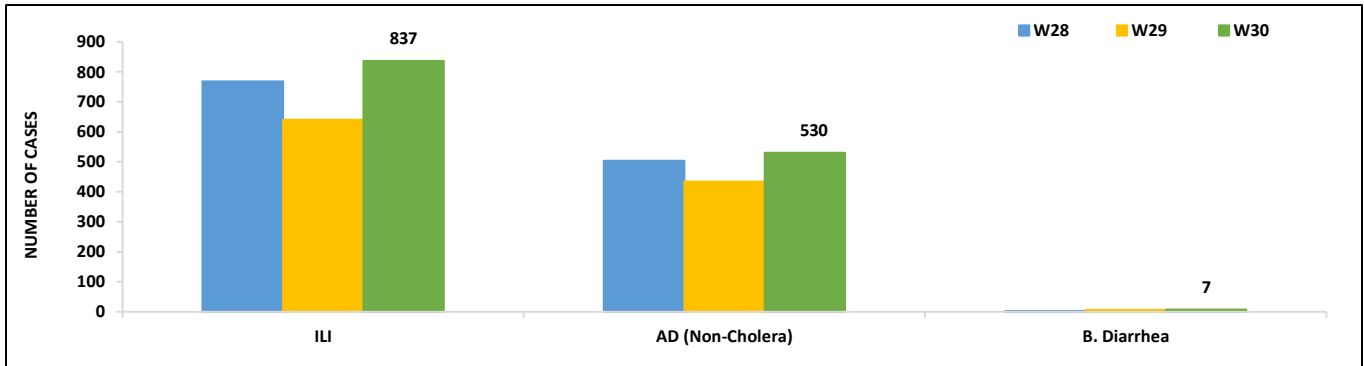


**Figure 6: Week wise reported suspected cases of ILI, ICT**



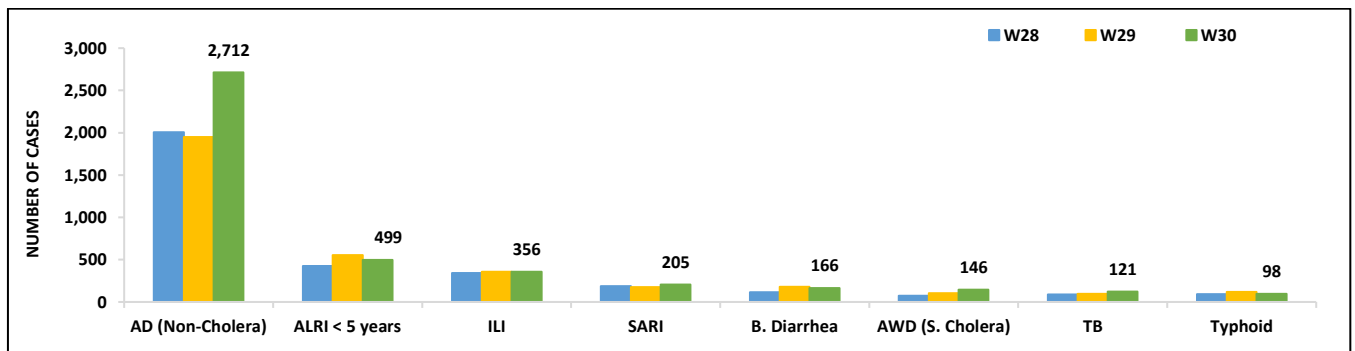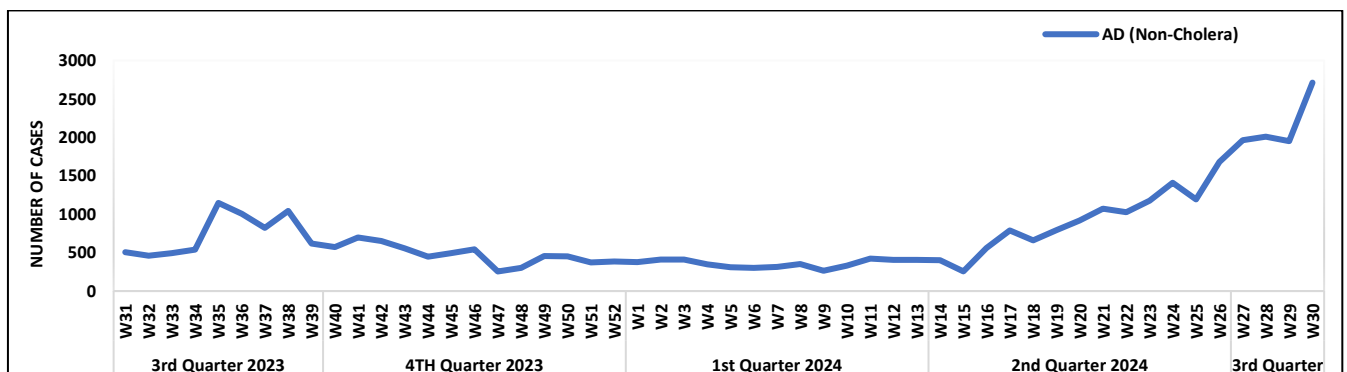**Figure 7: Most frequently reported suspected cases during week 30, AJK**

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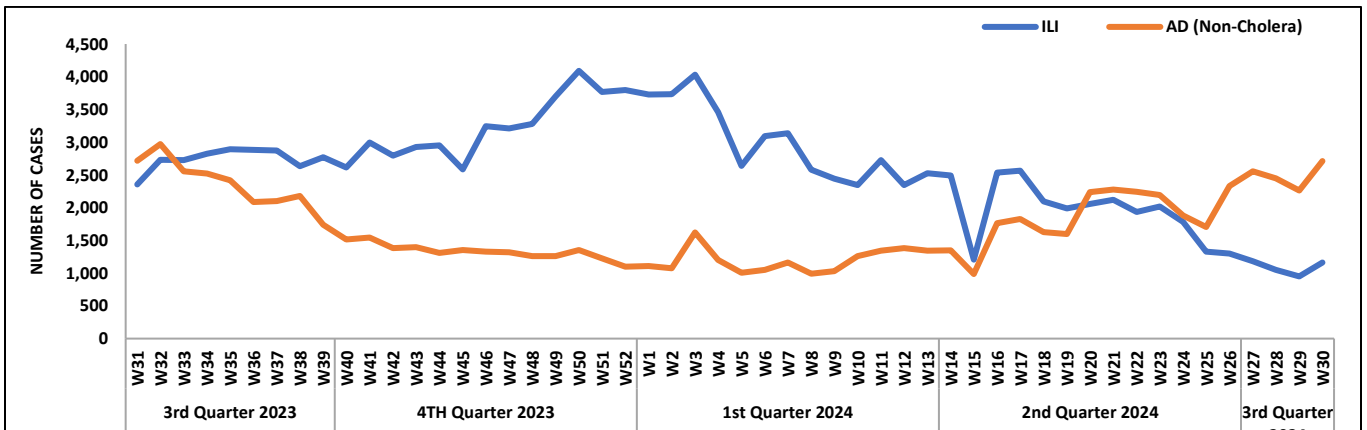


*Figure 9: Most frequent cases reported during Week 30, GB*



*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, Dengue, ALRI<5 Years and Measles cases.
- AD (Non-Cholera), TB, dog bite, Malaria, AWD (S. Cholera) and Typhoid cases showed an increasing trend this week.
- Three cases of AFP, three suspected cases of CCHF and Two suspected cases of HIV/ AIDS reported from Punjab. All are suspected cases and need field verification.

**Figure 11: Most frequently reported suspected cases during week 30, Punjab.**
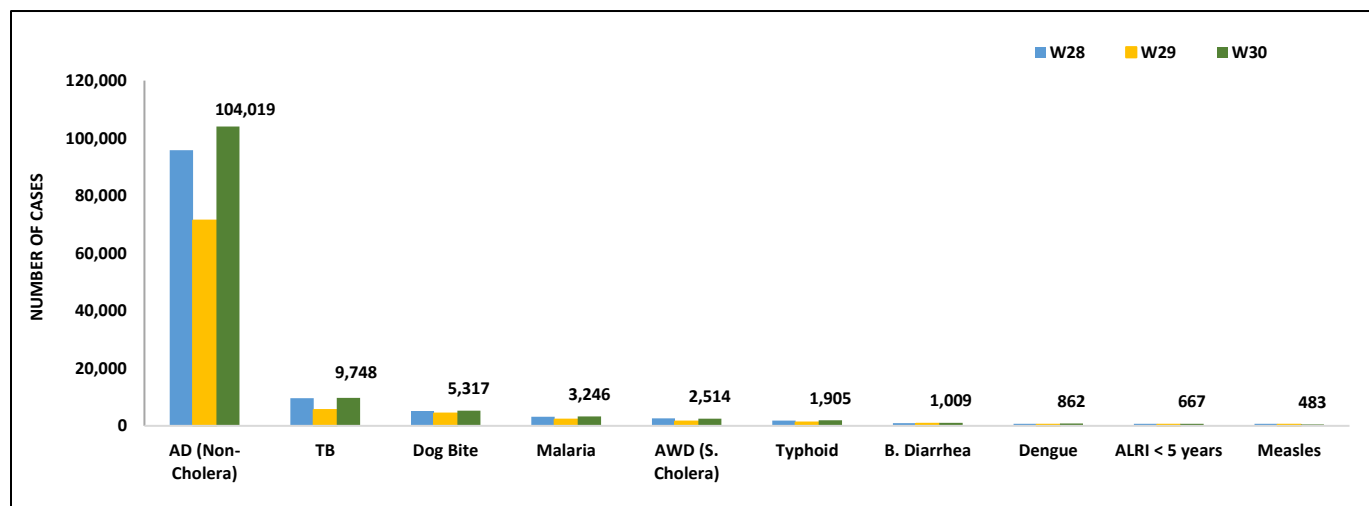


**Table 5: Public Health Laboratories confirmed cases of IDSR Priority Diseases during Epid Week 30**

| 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) | 8 | 0 | - | - | 6 | 0 | - | - | - | - |
| AD (Non-Cholera) | 118 | 2 | - | - | - | - | 6 | 4 | - | - |
| Malaria | 2,644 | 106 | - | - | - | - | - | - | - | - |
| CCHF | - | - | 14 | 1 | 1 | 0 | 5 | 0 | - | - |
| Dengue | 716 | 13 | 0 | 0 | - | - | 6 | 0 | - | - |
| VH (B) | 3,955 | 69 | 87 | 68 | - | - | - | - | 23 | 9 |
| VH (C) | 4,425 | 335 | 0 | 0 | - | - | - | - | - | - |
| VH (A&E) | 84 | 0 | 40 | 1 | - | - | - | - | - | - |
| Covid-19 | - | - | 33 | 0 | - | - | 2 | 0 | 35 | 0 |
| HIV | 402 | 0 | - | - | - | - | - | - | - | - |
| Influenza A | 0 | 0 | 0 | 0 | 1 | 0 | 40 | 0 | 0 | 0 |
| TB | 44 | 0 | - | - | - | - | - | - | - | - |
| Syphilis | 343 | 0 | - | - | - | - | - | - | - | - |
| Typhoid | 568 | 6 | - | - | - | - | 9 | 1 | - | - |
| Diptheria (Probabale) | - | - | - | - | - | - | 3 | 0 | - | - |
| Pertussis | - | - | - | - | - | - | 8 | 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 30, 2024*

| Provinces/Regions | Districts | Total Number of Reporting Sites | Number of Reported Sites for current week | Compliance Rate (%) |
|---|---|---|---|---|
| Khyber Pakhtunkhwa | Abbottabad | 111 | 103 | 93% |
| | Bannu | 239 | 134 | 56% |
| | Battagram | 63 | 18 | 29% |
| | Buner | 34 | 31 | 91% |
| | Bajaur | 44 | 39 | 89% |
| | Charsadda | 59 | 55 | 93% |
| | Chitral Upper | 34 | 26 | 76% |
| | Chitral Lower | 35 | 34 | 97% |
| | D.I. Khan | 114 | 107 | 94% |
| | Dir Lower | 74 | 74 | 100% |
| | Dir Upper | 53 | 44 | 83% |
| | Hangu | 22 | 18 | 82% |
| | Haripur | 72 | 67 | 93% |
| | Karak | 35 | 35 | 100% |
| | Khyber | 52 | 16 | 31% |
| | 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 | 19 | 45% |
| | Upper Kurram | 41 | 31 | 76% |
| | Malakand | 42 | 34 | 81% |
| | Mansehra | 136 | 104 | 76% |
| | Mardan | 80 | 75 | 94% |
| | Nowshera | 55 | 54 | 98% |
| | North Waziristan | 12 | 5 | 42% |
| | Peshawar | 151 | 107 | 71% |
| | Shangla | 39 | 33 | 85% |
| | Swabi | 63 | 60 | 95% |
| | Swat | 77 | 72 | 94% |
| | South Waziristan | 134 | 55 | 41% |
| | Tank | 34 | 34 | 100% |
| | Torghar | 14 | 13 | 93% |
| | Mohmand | 86 | 39 | 45% |
| | SD Peshawar | 5 | 1 | 20% |
| | SD Tank | 58 | 12 | 21% |
| | Orakzai | 68 | 18 | 26% |
| | Mirpur | 36 | 36 | 100% |
| | Bhimber | 20 | 20 | 100% |
| | Kotli | 60 | 60 | 100% |
| | Muzaffarabad | 45 | 45 | 100% |
| | Poonch | 46 | 46 | 100% |
| | Haveli | 39 | 39 | 100% |

| | | | | |
|---|---|---|---|---|
| **Azad Jammu Kashmir** | Bagh | 40 | 38 | 95% |
| | Neelum | 39 | 39 | 100% |
| | Jhelum Vellay | 29 | 29 | 100% |
| | Sudhnooti | 27 | 27 | 100% |
| **Islamabad Capital Territory** | ICT | 21 | 21 | 100% |
| | CDA | 15 | 8 | 53% |
| **Balochistan** | Gwadar | 25 | 0 | 0% |
| | Kech | 44 | 0 | 0% |
| | Khuzdar | 74 | 41 | 55% |
| | Killa Abdullah | 26 | 0 | 0% |
| | Lasbella | 55 | 55 | 100% |
| | Pishin | 69 | 46 | 67% |
| | Quetta | 43 | 30 | 70% |
| | Sibi | 36 | 0 | 0% |
| | Zhob | 39 | 28 | 72% |
| | Jaffarabad | 16 | 15 | 94% |
| | Naserabad | 32 | 32 | 100% |
| | Kharan | 30 | 30 | 100% |
| | Sherani | 15 | 15 | 100% |
| | Kohlu | 75 | 59 | 79% |
| | Chagi | 35 | 23 | 66% |
| | Kalat | 41 | 40 | 98% |
| | Harnai | 17 | 17 | 100% |
| | Kachhi (Bolan) | 35 | 32 | 91% |
| | Jhal Magsi | 26 | 26 | 100% |
| | Sohbat pur | 25 | 25 | 100% |
| | Surab | 32 | 32 | 100% |
| | Mastung | 45 | 45 | 100% |
| | Loralai | 33 | 33 | 100% |
| | Killa Saifullah | 28 | 27 | 96% |
| | Ziarat | 29 | 0 | 0% |
| | Duki | 31 | 0 | 0% |
| | Nushki | 32 | 29 | 91% |
| | Dera Bugti | 45 | 32 | 71% |
| | Washuk | 46 | 28 | 61% |
| | Panjgur | 38 | 0 | 0% |
| | Awaran | 23 | 7 | 30% |
| | Chaman | 25 | 22 | 88% |
| | Barkhan | 20 | 19 | 95% |
| | Hub | 33 | 24 | 73% |
| | Musakhel | 41 | 4 | 10% |
| | Usta Muhammad | 34 | 33 | 97% |
| **Gilgit Baltistan** | Hunza | 32 | 32 | 100% |
| | Nagar | 20 | 19 | 95% |
| | Ghizer | 40 | 40 | 100% |
| | Gilgit | 40 | 39 | 98% |
| | Diamer | 62 | 62 | 100% |
| | Astore | 54 | 54 | 100% |

| Region | District | | | |
|---|---|---|---|---|
| | Shigar | 27 | 27 | 100% |
| | Skardu | 52 | 52 | 100% |
| | Ganche | 29 | 29 | 100% |
| | Kharmang | 18 | 18 | 100% |
| Sindh | Hyderabad | 73 | 68 | 93% |
| | Ghotki | 64 | 64 | 100% |
| | Umerkot | 43 | 43 | 100% |
| | Naushahro Feroze | 107 | 85 | 79% |
| | Tharparkar | 282 | 246 | 87% |
| | Shikarpur | 59 | 59 | 100% |
| | Thatta | 52 | 52 | 100% |
| | Larkana | 67 | 67 | 100% |
| | Kamber Shadadkot | 71 | 71 | 100% |
| | Karachi-East | 23 | 16 | 70% |
| | Karachi-West | 20 | 20 | 100% |
| | Karachi-Malir | 37 | 37 | 100% |
| | Karachi-Kemari | 18 | 11 | 61% |
| | Karachi-Central | 11 | 9 | 82% |
| | Karachi-Korangi | 18 | 18 | 100% |
| | Karachi-South | 4 | 4 | 100% |
| | Sujawal | 54 | 51 | 94% |
| | Mirpur Khas | 106 | 102 | 96% |
| | Badin | 124 | 119 | 96% |
| | Sukkur | 63 | 62 | 98% |
| | Dadu | 88 | 85 | 97% |
| | Sanghar | 100 | 100 | 100% |
| | Jacobabad | 44 | 44 | 100% |
| | Khairpur | 169 | 152 | 90% |
| | Kashmore | 59 | 53 | 90% |
| | Matiari | 42 | 40 | 95% |
| | Jamshoro | 70 | 62 | 89% |
| | Tando Allahyar | 54 | 54 | 100% |
| | Tando Muhammad Khan | 40 | 40 | 100% |
| | Shaheed Benazirabad | 122 | 122 | 100% |

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# Persistent Polio Outbreak in Pakistan: A Call for Urgent Action.

Pakistan continues to grapple with a persistent polio outbreak, as evidenced by the recent confirmation of a twelfth wild poliovirus type 1 (WPV1) paralysis case in a child from Chakwal district, Punjab. This development underscores the critical need for intensified vaccination efforts to eradicate this debilitating disease.

The National Institute of Health's Regional Reference Laboratory for Polio Eradication confirmed WPV1 infection in a child from Miani Union Council, Chakwal, who developed paralysis on July 16. Additionally, Balochistan reported two more WPV1 paralysis cases: a three-year-old from Jhal Magsi and a 1.5-year-old from Killa Abdullah. The nationwide tally of twelve cases (nine in Balochistan, two in Sindh, and one in Punjab) highlights the persistent threat. The detection of WPV1 in environmental samples from multiple cities underscores the outbreak's widespread nature.

The recent confirmation of a polio case in a child from Chakwal district, Punjab, marks the first occurrence of the disease in the region within a decade. This alarming development underscores the persistent threat of polio in Pakistan and necessitates intensified efforts to eradicate the virus. To understand the emergence of polio in Chakwal, a thorough case investigation is underway, focusing on immunization rates and outbreak circumstances. A comprehensive strategy is being implemented to contain the virus through collaboration with provincial authorities.

To protect children from the irreversible consequences of polio, parents and caregivers are urged to adhere strictly to the complete polio vaccination schedule. Multiple doses of the oral polio vaccine are essential for developing robust immunity. The polio eradication program remains committed to achieving widespread vaccine coverage across Pakistan.

The resurgence of polio necessitates sustained efforts to eliminate this preventable disease. Comprehensive vaccination campaigns, coupled with rigorous surveillance and response measures, are crucial to safeguard children from the devastating impact of polio.

# National Institute of Health (NIH) Unveils Roadmaps for Enhanced Public Health Emergency Management (PHEM) & Integrated Disease surveillance and response (IDSR)

The National Institute of Health (NIH) successfully convened a two-day orientation workshop on Public Health Emergency Management (PHEM) culminating in the launch of the national roadmaps for PHEM and Integrated Disease Surveillance and Response (IDSR) for the period 2024-2028. Held on July 27th and 28th, the event brought together key stakeholders, including senior officials from the Ministry of National Health Services, Regulations & Coordination, the UK Health Security Agency (UKHSA), World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC).

A cornerstone of the workshop was the dissemination of the PHEM and IDSR roadmaps to provincial representatives and key stakeholders. These comprehensive roadmaps outline strategic approaches for effectively managing public health emergencies and fortifying disease surveillance systems. The IDSR roadmap is a significant stride towards mitigating the morbidity, mortality, and socioeconomic impacts of epidemics and public health crises in Pakistan. It meticulously delineates the key steps for the subsequent phase of IDSR implementation nationwide.

As the country's leading public health institution, the NIH, in collaboration with development partners, is steadfast in its commitment to bolstering Pakistan's public health emergency management system in alignment with the Global Health Security (GHS) agenda and the International Health Regulations (IHR) 2005. The five-year National PHEM Roadmap will serve as a guiding document, addressing critical areas such as the development of a skilled public health workforce, system optimization, streamlined intersectoral collaboration, robust monitoring and evaluation, and strategic direction in harmony with regional and global initiatives. Collectively, these efforts aim to cultivate a resilient public health emergency management system for Pakistan.

Following the roadmap distribution, comprehensive orientation sessions were conducted to equip provincial representatives and their teams with a thorough understanding of the implementation process. The workshop further included a series of informative presentations and interactive discussions that underscored the pivotal role of Public Health Emergency Operations Centers (PHEOCs) in coordinating and responding to public health crises. Experts from the NIH and partner organizations emphasized the indispensable contributions of PHEM and IDSR to building robust health systems and safeguarding public health.

# Provincial Workshop on Multi-Hazard Public Health Risk Assessment and Profiling: A Milestone in Public Health Management in Balochistan

The National Institute of Health (NIH), in collaboration with the Health Department Balochistan, successfully conducted the Provincial Workshop on Multi-Hazard Public Health Risk Assessment and Profiling in Quetta, Balochistan. This collaboration marks a significant step towards enhancing public health risk management and preparedness in Pakistan, especially in regions like Balochistan with unique challenges.

A remarkable aspect of this workshop was the convergence of 12 different departments and 5 partners under one roof for four days to collaboratively undertake the public health risk profiling for Balochistan. This unprecedented collaboration fostered a strong spirit of multi-sectoral coordination and advocacy.

Balochistan faces distinct obstacles in public health risk management due to geographical isolation, limited healthcare infrastructure, and socio-economic factors. Engaging local stakeholders was crucial for assessing risks, prioritizing actions, and developing tailored strategies. The workshop brought together diverse participants to identify and evaluate public health hazards, including infectious disease outbreaks, natural disasters, and environmental health threats.

Strategies for prevention, mitigation, and response to public health risks were developed, emphasizing surveillance systems, strengthened healthcare infrastructure, and community engagement. The presence of five Director Generals from Balochistan (Health, Livestock, Agriculture,

Education, and Treasuries) at the closing ceremony underscored the high-level commitment to this initiative.

While the workshop represents a positive development, translating discussions into concrete actions is essential. Implementing well-defined strategies, allocating adequate resources, and maintaining engagement with communities and healthcare providers are crucial for achieving tangible results.

The successful execution of the workshop signifies a significant advancement in Balochistan's public health preparedness and response framework. The collaborative effort between NIH and the Health Department Balochistan highlights the importance of inter-institutional cooperation in addressing public health challenges. Regular updates of risk assessments, implementation of developed strategies, and monitoring their effectiveness are vital for enhancing Pakistan's public health resilience and protecting its population from public health emergencies.

# Nurturing A Heathier Pakistan: The Imperative Of Breastfeeding

World Breastfeeding Week, observed annually from August 1 to 7, is a global platform dedicated to promoting, protecting, and supporting breastfeeding. This year's theme, "Closing the Gap: Breastfeeding Support for All," underscores the critical importance of addressing disparities in breastfeeding rates and ensuring equitable access to support services for mothers worldwide. Pakistan, with its unique socio-cultural and economic landscape, presents a compelling case for prioritizing breastfeeding.

Breastfeeding is undeniably essential for optimal infant health and development, offering numerous benefits for both mother and child. Breast milk provides the perfect balance of nutrients, antibodies, and growth factors, reducing the risk of infections, allergies, and chronic diseases. Studies have shown that breastfed infants have a lower incidence of respiratory infections, diarrhea, and sudden infant death syndrome (SIDS). Additionally, breastfeeding promotes cognitive development and strengthens the bond between mother and child. For mothers, breastfeeding offers several advantages, including reduced risk of postpartum hemorrhage, type 2 diabetes, and breast and ovarian cancer.

However, Pakistan faces significant challenges in achieving optimal breastfeeding rates. According to the National Nutrition Survey of 2018, a mere 39% of infants aged 0-5 months are exclusively breastfed, falling short of the global target of 50%.

Cultural norms, limited awareness, and inadequate support systems hinder exclusive breastfeeding in Pakistan. Many women grapple with early introduction of complementary foods, workplace discrimination, and insufficient access to skilled breastfeeding counseling. A 2021 study by the Pakistan Medical Association revealed a critical gap in breastfeeding support services, with only 25% of healthcare facilities providing adequate counseling.

To effectively address these challenges, a comprehensive approach is required. Government policies must prioritize maternity leave, breastfeeding breaks, and lactation-friendly workplaces. While the recent amendment to the Pakistan Labor Law is a positive step, robust enforcement and implementation are essential. Healthcare providers must receive comprehensive training in breastfeeding management and counseling to deliver high-quality support to mothers. Furthermore, community-based initiatives and mass media campaigns can play vital roles in fostering breastfeeding-friendly environments and promoting breastfeeding as the norm.

Vulnerable populations, including mothers in rural areas, low-income households, or with underlying health conditions, require targeted support. By investing in breastfeeding support programs, Pakistan can significantly improve maternal and child health outcomes, reduce infant mortality rates, and contribute to the overall well-being of its population.

Ultimately, achieving optimal breastfeeding rates necessitates a collaborative effort involving

governments, healthcare providers, communities, and individuals. By working together, we can create an environment where every mother feels empowered to breastfeed her child. World Breastfeeding Week serves as a timely reminder of this collective responsibility.

# Notes from field activities

## Preliminary Outbreak Investigation Report: Acute Watery Diarrhea (Suspected Cholera) Outbreak at UC 91 Lohlay Shah, Tehsil & District Jhang, Pakistan (18-7-2024 to 22-7-2024)

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

### Background

On July 16, 2024, the Pediatric Department of DHQ Hospital, Jhang, reported a cluster of 13 suspected cholera cases within two hours among individuals residing in the same area. The common exposure factor was consumption of water from a Sabeel (public water dispenser) provided during the Ashoor religious observance. This cluster was confirmed by the Head of the Pediatric Department and Medical Superintendent of DHQ Hospital, Jhang. In response, a team comprising Dr. Muhammad Mohsan Watto (Epidemiologist, Punjab) and Dr. Javaria Altaf (FETP Fellow, 15th Cohort) was dispatched by the Provincial Directorate of Health Services to conduct an outbreak investigation.

### Objectives

The primary objectives of this investigation were:

1. To determine the exact burden of the disease within the affected community.
2. To identify the source of infection and the underlying cause of the outbreak.
3. To conduct active surveillance to detect additional cases within the community.

4. To collect and analyze laboratory specimens to confirm the etiological agent.

### Methods

A descriptive study was conducted to characterize the outbreak in terms of person, place, and time. This was followed by a case-control study to identify potential risk factors associated with cholera disease.

A standardized case definition was developed based on the World Health Organization (WHO) criteria for cholera. Cases were defined as individuals with acute watery diarrhea (three or more loose stools within 24 hours) without other obvious causes, and residing in the affected area during the outbreak period. Active case finding was conducted in the affected community through household visits and screening of individuals with diarrhea-like symptoms. Medical records from healthcare facilities were reviewed to identify additional cases.

Controls were selected from the same geographic area as cases, matched by age, sex, and residence. A 1:2 case-to-control ratio was maintained to ensure adequate statistical power. Controls were individuals without diarrhea or other gastrointestinal symptoms during the outbreak period.

A structured questionnaire was administered to cases and controls to collect information on demographic characteristics, clinical symptoms, exposure history, water sources, sanitation practices, and other potential risk factors. Data were collected on a standardized form for consistency and completeness.

Descriptive statistics were used to characterize the outbreak population and identify trends in terms of age, sex, and temporal distribution of cases. Case-control analysis was conducted to estimate the odds ratios for potential risk factors associated with cholera disease. Statistical significance was determined using appropriate statistical tests

## Findings

A total of 56 cases were identified during the outbreak investigation, with a slightly higher incidence among male individuals (31 males, 25 females). The pediatric age group was disproportionately affected, indicating a higher susceptibility to the illness in this population. The predominant clinical manifestations of the disease included severe dehydration (present in 71% of cases), vomiting (61%), diarrhea (universally present), fever (40%), and abdominal pain (68%). To facilitate laboratory confirmation of the etiological agent, rectal swabs from six affected individuals and three water samples from the affected area were collected and dispatched to the Microbiology Department of the National Institute of Health for analysis. Results from these laboratory investigations are pending.
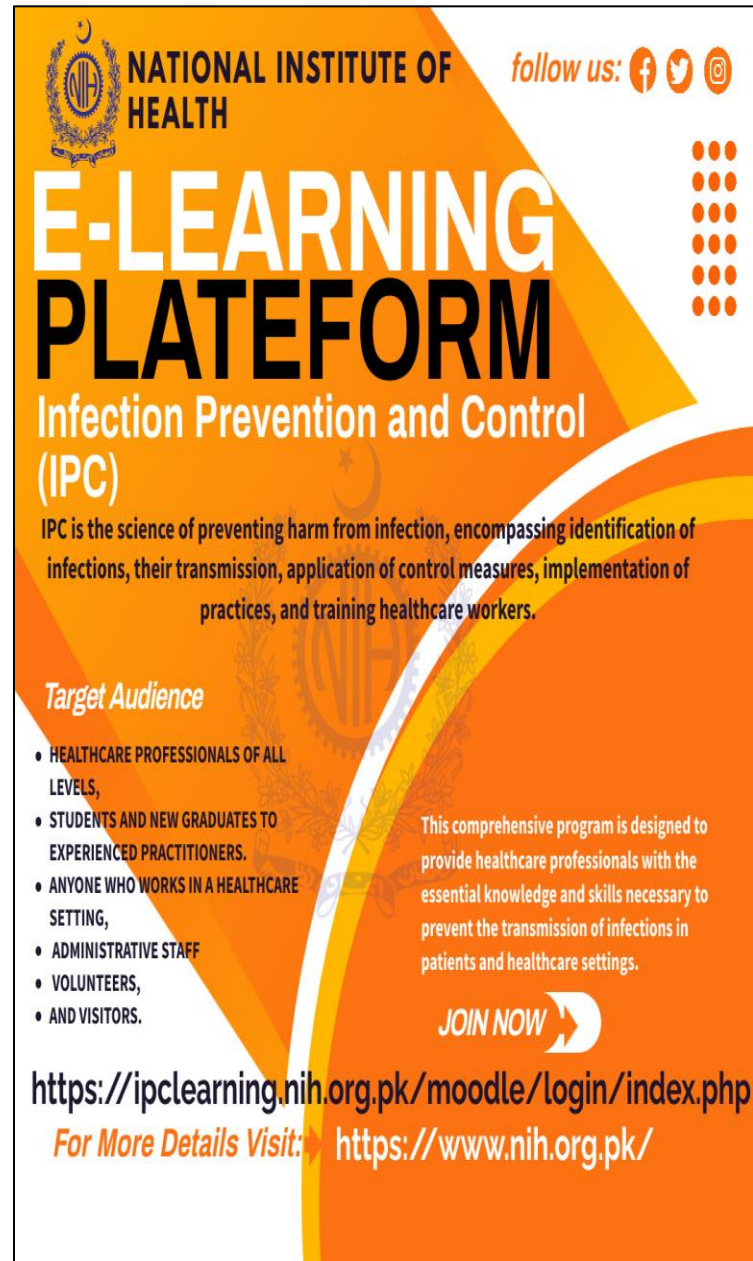
Epidemiological inquiry revealed a strong association between attendance at the Ashoor event and disease occurrence, with 85% of cases reporting participation in the event. The consumption of water from the Sabeel during the event is suspected as a potential vehicle for disease transmission. The primary source of drinking water for the majority of households in the affected area was identified as bore wells.

## Recommendations

1. Continue active case finding within the community for at least one week, with regular follow-up of identified cases.

2. Maintain the provision of medical services to the affected population.

3. Conduct regular health education and community awareness sessions on hygiene practices, including handwashing and safe water consumption.

4. Collaborate with Water and Sanitation Agency (WASA), the Municipal Committee, and local administration to implement long-term strategies for proper waste disposal, water chlorination, and water filtration facilities at the tehsil level.

## Conclusion

The outbreak was attributed to the consumption of contaminated tap water used for the Sabeel during the Ashoor event. The majority of cases presented with severe dehydration and diarrhea. This investigation highlights the importance of safe drinking water practices and the need for sustained community education to prevent similar outbreaks.

# National Institute of Health E-LEARNING Program

## Infection Prevention and Control (IPC) Course

### Introduction

Greetings, and welcome to the Infection Prevention and Control (IPC) course. This comprehensive program is designed to provide healthcare professionals with the essential knowledge and skills necessary to prevent the transmission of infections in patients and healthcare settings. In today's global healthcare environment, the significance of IPC cannot be overstated. This is particularly true in light of recent challenges such as the COVID-19 pandemic, which has highlighted the critical role that IPC plays in safeguarding the safety of patients, healthcare workers, and the public.

Infectious diseases pose a significant threat to public health, causing millions of deaths and disabilities each year. Healthcare settings are particularly vulnerable to the spread of infection, as they are home to a large number of people who are already sick or injured, and who may be more susceptible to infection.

IPC practices are designed to prevent the spread of infections between patients, healthcare workers, and visitors. These practices include a variety of measures, such as hand hygiene, standard precautions, transmission-based precautions, aseptic techniques, cleaning, disinfection, and sterilization. Effective IPC practices are essential for ensuring the safety of patients and healthcare workers. IPC practices can also help to reduce the burden of healthcare-associated infections (HAIs), which can lead to increased morbidity, mortality, and costs.

This course will provide you with a comprehensive overview of IPC principles, strategies, and practices. You will learn about the various types of infections, how they are transmitted, and how to prevent their spread. You will also learn about the most recent IPC guidelines and recommendations.

### *Upon completion of this course, you will be able to:*

- Define IPC and explain its significance in healthcare
- Identify the various types of infections and how they are transmitted
- Apply IPC principles and strategies to prevent the spread of infection in healthcare settings
- Implement and maintain effective IPC practices in your own workplace
- Train other healthcare workers on IPC practices

### Overview of the Infection Prevention and Control (IPC) Course

Infection prevention and control (IPC) is a foundational component of safe and effective healthcare delivery. It encompasses a holistic approach to preventing the transmission of infections between patients, healthcare workers, and visitors. This course has been carefully designed to provide healthcare professionals with a comprehensive understanding of IPC principles, strategies, and practices. It covers a broad spectrum of topics, from the fundamentals of IPC to specialized departmental considerations and emergency management.

Specifically, the course will explore:

I. The core principles of IPC, including the chain of infection, standard precautions, and transmission-based precautions.

II. The microbiological basis of infection, including the different types of pathogens and their modes of transmission.
III. The principles and practices of aseptic technique, as well as their application to various procedures.
IV. The different methods of cleaning, disinfection, and sterilization, and how to choose the appropriate method for specific surfaces and equipment.
V. The proper management of healthcare waste, including segregation, storage, and disposal.
VI. The relationship between IPC and patient safety, and how to implement IPC practices to protect patients from harm.
VII. The principles of antimicrobial stewardship and how to promote the appropriate use of antibiotics.
VIII. The occupational hazards faced by healthcare workers and how to protect themselves from infection.
IX. IPC practices in specialized departments, such as the ICU, burn unit, and operating room.
X. The surveillance of healthcare-associated infections (HAIs) and how to use this data to improve IPC practices.
XI. IPC in emergencies, such as pandemics and natural disasters.

## Who Should Attend this Course

This course is designed for healthcare professionals of all levels, from students and new graduates to experienced practitioners. It is also beneficial for anyone who works in a healthcare setting, such as administrative staff, volunteers, and visitors. By learning about IPC principles and practices, you can help to keep yourself, your patients, and your colleagues safe.

## Course Content

Each module in the course is designed to provide you with a deep understanding of a specific IPC topic. Modules include:

### Module 1: Basic Concepts in Infection Prevention and Control

This module covers the core components of an IPC program, as well as the roles and responsibilities of the IPC committee and team. You will also learn about multimodal IPC strategies and the global perspective on IPC.

### Module 2: Microbiology and IPC

This module explores the microbiology and risk factors of infection, as well as the chain of infection and the difference between colonization and infection. You will also learn about laboratory diagnostics, sample collection, and transportation.

### Module 3: Standard and Transmission-Based Precautions

This module reviews standard precautions and transmission-based precautions. You will learn how to apply these precautions to protect yourself, your patients, and your colleagues from the spread of infection.

### Module 4: Aseptic Techniques, Cleaning, Disinfection, Sterilization, and Single-Use Devices

This module covers medical and surgical aseptic techniques, as well as the different types of cleaning, disinfection, sterilization, and single-use devices. You will also learn about laundry and the decontamination of endoscopes and intensive care unit instruments.

### Module 5: Management of Healthcare Waste

This module explores the definition, classification, hazards, categories, and sources of healthcare waste. You will also learn about waste segregation, handling, transportation, storage, and disposal methods.

## Module 6: IPC and Patient Safety

This module reviews the World Health Organization (WHO) Action Plan for Patient Safety, including the seven core components. You will also learn about the infection prevention component of patient safety and the Patient-Friendly Hospital Initiative.

## Module 7: Antimicrobial Stewardship

This module explores the microbiological basis of antimicrobial resistance, as well as antibiograms and antimicrobial stewardship. You will also learn about the AWaRe list of antimicrobials.

## Module 8: Occupational Health

This module covers vaccination and work restriction guidelines, risk assessment, the responsibilities of healthcare facilities, environmental health, and post-exposure prophylaxis. You will also learn about incident reporting.

## Module 9: IPC in Specialized Departments

This module explores IPC in specialized departments, including the ICU, burn unit, dialysis center, NICU, cardiac ICU, dental services, ER, and laboratory.

## Module 10: Healthcare-Associated Infection Surveillance

This module reviews the definition and types of HCAIs, as well as HCAI surveillance types and tools. You will also learn about care bundles, multidrug-resistant organisms (MDROs), and the reporting of HCAIs.

## Module 11: Emergency Management and the Role of IPC in Emergencies

This module explores IPC in health emergencies, outbreaks, and pandemics. You will also learn about the organizational structure of IPC, outbreak investigation at the community and facility levels, notifiable diseases in Pakistan, and IPC in COVID-19 in healthcare facilities.

## Why This Course Matters:

The global impact of infectious diseases, as exemplified by the COVID-19 pandemic, underscores the critical role that infection prevention and control (IPC) plays in safeguarding public health. With over 66 million infections and 6.8 million deaths worldwide, IPC practices are essential for disease prevention and control. This course is designed to equip healthcare professionals, including nurses, doctors, and infection control practitioners, with the knowledge and skills necessary to enhance IPC practices at the national, provincial, and facility levels. It encompasses a wide range of principles, strategies, and practices, including:

- Standard precautions, such as hand hygiene, personal protective equipment (PPE), and safe injection practices
- Transmission-based precautions, which are tailored to specific pathogens and modes of transmission
- Aseptic techniques, which are used to maintain sterility during procedures
- Cleaning, disinfection, and sterilization of surfaces and equipment
- Healthcare waste management

Effective IPC practices are essential for ensuring the safety of patients, healthcare workers, and the public. They can help to reduce the incidence of healthcare-associated infections (HAIs), which can lead to decreased morbidity, mortality, and costs. By improving IPC, one can effectively address the challenges posed by infectious diseases, protect our healthcare systems, and safeguard public health.

## Course Content

This course is divided into several modules, each of which covers a different aspect of infection prevention and control (IPC). Each module is rich in content, including:

- **Lectures**: Engaging lectures delivered by experts in the field of IPC. These lectures will cover key concepts and principles, such as the chain of infection, standard precautions, and transmission-based precautions. A lecture on standard precautions might cover topics such as hand hygiene, personal protective equipment (PPE), and safe injection practices. A lecture on transmission-based precautions might cover topics such as airborne precautions, contact precautions, and droplet precautions.

- **Support materials:** Additional resources to help you learn more about the material, such as reading materials, case studies, and reference materials. These resources can be used to supplement the lectures and to explore topics in more depth. A reading material on aseptic technique might include step-by-step instructions on how to perform a sterile dressing change. A case study on healthcare-associated infections (HAIs) might describe a real-world example of a HAI outbreak and how it was controlled. A reference material on IPC guidelines might include links to the latest recommendations from the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC).

- **Videos**: Visual aids and demonstrations to help you understand the material more concretely. Videos can be used to illustrate concepts and techniques, and to see how IPC practices are implemented in real-world settings. A video on hand hygiene might demonstrate how to perform proper handwashing and hand sanitizing techniques. A video on aseptic technique might show how to perform a sterile glove change. A video on transmission-based precautions might show how to don and doff PPE safely.

In addition to the above, the course may also include other types of content, such as interactive exercises, quizzes, and assignments. These activities are designed to help you assess your understanding of the material and to develop your IPC skills.

## Certification and Evaluation

To receive your course certificate, you must successfully complete the following tasks:

- **Quizzes**: You will be required to complete a quiz at the end of each module. Each quiz will cover the key concepts and principles covered in the module. Each quiz will consist of a mix of multiple choice, true/false, and fill-in-the-blank questions. You will have a limited amount of time to complete each quiz, so it is important to be prepared. You will need to achieve a passing score of 60% on each quiz in order to progress to the next module.

- **Assignments**: There will be a mandatory assignment to submit at the end of each module. Each assignment will be designed to assess your understanding of the material and to develop your IPC skills. The assignments will vary depending on the specific topic covered in the module. However, all assignments will be designed to assess your understanding of the material and to develop your IPC skills. For example, you may be asked to write a case report on a HAI outbreak, to develop an IPC policy for a specific healthcare setting, or to create a training presentation on a particular IPC practice.

It is important to note that the quizzes and assignments are designed to be challenging but achievable. If you have paid attention to the lectures, read the support materials, and watched the videos, you should be able to successfully complete all of the required tasks.

Once you have successfully completed all of the required tasks, you will be awarded a course certificate. This certificate will attest to your knowledge and skills in infection prevention and control.

# Commentary

## Pakistan's Silent Epidemic: Unveiling the Lung Cancer Crisis in Pakistan

*Muhammad Hamza Ikram*
*Scientific Officer, NIH,*
*Islamabad*

Lung cancer, a malignancy characterized by uncontrolled cell growth in lung tissues, is a leading cause of cancer-related deaths globally. Despite advancements in medical technology and therapeutic interventions, the prognosis for lung cancer patients remains poor due to late-stage diagnosis and limited access to effective treatments.

Lung cancer is the most common cancer worldwide, with an estimated 2.1 million new cases and 1.8 million deaths annually, representing about 11.6% of all cancer cases and 18.4% of cancer deaths (WHO, 2021). The incidence rates vary significantly across different regions, influenced by smoking prevalence, environmental factors, and genetic predispositions. Developed countries like the United States, China, and European nations report high incidence rates, while developing regions, though currently showing lower rates, are experiencing a rapid increase.

The primary risk factor for lung cancer is tobacco smoking, accounting for approximately 85% of cases (American Cancer Society, 2020). Other significant risk factors include exposure to radon gas, occupational hazards such as asbestos, and air pollution. Genetic factors and family history also play roles, albeit to a lesser extent compared to environmental factors.

Lung cancer has a high mortality rate due to its typically late-stage diagnosis. The 5-year survival rate for lung cancer varies by stage and region but remains low overall, with an average of around 19.4% in the United States (SEER, 2021). Early detection through screening programs and advancements in targeted therapies and immunotherapies offer hope for improved survival rates.

## Lung Cancer in Pakistan: A Closer Look

Pakistan, a developing country with a population exceeding 220 million, faces significant public health challenges, including a rising burden of lung cancer. Epidemiological data indicate a growing prevalence of lung cancer, particularly in urban areas where industrial pollution and smoking rates are higher. According to the Pakistan Medical Research Council (PMRC), lung cancer constitutes approximately 5.9% of all cancers, with a higher incidence in males compared to females (PMRC, 2020).

## Mortality Statistics

Lung cancer mortality in Pakistan is alarmingly high, reflecting global trends of late-stage diagnosis and limited treatment options. The PMRC reports that lung cancer is responsible for about 7.3% of cancer-related deaths in Pakistan (PMRC, 2020). The 5-year survival rate remains low, often less than 10%, primarily due to inadequate screening programs and lack of early detection.

## Socioeconomic Factors and Cultural Beliefs

- **Socioeconomic Factors**: Socioeconomic status (SES) significantly impacts lung cancer outcomes in Pakistan. Lower SES is associated with higher smoking rates, increased exposure to environmental pollutants, and limited access to healthcare services. Many individuals from lower socioeconomic backgrounds cannot afford diagnostic tests or treatments, leading to delayed diagnosis and poor prognosis. A study highlights that individuals from lower-income groups are more likely to present with advanced-stage lung cancer due to these disparities.

- **Cultural Beliefs:** Cultural beliefs and social stigma also influence lung cancer outcomes. In many Pakistani communities, there is a

strong cultural stigma associated with cancer, often perceived as a death sentence. This stigma can discourage individuals from seeking medical help early, further complicating early diagnosis efforts. Additionally, traditional beliefs in alternative medicine can lead to delays in seeking conventional medical treatments.

- **Healthcare Access:** Access to healthcare services is a critical factor affecting lung cancer outcomes in Pakistan. The healthcare infrastructure in Pakistan is underdeveloped, with significant disparities between urban and rural areas. Urban centers have better access to diagnostic facilities and specialized cancer treatment centers, while rural areas often lack basic healthcare services. This urban-rural divide exacerbates the challenges of timely diagnosis and treatment.

- **Impact of Air Pollution:** Air pollution is a significant environmental risk factor for lung cancer in Pakistan. Major cities like Karachi, Lahore, and Islamabad experience high levels of air pollution due to industrial emissions, vehicular exhaust, and construction activities. Studies have shown a correlation between long-term exposure to polluted air and an increased risk of lung cancer. Addressing air pollution through stringent regulations and public awareness campaigns is essential for reducing the lung cancer burden in Pakistan.

## Challenges in Diagnosis and Treatment

- **Diagnostic Challenges:** Early detection of lung cancer is crucial for improving survival rates. However, Pakistan faces several challenges in this regard. Limited availability of advanced diagnostic tools, such as low-dose computed tomography (CT) scans, hampers early detection efforts.

Additionally, the lack of awareness about lung cancer symptoms among the general population and healthcare providers contributes to delays in diagnosis.

- **Treatment Challenges:** Treatment options for lung cancer in Pakistan are constrained by resource limitations. While chemotherapy and radiotherapy are available in major urban centers, access to advanced treatments like targeted therapies and immunotherapies is limited. Furthermore, the high cost of cancer treatment poses a significant barrier for many patients. A study found that financial constraints are a primary reason for treatment abandonment among lung cancer patients in Pakistan.

## Preventive Measures and Public Health Strategies

- **Tobacco Control**: Effective tobacco control policies are vital for reducing lung cancer incidence. Pakistan has implemented several measures, such as graphic health warnings on cigarette packs and bans on tobacco advertising. However, enforcement remains weak, and smoking rates, particularly among men, remain high. Strengthening tobacco control laws, increasing taxes on tobacco products, and implementing comprehensive smoking cessation programs are crucial steps towards reducing lung cancer rates.

- **Public Awareness and Screening Programs**: Raising public awareness about lung cancer symptoms and risk factors is essential for early detection. Public health campaigns should focus on educating the population about the dangers of smoking and the importance of early medical consultation for respiratory symptoms. Additionally, establishing nationwide lung cancer screening programs, particularly for high-risk

populations, can significantly improve early detection rates.

- **Improving Healthcare Access:** Improving healthcare infrastructure and access is imperative for better lung cancer outcomes. Expanding diagnostic and treatment facilities to rural and underserved areas, along with training healthcare professionals in early detection and management of lung cancer, can bridge the urban-rural gap. Collaborations with international cancer organizations can also provide technical support and funding for enhancing cancer care services in Pakistan.

- **Research and Data Collection:** Investing in cancer research and data collection is crucial for informed public health planning. Establishing a national cancer registry can provide accurate data on lung cancer incidence, prevalence, and outcomes, facilitating targeted interventions. Furthermore, research into the genetic and environmental factors contributing to lung cancer in the Pakistani population can inform tailored prevention and treatment strategies.

## Conclusion

Lung cancer remains a significant public health challenge globally and in Pakistan. The high incidence and mortality rates, coupled with socioeconomic and cultural barriers, complicate efforts to combat this disease effectively. Comprehensive public health strategies, including stringent tobacco control, improved healthcare access, public awareness campaigns, and robust research initiatives, are essential for reducing the burden of lung cancer in Pakistan. By addressing these multifaceted challenges, Pakistan can make strides towards better lung cancer outcomes and ultimately improve the overall health and well-being of its population.

## Knowledge Hub

### "Protect Your Lungs, Save Your Life: Early Detection and Prevention of Lung Cancer"

Lung cancer is a severe health risk that affects millions worldwide. To reduce its impact, we must embrace preventive measures and strive for early detection. Here are some steps you can take to protect your lungs and potentially save your life:

1. **Kick the smoking habit:** Smoking is the leading cause of lung cancer. Quitting smoking, or avoiding starting in the first place, significantly reduces your risk.

2. **Avoid exposure to secondhand smoke:** Limit your exposure to environments with tobacco smoke as secondhand smoke is harmful to your lungs and has been linked to lung cancer.

3. **Test for radon:** A naturally occurring radioactive gas, radon can contribute to lung cancer if it builds up in your home. Have your home tested and use mitigation techniques, if necessary.

4. **Protect against workplace hazards:** In certain jobs, workers might be exposed to harmful substances like asbestos, arsenic, or diesel exhaust. Follow safety regulations and use protective equipment whenever necessary.

5. **Maintain a healthy lifestyle:** Eating a well-balanced diet, exercising regularly, and adopting good habits promote overall wellness which can lower the risk of developing lung cancer.

6. **Pay attention to lung health:** Be aware of any persistent coughs, shortness of breath, chest pain, or unexplained weight loss – these could be signs of lung cancer – and consult a physician immediately when such symptoms occur.

Early detection is vital in the fight against lung cancer. Regular screenings with low-dose CT scans are

encouraged for high-risk individuals like smokers or those with occupational exposure to hazardous materials. Stay vigilant and proactive in safeguarding your lungs – it could mean the difference between life and death!

Stay informed and stay safe!

## LUNG CANCER
### KNOW THE SYMPTOMS

**B** Blood when you cough or spit

**R** Recurring respiratory infections

**E** Enduring cough that is new or different

**A** Ache or pain in shoulder, back or chest

**T** Trouble breathing

**H** Hoarseness or wheezing

**E** Exhaustion, weakness or loss of appetite

If any of these symptoms are troubling you, see your doctor.

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AUGUST 1
**WORLD LUNG CANCER DAY**

**RISK FACTORS**

80% smoking
30% environment
40% radiation
10% passive smoking

**SYMPTOMS**

chest pain | coughing up blood | weight loss | tingling fingers | persistent cough

GENDER — female — male
AGE — 0-45 (10%) | 46-60 (52%) | 61-75 (38%)

**LUNG CANCER PREVENTION TIPS**

Eat a variety of fruits, vegetables, whole grains and legumes

Exercise regularly

Avoid smoking and passive smoking

Check your home for radon

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