

Epidemiological Week N<sup>o</sup> 17 (22-28 April 2006)

01 May 06/ Vol. 23/ DEWS 2006-17

## Contents

|   |    |
|---|----|
| Reporting Units.....  | 2  |
| Total number of consultations.....                          | 2  |
| DEWS Data, Epidemiological Week N <sup>o</sup> 17 2006..... | 3  |
| DEWS Data, Epidemiological Weeks N <sup>o</sup> 14-17.....  | 5  |
| Acute Diarrhoea.....  | 7  |
| Bloody Diarrhoea.....                                       | 7  |
| Acute Jaundice Syndrome.....                                | 8  |
| Malaria.....  | 8  |
| Measles.....  | 9  |
| Acute Respiratory Infection.....                            | 10 |
| Outbreak Alert and Response.....                            | 11 |
| Acute Flaccid Paralysis .....                               | 11 |
| Acute Jaundice Syndrome.....                                | 11 |
| Meningitis.....   | 12 |
| Measles .....   | 12 |
| Reported cases and deaths per District, AJK.....            | 13 |
| Reported cases and deaths per District, NWFP.....           | 14 |



Acute Jaundice Syndrome cases in Jahala and Chalandrat village, Mallot Union Council, Dhirkot Tehsil, Bagh (see outbreak alert section)



## Highlights

- In the past month (Epidemiological weeks 14-17 inclusive), a total of 329,972 health events under surveillance were reported including 50 deaths.
- This week, 199 of the 215 reporting units (93%) reported a total of 87,176 consultations, including 10 deaths.
- The main causes for consultations this week are Acute Respiratory Infection (22%), Acute Watery Diarrhoea (7%), Fever of Unexplained Origin (6%) and (4%) injuries.
- A total of 18,840 ARI cases with 1 related deaths (CFR, 0.005).
- Four Hundred-three (403) cases of Bloody diarrhoea were reported; of them, 50% were from Muzaffarabad district.
- Eighteen cases of suspected measles were reported; of them, 9 cases were from Muzaffarabad district.
- One case of Acute Flaccid Paralysis was reported from Mansehra district.

The Weekly Morbidity and Mortality Report (WMMR) is published by the Ministry of Health of Pakistan (MOH) and the World Health Organization (WHO). The WMMR is built on surveillance data that health service providers and NGOs transmit on a weekly basis from health facilities and hospitals in those areas affected by the earthquake that struck Pakistan on 8 October 2005.

The WMMR objectives are to monitor the trend of health conditions over a period of time and provide vital information to all health partners. The WMMR is only a snapshot of the health conditions in those facilities where events are registered and data collected and does not necessarily reflect the situation from other health facilities.

The WMMR is a publication that has been developed for emergencies and previously used in other areas such as the Darfur Crisis.

The WMMR is published by the World Health Organization (WHO),  
Health Emergency Operation Centre, House #6, Street #20, F-7/2, Islamabad, Pakistan  
For More Information, please contact:

Dr. Hammam El Sakka, Senior Medical Epidemiologist, WHO/EHA/Pakistan; [elsakkah@egpak.emro.who.int](mailto:elsakkah@egpak.emro.who.int) or  
Dr. Birjees Mazher Kazi, Chief, Public Health Laboratories Division, NIH MOH; [kazis@isb.paknec.com.pk](mailto:kazis@isb.paknec.com.pk) or  
WHO Webpage: <http://www.whopak.org/disaster>

## Reporting Units

The total number of reporting sites trained for DEWS in the earthquake affected areas remains 215; 199 (93%) sent their surveillance data on time during the epidemiological week 17 (22-28 April 2006). The reporting timeliness of the DEWS system has decreased by 2% compared with the previous week (Epidemiological week 16); mainly due increase of the reporting units from Bagh district. As the WHO offices in Balakot and Mansehra were merged, the surveillance data from Balakot were put together with the Mansehra data (Table 1).

Table 1. Number of reporting health facilities by district, Earthquake Affected Areas, Pakistan, 7-28 April 2006.

| Area                | Population       | Reporting Health Facilities<br>2006 |                  |                  |                 |
|---------------------|------------------|-------------------------------------|------------------|------------------|-----------------|
|                     |                  | Week 14                             | Week 15          | Week 16          | Week 17         |
| Muzaffarabad        | 894,364          | 20                                  | 28               | 24               | 24              |
| Bagh                | 452,532          | 27                                  | 24               | 28               | 25              |
| Poonch              | 633,712          | 48                                  | 52               | 53               | 52              |
| Mansehra / Balakot  | 1,154,804        | 69                                  | 64               | 65               | 66              |
| Battagram / Shangla | 592,256          | 40                                  | 33               | 33               | 31              |
| Islamabad           | 10,500           | 1                                   | 1                | 1                | 1               |
| <b>Total</b>        | <b>3,738,168</b> | <b>205 (95%)</b>                    | <b>202 (94%)</b> | <b>204 (95%)</b> | <b>199(93%)</b> |

## Total number of consultations

The total number of units reporting on time **decreased** with 5 reporting units this week over the previous week (from 204 units last week to 199 units this week) but, the total number of consultations reported throughout DEWS **increased** by 3% compared with the previous week (84,402 to 87,176). The weekly trend of reporting units participating in the DEWS and the number of consultations is shown in Figure 1.

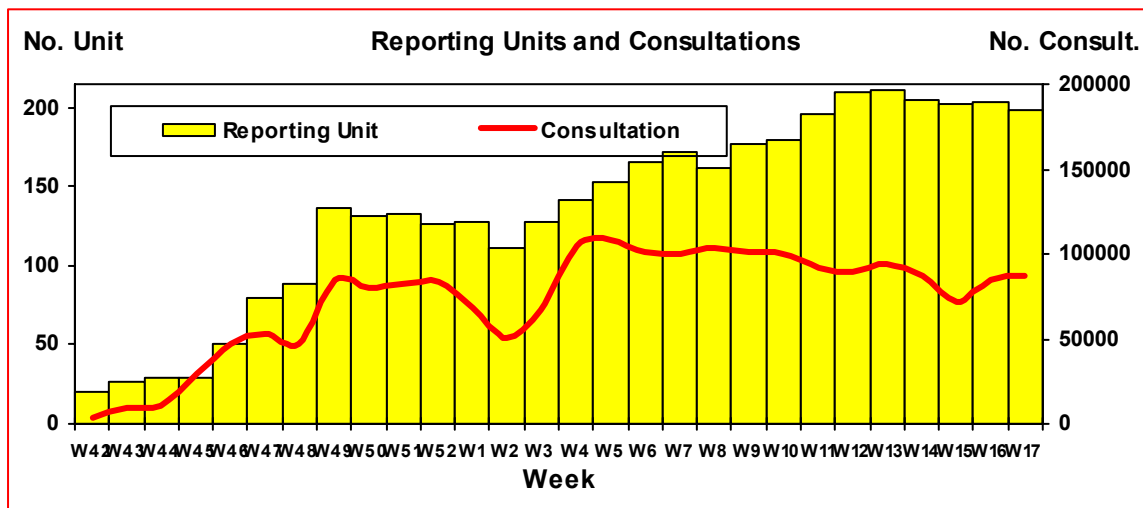


Figure 1. Weekly trend of reporting units and total number of consultations, Earthquake Affected Areas, Pakistan, 15 October 2005 -28 April 2006.

**DEWS Data, Epidemiological Week N<sup>o</sup> 17 2006**

Between 22 and 28 April 2006, 87,176 consultations for events under surveillance were reported through DEWS. Overall, **22%** (18,840) were due to Acute Respiratory Infections (**ARI**), **7%** (6,046) due to Acute Diarrhoea (**AWD**), **6%** (5,177) due to Fever of Unknown Origin (**FUO**), and **4%** (3,663) due to Injuries (**INJ**). **ARI** represented **29%** and **19%** in the less than 5 years old and 5 or more years old respectively. **AWD** was found to be higher in those less than 5 years old and represented **12%** of the total consultations compared to **5%** in those 5 years old or more (Figure 2).

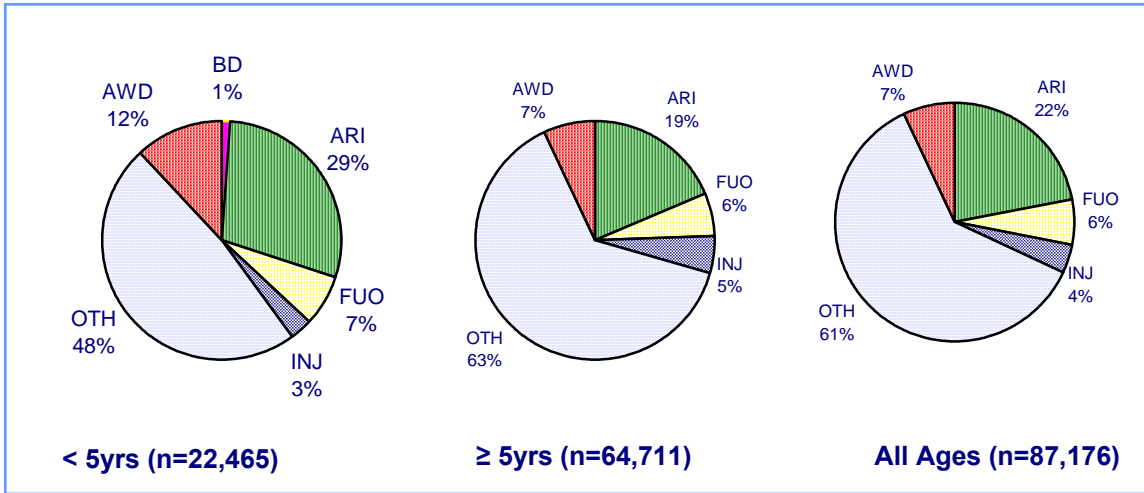


Figure 2. Proportion of primary causes for all reported cases, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

During the reporting week, **34%** (29,488/87,176) of all reportable conditions were reported from Mansehra, **19%** (16,655) reported from Bagh, followed by **17%** (15,120) from Muzaffarabad district. Less than 1% of the consultations were reported from H-11 camp in Islamabad, due to the decrease in number of IDPs to less than 1,000 population. The distribution of the total number of consultations by age and district is shown in Figure 3.

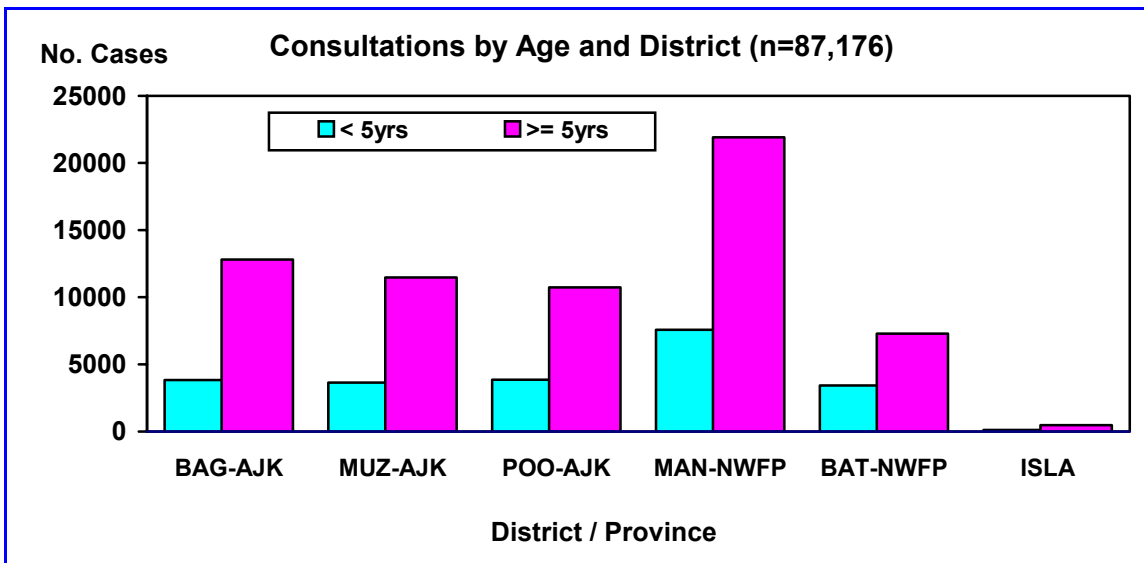


Figure 3. The total number of consultations by age and district, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

### DEWS Data, Epidemiological Week N<sup>o</sup> 17, 2006, 5 years of age and older

In the current week, ARI was the most common health event reported **among 5 years of age and older**, with **no** related death. **One hundred-ninety** (190) clinically diagnosed Malaria (**MAL**) cases were reported; **53%** (100/190) were reported from Poonch district. **Seven** (7) clinically diagnosed measles (**MES**) were reported; **43%** (3/7) from Muzaffarabad, **2** cases from Poonch and **1** case were reported from Bagh district. **One** (1) case of Acute Flaccid Paralysis was reported from Mansehra district. One case of clinically diagnosed meningitis was reported from Poonch district (Figure 4).

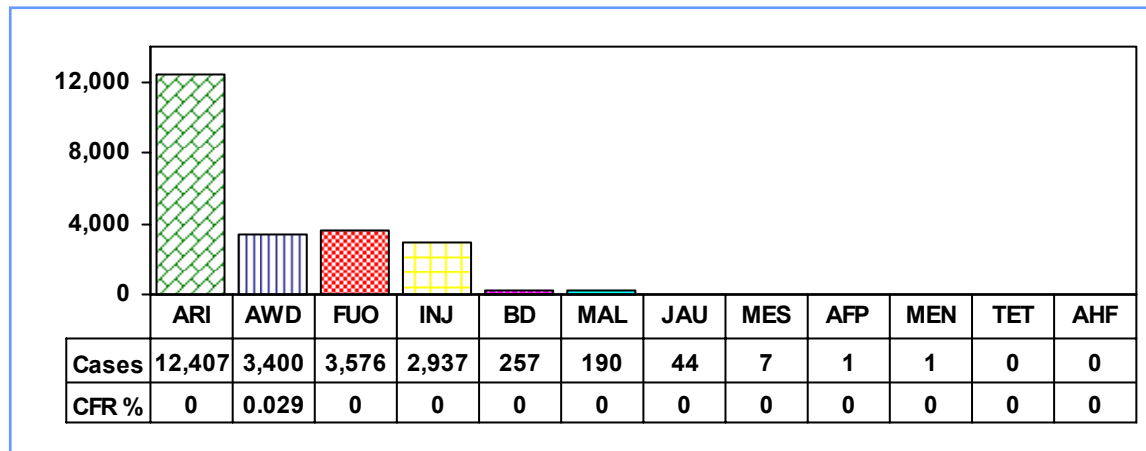


Figure 4. Primary causes for the reported cases and weekly CFRs, 5 years of age and older, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

### DEWS Data, Epidemiological Week N<sup>o</sup> 17, 2006, less than 5 years

In the less than 5 year age group, **22,465** consultations were reported; **29%** (6,433) of these reports were attributed to **ARI** with **1** related deaths (**CFR, 0.016**), while **12%** (2,646) were due to acute watery diarrhoea (**AWD**) with **no** related deaths. **Fifty-six** (56) cases of clinically diagnosed malaria were reported; of them **42%** (23/56) from Mansehra, **33%** (18/56) from Mansehra and **18%** (9/56) were reported from Muzaffarabad district. **Eleven** (11) clinically diagnosed measles cases were reported; of them **43%** (6/11) from Muzaffarabad, **3** cases from Bagh, **1** case from Mansehra, and **1** case was reported from **H-11** Camp, Islamabad (Figure 5). Please see attached tables (4-9) for district wise reporting.

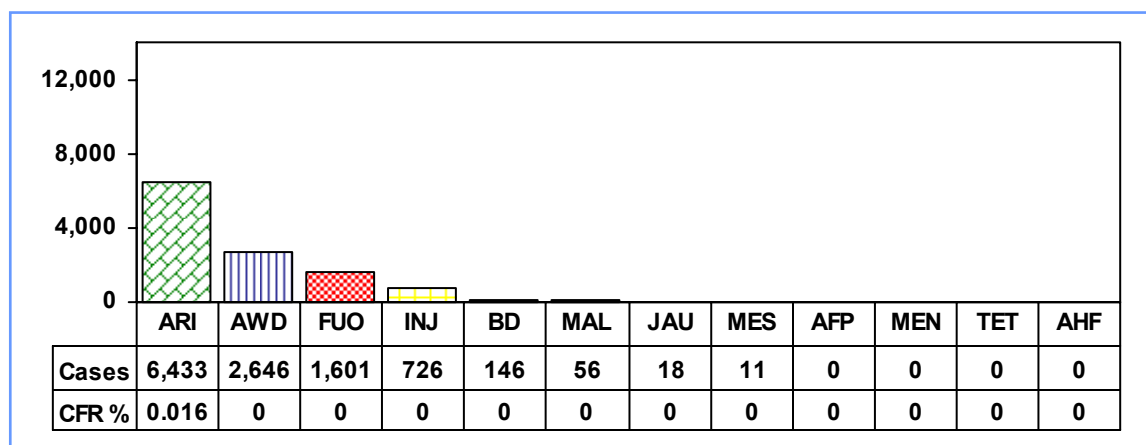


Figure 5. Primary causes for the reported cases and their weekly CFRs, LESS than 5 years old, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

**DEWS Data, Monthly Summary (Epidemiological Weeks N<sup>o</sup> 14-17)**

In summary for the past month between 31 March and 28 April (Epidemiological weeks 13-17 inclusive), a total of **334,316** health events under surveillance were reported, of which **22%** (75,101) were due to acute respiratory infection (**ARI**), **6%** (20,934) acute diarrhoea (**AWD**), **5%** (17,384) Unexplained fever (**FUO**) and **4%** (11,879) **Injuries (INJ)**.

Table 2. Comparison of the weekly distribution of reported cases, deaths and monthly Case Fatality Rate (CFR), Earthquake Affected Areas, Pakistan, 31 March-28 April 2006.

| Week Event   | WEEK 14      |           | WEEK 15      |           | WEEK 16      |           | WEEK 17      |           | TOTAL         |           | CFR%         |
|--------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|---------------|-----------|--------------|
|              | C            | D         | C            | D         | C            | D         | C            | D         | C             | D         |              |
| <b>AWD</b>   | 5334         | 0         | 4274         | 1         | 5356         | 2         | 6046         | 1         | <b>21010</b>  | <b>4</b>  | <b>0.019</b> |
| <b>BD</b>    | 284          | 0         | 289          | 0         | 273          | 0         | 403          | 0         | <b>1249</b>   | <b>0</b>  | <b>0.000</b> |
| <b>AFP</b>   | 0            | 0         | 1            | 0         | 3            | 0         | 4            | 0         | <b>8</b>      | <b>0</b>  | <b>0.000</b> |
| <b>MAL</b>   | 133          | 0         | 128          | 0         | 98           | 0         | 246          | 0         | <b>605</b>    | <b>0</b>  | <b>0.000</b> |
| <b>ARI</b>   | 20092        | 4         | 15977        | 5         | 17527        | 2         | 18840        | 1         | <b>72436</b>  | <b>12</b> | <b>0.017</b> |
| <b>MES</b>   | 13           | 0         | 10           | 0         | 22           | 0         | 18           | 0         | <b>63</b>     | <b>0</b>  | <b>0.000</b> |
| <b>MEN</b>   | 2            | 0         | 2            | 0         | 1            | 0         | 1            | 0         | <b>6</b>      | <b>0</b>  | <b>0.000</b> |
| <b>JAU</b>   | 46           | 0         | 43           | 0         | 63           | 0         | 62           | 0         | <b>214</b>    | <b>0</b>  | <b>0.000</b> |
| <b>TET</b>   | 0            | 0         | 0            | 0         | 0            | 0         | 0            | 0         | <b>0</b>      | <b>0</b>  | <b>0.000</b> |
| <b>AHF</b>   | 0            | 0         | 0            | 0         | 0            | 0         | 0            | 0         | <b>0</b>      | <b>0</b>  | <b>0.000</b> |
| <b>FUO</b>   | 4181         | 0         | 4505         | 0         | 4187         | 0         | 5177         | 0         | <b>18050</b>  | <b>0</b>  | <b>0.000</b> |
| <b>INJ</b>   | 3270         | 0         | 2435         | 0         | 3123         | 1         | 3663         | 0         | <b>12491</b>  | <b>1</b>  | <b>0.008</b> |
| <b>OTH</b>   | 53394        | 9         | 43981        | 10        | 53749        | 6         | 52716        | 8         | <b>203840</b> | <b>33</b> | <b>0.016</b> |
| <b>TOTAL</b> | <b>86749</b> | <b>13</b> | <b>71645</b> | <b>16</b> | <b>84402</b> | <b>11</b> | <b>87176</b> | <b>10</b> | <b>329972</b> | <b>50</b> |              |
| <b>RU</b>    | <b>211</b>   |           | <b>205</b>   |           | <b>202</b>   |           | <b>199</b>   |           |               |           |              |

C – Cases, D – Deaths, AWD - Acute Diarrhoea, BD - Bloody Diarrhoea, AFP - Acute Flaccid Paralysis, MAL – Malaria, ARI - Acute Respiratory Infection, MES – Measles, Men - Meningitis, JAU - Acute Jaundice Syndrome, TET - Neonatal Tetanus, AHF Acute Hemorrhagic Fever, FUO –Unexplained fever, INJ – Injuries, OTH – Others, RU – Reporting Units. Please note data from late reporting in previous weeks has been updated.

During the same reporting period, **77,321** consultations were reported in the less than 5 years old group, (**23%** of the total consultations), of which **32%** (25,057) were due to **ARI**, **11%** (8,723) due to **AWD**, **6%** (4,968) due to **FUO** and **3%** (2,311) were reported as injuries (**INJ**).

Table 3. Total number of reported cases, deaths and monthly Case Fatality Rate (CFR), less than 5 years old, Earthquake Affected Areas, Pakistan, 31 March-28 April 2006.

| Week Event   | WEEK 14      |          | WEEK 15      |          | WEEK 16      |          | WEEK 17      |          | TOTAL        |           | CFR%         |
|--------------|--------------|----------|--------------|----------|--------------|----------|--------------|----------|--------------|-----------|--------------|
|              | C            | D        | C            | D        | C            | D        | C            | D        | C            | D         |              |
| <b>AWD</b>   | 2218         | 0        | 1767         | 0        | 2236         | 2        | 2646         | 0        | <b>8867</b>  | <b>2</b>  | <b>2</b>     |
| <b>BD</b>    | 87           | 0        | 99           | 0        | 80           | 0        | 146          | 0        | <b>412</b>   | <b>0</b>  | <b>0.000</b> |
| <b>AFP</b>   | 0            | 0        | 1            | 0        | 1            | 0        | 0            | 0        | <b>2</b>     | <b>0</b>  | <b>0.000</b> |
| <b>MAL</b>   | 34           | 0        | 27           | 0        | 27           | 0        | 56           | 0        | <b>144</b>   | <b>0</b>  | <b>0.000</b> |
| <b>ARI</b>   | 6573         | 4        | 5364         | 4        | 5851         | 2        | 6433         | 1        | <b>24221</b> | <b>11</b> | <b>0.045</b> |
| <b>MES</b>   | 10           | 0        | 5            | 0        | 6            | 0        | 11           | 0        | <b>32</b>    | <b>0</b>  | <b>0.000</b> |
| <b>MEN</b>   | 2            | 0        | 1            | 0        | 1            | 0        | 0            | 0        | <b>4</b>     | <b>0</b>  | <b>0.000</b> |
| <b>JAU</b>   | 8            | 0        | 6            | 0        | 16           | 0        | 18           | 0        | <b>48</b>    | <b>0</b>  | <b>0.000</b> |
| <b>TET</b>   | 0            | 0        | 0            | 0        | 0            | 0        | 0            | 0        | <b>0</b>     | <b>0</b>  | <b>0.000</b> |
| <b>AHF</b>   | 0            | 0        | 0            | 0        | 0            | 0        | 0            | 0        | <b>0</b>     | <b>0</b>  | <b>0.000</b> |
| <b>FUO</b>   | 1223         | 0        | 1214         | 0        | 1182         | 0        | 1601         | 0        | <b>5220</b>  | <b>0</b>  | <b>0.000</b> |
| <b>INJ</b>   | 619          | 0        | 492          | 0        | 616          | 0        | 726          | 0        | <b>2453</b>  | <b>0</b>  | <b>0.000</b> |
| <b>OTH</b>   | 9762         | 5        | 7115         | 1        | 8571         | 2        | 10828        | 1        | <b>36276</b> | <b>9</b>  | <b>0.025</b> |
| <b>TOTAL</b> | <b>20536</b> | <b>9</b> | <b>16091</b> | <b>5</b> | <b>18587</b> | <b>6</b> | <b>22465</b> | <b>2</b> | <b>77679</b> | <b>22</b> |              |
| <b>RU</b>    | <b>211</b>   |          | <b>205</b>   |          | <b>202</b>   |          | <b>199</b>   |          |              |           |              |

In the current week, **ARI** continues to contribute significantly to the overall consultations in all reporting, but showed an increase in the total number of cases (from 17,527 last week to 18,840 this week, while there was no change in percent of consultations compared with the previous week (**22%** in both weeks). In the same period, **6,046 AWD** cases with **1** related death were reported and showed increase in the number of reported cases (from 5,356 last week to 6,046 this week) and in the overall proportion (6% last week to 7% this week). The weekly proportion of ARI and AWD is shown in figure 6.

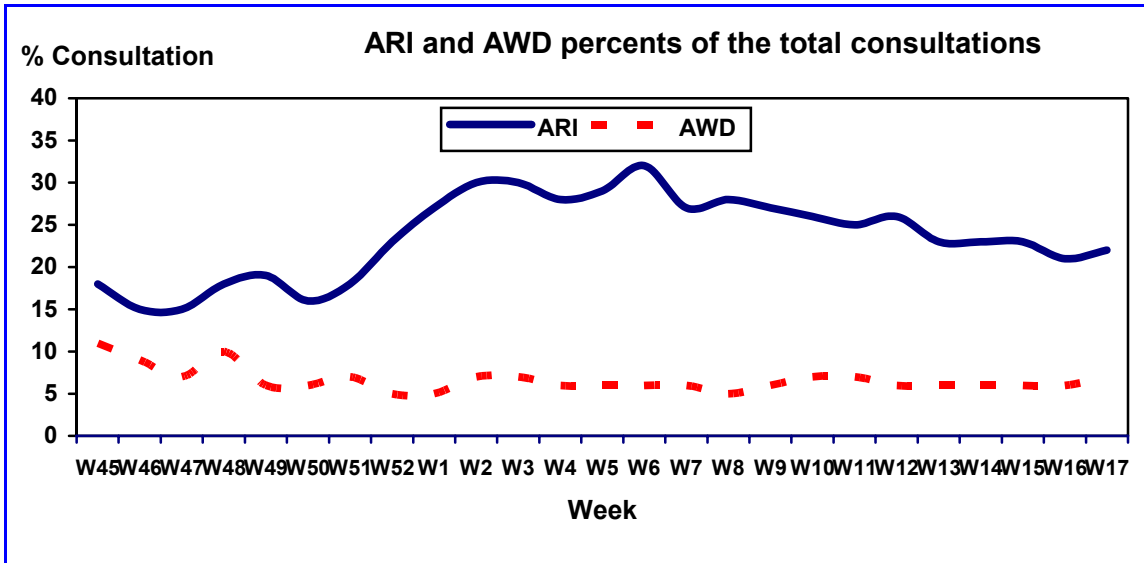
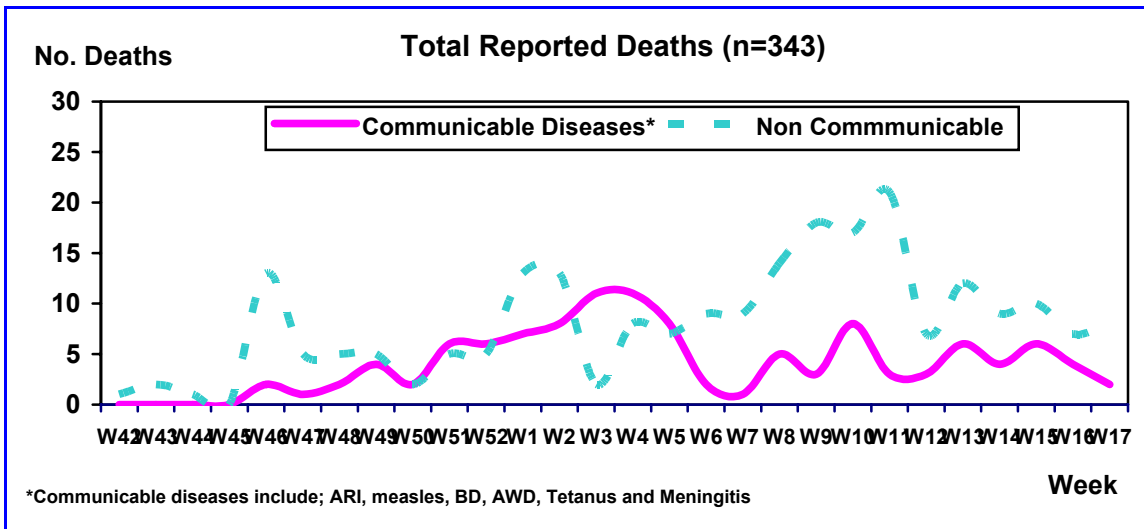


Figure 6. Weekly trend of percent consultations of reported ARI and AWD cases, Earthquake Affected Areas, Pakistan, 5 November-28 April 2006.

Since the start of the DEWS system as of 15 October 2005, a total of **343** deaths were reported from the earthquake affected areas; of them, **66%** (228/343) were due to non-communicable diseases. **Twelve** percent (28/228) of the non-communicable disease related deaths were due to injuries. **Seventy-seven** percent (89/115) of the communicable disease-related death were ARI-related deaths. To improve the quality of mortality data, an active collection of the mortality data from DHQ hospitals was established since week 8 of 2006. In the current week, there were **10** reported deaths of them; **1** was **ARI**-related, **1** **AWD**-related and **8** were due to **other (OTH)** causes. The weekly trend of reported deaths is shown in figure 7.



\*Communicable diseases include; ARI, measles, BD, AWD, Tetanus and Meningitis

Figure 7. Weekly trend of reported deaths, Earthquake Affected Areas, Pakistan, 5 November 2005-28 April 2006.

**Acute Diarrhoea**

During the epidemiological week 17, a total of 5,185 **AWD** cases were reported with **1** related death (**CFR, 0.029**); of them, **26%** (1,558/6,046) were reported from Mansehra district. In all districts, the number of **AWD** cases over 5 years old is greater than the number under 5 years of age (3,400 and 2,646 respectively). The distribution of reported AWD cases by age and district is shown in figure 8.

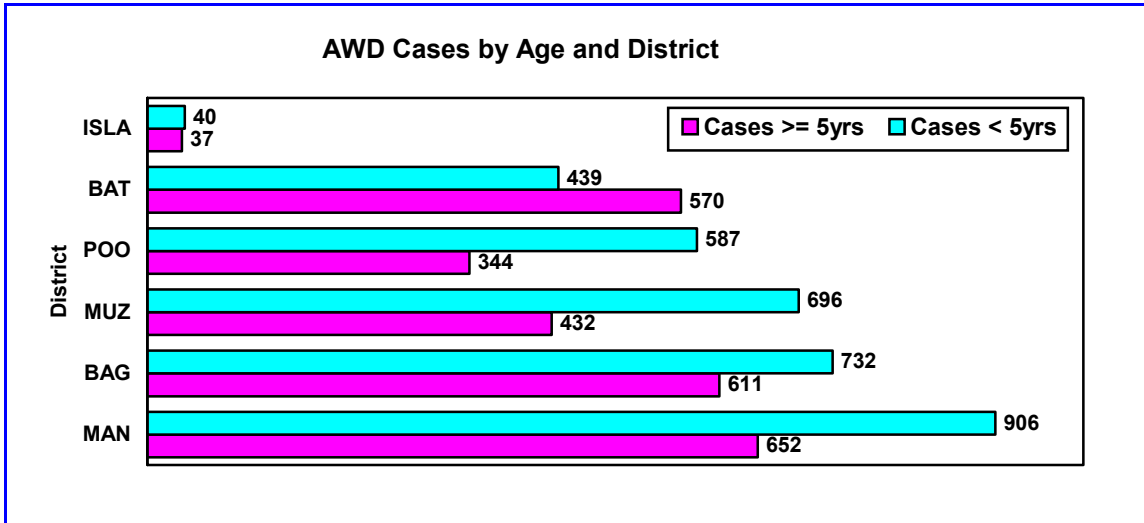


Figure 8. Distribution of AWD cases by age and district, Earthquake Affected Areas, 22-28 April 2006.

**Bloody Diarrhoea**

Between 15 October 2005 and 28 April 2006, a total of **11,102** cases of clinically diagnosed **Bloody diarrhoea** were reported from the earthquake affected areas. In the current week, **403** cases with no related death were reported; of them, **50%** (201/403) were reported from Muzaffarabad followed by **17%** (70/403) from Mansehra and **12%** (49/403) from Bagh district. The weekly trend of bloody diarrhoea cases is shown in figure 9.

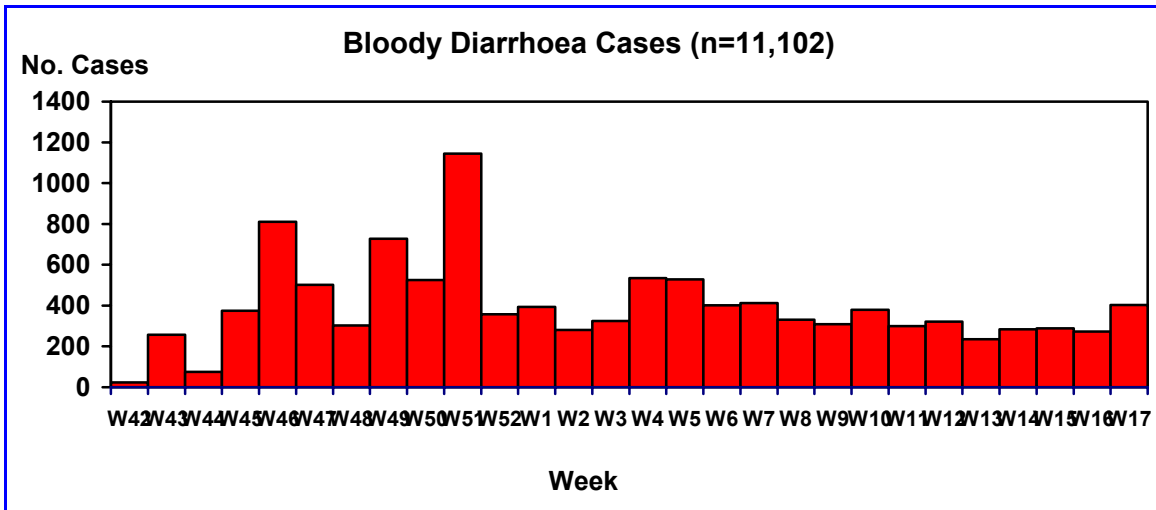


Figure 9. Weekly trend of reported bloody diarrhoea cases, Earthquake Affected Areas, Pakistan, 15 October 2005-28 April 2006.



**Acute Jaundice Syndrome**

Between 15 October 2005 and 28 April 2006, a total of **1,265** cases of Acute Jaundice syndrome with 5 related deaths (**CFR, 0.395**) were reported from the earthquake affected areas. The peak in the epidemiological week 9 was related to Hepatitis E outbreak (laboratory confirmed) in Balakot and Poonch districts. In the current week, 62 cases with no related death were reported; of them, **52%** (32/62) were reported from Muzaffarabad followed by Bagh **29%** (18/62) and **9%** (5/62) from Poonch district. The weekly trend of reported acute jaundice syndrome cases is shown in figure 10.

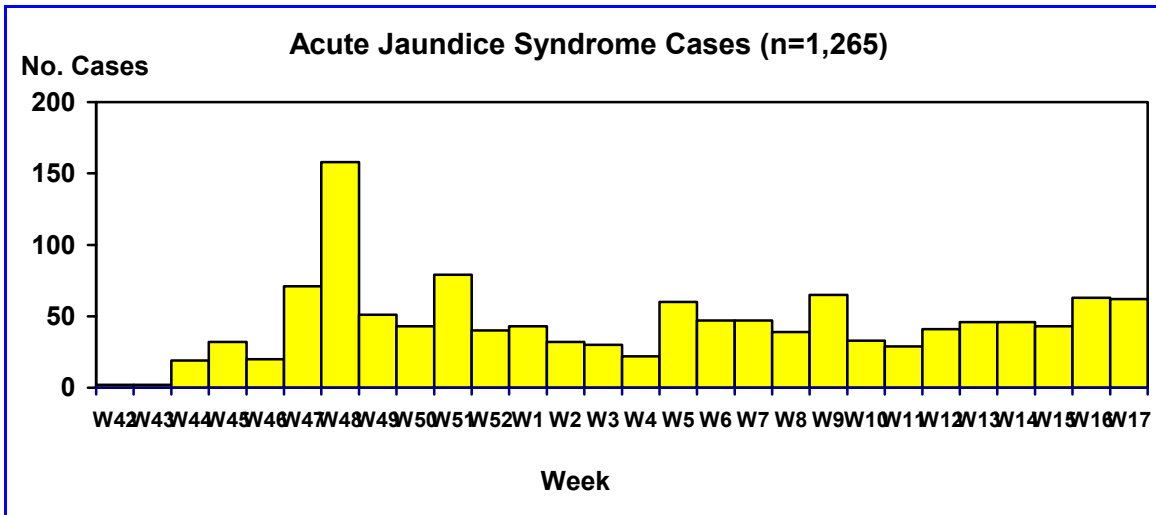


Figure 10. Weekly trend of Acute Jaundice Syndrome, Earthquake Affected Areas, Pakistan, 15 October 2005-28 April 2006.

**Malaria**

So far, **2,152** cases of clinically diagnosed malaria were reported from the earthquake-affected areas. In the current week, **246** cases with no related death were reported; of them, **48%** (118/246) were reported from Poonch followed by Mansehra **24%** (60/246) and **17%** (43/246) from Muzaffarabad district. The weekly distribution of the reported malaria cases is shown in figure 11.

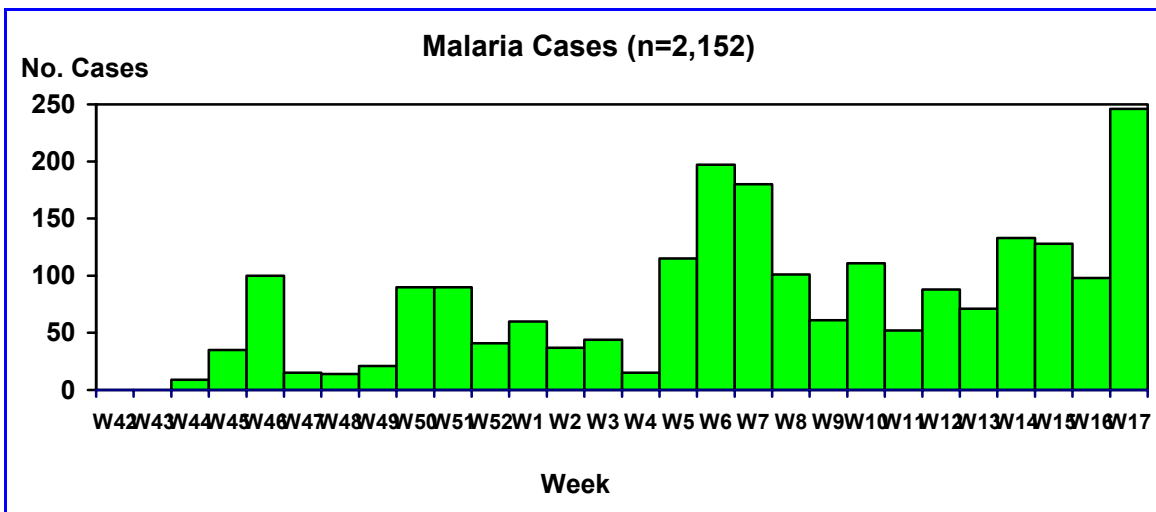


Figure 11. Weekly trend of reported bloody diarrhoea cases, Earthquake Affected Areas, Pakistan, 15 October 2005-28 April 2006.



**Measles**

Between 5 November 2005, and 28 April 2006, a total of **434** clinically diagnosed **measles** including **2** related deaths (**CFR 0.460**) were reported from the earthquake-affected areas. There was a sharp decrease in the number of reported cases since week 12 in which an outbreak was detected in Muzaffarabad district (35 cases). In the current week, 18 cases of suspected measles were reported and showed decrease compared with the previous week. The weekly trend of measles cases is shown in figure 12.

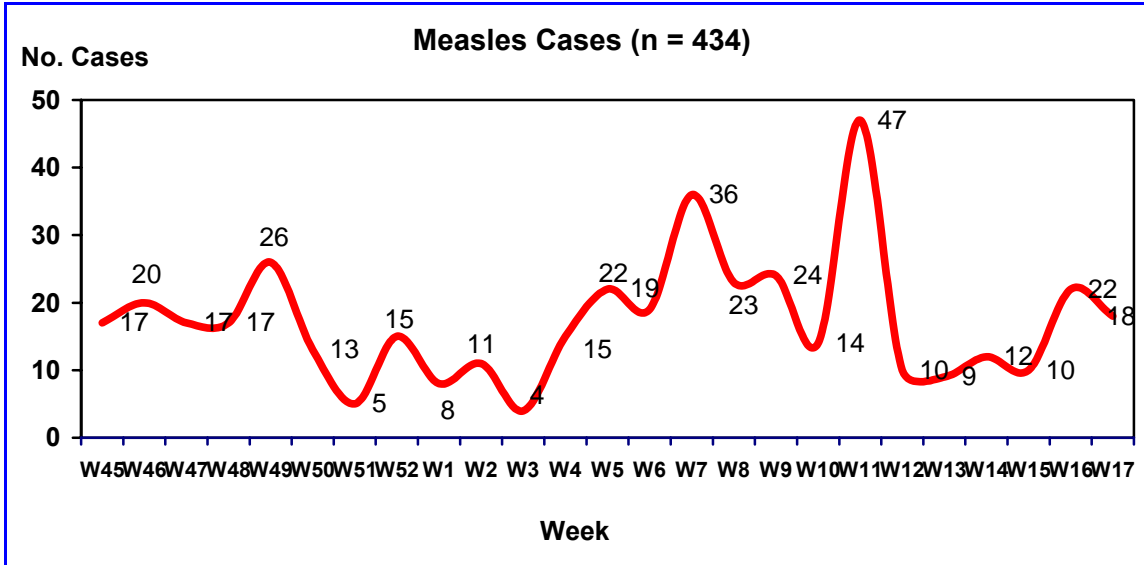


Figure 12. Weekly trend of reported measles cases, Earthquake Affected Areas, Pakistan, 5 November 2005-28 April 2006.

In the current week, **18** cases with **no** related death were reported; of them **50%** (9/18) were reported from Muzaffarabad, followed by **22%** (4/18) from Bagh, **2** cases from Mansehra, **2** case from Poonch district and **1** case from **H-11 camp**, Islamabad. The distribution of measles cases by district is shown in figure 11.

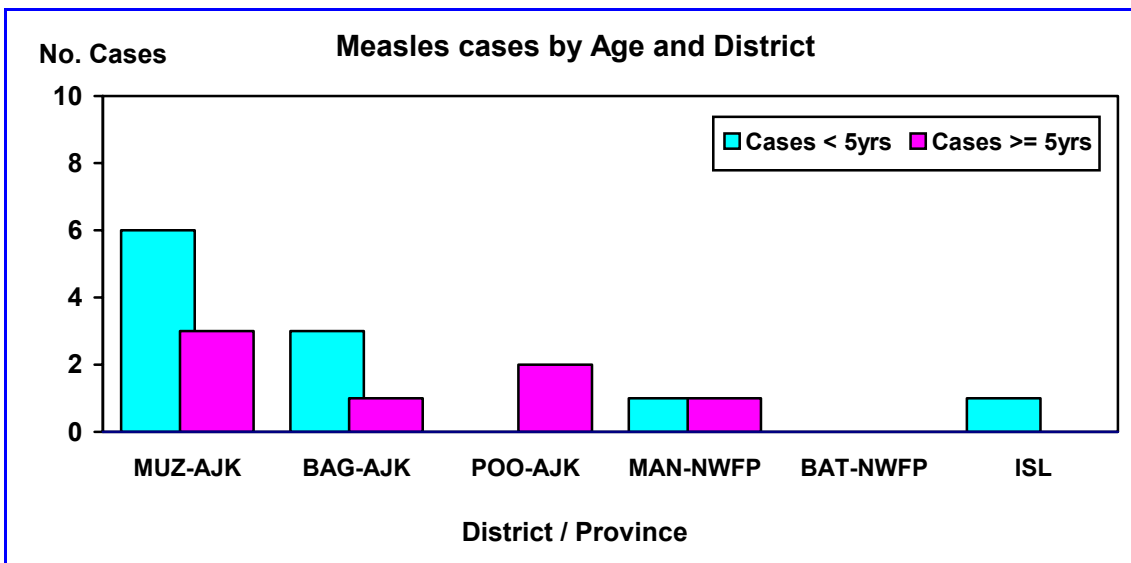


Figure 12. Distribution of measles cases by age and district, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

**Acute Respiratory Infection**

In the last four epidemiological weeks, there was a decrease of number of reported **ARI** cases in **Mansehra, Muzaffarabad, Poonch** and **H-11 Camp**, Islamabad while an increase was observed in **Battagram** and **Bagh** districts. Overall, the number of reported ARI cases increased by **1%** compared to the last week (from 17,527 last week to 18,840 this week). The weekly distribution of reported ARI cases by district is shown in figure 13.

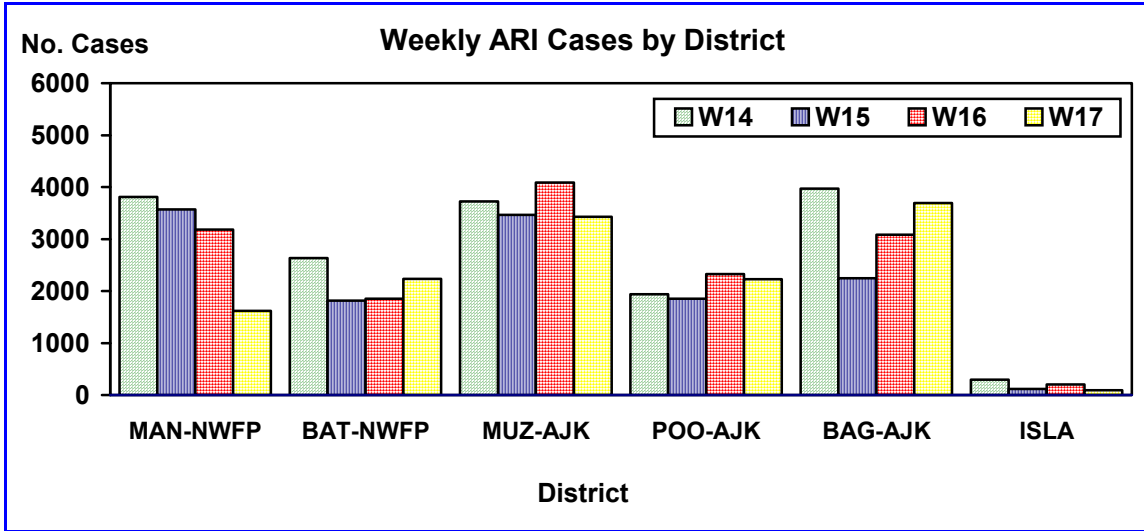


Figure 13. The weekly distribution of reported ARI cases by district, Earthquake Affected Areas, Pakistan, 22-28 April 2006.

In the current week, although the number of ARI cases 5 years old and older is greater than the number under 5 years old (12,407 and 6,433 respectively), the overall portion of the disease is higher in the under 5 years old of age (29% and 19% respectively). Overall, **38%** (7,167/18,840) were reported from Mansehra district, followed by Bagh and Muzaffarabad districts (20% and 18% respectively). The distribution of reported ARI cases by age and district is shown in figure 14.

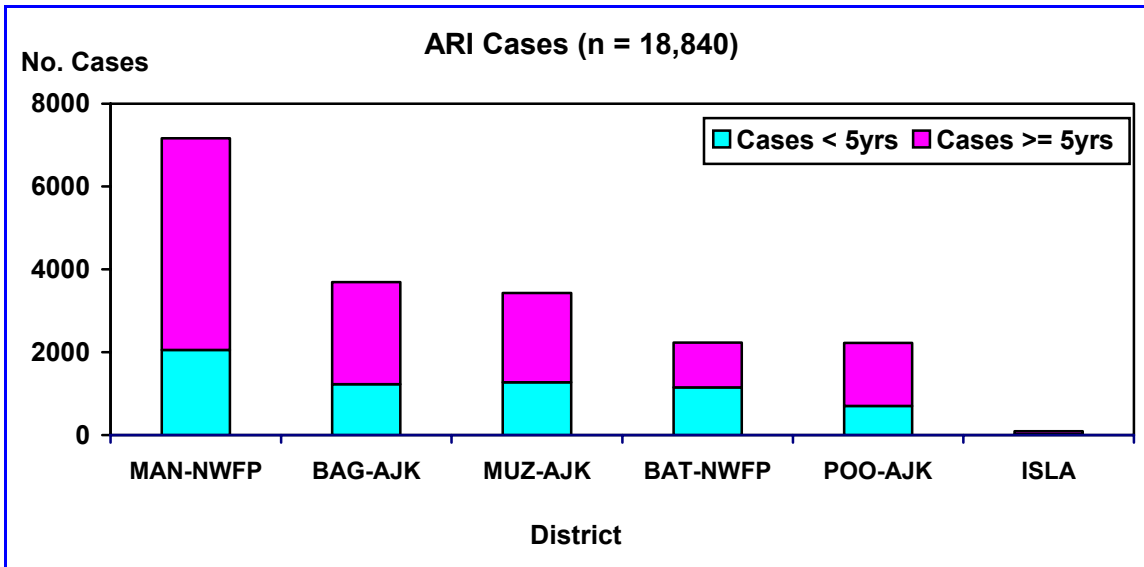


Figure 14. Distribution of ARI cases by age and district, Earthquake Affected Areas Pakistan, 22-28 April 2006.

## Outbreak Alert and Response<sup>1</sup>

### Acute Flaccid Paralysis

#### Mansehra

One case of suspected Acute Flaccid Paralysis (AFP) was reported by the Civil Hospital Garhi Habibullah. The 11-year-old boy from Mohalla Porh, Garhi Habibullah, Balakot Tehsil was fully vaccinated and referred to the District Headquarters (DHQ) hospital in Mansehra. WHO sent an investigation team and samples were sent for laboratory confirmation to the National Institute of Health (NIH) in Islamabad.

#### Poonch

Three cases of suspected AFP were reported by the Cuban field hospital, now operated by the Pakistani military. All alerts resulted to be false alarm, as they were not notified by a qualified doctor. To prevent false alerts in the future; onsite training was conducted for case definition.

### Acute Jaundice Syndrome

#### Bagh

On 29 April, RHC Arja reported a cluster of cases of Acute Jaundice Syndrome (AJS) in Jahala and Chalandrat village, Mallot Union Council, Dhirkot Tehsil with an approximate population of 550 and 2100 respectively. A WHO investigation team found 21 more cases of suspected AJS, the main signs and symptoms being fever, fatigue, loss of appetite, yellowish sclera, and dark urine. Blood samples were collected from 14 patients.

Both villages share the same water source; an unprotected spring located approximately 500 meters from the villages. This water source supplies a tanked water source in the main market of the village, which is unprotected and used for domestic consumption. Open field defecation is in practice. General environmental and personal hygiene appears very poor. Water storage in most of the houses is unsatisfactory. The current personal, environmental hygienic conditions, signs, and symptoms of the suspected cases suggest possible infection with Hepatitis E virus. There is a strong potential for further environmental pollution and contamination of water sources during summer season. This is a further threat for epidemics of communicable diseases spreading through faecal-oral route.

Water samples were taken from 10 different points: the water source, a water tank at the source, water tanks, taps, as well as water pots at household level. All samples were tested to be unfit for drinking purposes. Hygiene promotion activities as well as the distribution of hygiene kits, Nerox Filters and chlorine tablets to encourage people to chlorinate water will be carried out soon.

This same union council experienced an acute jaundice syndrome outbreak in January 2006, suggesting the area is at high risk of faecal-orally



<sup>1</sup> Outbreak Investigation and response of Acute Jaundice Syndrome, Malaria, and Bloody Diarrhoea would only take place when a cluster of cases is identified or there is an increase in the incidence of the disease. When only 1 case is found, the MOH/WHO investigation teams initiate no further action.

transmitted diseases. The protection of springs as well as the restoration and expansion of water supply systems in the area may ensure a sustainable solution.

### **Poonch**

Five cases of AJS were reported from different health facilities: one from the Cuban field hospital Bangoin, one from the Basic Health Unit (BHU) Hussaein Kot and three from BHU Harenmera.

## **Meningitis**

### **Poonch**

One suspected case of meningitis was reported from Basic Health Unit Hussain Kot. The 8-year-old girl was referred to the Combined Military Hospital in Rawalakot, who referred her further to PIMS hospital in Islamabad. Patient reacted well to treatment and condition has improved vastly.

## **Measles**

### **Bagh**

One suspected case of measles was reported from Sohawa Sharif in a six-year-old-girl from Fatehpura village in Dhirkot Tehsil. Active case finding revealed seven more cases in the same area. The mean age of cases was 7.1 years ranging from 1.5 to 10 years and 75% (6/8) were males. The most frequent signs and symptoms were fever, running nose, cough, conjunctivitis, and rash. None of the patients was vaccinated against measles.



Blood samples were collected and sent for laboratory confirmation to the National Institute of Health (NIH) in Islamabad. Rapid assessment to verify vaccine coverage in the area will to be done, mass vaccination campaign will be conducted after the results of the assessment.

### **Mansehra**

The NGO Mercy Corps reported two suspected cases of measles from the Civil Hospital Battal in Mansehra. Case investigation was conducted and mop vaccination campaign will be carried out soon in the area where the cases originated.

### **Muzaffarabad**

Several case investigations were carried out into suspected cases of measles in different areas in Muzaffarabad district. One 8-year-old girl from Samanbandhi may not have been vaccinated against the disease. Blood sample was taken and sent to the NIH in Islamabad.



Four cases were reported by IOM from Herein IDP camp, Chela Bandi, in spite of a recent immunization campaign carried out by the Ministry of Health, including for measles. Blood samples were taken and sent to NIH. Two other cases were reported from Sarli-Sacha by the NGO Merlin. No further information is available due difficult access of the area.

**Number of reported cases and deaths per District, AJK**Table 4. Number of reported cases and deaths, **Bagh District**, Earthquake Affected Areas, Pakistan, 22 - 28 April 2006.

| Week         | AWD         |          | BD         |          | AFP      |          | MAL       |          | ARI          |          | MEA      |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF         |          | INJ         |          | OTH          |          |
|--------------|-------------|----------|------------|----------|----------|----------|-----------|----------|--------------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-------------|----------|-------------|----------|--------------|----------|
|              | C           | D        | C          | D        | C        | D        | C         | D        | C            | D        | C        | D        | C        | D        | C         | D        | C        | D        | C        | D        | C           | D        | C           | D        | C            | D        |
| 14           | 1207        | 0        | 49         | 0        | 0        | 0        | 28        | 0        | 3967         | 0        | 0        | 0        | 0        | 0        | 16        | 0        | 0        | 0        | 0        | 0        | 664         | 0        | 598         | 0        | 10192        | 1        |
| 15           | 432         | 0        | 26         | 0        | 0        | 0        | 36        | 0        | 2248         | 1        | 1        | 0        | 1        | 0        | 7         | 0        | 0        | 0        | 0        | 0        | 329         | 0        | 195         | 0        | 9743         | 1        |
| 16           | 572         | 1        | 27         | 0        | 0        | 0        | 9         | 0        | 3084         | 0        | 2        | 0        | 0        | 0        | 11        | 0        | 0        | 0        | 0        | 0        | 344         | 0        | 418         | 0        | 10028        | 0        |
| 17           | 1343        | 0        | 49         | 0        | 0        | 0        | 19        | 0        | 3693         | 0        | 4        | 0        | 0        | 0        | 18        | 0        | 0        | 0        | 0        | 0        | 699         | 0        | 773         | 0        | 10057        | 0        |
| <b>Total</b> | <b>3554</b> | <b>1</b> | <b>151</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>92</b> | <b>0</b> | <b>12992</b> | <b>1</b> | <b>7</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>52</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2036</b> | <b>0</b> | <b>1984</b> | <b>0</b> | <b>40020</b> | <b>2</b> |

Table 5. Number of reported cases and deaths, **Poonch District**, Earthquake Affected Areas, Pakistan, 22 - 28 April 2006.

| Week         | AWD         |          | BD        |          | AFP      |          | MAL        |          | ARI         |          | MEA      |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF         |          | INJ         |          | OTH          |          |
|--------------|-------------|----------|-----------|----------|----------|----------|------------|----------|-------------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-------------|----------|-------------|----------|--------------|----------|
|              | C           | D        | C         | D        | C        | D        | C          | D        | C           | D        | C        | D        | C        | D        | C         | D        | C        | D        | C        | D        | C           | D        | C           | D        | C            | D        |
| 14           | 507         | 0        | 10        | 0        | 0        | 0        | 6          | 0        | 1940        | 2        | 0        | 0        | 0        | 0        | 4         | 0        | 0        | 0        | 0        | 0        | 761         | 0        | 759         | 0        | 7826         | 2        |
| 15           | 620         | 0        | 9         | 0        | 0        | 0        | 30         | 0        | 1851        | 3        | 0        | 0        | 0        | 0        | 0         | 0        | 0        | 0        | 0        | 0        | 1027        | 0        | 570         | 0        | 6327         | 2        |
| 16           | 864         | 0        | 16        | 0        | 2        | 0        | 40         | 0        | 2328        | 0        | 0        | 0        | 0        | 0        | 10        | 0        | 0        | 0        | 0        | 0        | 1030        | 0        | 872         | 0        | 10180        | 1        |
| 17           | 931         | 1        | 36        | 0        | 3        | 0        | 118        | 0        | 2225        | 0        | 2        | 0        | 1        | 0        | 5         | 0        | 0        | 0        | 0        | 0        | 1229        | 0        | 707         | 0        | 9332         | 3        |
| <b>Total</b> | <b>2922</b> | <b>1</b> | <b>71</b> | <b>0</b> | <b>5</b> | <b>0</b> | <b>194</b> | <b>0</b> | <b>8344</b> | <b>5</b> | <b>2</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>19</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>4047</b> | <b>0</b> | <b>2908</b> | <b>0</b> | <b>33665</b> | <b>8</b> |

Table 6. Number of reported cases and deaths, **Muzaffarabad District**, Earthquake Affected Areas, Pakistan, 22 - 28 April 2006.

| Week         | AWD         |          | BD         |          | AFP      |          | MAL        |          | ARI          |          | MEA       |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF         |          | INJ         |          | OTH          |          |
|--------------|-------------|----------|------------|----------|----------|----------|------------|----------|--------------|----------|-----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-------------|----------|-------------|----------|--------------|----------|
|              | C           | D        | C          | D        | C        | D        | C          | D        | C            | D        | C         | D        | C        | D        | C         | D        | C        | D        | C        | D        | C           | D        | C           | D        | C            | D        |
| 14           | 1174        | 0        | 96         | 0        | 0        | 0        | 28         | 0        | 3722         | 0        | 2         | 0        | 1        | 0        | 9         | 0        | 0        | 0        | 0        | 0        | 729         | 0        | 879         | 0        | 9199         | 0        |
| 15           | 1119        | 0        | 115        | 0        | 0        | 0        | 37         | 0        | 3466         | 0        | 7         | 0        | 1        | 0        | 22        | 0        | 0        | 0        | 0        | 0        | 700         | 0        | 820         | 0        | 8192         | 0        |
| 16           | 1355        | 0        | 124        | 0        | 0        | 0        | 9          | 0        | 4086         | 0        | 7         | 0        | 0        | 0        | 30        | 0        | 0        | 0        | 0        | 0        | 1299        | 0        | 931         | 0        | 9543         | 0        |
| 17           | 1128        | 0        | 201        | 0        | 0        | 0        | 43         | 0        | 3425         | 0        | 9         | 0        | 0        | 0        | 32        | 0        | 0        | 0        | 0        | 0        | 1077        | 0        | 1049        | 0        | 8156         | 1        |
| <b>Total</b> | <b>4776</b> | <b>0</b> | <b>536</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>117</b> | <b>0</b> | <b>14699</b> | <b>0</b> | <b>25</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>93</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3805</b> | <b>0</b> | <b>3679</b> | <b>0</b> | <b>35090</b> | <b>1</b> |

**Number of reported cases and deaths per District, NWFP**Table 7. Number of reported cases and deaths, **Battagram District**, Earthquake Affected Areas, Pakistan, 22 - 28 April 2006

| Week         | AWD         |          | BD         |          | AFP      |          | MAL       |          | ARI         |          | MEA       |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF         |          | INJ        |          | OTH          |          |
|--------------|-------------|----------|------------|----------|----------|----------|-----------|----------|-------------|----------|-----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-------------|----------|------------|----------|--------------|----------|
|              | C           | D        | C          | D        | C        | D        | C         | D        | C           | D        | C         | D        | C        | D        | C         | D        | C        | D        | C        | D        | C           | D        | C          | D        | C            | D        |
| 14           | 777         | 0        | 58         | 0        | 0        | 0        | 21        | 0        | 2636        | 0        | 9         | 0        | 0        | 0        | 14        | 0        | 0        | 0        | 0        | 0        | 849         | 0        | 186        | 0        | 7560         | 0        |
| 15           | 705         | 0        | 39         | 0        | 0        | 0        | 12        | 0        | 1817        | 0        | 1         | 0        | 0        | 0        | 2         | 0        | 0        | 0        | 0        | 0        | 561         | 0        | 115        | 0        | 6203         | 2        |
| 16           | 756         | 0        | 51         | 0        | 0        | 0        | 5         | 0        | 1852        | 0        | 7         | 0        | 0        | 0        | 4         | 0        | 0        | 0        | 0        | 0        | 588         | 0        | 168        | 0        | 6595         | 0        |
| 17           | 1009        | 0        | 37         | 0        | 0        | 0        | 5         | 0        | 2235        | 0        | 0         | 0        | 0        | 0        | 3         | 0        | 0        | 0        | 0        | 0        | 422         | 0        | 198        | 0        | 6811         | 0        |
| <b>Total</b> | <b>3247</b> | <b>0</b> | <b>185</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>43</b> | <b>0</b> | <b>8540</b> | <b>0</b> | <b>17</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>23</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2420</b> | <b>0</b> | <b>667</b> | <b>0</b> | <b>27169</b> | <b>2</b> |

Table 8. Number of reported cases and deaths, **Mansehra District\***, Earthquake Affected Areas, Pakistan, 22 - 28 April 2006.

| Week         | AWD         |          | BD         |          | AFP      |          | MAL        |          | ARI          |          | MEA       |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF         |          | INJ         |          | OTH          |           |
|--------------|-------------|----------|------------|----------|----------|----------|------------|----------|--------------|----------|-----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-------------|----------|-------------|----------|--------------|-----------|
|              | C           | D        | C          | D        | C        | D        | C          | D        | C            | D        | C         | D        | C        | D        | C         | D        | C        | D        | C        | D        | C           | D        | C           | D        | C            | D         |
| 14           | 786         | 0        | 26         | 0        | 0        | 0        | 20         | 0        | 3808         | 2        | 1         | 0        | 1        | 0        | 1         | 0        | 0        | 0        | 0        | 0        | 952         | 0        | 368         | 0        | 9716         | 4         |
| 15           | 787         | 1        | 74         | 0        | 1        | 0        | 13         | 0        | 3572         | 1        | 1         | 0        | 0        | 0        | 7         | 0        | 0        | 0        | 0        | 0        | 1702        | 0        | 446         | 0        | 8218         | 5         |
| 16           | 888         | 1        | 32         | 0        | 1        | 0        | 9          | 0        | 3184         | 2        | 6         | 0        | 1        | 0        | 4         | 0        | 0        | 0        | 0        | 0        | 688         | 0        | 336         | 0        | 11061        | 2         |
| 17           | 1558        | 0        | 70         | 0        | 1        | 0        | 60         | 0        | 7167         | 1        | 2         | 0        | 0        | 0        | 3         | 0        | 0        | 0        | 0        | 0        | 1715        | 0        | 921         | 0        | 17991        | 4         |
| <b>Total</b> | <b>4019</b> | <b>2</b> | <b>202</b> | <b>0</b> | <b>3</b> | <b>0</b> | <b>102</b> | <b>0</b> | <b>17731</b> | <b>6</b> | <b>10</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>15</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>5057</b> | <b>0</b> | <b>2071</b> | <b>0</b> | <b>46986</b> | <b>15</b> |

Data from Balakot Tehsil were merged with the data from Mansehra district (Balakot data was presented in the previous weeks as separated table).

Table 9. Number of reported cases and deaths, **Islamabad, H-11 Camp**, Pakistan, 22 - 28 April 2006.

| Week         | AWD        |          | BD        |          | AFP      |          | MAL      |          | ARI        |          | MEA      |          | MEN      |          | JAU       |          | TET      |          | AHF      |          | UXF        |          | INJ       |          | OTH         |          |
|--------------|------------|----------|-----------|----------|----------|----------|----------|----------|------------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|------------|----------|-----------|----------|-------------|----------|
|              | C          | D        | C         | D        | C        | D        | C        | D        | C          | D        | C        | D        | C        | D        | C         | D        | C        | D        | C        | D        | C          | D        | C         | D        | C           | D        |
| 14           | 223        | 0        | 19        | 0        | 0        | 0        | 0        | 0        | 293        | 0        | 1        | 0        | 0        | 0        | 2         | 0        | 0        | 0        | 0        | 0        | 89         | 0        | 36        | 0        | 732         | 0        |
| 15           | 150        | 0        | 11        | 0        | 0        | 0        | 0        | 0        | 119        | 0        | 0        | 0        | 0        | 0        | 4         | 0        | 0        | 0        | 0        | 0        | 3          | 0        | 23        | 0        | 225         | 0        |
| 16           | 343        | 0        | 1         | 0        | 0        | 0        | 3        | 0        | 205        | 0        | 0        | 0        | 0        | 0        | 3         | 0        | 0        | 0        | 0        | 0        | 1          | 0        | 6         | 0        | 151         | 0        |
| 17           | 77         | 0        | 10        | 0        | 0        | 0        | 1        | 0        | 95         | 0        | 1        | 0        | 0        | 0        | 1         | 0        | 0        | 0        | 0        | 0        | 35         | 0        | 15        | 0        | 369         | 0        |
| <b>Total</b> | <b>793</b> | <b>0</b> | <b>41</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>4</b> | <b>0</b> | <b>712</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>10</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>128</b> | <b>0</b> | <b>80</b> | <b>0</b> | <b>1477</b> | <b>0</b> |