

Epidemiological Week N^o 31 (29 July - 04 Aug 2006)

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Highlights

- In the past month (Epidemiological weeks 27-30 inclusive), 360,760 health events under surveillance were reported including 93 deaths.
- This week, 246 reporting units reported a total of 83,500 consultations, including 20 deaths.
- 1 death from acute jaundice was reported in a patient over 5 years old, from Muzaffarabad
- 1 death from tetanus was reported from Muzaffarabad
- 13,053 cases of AWD were reported; outbreaks were reported in three of the five districts
- 15,020 cases of ARI were reported, with 5 deaths. 4 of the deaths were in patients < 5 years old

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.

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Reporting Units

The number of sites able to report in week 31 dropped by 11 this week, from 257 to 246. Heavy rains and landslides resulted in some sites being unable to report. See Table 1 for summary statistics.

Table 1. Reported health facilities by district, Earthquake Affected Areas, Pakistan, 8 July - 04 Aug 2006.

Area	Population	Reporting Health Facilities			
		8 - 14 July	15 - 21 July	22 - 28 July	29 July - 4 Aug
		Week 28	Week 29	Week 30	Week 31
Muzaffarabad	894,364	86	76	74	72
Bagh	452,532	30	32	31	28
Poonch	633,712	50	41	49	45
Mansehra / Balakot	1,154,804	69	69	64	61
Battagram / Shangla	592,256	34	36	39	40
Total	3,727,668	269 (98%)	254 (92%)	257 (93%)	246 (78%)

Total number of consultations

As a result of fewer reporting sites, the number of consultations dropped in week 31 to 83,500, a reduction of 13%. Poonch district experienced the largest drop in reporting sites, with a concomitant decline in consultations. The highest number of consultations by district was in Muzaffarabad, with 26,642, and the lowest was in Battagram, at 9,392. The average number of consultations per facility declined from week 30, to 346 from 376, and the maximum number of consultations in a facility also decline, to 4,908 from 6678.

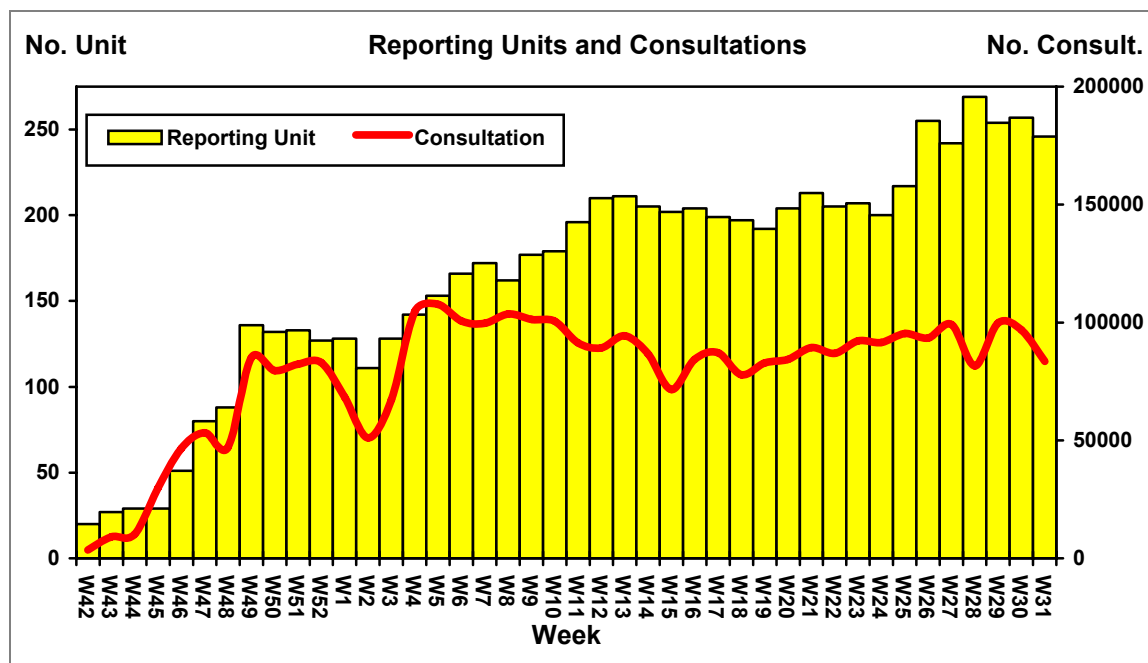


Figure 1. Weekly trend of reporting units and total number of consultations, Earthquake Affected Areas, Pakistan, 15 October 2005 – 04 Aug 2006.

DEWS Data, Epidemiological Week N^o 30 2006

Between 22 - 28 July 2006, **83,500** consultations for health events under surveillance were reported through DEWS. Overall, **18%** (15,020) were due to Acute Respiratory Infections (**ARI**), **15%** (13,053) due to Acute Diarrhoea (**AWD**), **6%** (4,707) due to Fever of Unknown Origin (**FUO**), and **5%** (4,189) due to Injuries (**INJ**). **ARI** attributed to **23%** and **15%** of consultations in the less than 5 years old and 5 or more years old respectively. All other reportable conditions, with the exception of bloody diarrhoea (1.25% of all consultations), each represented less than 1% of the total consultations in week 30.

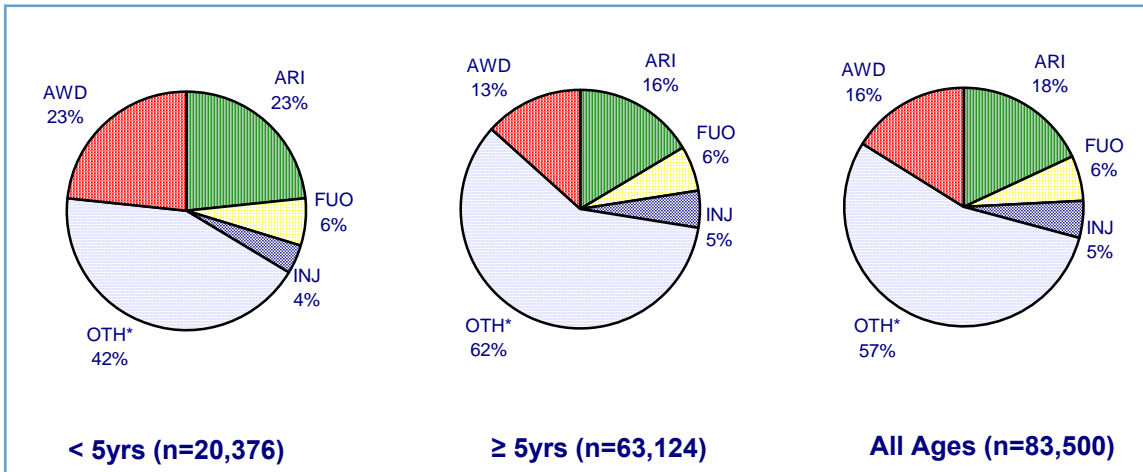


Figure 2. Proportion of primary causes for all reported cases, Earthquake Affected Areas, Pakistan, 29 July – 4 August 2006.

*OTH includes all other reportable conditions, plus all other consultations for conditions not under surveillance

DEWS Data, Epidemiological Week N^o 30, 2006: Consultations by age

Though ARI is still the single greatest reason for consultation in both age groups, for children < 5 acute watery diarrhoea (AWD) has now equalled the ARI rate. The two conditions together account for almost half the consultations in children under 5. Conditions under surveillance constitute the majority of reasons for consultation in the under five age group (ARI and AWD alone are the reason behind 46% of all consultations), while they represent slightly more than a third (38%) of all consultations for the five and over age group. The less common conditions (malaria, acute flaccid paralysis, measles, acute jaundice syndrome, meningitis, tetanus, and hemorrhagic fever) are almost identical in the proportion of consultations for the two age groups.

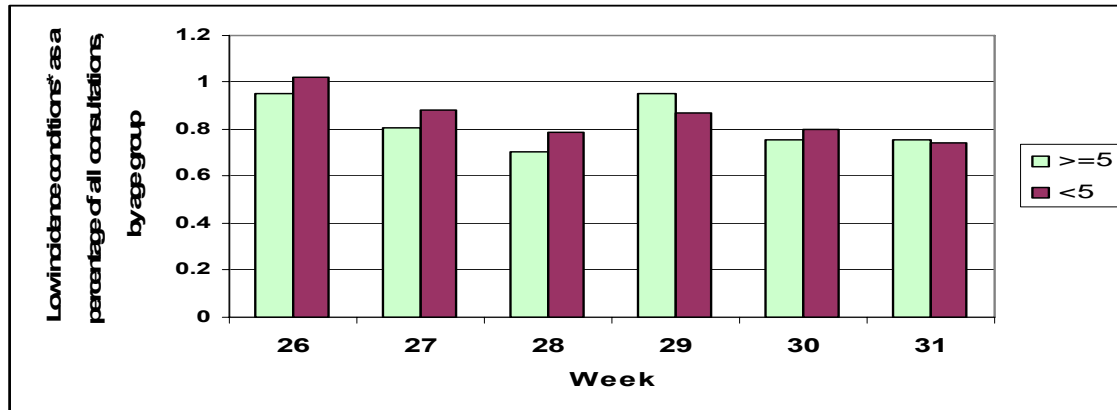


Figure 3: Low incidence conditions as a percentage of all consultations, by age group and week, Earthquake Affected Areas, Pakistan, 29 July – 4 August 2006.

*Low incidence conditions include malaria, meningitis, measles, acute flaccid paralysis, acute jaundice syndrome, tetanus, and hemorrhagic fever

DEWS Data, Monthly Summary (Epidemiological Weeks N^o 28-31)

In summary for the past month between 8 July to 04 Aug (Epidemiological weeks 28-31 inclusive), 160,305 consultations for health conditions under surveillance were reported, out of a total 360,760 consultations. **18%** (64,042) of consultations were due to acute respiratory infection (**ARI**), **14%** (51,920) acute watery diarrhoea (**AWD**), **6%** (21,349) Unexplained Fever (**FUO**) and **4%** (16,136) Injuries (**INJ**).

Table 2. Comparison of the weekly distribution of reported cases, deaths and monthly Case Fatality Rate (CFR), Earthquake Affected Areas, Pakistan, 1 – 28 July 2006.

Week Event	WEEK 28		WEEK 29		WEEK 30		WEEK 31		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
AWD	11709	0	13621	6	13102	0	13053	0	51920	6	0.012
BD	1160	0	1004	0	961	0	757	1	3946	1	0.000
AFP	0	0	4	0	0	0	0	0	4	0	0.000
MAL	473	0	802	0	648	0	555	0	2483	0	0.000
ARI	14141	2	17774	2	16887	0	15015	5	64042	9	0.014
MES	33	0	9	0	31	0	21	0	94	0	0.000
MEN	17	1	8	0	1	0	2	0	28	2	0.000
JAU	86	0	107	0	61	0	48	1	302	1	0.331
TET	0	0	0	0	0	0	1	1	1	1	0.000
AHF	0	0	0	0	0	0	0	0	0	0	0.000
FUO	4643	0	6092	0	5874	1	4707	0	21349	0	0.000
INJ	4294	0	4870	0	5436	0	4189	0	16136	0	0.000
OTH	45063	21	55557	24	53856	15	45152	12	200455	73	0.036
TOTAL	81619	24	99848	32	96857	16	83500	20	360760	93	
RU	269		254		257		246				

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, **90,224** consultations were reported in the **less than 5 years** old group, (**25%** of the total consultations), of which **24%** (21,456) were due to **ARI**, **21%** (19,391) due to **AWD**, **7%** (6,199) due to **FUO** and **4%** (3,768) 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 1 – 28 July 2006.

Week Event	WEEK 28		WEEK 29		WEEK 30		WEEK 31		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
AWD	4096	0	5318	1	5129	0	4730	0	19391	1	0.005
BD	233	0	371	0	281	0	216	0	1129	0	0.000
AFP	0	0	0	0	0	0	0	0	0	0	0.000
MAL	115	0	179	0	176	0	130	0	601	0	0.000
ARI	4989	2	6019	2	5672	0	4709	4	21456	8	0.037
MES	23	0	7	0	10	0	5	0	45	0	0.000
MEN	1	1	0	0	0	0	2	0	3	2	0.000
JAU	22	0	30	0	9	0	14	0	75	0	0.000
TET	0	0	0	0	0	0	0	0	0	0	0.000
AHF	0	0	0	0	0	0	0	0	0	0	0.000
FUO	1414	0	1753	0	1807	0	1217	0	6199	0	0.000
INJ	822	0	968	0	1115	0	861	0	3768	0	0.000
OTH	8468	7	10249	8	10235	4	8492	4	37557	23	0.061
TOTAL	20183	10	24894	11	24434	4	20376	8	90224	34	
RU	269		254		257		246				

In the current week, there was a very minor decrease in the number of cases of AWD, with **13,053** this week and **13,102** last week with no related deaths reported. Though the absolute number of cases remains almost the same, the number of reporting units has declined by 11, so an actual increase in AWD cases throughout the region may be masked. In the current week, **ARI** also continued to decrease in the total number of cases as compared with the previous week (**16,887** last week and **15,020** this week). There were **5** deaths reported from **ARI**. The weekly proportion of ARI and AWD is shown in figure 6.

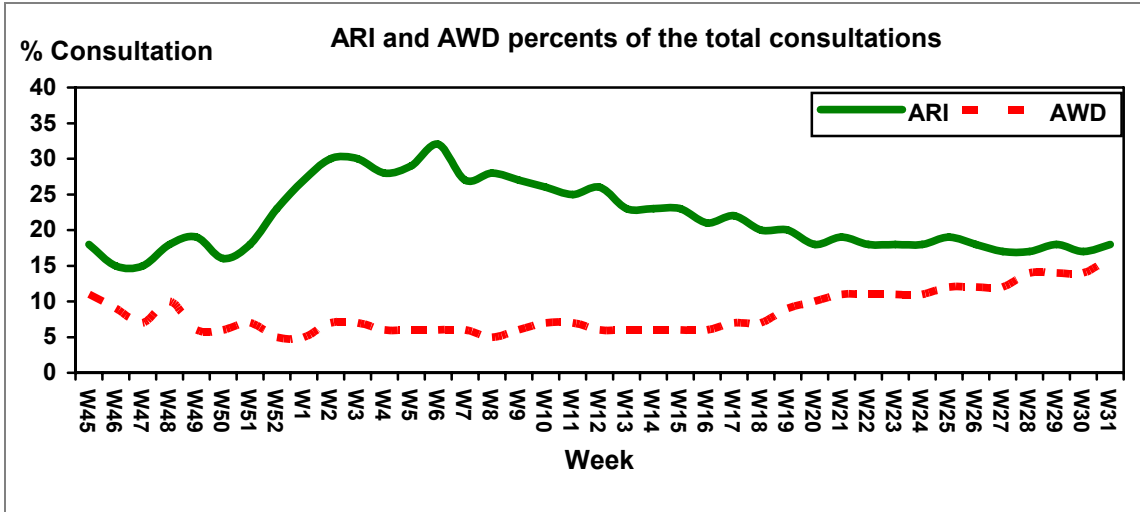


Figure 4. Weekly trend of percent consultations of reported ARI and AWD cases, Earthquake Affected Areas, Pakistan, 5 November -4 August 2006.

Acute Watery Diarrhoea

During the epidemiological week 31, a total of 13,053 **AWD** cases were reported with no related deaths. AWD continues to increase as a percentage of all consultations across both age groups (see figure 5).

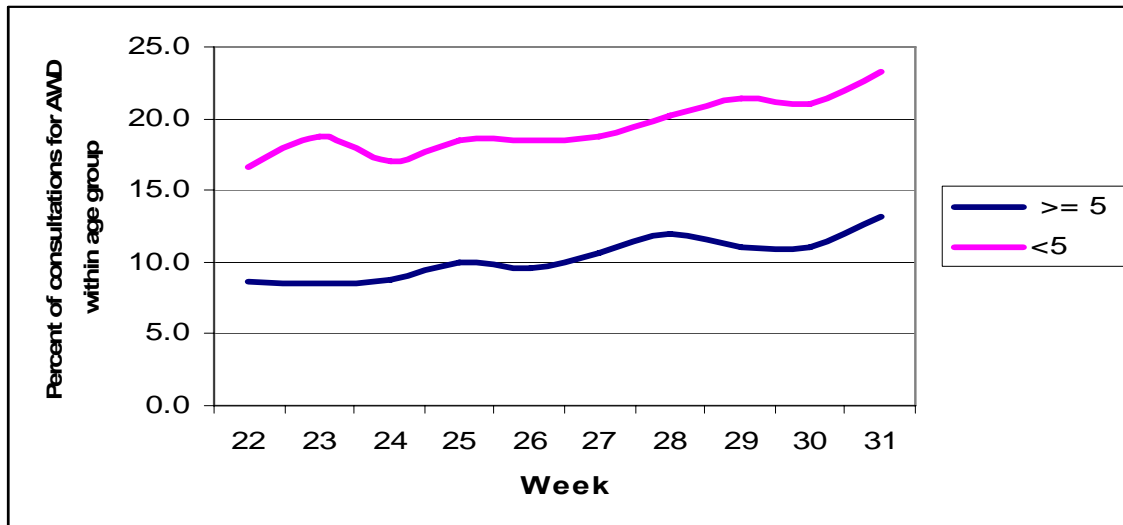


Figure 5: AWD as a percent of all consultations across reporting sites, by age groups, Earthquake Affected Areas, Pakistan, 27 May – 4 August 2006

All districts but one (Muzaffarabad) saw a significant increase in the percentage of consultations that were for AWD. The highest percentage increase was in Battagram, which saw the AWD

proportion increase by 40%, from 16% of all consultations to 23%. Muzaffarabad saw a small decrease, from 15.1% to 14.8% of all consultations, however this district did not have the lowest proportion of AWD in week 31; this was found in Bagh district, with 12% of all consultations being for AWD, and increase of 23% over the 9.9% proportion in the previous week.

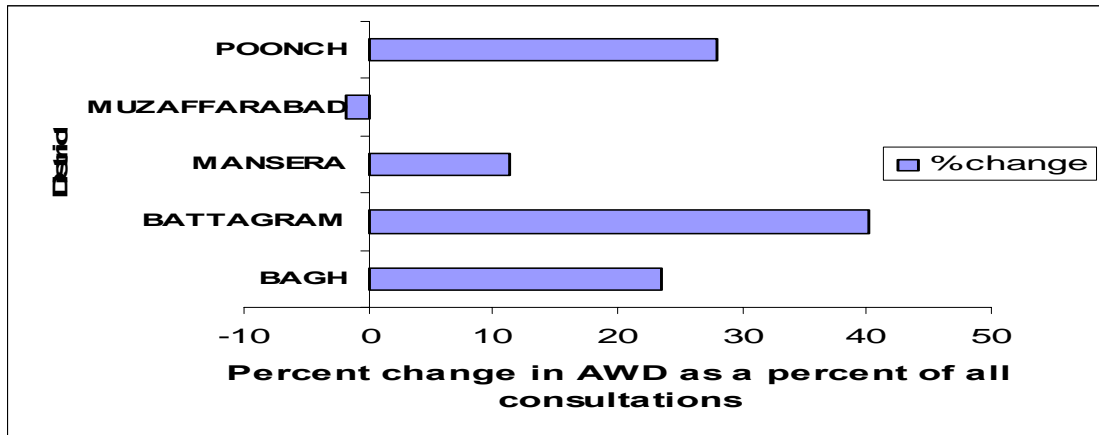


Figure 6: Percent change in AWD as a percent of all consultations, by district, Earthquake Affected Areas, Pakistan, July 28 – 4 August, 2006

Outbreaks of AWD continue to be a challenge in the earthquake zone. Only Muzarrarabad had no outbreaks of this condition this week. See the Alerts and Outbreaks section for more details.

Bloody Diarrhoea

Unlike watery diarrhea, bloody diarrhea cases have been dropping steadily in the past four weeks, both in terms of total cases, and in terms of percentage of consultations. Of all diarrhea cases, bloody diarrhea in week 28 was approximately 9%, but is now 5.5, reflecting the large overall increase in watery diarrhea cases

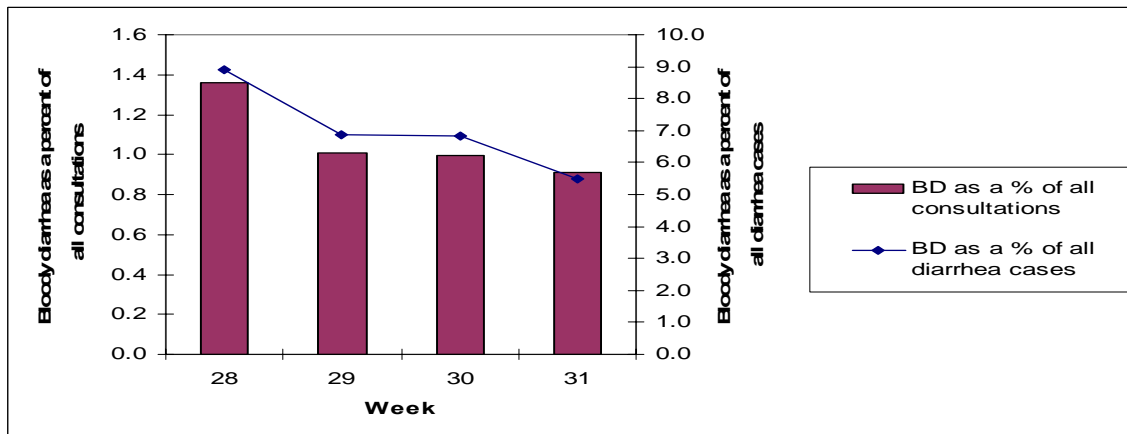


Figure 7. Bloody diarrhea as a percentage of all consultations and all consultations for diarrhea, Earthquake Affected Areas, Pakistan, 8 July – 4 August, 2006

Acute Jaundice Syndrome

With monsoon rains resulting in the contamination of unprotected water sources, the incidence of water-borne diseases could be expected to rise. This is the case with watery diarrhea, however,

there is no increase seen in bloody diarrhea or acute jaundice syndrome. In the current week, **49** cases of acute jaundice syndrome with **1** related death were reported. This is 12 cases fewer than week 30, which in turn was 46 cases lower than week 29. Muzaffarabad in particular has shown a significant decline in acute jaundice cases over the course of the rainy season. The trend in acute jaundice cases per reporting site, by district is shown in Figure 7.

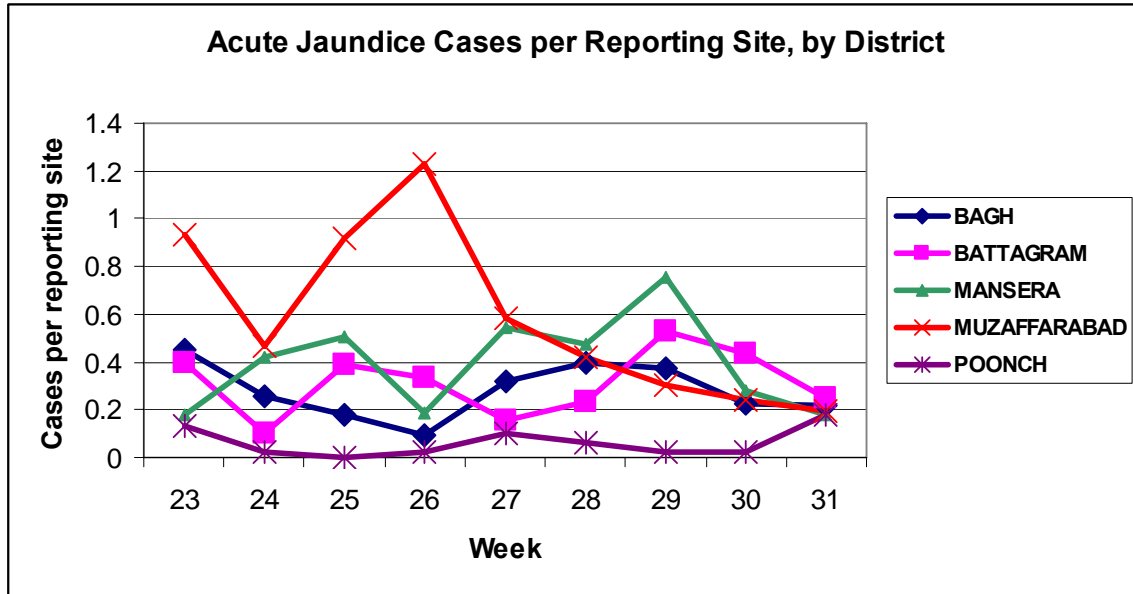


Figure 8 .Weekly trend of Acute Jaundice Syndrome by district, Earthquake Affected Areas, Pakistan, 3 June – 4 August, 2006

Malaria

The expected rise in malaria cases with the monsoon has not yet been seen, and in the current week, there was a decrease in consultations for malaria, to **555** from **648** cases in week 30.

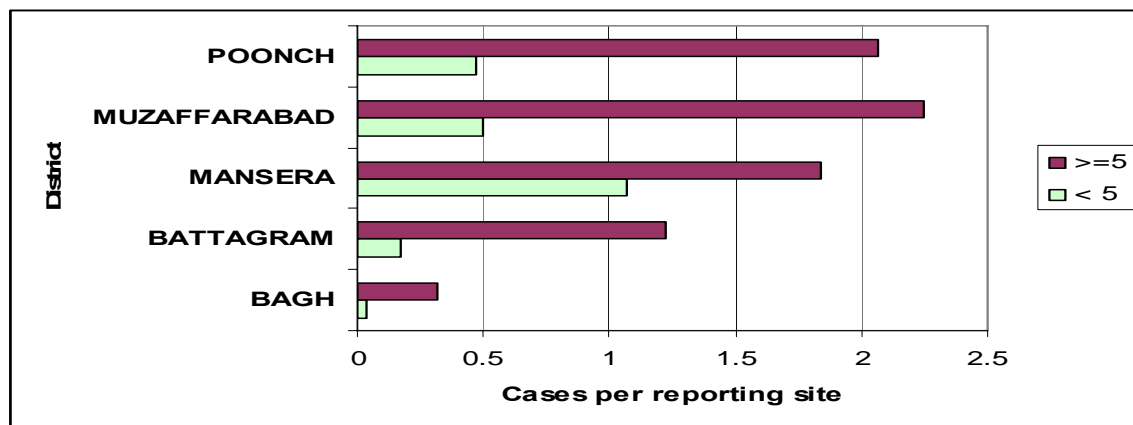


Figure 9: Malaria cases per reporting site by age, Earthquake Affected Areas, Pakistan, 29 July – 4 August 2006.

Malaria varies considerably by district, with Muzaffarabad having a rate more than five times higher than that of Bagh for patients 5 years and over, and Mansehra having a rate twice that of Muzaffarabad in patients under 5 years (see figure 9)

Measles

In week 31 there were **21** suspected cases of measles in the earthquake-affected areas, a drop from 31 in week 30. 10 of the cases were reported from Muzaffarabad, 8 from Battagram, and 3 from Mansehra. There were no reported cases from Poonch or Bagh. All of the cases from Mansehra and Muzaffarabad were in patients 5 years and older, while 5 of the 8 cases in Battagram were in children under 5. The trend in measles cases has been downward for Muzaffarabad, Mansehra, and Bagh, upward for Battagram, and alternating for Poonch, however, in all cases the slope of the trend is small, and there has been little fluctuation in the case-count by week.

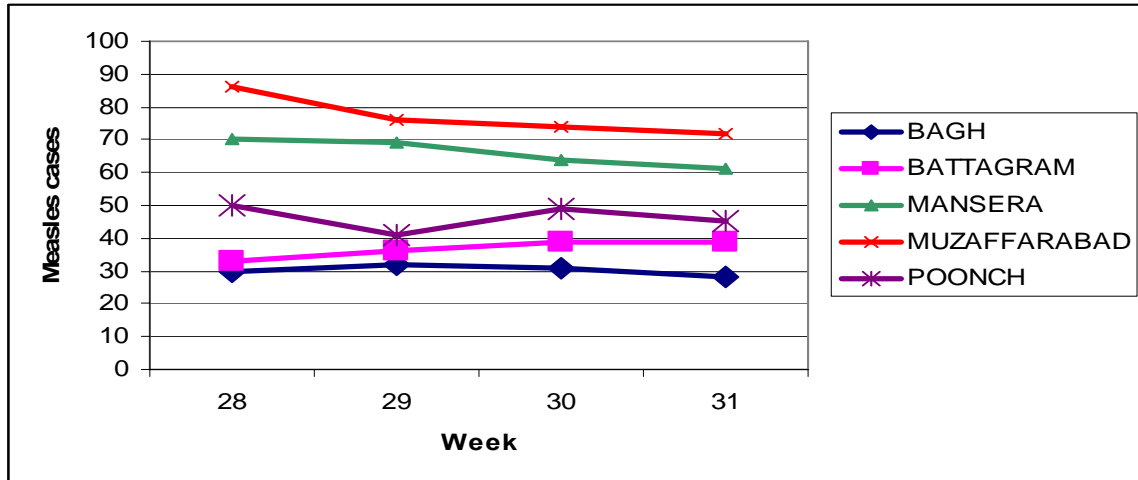


Figure 10. Weekly trend of reported measles cases, Earthquake Affected Areas, Pakistan, 5 November 2005 - 28 July 2006.

Acute Respiratory Infection

Acute Respiratory Tract Infections (ARI) is continuing to decline as a percentage of all consultations in patients less than 5 years old, however, for patients 5 and over the rate remains steady, with only minor fluctuations in the past month. See figure 11.

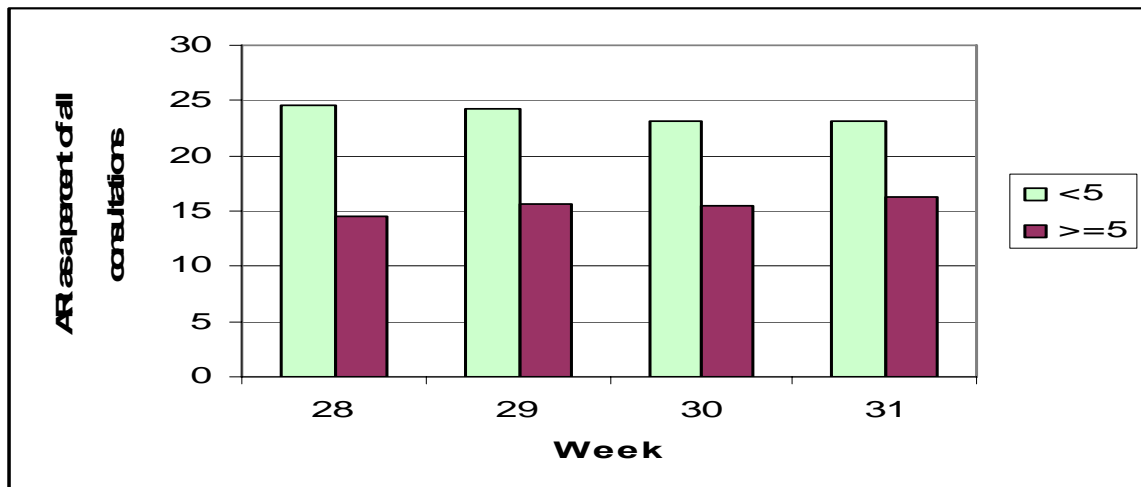


Figure 11: Weekly trend in ARI as an average percent of all consultations across reporting sites, Earthquake Affected Areas, Pakistan, 8 July – 4 August, 2006

Other Reportable Diseases and Conditions

There was one death from tetanus reported in week 31, in Muzaffarabad, and 2 cases of suspected meningitis, one in Mansehra, and one in Muzaffarabad. There were no cases of hemorrhagic fever or acute flaccid paralysis in reporting week 30.

Meningitis does not follow a predictable seasonal pattern as many of the conditions under surveillance do. The number of cases per reporting site ranges from a low of 0 to a high of 0.07. The trend in meningitis cases per reporting site is shown in figure 12.

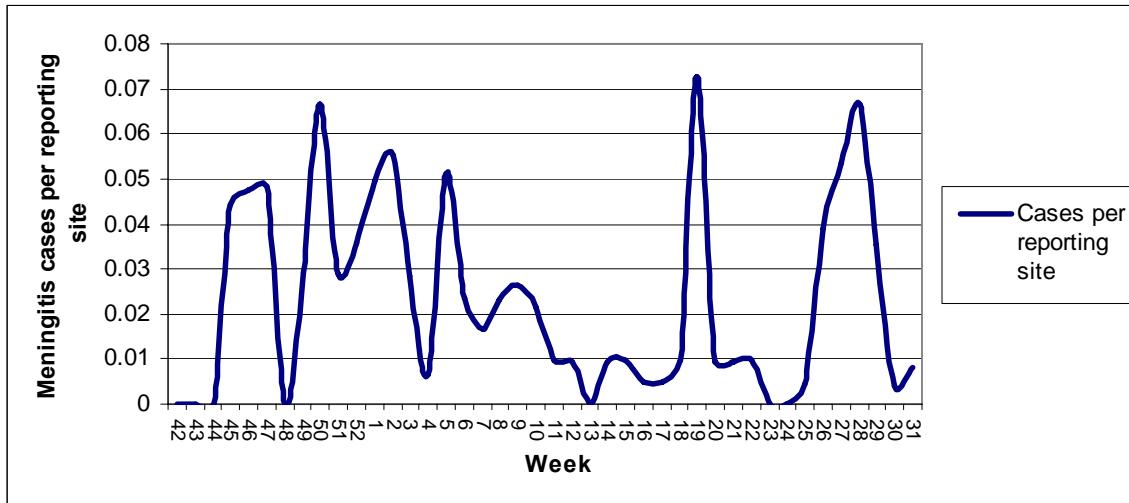


Figure 12 :Meningitis cases per reporting site, Earthquake Affected Areas, Pakistan,15 October- 4 August 2006 .

Despite the fact that the over five age group would include manual workers and others more prone to injuries, the percent of consultations that are from injuries is similar across the two age groups, with 4.2% of consultations due to injuries in the under five age group, and 5.2% in the over five age group. See figure 13.

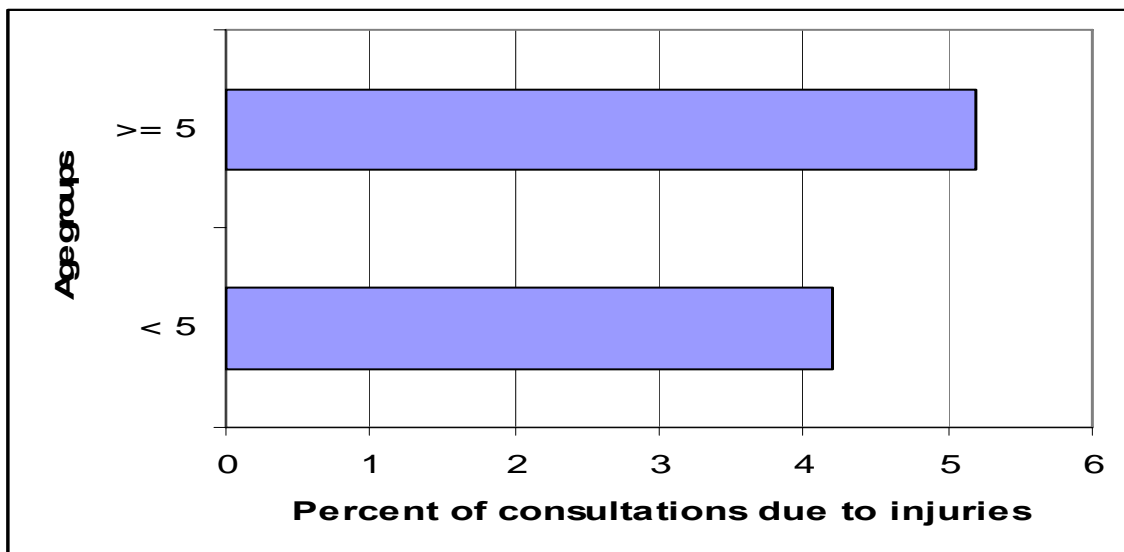


Figure 13: Injuries as a percent of all consultations, by age group, Earthquake Affected Areas, Pakistan,29 July – 4 August 2006

Outbreak Alert and Response¹

Acute Watery Diarrhoea

Bagh

A field clinic has been established in village Rerban in Tehsil Bagh, where 54 patients were treated for dehydration with intravenous fluids between July 26 and August 3. The field camp is still in operation and receiving patients.

An alert was received for two further sites, Makhdoom Kot and Salian, however when an investigation was undertaken only sporadic cases were found.

Battagram

A large outbreak throughout the district of Battagram began in week 31 and is ongoing. The District hospital has had three new ward tents erected to deal with the extra patients, and supplies have been distributed to facilities designated as referral sites across the district to lessen the burden on the hospital. IFRC and FRC have established field camps in areas with large clusters of patients. Approximately 300-350 patients have been treated per day since August 1.

Rawalakot

An investigation of acute watery diarrhea has been undertaken in the Abbaspur area. A total of 294 patients with acute watery diarrhea were reported.

Mansehra

An alert was received of 6 cases of acute watery diarrhoea and one death from the Balakot area, villages Bhangian, Jabbi, and Arban. The area was not accessible to WHO due to landslides, however a local resident was able to reach the site to take stool samples and report back. The investigation is ongoing.

Acute Jaundice Syndrome

Muzaffarabad

3 cases of jaundice were reported from Salmiyah and Chikar; there was no clustering. 4 cases were reported from Neelum, however roads are blocked due to heavy rains.

Rawalakot

RHC Abbaspur reported an alert for acute jaundice, however the road was blocked by landslides. The investigation will be undertaken when the road is cleared.

Meningitis

Muzaffarabad

One case of suspected meningitis was reported; the investigation is to take place 8-August.

Measles

Muzaffarabad

7 cases have been reported from Qazi Abdul Hameed camp. These cases are to be investigated.

¹ Outbreak Investigation and response of Suspected Viral Hepatitis, Malaria, and Bloody Diarrhoea and Watery Diarrhoea would only take place when a cluster of cases is identified or there is an increase in the incidence of the disease.
(Note: Single death due to Diarrhoea and single case of reported severe dehydration among >5 years would be investigated)

Number of reported cases and deaths per District, AJKTable 6. Number of reported cases and deaths, **Bagh District**, Earthquake Affected Areas, Pakistan, 29 July - 04 Aug 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
28	962	0	38	0	0	0	15	0	1065	0	0	0	0	0	6	0	0	0	0	0	244	0	262	0	5280	0
29	1356	4	75	0	0	0	21	0	1948	0	0	0	0	0	12	0	0	0	0	0	341	0	608	0	10375	0
30	1461	0	70	0	0	0	31	0	2335	0	2	0	0	0	7	0	0	0	0	0	436	0	782	0	9655	0
31	1242	0	54	0	0	0	10	0	1530	0	0	0	0	0	6	0	0	0	0	0	201	0	368	0	6774	0
Total	5021	4	237	0	0	0	77	0	6878	0	2	0	0	0	31	0	0	0	0	0	1222	0	2020	0	32084	0

Table 7. Number of reported cases and deaths, **Poonch District**, Earthquake Affected Areas, Pakistan, 29 July - 04 Aug 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
28	1052	0	20	0	0	0	58	0	1826	0	0	0	0	0	3	0	0	0	0	0	1140	0	612	0	4166	4
29	2125	1	14	0	1	0	89	0	2566	0	0	0	0	0	1	0	0	0	0	0	1918	0	838	0	6153	8
30	2107	0	86	0	0	0	92	0	2707	0	0	0	0	0	1	0	0	0	0	0	1899	0	1288	0	7388	6
31	2116	0	24	0	0	0	114	0	2638	2	0	0	0	0	8	0	0	0	0	0	1240	0	886	0	5191	4
Total	7400	1	144	0	1	0	353	0	9737	2	0	0	0	0	13	0	0	0	0	0	6197	0	3624	0	22898	22

Table 8. Number of reported cases and deaths, **Muzaffarabad District**, Earthquake Affected Areas, Pakistan, 29 July - 04 Aug 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
28	5391	0	725	0	0	0	286	0	5447	0	21	0	16	1	36	0	0	0	0	0	1229	0	2265	0	14194	12
29	4404	0	454	0	0	0	312	0	6017	1	5	0	8	0	23	0	0	0	0	0	1505	0	2093	0	15809	9
30	4344	0	396	0	0	0	254	0	5619	0	22	0	1	0	18	0	0	0	0	0	1467	1	2225	0	14354	6
31	3956	0	384	1	0	0	198	0	5550	1	10	0	0	0	13	1	1	1	0	0	1623	0	1863	0	13043	5
Total	18095	0	1959	1	0	0	1050	0	22633	2	58	0	25	1	90	1	1	1	0	0	5824	1	8446	0	57400	32

Number of reported cases and deaths per District, NWFPTable 9. Number of reported cases and deaths, **Battagram District**, Earthquake Affected Areas, Pakistan, 29 July - 04 Aug 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
28	1266	0	96	0	0	0	35	0	1108	0	4	0	0	0	8	0	0	0	0	0	420	0	256	0	3422	0
29	1906	0	95	0	0	0	72	0	1769	0	1	0	0	0	19	0	0	0	0	0	563	0	294	0	4809	1
30	1470	0	112	0	0	0	60	0	1502	0	5	0	0	0	17	0	0	0	0	0	433	0	319	0	5186	1
31	2127	0	135	0	0	0	56	0	1293	0	8	0	0	0	10	0	0	0	0	0	545	0	299	0	4919	2
Total	6769	0	438	0	0	0	223	0	5672	0	18	0	0	0	54	0	0	0	0	0	1961	0	1168	0	18336	4

Table 10. Number of reported cases and deaths, **Mansehra District***, Earthquake Affected Areas, Pakistan, 29 July - 04 Aug 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
28	3038	0	281	0	0	0	79	0	4695	2	8	0	1	0	33	0	0	0	0	0	1610	0	899	0	18001	5
29	3859	1	366	0	3	0	313	0	5516	1	3	0	0	1	52	0	0	0	0	0	1795	0	1044	0	18683	6
30	4128	0	361	0	0	0	211	0	4907	0	2	0	0	0	18	0	0	0	0	0	1642	0	862	0	17828	3
31	3612	0	160	0	0	0	177	0	4004	2	3	0	1	0	11	0	0	0	0	0	1098	0	773	0	15225	1
Total	14637	1	1168	0	3	0	780	0	19122	5	16	0	2	1	114	0	0	0	0	0	6145	0	3578	0	69737	15

*Data from Balakot Tehsil were merged with the data from Mansehra district.