Ministry of Health Government of Pakistan
World Health Organization

Epidemiological *Bulletin*
Flood Response in Pakistan

Volume 1, Issue 2 Monday 30 August 2010

Highlights

Epidemiological week no 34 (21-27 August 2010)

- Sixty out of the seventy-three flood affected districts in four provinces are now reporting surveillance data to the DEWS;
- 702 fixed health centers and 375 mobile medical outreach centers have reported to the Disease Early Warning System (DEWS) during the last reporting period (Week no-34: 21-27 August 2010);
- 1,413,980 patients' consultations were reported during the last epidemiological week (week no-34) which shows an increase by 11% over the preceding week;
- The number of populations currently under surveillance by the Disease Early Warning System (DEWS) in the flood affected districts is close to 9 million;
- Acute diarrhea, acute respiratory infections, skin diseases and suspected malaria remain the major causes of seeking health care in the flood affected districts

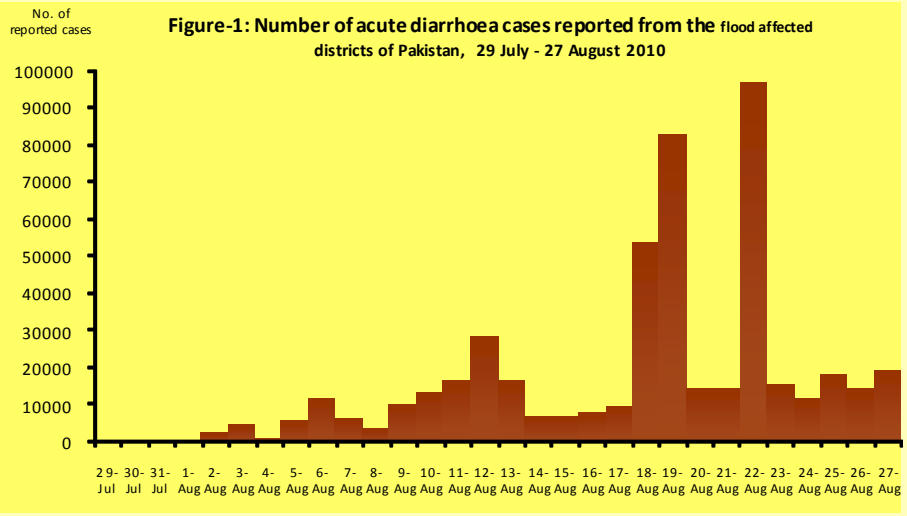


Figure-1: Number of acute diarrhoea cases reported from the flood affected districts of Pakistan, 29 July - 27 August 2010

Epidemic prone diseases under surveillance in the flood affected areas

- Acute flaccid paralysis
- Cholera/Acute Watery Diarrhoea
- Bloody Diarrhoea
- Dengue
- Malaria
- Measles
- Viral Hepatitis/ Acute Jaundice Syndrome
- Acute Respiratory Infections

Cumulative number of selected health events reported from the flood affected districts (29 Jul-28 Aug)

Disease	Number	% of total consultations
Acute Diarrhoea	515,696	14%
ARI	531,660	14%
Skin Diseases	708,677	19%
Suspected malaria	100,975	3%
Total consultations		3,806,804

Major health events reported during the week (21-27 Aug)

Disease	Number	% of total consultations
Acute Diarrhoea	198,793	14%
ARI	215,619	15%
Skin Diseases	295,193	21%
Suspected malaria	45,459	3%
Total consultations		1,413,980

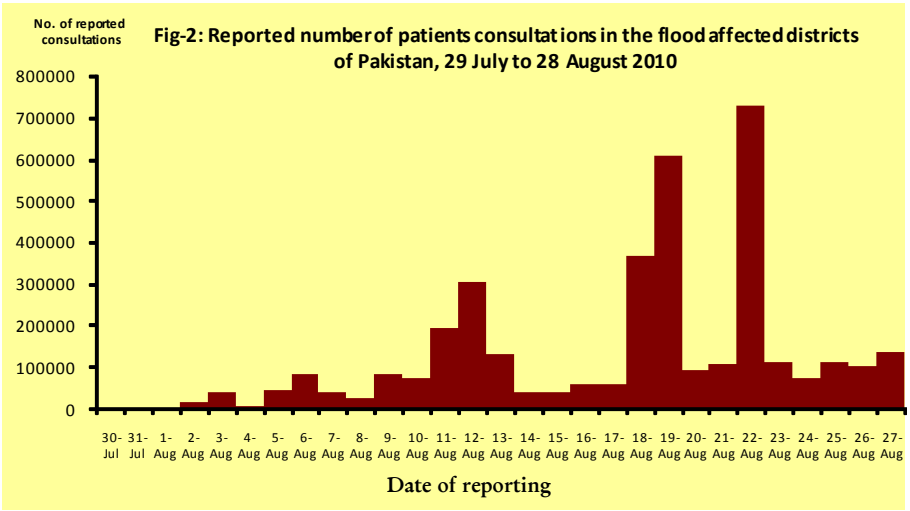


Fig-2: Reported number of patients consultations in the flood affected districts of Pakistan, 29 July to 28 August 2010

Surveillance sites

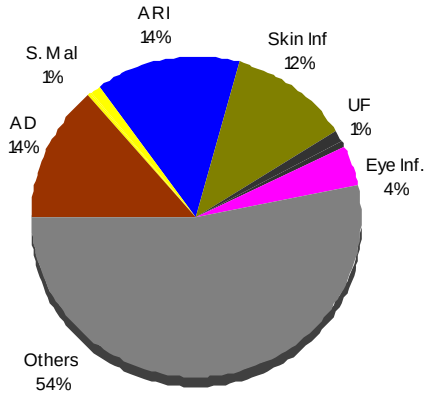
Province	Fixed centers	Mobile outreach
Balochistan	33	11
KPK	43	50
Punjab	278	185
Sindh	348	129
Total	702	375

This weekly Epidemiological Bulletin is published jointly by the Federal Ministry of Health, Government of Pakistan and World Health Organization (WHO), Pakistan . For Correspondence: Tel : +92-051-9255184-5, Fax : +92-051-9255083, E-mail: wr@pak.emro.who.int. or eic.nih@gmail.com

Selected health events: KPK Province, Week-34 (21-27 Aug):

Health events	Case counts (%)
Acute diarrhea (AD)	17,448 (14%)
Bloody diarrhoea	401 (<1%)
Acute respiratory tract infection (ARTI)	17,886 (14%)
Skin infections (SI)	15,320 (12%)
Unexplained fever (UF)	1,461 (1%)
Suspected malaria (S. Mal)	1,082 (0.85%)
Total consultation	126,922

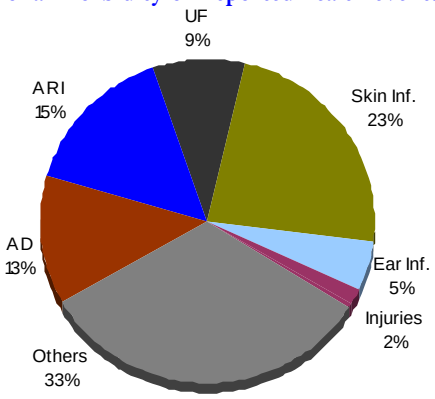
Figure-3: Proportional morbidity of reported health events, KPK



Selected health events: Punjab Province, Week-34 (21-27 Aug):

Health events	Case counts (%)
Acute diarrhea (AD)	119,293 (13%)
Ear Infections (Ear Inf)	46,893 (5%)
Acute respiratory tract infection (ARI)	143,884 (15%)
Skin infections (SI)	216,121 (23%)
Unexplained fever (UF)	83,045 (9%)
Injuries (Inj)	16,348 (2%)
Total consultation	934,188

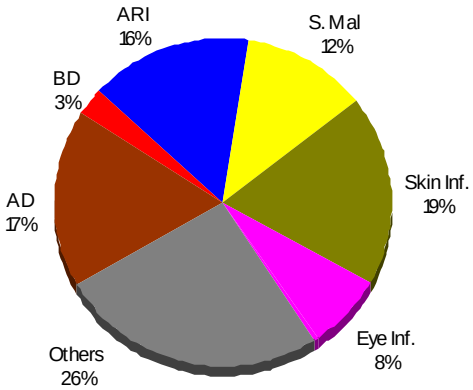
Figure-4: Proportional morbidity of reported health events, Punjab



Selected health events: Sindh Province, Week 34 (21-27 Aug)

Health events	Case counts (%)
Acute diarrhea (AD)	57,056 (17%)
Suspected malaria (S. Mal)	38,721 (12%)
Acute respiratory tract infection (ARI)	51,275 (16%)
Skin infections (SI)	60,996 (19%)
Bloody diarrhoea (BD)	9,227 (3%)
Total consultation	327,122

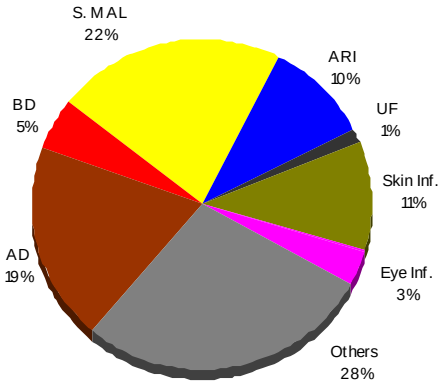
Figure-5: Proportional morbidity of reported health events, Sindh



Selected health events: Balochistan Province, Week 34 (21-27 Aug)

Health events	Case counts (%)
Acute diarrhea (AD)	4,996 (19%)
Suspected malaria (S. Mal)	5,656 (22%)
Acute respiratory tract infection (ARI)	2,574 (10%)
Skin infections (SI)	2,756 (11%)
Bloody diarrhoea (BD)	1,274 (5%)
Total consultation	25,682

Figure-6:Proportional morbidity of reported health events, Balochistan



Patient consultations

Since the beginning of flood, approximately 3,806,804 patients' consultations have been reported to the DEWS from the four flood affected provinces in Pakistan. Starting from 213 patients' consultations reported on 29 July , the number of patients seeking health care from both the fixed and mobile outreach centers are increasing– a sign of increasing health facility utilization by the flood affected communities. During the last week *(Figure-2)*, a total of 1,413,980 patients consultations were reported from 702 fixed and 375 mobile health

Leading causes of morbidity

The major causes for seeking health care by the affected communities in almost all the flood affected provinces are from the commonly prevalent infectious diseases like diarrhoeal diseases, acute respiratory infections, skin diseases and suspected malaria. While in the province of Balochistan and Sindh, the risk of increasing case load from malaria are unfolding *(Figure-7*), the provinces of Punjab, KPK and Sindh are showing increasing trend of skin diseases, diarrhoeal disease and acute respiratory infections.

The number of diarrhoeal diseases reported from the flood affected provinces are on the rise *(Figure-8 and 9)* and a perceptible increasing trend has been observed in each of the affected areas compared to the same corresponding reporting period in the past.

As seen in the *figure-9*, the diarrhoeal diseases, reported from the IDP crisis and hosting districts of KPK province after the flood, as a percentage of total patients consultations, have clearly exceeded the number reported during the same corresponding period in 2009

Alert/Alarm thresholds

A total of twenty-five (25) alerts were raised during the last reporting period (Week no 34: 21-27 August 2010). Out of these, 24 alerts were flagged for

Figure-7: Leading causes of seeking health care in the flood affected districts of Pakistan, 29 July - 27 August 2010

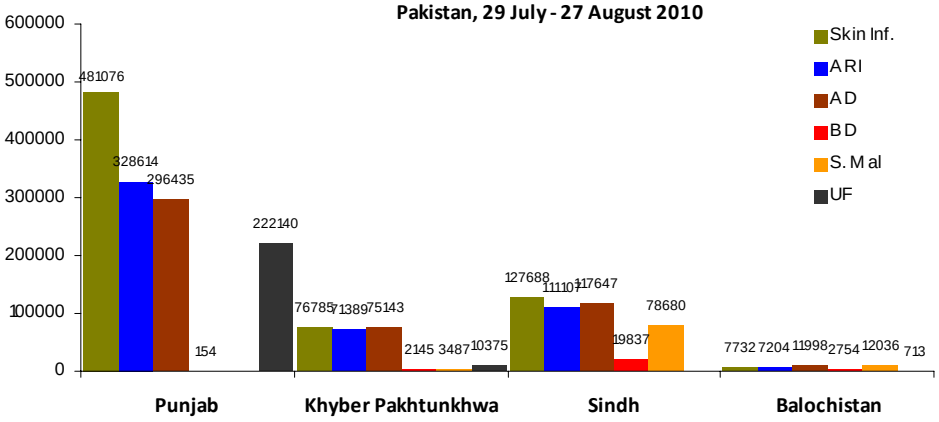


Figure-8: Cases of dairrhoeal diseases as percentage of patients consultation reported from the flood affected districts, Pakistan (29 July - 24 August, 2010)

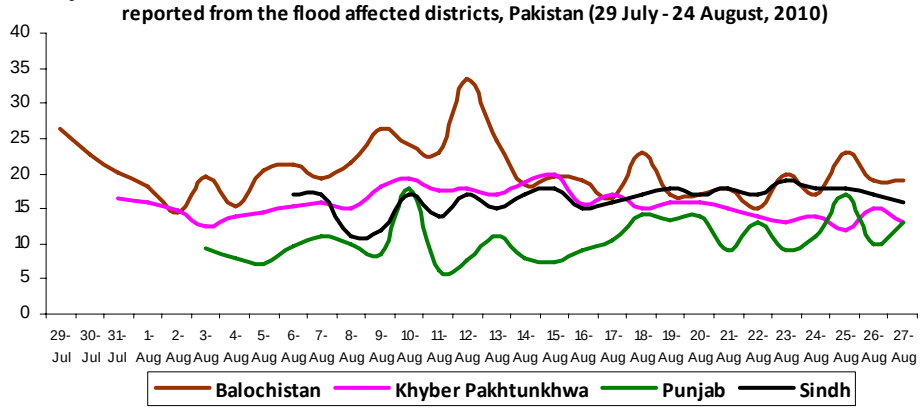
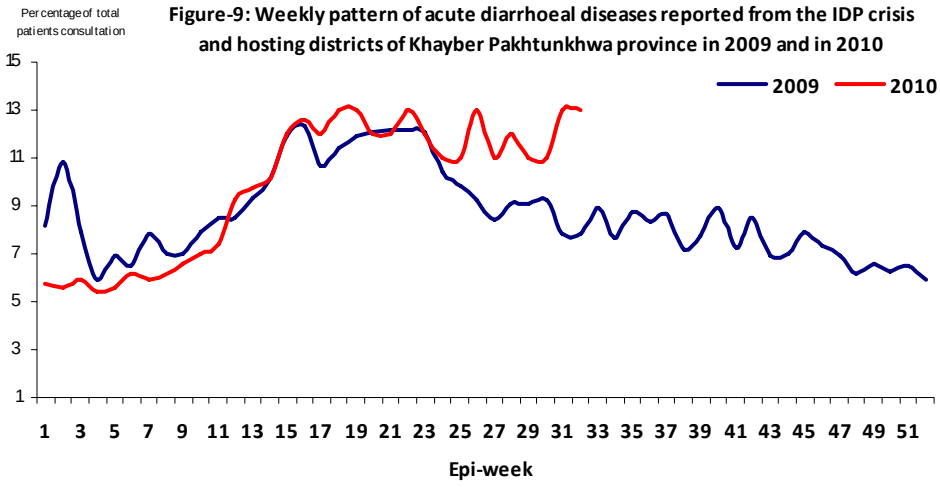


Figure-9: Weekly pattern of acute diarrhoeal diseases reported from the IDP crisis and hosting districts of Khayber Pakhtunkhwa province in 2009 and in 2010



suspected cute watery diarrhea and the remaining alert was for Acute Flaccid Paralysis. Of the alerts for AWD, 14 were from KPK province, 7 were from Sindh province and 1 alert, each, was reported from Punjab, Balochsitan and AJK province. In the KPK province, 5 alerts were reported from Peshwar district, 3 from Tank district, 2 from Mardan and Nowshera district and 1 from DI Khan district. In the Sindh province, 3 alerts were reported from Khairpur, 2 were from Sukkur, and 2 were from Kashmore district. In Punjab province, the alert for AWD was reported from Muzaffargarh district and the alert from AJK province was reported from Haveli district. The alert for Acute Flaccid Paralysis (AFP) was reported from Ghotki district of Sindh province. Laboratory samples have been collected from all these sites and sent to the NIH for laboratory confirmation.

Epidemic Watch

The emergency health interventions are being scaled up in the flood affected areas. The surveillance system has also been geared up in these areas to early detect any potential outbreak.

Since the beginning of the flood, the epidemic prone diseases are being closely monitored. The progression of these epidemic prone diseases are under close vigilance through daily analysis of surveillance data as well as, whenever possible, through comparison with past historical trend (Figure-10).

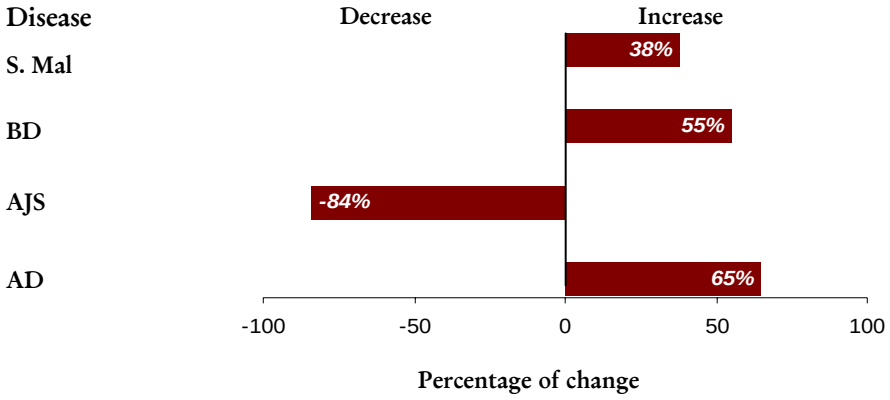
Any alerts for an outbreak, whenever flagged, are rapidly investigated and biological samples collected for laboratory diagnosis and verification.

So far, 92 outbreak alerts have been reported by the DEWS since the beginning of the flood, out of which 84 (91%) were from Acute Watery Diarrhoea. 3 alerts were raised for Measles and 1 alert, each, was raised for malaria, dengue fever and acute flaccid paralysis. Majority of the alerts (Over 75%) were raised from the province of Khyber Pakhtunkhwa (KPK).

All these outbreak alerts were verified through field investigation and clinical specimens were collected and sent to the National Reference Laboratory for confirmation.

The rapid analysis of surveillance data, almost on a daily basis, field investigation for verification of any unusual health event that represent a threat to public health and use of epidemic intelligence data are the central basis of this early warning system for any potential outbreak in the flood affected areas of Pakistan.

Fig-10: Selected health events reported from the flood affected provinces of Pakistan: Comparison of 1-week totals reported in week 34 of 2010 with the same period in

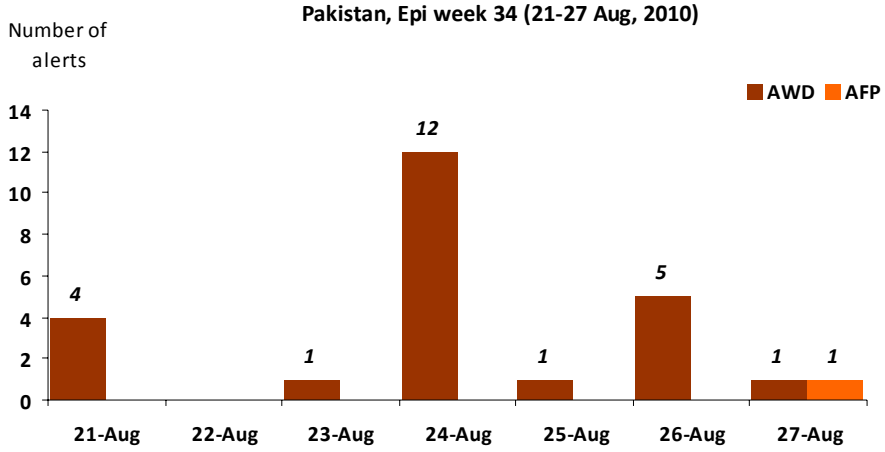


The comparison (Figure-10) of one week total of selected health events– Suspected malaria (S. Mal), Acute Jaundice Syndrome (AJS), Acute Diarrhoea (AD) and Bloody Diarrhoea (BD) for week no 34 of 2010 with the same period in 2009 in KPK, Balochistan and Sindh province shows that except AJS, there has been an

Outbreak Alert and Verification

Diseases	Number	Number investigated
AWD	84	84
BD	1	1
Dengue Fever	1	1
Malaria	1	1
Measles	3	3
AFP	2	2
Total	92	92

Fig-11: Number of Alerts resported from the flood affected districts of Pakistan, Epi week 34 (21-27 Aug, 2010)



The objective of this weekly epidemiological bulletin is to provide a snap shot on the health events occurring amongst the affected communities displaced by the current flood in Pakistan. It is built upon the daily surveillance data received from over 490 fixed and 554 mobile outreach centers which are currently operational in the 73 flood affected districts of four provinces (Balochistan, KPK, Punjab and Sindh). While every attempt is made to show and analyse the weekly trend of the epidemic prone diseases amongst the flood-hit communities, the information presented in the bulletin needs to be interpreted in the context that precise information on the reference populations is not always available, The bulletin doesn't provide any health information on areas not currently accessible or covered by the emergency health response operations of MoH, Pakistan and WHO.

For further information and feed-back

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