



Highlights

*Epidemiological week no. 24
(9 to 15 June 2013)*

- **Measles:** This week a total of 97 alerts investigated. 457 measles cases were reported from 35 districts. Vitamin-A drops provided to the suspected cases and district health teams were contacted to improve vaccination in affected areas.
- **71 districts** and 2020 health facilities have reported to Disease Early Warning system (DEWS) this week 24, compared to 73 districts with 2105 health facilities shared weekly data in week 23, 2013 to the DEWS.
- **810,623** patients consultations were reported in week 24, 2013 compared to **792,860** consultations reported in week 23, 2013.
- Altogether **137** alerts were investigated and **2** new outbreaks along with 4 ongoing outbreaks were responded.

Figure-1: 71 districts reported to DEWS in week 24, 2013



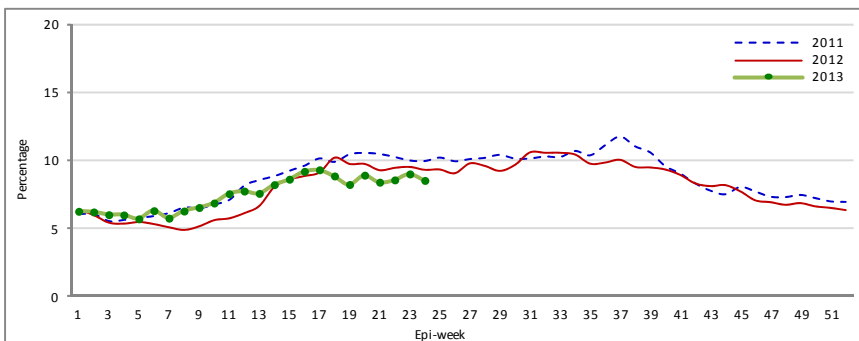
Priority diseases under surveillance in DEWS

- Pneumonia
- Acute Watery Diarrhoea
- Bloody diarrhoea
- Acute Diarrhoea
- Suspected Enteric/Typhoid Fever
- Suspected Malaria
- Suspected Meningitis
- Suspected Dengue fever
- Suspected Viral Hemorrhagic Fever
- Suspected Measles
- Suspected Diphtheria
- Suspected Pertussis
- Suspected Acute Viral Hepatitis
- Neonatal Tetanus
- Acute Flaccid Paralysis
- Scabies
- Cutaneous Leishmaniasis

Cumulative number of selected health events reported in Epi-week 1 to 24, 2013 (29 Dec 2012 to 15 June 2013)

Disease	# of Cases	Percentage
ARI	4,357,565	23%
Bloody diarrhoea	51,952	<0.5%
Acute diarrhoea	1,449,872	7%
S. Malaria	859,650	5%
Skin Diseases	720,116	4%
Unexplained fever	613,370	3%
Total (All consultations)	19,396,255	

Figure-2: Weekly trend of Acute Diarrhoea in Pakistan; Week-1, 2011 to week-24, 2013.



Major health events reported during the Epi-week - 24 (9 - 15 June 2013)

Disease	# of Cases	Percentage
ARI	111,232	14%
Bloody diarrhoea	1,910	<0.5%
Acute diarrhoea	69,428	9%
S. Malaria	28,969	4%
Skin Diseases	31,443	4%
Unexplained fever	21,742	3%
Total (All consultations)	810,623	

- The graph (Figure-2) shows the comparison of weekly trend of Acute diarrhoea (AD) as proportional morbidity (percentage of cases out of total consultations) reported to DEWS each week in year 2011; 2012 and 2013.

Outbreaks (Wk-24/2013):

Date	Disease	Province	District	Area	<5M	>5M	<5F	>5F	Action Taken
10-Jun	Measles	Punjab	Bahawalpur	Bahawalpur Saddar - Jhangwali, Khanqah Sharif, Gulistan Mill, Samma Satta, Chak 12 BC	2	1	3	0	Alert for 7 suspected cases of measles with 1 death were reported from Saddar area, district Bahawalpur. All the suspected cases were given first dose of Vitamin-A, while second dose was provided to the parents to be administered on next day. Health education sessions were conducted in the community about prevention from measles. Mop up activity has been conducted at Khanqah Sharif from where the death was reported. Information shared with DoH.
10-Jun	Measles	Punjab	Bhakkar	UC Darya Khan Urban II, Tehsil Darya Khan.	2	3	6	2	In continuation of Measles outbreak in Tehsil Darya Khan, district Bhakkar, 13 new suspected Measles cases were reported from THQ and DHQ hospitals. 10 out of 13 cases were found vaccinated. All the suspected cases were given single dose of Vitamin-A, while second dose were ensured after 24 hours. Community was provided awareness through health education session for highlighting importance of vaccination of children against all the EPI diseases. Information shared with EDO(H).
10-Jun	Measles	Punjab	Rawalpindi	UC's City 21-30; 91-100, Tehsil Rawalpindi.	1	1	2	0	In continuation of Outbreak in Rawalpindi city (UC's 21-30 and 91-100) 4 more new suspected Measles cases were reported, previously 49 cases have been reported from same UC's making a total of 54 cases. 2 suspected cases were found fully vaccinated while 1 had received MCV 1. On active surveillance no more Measles cases were found. All the suspected cases were given single dose of Vitamin-A while second dose were ensured after 24 hours. Health education sessions were conducted in the community highlighting the importance of vaccination of children against all the EPI diseases. Information shared with EDO(H).
12-Jun	Measles	Balochistan	Nasirabad	Abro Muhallah, Dera Murad Jamali, Tehsil Dera Murad Jamali	1	1	4	0	Alert for 6 suspected cases of Measles were investigated. Vitamin-A doses were given to all the suspected cases. 1 blood sample collected and sent to NIH. During active surveillance 16 children were checked of which 11 were immunized against BCG. DHO was informed mop up activity planed.
15-Jun	AD	Balochistan	Jaffarabad	Goth Jia Khan Khoso, UC Roopa, Tehsil Sohbat Pur	8	17	11	13	Alert for 49 cases of Other Acute Diarrhea reported. Investigation was jointly done with HF in charge. Cases were from different locations. The cause was probably contaminated water. Diarrheal medicines, ORS along with purification sachet and other essential medicines were provided to DoH. HF in charge was informed to establish ORT corner to treat and rehydrate cases via Plan A and B type of diarrheal cases and to refer the complicated cases to DHQ.
15-Jun	Leishmaniasis	Balochistan	Killa Saifullah	THQ Muslim Bagh	0	0	0	0	In continuation of Leishmaniasis outbreak in district Killa Saifulla, 24 more cases were reported from THQ hospital, Muslim Bagh. So for a total of 653 cases were reported in 2013. Community is being mobilized about treatment and health issues. Information shared on regular basis with DHO.

Figure-3: Number of alerts received and responded, week 20 - 24, 2013

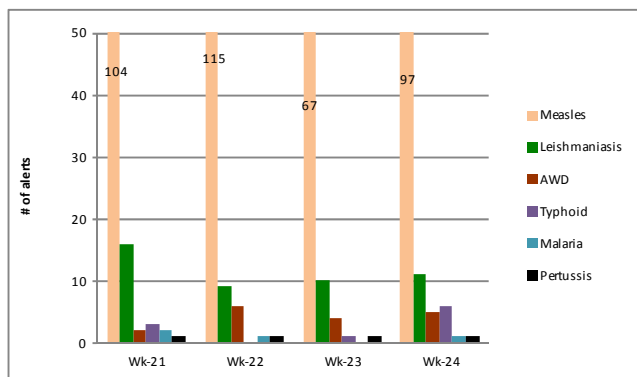
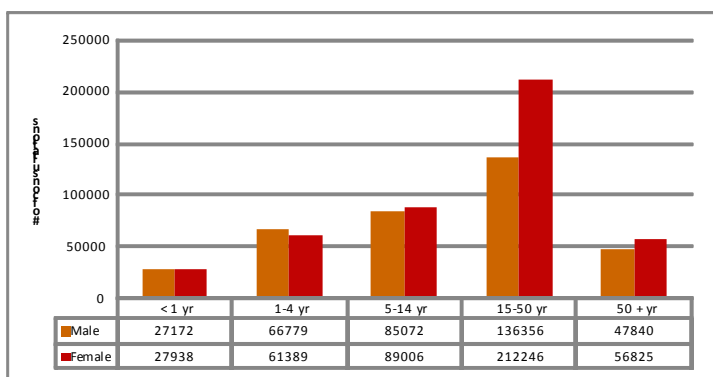


Figure-4: Number of consultations by age and gender, week 24, 2013



Province Khyber Pakhtunkhwa:

247 health facilities from 11 districts of Khyber Pakhtunkhwa sent reports to DEWS with a total of 82,354 patients consultations reported in week 24, 2013. 51 alerts were received and appropriate measures were taken. Altogether 49 alerts were for Measles; while 1 each for AWD and Leishmaniasis. The weekly trend of Acute diarrhoea is showing decrease as compare with last week in KP. ARI trend also showing decrease as compared with last week.

Figure-5: Weekly trend of Acute diarrhoea, province Khyber Pakhtunkhwa

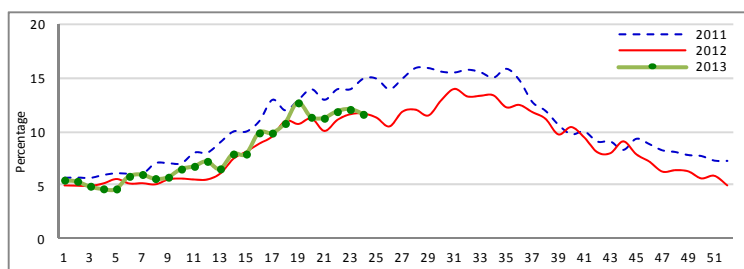
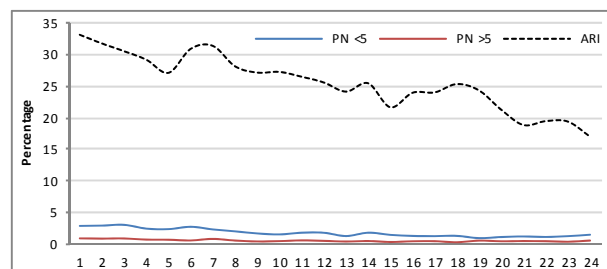


Figure-6: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



Province Sindh:

822 health facilities from 23 districts in Sindh province reported to DEWS with a total of 311,961 patient consultations in week 24, 2013. 2 alerts, 1 each were for NNT and Leishmaniasis were received and appropriate measures were taken. The weekly proportion of consultation for AD in Sindh showing a high and steady trend. The overall proportion of AD for the province is high as compared to the previous years during the same period. In the recent weeks 5 AWD outbreaks identified and responded, the situation need continuous attention. ARI trend showing decrease as compared with last week.

Figure-7: Weekly trend of Acute diarrhoea, province Sindh

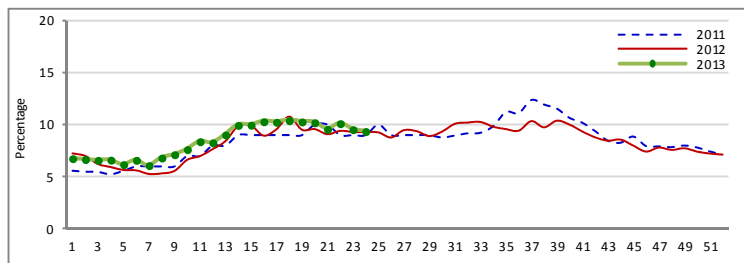
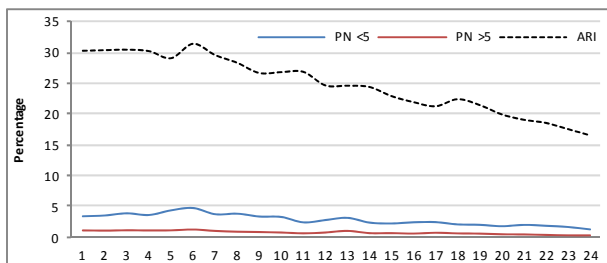


Figure-8: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



Province Punjab:

627 health facilities from 13 districts in province Punjab reported to DEWS with a total of 365,819 patients consultations in week 24, 2013. Total 52 alerts were received and appropriate measures were taken. Altogether 35 alerts were for Measles; 5 for Typhoid; 3 for AWD; 2 each for Acute diarrhoea, AJS, Bloody diarrhoea and Scabies; while 1 for Malaria. The weekly trend of AD in Punjab decrease this week as compared with previous week. ARI trend showing decrease as compared with last week.

Figure-9: Trend of ARI, province Punjab

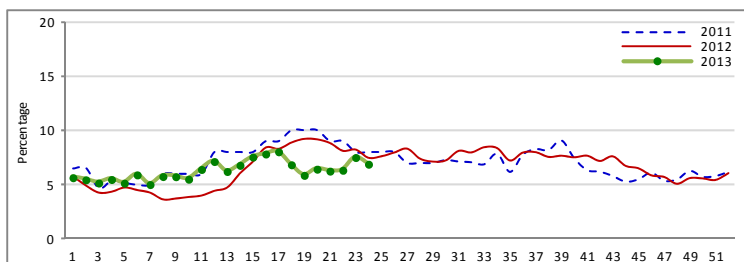
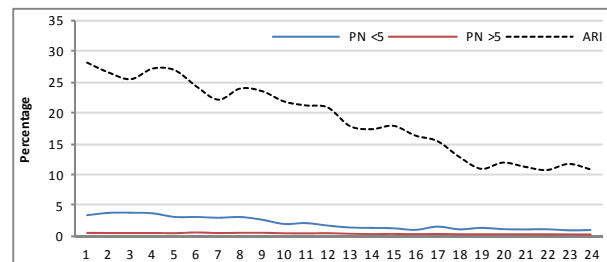


Figure-10: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



Province Balochistan:

197 health facilities from 10 districts in province Balochistan reported to DEWS with a total of 24,095 patients consultations in week 24, 2013. Total 16 alerts reported and appropriate measures were taken in week 24, 2013. Altogether 5 for Leishmaniasis; 4 for CCHF; 2 for Measles; while 1 each for AD, AWD, BD, Pertussis and Typhoid. The weekly proportion of AD consistently showing an upward trend; one potential AD outbreak was detected and responded in district Jaffarabad. Vigilant monitoring of the situation is required. ARI trend showing decrease as compared with last week.

Figure-11: Weekly trend of Acute diarrhoea, province Balochistan

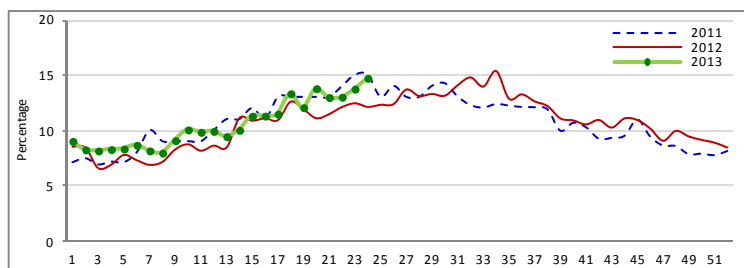
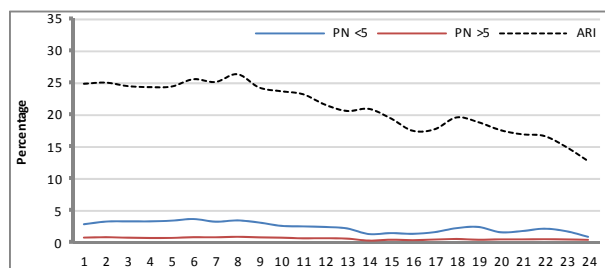


Figure-12: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



Province Gilgit Baltistan:

6 health facilities from 4 districts in Gilgit Baltistan reported to DEWS with a total of 643 patients consultations in week 24, 2013. No alerts for any disease was reported in week 24, 2013. The weekly AD trend is fluctuating and upward and required vigilant monitoring. ARI also showing fluctuating and upward trend.

Figure-13: Weekly trend of Acute diarrhoea, province Gilgit Baltistan

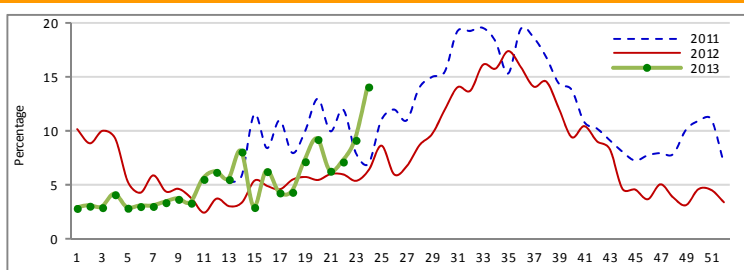
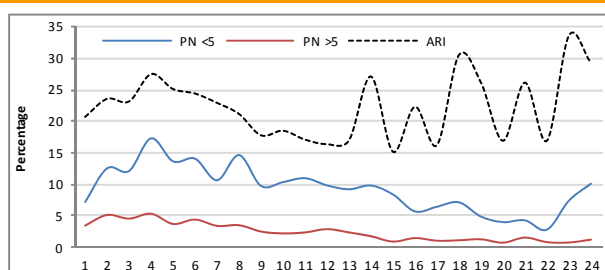


Figure-14: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



FATA:

25 health facilities from 2 agencies in FATA reported to DEWS with a total of 2,175 patients consultations in week 24, 2013. 6 alerts, 3 for Leishmaniasis; 2 for Measles; while 1 for NNT were reported in week 24, 2013 and appropriate measures were taken. Fluctuating and upward weekly trend of Acute diarrhoea with a sharp increase this week is noted in FATA, this require vigilant monitoring. ARI also showing increase as compared with last week.

Figure-15: Weekly trend of Acute diarrhoea, FATA

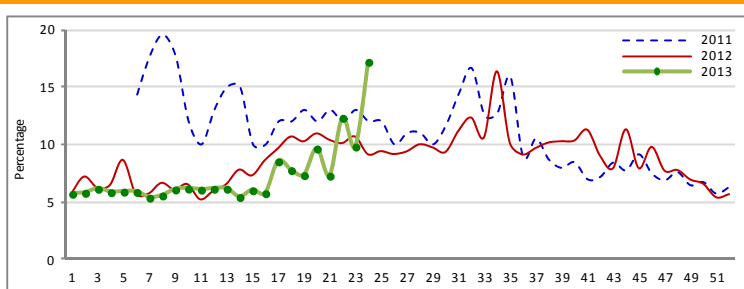
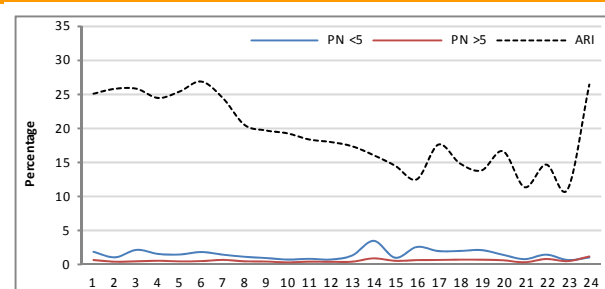


Figure-16: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013



State of Azad Jammu and Kashmir:

87 health facilities from 7 districts in AJ&K reported to DEWS with a total of 22,231 patients consultations in week 24, 2013. 10 alerts, 9 were for Measles; while 1 for Leishmaniasis were received in week 24, 2013 and appropriate measures were taken. Weekly trend of AD showing decrease as compared with last week, while ARI trend also showing a decreasing trend from last couple of weeks.

Figure-17: Weekly trend of Acute diarrhoea, AJ&K

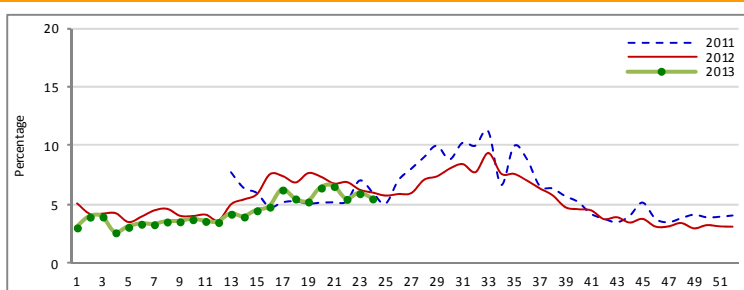


Figure-18: Weekly trend of ARI and Pneumonia <5 and >5 age group, week 1 to 24, 2013

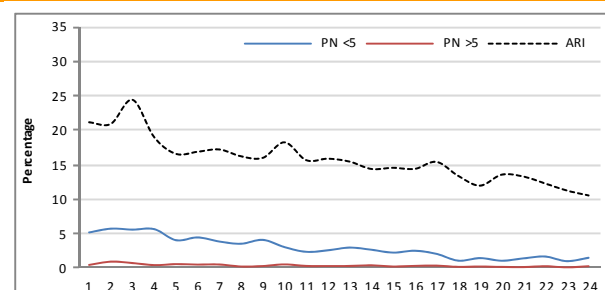
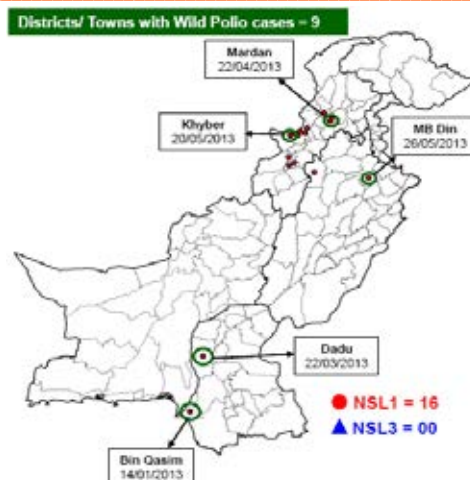


Table-1: Number of alerts and outbreaks reported and investigated with appropriate response

Disease	2012		Current week 24, 2013		2013 (Total up till week - 24)	
	A	O	A	O	A	O
Acute watery diarrhoea	635	171	5	0	34	7
Acute jaundice syndrome	113	22	2	0	14	4
Bloody diarrhoea	146	11	3	0	17	1
CCHF	68	41	4	0	27	9
Dengue fever	175	29	0	0	4	1
Diphtheria	60	16	0	0	22	1
Measles	5922	812	97	2	2275	241
Pertussis	366	147	1	0	30	8
NNT + tetanus	560	0	2	0	123	0
Malaria	136	68	1	0	13	2
Cutaneous Leishmaniasis	900	78	11	0	365	40
Others	1529	58	11	0	206	3
Total	10610	1453	137	2	3130	317

Distribution of Wild Polio Virus cases Pakistan 2012 and 2013

- In week 24, 2013, 2 new wild polio cases (type-1) were reported 1 each from Federally Administered Tribal Areas (Khyber agency) and Punjab province (Mandi Bahauddin district), bringing the total number of polio cases in 2013 to 16 (compared to 23 during the same time period last year) from 9 districts/towns/tribal agencies /areas (compared to 13 during the same time period last year) .

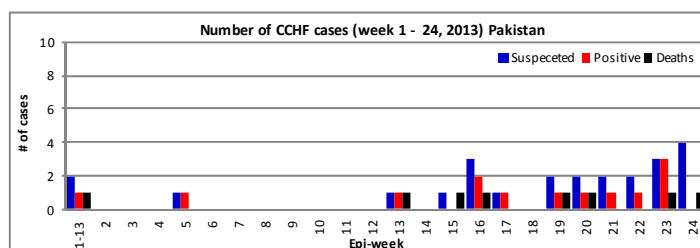


Province	2012			2013		
	P1	P3	P1+P3	P1	P3	P1+P3
Punjab	2	-	-	2	-	-
Sindh	4	-	-	2	-	-
Khyber Pakhtunkhwa	27	-	-	4	-	-
FATA	17	2	1	8	-	-
Balochistan	4	-	-	-	-	-
AJ&K	-	-	-	-	-	-
Gilgit-Baltistan	1	-	-	-	-	-
Islamabad	-	-	-	-	-	-
Total	55	2	1	16	-	-

Follow up of CCHF

CCHF is a serious viral hemorrhagic fever with up to 50% case fatality rate, caused by an RNA virus of family Bunyaviridae, genus Nairovirus, carried by Hyalomma species of ticks. Human beings become infected by tick bites or crushing the ticks, which are usually found on sheep, cattle, goats or camels, and their slaughtered skins. They may also be exposed to the virus in blood or tissues of a viremic animal during its slaughter and butchering; or by contact with infected blood or secretions of acute human cases in home or hospital setting. Any contact of a CCHF patient should monitor his/her temperature for 14 days and see a doctor if fever develops. The anti viral medicine Ribavirin has been effective in saving lives of patients who report early to the health facility.

In week 24, 2013, 4 new suspected CCHF cases with 1 deaths were reported from Quetta, Balochistan. 3 out of 4 cases were male (30yrs-Butcher; 50yrs-Laborer; and 57yrs-animal handler) all having history of animal contact. While the 4th case is 20 years old female (housewife) with a history of contact animals at home. Total 24 suspected, 13 confirmed CCHF cases and 8 deaths have been reported in year 2013.



In 2012, a total of 61 suspected cases have been reported throughout the country with 41 cases confirmed to date and in total 17 deaths; of which 13 deaths (CFR is 31.7%) are reported of the lab confirmed cases and 4 deaths are reported as suspected CCHF cases. 23 confirmed cases have been reported from Balochistan; 7 from Sindh; 6 from Khyber Pakhtunkhwa and 5 from Punjab. Chart at right illustrates situation of CCHF cases in 2012-13.

Approximately all the cases had contact history with animal trading/handling, tick bite, contact with patient, tannery worker, butcher/animals slaughtering, a traditional practice of wearing fresh animal skin (posti) to treatment ailment. There is ongoing trade of animals and animal skins with movement intra Pakistan and between neighboring countries (Afghanistan and Iran).

Measles

Measles is a highly contagious viral disease, which affects mostly children. It is transmitted via droplets from the nose, mouth or throat of infected persons. Initial symptoms, which usually appear 10–12 days after infection, include high fever, runny nose, bloodshot eyes, and tiny white spots on the inside of the mouth. Several days later, a rash develops, starting on the face and upper neck and gradually spreading downwards. There is no specific treatment for measles and most people recover within 2–3 weeks. However, particularly in mal-nourished children and people with reduced immunity, measles can cause serious complications, including blindness, encephalitis, severe diarrhoea, ear infection and pneumonia.

Measles is a killer childhood disease but preventable through immunization. One in 15 people have complications with measles, and one in 1,000 will die of it, but two doses of measles vaccine will protect people against the disease. WHO has set the target for measles elimination for 2015 which would require that more than 95% of the world children are covered by two doses of measles vaccine.

Proper case management during outbreaks:

It is imperative that during outbreak situations proper case management is ensured in order to minimize measles related deaths and measles related complications. The treatment of measles patients with Vitamin A will dramatically reduce their risk of deaths. Two doses of Vitamin A will be given to all identified cases (active and old) during house-to-house investigation, unless it was already received as part of the treatment in the health facility. One dose to be given by the health worker on the day of investigation and the 2nd dose provide to the parents advising to give on next day. The therapy will be given regardless of previous vitamin A prophylaxis. If the investigation team observes complications, the patient should be referred to the nearest health facility for specific treatment of these complications.

Measles Prevention:

Routine measles vaccination for children; combined with mass immunization campaigns in countries with high case and death rates, is key public health strategy to reduce global measles mortality rates. The measles vaccine has been in use for over 40 years. It is safe, effective and inexpensive. It costs less than one US dollar to immunize a child against measles. Measles vaccine is provided by the Pakistan EPI programme to children at 9 months and 15 months. Children who are vaccinated against measles before 9 months of age must receive a 2nd measles vaccination at 9 months age ensuring a gap of one month between both vaccinations. Moreover, any child who received measles vaccine should also receive OPV.

Priority should be placed to immunize children 6 months to 5 years old during outbreaks, regardless of vaccination status or history of disease. Auto destructible syringes and safety boxes are recommended and safe disposal of used sharps and safety of injection during immunization should be ensured. Let's remind all our neighbors, friends and colleagues to be sure that their children are immunized against measles.

Table at the bottom summarizes the situation of measles in year 2012; and illustrates the alerts and outbreaks in 2013 up till week 24 (15 June 2013).

Province	2012 (Week 1 - 52)				2013 (Up till week 24)			
	# of Alerts	# of Outbreaks	# of Cases	# of Deaths	# of Alerts	# of Outbreaks	# of Cases	# of Deaths
AJ&K	165	6	268	0	190	11	373	1
Balochistan	447	119	1816	31	286	52	1145	45
FATA	211	31	559	13	63	12	184	3
Gilgit Baltistan	40	1	54	0	11	1	22	0
ICT	27	2	63	0	40	2	128	1
Khyber Pakhtunkhwa	1989	108	3542	38	739	70	1552	19
Punjab	809	40	1329	16	835	65	6728	80
Sindh	2234	505	7353	212	111	28	3313	146
Total	5922	812	14984	310	2275	241	13445	295

Focus on: Acute Watery Diarrhoea/Cholera

Acute Watery diarrhoea/Cholera is an acute enteric infection caused by the ingestion of bacterium *Vibrio cholera* present in faecally contaminated water or food. Primarily linked to insufficient access to safe water and proper sanitation, its impact can be even more dramatic in areas where basic environmental infrastructures are disrupted or have been destroyed. Countries facing complex emergencies are particularly vulnerable to cholera outbreaks. Massive displacement of IDPs or refugees to overcrowded settings, where the provision of potable water and sanitation is challenging, constitutes also a risk factor. Every year, there are an estimated 3–5 million cholera cases and 100,000–120,000 deaths due to cholera worldwide.

Acute Watery Diarrhoea/Cholera is characterized in its most severe form by a sudden onset of acute watery diarrhea that can lead to death by severe dehydration. The extremely short incubation period - two hours to five days - enhances the potentially explosive pattern of outbreaks, as the number of cases can rise very quickly. About 75% of people infected with cholera do not develop any symptoms. However, the pathogens stay in their feces for 7 to 14 days and are shed back into the environment, possibly infecting other individuals. Cholera is an extremely virulent disease that affects both children and adults. Individuals with lower immunity, such as malnourished children are at greater risk of death if infected by cholera.

Risk factors for Acute Watery Diarrhoea/Cholera:

Lack of safe water, inadequate quantity and quality of water, poor personal hygiene, poor washing facilities, insufficient soap for washing hands, Poor sanitation, inadequate cooking facilities, Overcrowding, population movement/displacement.

Key steps for prevention and control:

Ensuring adequate safe drinking water supply and proper sanitation are the most important means of protection against severe diarrhoeal diseases including cholera epidemics.

Safe drinking water:

In areas where the infrastructure for provision of safe drinking water does not exist simple inexpensive measures can be used to make water safe for drinking at household level as follows.

Boiling:

Bringing water to a vigorous, rolling boil and keep it boiling for one minute will kill *Vibrio cholera* O1 and most other organisms that cause diarrhoea.

Chlorination at household:

First prepare stock solution by mixing 33 gm of bleaching powder in one litre of water and store it in a brown glass bottle. Then put 3 drops (0.6 ml) of stock solution in one litre of water or 30 drops (6 ml) in 10 litres of water or 60 ml in 100 litres. Do not cover the container for first 30 minutes after adding stock solution in it and wait 30 minutes before drinking or using the water. Alternatively, water disinfection tablets (eg. Aquatabs) can be added to the water according to package instructions.

Solar water disinfection:

Another small-scale and cost-effective immediate technique is solar water disinfection (SODIS) by which transparent plastic bottles filled with water are placed horizontally on a flat surface and exposed to solar light for about 5 hours in order to let the ultraviolet light in solar irradiation kill the pathogens. The effect of solar irradiation can be enhanced by painting the bottom half of the bottle black or placing them on a black background.

(Note: In case of Cholera outbreak Chlorination is the only option to make the water safe for consumption)

Hand-washing

Studies of diarrhoea show that washing hands with soap and water (where soap is not available one may use ash) reduces the incidence of diarrhoea by up to 35%. Hands must be washed: After defecation; After any direct or indirect contact with stools; Before preparing and distributing food; Before eating; Before feeding children.

Sanitation

Improvements in water supply and environmental sanitation will reduce the incidence of diarrhoeal diseases in the long run. Even where sanitation is poor, simple measures help ensure the safe disposal of stools and must be followed – particularly in the case of outbreaks of diarrhoeal diseases:

No defecation on the open ground – cover stool with soil (or use trench latrines that are regularly covered); No defecation near a water supply/source; Disposal of children's stools in toilets or latrines or buried in the ground; Washing hands with soap (or ash) after any contact with stools; Build and use latrines – a pit latrine 2 metres deep with an opening of 1 metre by 1 metre can be used by a family of 5 persons for a period of 2 to 4 years. Latrines must be sited downhill and away from sources of drinking-water (at least 30 metres), wash daily and regularly disinfected with cresol or bleaching powder.

Key messages:

Cholera is transmitted through contaminated water or food.
Prevention and preparedness of cholera require a coordinated multidisciplinary approach
Cholera can rapidly lead to severe dehydration and death if left untreated
Once *Vibrio cholera* is confirmed, the WHO clinical case definition is sufficient to diagnosis and management of cases. Laboratory testing is required only for antimicrobial sensitivity testing and for confirming the end of an outbreak.
Provision of safe water, proper sanitation, and food safety are critical for preventing occurrence of cholera
Health education aims at communities adopting preventive behavior for averting contamination
ORS can successfully treat 80% of cholera cases
Appropriate antibiotics can reduce the duration of *Vibrio Cholera* bacterium in the patient stool

