

WHO Somalia

Acute Watery Diarrhoea Update



Regional Office for the Eastern Mediterranean

22 June 2007



Photo: Dr Hammam El Sakka, WHO Somalia

This update describes the development, status, and activities implemented by the humanitarian community in response to the Acute Watery Diarrhoea outbreak in Somalia. The update follows the structure as proposed in the WHO guidelines for cholera outbreak response.

The report is built on surveillance data that health service providers and NGOs transmit on a weekly basis from health facilities and hospitals in South and Central Somalia.

Highlights

- Between 1 January and 22 June 2007, **37 094** of Acute Watery Diarrhoea (AWD) cases were reported from Central and South Zone including **1133 related deaths**.
- In the current week (epidemiological week 25), the reported cases decreased by 23%, in comparison to the previous week (256 and 410 respectively).
- In comparison to the previous epidemiological weeks, the overall Case Fatality Rate (CFR) increased from **0.78%** in epidemiological week 23, to **3.05%** in the current week.
- Overall, Banadir region reported **40% (14 833)** of the cases, including **15% (170)** of the total related deaths. However, the trend shows a sharp decrease in the reported cases in the last epidemiological weeks.
- Although Bakool region reported only **4% (652)** of the total reported cases, they reported one of the highest CFR at **6.60%**.
- WHO team investigated an AWD rumour in Dahargo Village, near Baidoa in Bay region; 38 cases including 16 related deaths were confirmed in the last 2 epidemiological weeks.

The Acute Watery Diarrhoea (AWD) trend showed that the number of reported cases is decreasing in all the regions except in Bay region.

This update has been made possible thanks to the support of:



In this issue

- ✓ Detailed epidemiological description of the current (16-22 June, 2007) AWD outbreak;
- ✓ Revised Bakool and Bay region data including AWD age distribution;
- ✓ Easy-to-grasp figures showing the trends in the affected regions;
- ✓ Interventions from all health partners in response to the ongoing AWD outbreak

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1 Epidemiological week No 25: Overall results

Between 1 January and 22 June 2007, a total of **37 094** cases of clinically diagnosed **Acute Watery Diarrhoea (AWD)** including **1133** related deaths (**CFR¹ 3.05%**) were reported from Central and South Somalia. Cases were reported from 10 regions (Hiiraan, Banadir, Lower and Middle Shabelle, Bay, Gedo, Bakool, Galgudud and Lower Juba and Middle Juba) with an estimated population of **4,121,647**; the overall attack rate² (**AR**) was **0.90%**.

In the last **four** epidemiological weeks (22 to 25), the trend shows a decrease in the number of reported cases in all the 10 regions. In the current week (epidemiological week 25), the reported cases decreased by **23%** in comparison to the previous week (177 and 410 cases respectively). Although the overall CFR continued to decrease from **4.32%** in epidemiological week 14 to **0.83%** in week 23, another increase was observed in the last two epidemiological weeks (3.41% and 4.52% respectively) due to the increased number of reported AWD related-deaths (n=16) in Bay region. The weekly distribution of AWD cases and CFR is shown in figure 1.

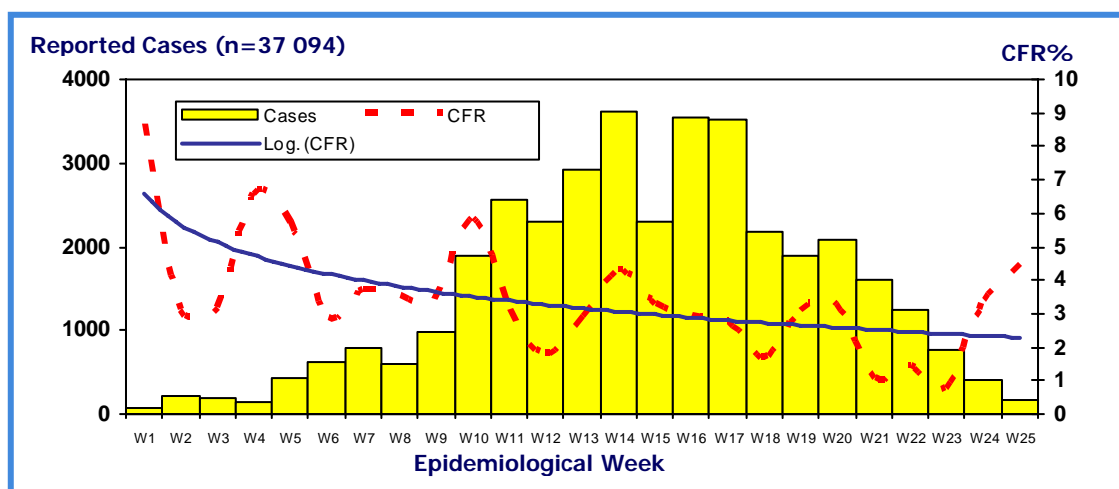


Figure 1: Distribution of AWD cases, Central and South Somalia, 01 January-22 June 2007

The **first** report of an increase in AWD cases was received from **Hiiraan region** in the first epidemiological week of 2007. After reaching the peak in week 7, cases started to decrease up to date (no cases were reported since epidemiological week 12).

In epidemiological **week 3**, the first cases of AWD were reported from **Middle Shabelle** region. The peak was reached in epidemiological week 7, but a slight decrease was observed in epidemiologic weeks 8-11 with another increase in epidemiological week 15, followed by a steady decrease in the last 10 weeks (epidemiological weeks 16 to 25).

Starting from epidemiological **week 5**, **Lower Juba** region reported AWD cases with a high Case Fatality Rate. The peak was reached in epidemiological week 9, but a slight decrease was observed in epidemiologic weeks 10-16 with another increase in epidemiological weeks 17-19. However in the last 4 epidemiological week the number of reported cases decreased dramatically by **24%**. In the current week the cases were decreased by more than **35%** (67 and 31 respectively).

In the beginning of epidemiological **week 6**, an increase of AWD cases was reported from **Lower Shabelle** region. The peak was reached in epidemiological week 10, but a slight decrease was observed in the epidemiologic weeks 11 and 12 with another increase in

¹ The case fatality rate (CFR) refers to the number of deaths per 100 cases

² WHO/EMC/ DIS/97.11 "Attack rate of 0.5% would be used for urban areas, 0.2% for rural areas and 1-2% for refugee/displaced populations as a worst case scenario"

epidemiological week 13, followed by a steady decrease in the last 9 weeks (epidemiological weeks 16 to 25). In the current week the cases decreased 6% (31 and 27 respectively).

Banadir region started reporting cases from **week 8**. The trend shows a continuous increase up to week 13. In the last 7 epidemiological weeks (16 and 23), a sharp decrease in the reported AWD cases was observed. In epidemiological week 25, the cases decreased by about 24% in comparison to epidemiological week 24 (79 and 130 respectively). The CFR showed an increase from 0.00% in week 23 to 1.27% in epidemiological week 25.

Bay region started to report cases in epidemiological **week 9**. In the epidemiological week 21, no more cases were reported and the Cholera Treatment Centre (CTC) in Baidoa was closed accordingly. In epidemiological week 24, reports were received about AWD cases from Dharqo village, Baidoa district, **WHO** conducted rumour verification and 25 cases were confirmed including 10 related deaths (**CFR 40.00%**). In the current week, 13 cases including 6 related deaths (**CFR 46.15%**) were reported from the same village. The total number of AWD cases by age group, number of deaths and CFR is shown in table 3.

Gedo region started to report cases in epidemiological **week 10** followed by a marked decrease in epidemiological week 19, but a slight increase in both reported cases and CFR was observed in week 20. In the current week, the number of cases decreased dramatically by about 30% compared to the previous week (76 and 151 cases respectively).

Galgadud region reported AWD cases in epidemiological **week 10**. The peak was observed in epidemiological week 13 then showed a slight decrease in the number of reported cases until epidemiological week 16. A sharp decrease was observed in weeks 18-19 (40 and 27 cases respectively). However, week 20 saw a marked increase in the number of cases due to the fact that **ICRC** reported 368 cases including 38 related deaths (**CFR 9.29%**) from **Hindar** district in Galgadud. In week 21, ICRC reported another 150 cases with no related-deaths from the same location, however, cases decreased again in epidemiological weeks 22 to 24. No data was available for epidemiological week 25. Investigation is ongoing to collect further information.

Bakool region started to report cases in epidemiological **week 12** reaching the peak in the epidemiological week 17. A sharp decrease was observed in epidemiological weeks 18 and 19 which continued until week 21. Since week 22, no more cases have been reported and the CTC was closed accordingly. No more cases were reported from Bakool region in the last 3 epidemiological weeks (23-25). The total number of AWD cases reported from Bakool region by age group, number of deaths and CFR is shown in table 4.

In epidemiological **week 14**, **Middle Juba** region reported 927 cases including 59 related deaths (CFR 6.36%). No more reports were received in weeks 15-18. In week 19, 129 cases were reported with 33 related deaths. This trend quickly showed a decrease in the following weeks but the current week showed about 30% increase compared to the previous week (47 and 24 respectively).

The charts below (Figure 2-1 to 2-8) show the weekly distribution of AWD and the logarithmic trend line (in black). The charts demonstrate that the outbreak started in Hiiraan region in early January 2007, and then spread to Middle Shabelle in late January. Lower Shabelle region reported cases in February, while Banadir, Gedo and Bay regions cases started reported cases in early March, followed by Galgadud region. The trend line shows that the number of reported cases is decreasing in all the 10 regions.

2 Distribution of Acute Watery Diarrhoea cases by region, South and Central Somalia, 1 January-22 June 2007 (Figure 2)

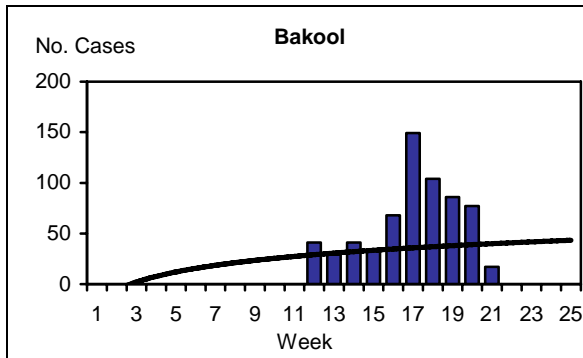


Figure 2-1

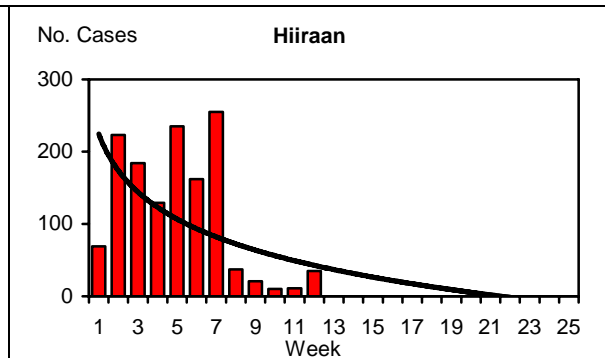


Figure 2-2

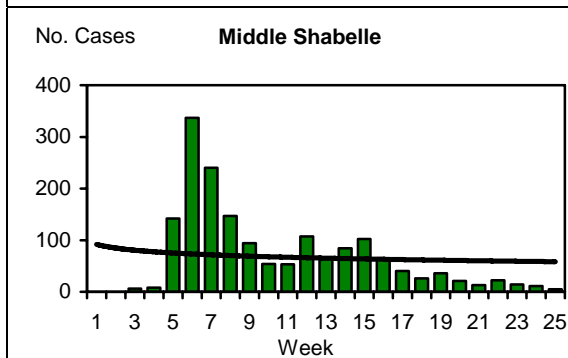


Figure 2-3

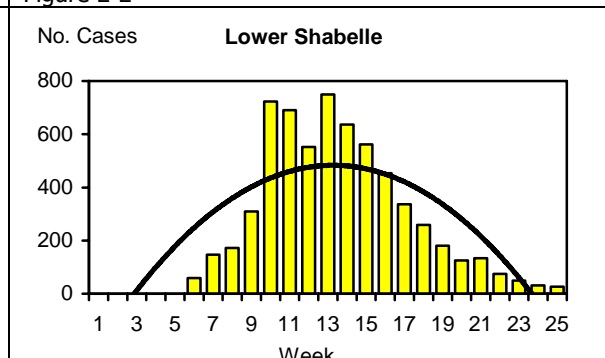


Figure 2-4

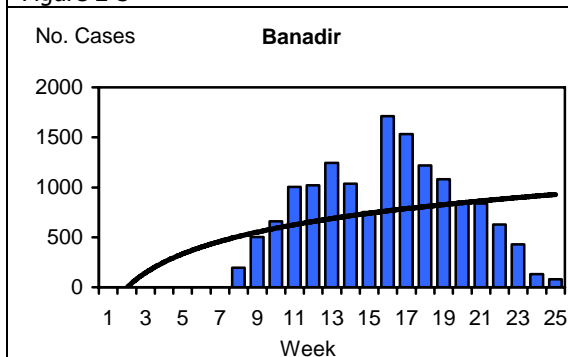


Figure 2-5

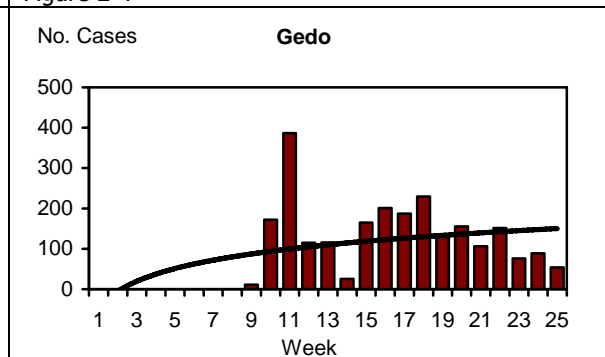


Figure 2-6

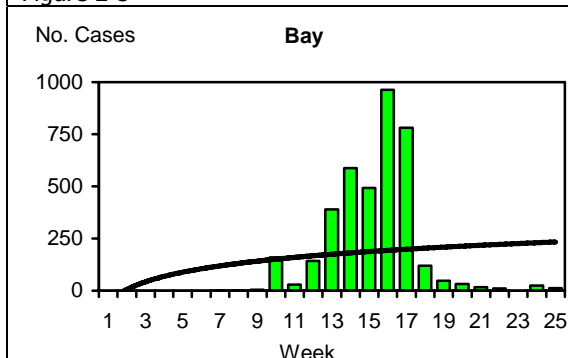


Figure: 2-7

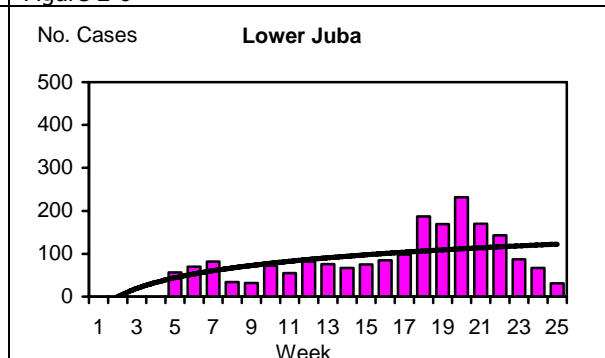


Figure 2-8

Overall, the highest attack rate (AR) was observed in **Gedo** region with **2.28%** and **Banadir** with **1.65%**, followed by **Lower Shabelle** and **Middle Shabelle** with **0.90%** and **0.79%** respectively. The lowest attack rate was observed in **Lower Juba** (**0.52%**) and **Bakool** (**0.26%**). The attack rate per 100 population is shown in figure 3 and table 2.

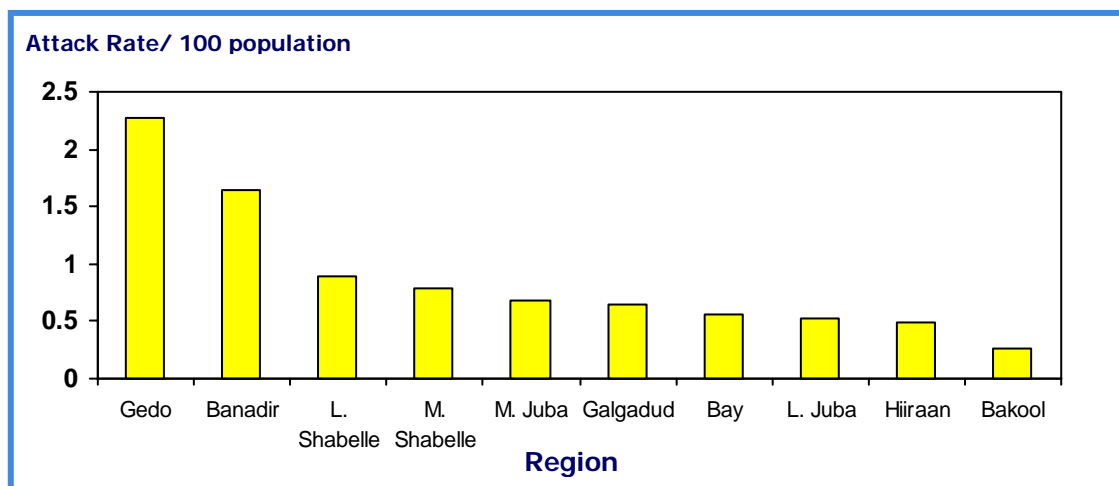


Figure 3: Distribution of AWD cases, deaths and CFR by region, Central and South Somalia, 1 January-22 June 2007

During the same reporting period, **40%** (14 912/37 094) of AWD cases were reported from **Banadir** region including **15%** (171/1102) of the total related deaths (**CFR³ 1.15%**). **Seventeen percent** (6269) were reported from **Lower Shabelle** including **22%** (253) of the total related deaths (**CFR 4.04%**). **Eleven percent** (4043) were reported from **Bay** including **22%** (244) of the total related deaths (**CFR 6.04%**). The highest CFR was seen in **Middle Juba** at **7.39%**. **Gedo** region reported **7%** (2424) including **5%** (51) of the total related deaths (**CFR 2.10%**). Although **Bakool** region reported only **4%** (652) of the total reported cases, it reported one of the highest CFR at **6.60%**.

The distribution of AWD cases, deaths, and CFR by region is shown in figure 4.

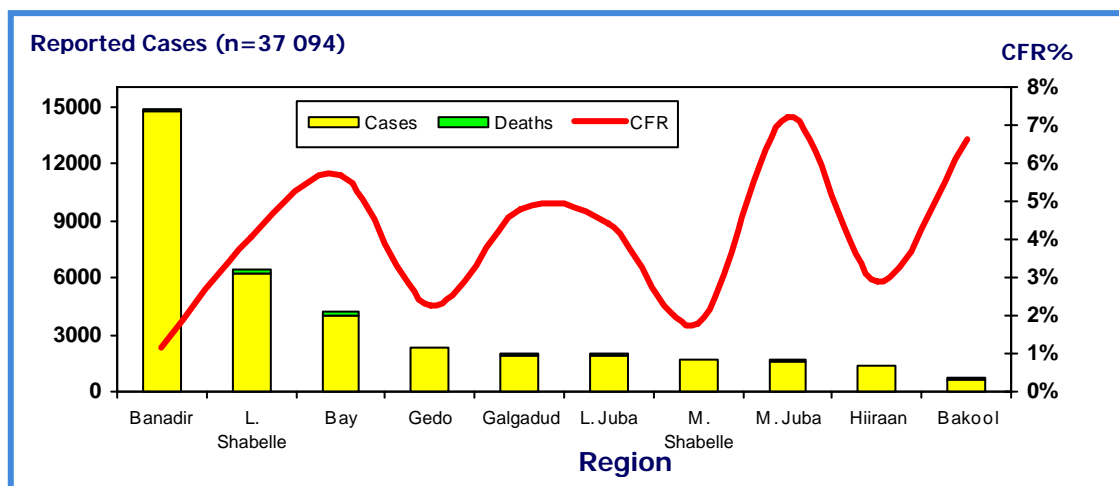


Figure 4: Distribution of AWD cases, deaths and CFR by region, Central and South Somalia, 1 January-22 June 2007

³ <http://www.who.int/topics/cholera/control/en/index.html> "Prompt and appropriate medical management of cases can significantly decrease mortality (Case Fatality Rate); when applied properly; case-fatality rate should be below 1%. In untreated cases the fatality rate may reach 30-50%. These levels are often observed in crisis situations with overcrowding, limited access to health care and precarious environmental management"

Table 1: Number of reported Acute Watery Diarrhoea cases, deaths and Case Fatality Rate per region, Central and South Somalia*

Central and South Region, 1 January – 22 June 2007, Somalia															
Week	Hiiraan			Banadir			Lower Shabelle			Middle Shabelle			Bay*		
	C	D	CFR%	C	D	CFR%	C	D	CFR%	C	D	CFR%	C	D	CFR%
1	69	6	8.70	0	0	0	0	0	0	0	0	0.00	0	0	0.00
2	223	7	3.14	0	0	0	0	0	0	0	0	0.00	0	0	0.00
3	184	6	3.26	0	0	0	0	0	0	6	0	0.00	0	0	0.00
4	129	8	6.20	0	0	0	0	0	0	8	1	12.50	0	0	0.00
5	235	6	2.55	0	0	0	0	0	0	142	4	2.82	0	0	0.00
6	162	4	2.47	0	0	0	59	5	8.47	337	4	1.19	0	0	0.00
7	255	3	1.18	0	0	0	147	18	12.24	240	3	1.25	1	0	0.00
8	37	0	0.00	196	2	1.02	172	15	8.72	147	4	2.72	2	0	0.00
9	21	0	0.00	502	10	1.99	309	18	5.83	94	1	1.06	5	2	40.00
10	10	0	0.00	659	12	1.82	723	69	9.54	54	0	0.00	203	14	8.81
11	11	0	0.00	1006	16	1.59	691	33	4.78	73	2	2.74	92	2	6.90
12	35	0	0.00	1021	14	1.37	552	13	2.36	107	1	0.93	172	4	2.82
13	0	0	0.00	1244	17	1.37	750	22	2.93	64	0	0.00	412	31	7.97
14	0	0	0.00	1036	21	2.03	636	15	2.36	84	1	1.19	566	43	7.33
15	0	0	0.00	751	8	1.07	562	21	3.74	102	2	1.96	452	25	5.08
16	0	0	0.00	1711	29	1.69	453	12	2.65	65	2	3.08	945	44	4.57
17	0	0	0.00	1534	16	1.04	337	8	2.37	40	2	5.00	930	44	5.63
18	0	0	0.00	1219	7	0.57	259	1	0.39	28	1	3.57	119	14	11.67
19	0	0	0.00	1081	9	0.83	180	0	0.00	36	1	2.78	47	4	8.51
20	0	0	0.00	849	3	0.35	125	0	0.00	21	0	0.00	32	0	0.00
21	0	0	0.00	839	5	0.60	133	0	0.00	13	1	7.69	17	0	0.00
22	0	0	0.00	626	0	0.00	74	2	2.70	22	0	0.00	10	1	10.00
23	0	0	0.00	429	1	0.23	49	0	0.00	14	0	0.00	0	0	0.00
24	0	0	0.00	130	0	0.00	31	1	3.23	11	0	0.00	25	10	40.00
25	0	0	0.00	79	1	1.27	27	0	0.00	5	1	20.00	13	6	46.15
TOT	1371	40	2.92	14912	171	1.15	6269	253	4.34	1713	31	1.81	4043	244	6.03

In the last 2 epidemiological weeks (24-25) 38 AWD cases were reported from Darqo village in Baidoa, Bay Region with high CFR (40.00% and 46.15% respectively).

Central and South Region, 1 January – 22 June 2007, Somalia																		
Week	Bakool			Gedo			Galgadud*			Middle Juba			Lower Juba***			GRAND TOTAL		
	C	D	CFR	C	D	CFR	C	D	CFR	C	D	CFR	C	D	CFR	C	D	CFR
1	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	69	6	8.70
2	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	223	7	3.14
3	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	190	6	3.16
4	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	137	9	6.57
5	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	57	15	26.32	434	25	5.76
6	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	70	5	7.14	628	18	2.87
7	1	0	0.00	55	0	0.00	0	0	0.00	0	0	0.00	82	5	6.10	781	29	3.71
8	2	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	34	0	0.00	590	21	3.56
9	0	0	0.00	11	0	0.00	0	0	0.00	0	0	0.00	32	2	6.25	974	33	3.39
10	0	0	0.00	172	13	7.56	3	0	0.00	0	0	0.00	72	3	4.17	1896	111	5.85
11	0	0	0.00	387	14	3.62	245	10	4.08	0	0	0.00	55	3	5.45	2560	80	3.13
12	41	3	7.32	115	4	3.48	166	0	0.00	0	0	0.00	82	2	2.44	2291	41	1.79
13	29	3	10.34	116	2	1.72	236	8	3.39	0	0	0.00	76	3	3.95	2927	86	2.94
14	41	2	4.88	25	3	12.00	228	10	4.39	927	59	6.36	67	2	2.99	3610	156	4.32
15	34	2	5.88	165	1	0.61	147	12	8.16	0	0	0.00	75	4	5.33	2288	75	3.28
16	68	5	7.35	201	4	1.99	23	4	17.39	0	0	0.00	85	5	5.88	3551	105	2.96
17	149	16	10.74	187	0	0.00	245	10	4.08	0	0	0.00	98	1	1.02	3520	97	2.76
18	104	8	7.69	230	2	0.87	40	0	0.00	0	0	0.00	187	4	2.14	2186	37	1.69
19	86	0	0.00	129	2	1.55	27	0	0.00	129	33	25.58	169	10	5.92	1884	59	3.13
20	77	4	5.19	155	5	3.23	450	38	9.29	131	15	11.45	232	3	1.29	2072	68	3.28
21	17	0	0.00	106	1	0.94	182	0	0.00	127	3	2.36	170	7	4.12	1604	17	1.06
22	3	0	0.00	151	0	0.00	33	0	0.00	183	10	1.09	143	5	3.50	1245	18	1.45
23	0	0	0.00	76	0	0.00	44	0	0.00	69	1	1.45	87	4	4.60	768	6	0.78
24	0	0	0.00	89	0	0.00	33	0	0.00	24	0	0.00	67	3	4.48	410	14	3.41
25	0	0	0.00	54	0	0.00	NA	NA	NA	47	0	0.00	31	1	3.23	256	9	3.52
	652	43	6.60	2424	51	2.10	2102	92	4.38	1637	121	7.34	1971	87	4.41	37094	1133	3.05

* Please note that the data included in the table is dynamic due to verifications and updating upon receiving the data from the field.

Table 2: Distribution of reported Acute Watery Diarrhoea cases and deaths by district

Region	Estimated Population	Cases	AR per 100	% of Total	Deaths	CFR%	% of Total	Comments
Banadir	901,183	14912	1.65	40%	171	1.15	15%	Lab. confirmation (24) <i>V. Cholera Inaba</i>
Lower Shabelle	695,008	6269	0.90	17%	253	4.04	22%	
Bay	726,849	4043	0.56	11%	244	6.04	22%	
Gedo	106,172	2424	2.28	7%	51	2.10	5%	Lab. confirmation (3) <i>V. Cholera Inaba</i>
Galgudud	330,057	2102	0.64	6%	92	4.38	8%	
Lower Juba	378,950	1971	0.52	5%	87	4.41	8%	Lab. confirmation (10) <i>V. Cholera Ogawa</i>
Middle Shabelle	218,027	1713	0.79	5%	31	1.81	3%	All samples negative for <i>V. Cholera</i> .
Middle Juba	238,877	1637	0.69	4%	121	7.39	11%	
Hiiran	280,189	1371	0.49	4%	40	2.92	4%	
Bakool	246,335	652	0.26	2%	43	6.60	4%	
GRAND TOTAL	4,121,647	37094	0.90	100%	1133	3.05	100%	

Table 3: Distribution of reported Acute Watery Diarrhoea cases, deaths and CFR by district, Bay region*

Week	Baidoa				Burhakaba				Bardale				Densor				Total		
	Cases		D	CFR	Cases		D	CFR	Cases		D	CFR	Cases		D	CFR	Cases	D	CFR
	<5	>5			<5	>5			<5	>5			<5	>5					
1	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
2	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
3	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
4	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
5	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
6	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
7	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	0	0.00
8	0	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	0	0.00
9	0	5	2	40.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	5	2	0.00
10	0	159	14	8.81	0	0	0	0.00	9	35	0	0.00	0	0	0	0.00	203	14	0.00
11	17	12	2	6.90	0	0	0	0.00	15	48	0	0.00	0	0	0	0.00	92	2	0.00
12	59	67	2	1.59	8	8	2	12.50	7	23	0	0.00	0	0	0	0.00	172	4	0.00
13	112	103	6	2.79	47	127	25	14.37	6	17	0	0.00	0	0	0	0.00	412	31	0.00
14	142	145	14	4.88	28	186	23	10.75	0	2	0	0.00	23	40	6	9.52	566	43	7.60
15	92	67	2	1.26	20	142	9	5.56	0	0	0	0.00	17	114	9	6.87	452	25	5.53
16	186	298	30	6.20	36	72	5	4.63	0	0	5	0.00	29	324	9	2.55	945	44	4.66
17	90	144	20	8.55	0	0	0	0.00	37	125	0	0.00	63	471	24	0.00	930	44	0.00
18	49	28	0	0.00	0	0	0	0.00	0	0	0	0.00	3	39	14	0.00	119	14	0.00
19	35	12	4	8.51	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	47	4	0.00
20	14	18	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	32	0	0.00
21	11	6	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	17	0	0.00
22	9	1	1	10.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	10	1	10.00
23	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
24	3	22	10	40.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	25	10	40.00
25	2	11	6	46.03	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	13	6	46.03
TOT	821	1101	113	10.26	139	535	64	9.50	74	250	5	1.54	135	988	62	5.52	4043	244	6.03

** D; Deaths, CFR%; Case Fatality Rate per 100 cases

Table 4: Distribution of reported Acute Watery Diarrhoea cases, deaths and CFR by district, Bakool region*

Week	Wajid				Elbon				Burdhuhunle				Tieglow				Total		
	Cases		D	CFR	Cases		D	CFR	Cases		D	CFR	Cases		D	CFR	Cases	D	CFR
	<5	>5			<5	>5			<5	>5			<5	>5					
1	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
2	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
3	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
4	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
5	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
6	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
7	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	0	0.00
8	0	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	0	0.00
9	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
10	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
11	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
12	7	34	3	7.32	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	41	3	7.32
13	12	17	3	10.34	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	29	3	10.34
14	20	21	2	4.88	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	41	2	4.88
15	15	4	2	10.53	0	0	0	0.00	0	0	0	0.00	4	11	0	0.00	34	2	5.88
16	18	10	3	10.71	0	0	0	0.00	0	0	0	0.00	15	25	2	5.00	68	5	7.35
17	18	17	2	5.71	8	7	0	0.00	18	69	14	20.29	4	8	0	0.00	149	16	10.74
18	12	12	1	4.17	6	3	1	33.33	3	31	6	19.35	37	0	0	0.00	104	8	7.69
19	15	6	0	0.00	2	4	0	0.00	0	7	0	0.00	16	37	0	0.00	87	0	0.00
20	1	1	1	50.00	9	40	3	7.50	0	1	0	0.00	14	11	0	0.00	77	4	5.19
21	0	3	0	0.00	3	11	0	0.00	0	0	0	0.00	0	0	0	0.00	17	0	0.00
22	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	3	0	0.00
23	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
24	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
25	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0.00
TOT	118	128	17	6.94	28	65	4	4.30	21	108	20	18.52	91	93	2	1.60	652	43	6.63

*** D; Deaths, CFR%; Case Fatality Rate per 100 cases

3 Laboratory confirmation / drug resistance

Three out of 10 stool samples collected from **Merka district**, Lower Shabelle on 10 March 2007, were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba*, and two samples with *V. cholerae*, serogroup O1, serotype *Hikojima*⁴. WHO requested the African Medical and Research Foundation (AMREF) laboratory in Nairobi to confirm the results. The mean age of confirmed cases was 5.0 years, ranging from 2-20 years. 60% (3/5) were males. The *Vibrio* was resistant to Chloramphenicol, and Cotrimoxazole, while sensitive to Erythromycin and Tetracycline.

On 13 March 2007, 10 stool samples were collected by MSF-Spain from **Banadir hospital**. All 10 samples were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba*. The mean age of confirmed cases was 11.02 years ranging from 10 months-35 years. 70% (7/10) were male.

On 14 March 2007, 12 stool samples were collected by MSF-Spain from **Hayat hospital**. Five samples were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba*. The mean age of confirmed cases was 8.70 years ranging from 2-40 years. Sixty percent (3/5) were male.

In both cases, the *Vibrio* was resistant to Chloramphenicol, and Cotrimoxazole, while sensitive to Tetracycline.

On 5 April 2007, 4 stool samples were collected from **Gedo Region**. Three (3) samples were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba* in AMREF Laboratory in Nairobi. The mean age of confirmed cases was 4.70 years ranging from 18 months-16 years.

4 Outbreak control task force

Four Cholera Treatment Centers (CTC) were closed down during the month of June: World Vision (WVI) closed its 2 CTCs in Borden and Elbon (Wajid district) and Action Contre la Faim (ACF) and Médecins sans Frontières (MSF) closed. CTCs in Mogadishu. ACF distributed 1000 liters of ringer lactate to the Banadir hospital CTC.

ACF chlorinated 23 wells in Borden and Elbon for a 2 week period. Chlorination will be stopped in Borden and Elbon afterwards, as well as in Mogadishu. In Mogadishu, chlorination will recommence in October as part of the normal routine 7 month chlorination schedule. ACF received 6 drums of chlorine from UNICEF in Mogadishu.

Oxfam is providing water to the displaced population in Mogadishu. A total of 12 boreholes are being rehabilitated, and 300 latrines (twin pit) are being constructed. UNICEF will be supplying Oxfam with water bladders and chlorine. Oxfam will support Wajir South Development Association (WASDA) with chlorination in Dobeley.

WVI completed the improvement of 9 water pans, 10 shallow wells and 10 twin pit latrines and started construction of 30 new shallow wells to be fitted with hand pumps and 200 household latrines in Bulle, Sakor and Slagle (Middle Juba).

Joint Coordinating Committee (JCC) trained 120 hygiene promoters from 24 villages in Bualle and Salagley. JCC also distributed 100 latrine slabs and dug 10 refuse pits. Also, sanitation tools were distributed for clean up campaigns and flood protection.

⁴ The organism responsible for causing cholera is *Vibrio cholerae* serogroup O1 of which there are 2 biotypes, Classical and El Tor. The biotypes are further split into serotypes *Inaba*, *Ogawa* and (rarely) *Hikojima*. If *Hikojima* serotype is confirmed, all 3 serotypes of *Vibrio cholerae* are present during the ongoing outbreak.

Southern Africa Communication for Development (**SACOD**) is providing drinking water to IDPs from Borane and Afgoye residing in Jernabe village in Merka.

CTC Kismayo receives supplies from UNICEF though Muslim Aid UK. Local NGO **Munhall** provided incentives to staff.

UNICEF provided AWD supplies to **Afmadow** health centre in response to AWD outbreak in Doble village, 150 km from Afmadow. UNICEF also supplies **Hagar** district health post.

UNFPA is supporting 5 mobile medical teams run by **Muslim Aid UK** in the area between Mogadishu and Afgoye. One of their tasks is health education.

During 4 training sessions, 126 well owners, 140 women groups and 70 members from the 16 district authorities from Mogadishu were trained in hygiene promotion, sanitation and water chlorination by the Somalia Public Health Professional Association (**SOPHPA**), supported by **UNICEF**. **SOPHPA** has started the chlorination of 126 wells in Mogadishu and will continue doing so for the coming three months.

The Somali Red Crescent Society (**SRCS**) conducted similar training for 92 participants from 46 flood affected villages in Afgoye district, 32 from woman groups, 24 social mobilizers and 8 well owners from areas between Mogadishu and Afgoye, also with the support from **UNICEF**.

UNICEF is supporting **SRCS** to construct 100 latrines for IDPs between Mogadishu and Afgoye.

WHO visited the health centre run by the local NGO called Community Care Centre (**CCC**) in Dharqo village, 45 Km from Baidoa. An increased number of AWD cases was reported from the health centre. WHO provided AWD supplies such as 5 cartons of ringer lactate, 2 cartons of Oral Rehydration Salts, 1000 tablets of Doxycycline and so on for 5 days and conducted health education about prevention and treatment of AWD. The nearest water point is located at 8 km from Dharqo village.

WHO team ensured the community water supplies were chlorinated by training community volunteers on chlorination techniques for shallow wells.

To improve coordination in water and sanitation, 2 lead agencies (1 international and 1 local) have been made responsible per region. Plans are under way to start a new WASH program in Buhakaba district in Bay region.



WHO Baidoa team conducted rumor verification in Dharqo village, where 37 AWD cases including 16 deaths were confirmed from -17 June 2007.