

# WHO Somalia

## Acute Watery Diarrhoea Update



Cholera Treatment Centre in Elbon, Bakool Region. 13 May 2007. Photo: WHO Wajid/Ibrahim Moallim

11 May 2007

*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 11 May, 2007, **30 227** of Acute Watery Diarrhoea (AWD) cases were reported from Central and South Zones including **973** related deaths.
- In the current week (epidemiological week 19), the reported cases decreased by 24%, in comparison with the previous week (**1591** and **2098** respectively).
- In comparison with previous epidemiological weeks, the overall Case Fatality Rate (CFR) continues to decrease from **4.30%** in epidemiological week 14, to **1.26%** in the current week.
- Overall, Banader region reported **40% (11 960)** cases, including **17% (161)** of the total related deaths. However, the trend shows a sharp decrease in the reported cases in the last epidemiological weeks.
- Although Middle Juba and Bakool regions reported only **3% (927)** and **1% (363)** of the total reported cases, they reported the highest CFR **6.36%** and **10.7%** respectively.
- Somaliland Ministry of Health and Labour (MOH&L) stated that between 4 April and 11 May 2007, **100** cases of AWD were reported from 5 districts in Hargeisa.

## In this issue

- ✓ Detailed epidemiological description of the current AWD outbreak;
- ✓ Revised Bay region data including 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 19<sup>0</sup>: Overall results

Between 1 January and 27 April 2007, a total of **30 227** cases of clinically diagnosed **Acute Watery Diarrhoea (AWD)** including **973** related deaths (**CFR<sup>1</sup> 3.22%**) 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 **4,089,847**; the overall attack rate<sup>2</sup> (**AR**) is **0.54%**.

In the last three epidemiological weeks (17 to 19), the trend shows a decrease in the number of reported cases in all regions. In the current week (epidemiological week 19), the reported cases decreased by 24%, in comparison with the previous week (1591 and 2098 cases respectively). In comparison with previous epidemiological weeks, the overall CFR continues to decrease: from 4.30% in epidemiological week 14 to 1.26% in the current week (epidemiological week 19), mainly due to early detection of cases and proper case management. The weekly distribution of AWD cases and CFR is shown in figure 1.

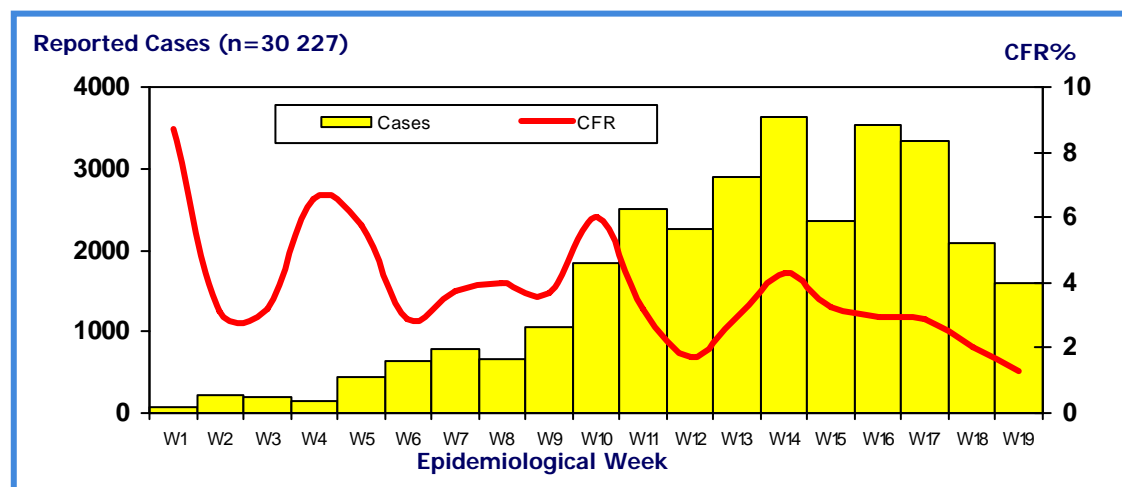


Figure 1: Distribution of AWD cases, Central and South Somalia, 01 January -11 May 2007

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 12, followed by a steady decrease in the previous 5 weeks (epidemiological weeks 15 to 19).

Starting from epidemiological **week 5**, **Lower Juba** region reported AWD cases with 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 17-18. Another decrease in the number of reported cases was observed in the current week.

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 epidemiological week 13, followed by a steady decrease in the previous 6 weeks (epidemiological weeks 14 to 19).

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

<sup>2</sup> 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"

**Banadir** region started reporting cases from **week 8**. The trend is showing a continuous increase up to week 13. In the previous 4 epidemiological weeks (15 and 19), a sharp decrease in the reported AWD cases was observed, but the CFR showed a little increase in the current week.

**Bay** region started to report cases in epidemiological **week 9**. In the current week, the reported cases showed a marked decrease in the trend. In comparison with the previous week, a 40% decrease was observed in the number of reported cases (120 and 47 respectively). On 14 May 2007, **WHO team** (Senior Medical Epidemiologist and Program Officer) visited Bay region to follow up on the situation and validate the reported AWD data. Reviewing the records from 4 Cholera treatment centres named; Baidoa, Burhakaba, Bardale, and Densor, revealed that the total number of registered AWD is **3946** including **227** related deaths, while the reports from the field reported only **3717** cases including the same number of reported deaths. The under reporting was estimated at **6%** (229 cases). 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 to date.

**Galgadud** region reported AWD cases in epidemiological **week 10**. The peak was observed in epidemiological week 13 and showing a slight decrease in the number of reported cases until epidemiological week 16, but a sharp increase was observed in the current week (245 and 23 respectively). No data is available in the last 2 Epidemiological weeks (18 and 19).

**Bakool** region started to report cases in epidemiological **week 12** with an increase in the number of reported reaching the peak in the epidemiological week 17, a sharp decrease was observed in the last 2 epidemiological weeks (18 and 19).

In epidemiological **week 14**, **Middle Juba** region reported 927 cases including 59 related deaths (CFR 6.36%). No more reports were received in the last three epidemiological weeks (15 to 19).

The weekly distribution of AWD cases in 4 regions (Bay, Banadir, Lower Shabelle and Middle Shabelle) is shown in figure 2.

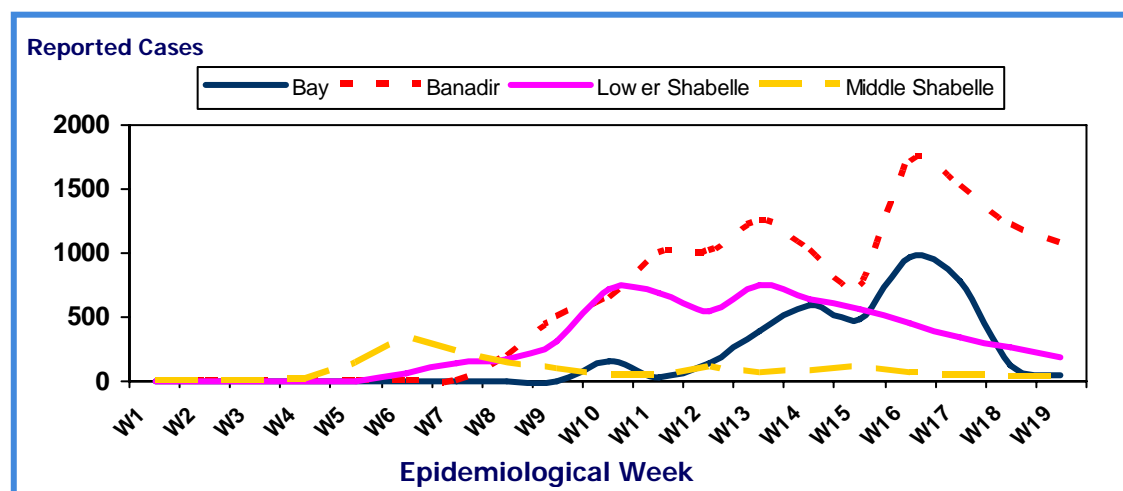


Figure 2: Distribution of AWD cases by region, Central and South Somalia, 1 January -11 May 2007

The charts below (Figure 3-1 to 3-8) show the weekly distribution of AWD and the logarithmic trend line (in black). The charts demonstrate that the outbreak started in Hiiraan region early in 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 were reported in early March, followed by Galgadud region. The trend line shows that the number of reported cases is decreasing in Hiiraan, Lower Shabelle, Middle Shabelle and Bay regions, while it remains steady in the other regions.

## 2 Distribution of Acute Watery Diarrhoea cases by region, South and Central Somalia, 1 January-11 May 2007 (Figure 3)

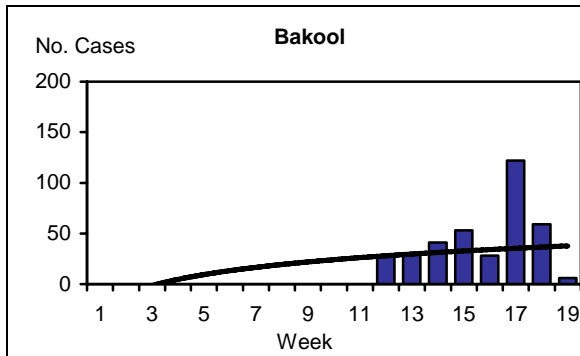


Figure 3-1

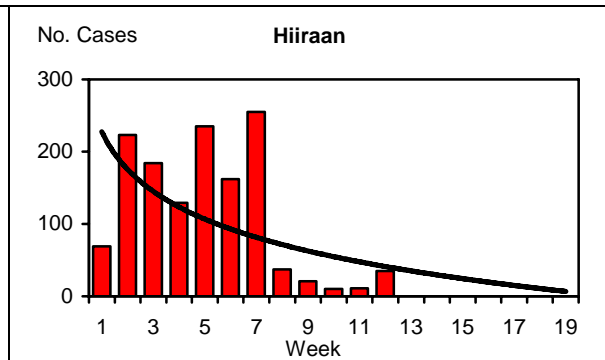


Figure 3-2

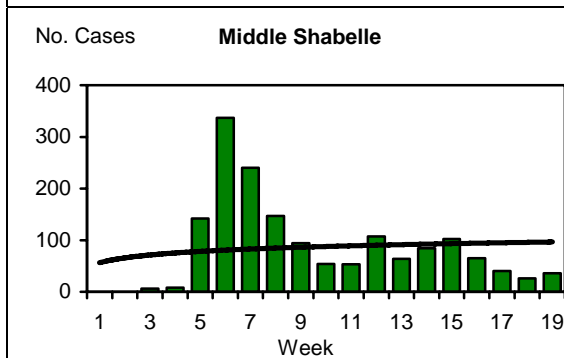


Figure 3-3

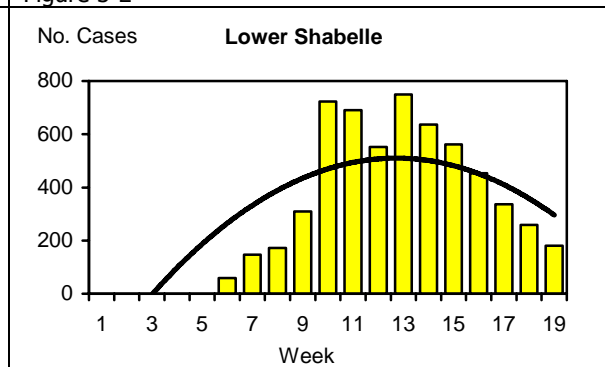


Figure 3-4

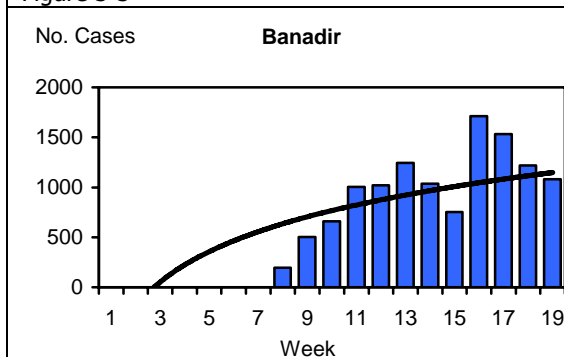


Figure 3-5

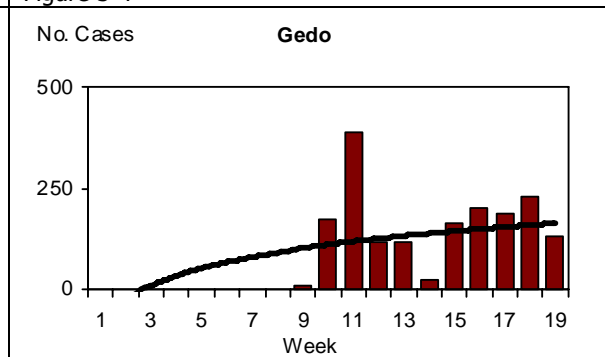


Figure 3-6

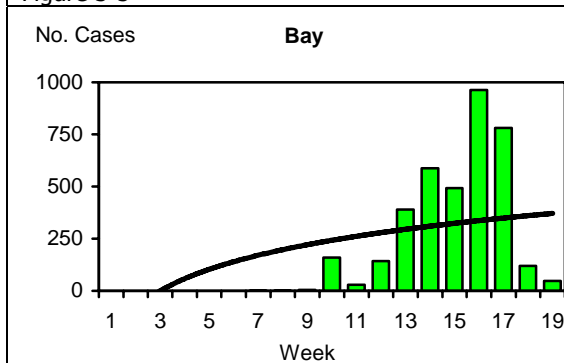


Figure: 3-7

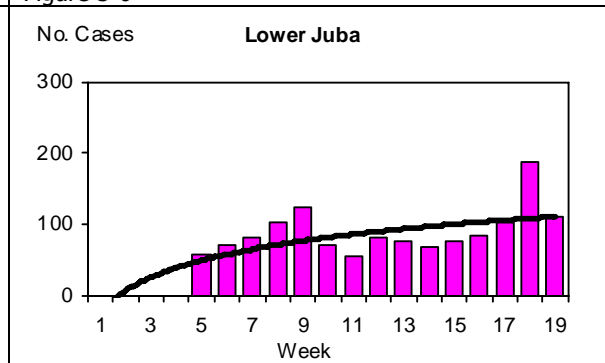


Figure 3-8

Overall, the highest attack rate (AR) was observed in **Gedo** region with **1.69%** and **Banadir** with **1.33%**, followed by **Lower Shabelle** and **Middle Shabelle** with **0.84%** and **0.75%** respectively. The lowest attack rate was observed in **Bakool** (**0.15%**) and **Lower Juba** (**0.39%**). The attack rate per 100 population is shown in figure 4.

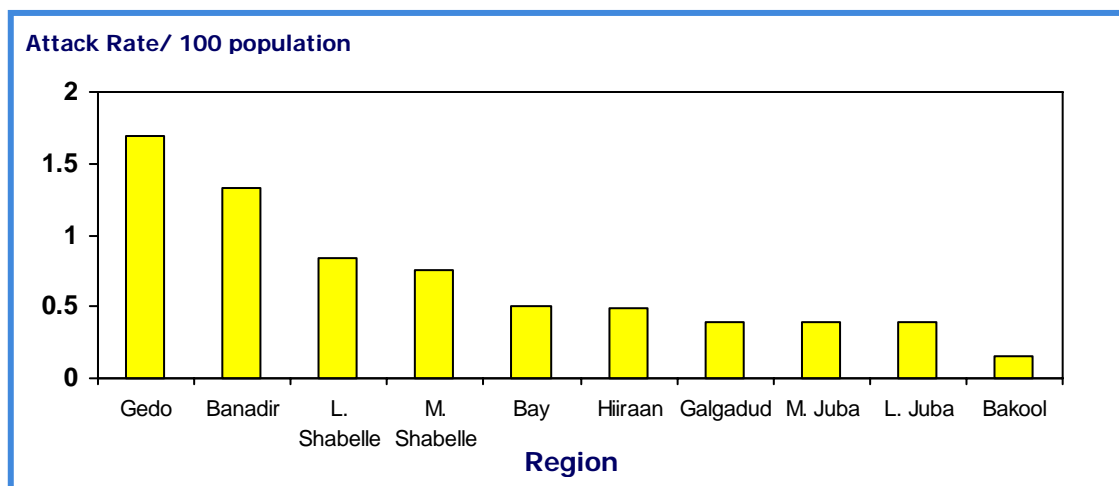


Figure 4: Distribution of AWD cases, deaths and CFR by region, Central and South Somalia, 1 January - 11 May 2007

During the same reporting period, **40%** (11 960/30 227) of AWD cases were reported from **Banadir** region including **17%** (161/973) of the total related deaths (**CFR<sup>3</sup> 1.35%**). **Nineteen percent** (5830) were reported from **Lower Shabelle** including **27%** (259/973) of the total related deaths (**CFR 4.29%**). **Twelve percent** (3717) reported from **Bay** including **23%** (227/973) of the total related deaths (**CFR 6.11%**). **Gedo** region reported **6%** (1693) including **5%** (45/973) of the total related deaths (**CFR 2.51%**). Although Middle Juba and Bakool regions reported only **3%** (927) and **1%** (363) of the total reported cases, they reported the highest **CFR 6.36%** and **10.7%** respectively. The distribution of AWD cases, deaths, and CFR by region is shown in figure 5.

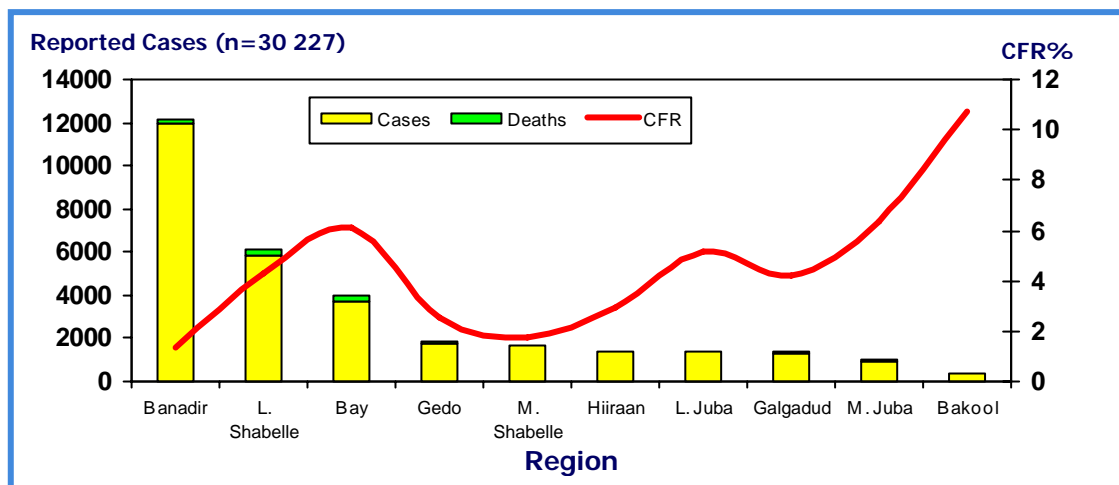


Figure 5: Distribution of AWD cases, deaths and CFR by region, Central and South Somalia, 1 January - 11 May 2007

<sup>3</sup> <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 – 11 May 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	159	14	8.81
11	11	0	0.00	1006	16	1.59	691	33	4.78	73	2	2.74	29	2	6.90
12	35	0	0.00	1021	14	1.37	552	13	2.36	107	1	0.93	142	4	2.82
13	0	0	0.00	1244	17	1.37	750	22	2.93	64	0	0.00	389	31	7.97
14	0	0	0.00	1036	21	2.03	636	15	2.36	84	1	1.19	587	43	7.33
15	0	0	0.00	751	8	1.07	562	21	3.74	102	2	1.96	492	25	5.08
16	0	0	0.00	1711	29	1.69	453	12	2.65	65	2	3.08	963	44	4.57
17	0	0	0.00	1534	16	1.04	337	8	2.37	40	2	5.00	781	44	5.63
18	0	0	0.00	1219	7	0.57	259	1	0.39	26	1	3.85	120	14	11.67
19	0	0	0.00	1081	9	0.83	180	0	0.00	36	0	0.00	47	4	8.51
TOT	1371	40	2.92	11960	161	1.35	5830	250	8.29	1625	28	1.72	3717	227	6.11

Central and South Region, 1 January – 11 May 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	0	0	0.00	55	0	0.00	0	0	0.00	0	0	0.00	82	5	6.10	780	29	3.72
8	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	102	5	4.90	656	26	3.96
9	0	0	0.00	11	0	0.00	0	0	0.00	0	0	0.00	124	8	6.45	1066	39	3.66
10	0	0	0.00	172	13	7.56	3	0	0.00	0	0	0.00	72	3	4.17	1852	111	5.99
11	0	0	0.00	387	14	3.62	245	10	4.08	0	0	0.00	55	3	5.45	2497	80	3.20
12	27	0	0.00	115	4	3.48	166	0	0.00	0	0	0.00	82	2	2.44	2247	38	1.69
13	29	3	10.34	116	2	1.72	236	8	3.39	0	0	0.00	76	3	3.95	2904	86	2.96
14	41	2	4.88	25	3	12.00	228	10	4.39	927	59	6.36	67	2	2.99	3631	156	4.30
15	53	3	5.66	165	1	0.61	147	12	8.16	NA	NA	NA	75	4	5.33	2347	76	3.24
16	28	3	10.71	201	4	1.99	23	4	17.39	NA	NA	NA	85	5	5.88	3529	103	2.92
17	122	15	12.29	187	0	0.00	245	10	4.08	NA	NA	NA	102	1	0.98	3348	96	2.87
18	57	13	22.81	230	2	0.87	NA	NA	NA	NA	NA	NA	187	4	2.14	2098	42	2.00
19	6	0	0.00	129	2	1.55	NA	NA	NA	NA	NA	NA	112	5	4.46	1591	20	1.26
TOT	363	39	10.74	1793	45	2.51	1293	54	4.18	927	59	6.36	1348	70	5.19	30227	973	3.22

\* Please note that the data included in the tables 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	District	Estimated Population	Cases	AR per 100	Deaths	CFR%	Comments
Hiiraan	Bulo Burte	89,120	355	0.40	26	7.32	
	Jalaalqsi	46,724	795	1.70	6	0.75	
	Beletweyne	144,345	221	1.15	8	3.62	
<b>TOTAL</b>		<b>280,189</b>	<b>1371</b>	<b>0.49</b>	<b>40</b>	<b>2.92</b>	
Lower Shabelle	Merka	192,939	2713	1.41	83	3.06	
	Afgoye	135,012	892	0.66	47	5.27	
	Qoryoley	134,205	582	0.43	52	8.93	
	K/Warey	55,445	770	1.39	30	3.90	
	Sablale	43,055	145	0.34	8	5.52	
	Brave	57,652	547	0.95	13	2.38	
	Awdegle	76,700	181	0.24	17	9.39	
<b>TOTAL</b>		<b>695,008</b>	<b>5830</b>	<b>0.84</b>	<b>250</b>	<b>4.29</b>	
Lower Juba	Kismayo	166,667	1267	0.76	57	4.50	Lab. confirmation (10) <i>V. Cholera Ogawa</i>
	Afmadow	51,334	30	0.06	0	0.00	
	Jamame	129,149	51	0.04	13	25.49	
<b>TOTAL</b>		<b>347,150</b>	<b>1348</b>	<b>0.39</b>	<b>70</b>	<b>5.19</b>	
Middle Juba		238,877	927	0.31	59	6.36	Week 15-19 data are missing
<b>TOTAL</b>		<b>238,877</b>	<b>927</b>	<b>0.31</b>	<b>59</b>	<b>6.36</b>	
Banadir	Mogadishu	901,183	11690	1.30	161	1.38	Lab. confirmation (24) <i>V. Cholera Inaba</i>
<b>TOTAL</b>		<b>901,183</b>	<b>11690</b>	<b>1.30</b>	<b>161</b>	<b>1.38</b>	
Middle Shabelle	Jowhar	218,027	1625	0.75	28	1.72	All samples negative for <i>V. Cholera</i> .
<b>TOTAL</b>		<b>218,027</b>	<b>1625</b>	<b>0.75</b>	<b>28</b>	<b>1.72</b>	
Gedo	Bardera	106,172	1793	1.69	45	2.51	Lab. confirmation (3) <i>V. Cholera Inaba</i>
<b>TOTAL</b>		<b>106,172</b>	<b>1793</b>	<b>1.69</b>	<b>45</b>	<b>2.51</b>	
Bay	Baidoa	726,849	3717	0.51	227	6.11	
<b>TOTAL</b>		<b>726,849</b>	<b>3717</b>	<b>0.51</b>	<b>227</b>	<b>6.11</b>	
Galgudud	Galaheri	330,057	1293	0.39	54	4.18	Week 18 and week 19 data are missing
<b>TOTAL</b>		<b>330,057</b>	<b>1293</b>	<b>0.39</b>	<b>54</b>	<b>4.18</b>	
Bakool	Wajid	246,335	363	0.17	39	10.74	
<b>TOTAL</b>		<b>246,335</b>	<b>363</b>	<b>0.17</b>	<b>39</b>	<b>10.74</b>	
<b>GRAND TOTAL</b>		<b>4,089,847</b>	<b>30 227</b>	<b>0.74</b>	<b>973</b>	<b>3.22</b>	

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
TOT	782	1043	96	5.26	139	535	64	9.50	74	250	5	1.54	135	988	62	5.52	3946	227	5.75

\* WHO visited Bay region to follow up on the situation and validate the reported AWD data. Reviewing the record revealed that the total number of registered AWD is **3946** including **227** related deaths, while the reports from the field reported only **3717** cases (mentioned in table 1) including the same number of reported deaths. The under reporting was estimated at **6%** (229 cases).

\*\* 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*<sup>4</sup>. 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 05 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

WHO conducted a mission to Elbon, 45 km from west of Wajid town to verify and assess the AWD situation and to encourage the health workers in information sharing. Elbon location is estimated to have 5000 households. A CTC was opened in the health centre run by NGO Gedo Health Consortium (GHC). 25 hand dug wells were rehabilitated by ACF; there are no telecommunication services except HF radios. Elbon health center is providing health promotion awareness to the visiting patients and their relatives to sensitize them about the prevention steps.



Since the WHO mission into high Case Fatality Rate (CFR) due to Acute Watery Diarrhoea (AWD) in Baidoa and Wajid in the beginning of April 2007, many improvements have been made. However, challenges remain, as chlorination activities have reportedly been stopped due to lack of chlorine. WHO emphasizes the importance of continuation of chlorination activities all year round and not only during AWD outbreaks. Safe drinking water prevents many infectious diseases, not only AWD.

<sup>4</sup> 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.



CTC Baidoa before cleaning up campaign



CTC Baidoa, one month after



**ACF** runs one CTC in Mogadishu. Chlorination continues of part of the 326 wells. **MSF** managed up to 5 Cholera Treatment Centres (CTCs): in Dinsor at the MSF hospital, in Gal Hareeri (Galgadud), at the MSF hospital in Jamaame (Lower Juba), in the paediatric ward of the hospital in South Galcayo (Mudug), in Forlanini, south Yaqshid (Mogadishu). Especially from Mogadishu, MSF reports the number of cases treated during this outbreak, is more than double then in previous outbreaks in the capital.

**MSF** is providing 72,000 litres of clean water every day to the IDPs in Afgoye (Lower Shabelle) through water trucking distributions. MSF chartered a plane containing 2,000 litres of ringer lactate, chlorination kits, emergency kits for 10,000 people for 3 months, 1,000 mosquito nets and other logistical materials. On May 4, another 14 tonnes of medical and logistical materials were sent.

The NGO **Concern World Wide** is conducting hygiene promotion activities and has rehabilitated 13 boreholes, 3 water distribution systems and 66 water catchments since 2003. The **Berdere Water Committee** is chlorinating water for 673 households. In addition, one borehole was rehabilitated, and a water pump was installed. **Intersos** is drilling and installing a submersible pump in one borehole in Khadekhal, Bay region. **CCC** is conducting community mobilization and sensitization on AWD control in Baidoa town and 15 villages in Bay district. Messages through Warsan radio station in Baidoa on cholera prevention are disseminated several times a day, in addition to radio soaps and debates. The Somalia Association for Rehabilitation and Development (**SARD**) trained 400 people from Baidoa and Burhakaba on hygiene promotion and chlorination. Also, 205 wells were chlorinated. **Mumin Global** continues to provide water to 350 households in Baidoa town.

The Society Development Initiative Organization (**SDIO**) is chlorinating the water supply in Sakow (Middle Juba) and taking care of the garbage collection in the town. The Baidoa Water Agency (**BWA**) is providing safe drinking water for 500 wells in Baidoa town by chlorinating the main water points. The NGO **Deegan** rehabilitated 3 boreholes in Khasandhere and provided rubbish pits for an environmental clean-up campaign.

The German Development Cooperation Agency (**GTZ**) rehabilitated one earth dam in Disor and one shallow well, and trained the water committees in maintenance and usage. **World Vision International** is constructing latrines in Wajid. Six chlorination teams of 2 persons each have been chlorinating the main wells in the town. Chlorination had to be stopped because of lack of supplies. **UNDP** is implementing an ongoing drilling program for 47 boreholes throughout Somalia, of which 17 in Central South. Two boreholes in Bay region have been completed.

**WHO** provided 100 liters of ringer lactate to the Cholera Treatment Centre (CTC) in Hayat village, Mogadishu, another one complete cholera kit was given to CISP to use it in Bladhere and Xarardheere

**UNICEF** distributed 20,000 aqua tablets, 100 kg of aluminium sulphate powder, 3 drums of chlorine and, 20 sanitation tool sets and wheelbarrow and other supplies to the Somali Red Crescent Society (SRSC) in Mogadishu. SRCS is running 5 Oral Rehydration Therapy (ORT) corners. UNICEF provided 2000 plastic sheets to DRC for IDPs outside of Mogadishu.

**UNICEF** furthermore provided 175 cartons of Ringer Lactate to Banadir Hospital and the NGOs CISP in Elder and ACF in Mogadishu, 3 drums of chlorine powder to Banadir hospital and CISP, 4 partial cholera kits (carton A) to ACF, COSV and Banadir Hospital, and 533 cartons of Oral Rehydration Salts (ORS) to COSV, CISP, Banadir Hospital, SOS Hospital, Muslim-Aid UK, and the health centres in Hanano/Dharkenley run by the UAE Red Crescent, SORRDO, Waberi,H/wayne and H/jajab, Alda,wa, Sifa-A/aziz, and IIRO-Bondhere.

The NGO **WAMY** distributed 4 cartons of ringer lactate and 100 of canula and other diarrhea supplies to Alhayat CTC in Sinkadheer and Banadir Hospital. The NGO **MANHAL** distributed 150 cartons of ringer lactate to Banadir hospital, and Dhanane village in Lower Shabelle as well as fuel and mattresses to the Madina, Kaydsaney and Banadir hospitals. Mobile teams have been providing health care to IDPs in Lower and Middle Shabelle near to Mogadishu. Social mobilization through radio Banadir is ongoing.