

10 August 2007

*This update describes the development, status, and activities implemented by the humanitarian community in response to the Acute Watery Diarrhoea outbreak in Somaliland. 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 Somaliland.*



Photo: Dr Hammam El Sakka, WHO Somalia

## Highlights

- Between 1 January and 10 August 2007, **3864** Acute Watery Diarrhoea (AWD) cases were reported from Somaliland including **46** related deaths (CFR 1.24%).
- In the current week (epidemiological week 32), the reported number of cases **decreased** by 5%, in comparison to the previous week (143 and 159 cases respectively).
- In the current epidemiological week, **no** AWD related-deaths were reported from all regions.
- Overall, Toghheer region (Bura) reported 56% (2179) of the total number of reported cases, including 43% (20/46) of the total related deaths. The trend shows a marked **decrease** in the reported cases compared to the last epidemiological week.
- Although Awdal region (**Borama**) reported only **12%** (477) of the total reported cases, it reported the highest CFR at **1.68%**.

**Overall, the number of reported Acute Watery Diarrhoea cases is decreasing in Somaliland due to decrease in the number of reported cases from Toghheer region. However, a slight increase was observed in the number of AWD cases reported from Wogoyi Galbeed and Awdal regions.**

## In this issue

- ✓ Detailed epidemiological description of the current (4-10 August 2007) AWD outbreak in Somaliland;
- ✓ AWD data including age distribution;
- ✓ Easy-to-grasp figures showing the trends in the affected regions;

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## 1 Epidemiological week No 32: Overall results

Between 01 January and 10 August 2007, a total of **3864** cases of clinically diagnosed **Acute Watery Diarrhoea (AWD)** including **46** related deaths (**CFR<sup>1</sup> 1.19%**) were reported from Somaliland. Cases were reported from 3 regions (Toghheer, Awdal and Wogooyi Galbeed) with an estimated population of **1,063,855**; the overall attack rate<sup>2</sup> (**AR**) is **0.36%**.

In the current week (epidemiological week 32), the reported cases **decreased** by 5% in comparison to the previous week (143 and 159 cases respectively) mainly due to decrease in the number of reported cases in Toghheer region. The overall CFR continues to decrease from **5.26%** in epidemiological week 20 to **1.19%** in epidemiological week 32. In the current week, no AWD related-death was reported from any region; accordingly the CFR showed a decrease in comparison to the previous week (**0.00%** and **0.63%** respectively). The weekly distribution of AWD cases and CFR is shown in figure 1.

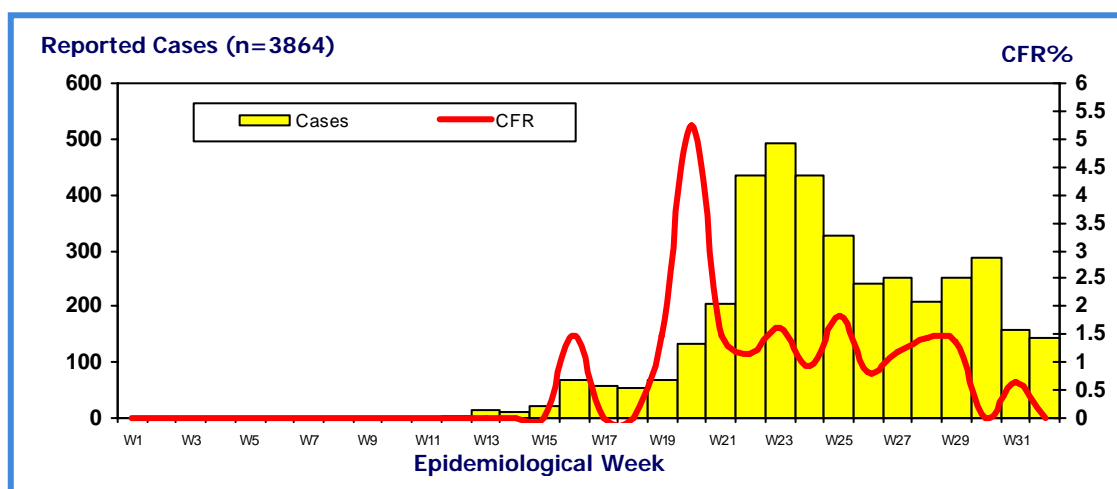


Figure 1: Distribution of AWD cases, Somaliland, 01 January-10 August 2007

Overall, **63%** (2423/3864) of the AWD cases occurred in equal to or above 5 years old age group including **54%** (25/46) of all reported deaths. Although the less than 5 years old age group reported **37%** (1441/3864) of the number of cases, the Case Fatality Rate (CFR) was higher compared to the more than 5 years old age group (**1.45%** and **1.03%** respectively). The weekly distribution of AWD cases by age group is shown in figure 2.

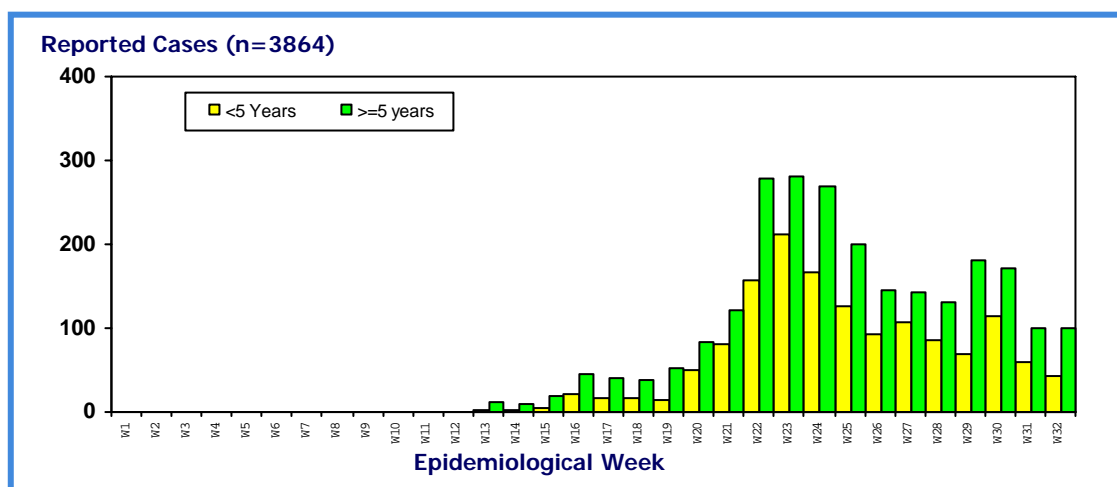


Figure 2: Distribution of AWD cases by age groups, Somaliland, 01 January-10 August 2007

<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"

The **first** report of an increase in AWD cases was received from **Burao** district in **Toghheer region** in epidemiological week 12. After reaching the peak in week 22, cases started to decrease up to the current epidemiological week. Burao district is divided into 4 main sectors. Cases were reported from different locations named; Sheik Bashir (reported the majority of the cases), Farah Omer, Aden Suleiman, Mohamed Ali and Kossar. Only 3 cases were reported from villages outside Burao town named; Ununlay, Lebiguun and Kabadhere villages. In the current week, Burao district reported **88** cases with no related-deaths (CFR **0.00%**), in comparison to the previous week, a **decrease** of **14%** was observed (88 and 117 cases respectively).

In epidemiological week 14, the first cases of AWD were reported from **Hargeisa** district, **Wogooyi Galbeed** region. Hargeisa town reported 3 cases of AWD and the number of reported cases continued to increase reaching the peak in epidemiological week 23. However, an **increase** of **4%** was observed in the current epidemiologic week compared to the previous week (24 and 22 cases respectively).

Starting from epidemiological week 16, **Borama** district, Awdal region reported AWD cases with a high CFR of **4.35%**. The peak was reached in epidemiological week 23, but a sharp decrease was observed in the last 4 weeks. In the current week, Borama reported 20 cases with no related-death (CFR **0.00%**). In comparison to the previous week, the number of reported cases was **increased** by **22%** was observed (31 and 20 cases respectively).

The distribution of AWD cases by region is shown in figure 3.

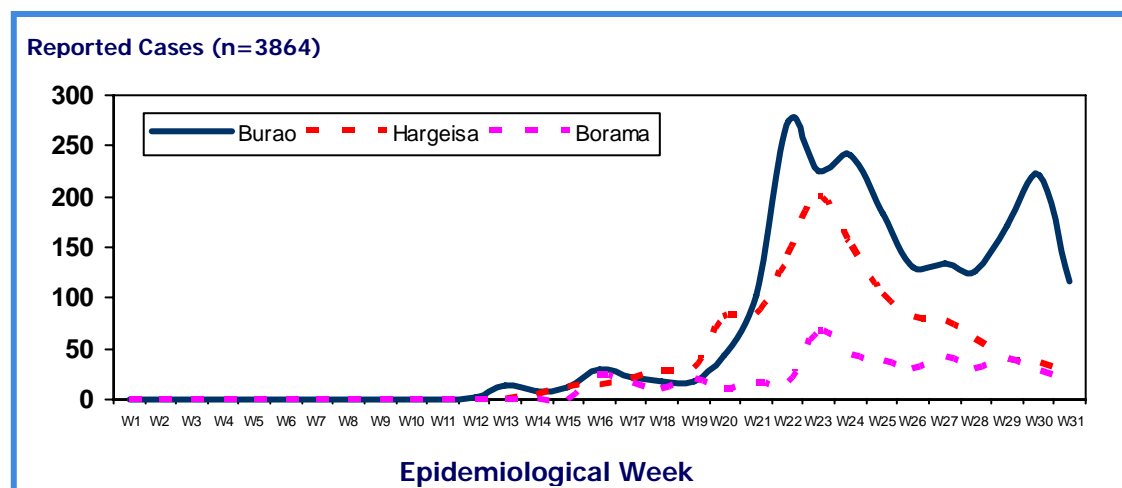


Figure 3: Distribution of AWD cases by region, Somaliland, 01 January-10 August 2007

During the same reporting period, **56%** (2179/3864) of AWD cases were reported from **Toghheer** region (Burao) including **43%** (20/46) of the total related deaths (CFR<sup>3</sup> **0.92%**). **Thirty-one percent** (1208) were reported from Wogooyi Galbeed region (Hargeisa) including **39%** (18) of the total related deaths (CFR **1.49%**). Although **Awdal** region (Borama) reported only **17%** (8) of the total related deaths, it reported the highest CFR at **1.68%**.

Overall, equal or more than 5 years old group represented **63%** (2423/3864) of the total number of reported cases. The age distribution in both Burao and Hargeisa is almost identical; the less than 5 years old group represented **34%** and **35%** respectively of the total reported cases. In Borama, the less than 5 years old represented **60%** of the total reported cases which may indicate that the cholera case definition is not appropriately used. The age distribution of reported AWD in the 3 regions is shown in figure 4 and table 1.

<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".

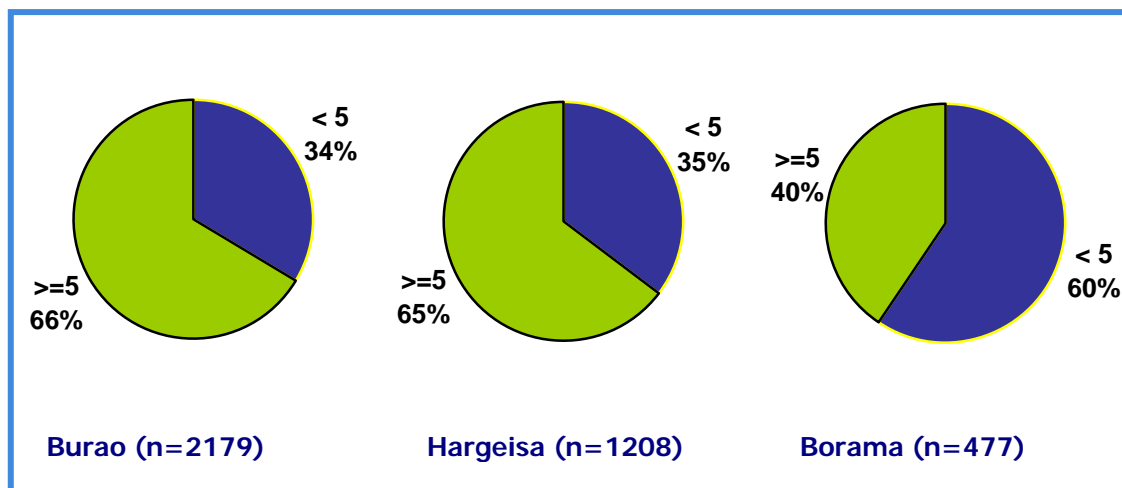


Figure 4: Distribution of AWD cases by age groups, Somaliland, 1 January-10 August 2007

The charts below (Figure 5-1 to 5-3) show the weekly distribution of AWD and the logarithmic trend line (in black). The charts demonstrate that the outbreak started in Burao district in March 2007, and then spread to Hargeisa in early April followed by Borama in the middle of April 2007. The overall trend line (Figure 5-4) shows that the number of reported cases is **decreasing** in Somaliland due to decreased number of reported cases from Togheer (Burao) region.

## 2 Distribution of Acute Watery Diarrhoea cases by region, Somaliland, 1 January-10 August 2007 (Figure 5)

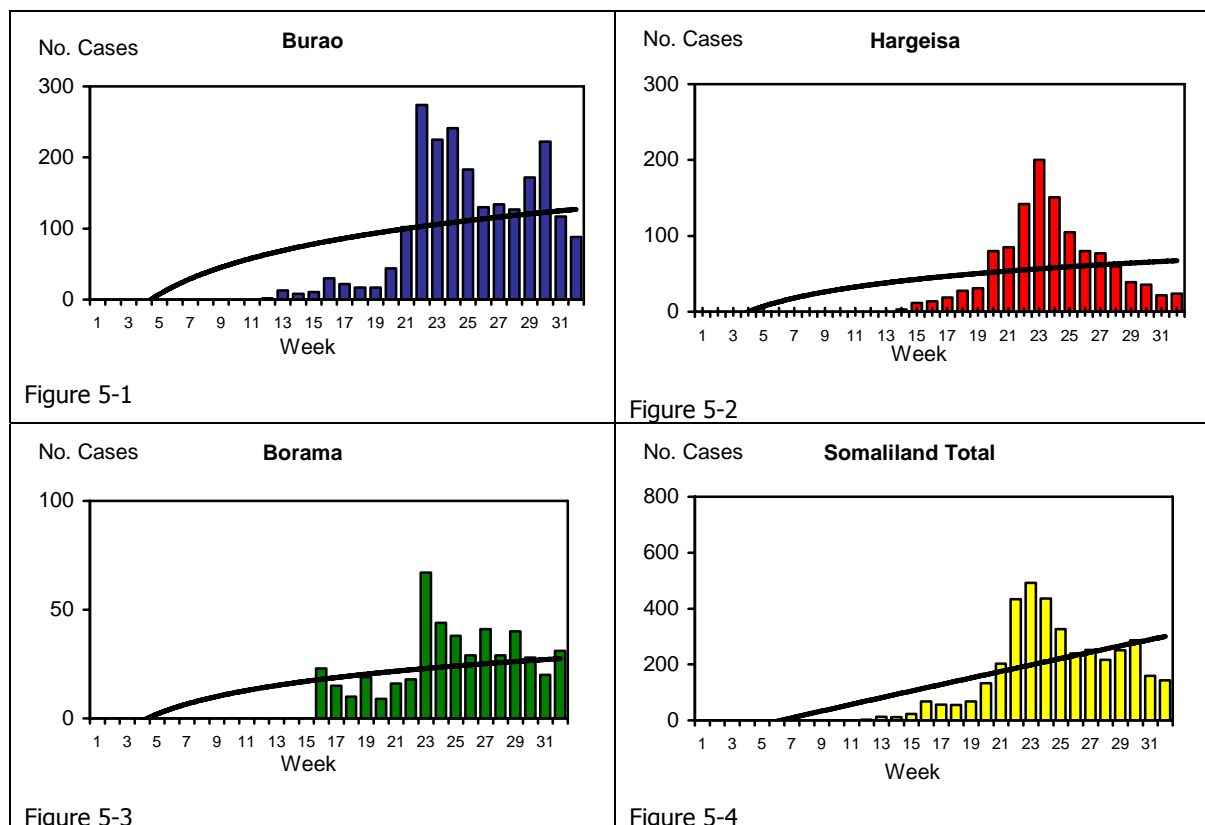


Table 1: Distribution of reported Acute Watery Diarrhoea cases and deaths by region in Somaliland

Week	Burao (Toghheer)					Hargeisa (Wogooyi Galbeed)					Borama (Awdal)					Total				
	Cases		Deaths		CFR	Cases		Deaths		CFR	Cases		Deaths		CFR	Cases		Deaths		CFR
	<5	>=5	>5	<5		<5	>=5	>5	<5		<5	>=5	>5	<5		<5	>=5	>5	<5	
1	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
2	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
3	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
4	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
5	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
6	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
7	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
8	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
9	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
10	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
11	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
12	1	1	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	1	1	0	0	0.00
13	2	11	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	2	11	0	0	0.00
14	2	6	0	0	0.00	0	3	0	0	0.00	0	0	0	0	0.00	2	9	0	0	0.00
15	3	8	0	0	0.00	1	11	0	0	0.00	0	0	0	0	0.00	4	19	0	0	0.00
16	6	24	0	0	0.00	1	13	0	0	0.00	15	8	0	1	4.35	22	45	0	1	1.49
17	6	16	0	0	0.00	2	17	0	0	0.00	8	7	0	0	0.00	16	40	0	0	0.00
18	7	10	0	0	0.00	4	24	0	0	0.00	5	5	0	0	0.00	16	39	0	0	0.00
19	4	13	0	0	0.00	4	27	0	1	3.23	6	13	0	0	0.00	14	53	0	1	1.49
20	16	28	0	3	6.82	25	55	0	1	1.25	8	1	3	0	33.33	49	84	3	4	5.26
21	36	66	0	0	0.00	30	55	0	2	2.35	16	0	1	0	6.25	82	121	1	2	1.49
22	96	178	3	0	1.09	47	95	0	2	1.41	13	5	0	0	0.00	156	278	3	2	1.15
23	72	153	3	3	2.41	85	115	1	0	0.47	54	13	1	0	1.33	211	281	5	3	1.48
24	70	171	1	2	1.16	64	87	1	0	1.25	32	12	0	0	0.00	166	270	2	2	1.09
25	70	113	1	0	0.55	36	69	1	3	3.81	21	17	0	1	2.63	127	199	2	4	1.84
26	50	80	0	0	0.00	27	53	0	2	2.50	16	13	0	0	0.00	93	146	0	2	0.84
27	50	84	2	0	1.49	35	42	0	0	0.00	23	18	1	0	2.44	108	144	3	0	1.19
28	51	76	1	0	0.79	14	46	0	2	3.33	20	9	0	0	0.00	85	131	1	2	1.43
29	39	133	1	0	0.58	18	21	0	1	2.56	13	27	0	0	0.00	70	181	1	1	0.80
30	87	135	0	0	0.00	12	24	0	0	0.00	16	12	0	0	0.00	115	171	0	0	0.00
31	41	76	0	0	0.00	11	11	0	1	4.55	7	13	0	0	0.00	59	100	0	1	0.63
32	21	67	0	0	0.00	11	13	0	0	0.00	11	20	0	0	0.00	43	100	0	0	0.00
<b>TOT</b>	<b>730</b>	<b>1449</b>	<b>12</b>	<b>8</b>	<b>0.92</b>	<b>427</b>	<b>781</b>	<b>3</b>	<b>15</b>	<b>1.49</b>	<b>284</b>	<b>193</b>	<b>6</b>	<b>2</b>	<b>1.68</b>	<b>1441</b>	<b>2423</b>	<b>21</b>	<b>25</b>	<b>1.19</b>

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

### 3 Laboratory confirmation / drug resistance

Date	District	No. tested	Confirmed	Results		Antibiotic Sensitivity Test		
				Organism	Serotype	Chloramphenicol	Tetracycline	Erythromycin
23 March 07	Burao	3	3	<i>V. cholerae</i>	<i>Inaba</i>	Sensitive	Sensitive	Sensitive
31 March 07	Hargeisa	3	3	<i>V. cholerae</i>	<i>Inaba</i>	Resistant <sup>4</sup>	Sensitive	Sensitive
04 April 07	Burao	8	1	<i>V. cholerae</i>	<i>Inaba</i>	Resistant	Sensitive	Sensitive
04 April 07	Hargeisa	5	2	<i>V. cholerae</i>	<i>Inaba</i>	Sensitive	Sensitive	Sensitive
07 April 07	Hargeisa	3	2	<i>V. cholerae</i>	<i>Inaba</i>	1XR, 1XS	Sensitive	Sensitive
11 April 07	Hargeisa	4	3	<i>V. cholerae</i>	<i>Inaba</i>	Resistant	Sensitive	Sensitive
13 April 07	Hargeisa	11	8	<i>V. cholerae</i>	<i>Inaba</i>	3XR, 5XS	Sensitive	Sensitive
16 April 07	Hargeisa	1	0	<i>V. cholerae</i>	<i>Inaba</i>	NA	NA	NA
17 April 07	Hargeisa	5	0	<i>V. cholerae</i>	<i>Inaba</i>	NA	NA	NA
18 April 07	Hargeisa	1	0	<i>V. cholerae</i>	<i>Inaba</i>	NA	NA	NA
19 April 07	Hargeisa	3	2	<i>V. cholerae</i>	<i>Inaba</i>	Sensitive	Sensitive	Sensitive
21 April 07	Hargeisa	4	0	<i>V. cholerae</i>	<i>Inaba</i>	NA	NA	NA
23 April 07	Hargeisa	4	1	<i>V. cholerae</i>	<i>Inaba</i>	Sensitive	Sensitive	Sensitive
24 April 07	Hargeisa	7	1	<i>V. cholerae</i>	<i>Inaba</i>	Sensitive	Sensitive	Sensitive
<b>TOTAL</b>		<b>62</b>	<b>26</b>	<b><i>V. cholerae</i> serogroup O1, serotype <i>Inaba</i>.</b>				

Between 23 March and 24 April 2007, a total of 62 stool samples were tested in Hargeisa general hospital laboratory; of these **42%** (26/62) were positive for ***V. cholerae* serogroup O1, serotype *Inaba***. Eighty-five percent (51/62) of the samples were from Hargeisa and the remaining 15% were from Burao. Overall, the mean age of positive samples was 28.03 years, ranging from 6-70 years. Fifty-three percents (14/26) were females. The antibiotics sensitivity test showed 42% (11/26) of the isolated *V. cholera* was resistant to Chloramphenicol.

From the 51 samples collected from Hargeisa **43%** (22/51) were positive, and, the mean age of positive samples was 28.82 years, ranging from 6-70 years. Fifty percent (14/22) were females.

From the samples collected from Burao **36%** (4/11) were positive, and the mean age of positive samples was 34.00 years, ranging from 7-70 years. Seventy-five percent (14/26) were females.

In the epidemiological week 29, **7** stool samples were collected from patients with AWD in Awdal region (3 from Borama and 4 from Hariirad village), Samples were tested in Hargeisa Hospital, and all samples were negative for ***V. cholerae***.

<sup>4</sup> All ***V. cholerae* serogroup O1 serotype *Inaba* positive** samples collected in South and Central zones of Somalia were sensitive to Chloramphenicol.