



Suspected cholera case treated in Merka CTC

Photo: WHO Somalia

## September 2008 Lower Shabelle Region

*This document is built on surveillance data that health service providers transmit on a weekly basis to the Ministry of Health of Somalia and WHO from health facilities and hospitals in Lower Shabelle Region.*

*The Monthly Morbidity and Mortality Bulletin (MMMB) is a snapshot of the health conditions in those facilities where events are registered and data collected. The MMMB does not reflect the situation from other health facilities.*

## Highlights

- In the past month (Epidemiological weeks 35-38 inclusive), a total of 10,462 consultations were reported, including 50 deaths.
- In the current week (epidemiological week 38), 2,897 consultations for events under surveillance were reported through EWARS in Lower Shabelle region, including 10 deaths.
- Overall, **16%** (466) were due to Acute Respiratory Infections (**ARI**) and **12%** (349) due to Diarrhoeal Disease (**DD**).
- Forty-one Malaria cases (**MAL**) were reported with case fatality rate (**CFR**) of **2.44%**.
- In the current week (epidemiological week 38), **10** deaths were reported; of them **three** were related to severe malnutrition (**SMN**), **two** were injury (**INJ**)-related, **one** was Diarrhoeal disease (**DD**)-related, **one** was Neonatal Tetanus death, **one** was Malaria (**MAL**)-related and **two** deaths were due to Other causes (**OTH**).
- Between 13 August and 7 October 2008, a total of **412** cases of acute watery diarrhoea, including **six** related-deaths (**CFR: 1.46%**) were reported from Merka hospital.
- 11 stool samples were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba* in Merka hospital.

## In this issue

- ✓ Detailed epidemiological description of the past four epidemiological weeks (35-38 inclusive);
- ✓ EWARS Data, Epidemiological Week N<sup>o</sup> 38, 2008;
- ✓ Figures showing the trends of Diarrhoeal diseases per district in Lower Shabelle Region;
- ✓ Laboratory confirmed cholera cases in Merka Hospital.

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This update has been made possible with the support of:



## 1 Reporting Units

WHO Somalia started its surveillance system (EWARS) in week 21 with 27 trained reporting units in Lower Shabelle region. A continuous effort has been made to increase the number of reporting units, so that by week 28 another 5 health facilities were added to the system, bringing the total number of reporting sites to 32 (**15%** increase). The total population under EWARS surveillance in Lower Shabelle region is estimated at **845,651**.



**Thirty-one** of these sites (**97%**) have sent their surveillance data on time during the epidemiological week 38 (20-26 September 2008). WHO is planning to expand the system to cover all the health facilities in Lower Shabelle Region (Table 1). Since the start of the EWARS in the epidemiological week 21 (24 May 2008), a total of **44,882** consultations were reported through the system from Lower Shabelle Region. The weekly number of reporting units per district is shown in Figure 1.

Table 1. Number of reported units by district, Lower Shabelle Region, Somalia, 30 August-26 September 2008.

District	Population <sup>1</sup>	No. Reported Sites/epidemiological Weeks			
		Week 35	Week 36	Week 37	Week 38
Afgooye	135 012	2	2	2	2
Awdheegle	76 700	3	3	3	3
Brava	57 652	3	3	3	3
Katunwary <sup>2</sup>	50 445	4	5	5	5
Marka	192 939	13	13	12	12
Qoryole	134 205	4	4	4	4
Sablale	43 055	1	1	1	1
Wanleweyne	155 643	1	1	1	1
<b>TOTAL</b>	<b>845 651</b>	<b>31 (97%)</b>	<b>32 (100%)</b>	<b>31 (97%)</b>	<b>31 (97%)</b>

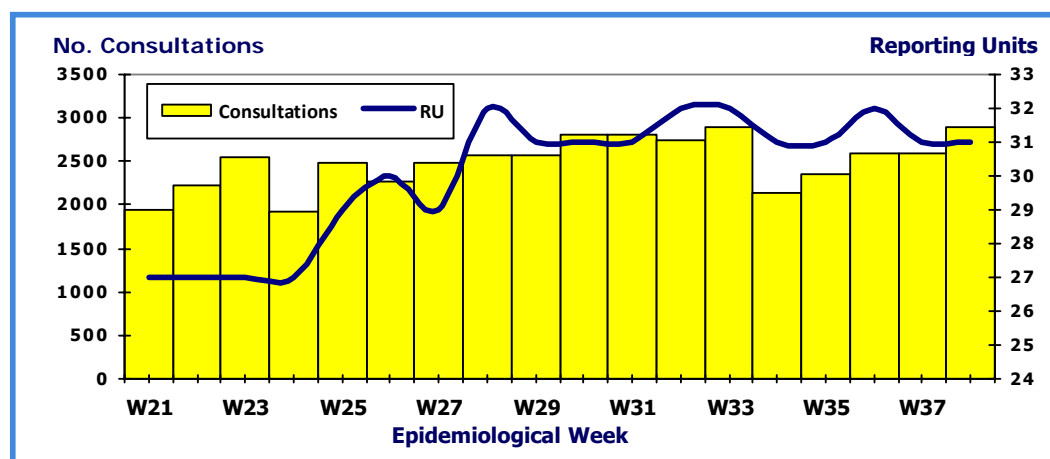


Figure 1: Number of Reported Health facilities by week, Lower Shabelle Region, Somalia, 24 May-26 September 2008.

<sup>1</sup> UNDP Somalia

<sup>2</sup> One additional health facility was trained and participated in the EWRAS in Katunwary district in the epidemiological week 36.

## 2 EWARS Data, Summary (Epidemiological Weeks No 29-32)

In summary, for the four weeks between 30 August and 26 September 2008 (Epidemiological weeks 35-38 inclusive), a total of **10,462** consultations were reported, of which **14%** (1,373) stated **diarrhoeal diseases**, **17%** (1,767) **acute respiratory infection (ARI)**, **4%** (435) **injuries (INJ)**, **2%** (193) as **severe malnutrition (SMN)**, **2%** (193) **Malaria (MAL)** and **1%** (143) **Schistosomiasis (BIL)**.

Table 2. Weekly distribution of reported cases, **All age groups**, deaths and monthly Case Fatality Rate (CFR), Lower Shabelle Region, Somalia, 30 August-26 September 2008.

Week Event	WEEK 35		WEEK 36		WEEK 37		WEEK 38		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
<b>AWD</b>	84	<b>1</b>	83	<b>2</b>	73	<b>2</b>	54	<b>1</b>	294	<b>6</b>	<b>2.04</b>
<b>BD</b>	58	<b>1</b>	60	<b>0</b>	59	<b>1</b>	89	<b>0</b>	266	<b>2</b>	<b>0.75</b>
<b>OTDR</b>	202	<b>0</b>	211	<b>0</b>	194	<b>1</b>	206	<b>0</b>	813	<b>1</b>	<b>0.12</b>
<b>ARI</b>	351	<b>2</b>	491	<b>1</b>	459	<b>0</b>	466	<b>0</b>	1767	<b>3</b>	<b>0.17</b>
<b>MES</b>	1	<b>0</b>	0	<b>0</b>	1	<b>0</b>	0	<b>0</b>	2	<b>0</b>	<b>0.00</b>
<b>MEN</b>	0	<b>0</b>	1	<b>0</b>	0	<b>0</b>	3	<b>0</b>	4	<b>0</b>	<b>0.00</b>
<b>AFP</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	<b>0.00</b>
<b>JAU</b>	6	<b>0</b>	9	<b>1</b>	10	<b>1</b>	1	<b>0</b>	26	<b>2</b>	<b>7.69</b>
<b>AHF</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	<b>0.00</b>
<b>NNT</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	1	<b>1</b>	1	<b>1</b>	<b>100.00</b>
<b>ATT</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	<b>0.00</b>
<b>DIPH</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	<b>0.00</b>
<b>WCO</b>	4	<b>0</b>	9	<b>0</b>	1	<b>0</b>	1	<b>0</b>	15	<b>0</b>	<b>0.00</b>
<b>MUM</b>	11	<b>0</b>	16	<b>0</b>	12	<b>0</b>	9	<b>0</b>	48	<b>0</b>	<b>0.00</b>
<b>MAL</b>	31	<b>2</b>	27	<b>0</b>	31	<b>1</b>	41	<b>1</b>	130	<b>4</b>	<b>3.08</b>
<b>LESH</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	0	<b>0</b>	<b>0.00</b>
<b>BIL</b>	28	<b>0</b>	31	<b>0</b>	55	<b>0</b>	29	<b>0</b>	143	<b>0</b>	<b>0.00</b>
<b>UXF</b>	47	<b>0</b>	55	<b>0</b>	50	<b>0</b>	41	<b>0</b>	193	<b>0</b>	<b>0.00</b>
<b>SMN</b>	46	<b>1</b>	58	<b>1</b>	37	<b>0</b>	52	<b>3</b>	193	<b>5</b>	<b>2.59</b>
<b>INJ</b>	106	<b>1</b>	93	<b>5</b>	116	<b>0</b>	120	<b>2</b>	435	<b>8</b>	<b>1.84</b>
<b>OTH</b>	1387	<b>3</b>	1459	<b>8</b>	1502	<b>5</b>	1784	<b>2</b>	6132	<b>18</b>	<b>0.29</b>
<b>TOTAL</b>	<b>2362</b>	<b>11</b>	<b>2603</b>	<b>18</b>	<b>2600</b>	<b>11</b>	<b>2897</b>	<b>10</b>	<b>10462</b>	<b>50</b>	
<b>RU</b>	<b>31</b>		<b>32</b>		<b>31</b>		<b>31</b>				

C – Cases, D – Deaths, AWD - Acute Watery Diarrhoea, BD - Bloody Diarrhoea, OTDR-Other Diarrhoea, - ARI-Acute Respiratory Infection, MES – Measles, Men - Meningitis, AFP - Acute Flaccid Paralysis, JAU - Acute Jaundice Syndrome, AHF Acute Hemorrhagic Fever, NNT - Neonatal Tetanus, ATT-Adult tetanus, DIPH-Diphtheria, WCO-Whooping Cough, MUM-Mumps, MAL – Malaria, LESH-Leishmania, BIL-Bilharzia, UXF-Unexplained fever, INJ – Injuries, OTH – Others, RU – Reporting Units. Please note data from late reporting in previous weeks has been updated.

During the same reporting period, a total of **4,182** consultations were reported in the less than 5 years old group, (**40%** of the total consultations), of which **23%** (943) were due to **ARI**, **21%** (876) due to **DD**, **3%** (126) due to **SMN**, **3%** (124) due to **INJ**, **2%** (63) due to **BIL** and **1%** (42) were reported as **MAL**. **Twenty-eight** percent (14/50) of the total deaths were reported in this age group. Of them 5 (36%) were **DD**-related, four (29%) were **SMN**-related, one (7%) **ARI** related death, one **Neonatal Tetanus** (NNT) and the remaining 3 deaths were due to **other causes** (OTH).

Table 3. Weekly distribution of reported cases, deaths and monthly Case Fatality Rate (CFR), less than 5 years old, Lower Shabelle Region, Somalia, 30 August-26 September 2008.

Week Event	WEEK 35		WEEK 36		WEEK 37		WEEK 38		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
<b>AWD</b>	62	0	52	1	57	1	38	1	209	3	<b>1.44</b>
<b>BD</b>	28	1	24	0	30	1	29	0	111	2	<b>1.80</b>
<b>OTDR</b>	131	0	146	0	144	0	135	0	556	0	<b>0.00</b>
<b>ARI</b>	191	1	258	0	226	0	268	0	943	1	<b>0.11</b>
<b>MES</b>	1	0	0	0	1	0	0	0	2	0	<b>0.00</b>
<b>MEN</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>AFP</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>JAU</b>	1	0	1	0	0	0	0	0	2	0	<b>0.00</b>
<b>AHF</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>NNT</b>	0	0	0	0	0	0	1	1	1	1	<b>100.00</b>
<b>ATT</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>DIPH</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>WCO</b>	4	0	5	0	1	0	1	0	11	0	<b>0.00</b>
<b>MUM</b>	6	0	7	0	8	0	4	0	25	0	<b>0.00</b>
<b>MAL</b>	11	0	9	0	12	0	15	0	47	0	<b>0.00</b>
<b>LESH</b>	0	0	0	0	0	0	0	0	0	0	<b>0.00</b>
<b>BIL</b>	11	0	7	0	29	0	16	0	63	0	<b>0.00</b>
<b>UXF</b>	8	0	15	0	9	0	10	0	42	0	<b>0.00</b>
<b>SMN</b>	27	1	39	0	27	0	33	3	126	4	<b>3.17</b>
<b>INJ</b>	30	0	32	0	28	0	34	0	124	0	<b>0.00</b>
<b>OTH</b>	390	0	439	1	469	2	622	0	1920	3	<b>0.16</b>
<b>TOTAL</b>	<b>901</b>	<b>3</b>	<b>1034</b>	<b>2</b>	<b>1041</b>	<b>4</b>	<b>1206</b>	<b>5</b>	<b>4182</b>	<b>14</b>	
<b>RU</b>	<b>31</b>		<b>32</b>		<b>31</b>		<b>31</b>				

C – Cases, D – Deaths, AWD - Acute Watery Diarrhoea, BD - Bloody Diarrhoea, OTDR-Other Diarrhoea, - ARI-Acute Respiratory Infection, MES – Measles, Men - Meningitis, AFP - Acute Flaccid Paralysis, JAU - Acute Jaundice Syndrome, AHF Acute Hemorrhagic Fever, NNT - Neonatal Tetanus, ATT-Adult tetanus, DIPH-Diphtheria, WCO-Whooping Cough, MUM-Mumps, MAL – Malaria, LESH-Leishmania, BIL-Bilharzia, UXF–Unexplained fever, INJ – Injuries, OTH – Others, RU – Reporting Units. Please note data from late reporting in previous weeks has been updated.

### 3 EWARS Data, Epidemiological Week N<sup>o</sup> 38, 2008

Between 20-26 September 2008 (epidemiological week 38), a total of **2,897** consultations were reported through EWARS in Lower Shabelle region. Overall, **16%** (466) due to **ARI**, **12%** (349) were due to **DD**, **4%** (120) due to **INJ**, **2%** (52) due to **SMN**, **1%** (41) due to **MAL** and **1%** (41) were reported as **Fever of Unknown Origin** (UXF). **ARI** represented **22%** and **12%** in the less than 5 years old and 5 or more years old respectively. **DD** was found to be higher in those less than 5 years and represented **17%** of the total consultations. In the same period, 10 deaths were reported; of them **30%** (3/10) were **SMN**-related, **20%** were **INJ**-related, **10%** were **NTT**-related, **10%** were **MAL**-related, **10%** were **DD**-related and the remaining 20% were due to **OTH**.

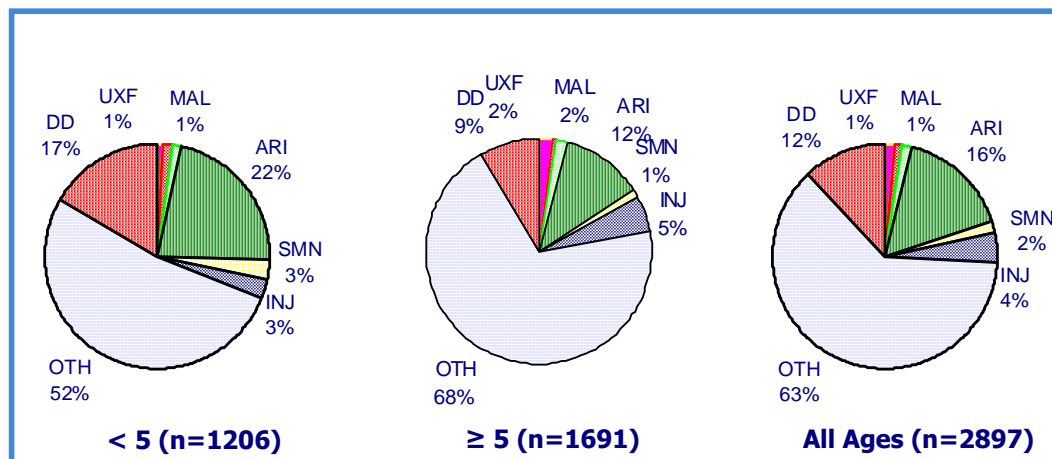


Figure 2. Proportion of primary causes for all reported cases, Lower Shabelle Region, Somalia, 20-26 September 2008.

The below graph (Figure 3) shows that Acute Respiratory Infections and Diarrheal diseases are the most common of communicable diseases throughout the region; while Bilharzia and vector borne diseases (Malaria and Leishmania) are present predominantly in Katunwary district. Vaccine preventable diseases mainly occur in Qoryole and Afgooye district. The later also presents the highest rate of severe malnutrition in the region, followed by Katunwary district.

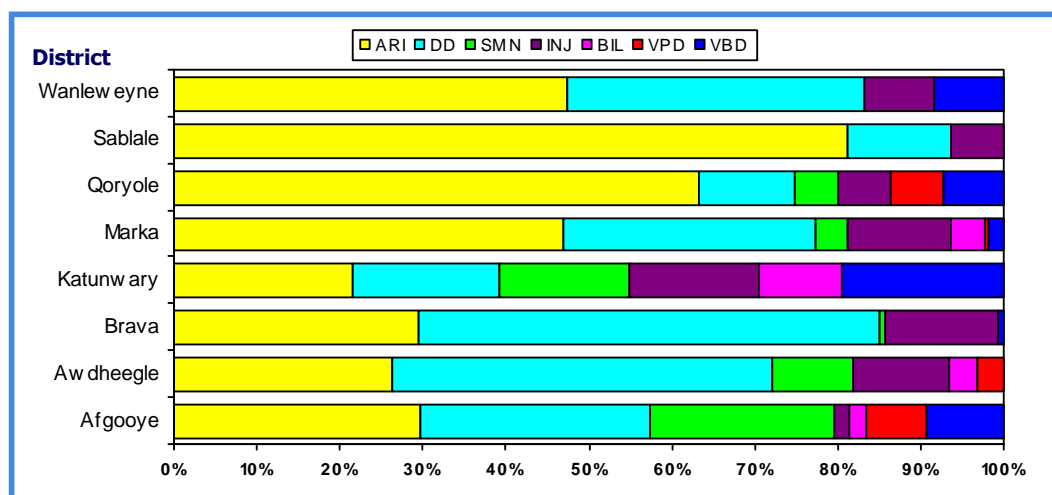


Figure 3. The distribution of reported health events by district, Lower Shabelle Region, Somalia, 20-26 September 2008.

#### 4 Distribution of reported cases and CFR<sup>3</sup> by Age Group

**ARI** was the most common health event reported among persons older than 5 years of age, with no related death, followed by **DD**. Twenty-six Malaria cases (**MAL**) were reported with the highest **CFR** of **3.85%**. Fifty-four percent (54%) were laboratory confirmed using a rapid diagnostic test. Seventy-two (72) cases of injuries (**INJ**) were reported with CFR of 2.78%. Thirteen cases of Schistosomiasis (**BIL**) were reported, of them 54% (7/13) from Merka district. Three cases of suspected Meningitis (**MEN**) were reported from Fiqi Hospital, Afgooyi district (Figure 4).

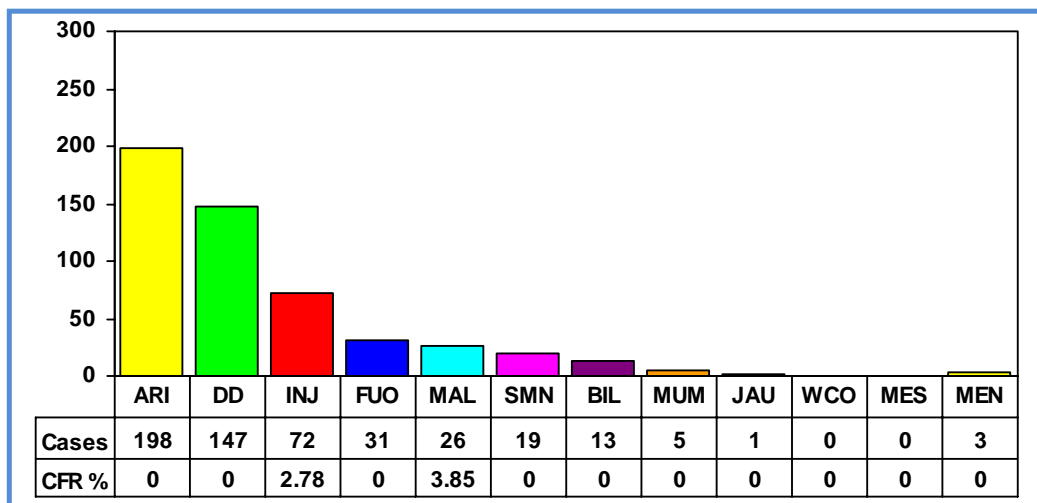


Figure 4. Primary causes for the reported cases and CFRs, **MORE than or equal 5 years of age**, Lower Shabelle Region, Somalia, 20-26 September 2008.

In the under-5 year age group, **1,206** consultations were reported, constituting **42%** of the total number of consultations; **22%** (268) of these reports were attributed to **ARI** while **17%** (202) were due to **DD**. Unlike in the more than 5 years old group, the injuries contribute only **3%** of the total consultations. One case of **Neonatal Tetanus** (NNT) was reported from Brava district. Of the **10 deaths** reported in the current week (epidemiological week 38) **5** (50%) occurred among children under-5 years. **Three deaths** were reported as **SMN**-related, **one** as **NNT**, and **one** as **DD**-related (Figure 5).

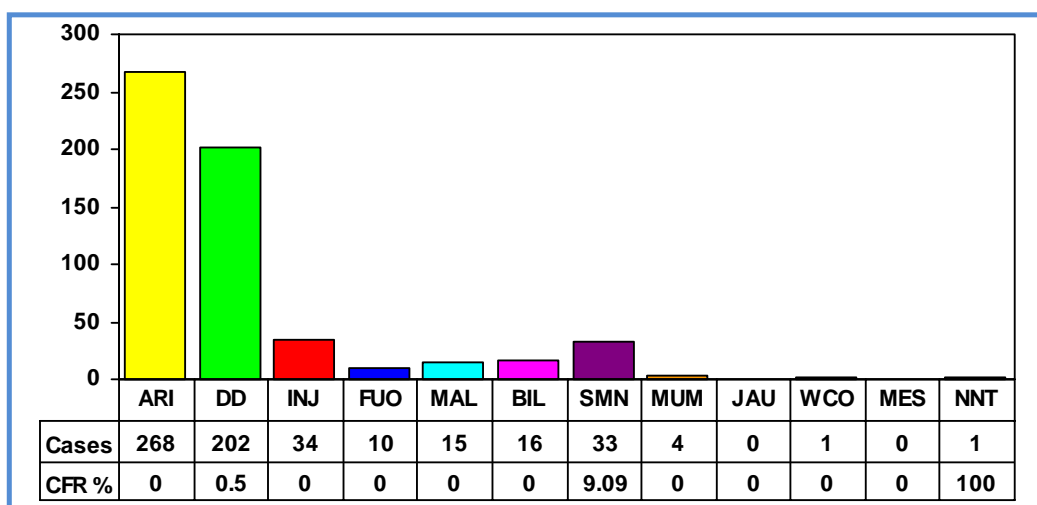


Figure 5. Primary causes for the reported cases and CFRs, **LESS than 5 years of age**, Lower Shabelle Region, Somalia, 20-26 September 2008.

<sup>3</sup> The case fatality rate (CFR) refers to the number of deaths per 100 cases

## 4.1 Acute Diarrhoeal Diseases

Since the start of the EAWRS on 24 May 2008, a total of **6,490 DD** cases with **30** related deaths (**CFR 0.46%**) were reported from Lower Shabelle region. There was a peak in the epidemiological week 28 due to increased numbers of reported cases from Merka district (n=524, of them 64% were less than 5 years old).

In the current week (epidemiological week 38), **349** cases with **one** related death were reported - **7%** increase in the number of reported cases compared to the epidemiological week 37 (349 and 326 respectively). The weekly distribution of Diarrheal disease cases is shown in figure 6.

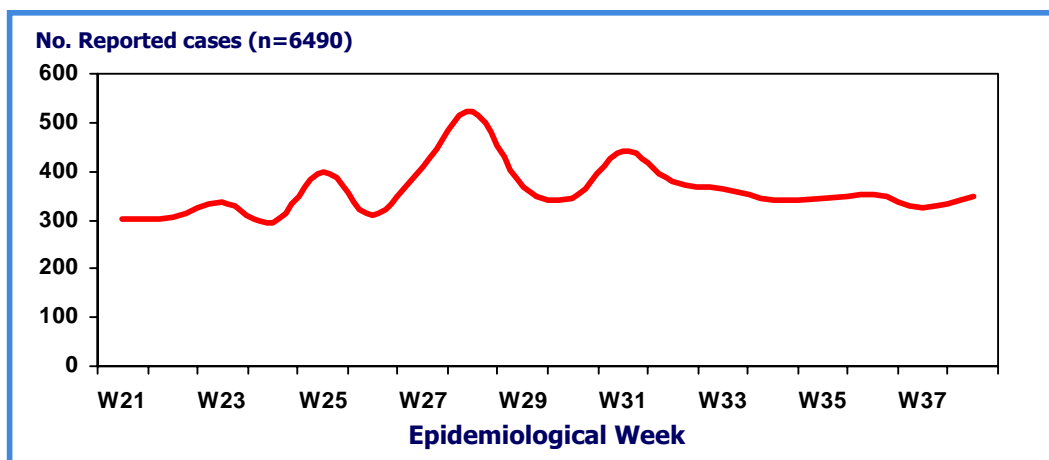


Figure 6. Weekly distribution of reported Diarrhoeal Disease cases, Lower Shabelle Region, Somalia, 24 May-26 September 2008.

Diarrheal diseases in the less than 5 years old represented **63%** (4,104/ 6,490) of all reported cases. The weekly distribution of reported cases by age group is shown in figure 7.

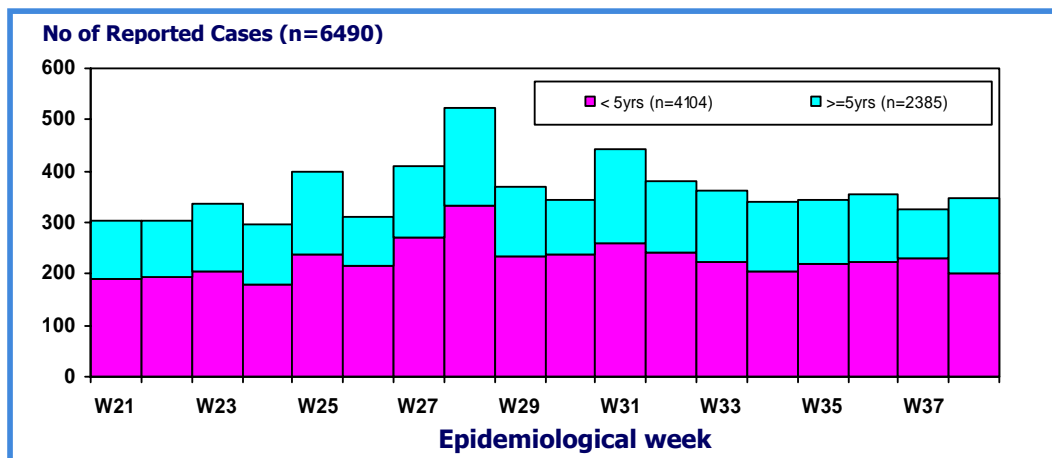


Figure 7. Weekly distribution of reported Diarrhoeal Disease cases by age group, Lower Shabelle Region, Somalia, 24 May-26 September 2008.

**DD** continues to contribute significantly to the overall burden of disease in all of the districts in Lower Shabelle Region. In the current week, from the 349 DD reported cases, **46%** (159/349) occurred in Merka district, while **26%** (89) were reported from Brava followed by **9%** (34) from Wanleweyne district. The peak observed in Afgooye in the epidemiological week 31 is due to increased numbers of reported diarrheal cases from Figi Hospital (n=82 cases; of them **43%** were less than 5 years old).

## 4.2 Distribution of Acute Diarrhoeal Diseases by District, Lower Shabelle region, Somalia, 24 May-26 September 2008

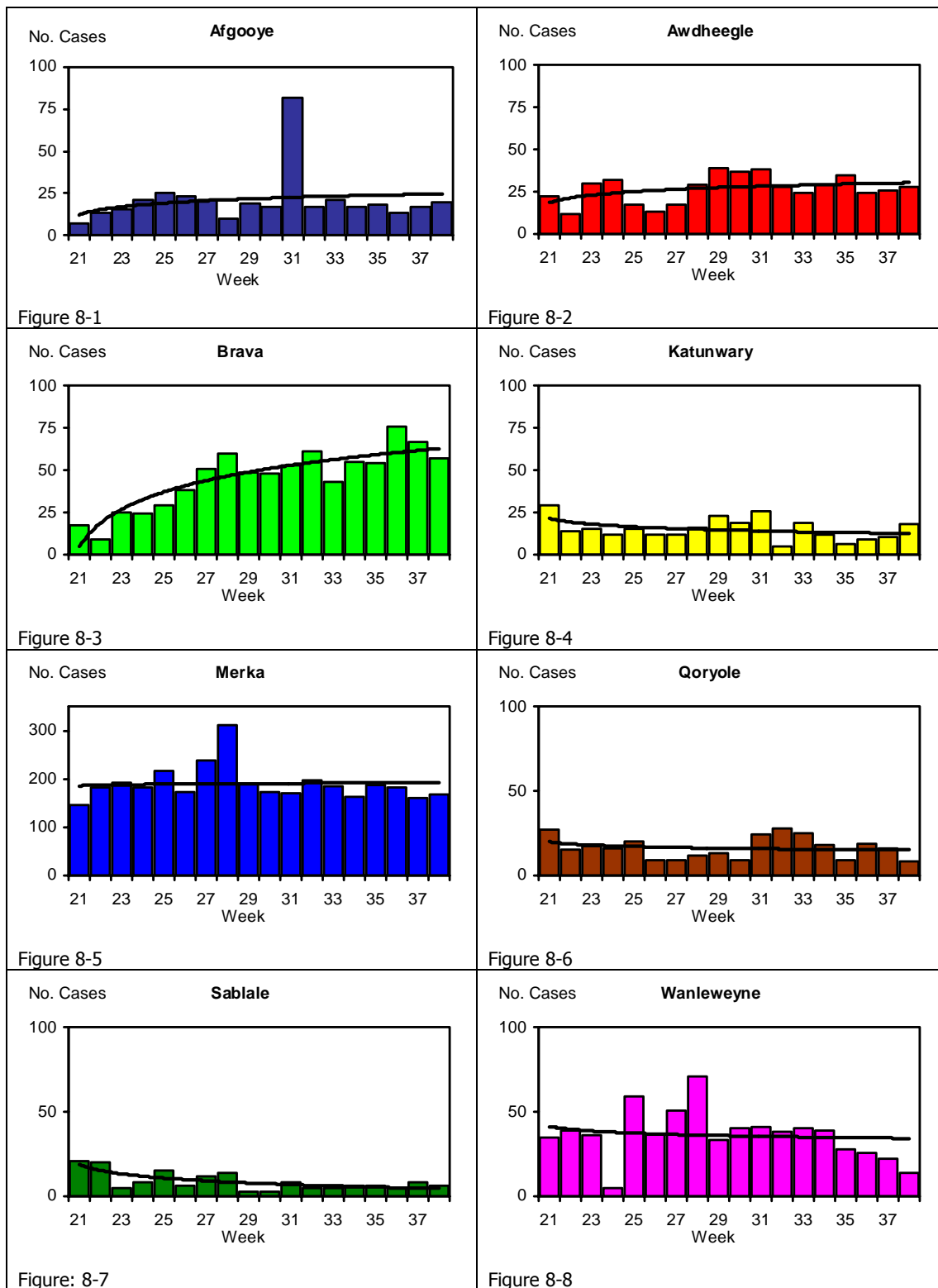


Figure 8. Distribution of reported diarrhoeal disease cases by district, Lower Shabelle Region, Somalia, 24 May-26 September 2008.

### 4.3 Laboratory confirmed *Vibrio Cholera* cases in Merka District.

#### Introduction

On 13<sup>th</sup> August 2008, the EWARS detected an increase of acute watery diarrhea (AWD) cases in Merka district. The AWD cases were reported from Merka General Hospital and New Way MCH in Merka town. An outbreak investigation team was sent to Lower Shabelle region with the following objectives: to verify existing information of an ongoing AWD outbreak; to evaluate the AWD situation on the ground and identify crucial intervention needs; and to provide technical and material support for *COSV* and *New Way* already managing the AWD situation.

#### Results and Analysis

Between 13 August and 7 October 2008, a total of **412** cases of suspected cholera, including **six** related-deaths (**CFR<sup>4</sup>: 1.46%**) were reported from Merka hospital. **Sixty-one** percent (250/412) was less than 5 years old. **Eighty-nine** percent (389/412) was diagnosed with severe dehydration and required IV treatment. Overall, the mean age of the 6 related deaths was 6.63 years, ranging from 0.8-32 years.



The hospital records indicate that **47%** (192/412) were from Holwadaag village, **28%** (116) from Horseed Village, and **21%** (85) from Wadajir Village. The remaining **4%** (19) of the cases were from other villages around Merka town. All the affected villages are situated less than 5 kilometres from Merka town. The daily distribution of suspected Cholera cases reported from Merka hospital is shown in figure 9.

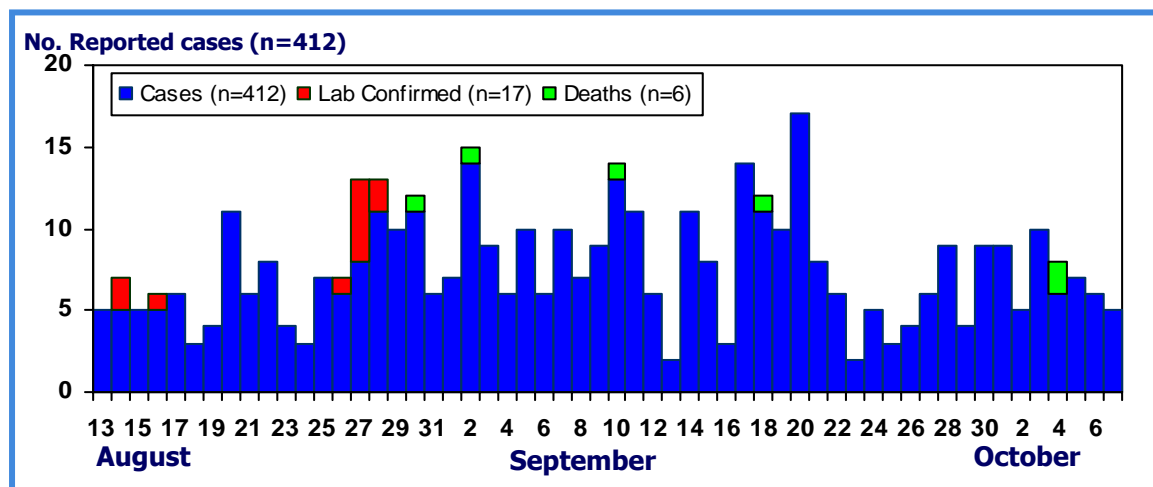


Figure 9. Daily distribution of reported clinically diagnosed and Laboratory confirmed Cholera cases, Merka Hospital, Lower Shabelle Region, Somalia, 13 August-7 October 2008.

<sup>4</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"

## Laboratory Confirmation

Between 18 August and 19 September **2008**, a total of 22 stool samples were tested by AMREF laboratory in Nairobi, Kenya. Of these, 77% (17/22) were positive for *V. cholerae* serogroup O1, serotype *Inaba*. All the samples were collected from the Cholera Treatment Centre in Merka Hospital<sup>5</sup> in Lower Shabelle region. Overall, the mean age of positive samples was 19.5 years, ranging from 1.5-70 years. Fifty-three percent (9/17) were females. The antibiotics sensitivity test showed 100% of the isolated *V. cholerae* was resistant to Nalidixic Acid and Cotrimoxazole while sensitive to Tetracycline. The laboratory and the drug resistance results of the isolated *V. Cholera* are shown in table 4.

Table 4. Laboratory Confirmed results and Drug resistance, Merka Town, Lower Shabelle region, Somalia 18 August-19 September 2008.

Date	No. tested	Confir med	Results	Antibiotic Sensitivity Test		
			Organism/ Serotype	Cotrimoxazole	Nalidixic	Tetracycline
18/08/20	4	3	<i>V. cholera Inaba</i>	Resistant	Sensitive	Sensitive
29/08/20	8	8	<i>V. cholera Inaba</i>	Resistant	Sensitive	Sensitive
19/09/20	10	6	<i>V. cholera Inaba</i>	Resistant	Sensitive	Sensitive
<b>TOTAL</b>	<b>22</b>	<b>17</b>	<b><i>V. cholera Inaba</i></b>			

## Case Management

WHO, COSV and MDM established a Cholera Treatment Centre (CTC) in Merka Hospital together with patient referral system from the surrounding villages.

COSV and MoH CTC staff has demonstrated high competence and managed to keep the case fatality rate within 1.5%. Assessments of AWD case management principles and practice sessions were conducted by WHO for Merka Hospital CTC and New Way MCH staff. Based on recommendations from the assessment, trainings in cholera case management were initiated using WHO guidelines and treatment protocols. One doctor, six nurses, one midwife, one lab technician and four auxiliary staff attended the two sessions.



WHO provided supplementary case management supplies to New Way MCH, including intravenous fluids and oral antibiotics. Almost 40% of all AWD cases reported had been referred from New Way MCH. Additional supplies and drugs were given to the CTC.

WHO and MDM continue daily monitoring of the evolution of case management activities at the CTC. MDM pre-positioned 2 additional cholera kits to be used if necessary.

<sup>5</sup> In 2007, three out of 10 stool samples collected from **Merka Hospital**, Lower Shabelle were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba*, and two samples with *V. cholerae*, serogroup O1, serotype *Hikojima*<sup>5</sup>. 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.

### Water sources and Chlorination

There are more than 100 private wells in Merka Town, most of which are unprotected (see picture). Due to the fact that the inhabitants are charged 500 Somali Shillings per jerry can of water from the private wells, part of the population is using different shallow unsafe water collecting points. Residents reported that neither water sources were ever chlorinated. However, the majority of the inhabitants still use the water for domestic use.



UNICEF supplied sufficient amount of HTH chlorine powder to COSV (WASH partner) but the COSV volunteers have not been able to implement appropriate well chlorination activities. There are 10 volunteers and over 100 wells to chlorinate. In addition, they have only a single chlorinometer.

Although the team trained some well owners and provided chlorine powder for subsequent and continued dosing of their wells, no follow up and monitoring of the chlorination activities was done. The following well owners have been trained and received 250gms of HTH: El Magaro, Xuseen Osman, Dug Xasana, Ayuub, El Jeele and El Sh. Xasan. However, the selection of well owners to be trained and receive HTH powder did not follow the recommendations given to the WASH cluster and cholera task force, based on the results of the survey conducted on the patients admitted to the CTC. The only well owner addressed of the given list was El Magaro. However, only 12% of the AWD cases submitted to the CTC identified his well as their source of water. Hence 88% of the patients are not covered by the chlorination activities.

Although the survey recommended the following well owners to be included in the training and provision of chlorine (percentage of the patients mentioning the respective well as their source of water given in brackets) El Cabdigaab (12%); El Fayislaaw (10%); El Shidane and El Cabdiile (6% each); El Jeele and El Cumarey (5% each); El Cali Cilmi (5%); and El Bashirow (4%) in total constituting 48% of water sources of the patients admitted to CTC - none of those wells has been chlorinated effectively. On 29 September, WHO conducted impromptu random well sampling for measuring residual chlorine levels in Merka town. Only 1 out of 10 wells surveyed had the recommended level of residual chlorine.

Another random check conducted on 2 October showed that 80% of wells had insignificant residual chlorine and the remaining 20% had not been chlorinated at all. This situation had not changed significantly by the time of a consequent check conducted on 4 October. Still 73% of wells had been chlorinated but had insignificant levels of residual chlorine, all <math><0.1\text{ mg/litre}</math>. The remaining had not been chlorinated at all. In the period of 37 days of monitoring, only **13%** proved to have the recommended residual chlorine levels to ensure safe drinking water. **73%** of the wells had been inappropriately chlorinated; and the remaining **14%** had not been chlorinated at all.



These results show that 87% of the Merka population still uses un-chlorinated water and hence remain at risk of infection even though sufficient quantities of chlorine are available (Annex 1).

### Social mobilization and Aqua tab distribution

During the monitoring and evaluation follow-up visit on 23 September, 25 random interviews were made, 15 of them in Horseed (60%) and 10 in Wadajir (40%).

48% of the households reportedly collect their water from un-chlorinated wells. Of all those interviewed, 88% had not heard of AWD at all. Of the three who had received health messages, 1 was from Horseed and 2 were from Wadajir. The 1 from Horseed received the health messages from MCH staff while visiting the health facility for treatment of other ailments. The 2 from Wadajir were briefed by a community based social mobilizer. Both had fully understood and remembered the health messages.



WHO provided 1.4 million 1-litre Aqua tabs to be distributed to the community through women trained by COSV, Ayuub, and IIDA. The intended dosage was 100 tablets per household, enough for purification of 20 liters of drinking water per household for 5 days, covering a population of 70,000. Alongside the distribution, each household was to be trained on correct use of the purification tablets.

Only 32% (8) of the interviewed households had received Aquatabs. None had received the intended dosage; and only 50% used the purifying tablets correctly (1 tablet/ 1 liter). 38% used an average ½ tablet/ liter of water. The remaining 12% did not understand how to use Aquatabs.

Even though the results of the first survey (23 September) were widely shared (including the cholera task force), a follow-up survey conducted on 4 October, covering 130 randomly selected households, revealed the following: 88% of households interviewed had not received any health promotion or social-mobilization messages. The 12% who had been reached by the social mobilization recalled all key messages.



The number of households that received Aquatabs had decreased to 25% of the households interviewed in the second survey (as compared to 32% in the first survey); 6% (2 households) of them received the correct quantity of 100 tablets; and 56% used the tablets correctly.

### Conclusions

Although the number of reported cases of AWD is decreasing, and the outbreak is still being contained in Merka town, the risk of a spread outside the region is very high due to:

- Insufficient WASH activities;
- Ineffective social mobilization strategy;
- Inadequate distribution and utilization of Aquatabs.

### Urgent Action Recommendations

- To conduct a meeting with all partners at the central level (WHO, UNICEF, COSV and WASH cluster) to plan and coordinate the necessary preventive and control measures **(pending)**.
- To review the main water sources and distribution points in order to reduce the contamination of the water and the current high wastage. If properly managed, this water could reduce the risk of fecal-oral transmitted diseases **(pending)**.
- To intensify health/hygiene promotion activities to improve population awareness and practice in relation to AWD e.g. hand washing, proper disposal of human excreta and use of clean and safe drinking water **(pending)**.
- To distribute Household (HH) chlorination tablets in the affected villages **(ongoing but to be improved)**.
- To train staff and community and mobilize them to detect and report/refer cases of AWD fitting the case definition as early as possible **(ongoing)**.
- To conduct refresher course on AWD case management including WHO recommended case definition, data registration and reporting tools **(done)**.
- To conduct a joint evaluation mission by WHO, COSV, UNICEF and other partners to verify chlorination of the wells **(done)**.
- To provide medical supplies to Merka hospital for the treatment of AWD cases. WHO will send the required IV fluids and necessary antibiotics such as Tetracycline and Erythromycin **(done)**.

### 4.4 Acute Respiratory Infections

Between 24 May and 26 September 2008, a total of **6,931** of **ARI** cases with **25** related deaths (**CFR 0.36%**) were reported from Lower Shabelle region. In the current week (epidemiological week 38), **466** cases were reported with **no** related death. One percent (**1%**) increase (466 and 459 respectively) has been observed in the number of reported cases compared to the last week (epidemiological week 37). The weekly distribution of reported ARI cases is shown in figure 10.

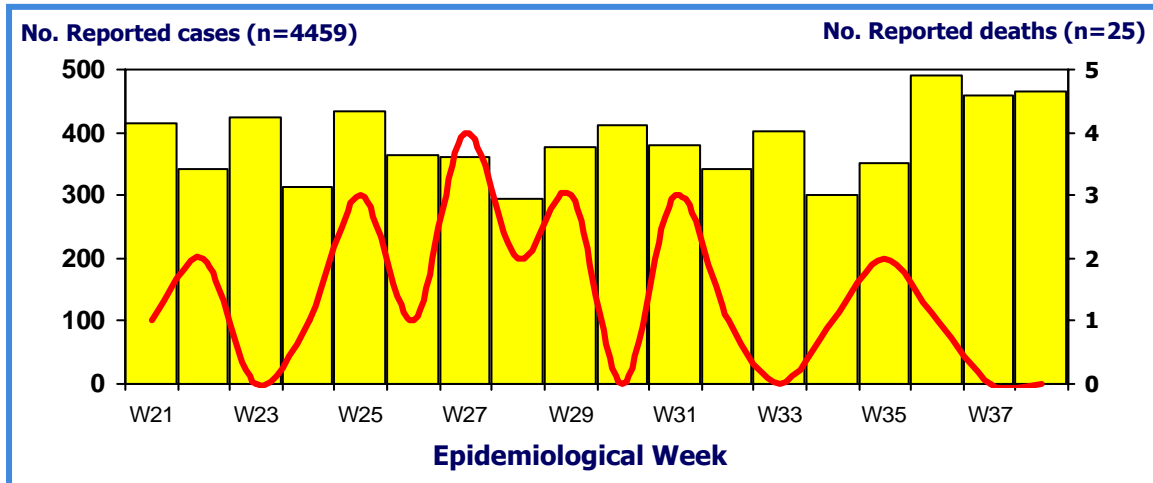


Figure 10. Weekly distribution of reported ARI cases, Lower Shabelle Region, Somalia, 24 May-26 September 2008.

In the current week, the number of **ARI** cases in less than 5 years old group exceeds the number in the group of more than 5 years of age by 26% (268 and 198 respectively). **Merka** district reported **53%** (245/466) of all reported ARI cases, of these **51%** (124/245) were 5 years of age and older.

**Qoryole** reported **13%** (60) followed by **Brava** and **Wanlewey** with **10%** each (47 and 45 respectively). The distribution of reported ARI cases by age and district is shown in figure 11.

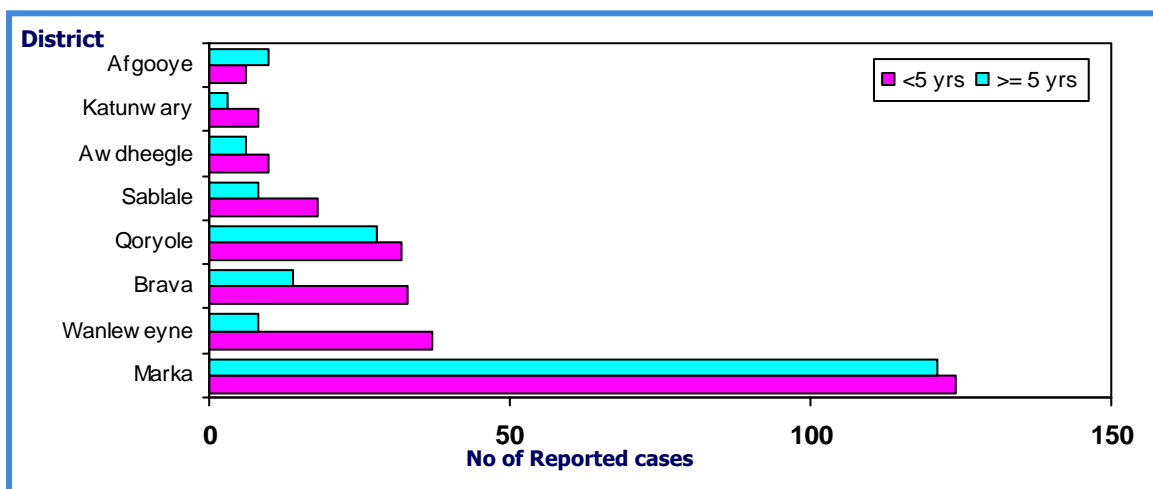


Figure 11: Distribution of ARI by age and district, Lower Shabelle Region, Somalia, 20-26 September 2008.

**Annex1: Residual chlorine level, Random assessment, Merka town, Lower Shabelle Region.**

Date	Well Name	Chlorine today	Residual chlorine
<b>28 September 2008</b>			
1.	Howlwadag – El Shidane*	Yes	0.3 mg/ litre
2.	Howlwadag – El Adoomoow*	Yes	0.4 mg/ litre
3.	Howlwadag – Cabdigaab*	Yes	0.1 mg/ litre
4.	Howlwadag – El Fayislaaw*	Yes	0.7 mg/ litre
5.	Howlwadag – Osman Shariff*	Yes	0.2 mg/ litre
6.	Howlwadag – El Cumarey*	Yes	0.3 mg/ litre
<b>29 September 2008</b>			
1.	Howlwadag – Osman Shariff	Yes	0.2 mg/ litre
2.	Howlwadag – El Fayislaaw	Yes	0.1 mg/ litre
3.	Howlwadag – Adoomoow	Yes	0.1 mg/ litre
4.	Howlwadag – El Shidane	Yes	0.6 mg/ litre
5.	Howlwadag – El Cumarey	Yes	0.1 mg/ litre
6.	Howlwadag – Cabdigaab 1	Yes	0.1 mg/ litre
7.	Howlwadag – Cabdigaab 2	Yes	0.1 mg/ litre
8.	Howlwadag – El Bashirow	Yes	0.1 mg/ litre
9.	Howlwadag – Foolweyn	Yes	0.1 mg/ litre
10.	Howlwadag – Ceel Hindu	Yes	0.1 mg/ litre
<b>02 October 2008</b>			
1.	- Cali Cilmi	No	<0.1 mg/ litre
2.	- Muuse Osman Qoole	No	1 week ago
3.	- Sh. Cali Maye	Yes	<0.1 mg/ litre
4.	- Sh. Maxamed	Yes	<0.1 mg/ litre
5.	- El Jeele	Yes	<0.1 mg/ litre
6.	- Sh. Xasan Jiis	Yes	<0.1 mg/ litre
7.	Horseed - El Magaro	Yes	<0.1 mg/ litre
8.	- Badar	Yes	<0.1 mg/ litre
9.	- Sh. Xuseen	Yes	<0.1 mg/ litre
10.	- Adeeroow	No	5 days ago
<b>04 October 2008</b>			
1.	Howlwadag – Osman Shariff	Yes	0.1 mg/ litre
2.	Howlwadag – El Fayislaaw	Yes	0.1 mg/ litre
3.	Howlwadag – Cabdigaab	Yes	<0.1 mg/ litre
4.	Howlwadag – Adoomoow	Yes	<0.1 mg/ litre
5.	H – Ceel-qaloococu	Yes	<0.1 mg/ litre
6.	Howlwadag – El Shidane	No	<0.1 mg/ litre
7.	Howlwadag – El Cumarey	Yes	<0.1 mg/ litre
8.	Howlwadag – Cabdigaab 2	No	Two days ago
9.	Howlwadag – Buurta Baracadadi	No	Never been chlorinated
10.	Howlwadag – El Bashirow	Yes	<0.1 mg/ litre
11.	Howlwadag – Ceel Mayow Masjid Hidaaya	No	Never been chlorinated