



Photo: by WHO Merka

August 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 May 2008, the Disease Early Warning System (EWARS) was established in Lower Shabelle region.
- In the past month (Epidemiological weeks 29-32 inclusive), a total of 10,931 health events under surveillance were reported including 103 reported deaths.
- In the current week (epidemiological week 32), 2,739 consultations for events under surveillance were reported through EWARS in Lower Shabelle region.
- Overall, **14%** (379) were due to Diarrhoeal Disease (**DD**), **12%** (345) due to Respiratory Infections (**ARI**)
- In the current week, 15 reported deaths; of them 13% (2/15) were Acute Jaundice syndrome (AJS)-related, **one** was ARI-related death, **one** was Neonatal tetanus (NTT)-related, one was severe malnutrition (SMN)-related and **10** deaths were due to Other (**OTH**) causes.
- Between 13 August and 2 September 2008, a total of **146** cases of acute watery diarrhoea including **two** related-deaths (**CFR; 1.37%**) 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 (29-32 inclusive);
- ✓ EWARS Data, Epidemiological Week N^o 32, 2008;
- ✓ Easy-to-grasp figures showing the trends of Diarrhoeal diseases per district in Lower Shabelle Region;
- ✓ Laboratory confirmed cholera cases in Merka Hospital.

World Health Organization (WHO) Somalia

Emergency Preparedness & Humanitarian Action (EHA)
P.O.Box: 63565
Nairobi - Kenya

Further information:

Dr Hammam El Sakka:
elsakkah@nbo.emro.who.int
+254 736 661 111 (Nairobi)
+252 150 101 000 (Somalia)

WHO Somalia
T: +254 20 762 3197 / 2840

<http://www.emro.who.int/somalia>

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1 Introduction

After 15 years of conflict, the health system remains underdeveloped, poorly resourced, and inequitable. It struggles to provide services to a limited number of Somalis in a context characterized by inadequate resources and capacity, insecurity, financial and operational fragmentation. The health-related MDG indicators in Somalia are among the worst in the world, though recent data suggest an overall improvement in the past 5 years. Access and utilization of health services remain limited across the country.

Recurrent droughts, chronic conflict and anarchy have led to a persistent humanitarian catastrophe in South Central Somalia where the population is suffering from an acute food and livelihood crisis. Since January to August 2008, the number of people in need of livelihood and humanitarian support increased by 77% from 1.8 to 3.24 million. Some 870,000 people have been newly displaced since March; and an estimated 275,000 are long-term or protracted IDPs¹.

The MOH and WHO have established Disease Early Warning System (EWARS for epidemic-prone diseases). This is the first report on EWRAS with compiled data from Lower Shabelle region in south central Somalia.

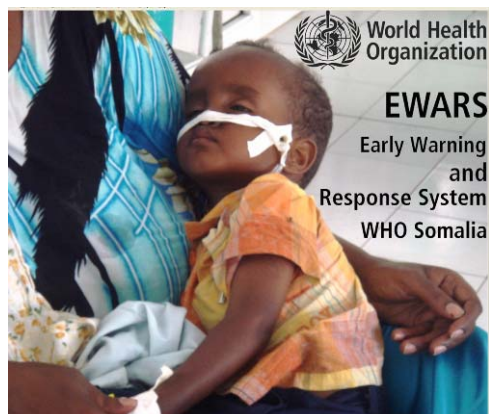
Training has recently been conducted and it is anticipated that additional reporting sites will begin reporting data in the coming weeks. MOH and WHO will provide timely feedback of this information on a weekly basis. WHO would appreciate any inputs on this presentation of results and encourages all providers in the region to participate in the Disease Early Warning System.



Surveillance efforts have been prioritized to detect epidemic prone diseases for which effective control and prevention is possible and available. Due to poor living conditions in the country, it is likely that epidemics will occur with regular frequency. A key objective of this surveillance system is the early detection and response to these infectious disease threats.

The MOH and WHO have established a list of **22** priority diseases and have identified and trained reporting sources throughout the region. In Lower Shabelle region, there is a WHO Field office where MOH and WHO staff are collecting data on weekly basis. Reporting sources include hospitals, MCHs, Health Posts and functional MOH facilities. Overall, there are **32** reporting sites representing all the 8 districts in Lower Shabelle Region.

To facilitate data management, software has been developed and a data base established in WHO sub office in lower Shabelle. Electronic EWARS database application based on EPIINFO 604 and EPIDATA 3.1 software was developed for the EWARS System. The overall objectives of the system are; to ensure timely detection, response and control of outbreaks by early detection at local level of time and place of clustering of cases among the South Central zone; to monitor the trend of communicable diseases in order to take appropriate public health actions and to estimate workload of different health units involved in the system. One Master EWARS software application was developed in the WHO Somalia Emergency office (WHO/EHA/Somalia) to merge all the information at the central level. The EWRAS software has a data entry screen to enter data collected via the new developed daily Surveillance Morbidity and Mortality Form. A check file



¹ FSAU/FAO Somalia

was installed to facilitate and minimize data entry errors. EWRAS data from the regions is automatically zipped and mailed if internet connection is available.

Through this software, local health staff is able to generate reports at the district and reporting unit level to provide feedback to reporting source. MOH staff has been trained on standardized data collection tools and outbreak response. Data is being sent to the national level by email on a weekly basis where it is merged into a unified file and analyzed for summary reports.

2 Reporting Units

WHO Somalia started its surveillance system (EWARS) in week 21 with 27 trained reporting units in Lower Shabelle region. A continuous effort was 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**.

However, 32 of these sites (**100%**) have sent their surveillance data on time during the epidemiological week 32 (9-15 August 2008). WHO is planning to expand the system to cover all the health facilities in Lower Shabelle Region (Table 1). 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, 19 July-15 August 2008.

District	Population ²	No. Reported Sites/epidemiological Weeks			
		Week 29	Week 30	Week 31	Week 32
Afgooye	135 012	2	2	2	2
Awdheegle	76 700	3	3	3	3
Brava	57 652	3	3	3	3
Katunwary	50 445	4	4	4	5
Marka	192 939	13	13	13	13
Qoryole	134 205	4	4	4	4
Sablale	43 055	1	1	1	1
Wanleweyne	155 643	1	1	1	1
TOTAL	845 651	31 (97%)	31 (97%)	31 (97%)	32 (100%)

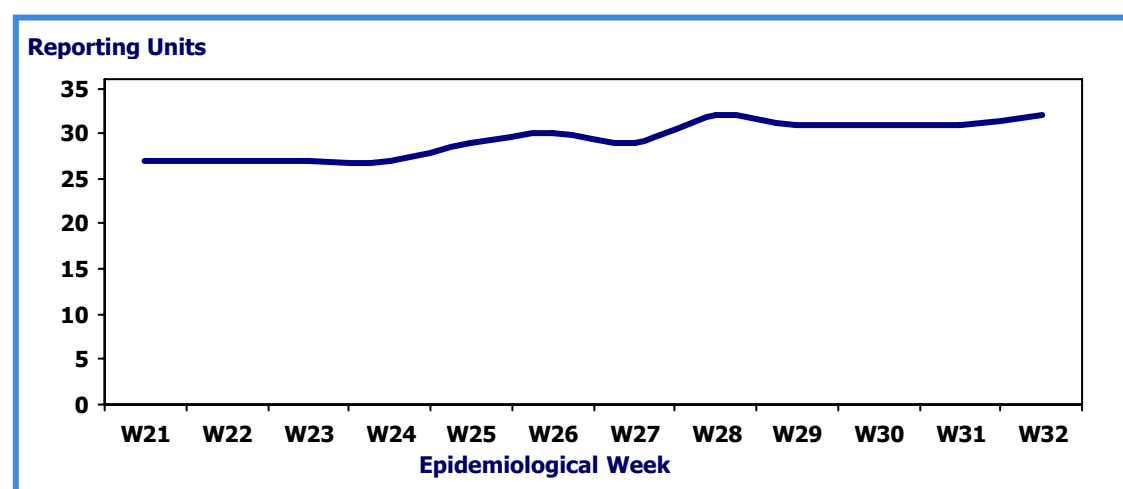


Figure 1: Number of Reported Health facilities by week, Lower Shabelle Region, Somalia, 24 May-15 August 2008.

² UNDP Somalia

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

In summary, for the month between 19 July and 15 August 2008 (Epidemiological weeks 29-32 inclusive), a total of **10,931** health events under surveillance were reported, of which **14%** (1535) were reported as **diarrhoeal diseases**, **13%** (1510) were **acute respiratory infection (ARI)**, **4%** (436) were **injuries (INJ)**, **2%** (220) as **severe malnutrition (SMN)** and **2%** (177) due to **Malaria (MAL)**.

Table 2. Weekly distribution of reported cases, **All age groups**, deaths and monthly Case Fatality Rate (CFR), Lower Shabelle Region, Somalia, 19 July-15 August 2008.

Week Event	WEEK 29		WEEK 30		WEEK 31		WEEK 32		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
AWD	25	1	26	0	59	0	49	0	159	1	0.63
BD	67	1	69	0	77	0	58	0	271	1	0.37
OTDR	276	2	250	0	307	1	272	0	1105	3	0.27
ARI	377	3	411	0	380	3	342	1	1510	7	0.46
MES	2	1	0	0	1	1	1	0	4	2	50.00
MEN	0	0	0	0	1	0	0	0	1	0	0.00
AFP	0	0	0	0	0	0	0	0	0	0	0.00
JAU	10	0	13	4	5	0	11	2	39	6	15.38
AHF	0	0	0	0	0	0	0	0	0	0	0.00
NNT	0	0	0	0	2	2	3	1	5	3	60.00
ATT	0	0	3	3	0	0	0	0	3	3	100.00
DIPH	0	0	0	0	0	0	0	0	0	0	0.00
WCO	4	0	6	0	2	0	12	0	24	0	0.00
MUM	15	0	13	0	17	0	15	0	60	0	0.00
MAL	39	1	41	3	53	0	44	0	177	4	2.26
LESH	0	0	0	0	0	0	0	0	0	0	0.00
BIL	50	0	44	0	51	0	43	0	188	0	0.00
UXF	71	0	55	0	39	1	56	0	221	1	0.45
SMN	54	3	58	4	51	2	57	1	220	10	4.55
INJ	109	2	95	1	121	0	111	0	436	3	0.69
OTH	1472	5	1735	11	1636	4	1665	10	6508	30	0.46
TOTAL	2571	19	2819	26	2802	14	2739	15	10931	74	
RU	31		31		31		32				

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 **4298** consultations were reported in the less than 5 years old group, (**39%** of the total consultations), of which **23%** (970) were due to **DD**, **18%** (794) due to **ARI**, **4%** (156) due to **SMN**, **3%** (127) due to **INJ** and **2%** (73) were reported as Malaria (**MAL**).

Table 3. Weekly distribution of reported cases, deaths and monthly Case Fatality Rate (CFR), less than 5 years old, Lower Shabelle Region, Somalia, 19 July-15 August 2008.

Week Event	WEEK 29		WEEK 30		WEEK 31		WEEK 32		TOTAL		CFR%
	C	D	C	D	C	D	C	D	C	D	
AWD	20	1	21	0	39	0	27	0	107	1	0.93
BD	28	1	36	0	23	0	25	0	112	1	0.89
OTDR	185	2	179	0	196	1	191	0	751	3	0.40
ARI	210	2	221	0	191	3	172	1	794	6	0.76
MES	2	1	0	0	1	1	1	0	4	2	50.00
MEN	0	0	0	0	0	0	0	0	0	0	0.00
AFP	0	0	0	0	0	0	0	0	0	0	0.00
JAU	2	0	2	1	1	0	0	0	5	1	20.00
AHF	0	0	0	0	0	0	0	0	0	0	0.00
NNT	0	0	0	0	2	2	3	1	5	3	60.00
ATT	0	0	1	1	0	0	0	0	1	1	100.00
DIPH	0	0	0	0	0	0	0	0	0	0	0.00
WCO	4	0	5	0	2	0	0	0	11	0	0.00
MUM	12	0	8	0	9	0	10	0	39	0	0.00
MAL	13	0	18	0	29	0	13	0	73	0	0.00
LESH	0	0	0	0	0	0	0	0	0	0	0.00
BIL	21	0	14	0	19	0	12	0	66	0	0.00
UXF	19	0	18	0	12	0	19	0	68	0	0.00
SMN	43	3	38	2	36	1	39	1	156	7	4.49
INJ	26	0	27	0	35	0	39	0	127	0	0.00
OTH	436	2	520	1	515	0	508	1	1979	4	0.20
TOTAL	1021	12	1108	5	1110	8	1059	4	4298	29	
RU	31		31		30		32				

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.

4 EWARS Data, Epidemiological Week N^o 32, 2008

Between 9-15 August 2008 (epidemiological week 32), a total of 2,739 consultations for events under surveillance were reported through EWARS in Lower Shabelle region. Overall, **14%** (379) were due to Diarrhoeal Disease (**DD**), **12%** (345) due to Respiratory Infections (**ARI**), **4%** (111) due to Injuries (**INJ**), **2%** (57) due to Severe Malnutrition (**SMN**), **2%** (44) due to Malaria (MAL) and 1% (39) were reported as Fever of Unknown Origin (**UXF**). Acute respiratory infections (**ARI**) represented 17% and 10% in the less than 5 years old and 5 or more years old respectively. Diarrhoeal Diseases (**DD**) was found to be higher in those less than 5 years and represented **23%** of the total consultations. In the same period, there were 15 reported deaths; of them 13% (2/15) were Acute Jaundice syndrome (AJS)-related, **one** was ARI-related death, **one** was Neonatal tetanus (**NTT**)-related, one was severe malnutrition (SMN)-related and **10** deaths were due to Other (**OTH**) causes.

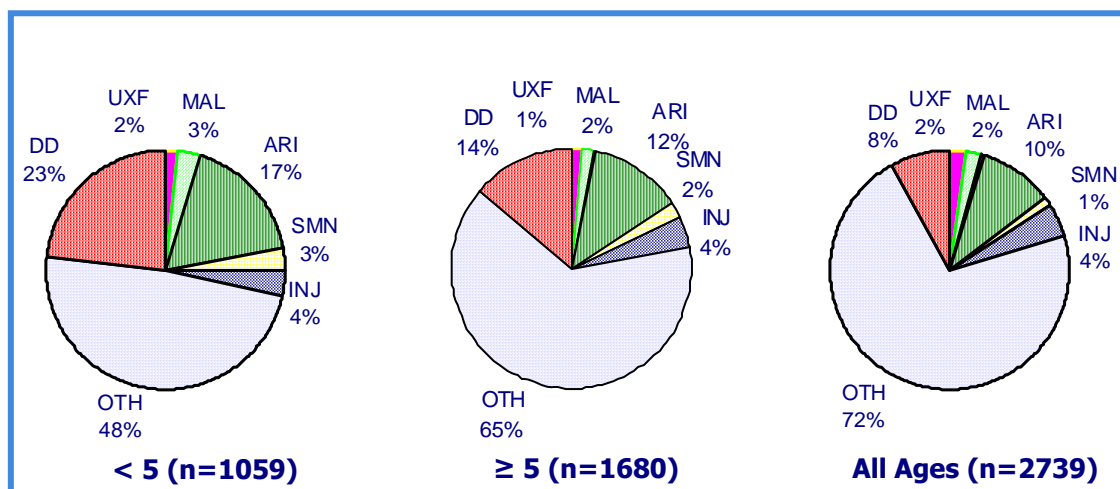


Figure 2. Proportion of primary causes for all reported cases, Lower Shabelle Region, Somalia, 9-15 August 2008.

During the reporting week, **48%** (1305) of all reportable conditions were reported from Merka district, another **13%** (357) reported from Qoryole, followed by **12%** (318) from Wanlewene district as shown in Figure 3.

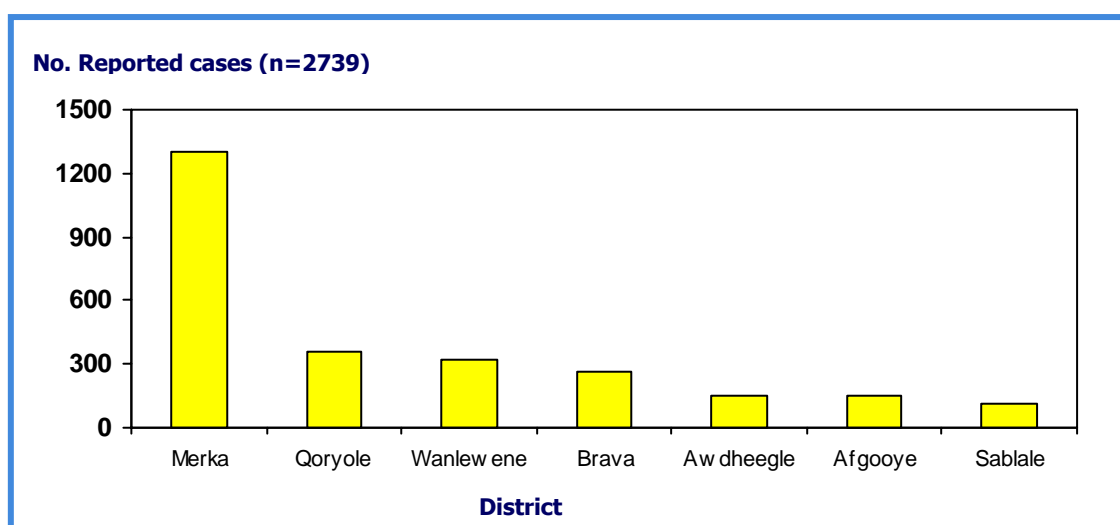


Figure 3. The distribution of reported health events by district, Lower Shabelle Region, Somalia, 9-15 August 2008.

5 Distribution of reported cases and CFR by Age Group

ARI was the most common health event reported among persons older than 5 years of age, with no related death. Eleven cases of acute Jaundice syndrome (**AJS**) were reported with the highest **CFR** of **18.18%**. Seventy-two (72) cases of injuries (**INJ**) were reported of them 53% (38/72) were reported from Merka District. Thirty-one (31) cases of Malaria (**MAL**) were reported of them 48% (15/31) were laboratory confirmed using a rapid diagnostic test. Twelve (12) cases of clinically diagnosed whooping cough (WCO) were reported from Merka district (Figure 4).

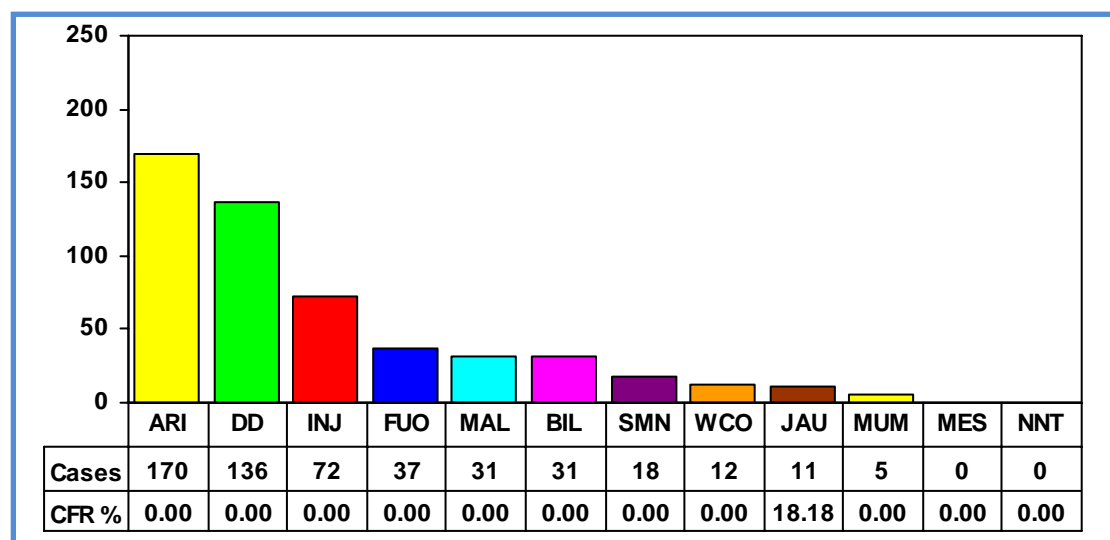


Figure 4. Primary causes for the reported cases and CFRs, **MORE than or equal 5 years old of age**, Lower Shabelle Region, Somalia, 9-15 August 2008.

In the under-5 year age group, **1,059** health events were reported, constituting **39%** of the total number of consultations; **23%** (243) of these reports were attributed to **DD** while **16%** (172) were due to **ARI**. Unlike in the more than 5 years old group, the injuries contribute only **4%** of the total consultations. Three cases of Neonatal Tetanus (**NNT**) were reported from Brava, Merka and Qoryole districts.

Of the **15 deaths** reported during the reporting period, **4** (27%) occurred among children under-5 years. **One death** was reported as **ARI**-related, one as Neonatal tetanus, one as SMN-related and one as other (OTH) causes (Figure 3).

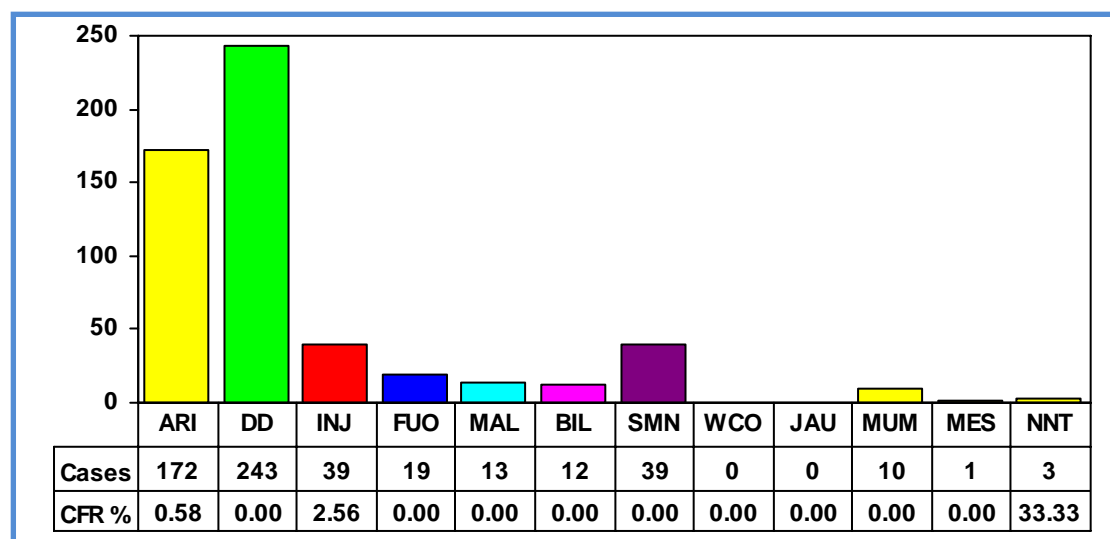


Figure 5. Primary causes for the reported cases and CFRs, **LESS than 5 years old of age**, Lower Shabelle Region, Somalia, 9-15 August 2008.

5.1 Acute Diarrhoeal Diseases

Since the start of the EAWRS as of 24 May 2008, a total of **4,416 DD** cases with **17** related deaths (**CFR 0.38%**) were reported from Lower Shabelle region. There was a peak in the epidemiological week 28 due to increase number of reported cases from Merka district (n=524 of them 64% were less than 5 years old).

In the current week (epidemiological week 32), **379** cases with **no** related death were reported. There was 14% decrease (443 and 379 respectively) in the number of reported cases compared to the last week (epidemiological week 31). The weekly distribution of Diarrheal disease cases is shown in figure 6.

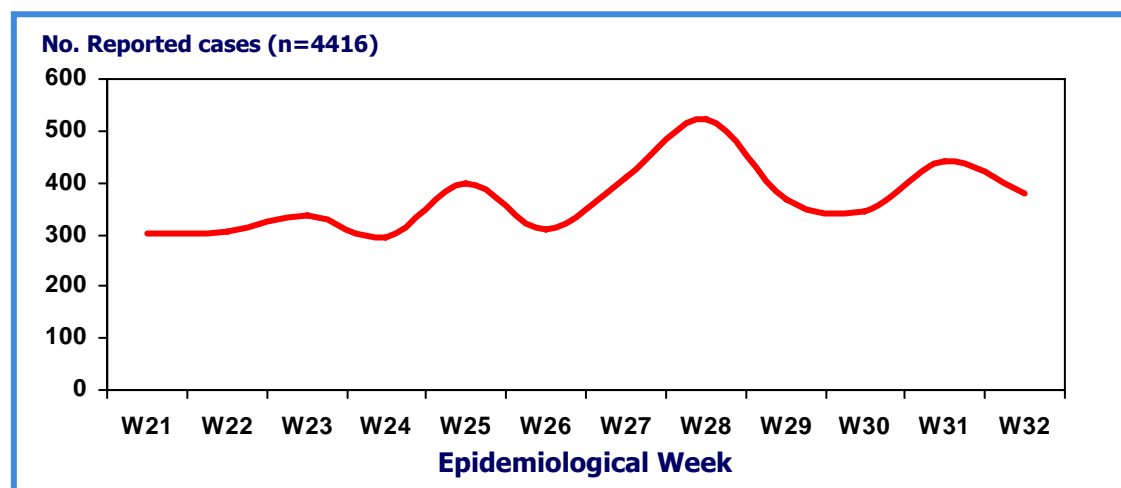


Figure 6. Weekly distribution of reported Diarrhoeal Disease cases, Lower Shabelle Region, Somalia, 24 May-15 August 2008.

Diarrheal diseases in the less than 5 years old represented **63%** (2800/4416) of all reported cases. The weekly distribution of reported cases age is shown in figure 7.

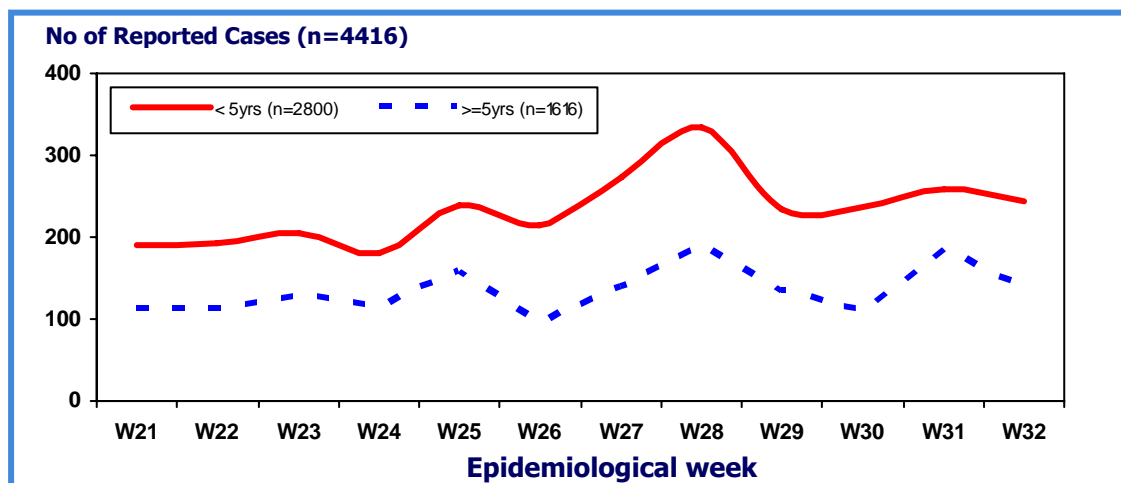


Figure 7. Weekly distribution of reported Diarrhoeal Disease cases by age group, Lower Shabelle Region, Somalia, 24 May-15 August 2008.

DD continues to contribute significantly to the overall burden of disease in all of the districts in Lower Shabelle Region. In the current week, 379 cases were reported. Merka district reported **52%** (197/379) of the total cases, while **16%** (61) were reported from Brava followed by **10%** (38) from Wanlewene district. The peak observed in Afgooye is the epidemiological week 31 is due to increase number of reported diarrheal cases from Figi Hospital (n=82 cases of them **43%** were less than 5 years old).

5.2 Distribution of Acute Diarrhoeal Diseases by District, Lower Shabelle region, Somalia, 24 May-15 August 2008

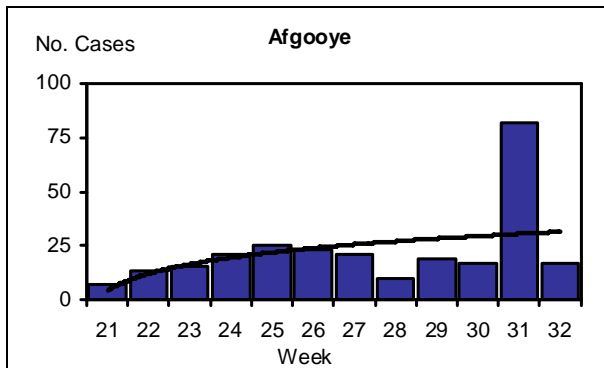


Figure 8-1

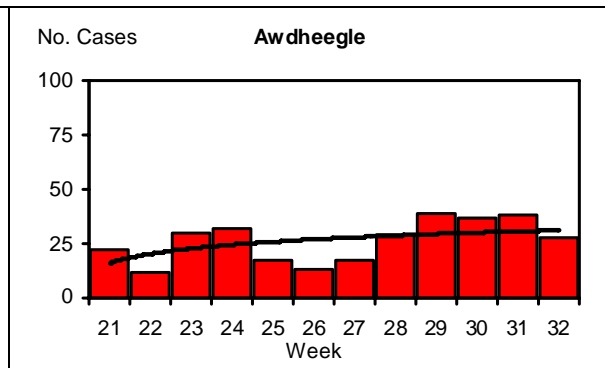


Figure 8-2

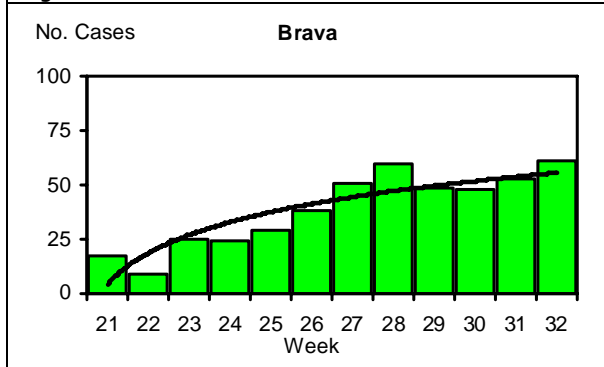


Figure 8-3

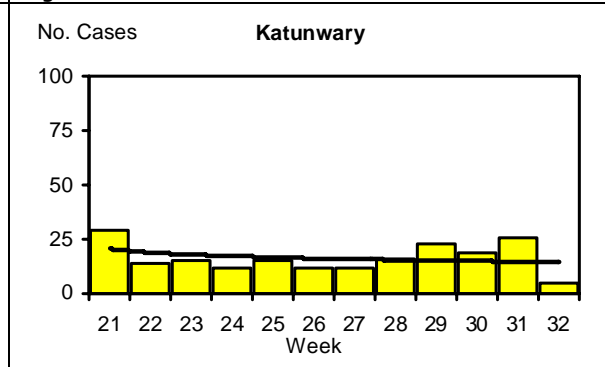


Figure 8-4

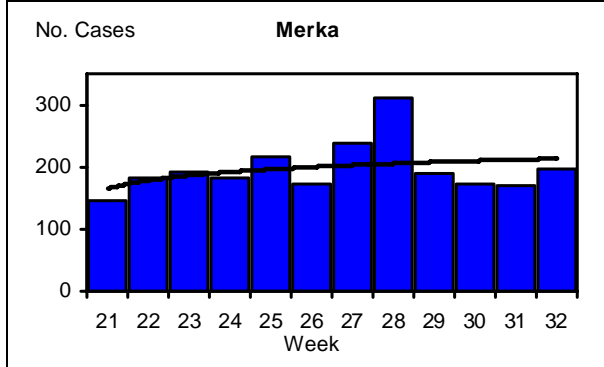


Figure 8-5

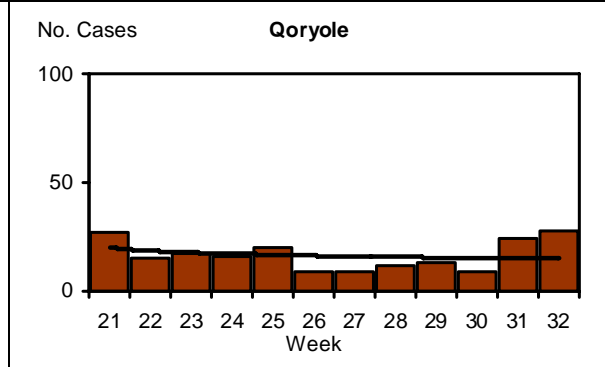


Figure 8-6

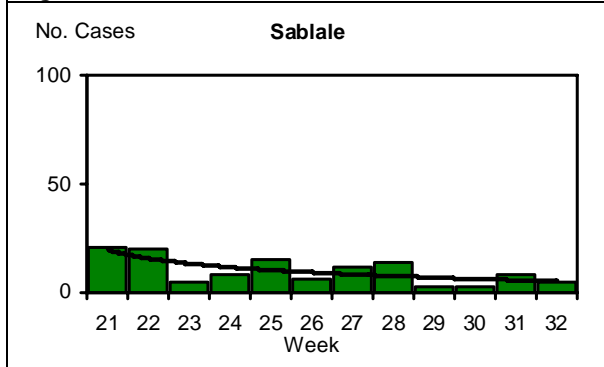


Figure: 8-7

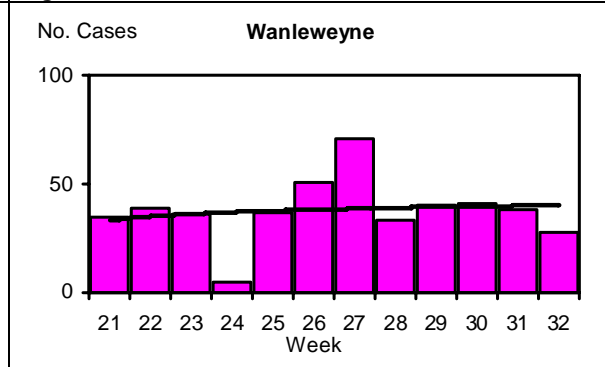


Figure 8-8

Figure 8. Distribution of reported diarrhoeal disease cases by district, Lower Shabelle Region, Somalia, 24 May-15 August 2008.

5.3 Vibrio Cholera cases in Merka District.

Between 13 August and 2 September 2008, a total of **146** cases of acute watery diarrhoea including **two** related-death (**CFR 0 1.37%**) were reported from Merka hospital. Fifty-nine (59%) was less than 5 years old. Fifty percent (**50%**) (73/146) were males.

Reviewing the hospital records revealed that **59%** (86/146) were from Holwadaag village, **23%** (33) from Horseed Village, and **14%** (20) from Wadajir Village. The remaining **5%** (7) of the cases were from other villages around Merka town. All the affected villages are less than 5 kilometres from Merka town.



Three out of 4 stool samples collected from **Merka hospital**, Lower Shabelle region, on 17 August 2008, were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba* by the African Medical and Research Foundation (AMREF) laboratory in Nairobi, Kenya. The mean age of confirmed cases was 33.66 years, ranging from 4-65 years. 66% (2/3) were males. The *Vibrio* was resistant to Nalidixic acid, Cotrimoxazole and Ampicilin, while sensitive to Norfloxacin and Tetracycline.

On 28 August 2008, another 8 stool samples were collected by WHO from Merka Hospital. All the 8 samples were confirmed with *V. cholerae*, serogroup O1, serotype *Inaba*. The mean age of confirmed cases was 8.44 years ranging from 1.5-20 years. 63% (5/8) were male. The isolated *Vibrio* was resistant to Nalidixic acid, Cotrimoxazole and Ampicilin, while sensitive to Norfloxacin and Tetracycline. The daily distribution of acute watery diarrhea cases reported from Merka hospital is shown in figure 9.

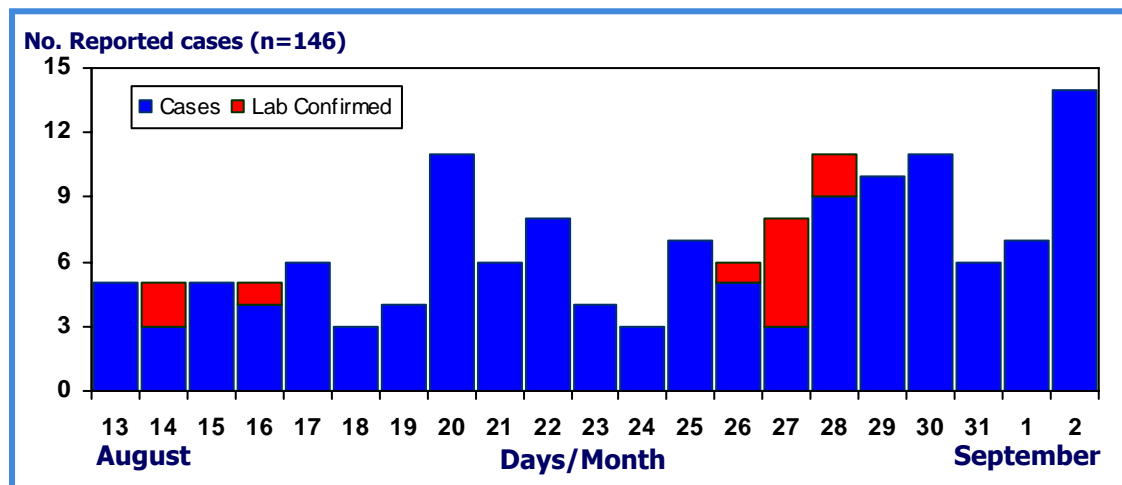


Figure 9. Daily distribution of reported clinically diagnosed and Laboratory confirmed Cholera cases, Merka Hospital, Lower Shabelle Region, Somalia, 13 August-2 September 2008.

WHO and COSV A established a Cholera Treatment Centre (CTC) in Merka Hospital together with patient referral system from the village and the surrounding areas.

On the 12 August 2008, an emergency outbreak investigation visit was planned and conducted by the WHO Somalia team with the following objectives: to verify existing information of an

ongoing AWD outbreak in Holwadaag village and surrounding areas; to evaluate the AWD situation on ground and identify crucial intervention needs; and to provide technical and material support if needed.

All the families of positive cases and their neighborhood were visited to investigate the water sources. Holwadaag village, there are more than 140 unprotected wells. Overall, three wells are shared with than 100 families. In addition, no evidence of chlorination in the wells was observed during the investigation.

A taskforce to manage the outbreak was formulated to emphasize the importance of chlorination of water sources and household water content. In addition, a national investigation team is currently on the ground to monitor and follow up on the situation.



Urgent Action Recommendations

- 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.
- Distribute Household (HH) chlorination tablets in the affected villages.
- To review the main water sources and the distribution points as the team believe that this will 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.
- Train staff and community and mobilize them to detect and report/refer cases of AWD fitting the case definition as early as possible.
- Conduct refresher course on AWD case management including WHO recommended case definition, data registration and reporting tools.
- 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.

5.4 Acute Respiratory Infections

The common acute infections of the upper and lower respiratory tract range from a simple cold or cough, otitis media, sore throat, laryngitis, to bronchitis, bronchiolitis, and pneumonia. Diphtheria and Pertussis (whooping cough) are also respiratory infections.

Currently, the EWARS is collecting all cases of ARI including both upper and lower in one category. On average, children less age five experience between five and eight ARI episodes a year, which translates into at least 2,000 million episodes each year in the developing world. The majority of ARI episodes are mild and self-limiting, as in the case of coughs and colds. However, about one in every 30 to 50 episodes of cough will develop into pneumonia. Without treatment, 10% to 20% of pneumonia cases will result in death.

Acute Respiratory Infection (**ARI**) can be attributed to an interaction between the host, the infectious agent, and the environment. Although 80% of all cases of pneumonia examined in hospitals in developing countries are caused by two types of bacteria, *Streptococcus pneumoniae* and *Haemophilus influenzae*, most other infections are of viral origin. Other risk factors that encourage the spread of ARI include: low birth weight, malnutrition, poor breast-feeding practices, specific nutritional deficiencies (especially Vitamin A), chilling in young infants, indoor air pollution, illiteracy, overcrowding, poor hygiene, lack of access to health services (especially

immunizations), and low socioeconomic status. Many of these risk factors may interact through complex mechanisms to cause subsequent illness.

Between 24 May and 15 August 2008, a total of **4,459** of **ARI** cases with **21** related deaths (**CFR 0.47%**) were reported from Lower Shabelle region. In the current week (epidemiological week 32), **342** cases were reported with **one** related death (**CFR 0.29%**). There was **10%** decrease (380 and 342 respectively) in the number of reported cases compared to the last week (epidemiological week 31). The weekly distribution of reported ARI cases is shown in figure 10. In the current week (epidemiological week 32), **379** cases with **no** related death were reported. There was 14% decrease (443 and 379 respectively) in the number of reported cases compared to the last week (epidemiological week 31). The weekly distribution of Diarrheal disease cases is shown in figure 10.

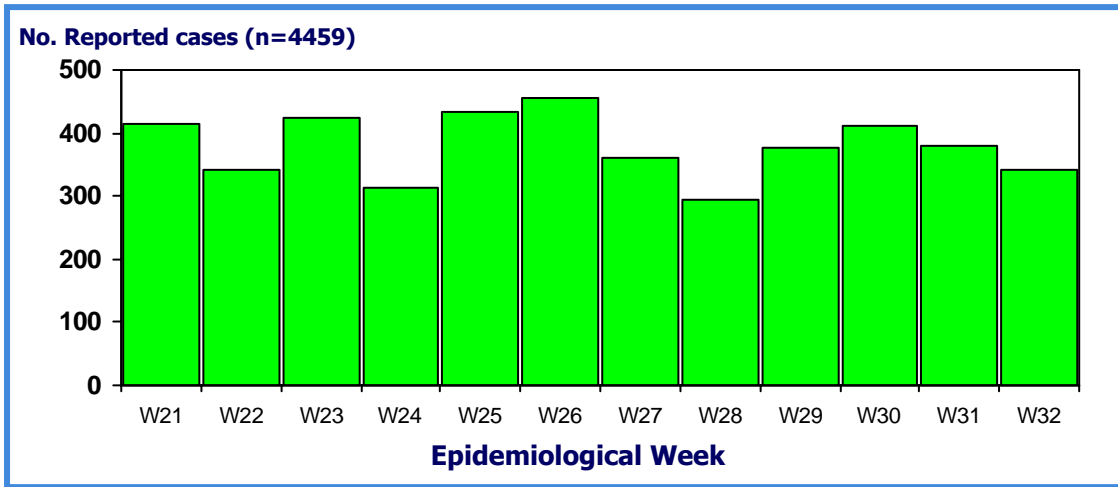


Figure 10. Weekly distribution of reported ARI cases, Lower Shabelle Region, Somalia, 24 May-15 August 2008.

In the current week, the number of **ARI** cases over 5 years old is equal to the number under 5 years old of age (170 and 172 respectively). **Merka** district reported **53%** (181/342) of all reported ARI cases of these, **56%** (102/181) were 5 years old and older. **Wanleweyne** and **Qoryole** districts reported **12%** and **11%** respectively. One ARI-related death was reported from **Qoryole** district. The distribution of reported ARI cases by age and district is shown in figure 11.

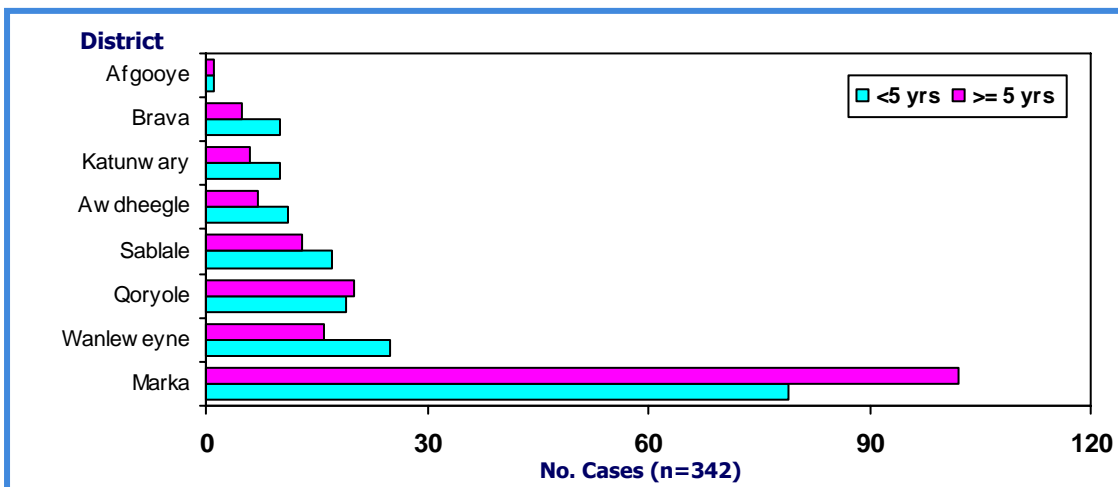


Figure 11: Distribution of ARI by age and district, Lower Shabelle Region, Somalia, 9-15 August 2008.