Nutrition and Mortality Monitoring in IDP Populations

Report on Round 4 – February 2023

Report issued: 07/03/2023

Photo taken by GREDO data collection team of a camp
for newly arrived IDP in Dinsoor, January 2023

Executive Summary

This is the fourth report from the 2022/2023 Nutrition and Mortality Motioning System project. This sentinel site data collection continues to provide periodic data on the evolution of the crisis and the adequacy of the humanitarian response. While the upscaled response has contributed to avoiding famine, projected for the end of 2022, the current situation and near term outlook continue to be serious and unpredictable.

Between January 18th and February 11th, 2023, data was collected from **3,406 households in 29 IDP sites in Khada and Daynille in the Afgooye Corridor, Baidoa, Diinsor, Galkayo, and Kismayo.**

The predominant household water source varied by location with public taps still the most frequent in Kahda and Galkayo, tankers in Baidoa and Daynille, and water vendors/donkey carts in Diinsor. **The use of tankers has increased in both Baidoa and Dayniile**, together with a decrease in the use of wells or springs in Baidoa, likely associated with the end of the Deyr rains.

Drinking water adequacy showed a decrease in all previously measured locations during Round 4. Inadequate drinking continued to be the marked in Dinsoor, where 32% of households reported drinking water was sometimes, often, or always inadequate, but there was also a concerning deterioration in the situation in Galkayo, Dayniile, and Baidoa. In Kismayo over 50% also reported problems with obtaining adequate drinking water. Defecation in the open field continued to reported by a substantial proportion of respondents in all areas although access to pit latrines had improved in all areas except Kahda.

Overall, the **improving trend in nutritional status** seen in round 3 continues. In all areas previously included in NMS data collection rounds the prevalence of GAM by MUAC now lies below the IPC Serious-Critical threshold of 15%. However, in both Dinsoor and Dayniile the situation remains Serious. Sites in Kismayo were included in for the first time and here the situation is Critical, with a prevalence of 17.5%. Overall, treatment coverage for MAM showed improvement while SAM treatment coverage remained similar. **However, the target coverage of >90% has still not been achieved for MAM or SAM treatment in any of the sites.**

There have been some improvements in health record card possession and vaccination coverage. However, only 43% of children aged 0-59 mo. possessed a health record card and measles vaccination coverage had only reached 64%. The two week period prevalence of suspected measles was similar to round 3. Improvement in vaccination coverage remains an urgent priority. Overall, mortality has continued to decrease since round 3 and both the CDR and U5DR were found to be below emergency levels.

In summary, data from round 4 indicates that **IDP populations are still experiencing a serious nutrition and health crisis although conditions have, in general, continued to improve.** Acute malnutrition in children remains at a serious level and is critical in Kismayo, there is a continued threat from measles and AWD infections, and gaps remain in the provision of life saving interventions including WASH, health, and nutrition.

Recommendations

1. Despite the improvements in programme performance indicators, a continued humanitarian response is still required to deal with the serious health and nutrition situation in IDP populations. The outlook for the next few months remains uncertain with unfavourable weather forecasts, continuing conflict, and global food price volatility.

2. **Action to further strengthen WASH services** is required to ensure adequate access to potable water and reduce the use of open field defecation.

3. **Treatment of acute malnutrition should continue to be scaled up** to ensure an adequate coverage of selective feeding programmes that meets Sphere standards and efforts continued to improve outreach.

4. **The coverage of vaccination remains well below Sphere Standards** and additional action should be taken to improve coverage, including the implementation of on-demand and campaign vaccination services. Sphere standards require that at least 95 per cent of newcomers to a settlement aged between six months and 15 years are vaccinated.

Contents

Introduction

This is the fourth report from the Nutrition and Mortality Monitoring System (NMS) 2022/2023 project, that was set up to track the health and nutrition situation of IDP populations in southern Somalia.

The drought related emergency continues to impact Somalia with profound impacts on the nutrition and health status of the population. The NMS sentinel site data collection aims to provide regular updates about the situation of vulnerable groups in purposively selected locations in Banadir, Baidoa, Dinsoor and Galkayo, and for the first time in round 4 data is also reported from Kismayo. The NMS project is run by the Building Resilient Communities in Somalia consortium (BRCiS), led by the Norwegian Refugee Council, and the Caafimaad Plus consortium, led by Action Against Hunger, in partnership with Evidence for Change (e4c).

Methods

Sampling

The Nutrition and Mortality Monitoring System (NMS) approach[1] was used to collect data from a purposively selected sample of IDP sites/camps. Details of the sampling and data collection methods can be found in the Round 1 report.[2]

IDP settlements in Khada, within the Afgooye Corridor, Baidoa, and Dinsoor were included in Round 1 and the area of Daynille was added in Round 2. Additional camps from new areas in Baidoa were also added. In Round 3, additional IDP sites from the north and east of Baidoa were included, as well as more sites from Khada. Galkayo was also added as a new area. In Round 4, camps from Kismayo were added and an additional camp of new arrivals was added in Dinsoor. The sample therefore contains a mix of camps that we sampled to represent IDPs that have been resident in the sentinel sites since the emergency began last year as well the most recent arrivals.

Team training

Hybrid trainings were conducted by e4c consultants with support from health and nutrition officers from participating BRCiS and Caafimaad Plus members. Team training was conducted either face-to-face or remotely via video link. The e4c consultants conducted 1-day refresher training for community health workers (CHW), enumerators, and supervisors who had been involved in previous data collection rounds, and a 2-day training for the teams that were starting NMS work for the first time. During the training, an overview of different types of malnutrition, a virtual demonstration of MUAC measurements, the assessment of oedema, and the identification of suspected measles were provided. The data collection process was also piloted, and mock interviews were conducted with the CHWs and enumerators. Nutrition officers provided live demonstration of MUAC measurements and the assessment of oedema. Training was provided for 81 data collectors from the 6 different partner organisations.

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[1] Seal, A. J., et al. (2021). "Use of verbal autopsy for establishing causes of child mortality in camps for internally displaced people in Mogadishu, Somalia: a population-based, prospective, cohort study." Lancet Glob Health 9(9): e1286-e1295.
[2] https://reliefweb.int/report/somalia/nutrition-and-mortality-monitoring-idp-populations-report-round-1-july-2022-report-issued-15082022

Data collection

Data was collected at household level by trained CHW and enumerators. The questionnaire was developed by e4c after consultation with BRCiS and Caafimaad Plus, and other experts working on Somalia. It was developed in English and then translated into Somali. The data collection form was piloted and revised based on the feedback from teams during the training sessions. It was coded in ODK and data was uploaded to the ONA Systems server. Data collectors used mobile phones or tablets running the Android operating system.

As summarised in Table 1, in Round 4 data collection took place between 18th Jan and 11th Feb, 2023. Teams were comprised of two CHW or enumerators, one of which conducted the interviews and one who performed the MUAC measurements. Data collection took approximately 20 minutes for each household and teams averaged 10 households per day.

The questionnaire included questions on household demographics, area of origin and clan affiliation, date of arrival in the IDP site, spoken dialects/languages, household WASH, possession of child-health record cards, vaccination status, morbidity, and mortality. Questions on morbidity included symptoms of measles and acute watery diarrhoea (AWD) experienced during the last 2 weeks. MUAC measurements were taken on children 6-59 months in duplicate and, in the event that the difference in measurements was greater than 0.5 cm, a third measure was taken and the mean of the two measurements with the best agreement was used.

Data management

MUAC measurements and questionnaire data, collected by the CHW and enumerators, were entered into the ODK data form on mobile phones or tablets running the Android operating system. Data was uploaded to a server run by ONA after forms were finalised, and an internet connection was available. The data files were then downloaded from the ONA server in .csv format and loaded into Excel and R for analysis. Unique IDs for each household and individual were created during data collection using a unique household identifier number and sequential individual ID numbers within each household. To avoid the creation of duplicate ID numbers a paper 'cluster control sheet' was used to monitor the collection of data by each team. To find households that had been previously interviewed, household identifiers were uploaded to the digital devices so that the household identify could be confirmed at the start of each interview.

Data analysis

Data analysis was performed in R. Tree charts and graphs were created in Excel. The prevalence of GAM and SAM by MUAC was calculated taking in to account the prevalence of nutritional oedema.

The under-five and crude death rates were measured using separate recall periods for households newly enrolled during Round 3 and those that had been previously interviewed in Round 2. A memorable date of October 29th, 2022, on which the Zobe 2 explosion took place in Mogadishu, was used for new households and the time since the previous interview was used for the others. Household members that joined, left, or died within the recall period contributed half of the recall period to the rate denominator. To cross-check that the date of death fell within the recall period follow-up questions were asked to confirm the number of weeks since the death occurred, and whether the location of the death was consistent with the household's date of arrival in the IDP camp. These were used during analysis to exclude any deaths that occurred outside of the recall period, or deaths that had occurred in a location outside of the IDP camp after the household reported arriving in the camp.

To assess whether conditions within IDP camps are improving or deteriorating over time, bar graphs or tables were prepared to show key indicators for each camp and how they changed between data collection rounds. If the humanitarian response is adequate a positive improvement in performance and outcome indictors is expected as the time since arrival increases.

Results

IDP Sample Characteristics

The characteristics of the samples collected in each area and IDP site are described in table 1. In total, during Round 4 data was collected from 3,406 IDP households in 29 sites. The sampled households contained 20,330 individuals.

The median time since arrival for the 29 IDP sites was 9.0 months, ranging from 2 months up to 38 months. The sites with the most recent arrivals were the new sites in Kahda and Baidoa, that were included in Round 3, and the additional site from Dinsoor that was included in Round 4, Korkaamare Area 3. Korkaamare was a previously established camp that had been included in the NMS sine Round 1. A large number of new arrivals had occurred after Round 3 and these IDP had settled in new areas next to Korkaamare. One of these areas was selected at random for inclusion in Round 4. IDP sites in Galkayo continue to be camps with the longest duration of residence.

Region of Origin

Figure 1 shows the region of origin for the IDP Mothers/Carers that were interviewed for the first time in Round 4. IDPs had migrated from a range of different regions with the majority coming from Dinsoor, Lower Juba and Middle Juba. The large number arriving from Dinsoor was related to the influx into Korkaamare camp and formation of the new Korkaamare Area 3 camp.

Clan and Language

The clan affiliation of all the IDP mothers/caregivers who were interviewed during Round 4 is shown in the tree plot, figure 2, below. The largest group were from the Hawiye clan with similar proportions coming from the Digil and Mirifle and minority clans. However, the great majority of displaced people in the camps continue to belong to the Digil and Mirifle (Rahanweyn) clans.

The languages spoken by Mothers/Carers are shown in Figure 3. The largest category of Mothers first interviewed in Round 4 spoke Mahatiri, followed by Maay only, and then other languages and combinations. The language profile for new arrivals differed from Round 3 due to the different clan profile.

Table 1: Data collection summary

Area	Partner	IDP site	Round 1 (18th Jul - 2nd Aug)			Round 2 (21st Aug - 10th Sep)				Round 3 (21st Nov - 11th Dec)				Round 4 (18th Jan - 11th Feb (2023))				Overall Change[2]		Months since arrival[1]
			Households	Population	Household size	Households	Change	Population	Household size	Households	Change	Population	Household size	Households	Change	Population	Household size	HH	Pop.	
Kahda - Banadir	Action Against Hunger	Wabiyarow	198	1,092	5.5	190	-8	1079	5.7	166	-24	935	5.6	144	-22	839	5.8	-54	-253	8.1 (7,9)
		Kuntuwareey	241	1,310	5.4	227	-14	1283	5.7	220	-7	1,203	5.5	192	-28	1055	5.5	-49	-255	8.9 (8,9)
		Canoole	164	680	4.1	144	-20	652	4.5	117	-27	527	4.5	75	-42	344	4.6	-89	-336	8.3 (7,12)
		Al Karim	-	-	-	-		-	-	57	-	263	4.6	55	-2	299	5.4	-2	36	2.1 (2,3)
		Calafsuge	-	-	-	-		-	-	36		191	5.3	35	6	182	5.2	-1	-9	6.2 (3,11)
		Mahad Alle	-	-	-	-		-	-	50		298	6.0	42	-8	252	6.0	-8	-46	6.0 (5,7)
Daynille - Banadir	IRC	Durdur	-	-	-	247		1045	4.2	186	-61	898	4.8	173	-13	838	4.8	-74	-207	7.1 (7,8)
		Horseed	-	-	-	311		1701	5.5	292	-19	1,690	5.8	247	-45	1419	5.7	-64	-282	6.0 (6,7)
		Furuqly	-	-	-	117		566	4.8	107	-10	579	5.4	100	-7	527	5.3	-17	-39	7.8 (7,8)
Baidoa City	GREDO	Bogey	109	570	5.2	79	-30	571	5.2	109	30	608	5.6	103	-6	599	5.8	-6	29	8.1 (7,8)
		Abag Dheere	122	511	4.2	110	-12	482	4.1	58	-52	289	5.0	52	-6	254	4.9	-70	-257	7.0 (6,8)
		Barbaare	79	511	6.5	63	-16	497	6.4	75	12	521	6.9	67	-8	446	6.7	-12	-65	10.0 (8,10)
		War Ajiin	126	754	6.0	113	-13	724	6.4	99	-14	637	6.4	96	-3	597	6.2	-30	-157	9.2 (8,10)
		Garas	-	-	-	149		869	5.8	157	8	897	5.7	138	-8	842	6.1	-11	-27	6.2 (6,7)
		Lowfooraar	-	-	-	131		664	5.1	130	-1	750	5.8	130	0	750	5.8	-1	86	5.9 (5,8)
	SOS	Dee	-	-	-	-		-	-	200	-	1,210	6.1	193	-7	1314	6.8	-7	104	4.1 (4,4)
		Dulmadiid	-	-	-	-		-	-	173	-	1,028	5.9	170	-3	1026	6.0	-3	-2	4.0 (3,4)
		Bansadiiq	-	-	-	-		-	-	230	-	1,499	6.5	206	-24	1440	7.0	-24	-59	13.9 (8,19)
Dinsoor Town	GREDO	Biilale One	119	669	5.6	94	-25	623	5.5	111	17	633	5.7	112	1	648	5.8	-7	-21	13.9 (9,16)
		Biilale Two	165	914	5.5	125	-40	864	6.0	143	18	845	5.9	143	0	855	6.0	-22	-59	7.3 (6,13)
		Korkaamare	95	460	4.8	80	-15	423	4.7	90	10	423	4.7	90	0	424	4.7	-5	-36	8.2 (7,11)
		Tunida	73	441	6.0	64	-9	366	6.0	57	-7	351	6.2	56	-1	369	6.6	-17	-72	7.0 (6,8)
		Korkaamare 3	-	-	-	-		-	-	-	-	-	-	146	-	731	5.0	-	-	2.0 (1,3)
Galkayo	IMC	Baantu 1	-	-	-	-		-	-	36	-	258	7.2	35	-1	235	6.7	-1	-23	38.0 (11,62)
		Baxsan 1	-	-	-	-		-	-	77	-	560	7.3	73	-4	491	6.7	-4	-69	10.0 (8,26)
		Bulojawan 1	-	-	-	-		-	-	114	-	826	7.2	86	-28	671	7.8	-28	-155	37.9 (4,98)
Kismayo	SC	Buulo Fatura	-	-	-	-		-	-	-		-	-	228		1516	6.6	-	-	6.0 (3,16)
		Dulcade	-	-	-	-		-	-	-		-	-	105		664	6.3	-	-	9.0 (8,9)
		Gargaar	-	-	-	-		-	-	-		-	-	114		703	6.2	-	-	15.0 (13,15)

[1] Median and IQR; [2] Change in household number is shown since the previous data collection using red and blue bars, and the overall change in household number and population size since the first round is also given. Small changes to the number of households reported in R3 have been updated following additional verification.

Figure 1 - Region & District of Origin of New Arrival IDP Mothers/Caregivers First Interviewed in Round 4 *(n=474)*
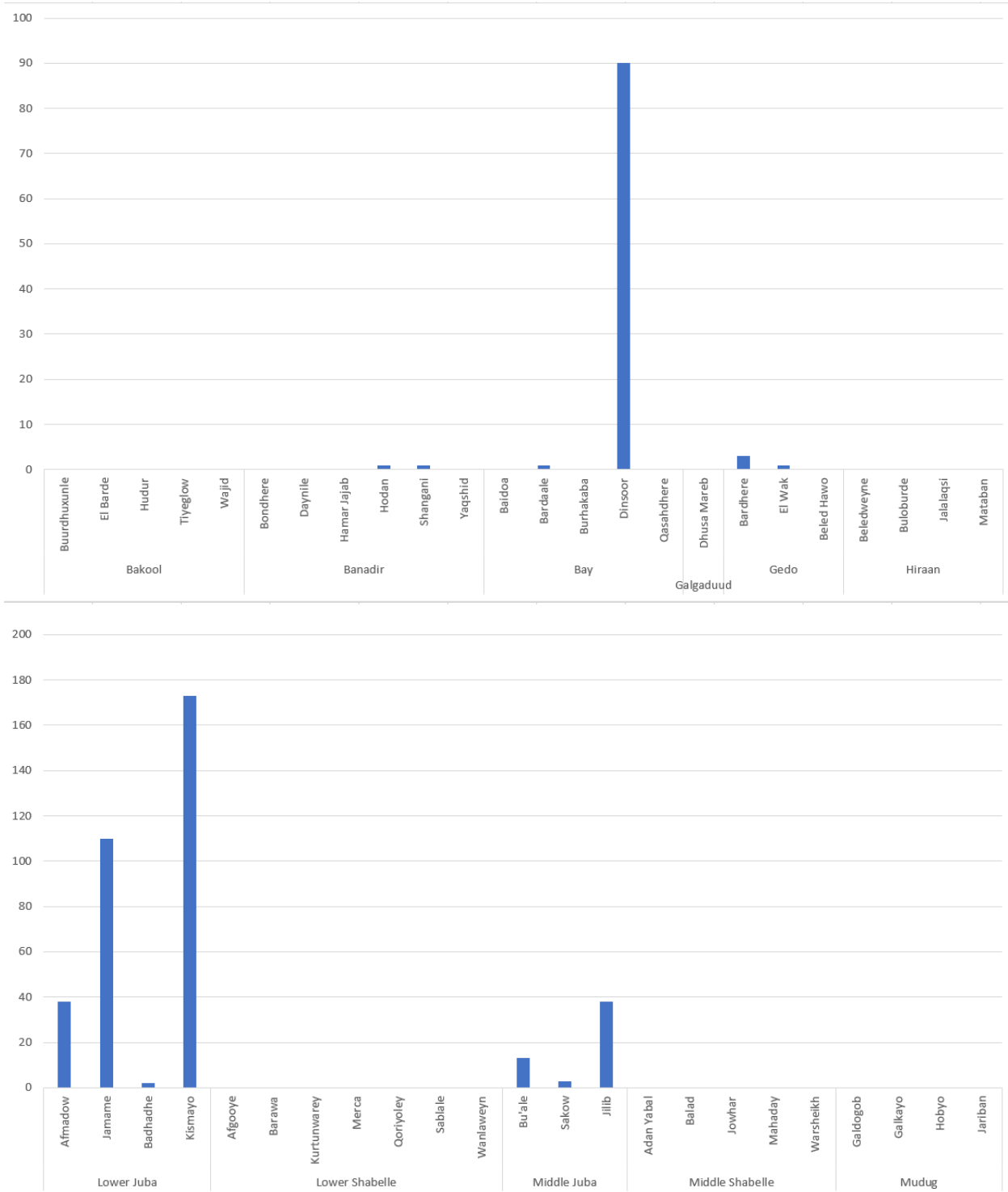
Figure 2 - Clan of New Arrival IDP Mothers/Caregivers First Interviewed in Round 4 (n=474)
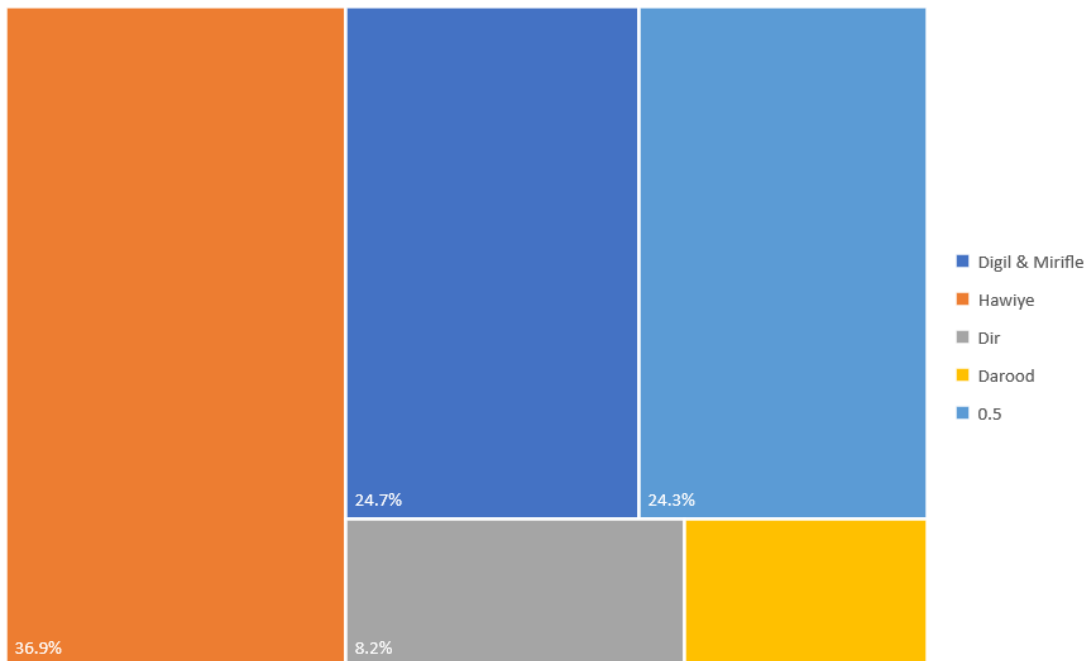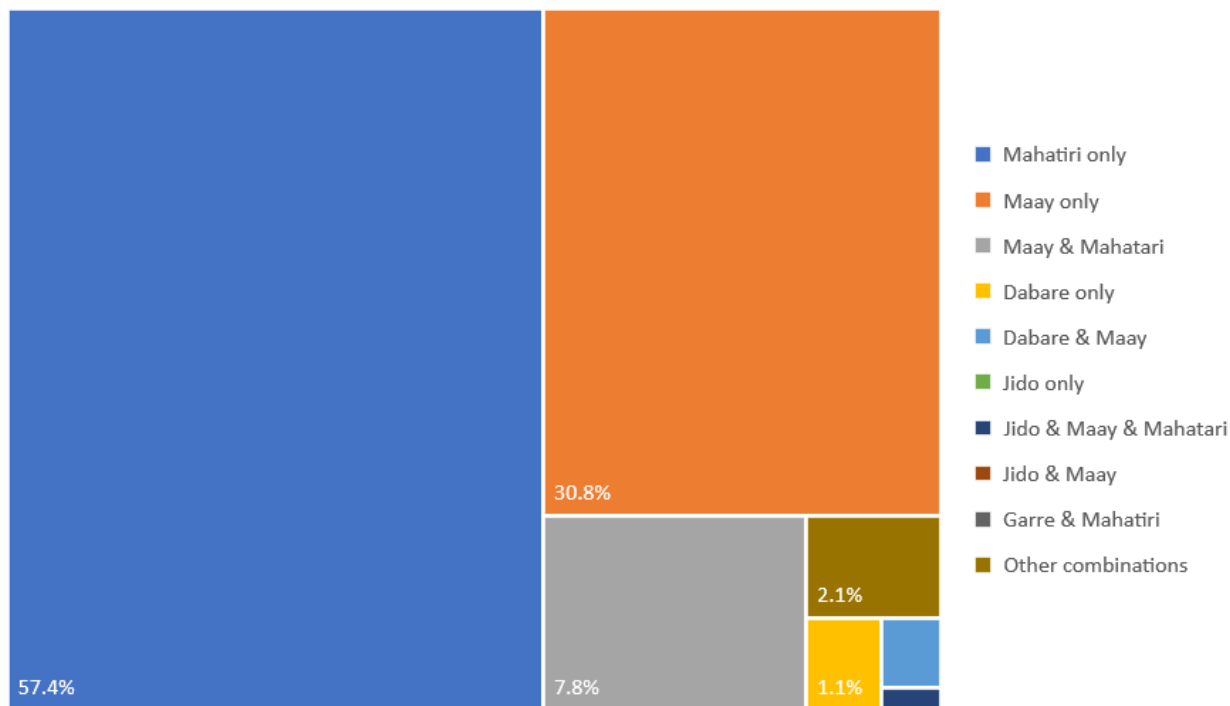

- Digil & Mirifle
- Hawiye
- Dir
- Darood
- 0.5

36.9% 24.7% 24.3% 8.2%

Figure 3 – Language of New Arrival IDP Mothers/Caregivers First Interviewed in Round 4 (n=474)

- Mahatiri only
- Maay only
- Maay & Mahatari
- Dabare only
- Dabare & Maay
- Jido only
- Jido & Maay & Mahatari
- Jido & Maay
- Garre & Mahatiri
- Other combinations

57.4% 30.8% 7.8% 2.1% 1.1%

WASH

The household WASH situation in IDP camps in the six areas is shown in the 3 figures below. The predominant water source varied by location with public taps still the most frequent in Kahda and Galkayo, tankers in Baidoa and Daynille, and water vendors/donkey carts in Diinsor.

The use of tankers has increased in both Baidoa and Dayniile, together with a decrease in the use of wells or springs in Baidoa, likely associated with the end of the Deyr rains.

Drinking water adequacy showed a decrease in all previously measured locations during Round 4. Inadequate drinking continued to be the marked in Dinsoor, where 32% of households reported drinking water was sometimes, often, or always inadequate, but there was also a concerning deterioration in the situation in Galkayo, Dayniile, and Baidoa. In Kismayo over 50% also reported problems with obtaining adequate drinking water.

Disposal of faeces (Figure 6) was found to be a continued and significant problem in most areas. Defecation in the open field was reported by respondents in all areas although it has decreased in Baidoa and Galkayo.

To compare trends in WASH indicators between data collection rounds a score for drinking water inadequacy was calculated and is shown in Table 2. An increasing score indicates more inadequate access to drinking water. The scores reveal that the adequacy of drinking water access had decreased in all areas except Baidoa.

Use of pit latrines was also compared by looking at the proportion of households that reported using them in Round 3 and Round 4. The results, also shown in Table 2, indicate a good improvement in access to pit latrines in all areas except Kahda, although it should be noted that pit latrine usage had already reached 95% in the previous round.

Figure 4: Main Sources of Household Drinking Water by Area (n=3,406)[1]
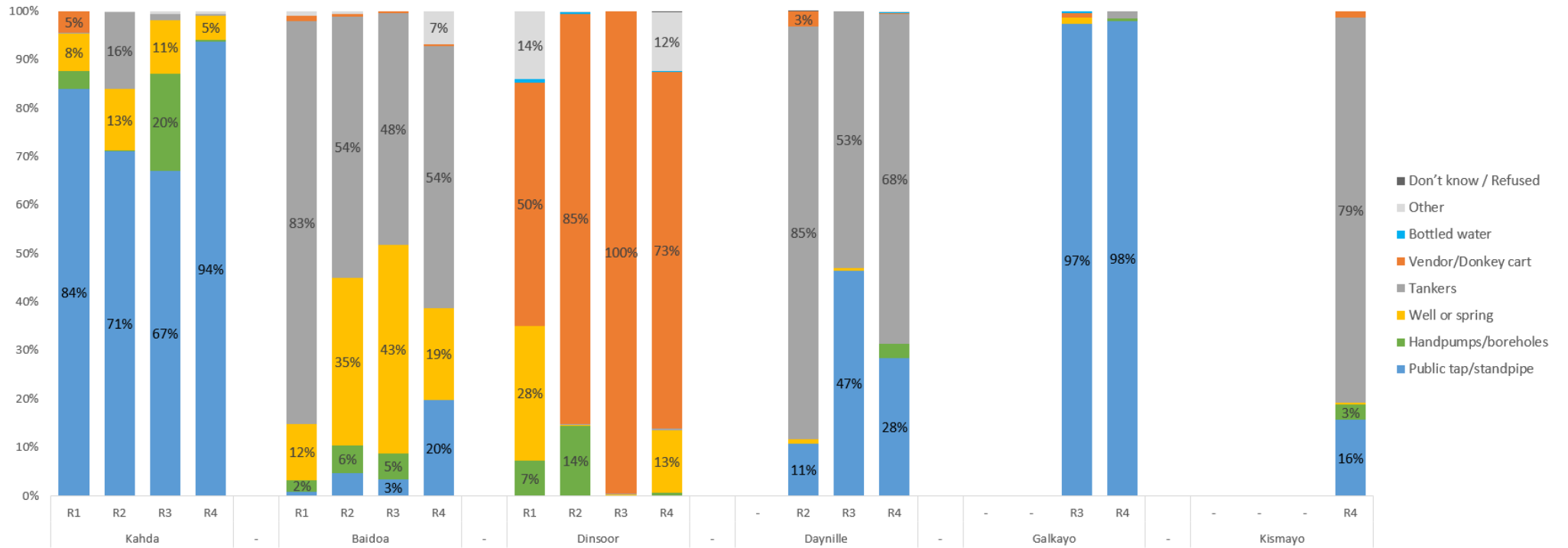
[1]Two households in Dinsoor were excluded during R3 for responding NA

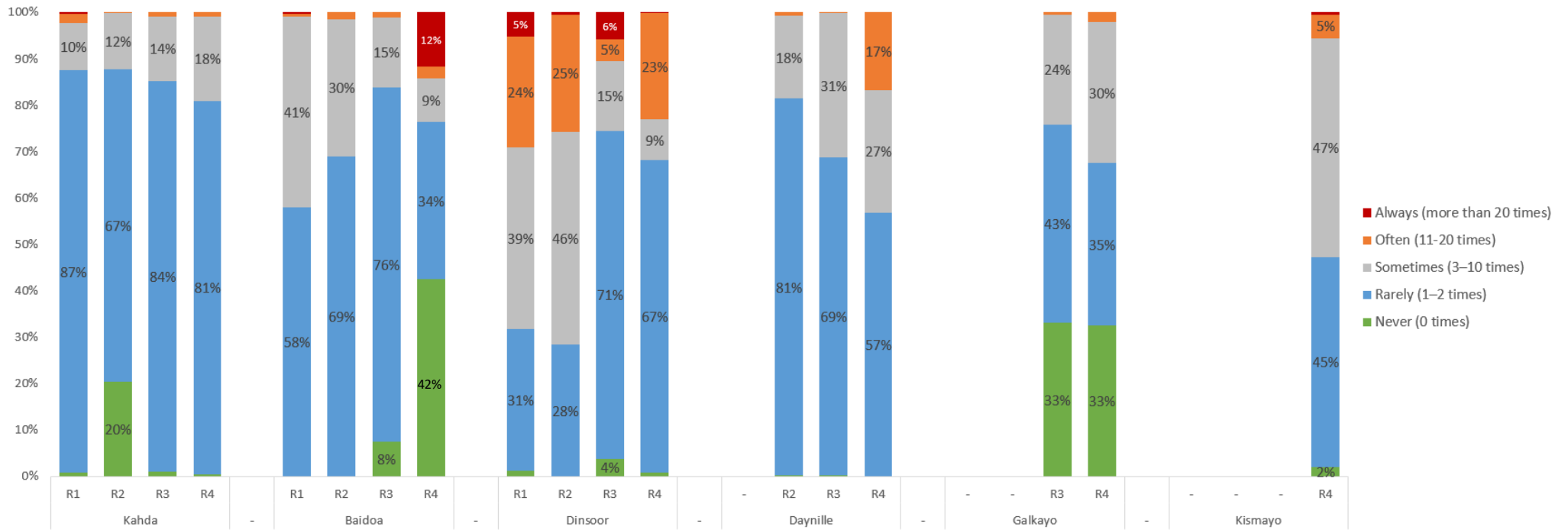**Figure 5: Frequency of Inadequate Household Drinking Water by Area (n=3,406)**

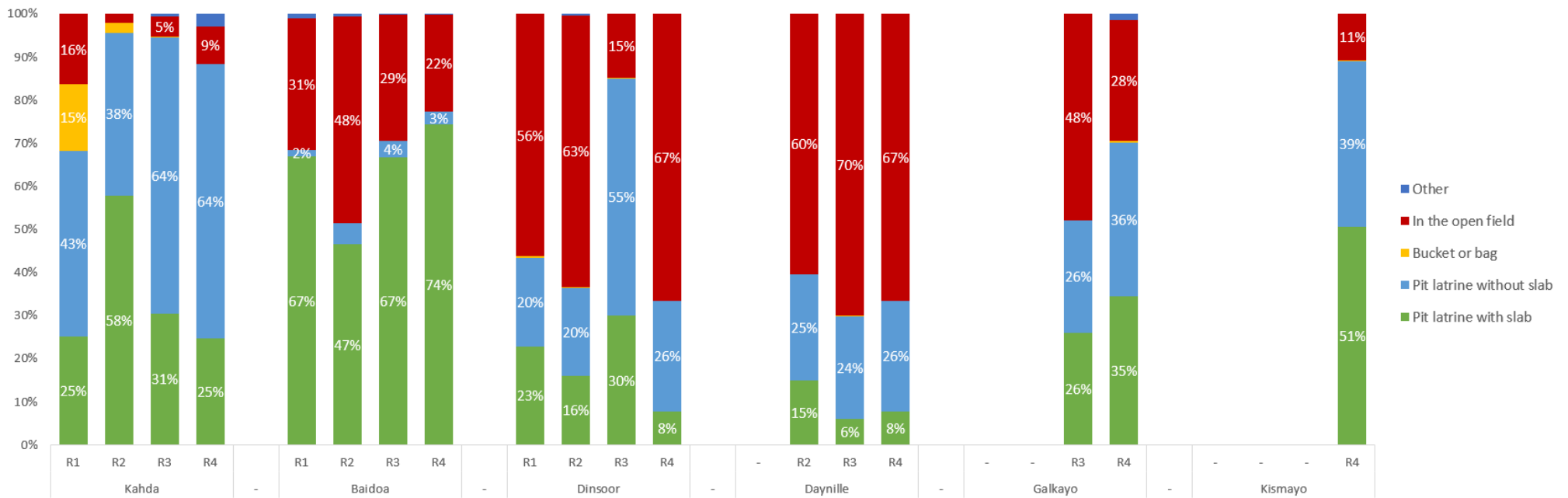Figure 6: Household Defecation Site by Area (n=3,406)

Table 2: Changes in Drinking Water Adequacy and Use of Pit Latrines

	Frequency of inadequate drinking water[1]								Change in score[3]	Use of pit patrines[2]								Change (% points)[3]
	Round 1		Round 2		Round 3		Round 4			Round 1		Round 2		Round 3		Round 4		
	N	*Score*	N	*Score*	N	*Score*	N	*Score*		N	%	N	%	N	%	N	%	
Kahda	596	2.1	561	1.9	646	2.1	541	2.2	+0.1	407/ 596	68.3%	537/ 561	95.7%	603/ 637	94.7%	480/ 543	88.4%	-6.3%
Baidoa	337	2.4	636	2.5	1289	2.3	665	2.1	-0.2	231/ 337	68.5%	328/ 636	51.6%	859/ 1217	70.6%	893/ 1,155	77.3%	+6.7%
Dinsoor	333	3.0	409	3.4	401	2.4	542	2.5	+0.1	144/ 333	43.2%	149/ 409	36.4%	339/ 401	85.0%	428/ 547	78.2%	-6.8%
Daynille	-	-	673	2.2	585	2.3	520	2.6	+0.3	-	-	267/ 673	39.7%	174/ 585	29.7%	174/ 520	33.5%	+3.8%
Galkayo	-	-	-	-	227	1.9	131	2.0	+0.1	-	-	-	-	118/ 227	52.0%	136/ 194	70.1%	+18.1
Kismayo	-	-	-	-	-	-	438	2.6	-	-	-	-	-	-	-	398/ 447	89.0%	-
Combined	1,266	2.4	2,175	2.3	3,148	2.2	2,837	2.3	+0.1	782/ 1,266	61.8%	1,281/ 2,279	56.2%	2,093/ 3,067	68.2%	2,509/ 3,406	73.7%	+5.5%

[1] Drinking water inadequacy scores are calculated based on the reported frequency of inadequate supply, with a larger score indicating that there was a greater number of times in the last month when there was not adequate drinking water for the household.

[2] Use of pit latrines is calculated as the proportion of households that reported using a pit latrine, with or without a slab, as their usual defecation site.

[3] The change in score is shown for the current data collection round compared to the round immediately before it.

Acute Malnutrition

The GAM by MUAC prevalence is shown for each sentinel site area in Table 3 and the trend is illustrated in Figure 7 for those sites where prevalence data is available over at least 3 rounds of data collection. Overall, the trend seen in R3 continues with an improvement in nutritional status. In all areas previously included in NMS data collection rounds the prevalence now lies below the IPC Serious-Critical threshold of 15%. However, in both Dinsoor and Dayniile the situation remains Serious. Sites from Kismayo were included in R4 for the first time and here the situation is Critical, with a prevalence of 17.5%.

Figure 7 Trends in the Prevalence of GAM by MUAC in Sentinel Site Camp Areas Included in at Least 3 Data Collection Rounds
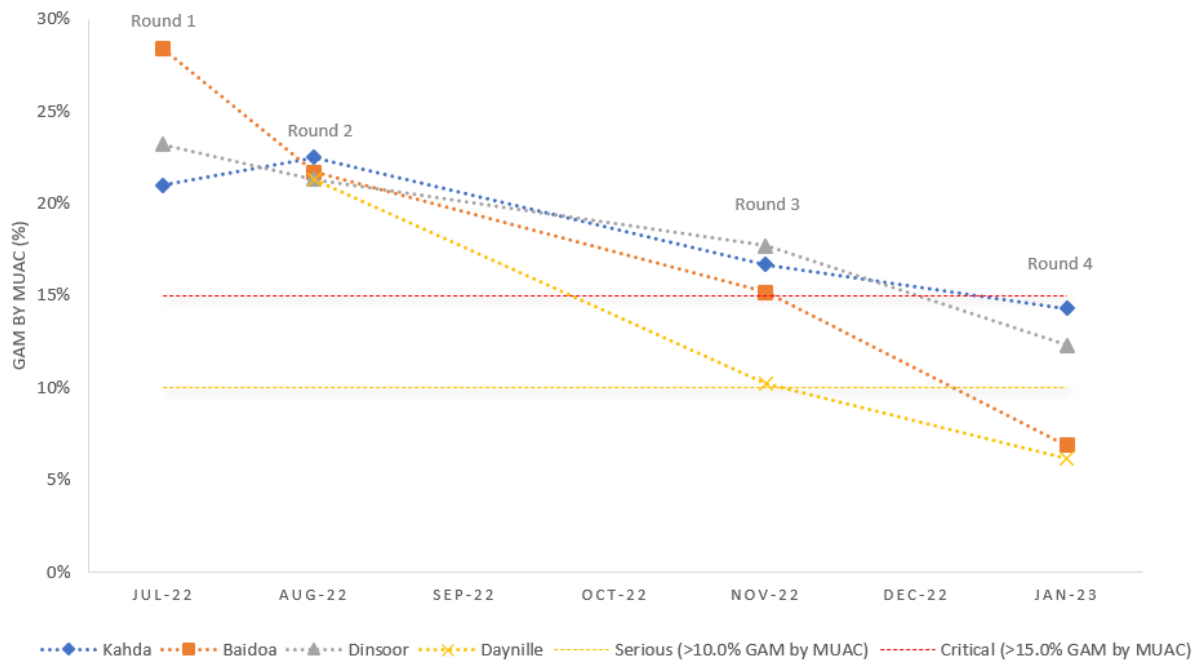
The changes in prevalence of GAM, MAM, and SAM are shown for individual camps in Figure 8. In 7 sites the prevalence was above the critical 15% threshold and in two of these the trend was also upwards. However, overall, in terms of both severity and trend there has been a marked improvement since R3. Three camps were included for the first time in R4 from Kismayo and one of these, Gargaar, showed critical levels of GAM by MUAC. New arrivals in Dinsoor, included from Korkaamare Area 3, had a prevalence above the longer stay residents in the main Korkaamare site, but GAM by MUAC was still below 10%.

Coverage of nutrition treatment programs

Enrolment in Selective Feeding Programmes is described in table 4. Overall, programme coverage in Round 4 was 74% for MAM and 65% for SAM, with Dayniile showing the lowest programme coverage. Overall, treatment coverage for MAM showed improvement while SAM treatment coverage remained similar. However, the target coverage of >90% has still not been achieved for MAM or SAM treatment in any of the sites.

Table 3: Prevalence of GAM by MUAC in Sentinel Site Camp Areas[1]

Area	Sex	Round 1 N	Age (mo.)	Oedema		GAM (MUAC < 12.5 cm or oedema)	Round 2 N	Age (mo.)	Oedema		GAM (MUAC < 12.5 cm or oedema)	Round 3[2] N	Age (mo.)	Oedema		GAM (MUAC < 12.5 cm or oedema)	Round 4 N	Age (mo.)	Oedema		GAM (MUAC < 12.5 cm or oedema)	Change R3 to R4 (% points)
Kahda	All	752	31.4	4	158	21.0%	680	32.3	2	153	22.5%	813	31.7	3	136	16.7%	651	31.9	6	93	14.3%	-2.4
	Male	371	31.1	3	69	18.6%	342	32.8	2	66	19.3%	384	31.7	1	64	16.7%	324	30.9	3	54	16.7%	
	Female	381	31.5	1	89	23.4%	338	31.7	0	87	25.7%	429	31.7	2	72	16.8%	327	33.0	3	39	11.9%	
Baidoa	All	423	28.4	4	120	28.4%	681	30.6	1	148	21.7%	1485	29.8	6	225	15.2%	1318	30.0	3	91	6.9%	-8.3
	Male	218	27.7	3	58	26.6%	351	30.3	1	75	21.4%	727	29.8	3	110	15.1%	651	29.9	1	42	6.5%	
	Female	205	29.1	1	62	30.2%	330	30.8	0	73	22.1%	758	29.9	3	115	15.2%	667	30.2	2	49	7.3%	
Dinsoor	All	495	29.7	1	115	23.2%	450	31.1	0	96	21.3%	436	32.8	1	77	17.7%	555	32.3	1	68	12.3%	-5.4
	Male	263	30.1	0	53	20.2%	245	31.6	0	47	19.2%	241	32.8	1	42	17.4%	307	32.6	1	31	10.1%	
	Female	232	29.1	1	62	26.7%	205	30.5	0	49	23.9%	195	32.7	0	35	17.9%	248	31.9	0	37	14.9%	
Daynille	All	-	-	-	-	-	581	29.8	10	124	21.3%	499	30.2	1	51	10.2%	418	29.5	2	26	6.2%	-4.0
	Male	-	-	-	-	-	321	29.5	5	62	19.3%	282	30.0	1	27	9.6%	241	29.6	2	9	3.7%	
	Female	-	-	-	-	-	260	30.3	5	62	23.8%	217	30.5	0	24	11.1%	177	29.5	0	17	9.6%	
Galkayo	All	-	-	-	-	-	-	-	-	-	-	254	29.6	2	31	12.2%	212	30.3	5	30	14.2%	+2.0
	Male	-	-	-	-	-	-	-	-	-	-	121	29.6	1	18	14.9%	98	29.1	4	17	17.3%	
	Female	-	-	-	-	-	-	-	-	-	-	133	29.5	1	13	9.8%	114	31.3	1	13	11.4%	
Kismayo	All	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	486	30.4	3	85	17.5%	-
	Male	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	31.8	2	36	13.2%	
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	28.7	1	49	22.9%	

[1]IPC levels of acute malnutrition: Critical-Extremely Critical (>15.0% GAM by MUAC) 🟥
Serious-Critical (10.0 - 14.9% GAM by MUAC) 🟧
Alert-Serious (5.0 - 9.9% GAM by MUAC) 🟨
Acceptable-Alert (<5.0% GAM by MUAC) 🟩

[2]GAM prevalence figures for R3 have been updated following additional verification and data cleaning.

Figure 8 Prevalence of SAM and MAM by MUAC in Individual Camps, Round 1 to Round 4 [1,2]
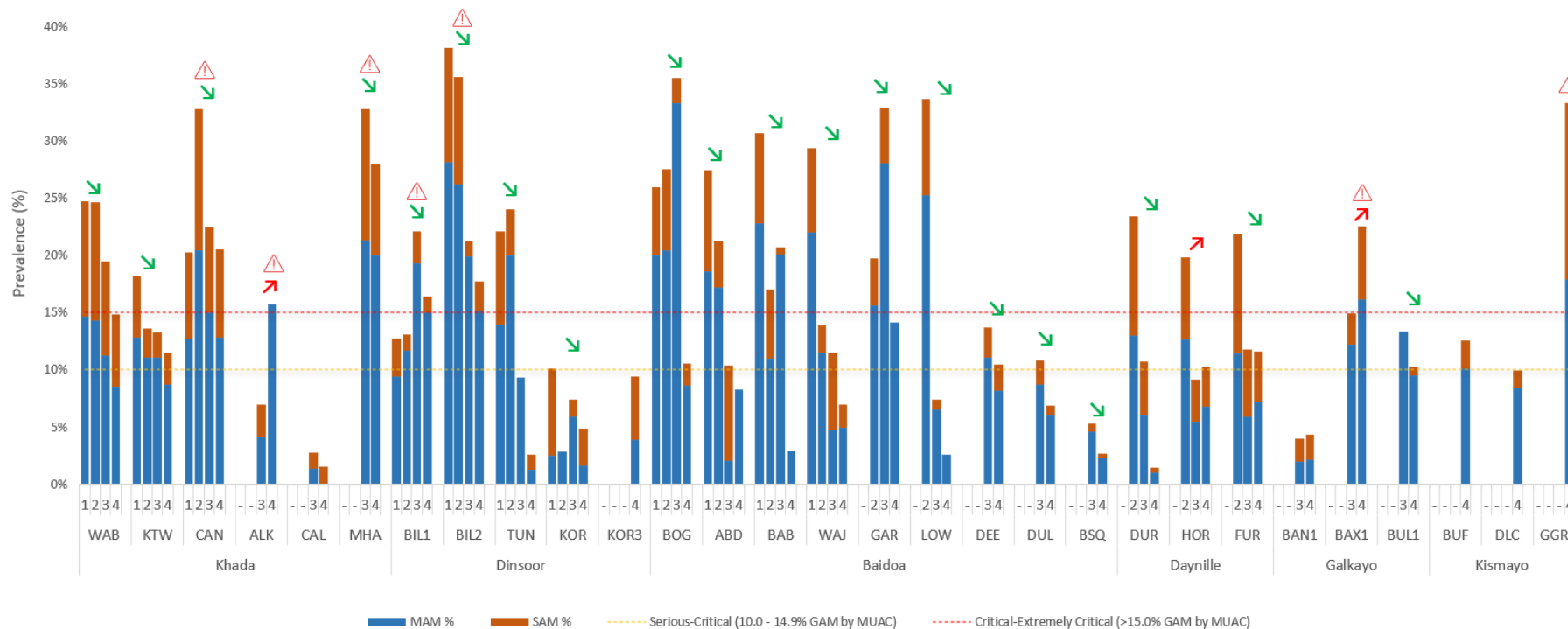
[1] An increase or decrease in prevalence since the last data collection round is indicated by a red or green arrow. A warning exclamation mark is shown when the current prevalence of GAM by MUAC exceeds 15%.

Camp/Site Names and Abbreviations									
Abag dheere	ABD	Biilale One	BIL1	Canoole	CAN	Garas	GAR	Lowfooraar	LOW
Al Kariim	ALK	Biilale Two	BIL2	Dee	DEE	Gargaar	GGR	Mahad Alle	MHA
Baantu 1	BAN1	Bogey	BOG	Dulcade	DLC	Horseed	HOR	Tunida	TUN
Bansadiiq	BSQ	Bulojawan 1	BUL1	Dulmadiid	DUL	Korkaamare	KOR	Wabiyarow	WAB
Barbaare	BAB	Buulo Fatura	BUF	Durdur	DUR	Korkaamare Area	KOR3	War Ajiin	WAJ
Baxsan 1	BAX1	Calafsuge	CAL	Furuqly	FUR	Kuntuwareey	KTW		

Table 4: Coverage of Selective Feeding Programmes for Children, Aged 6-59 months, with MAM by MUAC or SAM by MUAC

	Moderate Acute Malnutrition (MUAC < 12.5 & ≥ 11.5 cm)						Severe Acute Malnutrition (MUAC < 11.5 cm or oedema)					
	Percentage and number of cases in OTP or SFP						Percentage and number of cases in OTP					
Area	Round 1	Round 2	Round 3	Round 4	Change R3 to R4	> 90% Coverage [1]	Round 1	Round 2	Round 3	Round 4	Change R3 to R4	> 90% Coverage [1]
Khada	74 % (75/101)	90 % (88/98)	74% (68/92)	73% (48/65)	- 1%	NO	83 % (45/57)	64 % (34/53)	77% (34/44)	64% (18/28)	- 13%	NO
Baidoa	39 % (34/88)	42 % (47/112)	66% (124/188)	75% (59/79)	+ 9%	NO	19 % (6/32)	46 % (16/35)	76 % (28/37)	69% (9/13)	- 7%	NO
Diinsor	41 % (32/79)	87 % (66/76)	80% (56/70)	77% (40/52)	- 3%	NO	78 % (28/36)	90 % (18/20)	43 % (3/7)	44% (7/16)	+ 1%	NO
Daynille	-	89 % (65/73)	35% (10/29)	53% (9/17)	- 18%	NO	-	73 % (37/51)	27% (6/22)	56% (5/9)	+ 29%	NO
Galkayo	-	-	36% (10/28)	47% (8/17)	+ 11%	NO	-	-	33 % (1/3)	50% (3/6)	+ 17%	NO
Kismayo	-	-	-	83% (48/58)	-	NO				81% (22/27)	-	NO
Combined	53 % (141/268)	74 % (266/359)	66 % (268/406)	74% (212/288)	+ 8%	NO	63 % (79/125)	66 % (105/159)	64 % (72/113)	65% (64/99)	+ 1 %	NO

[1] https://handbook.spherestandards.org/#ch007_004_001

Vaccination and Morbidity

Possession of a child health record card was assessed for children less than 5 years of age, and all types of vaccination cards, health passports, and other record cards were counted. Overall, coverage had improved slightly but since round 3, but there was variation between different sites. A large decrease was observed in Galkayo, and we recommend that IMC undertakes further work to try and understand the reason for this reported decrease.

Overall coverage of health record cards remains low, with only 4 out of every child having one, and will therefore continue to impede the delivery and monitoring of essential child health and nutrition services. Coverage remains particularly low in Dinsoor but it is worth noting the improvements seen in Kahda, Dayniile, and Baidoa.

Table 5: Possession of a Health Record Card in Children aged 0-59 months

Area	Round 1		Round 2		Round 3		Round 4		Change R3 to R4
Kahda	25.0%	199/795	34.1%	245/719	47.4%	388/818	60.1%	406/676	+12.7
Baidoa	10.5%	50/476	15.1%	1,010/729	46.7%	703/1,513	53.7%	730/1,360	+7.0
Dinsoor	5.8%	29/497	9.0%	41/456	19.2%	85/442	16.8%	94/561	-2.4
Daynille	-	-	10.1%	66/655	10.9%	58/531	22.8%	101/443	+9.9
Galkayo	-	-	-	-	67.0%	177/264	31.6%	73/231	-35.4
Kismayo	-	-	-	-	-	-	41.0%	213/520	-
Combined	15.7%	278/1,768	18.1%	462/2,559	39.5%	1,411/3,568	42.7%	1,617/3,791	+3.2%

Measles vaccination coverage has also slightly improved, overall, since Round 3 but still remains low, with an overall coverage estimate, using recall and record cards combined, of only 64%. Important improvements are seen in coverage in Kahda and Baidoa, with coverage approaching 90% and 80% respectively. However, according to Sphere Standards (Child health standard 2.2.1: Childhood vaccine-preventable diseases) there is still a need for further measles vaccination campaigns as coverage remains well below the 90% threshold.

Table 6: Measles Vaccination (MCV1) Coverage in Children aged 9-59 months

Area	Indicator	Round 1		Round 2		Round 3		Round 4		Change[1] (% points)	90% Coverage[2]
Kahda	Record card	9.8%	70	18.9%	123	21.0%	157	16.5%	104		
	Recall	41.6 %	298	46.7%	304	58.5%	437	70.3%	442		
	Combined	**51.3%**	368/717	**65.6%**	427/651	**79.5%**	594/747	**86.8%**	546/629	+7.3	NO
Baidoa	Record card	3.2%	13	6.0%	36	23.9%	331	13.7%	172		
	Recall	26.9%	111	37.7%	227	39.1%	542	63.4%	794		
	Combined	**30.0%**	124/413	**43.7%**	263/602	**63.0%**	873/1386	**77.1%**	966/1,253	+14.1	NO
Dinsoor	Record card	1.04%	5	0.0%	0	14.2%	61	13.7%	74		
	Recall	20.4%	98	25.7%	96	58.5%	117	9.8%	53		
	Combined	**21.4%**	103/481	**25.9%**	96/374	**41.4%**	178/430	**23.6%**	127/539	-17.8	NO
Daynille	Record card	-	-	0.5%	3	4.5%	21	3.7%	15		
	Recall	-	-	24.0%	133	29.4%	138	34.9%	140		
	Combined	-	-	**24.5%**	136/554	**33.8%**	159/470	**38.7%**	155/401	+4.9	NO
Galkayo	Record card	-	-	-	-	49.4%	122	37.3%	76		
	Recall	-	-	-	-	40.5%	100	42.6%	87		
	Combined	-	-	-	-	**89.9%**	222/247	**79.9%**	163/204	-10.0	NO
Kismayo	Record card	-	-	-	-	-	-	23.9%	113		
	Recall	-	-	-	-	-	-	33.0%	156		
	Combined	-	-	-	-	-	-	**56.9%**	269/473	-	NO
Combined	Record card	5.5%	88	7.4%	162	21.1%	692	15.8%	554		
	Recall	31.%	507	34.8%	760	40.7%	1334	47.8%	1,672		
	Combined	**36.9%**	595/ 1,611	**42.3%**	922/ 2,181	**61.8%**	2,026/ 3,280	**63.6%**	2,226/ 3,499	+1.8	NO

The two-week period prevalence of suspected measles was similar to that seen in Round 3. For each child, questions were asked about the presence of fever, a rash, cough coryza, and conjunctivitis, during the last two weeks. A child was classified as having suspected measles if they had a fever *and* a rash, as well as at least one out of the other 3 symptoms (cough, coryza, or conjunctivitis).[3] Results in table 7 show that the outbreak in Galkayo appears to be receding while case remain elevated in Dinsoor.

Table 7: Two Week Period Prevalence of Suspected Measles in children 6-59 mo.

Area	Round 1		Round 2		Round 3		Round 4		Change R3 to R4
Kahda	9.8%	78/800	4.3%	31/726	2.0%	16/791	2.0%	13/651	0.0%
Baidoa	6.9%	33/478	4.6%	34/734	1.7%	25/1465	0.9%	12/1,318	-0.8%
Dinsoor	1.0%	5/497	0.4%	2/458	5.1%	22/434	5.4%	30/555	+0.3%
Daynille	-	-	4.0%	26/656	4.4%	22/496	2.6%	11/418	-1.8%
Galkayo	-	-	-	-	10.2%	26/255	2.8%	6/212	-7.4%
Kismayo							2.9%	14/486	-
Combined	6.5%	116/1,775	3.6%	93/2,574	3.2%	111/3,441	2.4%	86/3,640	-0.8%

The coverage of Oral Cholera Vaccine in children between 12 and 59 months is shown in table 8. Overall, coverage has fallen slightly since Round 3 and is now estimated as 42%. The inclusion of new arrival camps in Dinsoor may partly explain why the coverage of vaccination has fallen, along with challenges with health record card retention.

[3] Measles Vaccine-Preventable Diseases Surveillance Standards (2018) WHO https://www.who.int/publications/m/item/vaccine-preventable-diseases-surveillance-standards-measles

Table 8: Oral Cholera Vaccine (OCV) Coverage in Children aged 12-59 months

Area	Indicator	Round 1		Round 2		Round 3		Round 4		Change R3 to R4
Kahda	Record card	7.6%	50	8.1%	48	11.5%	81	8.7%	51	
	Recall	26.5 %	175	45.8%	273	59.3%	417	67.3%	393	
	Combined	**34.0%**	225/661	**53.9%**	321/596	**70.8%**	498/703	**76.0%**	444/584	+5.2%
Baidoa	Record card	1.8%	7	5.0%	28	20.1%	260	12.2%	144	
	Recall	22.0%	85	31.4%	177	29.8%	385	41.8%	494	
	Combined	**23.8%**	92/386	**36.4%**	205/563	**49.8%**	645/1294	**53.9%**	638/1,183	+4.1%
Dinsoor	Record card	0.7%	3	0.0%	0	1.7%	7	0.6%	3	
	Recall	20.4%	91	26.7%	94	26.3%	110	10.3%	54	
	Combined	**21.1%**	94/446	**26.7%**	94/352	**28.0%**	117/418	**10.9%**	57/523	-17.1%
Daynille	Record card	-	-	0.8%	4	1.6%	7	2.7%	10	
	Recall	-	-	12.1%	63	7.5%	33	6.7%	25	
	Combined	-	-	**12.9%**	67/520	**9.1%**	40/441	**9.4%**	35/374	+0.3%
Galkayo	Record card	-	-	-	-	20.3%	46	12.7%	24	
	Recall	-	-	-	-	36.7%	81	20.6%	39	
	Combined	-	-	-	-	**55.9%**	127/227	**33.3%**	63/189	-22.6%
Kismayo	Record card							16.7%	75	
	Recall							20.0%	90	
	Combined							**36.7%**	165/449	-
Combined	Record card	4.0%	60	3.9%	80	13.0%	401	9.3%	307	
	Recall	23.5%	351	29.9%	607	33.3%	1,026	33.2%	1095	
	Combined	**27.5%**	411/1,493	**33.8%**	687/2,031	**46.2%**	1,427/3,083	**42.5%**	1,402/3,302	-3.7%

Acute Watery Diarrhoea had declined in all areas except Galkayo since round 3, with an overall decrease of 4 percentage points. A marked decrease was again seen in Baidoa and smaller decreases in Dinsoor and Kahda.

Table 9: Two Week Period Prevalence of AWD in children 0-59 mo.

Area	Round 1		Round 2		Round 3		Round 4		Change R3 to R4
Kahda	21.8%	173/795	7.8%	56/719	10.4%	85/818	7.4%	50/676	-3.0%
Baidoa	26.9%	128/476	20.0%	146/729	12.3%	186/1,513	1.9%	26/1,360	-10.4%
Dinsoor	6.2%	31/497	10.7%	49/456	10.2%	45/442	5.0%	28/561	-5.2%
Daynille	-	-	15.0%	98/655	6.6%	35/531	5.2%	23/443	-1.4%
Galkayo	-	-	-	-	3.8%	10/264	16.0%	37/231	+12.2%
Kismayo	-	-	-	-	-	-	13.1%	68/520	-
Combined	18.8%	332/1,768	13.6%	349/2,559	10.1%	361/3,568	6.1%	232/3,791	-4.0%

Mortality

Death rates were assessed using separate recall periods for households newly enrolled during Round 4 and these that had been previously interviewed in Round 3. The memorable date used for defining the recall period for new households was the Zobe 2 explosion in Mogadishu, on Oct 29th, and the time since the previous interview was used for households that had been interviewed in previous rounds. A verification exercise was performed to confirm the deaths reported in camps with higher than average death rates. Results from the combined camps in the 6 areas indicate that both the CDR and the U5DR have now fallen below the emergency level. The trend in falling death rates has been observed since the

beginning of data collection in July/Aug 2022. We note that the observed fall in IDP death rates since the middle of last year is in line with the modelled estimates recently published by Watson and Checchi for the whole of Somalia.[4]

Table 10: Crude Death Rate (CDR) and Under-five Death Rate (U5DR) in the Combined Areas

Indicator	Combined Areas				
	Round 1	Round 2	Round 3	Round 4	Change R3 to R4
Persons under observation	8,029	12,400	17,808	20,317	
Average recall period (days)[1]	30.4	41.8	78.6	65.3	
Person days of observation	244,082	514,878	1,388,362	1,325,871	
Total deaths reported	23	32	58	39	
Deaths in children <5 years	17	24	43	27	
Crude Death Rate[2] (CDR) deaths/10,000/day	0.9	0.6	0.4	0.3	-0.1
Under Five Death Rate[3] (U5DR) deaths/10,000/day	3.0	2.2	1.5	1.1	-0.4

[1] The recall periods/days of exposure were set at a fixed one month (30.4 days) for each household in round 1 but were calculated for each household individually during susequent rounds. In round 2 we used a memorable date (July 9th) to define the recall period for newly recruited households, and for household that had been recruited during round 1 we used the date of the first interview. In round 3 we we used the end of Mowlid, (October 9th) to define the recall period for newly recruited households, and for household that had been previously recruited we used the date of the last interview.

[2] Threshold levels for CDR are: 1/10,000,day = Emergency; 2/10,000/day = Out of control

[3] Threshold levels for U5DR are: 2/10,000,day = Emergency; 4/10,000/day = Out of control

Source: Humanitarian Charter and Minimum Standards in Humanitarian Response; Essential health services standard http://www.spherehandbook.org/en/essential-health-services-standard-1-prioritising-health-services/

and Interpreting and using mortality data in humanitarian emergencies, Checchi and Roberts (2005) http://odihpn.org/wp-content/uploads/2005/09/networkpaper052.pdf

Conclusions

Data from Round 4 indicates that overall, there is a continuing improvement in most indicators, but the results also show the continuation of high levels malnutrition, inadequate WASH and health service provision, and a resulting risk of disease outbreaks and avoidable morbidity and mortality.

Acute malnutrition in children 6-59 mo. has declined but remains at critical levels in some camps, and in the Kismayo area, which was included for the first time in Round 4. Measles and AWD infections persist but no overall increase was detected. There have been some continued improvements in the delivery of vaccination and malnutrition treatment services, but gaps persist, and coverage is still well below Sphere Standards. Both the CDR and U5DR has decreased below emergency levels, consistent with the overall improvements that are seen.

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[4] Mortality patterns in Somalia: retrospective estimates and scenario-based forecasting. Report 1 (February 2023), Oliver Watson & Francesco Checchi

However, efforts need to be sustained to ensure the humanitarian response reaches Sphere standards and the risk factors for excess mortality continue to be controlled and reduced. The NMS results are consistent with the latest IPC classifications for southern Somalia, which show a generally improving food security situation but with continuing critical levels of malnutrition and a possible deterioration in the April to June projection period.[5]

While the Deyr rains performed better than forecast, a good Gu season will also be required to ensure sustained improvement in the health and nutrition situation. But according to the Greater Horn of Africa Climate Outlook Forum, combined analysis of seven global climate prediction models indicates that drier than normal conditions are most likely to continue over the drought affected regions of Ethiopia, Kenya, and Somalia during the current season (MAM).[6] The outlook for the next few months therefore remains uncertain with regards to the extent to which recovery from the drought can occur.

The war in Ukraine continues and further increases in tension between US/NATO and Russia mean global food, fertilizer, and energy prices remain unpredictable. Within Somalia, the military operation against Al-Shabaab by government and local forces also continues and the impact this may have on the movement of IDP remains uncertain.

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[5] SOMALIA : IPC Food Security & Nutrition Snapshot | January - June 2023
https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Somalia_Acute_Food_Insecurity_Malnutrition_2023JanJun_Snapshot.pdf
[6] Statement from the 63rd Greater Horn of Africa Climate Outlook Forum (GHACOF63), 20-22 February 2023 - Nairobi, Kenya