Sahel Food and Health Crisis:

Emergency Health Strategy

Photo: WHO/the Niger

West Africa Regional Health Working Group

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Executive Summary

The food security and nutrition crisis in the Sahel is already affecting now more than 18 million people. The current food deficit has provoked a nutrition disaster that is resulting in significant illness and death from malnutrition and confounding diseases especially in children under five years of age. A number of countries (Burkina Faso, Chad, the Gambia, Mali, Mauritania and the Niger) have declared a state of emergency, calling for international assistance. In addition to food insecurity, the Sahel countries experience recurrent outbreaks of cholera, measles, meningitis and polio. The situation is expected to deteriorate with the upcoming rainy season and the population movements caused by the conflict in Mali..

Despite the notable progress made in reducing the number of child deaths during the past 20 years, survival for children in the Sahel, is still a challenge. The Sahel countries are among those with the highest under-five mortality rates, with the majority of deaths due to three main preventable and treatable causes: pneumonia, diarrhoea and malaria. Malnutrition intensifies the severity of these epidemics and disease and, in turn, causes a deterioration in nutritional status..

At the beginning of the crisis, health was not considered a priority and it was not included as a component of the overall response strategy. As the crisis has evolved there has been increased awareness of the importance of addressing the health consequences of food insecurity and malnutrition. A clear example is that, out of the over one million children that are at risk of severe acute malnutrition (SAM), at least 205 000 are expected to require medical care in health facilities.

Moreover, malnutrition increases the risk of contracting and dying of common illnesses such as malaria, diarrhoea, cholera, pneumonia, measles and others. For instance the case fatality rate of cholera in Burkina Faso, Senegal, the Niger and Nigeria stands at 2.4% until mid-June (rather than <1%). Cases of measles have continued to increase. Over 36 000 cases have been reported in Cameroon, Mali, Chad, Nigeria, Senegal and Niger, with 260 deaths between January and May 2012. The Regional Health Strategy presented here has been developed by WHO with the contributions of the main health partners active in the region including UNICEF, the International Organization for Migration (IOM), Save the children, Medicines Sans Frontiers, UNFPA, IFRC and the European Commission (ECHO).. The Strategy provides a framework for the implementation of health sector response plans and complements food and nutrition and other relevant response strategies for the Sahel crisis. It aims to address the gaps and needs identified in multi-country assessments conducted by WHO and partners in the Sahel. It also aim to help in providing a sustainable solution that requires building community and individual resilience through strengthening of the health system to ensure continuity of basic health services with innovative approaches taking into account the challenging context as well as addressing health determinants.

With the overall goal of reducing excess morbidity and mortality in the populations affected by the food security and nutrition crisis, the strategy is organized around three strategic objectives:

1. Coordinate the health sector response
2. Accelerate priority lifesaving health services, including:
    a. treatment of medical complications of SAM
    b. interventions to control communicable diseases
3. Manage relevant health information to guide action
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Funding

According to data from the OCHA Financial Tracking Service (FTS), as of 15 June 2012 the overall funding received for the five countries that have issued a consolidated Appeal (CAP) –Burkina Faso, Chad, Mauritania, the Niger and Mali – amounts to 58% of the financial requirements. However, the health sector has only received 19% of the funds needed.

In the case of WHO, the low level of funding of its appeals, only 8%, is hampering its capacity to coordinate the health response, sustain progress made and collect and disseminate adequate health information to its partners.

Additional funding is urgently needed to continue the implementation of the Regional Health Strategy for the Sahel.

Context

Introduction

General context

The Sahel region is a transitional zone between the arid Sahara and the tropical forest. It represents the southern edge of the Sahara desert, extending at least 4500 km from Cape Verde through Senegal, Mauritania, Mali, Burkina Faso, the Niger, and Chad. It roughly coincides with the meningitis belt. Recurrent droughts, erratic rainfall, land degradation and desertification result in the loss of agricultural production and livestock, leading to cyclic upsurges in malnutrition and disease. In many areas, the prevalence of acute malnutrition remains above the public health or emergency thresholds. According to UN sources, over 490 000 children die each year from nutrition-related causes in the Sahel region.

The current food deficit has provoked a nutrition disaster that is resulting in significant illness and death from malnutrition and confounding diseases especially in children under five years of age. A number of countries (Burkina Faso, Chad, the Gambia, Mali, Mauritania and the Niger) have declared a state of emergency, calling for international assistance. Reports from the CILSS (Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel) and other development agencies indicate that levels of Global Acute Malnutrition (GAM) are likely to remain near or above 15% in a number of areas of the Sahel region during 2012. It is estimated that 15.6 million people out of 20 million living in crisis affected areas (including the Gambia since March 2012) are vulnerable, of whom over 10 million are food insecure.

Despite the notable progress made in reducing the number of child deaths during the past 20 years, children's survival in the Sahel is still a challenge. The Sahel countries are among those with the highest under-five mortality rates with the majority of deaths due to three main preventable and treatable causes; pneumonia, diarrhoea and malaria. Other causes of death include neonatal illnesses, malnutrition and measles, in areas where vaccination coverage is low. The impact of these diseases has been exacerbated by malnutrition and by the lack of access to health services, either because of financial constraints or but the weakness of the services.

The nine Sahel countries experience recurrent emergencies and crises such as outbreaks of cholera, measles, meningitis and polio along with flooding and insecurity, which further complicate the situation. Cholera is currently spreading through the Niger, Nigeria, Chad and Cameroon. Conflicts in Libya, Côte d'Ivoire and Nigeria resulted in approximately 200 000 returnees mainly in Chad, the Niger and Mali (IOM, October 2011). More recently, the conflict in Mali has left over 222 000 people displaced, including
127 000 new refugees (05 April 2012) mainly in Mauritania, Burkina Faso and the Niger. This is in addition to the 413 000 refugees already in the region (Senegal, Mali, Niger;

Chad: 363 300: UNHCR figures for 2012). These factors along with fragile health systems and lack of access to essential services, including health care, affect women, children and other vulnerable groups such as the elderly, those with special needs and migrants.

Affected areas and population

Table 1: affected areas and population (OCHA, 15 June 2012)

Country	Population affected by food insecurity	Malian Refugees/IDPs	Regions affected
Burkina Faso	2,060,000	23,437	Food insecure areas include about 16 provinces , mainly Yagh, Sèno, Oudalan and Soum Refugees: mainly Oudalan (Idanabo & Gendafabou and Soum (Djibo) provinces.
Cameroon	350,000		"Nord" and "Extrême Nord"
Chad	1,600,000		Kanem, Wadi-Fira, Barh El Gazel, Batha, HadjerLamis, Salamat
Gambia (the)	241,000		All the 5 regions (Division) affected in some way Districts: Western division (4); Uper river (1); North band (3); Lower River (3); Central (7)
Mali (IDPs)	4,600,000	93,433	IDPs: Kidal, Tombouctou, Gao; Food insecurity: Kayes; Koulikoro; Tombouctou, Gao
Mauritania	700,000	48,033	Refugees: Hodh El Chargu region (Fassala, Mbérra, Kobeni & Tenaha) Food insecurity: Assaba, Gorgol, Brakna, Guidimakha
Niger (the) refugees and returnees	5,500,000	27,382	Tillabéri (ffod insecurity & refugees) & Dosso
Nigeria	Not available		Katsina, Sokoto, Jigawa and Yobe state
Senegal	750,000		Matam & Diourbel
Algeria		30,000	Tin Zaouatine (refugees)
Total	**18,691,000**	**222,285**	

Public health impact

In a context of food insecurity, drought, malnutrition and prevalent endemic and epidemic diseases, along with poor access to health and other essential services, low immunization coverage and population movements, there is an increased risk of excess morbidity and mortality, especially in children under five years of age in the Sahel.

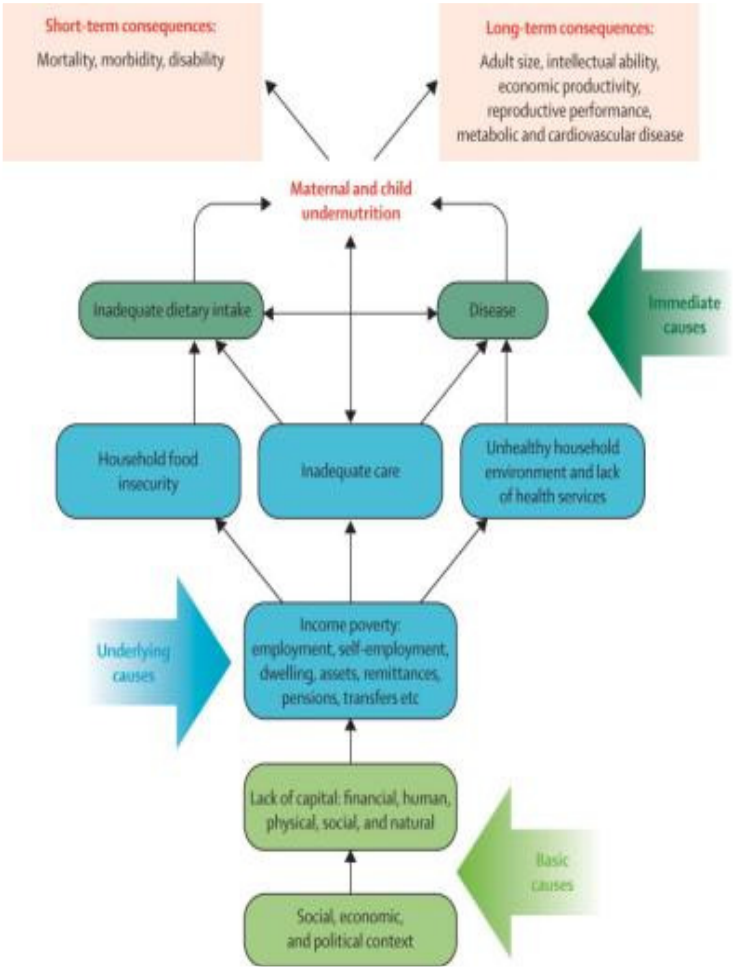


Figure 1: Framework food insecurity and other underlying and immediate causes of maternal and child under-nutrition

Source: The Lancet 2008;371:243-260 371:243-260

Over 1 100 000 cases of severe acute malnutrition (SAM) are expected across the region (Regional Food and Nutrition Group estimation). Of those, it is estimated that at least 205 000 children with SAM will have complications requiring medical care in health facilities.

Malnutrition increases the risk of contracting and dying from common illnesses such as malaria, diarrhoea, cholera, measles and pneumonia.

Maternal malnutrition increases the risk of poor pregnancy outcomes including obstructed labour, premature or low-birth-weight newborns and postpartum haemorrhage. Concurrent maternal infection with malaria exacerbates maternal anaemia and further contributes to maternal mortality, the risk of low-birth weight and poor neonatal outcomes.

The longer-term impacts of food insecurity and malnutrition include impaired mental development, reduced work productivity and higher rates of chronic diseases. The depletion of household resources due to the food crisis has serious impacts on the general health status of the affected population. The vicious cycle of hunger, poor health and poverty results in families spending less money on health care, just when they need it most.

Lack of access to health care and other essential services contributes to underlying causes of maternal and child under-nutrition (figure 1). Preventing and treating the main causes of illness and death and building health systems with close linkages with other key sectors are critical for reducing excess morbidity and mortality and improving long term outcomes.

Health situation in crisis affected areas

All the SAM and moderate acute malnutrition cases (estimated at 1.9 million by Regional Food and Nutrition Group) are at risk of more severe illness and death from diarrhoea, pneumonia, malaria and epidemic-prone diseases.

Measles is of great concern due to the low vaccination coverage within the displaced populations.

The coming rainy season in the Sahel region will also increase the risk of water and vector-borne diseases such as cholera, malaria and dengue fever. Epidemics of cholera, meningitis, malaria, measles and typhoid are already on-going in some areas in the Sahel and could worsen with malnutrition, population movements and seasonal upsurges in epidemic-prone diseases.

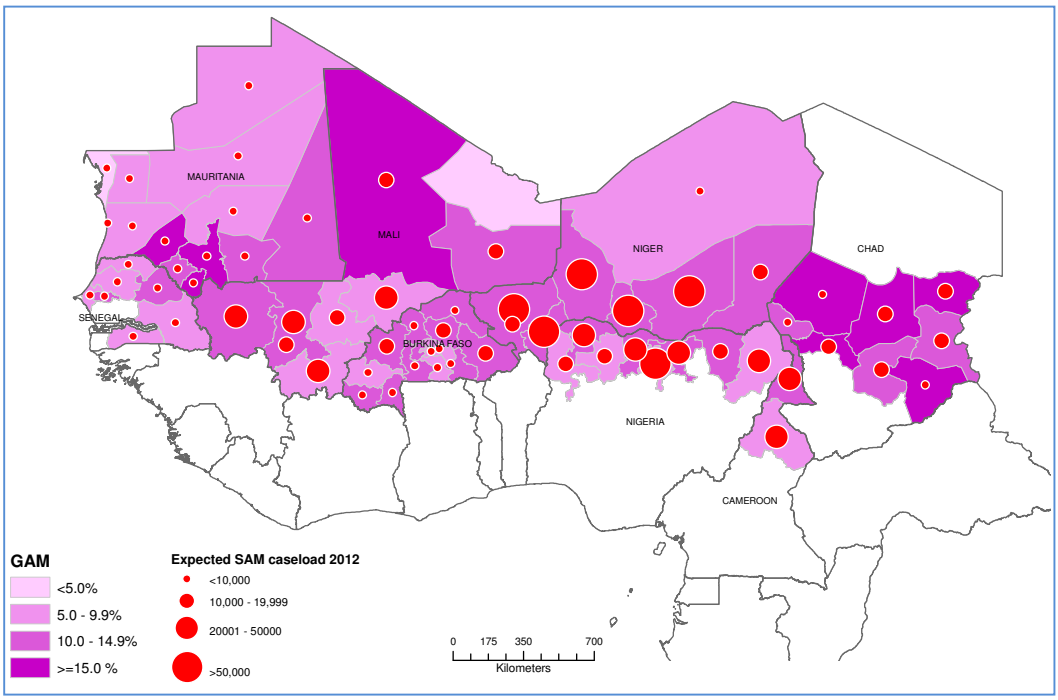
Tables 2 and 3 summarize key health indicators for the Sahel region.

Table 2: Key health indicators

Table summarizing health system performance indicators	% under-fives with suspected pneumonia taken to a health-care provider*	% under-fives with diarrhoea receiving oral rehydration and continued feeding*	Percentage of under-fives sleeping under insecticide treated nets*	Measles vaccination coverage	Problems in accessing health care due to distance to health facility**	Problems in accessing health care due to difficulties in getting money for treatment**
Burkina Faso	39%	42%	10%	94%	46%	63%
Cameroon	35%	22%	13%	79%	39%	66%
Chad	26%	23%	10%	46%	N/A	N/A
Mali	38%	38%	70%	63%	38%	53%
Mauritania	45%	32%	N/A	67%	N/A	N/A
Niger (the)	77%	51%	83%	71%	51%	N/A
Nigeria	45%	25%	29%	71%	36%	56%
Senegal	47%	43%	29%	60%	36%	53%

*SOWC- 2012 main report (Data refer to the most recent year available during the period 2006-2010)
**2011 MEASURE DHS STAT compiler - http://www.statcompiler.com/

Figure 2: Expected SAM Caseload in 2012 and Prevalence of GAM in the Sahel Region



Below are the number of cases and the case fatality rate (CFR) of the main disease outbreaks in the affected countries (MoH reports):

- **Cholera**: 1463 cases and 35 deaths (CFR: 2.4%) in four of the nine countries i.e. Burkina Faso, Senegal the Niger and Nigeria (week1-22, 2012). Cholera is a major risk for displaced people living in precarious conditions with no access to clean water and poor sanitation.
- **Meningitis**: about 13 000 cases and 980 deaths (CFR: 7.6%) in Burkina Faso, Chad, the Gambia, Mali, Mauritania, Nigeria, and Senegal: week 1-22. The first two countries had districts in epidemic mode in which reactive mass campaigns were conducted. The other five countries reported cases. Most of the cases are due to Neisseria meningitides (Nm) W135, Streptococcus Pneumoniae. Neisseria meningitides (Nm) A, caused most of the cases in Chad. The meningitis season is over and cases have decreased. Preparedness interventions, such as mass vaccination with the new vaccine, will resume soon in areas not yet covered in order to protect people for the next meningitis season which will start in December.
- **Lassa fever**: 933 cases and 93 deaths (CFR: 10%) from Nigeria (week 1-22)
- **Increasing measles cases** in Cameroon, Mali, Chad, Nigeria, Senegal and the Niger (more than 36 000 cases and 260 deaths in the six countries: week 1-22; with more than 47 800 in north Cameroon, one of the food insecure areas).

Vaccination coverage rates for measles and DTP presented in Table 2-3 are still below recommended levels and only reflect national coverage.

Table 3: Baseline country indicators

		Burkina Faso	Cameroon	Chad	Gambia (the)	Mali	Mauritania	Niger (the)	Nigeria	Senegal
HDI rank(3): 187countries		181	150	183	168	175	159	186	156	155
Population (million)- 2010 (2)		16,469	19,599	11,227	1,728	15,370	3,460	15,512	158,423	12,434
Vulnerable people (March 2012 by OCHA), in million		2.85	NA	1.6	0.6	3.5	0.7	5.5	_NA	0.85
Crude death rate (per 1000 population) (2)		12	14	16	9	15	10	13	14	9
Under 5 Mortality Rate (per 1000 live births)(2)		166	136	173	98	178	111	143	143	75
Major causes of deaths in under-5 (2008)	**Malaria**	28%	19%	24%	22%	16%	6%	21%	26%	19%
	Pneumonia	18%	18%	18%	16%	21%	23%	20%	14%	17%
	Diarrhoea	16%	16%	20%	14%	22%	19%	19%	15%	14%
	Prematurity	7%	8%	6%	11%	8%	12%	7%	8%	11%
	Birth asphyxia	5%	6%	7%	8%	7%	9%	6%	8%	8%
Maternal Mortality Ratio per 100,000 births) 2009 (1) Reg:620/Global:260		560	600	1,200	400	830	550	820	840	410
Births attended by skilled health personnel (rural: R; urban) (1): 2011		R: 31% U:88%	R:44% U:84%	R: 6% U:46%	R: 43% U:83%	R: 38% U: 80%	R:39% U: 90%	R:8% U:71%	R:28% U:65%	R:33% U:85%
<5 GAM (2011 surveys)		10.2%	11.4%	15%		10.9%	10.7%	12.3%	9.7%	10.1%
<5 SAM (2011 surveys)		2.4%	3%	3.5		2.2%	1.4%	1.9%	1.9%	2.3%
% of infants with low birth weight		16	11	22 *	11	19	34	27	12	19*
DTP3		95%	84%	59%	98%	76%	64%	70%	69%	70%
Cholera cases (CFR) in 2011		20(10)	23,117 (3.6)	17,285 (2.4)	-	1,323 (4.23)	49 (3)	2,408 (2.49)	23,377 (3.12)	12 (0)
Measles cases in 2011		-	4,574 (0.6)	8,632 (1.4)	-	-	-	10,543 (0.13)		27,737 (0.13)
Meningitis cases in 2011		3,878 (15.16)	2,733 (7)	5945 (4.5)	-	430 (3.49)	-	1,214 (11.94)	1,167 (5.31)	-
Adults aged 15 to 49 HIV prevalence rate (UNAIDS, 2009)		1.2% (1-1.5%)	5.3% (4.9-5.8%)	3.4% (2.8-5.1%)	2% (1.3-2.9%)	1% (0.8-1.3%)	0.7% (0.6-0.9%)	0.8% (0.8-0.9%)	3.6% (3.3-4%)	0.9% (0.7-1%)
Health system efficiency index/191 countries		132	164	178	146	163	162	170	187	59
Physicians per 10 000 pop (latest available from 2000 (Reg: 2.3) (1)		0.6	1.9	0.4	0.4	0.5	1.3	0.2	4	0.6
Nurses and midwives per 10 000 pop (latest available from 2000 (Reg:10.9)(1)		20.8	16	2.8	5.7	3	6.7	1.4	16.1	4.2
Hospital beds (per 10 000 population) (1)(years:2004-2009)		9 (06)	15 (06)	4(05)	11 (09)	6 (08)	4(06)	3(05)	5(04)	3(08)
% of population using improved sanitation facilities 2008 (2)		11%	47%	9%	67%	36%	26%	9%	32%	51%
% of population using improved drinking water sources 2008 (2)		76	74	50	92	56	49	48	58	69

Sources: WHO World Health report 2011 and Epidemiological reports from MoHs (1); & UNICEF, State of the World's Children 2012(2); UNDP 2011 (3); West Africa Food Security and Nutrition Group (4).

In remote and food insecure areas these figures may be much lower. The number of under-fives taken for care or receiving services for common illnesses are already low at the national levels, with even lower figures in populations affected by malnutrition. Maternal mortality in the region is high, as a consequence of low rates of deliveries by skilled birth attendants.

The Sahel countries have fragile health systems with Health System efficiency rankings from 162 to 178 out of 191 countries (according to WHO's Health Systems Efficiency Index). Field visits in some of the affected countries in the region show that major constraints influencing access to essential health services are linked to:

- Weak health sector governance that affects equitable access to quality basic health services by vulnerable populations and communities. Lack of adequate health data to inform decision making and planning to address health service gaps.
- Health facilities poorly equipped with adequate drugs, medical supplies and equipment. Frequent shortages of medicines and gaps in quality and quantity of human resources in frontline services.
- Lack of community engagement and awareness about healthy behaviour to prevent diseases.
- Financial barriers to access health care for the most vulnerable populations such as women, children, elderly, those with special needs and migrants (refugees, IDPs)

In the current context, these underperforming health systems are unlikely to be able to adapt to a significant increase in morbidity from the nutrition crisis. To reduce avoidable morbidity and mortality in the immediate and long term, governments require urgent support including resources to scale up their health systems to manage the current and emerging situation and to lead the coordination of national, sub-national and local efforts, together with the international community. The recurrent nature of droughts, food insecurity, epidemics and other emergencies in the sub-region also requires more resilient health systems and stronger capacities at country and community levels to reduce risks, and to respond and recover from emergency situations.

Health Sector Strategy

The Regional Health Strategy provides a framework for of the implementation of health sector response plans and complements food and nutrition and other relevant response strategies for the Sahel crisis. It aims to address the gaps and needs identified in multi-country assessments conducted by WHO and partners in the Sahel.

Identified Needs and Gaps

WHO conducted an assessment of national health needs and gaps in conjunction with the governments of the affected countries (Joint MoH, WHO and partners in Cameroon, Mauritania and the Niger in March 2012).

At the beginning of the crisis, the majority of the country response plans did not include health as a component of the overall response strategy. The crisis was largely being seen as a food security and nutrition crisis, while the very significant health dimension was underappreciated.

Given the similarity of the countries' epidemiological profile, health system performance and magnitude of food deficit, the following common health gaps and challenges were identified:

- Inadequate policy framework and strategies for health sector response. Resources allocated by governments limit health system capacity to respond and manage emergency health risks;
- Lack of adequate preparedness and contingency planning by the health sector for this crisis;
- Shortages in medical equipment and supplies;
- Insufficient availability and quantity of qualified health workers, especially those with the ability to manage SAM;
- Limited access to basic health care for target populations especially in rural and heavily affected areas;
- Inadequate information management including data collection, analysis and information use for timely and appropriate action;
- Weak in-country and cross country coordination, including intra and inter-sectoral coordination;
- Lack of participation, risk awareness and community mobilization
- User fees charged in several settings which can further reduce access to lifesaving interventions for target populations, who are already financially overstretched in securing food.

Detailed needs specified by country are included in the table in Annex I.

Target Population

Health interventions will focus on populations targeted for nutrition interventions at the facility and community levels (this may vary in scope according to context).

- Malnourished children and pregnant and lactating women seeking care at health facilities including feeding centers and schools.
- Families and communities in areas targeted for nutrition interventions
- People affected by the conflict (refugees, internally displaced people and host communities) that are residing in areas targeted for nutrition interventions

Table 4: Beneficiaries targeted for health interventions

Country	Population Affected (OCHA: 29, March 2012)	Beneficiaries (IASC: Food sec & Nut)	Expected # MAM caseload	Expected # SAM caseload	Expected # of SAM with medical complications	Malian Refugees/IDPs (05/04/12)
Burkina	2,060,000	570,000	101,000	99,178	9,918	23,437
Cameroon	350,000	190,000	91,000	55,119	5,512	
Chad	3,600,000	1,950,000	300,000	127,300	12,730	
Gambia (the)	241,000	428,000				
Mali (IDPs)	4,600,000	1,130,000	175,000	175,000	11,068	93,433
Mauritania	700,000	520,000	40,000	12,600	1,260	48,033
Niger (the) refugees and returnees	6,400,000	3,730,000	725,000	331,000	33,100	27,382
Nigeria	Unavailable	-	559,000	207,718	20,771	
Senegal	740,000	690,000	68,000	20,000	2,000	
Algeria		-	-	-	-	30,000
TOTAL (data available)	18,691,000	9,208,000	2,059,00	1,027,915	96,360	222,285

Objectives and interventions

Overall Goal: Reduce excess morbidity and mortality in populations affected by the food security and nutrition crisis.

Strategic objectives and interventions

The strategy aims at prioritizing, accelerating and expanding access to essential health services in target areas to respond urgently to the crisis, while integrating strategic approaches and interventions that build the longer-term resilience of health systems and communities. The strategy is to be guided by the following key principles.

Key principles applicable to interventions:

1. Building the capacity of existing health systems and services, thereby improving flexibility and avoiding parallel systems
2. Strengthening priority community-level services
3. Linking emergency response to long term development (partners and programs), prioritizing health and nutrition preventive and curative interventions according to the Integrated Food Security Phase Classification (IPC) phases in order to build the health system and community resilience to face public health risks.
4. Integrating health interventions in a multi-sector approach (i.e WASH, nutrition, protection, education)
5. Integrating active community participation in the planning, implementation and monitoring of the health response
6. Planning and implementing gender-responsive priority services taking into account the special needs of the women, girls, men and boys

The following strategic objectives and interventions are aimed at the defined target populations.

Strategic Objective 1: Accelerate priority lifesaving health services targeting populations affected by the nutrition crisis

1. Basic health services

Key Interventions:

Increase access to services

- Plan with governments and provide resources to remove user fees for pregnant women and children under five years old during the period of the crisis (equity funds, third-party payments, etc).
- Provide a referral system and transport for individuals with severe disease and to assist displaced populations in the affected areas.

Preventive interventions

- Vaccinate children aged six months – five years for measles (adjust age according to context) at minimum. Continue vaccination for DPT3/Penta for ages 12 - 23 months. Add polio to campaigns according to the national context.
- Provide vitamin A and deworming through health services or campaigns
- Distribute long-lasting insecticide treated nets (LLINs) to families (according to national context)

Capacity building for effective health care

- Disseminate guidelines and tools for the management of major causes of illness and death (Integrated Management of Child Illness - IMCI, Integrated Community Case management of Childhood Illness - ICCM)
- Train and supervise health workers and provide supplies for essential newborn care and targeted services for lactating and pregnant women
- Train and supervise health workers and provide supplies to detect, report and respond to epidemic-prone diseases filling gaps in the Integrated Diseases Surveillance and Response (IDSR) and Early Warning systems.
- Train and supervise health workers at facility and community levels to provide health and hygiene promotion messages on infectious disease prevention, including HIV

Medical supplies

- Provide essential drugs to health facilities, or through outreach activities at minimum, for the treatment of the main killers of children (antibiotics for pneumonia, ORS/zinc for diarrhea, RDT/ACT for malaria, mebendozole and vaccines and supplies for the management of acute malnutrition in coordination/gap filling with the Nutrition Cluster
- Provide medical supplies to avoid disruption of chronic illness prevention and management, (i.e. ART/OI, PMTCT, and testing for HIV in children that are not responding to SAM treatment).
- Fill gaps in national stocks of supplies to respond to outbreaks in target areas according risk and needs

2. Specialized health services for medical complications of Severe Acute Malnutrition

Key Interventions:

Increase access to services

- Support health worker deployment to ensure proper emergency services (24/7) availability for SAM with medical complications

Capacity building for effective health care

- Train and supervise health workers in the management the medical complications of severe acute malnutrition (SAM), in coordination with UNICEF and NGOs working in the Nutrition sector.

- Train and supervise health workers, including community-based health workers, in the assessment, treatment and referral on the main causes of illness and death related to malnutrition, such as measles, diarrhoea and malaria, in coordination with UNICEF and NGOs working in the Nutrition sector.

- Disseminate guidelines and tools for the management of medical complications of SAM

Medical supplies

- Provide medical supplies and equipment to provide specialized emergency care to treat SAM with medical complications

Improving the coverage of health preventive interventions and adopting specific and innovative approaches for health services delivery (mobile and outreach strategies) for the whole system (solar power for cold chain, accommodation and other incentives for health workers, etc), will contribute to building resilience.

Strategic Objective 2: Coordinate health sector response to health and nutrition crises

Key Interventions:

At country level:

- Map health partners' activities (who is doing what where)
- Activate or strengthen national and trans-national coordination mechanisms for the health sector
- Participate in national multi-sectoral coordination mechanisms - at minimum with the Nutrition cluster/sector
- Conduct joint needs assessments including risks of epidemics (initial and on a regular basis) to identify needs and gaps in health services, resources and supplies
- Conduct joint planning including the development of a joint action/operational/contingency plans outlining roles and responsibilities of all partners

At regional level:

- Compile health situation and analyze regional gaps including cross border issues
- Conduct joint planning, monitoring and evaluation of the health situation at the regional level through the Regional Emergency Health Group

Strategic Objective 3: Manage relevant health information to guide action

Key Interventions:

At country level:

- Develop a list of key measurable indicators to monitor the progress of health interventions with governments and key partners using, where possible, the national HIS/surveillance/EWARN systems
- Where there is no EWARN system in the affected area, support the government to put this in place. Integrate nutrition data where not already in the national integrated diseases surveillance system (IDSR) as in Chad and the Niger
- Provide regular updates on selected indicators (timing may vary, daily if there is an outbreak) to inform and adjust health programs accordingly including stocks of supplies from collected and analyzed data.
- Produce health sector information/epidemiologic bulletins highlighting disease trends and priority health actions and disseminate regularly (e.g. national bulletins)
- Use key indicators and health situation analysis to develop advocacy statements to mobilize governments and donors to allocate resources for the health aspects of the nutrition crisis
- Provide key health messages to integrate into the national risk communications and social mobilization strategies developed for the nutrition crisis: providing information to affected communities
- Use health related and disaster management information to develop a preparedness plan and resilience strategies.

At regional level:

- Design and implement a regional database to monitor health trends and systematically gather lessons learned in coordination with the Nutrition Sector.
- Provide regular updates on selected indicators in the region
- Produce health sector information/epidemiologic bulletins highlighting disease trends and priority health actions and disseminate regularly (e.g. regional bulletins)
- Conduct a joint real time evaluation (RTE) of the health sector response at three and six months

Monitoring and evaluation

In each country, data will be collected from the Integrated Disease Surveillance and Response (ISDR) and Health Information Management Systems (HIMS) or any other relevant contextualized/innovative data collection mechanisms involving all stakeholders to feed into a database for Monitoring and Evaluation purposes. The Health cluster/sector in each country will develop its own process to monitor and evaluate

health interventions against set priorities and needs using key indicators mentioned below.

At regional level, data from countries will be aggregated in a regional database and analyzed to guide decision-making processes for better support to countries.

Table 5: Key Indicators

Indicators	Data Source
IMPACT/OUTCOME INDICATORS	
▪ Case fatality rate of selected communicable diseases: cholera, measles, pneumonia, meningitis, diarrhea, malaria ▪ CFR of SAM patients treated in health facilities ▪ Attack rate of selected communicable diseases	▪ Health facilities MOH ▪ NGOs involved in health care ▪ Nutrition surveys and surveillance reports ▪ Retrospective mortality surveys ▪ Specific mortality surveillance systems
OUTPUT INDICATORS	
▪ Number of OPD visit/person/year ▪ Measles vaccination coverage rates Coverage of mass-prevention campaign, e.g. measles vaccination among children six months to five years, ▪ Number of bed nets distributed to affected populations ▪ Number of children who received one dose of (1) deworming, (2) Vit. A, etc.	• HMIS/IDSR reports • Measles vaccination coverage reports • Supervision and monitoring reports • Training reports • Health facility data
PROCESS INDICATORS	
▪ Number of under five children with SAM and medical complications treated in Stabilization Centre ▪ Number of people covered by essential drugs (emergency kits), vaccines per affected districts ▪ Percentage of disease surveillance reports submitted on time weekly (timeliness) and percentage of reports received out of the reporting sites (completeness):target above 80% ▪ Numbers of Health workers (MD, Nurses) trained in SAM management	▪ Assessment reports ▪ EWARN supervision and monitoring reports ▪ Minutes of coordination meetings ▪ Sitreps and Health Cluster bulletins

Financial requirements for health sector actors active in the Sahel crisis

CAP: Health Appeals funding requirements versus funding received (source OCHA-FTS 18-June-2012)

	Appeal date	Requirements (US$)	Funding (US$)	Unmet requirement (US$)	% Covered
Burkina Faso	15-Apr-12	5,381,330	2,551,412	2,829,918	47%
Chad	14-Dec-11	22,969,612	4,306,330	18,663,282	19%
Mali (in process, need: about US$ 13 million)	31-May-12	9,472,083	0		0%
Mauritania	15-Apr-12	4,617,300	192,611	4,424,689	4%
Niger (the)	14-Dec-11	13,106,968	3,414,129	9,692,839	26%
Gambia (the)	No Appeal				
Senegal	No Appeal				
Cameroon	No Appeal				
Nigeria	No Appeal				
Regional Coordination	No Appeal				
TOTAL		**US$ 46,075,210**	**US$ 9,410,901**	**US$ 36,664,309**	**19%**

Annex I: Country situation analysis

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities
Burkina Faso	• Total Population affected: 2.85 million • Food insecure areas about 16 provinces , mainly Yagh, Sèno, Oudalan and Soum • Refugees : mainly Oudalan (Idanabo & Gendafabou & Soum (Djibo) provinces . • Global Acute Malnutrition (GAM): 13.4% in Mouhoun region	• Ongoing meningitis outbreak due to Nm W135 (64%) and S.pneumoniae (22%): decreasing, 5,714 cases, 613 deaths (CFR: 10.72%), week 1-21 • Measles: 55,442 cases and 27 deaths (CFR: 0.4%), week 1-21 33.5% of case <5 years and 35% > 15 years. • Major causes of morbidity in children under five include: malaria (28%), Acute Respiratory Infection (ARI) (18%), diarrhoea (16%) and measles • Nine hospital beds, 0.6 medical doctors and 21 nurses per 10 000 population, (National average, 2006: WHO World Health report 2011)	Through CERF for refugees • Procuring medical kits and other medical supplies • Support the deployment of additional staff in health centres • Briefing health workers on management of common diseases, including acute malnutrition with medical complications and psychological stress, based on national guidelines and protocols • Strengthening disease surveillance in health districts hosting refugees • Supporting immunization campaigns against measles and meningitis • Support community sensitization for disease prevention • Support immunization campaigns against measles and meningitis	Scaling up ongoing interventions for local populations suffering from food insecurity: Disease burden • Procure drugs (kits) and other medical supplies for health care facilities • Support deployment of additional staff in health centres Severe acute malnutrition • Brief health workers on management of common diseases, including acute malnutrition with medical complications and psychological stress, based on national guidelines and protocols Prevent and control disease outbreaks • Strengthen disease and nutrition surveillance and EWARN systems in health districts hosting refugees • Preposition medical supplies for the control of communicable diseases • Support community sensitization for disease prevention Mitigating health impact of the crisis • Health risk assessment and contingency planning • Strengthen health coordination mechanisms with MoH (resources for field visits and eventual presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities
Cameroon	• Total population in affected regions (North and Far North): 5 891 785 people (1 184 249 children under five years old and 324 048 pregnant women). • GAM: 12.4% (9.8 to 15.1) in the region of the Far North; 9.6% (6.8 to 12.5) in the North. • Prevalence of malnutrition among women, 15.2% (12.1 to 18.4) in the North; 21.4% (17.4 to 27.5) in the Far North.	• Measles epidemics affecting 21 of the 43 health districts (43.8% in affected regions) Most of the reported cases were in age group above five years • There have been 7,801 cases of measles, with 42 deaths (CFR: 0.53%) as of week 1-21 (about 64% of cases in food insecure areas). • Risk of cholera due to poor access to water; Lassa fever (ongoing in Nigeria) and polio • Low routine immunization coverage (<70%); deworming (39.1%); and use of ITNs (8.7% in children and 5.7% among women). • Major causes of child morbidity: malaria (19%), ARI(18%), diarrhoea (16%), measles; increasing number of ARI cases related to the dry season • Fifteen hospital beds, 1.9 medical doctors and 16 nurses per 10 000 population (National average, 2006) • Detection rate of SAM cases is only 47% due to lack of financial resources (medicine, laboratory, Rx exams)	• Nutritional status evaluation in the two regions by the Ministry of Public Health • WFP started food distribution in the most affected area (Far North region) • Surveillance system assessed to address gaps • Planning for mass immunization campaign against polio coupled with measles (11-16 April), with partners: UNICEF, MSF, Lions club, Red Cross and Plan Cameroun • Setting up Toll-Free Numbers in affected districts (2 regions) to improve data collection for EWARN and surveillance system. • A network of 835 community workers for malnutrition case detection and referral to nutrition and health facilities • Review of nutrition data collection tools • Nutrition survey planned by MSF during the immunization campaign • immunization campaign for measles(with contribution from NGO partners) : 1,300,026 people immunized (104,85% of the target)	Disease burden • Support for the prevention and management of measles cases and infectious diseases associated or linked to malnutrition (guidelines and medical supplies). Prevent and control disease outbreaks • Strengthen disease and nutrition surveillance and EWARN systems • Preposition medical supplies for the control of communicable diseases. Severe Acute Malnutrition • Strengthen integrated management of SAM cases with medical complications with medical supplies provision staff training and deployment) Coordinated health interventions • Strengthen health coordination mechanisms with MoH (resources for field visits and eventual presence) • Preposition medical supplies for the control of communicable diseases

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities

Chad	• Total Population in affected regions: 6 035 253 people
	  • < 5 years: 1 098 416
	  • Pregnant Women: 196 150
	• Most affected regions**:** Kanem, Barh El Gazel, Batha, Wadi Fira, Hadjer Lamis, and Salamat
	• IDPs: 69 000 not resettled
	• Refugees: 274 640 Sudanese; 67 863 Central African Republic
	• Returnees: 800 from Nigeria
	• GAM above 15% (in seven affected regions)
	• SAM: Batha,4.6%; Wadi Fira, 4.6%; Sila, 5%;
	• Expected cases of SAM : 127 300
	• Expected SAM with medical complications: 25 460
		• Recurrent outbreaks: meningitis, measles and cholera
		• Ongoing meningitis (NmA) outbreaks: 3,716 cases and 154 deaths: week 1-20 (CFR: 4.1%)
		• Measles cases: 7,127 cases and 51 deaths (CFR: 0.7%), week1- 20
		• GAM cases registered in health facilities: 50758,week 1-20
		• SAM cases registered in health facilities :24,332, week1-20
		• Major causes of child morbidity: Malaria (24%), diarrhoea (20%), ARI (18%)
		• Four hospital beds, 0.4 medical doctors and 2.8 nurses per 10 000 population (National average, 2005).
			• Health situation monitoring (Ministry of Health with partners support)
			• Support to MoH for the meningitis and measles outbreaks: medical and laboratory supplies prepositioned in 15 Districts; immunization in Bedjondo and Goundi Districts
			• Mass immunization campaign against measles and polio (target: children six to 59 months), in January 2012
			• Strengthened integrated disease and nutrition surveillance in affected districts
			• Provision of medicines and other medical supplies to health facilities to districts at high risk for cholera
			• Two mobile clinics for remote areas not covered by health centers (Kanem and Bahr El Ghazal regions)
			• Support to nutrition surveillance in 10 regions of the Sahel Belt
			• Support to reactive mass campaigns for meningitis (1,170,000 doses MenA mobilized by WHO and health partners for campaigns in 8 Districts)
			• NGOS supporting meningitis case management
				Disease burden
				• Support the deployment of mobile teams
				• Support the deployment of health workers to increase access to health care
				Prevent and control disease outbreaks
				• Strengthen disease and nutrition surveillance and EWARN systems (10 regions of Sahel belt)
				• Respond to the meningitis and measles outbreak
				• Preposition medical supplies for the control of communicable diseases
				Severe Acute Malnutrition
				• Provision of medical supplies to manage malnutrition and related illnesses in 22 health facilities
				• Training health staff in the management of medical complications of acute malnutrition and IMCI (five regions)
				• Recruitment of one Medical Nutrition Expert to support MoH
				Coordinated health interventions
				• Strengthen health coordination mechanisms with MoH (resources for field visit and eventual field presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities
Gambia (the)	• Vulnerable population: 605 000 children under five:102 800 • Most affected:428 000 • Vulnerable districts: 25 • 19 most affected districts in the affected regions	• Major causes of child morbidity: Malaria (22%), ARI (16%), Diarrhea (14%), • 11 Hospital beds , 0.4 medical doctors and 5.7 nurses per 10 000 population (national, 2009) • Meningitis outbreaks in Fulladu West District (past epidemic threshold):165 cases/9 deaths (CFR: 5.5%) as of week 20	• Response plan developed and CERF allocated • Support to disease surveillance • Support to integrated management	Disease burden • Support the deployment of health workers to increase access to health care • Provision of essential medicine (kits) Prevent and control disease outbreaks • Strengthening disease surveillance and EWARN (19 most affected districts) • Support response to the meningitis outbreak. • Preposition medical supplies for outbreak response Severe Acute Malnutrition • Provision of medical supplies to manage malnutrition and related illnesses • Training health staff in the management of medical complications of acute malnutrition and IMCI Coordinated health interventions • Strengthen health coordination mechanisms with MoH (resources for field visits and eventual field presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Gaps/Needs
Mali	• Most affected regions are Kidal, Gao, Tombouctou, Mopti and Ségou (5 693 261 people). • IDPs: Kidal, Tombouctou, Gao; 93 000 people • Situation deteriorating in regions affected by food insecurity and population movement: Tombouctou and Gao • 35 health districts affected by food insecurity • Food insecurity: Kayes (Under 5 GAM: 13%; SAM: 2.9%); Koulikoro (GAM: 13.2%, SAM: 2.8%); Tombouctou (GAM: 16%, SAM: 3.4%), Gao (GAM: 15.2 %, SAM: 2.9%) (MoH, 2011)	• Recurrent outbreaks: meningitis, measles, cholera, • Risk of yellow fever (case in 2010) • 2011: Anthrax in Tombouctou, 25 cases/ 6 deaths; cholera in five regions, 1303 cases/ 55 deaths. • 2012: Meningitis cases (Nm W135): week 1-21: 520 cases 6 deaths (CFR: 1.15%); measles: 315 cumulative cases and 5 deaths (week1-21) • Measles vaccination coverage: 63%; DTP3 : 76% (national) • Major causes of child morbidity in general: diarrhoea (22%), ARI (21%), malaria (16%) • MOH survey in 2010 showed malaria prevalence in children between 6-59 months of age was 37.5%. In rural areas, the prevalence was even higher with 44.6%. • There are six hospital beds, 0.5 medical doctors and three nurses per 10 000 population (National average, 2008)	• Health cluster activated and Health Cluster Coordinator deployed • Support to health care for IDPs (NGOs) • Rapid assessment planned in Tombouctou • Medical supplies provision in process (WHO) • Strengthening disease surveillance	Disease burden • Support the deployment of health workers to increase access to health care (in IDP areas) • Provision of essential medicine (kits) Prevent and control disease outbreaks • Strengthening disease surveillance and EWARN • Support response to the meningitis outbreak. • Preposition medical supplies for outbreak response Severe Acute Malnutrition • Provision of medical supplies to manage malnutrition and related illnesses • Training health staff in the management of medical complications of acute malnutrition and IMCI Coordinated health interventions • Strengthen health coordination mechanisms with MoH (resources for field visits and eventual field presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Gaps/Needs
Mauritania	• 700 000 people in food insecure areas with 520 000 in need of assistance • 39 489 refugees: Hodh El Chargu region (Fassala, Mbérra, Kobeni and Tenaha) • GAM >15% in four regions Assaba (15.3%), Gorgol (15.7%), Brakna (18%), Guidimakha (15%). In the December SMART survey prevalence showed lower prevalence except in Bakna (12.5%) and Gorgol (11%). However, the worsening food security situation may increase GAM as usual during the lean season. • GAM > 14% in 3 regions and GAM> 10% in the remaining 5 regions (SMART July 2011)	• Access to health services: 67% of the population in affected regions • Measles vaccination coverage: 66% and DTC3: 79% in refugees' region; • Immunization coverage low in Malian refugees leaving in remote areas of Mali • Recurrent outbreaks: Remaining risk of meningitis, measles, cholera, RIFT valley fever, Congo Crimean fever outbreaks • Meningitis: 37 cases (W135) in 4 regions (including refugee area), week 1-21. • Communicable diseases: Malaria • ARI (21.4%), malaria (20.9%), diarrhoea (10.4%), anaemia (4.2%) at the refugee health screening center. • Major causes of child morbidity in general: ARI (23%), diarrhoea (19%), malaria 6%) • There are four hospital beds, 1.3 medical doctors and 6.7 nurses per 10 000 population (national, 2006) • One medical doctor for 43 000 people in the referral district hospital in the refugees' area (field assessment report) • Birth attended by skilled professionals: 34% in refugees' areas Critical water and sanitation gaps that could trigger disease outbreaks. Main cause of consultation for refugees is diarrhoea (assessment report)	• Support to initial health assessment in refugees' area • Technical support to MoH for disease surveillance, immunization activities and health promotion activities in refugees' area • Immunization campaign against measles and polio 19/05 to25/5/2012 in refugee camps and host population in Bassiknou District: For the Camps Polio Vaccine: 19,093 kids/ with 10,933 refugees (coverage 89.4%); Measles vaccine: 32,255 kids with 23,390 among refugees (Coverage 83.3%). For the all district of Bassiknou: Polio vaccine coverage reached: 102.6% Measles vaccine: 96.5%. • Support to health staff deployment • Provision of drugs, medical supplies and cold chain equipment to the MoH • Support to coordination (UNCT and health coordination) • Immunization campaign : polio with EPI • NGOs involved in the health response with UNHCR	Disease burden • Improve access to essential health care for refugees (referral level) and local population: medical supplies and equipment (including lab), staff deployment and support to ambulance service in refugees' areas: Hodh El Chargu (Fassala, Mbérra, Kobeni and Tenaha) Prevent and control disease outbreaks • Strengthen prevention: vaccination coverage (immunization of all refugees) with coming polio campaign); health and hygiene promotion with WASH partners: water quality control and improvement of access to potable water and sanitation facilities. • Strengthen disease and nutrition surveillance: integrating hospital based screening data to disease surveillance Severe Acute Malnutrition • Strengthen SAM case management in therapeutic centres (CRENI, CRENAS) in the Assaba, Gorgol, Brakna and Guidimakha Coordinated health interventions • Support for continuous situation monitoring • Strengthen health coordination mechanisms with MoH (resources for field visit and eventual presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities

Niger (the)	• Six million people affected by the food crisis.
	• Tillabéri region the most affected: highest food insecurity and global acute malnutrition prevalence. This region is also hosting Malian refugees and facing a cholera outbreak for the past year
	• Refugees in three health districts (DS) and in four main sites:
	  • DS Tillabéri (Ayorou: 3940),
	  • DS Ouallam (Sinegodar: 13 005, Mangaize: 2998),
	  • DS Filingue (Abala: 8915).
	• Influx of returnees and refugees from Côte d'Ivoire, Libya and Mali
	• Tillaberi with 14.8% GAM, 35.4% of households with food insecurity;
	
	• A total of 122 335 SAM cases in children under five with 100 related deaths reported by health facilities from week 1 - 11
	• Expected cases In 2012:
	  614 116 cases of GAM;
	  393 737 cases of SAM; 65 600 cases of SAM with medical complications
		• Ongoing cholera outbreaks: 1,054 cases and 27deaths (CFR: 2.6%), week1-21; initially in Tilaberi region and has spread to Niamey and Dosso regions
		• Increasing measles cases: 1,336 cases/5deaths (CFR: 04%), at week 1-21.
		• Meningitis: 220 cases and 36 deaths (CFR:16.3%), at week1-20 versus 1,131 cases and 126 deaths in 2011
		• Guinea worm prevalent in areas where refugees are coming from (Gao region: 12 of the 30 worldwide cases in 2011)
		• Communicable diseases: malaria
		• GAM cases in health facilities: 16,955 cases at week 21 compared to 19,489 cases at week 20; cumulative case on 293,298 cases7212 deaths, with 100,124 of SAM, week1-21
		• Major causes of child morbidity: malaria (21%); ARI (20%); diarrhea (19%):
		• Three hospital beds, 0.2 medical doctors and 1.4 Nurse per 10 000 population (national, 2005)
			• Supporting coordination (Health cluster)
			• Joint needs assessment completed in crisis affected areas
			• Support to cholera outbreak control interventions: epidemic crisis committee coordination, medical and laboratory supplies, health promotion
			• Provision of emergency kits for refugees
			• Strengthening disease surveillance
			• WHO, MoH and NGOs supporting health care in Sinegodar and Mangaize district. UNHCR also supporting refugee health care in Ouallam
				Disease burden
				• Support the deployment of mobile teams
				• Support the deployment of health workers to increase access to health care including reproductive health
				• Support to mobile clinics
				Prevent and control disease outbreaks
				• Strengthen disease surveillance and EWARN and response (mainly in Tillaberi with refugees and ongoing cholera)
				• Respond to the meningitis and measles outbreaks
				• Preposition medical supplies for the control of communicable diseases
				• Support EPI intervention in refugee and host population
				Severe Acute Malnutrition
				• Provision of medical supplies to manage malnutrition and related illnesses: support free access to health care
				• Train health staff in the management of medical complications of acute malnutrition and IMCI coordinated health interventions
				Coordinated health interventions
				• Strengthen health coordination mechanisms with MoH (resources for field visits and eventual presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities
Nigeria	• Seven states in northern Nigeria affected: Sokoto, Katsina, Jigawa, Yobe, Zamfara, Kebbi and Kano. (Combined population: 38 576 735; of which 7 715 347 are under-five) • GAM > 10% in four states (Katsina, Sokoto, Jigawa and Yobe)	• Recurrent outbreaks of infectious diseases such as measles, cholera and meningitis in the affected states • Lassa fever: 932 cumulative cases and 92 deaths (CFR: 9.87%) (weeks 1-21) • Major causes of child morbidity: malaria (26%); diarrhoea (15%), ARI (15%), • There are five hospital beds, four medical doctors and 16.1 nurses per 10 000 population (national, 2004)	• Scaling up of Vitamin A supplementation, integrated with polio and measles immunization programmes • Improving deworming coverage • Improving coverage of feeding programmes for under-fives • Promoting improved infant and young child feeding practices • Facility-based treatment of severe acute malnutrition • Heightening nutritional and disease surveillance	Disease burden • Increase coverage of Vitamin A supplementation and deworming in most of the affected states. Prevent and control disease outbreaks • Strengthen disease surveillance and EWARN and response Severe Acute Malnutrition • Strengthen the capacity of primary healthcare workers and community volunteers on infant and young child feeding in emergencies. • Supply of therapeutic food, medications and nutrition equipment. • Strengthen nutrition programme in affected districts with joint nutrition and health interventions at community and facility level to address chronic malnutrition in children and young mothers Coordinated health interventions • Strengthen health coordination mechanisms with MoH (resources for field visit and eventual presence)

Country	Affected Areas and population	Public health Risks	On-going Response	Priorities

Senegal	• Drought affected regions : Ziguinchor, Kolda, Sédhiou, Kédougou, Tambacounda, but mainly Matam and Diourbel
	• Affected population: 850 000 Population targeted by UNCT : 237 000
	  • Women and girls 120 000
	  • Men and boys 117 000
	  • Children under five years old: 44 650
	• GAM prevalence above 15% in Saint-Louis, Matam and Louga regions, and above 10% for Tambacounda and Thiès regions (EDS5/MICS 2010-2011).
	• Diourbel is the most affected region with SAM above 10% with worsening factors: SAM at 2% (SMART 2011).
	• Stunting < 40%; but chronic under nutrition in Kédougou and Kolda with prevalence > 25%.
	Underweight < 30% but Matam and Kolda need to be monitored
		• Main cause of morbidity for children under five: ARI (due to the dry season), malaria and malnutrition in affected areas
		  • Malaria (19%), ARI (17%), diarrhoea (14%)
		• 728 meningitis (most of them, W135) cases/3 deaths (CFR: 0.41%) reported (week 1-21)
		• Cholera cases confirmed in 2011 in Bakel District in Tambacounda region (10 cases/0 deaths); 1 confirmed case so far in 2012
		• Measles coverage <70 for children 9 - 59 months in 2011, 394 suspected measles cases in 2011 in seven regions (SMART survey).
		• There are three hospital beds, 0.6 medical doctors and 4.2 nurses per 10 000 population (national, 2008)
			• Development of a joint government and partners response plan
			• SAM case management capacity assessment in existing operational structures in the most affected regions: Matam and Diourbel.
			• Increasing formative supervision (CERF, WHO and UNICEF) to improve case management in the two regions Matam and Diourbel.
			• Training of health workers not yet trained, provision of anthropometric equipment and other supplies to SAM case management to increase coverage of structures dealing with SAM
			Strengthen preventive activities for malnutrition (communication, Vit A supplementary campaigns and deworming)
				Severe Acute Malnutrition
				• Provide emergency kits for health facility-based management of SAM.
				• Support capacity building (training and formative supervisions) of health workers in health centers and hospitals (IMCI including integrated management of child illnesses with SAM and counseling in child feeding)
				Prevent and control disease outbreaks
				• Provide technical support for nutrition and disease surveillance systems in health facilities and at community level
				• Strengthen immunization activities mainly targeting measles.
				Coordinated health interventions
				• Strengthen health coordination mechanisms with MoH (resources for field visit and eventual presence)