World Health Organization

HEALTH CLUSTER

Sudan Conflict and Complex Emergency

Date: 10 March 2025

Public Health Situation Analysis (PHSA)

This is the third WHO PHSA on the Sudan crisis. This updates the September 2024 version.

Typologies of emergency	Main health threats	WHO grade	Security level (UNDSS)[1]	INFORM (2025)[2]
Conflict Food Security Displacement Epidemics	• Malnutrition • Trauma and injury • Cholera and acute watery diarrhoea • Dengue • Malaria • Measles • Non-communicable diseases • Mental health • Protection (including gender-based violence)	**Grade 3** (IASC System-Wide Scale-Up activated)	**High (5/6):** Khartoum **Substantial (4/6):**North Kordofan, Northern, River Nile, Port Sudan (Red Sea), Kassala, Gedaref, Al Jazirah, White Nile, Sennar, North Darfur, Central Darfur, East Darfur, South Kordofan, West Kordofan, South Darfur, West Darfur. **Moderate (3/6):** Blue Nile	**Risk Index (0-10):** 7.4 (Very High) **Global Ranking (1-191 countries)**: 8

SUMMARY OF CRISIS AND KEY FINDINGS

Nearly two years since the escalation of the conflict, Sudan continues to experience a humanitarian crisis of epic proportions.[3] The country faces an unprecedented humanitarian crisis, with 30.4 million people—over half the population—requiring assistance in 2025. Of the total population affected, 16 million are children. [4] The humanitarian crisis has led to a substantial health crisis.

The Sudan conflict is the world's largest and fastest-growing displacement crisis. It is also one of the largest protection crises facing the world today. An estimated 12.8 million people have been forcibly displaced as of March 2025, including over 8.8 million newly displaced internally and over 3.7 million refugees, asylum seekers, and returnees who have crossed Sudan's borders into neighbouring countries.[5]

Along with Zamzam, famine has been confirmed in additional four areas of North Darfur and is projected to hit a further five by mid-May 2025, amid a rapidly deteriorating food security situation. On top of that, an additional 17 areas of Sudan are deemed at risk of famine.[6]

Sudan ranks among the top four countries globally for the prevalence of global acute malnutrition, at an estimated 13.6%. A staggering 4.9 million children under five years, along with pregnant and nursing women, were estimated to be acutely malnourished in 2024, marking a 22% increase compared to 2023.[7] Given the high rates of malnutrition, a debilitated health system and low immunization coverage, disease outbreaks will continue to have catastrophic impacts, particularly for children.[8]

Insecurity Insight identified 542 attacks on Sudan's health care system since fighting started in April 2023 and 18 December 2024. Between April 2023 and December 2024, at least 122 health workers have been killed, and 90 have been arrested.[9] Through the WHO's Surveillance System for Attacks on Health Care (SSA), 149 attacks with 317 deaths and 273 injuries have been formally recorded between 15 April 2023 and 19 February 2025.[10] Many health facilities have been destroyed, looted, or are functioning with severe shortages of staff, medicines, vaccines, equipment, and supplies.[11]

Disease outbreaks are increasing in the face of disruptions to basic public health services, including vaccination, disease surveillance, public health laboratories, and rapid response teams.[12] Sudan accounts for 42% of the total zero-dose children in the WHO Eastern Mediterranean Region.[13] Outbreaks, including cholera, dengue, malaria, measles, diphtheria, and poliovirus type 2 (cVDPV2), are ongoing in several states.[14] However, resources and local capacities to detect and respond to outbreaks are limited, particularly in hard-to-reach areas such as the Darfur and Kordofan states,[15] leading WHO to support the introduction of Early Warning Alert and Response System (EWARS) Mobile for the Darfur states. In addition, insecurity, displacement, and limited access to medicines, medical supplies, electricity, and water, continue to pose enormous challenges to delivering health care across the country.[16]

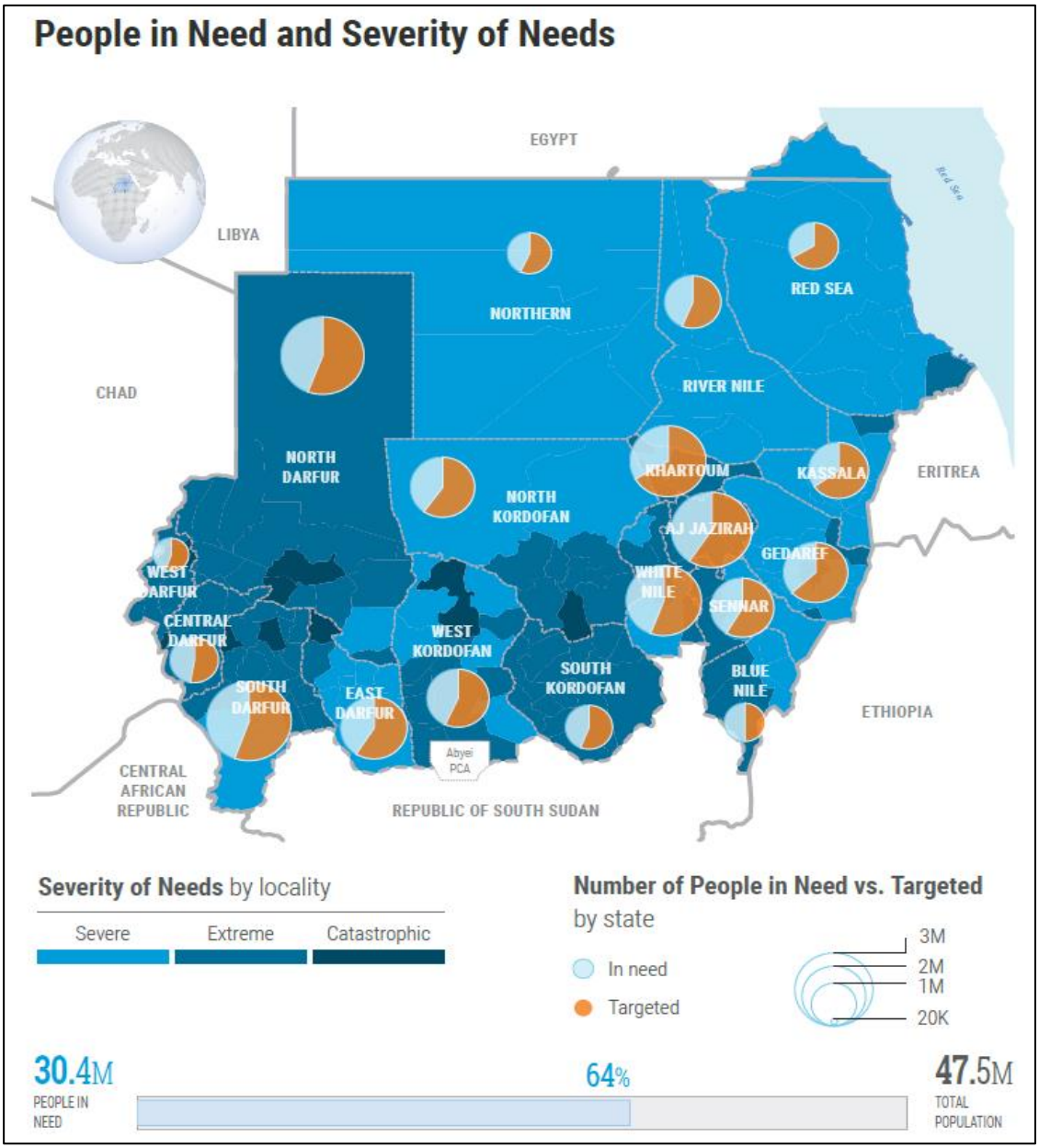

Figure 1. Intersectoral People in Need (PiN) and Severity of Needs, Humanitarian Needs Response Plan (HNRP) 2025 [17]

HUMANITARIAN PROFILE

HUMANITARIAN RESPONSE PLAN (HNRP) 2025[18]

PiN: 30.4 million

Target: 20.9 million

HEALTH NEEDS (HNRP) 2025[19]

Needs: 20.3 million

Target: 9.4 million

DISPLACEMENT SINCE APRIL 2023

12.8 million people have been forcibly displaced since April 2023, including over 8.8 million newly displaced internally.[20]

FOOD INSECURITY

Half of the population **(24.6 million people)** is facing high levels of acute food insecurity.[21]

2025 Humanitarian Needs Response Plan

Sudan faces an unprecedented humanitarian crisis, with 30.4 million people—over half the population—requiring assistance in 2025. The 2025 Humanitarian Needs Response Plan (HNRP) aims to support nearly 20.9 million of the most vulnerable individuals. The people in need comprises 14.3 million non-hosting residents (47%), 8.9 million internally displaced persons (29%), 6.4 million host community members (21%), and 0.89 million refugees (3%). Over half of those affected are children, and 50% are women and girls. [22] It seeks US$ 4.2 billion – equivalent to US$ 200 per person for the entire year, or 50 cents per day – underscoring the urgent need for unprecedented international support.[23]

Humanitarian Health Needs

Within the HNRP 2025, 20.3 million people have been identified as in need of humanitarian health assistance. Of these, 10.2 million people are women and girls, 10.6 million people are children, one million people are elderly, and 7.4 million people are internally displaced persons (IDPs). In addition, 1.1 million people are classified as having catastrophic severity of needs, with 12.4 million people and 6.6 million people with extreme and severe needs, respectively.

In six (Central Darfur, West Darfur, South Darfur, North Darfur, South Kordofan, and Blue Nile) out of 18 states, the majority of the population require humanitarian health assistance, whereas 10 (South Darfur, North Darfur, Khartoum, Al Jazirah, White Nile, North Kordofan, West Kordofan, East Darfur, Gedaref, and Sennar) out of 18 states have more than one million people in need of humanitarian health assistance.

In 2025, a total of 9.4 million people is targeted to be reached for humanitarian health assistance through 40 Health Cluster partners, requiring US$ 262.3 million.

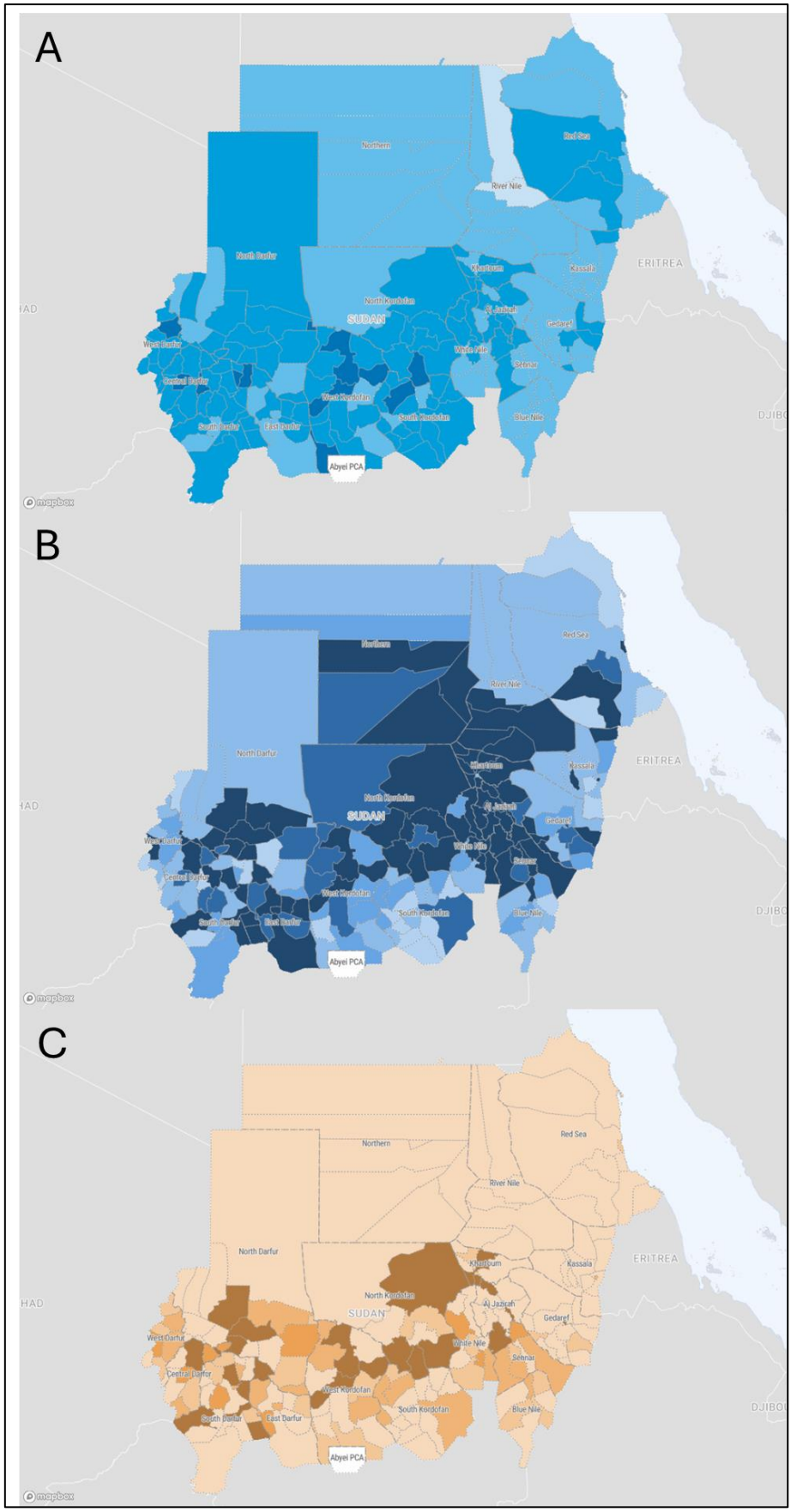

Figure 2. (A) Health Cluster Severity of Needs; (B) PiN; (C) People Targeted for Health Assistance by Locality, HNRP 2025 [24]

State | Locality	PiN	Target	% PiN to Population	% Target to PiN
Central Darfur	751.8K	665.9K	75.2%	88.6%
West Darfur	407.1K	359.4K	63.9%	88.3%
South Darfur	2.3M	1.5M	58.9%	66.7%
North Darfur	2.0M	1.4M	56.5%	70.4%
South Kordofan	632.9K	378.5K	55.9%	59.8%
Blue Nile	400.1K	225.3K	50.1%	56.3%
East Darfur	1.2M	542.8K	49.7%	46.4%
West Kordofan	1.2M	887.0K	47.8%	71.9%
River Nile	863.9K	64.1K	46.7%	7.4%
White Nile	1.3M	323.7K	43.2%	24.7%
Sennar	1.1M	498.3K	42.7%	46.2%
Northern	589.8K	47.0K	41.1%	8.0%
Gedaref	1.2M	296.6K	38.5%	25.5%
North Kordofan	1.3M	898.7K	37.3%	70.1%
Red Sea	703.4K	56.1K	34.9%	8.0%
Aj Jazirah	1.8M	340.8K	34.8%	19.1%
Khartoum	1.9M	808.0K	32.2%	42.6%
Kassala	766.4K	111.4K	29.6%	14.5%
Total	**20.3M**	**9.4M**	**43.4%**	**46.4%**

Figure 3. Health PiN, People Targeted for Health Assistance by State, HNRP 2025 [25]

Displacement

The Sudan conflict is the world's largest and fastest growing displacement crisis. It is also one of the largest protection crises facing the world today. As of 3 March 2025, an estimated 12.8 million people have been forcibly displaced. This includes over 8.8 million people newly displaced internally as of 5 February 2025 and over 3.7 million refugees, asylum seekers, and returnees who have crossed Sudan's borders into neighbouring countries as of 3 March 2025.[26]

Before the escalation of the conflict in April 2023, Sudan hosted an estimated 3.8 million IDPs. Most were displaced across the Darfur states, with many being displaced due to conflicts starting in 2003 and 2004. An estimated 29% of IDPs (more than one million IDPs) have experienced secondary or tertiary displacement after April 2023, while approximately over 2.7 million IDPs remained in their initial areas of displacement.

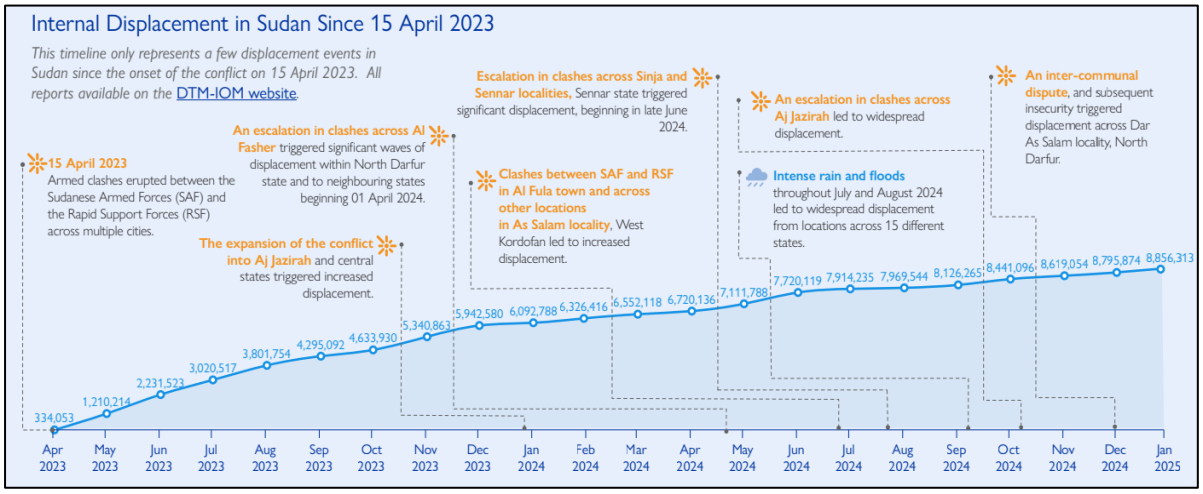

Figure 4. Timeline in Internal Displacement in Sudan since 15 April 2023 [27]

IDPs originated from all 18 states in Sudan and were displaced to 10 238 locations in 185 localities. Among them, the largest proportion have come from Khartoum (31%), South Darfur (18%), and North Darfur (15%). The highest proportion of IDPs have been hosted in South Darfur (16%), North Darfur (15%), and River Nile (9%). Over half (53%) of IDPs are reportedly children under 18-years-old.

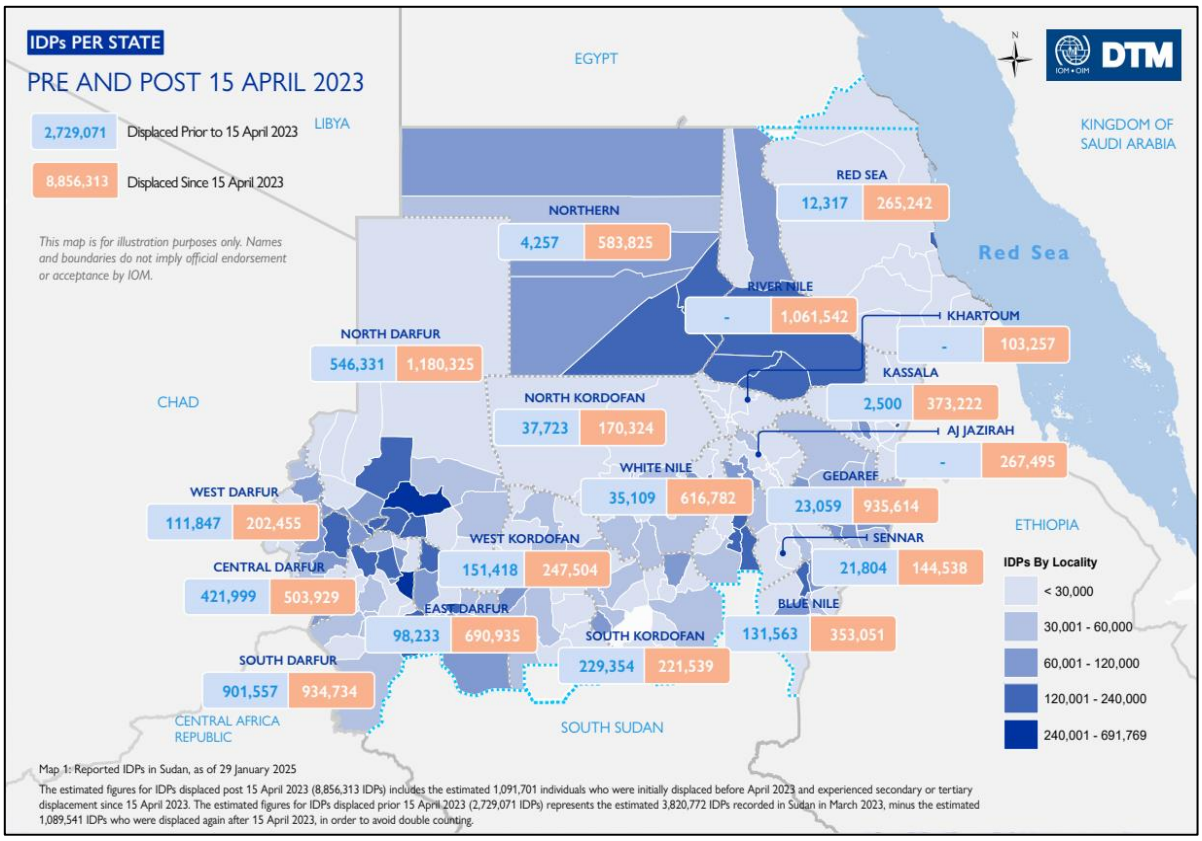

Figure 5. Reported IDPs in Sudan per State, as of 29 January 2025 [28]

Between 1 April 2024 and 31 January 2025, the International Organization for Migration (IOM)'s Displacement Tracking Matrix (DTM) reported 95 incidents that triggered sudden displacement from localities across North Darfur.[29] These incidents displaced an estimated 605 257 individuals (121 179 households). Of the total incidents reported since April 2024, 56 (59%) reportedly occurred in Al Fasher locality, North Darfur. Attacks were reported across nearly all neighbourhoods of Al Fasher town, including Abu Shock IDP camp, Saudi hospital and western neighbourhoods of Al Fasher town.[30]

Despite the ongoing conflict, Sudan's long history of generously hosting refugees persists. The country continues to have a sizeable refugee population, with 874 493 refugees and asylum seekers, making it the second largest refugee hosting country on the African continent. Since the start of the conflict, over 264 000 refugees and asylum seekers living in Sudan have been secondarily displaced.[31] The refugees hosted in Sudan mainly come from South Sudan, Eritrea, Syria, and Ethiopia, as well as the Central African Republic, Chad and Yemen, with 32% of the population living out of camps and 68% settled in the camps.[32]

Since the escalation of the conflict, Sudan has kept its border open to new refugees arriving from Ethiopia and Eritrea. The majority are located in White Nile, Kassala, and Gedaref, where they have been adversely impacted by the conflict and extreme weather events linked to climate change, including floods and drought, which destroy crops and livestock, and are likely to increase in frequency and severity.[33]

Food Insecurity

Half of the population (24.6 million people) is facing high levels of acute food insecurity.[34] The Integrated Phase Classification (IPC) has detected famine in at least five areas of Sudan, and projects that five additional areas will face famine between December 2024 and May 2025.[35] Furthermore, there is a risk of famine in 17 additional areas. This marks an unprecedented escalation of the food and nutrition crisis, driven by the devastating conflict, which has triggered unprecedented mass displacement, a

collapsing economy, the breakdown of essential social services, severe societal disruptions, and limited humanitarian access.[36] Famine (IPC Phase 5) was detected in August 2024 in Zamzam camp, North Darfur, and the famine has persisted and expanded to Al Salam and Abu shouk camps as well as the Western Nuba Mountains for the period October to November 2024. Between December 2024 and May 2025, famine is projected to expand in North Darfur localities.[37] There is a risk of famine in the Central Nuba Mountains and in areas likely to experience high influxes of IDPs in North Darfur and South Darfur.[38] These include Tawila, Nyala Janoub, Nyala Shimal, Beliel, Shattaya, As Sunta, Buram, and Kas in South Darfur, as well as Medani Al Kubra and Sharg Al Jazirah in Al Jazirah, Mayo and Alingaz in Jebel – Awilia, Khartoum, and Al Firdous in East Darfur.[39]

This latest IPC analysis shows that food insecurity is at worse levels than foreseen. Between December 2024 and May 2025, 24.6 million people face high levels of acute food insecurity (IPC Phase 3 or above). These results mark a stark increase of 3.5 million people compared to the number originally projected and correspond to over half of the population of Sudan. This includes about 15.9 million people (33%) classified in IPC Phase 3 (crisis), 8.1 million people (17%) in IPC Phase 4 (emergency), and at least 638 000 people (1%) in IPC Phase 5 (catastrophe).[40]

In several states, market functionality remains severely disrupted due to the conflict's impact on production and trade, resulting in shortages of basic goods and soaring prices. An interagency assessment revealed that physical barriers to accessing markets are extreme, with 84% of households in Blue Nile and 75% in South Kordofan reporting significant challenges. Furthermore, telecommunications disruptions have hindered the provision of multi-purpose cash assistance, a critical lifeline for vulnerable families. [41]

The conflict has decimated agricultural land, food production, and storage facilities, reducing the availability of and access to food. The destruction of agrifood processing facilities, a large percentage of which were based in Khartoum, has created a major gap in food supply across the country. [42]

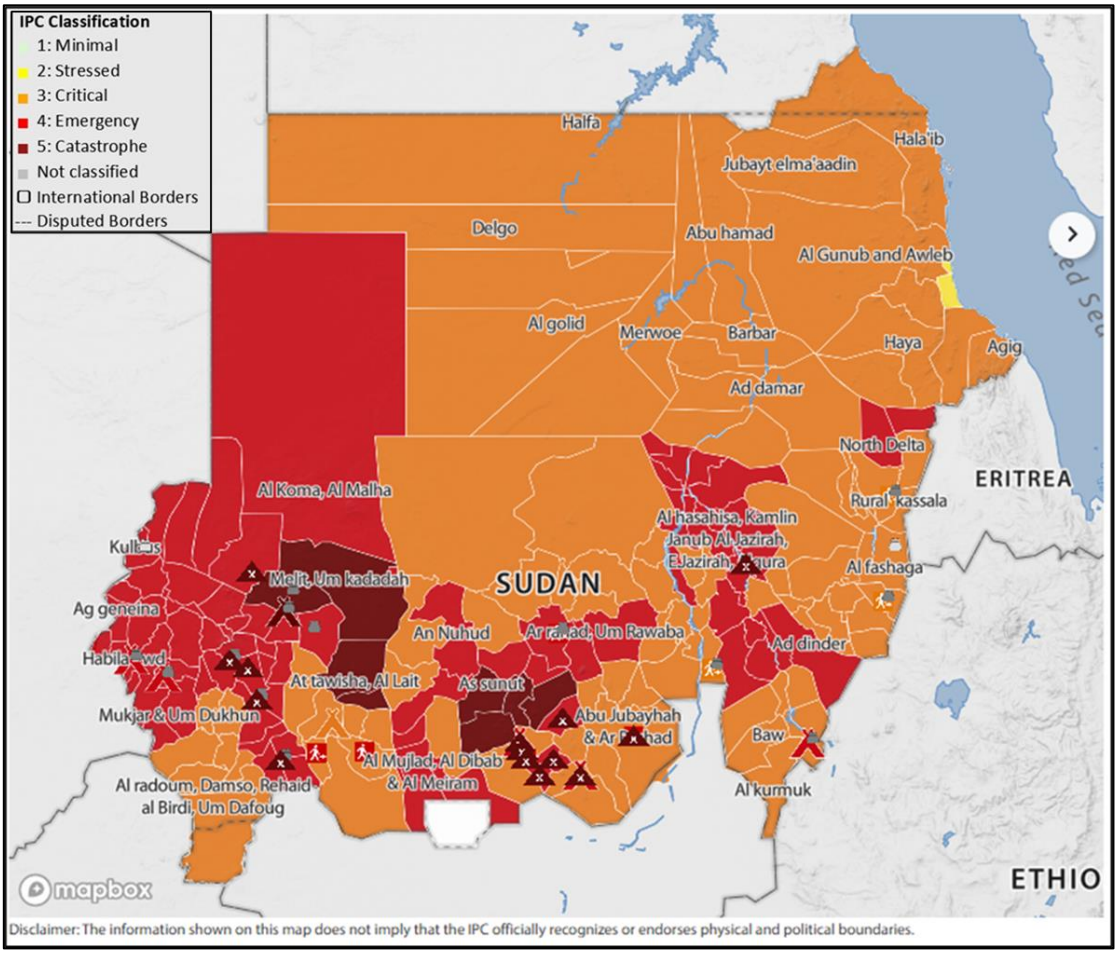

Figure 6. Sudan: Acute Food Insecurity Situation - Updated Projections and Famine Review Committee Conclusions for October 2024 to May 2025 (2nd projected in December 2024 – May 2025) [43]

Humanitarian Access

Intensified fighting and the arbitrary obstruction of humanitarian convoys are hindering the rapid and consistent movement of urgently needed aid.[44] In 2024 and in early 2025, humanitarian access in Sudan was severely hindered by disruptions at key border crossings, bureaucratic delays, and escalated insecurity, particularly in regions like Darfur and Kordofan. The prolonged closure of border crossings such as Adre and flooding at Tina limited aid delivery routes from Chad to Darfur, forcing convoys to take longer and more dangerous paths. [45]

Since launching a large-scale surge of food aid in late 2024, the World Food Programme (WFP) has pushed into hard-to-reach areas, including Zamzam Camp in North Darfur, southern Khartoum, and Gebaish in West Kordofan.[46] In January 2025, WFP even reached Wad Madani in Al Jazirah after the city became safe enough to get trucks of food and nutrition supplies through.[47] WFP reports that while new humanitarian routes have been identified to reach those in need, overall progress has been inconsistent and fragile. Efforts to reach Zamzam camp with more assistance have been thwarted by fighting and other roadblocks – challenges witnessed elsewhere in the country.[48]

MSF also reports that bureaucratic requirements from the warring parties have consistently hindered international organizations' efforts to reach and provide services to those in need.[49] Transporting supplies will become even more challenging during the upcoming rainy season, as flooded dirt roads will make it impossible to navigate.[50]

Furthermore, a national liquidity crisis has led to widespread cash shortages. WFP cash and in-kind food distributions for over four million people have been delayed for over one month due to a lack of sufficient bank notes to help pay porters to load trucks.[51] Recent efforts by Sudan’s Central Bank and Ministry of Finance to ease the crisis, and increase cash availability, have meant that WFP’s operations can gradually resume.[52]

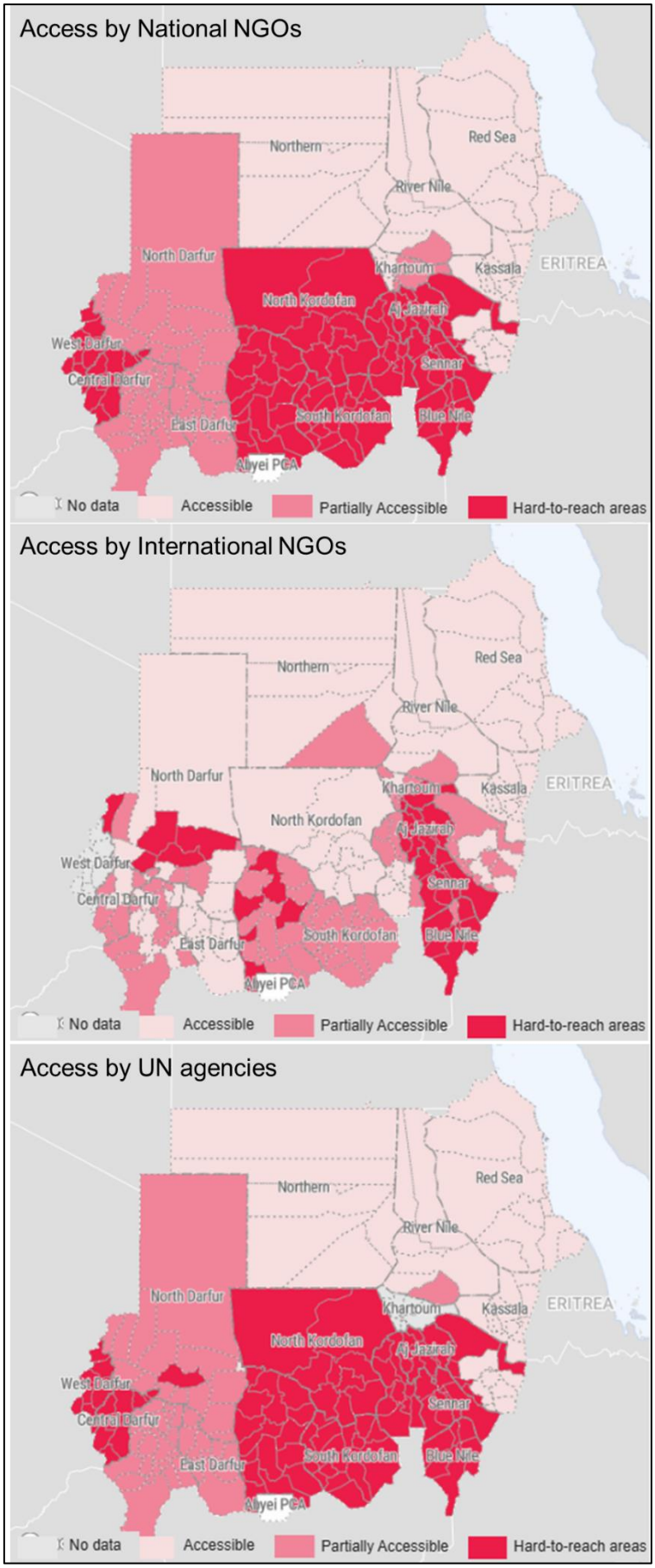

Figure 7. Sudan: Access by organization type per locality, as of June 2024, HNRP2025 [53]

Attacks Against Humanitarians

Attacks on aid workers and widespread looting of food supplies have further complicated relief efforts, leading to significant operational suspensions and increased reliance on local organisations for assistance. [54] Over 110 aid workers have been killed, injured or abducted since the conflict began in April 2023. [55] On 19 December 2024, WFP lost three team members in an aerial bombardment in Yabus, Blue Nile State.[56]

Vulnerable Groups

The scarcity of resources and limited international humanitarian aid has significantly increased the risks for vulnerable people in both host communities and amongst IDPs. [57] Those at risk include older persons, persons with disabilities, women, and girls.[58] There are also reports of targeting of individuals and communities along ethnic lines and political affiliations. [59]

The highest percentage of the population with acute needs (severity 4 and above) is found among IDPs, amounting to 84%, compared to 71% of households in the host community. Among these IDPs, 26% are in very extreme situations (severity 4+), facing potential or immediate life-threatening conditions.[60]

HEALTH STATUS AND THREATS

Population mortality: In Sudan, life expectancy at birth improved from 62.5 years in 2000 to 69.5 years in 2019, followed by a decline to 67.6 years in 2021.[61] WHO reports that for females, the top causes of death were ischaemic heart disease, neonatal conditions, stroke, lower respiratory infections, and hypertensive heart disease.[62] For males, the top causes of death were ischaemic heart disease, neonatal conditions, stroke, road injury, and lower respiratory infections.[63] However, according to the Annual Health Statistical Report 2019, the top causes of death included pneumonia (7.4%), followed by malaria (6.8%), and malignant neoplasms (4.6%).[64] This demonstrated that there have been significant challenges due to the multiple non-aligned, un-linked, and uncoordinated data systems in use. [65]

There is a lack of disaggregated data, weak capacity in data reporting, sharing, and analysis, and in using collected data for decision-making processes. Information relies heavily on population studies rather than routine data. [66] There is no active mortality surveillance system for the crisis-affected areas; few mortality surveys (in the context of SMART surveys) have been published since the start of the conflict, and even fewer from any of the most crisis-affected areas.[67]

Sudan health indicators are lagging the Millennium Development Goal (MDG) / Sustainable Development Goals (SDGs) targets. For example, Sudan continues to have high rates of child and maternal mortality. The maternal mortality ratio was 295 per 100 000 live births in 2017, while the 2015 MDG target was 134 and the 2030 SDG target is 70.[68] Health outcome disparities across states, and gender and poverty levels have not yet been addressed.[69] The under-five mortality rate is highest in East Darfur (112 per 1000 live births) and lowest in Northern (30 per 1000 live births).[70] Children living in the poorest households are twice as likely to die before their fifth birthday, compared to children from the wealthiest households.[71]

MORTALITY INDICATORS	SUDAN	YEAR	SOURCE
Life expectancy at birth	67.6 years	2021	WHO[72]
Crude mortality	7	2020	World Bank[73]
Infant mortality rate (deaths < 1 year per 1000 births)	39	2021	UNICEF[74]
Child mortality rate (deaths < 5 years per 1000 births)	54	2021	UNICEF[75]

Vaccination coverage: Before the escalation of the conflict, Sudan had witnessed a remarkable improvement in routine vaccination coverage over the prior few years. This was a result of the stable implementation of routine immunization for the prevention and control of vaccine-preventable childhood diseases.[76] The routine immunization programme in Sudan had good political support, which has been translated into modest financial support. [77]

Since the conflict began in April 2023, health infrastructure and immunization services have been disrupted. Hundreds of thousands of children have been left unvaccinated and at risk of infection from vaccine-preventable diseases, such as measles and polio. This situation is made worse by the displacement of large numbers of people.[78] Sudan, Yemen, and Syria are home to nearly 87% of the total zero-dose children in the region, with Sudan alone contributing 42% of these zero-dose children.[79]

SUDAN PRE-CONFLICT VACCINATION DATA (WHO)[80]		Regional Comparison
Diphtheria, Tetanus, and Pertussis (DTP)-containing vaccine, 1st dose (2022)	94%	80%
DTP-containing vaccine, 3rd dose (2022)	84%	72%
Polio, 3rd dose (2022)	85%	71%
Rotavirus, last dose (2022)	84%	51%
Measles-containing vaccine, 1st dose (2022)	81%	69%
Measles-containing vaccine, 2nd dose (2022)	63%	45%

COVID-19 Vaccination: A total of 29% of the population had received a vaccine by March 2023. This accounted for 12.6 million people.[81] COVID-19 vaccination was integrated into routine immunization.

Up through May 2024, unpublished reports from the national Expanded Programme on Immunization (EPI) program indicate that vaccination has reached an additional 7.7 million people. A 2023 study on vaccine hesitancy found that in Sudan, higher education levels and employment were associated with an increase in knowledge about the vaccine in around half of the participants. However, most participants had not taken the vaccine at the time of the study, and the trust in vaccines was low, with many having safety concerns.[82]

Disease outbreaks: Disease outbreaks are increasing in the face of disruptions of basic public health services, including vaccination, disease surveillance, public health laboratories, and rapid response teams.[83] Resources and local capacities to detect and respond to the multiple outbreaks ongoing in Sudan are overstretched. As of 24 February 2025, at least 11 of the 18 States in the country are simultaneously experiencing three or more outbreaks of different diseases, such as cholera, dengue, malaria, measles, and diphtheria.

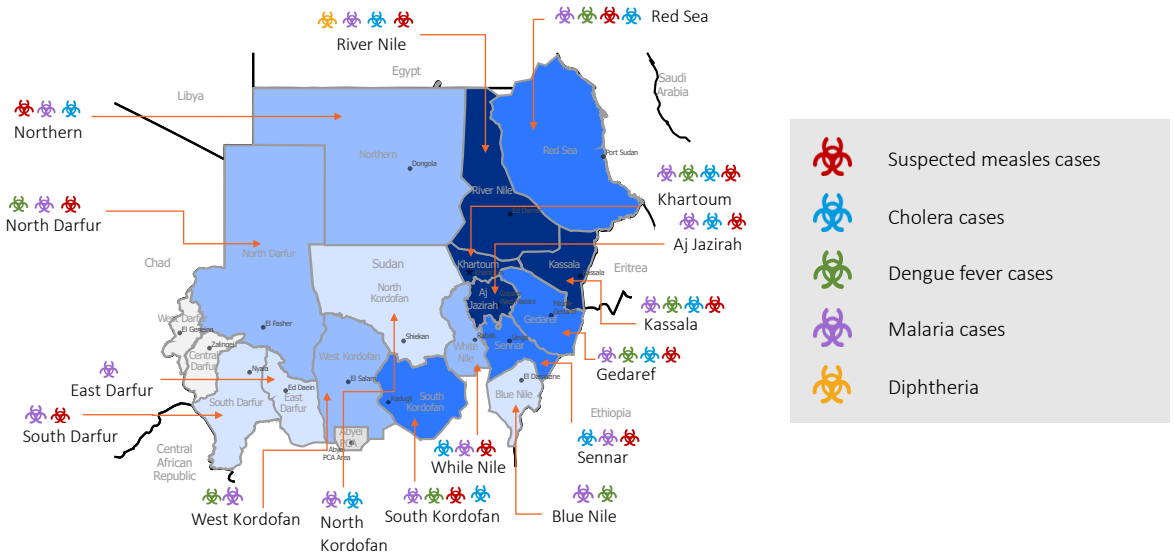

Figure 8. Reported outbreaks in Sudan, as of 24 February 2025

In addition to the implementation of the national 'Sudan EWARS,' an early warning, alert, and response surveillance system in accessible states since August 2023, the Federal Ministry of Health (FMoH) and WHO, in collaboration with Health Cluster partner agencies, have intensified efforts to introduce the emergency 'EWARS Mobile' surveillance system in hard-to-reach areas. In June 2024, a two-month pilot project was agreed for Central Darfur and East Darfur. With improved reporting completeness, active partner engagement, and over 192 000 outpatient department consultations recorded between September 2024 and 14 February 2025 through 17 partners (89%) from these States, EWARS Mobile is now being expanded to North Darfur, West Darfur, and South Darfur. Additionally, the FMoH has initiated bi-weekly meetings with partners.

SUDAN: KEY HEALTH RISKS IN THE COMING THREE – FOUR MONTHS		
Public health risk	**Level of risk**	**Rationale**
Malnutrition		Even before April 2023, Sudan had a global acute malnutrition (GAM) rate of 13.6% among children under five, ranking it among the top four countries globally for the highest GAM rates.[84] Recent nutrition surveys indicated a deteriorating situation, with 30 out of 38 SMART surveys reporting GAM levels of 15% or higher, the WHO emergency level. Notably, three surveys recorded GAM rates of 30% and above, reaching the famine threshold.[85]
Trauma and injury		Civilians continue to bear the brunt of armed violence. The fighting has led to mass displacement and appalling patterns of sexual violence against women and girls, indiscriminate bombardment of civilian areas, widespread damage and destruction of civilian infrastructure, attacks on healthcare facilities, and ethnically motivated killings.[86]
Cholera and acute watery diarrhoea (AWD)		Sudan declared a cholera outbreak in August 2024 after confirmation of toxigenic *Vibrio cholerae* in samples from Kassala in July 2024. Fuelled by heavy rains and flooding, coupled with intensified conflict, subsequent internal displacement that brought overcrowding, and lack of access to clean water in displacement sites and communities, the outbreak has spread to 12 states with 88 localities, with over 57 100 cases and 1500 deaths reported, as of 3 March 2025.[87] Oral cholera vaccination (OCV) reactive campaigns have targeted eight states, reaching 7.4 million people between 19 August 2024 and 5 January 2025.[88] Cholera has a long history in Sudan, characterized by recurrent outbreaks driven by conflict, environmental factors, inadequate water, sanitation and hygiene (WASH), and weak health infrastructure.
Dengue		The current dengue fever outbreak started in July 2024, and as of 3 March 2025, there have been 10 464 cases and 16 deaths across nine states and 36 localities. Khartoum and Kassala have been the most affected. The spread of vector-borne diseases like dengue is unsurprising, due to climate change, deterioration of routine vector control, poor waste management, and shortage of water supply. Co-occurrence of vector-borne diseases may lead to more severe illnesses.
Malaria		Malaria has remained stagnant on the list of the top ten causes of illness in Sudan, accounting for around 20% of outpatient department attendance and hospital admission in the country; hence, it remains a national health priority.[89] In November 2024, malaria vaccines were introduced for the first time in Sudan to curtail the impact of the disease. About 186 000 doses targeting 148 000 children across 15 localities in Gedaref and Blue Nile were administered. Efforts are underway to extend vaccination coverage to 129 localities.[90] In 2024, a total of more than 2.54 million malaria cases with 128 associated deaths were recorded across 16 states in the country.
Measles		The current measles outbreak began in 2023. Between January 2024 and 14 February 2025, 903 cases with 13 deaths (CFR: 1.4%) have been reported from 13 States. In addition, there have been reports of suspected measles in Central Darfur, South Darfur, and East Darfur through the EWARS Mobile system. There is low immunization coverage, particularly in hard-to-reach areas. The risk of measles outbreaks is particularly very high for mobile populations, including IDPs, refugees, and any others in camp settings. This risk is further exacerbated by limited access to vaccination.
Non-communicable diseases (NCDs)		NCDs contribute to over half of all deaths in Sudan, with specifically high burdens of rheumatic heart disease, hypertension, and diabetes.[91] The percentage of NCD-related mortality stood at 54% in 2022.[92] The current conflict has disrupted essential services and supplies of medicine. Insulin has been identified as an urgently needed medical supply.[93] Access to haemodialysis remains a challenge for patients with chronic kidney disease and acute kidney injury.
Mental health conditions		Civil wars in Sudan have been linked to an increase in mental health conditions, such as depression and post-traumatic stress disorder (PTSD), particularly among children and women.[94] No national prevalence study has

		been conducted; but high rates (53%) of psychiatric disorders have been found among IDPs. [95] Many communities throughout Sudan use traditional and religious healers to help meet their mental health needs. [96]
Protection (including gender-based violence)		With over 11 million girls, boys, women, and men in need of protection assistance, the ongoing crisis presents unprecedented risks. [97] There are reports that sexual violence, including rape, sexual slavery, forced marriage, and exploitation, continue to be used systematically by armed groups and factions involved in the conflict - not only aimed at individuals, but also used to destabilize communities, break down the social fabric, and displace populations.[98] In Khartoum, between April 2023 and June 2024, it is estimated that there were more than 26 000 deaths due to violence, significantly higher than the 20 178 injury deaths reported for the entire country.[99] Around 6.9 million women and girls, and increasingly men and boys, are at risk of gender-based violence (GBV) in Sudan.[100,101] In addition, the Sexual Exploitation and Abuse Risk Overview ranked Sudan as one of the highest sexual exploitation and abuse risk countries, with the sixth highest global index (7.2/10) out of 37 countries in humanitarian settings.
Acute enteric diseases, including typhoid and rotavirus		Acute enteric diseases are a leading cause of morbidity and mortality in Sudan, particularly in Darfur in the current context; examples include rotavirus and typhoid. Poor WASH, coupled with susceptible populations due to disrupted vaccination campaigns, remains a risk. Typhoid fever is still a major public health issue in Sudan, notably in communities with limited healthcare availability, with a high percentage of the population living in unhygienic environments, and not having access to safe water.[102] Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024 – week 2, 2025), a total of 188 757 cases of diarrhoea have been reported across 15 states. In addition, although the rotavirus 1-valent (RV-1) vaccine is part of the Sudan routine vaccination programme, vaccination remains suboptimal since the onset of the conflict.
Acute respiratory tract infections (ARTI)		Viral: Among the viral ARTI, SARS-CoV-2 transmission may be somewhat exacerbated by crowded conditions due to displacement. Increased mortality and morbidity may occur among severe cases due to a lack of access to oxygen and other lifesaving care in the context of the conflict. [103] Bacterial: Due to the conflict, vaccination coverage remains low in most areas of the country. *Haemophilus influenzae* type b (Hib), pneumococcus, and pertussis cause high morbidity, particularly among children. There have been reports of suspected pertussis outbreaks in Darfur in the period of May-August 2024. Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024 – week 2, 2025), a total of 118 suspected pertussis cases with one death were reported across seven states.
Chronic infectious diseases (TB/HIV)		For all chronic infectious diseases, interruption of treatment is likely given the ongoing conflict. Appropriate treatment is exacerbated by a current lack of diagnostic capacity.
Diphtheria		Pre-conflict in 2022, diphtheria was considered one of the high-risk hazards facing Sudan.[104] Although routine diphtheria (as part of DTP) vaccination is part of the EPI, there are still reported cases and outbreaks of diphtheria across the country.[105] Between 10 February 2024 and 14 February 2025, a total of 196 cases of diphtheria have been reported, with the highest number of cases (133) reported from River Nile, although surveillance is very limited. Access to treatment (e.g., anti-toxin) remains challenging.
Hepatitis B		Sudan is classified as a country with a high hepatitis B burden (prevalence ≥ 8%).[106] Increased risk may occur in the context of gender-based and sexual violence, and higher severity in the absence of access to healthcare for infections resulting in severe acute hepatitis.
Hepatitis E		There has been an ongoing hepatitis E outbreak in the country since 2021. Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024 – week 2, 2025), a total of 680 cases with one death were reported across six states. There is a high risk of an increase in cases, given issues with access to clean water, sanitation, and hygiene products.[107]

Maternal and neonatal health		More than one million women in Sudan are pregnant and in need of immediate and continuous access to essential reproductive health services. Among 20 million people in need of urgent life-saving humanitarian health assistance, 477 000 people are currently estimated to be pregnant, and within the next year,[108] 127 460 newborns will experience complications. Between 31 000 and 95 000 pregnant women will have complications during childbirth and require a Caesarean section.[109] The collapse of maternal services in Khartoum and in many other parts of Sudan has left thousands of Sudanese pregnant women without basic maternal health services.[110] Given the high rates of female genital mutilation (FGM) in Sudan, where 87% of women females aged 15–49 years have undergone the practice[111] and 50% of them have been infibulated, women face increased maternal and neonatal health risks due to lack of access to de-infibulation during childbirth.
Meningococcal disease		Sudan is in the African meningitis belt, and between 15 April 2023 and 9 August 2024, 155 cases were reported from 10 states, with 20 deaths from six states (CFR 10.4%); these are recorded as 'viral meningitis' but it is possible that some of these are meningococcus, as there is not systematic testing. The vaccination remains suboptimal since the onset of the conflict, and the availability of antibiotics for bacterial meningitis remains limited.
Mpox		There have been no confirmed cases from Sudan in 2024, although two suspected cases were identified in Central Darfur and Khartoum in mid-2024.[112] In addition, through EWARS Mobile, suspected mpox cases have been reported in Central Darfur (however, through the verification process, these alerts were disregarded). The recently declared mpox outbreak in South Sudan is a cause for increased concern of mpox in Sudan.
Poliovirus type 2 (cVDPV2)		In January 2024, a new strain (SUD-RED-1) of circulating vaccine-derived poliovirus type 2 (cVDPV2) was isolated from environmental samples collected from Port Sudan, Red Sea[113]; it was detected in six wastewater samples collected from September 2023 to March 2024.[114] In 2024, the second round of polio vaccination campaign was implemented in a staggered manner as access became available in 70 localities and 167 administrative units of seven accessible states in Sudan. The nOPV2 sub-national Immunization Day targeted 2 839 736 children below five years and vaccinated 3 170 853 children (112% of the target). As of 27 December 2024 (Sudan epi week 52, 2024), Sudan had reported 557 acute flaccid paralysis (AFP) cases against 612 expected annual cases. The risk of polio remains high, given the conflict, sub-optimal surveillance, disrupted vaccination, and concurrent health emergencies.[115]
Chemical hazards		There have been unverified reports of the suspected deliberate use of chemical weapons in 2024.[116]
Sudan virus disease (SVD)		No cases of SVD (one of the Ebolaviruses) have been confirmed in Sudan. However, following the outbreak of SVD in Uganda, Sudan has been strengthening preparedness efforts.
Yellow fever		Sudan belongs to the yellow fever zone, with a history of several large epidemics. According to a yellow fever risk assessment exercise in 2013, the virus circulates in all parts of the country. There have been reports of laboratory-confirmed cases from surrounding countries (e.g., Chad in October 2023, South Sudan in December 2023) as well as suspected cases, and there remains a risk of transmission that needs to be addressed with vector control.
Technological and environmental hazards		In April 2023, WHO officials initially believed it was extremely dangerous when one side in the conflict seized the National Public Health Laboratory and asked technicians to leave.[117] However, as all pathogens stored in the laboratory were already circulating in the community, there was little risk of major community outbreaks due to the leak of samples from the laboratory.[118]

Red: ***Very high risk***. *Could result in high levels of excess mortality/morbidity in the upcoming months.*
Orange: ***High risk***. *Could result in considerable levels of excess mortality/morbidity in the upcoming months.*
Yellow: ***Moderate risk.*** *Could make a minor contribution to excess mortality/morbidity in the upcoming months.*
Green: ***Low risk.*** *Will probably not result in excess mortality/morbidity in the upcoming months.*

Malnutrition: Even before the current conflict, Sudan had a global acute malnutrition (GAM) rate of 13.6% among children under five, ranking it among the top four countries globally for the highest GAM rates, alongside India, South Sudan, and Yemen.[119] Recent nutrition surveys indicated a deteriorating situation, with 30 out of 38 SMART surveys reporting GAM levels of 15% or higher, which is classified as the WHO emergency level. Notably, three surveys recorded GAM rates of 30% and above, reaching the famine threshold.[120]

Nearly five million children and pregnant and breastfeeding women are acutely malnourished.[121] An estimated 778 000 children under five will suffer from severe acute malnutrition (SAM) in 2025.[122] The 2025 outlook suggests further deterioration in acute malnutrition among children under five, and pregnant and breast-feeding women. This might exceed the estimated needs, especially as the conflict intensified with the onset of the dry season in October 2024.[123]

MSF has released data showing extremely high rates of malnutrition in multiple locations. In North Darfur, MSF teams screened over 9500 children under five while conducting a therapeutic food distribution in Tawila locality in December 2024. They found a staggering global acute malnutrition estimate of 35.5%, with 7% of the screened children suffering from severe acute malnutrition.[124] The conflict-driven malnutrition crisis has been exacerbated by the continued obstruction of aid by both of Sudan's warring parties and by delivery challenges faced by the United Nations (UNs) and broader aid system in Darfur.[125]

In September 2024, among 29 300 children screened by MSF through a vaccination campaign in Zamzam camp, 34% were under acute malnutrition. Since the beginning of December 2024, repeated shelling made it challenging to conduct further assessment activities in the camp, further exacerbating the status. MSF also saw concerning rates of malnutrition outside of Darfur, where IDPs were sheltered. In October 2024, 7.1% of screened children in Omdurman, Khartoum were severely acutely malnourished.[126]

MSF data also reveal that malnutrition is also an issue in relatively stable places, such as Nyala, South Darfur. In October 2024, 23% of children under five screened at MSF-supported facilities in Nyala, South Darfur's capital, and nearby locations were severely acutely malnourished. In two MSF-supported facilities, 26% of the pregnant and breastfeeding women seeking care were acutely malnourished. With WFP food distributions unable to reach the area, MSF launched a targeted food distribution in South Darfur in December 2024, providing two months' food to about 30 000 people.[127]

Trauma and injury: Civilians continue to bear the brunt of armed violence. The fighting has led to mass displacement and appalling patterns of sexual violence against women and girls, indiscriminate bombardment of civilian areas, widespread damage and destruction of civilian infrastructure, attacks on healthcare facilities, and ethnically motivated killings.[128]

In Khartoum state, between April 2023 and June 2024, an estimated more than 61 000 people died of all causes, a 50% increase compared to the pre-war death rate. Over the same period, it is estimated that there were over 26 000 deaths due to violence in Khartoum, significantly higher than the 20 178 intentional-injury deaths reported for the entire country. Over 90% of both all-cause and violent deaths in Khartoum state have gone unrecorded, suggesting the death toll in other regions is also significantly higher than recorded figures.[129]

Patients in critical condition from trauma injuries have been trapped in multiple locations throughout the country with no access to lifesaving care.

There have been multiple reports of mass influxes of war-wounded patients in multiple locations, including Khartoum, North Darfur, and South Darfur.[130]

Between June and December 2024, as the conflict spread into new areas, more than 900 incidents of grave violations against children were reported – an average of more than four a day. A staggering 80% of them were accounts of killing and maiming, primarily in Darfur, Khartoum, and Al Jazirah.[131]

In 2023 and 2024, Sudan emerged as the most lethal conflict zone per incident globally, with an average of 19 civilian casualties per explosive event in 2023, rising to 20.1 in 2024. These figures, based on Explosive Violence Monitor by the Action on Armed Violence, underscore the intense and often indiscriminate nature of violence in Sudan, which disproportionately affects civilians.[132] The dataset highlights the frequent use of heavy artillery, airstrikes, and improvised explosive devices in populated areas. The concentration of violence in urban centres and displacement camps exacerbates civilian suffering, with limited infrastructure further hindering medical and humanitarian interventions.[133]

Cholera and acute watery diarrhoea (AWD): Cholera has a long history in Sudan, characterised by recurrent outbreaks driven by conflict, environmental factors, inadequate WASH, and weak health infrastructure. Cholera spreads primarily through contaminated water, with poor sanitation making many areas in Sudan highly susceptible. Before the conflict, Sudan had experienced more than a dozen outbreaks of cholera and/or AWD in recent years, in 1966, 1970, 1972, 1980, 1981, 1985, 1988, 1999, 2002, 2004, 2006, 2007, 2008, 2016, 2017, 2018, 2019 and 2020.[134] Significant past epidemics include the 2017 outbreak, when disrupted health services and poor sanitation led to approximately 22 000 infections and 700 deaths in two months, and the 2019–2020 outbreak, when heavy rains and flooding contaminated water supplies, leading to hundreds of cases across several States. Sudan has also faced outbreaks since the start of the war in April 2023.[135]

The FMoH declared a cholera outbreak in August 2024 after confirmation of toxigenic *Vibrio cholerae* in samples taken from Kassala State in July 2024. Fuelled by heavy rains and flooding, coupled with intensified conflict and subsequent internal displacement that brought overcrowding and lack of access to clean water in displacement sites and within communities, the outbreak has spread to 12 states with 88 localities, with over 57 100 cases and 1500 deaths reported as of 3 March 2025. A case fatality rate of 2.6% exceeds the WHO acceptable standard of under 1%.[136]

Cholera has affected all age groups, with over 70% of cases reported among those aged up to age 50. While deaths have occurred across all age ranges, individuals aged 70 and above have experienced the highest mortality rate (14.3%), followed by ages 60-69 (12.6%) and 20-29 (12.3%). This higher mortality rate may be attributable to weakened immune systems; preexisting conditions such as cardiovascular or kidney diseases, which worsen dehydration; and limited access to timely healthcare, which delays treatment. The data indicate no significant disparity between genders.[137]

The escalation of hostilities in Al Jazirah and Sennar in November 2024 has caused further displacement to Gedaref, Kassala, and Blue Nile, straining the already limited response capacities in these regions.[138] Overcrowded displacement sites and settlements without adequate WASH mean that IDP populations are particularly at risk.[139] As a result of challenges accessing and reporting data, however, the actual figures are likely higher. Limited access and slowed community referrals to health facilities also contribute to underreporting.[140]

Reactive OCV campaigns targeted eight states, reaching 7.4 million people between 19 August 2024 and 3 January 2025.[141] Starting on 21 February 2025, an additional one million people have been targeted in two high-risk localities of White Nile. The national cholera vaccination subcommittee, with technical support from WHO, is preparing a new application to the International Coordinating Group for reactive campaigns targeting one high-risk locality in Blue Nile, where a recent resurgence has been observed. Details of the OCV reactive campaign implementation as of 19 February 2025 are shown in the table below.

Sr #	State	Localities	Implementation dates	Total target	Total coverage	%
1	Kassala	Wed Al hilaio	19-22 August 2024	51 000	51 000	100.0
2	Kassala	Wed Alhilaio and Kassala	16-21 September 2024	404 081	404 409	100.0
3	River Nile, Kassala, Gedaref	Madeinat Al Gedaref, Ad Damar, Atbara, Barbar, Reifi Khashm Elgirba	19-24 October 2024	1 407 188	1 393 399	99.0
4	White Nile, Al Jazirah, Sennar, Gedaref	Ad Diwaim, Al Gitaina, Al Manaqil, Al Fao, Sharg Sennar	11-19 November 2024	2 210 447	2 198 098	99.4
5	White Nile, Kassala	Halfa Aj Jadeedah, Reifi Nahr Atbara and Aj Jabalain	5-10 December 2024	1 152 866	967 214	83.9
6	Red Sea, River Nile, Northern, White Nile	Port Sudan, Haya, Dordieb, Shendi, Al Matama, Dongola, Ad Dabbah, Guli	18-23 December 2024 Northern: 29 December 2024 - 3 January 2025	2 365 249	2 360 763	99.8
#	**Total**			**7 590 831**	**7 374 523**	**97.2**

Dengue: The current dengue fever outbreak started in July 2024, and as of 3 March 2025, there have been 10 464 cases and 16 deaths across nine States and 36 localities. Khartoum and Kassala are the

most affected states, followed by Gedaref, North Kordofan, Red Sea, West Kordofan, South Kordofan, Blue Nile, and North Darfur.

Pre-conflict, dengue was considered one of the major risks facing Sudan.[142] The public health threat of arboviruses is rapidly growing worldwide, particularly in Sub-Saharan Africa, including Sudan. The predominant mosquito vector, *Aedes aegypti*, transmitting viruses causing dengue fever, chikungunya, yellow fever, West Nile fever, and Rift Valley fever, is widely prevalent in all 18 states of Sudan, although the prevalence is relatively lower in Khartoum and Northern. In 2022, dengue was found to have expanded beyond its historical spatial distribution to reach new areas, especially those heavily infested with the *Aedes aegypti* mosquito, affirming the impact of high population movement on disease distribution.[143]

The current situation in Sudan will have implications on prevention and control of vector-borne diseases in general. The existing vector control programs are poorly resourced and will demand additional financial and logistical resources. The displaced populations as well as the host communities in states including Al Jazirah and Sennar will require immediate coverage by core vector control interventions to ensure their protection. [144]

Many affected areas are suffering acute water supply shortages, leading to prolonged water storage practices, creating suitable breeding environments for the *Aedes* mosquito. The risk of mosquito breeding is expected to rise due to damage to water stations and interruption of water distribution programs, in addition to increased water storage practices; this is particularly the case in Khartoum, North Kordofan, West Darfur, and White Nile, where dengue was circulating and the security situation is preventing access to drinking water, in addition to an increasing demand on trained vector-control staff and high transportation costs due to fuel scarcity.[145]

High turnover of health care workers, with lack of guidance and supervision, insufficient surveillance system, high co-infection of dengue and malaria, and the additional influx of IDPs have been identified as challenges to dengue management. There is a need to invest in essential resources in diagnostics (dengue serotyping) and clinical management in ICUs (arterial blood gas testing, medications, SOPs, protocols/checklists, and IPC protocols).

Malaria: Malaria has remained stagnant on the list of the top ten causes of illness, outpatient department attendance, and hospital admission in Sudan; hence, it remains a substantial health problem and national health priority. [146] Malaria accounts for around 20% of total outpatient consultations.[147] In 2024, more than 2.54 million cases with 128 associated deaths (CFR of 0.005%) were reported from 16 States,[148] and during the first two weeks in 2025, an additional 137 370 cases with six deaths have been recorded.

The entire population is at risk of malaria, with 86.7% of the population classified to be at high risk. [149] Sudan shares international borders with seven countries; five of them are malaria endemic. The rainy season varies from about three months (July - September) in the north, to six months (June - November) in South Kordofan, Blue Nile, and South Darfur, resulting in various periods of malaria endemicity.[150]

In November 2024, malaria vaccines were introduced for the first time in Sudan to curtail the impact of the disease. About 186 000 doses targeting 148 000 children across 15 localities in Gedaref and Blue Nile were administered. Efforts are underway to extend vaccination coverage to 129 localities.[151]

Measles: The current measles outbreak began in 2023. Between January 2024 and 14 February 2025, 903 cases with 13 deaths (CFR: 1.4%) have been reported from 13 states. In addition, there have been reports of suspected measles in Central Darfur, South Darfur, and East Darfur through the EWARS Mobile system.

Pre-conflict in 2022, measles was considered one of the major risks facing Sudan.[152] There is a lack of locality-based data on disease outbreaks for measles. However, data indicate that nearly 30% of the cases are estimated to be severe and targeted for case management. According to the FMoH national measles risk assessment conducted in July-August 2021, a total of 25 localities in 12 states were identified as having high or very high risk of measles.[153] According to Sudan immunity profile data, by 31 December 2022, the number of measles-susceptible children under five years of age would have been 1 145 174 (average of 2018-2021 unprotected children 17%).[154]

Since the escalation of the conflict to the end of 2024, most children in Darfur and Kordofan states have received no measles vaccination. The planning for a multi-antigen immunization campaign for Darfur states, discussed in mid-2024, [155] remains on hold. As of October 2024, more than 50 localities in ten States have recorded a first-dose measles/rubella (MR1) coverage of less than 40%, and among them,

over 40 localities in nine states have recorded MR1 coverage of less than 25%. Given that data have not been available in some states in hard-to-reach areas, a large number of measles-susceptible children puts Sudan at risk of large measles outbreaks. The risk of measles outbreaks is very high for mobile populations including IDPs, refugees, and any others in camp settings. This risk is further exacerbated by lack of access to vaccination.[156]

Non-communicable diseases (NCDs): The percentage of NCD-related mortality increased from 32% in 2015 to 54% in 2022.[157] Sudan faces challenges in implementing NCD policies, particularly those targeting healthy diets, medications, and data management systems. This may be linked to the prolonged history of conflict, shortage of trained health personnel, limited resources, and lack of robust NCD surveillance systems in the country. The ongoing war and destruction of the healthcare system infrastructure in Sudan has further intensified these challenges.[158]

The prevalence of cardiovascular disease (CVD) in Sudan was estimated at 2.5% following a 2011 study but has likely increased since then. Hypertensive heart disease (HHD), rheumatic heart disease (RHD), ischaemic heart disease (IHD) and cardiomyopathy constitute more than 80% of CVD in Sudan.[159] In the immediate term, for those affected with CVD, there is a risk of interruption in supply of medicines and limited access to healthcare. This is critical for people with uncontrolled blood pressure and/or people at higher risk of stroke; thus, higher mortality is expected in the immediate term for these conditions. [160]

Risk of disruption of treatment and health care capacity is also likely to lead to an increased risk of negative outcomes for oncology patients. There is a particularly high risk for individuals under immunosuppressive therapy, given the increased risk of infection in the context of the crisis. [161]

With health facilities under-resourced and understaffed, coupled with economic hardship and cost of transportation, many patients arrive in advanced, critical stages of their diseases, often complicated by additional health issues or co-morbidities. Even if medical teams can provide some level of treatment to manage the conditions, there remain obstacles to effectively address the NCDs, like a lack of alternative secondary healthcare facilities for critical patient referral. [162]

Mental health conditions: Sudan's civil wars have been linked to an increase in mental health conditions such as depression and post-traumatic stress disorder (PTSD), particularly among children and women.[163] Although no national prevalence study has been conducted, many articles have been published regarding the psychiatric needs of specific groups. For instance, the prevalence of depression and anxiety in high-school students in Khartoum state has been estimated to be 12%.[164] Higher rates of psychiatric disorders have been found among internally displaced persons (53%), including major depressive disorder (24.3%), generalised anxiety disorder (23.6%), social phobia (14.2%), and post-traumatic stress disorder (12.3%).[165]

Children in Sudan face a range of risks, including abductions, rape and other forms of sexual violence, child marriage, and child labor. There is an increase in the forced recruitment of children into armed groups as a way of ensuring security, provision and shelter; some children have voluntarily joined as fighters. This exposes them to violence, trauma, and a loss of childhood. Both boys and girls are facing long-term detrimental effects from conflict-related risks, including nightmares/sleep disturbances, and psychological distress stemming from loss and instability. [166] The situation in Sudan is further intensified by the lack of adequate child services in some areas, such as psychosocial support for children, adolescents, and caregivers, educational facilities, health services, child friendly spaces, birth registration, and legal aid, coupled with limited community-based child protection structures and resources to support vulnerable children. [167]

The prevalence of major psychotic disorders among internally displaced persons is estimated at 1.5%, but no data are available on suicide attempts, completed suicides, or drug and alcohol addiction.[168] More broadly, the International Committee of the Red Cross has found that more than one person in five that live in a conflict area have some form of mental health condition.[169]

Although mental health is a major cause of morbidity, mental health programmes had insufficient resources even in pre-crisis.[170] In 2020, the total number of mental health professionals working in all sectors, including the private sector and services run by non-governmental organisations (NGOs), was 899. There are also massive regional inequities; only a small proportion of psychiatrists work in rural areas, which are home to two-thirds of Sudan's population. [171]

Many communities throughout Sudan use traditional and religious healers to help meet their immediate healthcare needs, including for mental health. Besides being accessible and available, traditional

healers are often part of the wider cultural belief system and are considered integral to everyday life and well-being. [172]

Protection (including GBV): Risks of protection and sexual exploitation and abuse are detailed in the below section, *Determinants of Health.*

Acute enteric diseases, including typhoid and rotavirus
: Acute enteric diseases are a leading cause of morbidity and mortality in Sudan, and particularly in Darfur in the current context.

Typhoid fever is still a major public health issue in Sudan, notably in communities with limited healthcare systems, with uneducated populations that lives in unhygienic environments, and with residents who habitually drink unsafe water from tube wells and do not typically wash their hands after latrines defecating. Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024 – week 2, 2025), a total of 188 757 of diarrhoea cases were reported across 15 states.

The contribution of rotavirus to the acute diarrhoeal burden varies; however, recent estimates suggest its contribution to mortality and morbidity is particularly high in African countries. Severe disease and mortality mostly affect children <24 months of age. Based on the EPI schedule in Sudan, Rotavirus 1-valent (RV-1) vaccine is administered at six, 10 and 14 weeks; however, vaccination has remained suboptimal since the onset of the conflict. Poor water, sanitation and hygiene measures, coupled with susceptible populations, are risks for acute enteric diseases.

Acute respiratory tract infection (ARTI): Viral and bacterial ARTI are detailed below.

- **Viral**: Among the viral ARTI, SARS-CoV-2 transmission may be somewhat exacerbated by crowded conditions due to displacement. Increased mortality and morbidity may occur among severe cases due to a lack of access to oxygen and other lifesaving healthcare in the context of the conflict.[173] As of March 2023, there had been 63 829 cases reported in Sudan, with 5017 deaths.[174]
- **Bacterial**: There have been reports of suspected pertussis outbreaks in Darfur from May to August 2024. Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024—week 2, 2025), 118 suspected pertussis cases with one death were reported across seven states. According to the EPI schedule in Sudan, pentavalent (DTwP-HiB-HepB) vaccine and pneumococcal conjugate vaccine (PCV) are administered at six, 10 and 14 weeks. However, due to the conflict, the vaccination coverage remains low in most of the country, and likely low in most birth cohorts aged five and below. *Haemophilus influenzae* type b (Hib), pneumococcus, and pertussis are major causes of morbidity and mortality, particularly among children. The risk of disease and severity of pertussis is highest among young infants, and immunity from vaccination remains suboptimal.

Chronic infectious diseases (TB/HIV): Given the ongoing conflict, interruption of treatment is likely for all chronic infectious diseases. Interruption of treatment will likely impact both disease course and transmissibility. Limited access to health care for acute flare-ups and opportunistic infections may result in excess deaths. Appropriate treatment is exacerbated by a current lack of diagnostic capacity.

The incidence of tuberculosis (TB) is 63 per 100 000, equalling 28 000 new cases per year. Mortality from TB is estimated to be 4100 per year. [175] Conflicts impact health infrastructure and human resources, which can hinder disease prevention and control measures and escalate the burden of communicable diseases, including TB. In addition, conflicts cause the displacement of populations and impair access to healthcare. This can increase TB transmission, worsen patient outcomes, and lead to increasing rates of drug resistance.[176]

Although the HIV epidemic in Sudan has been classified as low for the last 10 years, enrolment and retention on treatment have been low.[177] HIV prevalence is around 0.2% as per the 2019 estimates and projections. There are remarkable variations in the distribution of the HIV burden between the different regions and states of the country.[178]

Diphtheria: The first documented diphtheria outbreak in Sudan occurred in 1974.[179] Although routine DTP vaccination is part of the EPI, there are still reported cases and outbreaks of diphtheria across the country.[180] The most recent outbreak occurred in 2019 with 105 reported cases, with most cases coming from one locality in South Darfur.[181] Pre-conflict in 2022, diphtheria was considered as one of the high-risk hazards facing Sudan.[182]

Between 10 February 2024 and 14 February 2025, a total of 196 cases of diphtheria have been reported across Sudan, with the highest number of cases (133 cases) being reported from River Nile, although surveillance is very limited. According to the EPI schedule in Sudan, pentavalent (DTwP-HiB-HepB)

vaccine is administered at six, 10 and 14 weeks. However, there remains a low vaccination coverage, particularly in hard-to-reach areas; the coverage is below the herd immunity threshold. Coupled with limited access to health facilities and treatment options (particularly availability of antibiotics), and given limited global stocks of diphtheria antitoxin (DAT), outbreaks could result in potential higher severity and complexity in ensuring control.

Sudan is finalizing an outbreak vaccination plan for River Nile for pentavalent vaccine targeting children below seven years for three rounds (one month apart), and DAT for children aged seven to 15 years old through three rounds (first and second rounds will be one month apart and the third dose will be administered after six months). With support from WHO, DAT has been procured and is awaiting government clearance to be shipped to Sudan. For the long-term plan, WHO is supporting FMoH in requesting the introduction of booster doses to rebuild population immunity, and as per WHO guidelines, three doses are recommended. In addition, as the hexavalent vaccine (Penta + IPV) is now available and GAVI is ready to support the switch, WHO will also support this step and work with FMoH on all requirements. This will be cost-effective and will improve coverage with the six antigens.

Hepatitis B: According to WHO 2016 data, Sudan is classified as having a high hepatitis B burden (prevalence ≥ 8%).[183] Increased risk may occur in the context of gender-based and sexual violence, and higher severity in the absence of access to healthcare for infections resulting in severe acute hepatitis.

Hepatitis E: There has been an ongoing hepatitis E outbreak in the country since 2021. As of 14 April 2023, a total of 2 884 suspected cases (AR: 0.51/1000) including 24 associated deaths (CFR 0.83%) had been reported.[184] Between 30 December 2023 and 17 January 2025 (Sudan epi week 1, 2024 – week 2, 2025), a total of 680 cases with one death were reported across six states, although there is likely hepatitis E in non-reporting States such as Darfur states, given the identification of hepatitis E in refugees from Darfur states in eastern Chad.

There is a risk of increase in cases given the issues in access to WASH.[185] There is a particularly high risk of infection for those in camp settings, and for severe disease in pregnant women, for whom mortality can be high.

Maternal and neonatal health: More than one million women in Sudan are pregnant and in need of immediate and continuous access to essential reproductive health services. The collapse of maternal health services in Khartoum and in many other parts of Sudan have left thousands of Sudanese pregnant women without basic maternal health services.[186] Among 20 million people in need of urgent life-saving humanitarian health assistance, 477 000 people are currently estimated to be pregnant, and within the next year,[187] 127 460 newborns will experience complications. Between 31 000 and 95 000 pregnant women will have complications during childbirth and require a Caesarean section.[188]

Women's sexual and reproductive health and rights have been severely impacted. Women's access to maternal health services has become increasingly challenging due to the scarcity and inaccessibility of healthcare facilities across the country.[189] The destruction of hospital buildings and health centres, a shortage of medication and medical supplies, and medical personnel and hospitals being under incessant attacks, have impeded essential maternal health services, such as antenatal care, safe deliveries, and postnatal care.[190] Many pregnant women travel a long distance to access care, which can be laborious and harmful to their health and the health of the baby. [191]

The East Nile region has recorded several miscarriages and deaths among mothers and foetuses due to the deterioration of medical services and the lack of essential medicines. [192] In Sharg El Nil, the closure of hospitals and obstetrics and gynaecology centres has caused an alarming increase in maternal deaths and obstructed labour cases. This is compounded by a lack of trained medical personnel, the theft of medical equipment, plundering, and repeated shelling and targeted attacks. A lack of transportation and ambulance services leaves families to resort to dangerous methods, such as using a *dardaga* (a traditional wooden bed carried by people) to transport patients in emergencies.[193]

The pervasive lack of security causes menstrual disorders and labour complications among pregnant women. The psychological toll of constant fear and anxiety, fuelled by the sounds of gunfire and explosions, directly affects the health of mothers and their babies.[194]

With the continuing economic crisis and rising prices of goods and services, the cost of childbirth has increased significantly. The cost of natural childbirth has reached upward of 200 000 Sudanese Pounds, with many essential medicines and supplies, including anaesthetics and disinfectants, unavailable. [195]

A summary of maternal and newborn care health indicators is displayed below (data are the most recently available, from various years):

MATERNAL AND NEWBORN HEALTH INDICATORS[196]	Sudan	Source
Postnatal care for mothers – percentage of women (aged 15-49 years) who received postnatal care within two days of giving birth (Female)	27%	UNICEF
Antenatal care 4+ visits – percentage of women (aged 15-49 years) attended at least four times during pregnancy by any provider (Female)	51%	UNICEF
Skilled birth attendant – percentage of deliveries attended by skilled health personnel (Female)	78%	UNICEF
C-section rate – percentage of deliveries by caesarean section	9%	UNICEF

Infant and young child feeding (IYCF) practices directly affect the health, development and nutritional status of children less than two years of age and, ultimately, impact child survival.[197] A summary of breastfeeding related indicators is displayed below (data are the most recently available, from various years):

NUTRITION INDICATORS[198]	Sudan	Source
Early initiation of breastfeeding	69%	UNICEF
Exclusive breastfeeding (0-5 months)	55%	UNICEF

The United Nations Population Fund (UNFPA) has raised concerns about the decrease in access to healthcare services, with 3.5 million women and girls of reproductive age needing reproductive health care services.[199] Meanwhile, humanitarian access is compromised in conflict zones, impacting medical care, maternal health, and the supply of menstrual hygiene products. [200]

About 14 million girls and women in Sudan are affected by female genital mutilation (FGM), which is mainly performed by midwives (77%).[201] Despite being outlawed in July 2020, the harmful traditional practice of FGM persists.[202] Given the high rates of FGM in Sudan, where 87% of women aged 15–49 years have undergone the practice[203] and 50% of them have been infibulated (undergone suturing of the vulva), women face increased maternal and neonatal health risks due to lack of access to de-infibulation during childbirth. FGM is also prevalent, at least 31% of girls aged 0-14 years having been subjected to the practice.[204] The lack of management of urogynaecological health complications of FGM in the current health system further exacerbates the health burden of women in Sudan.

Meningococcal disease: Worldwide, the incidence of meningitis is highest in the African meningitis belt, and parts of Sudan fall within it, where the highest rates of meningococcal disease are recorded and at least 350 million people are at risk for meningitis during annual epidemics. Between 15 April 2023 and 9 August 2024, 155 cases were reported from 10 states, with 20 associated deaths from five states (CFR 12.9%); [205] these are recorded as 'viral meningitis' but some of these may be meningococcus, as there is not systematic testing.

Vaccination is suboptimal, and overcrowding and poor shelters increase the risk of carriage of invasive meningococcal disease. The risk of severe disease is further compounded by malnutrition. Vaccination remains suboptimal since the onset of the conflict, and the availability of antibiotics for bacterial meningitis remains limited.

Mpox: The total reported suspected mpox cases between 1 January 2022 and 4 April 2023 reached 378: this included 19 confirmed cases and one associated death. In total, 38 localities from 13 states reported suspected cases and 11 localities from six states reported 19 confirmed cases.[206]

Although there were no confirmed cases from Sudan in 2024, eight suspected cases were reported. Among them, six were from Gedaref and two were from Central Darfur, with travel histories to Chad and Khartoum, respectively.[207] In addition, through the EWARS Mobile system, suspected mpox cases have been reported in Central Darfur (however, through the verification process, these alerts were discarded). From 2024, there has been a resurgence of mpox in the Democratic Republic of Congo and surrounding countries, and the transmission to Sudan and neighbouring countries is likely. The recent mpox report from South Sudan merits concern.

Poliovirus type 2 (cVDPV2): In 2022 the country was affected by cVDPV2, and a case with acute flaccid paralysis (AFP) caused by a different stain (emergence group NIE-ZAS-1) was reported in West Darfur.[208] Although poliomyelitis (polio) is a highly contagious disease that can cause permanent paralysis (approximately one in 200 infections) or death (2-10% of those paralyzed), this environmental detection does not currently represent a serious public health impact.[209] Pre-conflict in 2022, poliovirus was considered a moderate risk in Sudan.[210]

In January 2024, a new strain (SUD-RED-1) of circulating vaccine-derived poliovirus type 2 (cVDPV2) was isolated from environmental samples collected from Port Sudan, Red Sea;[211] it was detected in six wastewater samples collected from September 2023 to March 2024.[212]

In 2024, the second round of the polio vaccination campaign was implemented in a staggered manner as access became available in 70 localities and 167 administrative units of seven accessible states. Three rounds of novel oral polio vaccine type 2 (nOPV2) campaigns were implemented in Red Sea in April, June, and August 2024. In addition, seven other states implemented first rounds in June 2024, and five states implemented second rounds in August 2024. The nOPV2 Sub-National Immunization Days (SNIDs) targeted 2 839 736 children below five years and vaccinated 3 170 853 children (112% of the target). The independent monitoring report confirmed that 97% of targeted children were finger-marked.

Sudan has reported 557 acute flaccid paralysis (AFP) cases against an expected 612 annual cases. The non-polio AFP rate is 2.7 per 100 000. The stool adequacy rate is 91% and the non-polio enterovirus rate (NPEVR) is 18%, as of 27 December 2024 (Sudan epi week 52, 2024). Currently, no human cases are associated with this new strain. However, the risk remains high given the massive conflict within the country, sub-optimal surveillance, disrupted vaccination, and concurrent health emergencies.[213] Surveillance for poliovirus in children – conducted by searching intensely for acute flaccid paralysis (AFP), the most common indicator of polio infection – and in wastewater has been strengthened to swiftly detect any presence of the virus.[214]

Chemical hazards: There have been unverified reports of the suspected use of chemical hazardsin 2024.[215]

Sudan virus disease (SVD): To date, no cases of SVD, which is caused by one of the Ebolaviruses, have been confirmed in Sudan. However, Uganda has reported an outbreak of SVD in 2025, with the index case detected posthumously in a health worker in Kampala.[216]

Following the SVD outbreak in Uganda in 2025, Sudan has strengthened preparedness efforts, including: the establishment of a national task force; enhanced surveillance at points of entry; designation of isolation centres; set-up of the national referral policy and patient pathway; update and endorsement of the national Ebola Virus Disease (EVD) case management and infection prevention and control protocols; on-the-job training of medical personal at Port Sudan airport; coordination with the central public health laboratory to develop the EVD plan for sample collection, packaging, handling, and transportation; and distribution of personal protective equipment to the medical staff in Port Sudan airport.

Yellow fever: Sudan belongs to the yellow fever zone, and large epidemics were reported in Sudan in 1940, 1959, 2003, 2005, 2012, and 2013. Sudan conducted a yellow fever risk assessment exercise in early 2013 and confirmed that the yellow fever virus was circulating in all parts of the country. Also, there have been reports of laboratory-confirmed cases from surrounding countries (e.g., Chad, South Sudan), and there remains a risk of transmission that needs to be addressed with vector control.

Technological and environmental hazards: In April 2023, WHO officials initially believed it was extremely dangerous when one side in the conflict seized the National Public Health Laboratory and asked technicians to leave. According to the WHO Rapid Risk Assessment that followed, all pathogens present in the laboratory were already present in the community, thus the risk of major community outbreaks due to leak of samples from the laboratory is low.

DETERMINANTS OF HEALTH

Essential Infrastructure, including WASH

In January 2025, the international non-governmental organization (INGO) Forum in Sudan strongly condemned the deliberate and escalating attacks on power stations across the east of the country. This includes the targeted destruction of critical civilian infrastructure, including the deadly attack on the Saudi Hospital in Al Fasher and recent drone strikes on power stations in White Nile, Gedaref, River Nile, and Northern.[217]

The scarcity of clean and safe water has forced people to rely on river water for bathing, drinking, and laundry, which poses health risks. Absent, inadequate, or inappropriately managed water and sanitation services further expose individuals to preventable health risks. Drinking water from untreated sources can lead to illnesses like acute watery diarrhoea.[218]

Sudan did not achieve the MDG targets for water supply and sanitation and still has a long way to go to meet the SDGs by 2030.[219] WASH services have been provided to Sudan IDPs on an ongoing basis for years, but the situation has deteriorated due to a worsening economic crisis, non-functional or aging WASH infrastructure or conflict-destroyed infrastructure, decreased/insufficient revenue collections, poor budget allocation, and increased operation maintenance costs attributed to an increase in fuel prices.[220]

Socio-economic Challenges

Prior to the outbreak of conflict, Sudan's economy was marred by rampant inflation and shortages of essential goods, leading to protests across the country. The conflict has worsened the economic crisis.[221] Sudan's economy has experienced a sharp deterioration, with increased budget deficit, driven by a reduction in public revenues and a disruption in exports due to the fighting.[222] Supply chain disruption has led to a decline in domestic production and economic activities.[223] This has also been exacerbated by widespread looting and destruction of businesses, markets, factories, and warehouses.[224]

Nearly half of Sudan's population is unemployed, while the Sudanese pound has lost at least 50% of its value since the start of the conflict.[225] In Khartoum, factories, banks, shops and markets have been looted or damaged, further reducing the population's access to goods, services and cash.[226]People living in conflict zones have faced skyrocketing prices of food and non-food items, reduced purchasing power, and limited livelihood opportunities.[227]

As a result of the conflict, all social security schemes have been suspended.[228] Consequently, household incomes are expected to decline by over 40% in both urban and rural areas, leading to an estimated increase of 1.8 million people living in poverty compared to before the conflict, likely impacting significantly on persons already in a vulnerable situation.[229]

Protection Risks

Gender-Based Violence (GBV): UN Women warned in September 2024 that the number of GBV cases in Sudan has increased by 100% since the escalation of the conflict in April 2023.[230] In early 2025, GBV has reached alarming levels, disproportionately affecting women and children, with over 12.2 million at risk – an 80% increase from 2024.[231]

Furthermore, intimate partner violence, sexual exploitation and abuse, and trafficking in persons are widespread and increasing.[232] With persistent food insecurity among displaced families, particularly female-headed households, widows, adolescent girls, and people with disabilities, the adoption of negative coping mechanisms for survival is on the rise. In a food-insecure environment, the risk of GBV increases.[233]

Finally, the Sexual Exploitation and Abuse (SEA) Risk Overview ranked Sudan as one of the highest risk countries, with the sixth highest global index (7.2/10) out of 37 countries in humanitarian or aid settings. This implies a high level of exposure to SEA perpetrated by humanitarian actors including the UNs and INGOs.

Child Protection: Children are subjected to physical violence, with over 1171 child casualties reported as resulting primarily from crossfire, shelling, aerial bombardment, and shooting. The country has experienced a dramatic 480% surge in grave violations against children, ranking it amongst the seven countries with the highest incidence of such violations, including killing and maiming of children.[234] There has been a sharp increase in preventable deaths among children

owing to critically limited access to healthcare, with 70-80% of hospitals non-operational due to lack of supplies.[235]

Of the children who have been displaced, at least 1-3% are unaccompanied or separated from their families and primary caregivers due to parent(s)' death or disappearance and insecurity during their movements.[236]

Over 38% of girls aged 15-18 years are married before the age of 18 as a way of coping with the severe economic hardships and insecurity. Many families are resorting to marrying off their daughters at a young age as a means of reducing the number of mouths to feed and securing some form of financial stability. Survival sex is a coping mechanism in which many adolescents are engaging to access basic needs like food, shelter or safety.[237] The increase in the number of children in detention is posing a high risk in their safety and protection, which is worsened by the inadequate detention services in the country. [238]

A summary of key protection indicators is displayed in the below box (data are the most recently available, from various years):

CHILD PROTECTION INDICATORS[239]	Sudan	Year	Source
Percentage of women (aged 20-24 years) married or in union before age 18	34%	2022	UNICEF
Percentage of children (aged 5-17 years) engaged in child labour (economic activities and household chores)	18%	2022	UNICEF
Percentage of children (aged 1-14 years) who experienced any physical punishment and/or psychological aggression by caregivers	64%	2022	UNICEF
Percentage of girls and women (aged 15-49 years) who have undergone female genital mutilation (FGM)	87%	2022	UNICEF

Unexploded ordnance: The widespread use of conventional weapons including field artillery, mortars, air-dropped weapons and anti-aircraft guns has left copious unexploded ordnance (UXO) in Khartoum and Al Jazira and other urban areas.[240] In January 2024, for the first time since the conflict began, civilian deaths were reported to have been caused by landmines. On 21 January 2024, 10 civilians were reportedly killed when their bus ran over a landmine in River Nile State.[241]

Climate Impacts, including Flooding

Heavy rains and flooding occur seasonally in Sudan. The rainy season typically occurs between June and September, with the rains and flooding peaking in August - September. Heavy rains often result in the Nile and its tributaries and Gash river overflowing, leading to flooding and landslides that damage property, infrastructure, and crops, compounding humanitarian needs.

WHO has recorded four major floods (2013, 2019, 2022 and 2024) that have aggravated disease outbreaks, increased displacement and overstretched the already burdened health system. Between 1 June and 26 August 2024, Sudan experienced 77 incidents of heavy rains and flooding, leading to multiple episodes of sudden displacement across the country. Approximately 136 455 individuals (27 291 households) were newly displaced across 14 states.[242] On 25 August 2024, the Arba'at Dam, which is located approximately 38km northwest of Port Sudan, suffered severe damage due to heavy rains. Due to the dam's collapse, 64 people went missing, 84 boreholes were damaged, 1380 latrines were destroyed, and 20 villages were inundated.[243]

Education

As of September 2024, more than 90% of schools in Sudan remain closed, while others had been repurposed into shelters for IDPs. While schools have partially reopened in six states, many are still facing significant challenges, including shortages of essential materials and the fact that up to 50% of teachers have not been paid in over a year. [244] The conflict has devastated the lives of 24 million children, leaving 17 million out of school and fuelling a generational catastrophe.[245] The closure of schools and universities for long periods because of the war has also led to serious psychological effects among students.[246]

HEALTH SYSTEMS STATUS AND LOCAL HEALTH SYSTEM DISTRIBUTIONS

Pre-crisis health system status

Impact of the COVID-19 crisis: The COVID-19 pandemic has been a burden to the already fragile health system despite the relatively low (reported) case load, due to competition for resources needed in other parts of the health system.[247] The fragile surveillance system has low coverage in all states and was unable to cope with and absorb the needs for enhanced surveillance in a situation of countrywide community transmission.[248] No effective tracing system was implemented during the pandemic.[249] Due to the socioeconomic crisis and the rapid devaluation of the Sudanese Pound, funds for operating expenses and running costs (fuels and electricity) for health structures are scarce and salaries are not paid regularly, affecting the delivery of health services.[250]

Expenditure: The allocation of public expenditure to the health sector, as a share of total public spending, fluctuated between 7% and 8% during the last decade (until 2022).[251] Health expenditure predominantly takes place at the state level, amounting to 87%.[252] Before the crisis, it was found that people pay a considerable amount as out-of-pocket health expenditure (about 74% of total expenditure on health, while general government health expenditure represents only 26%).[253] During 2020, the costs of health services increased by 90%, further increasing the out-of-pocket expenditures. [254]

Universal Health Coverage: Sudan's UHC Service Coverage Index was reported at 44% in 2017.[255] There is inequality of access and uptake of services among and within states, and fragmented training of health promoters at the community levels. According to the report, there was underutilization of primary health centre (PHC) services, especially noted in public centres, and the justification according to reviewers was due to a gap in having comparable health service standards/quality between government health providers on one hand and the private and nongovernmental facilities on the other. Without a strong PHC system, it is difficult to address the challenges posed by both communicable and non-communicable diseases or progress toward universal health coverage.[256]

Geographic inequalities: Coverage of reproductive, maternal, neonatal, and child health services remains consistently lower in rural areas.[257] Looking at all aspects of the health system and health indicators, there are remarkable discrepancies between socioeconomic strata across states.[258] The lack of equity is apparent even within states, between rural and urban areas, and between high-income and low-income households.[259] Inequity also manifests in the distribution of inputs to the health system, including human resources, health facilities and health expenditure.

Healthcare workers: There is a disparity in the distribution of healthcare personnel between the public and private sectors and between urban and rural areas.[260] Moreover, the high turnover and migration of health professionals continue to threaten the capacity of the FMoH to respond to the increased demand for health services. There is a low nurse-to-doctor ratio, which affects the running and quality of care. There are 33.5 nurses and midwifery personnel and 2.8 physicians per 10 000 population, according to 2021 data.[261]

Key information on disruption of key health system components

ACCESS TO HEALTHCARE	DISRUPTION TO SUPPLY CHAIN	DAMAGE TO HEALTH FACILITIES	ATTACKS AGAINST HEALTH
			
About **65% of the population lack access to healthcare** according to OCHA (February 2024).[262]	**Eight out of 18 States** are covered with medicines and medical supplies provided by Health Cluster partners (February 2024).[263]	**Only 16% of primary care facilities, 14% of hospitals, and 40% of sentinel sites are operational.**[264]	There have been **542 attacks on Sudan's health care system** since fighting started in April 2023 and as of 18 December 2024. At least 122 health workers have been killed, and 90 arrested.[265]

In crisis health system status

Attacks on health care: Insecurity Insight identified 542 attacks on Sudan's health care system since fighting started in April 2023 and 18 December 2024. Between April 2023 and December 2024, at least 122 health workers have been killed, and 90 have been arrested.[266]

Health facilities have been damaged 128 times, some on multiple occasions.[267] Pharmacies have been looted and vital medicine prevented from reaching people. During 2024, incidents have increased in Al Jazirah and North Darfur states. High incident numbers continue to be reported in Khartoum but not to the same extent as in 2023.[268]

Through the WHO's Surveillance System for Attacks on Health Care, 149 attacks with 317 deaths and 273 injuries have been recorded between 15 April 2023 and 19 February 2025.[269]

On 24 January 2025, a drone attack, left at least 67 dead and 19 injured at Al-Saudi Maternity Hospital in El Fasher, and severely damaged its emergency unit, rendering it out of service. This is the second time the hospital – which was the only functional facility providing specialized services in El Fasher – has been attacked in January 2025. In 2024, it was shelled at least 13 times.[270]

Health infrastructure and functionality: The country's health system is on the brink of collapse due to insecurity, lack of resources, and attacks on healthcare facilities. Moreover, access to healthcare remains a severe concern, with only 16% of primary care facilities, 14% of hospitals, and 40% of sentinel sites operational, according to Health Cluster data.[271]

Healthcare facilities face severe shortages of water, power and food, and are running critically low on essential medical supplies.[272] In Khartoum, hospitals and healthcare facilities – already battered by conflict – are on the brink of collapse as power outages disrupt life-saving medical services. In the Eastern part of the country, the International NGO Forum in Sudan condemned that "cities hosting millions of internally displaced persons are pushed to the breaking point as the strain on already fragile water and electricity systems becomes unbearable." [273]

Based on the latest Health Resources and Services Availability Monitoring System (HeRAMS) report covering Abyei PCA, Blue Nile, Gedaref, Kassaka, Khartoum, Red Sea, Sennar, and White Nile, as of December 2024, 38% of health service delivery units are fully damaged or non-functioning, mainly due to lack of maintenance for building and equipment damage, lack of staff, security and physical access.[274]

Access to healthcare: Due to the conflict, as of February 2024, about 65% of the population lacked access to healthcare.[275] Prior to the conflict, healthcare in Sudan heavily relied on Khartoum, as almost 80% of health services were based in the city, meaning it affected the entire system when Khartoum's healthcare was debilitated. This direct effect of the conflict, which has affected both civilians and infrastructure, has further eroded the stability of the system.[276] Besides, bureaucratic barriers, particularly those linked to travel permits and cross-border access, continue to restrict the distribution of medical and essential supplies.[277]

For essential health services, 85% of general clinical and trauma care are now ‘not normally provided’. For child health and nutrition and communicable diseases, more than 60% of health services are not normally provided. For sexual and reproductive health, NCDs and mental health, the situation is severe, as around 80% of health services in these domains are not normally provided. [278]

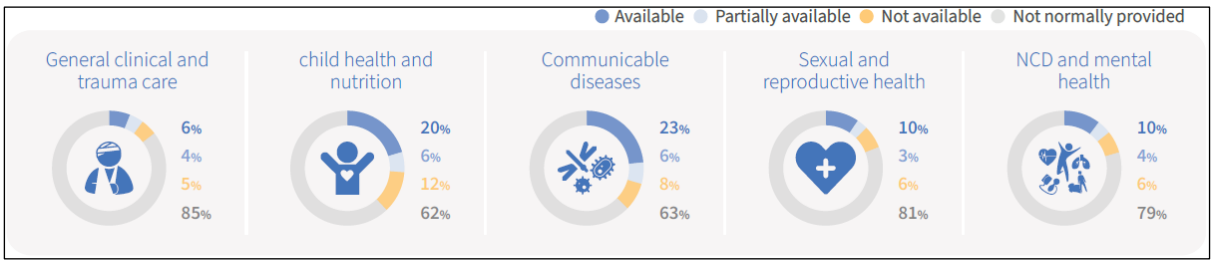

Figure 9. Service domain overview of essential health services [279]

Medical supplies and medicine: While the conflict has largely affected health facilities in the Khartoum area, its repercussions have extended to all states due to the country's reliance on Khartoum for medical supplies.[280] In February 2024, the Sudan Health Cluster report that just eight out of 18 States are covered with medicines and medical supplies provided by Cluster partners. [281] Consequently, individuals with chronic illnesses are experiencing and even dying from severe complications, most notably those with diabetes, hypertension, cancer, and kidney failure.[282]

Healthcare workers: Healthcare facilities have been severely impacted, despite the best efforts of Sudanese doctors and nurses, who have continued working in extremely difficult conditions, caring for the wounded, and providing other essential healthcare services to the population.[283] Health care workers go for months without payment, and there is an extreme lack of medical supplies and a shortage of cash to run operations.[284] GBV is also increasingly a risk for healthcare workers; for example, there have been reports of three female health workers raped in Al Jazirah and a female doctor killed in El Fasher, North Darfur.[285]

Impact of displacement and movement of people on health service delivery: Surges in displacement due to intensified fighting have occurred in Al Jazirah, leading to displacement to Gedaref, Kassala, White Nile, and across the border to South Sudan in October 2024. In Khartoum, Sennar, and White Nile, displacement escalated between November and December 2024. Similarly, in North Darfur, El Fasher, and Nyala, displacement occurred within the Darfur region and across the border to Chad from November 2024 to January 2025.[286]

Although the return of IDPs has occurred and is expected to continue with shifting lines of control in Al Jazirah and Khartoum, the collapsed and unprepared health system is unlikely to meet essential healthcare service demands. This challenge is further exacerbated by a significant risk of disease outbreaks, particularly cholera and acute watery diarrhoea (AWD). Attacks on healthcare facilities, including hospitals and health centres, have damaged equipment and warehouses, while many health workers have fled. Tremendous and coordinated support is urgently needed to restore hospitals and health facilities, ensuring they can provide the essential services that communities require.

HUMANITARIAN HEALTH RESPONSE

Health Cluster:

The Health Cluster HNRP 2025 response plan aims to address the humanitarian needs of the most vulnerable population, including women, children, elderly people, individuals with disabilities, those living in hard-to-reach areas and where life-saving essential services are lacking. The key objectives of the plan are as follows:

- Ensuring access to essential health and nutrition services while integrating them with other critical services, particularly for vulnerable groups. This includes sexual and reproductive health, child and maternal health services, immunizations, mental health, and psychosocial support (MHPSS).
- Strengthening and expanding operational support and logistics to ensure the availability of essential life-saving supplies for those affected.
- Enhancing capacity to prevent, detect, respond to, and mitigate disease outbreaks and other acute health emergencies within the current context.

Health Cluster Partners' Presence:

In 2009, the Cluster System was activated to respond to the deteriorating humanitarian crisis and the Sudan Health Cluster was established, for which WHO is the Cluster Lead Agency, to support the coordination of identifying needs, prioritizing and coordinating life-saving humanitarian health response.[287]

Since the escalation of the conflict in April 2023, challenges in access, insecurity, and huge humanitarian health needs over wide geographic areas, have accentuated the need to strengthen locally-led coordination at state and lower levels, linking to sub-national and national levels; and working better with local and national actors to increase reach and overall impact. As of December 2024, 46 partners actively report to the Health Cluster at the national level to support humanitarian and health emergency activities.[288]

Through the establishment of zonal (sub-national) Health Cluster hubs, further operational reach and impact have been achieved. Since the establishment of the sub-national Health Cluster in Darfur in March 2024, coordination efforts have been strengthened from 15 known partners supporting 230 health facilities to 43 partners supporting over 800 health facilities.[289] This has increased outreach for critical initiatives, such as EWARS Mobile and HeRAMS. In addition, since January 2025, sub-national Health Clusters have been established in the central and eastern zones.

Sub-National Health Cluster	Number of partners	Number of health facilities supported by Health Cluster partners
Western Zone (Darfur cross-border)	90 (coordinating) 43 (reporting)	875 (primary health care) 100 (mobile clinics) 64 (hospitals)
Central Zone	19	Under confirmation
Eastern Zone	17	Under confirmation

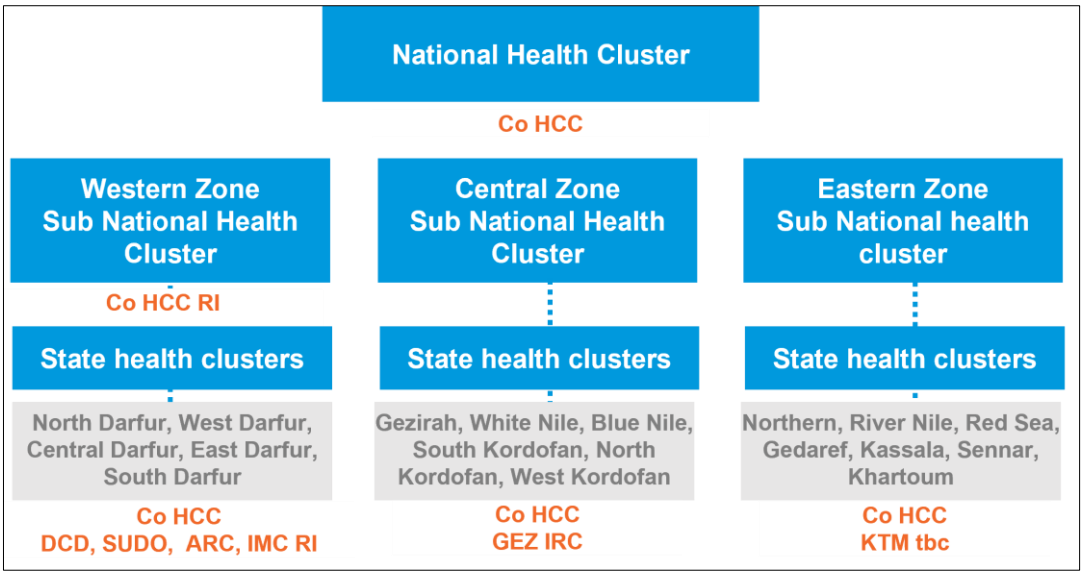

Figure 10. Sub-national Health Cluster in Sudan, January 2025

Funding Status: In 2024, humanitarian assistance, including in-kind aid, cash and services, reached 15.6 million people, surpassing the 14.7 million target set in the year's response plan.[290] By the end of the year, 65.2% of the response plan had been funded.[291] The Health Cluster in 2024 required US$ 178 million to meet the health needs of the 4.9 million people that make up the highly vulnerable target population.[292] By the end of 2024, the Cluster was 94% funded, reaching 2.3 million people (46.9% of the target).[293]

The 2025 HNRP requires US$ 4.2 billion to support nearly 20.9 million of the most vulnerable individuals with life-saving aid, protection, and access to basic services. As part of this, the Health Cluster requires US$ 262.3 million to reach 9.4 million people targeted for healthcare services, of a total of 20.3 million people in need.[294]

Impact of Funding Freeze by the United States: The funding freeze by the United States has considerable risks for humanitarian health response, diminishing the ability to provide life-saving services. At the risk of suspension are 335 health facilities (57% of those reporting to the Health Cluster), 1500 health care workers, and 13 partners in 15 States and 69 localities. In total, these support a catchment population of five million people in 184 locations, of which 1.5 million are IDPs living in 173 sites. Among all projects in the Health Cluster, 57% are affected.

The funding freeze has already started to affect all sectors. Given the impact of social determinants of health, the ramifications in other sectors, such as WASH, nutrition, food security, also increase the risk of poor health outcomes. In 2024, the United States provided significant support for the humanitarian response in Sudan, providing 45% (US$ 800 million) for the overall humanitarian response out of the US$ 2.6 billion requested, and 31% (US$ 52 million) of funding for the Health Cluster response out of the US$ 178 million requested.[295]

INFORMATION GAPS AND RECOMMENDED INFORMATION SOURCES		
Area	**Gap**	**Recommended tools / guidance for primary data collection**
Health status & threats for affected population	Surveillance data	EWARS Mobile surveillance system Analysis of laboratory surveillance data Routine environmental monitoring
	Mortality (disease-specific)	Mortality surveys Facility-based surveillance Prospective mortality surveillance
	Child health - malnutrition data	Anthropometric surveys (e.g., SMART) Desk-based nutritional risk assessment
Health resources & services availability	Information on Health services availability, disruption and functionality in several areas	HeRAMS (WHO)
	Limited information on health workers availability	HeRAMS (WHO)
	Limited information on attacks on healthcare	Surveillance System for Attacks on Health Care (SSA) (WHO)
Humanitarian health system performance	Information on quality of humanitarian health services provided to beneficiaries (accountability to affected populations)	Beneficiary satisfaction survey Strengthen monitoring framework and reporting on activities (distribution, service delivery, surveillance, etc.)
	Limited information on number of health partners in some regions	Health Cluster / OCHA / matrix 3/4/5Ws

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