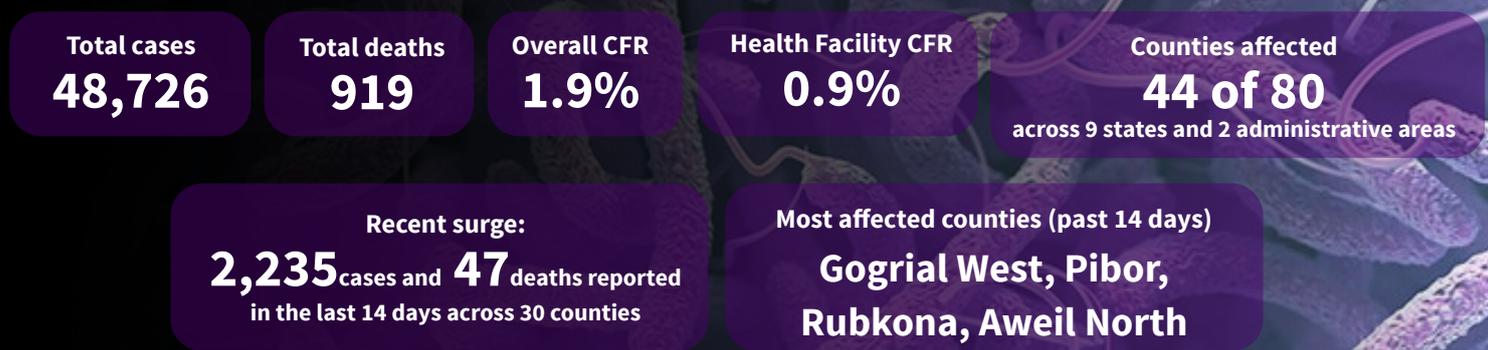




Cholera Outbreak in South Sudan: Mortality Patterns, Drivers, and Response Priorities

Snapshot

The current cholera outbreak was declared on 28th October 2024 and is the largest ever recorded with over 48,500 cases reported from 44 out of 80 counties of South Sudan



- Children under 15: 50% of cases, 39% of deaths
- High CFR in elderly (60+ years): 5.3%
- Counties with highest CFR: Eastern Equatoria (7.6%), Pibor (4.6%), Lakes (3.9%)
- Community deaths: 47% of total

Age group (years)	Cases	Deaths	CFR	HF CFR	Community deaths
0-4	13436 (28%)	164 (18%)	1.2%	0.7%	44%
5-14	10524 (22%)	189 (21%)	1.8%	1.1%	41%
15-24	8182 (17%)	118 (13%)	1.4%	0.7%	52%
25-34	6479 (13%)	99 (11%)	1.5%	0.7%	55%
35-44	4189 (9%)	121 (13%)	2.9%	1.2%	60%
45-54	2596 (5%)	68 (7%)	2.6%	1.4%	46%
55-59	748 (2%)	32 (3%)	4.3%	2.1%	50%
60+	2323 (5%)	122 (13%)	5.3%	3.4%	34%

Children under 5 years have accounted for the highest number of cases, while the 5–14 year age group has recorded the most deaths. However, the age-group specific CFR is particularly high in those aged 35 and above, with 60+ years old showing the highest CFR of 5.3%.

Cases and deaths per county

Four states (Jonglei, Lakes, Unity and Warrap) report over half of cholera deaths as non-HF deaths (likely community deaths), indicating delayed or no presentation at healthcare facilities - either due to lack of access, low risk perception or reliance on alternative treatment options. While the HF CFR nationally is at the 1% threshold, the county specific numbers ranges between 0-8.3% (Table 2). In total, 21 (48%) counties have a HF CFR above the recommended 1%. These are particularly located in Jonglei (6), Upper Nile (4), Warrap (2) and Eastern Equatoria (2).

Table 2. Suspected cholera cases, deaths and case fatality rate (CFR) per state, 27 Sept 2024 to 10 April 2025, South Sudan.

State	Counties	Cases	Deaths	CFR	County range CFR	HF deaths	%HF deaths	HF CFR	County Range HF CFR
Central Equatoria	Juba, Terekeka	5,476 (11%)	83 (11%)	1.5%	1.3-1.6%	54	65%	1%	0.6-1.1%
Eastern Equatoria	Ikotos, Magwi	344 (1%)	26 (3%)	7.6%	7.5-8.3%	19	73%	5.5%	5.4-8.3%
Jonglei	Duk, Bor South, Pigi, Fangak, Nyirol, Twic East, Akobo, Ayod, Uror	7,786 (16%)	209 (28%)	2.7%	1.4-10%	99	47%	1.3%	0.1-2.9%
Lakes	Yirol East, Awerial, Yirol West	659 (1%)	26 (3%)	3.9%	2.7-5.9%	11	42%	1.7%	0-2.2%
Northern Bahr el Ghazal	Aweil West, Aweil Centre, Aweil East, Aweil South, Aweil North	7,722 (16%)	32 (4%)	0.4%	0.1-4.2%	17	53%	0.2%	0-2%
Pibor AA	Pibor	1433 (3%)	66 (9%)	4.6%	4.6-4.6%	51	77%	3.6%	3.6-3.6%
Ruweng AA	Pariang	159 (0%)	3 (0%)	1.9%	1.9-1.9%	3	100%	1.9%	1.9-1.9%
Unity	Rubkona, Mayom, Leer, Guit, Panyijiar, Koch, Mayendit	18,459 (38%)	354 (47%)	1.9%	1.1-13.3%	167	47%	0.9%	0-1.5%
Upper Nile	Renk, Manyo, Malakal, Ulang, Panyikang, Maban, Baliyet, Fashoda, Luakpiny/Nasir, Maiwut	5,019 (10%)	73 (10%)	1.5%	0-4.1%	48	66%	1%	0-3.7%
Warrap	Gogrial East, Gogrial West	994 (2%)	32 (4%)	3.2%	2.8-19.2%	13	41%	1.3%	1.2-3.8%
Western Bahr el Ghazal	Jur River, Wau	464 (1%)	11 (1%)	2.4%	1.9-2.4%	6	55%	1.3%	0-1.5%
Total	44	48,515	915	1.9%	0-20%	488	53%	1.0%	0-8.3%

Drivers of mortality

Barriers to access

Conflict and flooding continue to limit access to health facilities, especially in hard-to-reach counties such as Akobo, Ulang, Nasir, and Pibor. During February–March 2025, these areas reported a resurgence in cholera CFRs, coinciding with the outbreak’s expansion into conflict-affected zones.

Counties with a high Health Facility Case Fatality Rate (HF CFR >2%) showed higher proportions of late presentation (≥3 days after symptom onset), doubling the rate seen in counties with HF CFR <1%.

Approximately 47% of all reported cholera deaths occurred in the community, suggesting delayed or no access to treatment.

Lack of safe water

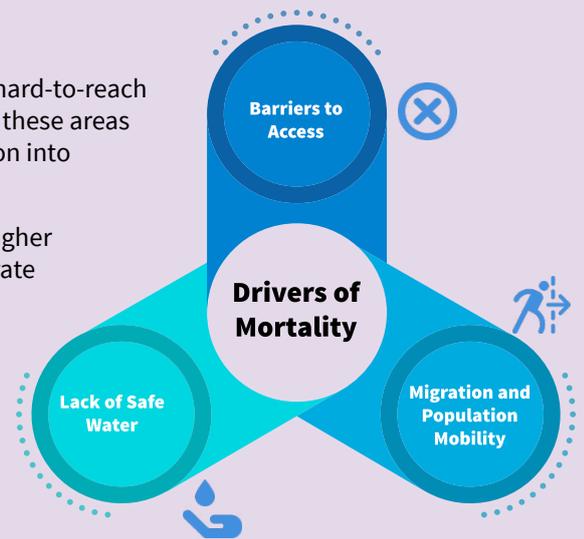
In 70% of counties, more than half of cholera cases presented with severe dehydration—well above the expected 20–30% in typical outbreaks—indicating delays in rehydration due to lack of clean water access.

Dehydration onset is accelerated by the absence of safe water for oral rehydration, particularly in areas where water sources are contaminated or compromised by floods and poor sanitation infrastructure.

Migration and population mobility

The Sudan crisis has led to large population influxes and internal displacement, increasing the number of mobile populations in border areas.

Nomadic lifestyles and displacement patterns complicate sustained intervention efforts and reduce oral cholera vaccine (OCV) coverage. In some high-risk counties such as Luakpiny/Nasir and Ulang, insecurity delayed or disrupted planned OCV campaigns.



Response measures



Oral Cholera Vaccination (OCV)

- Vaccinated individuals: 4.9 million (83% coverage)
- Counties covered: 23/34 approved, additional campaigns ongoing
- OCV doses delivered: ~6.97 million
- Estimated prevented: ~30,000 cases and 600 deaths



WASH/IPC interventions

- CTCs established in Juba, Tharqueny, and Kuajok
- WHO deployed 150 metric tons of cholera and WASH supplies worth USD 2.9M



Surveillance and lab capacity

- RRTs deployed in 13 counties
- 86% counties submitted samples despite logistical barriers
- Gaps remain in lab confirmation and surveillance in remote areas

Community-led innovation: locally constructed cholera treatment unit in Pharqueng

In response to rising cholera cases and limited infrastructure, the community in Pharqueng PHCC initiated the construction of a Cholera Treatment Unit (CTU) using locally sourced materials. The effort, supported by health partners, demonstrates how community ownership and indigenous solutions can expand access to care in remote areas. The CTU is expected to serve as a key stabilization point for moderate and severe cases and complements national efforts to decentralize cholera response capacity.



Photo: Ongoing construction of CTU structures at Pharqueng PHCC using local timber and woven fencing panels.

Analysis; Explaining the mortality patterns

The following analysis explores the underlying reasons behind observed mortality and transmission patterns using four health system dimensions

Access: Why are people not accessing care and why are outcomes worse in specific locations?

Distance to health facility

- In counties such as Ulang, Akobo, and Pibor, insecurity and flooding have made it physically difficult to reach care. These areas reported high case fatality rates (CFRs) and a large proportion of deaths in the community
- 47% of all reported cholera deaths occurred outside health facilities, indicating that many people never reached care

Functionality of health facilities

- In some regions, patients died on arrival or shortly after, such as in Central Equatoria and Jonglei, suggesting either inadequate triage, insufficient staffing, or stock-outs at treatment sites
- In 21 counties (48%), the health facility CFR exceeded the 1% threshold, an indicator of performance gaps

Social and cultural practices

- In areas with traditional healing practices or low trust in the health system, delayed care seeking is common. This may partly explain the high proportion of community deaths and late presentation in counties with HF CFR >2%

Quality of Services: Why are patients dying even after reaching care?

People's experience

- More than 70% of counties reported that over half of patients arrived with severe dehydration, suggesting that either care was not sought early or that facilities were not equipped for early-stage rehydration
- In Unity and Upper Nile, some HF deaths occurred after treatment with IV fluids, indicating that patients either deteriorated before reaching care or treatment protocols were not followed optimally

IPC service quality (safety)

- No direct IPC audit data is available, but the existence of reactive cholera treatment centers (e.g. in Pharqueng, Juba, Tharqueny, Kuajok) indicates efforts to establish safe treatment zones
- However, the high CFR in facilities such as in Eastern Equatoria (HF CFR up to 5.5%) raises questions about the consistent application of case management protocols and infection control practices

Community Demand: Why is early intervention not happening in some groups or places?

Health-seeking behavior

- Late presentation is widespread. In counties with HF CFR >2%, patients presenting after three days of symptom onset were twice as common as in counties with HF CFR <1%. This delay may be due to poor awareness of early symptoms, low trust in available services, or reliance on alternative care options

Healthy action

- 28% of cases occurred in children under five, but this age group accounted for only 18% of deaths, suggesting that caregivers in this group were more proactive or responsive
- RCCE gaps may have contributed to poor uptake of preventive practices, especially in mobile populations. Insecurity disrupted vaccine campaigns in high-risk counties such as Pibor and Nyirol

Resilience: Why is the system coping in some areas but not others?

Adherence to standards

- 83% OCV coverage (4.9 million people vaccinated) has been achieved in approved counties, with an estimated 30,000 cases and 600 deaths averted, reflecting strong alignment to response standards
- However, in 21 counties, health facilities failed to maintain CFRs below 1%, indicating gaps in adherence to WHO-recommended case management standards

Ability to provide services through shocks

- Despite logistical barriers, 86% of counties submitted laboratory samples, showing strong surveillance performance
- Community-led solutions such as the CTU built from local materials in Pharqueng show that adaptive service delivery is possible in resource-constrained settings
- Ongoing challenges include delays in PCR confirmation and limited lab capacity nationally, as well as insecurity halting response activities in counties like Akobo and parts of Pibor

Call to action – rainy season preparedness

In South Sudan, while the overall mortality has been kept low by the speed and depth of the response, the incoming rainy season together with persisting population movements occasioned by various social economic environmental and political factors present a risk of lengthening the outbreak, and higher mortality levels moving forward. To anticipate and avoid this, it is crucial to have a surge of investment in specific areas what will minimize the risk of transmission and hasten response to cases during the coming 3 months. This surge of investment should focus on the following areas:

Improve early diagnosis and laboratory capacity

- Improve timeliness and completeness of sample collection from suspected cases.
- Expand in-country laboratory capacity, with a focus on scaling PCR diagnostic capacity to support rapid confirmation and targeted response.

Strengthen prevention and promotion interventions

- Accelerate oral cholera vaccine (OCV) rollout in at-risk and mobile populations, particularly in counties with recent spread.
- Expand risk communication and community engagement (RCCE) to promote early care seeking and safe hygiene practices.

Enhance interventions to treat cholera cases

- Establish oral rehydration points (ORPs) and water points within communities to enable earlier rehydration and reduce severe dehydration.
- Reinforce facility-based case management capacity, especially in counties with rising CFRs.
- Implement systematic mortality audits and support community-based diagnosis to address quality-of-care gaps.

Improve availability of safe water

- Mass distribution of chlorine tablets to reduce waterborne transmission in flood- and conflict-affected areas.

For additional context and initial analysis, refer to the previous factsheet on the ongoing cholera outbreak in South Sudan [Cholera in South Sudan: past, present and future](#)

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