World Health Organization
South Sudan

Knowledge Management Series for Health

8th July 2025

Cholera outbreak in South Sudan: Response Impact

South Sudan continues to experience recurring cholera outbreaks, the latest beginning in the last quarter of 2024. The first suspected case was reported on 28 September 2024 in Renk, Upper Nile State, among people fleeing both conflict and a growing cholera crisis in neighbouring Sudan. The outbreak was officially declared on 28 October 2024.

As of 23 June, a total of 75,196 cholera cases and 1,383 deaths were reported across 53 counties the country's 80 counties, representing a case fatality rate (CFR) of 1.8%. The rapid spread of the disease was driven by inadequate access to clean water and sanitation, widespread flooding, and mass displacement, both from within South Sudan and across the border due to the ongoing crisis in Sudan. These conditions have made it difficult to contain transmission and have put immense pressure on health services. However, action taken has contributed to cases and deaths averted, and transmission has been slowed.

South Sudan Cholera Response

Oral Cholera Vaccination (OCV)

- Completed **16** OCV applications to ICG and cumulatively got approvals for **9** million doses of OCV
- Vaccinated **6,604,564** people with OCV in 34 counties as of 11 June 2025
- OCV campaigns conducted in **34** counties and planned/ongoing in additional **7** counties

Case Management

- Setup **102** ORPs, **19** cholera treatment centers (CTCs) **88** cholera treatment units (CTUs))
- Developed Cholera situation and OCV dashboard for real-time access

Surveillance & Laboratory Surveillance

- **127** facilities on average reporting suspected cholera cases
- Supported **16,027** point of care rapid diagnostic tests (RDTs), with 10,920 testing positive
- **1560** AWD alerts triggered in EWARS with **62%** verified
- Analyzed **1152** stool samples by culture for detection of V. cholerae with **436** testing positive

Coordination, Partnership, and Response Capacity

- Over **72** national coordination meetings
- Recruited **15** surge support staffs for deployment at national and sub-national level
- Deployed **39** nationally coordinated Rapid Response Teams (RRTs) to **29** counties
- Developed and distributed **35** weekly situation update reports
- Developed Cholera situation and OCV dashboard for real-time access

Health Cluster and Partner Coordination

Over **40** Humanitarian Partners supporting the Cholera Outbreak response

Water, Sanitation, and Hygiene (WASH)

Conducted water quality of **85** samples from health facilities and **510** in communities

Risk Communication and Community Engagement (RCCE)

Conducted community sensitization through public announcements, social mobilizer engagement, and the distribution of Information, Education, and Communication (IEC) materials, including posters, flyers, and radio broadcasts

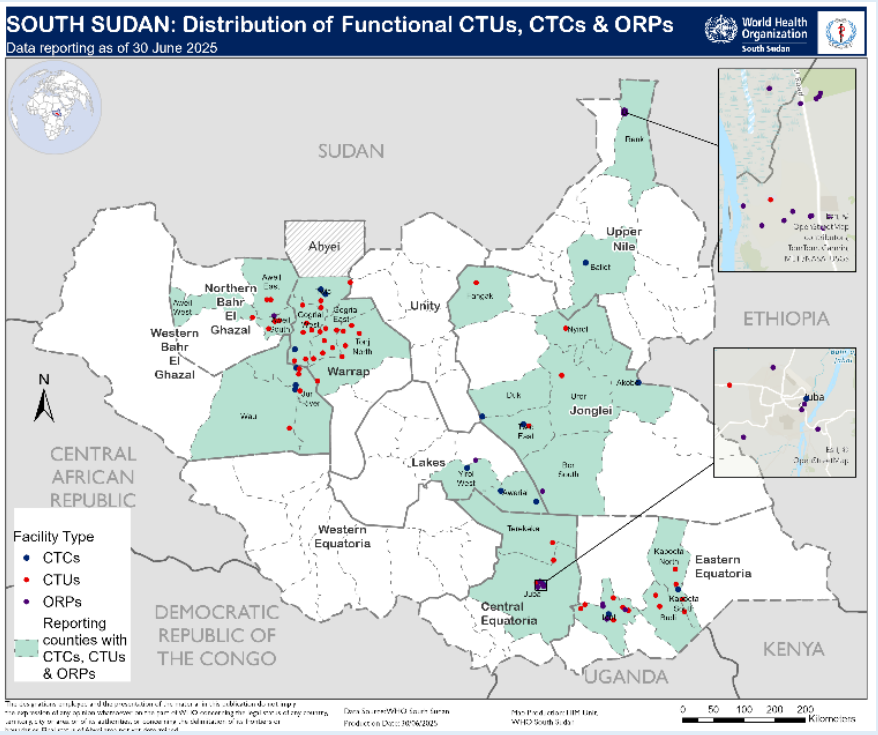
Logistics and supply

Dispatched **387.2** metric tons of cholera treatment supplies, sufficient for management of **1.2**million people

Table 1: Response in numbers as at 1st July 2025

To strengthen treatment capacity, WHO helped establish 102 oral rehydration points, 88 cholera treatment units, and several cholera treatment centres. This included expanding existing facilities, such as adding a 50-bed cholera treatment centre at Juba Teaching Hospital and opening a new 30-bed centre in Kuajok, Warrap State, as well as supporting health units in Mangey and Jur River.

To ensure patients could receive timely care, WHO distributed 387.2 metric tons of emergency health kits, capable of supporting over 1.2 million people. An additional 175 metric tons of cholera-specific supplies were delivered, enough to treat approximately 73,500 cases. These efforts reached 52 counties, 135 health facilities, and 38 implementing partners, including both hospitals and primary care centres.



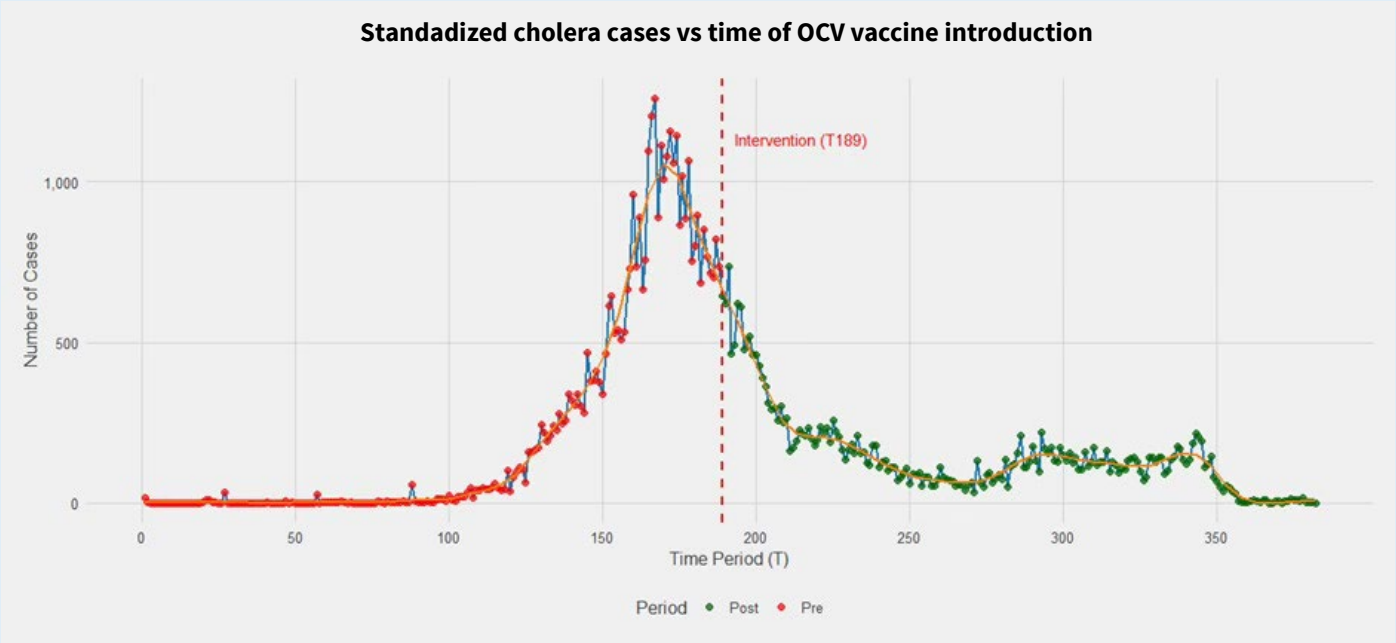
A cornerstone of the cholera response in South Sudan has been the nationwide oral cholera vaccination (OCV) campaign. Led by MoH and made possible through a successful application to the International Coordinating Group (ICG) by WHO, more than 6.6 million vaccine doses have been administered to date, achieving 95% coverage.

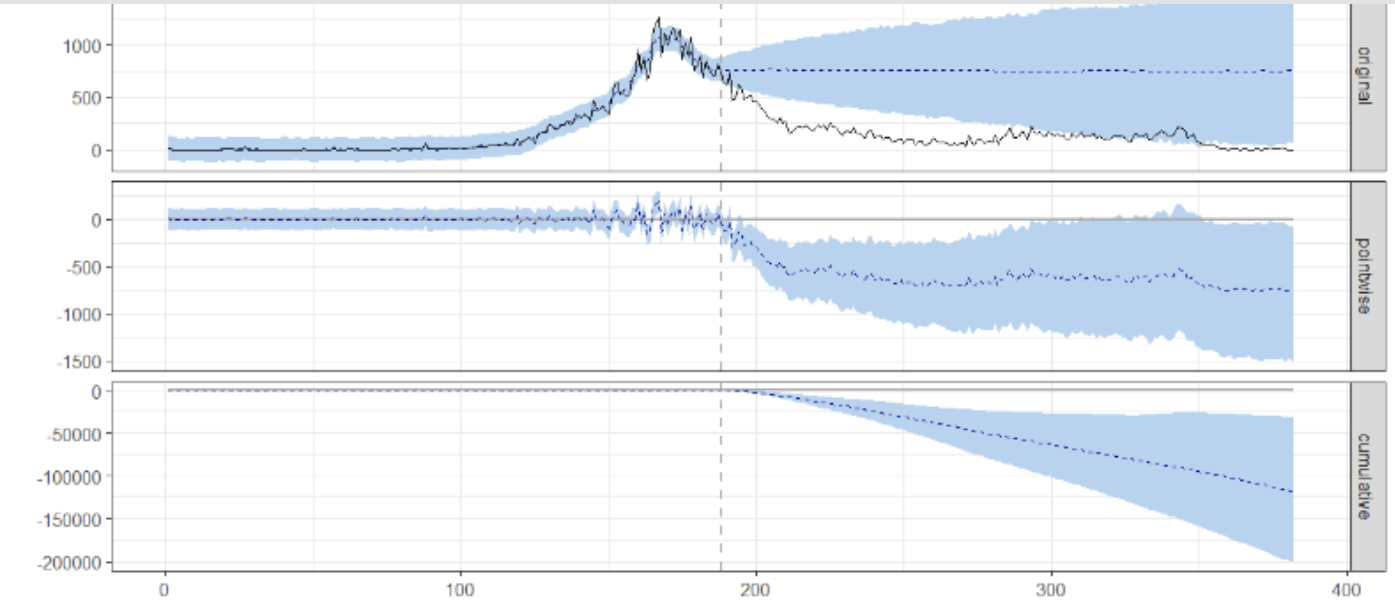
Impact of Response Activities

Although challenges persist, the outbreak has been slowed and interrupted thanks to the flexibility, speed, and strong collaboration among implementing partners, coordinated through the Health Cluster led by WHO, which has been critical in delivering life-saving support to affected communities.

Impact on cases

To evaluate the impact of the OCV campaigns on cholera cases, a retrospective cohort analysis was conducted across 34 counties using a Causal Impact framework. The analysis used left-truncated data to account for staggered intervention start dates across counties, enabling comparison between observed case trends and modelled counterfactuals in the absence of vaccination. Statistical testing was applied to assess the significance of observed reductions in cases at both national and subnational levels, focusing on vaccination as the primary intervention expected to influence case incidence.





Following vaccination campaigns in 34 counties, a total of 28,238 cholera cases were reported in those counties, with an average of 146 cases per day. In contrast, model projections estimated that, without the intervention, case counts would have averaged 754 per day, totaling approximately 146,244 cases by end of June.

This reflects an estimated reduction of 608 cases per day and about 118,006 fewer cases overall compared to what would have been expected without the intervention. The relative reduction in cholera cases is estimated at 78%, with a 95% credible interval ranging from 52% to 88%. These findings are consistent with a case-control study by WHO, which reported OCV effectiveness of 78% against all cases and 89% against severe cases (WHO, 2023).

County specific impact on cases

At county level, the impact of the oral cholera vaccine intervention varied, with most counties showing reductions in case incidence, while a few showed no detectable change or increase.

- Duk, Mayom, Twic East, Terekeka, Yirol East, Pibor, Nyirol, Bor South, Leer, and Malakal recorded the strongest statistically significant reductions in cholera cases following the intervention
- Akobo, Aweil East, Ayod, Guit, Juba, Jur River, Koch, Pigi, and Yirol West showed minimal changes (not statistically significant) in cholera cases following the intervention.
- Aweil South and Aweil North recorded statistically significant increases in cholera cases following the intervention, with observed case counts exceeding model projections.

Impact on mortality

	Facility level						
Time	**CTC**	**CTU**	**Hospital**	**Others**	**PHCC**	**PHCU**	**All**
2024							
Qtr4	0.6%	0.7%	2.1%	1.5%	3.4%	1.1%	2.1%
2025							
Qtr1	0.8%	0.0%	1.3%	1.4%	2.3%	2.2%	1.8%
Qtr2	0.0%	0.0%	0.8%	2.2%	2.2%	2.5%	1.8%
Total	**0.6%**	**0.5%**	**1.3%**	**1.8%**	**2.5%**	**2.1%**	**1.8%**

Table 2: Cholera Case Fatality Rate by Type of Health Facility as at 23rd June 2025

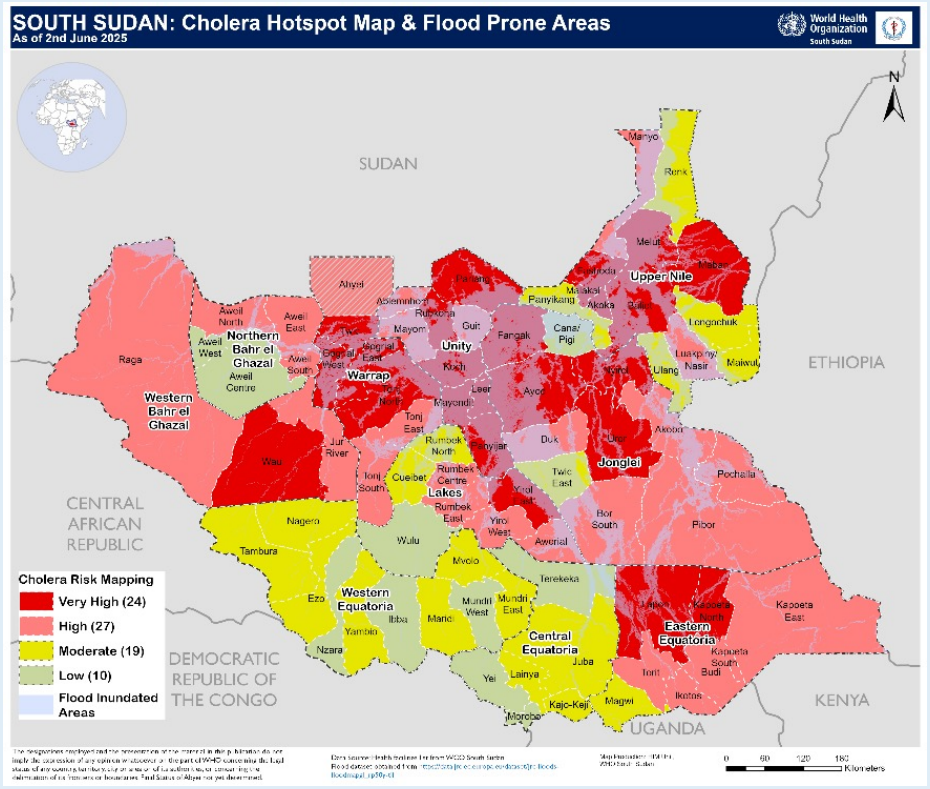
Overall, the CFR remained below 2% throughout the reporting period. Facilities designated for specialized cholera care, including Cholera Treatment Units (CTUs) and Cholera Treatment Centres (CTCs), consistently reported the lowest CFRs, reflecting more favourable clinical outcomes. In contrast, higher CFRs were documented at lower-level facilities such as Primary Health Care Units (PHCUs) and Primary Health Care Centres(PHCC).

Looking Ahead

As cholera transmission patterns continue to evolve, three main drivers are expected to shape the outbreak trajectory in the coming months.

Sudan crisis and displacement into unvaccinated or waning immunity areas

The ongoing crisis in Sudan has triggered large-scale displacement into South Sudan, including areas with low or no cholera vaccine coverage. Many of the new arrivals originate from areas with active cholera transmission. As they move within South Sudan, they seed multiple outbreaks, resulting in sporadic and geographically dispersed transmission patterns across the country.

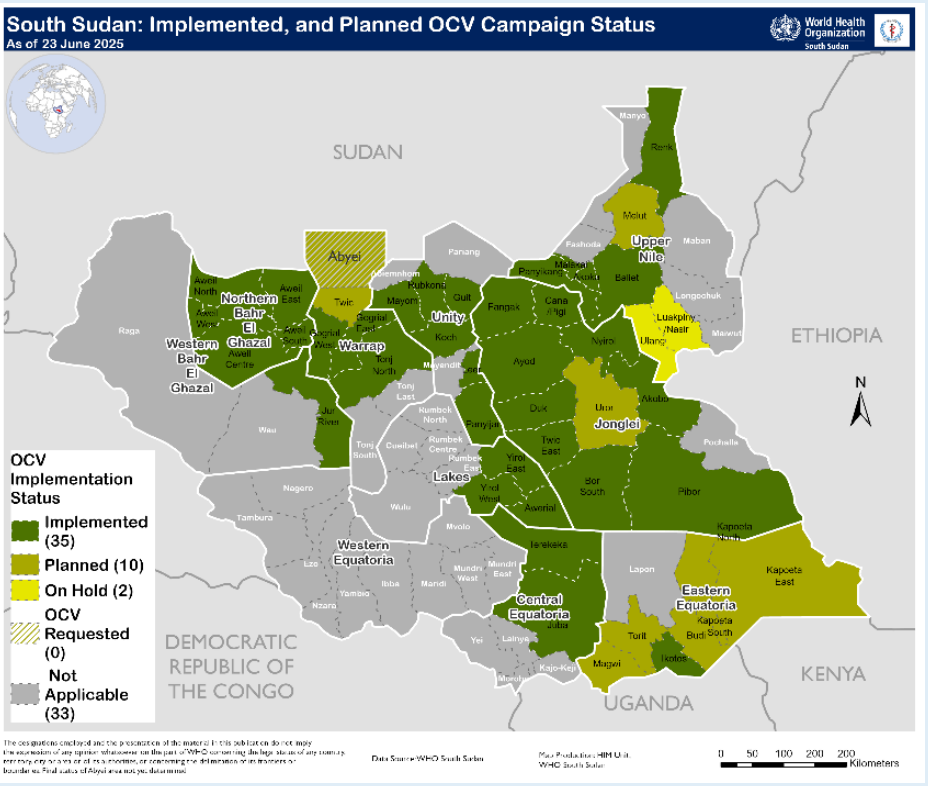


Flooding and poor water/sanitation conditions

Extensive flooding across many counties has led to widespread contamination of water sources used for drinking, cooking, and household hygiene. Freshwater sources such as rivers, shallow wells, hand-dug wells, and surface catchments have been inundated by floodwater and runoff, increasing the risk of fecal contamination. Following periods of heavy rainfall, stagnant water collects in low-lying areas and around human settlements, creating breeding grounds for pathogens and sustaining environmental reservoirs of Vibrio cholerae. While open defecation remains a contributing factor in some locations, the predominant concern is the direct contamination of drinking water sources due to poor drainage, overflow of latrines, and lack of protective infrastructure.

Waning vaccine protection over time

Although the OCV campaign has played a central role in reducing transmission and contributed to a marked decline in cases, a gradual resurgence is now being observed in several vaccinated areas. This is likely driven by waning immunity, as most individuals received only a single dose offering protection for approximately four to six months, and by continued population movements that reintroduce risk. For instance, individuals vaccinated during the December 2023 campaign are now at the tail end of their protection. In Juba, a recent increase in cases has been linked to the arrival of new internally displaced persons (IDPs), many of whom were not reached during earlier vaccination rounds.



Forward Focus (Next 6 Months)

Priority is to minimize mortality as we mitigate against the above 3 drivers of transmission. There is need to prioritize 7 interventions for this.

1. **Availability of Chlorine Tablets:** Distribute chlorine tablets in flood-affected and very high-risk counties. The aim is to reduce the infectious dose individuals are exposed to. Mass chlorination at the household level helps lower the bacterial load in drinking water, thereby reducing the risk and severity of infection.
2. **Ensure targeted real-time surveillance and Alert Systems in high-risk areas:** Deploy mobile-based real-time reporting tools in health facilities and displacement sites across high-risk counties to ensure early detection of acute watery diarrhea (AWD) cases. The goal is to pick up cases as early as possible and trigger rapid response. A weekly flood-health bulletin will support timely decision-making and operational coordination.
3. **Community ownership and engagement:** Build community ownership of the response to be able to practice healthy behaviors and appropriate health seeking behaviors. Communities should contribute to CTU, monitoring of water points and surveillance activities.
4. **Accelerate Early Diagnosis and Response:** Improve rapid testing, and sample collection for faster detection and treatment.
5. **Establish appropriate treatment capacity in the hotspots:** Equip and support health facilities in hotspots through supplies, workforce training, and operational guidelines.
6. **Establish Oral Rehydration Points (ORPs) and Safe Water Points:** Set up rehydration and clean water stations in IDP camps and underserved communities as well as along key flood-displacement routes through provision of supplies and training on set-up and management of ORPs.
7. **Introduce preventive vaccination:** To initiate a program for mass preventive vaccinations, particularly in very high-risk locations and counties. This should extend immunity to beyond the period at risk.

Refference: World Health Organization. (2023). Cholera response: Oral cholera vaccine use in cholera outbreaks – Experiences and lessons learned. https://apps.who.int/iris/handle/10665/370407

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