



Republic of South Sudan

Weekly Integrated Disease Surveillance and Response (IDSR) Epidemiological Bulletin

Reporting period: Epidemiological Week 06
5 to 11 February 2024

Background

This weekly bulletin presents the epidemiological status of priority diseases, conditions under surveillance, and public health events in South Sudan. The data presented in the bulletin come from various actors involved in preparedness and response to public health events in the country.

Highlights for the current reporting period

- In week 06 of 2024, the IDSR reporting timeliness and completeness were 80% and 91%, respectively, and IDSR performance at the EWARN mobile sites was 100%.
- Completeness of IDSR reporting at private Health facilities in Juba and Wau was only at 100%.
- A total of 200 alerts were triggered in the EWARS system in week 06, with 67% (134/200) verified in the system. Most alerts were for Event-based surveillance, measles, and AWD.
- Ministry of Health and partners launched the Yellow Fever reactive Vaccination Campaign in Yambio Western Equatoria state, targeting over 600,000 individuals aged 9 months to 60 years from 5 counties
- Ongoing preparedness measures and readiness are underway in Renk County, Upper Nile State, in response to a Ministry of Health statement on imported cholera cases from Sudan in November 2023.
- Epi week 01 to 06, 2024, a total of 295 suspected measles cases were reported, with 75 (25.4%) lab-confirmed, one death, and a case fatality rate of 0.3%.
- Other emergencies include circulating Vaccine Derived Polio Virus type 2 (cVDPV2) in Yambio and Juba counties, Hepatitis E in Fangak county, the Sudan crisis, and ongoing food security.

Surveillance system performance

Timeliness and Completeness of IDSR in week 06, 2024

The epidemic alert and response system in South Sudan currently relies mainly on immediate alert notification and weekly case data reporting through the Integrated Disease Surveillance and Response (IDSR) system. This system is complemented by a weekly Early Warning Alert and Response System (EWARS).

Completeness (proportion all of reports received regardless of time) and timeliness (proportion of reports received by the Wednesday following the end of the reporting period) of IDSR and EWARS are shown in **Table 1** below. Timeliness and completeness for week 06 were at 80% and 91%, respectively.

Table 1: Timeliness and completeness of IDSR reporting by State for week 06 2024

| State | Total facilities | Number of facilities reported (Completeness)† | Current reporting period | | Cumulative since year start (2024 level) | |
|--------------|------------------|---|--------------------------|--------------|--|--------------|
| | | | Timeliness | Completeness | Timeliness | Completeness |
| Lakes | 112 | 112 | 77% | 100% | 90% | 100% |
| NBGZ | 89 | 84 | 97% | 98% | 90% | 93% |
| Unity | 90 | 85 | 82% | 99% | 80% | 95% |
| WBGZ | 112 | 98 | 63% | 80% | 78% | 89% |
| WES | 183 | 186 | 85% | 93% | 88% | 95% |
| Jonglei | 118 | 94 | 86% | 89% | 88% | 88% |
| Warrap | 111 | 105 | 88% | 94% | 86% | 96% |
| EES | 107 | 101 | 78% | 95% | 84% | 95% |
| RAA | 16 | 16 | 56% | 56% | 67% | 89% |
| CES | 151 | 151 | 94% | 94% | 90% | 94% |
| AAA | 17 | 6 | 24% | 35% | 32% | 40% |
| Upper Nile | 136 | 111 | 63% | 83% | 63% | 82% |
| GPAA | 15 | 15 | 93% | 93% | 97% | 98% |
| Total | 1257 | 1164 | 80% | 91% | 83% | 92% |

Table 2: Timeliness and completeness of reporting by State and completeness of IDSR reporting from private health facilities in Juba and Wau

| Admin area | # Of Reporting Mobile Sites | Completeness in week 06 | Completeness in week 05 | Payam | Number of Private facilities reported | Completeness in week 06 | Completeness in week 05 |
|--------------|-----------------------------|-------------------------|-------------------------|---------------|---------------------------------------|-------------------------|-------------------------|
| IMC | 4 | 100% | 100% | Kator | 3 | 100% | 100% |
| SSHCO | 1 | 100% | 100% | Marial Baai | 1 | 100% | 100% |
| SMC | 1 | 100% | 100% | Juba | 10 | 90% | 100% |
| SCI | 2 | 100% | 100% | Northern Bari | 1 | 100% | 100% |
| WVI | 2 | 100% | 100% | Rajaf | 4 | 100% | 100% |
| SP | 4 | 100% | 100% | Muniki | 12 | 100% | 100% |
| CIDO | 1 | 100% | 100% | Wau North | 13 | 85% | 85% |
| HFO | 3 | 100% | 100% | Wau South | 20 | 90% | 80% |
| TOTAL | 18 | 100% | 100% | TOTAL | 64 | 92% | 91% |

Epidemic alerts

A total of 200 alerts were triggered in the EWARS system in week 06, with 67% (134/200) verified in the system. Most of the alerts were for EBS (19%) ((38/200), Measles (17%) (33/200), AFP (, and AWD (15%). It is important to note that there were significant alerts of Guinea worm, AJS, cholera, and malaria. See **table 3** below for more details.

Table 3: Summary alerts for week 06

| State/Admin Area | Acute jaundice syndrome | | Acute Respiratory Infections (ARI) | | Acute Watery Diarrhoea | | AFP | | Bloody Diarrhoea | | Cholera | | EBS | | Guinea Worm | | Malaria (Confirmed) | | Measles | | Neonatal Tetanus | | Yellow Fever | | Grand Total | | |
|--------------------|-------------------------|----------|------------------------------------|----------|------------------------|-----------|-----------|-----------|------------------|----------|----------|----------|-----------|-----------|-------------|-----------|---------------------|-----------|-----------|-----------|------------------|----------|--------------|----------|-------------|------------|----|
| | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | #R | #V | |
| CES | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| EES | 0 | 0 | 1 | 1 | 5 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 10 | 10 |
| GPAA | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Jonglei | 3 | 0 | 2 | 0 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 28 | 1 | |
| Lakes | 0 | 0 | 3 | 3 | 3 | 3 | 8 | 8 | 0 | 0 | 0 | 0 | 3 | 3 | 16 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 34 | |
| NBGZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 9 | 9 | |
| RAA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | |
| Unity | 3 | 1 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | |
| Upper Nile | 0 | 0 | 2 | 1 | 1 | 1 | 7 | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 17 | 14 | |
| Warrap | 0 | 0 | 2 | 0 | 3 | 2 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 18 | 5 | |
| WBGZ | 0 | 0 | 2 | 2 | 4 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 19 | 15 | |
| WES | 0 | 0 | 0 | 0 | 5 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | 25 | 25 | 0 | 0 | 4 | 4 | 6 | 6 | 0 | 0 | 0 | 0 | 43 | 43 | |
| Grand Total | 6 | 1 | 14 | 7 | 29 | 17 | 31 | 23 | 3 | 2 | 1 | 1 | 38 | 31 | 28 | 19 | 13 | 10 | 33 | 22 | 1 | 1 | 3 | 0 | 200 | 134 | |

#R= reported

#V= verified

Weekly Update on Indicator-Based Surveillance (Week 06)

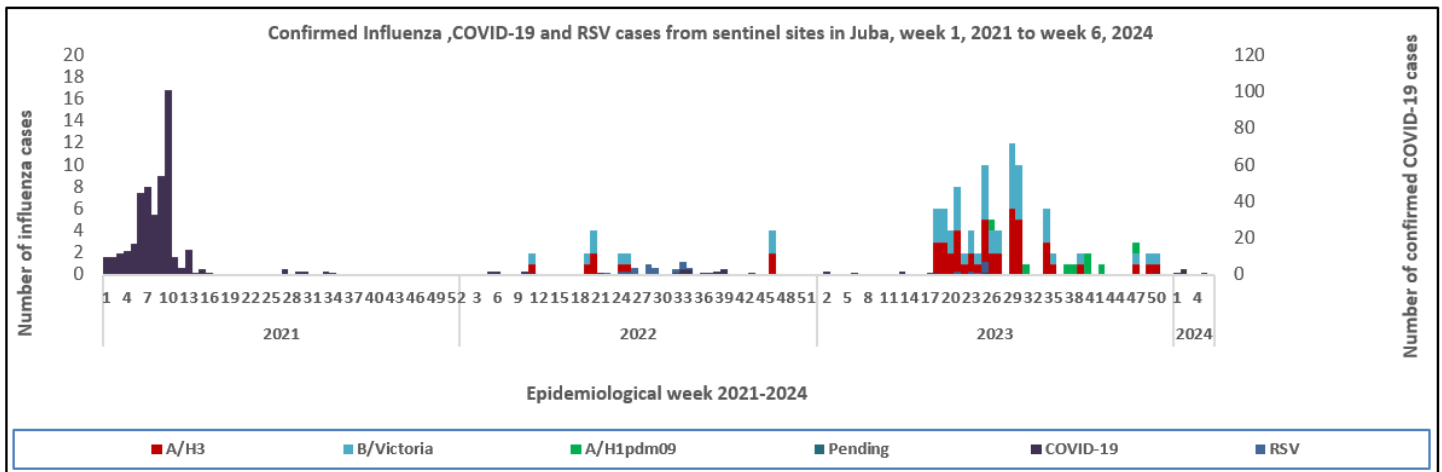
Indicator-based surveillance is implemented in South Sudan through the EWARS platform according to the IDSR 3rd guidelines, where approximately 59 priority diseases and public health events are monitored and reported from health facilities across the country regularly.

Influenza update

There are currently Four designated Influenza sentinel surveillance sites in Juba (Juba Teaching Hospital and Al Sabah Children's Hospital Rumbek State Hospital & Juba Military Hospital) that are collecting epidemiological data and samples from ILI/SARI cases.

From week 6 2024, a total of (151) ILI/SARI were collected: (88) tested negative, (5) were positive for COVID-19, (0) Influenza types A (H3), (1) B (Victoria), (0) for A/H1pdm09 and (0) for RSV in week 6,2024.

Figure 1: Indicator-Based Surveillance (IBS) Influenza Surveillance



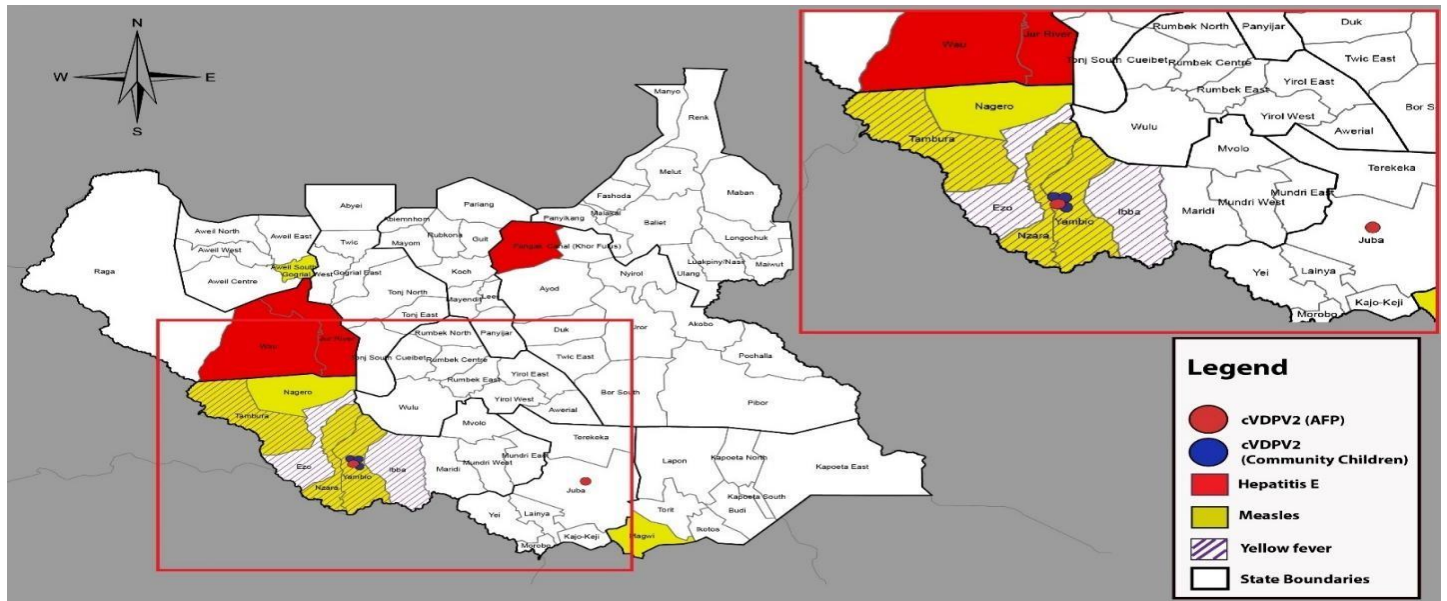
New and ongoing confirmed epidemics

Table 4 below lists ongoing and newly confirmed epidemics since the last reporting period. Cases are as reported to the epidemic alert and response system.

Table 4: Summary of new and ongoing confirmed epidemics

| Aetiologic agent | Location (county) | Date first reported | New cases since last bulletin | Cumulative cases to date | Response activities | | | | |
|--------------------------|--|---------------------|-------------------------------|--------------------------|------------------------|-----------------|-------------|------------------|----------|
| | | | | | Surveillance/Lab | Case management | Vaccination | Health promotion | IPC/WASH |
| <i>New epidemics</i> | | | | | | | | | |
| Yellow Fever | Yambio, Nzara, Ezo, Tambura, Ibba and Maridi | 21 Dec 2023 | 14 | 64 | 3 Laboratory confirmed | Ongoing | Planned | Ongoing | Ongoing |
| <i>Ongoing epidemics</i> | | | | | | | | | |
| Measles | 69 counties | 2022 | 19 | 12,399 | 1,083 | ongoing | ongoing | ongoing | ongoing |
| Hepatitis E | Fangak | 2023 | | 502 | | ongoing | ongoing | ongoing | ongoing |
| cVDPV | Yambio and Juba | 19/Dec 2023 | 2 | 2 | 2 | ongoing | ongoing | ongoing | ongoing |

Figure 2: Map showing ongoing disease outbreak across the country



Weekly Update on Event-Based Surveillance (Week 06)

EBS is the organized collection, monitoring, assessment, and interpretation of mainly unstructured ad hoc information regarding potentially risky events to public health. This information could be rumours and other ad hoc reports transmitted through formal and informal channels, including media, health workers, community structures, NGOs, etc.

Response activities for ongoing outbreaks

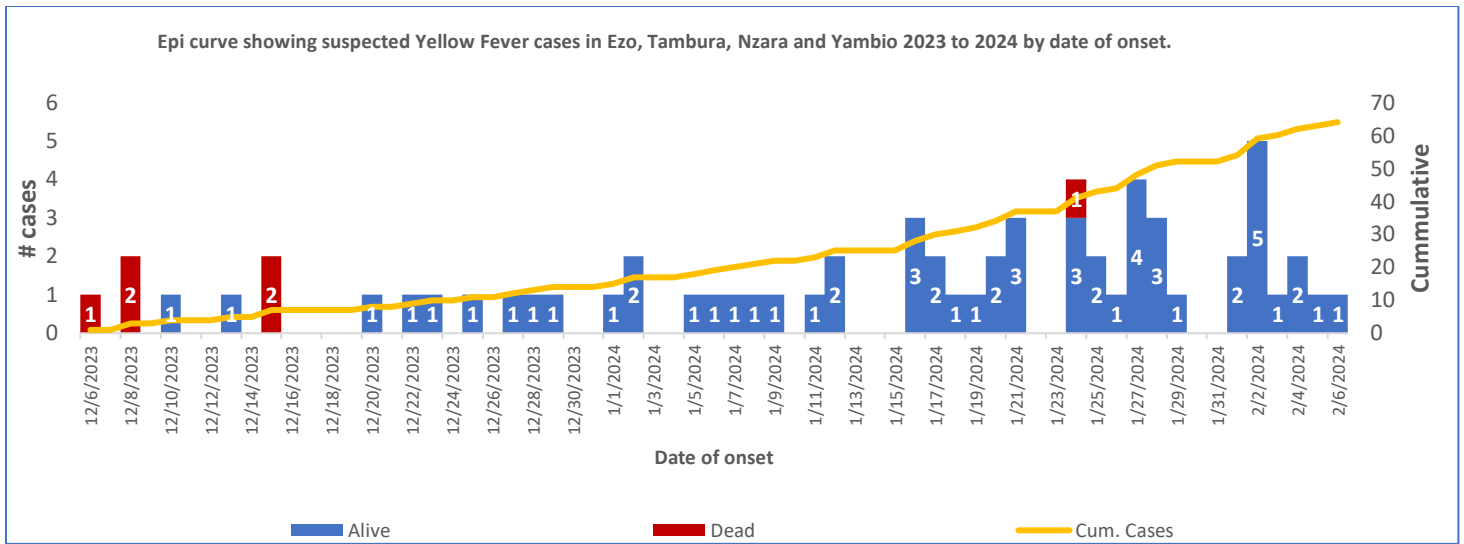
Yellow Fever outbreak in Yambio December 2023 to January 2024

On 21 December 2023, the Ministry of Health was notified a suspected case of viral hemorrhagic fever from Yambio County, Western Equatoria State. The suspected case was a 24-year¹-old male from Kangura village in Gangura Payam, Yambio County who presented with generalized body weakness, headache, epigastric discomfort, Fever, vomiting of blood and yellowish discoloration (Jaundice) of eyes. The patient was isolated at the health facility, and a sample was taken for testing. The sample tested positive for Yellow Fever on 24 December 2023 at the National Public Health laboratory using RT-PCR.

Following the confirmation, the National Ministry of Health of the Republic of South Sudan declared a Yellow Fever outbreak on 24 December 2023 and immediately activated the Public Health Emergency Operation Center (PHEOC) to response mode to facilitate pillar-based response to control and contain the outbreak.

Figure 3: Epi curve showing suspected Yellow Fever cases 2 by date of onset

¹ Further verification by national rapid response team revealed the age of the index case to be 24 years rather than 18 years.



As of 11 February 2024, A cumulative total of sixty-four (64) Yellow Fever cases (61 suspected and 03 confirmed) were reported from six counties in Western Equatoria state: Yambio (33), Nzara (09), Tambura (12), Ibba (04), Ezo (05) and Maridi Counties (01) as of 12 February 2024. since the first case of Yellow Fever was confirmed on 24 December 2023.

Fourteen (14) newly suspected Yellow Fever cases were reported during the last seven days. The cases were reported from Yambio (6), Tambura (3), Ezo (2), Nzara (2), and Ibba counties (1). No new deaths have been reported during the last seven days.

Response update

The Ministry of Health, in collaboration with the World Health Organization (WHO) and other partners, has prepositioned essential medical supplies in the affected areas to strengthen the management of Yellow Fever cases. A vaccination campaign for Yellow Fever is currently underway in Yambio, Nzara and Tambura in Western Equatoria state. On January 30, 2024, 410,596 doses of vaccines were deployed. The ICG has authorized an extra 223,743 doses of the Yellow Fever vaccine to be allocated for the remaining two counties of Ibba and Ezo counties. The State Ministry of Health actively coordinates response activities, including surveillance, laboratory testing, case management, risk communication, community engagement, vaccination, and infection prevention and control. Partners such as WHO, UNICEF, WVI-CGPP, CDTY, CMMB, Red Cross South Sudan, AMREF, JRS, IMA, and TRI-SS support the MoH response efforts.

Preliminary findings reveal the presence of Yellow Fever vector (mosquito) larvae in many residential areas in the affected counties.

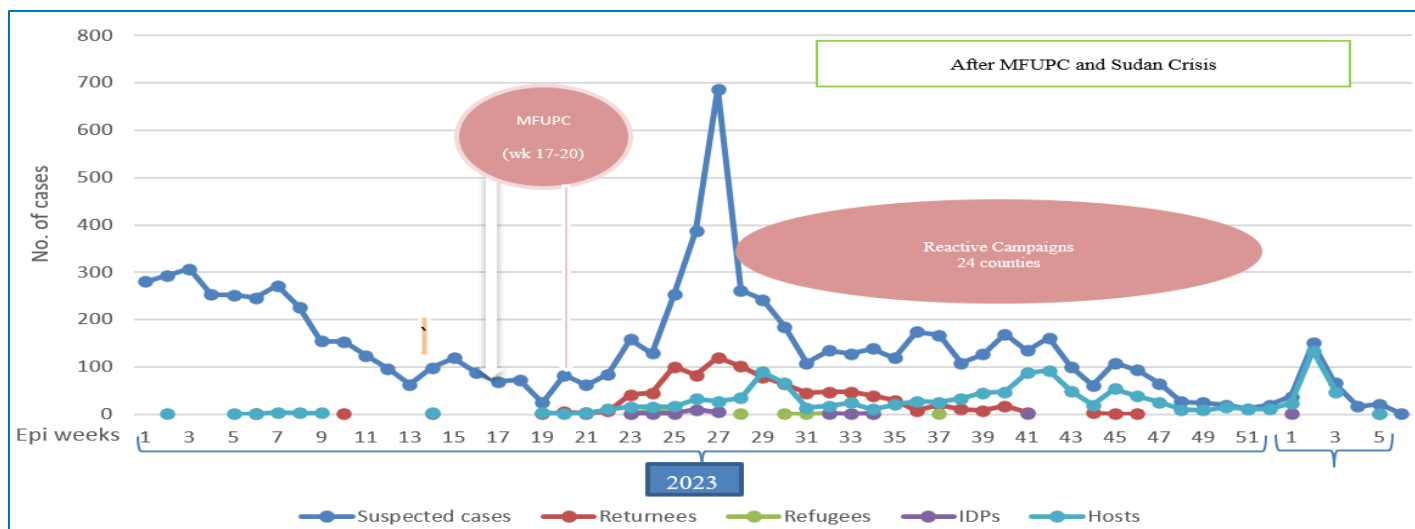
Measles Update

As of Epi week 06, 2024 a total of 295 suspected measles cases were reported, with 75 (25.4%) lab-confirmed, 1 death and a case fatality rate of 0.3% Cumulatively, there were 12,399 cases and 228 deaths reported from 2022 to 2024 giving a CFR of 1.8%

During the 06-week of 2024, 01 new case was reported with an onset of Epi week 06. One newly confirmed case has been reported from Aweil South in week 6.

During weeks 2-5, a total of 52 late cases were reported. Out of these, 34 cases were confirmed by lab tests while 15 were discarded and 3 were indeterminate. No deaths were reported during this week. There were six ongoing outbreaks in the week under review in Aweil Centre, Aweil East, Aweil South, Tambura, Nzara, and Wulu. Additionally, Morobo, Ezo, Ikotos, Aweil West, Aweil North, Yei, Juba, Terekeka, Twic East, Yambio, Kapoeta East, Kapoeta North, and Renk continue to report suspected or confirmed cases that have not reached the outbreak threshold in the last four weeks. These regions need to collect more samples for testing as per the revised SOP.

Figure 4: Trend of suspected measles cases against their residential status by epi week



Epi weeks 3 data shows three ongoing outbreaks (Tambura (1), Nzara (1) & Yambio (1)) involving three (3) payams as well as ten (10) counties reporting suspected/confirmed cases but to reach the outbreak threshold, warranting further investigation and laboratory validation.

Measles cases have been reported from different counties throughout 2023-2024. The observed peaks are driven by different counties that experienced a surge in measles cases at different times. The Sudan crisis started in week 14 of 2023, with the influx of returnees and refugees since then. The nationwide MFUPC also took place from week 17-20 and 24 reactive campaigns conducted from week 29 to 51 of 2023.

Table 5: Distribution of cases by final classification 2024

| FINAL CLASSIFICATION | NO. OF CASES | % |
|-----------------------|--------------|-------|
| Lab confirmed | 75 | 25.4 |
| Epi-linked | 52 | 17.6 |
| Clinically Compatible | 138 | 46.8 |
| Total | 265 | 89.8 |
| Discarded (-ve) | 30 | 10.2 |
| Grand Total | 295 | 100.0 |

Out of the 295 suspected measles cases, 75 (25.4%) are lab-confirmed, 52 (17.6%) epi-linked, 138 (46.8%) are clinically compatible, and 7 (3.6%) discarded cases have been reported as of epi week 06, 2024. There were 0 rubella-positive cases from the discarded (negative measles cases).

Response activities (measles)

In Phase I, over 65,000 children under 15 years were vaccinated in five counties (Renk, Aweil East, Aweil North, Aweil West, and Rubkona).

Phase II: 17 counties had implemented the reactive campaign to vaccinate over 910,728 (92%) children under 15 years, of which 150,202(16%) are returnees and refugees. Seven counties (Ayod, Leer, Fangak, Abyei, Gogrial West, Bentiu POC, and Malakal) were supported by Partners (MEDAIR, IMA, HFO, IHO, MSF, and Save the Children). Kapoeta East: the campaign was completed late last year, and final data is yet to be submitted.

Sudan Crises response updates

As of 7 February, 1,228 individuals have entered South Sudan. The cumulative number of arrivals since 16 April 2023 is

548,195. Of this number, 437,762 individuals (79.8%) are returnees, while 110,433 individuals (20.2%).

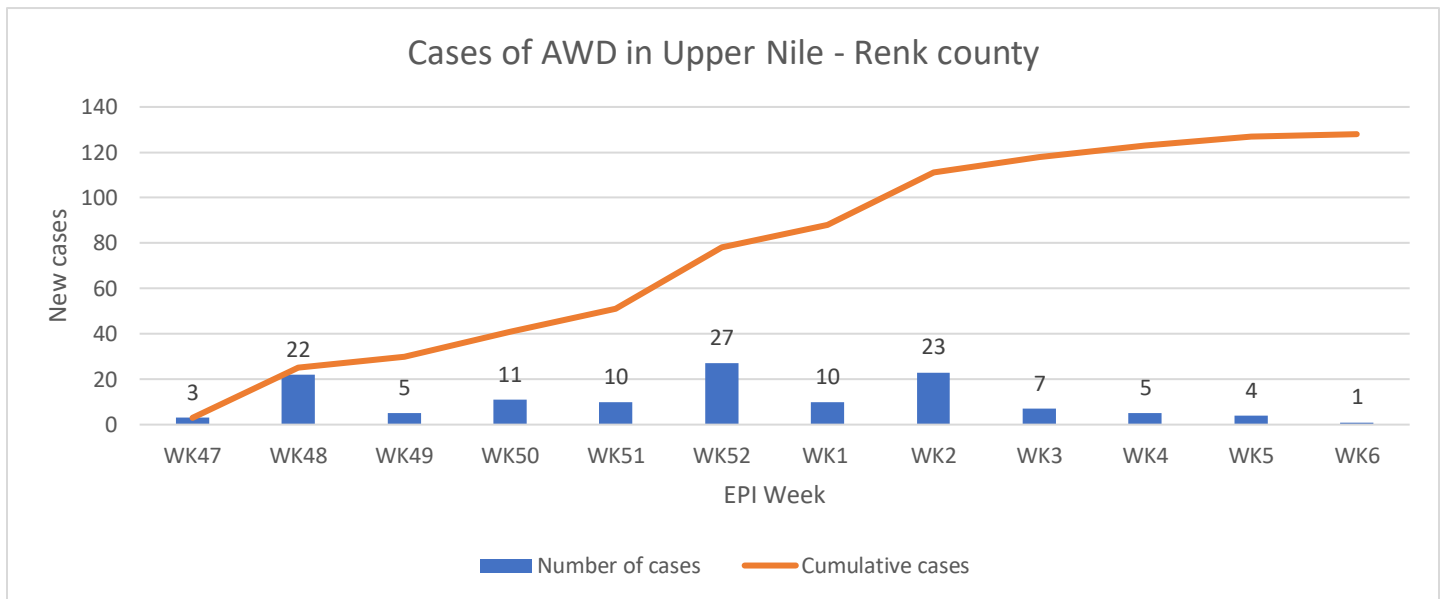
Currently, 22 points of entry (PoEs) are being monitored, accounting for 83% of the total reported influx figures.

Cholera Preparedness and Readiness updates in Renk

A health screening desk was established at Wanthou/Joda, and since 19 December 2023, 131,393 people have been screened for AWD at Wunthou point of entry – Renk county.

A total of 8,905 consultations were conducted this week, a reduction of 15% from last week. During the reporting period, the number of ARI reported stood at 29%, Malaria at 21%, and Acute Watery Diarrhea (AWDs) at 11%. with 77 samples collected, four tested positive for cholera RDT, all negative by culture, as seen in the graph below.

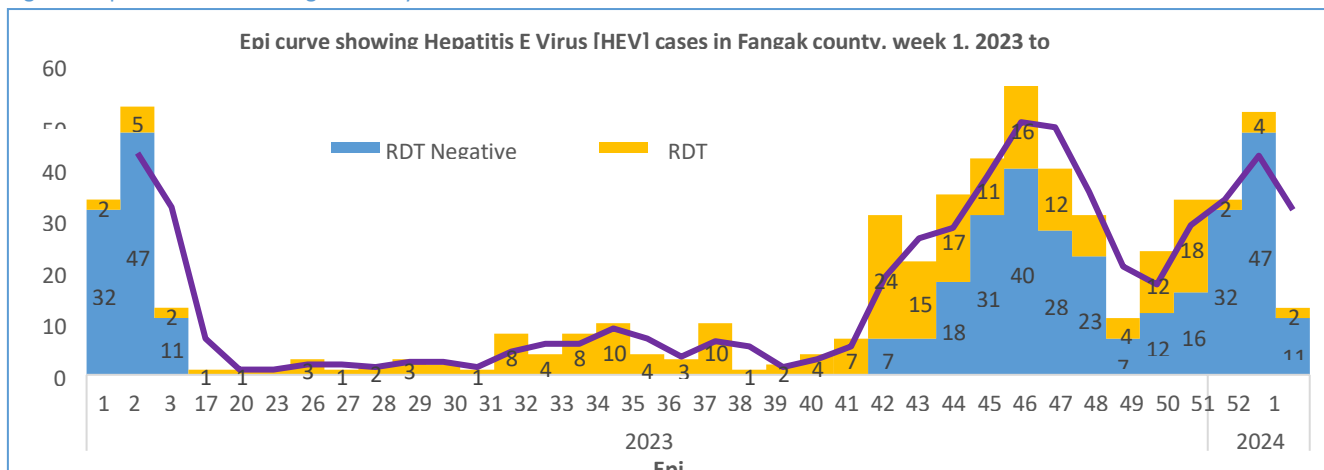
Figure 5: Alerts of Acute Watery Diarrhea Surveillance in Renk County from week 47 of 2023 to week 06 of 2024



Hepatitis E Virus in Fangak county Jonglei State

A total of 501 AJS cases, including 21 deaths, have been reported from week 1 of 2023 to week 3 of 2024. Most of the cases were reported among people aged 15 years and above. Females accounted for 68% (340) of the cases, while males accounted for 32% (161). The RDT positivity rate was high from week 17, 2023, to week 42, 2023, when there was a sharp increase in cases due to the intervention by National RRT through active case search and risk communication.

Figure 6: Epicure of HEV in Fangak County



Response activities include WASH intervention through community engagement. The First round of vaccination using Hecolin has been concluded, and plans are underway to conduct the second and third rounds of vaccination campaigns in Fangak

Circulating Vaccine Derived Polio Virus type-2 (cVDPV2)

As of 31 January 2024, a total of 02 cVDPV2 cases were reported from Yambio – Western Equatoria and Juba Central Equatoria. Three (3) Samples collected from healthy children from Western Equatoria and tested also confirmed the cVDPV2 variant and the virus is closely matched with the index case from West Equatoria State. The most recent cVDPV2 case from the AFP sample was reported from Juba County, Central Equatoria state, with the date of onset of paralysis on 4th November 2023. However, there are samples in the laboratory pending testing. There's an ongoing preparation to conduct a nationwide outbreak response campaign using the nOPV2 vaccine tentatively planned for 20-23 Feb 2024.

Other events

Meningitis: Suspected meningitis outbreaks were reported in Akobo and Nyirol counties. In Nyirol County, five cases have been recorded, including two deaths. Akobo County (Walgak Payam) reported a total of eight cases as of January 22, 2024, with three deaths reported among these cases. To investigate the outbreak, two teams, consisting of members from WHO and NMOH, will travel to both locations this week. To enhance surveillance, WHO has prepositioned meningitis investigation kits in the region for suspected meningitis.

Flooding: During the last four consecutive years, South Sudan has experienced consecutive years of devastating floods, affecting over 1 million people. The most impacted states include Northern Bahr el Ghazal, Warrap, Unity, Western Equatoria, Jonglei, and Upper Nile. These recurring floods have worsened an already dire situation, leaving people without food and viable land for cultivation. The same states affected by severe flooding are now receiving refugees and returnees from Sudan, further straining the capacity to respond. With the onset of the rainy season, the re-prioritization of limited resources to address people's needs because the Sudan crisis has created gaps in flood preparedness efforts, posing challenges ineffectively responding to ongoing emergencies and preparedness measures. Insufficient funding and access limitations have constrained the humanitarian response in 2023.

Sudan crises: South Sudan has received Cumulatively 550,514 individuals since 16th April 2023 who have entered South Sudan at 21 POEs. More than 80% (438,866) returnees and 111,648 (20 %) refugees of these arrivals are South Sudan returnees, most of them are arriving through Joda in Renk County, and the majority prefer Upper Nile as their destination state. Host communities and healthcare systems are struggling to cope with the increased demand for health and other services, morbidity, and mortality among the returnees and refugees. The interconnectedness between Sudan's and South Sudan's economies has resulted in the conflict significantly affecting market prices. According to the Cash Working Group, the average cost of a Multi-Sectoral Survival Minimum Expenditure Basket has risen by 28 percent since April 2023, indicating the extent of the impact.

Active surveillance for potential cholera cases is being conducted at the Wunthou point of entry. Suspect cholera cases are further screened and tested with the use of rapid diagnostic test (RDT). Of the 85,391 individuals that crossed through Wunthou point of entry since 19 December 2023, 16,889 were screened for AWD at the public health desk. Nutritional status assessment (MUAC) conducted on all children less than five years at Wunthou point of entry; referral of the severe acute malnourished children with medical complications for in-patient care in Renk County Hospital.

Food Insecurity: An estimated 7.8 million people are estimated to be in Crisis (IPC Phase 3) or worse acute food insecurity, with 43,000 people in Catastrophe (IPC Phase 5) in Akobo, Canal/Pigi and Fangak counties of Jonglei State; and Leer and Mayendit counties of Unity State between April and July. In March, several hunger-related deaths were reported in Kapoeta East, which triggered an IRNA and despite varying causes of death, 59% of assessed communities reportedly did not have access to adequate food.

Next step

- Strengthening active surveillance across the counties bordering with Sudan for potential cholera outbreak. Surveillance activities will also be strengthened in counties reporting disease outbreaks such as measles, HEV, Yellow Fever, and Circulating Vaccine Derived Polio Virus type-2 (cVDPV2).
- Support the reactive Yellow Fever vaccination campaigns in the Western Equatoria. Measles reactive vaccination campaigns will also be supported in counties with ongoing outbreaks.

Acknowledgments

Thanks to the State Surveillance Officers, Health Cluster partners for sharing the weekly IDSR data. To access the IDSR bulletins for 2023 use the link below:

<https://www.afro.who.int/publications/south-sudan-weekly-disease-surveillance-bulletin-2023>

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Notes

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The data has been collected with support from the EWARS project. This is an initiative to strengthen early warning, alert, and response in emergencies. It includes an online, desktop and mobile application that can be rapidly configured and deployed in the field. It is designed with frontline users in mind and built to work in difficult and remote operating environments. This bulletin has been automatically published from the EWARS application.

More information can be found at: <http://ewars-project.org>

Data source: DHIS-2 and EWARS

