



## Republic of South Sudan

# Weekly Integrated Disease Surveillance and Response (IDSR) Epidemiological Bulletin

Reporting period: Epidemiological Week 04

*22 January 2024 to 28 January 2024*

### Background

This weekly IDSR 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 04 of 2024, the IDSR reporting timeliness and completeness were 82% and 93%, respectively, and IDSR performance at the EWARN mobile sites was 64% and 81% for the EWARN sites.
- Completeness of reporting for IDSR at private Health facilities in Juba and Wau was only at 93%.
- A total of 241 alerts have been triggered in the EWARS system, with 58% (140/241) verified in the system. Most of the alerts were for measles, Acute Watery Diarrhea, Malaria, and ARI
- As of Epi week 04, 2024, a total of 50 suspected cases of Yellow Fever Cases were reported and investigated in Western Equatoria.
- 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.
- In Epi week 04, 272 suspected measles cases were reported, with 58 (12.3%) lab-confirmed and one death. Cumulatively, there were 8,155 cases reported from 2023 to 2024, with 182 deaths, giving a case fatality rate (CFR) of 2.2%.
- Other emergencies during the reporting 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 04

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 of all 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 04 were at 82% and 9%, respectively.

Table 1: Timeliness and completeness of IDSR reporting by State for week 04 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   | 79%                      | 100%         | 91%                                      | 100%         |
| NBGZ         | 89               | 84  | 94%                      | 94%          | 89%                                      | 93%          |
| Unity        | 90               | 85  | 67%                      | 94%          | 78%                                      | 95%          |
| WBGZ         | 112              | 98  | 79%                      | 88%          | 77%                                      | 90%          |
| WES          | 183              | 186   | 100%                     | 100%         | 92%                                      | 96%          |
| Jonglei      | 118              | 94  | 75%                      | 80%          | 87%                                      | 90%          |
| Warrap       | 111              | 105   | 77%                      | 95%          | 84%                                      | 96%          |
| EES          | 107              | 101   | 88%                      | 94%          | 86%                                      | 96%          |
| RAA          | 16               | 16  | 44%                      | 100%         | 61%                                      | 94%          |
| CES          | 151              | 151   | 100%                     | 100%         | 85%                                      | 91%          |
| AAA          | 17               | 6   | 35%                      | 35%          | 35%                                      | 44%          |
| Upper Nile   | 136              | 111   | 54%                      | 82%          | 65%                                      | 85%          |
| GPAA         | 15               | 15  | 100%                     | 100%         | 98%                                      | 100%         |
| <b>Total</b> | <b>1257</b>      | <b>1164</b>                                   | <b>82%</b>               | <b>93%</b>   | <b>83%</b>                               | <b>92%</b>   |

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 04 | Completeness in week 03 | Payam         | Number of Private facilities reported | Completeness in week 04 | Completeness in week 03 |
|--------------|-----------------------------|-------------------------|-------------------------|---------------|---------------------------------------|-------------------------|-------------------------|
| IMC          | 4                           | 100%                    | 100%                    | Kator         | 3                                     | 100%                    | 100%                    |
| SSHCO        | 1                           | 100%                    | 100%                    | Marial Baai   | 1                                     | 100%                    | 100%                    |
| SMC          | 1                           | 100%                    | 100%                    | Juba          | 10                                    | 100%                    | 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%                     | 95%                     |
| <b>TOTAL</b> | <b>18</b>                   | <b>100%</b>             | <b>100%</b>             | <b>TOTAL</b>  | <b>64</b>                             | <b>94%</b>              | <b>95%</b>              |

## Epidemic alerts

A total of 241 alerts have been triggered in the EWARS system, with 58% (140/241) verified in the system. Most of the alerts were for measles, Acute Watery Diarrhea, Malaria, and ARI. It is important to note that there were significant alerts of AFP, AJS, and Neonatal Tetanus. See table 3 below for more details.

Table 3: Summary alerts triggered week 04; 2024

| State/Admin Area | Acute jaundice syndrome |     | Acute Respiratory Infections (ARI) |     | Acute Watery Diarrhoea |     | AFP |     | Bloody Diarrhoea |     | Cholera |     | EBS |     | Guinea Worm |     | Malaria (Confirmed) |     | Measles |     | Meningitis |     | Neonatal Tetanus |     | Relapsing Fever |     | 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 | # R          | # V | # R         | # V |
| AAA              | 0                       | 0   | 1                                  | 1   | 0                      | 0   | 0   | 0   | 1                | 1   | 0       | 0   | 0   | 0   | 1           | 1   | 0                   | 0   | 1       | 0   | 0          | 0   | 1                | 1   | 0               | 0   | 0            | 0   | 5           | 4   |
| CES              | 0                       | 0   | 0                                  | 0   | 4                      | 1   | 1   | 0   | 1                | 0   | 0       | 0   | 0   | 0   | 0           | 0   | 3                   | 1   | 1       | 1   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 10  | 3           |     |
| EES              | 0                       | 0   | 2                                  | 2   | 4                      | 4   | 0   | 0   | 5                | 5   | 1       | 1   | 1   | 1   | 0           | 0   | 5                   | 5   | 4       | 3   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 22  | 21          |     |
| Jonglei          | 1                       | 0   | 4                                  | 0   | 3                      | 0   | 1   | 0   | 3                | 0   | 4       | 0   | 0   | 0   | 2           | 0   | 3                   | 0   | 7       | 0   | 0          | 0   | 0                | 0   | 2               | 0   | 0            | 0   | 30          | 0   |
| Lakes            | 0                       | 0   | 8                                  | 8   | 4                      | 4   | 1   | 1   | 2                | 2   | 0       | 0   | 2   | 2   | 17          | 17  | 1                   | 1   | 1       | 1   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 36  | 36          |     |
| NBGZ             | 0                       | 0   | 2                                  | 2   | 0                      | 0   | 0   | 0   | 2                | 2   | 0       | 0   | 0   | 0   | 0           | 0   | 0                   | 0   | 12      | 12  | 1          | 1   | 0                | 0   | 0               | 0   | 0            | 17  | 17          |     |
| RAA              | 0                       | 0   | 0                                  | 0   | 5                      | 0   | 0   | 0   | 0                | 0   | 0       | 0   | 5   | 0   | 0           | 0   | 0                   | 0   | 2       | 0   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 12  | 0           |     |
| Unity            | 1                       | 1   | 3                                  | 1   | 0                      | 0   | 0   | 0   | 5                | 1   | 0       | 0   | 0   | 0   | 0           | 0   | 1                   | 0   | 1       | 0   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 11  | 3           |     |
| Upper Nile       | 0                       | 0   | 3                                  | 3   | 3                      | 2   | 0   | 0   | 5                | 4   | 0       | 0   | 0   | 0   | 0           | 0   | 2                   | 2   | 9       | 7   | 0          | 0   | 1                | 0   | 0               | 0   | 0            | 23  | 18          |     |
| Warrap           | 0                       | 0   | 0                                  | 0   | 0                      | 0   | 0   | 0   | 3                | 2   | 1       | 1   | 0   | 0   | 3           | 3   | 2                   | 0   | 3       | 1   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 12  | 7           |     |
| WBGZ             | 0                       | 0   | 1                                  | 1   | 3                      | 0   | 0   | 0   | 1                | 1   | 0       | 0   | 1   | 1   | 3           | 0   | 4                   | 1   | 2       | 2   | 0          | 0   | 0                | 0   | 0               | 0   | 0            | 15  | 6           |     |
| WES              | 0                       | 0   | 3                                  | 0   | 17                     | 11  | 0   | 0   | 4                | 2   | 0       | 0   | 6   | 0   | 0           | 0   | 9                   | 6   | 8       | 5   | 0          | 0   | 0                | 0   | 0               | 0   | 1            | 1   | 48          | 25  |
| Grand Total      | 2                       | 1   | 27                                 | 18  | 43                     | 22  | 3   | 1   | 32               | 20  | 6       | 2   | 15  | 4   | 26          | 21  | 30                  | 16  | 51      | 32  | 1          | 1   | 2                | 1   | 2               | 0   | 1            | 1   | 241         | 140 |

#R= reported

#V= verified

## Weekly Update on Indicator-Based Surveillance (Week 04)

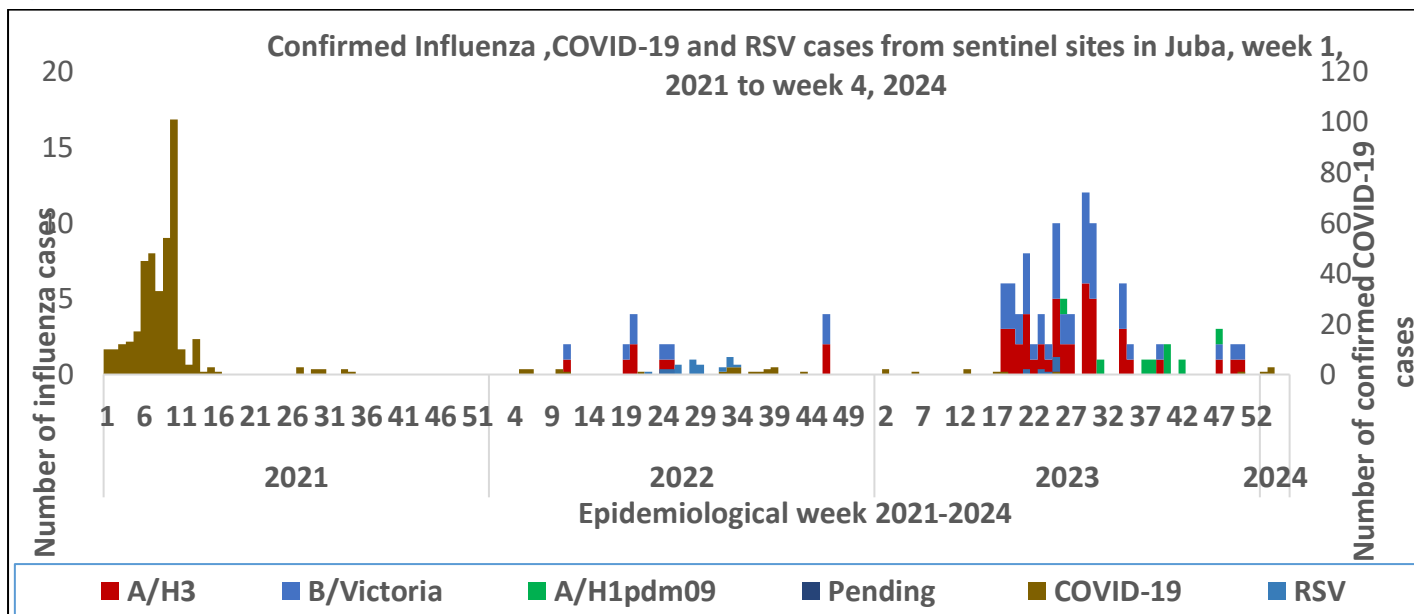
Indicator-based surveillance is implemented in South Sudan through the EWARS platform according to the IDSR 3rd guidelines where approximately 59 priority diseases and public health events are monitored and reported from health facilities across the country on regular basis.

### 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 4 2024, a total of (99) ILI/SARI were collected (70) tested negative,(4) positive for COVID-19, (0)Influenza types A (H3), (1) B (Victoria), (0) for A/H1pdm09 and (0) for RSV in week 4,2024

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



## New and ongoing confirmed epidemics

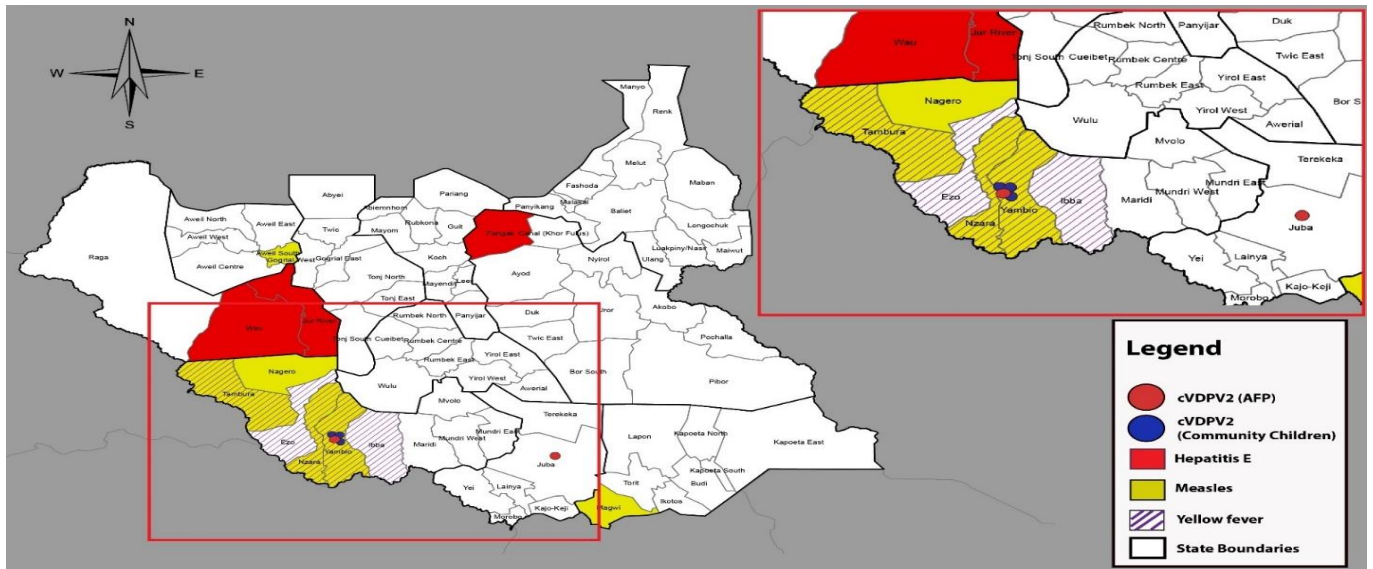
### Confirmed epidemics

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 | 21 Dec 2023         | 20                            | 50                       | 1 Laboratory confirmed | Ongoing         | Planned     | Ongoing          | Ongoing  |
| <i>Ongoing epidemics</i> |                                   |                     |                               |                          |                        |                 |             |                  |          |
| Measles                  | 69 counties                       | 2022                | 77                            | 8,155                    | 609                    | 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 03)

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. During Week 3, there were 3 alerts received from the community through media scan. These alerts were for suspected meningitis, increased AWD cases in Aweil East and Acute Jaundice syndrome in Aweil West.

## Response activities for ongoing outbreaks

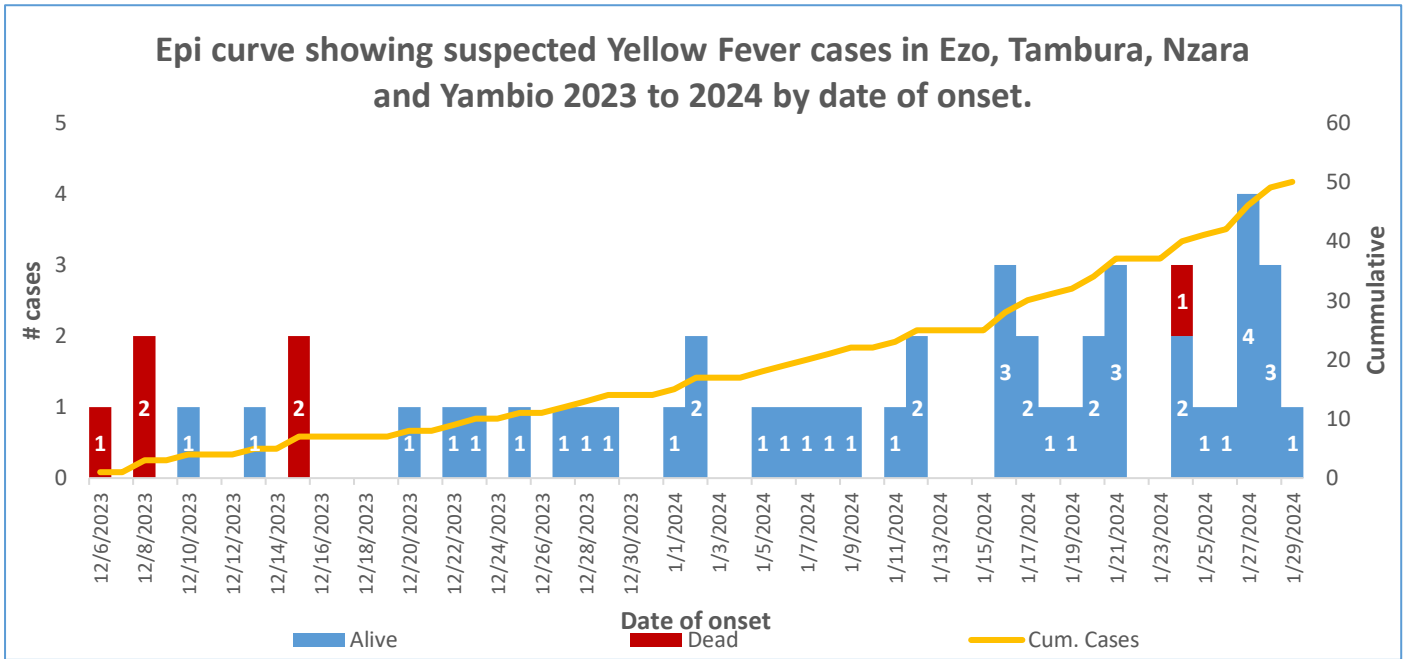
### Yellow Fever outbreak in Yambio December 2023 to January 2024

On 21 December 2023, the Ministry of Health was notified of a suspected case of viral hemorrhagic fever from Yambio County, Western Equatoria State. The suspected case was a 24-year-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.

As of 2 February 2024, A cumulative of fifty (50) Yellow Fever cases (49 suspected and 01 confirmed) were reported from six counties in Western Equatoria state: Yambio County (27), Nzara County (07), Tambura County (09), Ibba (03), Ezo (03) and Maridi County (01) as of 1 February 2024. With a total of 06 suspected Yellow Fever deaths reported,

Out of the cumulative 50 cases (1 confirmed and 49 suspected), males accounted for 52% and females counted for 48%. The majority (92%) of the reported cases are 15 years and above, whilst 12% are reported to be among 1 to 4 years old

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



### Response update

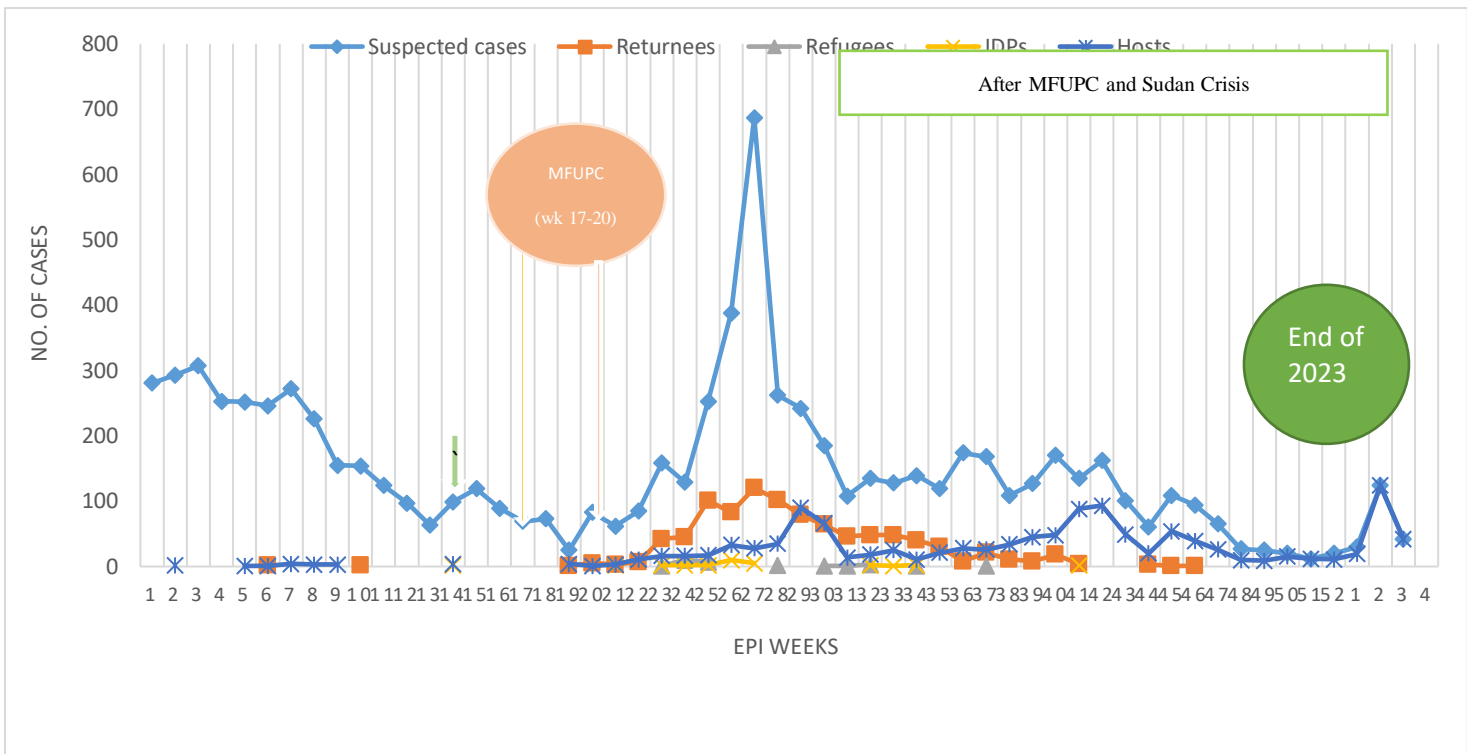
The Ministry of Health, in collaboration with the World Health Organization (WHO) and other partners, has prepositioned essential medical supplies in the affected areas to strengthen the management of Yellow Fever cases. Frontline healthcare workers are given refresher training on case definition, diagnosis, and treatment of Yellow Fever. A vaccine request has been submitted to the International Coordinating Group (ICG), and 410,596 doses have been approved for Yambio, Nzara, Tambura, Ezo, and Ibba Counties. A vaccination campaign is planned for February 2024. An entomological assessment was concluded, and the preliminary findings reveal the presence of Yellow Fever vector (mosquito) larvae in many residential areas in the affected counties.

### Measles Update

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.

As of Epi week 4 of 2024, 272 suspected measles cases were reported, with 58 (12.3%) lab-confirmed and One death. Cumulatively, there were 8,155 cases reported from 2023 to 2024, with 182 giving a CFR of 2.2%

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



During the 04 week of 2024, an additional 77 new cases were reported since the last update. There are currently three ongoing outbreaks in Tambura, Nzara, and Yambio, which involve three different payams. Meanwhile, suspected or confirmed cases have been reported in Nagero, Nzara, Rumbeek North, Torit, Aweil South, Aweil West, Aweil East, Yei, Maridi, and Wau. These cases have not reached the outbreak threshold in the last four weeks, but more samples need to be collected for testing as per the revised SOP.

### 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 is completed late last year, and final data is yet to be submitted.

### Sudan Crises response updates

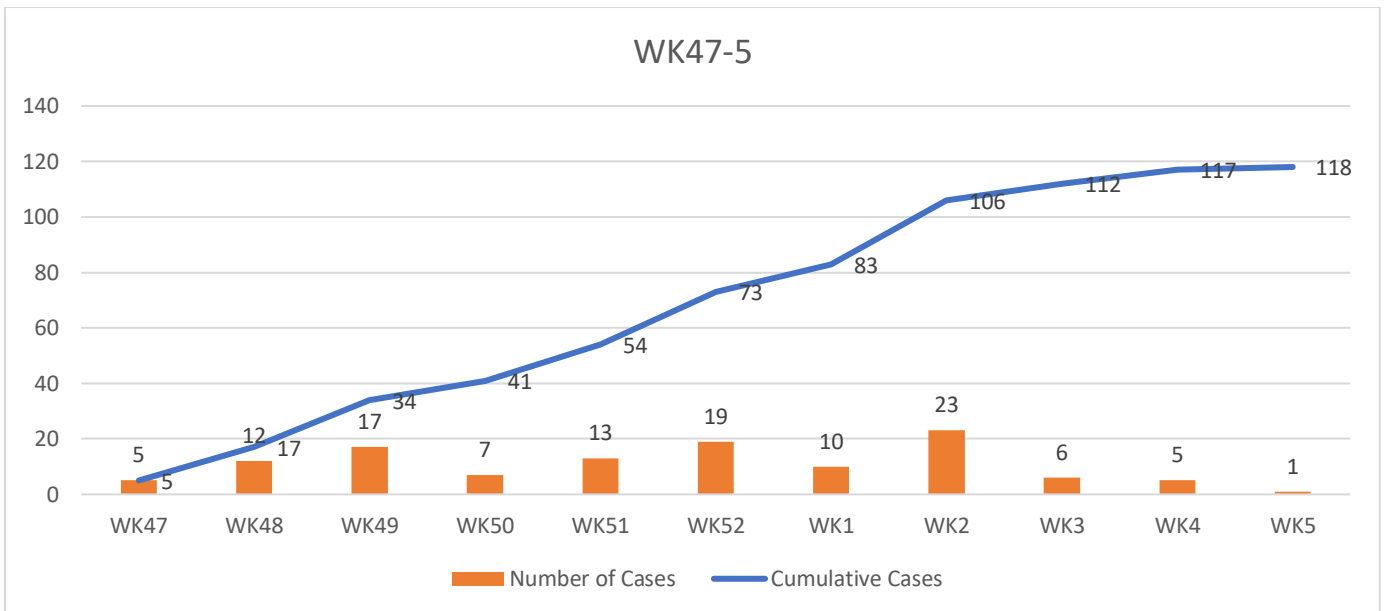
As of 7 February, 1,228 individuals have entered South Sudan. The cumulative number of arrivals since 16 April 2023 is 548,195. Of this number, 437,762 individuals (79.8%) are returnees, while 110,433 individuals (20.2%) are refugees.

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 as of week 05, 95,440 individuals were screened. 7,847 consultations were conducted, with ARI being the leading morbidity cause at 26%, followed by Malaria at 17%, and AWD at 6%. A total of 118 AWD alerts have been issued since December, with 77 samples collected on 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 05 of 2024

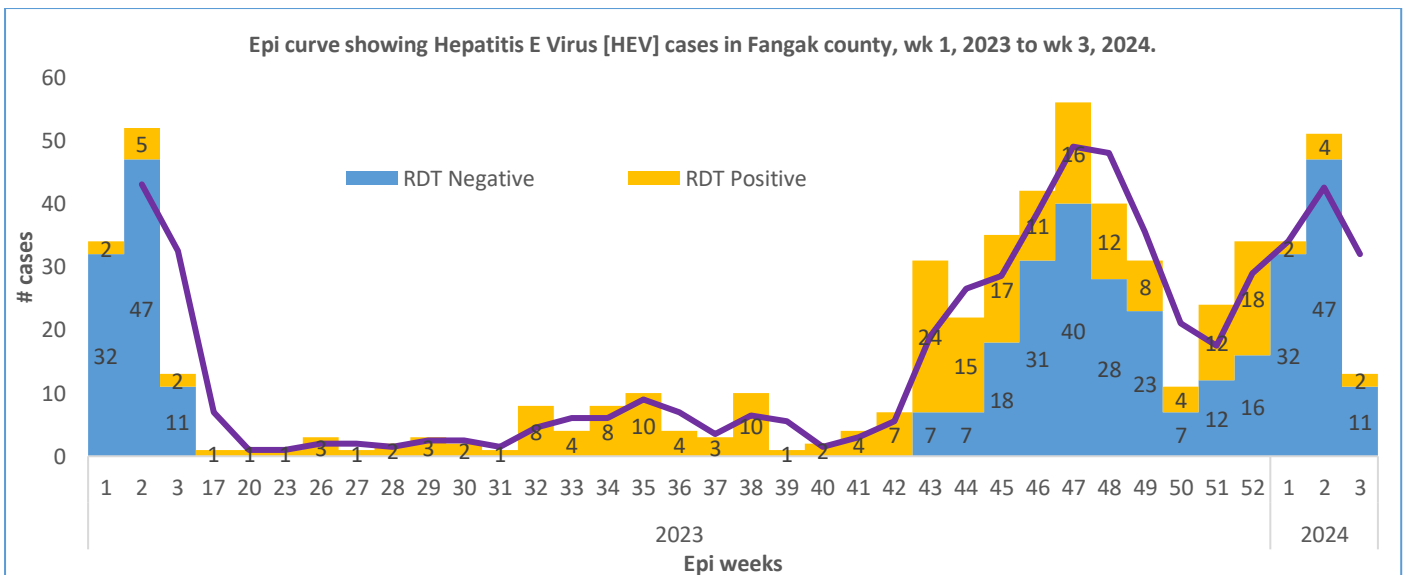


**Acute Watery Diarrhea Surveillance Total alert 118**

1. Number of samples collected 76
2. Number of samples tested positive by RDT 4, culture-negative
3. Number of samples tested negative by RDT 41
4. Number of samples discarded 31

**Hepatitis E Virus in Fangak county Jonglei State**

A total of 501 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. Regarding sex, 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 activities



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 round of vaccination campaign 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 in effectively 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 512,002 individuals at several (21) points of entry along the border with Sudan since April 2023. More than 81% (414,722) of these arrivals are South Sudan returnees, 433,609 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 boarding with Sudan for potential cholera outbreak. Surveillance activities will also be strengthened in counties reporting disease outbreak 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 going 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>

The Ministry of Health produces this bulletin with Technical support from WHO

For more help and support, please contact:

Dr Joseph Lasu Hickson  
 Director, Emergency Preparedness and Response  
 Ministry of Health  
 Republic of South Sudan  
 Email: [josh2013.lasu@gmail.com](mailto:josh2013.lasu@gmail.com)  
 Phone number +211921395440

Dr. John Rumunu  
 Director General Preventive Health Services  
 Ministry of Health  
 Republic of South Sudan  
 Email: [ori.moiga@gmail.com](mailto:ori.moiga@gmail.com)  
 Phone number: +211924767490

Dr BATEGEREZA, Aggrey Kaijuka  
 WHO-EPR Team Lead  
 Email: [bategerezaa@who.int](mailto:bategerezaa@who.int)  
 Phone number : +211 924222030

Notes

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The data has been collected with support from the EWARS project. This initiative strengthens 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

