



Republic of South Sudan

Weekly Integrated Disease Surveillance and Response (IDSR) Epidemiological Bulletin

Reporting period: Epidemiological Week 09
26 February -3 March 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 09 of 2024, the IDSR reporting timeliness and completeness were 84% and 90%, respectively, and IDSR performance at the EWARN mobile sites was 94%.
- Completeness of IDSR reporting at private Health facilities in Juba and Wau was only at 89%.
- A total of 248 alerts have been triggered in the EWARS system, with 58% (143/248) verified in the system. Most of the alerts were for Measles (21%), Malaria (19%), AWD (15%), ABD (15%) and ARI (11%)
- State Ministry of Health in Warrap state declared a Hepatitis E outbreak in Twic County following confirmation of the sample by PCR at the National Public Health Laboratory
- As of Epi week 9, 2024, a total of 429 suspected measles cases were reported, with 116(27%) lab-confirmed, four deaths, and a case fatality rate of 0.9%
- Other emergencies include circulating Vaccine Derived Polio Virus type 2 (cVDPV2) in Yambio and Juba counties and Nasir Upper Nile State, Hepatitis E in Twic, Fangak, Rubkona (Bentiu IDP camp) and Wau counties, the Sudan crisis, and ongoing food insecurity.

Surveillance system performance

Timeliness and Completeness of IDSR in week 09, 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 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 08 were at 74% and 93%, respectively.

Table 1: Timeliness and completeness of IDSR reporting by State for week 08 2024

State	Total facilities	Number of facilities reported (Completeness)†	Current reporting period		Cumulative since year start (2024 level)	
			Timeliness wk9	Completeness wk9	Timeliness	Completeness
Lakes	112	111	88%	99%	89%	100%
NBGZ	89	78	74%	88%	90%	93%
Unity	89	87	97%	98%	82%	96%
WBGZ	81	63	57%	84%	72%	60%
WES	183	183	100%	100%	82%	96%
Jonglei	119	101	85%	85%	89%	90%
Warrap	111	82	74%	74%	86%	94%
EES	107	94	81%	88%	86%	95%
RAA	16	8	50%	50%	61%	81%
CES	121	118	93%	97%	77%	78%
AAA	17	15	88%	88%	40%	50%
Upper Nile	141	114	74%	81%	66%	82%
GPAA	15	15	100%	100%	97%	98%
Total	1201	1069	84%	90%	82%	92%

Figure 1: Completeness of IDSR reporting by county for week 09, 2024

South Sudan: Week 9 Percentage of Completeness Across Counties

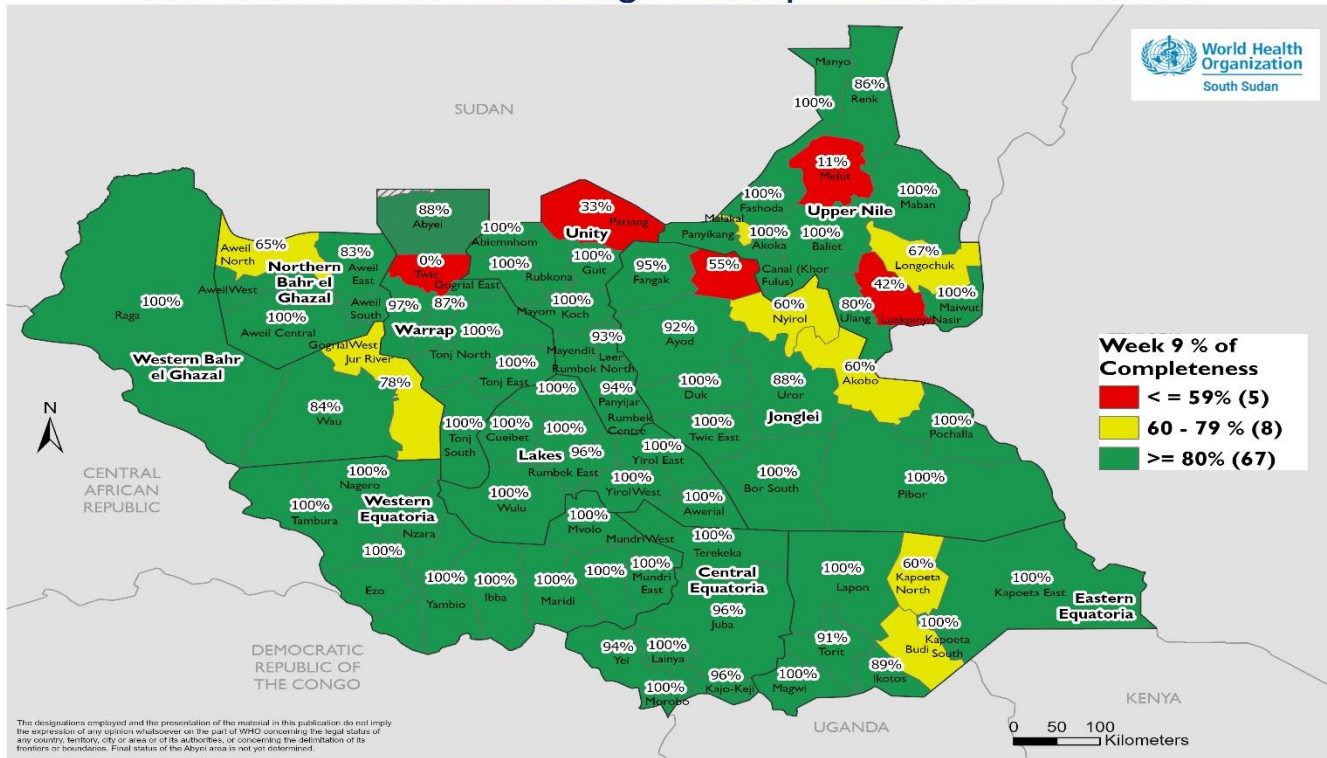


Table 2: Timeliness and completeness of reporting by State and completeness of IDSR reporting from NGO-run mobile health facilities and from private health facilities in Juba and Wau

Admin area	# of Reporting Mobile Sites	% of Completeness in week 09	% of Completeness in week 08	Payam	# of Reporting Private Health Facilities	% of Completeness in week 09	% of Completeness in week 08
IMC	4	75%	100%	Kator	3	100%	100%
SSHCO	1	100%	100%	Marial Baai	1	100%	100%
SMC	1	100%	100%	Northern Bari	1	100%	100%
SCI	2	100%	100%	Rejaf	3	100%	100%
HFO	3	100%	100%	Munuki	12	100%	100%
WVI	2	100%	100%	Wau South	20	85%	90%
CIDO	1	100%	100%	Wau North	12	69%	85%
SP	4	100%	100%	Juba	10	100%	90%
TOTAL	18	94%	100%	TOTAL	62	89%	92%

Epidemic alerts

A total of 248 alerts have been triggered in the EWARS system, with 64% (158/248) verified in the system. Most of the alerts were for ABD (29%), Measles (19%), AWD (16%), ARI (12%), and Malaria (12%). It is important to note that there were significant alerts for Guinea worm, AJS, and cholera. In week 09, Lakes, Eastern Equatoria, and Northern Bahr el Ghazal states show high alert verification rates. See Table 3 below for more details.

Table 3: Summary alerts triggered week 09, 2024

Admin Area	Acute jaundice syndrome		Acute Respiratory Infections (ARI)		Acute Watery Diarrhoea		AFP		Bloody Diarrhoea		Cholera		Covid-19		EBS		Guinea Worm		Malaria (Confirmed)		Measles		Relapsing 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	Total #R	Total #V
AAA	0	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
CES	0	0	2	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3	1	1	0	0	8	7
EES	1	1	3	3	7	7	0	0	4	4	1	1	0	0	0	0	0	0	4	4	1	1	0	0	21	21
Jonglei	1	0	7	1	3	0	0	0	5	1	2	0	0	0	0	0	0	0	3	0	9	0	0	0	30	2
Lakes	0	0	5	4	3	3	0	0	5	3	0	0	0	0	4	4	13	9	2	1	0	0	0	0	32	24
NBGZ	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	11	11	0	0	13	13
RAA	0	0	1	0	2	0	0	0	2	0	0	0	0	0	7	0	0	0	0	0	1	0	0	0	13	0
Unity	4	1	2	1	2	0	0	0	1	0	1	0	1	0	0	0	0	0	2	0	1	0	0	0	14	2
Upper Nile	0	0	4	0	3	0	0	0	6	0	1	0	0	0	0	0	0	0	4	1	1	0	0	0	19	1
Warrap	0	0	0	0	0	0	0	0	4	1	1	0	0	0	0	0	3	3	4	1	5	1	0	0	17	6
WBGZ	1	1	1	1	6	3	1	1	2	1	0	0	0	0	0	0	3	3	8	3	4	4	0	0	26	17
WES	0	0	1	1	8	8	0	0	6	6	0	0	0	0	0	0	0	0	18	17	17	17	1	1	51	50
Grand Total	7	3	27	13	38	22	1	1	38	18	6	1	1	0	11	4	19	15	48	30	51	35	1	1	248	143

#R= reported
#V= verified

Meningitis Alert in Aweil Northern Bahr el Ghazal

On March 10, 2024, the National Ministry of Health in South Sudan received an alert about a suspected meningitis outbreak in Aweil County, Northern Bahr el Ghazal state. The State Surveillance Officer for Northern Bahr-El-Ghazel submitted a list containing 25 suspected cases of meningitis, out of which 4 resulted in deaths (CFR 16%) as of March 11th, 2024. Out of the 15 samples collected from the case-patients, 7 tested positive for meningitis (5 for Neisseria Meningitidis serogroup Y and W, and 2 for Streptococcus Pneumoniae). Three additional samples have been collected from suspected case-patients and are scheduled to be shipped to Juba on March 12th, 2024, for further confirmatory testing to guide response actions.

Suspected meningitis in Twic county Warrap State

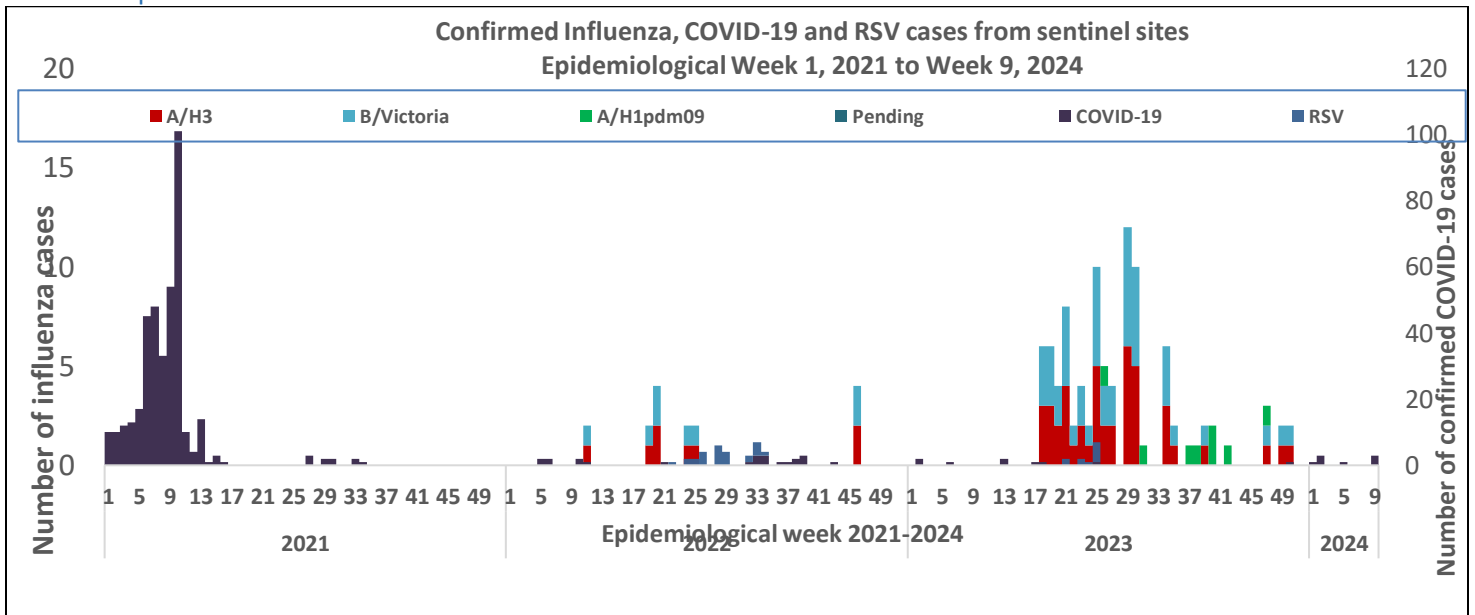
Suspected Meningitis has also been reported from the Mayenabun Primary Health Care Center (PHCC) in Twic County Warrap state. Ten (10) cases have been line-listed and treated, and some were discharged with one mortality (CFR = 10%). All cases were in children 5 years and below except for one. Active case search continues in three Payams of the county, and the National Rapid Response teams have been deployed to conduct further investigation.

Weekly Update on Indicator-Based Surveillance (Week 09)

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 regularly monitored and reported from health facilities across the country.

Figure 2: Indicator-Based Surveillance (IBS) Influenza Surveillance

Influenza update



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

During Epi weeks 1 to 9 in 2024, a total of 225 ILI/SARI samples were collected; 216 tested negative for all pathogens, eight (8) were positive for COVID-19, zero (0) for Influenza Type A (H3), one (1) for Influenza Type B (Victoria), zero (0) for Influenza A/(H1N1)pdm09 and zero (0) for RSV.

Ongoing confirmed epidemics

Table 4 below lists ongoing outbreaks

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>Ongoing outbreaks</i>									
Hepatitis E	Twic	Feb 2024	0	2	1	ongoing	-	Ongoing	Ongoing
Yellow Fever	Yambio, Nzara, Ezo, Tambura, Ibba and Maridi	21 Dec 2023	3	81	3 Laboratory confirmed	Ongoing	Done in 3 counties (Yambio, Nzara and Tambura)	Ongoing	Ongoing
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	0	3	2	ongoing	ongoing	ongoing	ongoing
Hepatitis E	Rubkona (Bentiu IDP Camp)	Dec/2018	48	5102	-	ongoing	Done in 2021/22	ongoing	ongoing

South Sudan: Ongoing Disease Outbreak as of March 2024

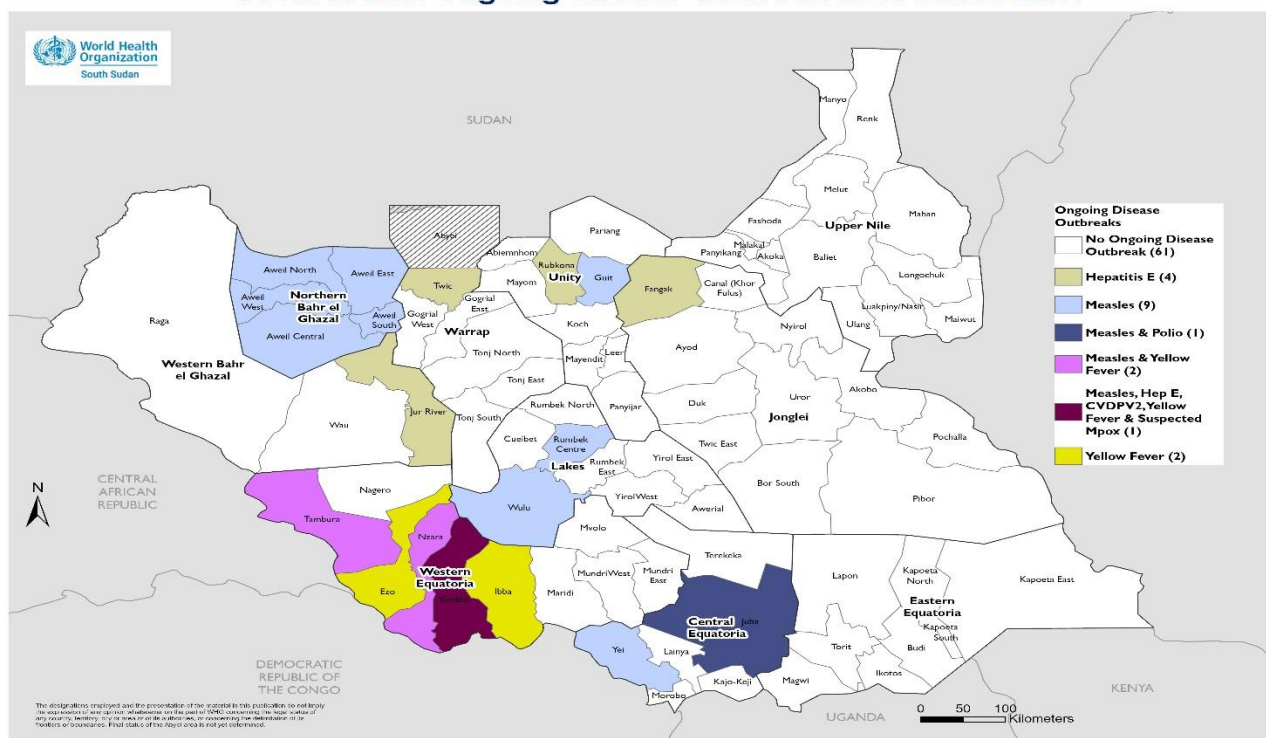


Figure 3: Map showing ongoing disease outbreak across the country

Response activities for ongoing outbreaks

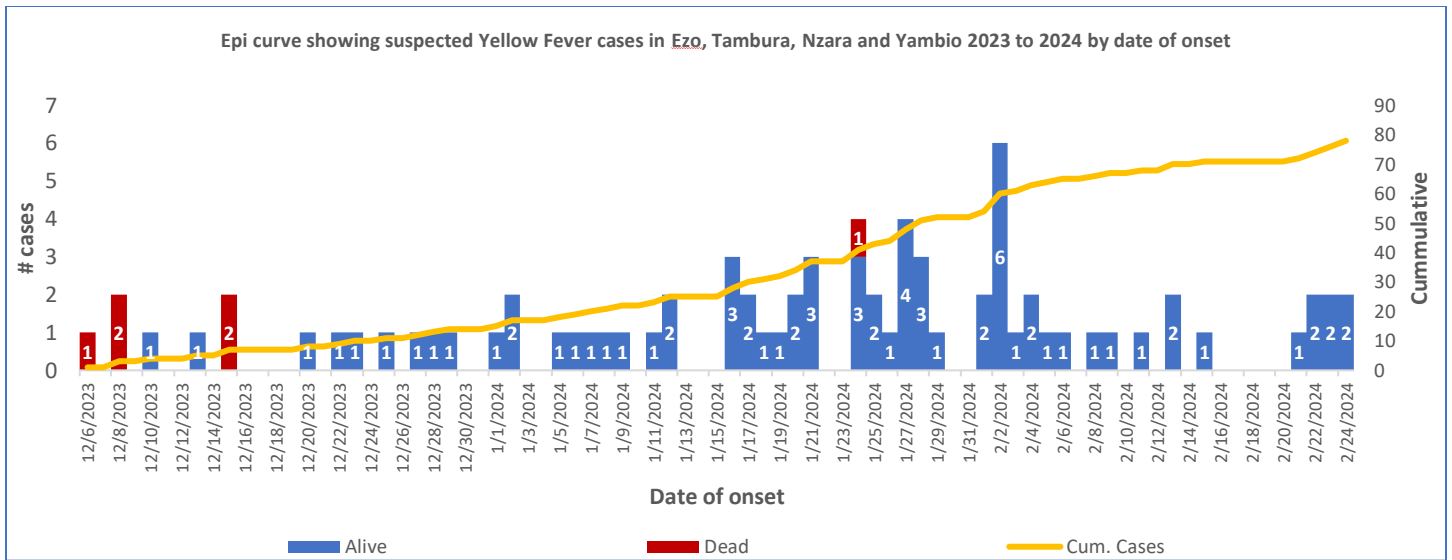
Hepatitis E Outbreak in Twic

On 28th February 2024, the SMOH declared an HEV outbreak after one of the two samples sent to the NPHL in Juba tested positive for the virus (26th Feb). The county team is conducting an active case search and raising community awareness about HEV. MSF is supporting the Mayenabun PHCC, which received the initial samples and is managing cases. Fortunately, there have been no deaths and no new cases have been reported so far.

Yellow Fever Outbreak in Yambio

As of the week ending on 26 February, A cumulative total of eight-one (81) Yellow Fever cases (78 suspected and 03 confirmed) were reported from six counties in Western Equatoria state: Yambio (45), Tambura (15), Nzara (10), Ezo (06), Ibba (04), and Maridi Counties (01) as of 3 March 2024. Surveillance is being strengthened in states and counties bordering Tambura and Ibba with support from health ministries and partners (WHO, UNICEF, CARE, Johanitter, AFOD, and CORDAID).

Figure 4: Epi curve showing suspected Yellow Fever cases by date of onset



Response update

The Honorable Minister for Health launched a reactive Yellow Fever vaccination campaign on 13 February 2024. Three (03) out of the five (5) counties have completed the reactive Yellow Fever campaign. 351,131 individuals, representing 86.3% of the targeted population, have been vaccinated. Response activities (coordination, surveillance, laboratory, case management, risk communication and community engagement, vaccination, infection prevention and control, logistics support, etc.) are being reinforced by State Ministry of Health and supported by partners (WHO, UNICEF, WVI-CGPP, CDTY, CMMB, Red Cross South Sudan, AMREF, JRS, IMA and TRI-SS) Activeness surveillance are being strengthened in states (Lake and Western Bahr El Ghazal) and counties bordering Tambura and Ibba through guidance from Ministry of Health and State Ministry of Health with support from partners (WHO, UNICEF, CARE, Johanitter, AFOD, and CORDAID).

Measles Update

As of Epi week 9, 2024, a total of 429 suspected measles cases were reported, with 116(27%) lab-confirmed, 4 deaths and a case fatality rate of 0.9%. cumulatively there are

From weeks 2-8, a total of eighteen (18) late cases were reported. Out of these cases, 13 were lab-confirmed while 5 were discarded, with 1 case being rubella positive. In week 9, there were no new confirmed cases or deaths. However, there were five (5) ongoing outbreaks in Ibba, Juba, Yei, Rumbek Centre, and Tonj East, respectively. Suspected/confirmed cases in Abiemnhom, Aweil Centre, Aweil South, Aweil West, Baliaet, Mundri West, Pibor, Tambura, Terekeka, Torit, and Maridi continue to be reported in February. These cases have not reached the outbreak threshold and require more samples to be collected for testing in accordance with the revised SOP.

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 contributing to a higher caseload. The nationwide MFUPC took place from week 17-20, and 24 reactive campaigns were conducted from week 29 to 51 of 2023.

.Figure 5: Epicurve of suspected measles cases against their residential status by Epi week

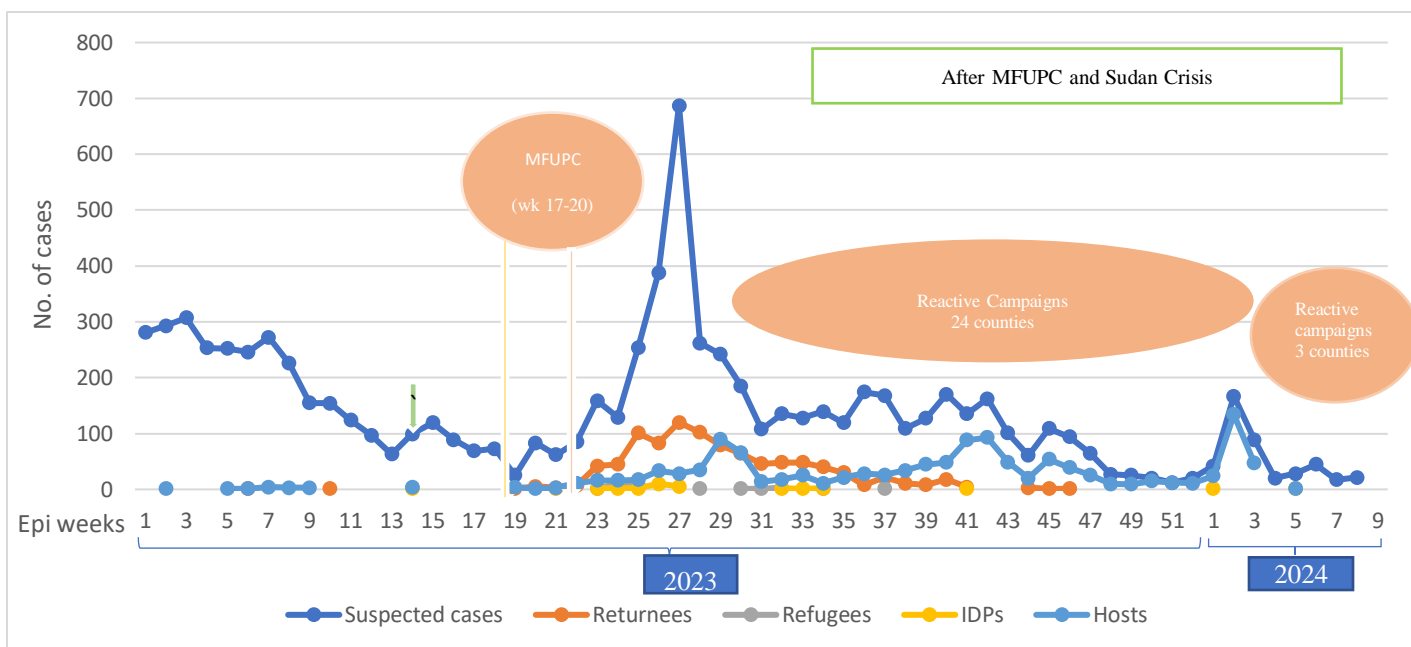


Table 5: Distribution of cases by final classification group in 2024

Final classification	No. of cases	%
Lab confirmed	116	27.0
Epi-linked	78	18.2
Clinically Compatible	184	42.9
Total	378	88.1
Discarded (-ve)	51	11.9
Grand Total	429	100.0

Table 6: Distribution of cases by age group in 2024

Age group in years	No. of cases	%	Deaths	%
<1	118	27.5	1	0.9
1-4	170	39.6	2	1.2
5-9	61	14.2	1	1.7
10-14	41	9.6	0	0.0
15+	39	9.1	0	0.0
Total	429	100.0	4	0.9

Out of the 429 suspected measles cases, 118 (25.1%) are lab-confirmed, 78 (18.2%) epi-linked, 184 (42.9%) clinically compatible, and 51 (11.9%) discarded cases have been reported as of epidemiological week 7, 2024. A total of 7 rubella-positive cases were identified from among the discarded (negative) measles cases.

Response activities (measles)

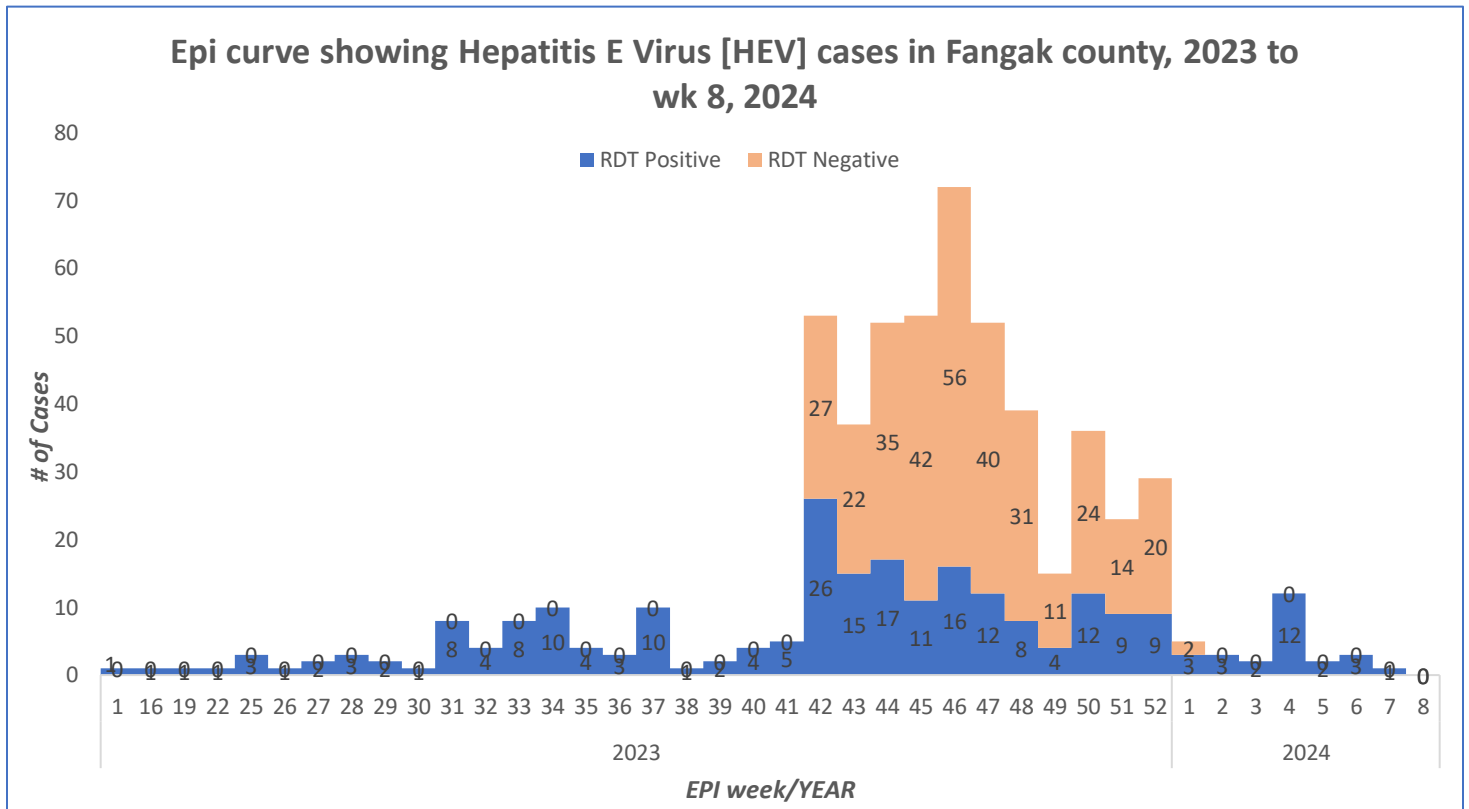
South Sudan implemented a vaccination campaign in 21 counties, vaccinating 1,004,230 children under 15 years old, including 169,316 returnees and refugees. Polio vaccine was integrated into 16 counties, reaching 664,526 children. Partners supported seven counties, and WHO provided financial and technical support to MOH to implement in 14 counties, while UNICEF supplied all the vaccines required. Preparation for the reactive campaign is ongoing in Tonj South, and monitoring of confirmed cases is underway. POE/Temporary transit post vaccination is ongoing in prioritized sites. Phase II POE activities will restart from March 2024.

Hepatitis E Virus in Fangak county Jonglei State

A total of 564 AJS cases, including 21 deaths, have been reported from week 1 of 2023 to week 8 of 2024. Most cases were reported among the age group 15 years and above; Females accounted for 67% (336/564) while Males accounted

for 33% (160/564) of cases. The outbreak peaked in week 42 of 2023, with an RDT positivity rate of more than 60%. Until week 52, 2023. All cases from weeks 2 to 7 tested negative using RDT

Figure 6: Epi curve of HEV in Fangak County

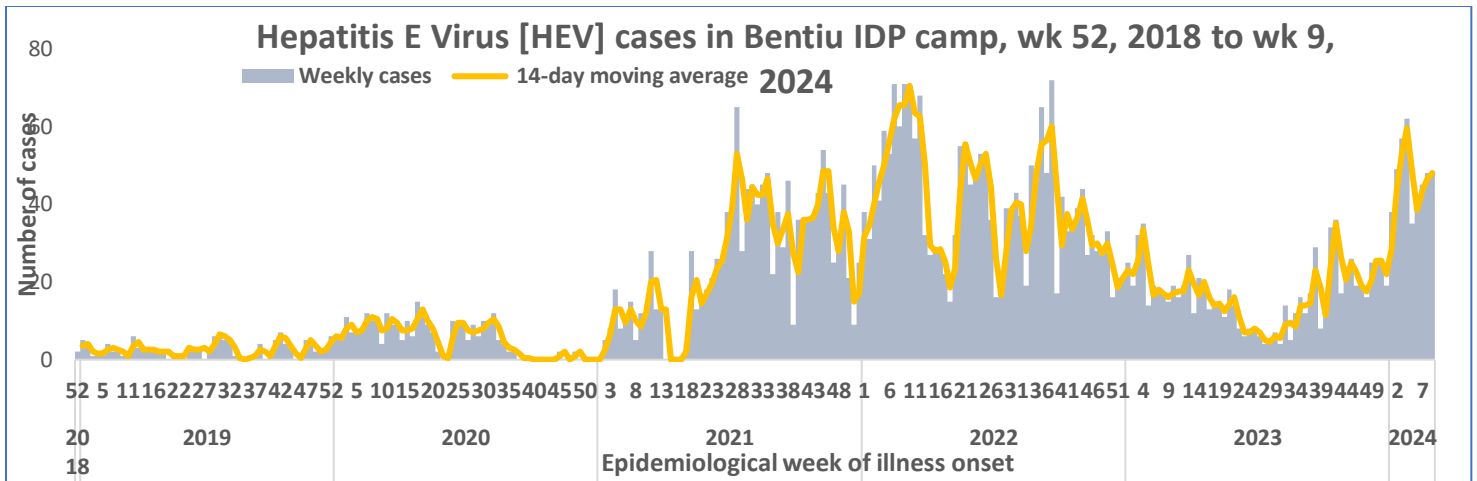


Response activities include WASH intervention through community engagement. The vaccination using Hecolin has been concluded, with 5,820 and 8,585 persons vaccinated for first and second round respectively and plans are underway to conduct the second and third rounds of vaccination campaigns in Fangak

Hepatitis E outbreak in Bentiu IDP Camp in Unity State

The continuous transmission of HEV in Bentiu IDP camp continues with 5102 cases, including 27 deaths since the end of 2018. A total of 48 new cases and zero deaths were reported in week 09, 2024. Most of the cases were reported among the age group 15 – 44 years; and Male account for 52% (2, 626), while females account for 48% of all the cases.

Figure 7: Epi curve of HEV in Bentiu IDP camp, Unity State



Vaccination Response in 2022 (Hepatitis E Virus in Bentiu)

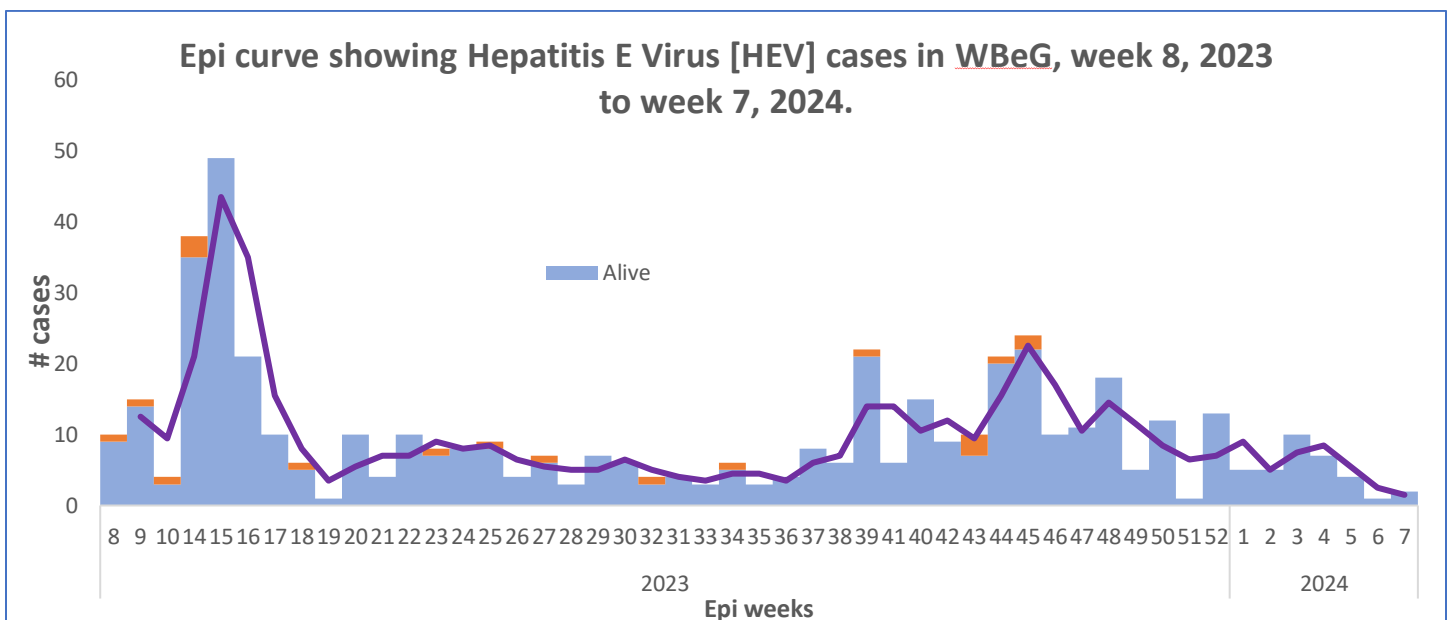
The HEV vaccination campaign was conducted in March 2022; first-round coverage was 91%, and the second round was 82% in Bentiu IDP camp were vaccinated aged 16-40 years (incl. pregnant women) Ongoing case management in the camp hospital supported by MSF. There is a need to continue to engage in community and risk communication to support behavioral changes to meet the WASH investment done by WASH partners.

Hepatitis E Updates in Wau, Western Bahr el Ghazal

Last year, on April 14, 2023, the national Ministry of Health declared an outbreak of Hepatitis E Virus (HEV) disease in Wau Western Bahr el Ghazal state. However, cases have continued to be reported since then. A total of 479 cases, including 19 deaths, have been reported from week 8, 2023, to week 7, 2024.

Most of the cases were reported among people 15 years of age and above, and males accounted for 63% (300), while Females accounted for 37% (179).

Figure 8: Epicure of HEV in Wau, Western Bahr el Ghazal State



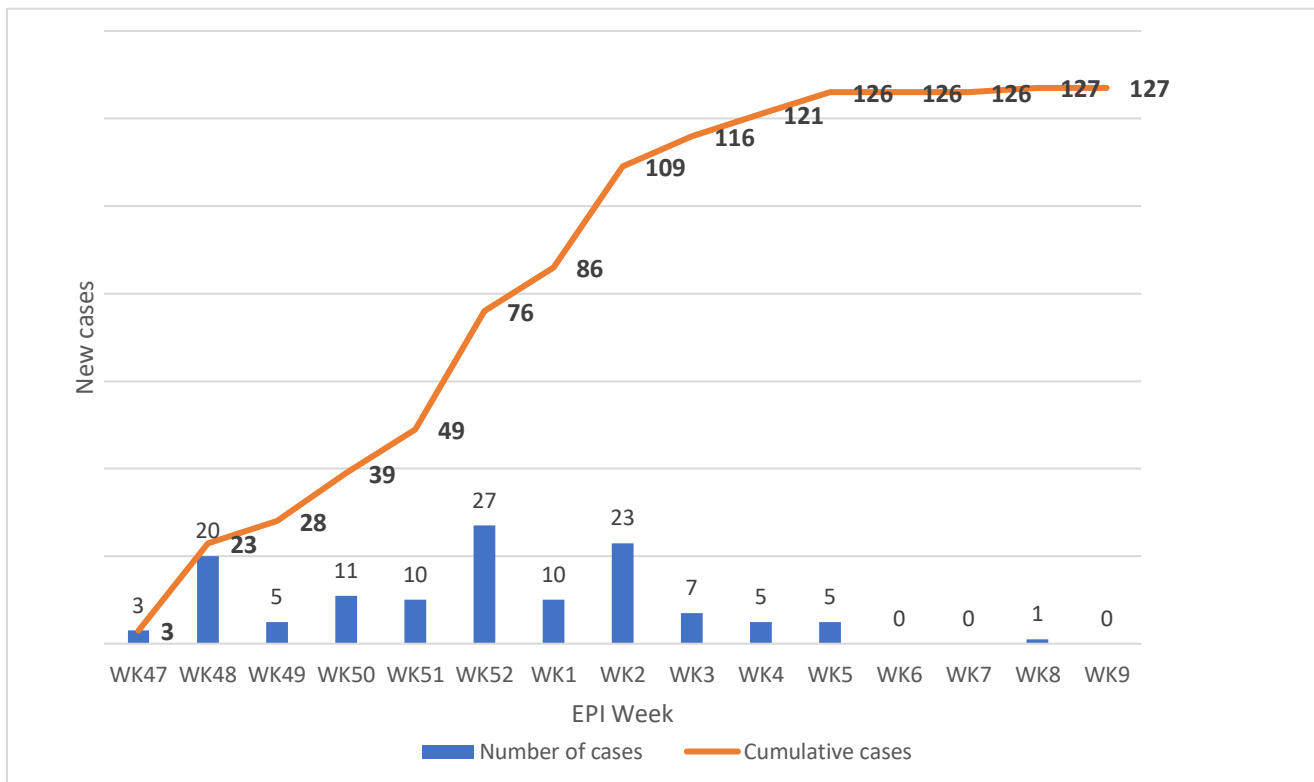
Circulating Vaccine Derived Polio Virus type-2 (cVDPV2)

As of 31 January 2024, two cases of cVDPV2 were reported from Yambio in Western Equatoria and Juba in Central Equatoria. Three samples were collected from healthy children in Western Equatoria, and after testing, the cVDPV2 variant was confirmed, which closely matched the index case from West Equatoria State. The most recent case of cVDPV2 was reported from Juba County, Central Equatoria state, with the date of onset of paralysis on 4th November 2023. However, there are still samples in the laboratory pending testing. To respond to the nationwide outbreak, a campaign was launched on 27th February 2024, using the nOPV2 vaccine, which has been completed in most counties.

Cholera Preparedness and Readiness updates in Renk

A health screening desk was established at Wanthou/Joda, and since 19 December 2023, screened over 146,238 individuals, detecting 127 alerts, of which 77 were verified samples collected. Five of the 77 samples collected tested positive for cholera RDT, all negative by culture, as seen in the graph below.

Figure 6: Alerts of Acute Watery Diarrhea Surveillance in Renk County from week 47 of 2023 to week 09 of 2024



Other readiness activities:

Coordination: The Cholera Technical Working Group (TWG) has established a biweekly meeting, which is attended by partners from the WASH, Nutrition, and Health sectors, as well as UN agencies, with WHO serving as the chair. A comprehensive plan for Cholera Preparedness and Response has been developed, with ongoing coordination meetings taking place between the Health, Nutrition, and WASH Clusters

Ongoing active case search at all health facilities in the Transit Center, Renk Hospital, and around Renk.

Engaged Behavioral Health Volunteers (BHV) to conduct Community-Based Surveillance (CBS) in payams and boma.

Enhanced health facility reporting through Integrated Disease Surveillance and Response (IDSR), with a recognized improvement in timeliness and completeness.

Other events

Flooding: During the last four consecutive years, South Sudan has experienced 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 is required 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 constrained the humanitarian response in 2023 and will continue to do so in 2024.

Sudan crisis: South Sudan has received Cumulatively 568,397 individuals since 16th April 2023 who have entered South Sudan at 22 POEs. **More than 449,743 (79.1%) returnees and 118,654 (20.9%) 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 a 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.
- Support the nationwide Polio (NOPV) for two rounds, with a target of over 3 million children under 5.
- Support detailed Measles outbreak investigations and risk assessment (root cause analysis) to understand the persistent outbreaks

Acknowledgments

Thanks to the State Surveillance Officers, Health Cluster partners for sharing the weekly IDSR data. To access the IDSR bulletins for 2024 use the link below:

<https://www.afro.who.int/countries/south-sudan/publication/south-sudan-weekly-integrated-disease-surveillance-and-response-bulletin-2024>

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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

