Republic of South Sudan
Weekly Integrated Disease Surveillance and Response (IDSR)
Epidemiological Bulletin

Reporting period: Epidemiological Week 20
13 -19 May 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 20 of 2024, the IDSR reporting timeliness and completeness were 89% and 94%, respectively, which is an improvement from the 84% and 88% reported in the previous week.
- At the EWARN mobile sites, the Timeliness and Completeness of IDSR performance were 76% and 93%, respectively. Completeness was higher than the previous week 19 (86%).
- Timeliness and completeness in private health facilities stand at 90% and 94%, respectively, much higher than the 65% in the previous week.
- In week 20, 195 alerts were triggered in eWARS, and the proportion of verified alerts increased from 47% (91/1191) in week 19 to 63% (122/195) in week 20. Most of the alerts in week 20 were for Guinea Worm (25%), ABD (15%) and Measles (14%).
- Three additional cases of suspected meningitis were reported from Aweil Hospital in week 20 of 2024 making the cumulative number of recorded meningitis cases across South Sudan to be 125 including 17 deaths (Case fatality rate: 13.6%).
- Updates on ongoing Hepatitis E Outbreaks from Fangak, Wau counties and Bentiu IDP camp

Surveillance System Performance

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 20 of 2024 were at 89% and 94%, respectively.
### Table 1: Timeliness and completeness of IDSR reporting by State for week 20, 2024

<table>
<thead>
<tr>
<th>State</th>
<th>Total facilities</th>
<th>Number of facilities reported (Completeness)†</th>
<th>Timelessness</th>
<th>Completeness</th>
<th>Cumulative 2024</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wk19</td>
<td>wk. 20</td>
<td>Wk19</td>
</tr>
<tr>
<td>Lakes</td>
<td>112</td>
<td>112</td>
<td>96%</td>
<td>96%</td>
<td>99%</td>
</tr>
<tr>
<td>NBGZ</td>
<td>89</td>
<td>80</td>
<td>97%</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>Unity</td>
<td>84</td>
<td>84</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>WBGZ</td>
<td>81</td>
<td>59</td>
<td>69%</td>
<td>62%</td>
<td>72%</td>
</tr>
<tr>
<td>WES</td>
<td>183</td>
<td>146</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Jonglei</td>
<td>119</td>
<td>101</td>
<td>87%</td>
<td>92%</td>
<td>88%</td>
</tr>
<tr>
<td>Warrap</td>
<td>111</td>
<td>105</td>
<td>75%</td>
<td>92%</td>
<td>87%</td>
</tr>
<tr>
<td>EES</td>
<td>107</td>
<td>101</td>
<td>88%</td>
<td>85%</td>
<td>93%</td>
</tr>
<tr>
<td>RAA</td>
<td>16</td>
<td>7</td>
<td>31%</td>
<td>69%</td>
<td>44%</td>
</tr>
<tr>
<td>CES</td>
<td>122</td>
<td>119</td>
<td>69%</td>
<td>92%</td>
<td>73%</td>
</tr>
<tr>
<td>AAA</td>
<td>17</td>
<td>17</td>
<td>88%</td>
<td>88%</td>
<td>88%</td>
</tr>
<tr>
<td>Upper Nile</td>
<td>141</td>
<td>107</td>
<td>65%</td>
<td>70%</td>
<td>73%</td>
</tr>
<tr>
<td>GPAA</td>
<td>15</td>
<td>15</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>1197</td>
<td>1053</td>
<td>84%</td>
<td>89%</td>
<td>88%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Admin area</th>
<th># Of Reporting Mobile Sites</th>
<th>% Of Timeliness in week 20</th>
<th>% Of Completeness in week 20</th>
<th>Payam</th>
<th># Of Reporting Private Health Facilities</th>
<th>% Of Timeliness in week 20</th>
<th>% Of Completeness in week 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMC</td>
<td>4</td>
<td>25%</td>
<td>75%</td>
<td>Kator</td>
<td>3</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>SSHCO</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
<td>Marial Baai</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>SMC</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
<td>Northern Bari</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>SCI</td>
<td>2</td>
<td>100%</td>
<td>100%</td>
<td>Rajaf</td>
<td>3</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>HFO</td>
<td>3</td>
<td>100%</td>
<td>100%</td>
<td>Muniki</td>
<td>12</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>WVI</td>
<td>2</td>
<td>100%</td>
<td>100%</td>
<td>Wau South</td>
<td>20</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>CIDO</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
<td>Wau North</td>
<td>12</td>
<td>67%</td>
<td>75%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>14</td>
<td>79%</td>
<td>93%</td>
<td>Juba</td>
<td>10</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

TOTAL: 62
Epidemic alerts
A total of 195 alerts have been triggered in the EWARS system, with 63% (122/195) verified in the system compared to 47% in the previous week (19). Most of the alerts were for Guinea Worm (25%), ABD (15%) and Measles (14%). See Table 3 below for more details.
Establishment of triage for all cases with symptoms of a coagulation disorder. These patients exhibited signs such as vomiting blood, coughing up blood, and severe acute malnutrition. However, there is ongoing follow-up with the partners on the ground to a) Conduct contact tracing for all the suspected deaths for at least 21 days, b) Establishment of triage for all cases with hemorrhagic symptoms, c) Provision of Personal Protective Equipment to all health workers designated to see patients with bloody symptoms/signs; and d) report any related event.

Alert: Deaths due to bloody diarrhea in Walgak, Akobo county

In week 20, an alert was received from a Health partner in Akobo of five individuals, all under the age of 10 (four of whom were under the age of 5), who arrived at the Walgak Primary Health Care Center (PHCC) displaying symptoms of a coagulation disorder. These patients exhibited signs such as vomiting blood, coughing up blood, and experiencing bloody diarrhea shortly after being admitted to the health facility. Unfortunately, their conditions deteriorated rapidly, and they passed away at the Walgak PHCC. The cases were reported from the Akobo West Payam, specifically from Yidit (3 cases), Buong (1 case), and Diror (1 case). The county team investigated, which was verified to be severe acute malnutrition. However, there is ongoing follow-up with the partners on the ground to a) Conduct contact tracing for all the suspected deaths for at least 21 days, b) Establishment of triage for all cases with hemorrhagic symptoms, c) Provision of Personal Protective Equipment to all health workers designated to see patients with bloody symptoms/signs; and d) report any related event.
Weekly Update on Indicator-Based Surveillance (Week 16)

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.

**Influenza update**

Currently, there are four designated Influenza sentinel surveillance sites in the country, three (3) in Juba (Juba Teaching Hospital, Al Sabbah Children’s Hospital, Juba Military Hospital) and one (1) in Rumbek State Hospital in Lakes State are collecting epidemiological data and samples from ILI/SARI cases.

![Figure 2: Indicator-Based Surveillance (IBS) Influenza Surveillance](image)

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

During Epidemiological Weeks 1 to 20 in 2024, a cumulative total of 602 ILI/SARI samples were collected; 561 tested negative for all pathogens, 23 were positive for COVID-19, 3 for Influenza Type A (H3), one for Influenza Type B (Victoria), nine for Influenza A/(H1N1) pdm09 and zero for RSV.

**Ongoing confirmed epidemics**

**Table 4: Summary of new and ongoing confirmed epidemics**

<table>
<thead>
<tr>
<th>Aetiologic agent</th>
<th>Location (county)</th>
<th>Date first reported</th>
<th>New cases since last bulletin</th>
<th>Cumulative cases to date</th>
<th>Response activities</th>
<th>A/3</th>
<th>B/Victoria</th>
<th>A/H1pdm09</th>
<th>Pending</th>
<th>COVID-19</th>
<th>RSV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Fever</td>
<td>Yambio, Nzara, Ezo, Tambura, Ibb and Maridi</td>
<td>21 Dec 2023</td>
<td>2</td>
<td>124</td>
<td>Laboratory confirmed</td>
<td>Ongoing</td>
<td>Done in 5 counties</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Measles</td>
<td>2 counties with active outbreak Jur River and Fangak</td>
<td>2022</td>
<td>0</td>
<td>14,507</td>
<td>1,154</td>
<td>ongoing</td>
<td>ongoing</td>
<td>ongoing</td>
<td>ongoing</td>
<td>ongoing</td>
<td></td>
</tr>
</tbody>
</table>
Ongoing Confirmed Outbreaks

Since 2022, South Sudan experienced several health emergencies throughout the country. Based on data provided by the states and the EWARS system, most counties have reported ongoing disease outbreaks. These outbreaks include measles, anthrax, meningitis, cholera, hepatitis E virus, and others. Measures have been put in place to help mitigate the spread of these outbreaks. Below is a map of the current ongoing emergencies.

Figure 3: Map showing ongoing disease outbreaks across the country
Response activities for ongoing/suspected outbreaks

Vaccine-preventable Diseases

1- Meningitis Situation Updates
In week 20, three cases were reported from Aweil West, East, and South Counties. This brings the cumulative number of recorded meningitis cases across South Sudan to 125 including 17 deaths (Case fatality rate: 13.6%). Two of the cases were aged 12 and 14 years, while the 3rd suspected case was a 33-month-old baby from Aweil West. In Payams (sub-counties), none surpassed the outbreak threshold (10 cases per 100,000 in payams with over 30,000 population or five cases per 100,000 or doubling of the Neisseria Meningitidis incidence over two to three consecutive weeks in areas with less than 30,000 population). The number of counties that have reported suspected meningitis cases remained 7 namely Aweil Centre, Aweil East, Aweil North, Aweil South, Aweil West, Gogriel West and Twic.

![Meningitis Epidemic Threshold in Geographies >30k population](image)

Figure 4: Attack rate of Meningitis cases by Payam and Epi-week 4 to 20, 2024

2- Measles outbreak
In Epi week 20, no additional data on cases from reporting locations. No new cases/deaths reported with date of onset in week 20. In the last four weeks two ongoing outbreaks in Fangak and Jur-River counties. The cumulative total of suspected measles cases from week 1 to week 20 is 2,407 of which, 164 (6.8%) were lab-confirmed, 772 (32.1%) epi-linked, 1,350 (56.1%) clinically compatible, and 121 (5.0%) discarded. A total of 30 rubella-positive cases were discarded (negative measles cases). About 66% (1604 out of 2407) of all cases were in children under 5 years old, and only 23% of those cases involved children who had received at least one dose of the measles vaccine. In the last four weeks, 16-19 of 2024, a total of 46 suspected cases were recorded, with 40 samples collected, and data shows ongoing outbreaks in Fangak, Jur-River, and Wulu counties.
Measles Vaccination Updates

In 2024, the reactive vaccination campaigns against measles continued. By Epi week 20, thirteen counties (Maridi, Mundri East, Tonj North, Tonj South, Aweil East, Aweil South, Aweil Center, Aweil North, Aweil West, Yambio, Nzara, Ibba and Tambura) had implemented the campaign, vaccinating 453188 (91%) children under the age of five, of which 2.3% are returnees. The campaign is partially implemented in six IDP camps of Tambura County. Ezo county scheduled implementation for the first week of June 2024.

3- Poliomyelitis

Circulating Vaccine Derived Polio Virus type-2 (cVDPV2)

There are three circulating lineages of VDPV2 emergences which are RSS-WEQ-1 detected in Yambio/WEQ and Juba CES detected in Ayod, Baliet and Nasir of UNL. An unnamed lineage has been detected in Tambura/WES and Longechuk/UNL. Additionally, there are two new unclassified VDPV2 emergencies, one in Ulang/UNL and one contact isolate in Nasir. The
investigation of these unclassified emergences is still ongoing. Two nationwide response SIAs using nOPV2 have already been completed and the LQAS results have been completed in 39 counties with only one more to be completed this week. We are enhancing surveillance activities in all states, counties, Payams and villages to identify any suspected cases promptly.

Figure 8: Distribution of cVDPV2 cases isolates (All sources)

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

In week 20, one case tested positive for RDT, bringing the total number of AJS cases to 643, with 22 reported deaths since the outbreak began in week 2 of 2023. Most cases occurred in individuals aged 15 and above, with females accounting for 66% (420 out of 643) and males 34% (223 out of 643) of the total cases. Most cases originated from old Fangak Payam (65% of total cases), followed by Paguir (11%) and 10 other villages. The outbreak peaked in week 42 of 2023, with an RDT positivity rate exceeding 60%. By week 52 of 2023, the Ministry of Health, County Health Department (CHD), MSF-France, and partners had initiated two rounds of Hecolin intervention to address the ongoing outbreak with four (04) RDT-positive cases reported in week two of 2024.
5. Hepatitis E outbreak in Bentiu IDP Camp in Unity State

In week 20 of 2024, 38 new cases were reported, with one RDT positive case and no deaths. Since the outbreak began in 2018, 5489 cases and 27 deaths have been reported. Among these cases, 43% occurred within the age group of 15-44 years. Males accounted for 52% (2,876 cases), and females accounted for 48% (2,613 cases). Most of the cases (47%) were among the non-camp residents who came to seek treatment within the camp, within the camp, cases were almost equally distributed with sector 3 with more cases (13%) than the other sectors.
6. Hepatitis E in Western Bahr EL-Ghazal State

Between week 8 of 2023 and week 20 of 2024, a total of 501 cases were reported, with 19 resulting in fatalities. Most cases (81%) were concentrated in the Wau South Payam region. Of the reported cases, 64% were male and 36% were female, with the most affected age group being 15 years and older. Wau Teaching Hospital accounted for 68% of the reported cases, while 28% were reported from the community. Although there has been a decrease in the weekly case load since the beginning of 2024, there is still an ongoing need for interventions at both the facility and community levels to mitigate this outbreak.

![Epi curve of HEV cases in WBeG, wk 1, 2023 to wk 20, 2024.](image)

**Figure 11:** Epi-curve of HEV in Fangak County

**Hemorrhagic Fevers**

1. **Yellow fever Outbreak**

In Week 20, two (2) additional cases were reported from Maridi, giving a cumulative total of 124 Yellow Fever cases (121 suspected and 3 confirmed). Seven counties in Western Equatoria state were affected: Yambio (64), Tambura (26), Nzara (11), Ezo (13), Ibba (03), Maridi (03), and Mvolo (03) Counties. In Epi week 16, one (01) new suspected Yellow Fever cases were reported from Yambio.
**Other Events**

**Sudan crisis:** As of Week 20, at least 674,475 individuals have crossed from 19 different nationalities. Of this number, 78.42% (528,923) are South Sudanese returnees. Currently, 21 PoEs are being monitored, with Joda-Renk accounting for 83.4% of the reported influx figures. Hostcommunities and healthcare systems are struggling to cope with the increased demand for health and otherservices, morbidity, and mortality among 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 entry point. Suspect cholera cases are further screened and tested using rapid diagnostic tests (RDT). A total of 2876 consultations were recorded this week, 20 less compared to 5445 consultations in Wk 19. The leading cause of morbidity in Renk is ARI 32% (922/2876) in both children under the age of five years old and adults, followed by malaria 246/2876 and acute watery diarrhea 244/2876.

**Food insecurity:** In 2023, severe acute food insecurity impacted an estimated 7.7 million people across 78 counties in South Sudan. This includes 43,000 people facing catastrophe-level food insecurity at Integrated Food Security Phase Classification (IPC) Phase 5, 2.9 million at IPC Phase 4 (emergency-level), and 4.8 million at IPC Phase 3 (crisis-level). Among those affected are 1.4 million malnourished children. For 2024, it is estimated that millions of people will still be unable to meet minimum food needs as food stocks could be depleted by April 2024. Additionally, ongoing sporadic conflicts and the influx of returnees and refugees from Sudan is likely to strain food supplies and incomes further, driving severe malnutrition.

**Flooding:** Remains a concern. In 2023, areas of Upper Nile and Unity states remained under floodwaters, with an estimated 7021 people still displaced in Rubkona.

**Next step**

- Strengthening active surveillance across the counties bordering 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).
- Training of rapid response teams (RRTs) in Renk.
• Support printing of IEC materials for red eye prevention awareness.
• Support the ongoing PSH training in Renk County.
• 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:

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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