South Sudan COVID-19 Weekly Epidemiologic Bulletin

Issue #: 12

22 – 28 March 2021

Epidemiologic Week 12

Summary statistics for Epidemiologic Week 12

213	10103	3	109	1326	130153
New Confirmed Cases	Total Confirmed Cases	New Deaths	Total Deaths	Contacts Under Follow-up	Cumulative Samples Tested

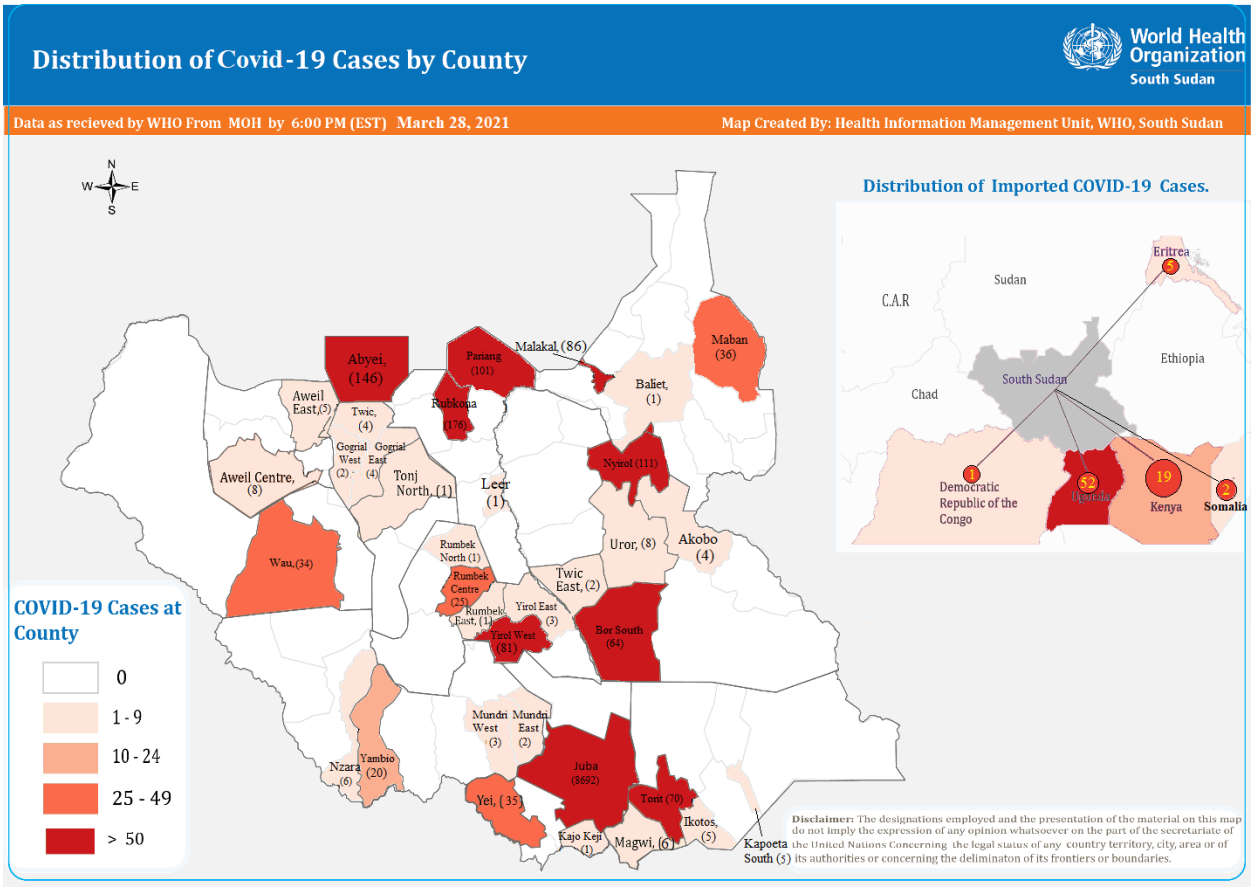

Figure 1. Map of cumulative reported COVID-19 cases, by county

Map source: WHO Weekly Bulletin

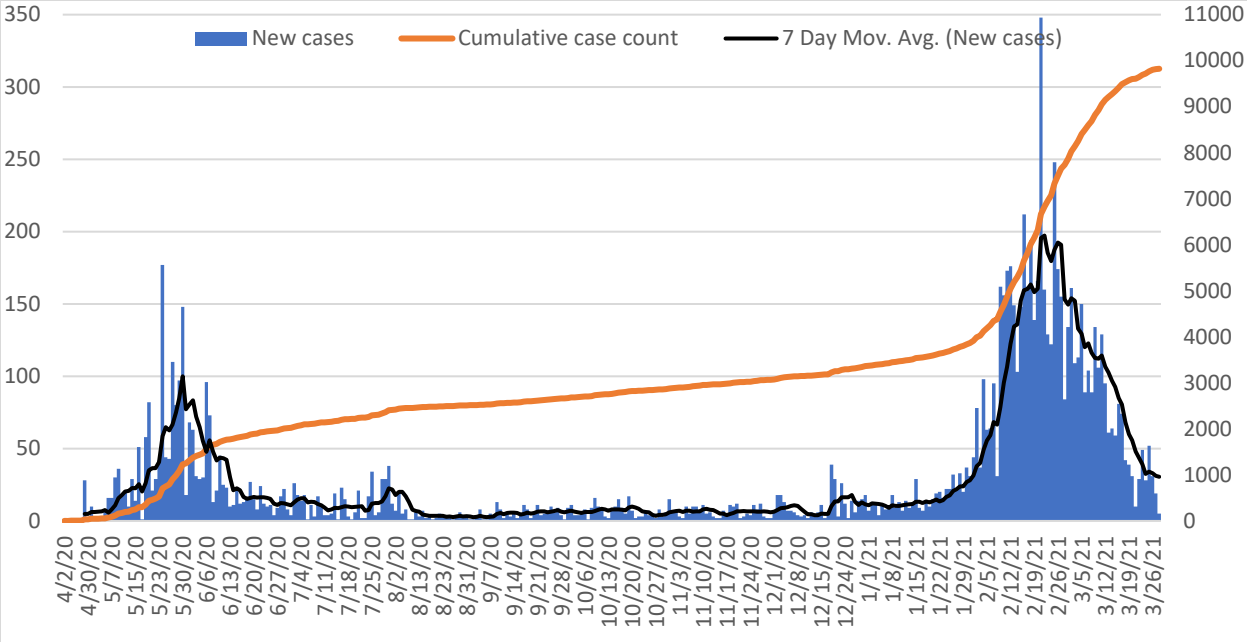

Figure 2. Epidemiological curve of reported cases through Week 12, showing new cases (blue bars), rolling 7-day average of reported cases (black line), and total cumulative reported cases (yellow line)

Epidemiology and Surveillance Update

Two hundred and thirteen new cases were identified in Week 12, bringing the cumulative number of confirmed cases to 10103[1], including 328 imported cases mainly from South Sudanese returnees (157), Uganda (52), and Kenya (19). There were no new imported cases in Week 12. Similar to trends observed in the last five epi weeks (07-11), the case count and average positivity yield continued to decline in Week 12. This week's tally is the lowest since epi week 04 when the country had 197 cases. It also shows a decrease of 36.6% in reported cases compared to Week 11, which also showed a 50.4% decrease compared to Week 10. Moving averages for yield, case count, and proportional daily case change were flattening or continued downward trends in Week 12. There was one additional reported death in Week 12 compared to Week 11 (a 50% increase), but mortality surveillance and reporting in the community needs to be active (i.e., the mortality surveillance team needs to respond to all community death alerts and visit mortuaries every day to look for suspect deaths and swab them). Although cases have surged in the country since the beginning of 2021, the case count has been decreasing for the past six epi weeks based on the 7-day moving average [Figure 2]. The case tally for Week 12 represents only 2.1% of the cumulative case total (compared to a high of 19.8% in Week 07). While it is more likely that the recent surge in the number of cases means the country is detecting more of cases from widespread community transmission due to increased testing, other factors including non-adherence to COVID-19 testing standard operating procedures by private testing facilities and double counting due to testing at multiple locations during the 14-day follow-up period also need to be taken in consideration.

[1] The cumulative case tally is likely an underestimate with backlogged data from some GeneXpert testing sites still to be added

At the end of Week 12, 35 (43.8%) of the 80 counties in the country have a confirmed case [Figure 1]. There was no county with a first confirmed case this week. Cumulatively, the age distribution of cases reported is skewed towards people under 50 years old, with most cases occurring in the 20-49 age group and skewed heavily towards males [Figure 3]. Fifty-nine percent of cases reported their nationality as South Sudanese, with a significant proportion (19.9%) with unknown nationality [Figure 4]. Despite expanded testing and increases in cases, the demographic breakdown profiles of the cases have not changed since the beginning of the outbreak. However, certainty about the case profiles is affected by increased lack of individual-level data and line listings especially from private testing facilities and GeneXpert (GXP) testing sites. This affects our ability to properly detect any changes in profiles.

Similar to trends in the last several epi weeks, most cases (125) in Week 12 were reported through traveler screening mainly at Med-Blue (52). Cumulatively, pre-travel screening account for the greatest proportion of cases (63.5%), followed by contact tracing (12.2%), and alerts (8.1%) [Figure 5B]. Most of the reported cases (62.4%) in Week 12 came from Central Equatoria. Ruweng Administrative Area (14.6%), Jonglei (8.9%), Abyei Administrative Area (6.1%), Unity (2.8%), Lakes (1.9%), Western Equatoria (1.4%), and Eastern Equatoria and Warrap (0.9%) contributed the remaining cases to the weekly case tally. Western Bahr el Ghazal, Northern Bahr el Ghazal, and Upper Nile did not report any cases in Week 12 [Figure 6]. In Week 12, one healthcare worker was confirmed as a case, bringing the cumulative case tally among healthcare workers to 255. Most of the cases among healthcare workers came from Central Equatoria (216), followed by Abyei (13), Jonglei (10), and Eastern Equatoria (9). Three states (Upper Nile, Western Bahr el Ghazal, and Northern Bahr el Ghazal) have not reported any cases among healthcare workers [Figure 7].

We are starting to see more testing reported from the states, mostly driven by further decentralization of GXP machines throughout the country (at least 27 sites). However, it is still difficult to know if we are at the community transmission stages in the states because there is still not enough testing being done. Nevertheless, notable clustered outbreaks have been reported in past epi weeks in Nzara, Yirol, Bentiu, Bor, Lakien, Ruweng, and Mapourdit, although epidemiological data usually lag in communication to the national authorities once the outbreaks are in the flourishing stages. Overall, COVID-19 surveillance and testing at sub-national levels continue to be weak and are in need of scaling up.

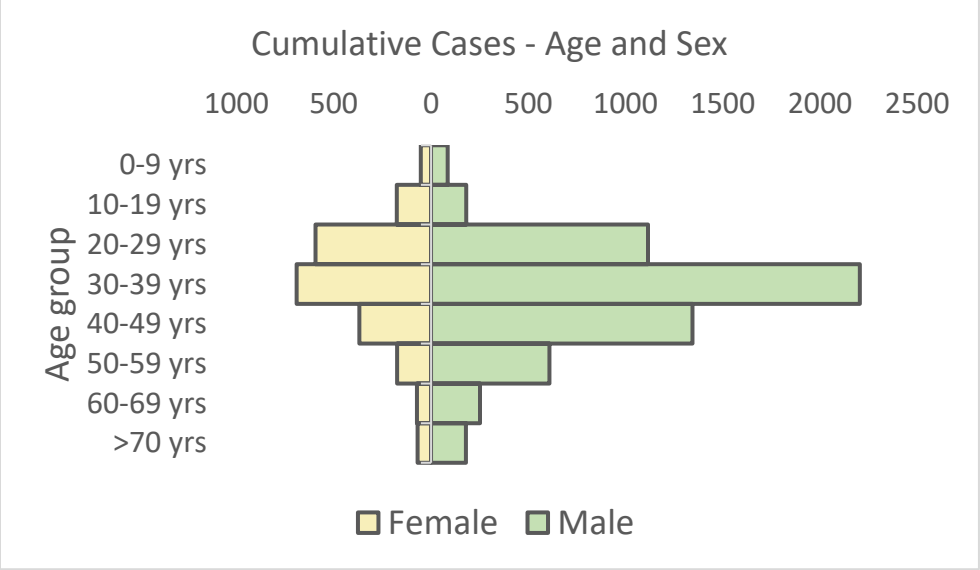

Figure 3. Distribution of cumulative reported cases by age and sex

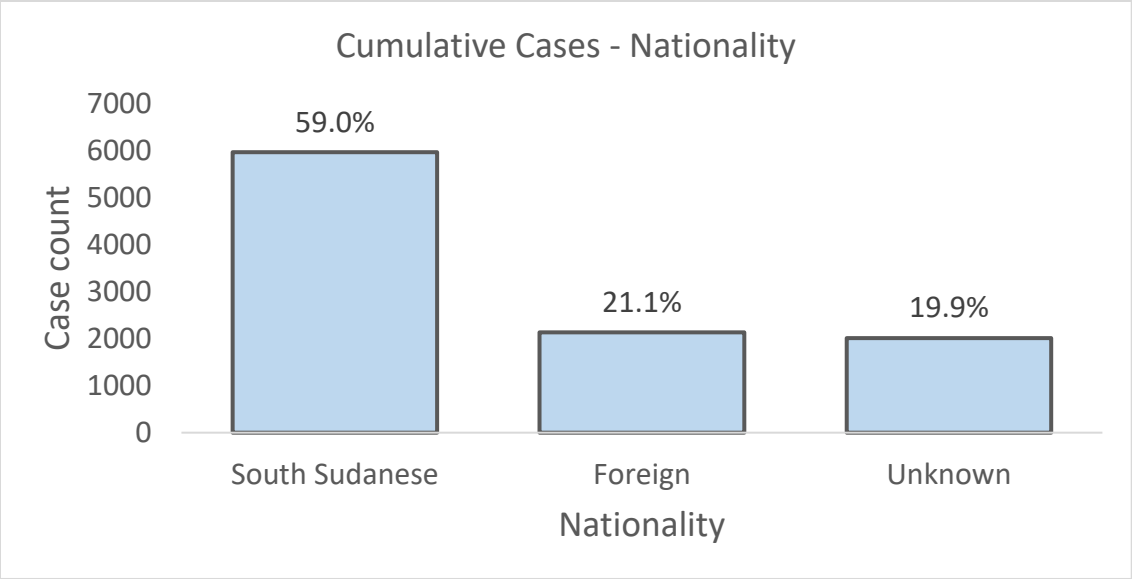

Figure 4. Distribution of cumulative reported cases by nationality

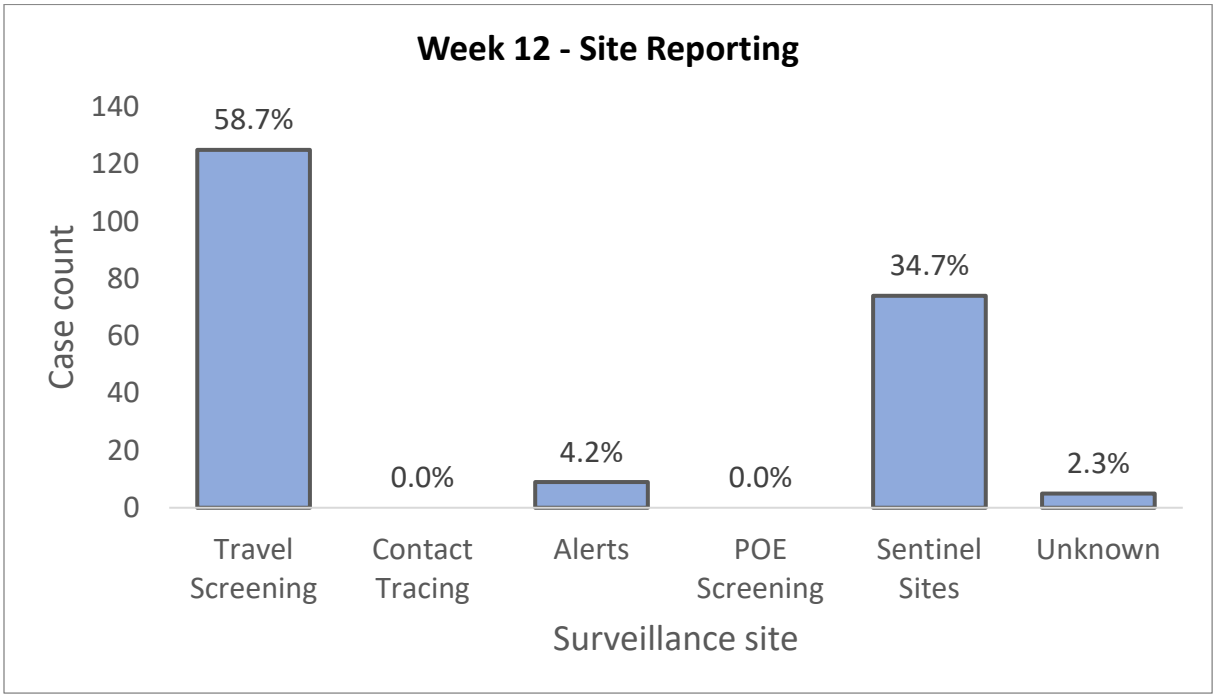

Figure 5A. Case by surveillance site (Week 12)

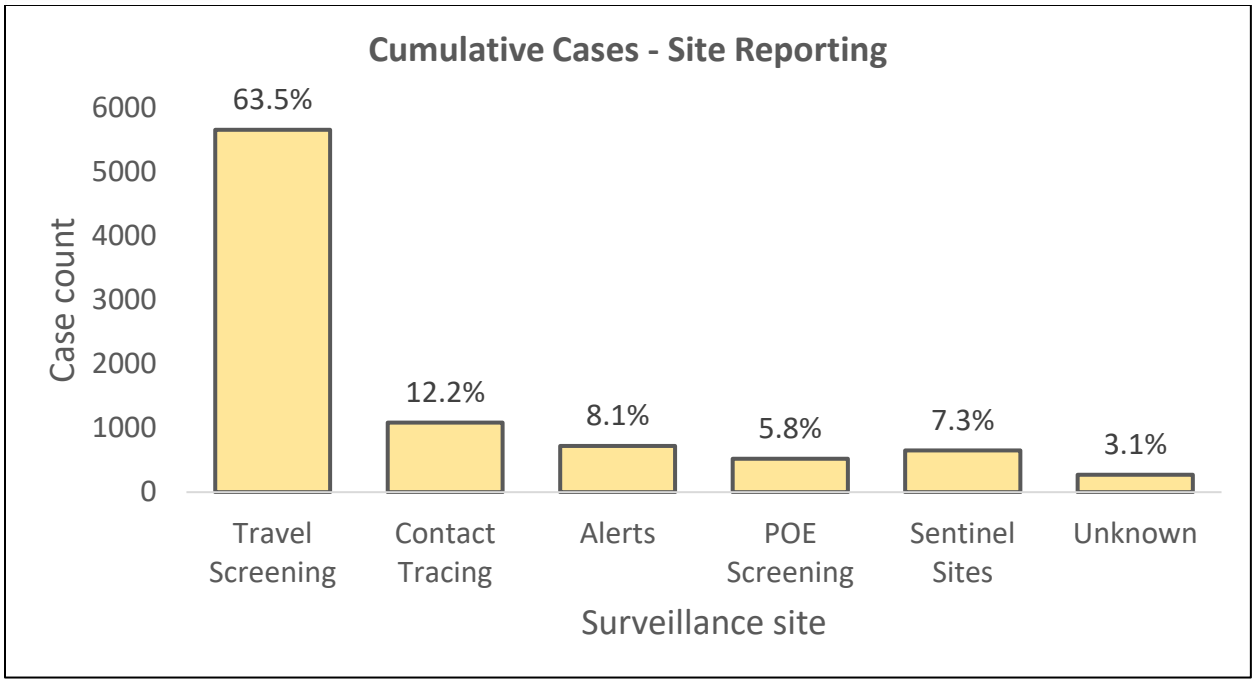

Figure 5B. Cases by surveillance site (cumulative)

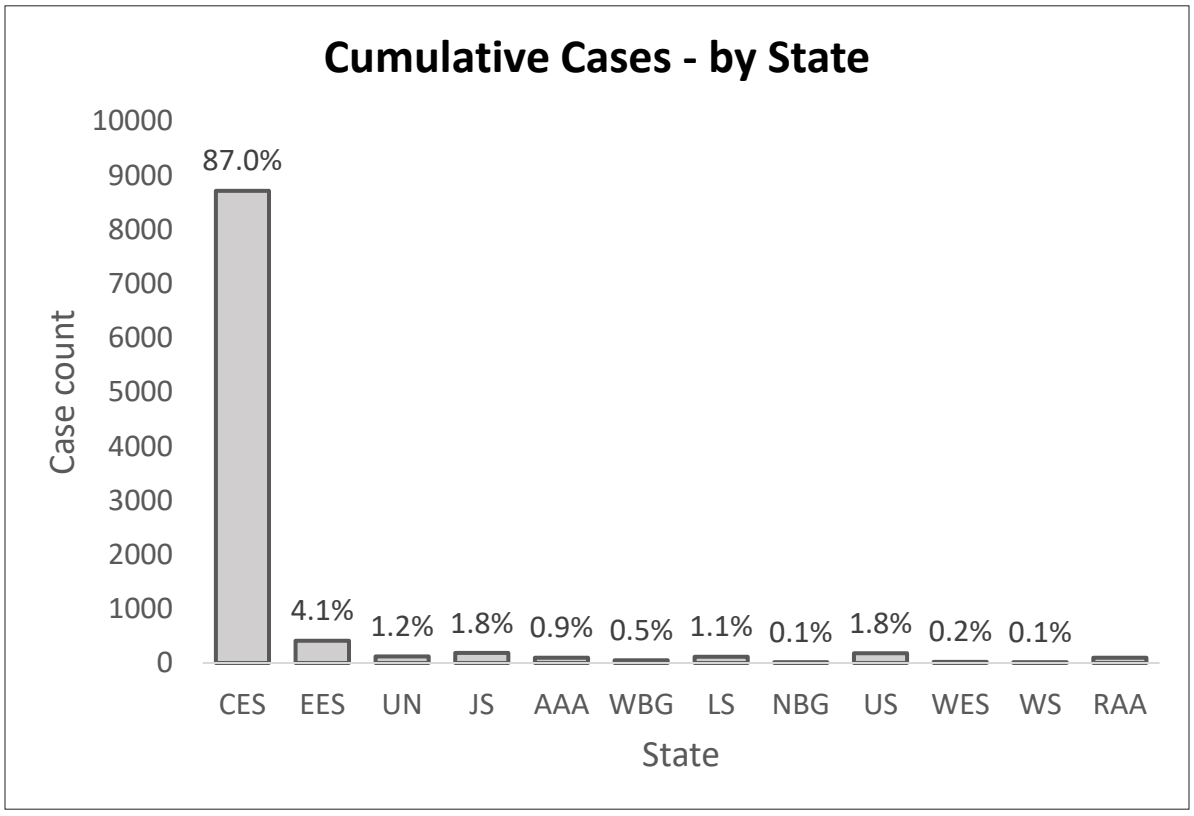

Figure 6. Case distribution by state (Week 12)

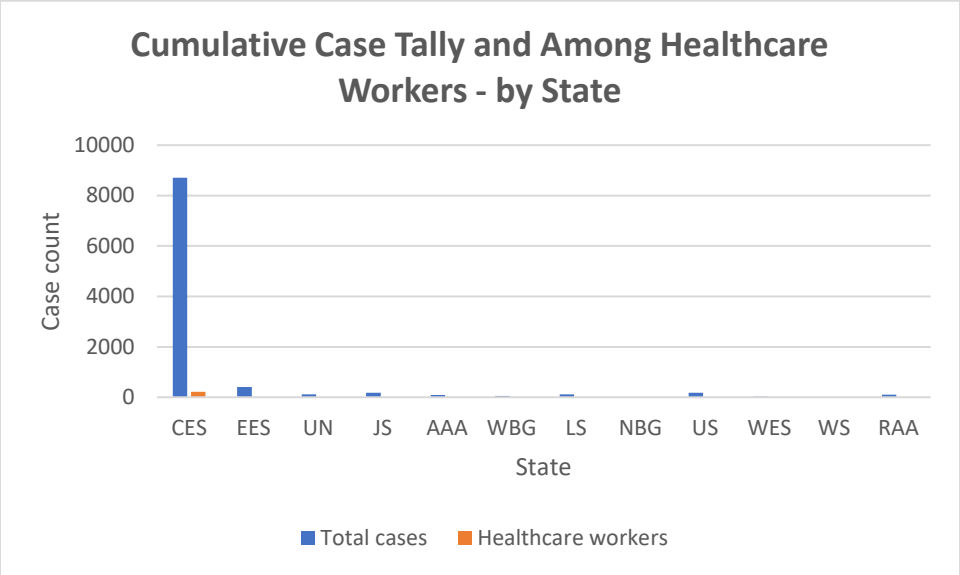

Figure 7. Cases among healthcare workers by state (cumulative)

Interpretation and recommendations

- **This week showed a 36.6% decrease in the number of reported cases compared to Week 11, a fifth consecutive week of a decreasing trend in case count. There was one additional reported death in Week 12 compared to Week 11 (a 50% increase).** However, there is a need for a more active mortality surveillance to identify COVID-19 deaths in the community. While it is more likely that the country is detecting more cases from widespread community transmission due to increased testing, other factors including non-adherence to COVID-19 testing standard operating procedures by private testing facilities and double counting due to testing at multiple locations during the 14-day follow-up period need to be taken in consideration. It is also important to conduct genomic sequencing to know which variants of SARS-CoV-2 are in circulation since they might change the transmissibility, clinical presentation, and severity of the disease among the population
- Identification of duplicated cases is an ongoing activity by the EOC data management unit with support from partners. Several duplicated cases have already been identified using a combination of core variables (e.g., name, age, and phone number). The EOC will develop SOPs to standardize the process of removing duplicates and replacing them with new cases. In addition, the EOC has mandated all private testing facilities to use the MOH approved CIF**, although this is currently only happening at Queens Medical Complex and Nojum and pending at Med Blue.** Use of this form will allow for duplicate cases to be easily identified using a core group of variables including name, age, phone number, sex, and having had a previous COVID-19 test. A training on the CIF for all private labs took place during Week 11
- Improved quality of data collection on individuals tested with key variables including surveillance site, nationality, age, sex, previous test history, clinical profile/symptomology remains critical to understand and characterize cases. This is even more critical now with the

transfer of traveler testing to private health clinics. The lack of individual-level testing data from these sites as well as from some facilities using GXP testing continues to affect our ability to fully describe the outbreak in South Sudan

- **Improved reporting of cases from sentinel surveillance sites first observed in Week 11, continued this week. Sentinel surveillance accounted for 74 (34.7%) of the weekly case tally. Contact tracing and alerts accounted for 0% and 4.2% of the weekly case tally respectively.** Cumulatively cases originating from contact tracing (12.2%) and alerts (8.1%) remain important to improve case surveillance in these populations with timely screening/testing of suspects and all listed contacts
- Despite recent improvement in reporting of results from GXP testing sites at sub-national level and the addition of backlogged data, only 8.9% of all confirmed cases have been detected in states other than Central Equatoria and Eastern Equatoria. In addition, about 86.5% of all cases have been detected in Juba compared to 13.5% outside of Juba, indicating that surveillance, testing, and reporting need to be improved and expanded in locations outside Central Equatoria
- **Although there is improved reporting of data from GXP testing sites (they have had the greatest positivity yields over the past four epi weeks), the data are currently provided in aggregate versus at the individual level format. Partners supporting the GXP testing sites need to provide individual-level data for both positive and negative results in order to better characterize the outbreak in these locations**

Laboratory Update

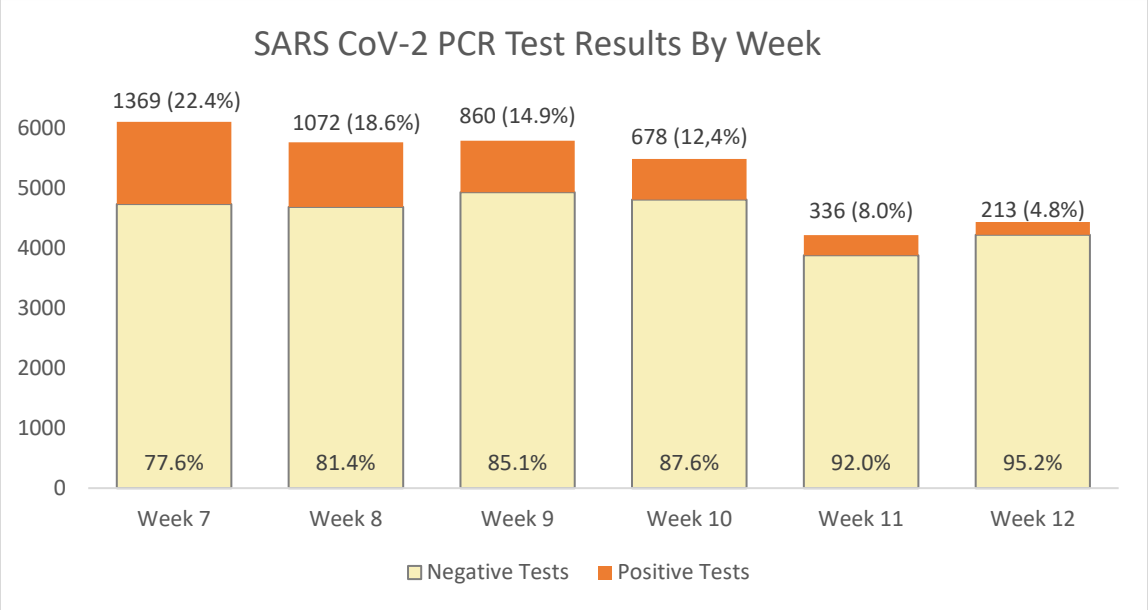

Figure 8. SARS-COV-2 PCR test results by week

Interpretation and recommendations

- **Average positivity has been more than 5% since Week 05, peaking at 22.4% in Week 07. However, average positivity yields have been declining for the last five epi weeks, reaching a**

low of 4.8% this week, likely indicating that the second wave has ended or is ending. While the recent surge in cases is likely due to the country simply detecting more of what has always been there – widespread community transmission, non-adherence to COVID-19 testing protocols in some testing facilities, with people being retested before they complete 14 days of follow-up could lead to double counting of follow up cases. The EOC has so far identified 178 such duplicated cases, and these will be removed from the cumulative case tally once SOPs to standardize the removal process have been finalized. There are also anecdotal reports of quality control challenges at the private testing clinics (e.g., positive result at a facility turning negative in another). The NPHL and EOC must implement a system of quality assurance for all COVID-19 testing laboratories in South Sudan. This can be adapted from the quality assurance system already in use for HIV and TB in the country

- **Positivity yields have declined significantly in recent epi weeks. However, positivity is still high in GXP testing sites due to the targeted testing (i.e., alerts, suspected cases, and contacts of cases) done at these locations.** Except for Torit (0.0%), Rumbek (0.0%), and Gentil PHCC (0.0%), positivity yield was more than 5% for all other GXP testing sites that provided data in Week 12 [Figure 9]. Positivity yields were as follows in Week 12, NPHL (4.5%), Med Blue (2.8%), Queens Medical Complex (3.1%), Nojum (3.1%), Nimule (0.0%), Kapoeta (28.6%), Lakien (53.3%), Nzara (50.0%), Pariang (48.5%), Pamir refugee camp (31.1%), Bentiu (26.1%), Makpandu (15.4%), Agok (25.5%), Mapourdit (33.3%), and UN Clinic/UNMISS (72.7%)[2]
- In Week 12, 1835 (41.5%) of the tests were run at Med-Blue, 977 (22.1%) at the NPHL, 1238 (28.0%) at Queens Medical Complex, 127 (2.9%) at Nojum, and 1 (<0.1%) in Nimule. Other tests were as follows: 51 (1.2%) in Agok, 45 (1.0%) in Pamir, 33 (0.7%) in Pariang, 23 (0.5%) in Bentiu, 18 (0.4%) in Torit, 15 (0.3%) in Lakien, 13 (0.3%) in Rumbek and Makpandu, 11 (0.2%) at the UN/UNMISS, 7 (0.2%) at Kapoeta, 6 (0.1%) in Mapourdit, 4 (0.1%) at Nzara and Ezo, and 3 (0.1%) at Yei and Gentil PHCC. Approximately 130153 SARS-COV-2 PCR tests have been performed throughout the outbreak with 7.8% positivity
- **Currently, there is limited quality assurance (QA) oversight of private testing facilities by the NPHL. As discussed above, the NPHL must implement a QA system for all COVID-19 testing laboratories in South Sudan**
- Moreover, reluctance to use MOH data capture tools, late and aggregate reporting (i.e., no individual-level data), and refusal to facilitate the work of the contact tracing and case management teams, have been major challenges from working with the private testing facilities. It is important that the private testing labs fully cooperate with the country COVID-19 SOPs including on testing protocols and data collection and reporting requirements
- Lastly, the EOC needs to produce a comprehensive testing dataset (combining positive and negative results with the CIF variables). This is important to calculate yields of sub-groups presenting for testing to see whether the epidemiology is changing for any of them (e.g., age groups, sex, clinical profile, testing category, etc.). For example, despite expanded testing and increases in cases, the demographic breakdown profiles of the cases have remained unchanged. A comprehensive testing dataset could tell us if the profile of those presenting for testing is the same as it was during the first six months of the outbreak

[2] The high positivity yields in the GXP testing sites and UN Clinic is due to these sites mostly testing persons who meet COVID-19 case definition, therefore the few tests they run are likely to be positive

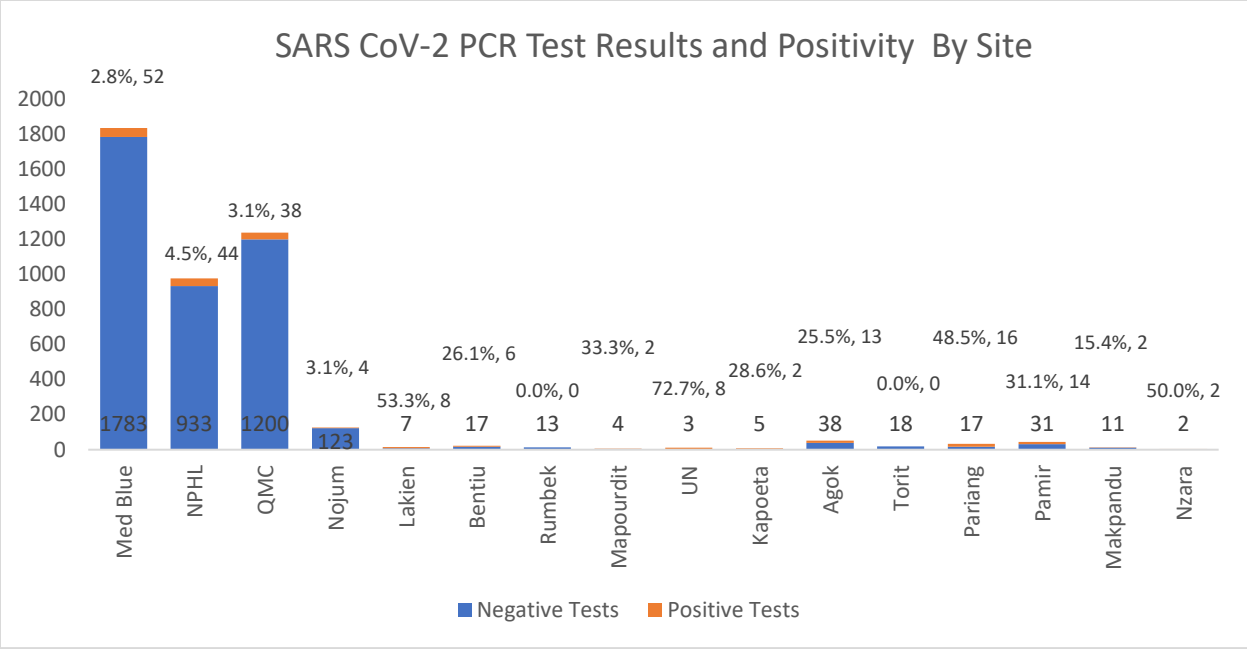

Figure 9. SARS-COV-2 PCR test results and positivity by testing site (Week 12)

Hotline/Alert System Update

During Week 12, the call center received 5300 calls, an increase of 6.4% from Week 12. Most calls came from callers living in Central Equatoria (29.5%). Of the calls received, 798 (15.1%) inquired about the cause of COVID-19 (up from 11.5% in Week 11), 966 (18.2%) sought information on signs and symptoms of COVID-19 (down from 18.3% in Week 11), and 994 (18.8%) asked about prevention of COVID-19 (up from 18.1% in Week 11). Overall, 3009 (56.8%) of the calls in Week 12 were COVID-19 related.

The trend in reported alerts has been downward in the last six epi weeks since a high of 145 alerts was recorded in Week 06. There were 41 potential COVID-19 alerts (all through the call center/hotline) in Week 12, same as the number of alerts in Week 11. Between Weeks 06 and 12, there has been a 71.7% decrease in the number of alerts, mirroring the observed decreases in case count and positivity yield in recent weeks. Thirty-seven of the 41 alerts (90%) were verified and investigated by the rapid response team (RRT). Samples were collected from all 37 (100%) of investigated alerts [Figure 10]. About 48.8% of the potential alerts were from Central Equatoria followed by Warrap (14.6%), Upper Nile (9.8%), Western Bahr el Ghazal and Northern Bahr el Ghazal (7.3%), Unity and Western Equatoria (4.9%), and Jonglei (2.4%). Eastern Equatoria and Lakes did not report any alerts in Week 12 [Figure 11]. Nine alerts tested positive for COVID-19, which represents 24.3% of the alerts sampled this week (up from 12.2% in Week 11). Cumulatively, 2321[3] alerts have been reported, of which 2209 (95.2%) have been verified, and 2128 (96.3%) of the verified alerts were sampled.

[3] Excludes any alerts not reported by the Watch Desk

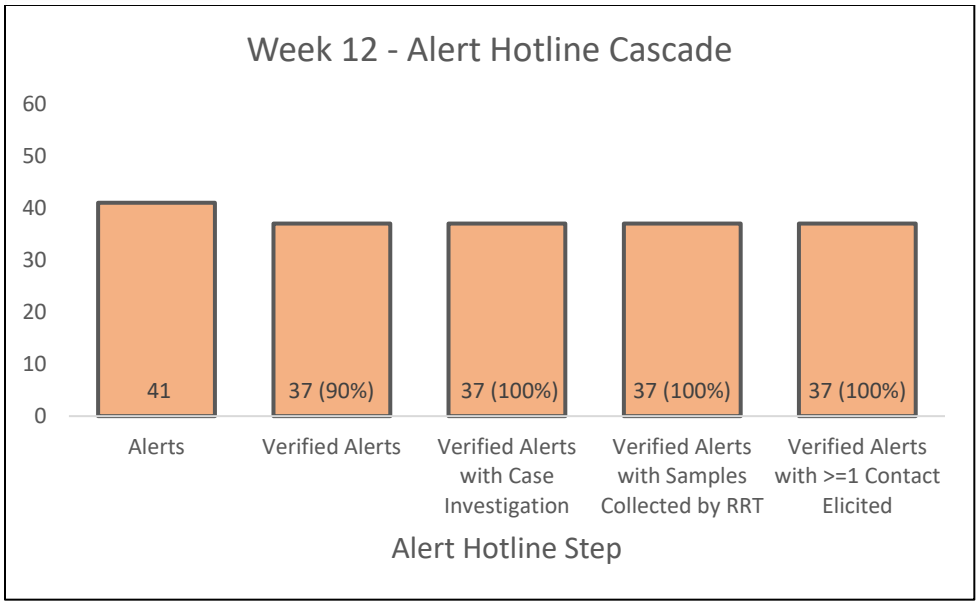

Figure 10: COVID-19 related alerts cascade (Week 12)

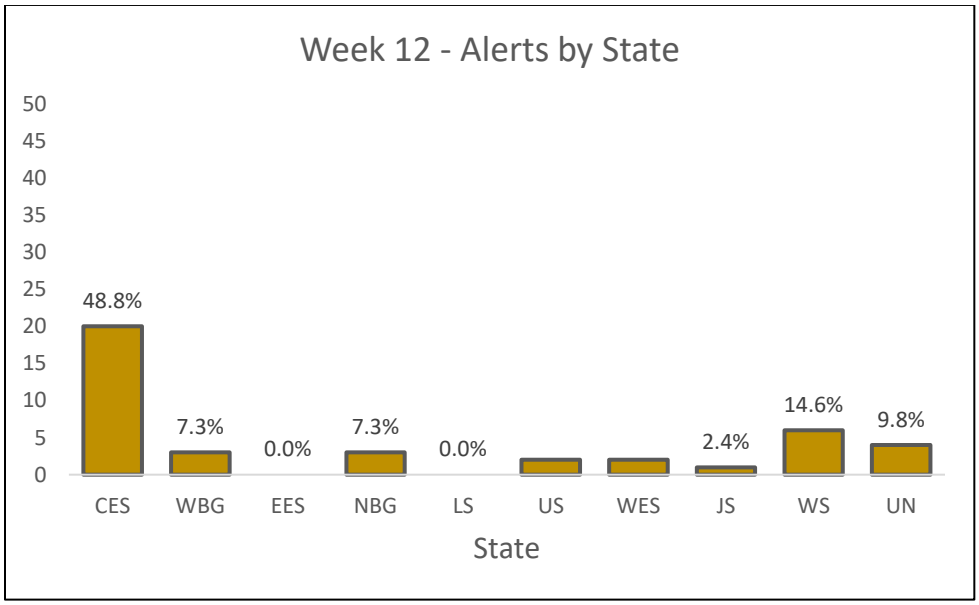

Figure 11: COVID-19 related alerts by state (Week 12)

Interpretation and recommendations

- **This week showed a flattening trend in the number of alerts after weeks of decreases**
- All verified alerts (37) screened to meet case definition for COVID-19 were investigated and sampled
- **Nine (24.3%) of the 41 investigated alerts in Week 12 tested positive**

- Alerts represent a small number of total tests run in South Sudan (1.6%). Understanding the reasons behind the low number of alerts via the call center/hotline should be investigated to identify root causes and potential drivers to remediate. Moreover, alerts outside of Central Equatoria are generally limited. Ongoing discussions to strengthen the hotline system and RRT, case investigation, contact tracing, sentinel sites, and mortality surveillance teams continue to be needed

Contact Tracing System Update

During Week 12, there were 128 cases in Juba County, of which 87 (68.0%) were allocated to ICAP by the EOC for contact listing and tracing. Of the 87 cases, 27 (31.0%) provided contacts (up from 20.0% in Week 11) and 60 (69.0%) either refused to provide contacts/denial (0), did not pick up after their phone (20), had no phone number (18), phone number was wrong (7), phone number was not going through (8), or other reasons (case in isolation [5], and a negative result [2]). From the 27 cases that provided contacts, a total of 176 contacts were listed, providing a case to contact ratio of 1:6.5 (up from 1:4.1 in Week 11). Since community-based contact tracing started in early October 2020, a total of 4261 contacts have been elicited from 508 cases (a ratio of 1:8.4), of which 1326 (31.1%) are still under active follow-up. Five hundred and seventy-one contacts have completed 14/10/7 days of follow up this week, with a cumulative total of 2566 (60.2%) thus far. None of the 1326 contacts followed up in Week 12 reported COVID-19 related symptoms. Samples were collected from 179 contacts this week. None of the contacts sampled this week tested positive for COVID-19. Cumulatively, 14506[4] contacts have been listed and followed up since the first confirmed case was reported in April 2020, of which 12985 (89.5%) have completed 14 days of follow-up.

Interpretation and recommendations

- **The contact tracing team started applying the Q7/Q10 quarantine guidelines this week**
- Solicitation of contacts from cases continues to be a challenge for the contact tracing team. In Week 12, 69% of the cases allocated to ICAP did not have contacts listed due to various reasons including denial of having had any contacts, case under isolation, and phone numbers not going through. The contact tracing team needs to come up with strategies to reduce the high refusal to provide contacts by cases. One strategy that has been discussed is listing contacts at the timing of CIF completion and sample collection, but this has not been received well by the private testing laboratories although it is part of the SOPs for COVID-19 testing in the country. The contact tracing team has instead embedded data clerks in the three private testing facilities to facilitate contact listing and checking of listed phone numbers for active status when the contact tracer is still engaged with the case
- The main barriers to enroll contacts successfully continues to be:
    1) Unwillingness of cases to list contacts
    2) Incorrect contact addresses (physical location and phone number)

[4] Arriving passengers, who are not contacts, but being followed up for adherence to quarantine regulations may have been included in this tally in the early weeks of the response

3) Contacts not answering their phones or answering their phones and saying they are outside South Sudan (these are being followed up whenever possible)

Case Management Update

Most cases that record the type of case management are managed at home (41.9%), with very few admitted to a health facility or hospital. A significant proportion of cases continues to have "unknown" (57.8%) case management type at first contact. However, there are ongoing discussions between the EOC data management unit and the case management team to identify and enter the missing individual-level data into the EOC case database. Ninety-six percent (9454) of all cases were discharged as of Week 12, with 540 cases (5.5%) under active follow-up. One hundred and nine cases have died, yielding a case fatality rate of 1.10% (up from 1.07% in Week 11) [Fig 12].

Case management at first detection	Count	Percent of total cases
Home management	4194	41.9%
Hospital	19	0.2%
Isolation center	4	<0.1%
UN health facility	2	<0.1%
UN home management	3	<0.1%
Died	10	0.1%
Unknown	5785	57.8%

Table 1. Distribution of case management type for cumulative cases, showing total count and as a percent of total cases. Data obtained for date of first contact with the patient

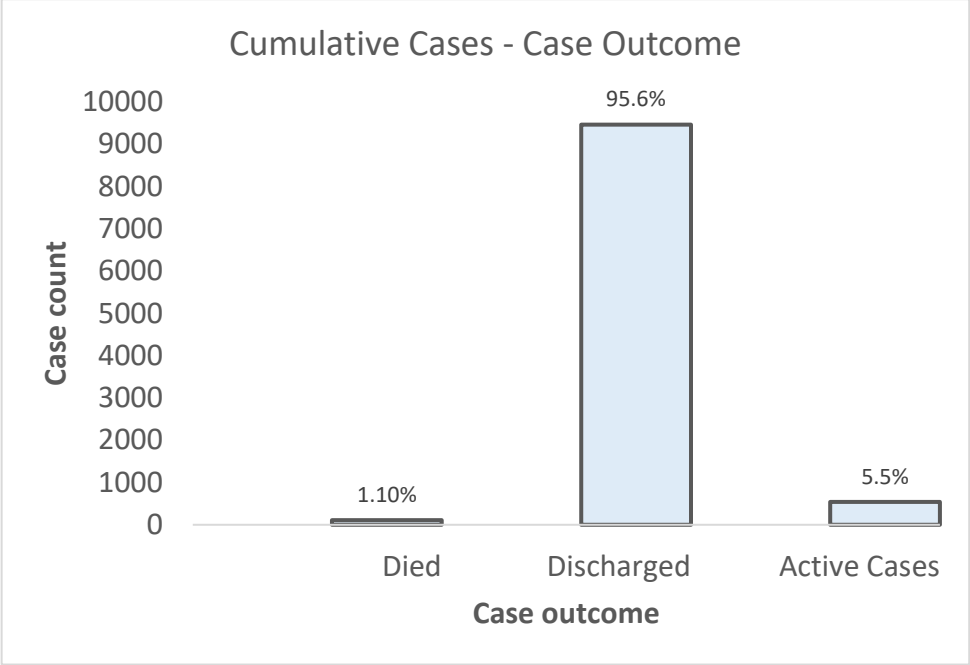

Figure 12. Distribution of case outcome for cumulative cases

Interpretation and recommendations

- Most cases with a case management type are managed at home. About 57.8% of all cases do not have case management type reported, with documentation entirely absent in several of the recent reporting weeks. The coordination of case management data needs to be improved between all reporting and receiving parties
- **The case fatality rate stands at about 1.10%, up from 1.07% in Week 11**

Risk Communication and Community Engagement Update

The following achievements were registered during Week 12 under the risk communication and community engagement (RCCE) pillar:

- Community mobilizers reached 47385 individuals (20204 male; 27181 female) with COVID-19 preventive messages and measures for the community to act and safeguard themselves against COVID-19 infection. This was through awareness sessions during house-to-house visits and megaphone broadcasts in the respective catchment areas
- Twenty-five key opinion leaders including community leaders, teachers, religious leaders, and village chiefs across South Sudan, were oriented/trained on COVID-19 messaging
- Twenty-two community mobilizers received a refresher training on communication skills pertaining to COVID-19 messaging
- 380 radio jingles were aired in 10 local languages through different radio stations across all 10 states in the country
- Nine talk shows were conducted
- Community-based contact tracers supported by ICAP, provided information about COVID-19 to 3547 persons
- Main challenges for the RCCE pillar include:
    1) Community non-compliance with COVID-19 preventive measures
    2) Stigmatization of COVID-19 prevents people from reporting suspected cases to the hotline

Points of Entry Update

During the epidemiological week, IOM screened 4550 (3367 male; 1183 female) travelers from Nimule land crossing. Nimule PoE screens only arriving travelers. No traveler underwent secondary screening. The cumulative number of travelers screened for COVID-19 from Feb 15, 2020 to March 28, 2021 is 582941.

Most of the travelers screened at Nimule PoE this week were truck drivers and returnees. The returnees from the camps are allowed to proceed to their destination without undergoing quarantine or presenting COVID-19 certificates but random samples are taken from at least one traveler per household. Other nationals and truck drivers are required to present valid COVID-19 free certificate to enter South Sudan.

IOM continues to actively participate in all the established coordination mechanisms for COVID-19 including technical working groups, state task force and national task force meetings in Nimule.

For more information, please contact the South Sudan Public Health Emergency Operation Centre [PHEOC]

Email: sspheoc@gmail.com
Tel #: +211922202028
For additional information follow these links:
http://moh.gov.ss/daily_updates.php
http://moh.gov.ss/covid-19.php

Note: COVID-19 testing in South Sudan is free of charge for alerts, contacts of cases, and suspected cases