

# South Sudan

**Integrated Disease surveillance and response (IDSR)**

**Epidemiological Bulletin Week 43 of 2020 (October 19-  
October 25)**





- In week 43, 2020 IDSR reporting completeness was 96% and timeliness was 81% at health facility level. EWARNS reporting both completeness and timeliness were 82%
- Of the 81 alerts in week 43, 2020; 96% were verified 0% were risk assessed and 0% required a response. Malaria (32), AWD (31), ARI (0), measles (1) and bloody diarrhea (7) were the most frequent alerts in week 43, 2020
- Malaria remains the top cause of morbidity and accounted for 102,650 cases (65.5% of OPD cases)
- A total of 1,409 COVID-19 alerts have been investigated with 1,220 (86.5%) being verified. Total of 2,890 COVID-19 confirmed cases and 56 deaths, CFR of 1.9%
- Other hazards include floods in 39 counties; malaria in 8 counties; measles in Pibor; HEV in Bentiu PoC; and yellow fever in Kajo-keji

# SURVEILLANCE PERFORMANCE



For the Integrated Disease Surveillance (IDSR)  
network and Early warning alert and response  
network (EWARN)



# IDSR timeliness & completeness performance at county level for week 43 of 20202



Completeness States Ranking	States	Supporting Partners	Total No. of Functional Health Facilities in the State	No. of HFs Reported on Time	Timeliness Percentage	No. of HFs Reported regardless of Time	Completeness Percentage
1st	WBGZ	Cordaid, Healthnet TPO, CARE International, IOM	75	71	95%	75	100%
2nd	Lakes	Doctors with Africa (CUAMM), LIVEWELL	113	106	94%	113	100%
3rd	WES	AMREF, World Vision, CUAMM, CDTY, OPEN	213	94	44%	212	100%
4th	Warrap	GOAL, CCM, WVI, Malaria Consortium, UNKEA, Save the Children, MSF	119	97	82%	114	96%
5th	CES	HLSS, SSUHA, Healthnet TPO, IHO, GOAL, TRI-SS, THESO	119	111	93%	113	95%
6th	NBGZ	Malaria Consortium, Healthnet TPO, IRC, CEDS, IHO	131	117	89%	123	94%
7th	Unity	Cordaid, UNIDOR, IRC, CHADO, CARE International, CRADA, CASS	88	71	81%	83	94%
8th	Upper Nile	Cordaid, WVI, RI, IMC, NIDO, UNKEA, MC, SSAID, Samaritans Purse	120	72	60%	110	92%
9th	EES	Cordaid, HLSS, CCM	142	104	73%	126	89%
10th	Jonglei	Nile Hope, MDM, JDF, Livewell, CMD, HFO, EDA, CRADA, Malaria Consortium, CMA	107	80	75%	82	77%
	South Sudan		1227	923	75%	1151	94%

**KEY**

	<60%	Poor
	61%-79%	Fair
	80%-99%	Good
	100%	Excellent

The timeliness of IDSR reporting (supported by EWARS mobile) at health facility level was 75% and completeness was 94%. All states were above the target of 80% with highest reporting rate in Lakes, WBGZ and WES

# IDSR timeliness & completeness performance at county level for week 43 of 2020 (1)



STATE	COUNTY	SUPPORTING PARTNER	Total No. of Functional Health Facilities in the County	No. of HFs Reported on Time	Timeliness Percentage	No. of HFs Reported regardless of time	Completeness Percentage
Lakes	Cueibet	Doctors with Africa (CUAMM)	15	16	107%	15	100%
Lakes	Rumbek East	Doctors with Africa (CUAMM)	24	24	100%	24	100%
Lakes	Awerial	Doctors with Africa (CUAMM)	7	7	100%	7	100%
Lakes	Yirol West	Doctors with Africa (CUAMM)	12	12	100%	12	100%
NBGZ	Aweil South	Malaria Consortium(MC),IHO	9	9	100%	9	100%
CES	Terekeka	HealthNetTPO	20	20	100%	20	100%
Lakes	Rumbek Centre	Doctors with Africa (CUAMM)	23	22	96%	23	100%
CES	Kajo Keji	SSUHA,GOAL,TRI-SS	17	16	94%	17	100%
Lakes	Wulu	Doctors with Africa (CUAMM)	14	13	93%	14	100%
NBGZ	Aweil Centre	Malaria Consortium(MC)	15	13	87%	15	100%
Lakes	Rumbek North	Doctors with Africa (CUAMM)	7	6	86%	7	100%
WBGZ	Jur River	Cordaid	35	28	80%	35	100%
Lakes	Yirol East	Doctors with Africa (CUAMM),LIVEWELL	11	8	73%	11	100%
WBGZ	Wau	Cordaid	28	10	36%	28	100%
NBGZ	Aweil East	IRC,TADO	36	29	81%	35	97%
CES	Yei	SSUHA	17	15	88%	16	94%
NBGZ	Aweil West	HealthNetTPO	37	34	92%	34	92%
CES	Juba	HLSS	46	45	98%	42	91%
NBGZ	Aweil North	HealthNetTPO,IHO	33	29	88%	30	91%
CES	Lainya	SSUHA	16	14	88%	14	88%
WBGZ	Raja	HealthNetTPO	14	0	0%	12	86%
CES	Morobo	SSUHA,THESO	5	4	80%	4	80%

STATE	COUNTY	SUPPORTING PARTNER	Total No. of Functional Health Facilities in the County	No. of HFs Reported on Time	Timeliness Percentage	No. of HFs Reported regardless of time	Completeness Percentage
WES	Nzara	World Vision International	20	20	100%	20	100%
WES	Nagero	World Vision International	10	10	100%	10	100%
WES	Mundri West	CUAMM	21	21	100%	21	100%
WES	Ibba	AMREF	11	11	100%	11	100%
WES	Mundri East	CUAMM	19	19	100%	19	100%
WES	Ezo	World Vision International	27	27	100%	27	100%
WES	Mvolo	CUAMM	11	11	100%	11	100%
WES	Tambura	World Vision International	26	26	100%	26	100%
WES	Yambio	World Vision International	42	40	95%	42	100%
Unity	Panyijiar	IRC	15	14	93%	15	100%
Unity	Mayom	CASS	9	8	89%	9	100%
Unity	Koch	CRADA,IRC.	5	4	80%	5	100%
Unity	Abiemnhom	Cordaid	4	3	75%	4	100%
Unity	Guit	CHADO	7	5	71%	7	100%
Unity	Mayendit	CASS	12	0	0%	12	100%
WES	Maridi	AMREF	26	25	96%	25	96%
Unity	Rubkona	Cordaid,IRC,IOM,MSF	15	13	87%	14	93%
Unity	Pariang	CARE International	11	9	82%	10	91%
Unity	Leer	UNIDOR	11	7	64%	7	64%

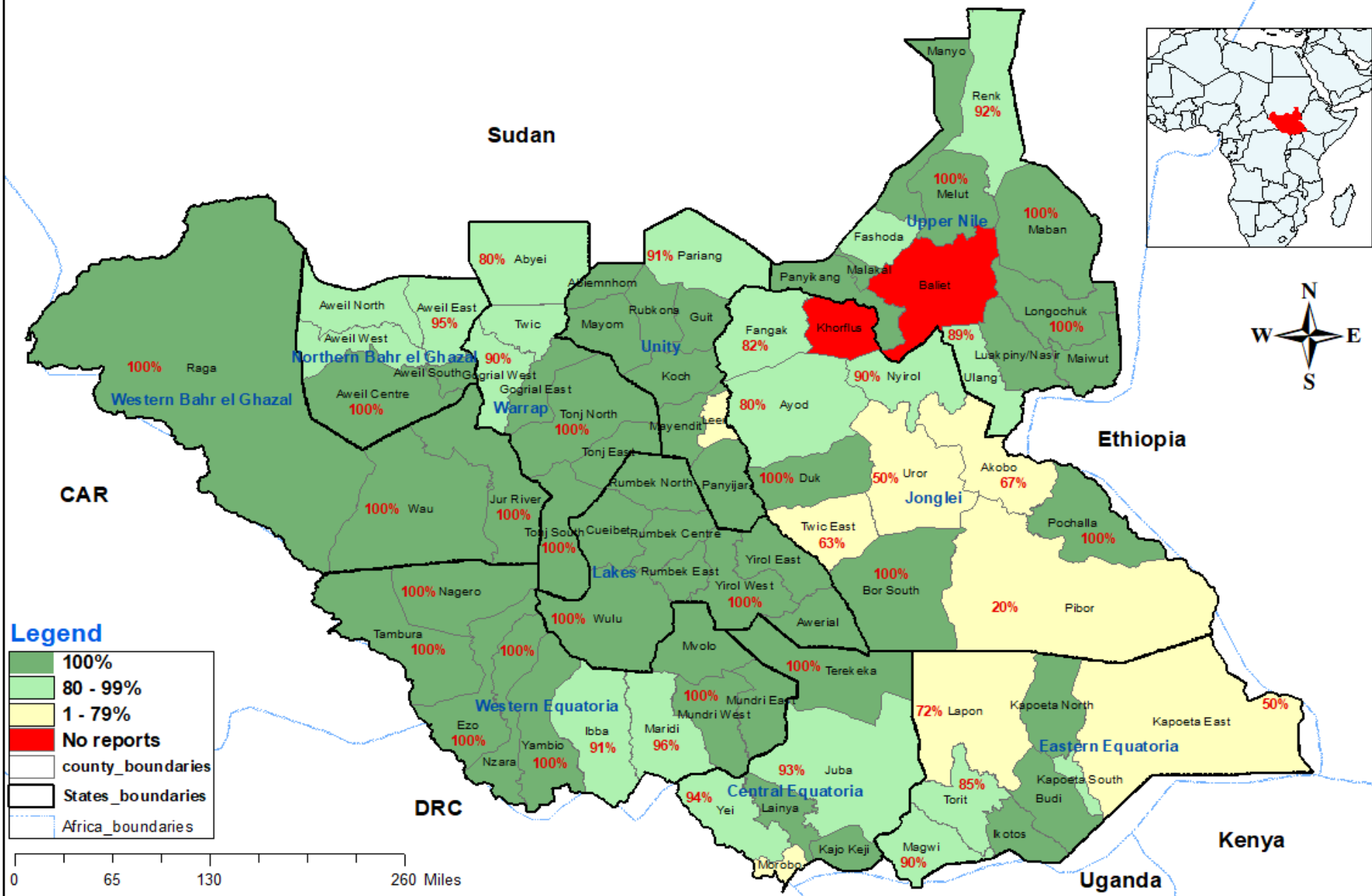
# IDSR timeliness & completeness performance at county level for week 43 of 2020 (2)



STATE	COUNTY	SUPPORTING PARTNER	Total No. of Functional Health Facilities in the County	No. of HFs Reported on Time	Timeliness Percentage	No. of HFs Reported regardless of time	Completeness Percentage
Jonglei	Pibor	LIVEWELL, CRADA	3	3	100%	3	100%
Jonglei	Pochalla	LIVEWELL	7	7	100%	7	100%
EES	Budi	Cordaid	21	13	62%	21	100%
EES	Ikotos	HLSS	27	16	59%	27	100%
EES	Kapoeta North	CCM	16	12	75%	15	94%
EES	Kapoeta South	CCM	10	8	80%	9	90%
Jonglei	Nyiroi	CMA, Malaria Consortium	10	6	60%	9	90%
Jonglei	Fangak	CMD, HFO	16	14	88%	14	88%
EES	Magwi	HLSS	22	15	68%	19	86%
EES	Torit	Cordaid	20	0	0%	17	85%
Jonglei	Ayod	CMD, EDA	15	11	73%	11	73%
Jonglei	Duk	MDM + JDF	15	0	0%	11	73%
EES	Lopa Lafon	HLSS	18	10	56%	13	72%
Jonglei	Bor	MDM + JDF	35	19	54%	21	60%
Jonglei	Twic East	MDM + JDF	11	2	18%	5	45%
EES	Kapoeta East	CCM	12	2	17%	5	42%
Jonglei	Akobo	NILE HOPE	8	2	25%	2	25%
Jonglei	Uror	Nile Hope, Malaria Consortium	8	0	0%	1	13%
Jonglei	Canal Pigi	IMC	11	0	0%	0	0%

STATE	COUNTY	SUPPORTING PARTNER	Total No. of Functional Health Facilities in the County	No. of HFs Reported on Time	Timeliness Percentage	No. of HFs Reported regardless of time	Completeness Percentage
Warrap	Tonj North	CCM	14	14	100%	14	100%
Warrap	Tonj South	CCM	12	12	100%	12	100%
Upper Nile	Melut	WVI + RI	8	8	100%	8	100%
Upper Nile	Panyikang	IMC	4	4	100%	4	100%
Upper Nile	Longechuk	RI	9	8	89%	9	100%
Warrap	Tonj East	CCM	12	10	83%	12	100%
Upper Nile	Maban	WVI, RI, Samaritans Purse	17	14	82%	17	100%
Upper Nile	Manyo	CORDAID	10	8	80%	10	100%
Upper Nile	Fashoda	CORDAID	13	9	69%	13	100%
Warrap	Gogrial East	GOAL	15	3	20%	15	100%
Upper Nile	Maiwut	RI	5	0	0%	5	100%
Upper Nile	Akoka	IMC	5	0	0%	5	100%
Upper Nile	Luakpiny Nasir	UNKEA, RI	15	10	67%	14	93%
Upper Nile	Renk	WVI + RI	13	7	54%	12	92%
Warrap	Gogrial West	GOAL	31	26	84%	28	90%
Warrap	Twic	GOAL	26	25	96%	23	88%
Upper Nile	Makal	IMC	7	5	71%	6	86%
Warrap	Abyei	AAA, Save the Children, MSF	10	7	70%	8	80%
Upper Nile	Ulang	UNKEA, RI	14	5	36%	7	50%
Upper Nile	Baliet	IMC	4	0	0%	0	0%

**IDSR performance Map showing completeness of reporting by counties in week 43, 2020.**



Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



# Surveillance: EWARS performance indicator by partner for week 43 of 2020

Partner	HF's	Reporting		Performance	
PARTER	# OF SITES	# of reports received on Time	No. of HF's Reported regardless of time	Timeliness	Completeness
IRC	1	1	1	100%	100%
HAA	2	2	2	100%	100%
RHS	1	1	1	100%	100%
Medicaair	2	2	2	100%	100%
UNIDOR	2	2	2	100%	100%
GOAL	2	2	2	100%	100%
CMD	1	1	1	100%	100%
MSF-E	6	6	6	100%	100%
Medair	2	2	2	100%	100%
IOM	12	12	12	100%	100%
TRI-SS	2	2	2	100%	100%
World Relief	2	2	2	100%	100%
MSF-H	5	4	4	80%	80%
IMC	6	4	4	67%	67%
IMA	9	6	6	67%	67%
HFO	2	1	1	50%	50%
UNH	2	0	0	0%	0%
SMC	2	0	0	0%	0%
TOTAL	61	50	50	82%	82%

**Both completeness and timeliness were 82% for weekly reporting in week 43, 2020 for partner-supported clinics serving IDP sites.**



# EVENT-BASED SURVEILLANCE



Alert management including detection; reporting;  
verification; risk assessment; & risk  
characterization





State	Acute Respiratory Infections (ARI)	Acute Watery Diarrhoea	Bloody Diarrhoea	Malaria (Confirmed)	Measles	Guinea Worm	Covid-19	Total alerts
CES	2	3		1				6
EES		4	3	1		1		9
Unity							1	1
Upper Nile	4	5	2					11
Warrap		7	1	10	1	1		20
WBGZ		5		1				6
WES	1	7	1	19				28
<b>Total alerts</b>	<b>7</b>	<b>31</b>	<b>7</b>	<b>32</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>81</b>

**During this week:**

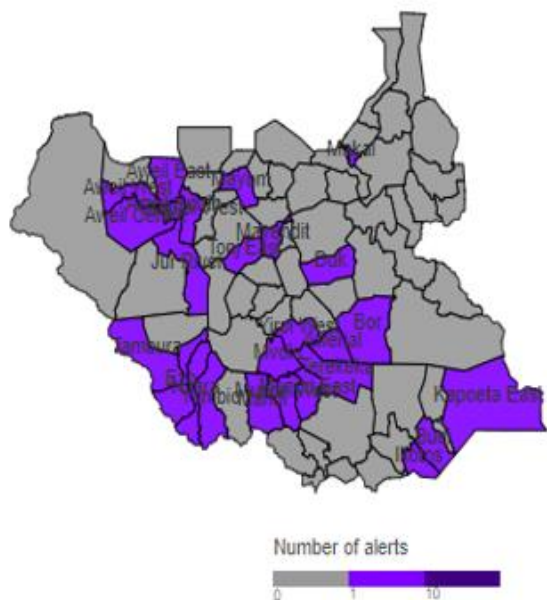
- 7 ARI alert: 3 undergoing verification and 4 investigated
- 31 AWD alert: 3 are undergoing verification and 28 investigated
- 7 ABD alert: 1 under going Investigation and 6 investigated
- 32 Malaria alerts: 3 are undergoing verification and 29 are investigated
- 2 Guinea Worm alert: all are investigated
- 1 Covid-19 alert: investigated
- 1 Measles alert: investigated



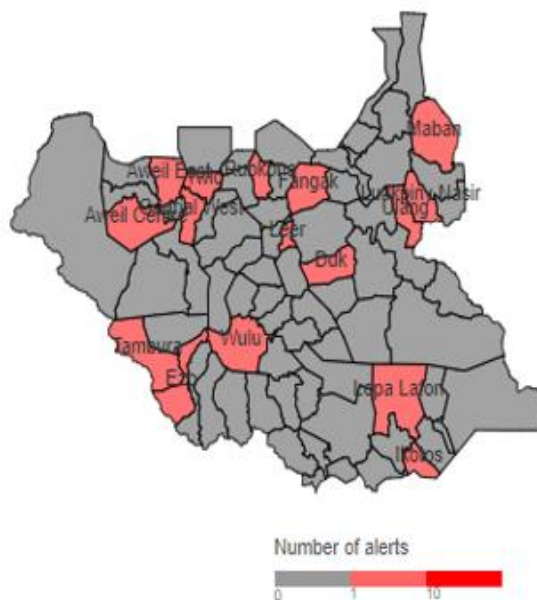
# Alert: Map of key disease alerts by county of week 43 of 2020



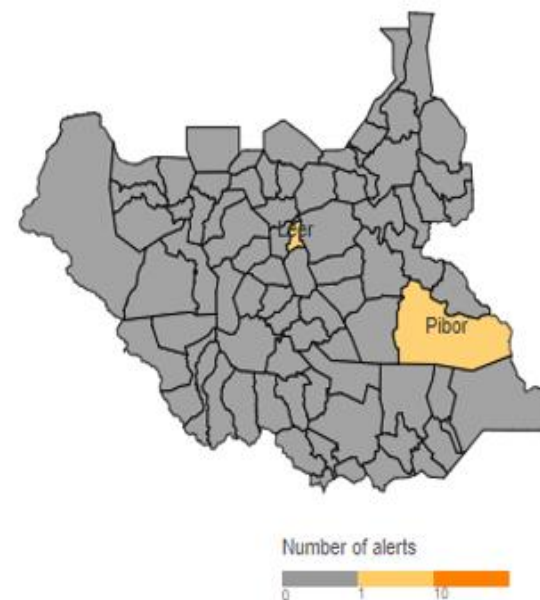
Map 2a | Malaria (W42 2020)



Map 2b | Bloody diarrhoea (W42 2020)



Map 2c | Measles (W42 2020)



Map 2e | Guinea Worm (W42 2020)



W42		Cumulative (2020)	
0	13	Low risk	
4	4	Medium risk	
0	27	High risk	
0	58	Very high risk	
96%	81%	% verified	
0%	0%	% auto-discarded	
0%	1%	% risk assessed	
0%	1%	% requiring a response	

# SUSPECTED OUTBREAKS



Major suspected outbreaks in South Sudan in  
2020





Malaria was the leading cause of morbidity and mortality, accounting for **65.5%** of all morbidities and **67.2%** of all mortalities this week.

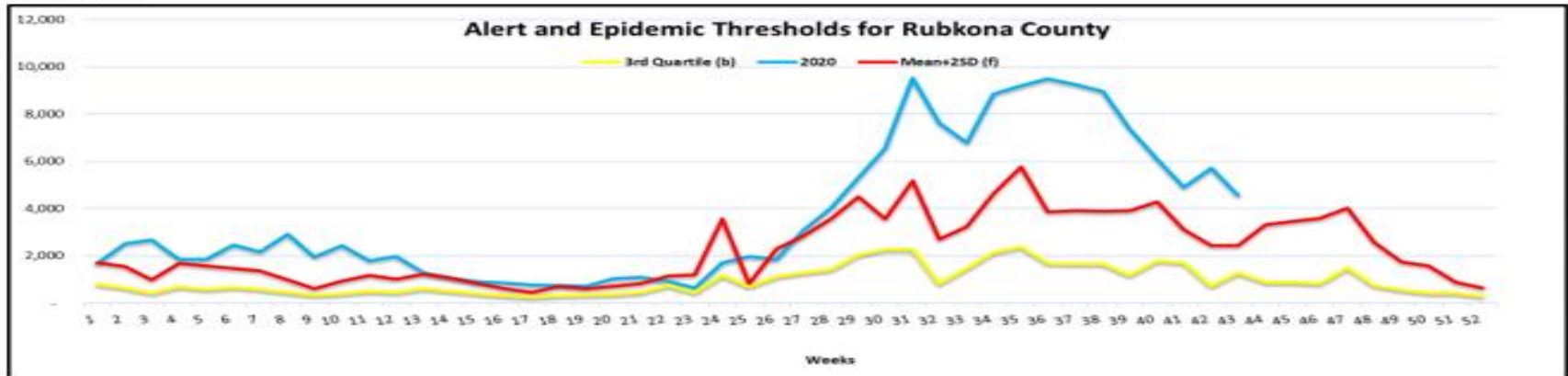
There were **8 Counties** with malaria trends that exceeded the threshold (third quartile of trends for the period 2013-2017) and these include the following:

1. Wau hub (Wau)
2. Kuajok hub (Gogrial East, Tonj North)
3. Aweil hub (Aweil east, Aweil west, Aweil North, Aweil South)
4. Bentiu hub (Rubkona)

□

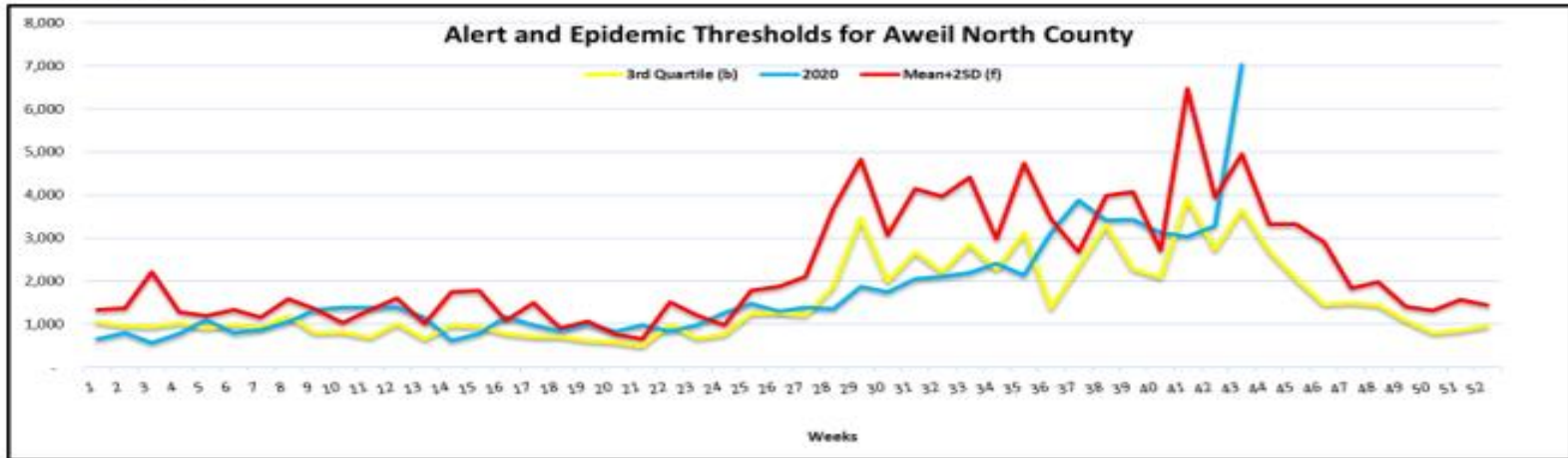
**In the PoC sites;** malaria is the top cause of morbidity in Bentiu (42%); Juba (0%), Bor (0%) and Wau (8%) PoCs, in Malakal PoC malaria accounts for (8%) of OPD consultations, respectively.

Rubkona.

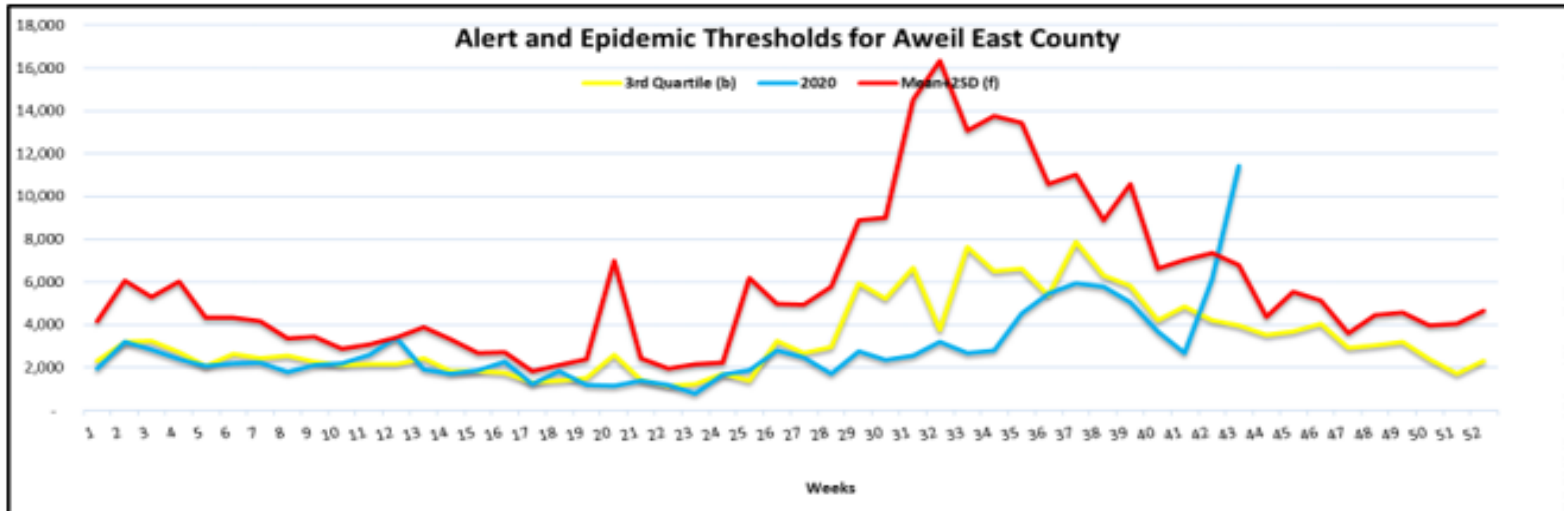


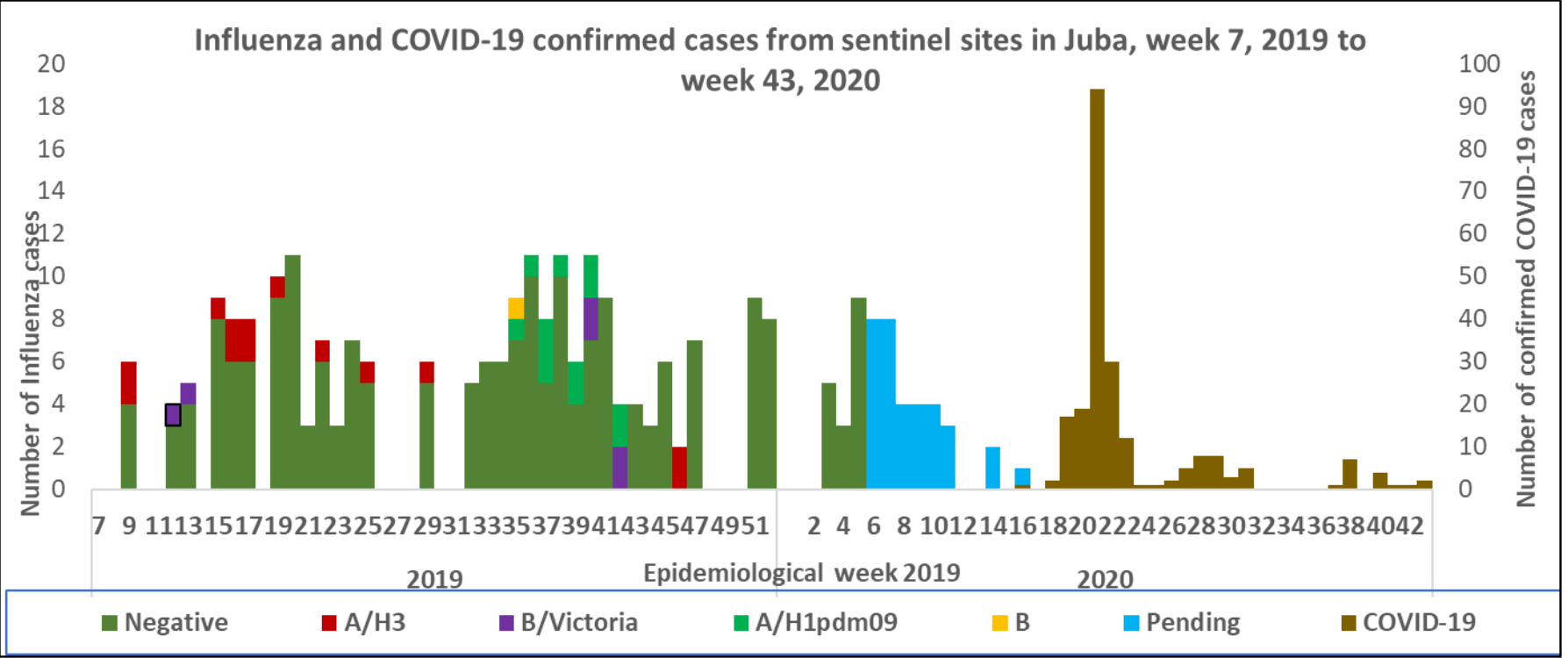


## Aweil North.



## Aweil East.





- In week 7, 2019, South Sudan started case-based surveillance for Influenza Like Illness (ILI) and Severe Acute Respiratory Infection (SARI) cases through systematic collection of epidemiological and virological information.
- In 2019, a total of 309 ILI/SARI samples have been collected and tested in UVRI 228 being negative; 6 positive for Influenza B (Victoria); 13 positive for Influenza A (H3); and 12 positive for Influenza A (H1)pdm09 and (50) samples are pending test results .
- There are currently 20 Covid-19 designated sentinel surveillance sites in Juba that are collecting epidemiological data and samples from ILI/SARI cases. A total of 3959 samples have been collected in 2020 with 222 (5.6%) being positive for COVID-19 in Juba. These sentinel samples have not been tested for influenza in 2020

# ACTIVE OUTBREAKS AND PUBLIC HEALTH EVENTS



Brief epidemiological description and public health response for active outbreaks and public health events



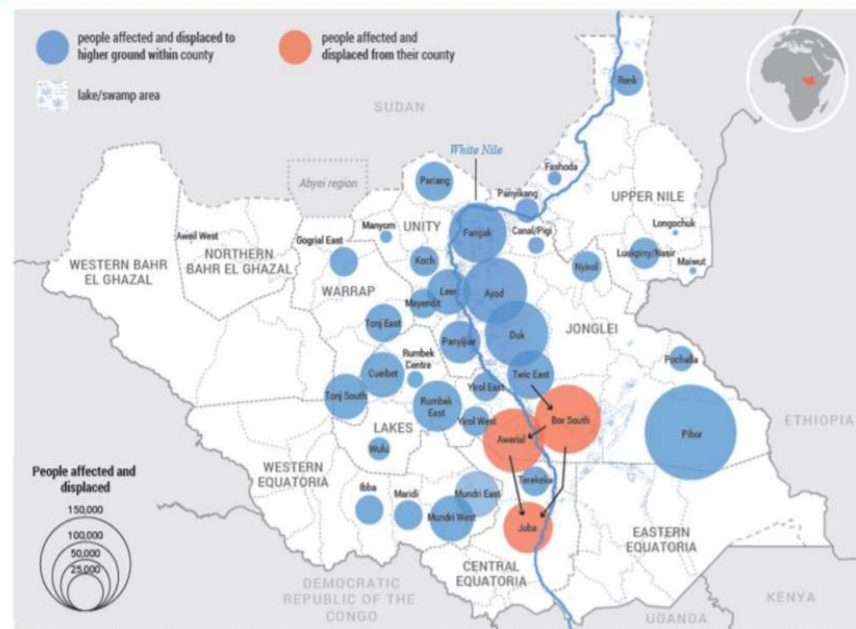




## Flooding, South Sudan, week 43, 2020

- In 2019, South Sudan grappled with one of the worst floods ever, which affected almost one million (908,000) individuals.
- In 2020, several Counties reported above-average rainfall and rising water levels in the River Nile, this has resulted in massive flooding.
- most of the flood-affected counties are already experiencing multiple shocks such as large-scale displacement, Intercommunal violence, and disease outbreaks including Covid-19 and food insecurity

Maps: People affected and displaced by flood.



COUNTIES AFFECTED

39

PEOPLE AFFECTED

856K

PEOPLE DISPLACED

389K

Funding REQUIREMENTS

\$10M

COUNTIES AFFECTED IN MALNUTRITION PHASE 3 & 4

80%



Aetiological agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
<b>Ongoing epidemics</b>								
Hepatitis E	Bentiu PoC	03/01/2018	3	409 (0.007)	Yes	No	Yes	Yes
Measles	Bentiu PoC	24/04/2019	NR	482 (0.006)	Yes	Yes	Yes	N/A
Measles	Pibor	27/1/2020	6	132 (0.045)	Yes	Yes	Yes	N/A





- Measles outbreaks confirmed in 2020

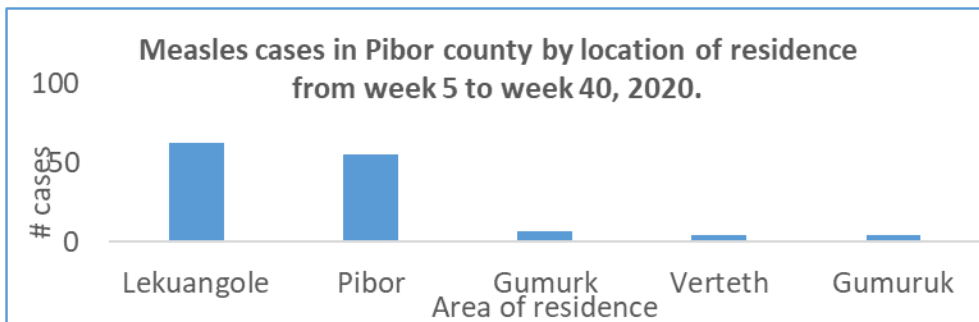
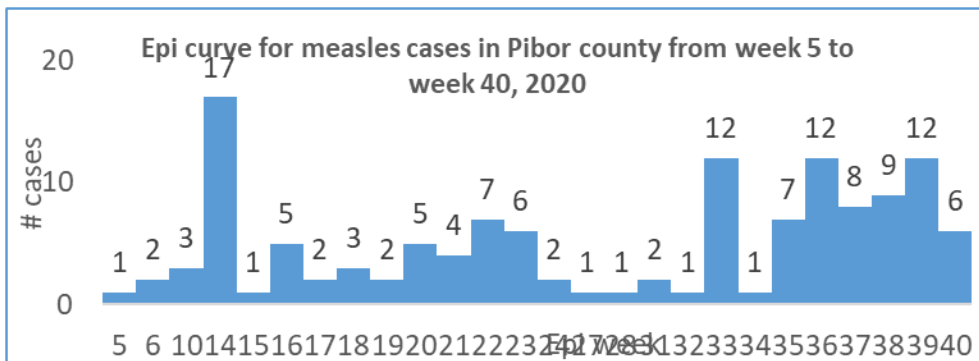
- 7 counties – Tonj East, Magwi, Bor, Kapoeta East, Tonj South, Wau and Pibor

- Locations with ongoing measles transmission

- Pibor County



## Confirmed Measles Outbreak in Pibor



Age Group	Cases	Percentage	% Cum.
1 - 4 Years	107	81%	81%
5 - 9 Years	19	14%	95%
15+ Years	4	3%	98%
10 - 14 Years	2	2%	100%
<b>Grand Total</b>	<b>132</b>	<b>100%</b>	

### Background and descriptive epidemiology

- Measles transmission has persisted in Pibor county despite of the vaccination campaign conducted in February and March and October, 2019
- Suspected measles cases were reported from Pibor; five sample were send to Juba and tested measles IgM +e.
- 6 cases were reported in week 40, makes a total of 132 since beginning of 2020
- 81% of the cases are less than 5 years of age
- 52% are female and 48% male
- Most affected areas are Lekuangle followed by Pibor town

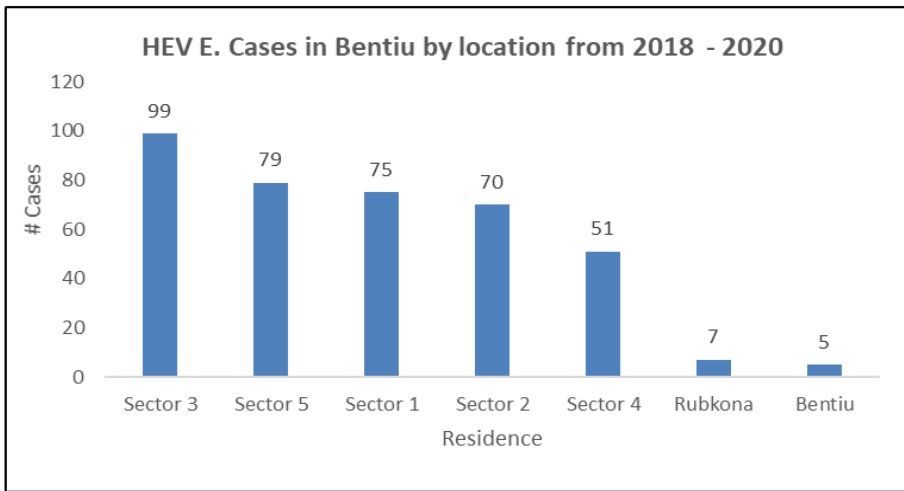
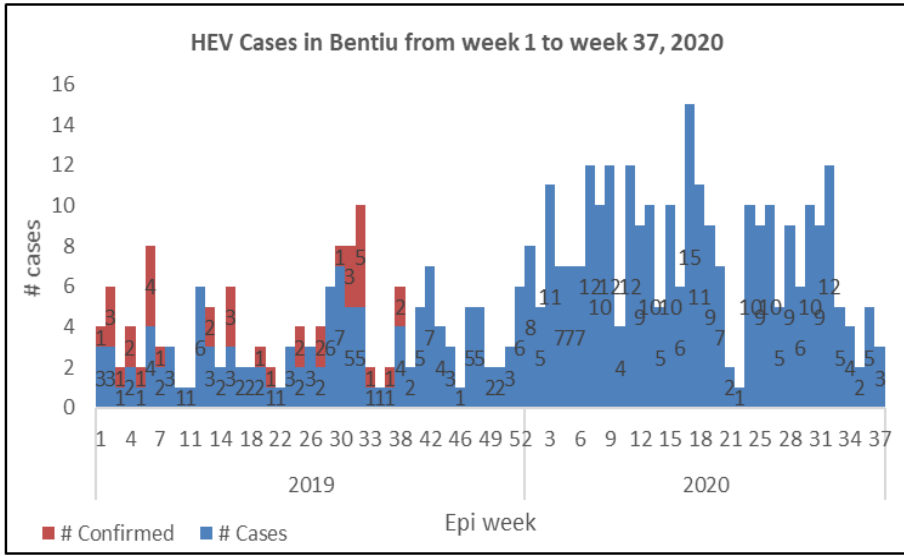
### Response Actions:

- Partners to strengthen routine immunization and to continue to collect samples from suspect cases.
- Measles case management to continue
- Micro plan is under development, targeting Pibor town.





# Hepatitis E, Bentiu PoC (1)



### Descriptive epidemiology

- The persistent transmission of HEV in Bentiu PoC continues with 409 cases since beginning of 2019
- There were (3) new cases reported in week 37, 2020
- All the cases were managed as outpatient cases except for seven cases who were admitted
- 5 deaths reported in 2019 and 2020
- 50% are female and 50% are male.
- Age group less than 15 years had the most cases with (75%) cases.
- At risk of adverse outcomes when infected in the 3rd trimester of pregnancy
- Use of unsafe drinking water likely to be source of infection
- Up to week 37, 2020; there were 409 cases of HEV in Bentiu PoC including 4 deaths (CFR 0.01%)

Age-Group	Alive	Dead	Grand Total	Percentage	CFR	Cum. %2
1 - 4 Years	128	0	128	31%	0%	31%
10 - 14 Years	64	0	64	16%	0%	47%
15+ Years	99	3	102	25%	3%	72%
5 - 9 Years	113	2	115	28%	2%	100%
<b>Grand Total</b>	<b>404</b>	<b>5</b>	<b>409</b>	<b>100%</b>	<b>0.01</b>	



## Recommendations

- Supportive case management guided by the HEV protocol is ongoing
- KEV messages on HEV prevention should continue within the community through HPs, CHWs and Kondial Radio
- With current COVID -19 Pandemic Outbreak, WASH partners to increase the coverage of hand washing facilities within the PoCs community.
- Other Wash intervention like increasing the access for clean water and improving the water storage in the affected individuals should be made urgently by distributing the water storage containers that will be the only way to mitigate this problem and stop the HEV outbreak.
- The WASH Cluster/HEV task force should engage in group discussion with Community leaders and woman group at water distribution points to understand their opinions on issue of Collapsing Jerrycans distribution.
- Monitoring the FRC levels at the taps stands in the different sectors, and the concentration of chlorination should maintain at 0.5-1mg/L as the point of collection





Aetiological agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
<b>Controlled epidemics</b>								
Measles	Juba	21/11/2019	NR	6( 0.1667)	Yes	No	Yes	N/A
Measles	Tonj East	12/12/2019	NR	61(0.98)	yes	Yes	Yes	N/A
Measles	Bor	17/01/2020	NR	14(0.214)	yes	No	yes	N/A
Measles	Jebel Boma	10/12/2019	NR	96(0.063)	yes	No	Yes	N/A
Measles	Kapoeta East	18/01/2020	NR	16(0.625)	yes	No	Yes	N/A
Measles	Aweil East	29/12/2019	NR	664 (0.127)	Yes	No		Yes



# EBOLA VIRUS DISEASE[EVD] PREPAREDNESS IN SOUTH SUDAN



Brief on the Ebola situation in DR Congo and updates on EVD preparedness in South Sudan





# Equateur Outbreak (Reporting up to 30th October)

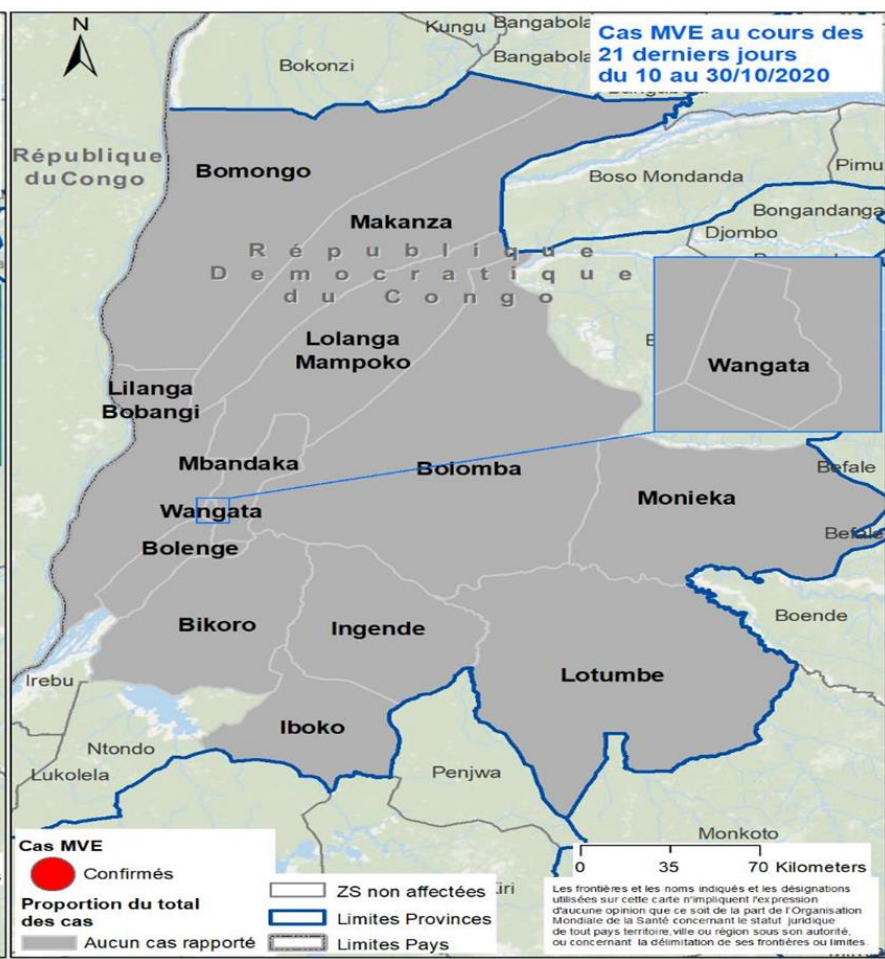
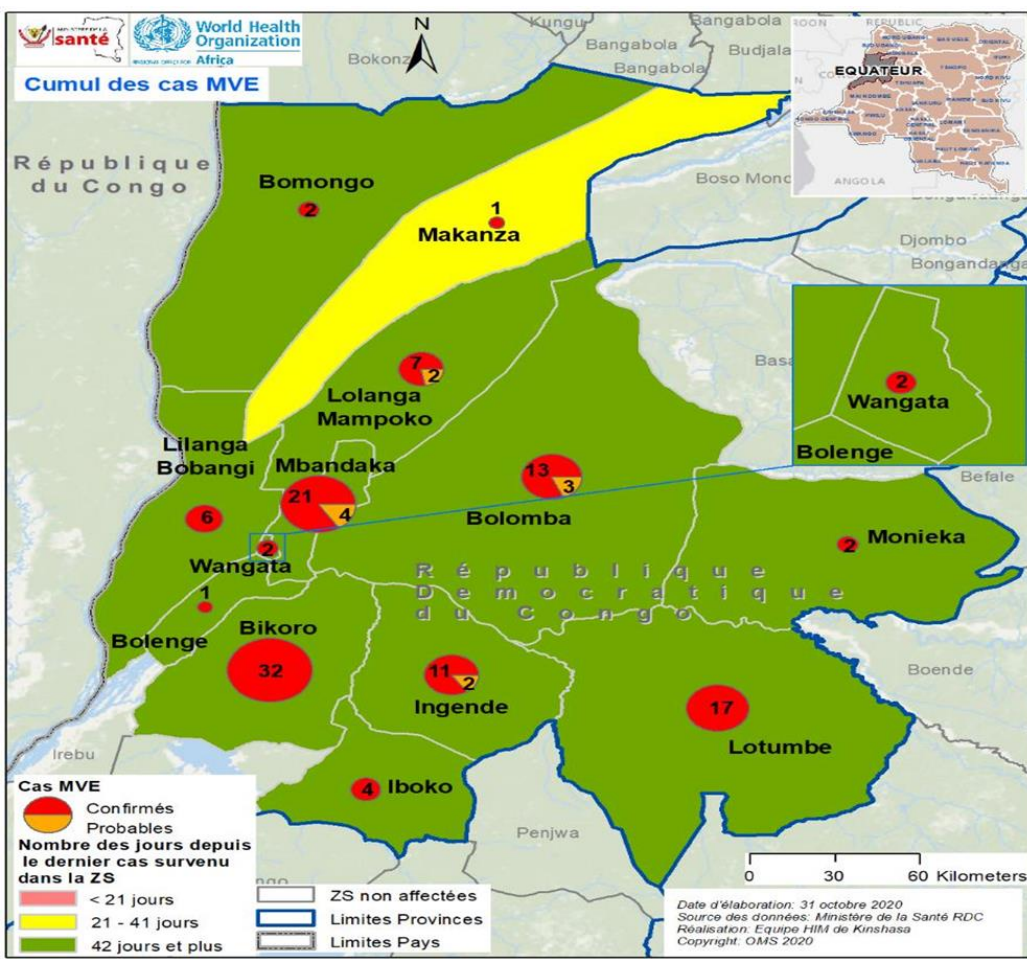
## Cumulative figures for the outbreak

- 130 cases (119 confirmed, 11 probable)
- 55 deaths (42.3% CFR)
- 75 recoveries (57.7%)
- 42 affected health areas, 13 health zones;
- 39,985 vaccinated
  
- The last confirmed case was reported on 28th Sept. in Makanza HZ
- 6 confirmed cases in the community have been designated as survivors;
- All contacts have completed 21 day follow up;
- 30 suspected are currently being treated across 19 IU/ETCs.
- 32 patients received experimental therapies.

## Highlights from past 21 days (20 -30 Oct):

- 0/13 affected HZs have reported a case in past 21 days,
  - 1/42 health areas have not reported a case in over 42 days;
  - 2 new probable cases validated in Lolanga Mampoko who died on the 24 July and 8 Aug
- Main Concerns:**
- Alert reporting remains low, decreasing in most HZs
  - No alerts reported from Bolomba district since 17 Oct

# Geographic distribution of confirmed and probable cases of EVD in Equateur province cumulative (n=130) & in the past 21 days



# COVID-19 Updates

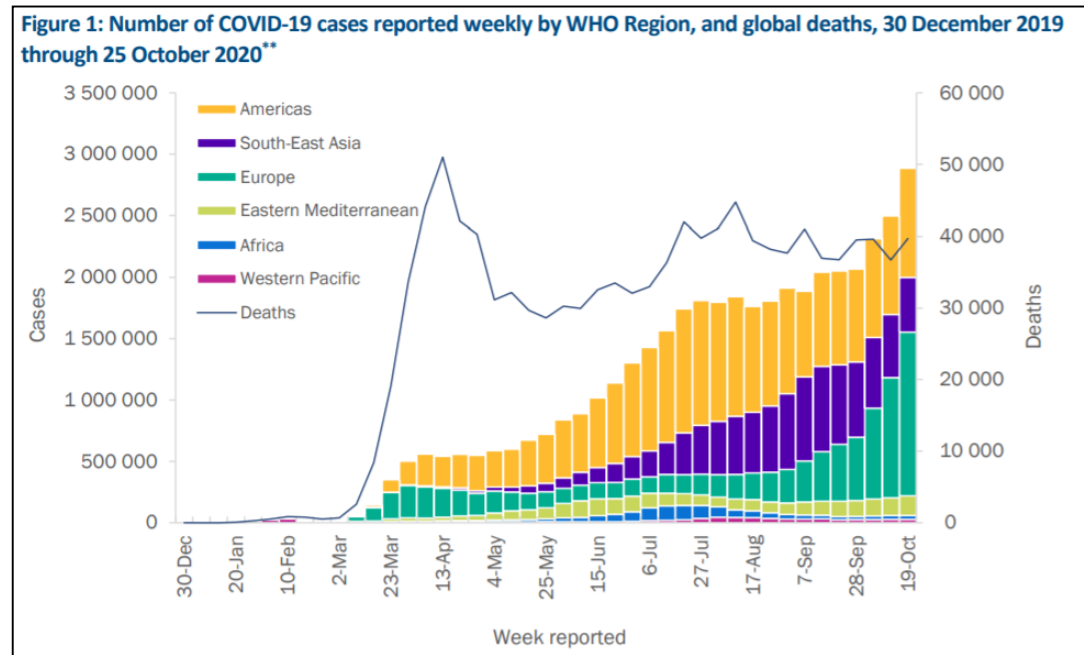


# COVID-19 Virus Situation Summary



Situation update as of 25<sup>th</sup> October 2020

- The COVID-19 pandemic initial cases were detected in Wuhan China
- Globally >42 million cases (> 1.1 million deaths)
- Africa > 1 298 315 million cases (>29 277 deaths)



WHO: <https://www.who.int/health-topics/coronavirus>

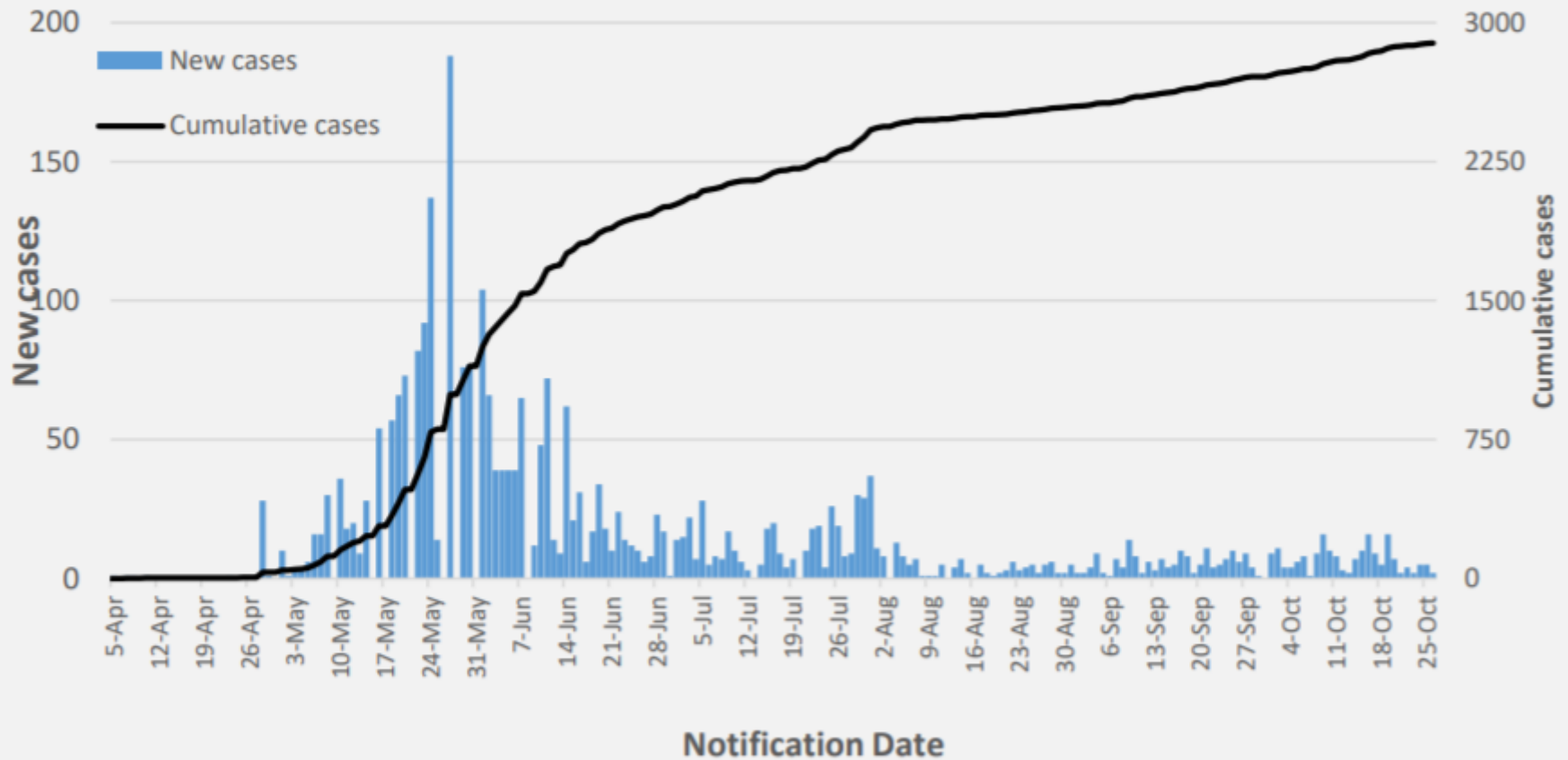


- 2,890 confirmed COVID-19 cases in South Sudan; 85% in Juba with 56 deaths and a case fatality rate (CFR) of 1.9%. Total 9,481 contacts identified, quarantined, & undergoing follow up
- Implementation of priorities; risk communication and community engagement; active case search and testing; quarantine for contacts; isolation of confirmed cases, infection prevention and control; and management of cases are currently underway
- The overall response currently led by the COVID-19 National level taskforce and the COVID-19 National Steering Committee





Figure 1. New and cumulative confirmed COVID-19 cases by notification date



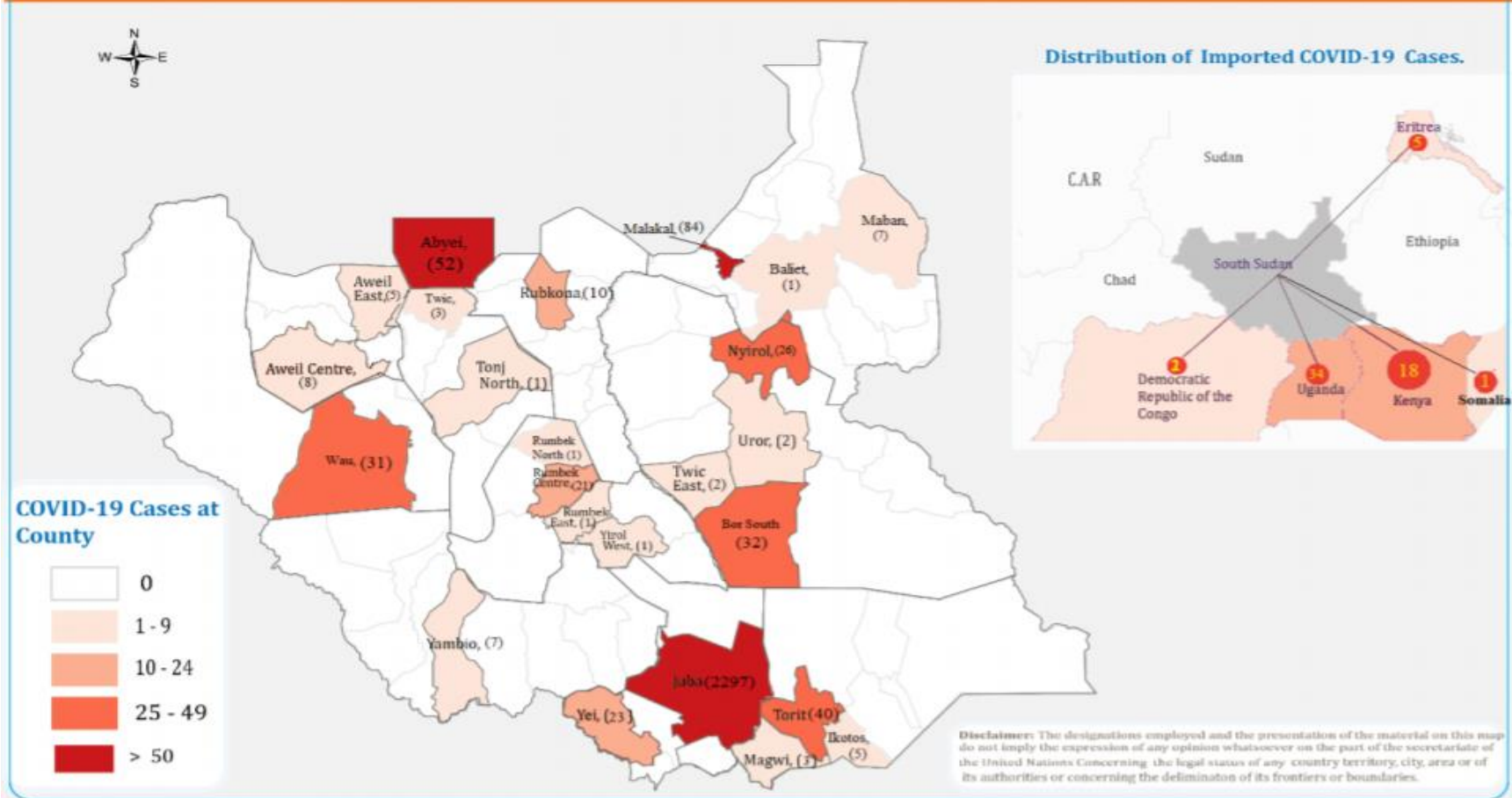
COVID-19 cases increasing exponentially in the past few weeks

# Distribution of COVID-19 cases in South Sudan



## Distribution of Covid-19 Cases by County

Data as received by WHO From MOH by 6:00 PM (EST) October 26, 2020 Map Created By: Health Information Management Unit, WHO, South Sudan



*\*Geographical information is available for 2 720 cases.*

The majority of the cases have been reported in Juba; while the rest have been imported (involving truckdrivers from the neighboring countries)

# Overall Conclusions and Recommendations





# Conclusion

- The overall IDSR and EWARNS reporting performance in week 43, is above the target of 80%. All (9) states were above 80%
- 2,890 confirmed COVID-19 cases in South Sudan; 85% in Juba with 56 deaths (CFR of 1.9%). Total 9,481 contacts identified, quarantined, & undergoing follow up
- Cumulative total of COVID-19 alerts is 1,409, of these, 1,220 (86.5%) have been verified and samples were collected
- With seven outbreaks confirmed in 2020; measles remains the most frequent vaccine preventable disease
- There are ongoing measles outbreak in Bentiu PoC and Pibor county
- Given the COVID-19 pandemic, it is critical that measures are stepped up to contain its spread.



## Recommendations

- All partners should support CHDs & State Ministries of Health to undertake IDSR/EWARN reporting
- All health facilities should report, and conduct case-based investigation of suspect measles cases and routine measles immunization should be strengthened in all counties
- Strengthen capacities for COVID-19 containment through identifying and testing suspect cases, isolating confirmed cases, and quarantining contacts



**Thanks to the State Surveillance Officers, County Surveillance Officers and Health Facility in-charges for sharing the weekly IDSR data**

**Thanks to all partners for supporting IDSR weekly reporting and sharing the line lists**

**To access the IDSR bulletins for 2020 use the link below:**

**<https://www.afro.who.int/publications/south-sudan-weekly-disease-surveillance-bulletin-2020>**



## This bulletin is produced by the Ministry of Health with Technical support from WHO

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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>

