

# South Sudan

## Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W46 2018 (Nov 12- Nov 18)



Ministry of Health  
Republic of South Sudan



World Health  
Organization  
South Sudan

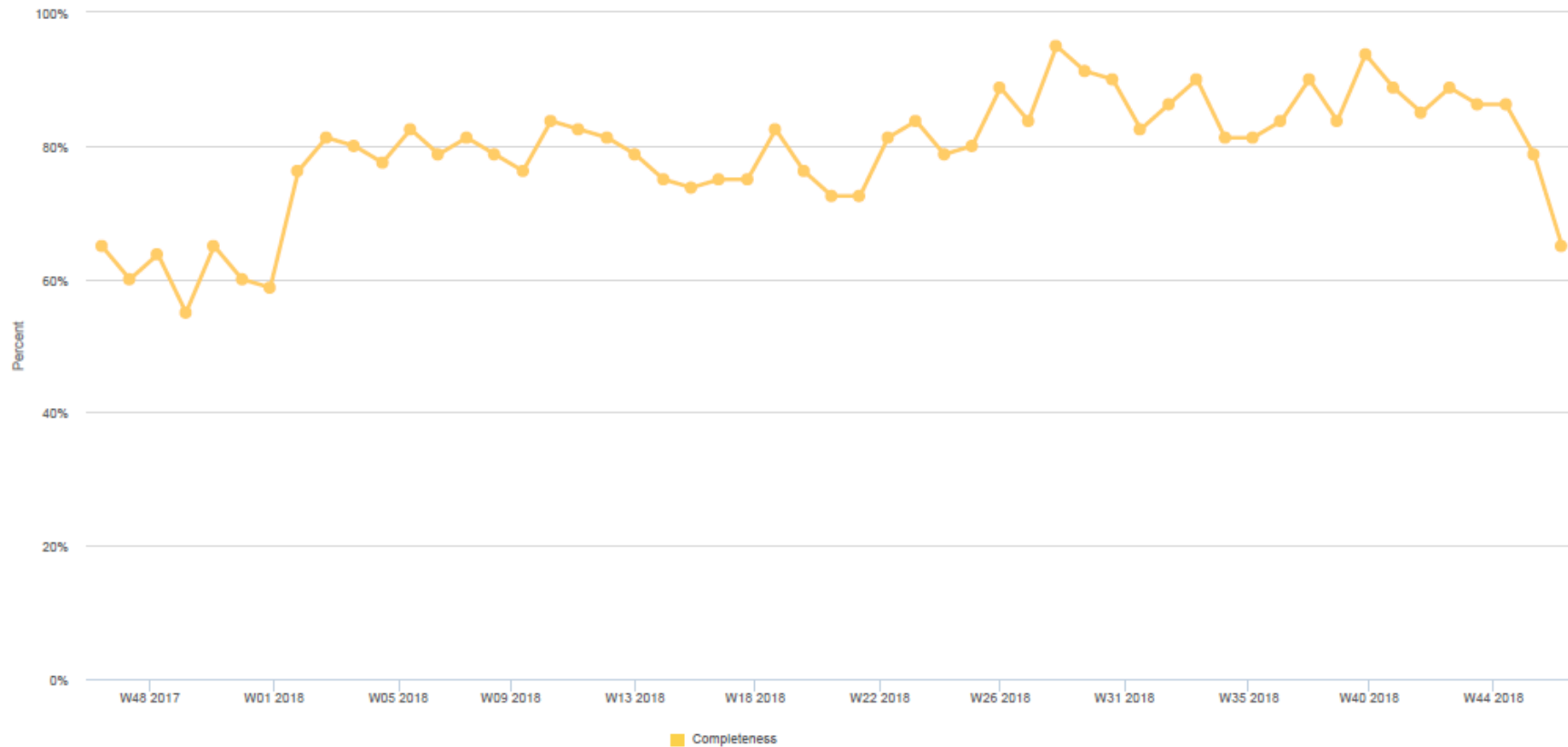
- Completeness for IDSR reporting at county level was 65% . Completeness for EWARS reporting from IDPs was 84%.
- A total of 16 alerts were reported, of which 81% were verified. 0 alerts risk assessed & 0 required a response.
- A suspect Ebola case was reported in Sakure, Nzara county, Gbudue state on 23/11/2018 tested negative for Ebola Zaire following preliminary GeneXpert testing in Juba. Further confirmatory testing to follow in UVRI, Entebbe, Uganda.
- A new measles outbreak has been confirmed after three measles IgM positive cases were confirmed in Bor PoC with the earliest case reported on 20/10/2018.
- At least 15 suspect measles cases including one death reported from Mabor Duang village, Aduel payam, Rumbek East with the initial case reported in week 41, 2018. Case and laboratory investigations are underway.
- There was no new suspect Rift Valley Fever (RVF) case reported from Yirol East in week 46. A total of 58 suspect human cases including 6 confirmed; 3 probable; 48 non-cases; and 01 pending classification (with no definitive lab. test results) have been reported. Nine confirmed animal cases (cattle).
- One new HEV cases were reported in week 46. A total of 145 HEV cases (18 confirmed by PCR) have been reported in Bentiu PoC in 2018. Current response entails surveillance, case follow up, WASH and discouraging communities from using stagnant water for domestic and recreational purposes.
- In light of the confirmed EVD outbreak in North Kivu, the South Sudan EVD contingency plan has been updated and implemented to mitigate the risk of EVD importation and enhance readiness capacities.

**Table 1** | IDSR surveillance performance indicators by county (W46 2018)

Hub	Reporting		Performance (W46 2018)		Performance (Cumulative 2018)	
	# counties	# reports received	Completeness	Timeliness	Completeness	Timeliness
Aweil	5	3	60%	60%	88%	87%
Bentiu	9	3	33%	33%	76%	53%
Bor	11	6	55%	55%	56%	47%
Juba	6	3	50%	50%	87%	74%
Kwajok	7	5	71%	71%	98%	89%
Malakal	13	4	31%	31%	58%	29%
Rumbek	8	8	100%	100%	100%	92%
Torit	8	8	100%	100%	98%	76%
Wau	3	2	67%	67%	90%	76%
Yambio	10	10	100%	100%	99%	99%
<b>South Sudan</b>	<b>80</b>	<b>52</b>	<b>65%</b>	<b>65%</b>	<b>82%</b>	<b>65%</b>

- Completeness for IDSR reporting at county level was 65% in week 46 and cumulatively at 82% for 2018.
- Timeliness for IDSR reporting at county level was 65% in week 46 and cumulatively at 65% for 2018.

Figure 1 | Trend in IDSR completeness over time<sup>1</sup>

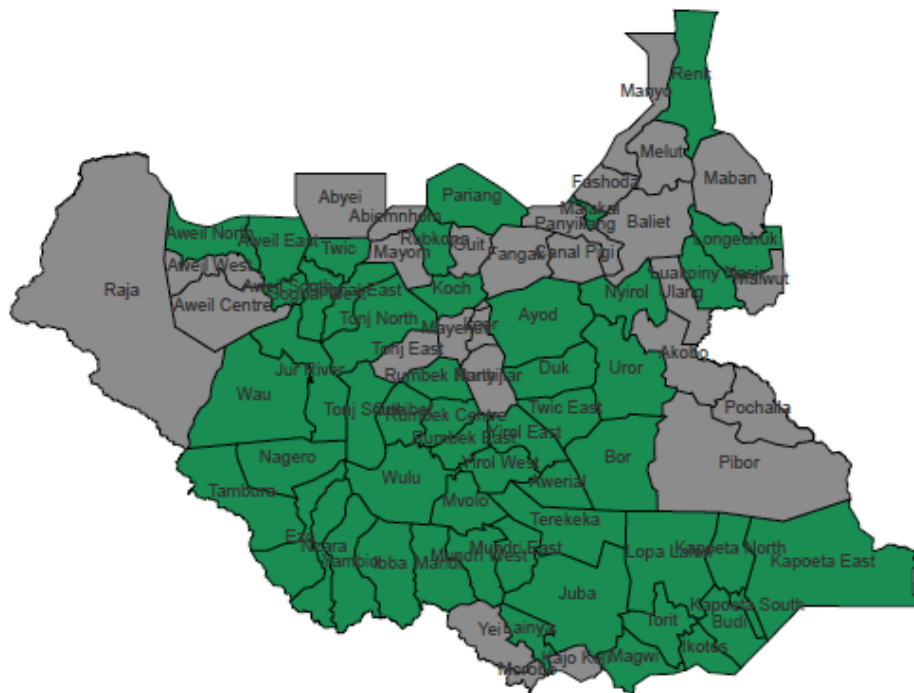


<sup>1</sup> Completeness footnote (to be drafted)

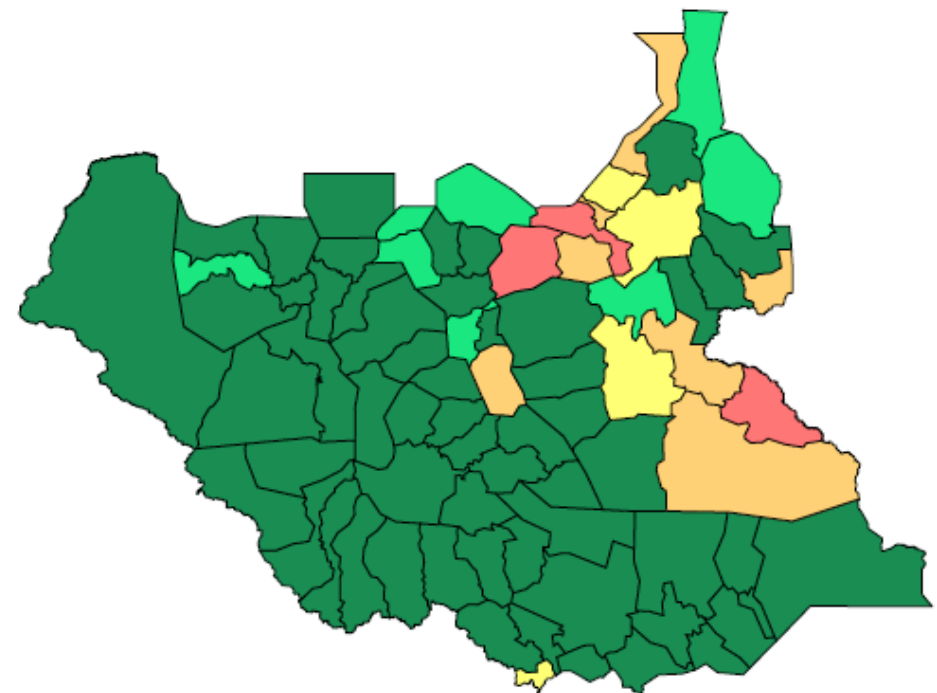
The graph shows completeness for weekly reporting at county level. The national average currently stands at 82%.



Map 1a | Map of IDSR completeness by county (W46 2018)



Map 1b | Map of IDSR completeness by county (2018)



- Counties that submitted IDSR reports in W46 are shown in green in map 1a.
- Counties that did not submit IDSR reports in W46 are shown in grey in map 1a.

**Table 4 | EWARS surveillance performance indicators by partner (W46 2018)**

Partner	Performance		Reporting (W46 2018)		Reporting (Cumulative 2018)	
	# sites	# reports received	Completeness	Timeliness	Completeness	Timeliness
CMD	3	3	100%	100%	51%	50%
GOAL	3	2	67%	67%	67%	62%
HLSS	2	1	50%	50%	50%	50%
IMA	6	5	83%	83%	74%	71%
IMC	6	6	100%	100%	93%	92%
IOM	9	9	100%	100%	89%	89%
IRC	1	1	100%	100%	100%	91%
Medair	2	2	100%	100%	95%	91%
MSF-E	2	1	50%	50%	67%	53%
MSF-H	3	1	33%	33%	55%	41%
SMC	6	4	67%	67%	57%	57%
UNIDO	3	1	33%	33%	34%	34%
UNKEA	2	2	100%	100%	88%	86%
World Relief	1	1	100%	100%	96%	87%
TRI-SS	7	7	100%	100%	40%	40%
LIVEWELL	4	4	100%	100%	43%	43%
<b>Total</b>	<b>61</b>	<b>51</b>	<b>84%</b>	<b>84%</b>	<b>67%</b>	<b>65%</b>

Timeliness and completeness for EWARN/IDP reporting stands at 84% for week 46, while cumulatively timeliness and completeness are 67% and 65% respectively for 2018.

Table 7 | Alert performance indicators by Hub

Hub	W46		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Aweil	0	0%	44	95%
Bentiu	0	0%	93	73%
Bor	2	100%	67	72%
Juba	1	0%	80	69%
Kwajok	0	0%	44	93%
Malakal	0	0%	84	79%
Rumbek	1	0%	62	66%
Torit	1	100%	58	86%
Wau	4	100%	54	72%
Yambio	7	86%	102	57%
<b>South Sudan</b>	<b>16</b>	<b>81%</b>	<b>688</b>	<b>74%</b>

Table 8 Summary of key alert indicators

W46	Cumulative (2018)	
<b>16</b>	<b>688</b>	Total alerts raised
<b>81%</b>	<b>74%</b>	% verified
<b>0%</b>	<b>0%</b>	% auto-discarded
<b>0%</b>	<b>3%</b>	% risk assessed
<b>0%</b>	<b>1%</b>	% requiring a response

A total of 16 alerts were reported in week 46 with 81% of the alerts in week 46 being verified; 0 were risk assessed and 0 required a response.

Table 9 | Alert performance indicators by event

Event	W46		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
<b>Indicator-based surveillance</b>				
Malaria	10	90%	139	70%
AWD	0	0%	211	69%
Bloody Diarr.	2	100%	173	58%
Measles	2	50%	143	80%
Meningitis	0	0%	0	0%
Cholera	0	0%	6	100%
Yellow Fever	0	0%	4	75%
Guinea Worm	0	0%	23	87%
AFP	0	0%	53	86%
VHF	0	0%	4	100%
Neo. tetanus	0	0%	5	60%
<b>Event-based surveillance</b>				
EBS total	2	50%	35	71%

Table 10 | Event risk assessment

W46	Cumulative (2018)	
0	8	Low risk
2	2	Medium risk
0	3	High risk
0	1	Very high risk

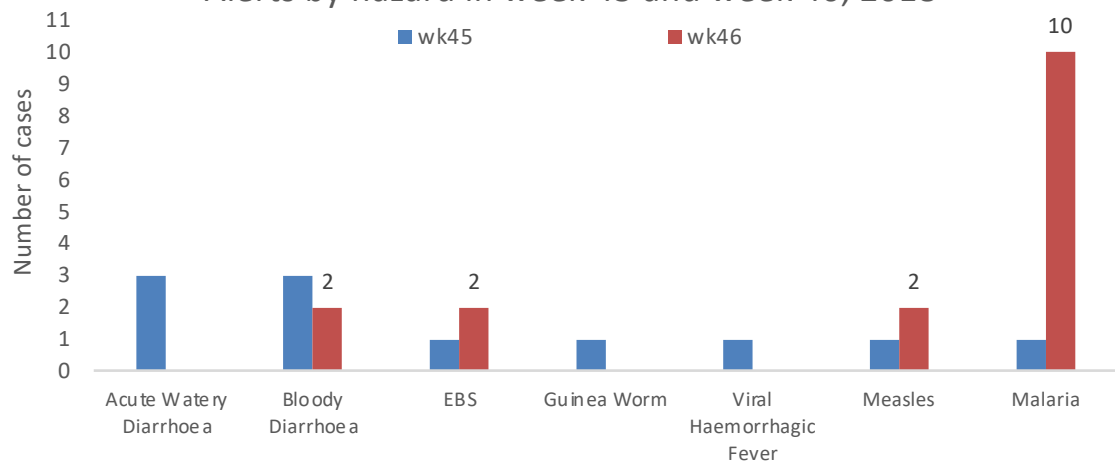
During the week, malaria, bloody diarrhoea and measles were the most frequent infectious hazards reported.

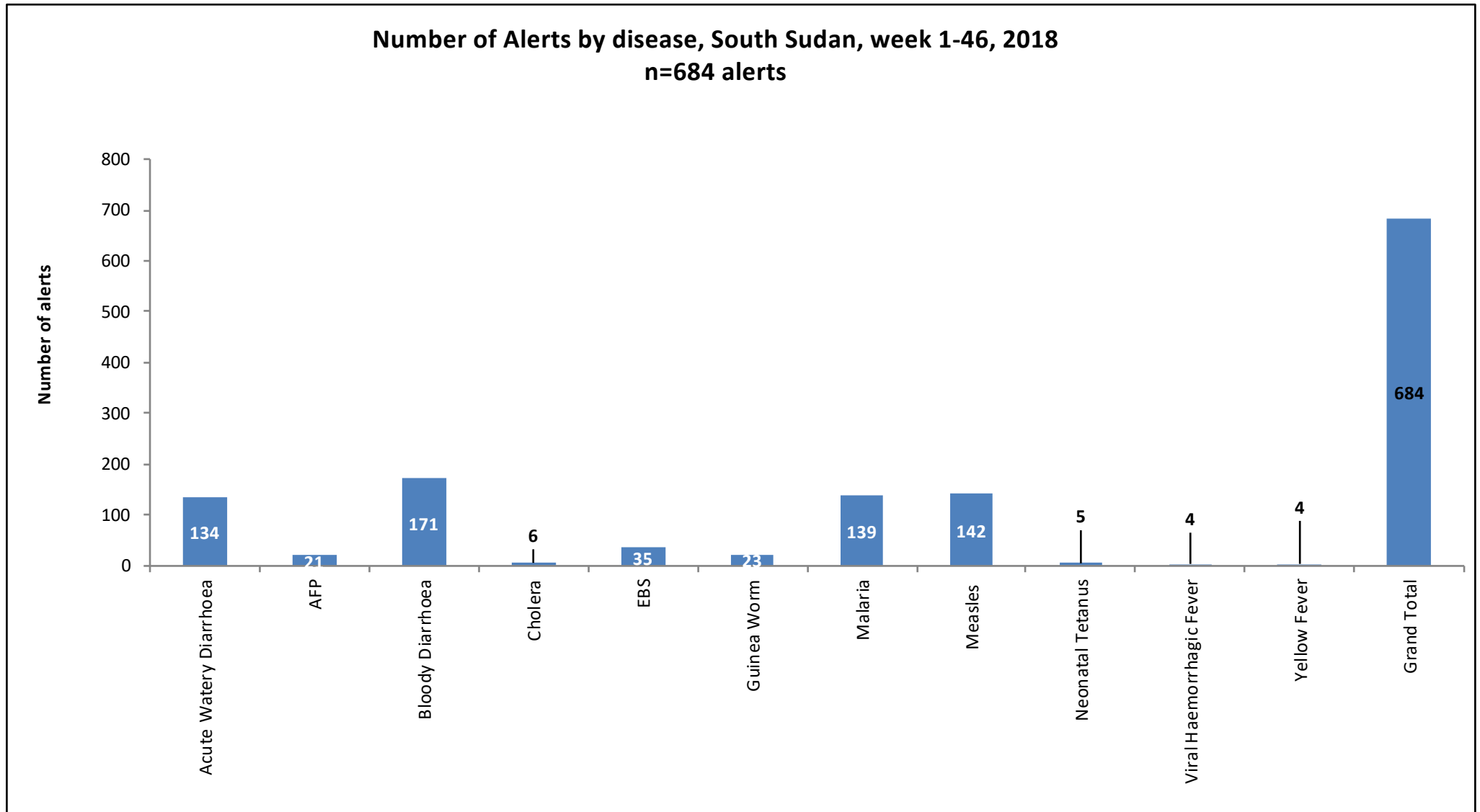
## Alert by disease and county in W46 2018

County	Bloody Diarrhoea	Suspect meningitis	Measles	Malaria	Total Alerts
Ayod	1				1
Kapoeta South		1			1
Mundri West		1			1
Yirol West			1		1
IOM Nazareth IDP Camp Clinic				1	1
IOM Cathedral IDP Camp Clinic				1	1
IMC UNMISS PoC Clinic	1				1
IOM Jebel Kher Clinic				1	1
TRI-SS Koriyo mobile clinic				1	1
TRI-SS Bari Mobile Clinic				1	1
TRI-SS Gulu Mobile Clinic				1	1
TRI-SS Lozah Mobile Clinic				1	1
TRI-SS Sirgirawa Mobile Clinic				1	1
TRI-SS Karika Mobile Clinic				1	1
TRI-SS Mbara Mobile Clinic				1	1
MSF-H Pieri PHCC			1		1
<b>Total Alerts</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>10</b>	<b>16</b>

- During week 46, a total of 16 alerts were reported through EWARS
- During the week; Malaria. Measles and bloody diarrhoea was the most frequent alert (see table and figure)
- Other suspect cases investigated included suspect meningitis case in Kapoeta South; and Mundiri West
- In Rumbek East at least 15 suspect measles cases including one death have been reported since 12/10/2018. Case and laboratory investigations are already underway.

Alerts by hazard in week 45 and week 46, 2018





The Figure shows the cumulative number of alerts triggered in 2018 by hazard.

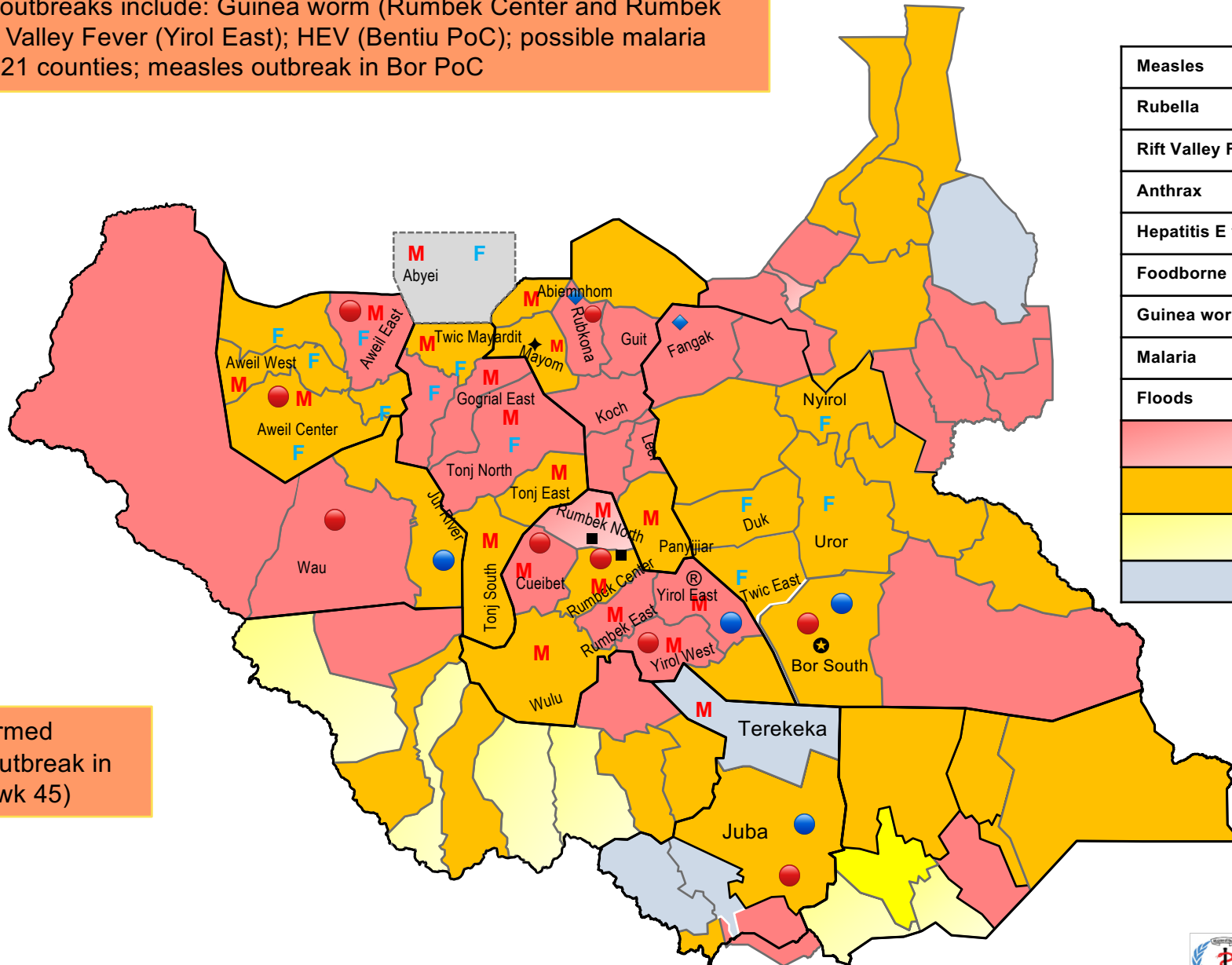
## Cumulative alerts by risk assessment stage in 2018

County	OUTCOME	RISK ASSESSED	RISK CHARACTERISED	VERIFICATION	Total Alerts
Acute Watery Diarrhoea	1	1		132	134
AFP		1		20	21
Bloody Diarrhoea	1	1		169	171
EBS	1	2		32	35
Guinea Worm	1	1		21	23
Neonatal Tetanus	2			3	5
Viral Haemorrhagic Fever				4	4
Yellow Fever				4	4
Measles	4	8	1	129	142
Cholera				6	6
Malaria	4	3	3	129	139
<b>Total Alerts</b>	<b>14</b>	<b>17</b>	<b>4</b>	<b>649</b>	<b>684</b>

- The Figures show the cumulative alerts by risk assessment state in 2018
- Of the 684 alerts reported in 2018; a total of 649 alerts have been verified; 17 alerts underwent risk assessment; and 14 alerts have a documented outcome.

# Confirmed Outbreaks South Sudan – 25 November 2018

- The map show outbreaks confirmed in 2018
- The active outbreaks include: Guinea worm (Rumbek Center and Rumbek North); Rift Valley Fever (Yirol East); HEV (Bentiu PoC); possible malaria upsurge in 21 counties; measles outbreak in Bor PoC












Measles	●
Rubella	●
Rift Valley Fever	Ⓜ
Anthrax	◆
Hepatitis E virus	◆
Foodborne disease	★
Guinea worm	■
Malaria	M
Floods	F
	IPC - Emergency phase
	IPC - Crisis phase
	IPC - Stressed phase
	No data

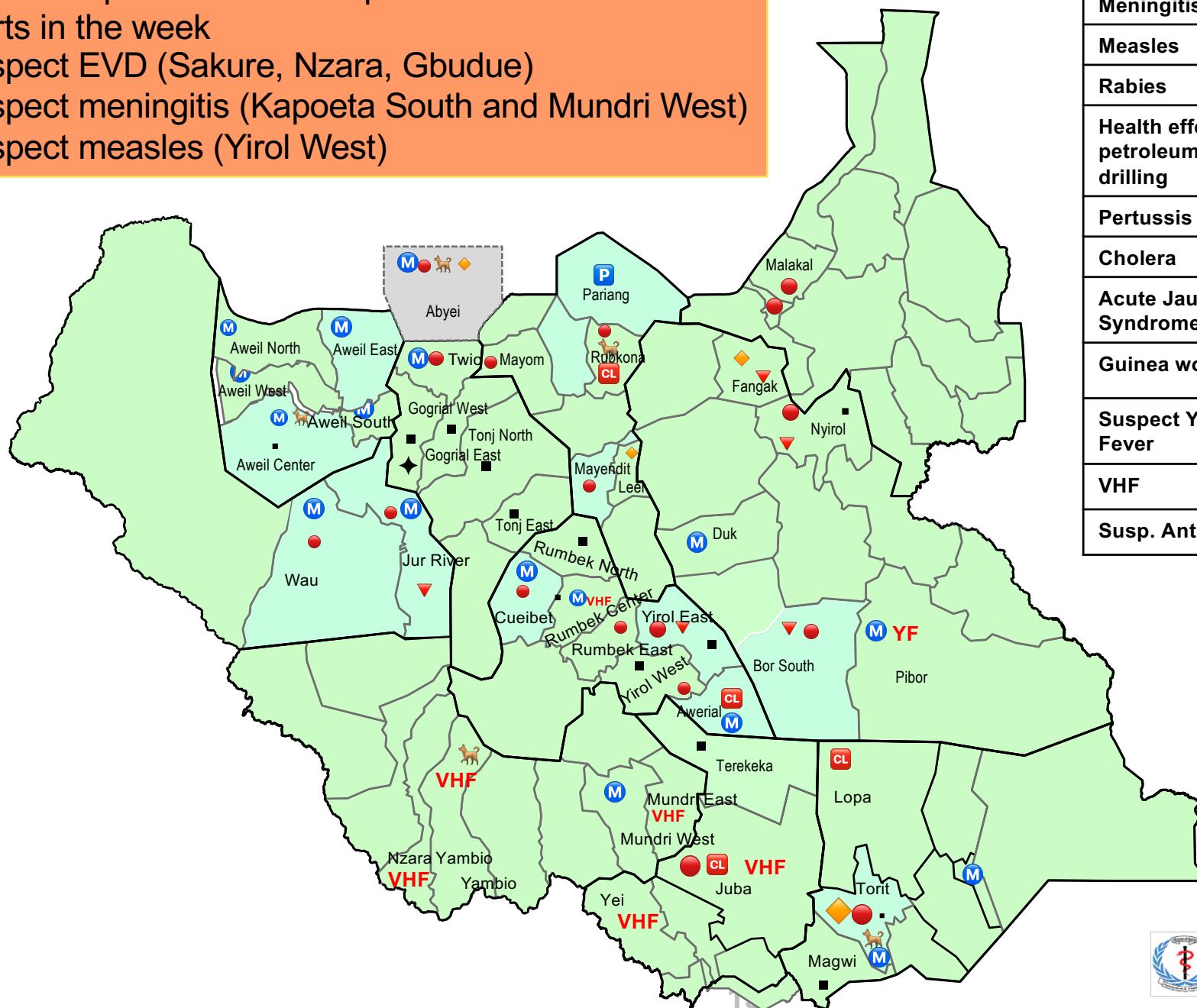
- New confirmed measles outbreak in Bor PoC (wk 45)



# Suspect Outbreaks South Sudan – 25 November 2018

- Map shows suspect outbreaks reported in 2018
- New alerts in the week
  - Suspect EVD (Sakure, Nzara, Gbudue)
  - Suspect meningitis (Kapoeta South and Mundri West)
  - Suspect measles (Yirol West)

Meningitis	
Measles	
Rabies	
Health effects of petroleum drilling	
Pertussis	
Cholera	
Acute Jaundice Syndrome	
Guinea worm	
Suspect Yellow Fever	<b>YF</b>
VHF	<b>VHF</b>
Susp. Anthrax	



Aetiologic 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>New epidemics</b>								
Measles	Bor PoC	20/10/2018	0	3 (0.15)	Yes	No	Yes	N/A
<b>Ongoing epidemics</b>								
Guinea worm	Rumbek Center & Rumbek North	27/05/2018	0	3 (0.001)	Yes	N/A	Yes	Yes
RVF	Yirol East	28/12/2017	0	58 (0.054)	Yes	N/A	Yes	N/A
Hepatitis E	Bentiu PoC	03/01/2018	1	145 (0.123)	Yes	No	Yes	Yes
Possible malaria upsurge	21 counties	01/07/2018			Yes	N/A	Yes	N/A

### **New outbreak in week 45, 2018**

A new outbreak of measles has been confirmed in Bor PoC after 3 measles IgM positive cases were reported on 12/11/2018. The initial two cases were new arrivals to the PoC from Akobo. Active case search; case investigation; line listing; reactive vaccination microplanning; and response planning are underway.

### **Other ongoing outbreaks**

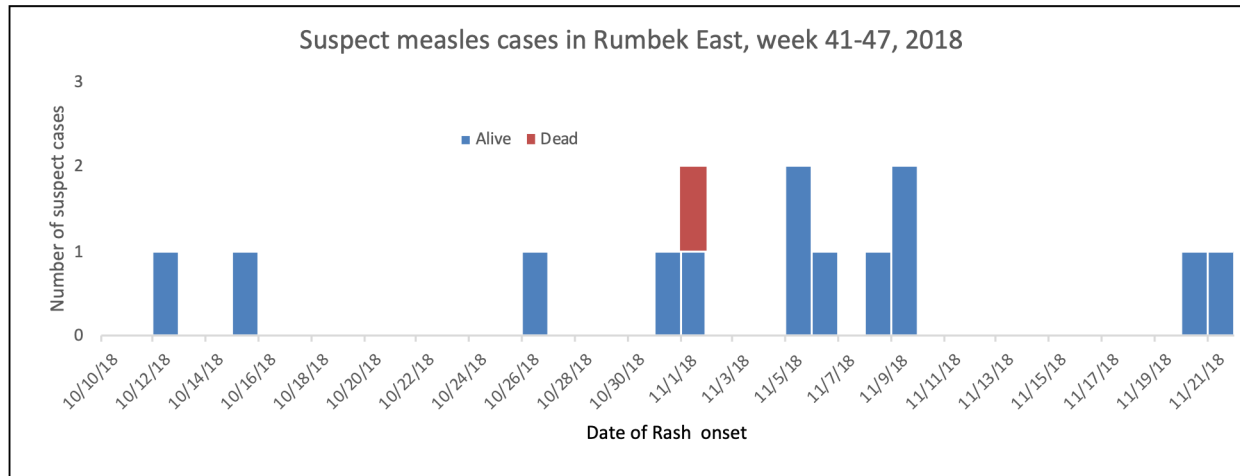
1. Guinea worm (Rumbek Center and Rumbek North);
2. Rift Valley Fever (Yirol East);
3. Hepatitis E Virus (Bentiu PoC);
4. Possible malaria upsurge in 21 counties

## Response | Summary of major outbreaks controlled in 2018

Aetiologic 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 (Al Mahad IDPs)	11/09/2018	0	26 (0.33)	Yes	Yes	Yes	N/A
Measles	Bentiu PoC	10/06/2018	0	23 (0.02)	Yes	Yes	Yes	N/A
Rubella	Bor South	20/08/2018	0	03 (0.001)	Yes	No	Yes	N/A
Measles	Yirol West	07/08/2018	0	11 (0.007)	Yes	Yes	Yes	N/A
Rubella	Yirol East	26/06/2018	0	18 (0.017)	Yes	Yes	Yes	N/A
Rubella	Jubek	28/05/2018	0	10 (0.0017)	Yes	No	Yes	N/A
Rabies probable	Bentiu PoC	06/12/2017	0	270 (0.231)	Yes	Yes	Yes	N/A
Measles	Rumbek Center	13/05/2018	0	40 (0.017)	Yes	Yes	Yes	N/A
Measles	Wau PoC AA	04/04/2018	0	1 (0.0025)	Yes	No	Yes	N/A
Hepatitis E	Old Fangak	15/02/2018	0	01 (0.001)	Yes	No	Yes	Yes
Rubella	Jur River	14/02/2018	0	76 (0.039)	Yes	No	Yes	N/A
Rubella	Juba	26/02/2018	0	22 (0.0037)	Yes	No	Yes	N/A
Rubella	Mayom	22/02/2018	0	08 (0.004)	Yes	No	Yes	N/A
Measles	Aweil Center	6/Jan/2018	0	22 (0.021)	Yes	Yes	Yes	N/A
Measles	Cueibet	14/10/2017	0	20 (0.012)	Yes	Yes	Yes	N/A
Measles	Aweil East	05/02/2018	0	31 (0.006)	Yes	Yes	Yes	N/A
Foodborne	Bor South	18/02/2018	0	434 (29)	Yes	Yes	Yes	Yes
Cut. Anthrax	Mayom	27/01/2018	0	2 (0.001)	Yes	No	Yes	N/A
Meningitis	Torit	17/01/2018	0	173 (0.107)	Yes	No	Yes	N/A

During 2018, at least 24 outbreaks have been reported out of which 19 outbreaks have been controlled.

# Suspect Measles outbreak – Rumbek East



Age	female	Male	Total cases	Percentage %
<5yrs	3	9	12	80%
5+yrs	1	1	2	13%
(blank)		1	1	7%
<b>Total cases</b>	<b>4</b>	<b>11</b>	<b>15</b>	<b>100%</b>

## Background

- Suspect measles cases reported from Mabor Duang village, Aduel payam in Rumbek East where the initial suspect case was a 38 year female whose illness started on 12 October 2018 in week 41.
- The affected village is served by Mabor Duang PHCC

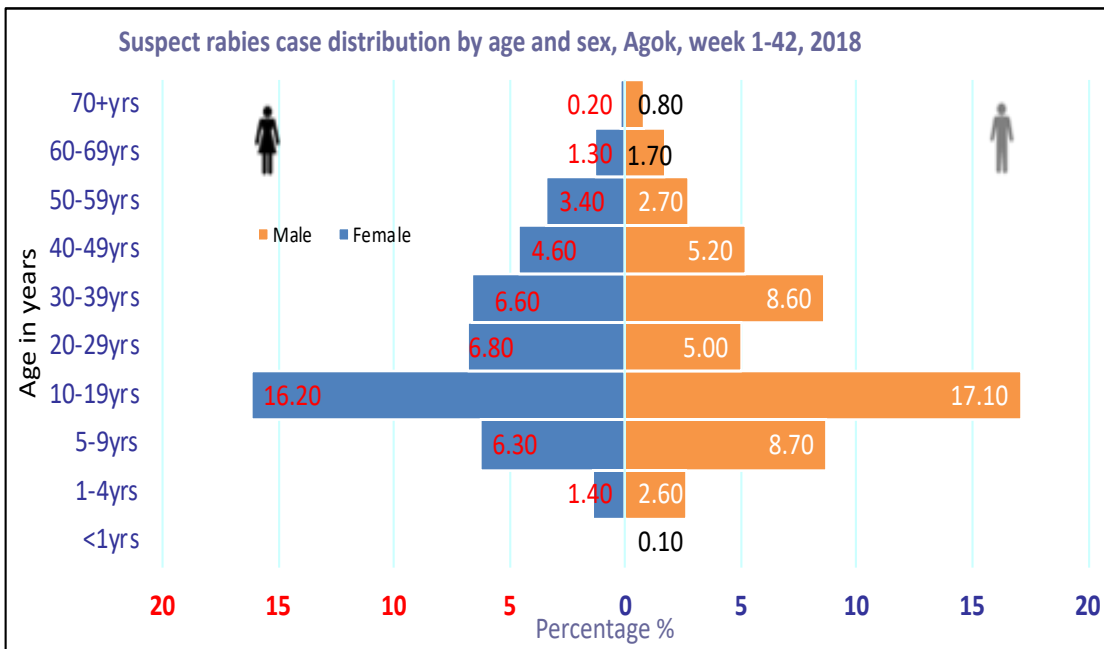
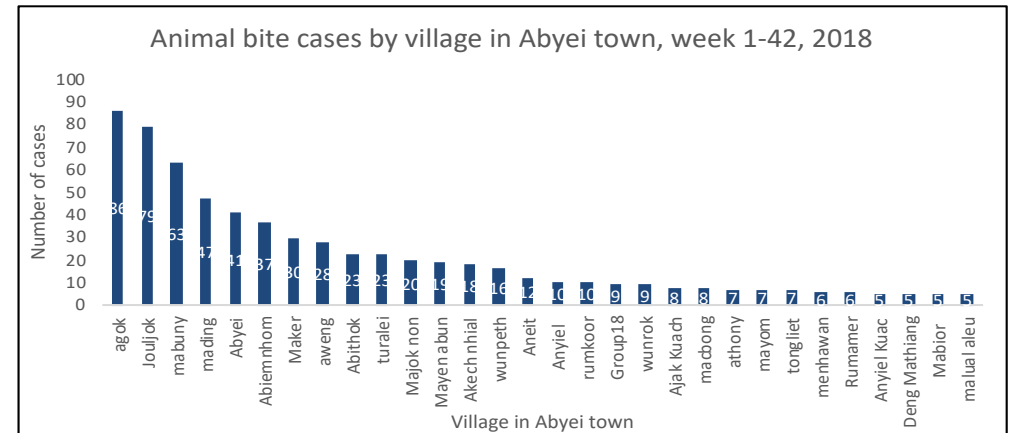
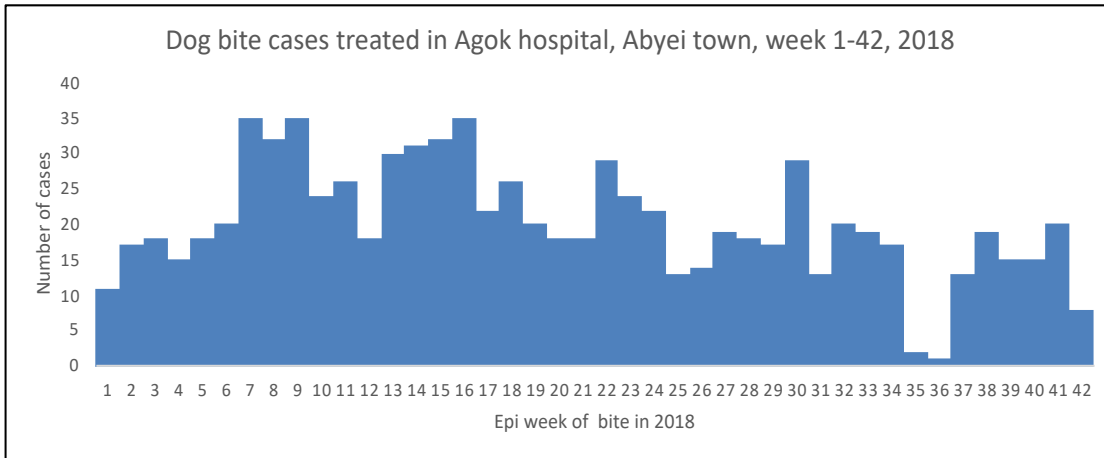
## Descriptive Epidemiology

- Since 20 Oct 2018; at least 15 cases including 1 death (CFR 6.67%) have been reported.
- All the suspect cases are from one village and payam (see background) and have never received measles vaccine.
- 12 (80%) cases were under 5 years of age

## Recommended response

1. Samples collected and shipped to Juba on 19 Nov 2018
2. Surveillance through active case search and line listing and community sensitisation on routine immunization
3. Prioritise affected payam for periodic intensified routine immunisation.

## Animal bites - suspect rabies, Agok hospital, Abyei Town



- An increase in dog bite (suspect rabies) cases continues to be reported from Agok hospital in Abyei.
- An exponential increase in suspect rabies cases has been reported in 2018 when compared to the previous years with a total of 848 cases reported in 2018 (week 1-42);
- Most bites reported in persons aged 10-19 years and there are no significant risk difference by sex (gender)
- Current response entails surveillance - case detection and line listing & post exposure prophylaxis with rabies vaccine.
- As part of the rabies day (28/9/2018) celebrations, Abyei is one of the five states selected by the South Sudan Veterinary Association (SSVA) to conduct rabies vaccination in dogs (the campaign is currently underway in Abyei)
- Meeting organized in PHEOC on 24/10/2018 to review rabies situation and current response

# Suspect Hepatitis E virus – Agok, Abyei

## Background

- MSF Agok hospital has reported suspect hepatitis E cases from Agok, Abyei town.
- Abyei has in the recent weeks been affected by floods following torrential rains. This should have exacerbated contamination of water sources in the affected areas

## Descriptive Epidemiology

- At least seven (7) suspect Hepatitis E virus cases and two (2) deaths (CFR 29%) deaths have been line listed since 10 July 2018.
- A total of six cases have been tested positive for HEV by RDT but definitive PCR testing is pending. However, the recent death was HEV RDT negative.
- The symptoms include fever, jaundice, vomiting, epigastric pains, head ache, and at least two cases have had unexplained bleeding.
- All the affected to are males with a median age of 24 years
- All the affected are from Abyei town

## Recommended response

1. Supportive case management and line listing underway in MSF Agok hospital
2. Integrated health WASH response planned to map possible sources of contamination and to improve access to safe water and sanitation in the affected locations

## Other Public Health issues in Abyei

- Abyei is also currently challenged by the following public health issues
- **Malaria** – current malaria trends higher than expected (above the third quartile)
- **Suspect rabies** – Abyei has reported 848 animal bites (suspect rabies) in 2018



## Ebola alerts investigated since May 2018

Date	Cases	Deaths	Payam	County	eRDT	eGeneXpert	ePCR	Comments
28May	1	0	Makpandu	Yambio	ND	ND	-ve	Reported in refugee camp
8Sep	1	1	Bakiwiri	Yambio	ND	ND	-ve	Did not meet case definition
26Sep	1	1	N/Bari	Juba	ND	ND	-ve	Community death
30Oct	1	1	Yei town	Yei	ND	ND	ND	Never traced (?false alert)
12Oct	1	0	Rumbek	Rumbek Center	ND	-ve	-ve	Recent travel from DR Congo
14Oct	1	0	Gumbo	Juba	ND	-ve	-ve	Did not meet case definition
18Oct	1	1	Mundri East	Mundri East		ND	-ve	Reported by Lui hospital
21Oct	1	1	Yambio	Yambio	ND	ND	-ve	Recovered & discharged
29Oct	2	0	Nimule	Pageri	ND	ND	ND	Alerts discarded
11Nov	1	1	Loka	Lainya	ND	-ve	-ve	Investigated 11 Nov
23 Nov	1	0	Sakure	Nzara	ND	-ve	Pending	Investigated 24 Nov

- A new suspect Ebola case was reported from Sakure in Nzara on 23 Nov 18. The rapid response team investigated the case on 24 Nov 2018. The sample obtained tested negative for Ebola Zaire following GeneXpert testing in Juba on 24 Nov 18. The sample will be shipped for further testing at UVRI, Entebbe, Uganda on 25 Nov 2018.
- A total of 15 Ebola alerts investigated since May 2018
- Samples obtained from nine Ebolavirus alerts; and
- Eight samples have tested PCR negative for Ebolavirus

## Suspect Ebola virus disease death in Sakure, Nzara, Gbudue state, 23 November 2018

### **Case description**

- On 23 November 2018, the Gbudue state EVD team reported a suspect Ebola case in Sakure, Nzara county, Gbudue state.
- The suspect case is in his 30s; a male from Sakure in Nzara (Gbudue State).
- The case illness started on the 18 Nov 2018 a day after he arrived in DR Congo from South Sudan. The disease symptoms included fever, head ache, joint pains, diarrhoea and vomiting of blood.
- At least 27 contacts have been listed by the investigation team.

### **Response undertaken**

- Case investigation and containment undertaken by the rapid response team on 24 Nov 2018. Samples were obtained by the RRT; packaged and shipped by UNHAS to Juba on 24 Nov 2018
- Supportive patient care and barrier nursing still ongoing in Sakure PHCU.
- Sample tested negative for Zaire ebolavirus by GeneXpert at the National Public Health Laboratory on 24 Nov 2018
- Further testing to follow in UVRI, Entebbe, Uganda



## Malaria trends

### Current malaria trends

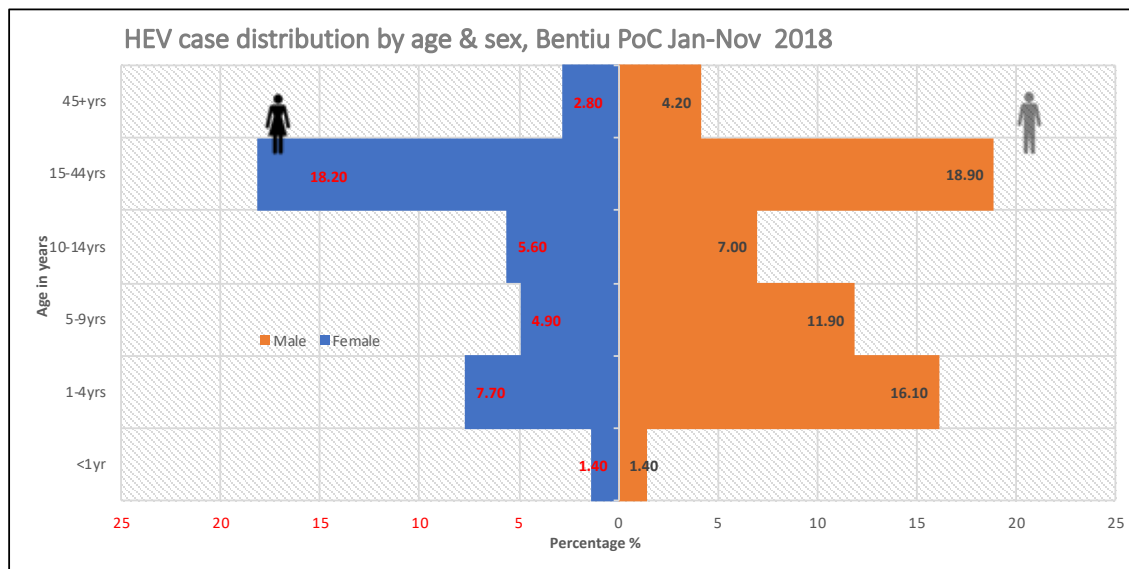
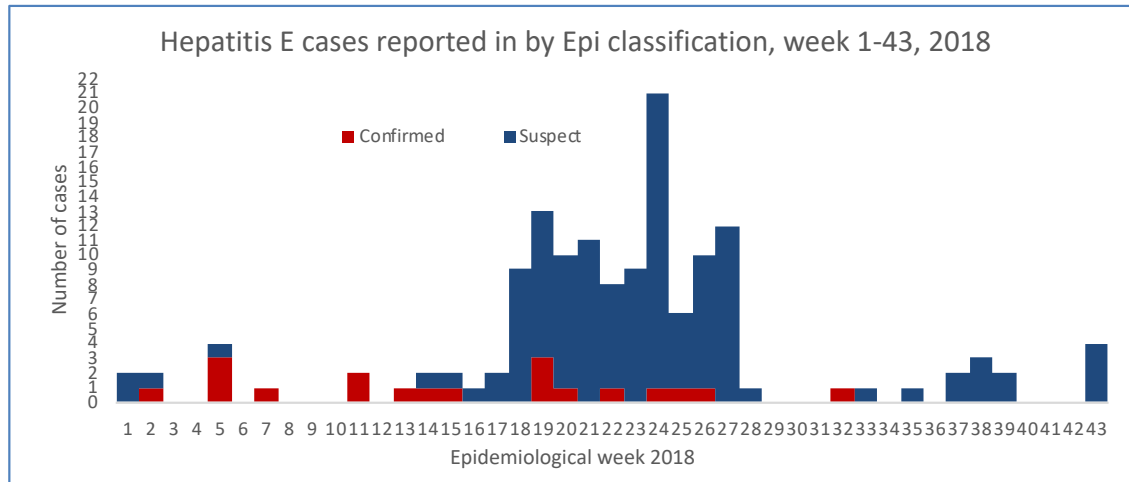
Malaria remains the top cause of morbidity and mortality that accounts for 63.6% of cases as of week 46, 2018. Consequently, trend analyses show that 21 counties in 6 state hubs currently have malaria trends that are significantly higher than expected. Counties with malaria trends that exceed the threshold (third quartile of trends for the period 2013-2017) include:

1. **Aweil hub** (Aweil Center, Aweil East, and Aweil West);
2. **Rumbek hub** (Cueibet, Rumbek Center, Rumbek East, Rumbek North, Wulu, Yirol East, Yirol West);
3. **Kuajok hub** (Abyei, Gogrial East, Tonj East, Tonj South, Tonj North, and Twic Mayardit);
4. **Bentiu hub** (Abiemnhom, Mayom, and Panyijiar); and
5. **Juba hub** (Terekeka).
6. **Malakal hub** (Melut)

### Proposed public health actions

1. Convene malaria taskforce or malaria technical working group meeting to ensure that operational readiness for malaria prevention, diagnosis, and treatment are optimized.
2. Field missions to conduct technical verification of the trends in the affected counties
3. Assessment of current stock levels of malaria diagnostics (RDTs), medicines (ACTs), and LLINs in the affected counties.
4. Stocking up on malaria prevention (LLINs), diagnostics (RDTs), medicines (ACTs), and enhancing behavioral change communication for malaria prevention, prompt investigation and initiation of treatment

## Hepatitis E, Bentiu PoC

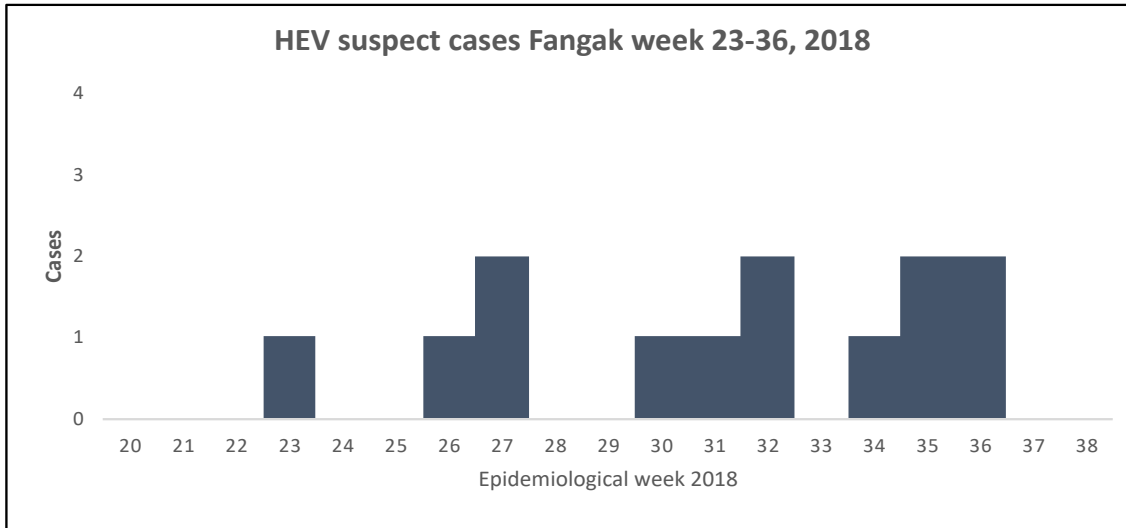


## Bentiu PoC

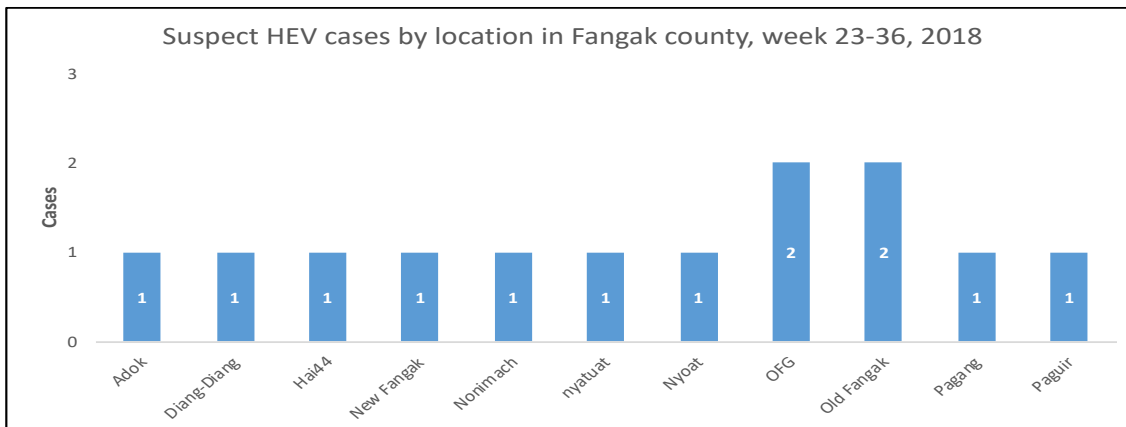
- At least 145 suspect cases of Hepatitis E (HEV) including one death (CFR 0.70%) have been reported in 2018. Of the 145 suspect cases, a total of 18 cases have been PCR confirmed as HEV in Bentiu PoC
- Only 11 HEV cases have been admitted.
- Most (37.1%) of the cases are 15-44 years of age; and 59% being male. Among the females, most cases have been reported in those aged 15-44 yrs (who are at risk of adverse outcomes if infected in the 3<sup>rd</sup> trimester of pregnancy).
- Use of stagnant water for domestic or recreation purposes likely to be source of infection - communities are being educated on the risk and draining the water is being discussed
- Unicef has disseminated key HEV messages - on radio [Kondial FM & Bentiu FM] and through community sensitizations.
- Case identification and follow up is and WASH interventions are ongoing.

One new HEV cases reported in week 46

## Hepatitis E Old Fangak



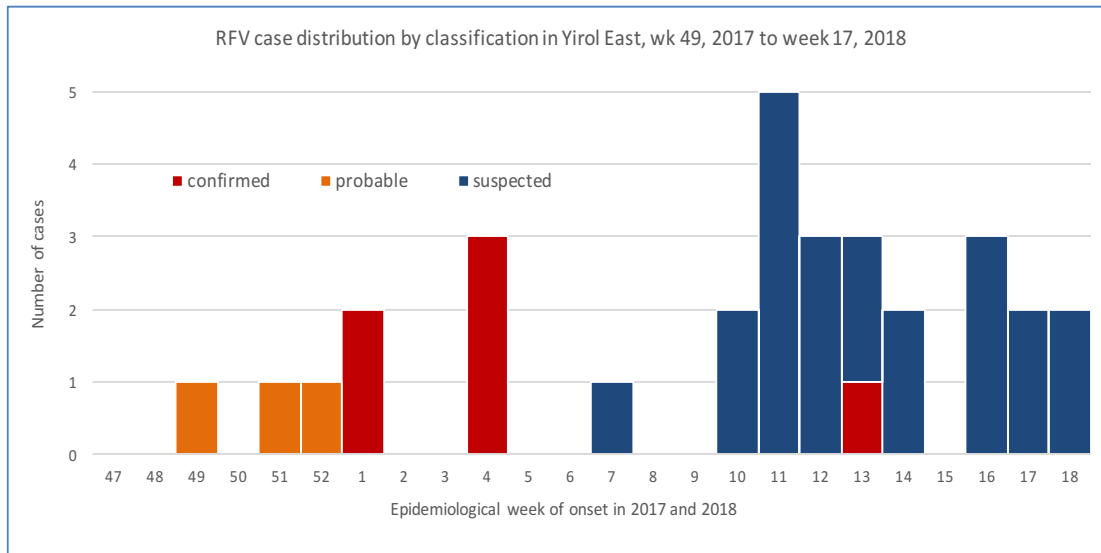
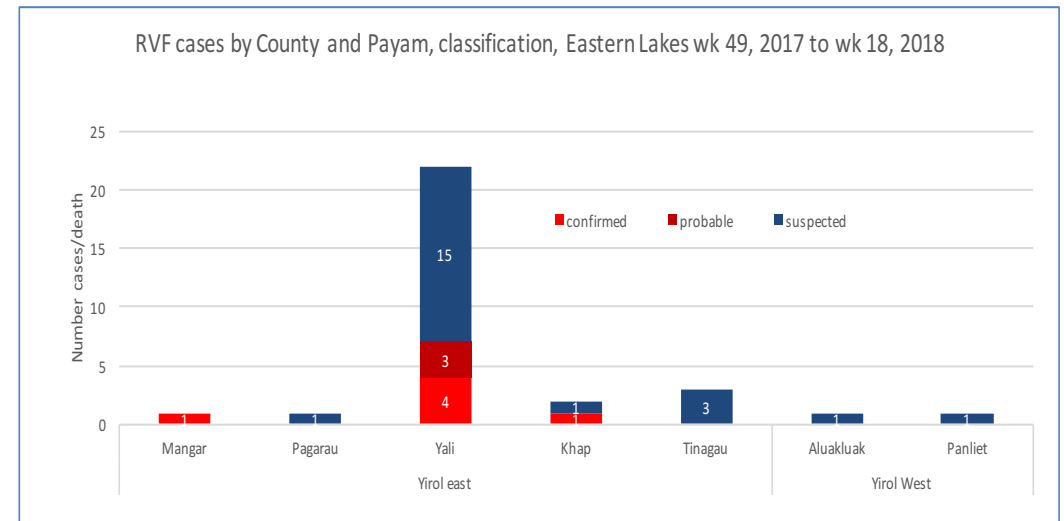
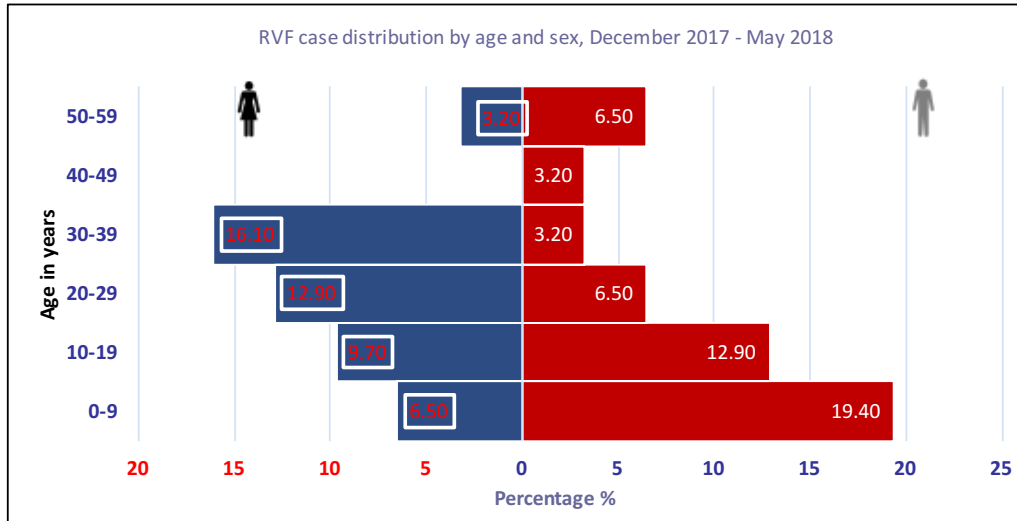
Age	Female	Male	Total cases	Percentage	Cum.%
10-19yrs	2	2	4	31%	31%
20-29yrs	1	6	7	54%	85%
30-39yrs		2	2	15%	100%
<b>Total cases</b>	<b>3</b>	<b>10</b>	<b>13</b>	<b>100%</b>	



## Old Fangak

- One suspect HEV death reported in week 43 of 2018.
- At least 14 suspect HEV cases including one confirmed HEV case (one suspect HEV death) have been investigated in Old Fangak.
- At least 13 cases were HEV RDT positive.
- Over half (54%) of the cases are 20-29 years of age.
- The cases appear to be occurring sporadically and are using River water (largely from Phow river).
- Community awareness and hygiene promotion are ongoing.

# Ongoing epidemics - Epidemic description - RVF Eastern Lakes state



Sno.	Description	Number
1	Suspect cases	58
2	Total deaths	4
3	Confirmed cases	6
4	Probable cases	3
5	Cases pending testing	01
6	Non-cases	48
7	Cases on admission	01
8	Total human samples collected	39
9	Total animal samples collected	28
10	Positive animal cases	9

- No new suspect RVF case reported from Yirol East in week 46.
- In the period 7 December 2017 to 25 Nov 2018, a total of 58 suspect RVF cases were reported in Eastern Lakes.
- These were reclassified based on investigations and laboratory results, such that as of 25<sup>th</sup> Nov 2018, there were a total of six (6) RVF confirmed cases, three (3) probable, and 01 suspect RVF cases (either no samples collected or samples collected and test results are pending).
- Forty eight (48) cases were discarded as non-cases following negative laboratory results for RVF and other common causes of viral haemorrhagic fever.
- A total of nine animal samples have been confirmed serologically (3IgM and 6IgG).
- Current response entails surveillance, laboratory testing, supportive care for suspect cases, and community sensitization on hygienic animal handling

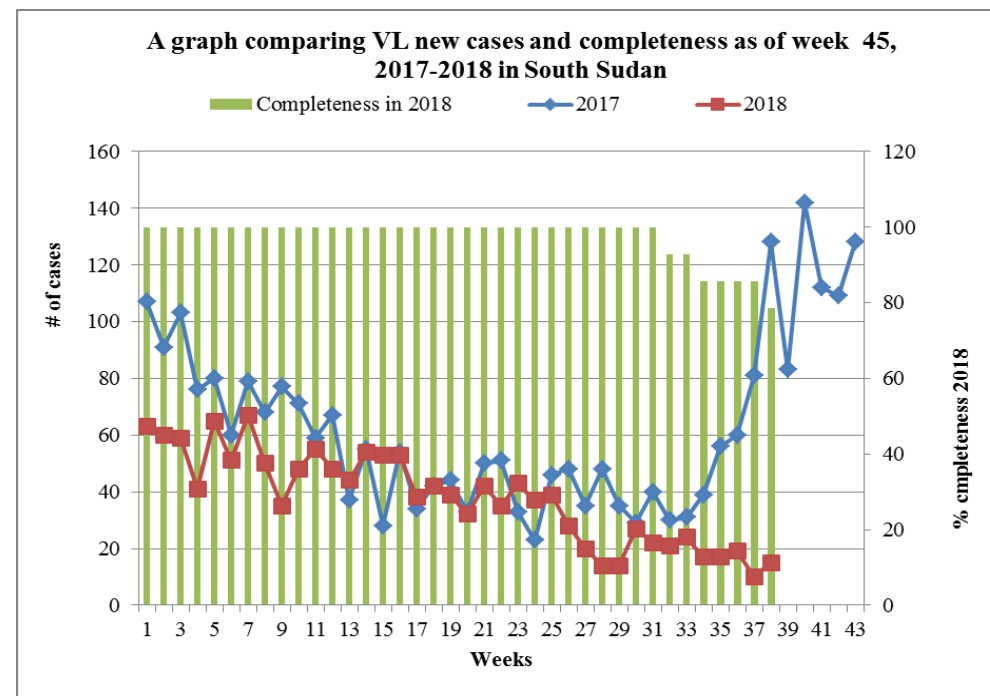
## Visceral Leishmaniasis | Kala-azar

Kala-azar is endemic in Upper Nile, Unity, Jonglei, & Kapoeta. Response interventions have been complicated by insecurity, population displacement, poor living conditions, increasing food insecurity, closure of treatment facilities; and low treatment completion rates.

In week 45, one Kala azar treatment facility (Koradar) reported with no new cases, deaths or defaulters reported

Since the beginning of 2018, a total of **1,978** cases including **67** deaths (CFR **3.4%**); **51 (2.6%)** defaulters; **1,524 (77%)** new cases; **93(4.7%)** PKDL; and **361(18.3%)** relapses - all reported from **39** treatment centers.

In the corresponding period of 2017, a total of **3,444** cases including **68** deaths (CFR **2.0%**) and **76(2.2%)** defaulters were reported from 21 treatment centers.

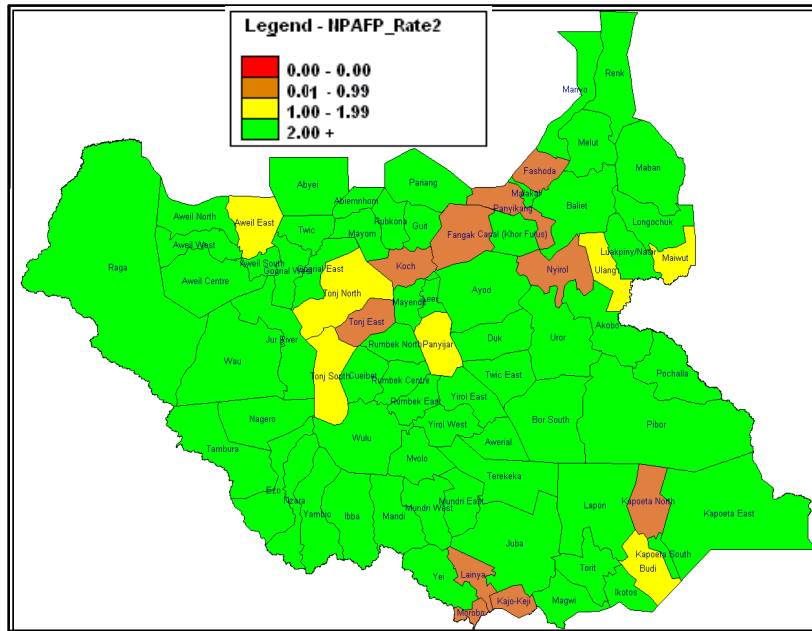


The majority of cases in 2018 have been reported from Lankien (**975**), Kurwai (**194**), Old Fangak (167), Walgak (98), Ulang (61), Malakal IDP (64), Narus (91), Pieri (42), KCH (65), Pagil (71), Doma (22), KMH (15), Bentiu (26) and Adong (13).

The most affected groups include, males [**977** cases (**49.4%**)], those aged  $\geq 15$  years and above [**873** cases (**44.1%**)] and 5 - 14 years [**783(39.7%)**]. A total of **306** cases (**15.5%**) occurred in children  $< 5$  years.

Low reporting rates currently impede meaningful trend interpretations however the major concern currently is seen from the high relapse rates; suggesting the need to improve treatment compliance through regular availability of testing and treatment kits and provision of food rations for cases on treatment. Treatment health facilities are urged to improve on timeliness of reporting.

# Acute Flaccid Paralysis - suspect Polio



In the weeks 41-45, 2018, a total of 32 new AFP cases was reported from Central Equatoria; Eastern Equatoria; Jonglei; Lakes; Unity; Upper Nile; Warrap; Western Bahr el Ghazal; Western Equatoria hubs. This brings the cumulative total for 2018 to 349 AFP cases.

The annualized non-Polio AFP (NPAFP) rate (cases per 100,000 population children 0-14 years) in 2018 is 4.9 per 100,000 population of children 0-14 years (target  $\geq 2$  per 100,000 children 0-14 years).

Stool adequacy was 87% in 2018, a rate that is higher than the target of  $\geq 80\%$

Environmental surveillance ongoing since May 2017; with 23 samples testing positive for non-polio enterovirus (NPEV) in 2017 and Thirty Six (36) NPEV positive sample in 2018.

**Source:** South Sudan Weekly AFP Bulletin

2017-2018\* SUMMARY by States (Using NID figures for population estimates)

State Hubs	Population <15 years	Cumulative AFP Cases	Non-Polio Cases	Cases of the Week	Polio cases					NPAFP Rate	Stool Adequacy			Lab indicators (Pending lab cases excluded)			
					Polio Compatible	VDPV	Pending				Specimens (#)	Adequate Specimens	Stool adequacy	NPEV		Sabin like	
							Pending Lab/CLT	Pending Lab/ITD	Pending ERC					Number	Percent	Number	Percent
CENTRAL EQUATORIA HUB	737148	24	17	2	0	0	7	0	0	3.76	23	20	87%	1	4%	0	0%
EASTERN EQUATORIA HUB	674008	34	32	2	0	0	1	0	1	5.83	34	33	97%	4	12%	2	11%
JONGLEI HUB	982693	36	34	4	0	0	1	0	1	4.23	35	30	86%	5	14%	1	8%
LAKES HUB	791864	49	49	3	0	0	0	0	0	7.15	49	49	100%	5	10%	0	0%
NORTHERN BAHR EL GHAZAL HUB	987309	31	31	0	0	0	0	0	0	3.63	31	29	94%	5	16%	3	15%
UNITY HUB	864151	36	28	11	0	0	1	0	7	4.81	36	28	78%	4	11%	1	7%
UPPER NILE HUB	895541	40	33	4	0	0	1	0	6	5.16	40	24	60%	5	13%	3	14%
WARRAP HUB	1456973	49	48	2	0	0	0	0	1	3.89	49	45	92%	7	14%	0	0%
WESTERN BAHR EL GHAZAL HUB	316372	18	16	2	0	0	1	0	1	6.57	18	12	67%	1	6%	0	0%
WESTERN EQUATORIA HUB	516397	32	29	2	0	0	3	0	0	7.16	32	31	97%	4	13%	2	11%
<b>SOUTH SUDAN</b>	<b>8222455</b>	<b>349</b>	<b>317</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>17</b>	<b>4.90</b>	<b>347</b>	<b>301</b>	<b>87%</b>	<b>41</b>	<b>12%</b>	<b>12</b>	<b>7%</b>

2018\*



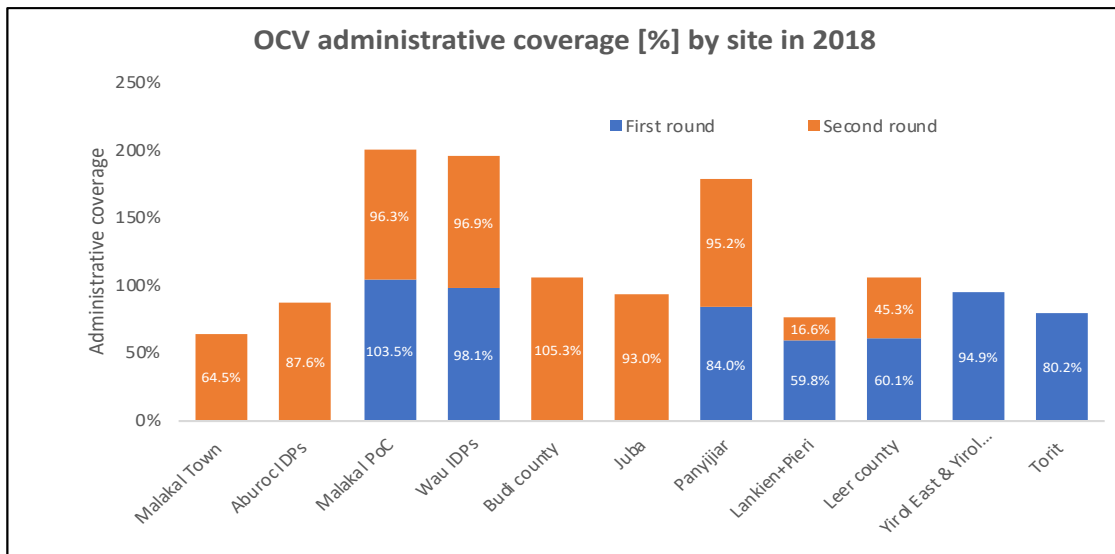
## Cholera preparedness and preventive activities - Oral cholera vaccine campaigns - 2018

Site	Total population	Target population	1st round doses	2nd round doses	Total doses	1st Round dates	2nd Round dates	Partners
Aburoc	11,640	11,291		11,550	11,550	20-22May2017	Jan 17- 20 2018	MoH, WHO, Unicef, MSF-E
Malakal Town	20,000	19,200		22,200	22,200	18-24Mar2017	Jan 5 - 9 2018	MoH, WHO, Unicef, MSF-E
Juba	214,887			206,292	206,292	9Sep - 24Nov 2017	Apr 24-28 2018	MoH, WHO, Unicef, MSF-F & Spain
Malakal PoC	24,424	23,691	34,291	34,291	68,582	19-23March 2018	Apr 17-21 2018	MoH, WHO, Unicef, IOM
Wau IDPs	40,499	39,284	56,860	56,860	113,720	19-23March 2018	Apr 17-21 2018	MoH, WHO, Unicef, IOM
Torit	180,169	174,764	174,764	174,764	349,528	9th - 14th Aug 2018	28Jul- 6Aug 2018	MoH, WHO, Unicef, SCI, CARE
Yirol East & West	170,189	165,083	165,083	165,083	330,167	20-29 July 2018	pending	MoH, WHO, Unicef, LiveWell, IOM
Lankien	38,000	36,860	36,860	36,860	73,720	28May -13Jun2018	suspended	MoH, WHO, Unicef, MSF-H
Panyijiar	75,000	72,750	75,000	75,000	150,000	16-22May2018	20-24 Jul2018	MoH, WHO, Unicef, IRC
Leer	50,000	48,500	48,500	48,500	97,000	13-15th Jun 2018 (Leer town) & 13th 18th Jul 2018 (Leer County)	24-29Aug (Leer Town); 8-13Aug (Leer County)	MoH, WHO, Unicef, MedAir
<b>Totals</b>	<b>824,808</b>	<b>800,064</b>	<b>591,358</b>	<b>831,400</b>	<b>1,422,759</b>			

- Cholera prevention and response activities are already underway to mitigate the risk of cholera outbreaks in cholera transmission hotspots
- These efforts are critical now as the rain season is starting for the states in the Southern parts of the country.
- The use of oral cholera vaccines alongside WASH and other interventions is critical to these efforts
- Preventive vaccine campaigns (with oral cholera vaccines) for the first half of 2018 are listed in the table
- The National Cholera Control Plan is being finalized by a consultant secured with support from the GTFCC
- Validation of the National Cholera control plan is planned for August 2018
- A consignment of 96,285 doses of oral cholera vaccine from the ICG arrived in the country on 4Jul 2018 for the pre-emptive campaign in Leer county
- Another 352,660 doses of oral cholera vaccine from the GTFCC arrived in the country on 18 July 2018 for the campaigns in Panyijiar and Yirol

- **Oral cholera vaccine campaigns completed in 2018 include:**
  - Malakal Town (2<sup>nd</sup> round)
  - Aburoc IDPs (2<sup>nd</sup> round)
  - Malakal PoC (1<sup>st</sup> & 2<sup>nd</sup> round)
  - Wau PoC+IDPs (1<sup>st</sup> & 2<sup>nd</sup> round)
  - Juba Town (1<sup>st</sup> & 2<sup>nd</sup> round)
  - Panyijiar (1<sup>st</sup> & 2<sup>nd</sup> round)
  - Leer county (1<sup>st</sup> & 2<sup>nd</sup> round)
  - Yirol East and Yirol West (1<sup>st</sup> round)
- **Upcoming campaigns for 2018**
  - Torit (2<sup>nd</sup> round)
  - Yirol East and Yirol West (2<sup>nd</sup> round)

### Oral cholera vaccine campaigns administrative coverage - 2018



2018 OCV campaigns	Site	Target	First round		Second round	
			Coverage	Coverage %	Coverage	Coverage %
1	Malakal Town	19,200			12,393	64.5%
2	Aburoc IDPs	9,683			8,484	87.6%
3	Malakal PoC	23,447	24,277	103.5%	22,588	96.3%
4	Wau IDPs	37,048	36,337	98.1%	35,887	96.9%
5	Budi county	89,377			94,128	105.3%
6	Juba	216,852			201,737	93.0%
7	Panyijiar	75,000	63,000	84.0%	71,378	95.2%
8	Lankien+Pieri	38,000	22,712	59.8%	6,294	16.6%
9	Leer county	48,125	28,930	60.1%	21,819	45.3%
10	Yirol East & Yirol West	165,081	156,682	94.9%		
11	Torit	158,297	126,895	80.2%		
	<b>Total</b>	<b>544,998</b>	<b>458,833</b>	<b>84.2%</b>	<b>474,708</b>	<b>85.3%</b>

The following OCV campaigns have been completed in 2018:

1. Malakal Town (2<sup>nd</sup> round)
2. Aburoc IDPs (2<sup>nd</sup> round)
3. Budi county (2<sup>nd</sup> round)
4. Malakal PoC (1<sup>st</sup> & 2<sup>nd</sup> round)
5. Wau PoC+IDPs (1<sup>st</sup> & 2<sup>nd</sup> round)
6. Juba (2<sup>nd</sup> round)
7. Panyijiar (1<sup>st</sup> & 2<sup>nd</sup> round)
8. Leer county (1<sup>st</sup> & 2<sup>nd</sup> round)
9. Lankien (1<sup>st</sup> round)
10. Pieri (1<sup>st</sup> & 2<sup>nd</sup> round)
11. Yirol East & Yirol West (1<sup>st</sup> round)
12. Torit county (1<sup>st</sup> round)



# Ebola update DRC 23 Nov 2018

## Current situation

- Currently in 16<sup>th</sup> week of the outbreak
- **399** Cases [352 confirmed & 47 probable]
- **228** Deaths [181 confirmed & 47 probable]
- **37** Health workers [29 confirmed & 10 dead]

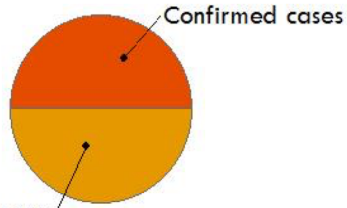
## Response update

- **4668** contacts under surveillance [93-94% followed up]; **28,727** vaccinated
- **110** cases discharged from ETCs
- **130** cases admitted in ETUs as of 19 Nov 18

## Affected health zones

- **2** provinces [North Kivu & Ituri]
- **14** health zones [10 North Kivu & 3 in Ituri]
- **Kalunguta, Beni, Butembo/Katwa** (North Kivu) – principle hotspots

**Boundaries and Locations Subject to Confirmation**



Probable cases

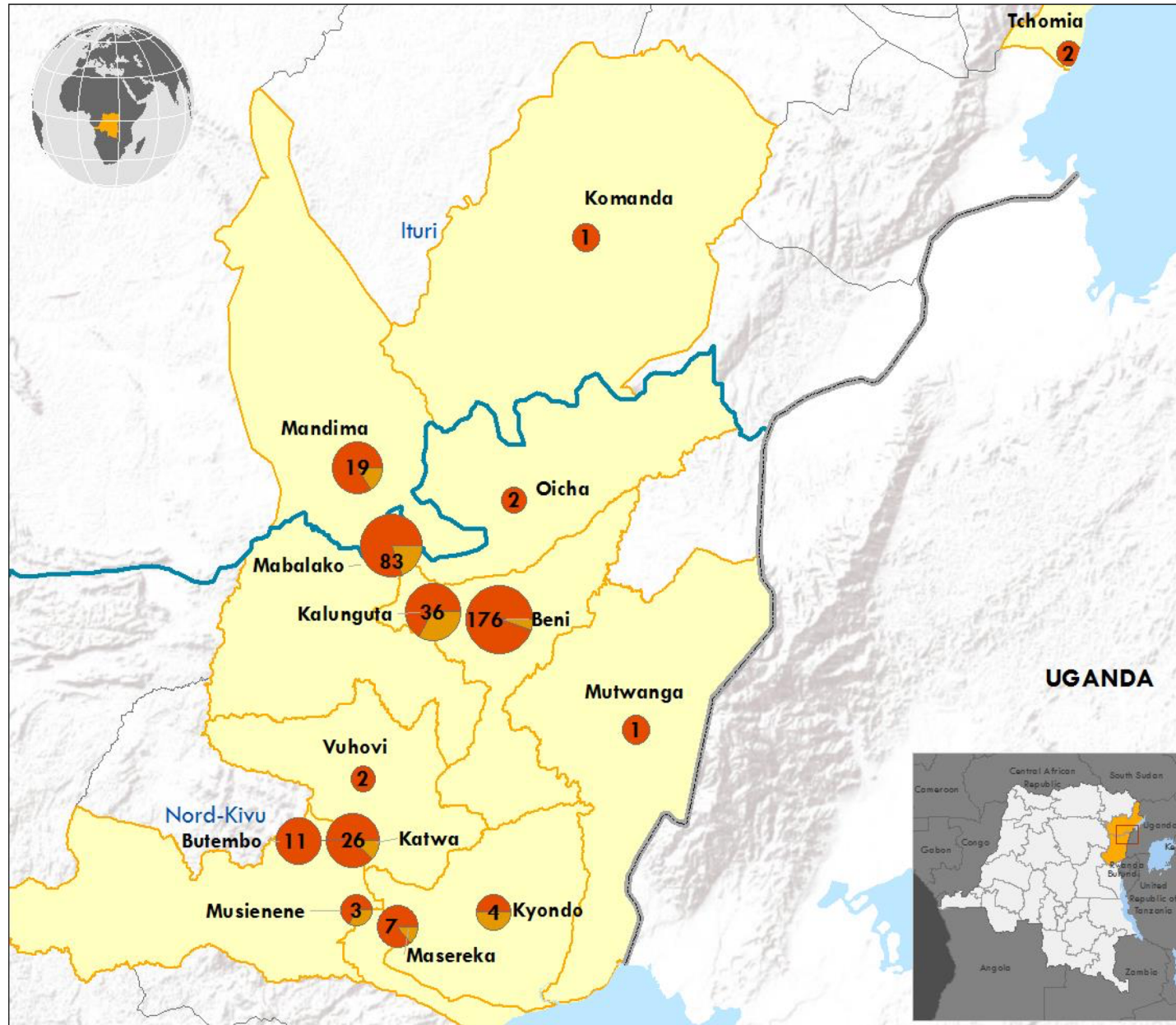
Major city

Health Zone reporting probable or confirmed cases

Health Zone

Province

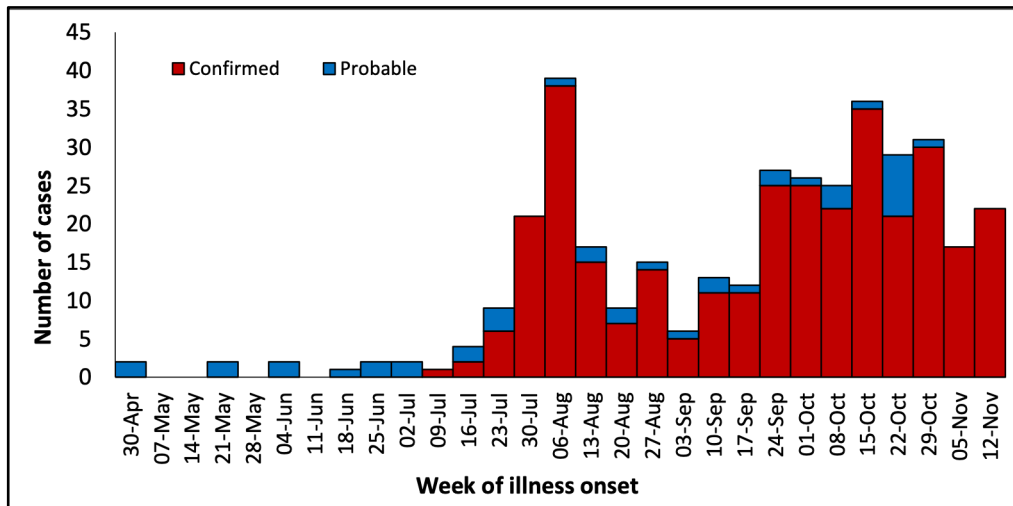
National boundary



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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. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

# EVD trends & case distribution in DR Congo



- The graph still shows **persistent transmission**
- **Several peaks** since outbreak was declared

- 61% cases female
- Most cases in **males** are **35-44yrs**; & **15-24yrs** in the **females**

# EVD risk assessment

- Very high-risk of regional spread to priority 1 countries like South Sudan
- On 17 Oct 2018; Emergency committee determined that **EVD outbreak in DRC does not constitute** a Public Health Emergency of International Concern (PHEIC)
- Priority 1 countries like South Sudan urged to:
  - Accelerate **preparedness & surveillance**
  - Strengthen **risk communications**
  - **Vaccinating frontline HCWs** in areas bordering DRC

## *Ebola preparedness in South Sudan*

### **EVD preparedness activities undertaken in South Sudan**

- South Sudan, as a priority one (1) country for Ebola virus disease outbreak (EVD) preparedness continues to make progress to enhance capacities for EVD case detection, investigation, response, and prevention.
- The national Ebola taskforce continues to meet twice weekly and is coordinating the implementation of the EVD contingency plan. The Ebola taskforce working groups are currently updating and implementing the EVD contingency plan to enhance readiness capacities for EVD response.
- Detailed preparedness update can be accessed <https://www.afro.who.int/publications/weekly-update-ebola-virus-disease-evd-preparedness-south-sudan>



South Sudan Ebola Response | Monitoring of EVD screening activities at Points of Entry in countries prioritized for Ebola preparedness activities

Year: 2018

Week number: W46

From: 2018-11-12

To: 2018-11-18

Name of PoE	Passengers Screening Information			EVD Alerts		
	# screened	# isolated	# under Voluntary Home Quarantine	# reported	# validated	# suspects
Bazi Border	0	0	0	0	0	0
Gangura Border	34	0	0	0	0	0
Juba International Airport	4,321	0	0	0	0	0
Kaya	0	0	0	0	0	0
Kaya Border	0	0	0	0	0	0
Maridi Airstrip	22	0	0	0	0	0
Nimule Border	0	10	0	0	0	0
Okaba	0	0	0	0	0	0
Panjala Docking River	543	0	0	0	0	0
Sakure Border	42	0	0	0	0	0
Tikori	0	0	0	0	0	0
Wau Airport	33	0	0	0	0	0
Yambio Airport	14	0	0	0	0	0
Yei Airport	22	0	0	0	0	0
Yei RRC	27	0	0	0	0	0
South Sudan	5,058	10	0	0	0	0

The electronic EWARS platform for capturing, aggregating, and analyzing points of entry screening data is now up and running with the table above, summarizing the number of travelers screened in week 46 at the active points of entry being exported from the web-based platform.



## Response | Suspect outbreaks in 2018

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
13Mar18	meningitis	16 (00)	Duk	Ayueldit	On 12 Mar 2018; a 3 year old male from Buongjok area, Ayueldit payam was admitted to Padiet PHCC. The health partner SMC requested for guidance on managing the case and the WHO Bor team shared the meningitis case management guidelines. Surveillance was stepped up but no additional cases were identified.
17Feb18	meningitis	173 (31)	Torit	Iyire and Imurok	After rumors of strange illness in Iyire, several RRT verification and response missions have been undertaken since 20Feb18. Torit county surpassed in the alert and epidemic thresholds in week 7 and week 9 respectively. There was no conclusive laboratory confirmation due to sample contamination . Overall coordination, case surveillance, line listing, and investigation are ongoing. Transmission declined after week 9 with the weekly attack rate falling below the alert and epidemic threshold in weeks 11-18, 2018. Plans underway to conduct meningitis training for the NRRT and laboratory team at NPHL & in the state hubs
10Mar18	meningitis	3 (0)	Cueibet		Since 10 Mar 2018, at least three suspect meningitis cases have been reported by CUAMM in Cueibet hospital. However, no samples were collected.
02Feb2018	meningitis	52 (06)	Aweil South (14cases) Aweil East (18 cases) Aweil West (11 cases) Aweil North (4 cases)	Aweil hub	Since 2Feb2018, at least 52 suspect cases (6 deaths) have been reported in Aweil hub. Six samples positive for <i>Streptococcus pneumoniae</i> following rapid pastorex testing or showed gram positive diplococci on gram stain. None of the affected counties exceeded the alert threshold for meningitis.
06Jan18	meningitis	03 (00)	Abyei and Twic	Rumkor and Pan-nyok	The two suspect cases were treated in Agok hospital on 4 Jan and 29 Jan respectively with initial diagnoses of severe malaria but final diagnosis was bacterial meningitis. Rapid pastorex testing sample for the 2 <sup>nd</sup> & 3 <sup>rd</sup> suspect case from Twic and Abyei counties respectively were positive for <i>Streptococcus pneumoniae</i> .
14Feb18	meningitis	21(03)	Wau (Jur River)	Udici, Roc Roc Dong	Since 14 Feb; 20 suspect meningitis cases have been reported from Wau (11 cases - 2deaths) and Jur River (9 cases - 1 death) counties. A suspect case involving a 45 year old male from Jur River was admitted in Comboni hospital on 28 Feb 18. PCR testing was positive for <i>Streptococcus pneumoniae</i> . Another suspect case tested positive for NmA by rapid pastorex at NPHL on 27/4/18.

## Response | Suspect outbreaks in 2018

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
16Mar2018	Measles	08(01)	Mayom	Riak & Lol Maroal	Suspect measles cases reported from Riak payam in Nyebola village since 9 Mar 2018. Four samples were obtained by MSF-CH for testing. Three of the four samples tested were positive for rubella IgM.
16Feb18	Health effects of petroleum drilling	Unspecified	Pariang	Pariang	A newswire indicates the Mayor of Pariang in Ruweng State has appealed to the Ministry of Health to establish some health conditions affecting people in the oil producing area. <a href="http://bit.ly/2EIndTP">bit.ly/2EIndTP</a> #SouthSudan. Initial verification details to follow
31Mar2018	Suspect meningitis /malaria	12(08)	Gogrial West	Kuach South	On 28 <sup>th</sup> Mar 2018; the Director Gogrial West reported community deaths in Kuach South that were verified by the RRT on 29 Mar 2018. The clinical and lab tests on suspect cases were consistent with malaria and the cases responded to treatment with ACTs. All the deaths were 10 years and above and 50% of the deaths were 20 years and above. Given the dramatic nature of symptoms, the other differential diagnosis to keep an eye on is epidemic meningitis. No new cases reported in weeks 14 and 15.
12/Apr/18	pertussis	18(00)	Fangak	Bei	Suspect pertussis cases have been reported by Mandeang PHCU and Kuephone PHCU in Fangak county. At least 11 suspect cases have been reported from Bei payam and another 7 suspect cases from Jiath. The response instituted by the partner CMA - entails treatment of cases and prophylaxis to close contacts and enhancing routine immunization for the infants.
22/05/18	cholera	2	Lopa	Imehejek	Two suspect cholera cases reported from Imehejek, Lopa from 22May18; the index ate cold food at a local market; direct RDT positive for cholera; all two samples negative for cholera after culturing in NPHL.
21/05/2018	measles	40	Rumbek Center	Teyau	Eight suspect measles cases reported from Teyau, Rumbek Centre - MMT dispatched for the investigation. Specimens obtained. Outbreak confirmed & reactive vaccination done.
23/05/18	measles	2	Mayom	Tam & Wangbur	Two suspect measles cases reported from Mayom (Tam & Wangbur payams) samples sent to Juba by MSF-CH
16/05/18	measles	1	Torit	Nyong	One suspect measles case reported from Nyong payam in Torit. Specimen collected



Response | Suspect outbreaks in 2018

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
30/05/2018	Acute jaundice	01(00)	Torit	Torit town	On 30 May 2018, a 2year and eight month child was admitted to Torit Hospital with fever, yellow eyes, and vomiting, Specimen obtained for testing and sent to Juba. First test results in week 26; showed the sample was negative for HEV by PCR. Further tests were IgM negative for YF, ZIKV, CHIK, WNV and DEN.
28/05/2018	Measles	2 (00)	Awerial		Two suspect measles cases reported and investigated in Awerial county. Samples have been collected and shipped to Juba for laboratory testing.
26/06/2018	Measles	14	Yirol East		Fourteen suspect measles cases have been reported and investigated in Adior payam. Samples have been collected for testing.
26/06/2018	Measles	1	Yirol West		One suspect measles cases was reported in week 26.
10/06/2018	Measles	18	Bentiu PoC		18 suspect measles cases were reported in Bentiu PoC from 10 June 2018. Samples have been obtained for laboratory testing
28/06/2018	Measles	6	Jur River		New suspect Measles cases reported from (Thilij) village in Wau Bai payam in Jur River county, an investigation team dispatched on 28 <sup>th</sup> June and they investigated & collected 6 blood samples
02/07/2018	Measles	6(0)	Twic		Five suspected measles cases have been reported in Twic County. They were investigated and samples were collected pending transportation to Juba. Line-listing and investigation reports had been prepared.
13/07/2018	cholera	Deaths	Awerial	Magok	On 13 <sup>th</sup> July; suspect cholera deaths were reported from Magok, Awerial county. Initial verification by MoH/WHO has not revealed suspect cholera deaths in the area. Further verification by the CHD revealed on additional information to confirm the alert.
25/07/2018	Acute Jaundice	3 (02)	Leer TPA	Leer Town	Three AJS (suspect HEV) deaths reported in Leer TPA are being investigated. Surveillance has been strengthened to detect and investigate subsequent cases; and WASH has been stepped up.
20/07/2018	measles	1	Aweil Center		A suspect measles case reported from Aweil Center county and investigated (sample collected for testing).

## Response | Suspect outbreaks in 2018

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
10/08/2018	Suspect measles & pertussis	unspecified	Nyirol	Waat	On 10 Aug 2018, CMA reported a cluster of suspect measles and pertussis cases in Waat payam, Nyirol county. The area has not been reached with immunization (routine or supplementary) in the last one year. Emergency supportive response is underway and there are preparations to line list and collect samples from suspect cases.
8/08/2018	Suspect cholera	1	Juba	Juba	Suspect cholera case reported in EB clinic and referred to Juba Teaching hospital. Test results awaited.
8/08/2018	Animal bites (suspect rabies)	12	Yambio	Yambio town	Animal bites (suspect rabies) involving 12 cases including 2 children were reported in Yambio town and were attributed to stray dogs. A multisectoral meeting convened in Yambio and from the national level - human & animal rabies vaccines are being shipped to support the response. IEC materials are being adapted to support rabies risk communication.
8/08/2018	Suspect Guinea worm	2	Aweil	Aweil town	Two suspected Guinea worm cases were reported and investigated in Aweil State hospital. There was no hanging worm found the patients are being monitored
24/08/2018	Suspect Guinea worm	1	Nyirol	Lankien	One suspect Guinea worm case reported in Lankien. The SSGWEP has been initiated to initiate detailed investigations into the suspect case
05/08/2018	Suspect HEV cases	8	Fangak	Fangak	From Fangak, one suspect HEV was reported in week 33. Since week31, a total of 7 HEV RDT positive cases have been reported from Fangak. All the cases have occurred in adults (one in a postpartum female). The cases appear to be occurring sporadically and are using River water (largely from Phow river). Community awareness and hygiene promotion are ongoing. Samples sent to Uganda for PCR testing.
17/08/2018	Suspect Yellow Fever	1 (01)	Pibor	Pibor Town	A 23 year old male presented to Pibor PHCC on 12/08/2018 with history of fever, yellowing of eyes, agitation, convulsions, vomiting, coma, and bleeding from 06/Aug/2018. Patient died and autopsy sample tested PCR negative for YF, DENV3 and DENV4. Further histochemical testing underway.
08/Sept/18	Suspect VHF	1	Yambio	Bakiwiri	One EVD alert reported and investigated by the rapid response team during the week in Bakiwiri Boma, Yambio county. The presentation was not consistent with EVD case definition and there was no epidemiological linkage to EVD case or the outbreak in DR Congo. Sample tested PCR negative for Ebola, Marburg, CCHF, RVF, and Sosuga.

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
10/09/2018	Suspect cutaneous anthrax	6	Gogrial West	Kuach North	During week 37, a suspect case of subcutaneous anthrax was detected in Kuajok hospital. The case originated from Wun-acier village, Monjiooc Boma in Gogrial West County. Follow up investigations revealed five additional cases, with lesions suggestive of subcutaneous anthrax. There were no human deaths linked to this case cluster. Outbreaks of similar cases were reported in the neighboring villages in 2011, 2013, and 2015, suggesting that the disease is endemic in the villages and county as a whole.
10/09/2018	Malaria alerts	counties with trends significantly higher than expected	15		Counties with malaria trends that exceed the threshold (third quartile of trends for the period 2013-2017) include: Aweil hub (Aweil Center); Rumbek hub (Rumbek Center, Rumbek East, Rumbek North, Wulu, Yirol East, Yirol West); Kuajok hub (Abyei, Gogrial East, Tonj East, Tonj South, and Twic Mayardit); Bentiu hub (Mayom); and Juba hub (Terekeka).
20/08/2018	Suspect rabies	30	Torit	Nyong, Himo donge	Animal bite (suspect rabies) have been on the increase in Torit county with 30 cases (no deaths) reported since 20 Aug 2018. The cases are distributed evenly by gender. Nearly 70% of the cases were reported in children aged 0-19 years. Nyong and Himo donge are the most affected payams.
04/08/2018	Suspect measles	11 (0)	Yirol West	Yirol Town; Abang	Since 4 Aug 2018; at least 11 suspect measles cases have been reported in Yirol hospital (originating from Yirol Town and Abang). Six samples have been collected for laboratory testing.
26/09/2018	Suspect Ebola	1 (01)	Juba	Northern Bari	On 26/09/2018; the PHEOC received a call of a suspect Ebola death involving a 25 year old businessman and Ethiopian by Nationality ; the illness of the case started on 24/08/2018 with fever, headache, and cough. He received treatment from a private clinic the same day and improved. Hence on 26/09/2018; he went to work but his condition changed suddenly; he started vomiting blood; collapsed and died as he was being rushed to the nearby clinic. The samples reached Uganda Virus Research Institute (UVRI) on 27 <sup>th</sup> September 2018 and the results released by the laboratory on 28 <sup>th</sup> September 2018 showed that the samples were negative for Ebola, Marburg, CCHF, RVF and Sosuga viruses by PCR.

Response | Suspect outbreaks in 2018

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
17/09/2018	Suspect rabies	10	Rubkona	Bentiu town	Suspect rabies have been reported in Bentiu town; MSF is supporting the management of cases but there is no rabies vaccine in stock to facilitate post-exposure prophylaxis
17/09/2018	Suspect measles	3	Wau; Jur River	Wau South; Jur River	Three suspect measles cases [one case in Agok village, Wau South Payam; and 2 suspect cases in Marial Ajieth village, Jur River] were investigated during the week and samples sent to Juba for testing. Laboratory results for 10 samples (from Jur River; Wau; & Raja) were released on 10/10/2018; all tested measles and rubella IgM negative.
17/09/2018	Suspect pertussis	7	Jur River; Wau	Kuajiena; Udici; Wau South & Wau North	From week 37, 2018, a cluster of seven suspect pertussis cases were reported from Chono PHCU and Mapel PHCC (Chono; Magala; & Gango villages). Additional cases were identified in Wau North and Wau South payam. An investigation was undertaken on 28 Sept 2018; confirmed clinical presentation was consistent with pertussis. No form of vaccination has been undertaken in the population in the last three years since the area has been under opposition control. Regular primary health care and routine vaccination outreaches were recommended for the affected areas.
03/10/2018	Suspect Ebola virus disease	1 (01)	Yei	Yei town	A suspect Ebola deaths was reported to the PHEOC on 3 Oct 2018; the rapid response team deployed to investigate the death on 4 Oct 2018; but were unable to locate the home or grave of the suspect death. Follow up investigations involving the community leaders have not yielded any additional information.
12/10/2018	Suspect Ebola virus disease	1	Rumbek Center	Rumbek Town	On 12 October 2018, an Ebola alert was reported from UNMIS Rumbek involving UNMISS staff that presented on the 10/10/2018 with fever and headache but without any wet symptoms. He tested positive for malaria but CBC and platelet counts were normal. He is currently on treatment for malaria and is confined to his home. The rapid response team has been constituted to investigate and collect samples for Ebola testing. Sample PCR negative for Ebola, Marburg, RVF, CCHF, and Sosuga viruses.
18/10/2018	Suspect Ebola virus disease	1 (01)	Mundri East	Mundri East	A suspect VHF case reported in Lui hospital on 12/10/2018. Symptoms included fever, abdominal pains, nose bleeding, hematemesis and comma. Died on 14/10/2018. No epidemiological link to similar cases. Sample collected and arrangements are underway to ship the sample to Juba. Sample tested PCR negative for Ebola, Marburg, RVF, CCHF, Sosuga.

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
07/01/2018	Suspect rabies	848	Abyei	Abyei	An increase in suspect rabies cases is reported in Abyei town where at least 848 animal bites have been reported (week 1-42, 2018). The most affected are children 10-19 years. Dog vaccination is currently underway by the South Sudan Veterinary Association.
10/07/2018	Suspect HEV	7 (02)	Abyei	Abyei	Suspect HEV cases have been reported in Abyei town with 7 cases including 6 HEV RDT positive cases and two deaths have been reported. An integrated Health-WASH assessment and response is planned.
21/10/2018	Ebola virus alert	1	Yambio	Yambio	The Ebola alert was reported from Yambio hospital on 21 Oct 2018. The case improved on treatment and has since been discharged on 25 Oct 2018. Sample PCR negative for Ebola, Marburg, RVF, CCHF, and Sosuga viruses.
26/10/2018	Suspect measles	3	Malakal	Malakal PoC	From 26th to 27th October 2018; three new suspect measles cases were reported in Malakal PoC. Samples collected for testing in Juba.
25/10/2018	Suspect Guinea worm	2	Gogrial West & Tonj North	Alabek & Kuac North	In week 42, two suspect Guinea worm cases were reported from Pankot village, Langkap Boma at Alabek Payam in Tonj North County; and Thurachol village, Ajiop Boma, Kuac North Payam in Gogrial West County. Sample PCR negative for Ebola, Marburg, RVF, CCHF, and Sosuga viruses.
29/10/2018	Ebola alert	2	Pageri	Nimule	Two Ebola alerts involving a 6 year old boy and a 9 year old boy that presented with malaria like symptoms and nose bleeding without any history of contact with a bleeding or severely ill case or travel to an Ebola area. The alerts were discarded as they did not meet the case definition.
09/11/2018	Suspect measles	7	Rumbek East		At least 7 measles suspect cases reported in Rumbek East; an investigation team is being dispatched from Rumbek on 12/11/2018 to verify and investigate the reports.
11/11/2018	Suspect Ebola	1 (1)	Lainya	Loka	A suspect Ebola death reported in Yei Civil hospital on 11/11/2018. The illness started on 6/11/2018 with fever; headache, diarrhoea; and then on 9/11/2018; he developed nose bleeding and hematemesis before he died on 11/11/2018. Sample collected same day and SDB planned. Sample to be transported to Juba on 12/11/2018. Sample PCR negative for Ebola, Marburg, RVF, CCHF, and Sosuga viruses.

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
20/10/2018	Suspect measles	3	Bor South	Bor PoC	At least three suspect measles cases reported from Bor PoC since 20/10/2018. All tested measles IgM positive following tests done in Juba. Reactive measles campaign planned.
24/11/2018	Suspect Ebola	1	Nzara	Sakure	A suspect Ebola case was reported from Sakure on 23/11/2018 and investigated by the rapid response team on 24/11/2018. Preliminary testing in Juba on 24/11/2018 were negative for Ebola Zaire following GeneXpert testing. Further testing to follow at UVRI in Uganda

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