

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W36 2018 (Sep03- Sep09)



Ministry of Health
Republic of South Sudan



World Health
Organization
South Sudan

- Completeness for IDSR reporting at county level was 80% . Completeness for EWARS reporting from IDP sites was 75%.

- A total of 15 alerts were reported, of which 100% have been verified. 3 alerts was risk assessed & 1 required a response.

- A combined measles/OPV campaign has been completed in response to the suspect measles outbreak in Bentiu PoC and a response is planned for Yirol East county.

- An Ebola virus disease alert was reported and investigated by the rapid response team in Bakiwiri Boma, Yambio on 8 Sep 2018. The case clinical presentation was not consistent with EVD case definition and there was no epidemiological linkage to suspect EVD cases or the current EVD outbreak in DR Congo.

- There was no new suspect Rift Valley Fever (RVF) case reported from Yirol East in week 36. 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).

- No new suspect HEV case reported in week 36. A total of 132 HEV cases (15 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.

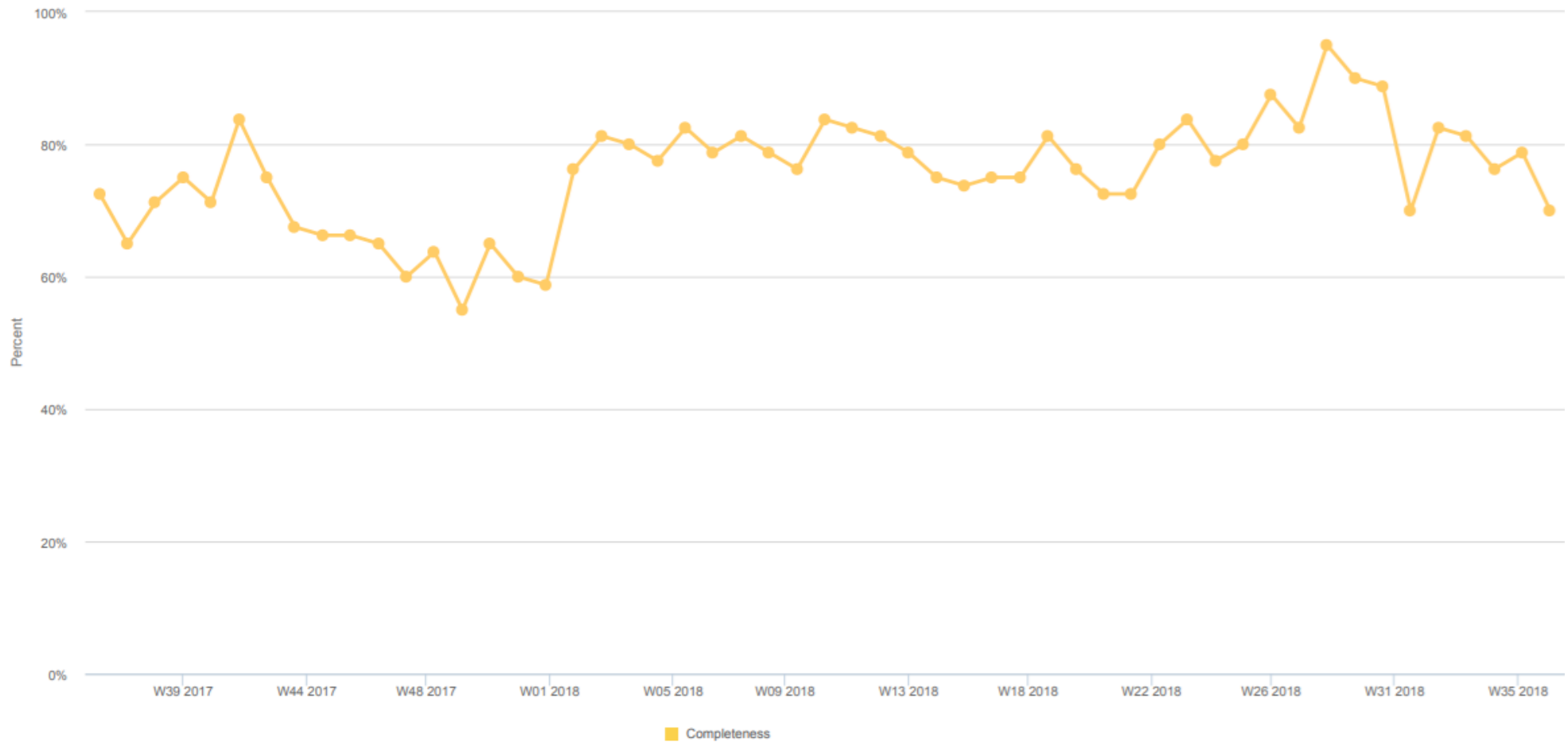
- In light of the confirmed EVD outbreak in North Kivu, the South Sudan EVD contingency plan has been updated to mitigate the risk of EVD importation and enhance readiness capacities.

Table 1 | IDSR surveillance performance indicators by county (W36 2018)

Hub	Reporting		Performance (W36 2018)		Performance (Cumulative 2018)	
	# counties	# reports received	Completeness	Timeliness	Completeness	Timeliness
Aweil	5	4	80%	80%	87%	87%
Bentiu	9	8	89%	89%	70%	56%
Bor	11	4	36%	36%	49%	46%
Juba	6	6	100%	100%	86%	73%
Kwajok	7	7	100%	100%	100%	91%
Malakal	13	4	31%	31%	56%	24%
Rumbek	8	7	88%	88%	100%	92%
Torit	8	4	50%	50%	94%	73%
Wau	3	2	67%	67%	91%	75%
Yambio	10	10	100%	100%	99%	99%
South Sudan	80	56	70%	70%	80%	70%

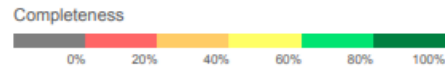
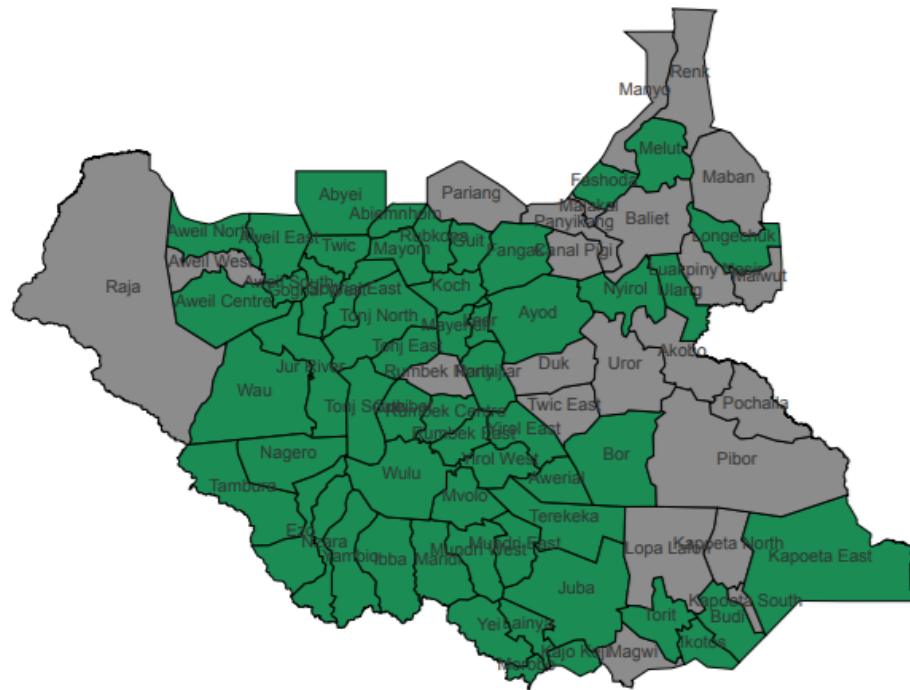
- Completeness for IDSR reporting at county level was 70% in week 36 and cumulatively at 80% for 2018.
- Timeliness for IDSR reporting at county level was 70% in week 36 and cumulatively at 70 % for 2018

Figure 1 | Trend in IDSR completeness over time¹

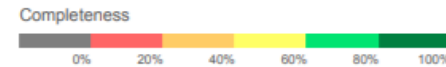
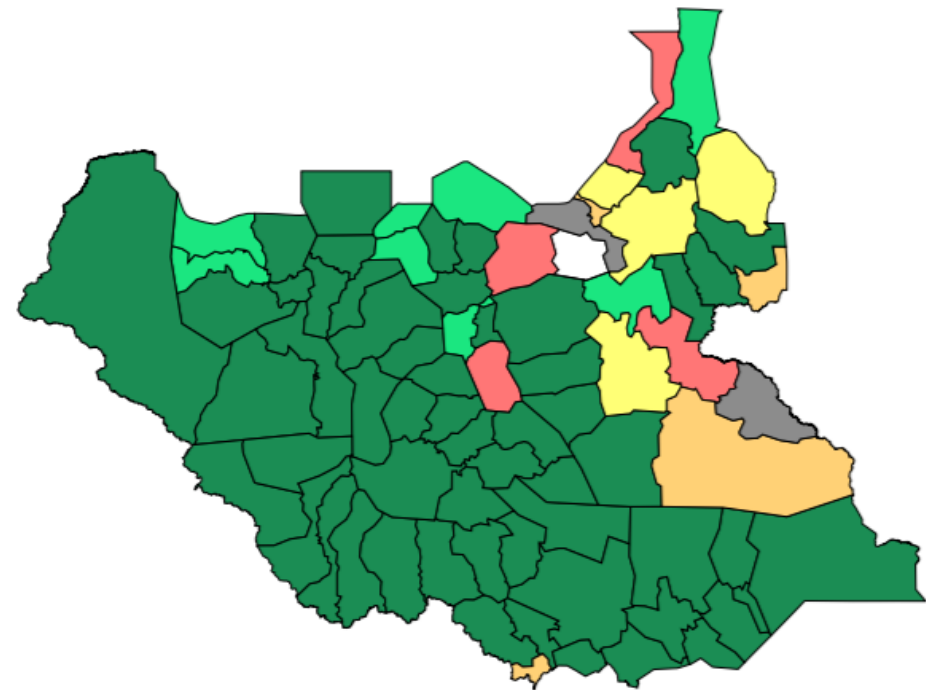


The graph shows completeness for weekly reporting at county level. The national average currently stands at 80%.

Map 1a | Map of IDSR completeness by county (W36 2018)



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



- Counties that submitted IDSR reports in W36 are shown in green in map 1a
- Counties that did not submit IDSR reports in W36 are shown in grey in map 1a

Table 4 | EWARS surveillance performance indicators by partner (W36 2018)

Partner	Performance		Reporting (W36 2018)		Reporting (Cumulative 2018)	
	# sites	# reports received	Completeness	Timeliness	Completeness	Timeliness
CMD	3	3	100%	100%	35%	34%
GOAL	2	2	100%	100%	100%	92%
HLSS	1	1	100%	100%	100%	100%
IMA	5	5	100%	100%	81%	78%
IMC	6	5	83%	83%	95%	94%
IOM	12	9	75%	75%	73%	73%
IRC	1	0	0%	0%	97%	94%
Medair	2	2	100%	100%	94%	92%
MSF-E	2	0	0%	0%	72%	58%
MSF-H	2	1	50%	50%	78%	56%
SMC	4	4	100%	100%	83%	83%
UNIDO	1	1	100%	100%	103%	103%
UNKEA	2	2	100%	100%	92%	89%
World Relief	1	1	100%	100%	97%	86%
TRI-SS	7	1	14%	14%	28%	28%
LIVEWELL	4	4	100%	100%	28%	28%
Total	55	41	75%	75%	70%	68%

Timeliness and completeness for EWARN/IDP reporting stands at 75% for week 36, while cumulatively timeliness and completeness are 68% and 70% respectively for 2018.

Table 7 | Alert performance indicators by Hub

Hub	W36		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Aweil	1	100%	37	95%
Bentiu	1	100%	71	73%
Bor	1	100%	51	65%
Juba	1	100%	72	69%
Kwajok	0	0%	37	100%
Malakal	5	100%	56	68%
Rumbek	2	100%	48	75%
Torit	0	0%	45	82%
Wau	0	0%	38	68%
Yambio	4	100%	83	59%
South Sudan	15	100%	538	73%

Table 8 Summary of key alert indicators

W36	Cumulative (2018)	
15	538	Total alerts raised
100%	73%	% verified
0%	0%	% auto-discarded
0%	3%	% risk assessed
0%	1%	% requiring a response

A total of 15 alerts were reported in week 36 with 100% of the alerts in week 36 being verified; 3% were risk assessed and 1% required a response.

Table 9 | Alert performance indicators by event

Event	W36		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	3	100%	107	66%
AWD	3	100%	180	67%
Bloody Diarr.	4	100%	134	55%
Measles	4	100%	110	83%
Meningitis	0	0%	0	0%
Cholera	0	0%	6	100%
Yellow Fever	0	0%	4	75%
Guinea Worm	0	0%	21	90%
AFP	1	100%	49	100%
VHF	0	0%	3	100%
Neo. tetanus	0	0%	5	60%
Event-based surveillance				
EBS total	0	0%	27	67%

Table 10 | Event risk assessment

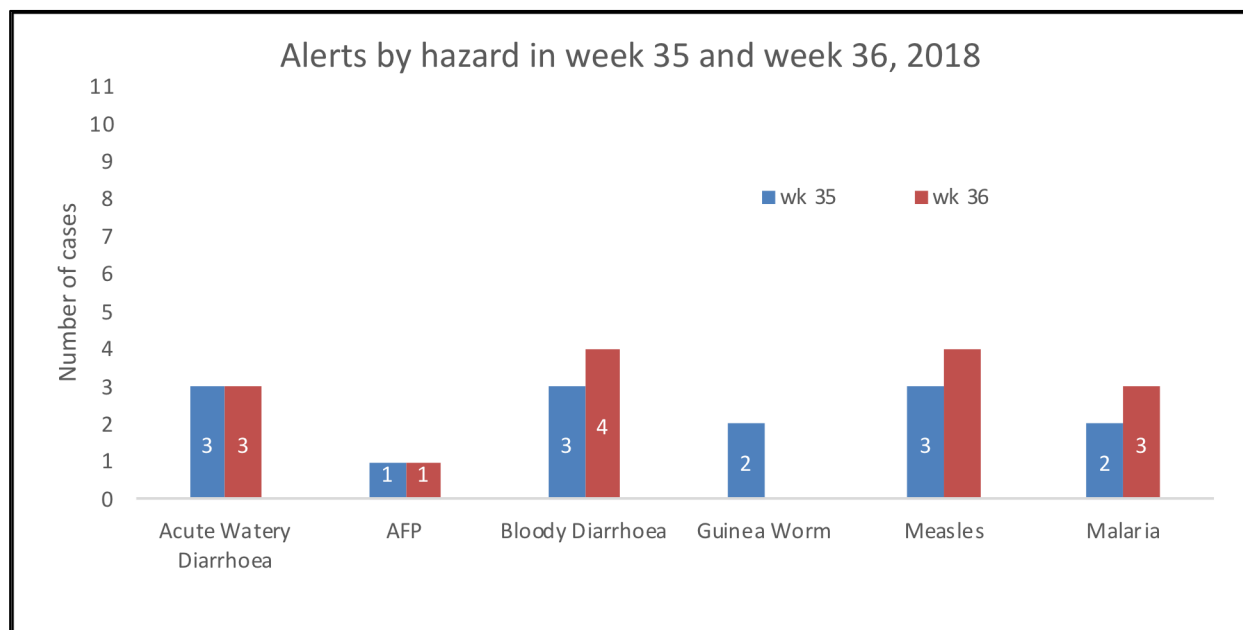
W36	Cumulative (2018)	
0	8	Low risk
2	2	Medium risk
0	3	High risk
0	1	Very high risk

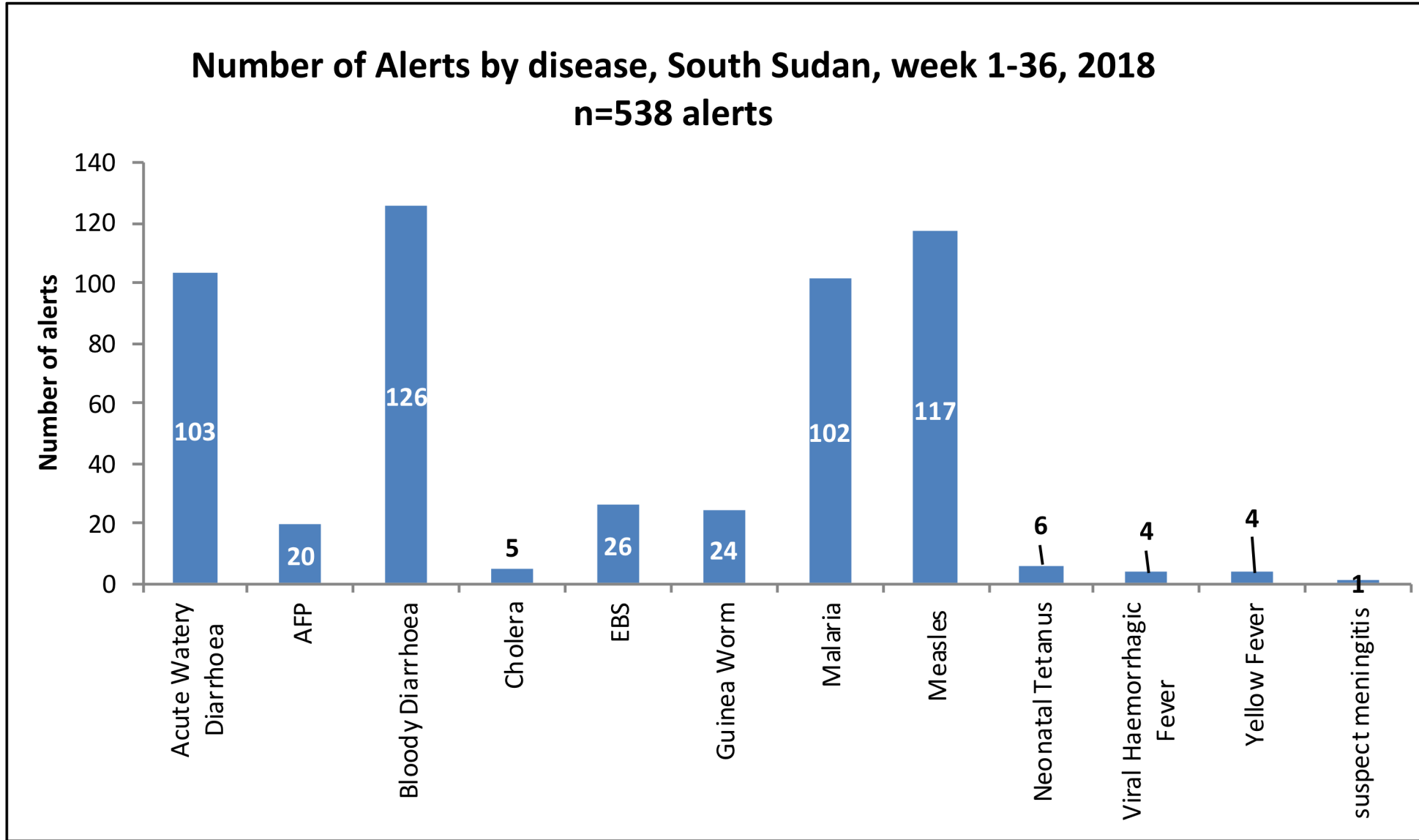
During the week, suspect measles was the most frequent infectious hazard reported.

Alert by disease and county in W36 2018

County	Acute Watery Diarrhoea	AFP	Bloody Diarrhoea	Measles	Malaria	Total Alerts
Aweil East			1			1
Fashoda	1	1			1	3
Juba				1		1
Nyirol					1	1
Rubkona				1		1
Tambura	1		1	1	1	4
Yirol East	1			1		2
Nasir			2			2
Total Alerts	3	1	4	4	3	15

- During week 36, a total of 15 alerts were reported through EWARS
- Measles, malaria, and acute watery diarrhoea were the most frequent alerts in the week





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

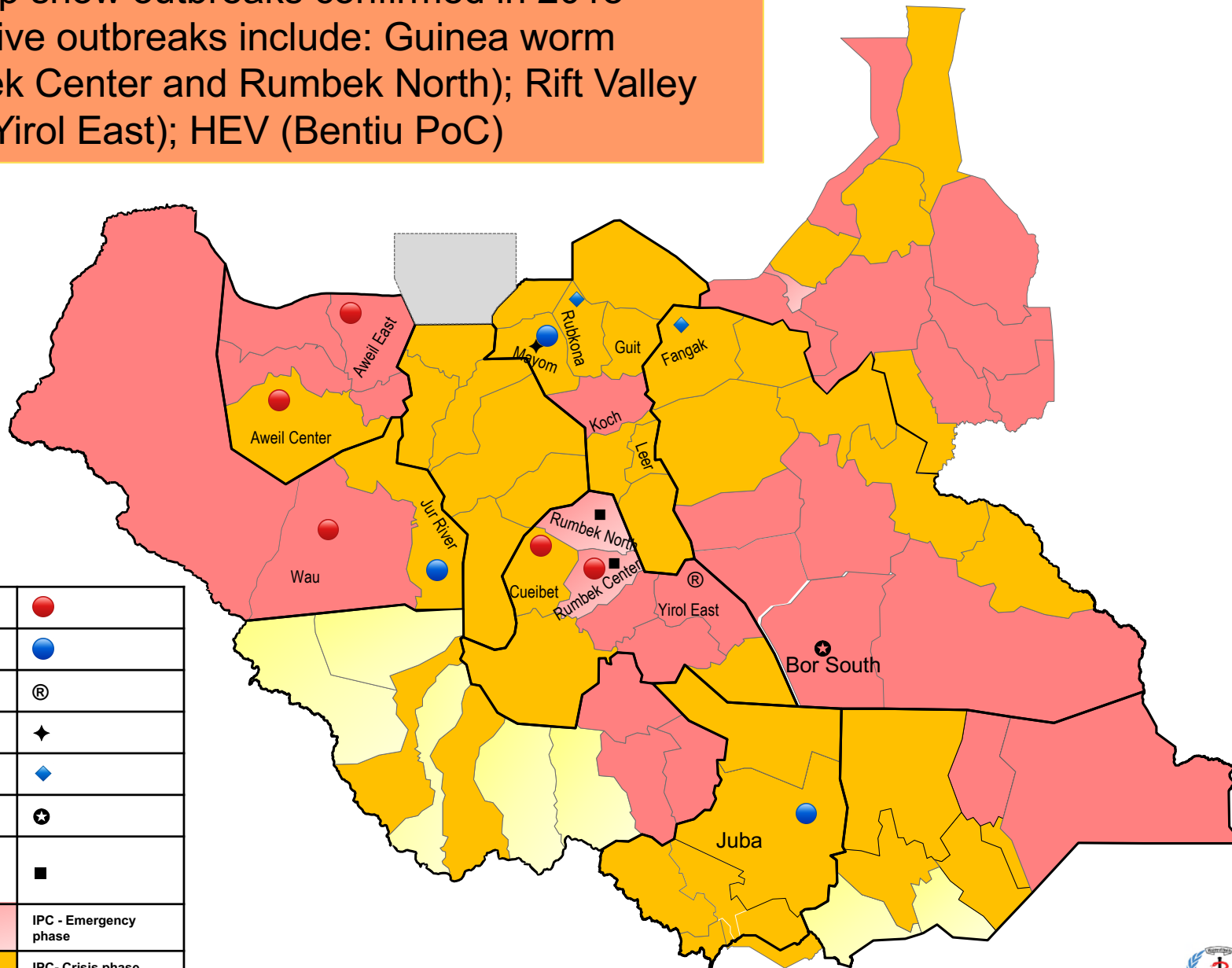
Cumulative alerts by risk assessment stage in 2018

County	OUTCOME	RISK ASSESSED	RISK CHARACTERISED	VERIFICATION	Total Alerts
Acute Watery Diarrhoea	1			102	103
AFP		1		19	20
Bloody Diarrhoea	1			125	126
Cholera	1			1	2
EBS		3		23	26
Guinea Worm	2	1		21	24
Neonatal Tetanus	3			3	6
Viral Haemorrhagic Fever				4	4
Yellow Fever				4	4
Measles	5	7		105	117
Cholera				3	3
Malaria	2	4	1	95	102
suspect meningitis				1	1
Total Alerts	15	16	1	506	538

- The Figures show the cumulative alerts by risk assessment state in 2018
- Of the 538 alerts reported in 2018; a total of 506 alerts have been verified; 16 alerts underwent risk assessment; and 15 alerts have a documented outcome

Confirmed Outbreaks South Sudan – 16 September 2018

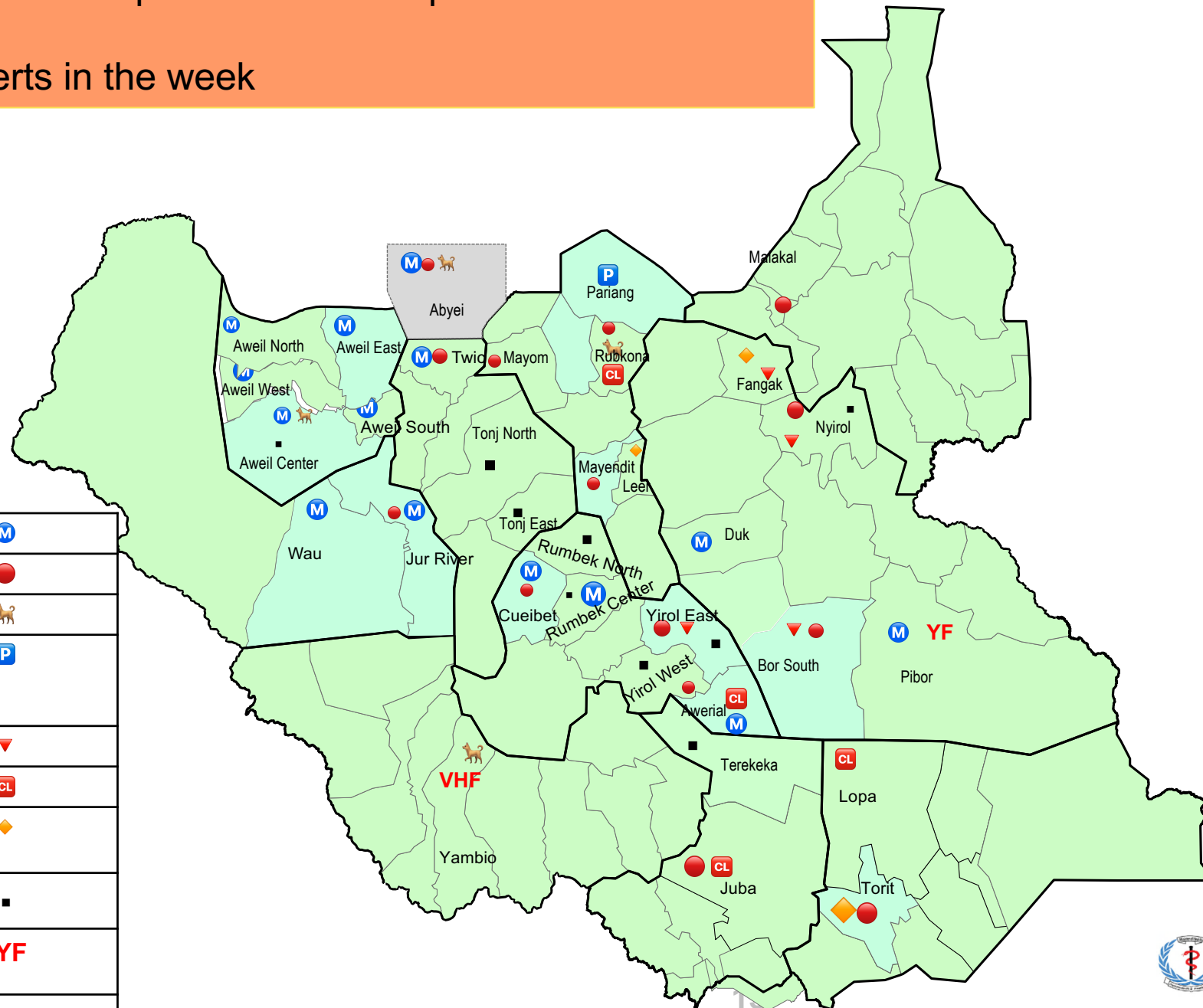
- The map show outbreaks confirmed in 2018
- The active outbreaks include: Guinea worm (Rumbek Center and Rumbek North); Rift Valley Fever (Yirol East); HEV (Bentiu PoC)



Measles	●
Rubella	●
Rift Valley Fever	Ⓜ
Anthrax	◆
Hepatitis E virus	◆
Foodborne disease	⊛
Guinea worm	■
	IPC - Emergency phase
	IPC- Crisis phase
	IPC - Stressed phase

Suspect Outbreaks South Sudan – 16 September 2018

- Map shows suspect outbreaks reported in 2018
- New alerts in the week



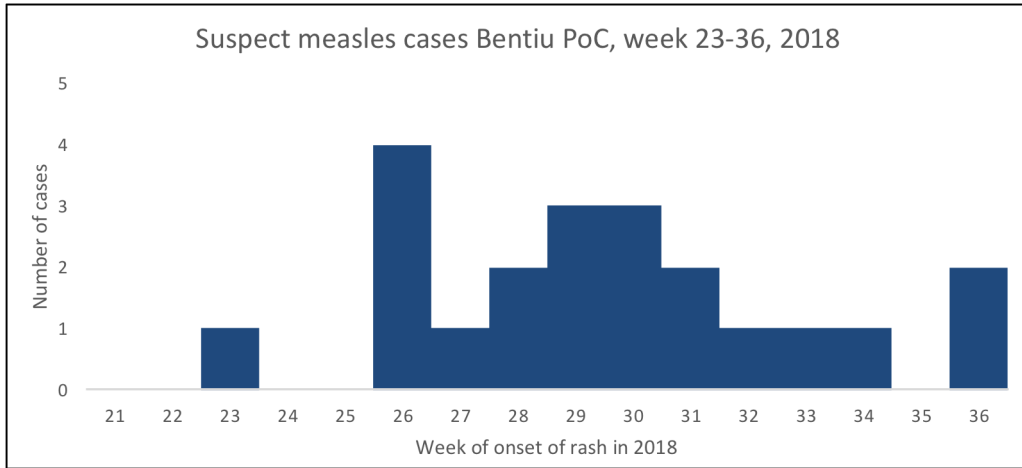
Meningitis	M
Measles	●
Rabies	🐕
Health effects of petroleum drilling	P
Pertussis	▼
Cholera	CL
Acute Jaundice Syndrome	◆
Guinea worm	■
Suspect Yellow Fever	YF
VHF	VHF

Response | Summary of major ongoing outbreaks

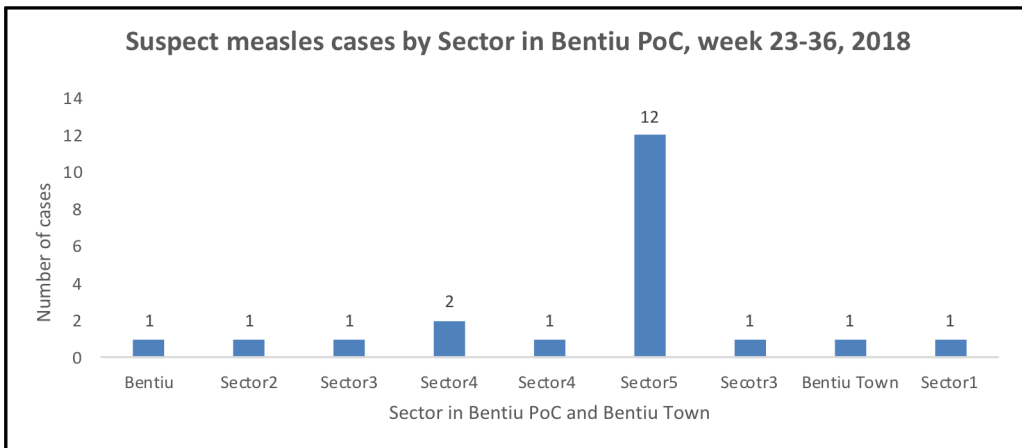
Aetiologic agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
New epidemics								
Ongoing epidemics								
Guinea worm	Rumbek Center & Rumbek North	27/05/2018	0	3 (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	0	132 (0.113)	Yes	No	Yes	Yes
Controlled epidemics								
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

- There is no new outbreak confirmed in the week
- The other ongoing and controlled outbreaks in 2018 are shown in the table

Suspect measles outbreak - Bentiu PoC



Age	Female	Male	Total cases	Percentage %	Cum %
<1yr	6	6	12	57%	57%
1-4yrs	3	3	6	29%	86%
5-9yrs	2	1	3	14%	100%
Total cases	11	10	21	100%	



- At least 21 suspect measles cases (with no deaths) have been reported in Bentiu PoC since week 23, 2018.
- All the suspect cases are <5 years with 86% being less than five years of age.
- Most cases 57% (12/1) are from sector 5;
- All the suspect measles cases reported to date have not received any measles vaccine dose

Recommended response

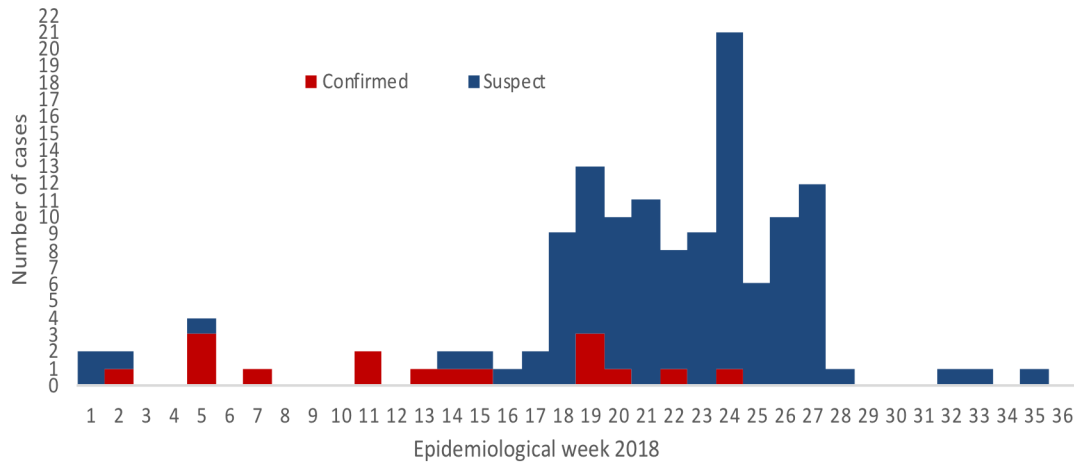
1. Case-based surveillance should continue
2. Ensure adequate clinical management of suspect measles cases (guided by national measles protocols).
3. Reactive measles vaccination (and polio vaccination)

Update on the vaccination campaign

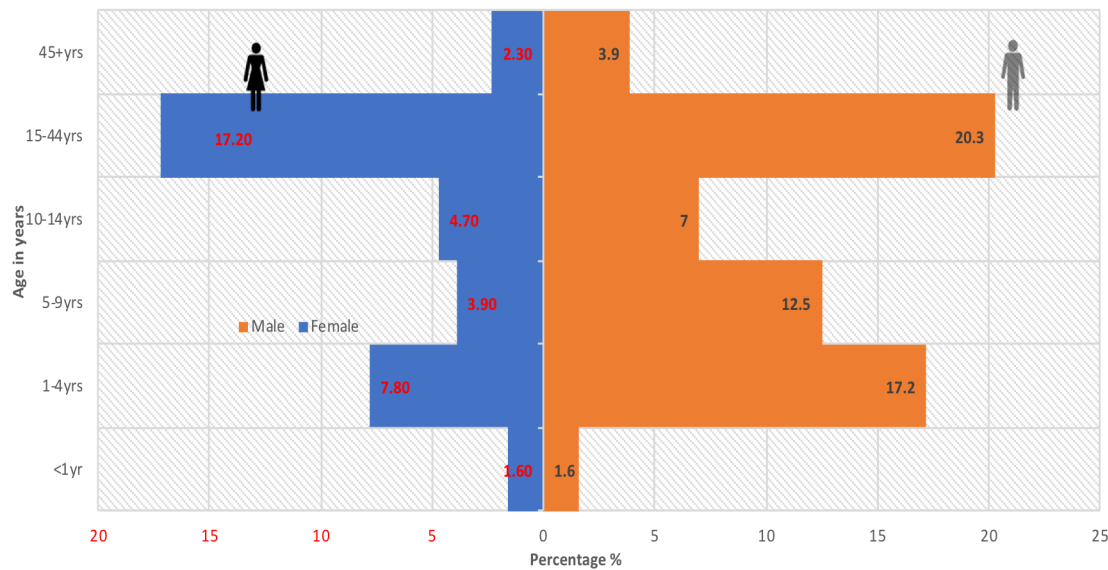
- Combined OPV/measles campaign started on 31 August 2018 and ended on 4 September 2018 with:
 - A total of 38,638 children aged 6 months to 15 years being vaccinated (75% coverage) for measles.
 - A total of 46,932 children aged 0-59 months being vaccinated (124% coverage) for polio.

Hepatitis E, Bentiu PoC and Old Fangak

Hepatitis E cases reported in by Epi classification, week 1-36, 2018



HEV case distribution by age & sex, Bentiu PoC Jan- Sept 2018



Bentiu PoC

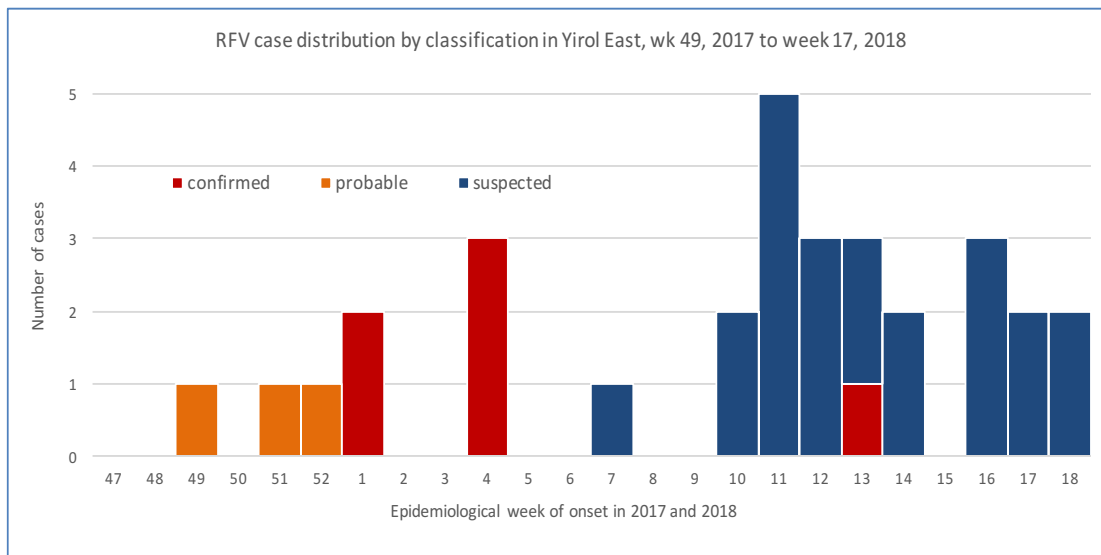
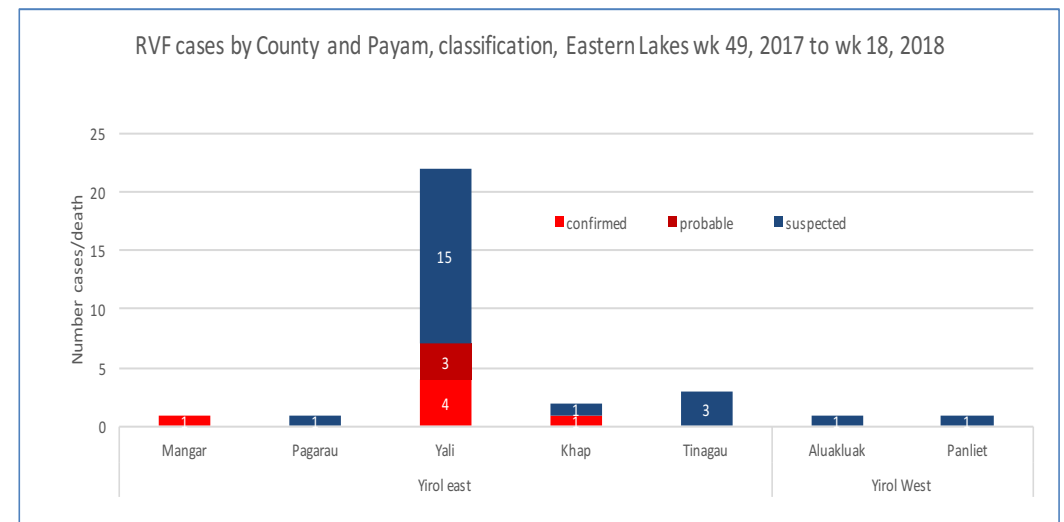
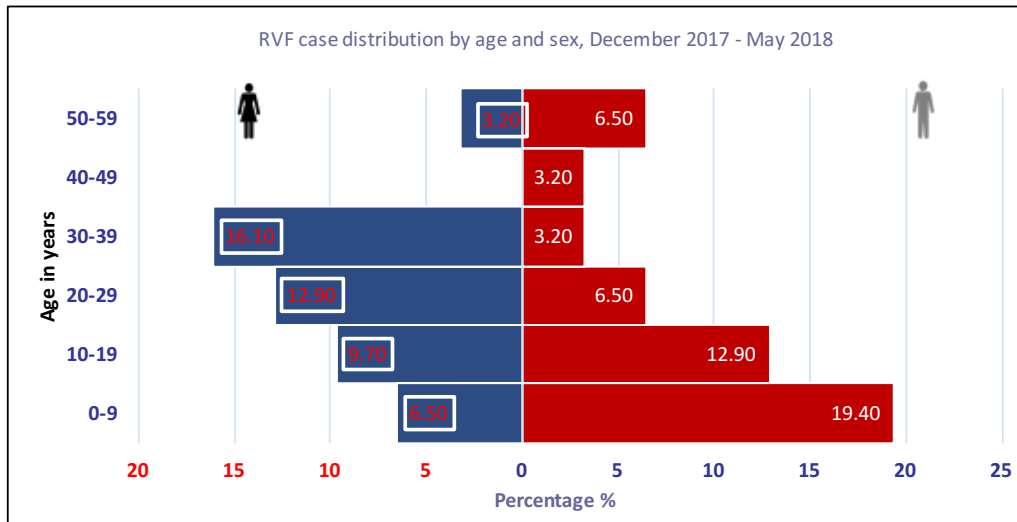
- At least 132 suspect cases of Hepatitis E (HEV) have been reported in 2018. Of the 132 suspect cases, a total of 15 cases have been PCR confirmed as HEV in Bentiu PoC
- Only 6 HEV cases have been admitted.
- At least 43.9% of the cases are 1-9 years of age; and 62% being male. Among the females, most cases have been reported in those aged 15-44 yrs (who are at risk of adverse outcomes if infected in the 3rd 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 shared key HEV messages - for radio programs on [Kondial FM & Bentiu FM] and community sensitizations.
- Case identification and follow up is ongoing and WASH risk assessment has been planned.

Old Fangak

- One confirmed HEV case and at least eight (8) suspect HEV cases have been investigated in Old Fangak. 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.

No new HEV case was reported in week 36

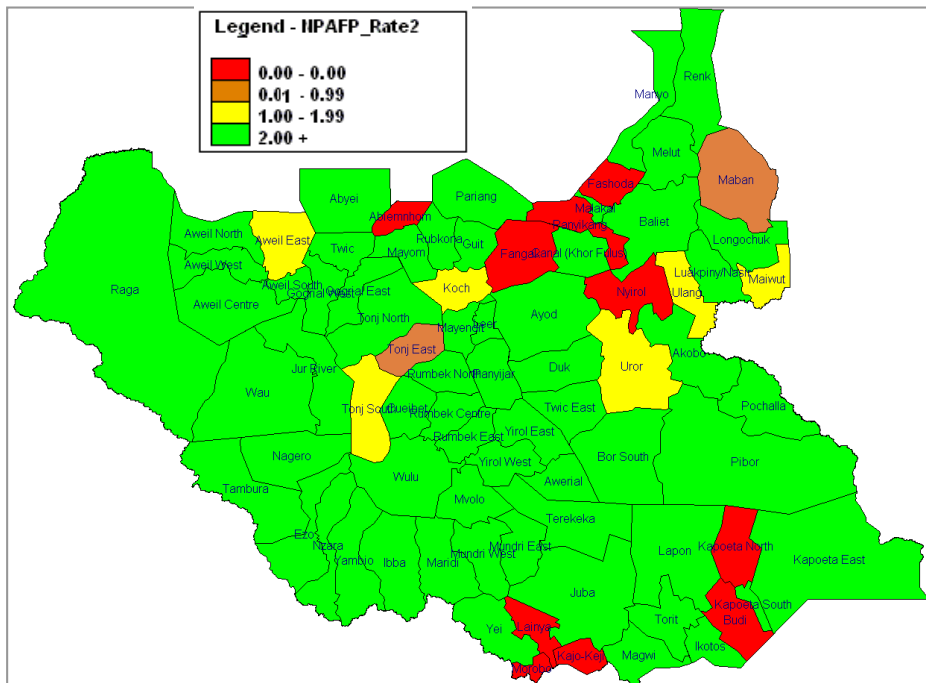
Ongoing epidemics - Epidemic description - RVF Eastern Lakes state



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 36.
- In the period 7 December 2017 to 16 Sep 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 16th Sep 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

Acute Flaccid Paralysis - suspect Polio



In week 36, 2018, a total of 15 new AFP cases were reported from Upper Nile, Western Equatoria, Lakes, Central Equatoria, Eastern Equatoria, Jonglei and Warrap hubs. This brings the cumulative total for 2018 to 289 AFP cases.

The annualized non-Polio AFP (NPAFP) rate (cases per 100,000 population children 0-14 years) in 2018 is 5.1 per 100,000 population of children 0-14 years (target ≥ 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 Two (32) 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	15	14	0	0	0	0	0	1	2.9	15	13	87%	1	7%	0	0%
EASTERN EQUATORIA HUB	674008	27	27	2	0	0	0	0	0	5.8	27	27	100%	3	12%	2	11%
JONGLEI HUB	982693	32	27	2	0	0	3	0	2	4.7	32	27	84%	3	10%	1	8%
LAKES HUB	791864	41	33	7	0	0	8	0	0	7.5	41	41	100%	4	12%	0	0%
NORTHERN BAHR EL GHAZAL HUB	987309	29	28	0	0	0	1	0	0	4.2	29	27	93%	5	17%	3	15%
UNITY HUB	864151	24	18	0	0	0	1	0	5	4.0	24	19	79%	4	17%	1	7%
UPPER NILE HUB	895541	35	26	1	0	0	2	0	1	5.7	35	21	60%	5	15%	3	14%
WARRAP HUB	1456973	43	37	1	0	0	5	0	2	4.3	43	40	93%	5	12%	0	0%
WESTERN BAHR EL GHAZAL HUB	316372	15	12	0	0	0	0	0	3	6.9	15	9	60%	1	7%	0	0%
WESTERN EQUATORIA HUB	516397	28	23	2	0	0	4	0	1	7.8	28	27	96%	3	12%	2	11%
SOUTH SUDAN	8222455	289	245	15	0	0	24	0	20	5.1	289	251	87%	34	12%	12	7%

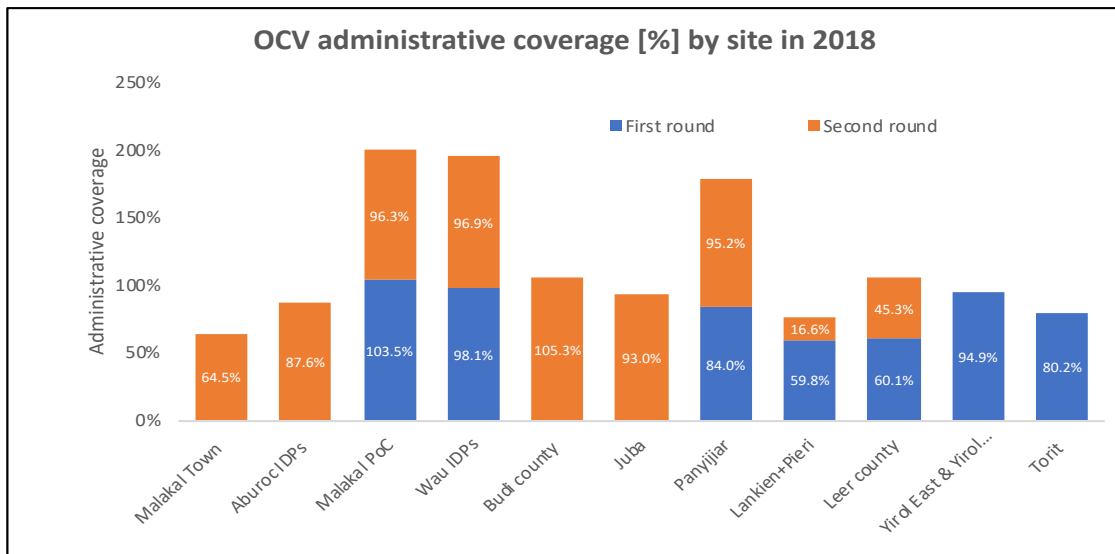
Cholera preparedness and preventive activities - Oral cholera vaccine campaigns - 2018

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	TBD	MoH, WHO, Unicef, LiveWell
Lankien	38,000	36,860	36,860	36,860	73,720	28May -13Jun2018	TBD	MoH, WHO, Unicef, MSF-H
Panyijiar	75,000	72,750	75,000	75,000	150,000	16-22May2018	TBD	MoH, WHO, Unicef, IRC
Leer	50,000	48,500	48,500	48,500	97,000	11-Jun-18		MoH, WHO, Unicef, MedAir
Totals	824,808	800,064	591,358	831,400	1,422,759			

- Cholera prevention and response activities are already underway to mitigate the risk of cholera outbreaks in cholera transmission hotspots
- These efforts are critical now at 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 (2nd round)
 - Aburoc IDPs (2nd round)
 - Malakal PoC (1st & 2nd round)
 - Wau PoC+IDPs (1st & 2nd round)
 - Juba Town (1st & 2nd round)
 - Panyijiar (1st & 2nd round)
 - Leer county (1st & 2nd round)
 - Yirol East and Yirol West (1st round)
- **Upcoming campaigns for 2018**
 - Torit (2nd round)
 - Yirol East and Yirol West (2nd round)

Oral cholera vaccine campaigns administrative coverage - 2018



2018 OCV campaigns		First round		Second round	
Site	Target	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%		
Total	544,998	458,833	84.2%	474,708	85.3%

The following OCV campaigns have been completed in 2018:

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

Ebola situation update - North Kivu 13 Sep 2018

Outbreak declaration

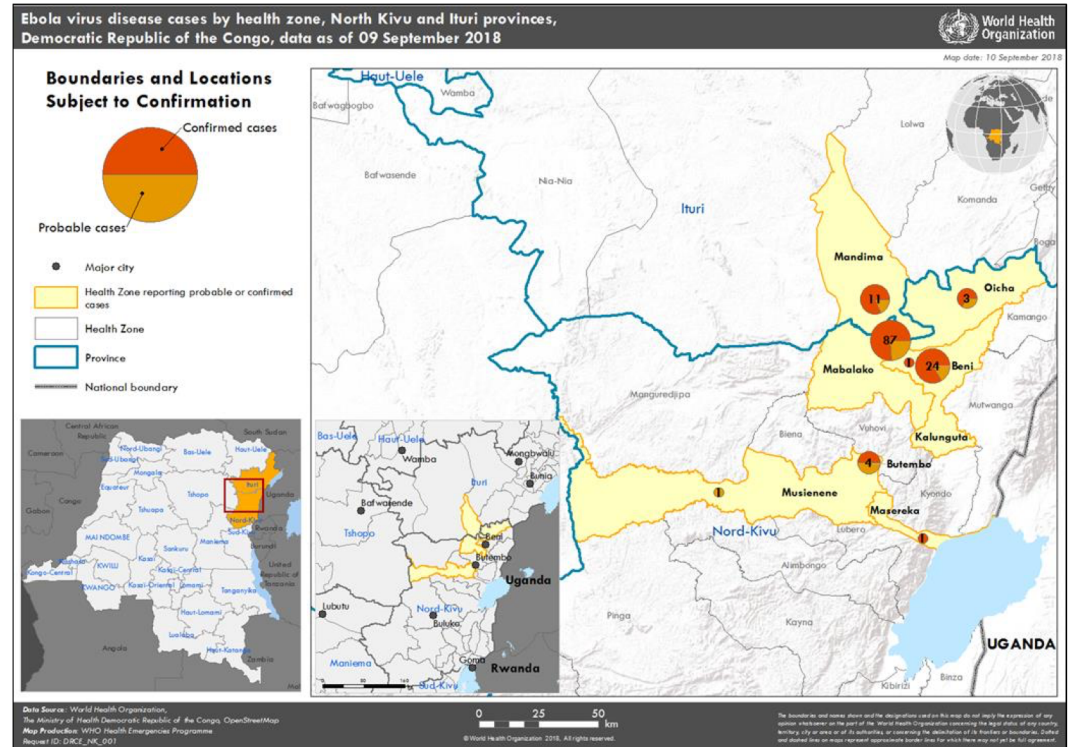
- Ebola outbreak declared in North Kivu province, DRC on 1 Aug 2018

Cases (deaths): 140 cases (94 deaths)

- 109 Laboratory confirmed cases
- 31 probable cases
- 17 healthcare workers (16 confirmed, 1 probable); one death
- 33 EVD cases recovered
- Over 5306 contacts listed with 75-97% being follow up daily in the past week.
- Ring vaccination commenced at least 8,229 contacts and health workers have been vaccinated

8 health zones affected in two provinces

- Mabalako, Beni, Butembo, Oicha, Musienene; Masereka, & Kalunguta in **North-Kivu Province**
- Mandima in **Ituri Province**



Latest numbers as of 13 September 2018

Total cases: 140
 - Confirmed cases: 109
 - Probable cases: 31

Deaths: 94
 - Confirmed: 63
 - Probable: 31

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.
- In-country surveillance and at the frontiers (Nimule, Juba International Airport, Yambio airport, Wau Airport, Gangura, and Sakure) is ongoing. There plans to open additional border screening points based on the risk of EVD importation from DR Congo.

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 nd & 3 rd 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. bit.ly/2EIndTP #SouthSudan. Initial verification details to follow
31Mar2018	Suspect meningitis /malaria	12(08)	Gogrial West	Kuach South	On 28 th 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 th 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 th 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	Nyirrol	Waat	On 10 Aug 2018, CMA reported a cluster of suspect measles and pertussis cases in Waat payam, Nyirrol 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	Nyirrol	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 VHD	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.

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

**For more help and support,
please contact:**

Dr. Pinyi Nyimol Mawien
Director General Preventive Health Services
Ministry of Health
Republic of South Sudan
Telephone: +211916285676

Dr. Mathew Tut Moses
Director Emergency Preparedness and Response (EPR)
Ministry of Health
Republic of South Sudan
Telephone: +211922202028

Notes

WHO and the Ministry of Health gratefully acknowledge the surveillance officers [at state, county, and health facility levels], health cluster and health pooled fund (HPF) partners who have reported the data used in this bulletin. We would also like to thank ECHO and USAID for providing financial support.

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>

