

# South Sudan

## Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W23 2018 (May 04- Jun 10)



World Health  
Organization  
South Sudan



Ministry of Health  
Republic of South Sudan

- Completeness for IDSR reporting at county level was 68% . Completeness for EWARS reporting from IDP sites was 83%.

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- A total of 7 alerts were reported, of which 43% have been verified. 1 alert was risk assessed & 0 required a response.

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- There is no new disease outbreak confirmed during the week.

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- There are no new suspect Rift Valley Fever (RVF) cases reported from Yirol East since week 18. A total of 57 suspect human cases including 6 confirmed; 3 probable; 26 non-cases; and 22 pending classification (with no definitive lab. test results) have been reported. Nine confirmed animal cases (cattle).

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- Suspect rabies cases continue to be reported in Bentiu PoC, Abyei town, and Aweil town. There is need to optimize the response through case management, vaccination, community engagement, and curling of stray dogs.

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- Hepatitis E continues in Bentiu PoC where a total of 79 suspect cases (13 confirmed by PCR). Current response entails surveillance, case follow up, WASH and discouraging communities from using stagnant water for domestic and recreational purposes.

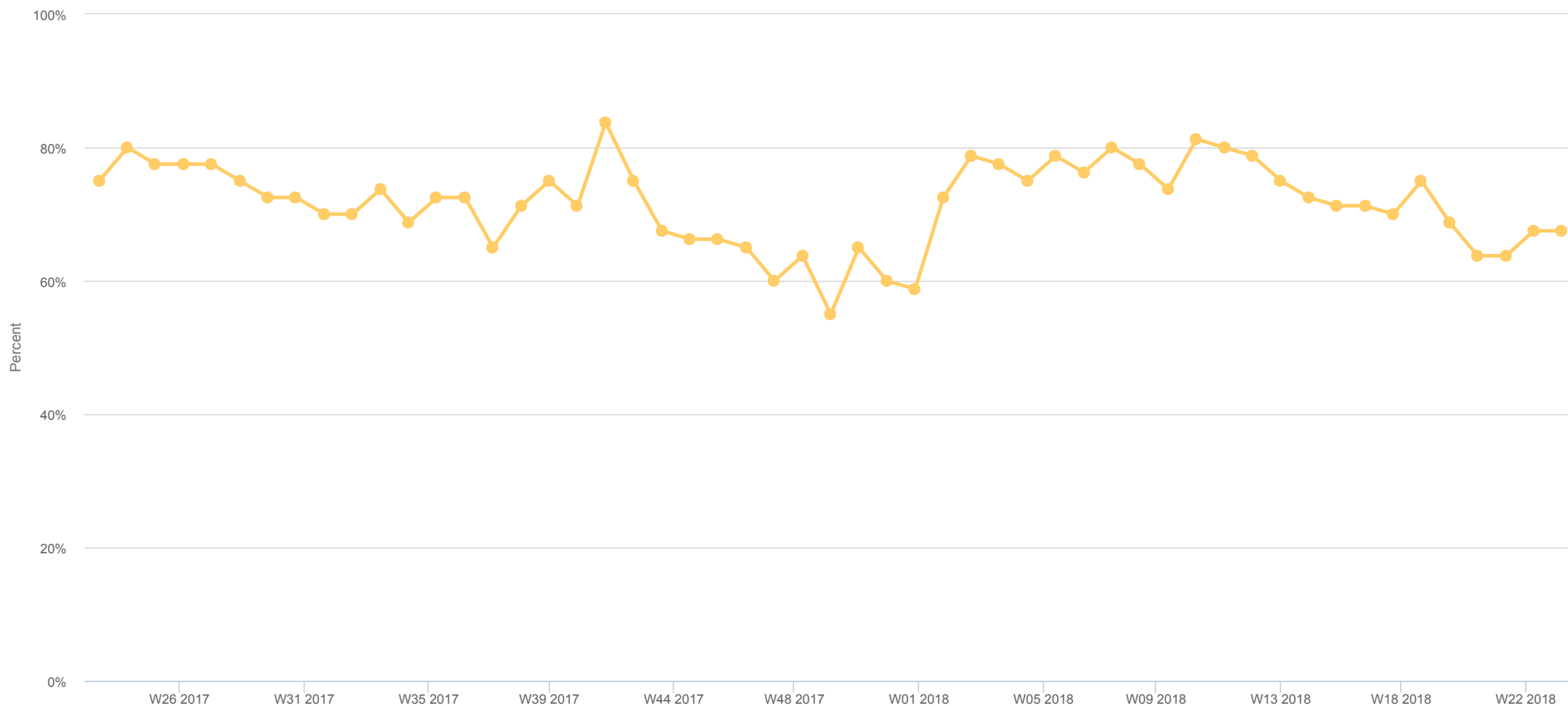
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Table 1 | IDSR surveillance performance indicators by county (W23 2018)

Hub	Reporting		Performance (W23 2018)		Performance (Cumulative 2018)	
	# counties	# reports received	Completeness	Timeliness	Completeness	Timeliness
Aweil	5	5	100%	100%	84%	84%
Bentiu	9	0	0%	0%	68%	49%
Bor	11	7	64%	64%	45%	41%
Juba	6	6	100%	100%	83%	65%
Kwajok	7	5	71%	71%	99%	89%
Malakal	13	4	31%	31%	26%	12%
Rumbek	8	8	100%	100%	101%	92%
Torit	8	7	88%	88%	96%	73%
Wau	3	2	67%	67%	93%	74%
Yambio	10	10	100%	100%	99%	99%
<b>South Sudan</b>	<b>80</b>	<b>54</b>	<b>68%</b>	<b>68%</b>	<b>74%</b>	<b>68%</b>

- Completeness for IDSR reporting at county level was 68% in week 23 and cumulatively at 74% for 2018
- Timeliness for IDSR reporting at county level was 68% in week 23 and cumulatively at 68% for 2018

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



The graph shows completeness for weekly reporting at county level. The national average currently stands at **74%**.



**Table 4 | EWARS surveillance performance indicators by partner (W23 2018)**

Partner	Performance		Reporting (W23 2018)		Reporting (Cumulative 2018)	
	# sites	# reports received	Completeness	Timeliness	Completeness	Timeliness
CMD	1	1	100%	100%	100%	100%
GOAL	2	2	100%	100%	100%	87%
HLSS	1	1	100%	100%	100%	100%
IMA	5	4	80%	80%	73%	70%
IMC	6	6	100%	100%	93%	93%
IOM	12	10	83%	83%	73%	73%
IRC	1	1	100%	100%	100%	100%
Medair	2	2	100%	100%	100%	96%
MSF-E	2	2	100%	100%	96%	74%
MSF-H	2	0	0%	0%	54%	41%
SMC	5	5	100%	100%	65%	65%
UNIDO	1	1	100%	100%	100%	100%
UNKEA	2	2	100%	100%	87%	83%
World Relief	1	1	100%	100%	100%	83%
<b>Total</b>	<b>48</b>	<b>40</b>	<b>83%</b>	<b>83%</b>	<b>74%</b>	<b>71%</b>

Timeliness and completeness for EWARN/IDP reporting stands at 83% for week 23, while cumulatively completeness and timeliness are 74% and 71% respectively for 2018

Table 7 | Alert performance indicators by Hub

Hub	W23		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Aweil	1	100%	24	100%
Bentiu	1	0%	42	67%
Bor	1	100%	32	53%
Juba	3	0%	52	69%
Kwajok	0	0%	28	100%
Malakal	0	0%	30	63%
Rumbek	0	0%	30	63%
Torit	0	0%	35	74%
Wau	0	0%	18	50%
Yambio	1	100%	65	57%
<b>South Sudan</b>	<b>7</b>	<b>43%</b>	<b>356</b>	<b>68%</b>

Table 8 Summary of key alert indicators

W23	Cumulative (2018)	
<b>7</b>	<b>356</b>	Total alerts raised
<b>43%</b>	<b>68%</b>	% verified
<b>0%</b>	<b>0%</b>	% auto-discarded
<b>14%</b>	<b>4%</b>	% risk assessed
<b>0%</b>	<b>2%</b>	% requiring a response

A total of 7 alerts were reported in week 23 with 43% of the alerts in week 23 being verified; 14% were risk assessed and 0% required a response.

Table 9 | Alert performance indicators by event

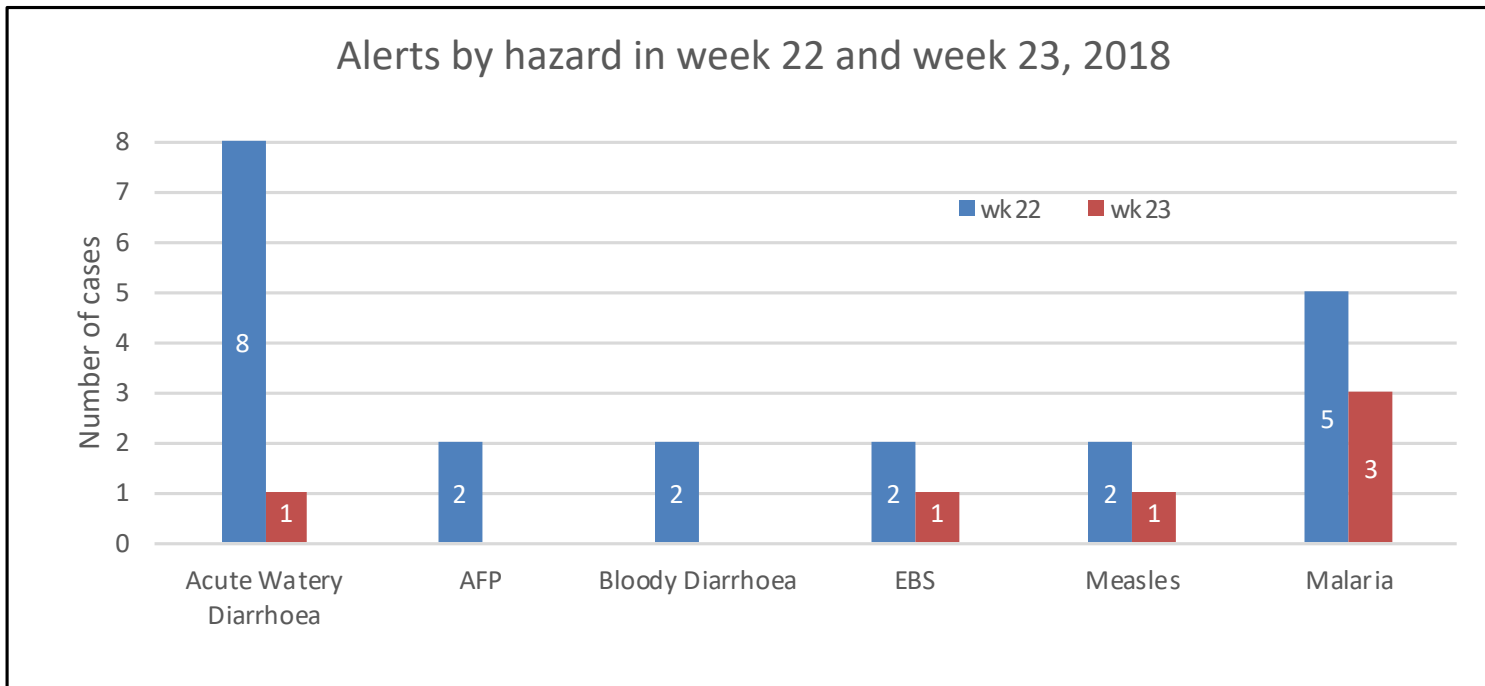
Event	W23		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
<b>Indicator-based surveillance</b>				
Malaria	3	33%	61	61%
AWD	1	100%	160	65%
Bloody Diarr.	0	0%	90	50%
Measles	2	50%	67	76%
Meningitis	0	0%	0	0%
Cholera	0	0%	6	100%
Yellow Fever	0	0%	4	75%
Guinea Worm	0	0%	11	82%
AFP	0	0%	46	92%
VHF	0	0%	1	100%
Neo. tetanus	0	0%	3	67%
<b>Event-based surveillance</b>				
EBS total	1	0%	21	76%

Table 10 | Event risk assessment

W23	Cumulative (2018)	
0	7	Low risk
2	2	Medium risk
1	3	High risk
0	1	Very high risk

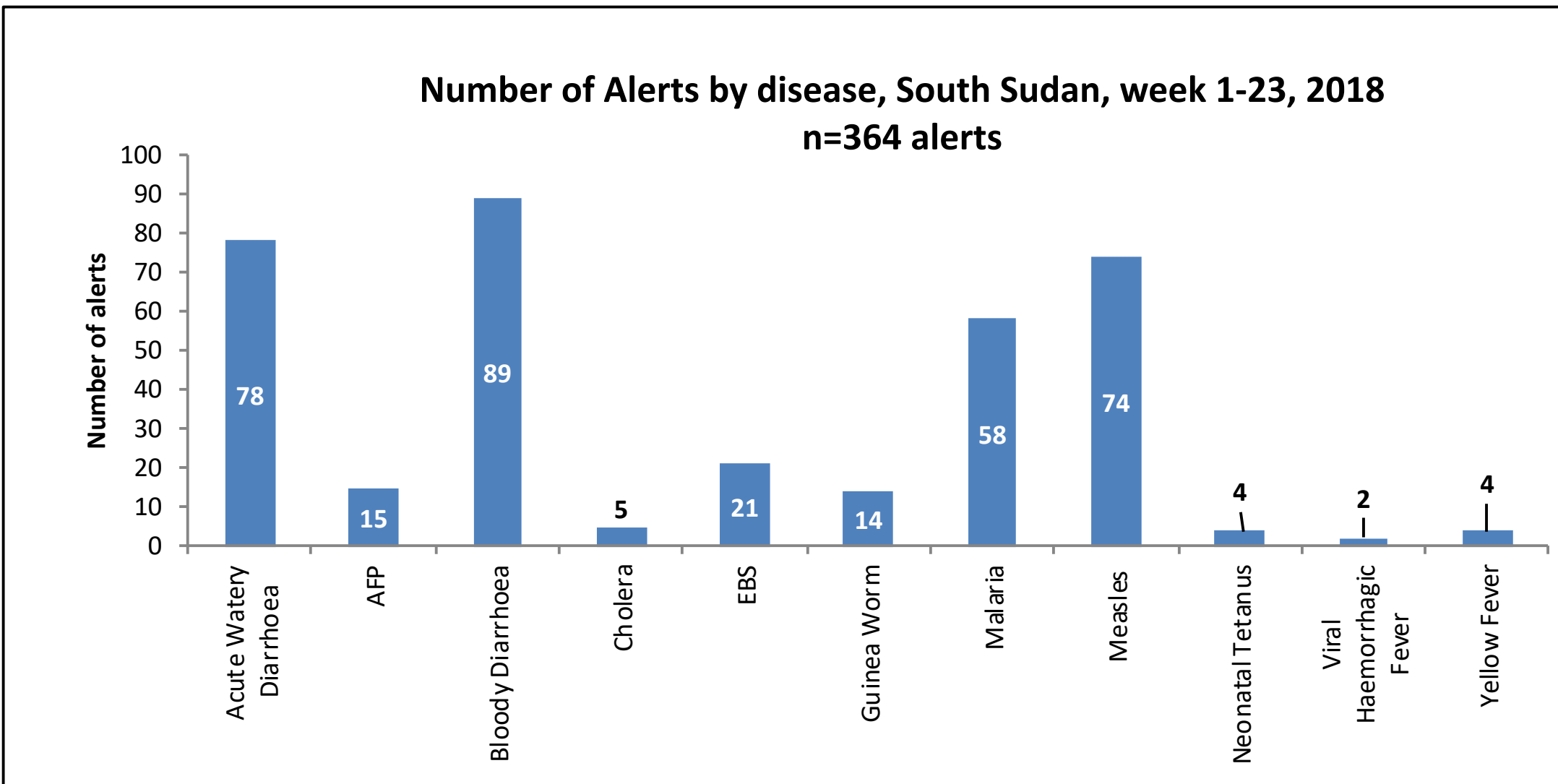
- During the week, malaria and suspect measles were the most frequent infectious hazards reported





County	Acute Watery Diarrhoea	EBS	Measles	Malaria	Total Alerts
Bor				1	1
Ibba	1				1
Juba		1	1		2
Lainya				1	1
Rubkona				1	1
<b>Total Alerts</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>6</b>

- During week 23, a total of 7 alerts were reported
- Most alerts were due to malaria emphasizing the need for enhanced malaria EP&R
- Suspect measles cases investigated in Awerial - samples shipped to Juba
- Suspect cholera deaths in Motot Ruled out by ICRC who are running Motot PHCU & the fact that there are no people in Motot currently



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

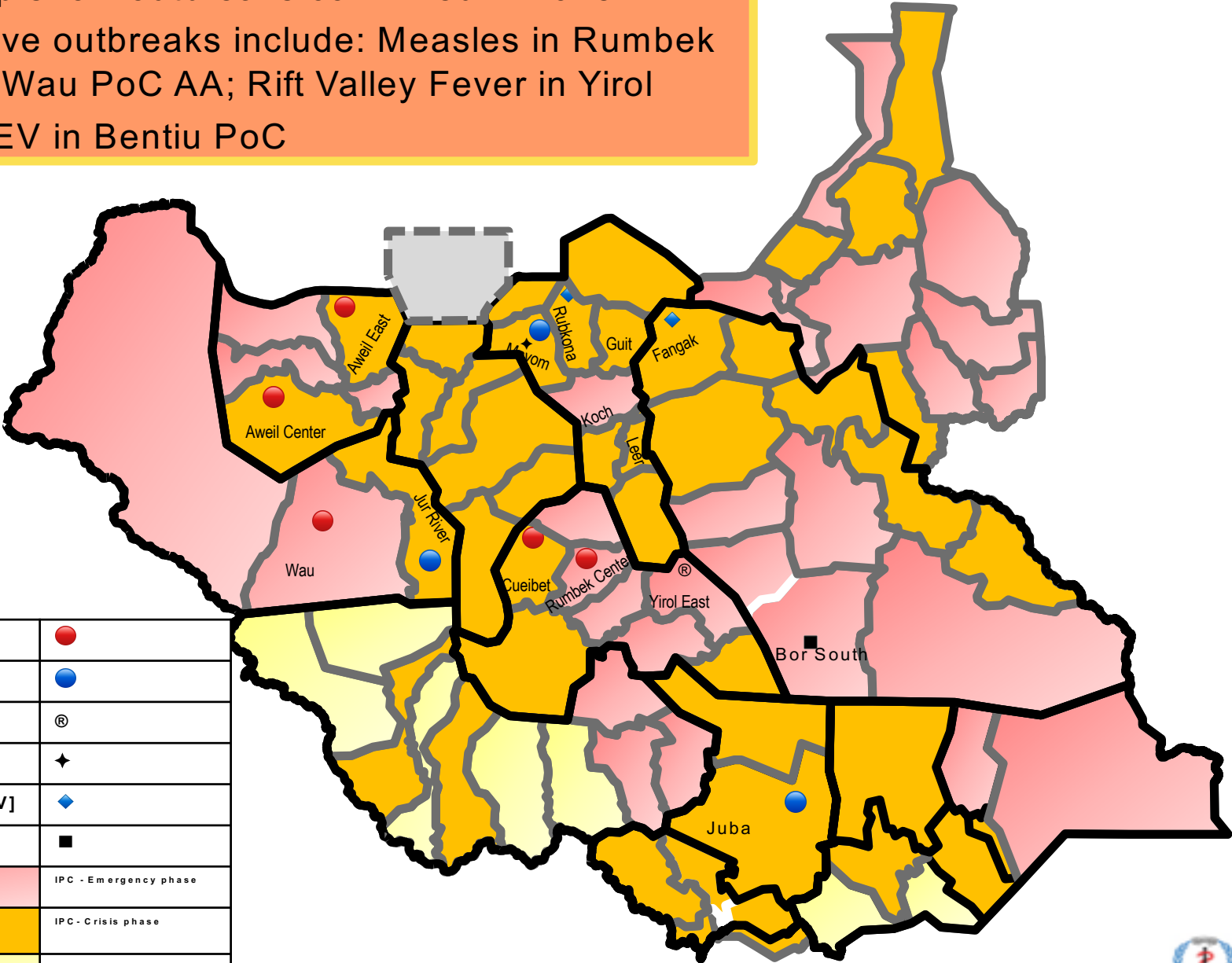
Cumulative alerts by risk assessment stage in 2018

County	OUTCOME	RISK_ASSESS	VERIFICATION	Total Alerts
Acute Watery Diarrhoea	1		77	78
AFP		1	14	15
Bloody Diarrhoea	1		88	89
Cholera	1		1	2
EBS		2	19	21
Guinea Worm	2		12	14
Neonatal Tetanus	2		2	4
Viral Haemorrhagic Fever			2	2
Yellow Fever			4	4
Measles	5	6	63	74
Cholera			3	3
Malaria	2		56	58
<b>Total Alerts</b>	<b>14</b>	<b>9</b>	<b>341</b>	<b>364</b>

- The Figures show the cumulative alerts by risk assessment state in 2018
- Of the 364 alerts reported in 2018; a total of 341 alerts have been verified; 9 alerts underwent risk assessment (9 alerts); and 13 alerts have a documented outcome

# Confirmed Outbreaks South Sudan – 17 June 2018

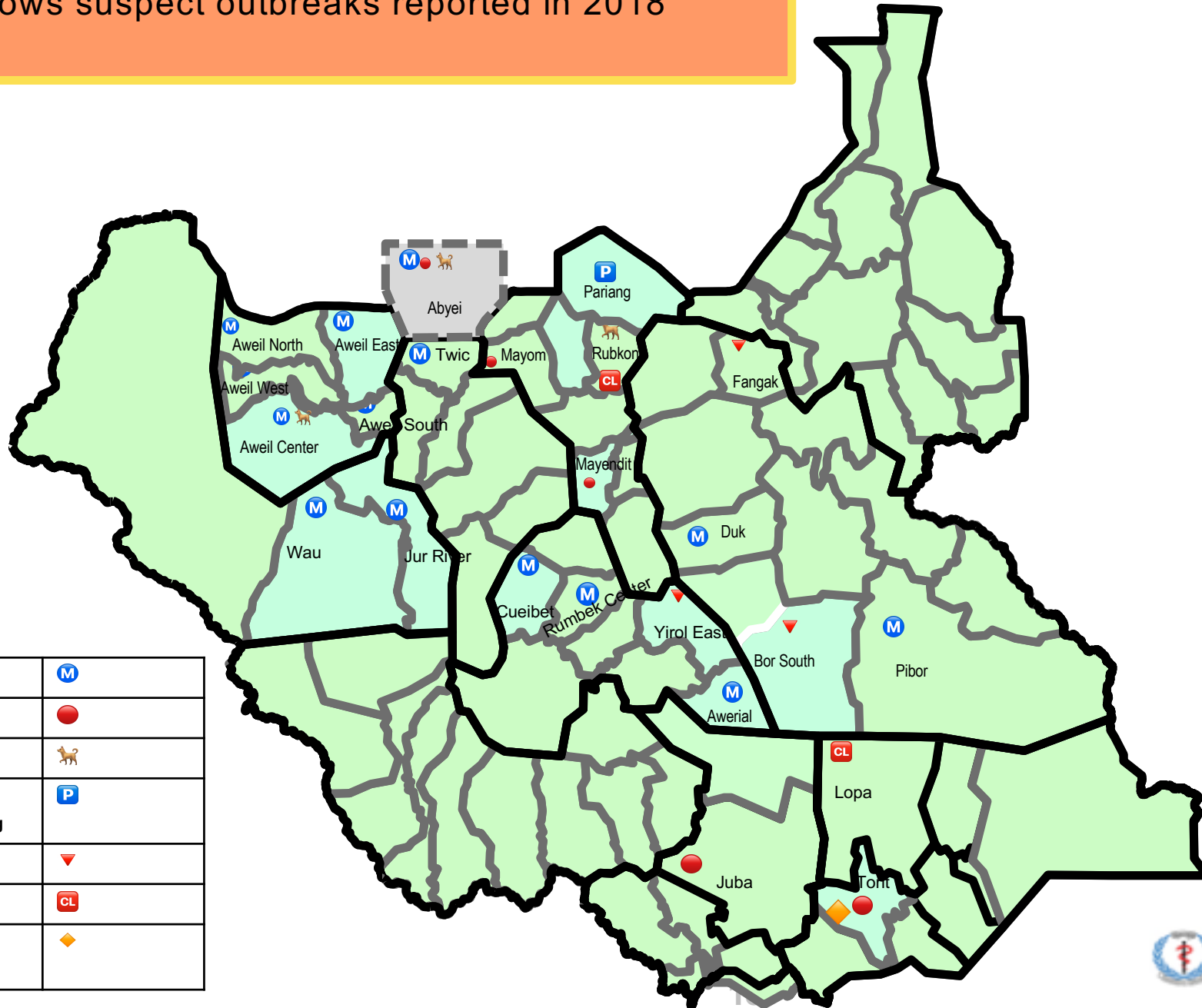
- The map show outbreaks confirmed in 2018
- The active outbreaks include: Measles in Rumbek Center; Wau PoC AA; Rift Valley Fever in Yirol East; HEV in Bentiu PoC



Measles	●
Rubella	●
Rift Valley Fever	Ⓜ
Anthrax	★
Hepatitis E virus [HEV]	◆
Foodborne disease	■
	IPC - Emergency phase
	IPC - Crisis phase
	IPC - Stressed phase

# Suspect Outbreaks South Sudan – 17 June 2018

- Map shows suspect outbreaks reported in 2018

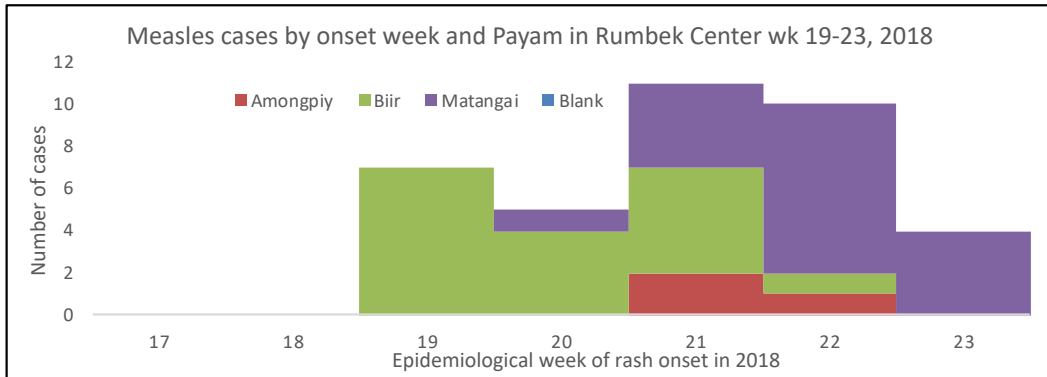


<b>Meningitis</b>	
<b>Measles</b>	
<b>Rabies</b>	
<b>Health effects of petroleum drilling</b>	
<b>Pertussis</b>	
<b>Cholera</b>	
<b>Acute Jaundice Syndrome</b>	

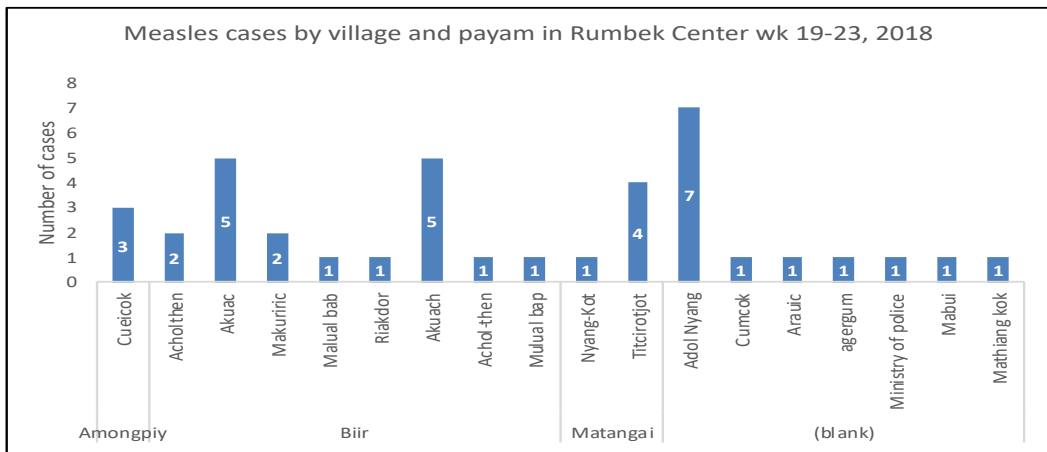
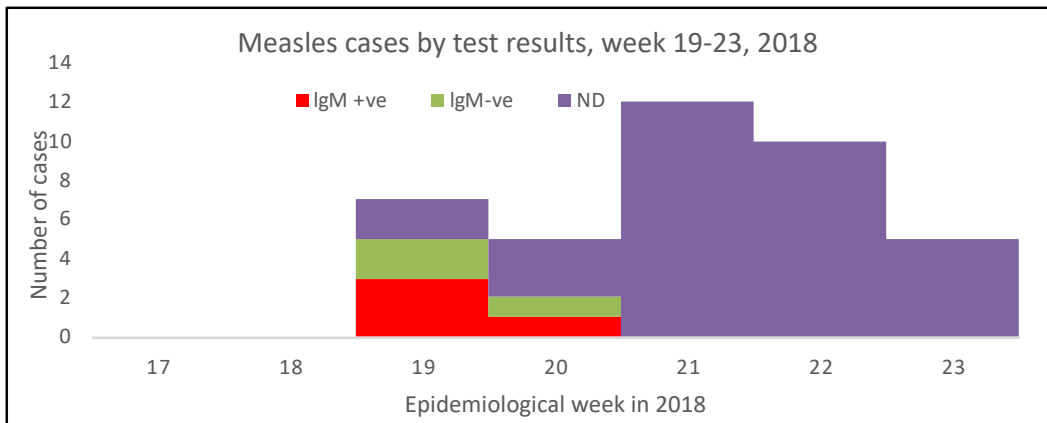
Aetiologic agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
<b>New epidemics</b>								
<b>Ongoing epidemics</b>								
Measles	Rumbek Center	13/05/2018	20	39 (0.017)	Yes	No	Yes	N/A
Measles	Wau PoC AA	04/04/2018	0	1 (0.0025)	Yes	No	Yes	N/A
RVF	Yirol East	28/12/2017	0	57 (0.053)	Yes	N/A	Yes	N/A
Hepatitis E	Bentiu PoC	03/01/2018	9	79 (0.068)	Yes	No	Yes	Yes
Rabies probable	Bentiu PoC	06/12/2017	5	234 (0.200)	Yes	Yes	Yes	N/A
<b>Controlled epidemics</b>								
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

# Measles outbreak - Rumbek Center County

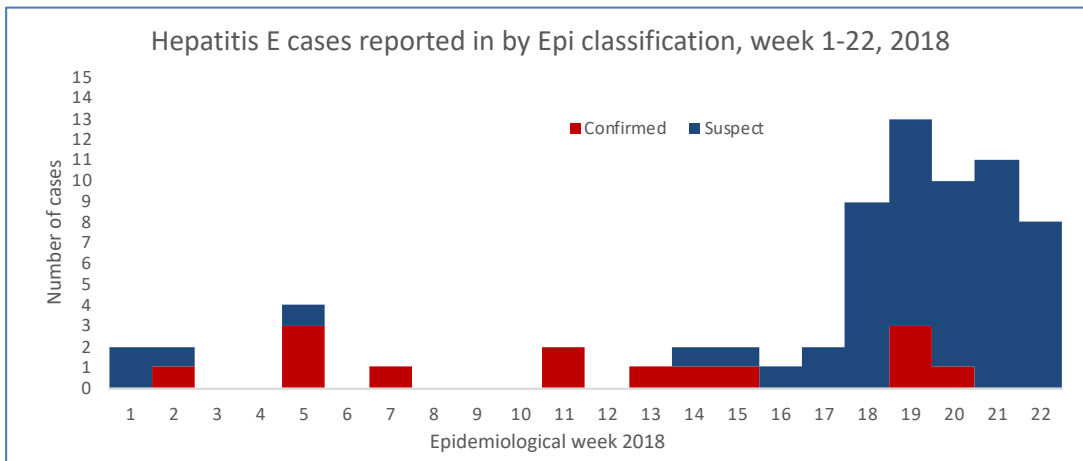
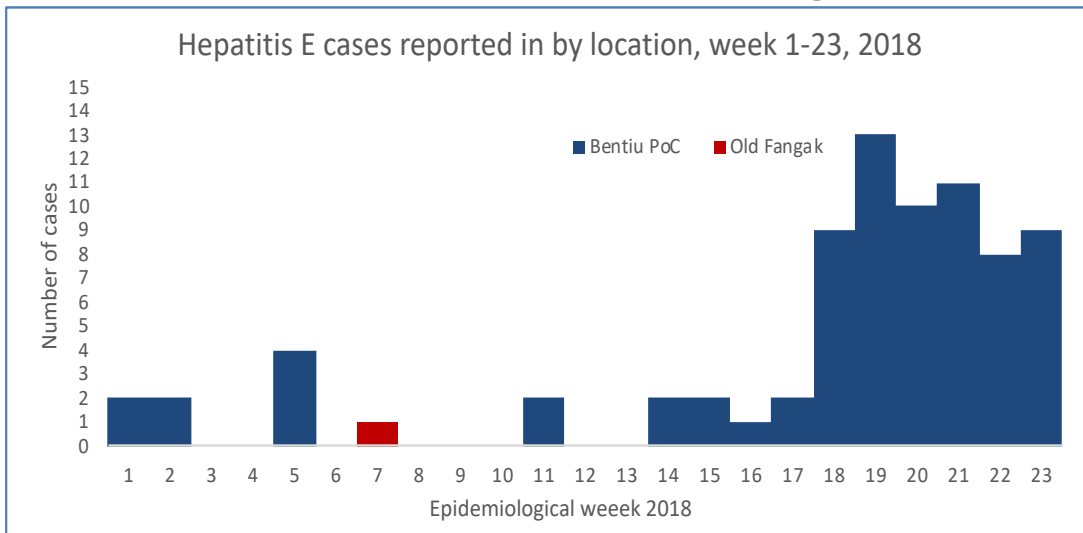


Age	Female	Male	Total cases	%age	Cum%
<1yr	1	3	4	10.3%	10.3%
1-4yrs	5	18	23	59.0%	69.2%
5-9yrs	4	2	6	15.4%	84.6%
10-14yrs		1	1	2.6%	87.2%
15-44yrs	5		5	12.8%	100.0%
<b>Total</b>	<b>15</b>	<b>24</b>	<b>39</b>	<b>100.0%</b>	

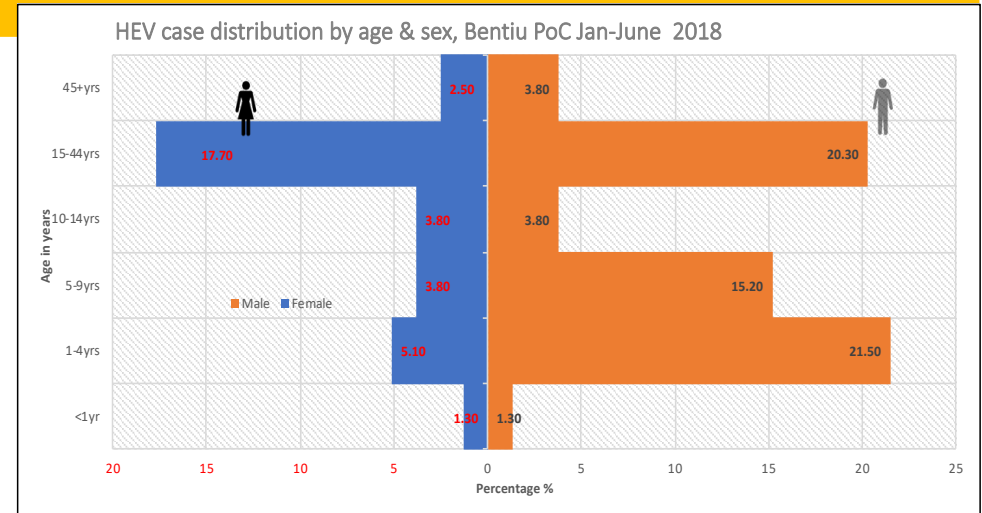


- Measles outbreak confirmed in Rumbek Center after 3 IgM positive cases were reported
- A cumulative of 39 measles cases with no deaths have been line listed since week 19
- Most cases are from Akuach village (2km from Rumbek hospital) in Biir Payam. This is where the index cluster originated
- Nearly 70% of the cases are under 0-59 months
- Routine measles coverage for 1<sup>st</sup> quarter of 2018 for the county was 19%
- As part of the response; outbreak investigation completed; line listing underway; and vaccination microplan targeting 44,049 children 6-59 months of age has been completed
- A reactive response is planned by MedAir and CUAMM supported by WHO and UNICEF
- Long-term strategy for improving routine immunization has been developed by EPI-MoH

## Hepatitis E, Bentiu PoC and Old Fangak



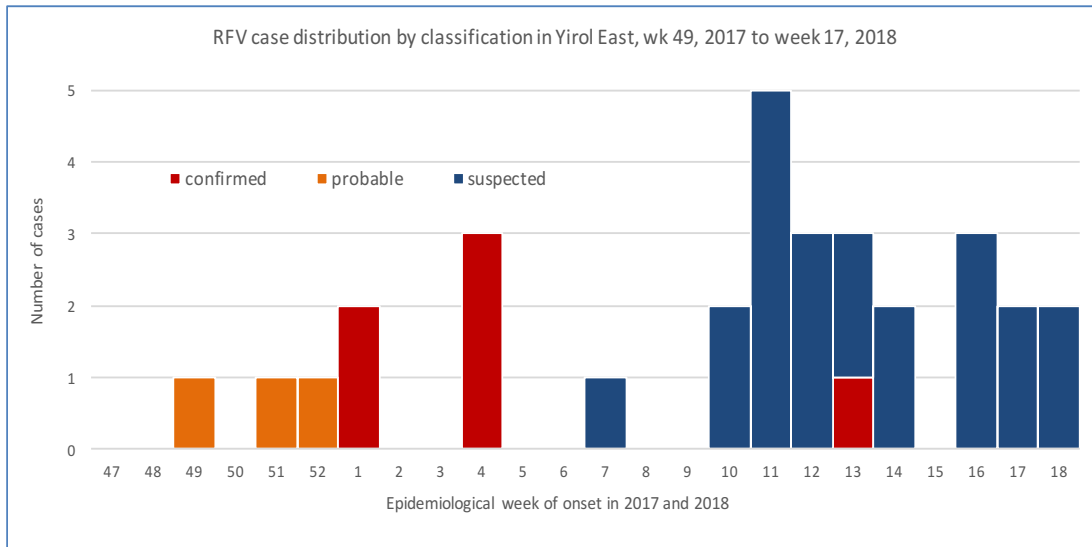
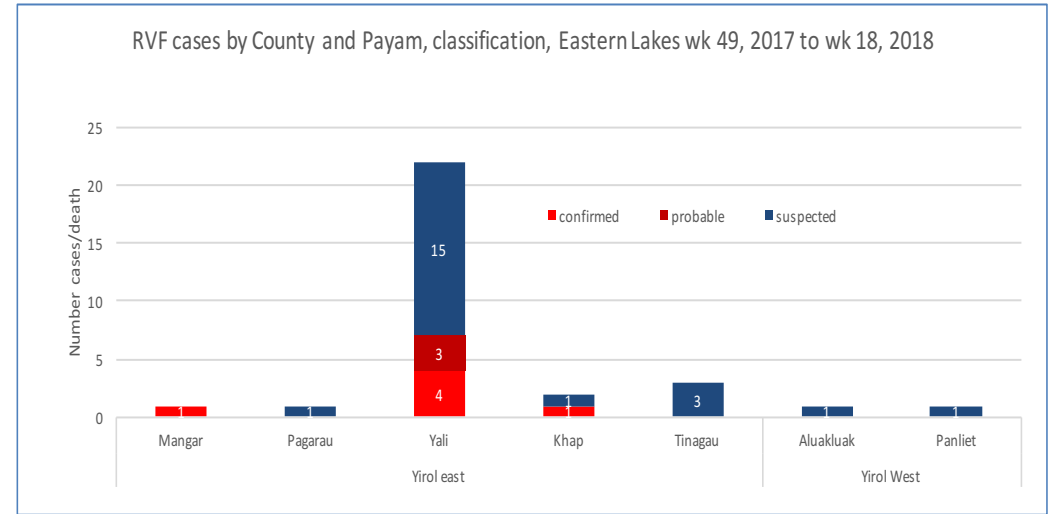
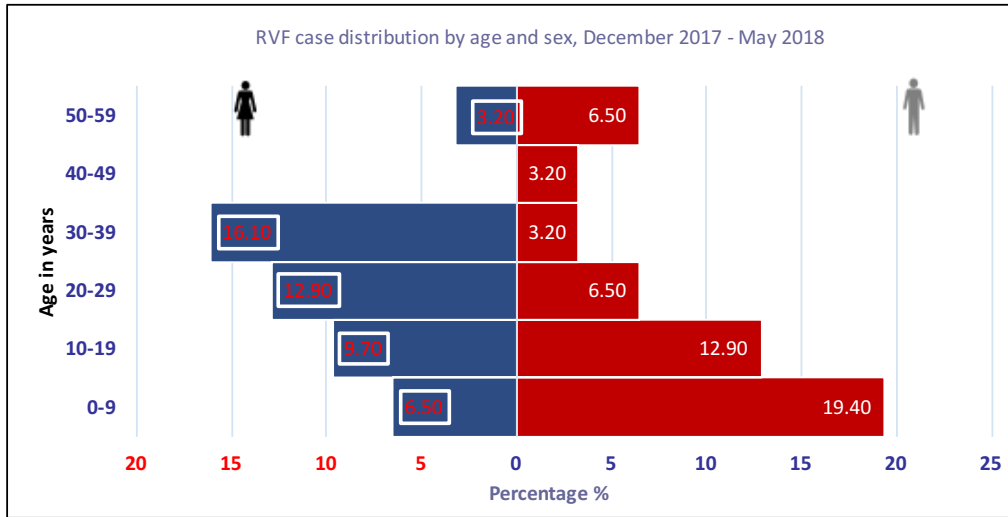
Nine HEV cases in week 23 including one RDT positive and one pregnant female



- At least 79 suspect case of Hepatitis E (HEV) have been reported in 2018. Of the 79 suspect cases, a total of 14 cases have been PCR confirmed as HEV (13 in Bentiu PoC & 1 in Old Fangak). No new cases identified after active follow up in Fangak.
- At least 48% of the cases are 1-9 years of age; and 66% 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 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.



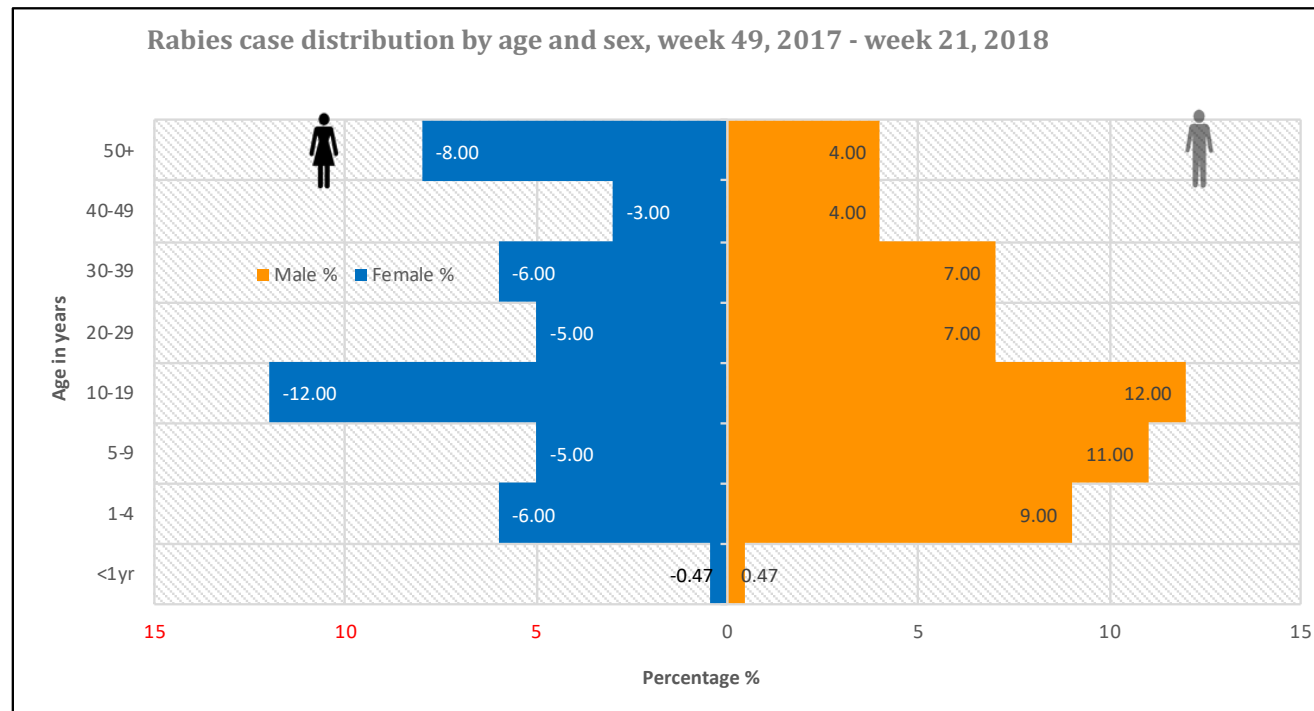
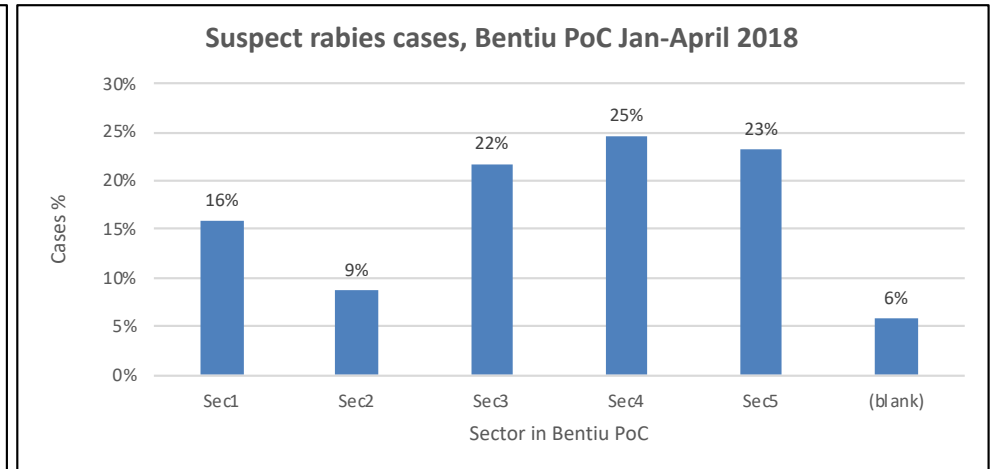
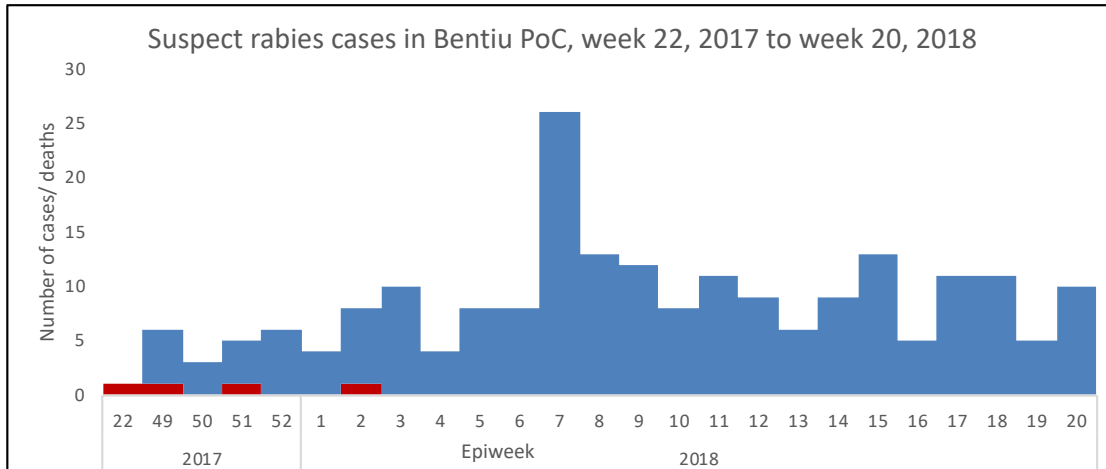
# Ongoing epidemics - Epidemic description - RVF Eastern Lakes state



Sno.	Description	Number
1	Suspect cases	57
2	Total deaths	4
3	Confirmed cases	6
4	Probable cases	3
5	Cases pending testing	22
6	Non-cases	26
7	Cases on admission	0
8	Total human samples collected	39
9	Total animal samples collected	28
10	Positive animal cases	9

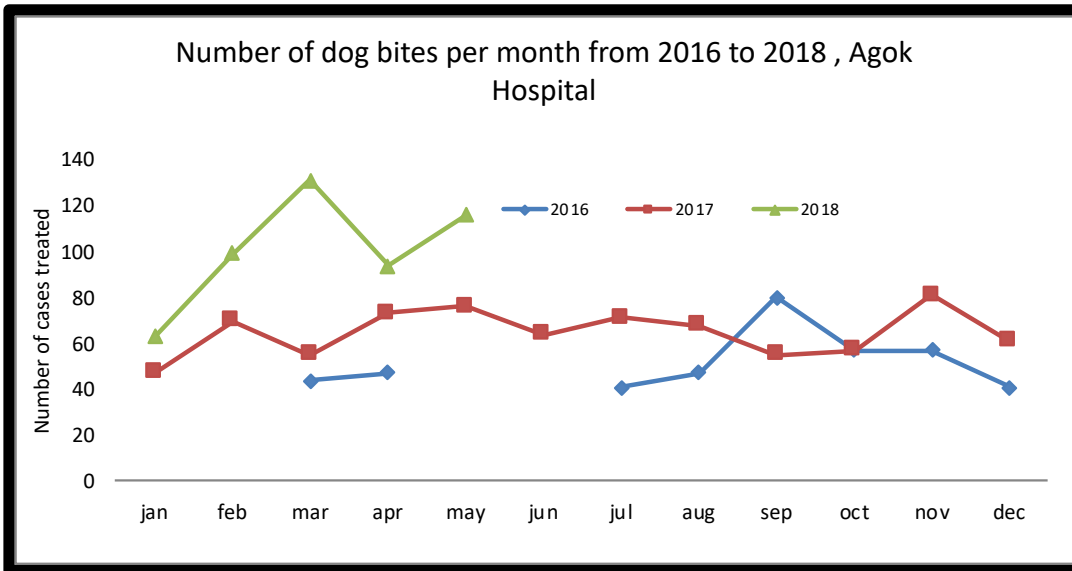
- No new suspect RVF cases reported since week 18 of 2018
- In the period 7 December 2017 to 6 April 2018, a total of 57 suspect RVF cases were reported in Eastern Lakes.
- These were reclassified based on investigations and laboratory results, such that as of 6<sup>th</sup> April 2018, there were a total of six (6) RVF confirmed cases, three (3) probable, and 22 suspect RVF cases (no laboratory results).
- Twenty six (26) 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

## Animal bites - suspect rabies, Bentiu PoC

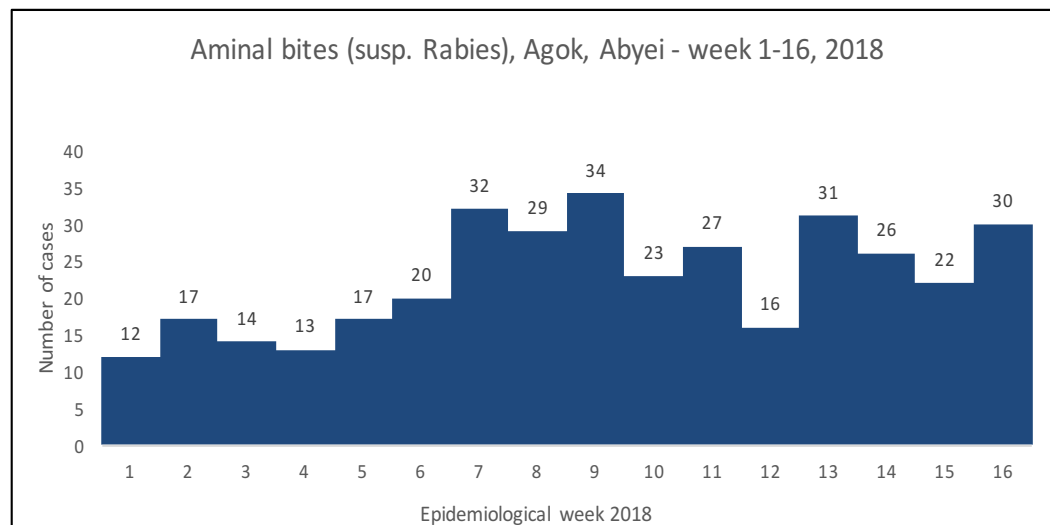


- During week 23, a total of 5 animal bite cases were reported and treated in Bentiu PoC
- A cumulative of 234 animal bite cases including 4 deaths have been reported since 6 Dec 2017.
- Sectors 3,4, &5 have reported most cases and children <19yrs constitute more than 56% of the cases with males affected more than females
- Post exposure vaccination ongoing with support from MSF-H and partners.
- WHO/ health cluster have secured antirabies vaccine to support the response.
- Community messaging underway via CCCM/ internews/ UNMISS broadcast
- VSF arrived in the PoC to support curling of stray dogs

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

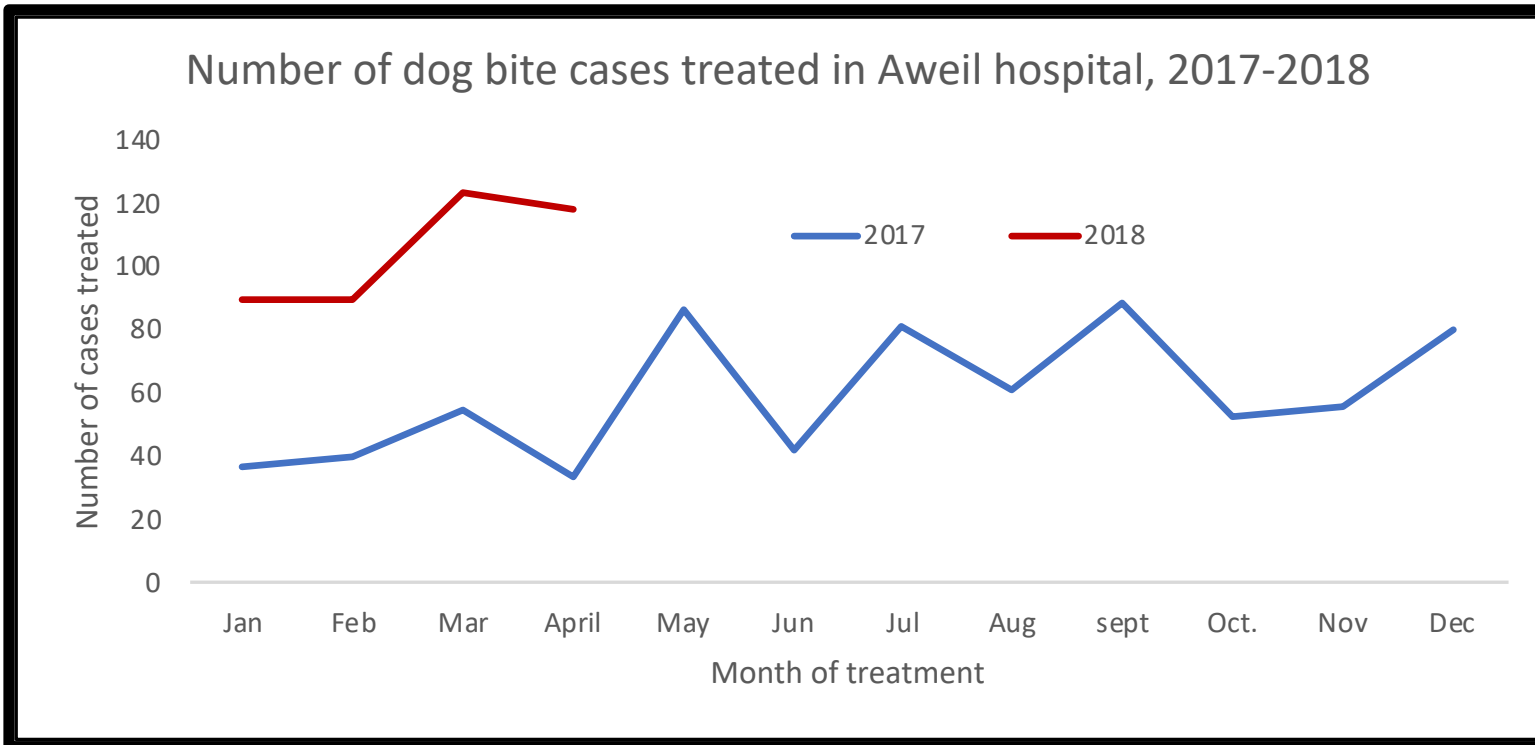


Sex/Age	<5yrs	5+yrs	Total
Male	16	178	194 (53.4%)
Female	5	164	169 (46.6%)
<b>Totals</b>	<b>21 (5.8%)</b>	<b>342 (94.2%)</b>	<b>363</b>



- 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 437 cases reported in 2018 (week 1-21);
- Current response entails surveillance - case detection and line listing and post exposure prophylaxis with rabies vaccine.
- At a joint meeting held in Abyei Town involving MSF and FAO on 7<sup>th</sup> June 2018; the following were noted:
  - MSF pledged to continue treating dog bite cases
  - FAO has 3,000-6,000 doses of rabies vaccine for vaccinating dogs with owners in Abyei but requested MSF to provide cold chain space for the vaccines
  - FAO also indicated they lack operational funds for deploying the vaccines.
  - In addition, a solution needs to be found for the stray dogs to reduce the risk of bites that they pose.
  - There is also need for social mobilization and health education to reduce the risk of exposure to dog bites

## Animal bites - suspect rabies, Aweil hospital, Aweil Town



Year	Jan	Feb	Mar	April	May	Jun	Jul	Aug	sept	Oct.	Nov	Dec	Total
<b>2017</b>	37	40	55	34	86	42	81	61	88	53	56	80	<b>713</b>
<b>2018</b>	89	90	123	118									<b>420</b>

- Reports from Aweil continue to show that dog bite cases remain a major public health concern
- The data shown here is obtained from Aweil hospital pediatrics outpatients department as a proxy of the suspect rabies burden in the state.
- In 2017; limited dog vaccination was undertaken in UNMISS camp, Aweil.
- The current statistics highlight the need for a comprehensive response that includes post exposure vaccination; community mobilization and education to minimize the risk of dog bites; dog vaccination; and curling of stray dogs in the town.

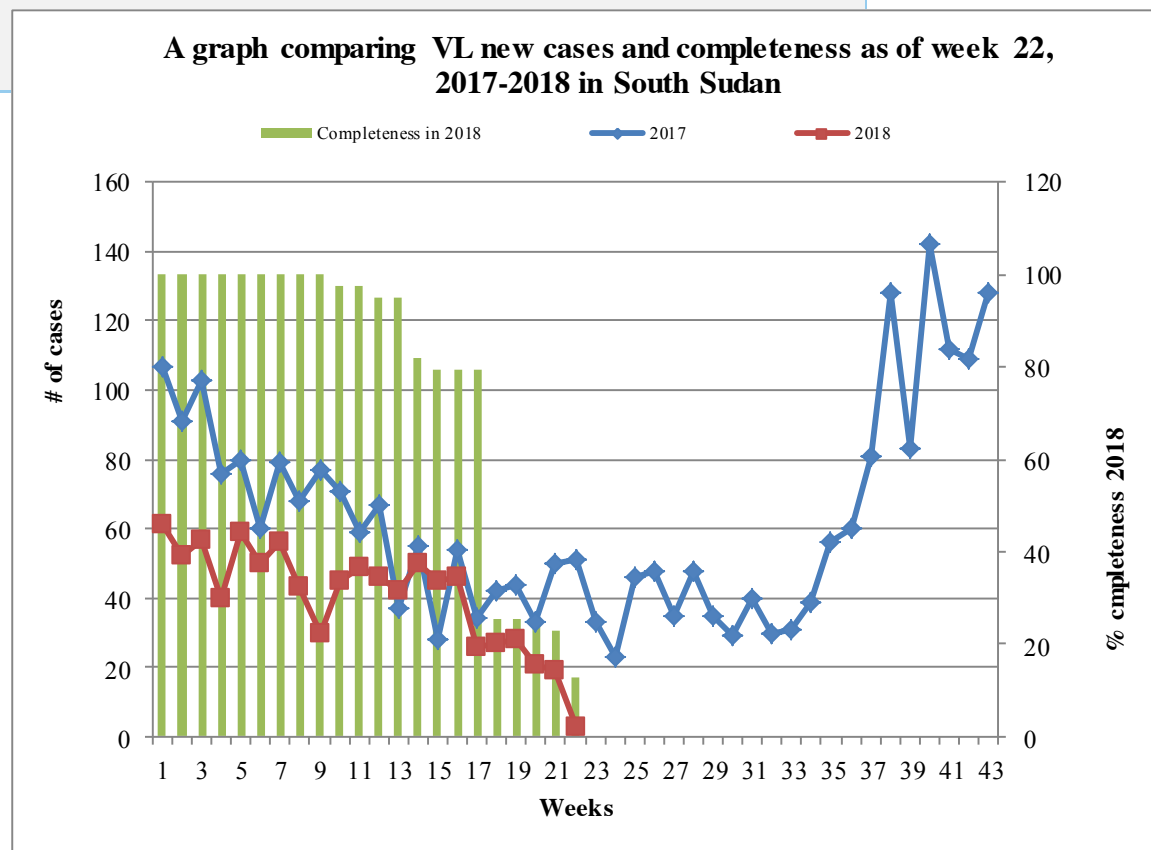
## Visceral Leishmaniasis | Kala-azar

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 22, six health facilities reported 4 cases; all were new cases

Since the beginning of 2018, a total of **1,132** cases including **35 deaths (CFR 3.1%)**; **25 (2.2%) defaulters**; **895 (79.1%)** new cases; **44(3.9%)** PKDL; and **203(17.9%)** relapses - all reported from less than half of the **39** treatment centers.

In the corresponding period of 2017, a total of **1,719** cases including **29 deaths (CFR 1.7%)** and **53(3.4%) defaulters** were reported from 21 treatment centers.



Graph:1 Cumulative number of VL new cases by WEEK 22 (29<sup>th</sup> May 2018 –4<sup>th</sup> June 2018).

The majority of cases in 2018 have been reported from Lankien (**676**), Kurwai (**72**), Walgak (53), Ulang (51), Malakal IDP (50), Narus (42), Pieri (36), KCH (28), Pagil (27), Doma and KMH (15), Bentiu (17) and Adong (13).

The most affected groups include, males [**574 cases (50.7%)**], those aged  $\geq 15$  years and above [**516 cases (45.6%)**] and 5 - 14 years [**423(37.4%)**]. A total of **184 cases (16.3%)** 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.

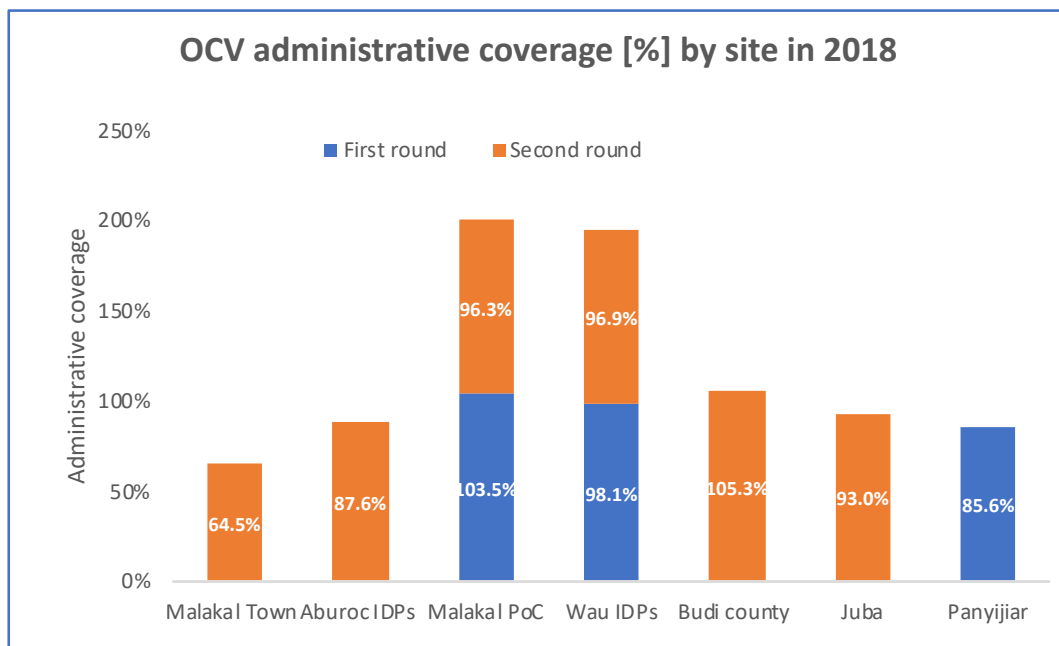
## Cholera preparedness and preventive activities - Oral cholera vaccine campaigns - 2018

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	30Jun-7Jul 2018	28Jul- 6Aug 2018	MoH, WHO, Unicef, SCI, CARE
Yirol East & West	143,722	139,410	139,410	139,410	278,821	TBD	TBD	MoH, WHO, Unicef, LiveWell
Lankien	65,000	63,050	63,050	63,050	126,100	TBD	TBD	MoH, WHO, Unicef, MSF-H
Panyijiar	76,000	73,720	75,000	75,000	150,000	16-22May2018	TBD	MoH, WHO, Unicef, IRC
<b>Totals</b>	<b>776,341</b>	<b>753,051</b>	<b>543,375</b>	<b>783,417</b>	<b>1,326,793</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
- A additional 113,800 doses of oral cholera vaccines requested from GTFCC arrived in the country on 18/04/2018.
- GTFCC secured support from GAVI for a consultant that is in the country to finalize the cholera prevention and response plan for South Sudan

- **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> round)
- **Upcoming campaigns for 2018**
  - Panyijiar (2<sup>nd</sup> round)
  - Torit (1<sup>st</sup> round)
  - Yirol East and parts of Yirol West (1<sup>st</sup> round)
  - Lankien, Akobo, Pieri & Karam (1<sup>st</sup> round)
  - Leer Town (pre-emptive campaign)

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	36337	98.1%	35887	96.9%
5 Budi county	89,377			94,128	105.3%
6 Juba	216,852			201,737	93.0%
7 Panyijiar	75,000	64,214	85.6%		
<b>Total</b>	<b>470,607</b>	<b>124,828</b>	<b>92.1%</b>	<b>375,217</b>	<b>94.8%</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> round)

• **Pre-emptive campaign Leer Town**

- Due to the recent displacements in Leer county; the first round of pre-emptive campaigns is scheduled to start during the week of 11 June 2018 targeting 10,000 individuals aged one year and above in Leer Town.
- The campaign is led by MedAir and supported by WHO and UNICEF.

## Ebola DR Congo update & risk to South Sudan

### Situation as of 12 June 2018

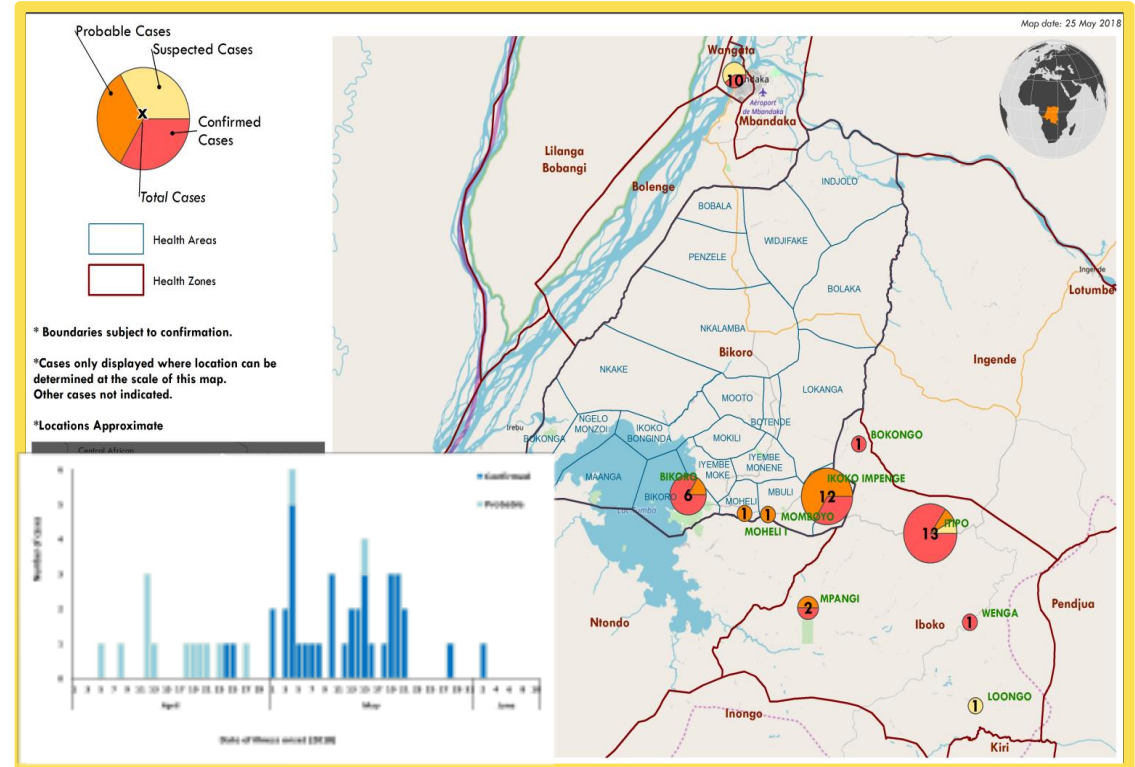
**Confirmed cases: 38**

**Probable cases: 14**

**Suspect cases: 3**

**Total cases: 55 (28 deaths CFR 50.9%)**

- The MoH DR Congo declared an outbreak of Ebola virus disease on 8 May 2018 Equateur province in Northwestern DR Congo
- The epidemic is active in three health zones - Bikoro (10 confirmed cases, 11 probable, 1 suspect, & 18 deaths); Iboko (24 confirmed cases, 3 probable, 2 suspect & 7 deaths); & Wangata (4 confirmed cases and 3 deaths).
- [5 HCW affected - 4 confirmed & 2 deaths].
- At least 634 contacts identified & being followed up.
- Recombinant vesicular stomatitis virus–Zaire Ebola virus (rVSV-ZEBOV) vaccines were delivered to Kinshasa by WHO - The initial vaccination is targeting immediate contacts to confirmed cases, contacts of contacts and frontline health workers. Since 21 May 2018, a total of 2,295 people have been vaccinated in the three affected health zones (713 -Wangata; 1,054 -Iboko; 498-Bikoro).
- Regional risk is high after cases were confirmed in Mbandaka - major commercial hub - with road, river, & air transport poses a risk to neighbouring countries.



### EVD Preparedness activities in South Sudan

- Screening of international travelers commenced at JIA
- RRT training undertaken on 26 May 2018 in Juba
- RRT deployed to investigate suspect Ebola case in Makpandu
- Updated EVD contingency planning completed along with EVD checklist
- Designation an EVD isolation facility - space identified
- Updating EVD SoPs
- Implementation of other preparedness interventions underway



Response | Suspect outbreaks being investigated

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 has been stepped up but no additional cases have been 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. Conclusive laboratory confirmation underway. 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.
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 being investigated

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	8	Rumbek Center	Teyau	Eight suspect measles cases reported from Teyau, Rumbek Centre - MMT to be dispatched for the investigation. Specimens collected for testing.
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 being investigated

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.
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.

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

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

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

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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>

