

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W18 2018 (Apr 30- May 06)



- Completeness for IDSR reporting at county level was 59% . Completeness for EWARS reporting from IDP sites was 85%

- A total of 7 alerts were reported, of which 14% have been verified. 0 alerts were risk assessed and 0 required a response

- Rift Valley Fever outbreak - Yirol East with 57 suspect human cases including 6 confirmed; 3 probable; 26 non-cases; and 22 pending classification (with no definitive lab. test results). Nine confirmed animal cases (cattle).

- Suspect rabies cases continue to be reported in Bentiu PoC with a cumulative of 179 suspect cases including 2 deaths reported since Dec 2017. Community engagement, social mobilization, and risk communication, preventive vaccination, and discussions on curling stray dogs are underway.

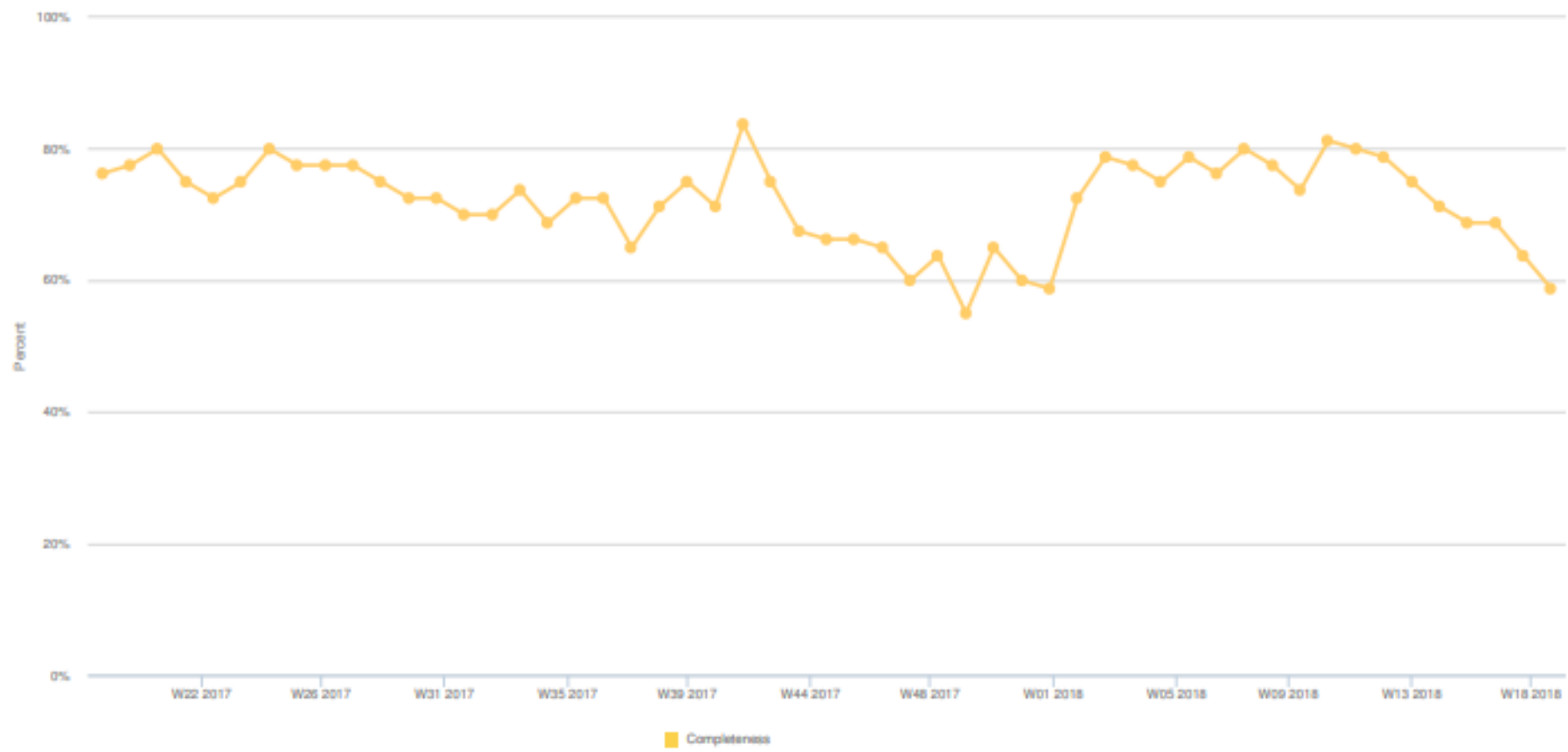
- Hepatitis E cases have been confirmed in Bentiu PoC and Old Fangak where a total of 28 suspect cases have been reported. Out of the 28 suspect cases; 10 have been confirmed positive for HEV by PCR (9 positive in Bentiu PoC and 1 positive in Old Fangak). The Ministry of Health and partners are working together to enhance surveillance, case investigation, sample collection, supportive clinical care, and WASH.

Table 1 | IDSR surveillance performance indicators by county (W18 2018)

Hub	Reporting		Performance (W18 2018)		Performance (Cumulative 2018)	
	# counties	# reports received	Completeness	Timeliness	Completeness	Timeliness
Aweil	5	4	80%	80%	82%	82%
Bentiu	9	4	44%	44%	78%	57%
Bor	11	4	36%	36%	48%	42%
Juba	6	4	67%	67%	75%	58%
Kwajok	7	3	43%	43%	95%	88%
Malakal	13	5	38%	38%	28%	12%
Rumbek	8	3	38%	38%	97%	94%
Torit	8	8	100%	100%	99%	70%
Wau	3	2	67%	67%	91%	76%
Yambio	10	10	100%	100%	99%	99%
South Sudan	80	47	59%	59%	74%	59%

- Completeness for IDSR reporting at county level was 59% in week 18 and cumulatively at 74% for 2018
- Timeliness for IDSR reporting at county level was 59% in week 18 and cumulatively at 59% for 2018

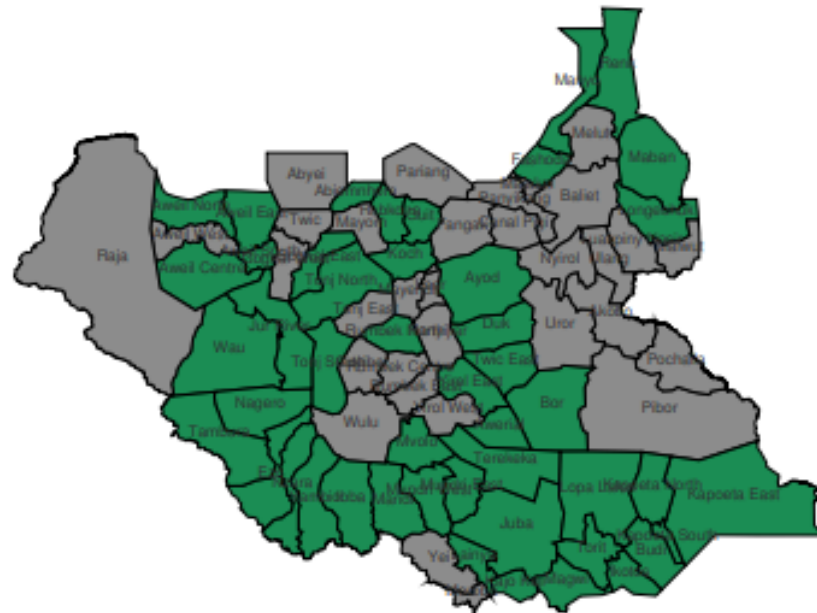
Figure 1 | Trend in IDSR completeness over time¹



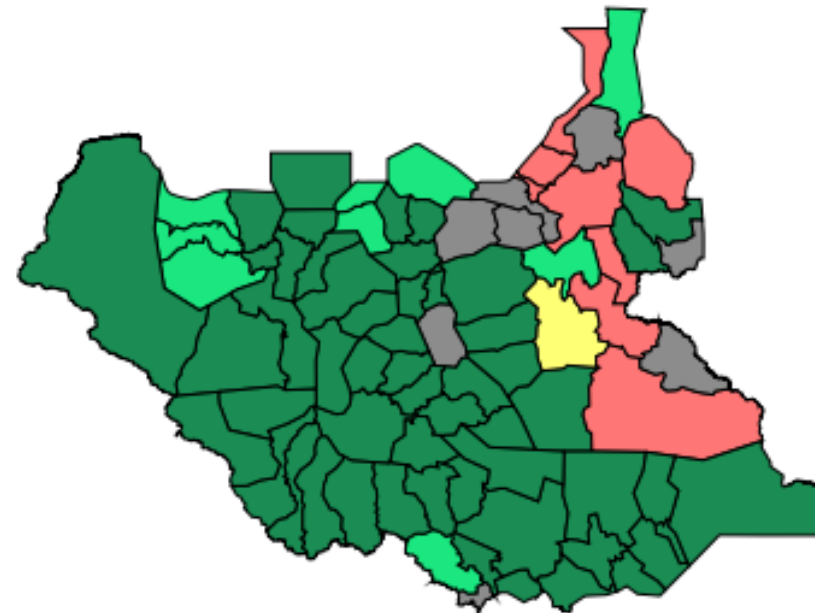
¹ Completeness footnote (to be drafted)

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

Map 1a | Map of IDSR completeness by county (W18 2018)



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



- Counties that submitted IDSR reports in W18 are shown in green in map 1a
- Counties that did not submit IDSR reports in W18 are shown in grey in map 1a

Table 4 | EWARS surveillance performance indicators by partner (W18 2018)

Partner	Performance		Reporting (W18 2018)		Reporting (Cumulative 2018)	
	# sites	# reports received	Completeness	Timeliness	Completeness	Timeliness
CMD	1	1	100%	100%	100%	100%
GOAL	2	2	100%	100%	100%	83%
HLSS	1	1	100%	100%	100%	100%
IMA	5	5	100%	100%	68%	63%
IMC	6	5	83%	83%	93%	92%
IOM	10	9	90%	90%	76%	76%
IRC	1	1	100%	100%	100%	100%
Medair	2	2	100%	100%	100%	94%
MSF-E	2	2	100%	100%	94%	78%
MSF-H	2	0	0%	0%	50%	44%
SMC	5	5	100%	100%	57%	57%
UNIDO	1	1	100%	100%	100%	100%
UNKEA	2	2	100%	100%	83%	83%
World Relief	1	1	100%	100%	100%	78%
Total	46	39	85%	85%	72%	69%

Timeliness and completeness for EWARN/IDP reporting stands at 85% for week 18 while cumulatively, completeness and timeliness are 72% and 69% respectively for 2018

Table 7 | Alert performance indicators by Hub

Hub	W18		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Aweil	0	0%	22	73%
Bentiu	1	0%	39	67%
Bor	2	0%	25	44%
Juba	2	0%	38	68%
Kwajok	0	0%	25	100%
Malakal	0	0%	26	58%
Rumbek	0	0%	25	60%
Torit	0	0%	26	69%
Wau	1	100%	13	54%
Yambio	1	0%	48	58%
South Sudan	7	14%	287	65%

Table 8 Summary of key alert indicators

W18	Cumulative (2018)	
7	287	Total alerts raised
14%	65%	% verified
0%	0%	% auto-discarded
0%	2%	% risk assessed
0%	1%	% requiring a response

A total of 7 alerts were reported in week 18 with 14% of the alerts in week 18 being verified; 0% were risk assessed and 0% required a response.

Table 9 | Alert performance indicators by event

Event	W18		Cumulative (2018)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	0	0%	42	67%
AWD	2	0%	143	63%
Bloody Diarr.	1	0%	78	45%
Measles	2	50%	56	73%
Meningitis	0	0%	0	0%
Cholera	0	0%	5	100%
Yellow Fever	0	0%	3	67%
Guinea Worm	0	0%	11	82%
AFP	1	0%	45	75%
VHF	0	0%	1	100%
Neo. tetanus	1	0%	3	33%
Event-based surveillance				
EBS total	0	0%	14	79%

Table 10 | Event risk assessment

W18	Cumulative (2018)	
0	4	Low risk
1	1	Medium risk
0	0	High risk
0	0	Very high risk

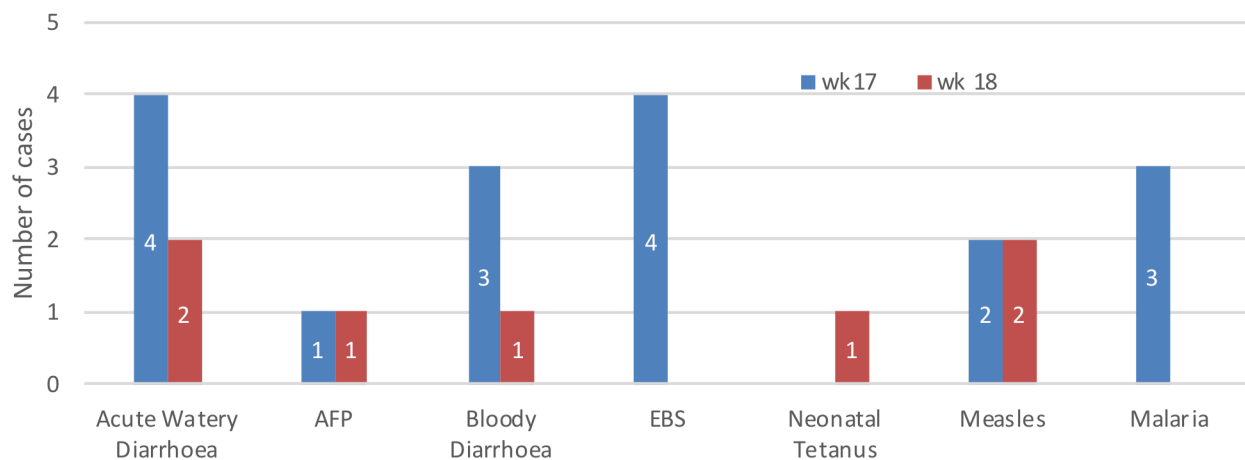
- During the week, AWD and measles were the most frequent infectious hazards reported.

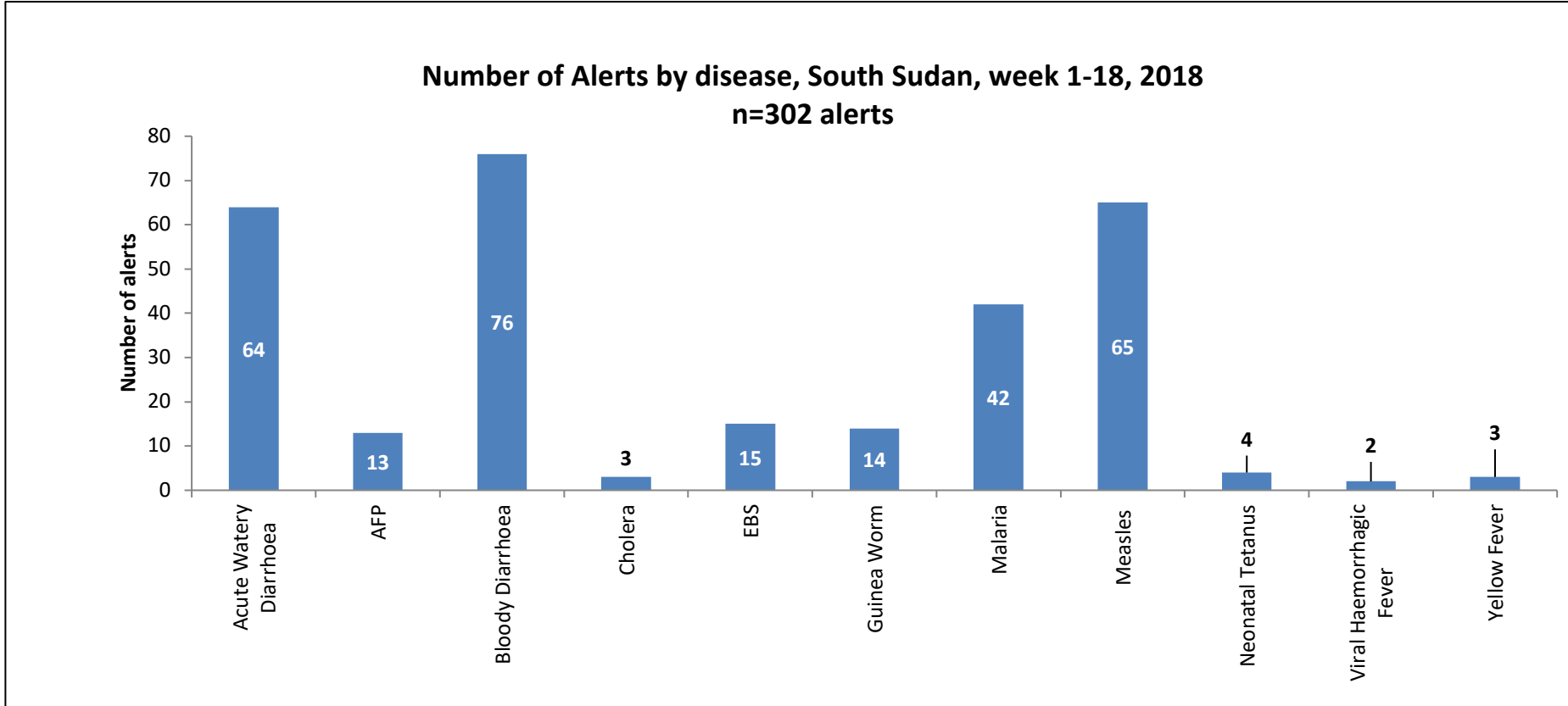
Alert by disease and county in W18 2018

County	Acute Watery Diarrhoea	AFP	Bloody Diarrhoea	Neonatal Tetanus	Measles	Total Alerts
Juba			1		1	2
Leer		1				1
Mundri East		1				1
Twic East			1		1	2
Wau					1	1
Total Alerts	2	1	1	1	2	7

- During week 18, a total of 7 alerts were reported.
- The table and chart show the distribution of alerts by hazard and location

Alerts by hazard in week 17 and week 18, 2018





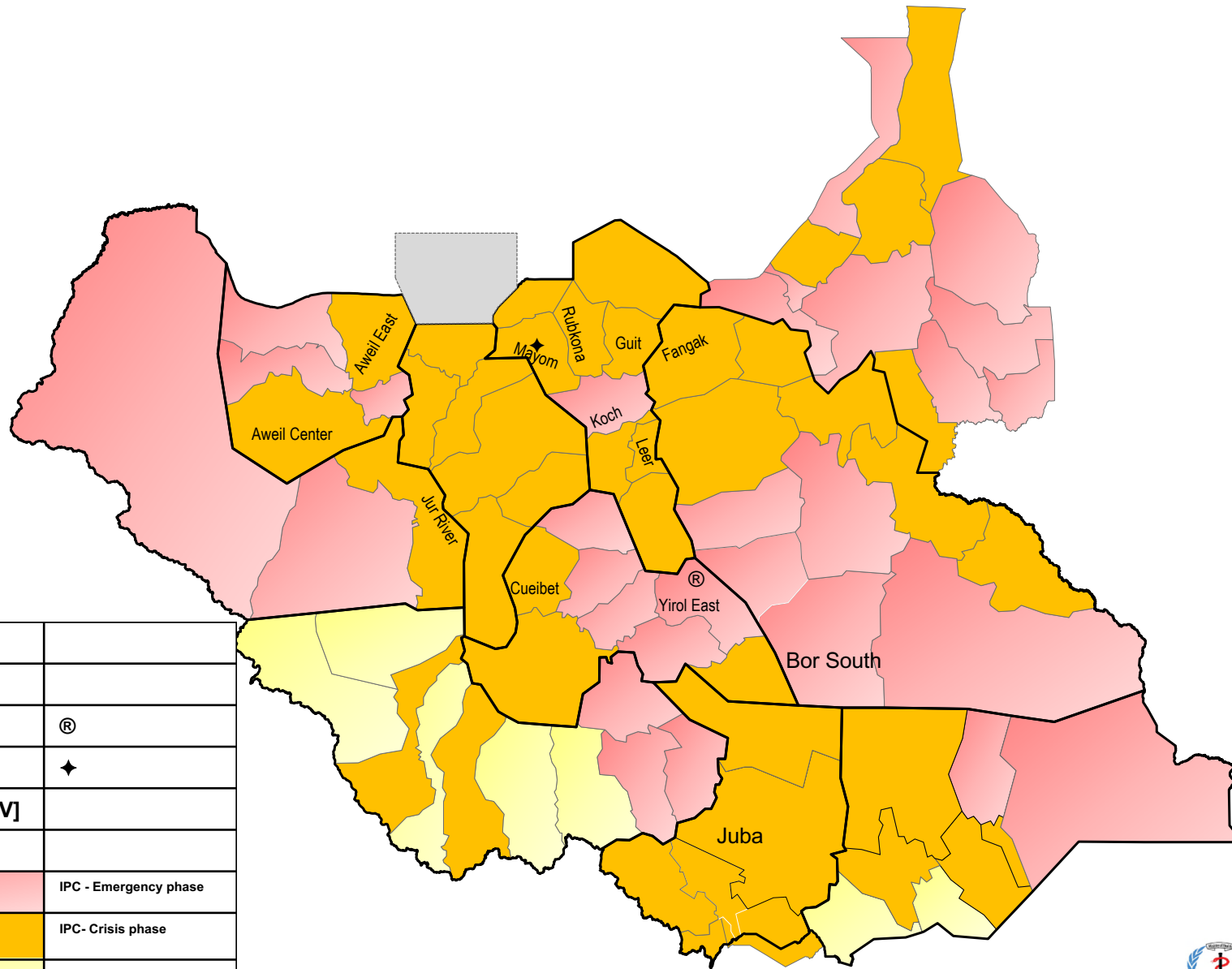
- The Figure shows the cumulative number of alerts triggered in 2018 by hazard and location.

Cumulative alerts by risk assessment stage in 2018

County	OUTCOME	RISK_ASSESS	VERIFICATION	Total Alerts
Acute Watery Diarrhoea			64	64
AFP		1	12	13
Bloody Diarrhoea			76	76
EBS		2	13	15
Guinea Worm	2		12	14
Neonatal Tetanus	2		2	4
Viral Haemorrhagic Fever			2	2
Yellow Fever			3	3
(blank)			1	1
Measles	4	6	55	65
Cholera			3	3
Malaria			42	42
Total Alerts	8	9	285	302

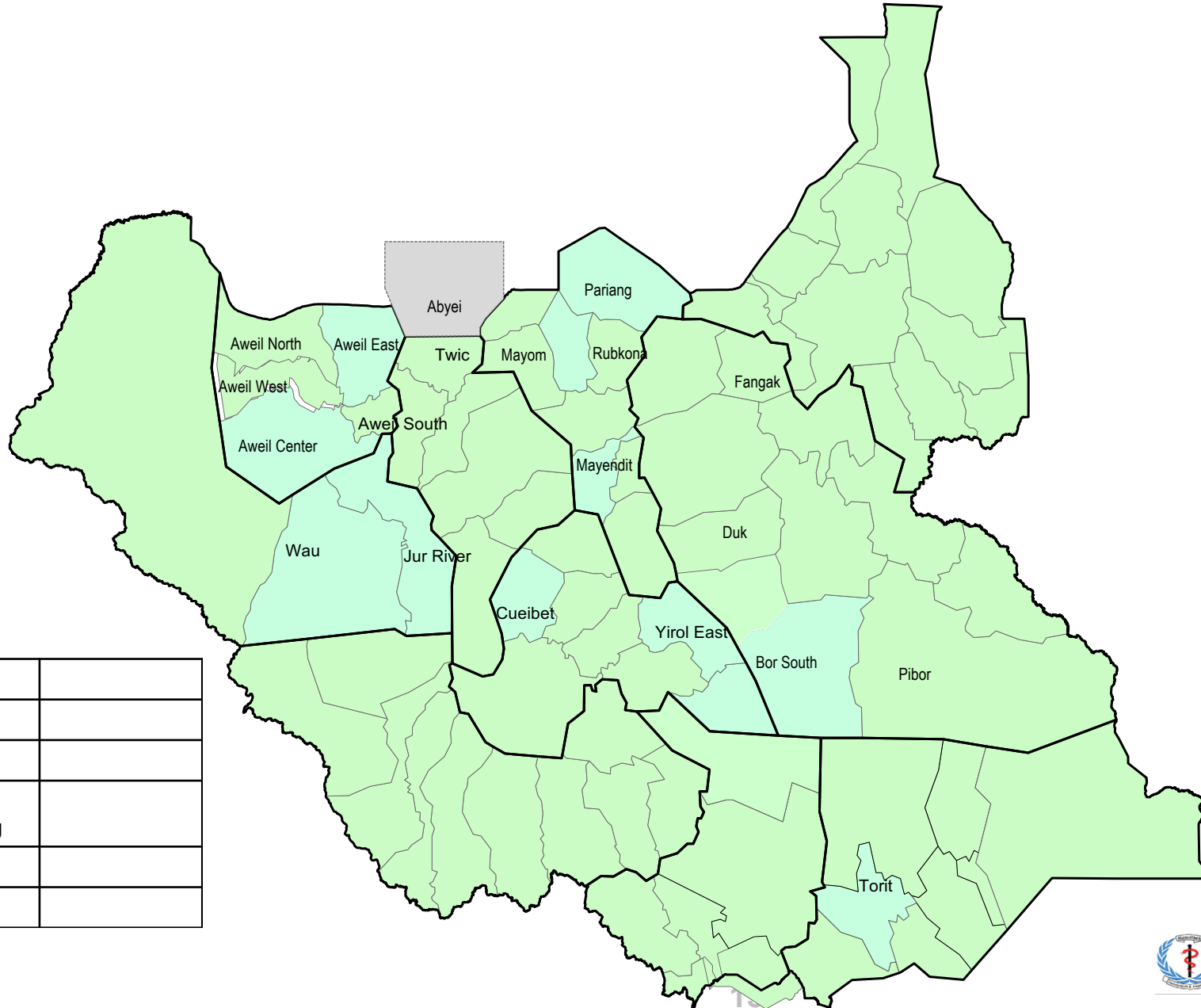
- The Figures show the cumulative alerts by risk assessment state in 2018
- Of the 302 alerts reported in 2018; a total of 285 alerts are at verification stage; and the rest are at risk assessment stage (9 alerts); 8 at outcome stage.

Confirmed Outbreaks South Sudan – 13 May 2018



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

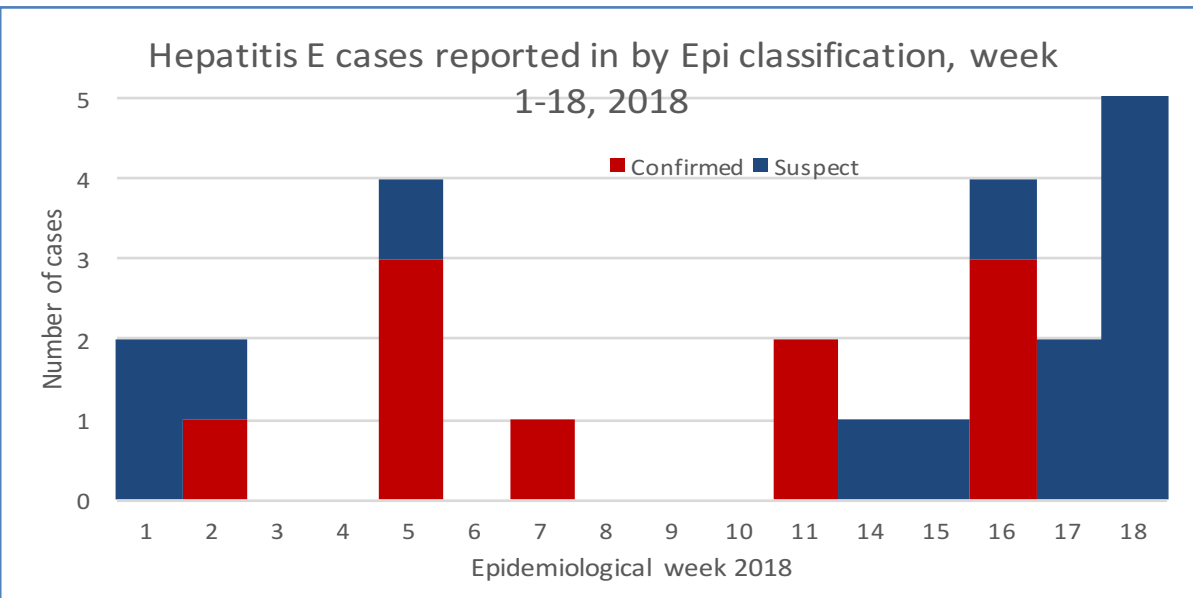
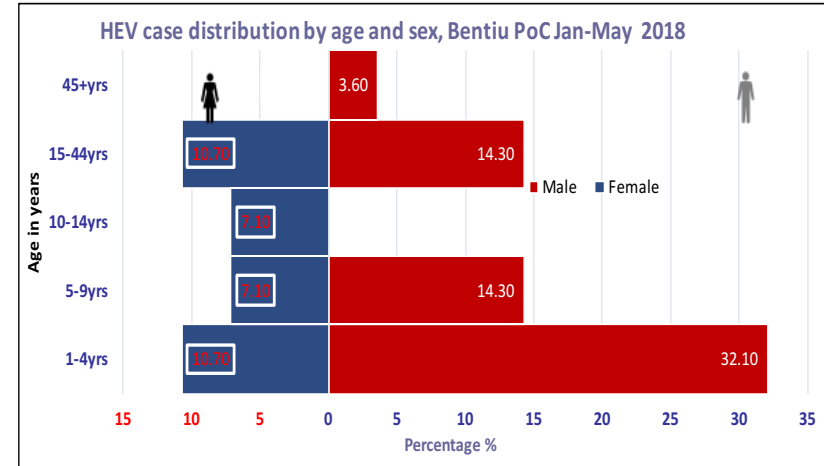
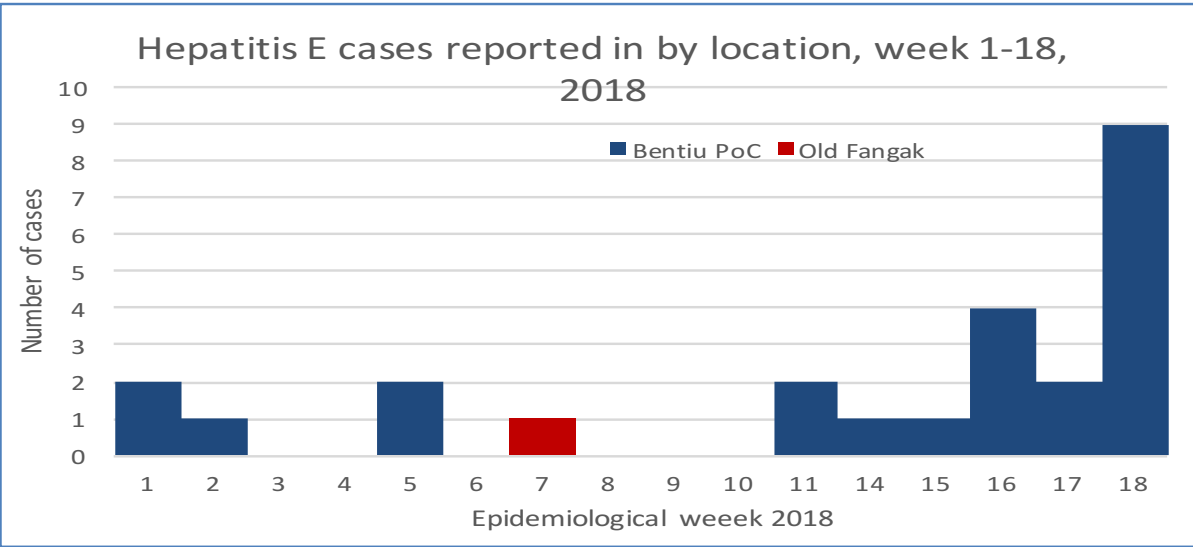
Suspect Outbreaks South Sudan – 13 May 2018



Meningitis	
Measles	
Rabies	
Health effects of petroleum drilling	
Pertussis	

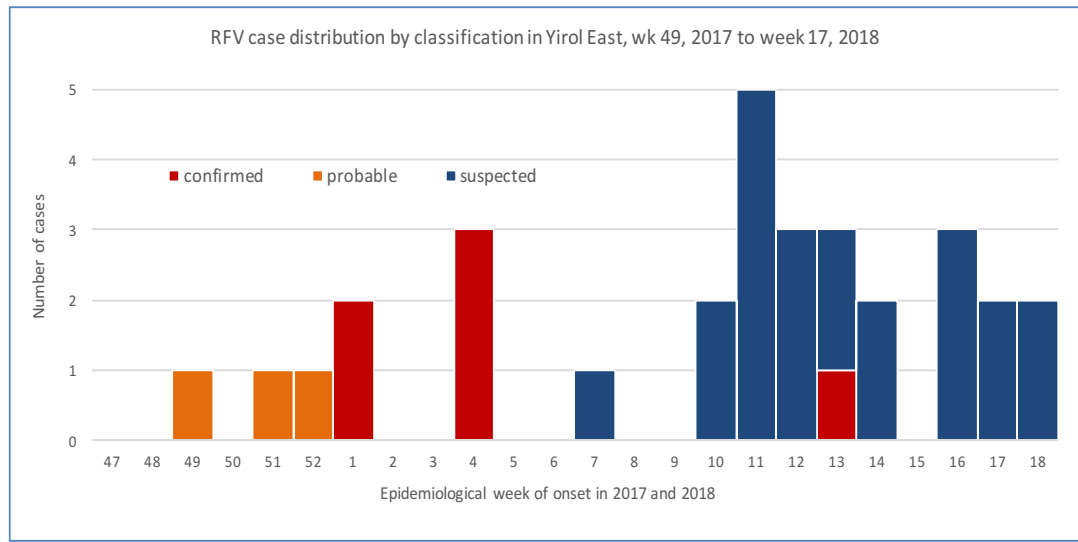
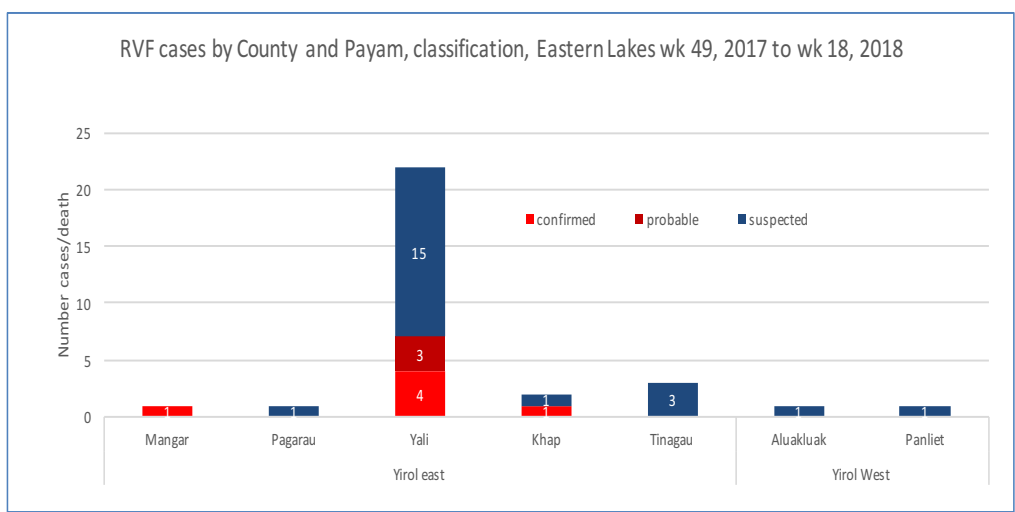
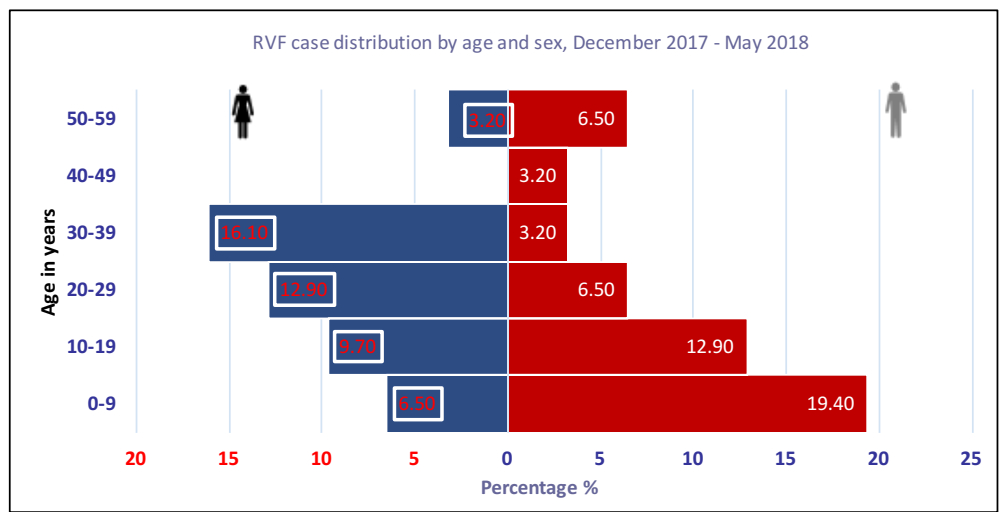
Aetiologic agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
New epidemics								
Ongoing epidemics								
RVF	Yirol East	28/12/2017	0	57 (0.053)	Yes	N/A	Yes	N/A
Rubella	Jur River	14/02/2018	1	74 (0.038)	Yes	No	Yes	N/A
Rubella	Juba	26/02/2018	0	22 (0.0037)	Yes	No	Yes	N/A
Hepatitis E	Old Fangak	15/02/2018	0	01 (0.001)	Yes	No	Yes	Yes
Hepatitis E	Bentiu PoC	03/01/2018	9	27 (0.023)	Yes	No	Yes	Yes
Rabies probable	Bentiu PoC	06/12/2017	11	179 (0.15)	Yes	Yes	Yes	N/A
Controlled epidemics								
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

Hepatitis E, Bentiu PoC and Old Fangak



- At least 28 suspect case of Hepatitis E (HEV) have been reported in 2018. Of the 28 suspect cases, a total of 10 cases have been PCR confirmed as HEV (9 in Bentiu PoC & 1 in Old Fangak).
- At least 64.3% of the cases are 1-9 years of age; and 64% being male.
- Health-WASH partners meeting convened in Bentiu PoC agreed to:
- Map line listed cases to facilitate source identification
- Health partners to conduct joint Continuous Medical Education for healthcare workers
- Unicef has shared key HEV messages - for radio programs on [Kondial FM & Bentiu FM] and community sensitizations.

Ongoing epidemics - Epidemic description - RVF Eastern Lakes state

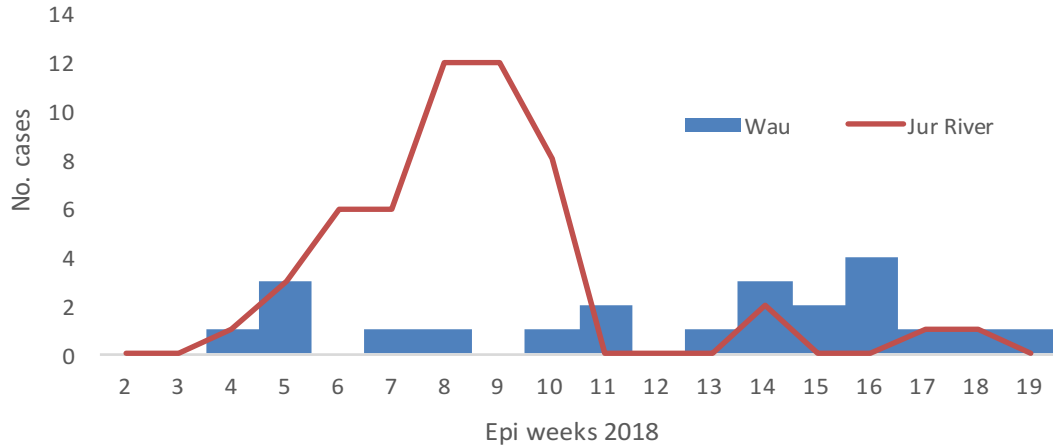


Sno.	Description	Number
1	Suspect cases	57
2	Total deaths	4
3	Confirmed cases	6
4	Probable cases	3
5	Cases pending testing	22
6	Non-cases	26
7	Cases on admission	0
8	Total human samples collected	39
9	Total animal samples collected	28
10	Positive animal cases	9

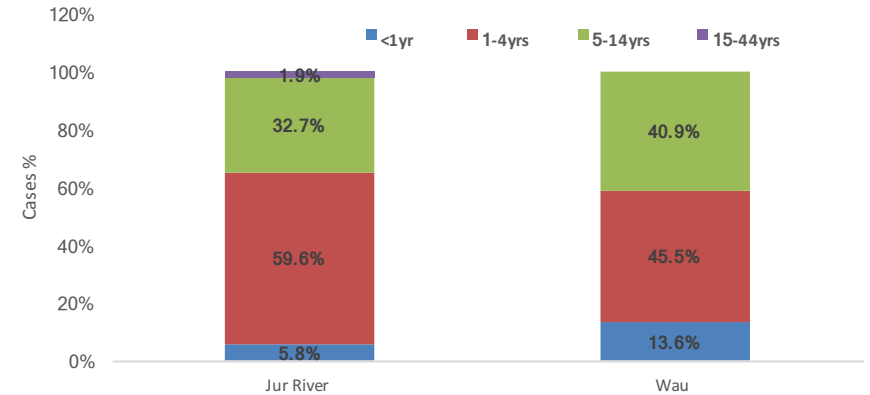
- In the period 7 December 2017 to 6 May 2018, a total of 57 suspect RVF cases were reported in Eastern Lakes.
- These were reclassified based on investigations and laboratory results, such that as of 6th May 2018, there were a total of six (6) RVF confirmed cases, three (3) probable, and 22 suspect 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

Rubella in Jur River and Wau counties

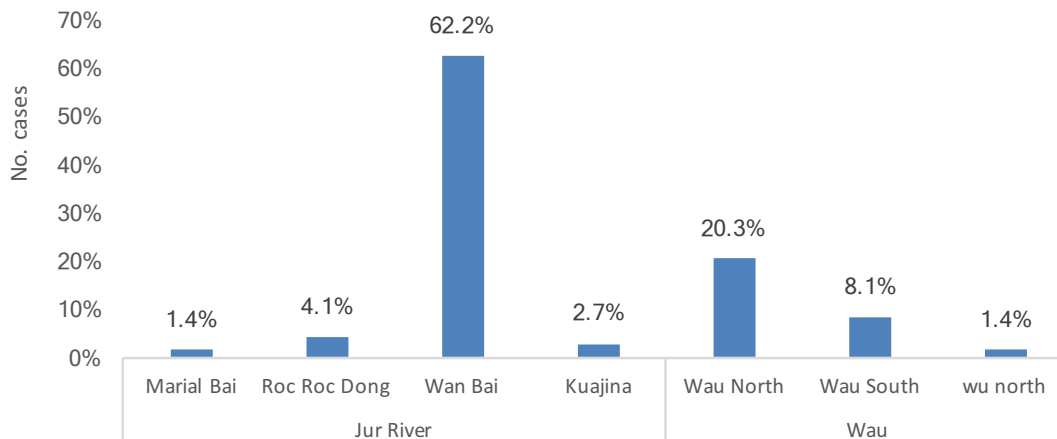
Rubella cases in Wau & Jur River, week 4 to 19, 2018



Rubella case distribution by age - Wau & Jur River Counties

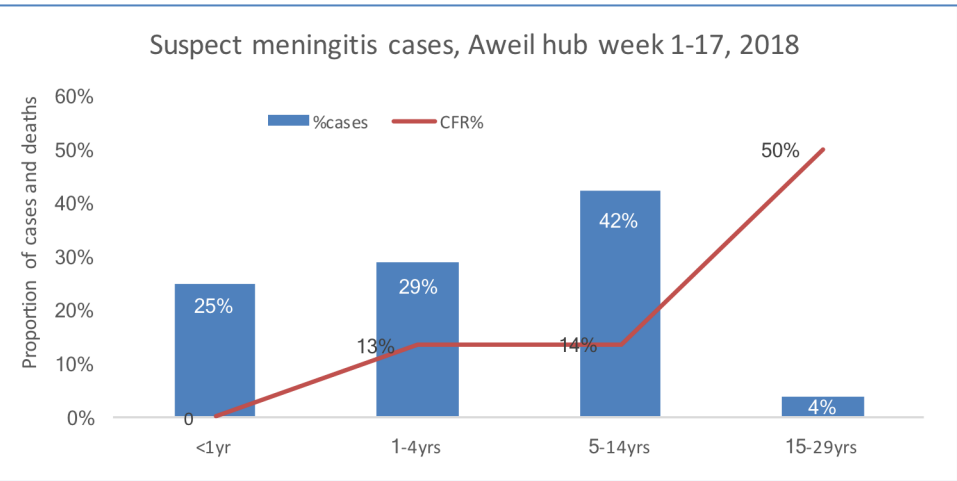
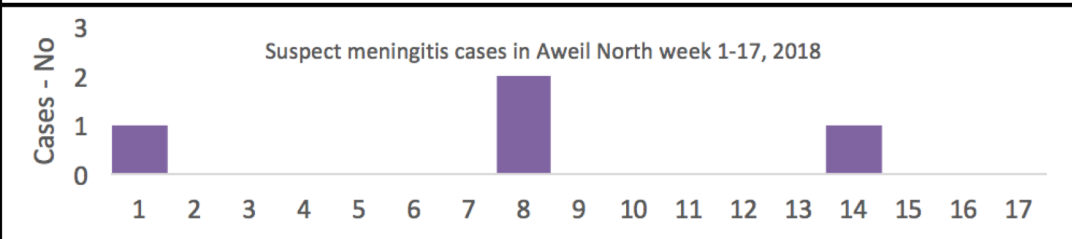
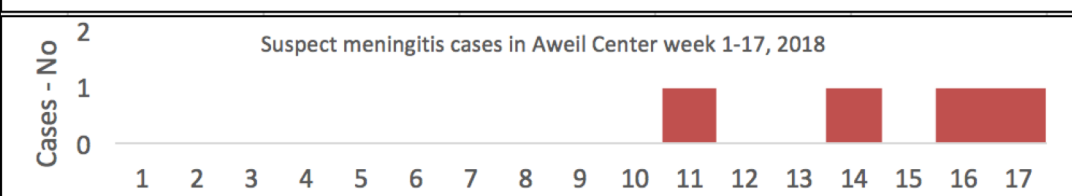
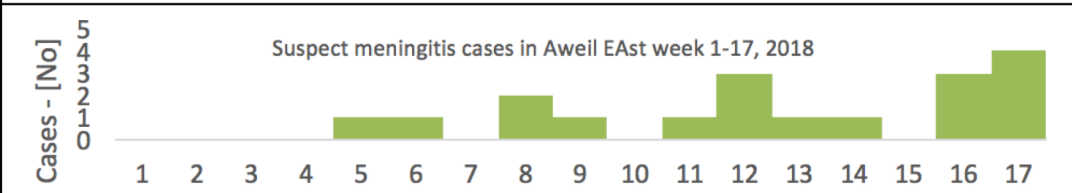
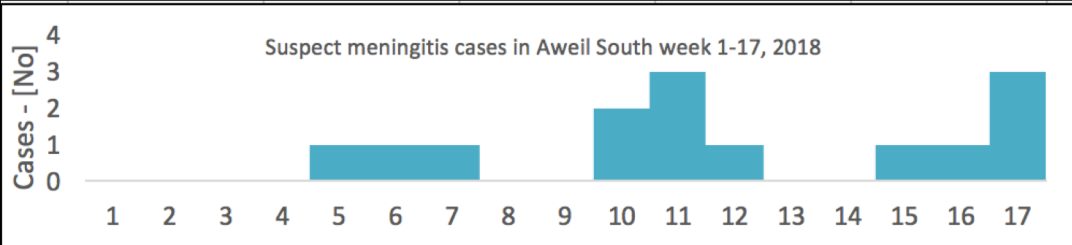
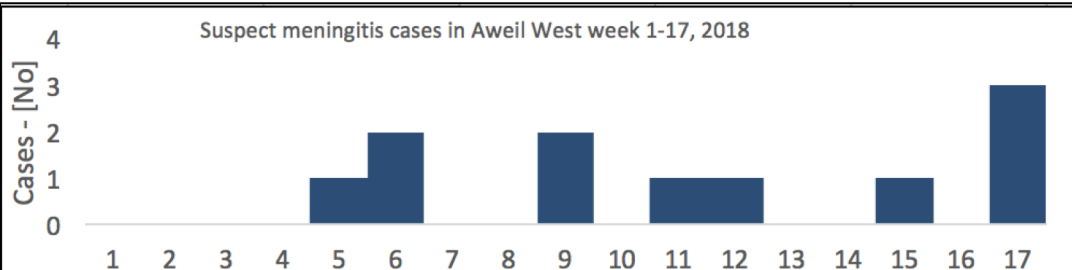


Rubella cases by payam in Jur River and Wau Counties, weeks 4-18, 2018



- At least 74 rubella cases have been reported from Jur River (52 cases) and Wau (22 cases) with no deaths
- Cases have been reported from week 4 of 2018
- Most cases were not vaccinated
- Most cases are aged 1 - 4 years - 65.4% [Jur River] & 59.1% in Wau.
- Most cases (62.2%) are from Wan Bai payam in Jur River county
- Females constitute 40% of the cases reported in Jur River and Wau.
- No cases reported in females of childbearing age.
- The current response entails case identification, line listing, supportive care for suspect cases; and community mobilization for enhanced routine immunization.
- Health authorities (at health facility and CHD) and partners are advised to continue case-based surveillance with sample collection and line listing for suspect cases; provide supportive care to suspect cases; and enhance routine immunization for infants - at static clinics & outreach posts.

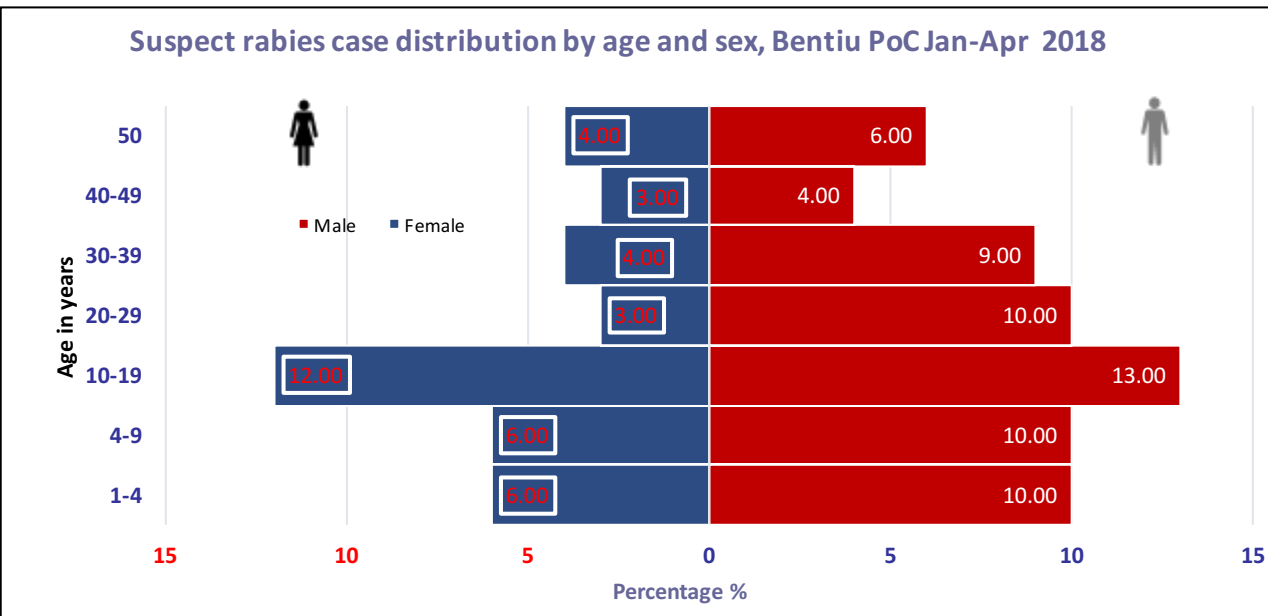
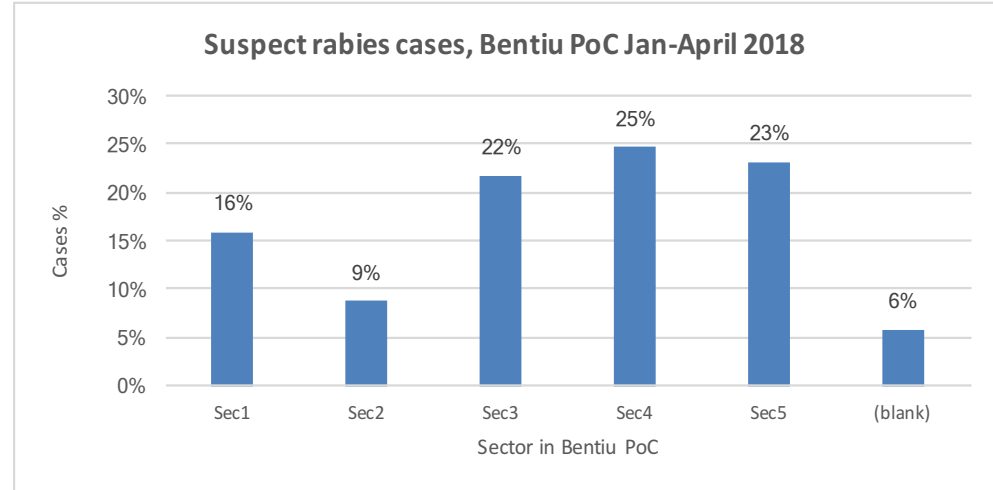
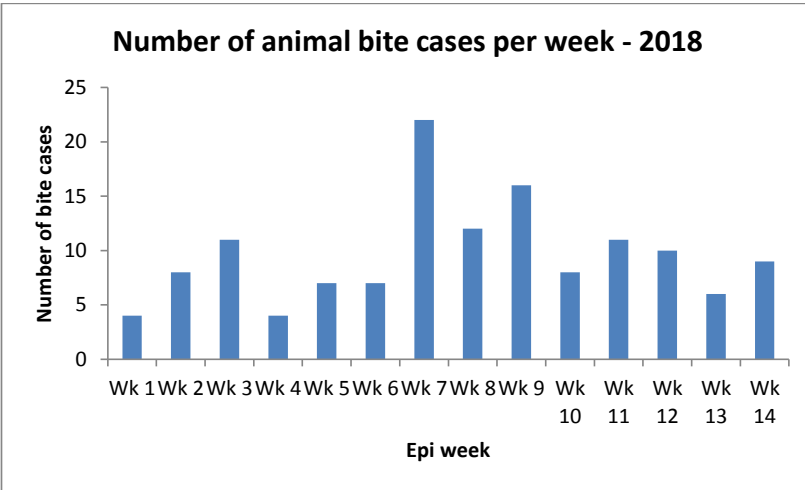
Suspect meningitis cases in Aweil hub



- From week 1-18, 2018; at least 52 suspect meningitis cases including 6 deaths (CFR 11.54%)
- Most cases and deaths reported in 1-4 yrs & 5-14yrs age groups
- Non of the five affected counties attained the alert threshold during the period week 1-17, 2018.
- Six samples positive for *Streptococcus pneumoniae* following rapid pastorex testing or showed gram positive diplococci on gram stain.
- No samples have been submitted to the National Public Health Laboratory for culture and sensitivity testing
- Surveillance officers and partners encouraged to collect samples in TI for culture and sensitivity testing in Juba

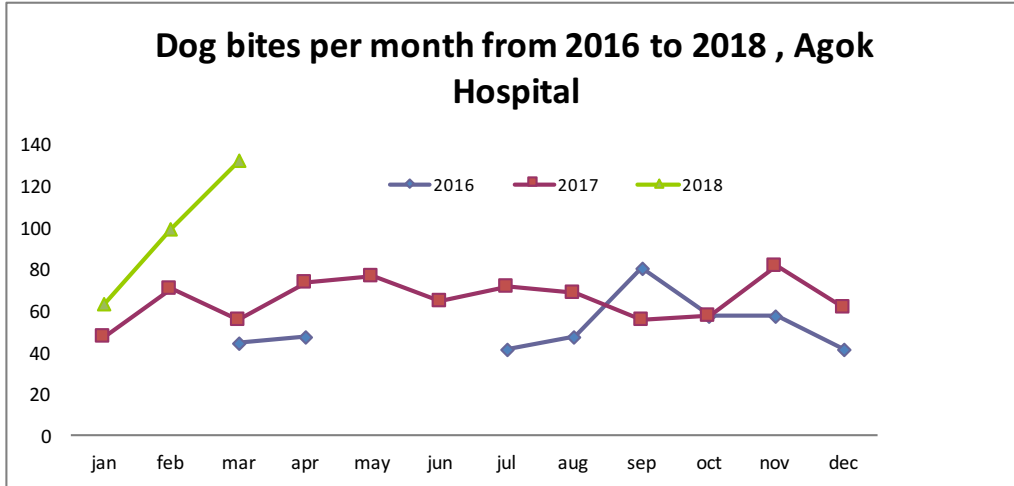
County	Cases	Population	AR cases/100,000
Aweil Center	4	105,425	3.79
Aweil East	18	489,714	3.68
Aweil North	4	213,285	1.88
Aweil South	14	112,162	12.48
Aweil West	11	258,616	4.25

Animal bites - suspect rabies, Bentiu PoC

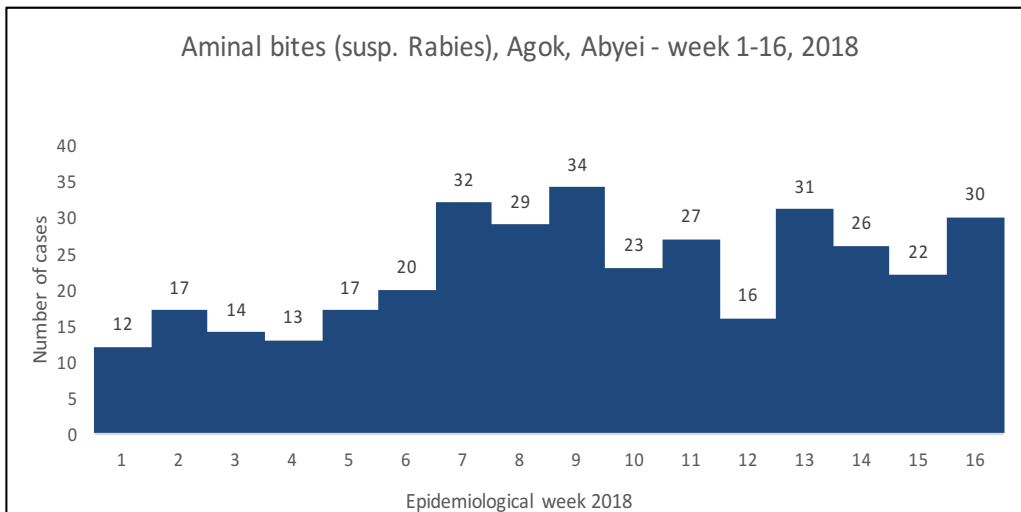


- During week 18, a total of 11 animal bite cases were reported in Bentiu PoC
- A cumulative of 179 animal bite cases including 2 deaths have been reported since 6 Dec 2017.
- Sectors 3,4, &5 have reported most cases and children <19yrs constitute more than 50% of the cases with males affected more than 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
- Discussions underway on the feasibility of curling stray dogs

Animal bites - suspect rabies, Agok, Abyei Administrative Area



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



- An increase in dog bite (suspect rabies) cases have been 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 363 cases reported in 2018 (week 1-16);
- Current response entails surveillance - case detection and line listing and post exposure prophylaxis with rabies vaccine.
- FAO has been engaged to support community response to reduce exposure to the source through vaccination of domestic dogs and corresponding engagement with the local authorities on the feasibility of curbing stray dogs.

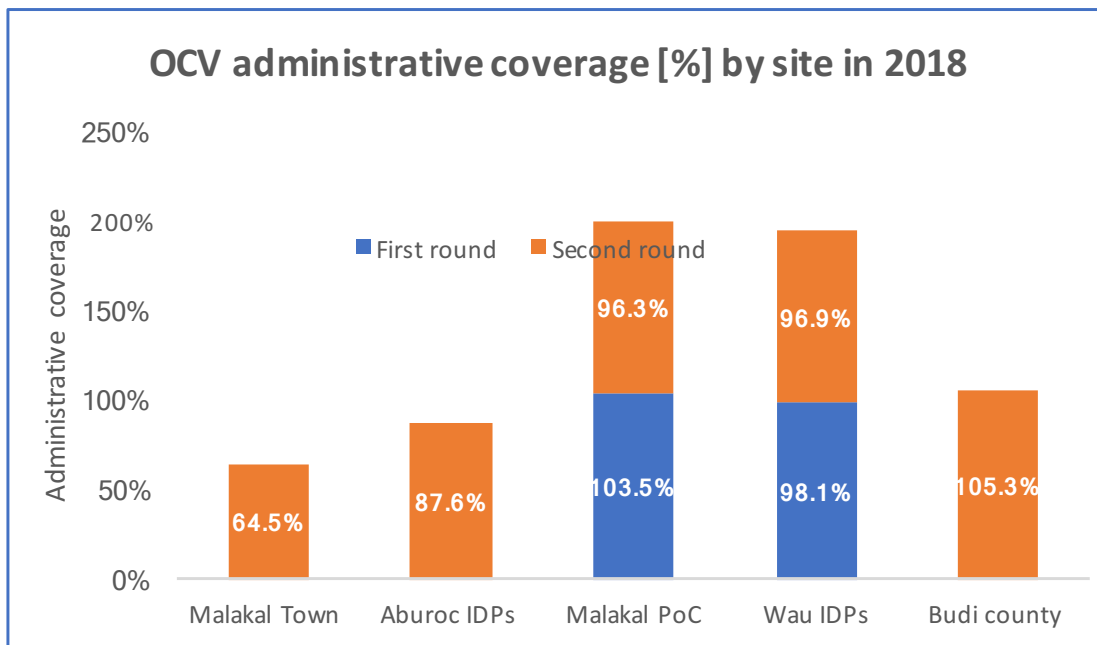
Cholera preparedness and preventive activities - Oral cholera vaccine campaigns - 2018

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-France & 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	160,000	155,200	155,200	155,200	310,400	TBD	TBD	MoH, WHO, Unicef, SCI, CARE
Yirol East & West	268,446	260,393	260,392	260,392	520,784	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	TBD	TBD	MoH, WHO, Unicef, IRC
Totals	880,896	854,469	644,793	884,835	1,529,628			

- 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
- An 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 (2nd round)
 - Aburoc IDPs (2nd round)
 - Malakal PoC (1st & 2nd round)
 - Wau PoC+IDPs (1st & 2nd round)
- **Upcoming campaigns for 2018**
 - Juba Town - (2nd round) - started 25th Apr 18 & is ongoing
 - Torit (1st round)
 - Yirol East and Yirol West (1st round)
 - Lankien, Akobo, Pieri & Karam (1st round)

Oral cholera vaccine campaigns administrative coverage - 2018

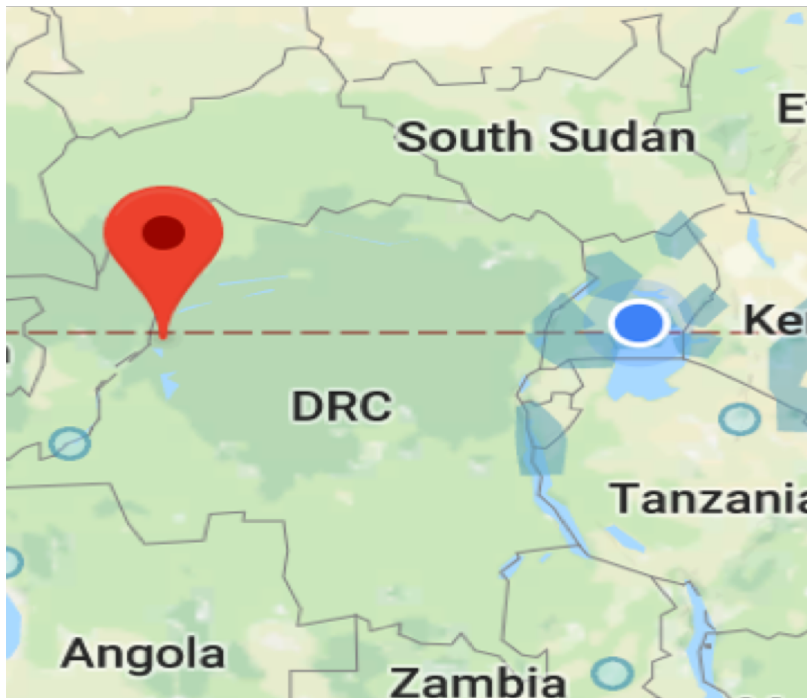


- The following OCV campaigns have been completed in 2018:
 - Malakal Town (2nd round)
 - Aburoc IDPs (2nd round)
 - Budi county (2nd round)
 - Malakal PoC (1st & 2nd round)
 - Wau PoC+IDPs (1st & 2nd round)

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%
Total	178,755	60,614	33.9%	173,480	97.0%

Ebola DR Congo update & risk to South Sudan

- The MoH DR Congo declared an outbreak of Ebola virus disease on 8 May 2018.
- [As of 11 May 2018, at least 34 cases including 18 deaths \(CFR 52.9%\), among which, two are confirmed, 14 suspected, and 18 probable have been reported from Bikoro Health Zone, Equateur province in Northwestern DR Congo.](#)
- The risk of cross-border spread to South Sudan is low.
- Currently, there are no reported suspected Ebola virus disease cases in South Sudan.
- Nevertheless, preparedness measures have been initiated in response to the current event



Preparedness activities in South Sudan

- Inline with WHO guidelines for preparedness to EVD and other VHF the Ministry of Health RSS is being supported to implement the following preparedness activities:
- The Ebola contingency plan is being updated to enhance readiness capacities.
- The outbreak taskforce at the national level and in Gbudue state have been activated to coordinate preparedness and risk monitoring activities.
- Surveillance officers have been alerted and supported to enhance surveillance.
- In addition, social mobilization and health education is ongoing to enhance public awareness.
- Ebola virus disease kits have also been prepositioned to facilitate suspect case investigation and response.
- A high-level advocacy by the Minister of Health and his senior management is planned to the border state of Gbudue on 17 May 2018

WHO advises against the application of any travel or trade restrictions on the Democratic Republic of the Congo based on the currently available information. WHO continues to monitor reports of measures being implemented at points of entry

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	02 (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 from the second suspect case from Twic county was positive for <i>Streptococcus pneumoniae</i> .
14Feb18	meningitis	20(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.

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.

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

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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.

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