

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W10 2019 (Mar 04, 2019- Mar 10, 2019)



- The completeness for IDSR reporting at the county level was 64% in week 10 of 2019. The completeness for EWARS reporting from IDPs was 75%.
- The latest EVD alerts that was reported from Tambura on 14th March 2019 has been investigated and Ebola virus (all species), Marburg, and RVF ruled out on PCR testing.
- Two (2) new measles outbreaks have been confirmed in the country in week 10, 2019. An outbreak was confirmed in Aweil South County following laboratory confirmation of four (4) suspected measles samples. The second outbreak was declared in Melut County after three (3) suspected measles samples tested positive for measles IgM antibodies.
- Four rubella outbreaks confirmed in Aweil Center (3 rubella IgM positive cases); Bor South (4 rubella IgM positive cases); Gogrial West (5 rubella IgM positive cases); and Yirol East (3 rubella IgM positive cases).
- A reactive vaccination campaign targeting 76,024 children aged between 6-59 months in Gogrial West was conducted between 11th March 2019 and 16th March 2019. According to preliminary data representing 84% of all the data that was expected, 71,849 (94.5%) children have been vaccinated
- A team of MoH, WHO and IPs visited Kuerdeng on 11th February 2019 to conduct investigation of a suspected AWD and ABD outbreak in Kuerdeng. The six (6) AWD samples collected during the mission have all tested negative for *vibrio cholerae*. No organisms were isolated on culture. The one (1) acute diarrhea bloody diarrhea sample's result is pending. Findings from analysis of water samples indicated that the water was unfit for human consumption. Re-establishment of basic health and WASH services, and provision of surge HR was recommended to implementing partners
- A new suspected HEV case has been reported from Bentiu PoC in week 10, 2019. Cumulatively, 22 suspected HEV cases have been reported in Bentiu PoC since the beginning of 2019.
- Considering the confirmed EVD outbreak in North Kivu, the South Sudan EVD contingency plan has been updated and implemented to mitigate the risk of EVD importation and enhance readiness capacities.

SURVEILLANCE PERFORMANCE

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

Table 1 | IDSR surveillance performance indicators by county (W10 2019)

Hub	Reporting		Performance	
	# counties	# reports received # reports	Completeness	Timeliness
Aweil	5	5	100%	100%
Bentiu	9	5	56%	56%
Bor	11	9	82%	82%
Juba	6	2	33%	33%
Kwajok	7	2	29%	29%
Malakal	13	10	77%	62%
Rumbek	8	8	100%	100%
Torit	8	0	0%	0%
Wau	3	0	0%	0%
Yambio	10	10	100%	100%
South Sudan	80	51	64%	61%

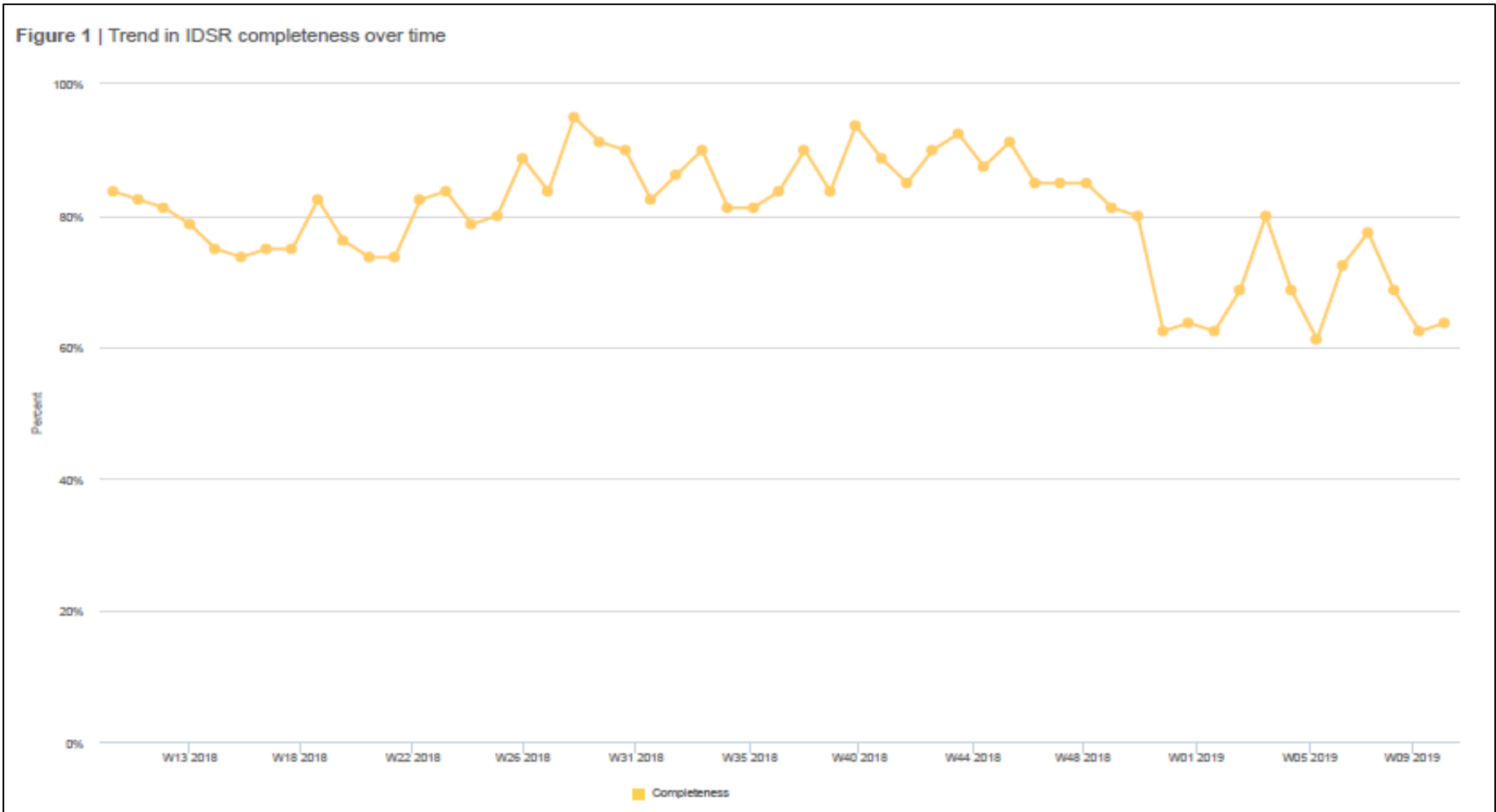
Table 2 | Summary of key IDSR surveillance indicators

W10	Cumulative (2019)	
80	-	Number of counties
64%	67%	Completeness
61%	59%	Timeliness

Table 3 | IDSR report submissions

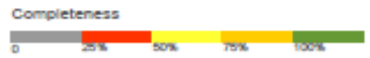
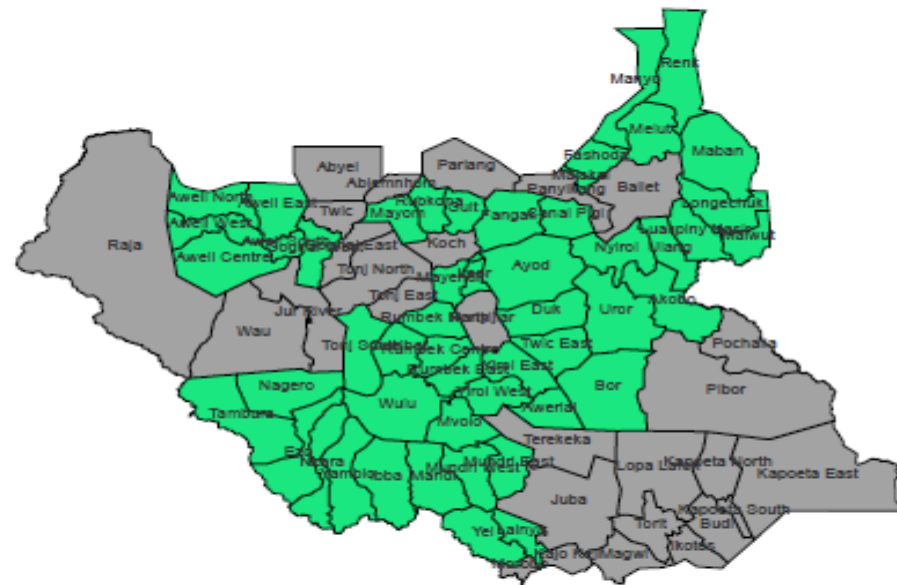
W10	Cumulative (2019)	
51	586	total submissions
5	0	submissions by mobile
46	0	submissions by web

- Completeness for IDSR reporting at the county level was 64% in week 10, 2019 and cumulatively at 67% for 2019.
- Timeliness for IDSR reporting at the county level was 61% in week 10 and cumulatively at 59% for 2019.

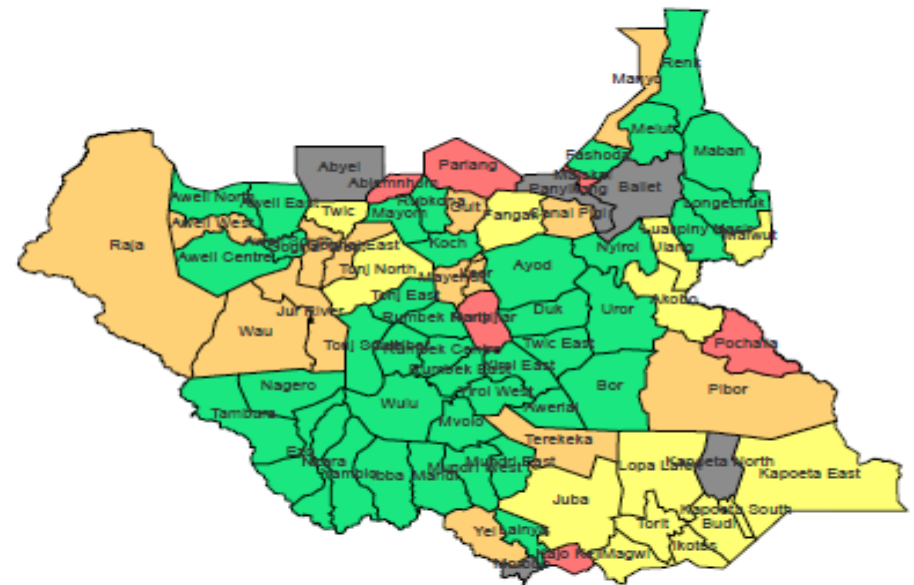


The graph shows completeness for the weekly IDSR reporting at the county level

Map 1a | Map of IDSR completeness by county (W10 2019)



Map 1b | Map of IDSR completeness by county (2019)



- Counties that submitted their IDSR reports in week 10, 2019 are shown in green in map 1a.
- Counties that did not submit their IDSR reports in week 10, 2019 are shown in grey in map 1a.

Table 4 | EWARS surveillance performance indicators by partner (W10 2019)

Partner	Performance		Reporting	
	# sites	# reports received	Completeness	Timeliness
CMD	3	3	100%	100%
GOAL	2	2	100%	100%
HLSS	1	1	100%	100%
IMA	7	7	100%	100%
IMC	5	5	100%	100%
IOM	10	9	90%	90%
IRC	1	1	100%	100%
Medair	2	2	100%	100%
MSF-E	2	1	50%	50%
MSF-H	3	1	33%	33%
SMC	7	4	57%	57%
UNIDO	1	1	100%	100%
UNKEA	2	2	100%	100%
World Relief	1	1	100%	100%
TRI-SS	2	1	50%	50%
LIVEWELL	4	0	0%	0%
Total	57	43	75%	75%

Table 5 | Summary of key EWARS surveillance indicators

W10	Cumulative (2019)	
57	-	Number of EWARS reporting sites
75%	75%	Completeness
75%	73%	Timeliness

Table 6 | EWARS report submissions

W10	Cumulative (2019)	
43	500	total submissions
1	20	submissions by mobile
42	480	submissions by web

- Both the completeness and timeliness for EWARS reporting stand at 75% for week 10, while the cumulative completeness and timeliness are 75% and 73% respectively for 2019

EVENT-BASED SURVEILLANCE

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

Table 7 | Alert performance indicators by Hub

Hub	W10		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Aweil	5	80%	18	94%
Bentiu	10	100%	41	93%
Bor	1	0%	18	89%
Juba	11	55%	64	70%
Kwajok	1	100%	8	63%
Malakal	6	100%	31	84%
Rumbek	18	100%	126	90%
Torit	2	100%	17	71%
Wau	0	0%	33	70%
Yambio	1	100%	46	65%
South Sudan	55	87%	402	81%

Table 8 Summary of key alert indicators

W10	Cumulative (2019)	
55	402	Total alerts raised
87%	81%	% verified
0%	0%	% auto-discarded
15%	8%	% risk assessed
15%	5%	% requiring a response

- Out of 55 alerts that were received in week 10, 87% were verified, 15% were risk assessed and 15% required a response.

Table 9 | Alert performance indicators by event

Event	W10		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	4	100%	47	87%
AWD	6	67%	284	73%
Bloody Diarr.	11	91%	87	69%
Measles	12	83%	104	85%
Meningitis	0	0%	0	0%
Cholera	0	0%	10	70%
Yellow Fever	1	100%	6	83%
Guinea Worm	0	0%	12	67%
AFP	2	100%	67	79%
VHF	0	0%	3	100%
Neo. tetanus	0	0%	5	80%
Event-based surveillance				
EBS total	2	50%	13	92%

Table 10 | Event risk assessment

W10	Cumulative (2019)	
1	7	Low risk
16	16	Medium risk
1	7	High risk
0	1	Very high risk

- In epi week 10 of 2019, Measles (12), bloody diarrhea (11) and AWD (6) were the three most frequently reported infectious diseases.

Alert by disease and county in W10 2019

Counties	AWD	Bloody Diarrheas	Measle	Malaria	AJS	ARI	AFP	EBS	Relapsing Fever	Yellow Fever	Total
Juba	2		4		1	1					8
Rubkona			1		1						2
Guit						1					1
Nzara										1	1
Mayendit		1				1					2
Leer				1		1					2
Wulu						1	1				2
Malakal			2				1				3
Leer		1				1					2
Terekeka		1	1								2
Ikotos				1							1
Aweil West			1								1
Aweil North			1								1
Lainya			1								1
Gogrial West			1								1
Bor								1			1
Rumbek North								1			1
Lapo/Lafon				1							1
Rumbek East		2				4					6
Rumbek Centre		3				3					6
Renk	1	1				1					3
Aweil East	1	1		1							3
Mayendit	1										1
Cueibet	1	1							1		3
Total Alerts	6	11	12	4	2	14	2	2	1	1	55

Measles cases in Malakal and Renk

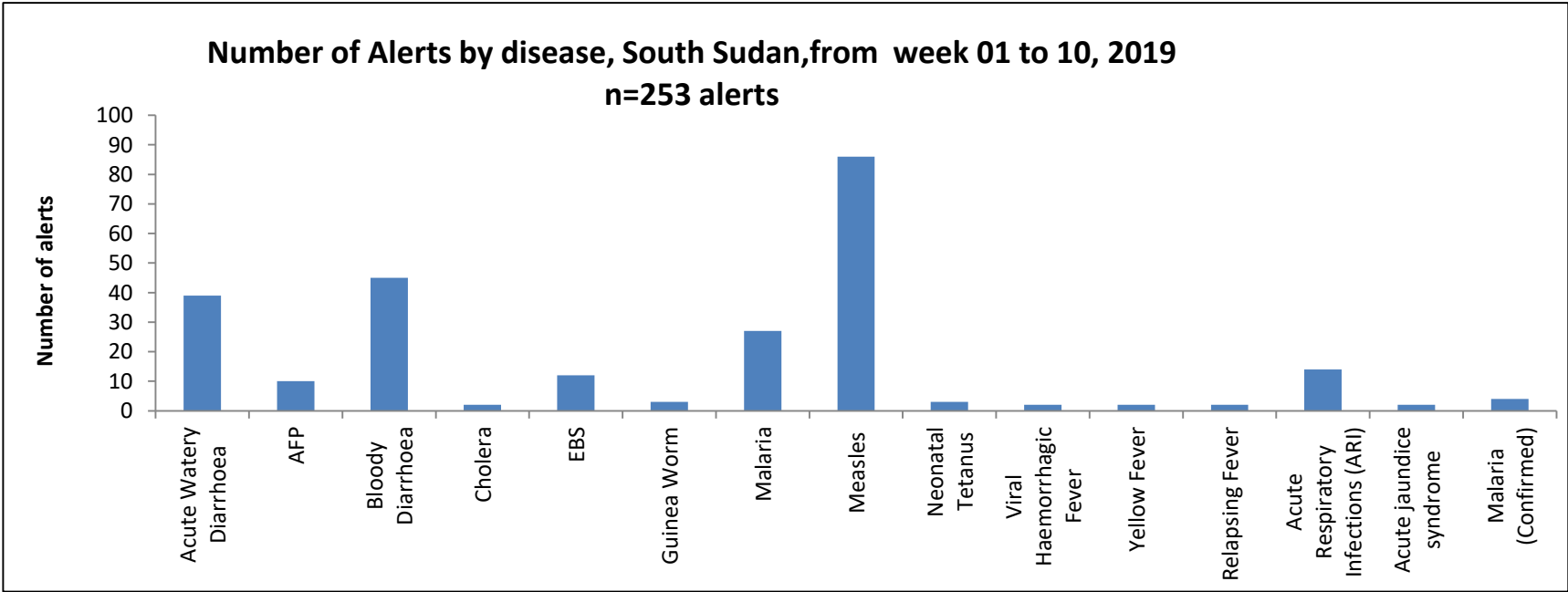
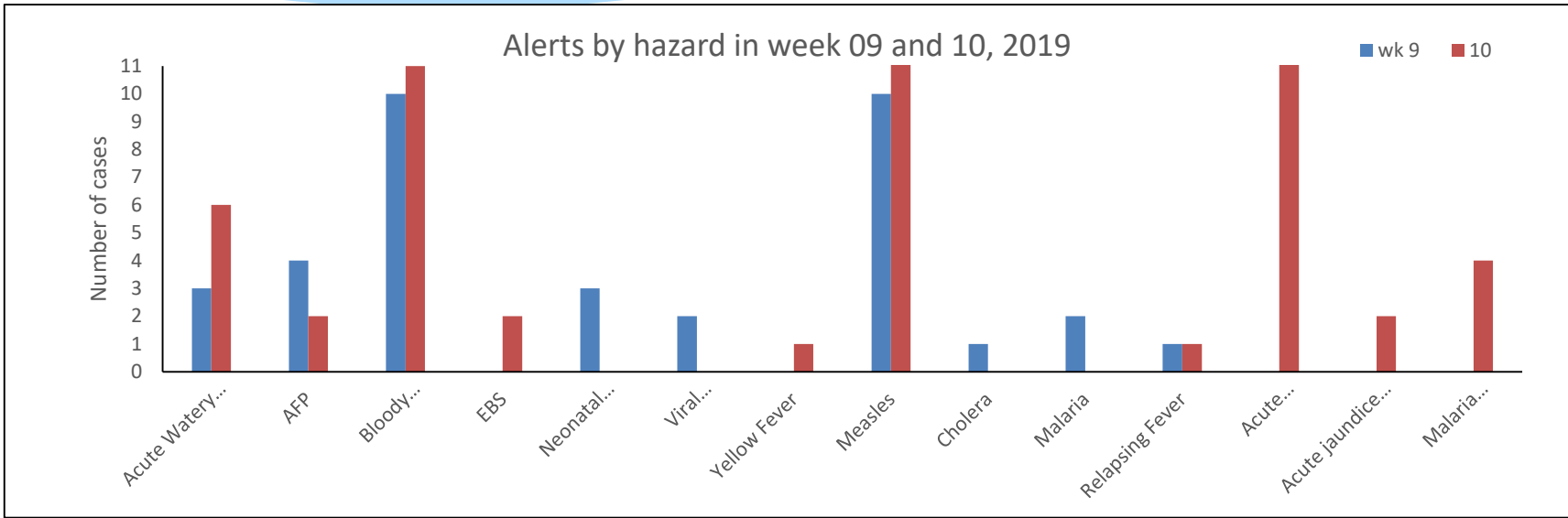
- Two (2) samples from Malakal Town tested positive for measles while 11 samples tested positive for rubella IgM antibodies.
- One (1) sample from Renk tested positive for measles IgM antibodies.
- Partners in Renk and Malakal advised to enhance their surveillance, conduct active case search and collect more samples

AWD cases in Kuardeang, Fangak South

- A report of increasing cases of acute watery diarrhea and acute bloody diarrhea in Kuerdeng, South Fangak since week 4, 2019.
- A team of MoH, WHO and IPs visited Kuerdeng on 11th February 2019 to conduct investigation of a suspected AWD and ABD outbreak in Kuerdeng.
- Six (6) AWD samples collected during the mission have all tested negative for *vibrio cholerae*. No organisms were isolated on culture.
- The one (1) acute diarrhea bloody diarrhea sample's result is pending.
- Findings from analysis of water samples indicated that the water was unfit for human consumption
- Re-establishment of basic health and WASH services, and provision of surge HR was recommended to implementing partners

Suspected Meningitis Case in Yirol West

- One suspected meningitis case has been reported in Yirol West County. Sample was collected pending air transportation to Juba next week.



The Figures show comparison of alerts by hazard reported in week 09 and 10, and the cumulative number of alerts triggered in 2019 by hazard.

County	OUTCOME	RISK ASSESSED	VERIFICATION	Total Alerts
Acute Watery Diarrhoea	1	1	37	39
AFP			10	10
Bloody Diarrhoea	2	2	41	45
EBS	2		10	12
Guinea Worm			3	3
Neonatal Tetanus			3	3
Viral Haemorrhagic Fever			2	2
Yellow Fever			2	2
Measles	6	2	78	86
Cholera			2	2
Malaria			27	27
Relapsing Fever			2	2
Acute Respiratory Infections (ARI)	3		11	14
Acute jaundice syndrome	1		1	2
Malaria (Confirmed)			4	4
Total Alerts	15	5	233	253

- The table shows the cumulative alerts by risk assessment state in 2019
- Of the 253 alerts reported in 2019; 233 (92.1%) alerts were verified and five (2.0%) underwent risk assessment..






OUTBREAKS IN 2019

Major suspected and confirmed outbreaks in
South Sudan in 2019









Confirmed Outbreaks South Sudan – As at 18th March 2019

- The map show outbreaks confirmed in 2019
- The active outbreaks include: HEV in Bentiu PoC; Yellow Fever in Nzara; Measles in Abyei, Rubella in Malakal PoC; Measles in Juba; Measles in Pibor; Measles in Gogriell West; Rubella in NBG; Measles in Mayom, Aweil South and Melut

Outbreak diseases

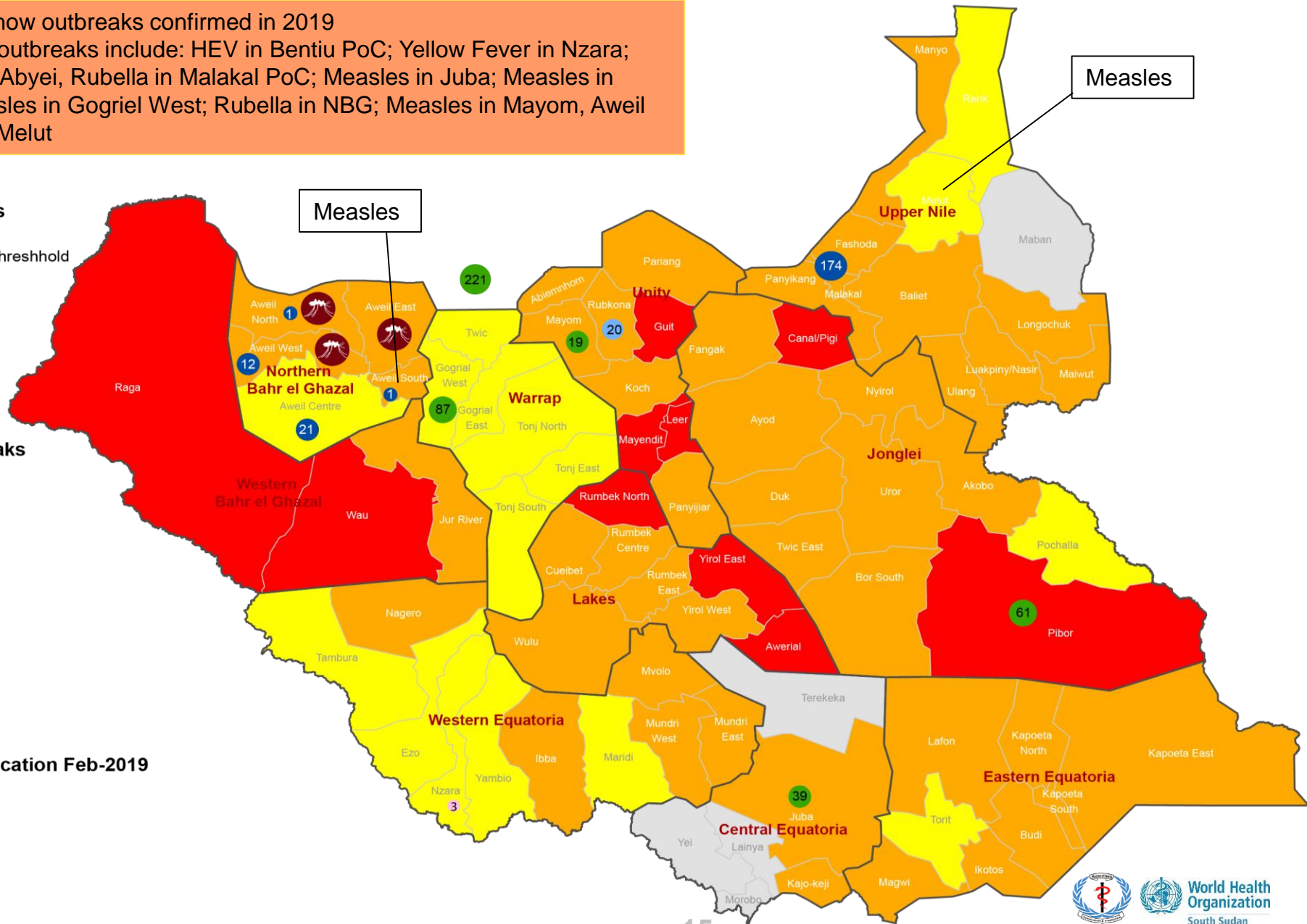
-  Malaria -above threshold
-  Measles
-  Rubella
-  Hepatitis E
-  Yellow Fever

Number of outbreaks

-  1 - 5
-  6 - 10
-  11 - 50
-  51 - 100
-  101 - 200
-  201 - 300
-  301 - 400
-  401 - 500

IPC Phase Classification Feb-2019

-  Emergency
-  Crisis
-  Stressed
-  No data











Suspected Outbreaks South Sudan – As at 18th March 2019

- New alerts in the week
 - Suspected Measles outbreak in Yirol East, Bentiu PoC
 - Whooping Cough in Jur River County, Awerial, Juba
 - AWD and ABD in Old Fangak and Aweil North

Week- 08 Suspected Outbreak diseases

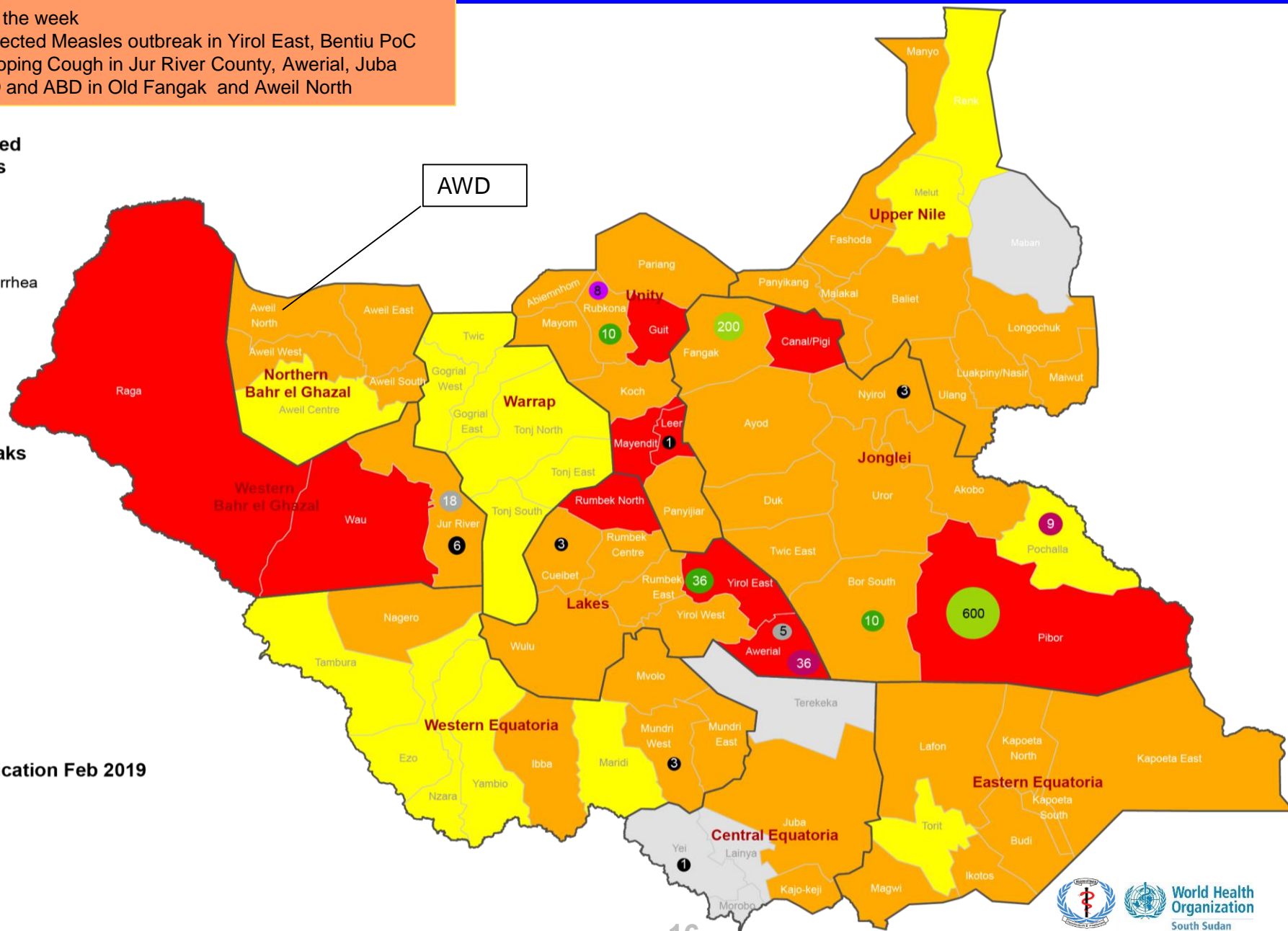
-  Meningitis
-  Measles
-  Acute Watery Diarrhea
-  Rabies probable
-  Pertussis
-  Chicken Pox

Number of outbreaks

-  1 - 5
-  6 - 10
-  11 - 50
-  51 - 100
-  101 - 200
-  201 - 300
-  301 - 400
-  401 - 500

IPC Phase Classification Feb 2019

-  Emergency
-  Crisis
-  Stressed
-  No data



Aetiological agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
Ongoing epidemics								
Rubella	Malakal PoC	25/10/2018	0	178 (0.08)	Yes	No	Yes	N/A
Yellow Fever	Nzara	23/11/2018	0	1 (0.001)	Yes	Yes	Yes	N/A
Hepatitis E	Bentiu PoC	03/01/2018	1	22 (0.011)	Yes	No	Yes	Yes
Measles	Abyei	12/02/2018	0	316 (0.40)	Yes	Yes	Yes	N/A
Measles	Juba	15/01/2019	0	48 (0.01)	Yes	Yes	Yes	N/A
Measles	Pibor	17/01/2019	0	61 (0.015)	Yes	Yes	Yes	N/A
Measles	Gogrial West		0	97 (0.025)	Yes	Yes	Yes	N/A
Rubella	Aweil Center/NBG		0	35 (0.028)	Yes	No	Yes	N/A
Measles	Mayom	17/01/2019	0	19 (0.010)	Yes	Yes	Yes	N/A
Measles	Aweil South	15/03/2019	12	12 (0.011)	Yes	Yes	Yes	N/A
Measles	Melut	15/03/2019	6*	6 (0.008)	Yes	Yes	Yes	N/A
Rubella	Bor South		4	4 (0.001)	Yes	No	Yes	N/A
Rubella	Gogrial West		5	5 (0.001)	Yes	No	Yes	N/A
Rubella	Yirol East		3	3 (0.003)	Yes	No	Yes	N/A

Ongoing outbreaks in week 10, 2019

1. Rubella Malakal PoC
2. Yellow Fever in Nzara county
3. Hepatitis E Virus (Bentiu PoC);
4. Measles in Abyei
5. Measles in Juba
6. Measles in Pibor
7. Measles in Gogrial West
8. Rubella in NBG
9. Measles in Mayom
10. Measles in Aweil South
11. Measles in Melut
12. Rubella in Bor South, Gogrial West and Yirol East

ACTIVE OUTBREAKS AND PUBLIC HEALTH EVENTS

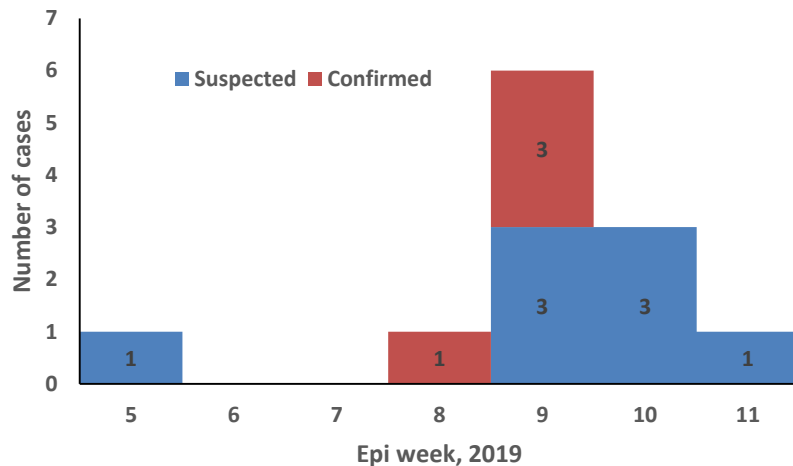
Brief epidemiological description and public health response for active outbreaks and public health events

Confirmed Measles outbreak – Melut

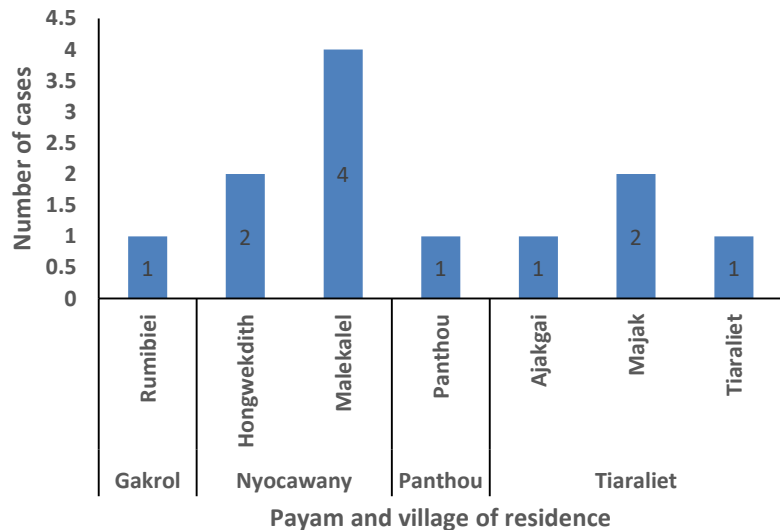
- A measles outbreak has been confirmed in Melut following laboratory confirmation of three (3) suspected samples.
- There are nine (9) suspected cases out of which three (3) cases have not been verified yet. The three cases to be traced and verified on 20th March 2019.
- Among the six (6) that have been verified
 - All are < 5 years with mean age of 1.3 years (SD=0.3)
 - All residing in Paloch Payam
 - No deaths reported
 - Four of them reported being fully immunized
- Engagement between partners and SMOH ongoing to develop a response plan.

Confirmed Measles outbreak – Aweil South

Measles cases in Aweil South, week 05-11, 2019



Measles cases in Aweil South, week 05-11, 2019



Introduction

- An outbreak was confirmed in Aweil South after four samples collected from suspected measles cases tested positive for measles IgM antibodies in week 11
- Six (6) samples were received out of which four (4) tested positive for measles and one (1) tested positive for rubella.
- Aweil South borders Gogriel West, a county with confirmed ongoing measles outbreak
- Suspected measles cases are also being reported from Aweil North, Aweil East and Aweil West
 - In Aweil East, three samples were received out of which two (2) tested positive for measles. There are six (6) suspected cases line listed in Aweil East.
 - In Aweil West, one suspected case was confirmed positive for measles. In addition, there six (6) suspected cases who were confirmed positive for rubella.
 - One (1) sample from Aweil Centre tested positive for measles. Aweil Centre has an ongoing confirmed rubella outbreak.

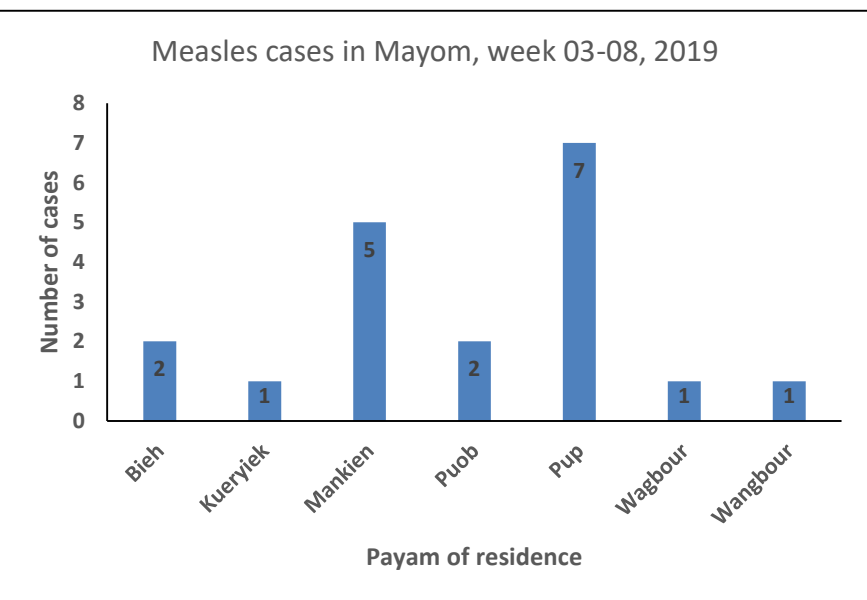
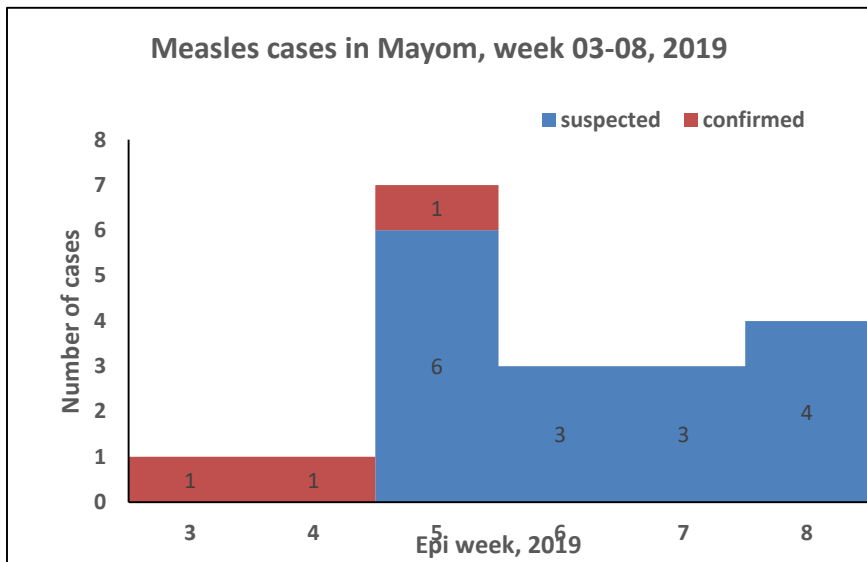
Descriptive Epidemiology for measles cases in Aweil South

- There are 12 suspected cases reported from Aweil South. The first cases reported that their illness began in week 05, 2019.
- No deaths have been reported
- Out of the 12 cases, 10 (83.3%) are children < 5 years
- Half (6) of the cases are residing in Nyocawany Payam
- Seven (58.3%) reported not receiving measles vaccination prior to their illness

Recommended response

1. A response plans which includes a reactive vaccination campaign is being developed through engagement between SMOH and the partners
2. Other recommended interventions include active case search by surveillance officers in the health facilities and communities, quality case management to improve outcome, and continuation with enhanced surveillance and routine EPI activities
3. The health facilities and partners in Aweil East, Aweil West, Aweil North and Aweil Centre are advised to collect more samples from suspected and to increase awareness among health workers and communities to enhance identification of suspected cases.

Confirmed Measles outbreak – Mayom



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	1	1	2	10.5	10.5
1-4	9	6	15	78.9	89.4
5-9	2	0	2	10.5	100.0
10-14	0	0	0	0.0	100.0
15+	0	0	0	0.0	
Total cases	12	7	19	100.0	

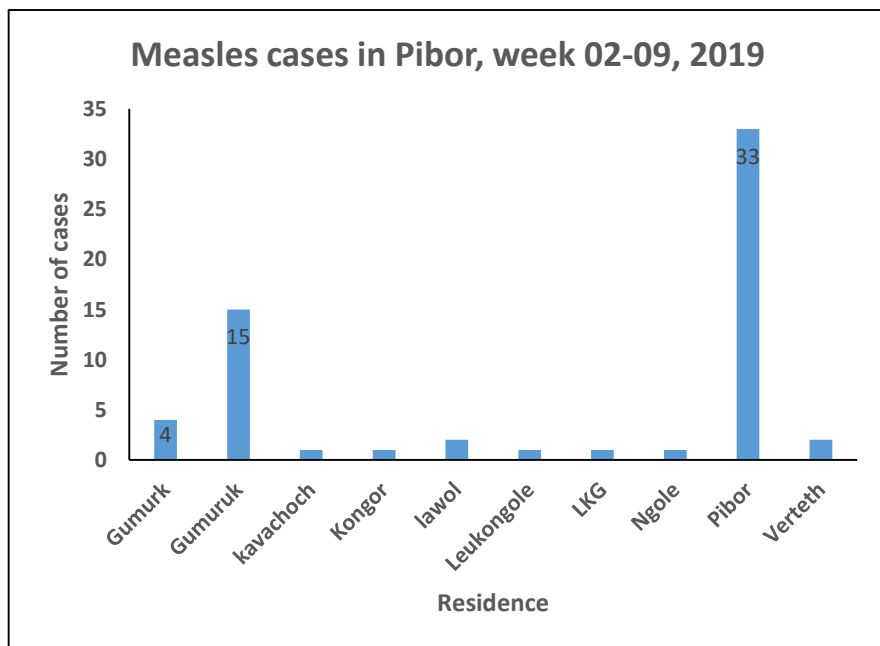
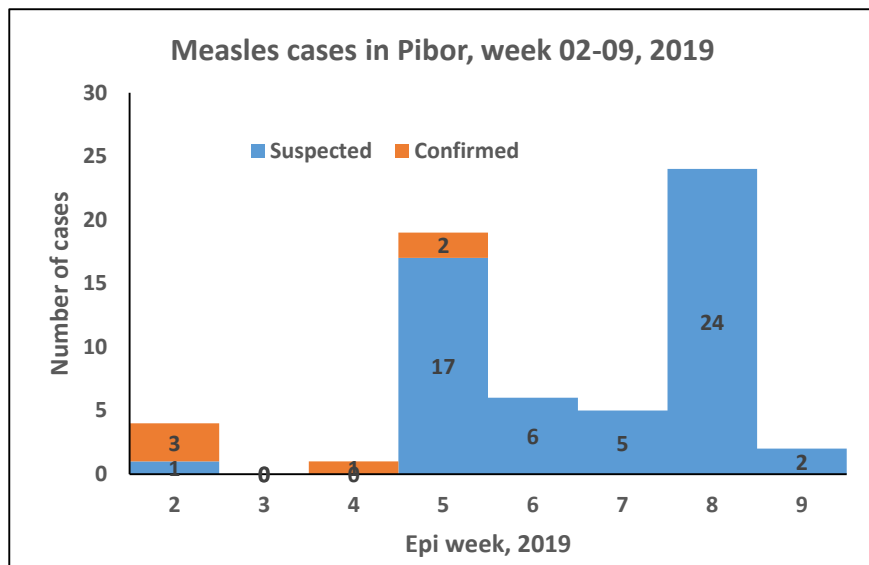
Descriptive Epidemiology

- Nineteen (19) suspected measles cases were reported in Mayom between week 03, 2019 and week 08, 2019.
 - Three cases have been confirmed positive for Measles IgM antibodies
 - No deaths have been reported
- The payams with the most cases are Pup (7) and Mankien (5) Payam
- Majority (89.4%) of the cases are children < 5 years of age
- Only two (10.5%) cases reported ever receiving a vaccination against measles before their illnesses

Recommended response

1. A reactive vaccination campaign targeting 37, 193 children aged 6-59 months in 10 payams in Mayom started on 6th and ended on 12th March 2019
 1. 53434 (143.7%) children were vaccinated as at end of day 6. Data for some difficult to reach areas are not available yet
2. Other recommended interventions include active case search in the health facilities and communities, case management, routine surveillance and social mobilization

Confirmed Measles outbreak – Pibor



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	1	2	3	4.9	4.9
1-4	13	21	34	55.7	60.6
5-9	13	6	19	31.1	91.8
10-14	1	2	3	4.9	96.7
15+		2	2	3.3	100.0
Total cases	28	33	61	100.0	

Descriptive Epidemiology

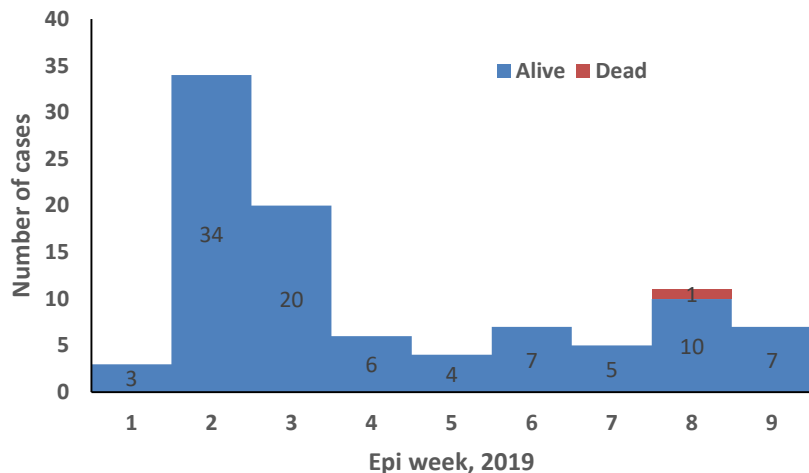
- A total of 61 suspected measles cases have been reported as at mid week 9, 2019.
 - Six cases have been confirmed positive for Measles IgM antibodies
 - No deaths have been reported
- Most of the cases are from Gumuruk (15) and Pibor (33) contributing about 79% (48) of all the cases
- About 61% (37) of the cases are children <5 years
- Majority of the cases (86.7%) of all the cases have either no history of prior vaccination against Measles or don't know their vaccination status.

Recommended response

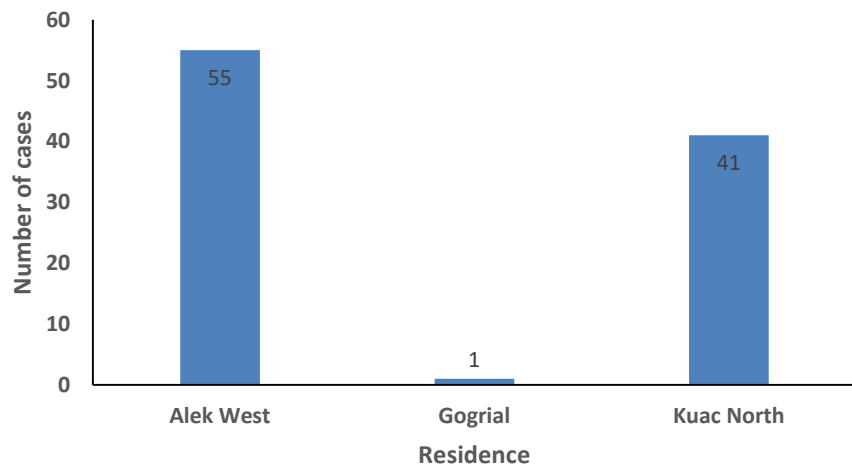
- A reactive vaccination campaign targeting 47,328 children aged 6 months to 15 years in all the payams started on 4th March 2019
 - A total of 13882 (30%) children vaccinated
 - The campaign lasted for 5 days with a mop-up exercise conducted on the 6th day
 - About 4,000 children had been vaccinated by MSF-OCB before the campaign started
- The challenges that had contributed to the low coverage include erroneous target population, inadequate social mobilization and communities' reluctance to bring their children for vaccination
- Partners advised to map out areas with low vaccination coverage and prioritize them either for a mop-up campaign or support the health facilities in those locations to implement enhanced routine vaccination.

Confirmed Measles outbreak – Gogrial West

Measles in Gogrial West, week 01-09, 2019



Measles cases in Gogrial West, week 01-09, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	7	7	14	14.4	14.4
1-4	13	25	38	39.2	53.6
5-9	13	13	26	26.8	80.4
10-14	6	5	11	11.3	91.7
15+	5	3	8	8.2	100.0
Total cases	44	53	97	100.0	

Descriptive Epidemiology

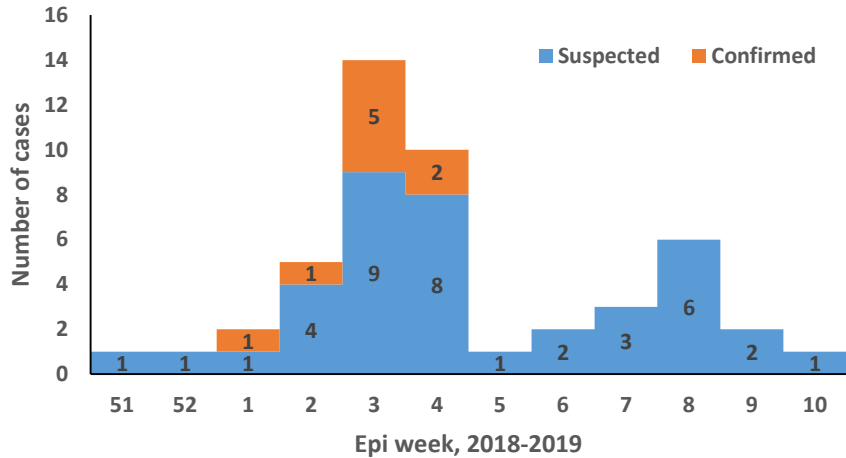
- Ninety seven (97) suspected Measles cases reported between week 01, 2019 and week 09, 2019.
 - Three (3) cases are laboratory-confirmed
 - One death reported in week 8
- Most of the cases are from Alek West Payam with 55 (56.7%) suspected cases.
- More than half (53.6%) of the cases are younger than 5 years
- Most (94.7%) of the cases reported no history of receiving Measles vaccination prior to the illness

Recommended response

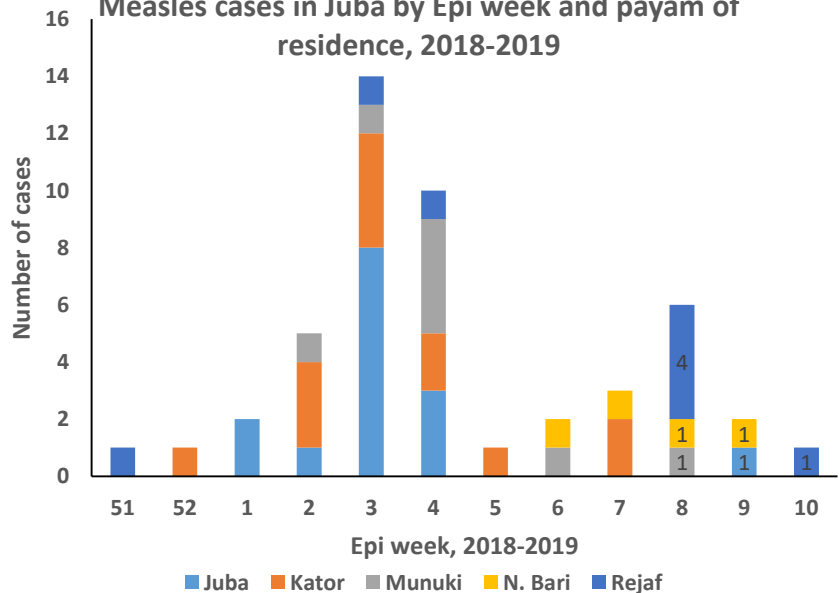
1. A reactive vaccination campaign targeting 76024 children aged between 6-59 months in the 9 payams was conducted between 11th March 2019 and 16th March 2019
 1. According to preliminary data representing 84% of all the data that was expected, 71,849 (94.5%) children have been vaccinated
2. Continue with active case search, surveillance, case management and routine immunization

Confirmed Measles outbreak – Juba

Measles cases in Juba, week 51, 2018-09, 2019



Measles cases in Juba by Epi week and payam of residence, 2018-2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	3	14	17	35.4	35.4
1-4	8	17	25	52.1	87.5
5-9		3	3	6.3	93.7
10-14	1	1	2	4.2	97.9
15+		1	1	2.1	100.0
Total cases	12	36	48	100.0	

Descriptive Epidemiology

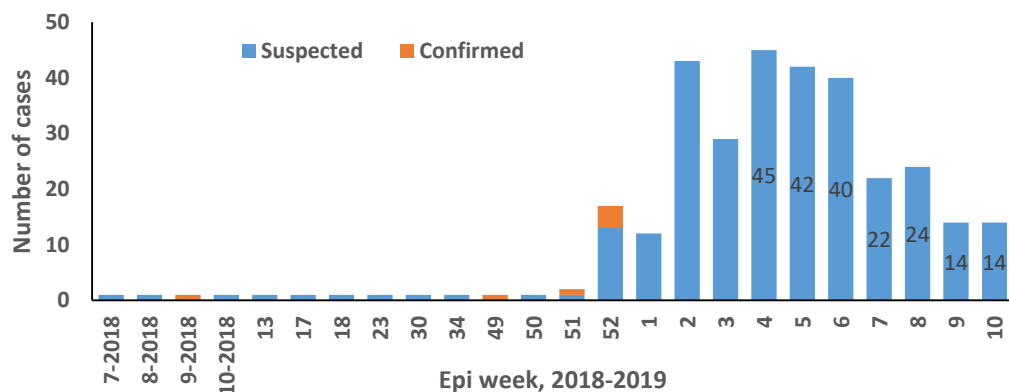
- A total of 48 suspected measles cases were reported from Juba as at end of week 10.
 - Most cases are from Juba 15 (31.3%) and Khator 13 (27.1%) payams
 - Ten (10) confirmed cases; 6 from Khator, 3 from Amarat and 1 from Rejaf
 - Three (CFR 6.3%) deaths reported; two (2) from Amarat and One (1) from Khator. All the deaths are among <5 children.
- A majority of the cases are children < 5 years, 42 (87.5%) while 36 (75%) are male
- The new cases are coming from Rejaf, N. Bari and Juba payams

Recommended response

- A reactive vaccination campaign covering three payams of Juba, Khator and Rejaf started on 11th February, 2019 and ended on 17th February, 2019 where 11712 (21%) children were vaccinated.
 - Active case search in health facilities and communities to ascertain presence of additional cases being seen in the facilities and communities to inform the next course of action is ongoing
- Increase community awareness through social mobilization both in the communities and at the health facilities
- Continue with surveillance and routine immunization

Confirmed Measles outbreak – Abyei

Measles cases in Abyei, week 07, 2018-10, 2019



Age groups	Female	Male	Total	Percentage, Cumulative	
				%	%
<1	50	52	102	32.6	32.6
1-4	46	64	110	35.1	67.7
5-9	13	8	21	6.7	74.5
10-14	14	16	30	9.6	84.0
15+	21	29	50	16.0	100.0
Total cases	144	169	313	100.0	

Background

- Measles has been present in the area throughout the year, with about one suspected seen per week

Descriptive Epidemiology

- A total of 316 suspected cases reported between week 7, 2018 and week 09, 2019. Of all the cases, 306 (96.8%) were reported between week 49, 2018-10, 2019.
- Six (6) cases were confirmed between week 49-52, 2018, triggering declaration of an outbreak
- No deaths reported
- Among the cases with age and sex recorded, majority of the cases are children <5 years accounting for 67.7% (212). Males are more than females accounting for 53.5% (169). Sex and age variable was missing for three cases.
- Rumammer county had the most cases with 219 (69.3%)

Recommended response

- A reactive vaccination was conducted between week 04 and 05, 2019 targeting four counties of Abyei, Rumammer, Alal and Mijak achieving an overall coverage of 88% (13335/15204).
 - A slow reduction in number of measles cases was observed from week 07, 2019 to week 10, 2019
- Strengthening of routine immunization activities that includes both static and outreach activities
- Continue with surveillance, health education and sensitization

Yellow Fever Update: Sakure Payam, Nzara county, Gbudue state

Epidemiological update

- Yellow Fever outbreak declared following PCR confirmation of a case on 19 Dec 2018
- WHO supported the MoH to conduct an outbreak investigation, and active case search both in the health facilities and in the community
- 35 samples collected by investigation team during active case search and contact tracing

Entomological update

- Overall, the entomological assessments in Sakure, Nzara, and Yambio towns showed no evidence of *Aedes species* mosquitoes and the stegomyia entomological outbreak indices for the three towns were all below the WHO epidemic thresholds. This is attributed to the current dry season and hence the greatly reduced breeding and mosquito populations at this time of the year.

Laboratory update

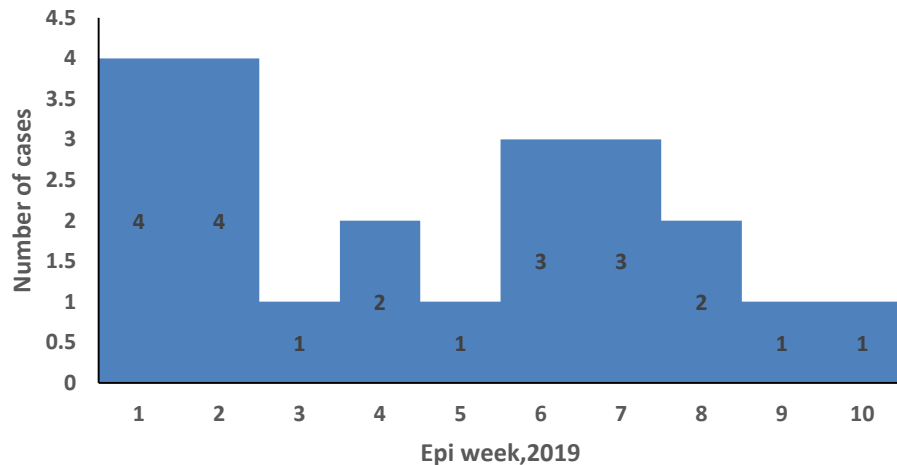
- Out of the 36 samples tested;
 - One (1) sample was PCR confirmed for Yellow Fever virus
 - Two (2) samples out of the 35 samples collected during active case search tested presumptively Yellow Fever IgM positive were eventually confirmed PRNT positive for yellow fever.
 - The two (2) Yellow Fever samples that initially tested presumptively IgM positive for Yellow Fever virus was confirmed plaque reduction neutralization test (PRNT) positive for Yellow Fever.
 - The other 33 samples tested negative for Yellow Fever.
 - The PCR positive case and the two YF PRNT positive cases all originate from Sakure payam in Nzara Payam, Gbudue state

Recommendations and Ongoing Activities

- WHO developed a reactive yellow fever vaccination campaign microplan targeting 19,578 individuals aged 9 months to 65 years in Sakure payam, Nzara county, Gbudue state.
- The vaccination microplan was submitted to the ICG on 19th February and approved on 21st Feb 2019
- A total of 21,416 doses of yellow fever vaccines are expected to arrive in South Sudan on 6th March 2019.
- Preparation of campaign reporting tools, field manuals and other necessary tools is ongoing
- Approval from the MoH has been obtained and the campaign is expected to start after all the preparation activities are completed
- The campaign dates will be 25th to 29th March 2019

Hepatitis E, Bentiu PoC

HEV cases in Bentiu PoC, week 01-10,2019



Bentiu PoC

- There has been persistent transmission of HEV in Bentiu PoC
- A total of 22 suspected HEV cases have been reported in Bentiu PoC since the beginning of 2019. One (1) new case was reported in week 10.
- There were 159 HEV cases reported in 2018
- None of the cases were admitted
- All the recent cases have recovered
- Males and female are equally affected
- Age groups 1-4 years had the most cases with 7 cases (31.8%).
- Out of the 11 females cases that were reported, one(1) cases is aged 15-44 years
 - At risk of adverse outcomes when infected in the 3rd trimester of pregnancy
- Use of unsafe drinking water likely to be source of infection
- Social mobilization to raise awareness on modes of transmission, symptoms and where to seek for care
- Case identification and follow up in the communities and WASH interventions are recommended.

Age groups	Female, n	Male, n	Total, n	Percent, %	Cumulative %
<1 year	0	0	0	0.0	0
1-4 years	4	3	7	31.8	31.8
5-9 years	1	1	2	9.1	40.9
10-14 years	3	2	5	22.7	63.6
15-44 years	1	5	6	27.3	90.9
45+years	2	0	2	9.1	100.0
Total cases	11	11	22	100.0	

Malaria trends

Current malaria trends

Malaria was the leading cause of morbidity and mortality accounting for 51.6% of all morbidities and 39.0% of all mortalities in week 10, 2019. The trend analyses showed at least 5 counties in three state hubs having malaria trends that are significantly higher than the expected levels. Counties with malaria trends that exceeded the threshold (third quartile of trends for the period 2013-2017) include:

- 1. Aweil hub(Aweil East Aweil West)**
- 2. Kwajok hub(Tonj South, Gogrial West)**
- 3. Juba hub(Yei)**

Proposed public health actions

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

Ebola alerts investigated in 2018

Date	Cases	Deaths	Payam	County	eRDT	eGeneXpert	ePCR	Comments
28May	1	0	Makpandu	Yambio	ND	ND	-ve	Reported in refugee camp
8Sep	1	1	Bakiwiri	Yambio	ND	ND	-ve	Did not meet case definition
26Sep	1	1	N/Bari	Juba	ND	ND	-ve	Community death
30Oct	1	1	Yei town	Yei	ND	ND	ND	Never traced (?false alert)
12Oct	1	0	Rumbek	Rumbek Center	ND	-ve	-ve	Recent travel from DR Congo
14Oct	1	0	Gumbo	Juba	ND	-ve	-ve	Did not meet case definition
18Oct	1	1	Mundri East	Mundri East		ND	-ve	Reported by Lui hospital
21Oct	1	1	Yambio	Yambio	ND	ND	-ve	Recovered & discharged
29Oct	2	0	Nimule	Pageri	ND	ND	ND	Alerts discarded
11Nov	1	1	Loka	Lainya	ND	-ve	-ve	Investigated 11 Nov
23 Nov	1	0	Sakure	Nzara	ND	-ve	-ve	Confirmed for Yellow Fever
29 Nov	1	1	Yambio	Yambio	ND	-ve	-ve	Investigated on 29 Nov
03 Dec	1	0	Renk South	Renk	ND	-ve	-ve	Investigated 4 Dec
15 Dec	1	0	Rejaf	Rejaf	ND	-ve	-ve	Investigated 15 Dec
25 Dec	1	0	Yambio Town		ND	-ve	-ve	Investigated 25 Dec

- In 2018, at least 16 alerts met the case definition and therefore underwent verification and follow up investigation by the rapid response teams.
- During 2018, at least 13 alerts that met the case definition were investigated and had samples obtained for laboratory testing will testing negative for Ebola virus disease and other hemorrhagic fevers safe for one alert in Sakure, Nzara county that was confirmed yellow fever positive.

Ebola alerts investigated in 2019

Date	Cases	Deaths	Payam	County	eRDT	eGeneXpert	ePCR	Comments
27 Jan 19	1	0	Nimule		ND	-ve	-ve	Investigated on 27 Jan 2019
30 Jan 19	1	0	Nimule		ND	-ve	-ve	Investigated on 30 th Jan 2019
09 Feb 19	1	0	Juba		Nd	-ve	-ve	Investigated on 09 th Feb 2019
21 st Feb 19	1	1	Yambio		Nd	-ve	-ve	Investigated on 21 st Feb 19
25 rd Feb 19	1	0	Yambio		Nd	-ve	-ve	Investigated on 25 th Feb 19
26 th Feb 19	1	0	Yambio		Nd	-ve	-ve	Investigated on 26 th Feb 19
14 th Mar 19	1	0	Tambura		Nd	-ve	-ve	Investigated on 14 th Mar 19

- The latest EVD alerts that was reported from Tambura on 14th has been investigated and Ebola Zaire virus ruled out on PCR testing.
- Blood samples have been obtained from seven (7) Ebolavirus alerts; seven (7) samples tested negative for Ebolavirus and other viral hemorrhagic fevers including RVF, Marburg; Yellow Fever; and CCHF

EBOLA VIRUS DISEASE[EVD] PREPAREDNESS IN SOUTH SUDAN

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

Ebola update DRC 16th Mar 2019

Current situation

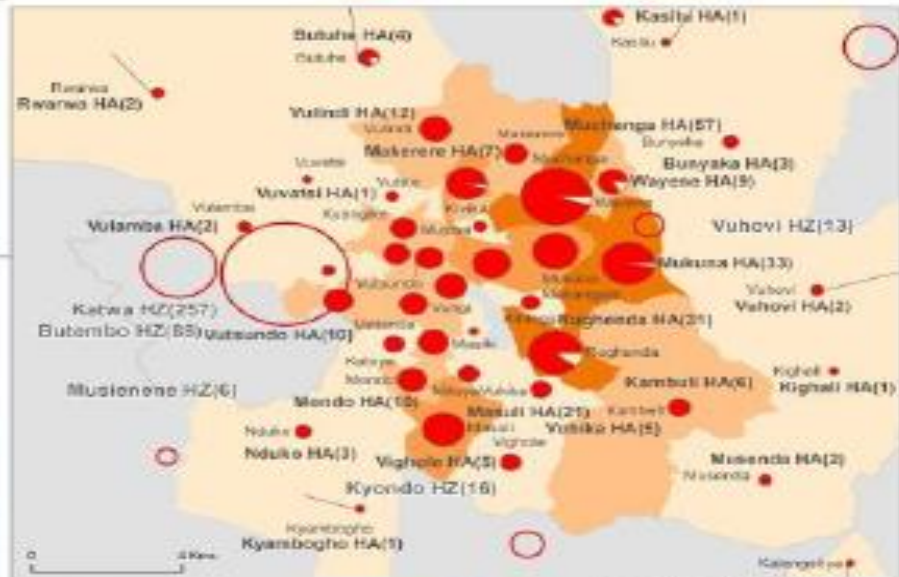
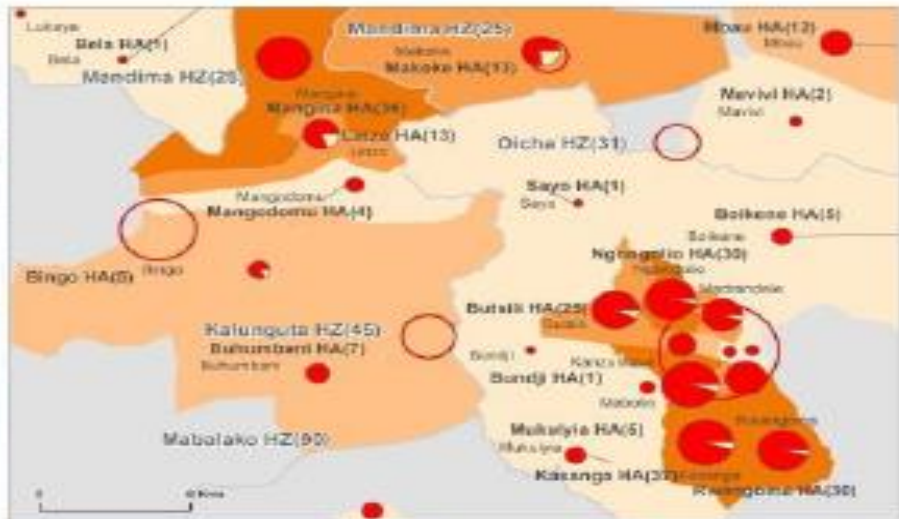
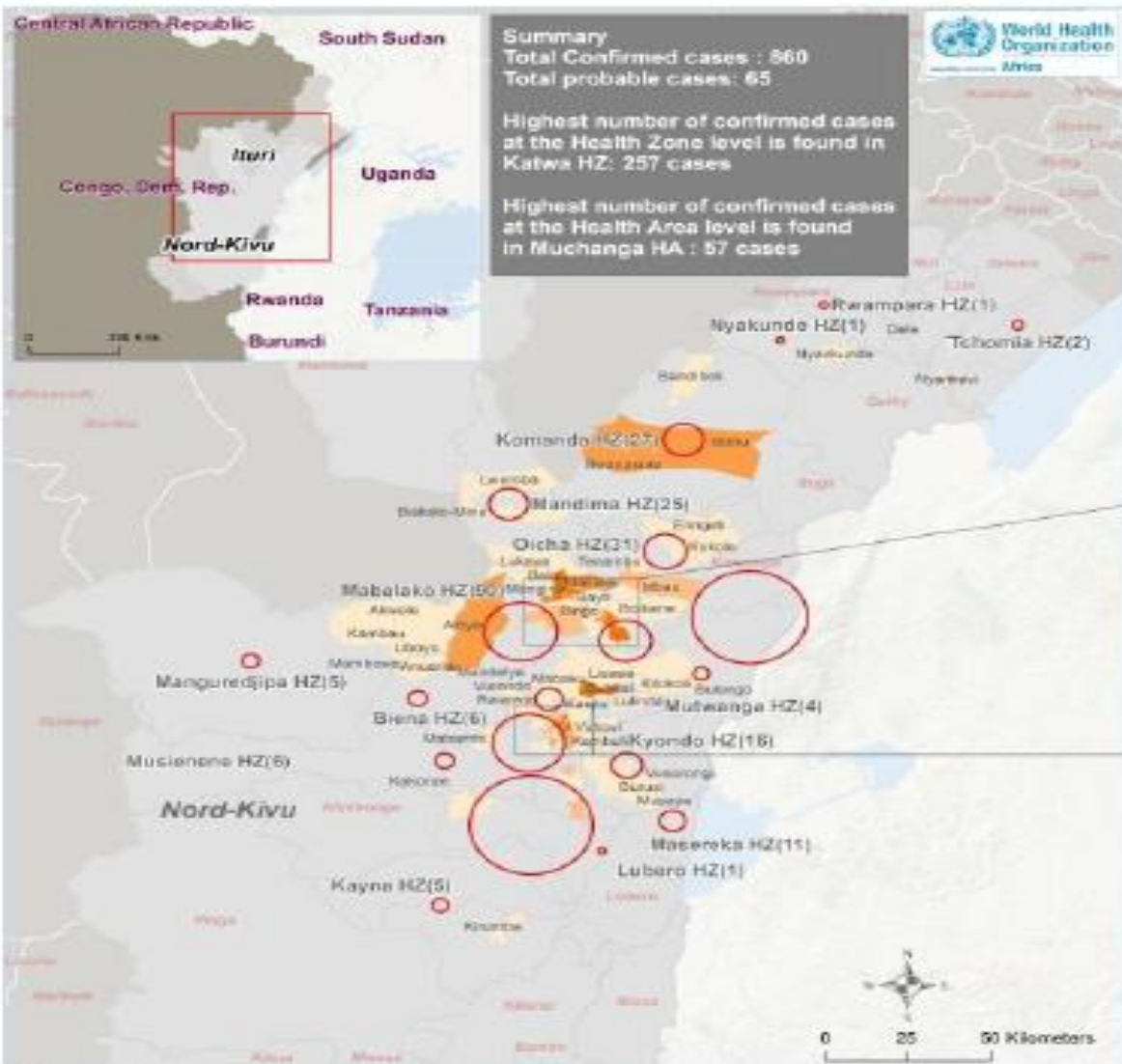
- Currently in 32nd week of the outbreak
- **951** Cases [886 confirmed & 65 probable]
- **598** Deaths [533 confirmed & 65 probable]
- **74** Health workers [26 dead]

Response update

- **4715** contacts under surveillance [84-86% followed up]; 86 917 vaccinated

Affected health zones

- **2** provinces [North Kivu & Ituri]
- **19** health zones [14 North Kivu & 5 Ituri]
- **80** cases in last 21 days; Katwa (45), Butembo (18), Mandima (7), Kalunguta (3), Kyondo (2), Masereka (2), Lubero (1), Beni (1) and Biena (1).



EVD cumulative cases
 Numbers in brackets represent cumulative confirmed cases.
 HZ stands for Health Zones, HA stands for Health Areas.

Confirmed cases in Health Areas (HA)
 Probable cases in Health Areas (HA)
 Confirmed cases in Health Zones (HZ)

Proportion of cases over the total of cases

0.1% - 0.5%
0.6% - 1.3%
1.4% - 2.8%
2.9% - 6.5%

Non-Affected areas

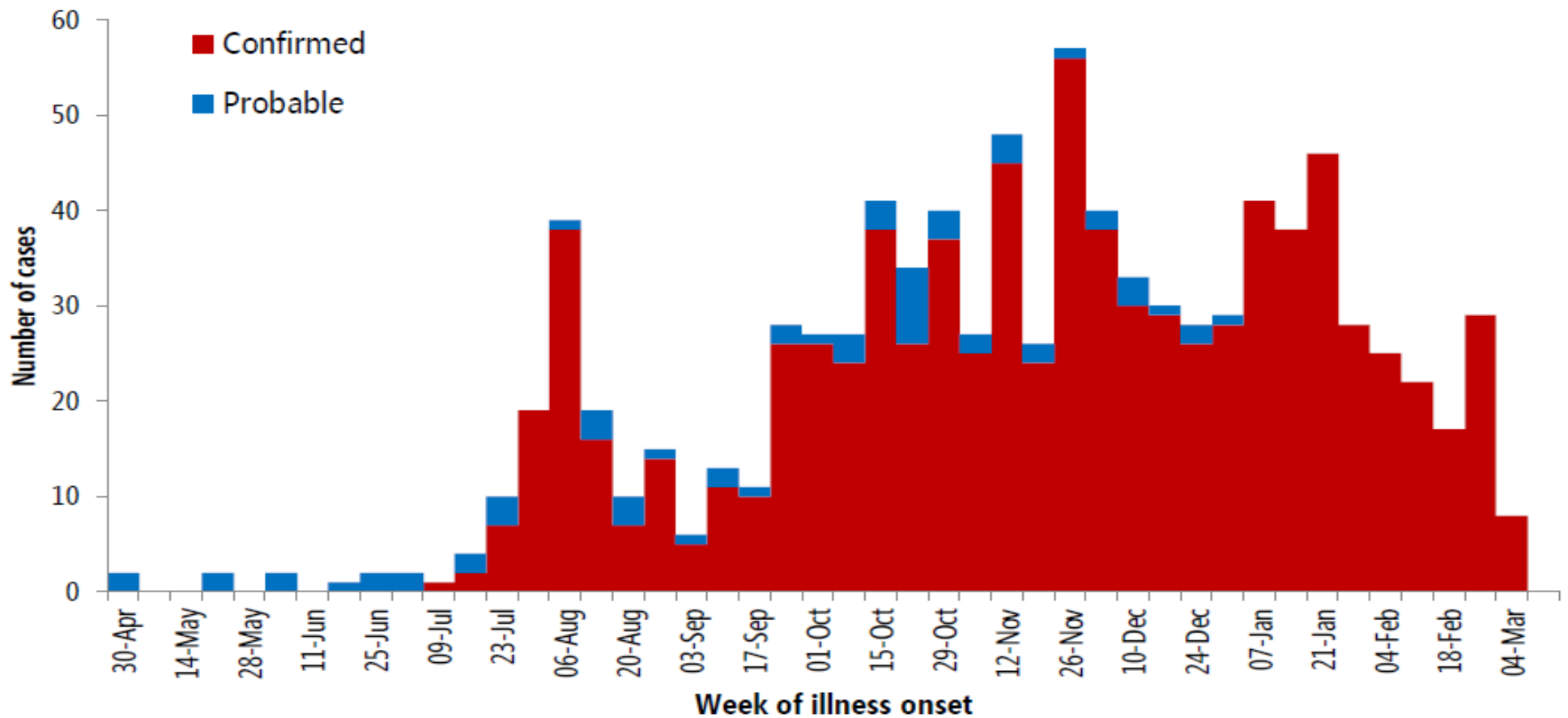
- Non-affected areas in affected Health Zones (HZ)
- Other non-affected areas



Date as of 1st Dec 2019
 By Health Emergency and Programme Support - NCHA-CDC
 Catalogue ID: WHO/2019

This document contains official information prepared for the use of the public. It is not intended for publication or distribution outside the WHO system. It is not to be used for advertising or promotional purposes. It is not to be used for any other purpose without the prior written permission of the WHO.

EVD trends & case distribution in DR Congo



- Trends in case incidences reflect an outbreak that is continuing with moderate intensity.

EVD risk assessment

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

EVD preparedness activities undertaken in South Sudan

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

Name of PoE	Passengers Screening Information			EVD Alerts		
	# screened	# isolated	# under Voluntary Home Quarantine	# reported	# validated	# suspects
Bangangal	0	0	0	0	0	0
Basukangbi	0	0	0	0	0	0
Badj Border	1,244	0	0	0	0	0
Dukudu-Clo	0	0	0	0	0	0
Ezo	0	0	0	0	0	0
Gangura Border	29	0	0	0	0	0
James Dico	0	0	0	0	0	0
Juba International Airport	0	0	0	0	0	0
Kaya	0	0	0	0	0	0
Kaya Border	2,795	0	0	0	0	0
Khorjo	2,551	0	0	0	0	0
Makpandu	5	0	0	0	0	0
Maridi Airstrip	17	0	0	0	0	0
Nimule Airstrip	0	0	0	0	0	0
Nimule Border	0	0	0	0	0	0
Okaba	1,574	0	0	0	0	0
Panjala Docking River	0	0	0	0	0	0
Pure	2,786	0	0	0	0	0
Sakure Border	0	0	0	0	0	0
Safia Musala	1,429	0	0	0	0	0
Sangus 1	0	0	0	0	0	0
Tikori	152	0	0	0	0	0
Wau Airport	61	0	0	0	0	0
Yambio Airport	10	0	0	0	0	0
Yei Airport	23	0	0	0	0	0
Yei RRC	2	0	0	0	0	0
South Sudan	12,678	0	0	0	0	0

The electronic EWARS platform captures points of entry screening data and enables summarizing number of travelers screened on weekly basis. In week 10 of 2019, 12,678 individuals were screened at various screening points in the country.

MAJOR SUSPECTED AND CONFIRMED OUTBREAKS & EVENTS REPORTED IN 2019

Listing of the major suspected and confirmed
outbreaks and public health events reported in
2018-2019

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
20/10/2018	Measles	3	Bor South	Bor PoC	At least three suspect measles cases reported from Bor PoC since 20/10/2018. All tested measles IgM positive following tests done in Juba. Reactive measles campaign planned.
24/11/2018	Yellow Fever	1	Nzara	Sakure	A suspect Ebola case was reported from Sakure on 23/11/2018 and investigated by the rapid response team on 24/11/2018. Preliminary testing in Juba on 24/11/2018 were negative for Ebola Zaire following GeneXpert testing. Further testing of the sample was PCR negative for all Ebola species; Marburg; Rift Valley Fever, Crimean Congo Hemorrhagic Fever, and Sosuga viruses. The sample eventually tested PCR positive for Yellow Fever.
12/10/2018	measles	82 (3)	Rumbek East		Suspect measles cases reported from Mabor Duang village, Aduel payam in Rumbek East where the initial suspect case was a 38 year female whose illness started on 12 October 2018 in week 41. The affected village is served by Mabor Duang PHCC . 82 cases including 9 confirmed cases and 3 death (CFR 3.6%) reported . Cases reported from six payams with most originating from Aduel; Atiaba, and Mathian kok. Majority of the cases, 55 (67%), were children < 5 years of age A total of 9 samples tested positive for measles IgM on 22 November 2018
24/12/2018	Dog bites	8	Bentiu	Bentiu PoC	A cluster of cases of dog bites has been reported in Bentiu PoC. Eight (8) cases have been seen at health facilities between 24 th Dec 2018 and 28 th Dec 2018. Majority (75%) of the cases are children aged 5-12 years. None of the cases are symptomatic and no deaths were reported. Most of the dogs implicated are stray dogs who attacked unprovoked. Four (4) of the dogs were reported as being acting suspiciously and died within 15 days of the attacks. Of all the 8 cases reported, 5 (63%) received passive immunization with immunoglobulins, 2 (25%) received rabies vaccine and 6 (75%) received tetanus toxoid

Outbreaks in 2019

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
06/01/2019	Malaria alerts	counties with trends significantly higher than expected	6		Counties with malaria trends that exceed the threshold (third quartile of trends for the period 2013-2017) include: Aweil hub (Aweil East, Aweil West and Aweil North)
27/10/2018	Rubella	155	Malakall PoC		A total of 155 suspected rubella cases have been reported since week 43. No deaths reported. 41 cases are laboratory confirmed
31/12/2019	HEV	169	Bentiu PoC		At least 169 suspect cases of Hepatitis E (HEV) have been reported in Bentiu PoC in 2018. Of all the cases, 18 suspect cases were confirmed using PCR. The eight (8) cases were reported between week 50-52 tested positive on RDT testing. One (1) mortality (CFR 0.65%) in 2018. Result are pending.
06/01/2019	Acute Watery Diarrhea	467	Malakal PoC & Malakal Town		An increase in AWD cases in Malakal PoC and Malakal Town reported from week 51, 2018. Overall, 467 AWD cases to date. In Malakal PoC, a total of 333 cases (70 in week 51, 224 in week 52 and 39 in week 01). In Malakal Town, 134 cases (49 in week 52 and 85 in week 01). Assossa, Jalaba and Malakal Payams had the most number of cases. No mortalities reported.
06/01/2019	Measles	202	Abyei		Measles has been present in the area throughout the year, with about one suspected seen per week. A total of 45 suspected cases reported between week 7, 2018 and week 02,2019. The number of cases increased from week 50, 2018. Of all the cases, 35 (76%) were reported between week 51, 2018-02, 2019. Five (5) confirmed cases between week 51-52, 2018. No deaths reported
27/01/2019	EVD	1	Nimule		An alert was reported on 27 th Jan, 2019. The cases, 30year old male, was investigated, sample collected which tested negative on GneneXpert and PCR testing.
27/01/2019	Measles	3	Juba	Kator and Amarat	Twenty-one (21) cases reported as from week 01, 2019. Five cases confirmed positive for Measles IgM antibodies. Two deaths have been reported.

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
21/01/2019	Chicken Pox	0	Awerial	Puluk	38 suspected cases of chicken pox all coming from Mingkaman in Puluk Payam.
30/01/2019	EVD	1	Nimule		An alert was reported on 30 th Jan, 2019. The cases, 30year old patient, was investigated, sample collected which tested negative on GgeneXpert and PCR testing.
17/01/2019	Measles	1	Gogriel West		97 suspected, three positive for IgM
31/01/2019	Measles	0	Aweil Center		About 12 suspected Measles cases have been reported from Aweil Center as at 31 st January, 2019. Eight cases tested positive for rubella. There are now 35 cass.
	Measles	0	Yirol East	Shambe	25 suspected Measles cases have been reported in Shambe in Yirol East. They have not been investigated or sample collected because of insecurity in the area
17/01/2019	Measles	0	Pibor	Gumuruk	Five suspected cases out of which three tested positive for Measles IgM antibodies
17/01/2019	Measles	0	Mayom		Five suspected cases out of which three tested positive for Measles IgM antibodies
15/03/2019	Measles	0	Aweil South		Twelve (12) suspected cases reported in the county, following which 4 samples tested positive for measles
15/03/2019	Measles	0	Melut		Three samples tested positive for measles out of six samples tested

**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>

