

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W13 2019 (Mar 25, 2019- Mar 31, 2019)



- The completeness for IDSR reporting at the county level was 54% in week 13 of 2019. The completeness for EWARS reporting from IDPs was 70%.

- Measles (11), bloody diarrhea (11), malaria (3) and cholera (3) were among the top frequently reported infectious diseases in week 13, 2019.

- The number of counties affected by the ongoing measles outbreaks in the country continues to increase by the week. In week 14, three more counties, Gogrial East, Aweil West and Aweil Centre, confirmed outbreaks having reported more than three (3) laboratory confirmed measles cases. There were four confirmed measles cases in Gogrial East, seven confirmed cases in Aweil West and five confirmed measles cases in Aweil Centre. The SMOH and partners have been notified and advised to develop a response plan for their respective counties.

- As part of the county specific response plans to the measles outbreaks, reactive vaccination campaign is ongoing in Aweil South, having started on 9th April and expected to start on 10th April in Melut. The campaigns are targeting to vaccinate 22071 children in Aweil South, and 15,502 children in Melut. A micro-plan for an emergency campaign is being finalized for Tonj North County.

- No new suspected HEV case has been reported from Bentiu PoC in week 13, 2019. Cumulatively, 23 suspected HEV cases have been reported in Bentiu PoC since the beginning of 2019.

- A report about 7 community deaths in Kasingoro and Lopeate in Kapoeta East was investigated by a team of MoH, WHO MMT and CMD officers on 4th April 2019. The community deaths were as a result of acute watery diarrhea according to the history provided by the relatives and neighbors of the deceased. No similar cases were found on active case search in the community. Other findings included an existing critical gap in service delivery in health, nutrition and WASH. Health, nutrition and WASH clusters advised to establish basic services in health, nutrition and WASH by deploying partners to Kasingoro and Lopeate in Kapoeta East County.

- 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 (W13 2019)

Hub	Reporting		Performance	
	# counties	# reports received	Completeness	Timeliness
Aweil	5	5	100%	100%
Bentiu	9	7	78%	67%
Bor	11	9	82%	82%
Juba	6	1	17%	17%
Kwajok	7	1	14%	14%
Malakal	13	7	54%	54%
Rumbek	8	0	0%	0%
Torit	8	3	38%	38%
Wau	3	0	0%	0%
Yambio	10	10	100%	100%
South Sudan	80	43	54%	53%

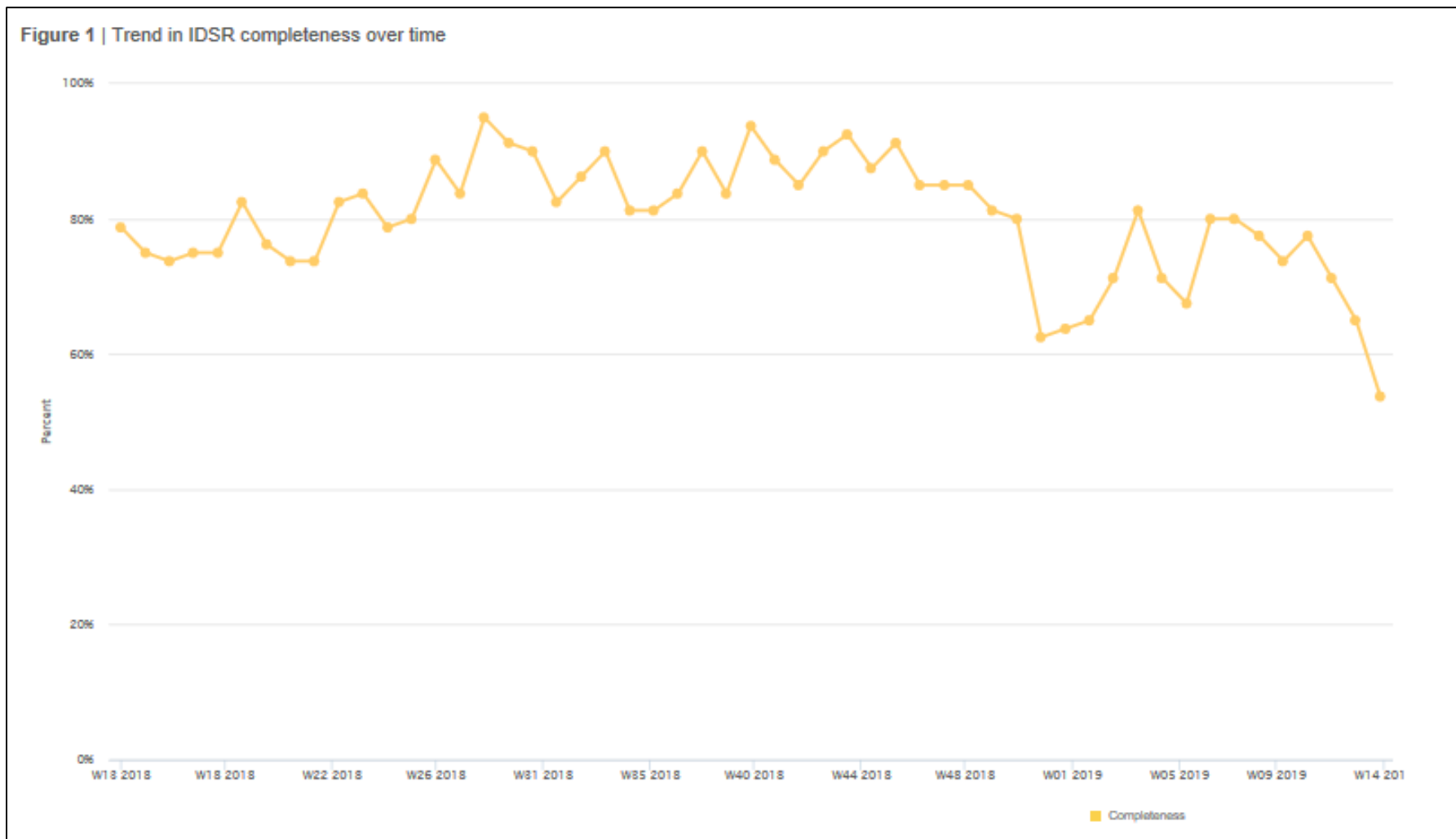
Table 2 | Summary of key IDSR surveillance indicators

W13	Cumulative (2019)	
80	-	Number of counties
54%	69%	Completeness
53%	57%	Timeliness

Table 3 | IDSR report submissions

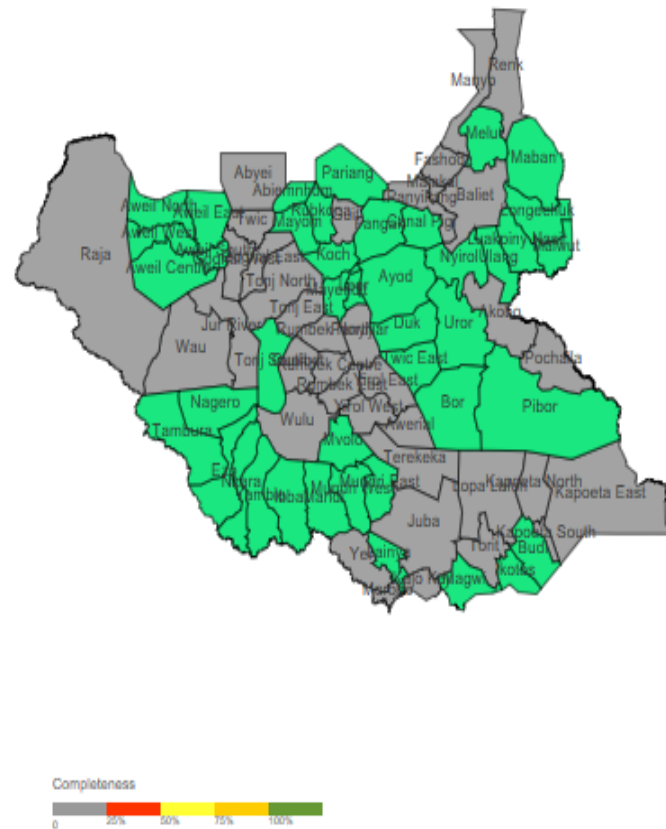
W13	Cumulative (2019)	
43	775	total submissions
4	0	submissions by mobile
39	0	submissions by web

- Completeness for IDSR reporting at the county level was 54% in week 13, 2019 and cumulatively at 69% for 2019.
- Timeliness for IDSR reporting at the county level was 53% in week 13 and cumulatively at 57% for 2019.
- The rolling out of the mobile phones for reporting to the health facilities is ongoing. This has affected the completeness of the surveillance system as the reports from the health facilities are captured separately.

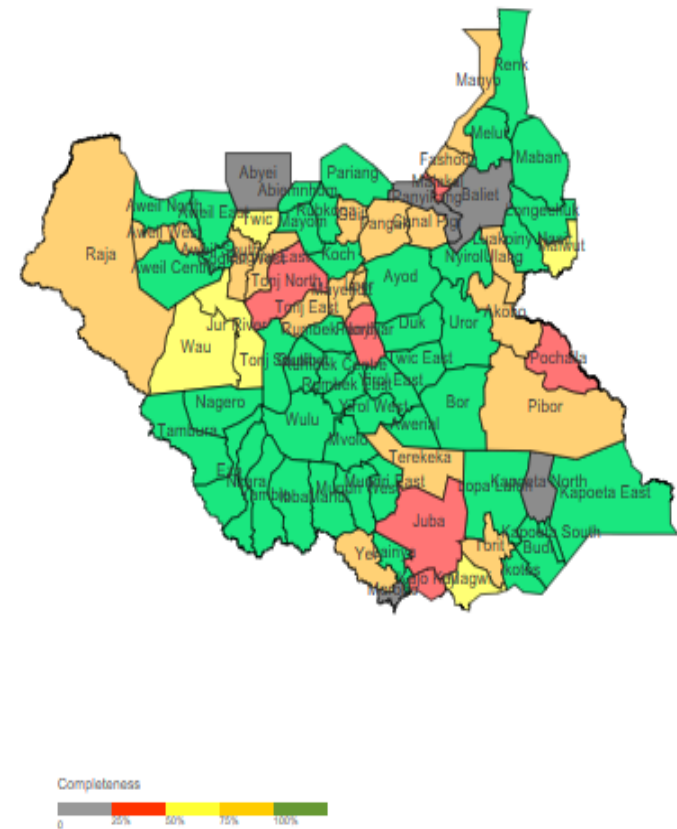


The graph shows completeness for the weekly IDSR reporting at the county level

Map 1a | Map of IDSR completeness by county (W13 2019)



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



- Counties that submitted their IDSR reports in week 13, 2019 are shown in green in map 1a.
- Counties that did not submit their IDSR reports in week 13, 2019 are shown in grey in map 1a.

Table 4 | EWARS surveillance performance indicators by partner (W13 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	0	0%	0%
IMC	5	5	100%	100%
IOM	10	10	100%	100%
IRC	1	1	100%	100%
Medair	2	2	100%	100%
MSF-E	2	1	50%	50%
MSF-H	3	2	67%	33%
SMC	7	4	57%	57%
UNIDO	1	1	100%	100%
UNKEA	2	2	100%	100%
World Relief	1	0	0%	0%
TRI-SS	2	2	100%	100%
LIVEWELL	1	0	0%	0%
Total	54	38	70%	69%

Table 5 | Summary of key EWARS surveillance indicators

W13	Cumulative (2019)	
54	-	Number of EWARS reporting sites
70%	73%	Completeness
69%	71%	Timeliness

Table 6 | EWARS report submissions

W13	Cumulative (2019)	
38	579	total submissions
1	23	submissions by mobile
37	556	submissions by web

- The completeness and timeliness for EWARS reporting by partners was 70% and 69% respectively for week 13, while the cumulative completeness and timeliness are 73% and 71% respectively for 2019

EVENT-BASED SURVEILLANCE

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

Table 7 | Alert performance indicators by Hub

Hub	W13		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Aweil	3	67%	24	88%
Bentiu	4	100%	58	88%
Bor	3	33%	29	83%
Juba	2	50%	89	64%
Kwajok	0	0%	9	56%
Malakal	2	100%	41	83%
Rumbek	10	70%	189	85%
Torit	5	100%	52	92%
Wau	8	75%	56	61%
Yambio	2	100%	70	77%
South Sudan	39	77%	617	79%

Table 8 Summary of key alert indicators

W13	Cumulative (2019)	
39	617	Total alerts raised
77%	79%	% verified
0%	0%	% auto-discarded
5%	7%	% risk assessed
3%	4%	% requiring a response

- Out of 39 alerts that were received in week 13, 77% were verified, 5% were risk assessed and 3% required a response.

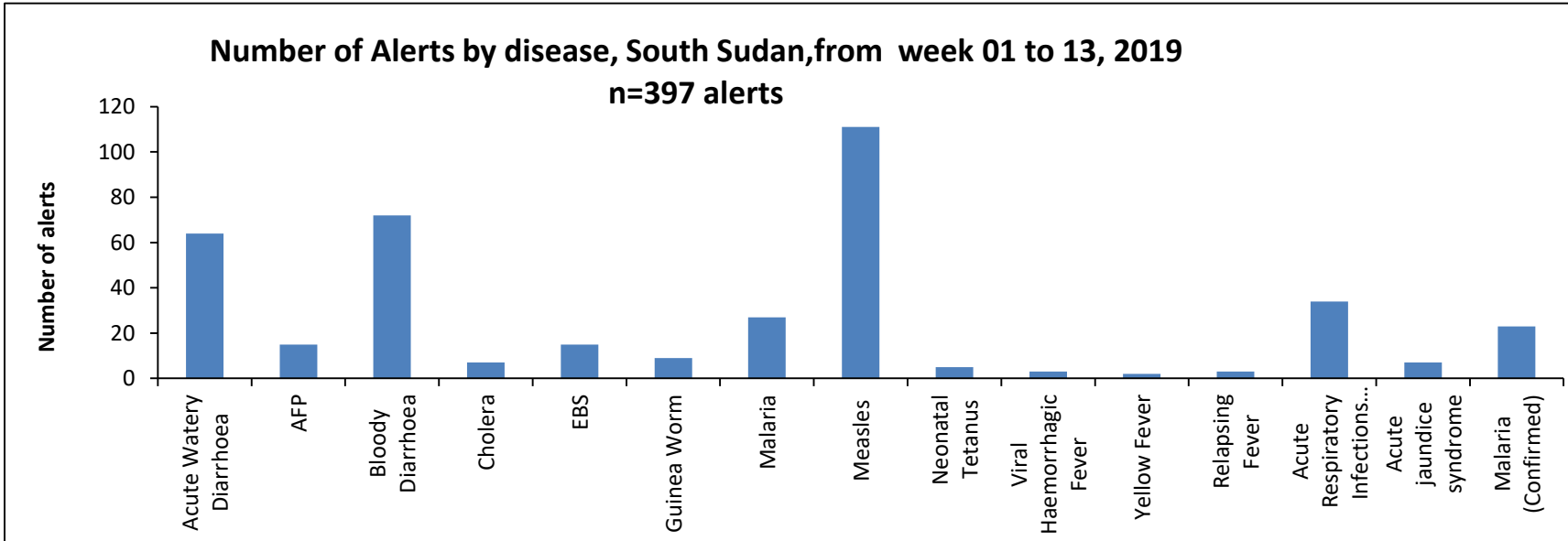
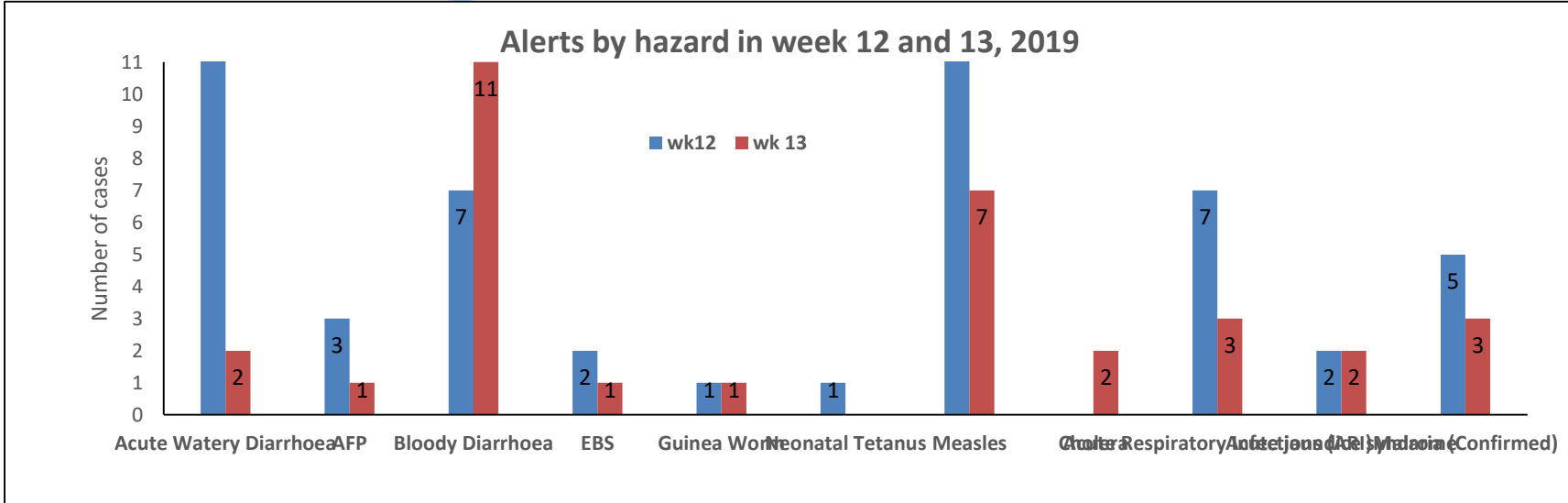
Event	W13		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	3	100%	69	81%
AWD	2	100%	325	78%
Bloody Diarr.	11	82%	124	69%
Measles	11	55%	161	75%
Meningitis	0	0%	0	0%
Cholera	3	67%	21	76%
Yellow Fever	0	0%	7	100%
Guinea Worm	1	100%	21	81%
AFP	1	100%	76	91%
VHF	0	0%	5	80%
Neo. tetanus	0	0%	8	75%
Event-based surveillance				
EBS total	1	0%	18	78%

W13	Cumulative (2019)	Risk Level
2	13	Low risk
20	20	Medium risk
0	7	High risk
0	3	Very high risk

- Measles (11), bloody diarrhea (11), malaria (3) and cholera (3) were among the top frequently reported infectious diseases in week 13, 2019.

Verification and investigation of community deaths in Kapoeta East

- A report about 7 community deaths in Kasingoro and Lopeate in Kapoeta East was investigated by a team of MoH, WHO MMT and CMD officers on 4th April 2019
- The community deaths were as a result of acute watery diarrhea according to the history provided by the relatives and neighbors of the deceased.
- No similar cases were found on active case search in the community
- Other findings included an existing critical gap in service delivery in health, nutrition and WASH
- The only existing facility, Lopeate PHCU, is not funded under HPF 3
- Health, nutrition and WASH clusters advised to establish basic services in health, nutrition and WASH by deploying partners to Kasingoro and Lopeate in Kapoeta East County
- Suspected meningitis case in Rumbek
 - A suspected Meningitis case was reported in Rumbek State Hospital from Aduel village in Rumbek East County on 2nd April, 2019
 - The case was a 21-years old female with high grade fever, neck stiffness, and unconsciousness
 - A sample was collected pending transportation to Juba next week



The Figures show comparison of alerts by hazards reported in week 12 and 13, and the cumulative number of alerts triggered in 2019 by hazard.

Cumulative alerts by risk assessment stage in 2019

County	OUTCOME	RISK ASSESSED	VERIFICATION	Total Alerts
Acute Watery Diarrhea	2	1	61	64
AFP			15	15
Bloody Diarrhoea	2	2	68	72
EBS	3		12	15
Guinea Worm			9	9
Neonatal Tetanus			5	5
Viral Hemorrhagic Fever			3	3
Yellow Fever			2	2
Measles	12	3	96	111
Cholera			7	7
Malaria			27	27
Relapsing Fever			3	3
Acute Respiratory Infections (ARI)	4		30	34
Acute jaundice syndrome	2		5	7
Malaria (Confirmed)			23	23
Total Alerts	25	6	366	397

- The table shows the cumulative alerts by risk assessment status in 2019
- Of the 397 alerts reported in 2019; 366 (91.2%) alerts were verified and six (1.5%) underwent risk assessment..






OUTBREAKS IN 2019

Major suspected and confirmed outbreaks in
South Sudan in 2019




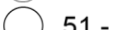
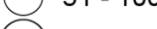
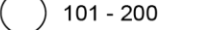


Confirmed Outbreaks South Sudan – As at 7th April 2019

- 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, Bor South, Yirol East and Gogrial West; Measles in Juba; Measles in Pibor; Measles in Gogrial West; Rubella in NBG; Measles in Mayom, Aweil South, Melut, Tonj North, Gogrial East, Aweil West and Aweil Centre

Outbreak diseases

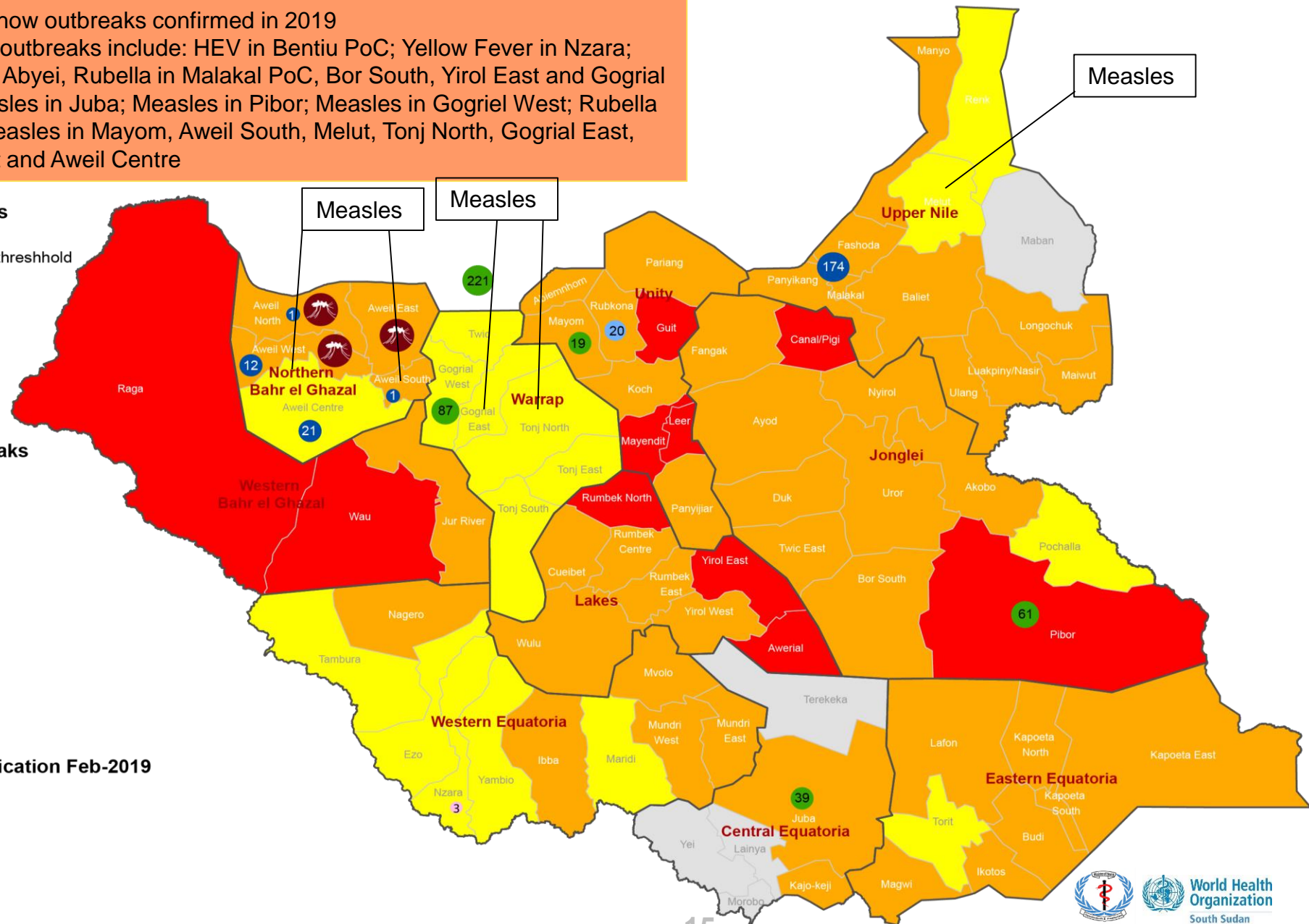
-  Malaria -above threshold
-  Measles
-  Rubella
-  Hepatitis E
-  Yellow Fever

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 7th April 2019

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

Week- 08 Suspected Outbreak diseases

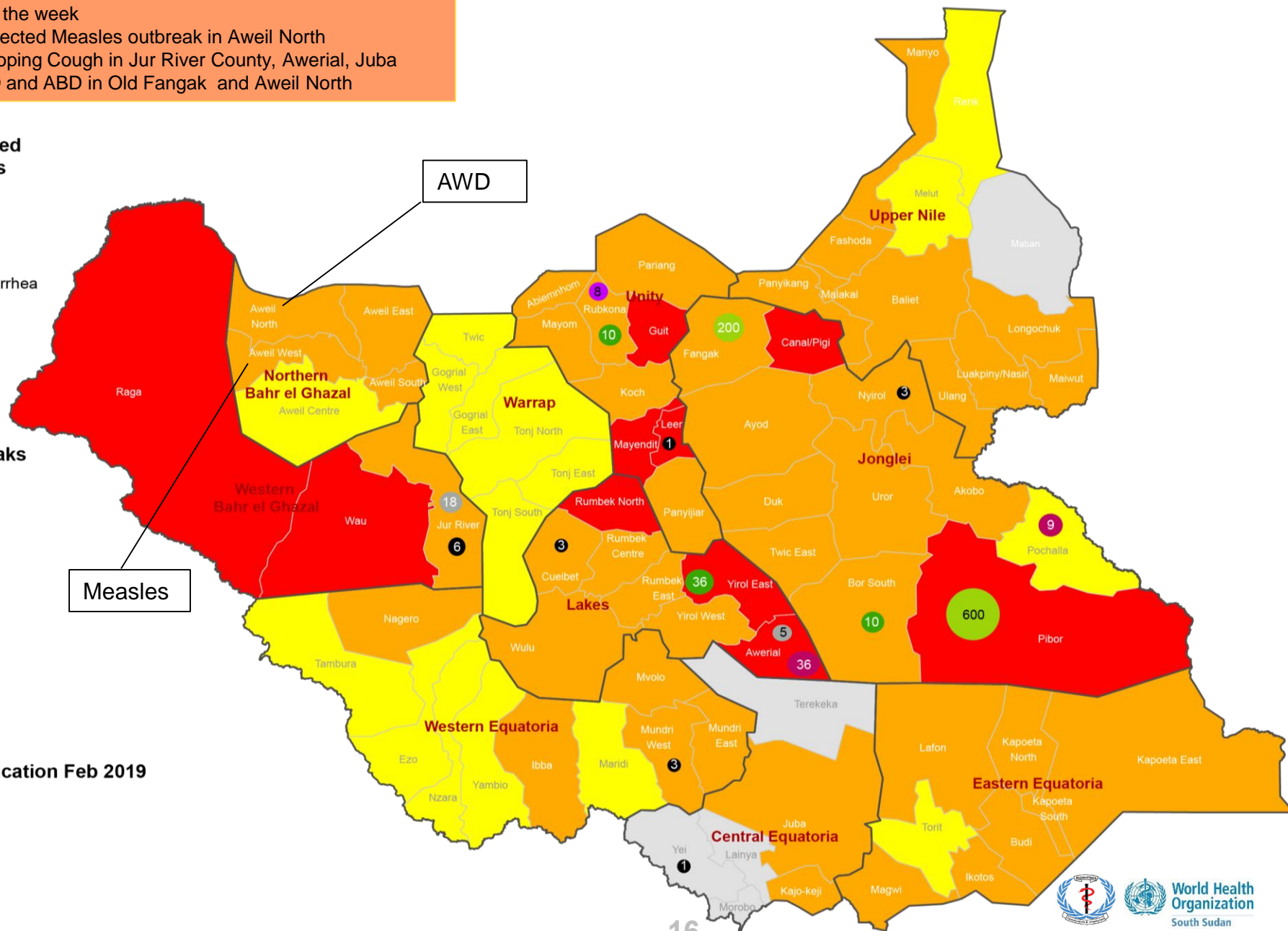
- Meningitis
- Measles
- Acute Watery Diarrhea
- Rabies probable
- Pertusis
- Chicken Pox

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



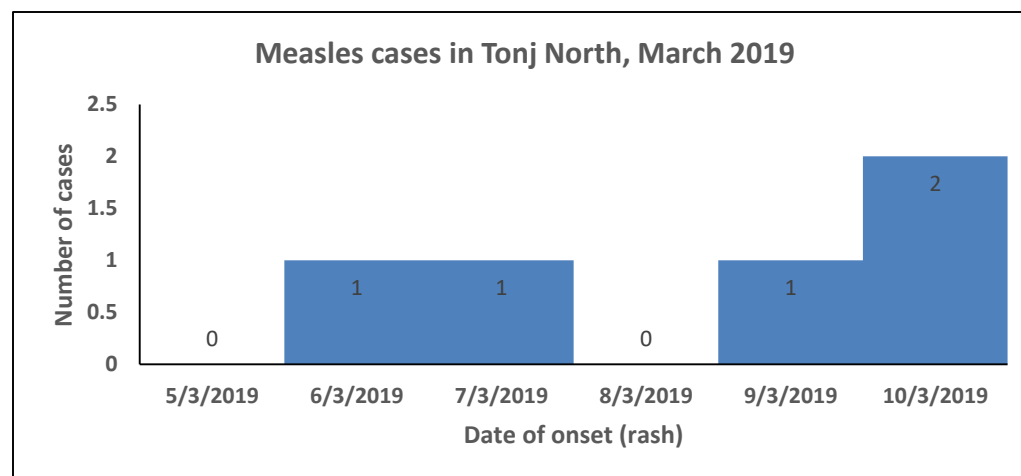
Aetiological agent	Location (county)	Date first reported	New cases since last bulletin	Cumulative cases to date (attack rate %)	Interventions			
					Case management	Vaccination	Health promotion	WASH
Ongoing epidemics								
Rubella	Malakal PoC	25/10/2018	0	178 (0.08)	Yes	No	Yes	N/A
Yellow Fever	Nzara	23/11/2018	0	3 (0.001)	Yes	Yes	Yes	N/A
Hepatitis E	Bentiu PoC	03/01/2018		23 (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	136 (0.015)	Yes	Yes	Yes	N/A
Measles	Gogrial West		0	156 (0.025)	Yes	Yes	Yes	N/A
Rubella	Aweil Center/NBG		0	35 (0.028)	Yes	No	Yes	N/A
Measles	Mayom	17/01/209	0	19 (0.010)	Yes	Yes	Yes	N/A
Measles	Aweil South	15/03/2019	8	33 (0.012)	Yes	Yes	Yes	N/A
Measles	Melut	15/03/2019	0	9(0.008)	Yes	Yes	Yes	N/A
Rubella	Bor South		0	4 (0.001)	Yes	No	Yes	N/A
Rubella	Gogrial West		0	5 (0.001)	Yes	No	Yes	N/A
Rubella	Yirol East		0	3 (0.003)	Yes	No	Yes	N/A
Measles	Tonj North		5	5 (0.002)	Yes	Yes	Yes	N/A
Measles	Gogrial East	4/04/2019	11	11 (0.003)	Yes	Yes	Yes	N/A
Measles	Aweil Centre	4/04/2019	5	5 (0.005)	Yes	Yes	Yes	N/A
Measles	Aweil West	4/04/2019	7	7 (0.003)	Yes	Yes	Yes	N/A

ACTIVE OUTBREAKS AND PUBLIC HEALTH EVENTS

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

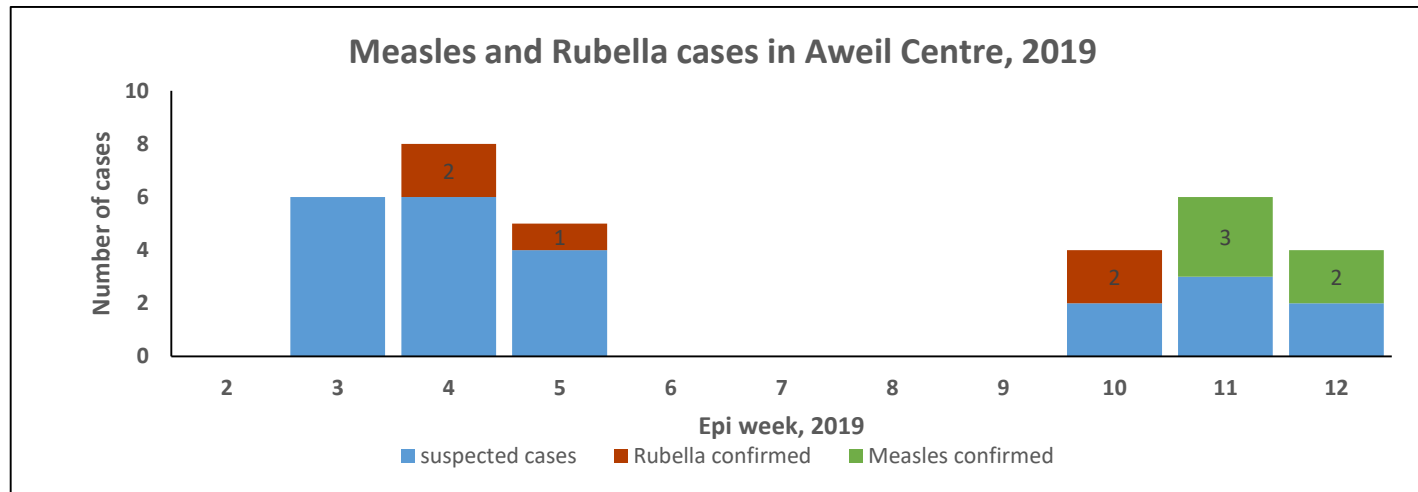
Confirmed Measles outbreak – Tonj North

- A new measles outbreak has been confirmed in Tonj North County in Warrap. A total of five (5) suspected measles cases were line listed
- All the five (5) samples that were received tested positive for measles IgM
 - One case tested positive for measles on 16th February 2019
- Most of the cases are children < 5 years of age with mean ages of 4.2 years (SD=1.3 years)
- All the cases are from Akop Payam.
 - Four (4) cases from Ariik Village
- Four (4) cases have no history of vaccination



- Recommended response
 - SMOH and partners to finalize development of a response plan including a micro-plan for a reactive vaccination campaign
 - All partners involved including the new HPF partners taking over the facilities in the county are expected to support this process to ensure timely response to the outbreak
 - Active case search both in the facilities and communities to identify the missed cases and to establish the magnitude and extent of the outbreak
 - Strengthen routine surveillance and immunization activities
 - Training of health workers on case management of measles cases (supportive management including vitamin A supplementation)

Confirmed Measles and Rubella outbreak – Aweil Centre



Introduction

- A measles outbreak has been confirmed in Aweil Centre, a county with an ongoing rubella outbreak and an ongoing measles outbreak in a neighboring county of Aweil South.
- Five (5) suspected cases of measles were confirmed positive for measles IgM antibodies. The samples tested negative for rubella IgM antibodies.
- Clinically, it may not be easy to differentiate suspected measles and suspected rubella cases.
- Additionally, two (2) cases tested positive for measles in Aweil East while five (5) cases tested positive for rubella in Aweil North. No cases tested positive for measles in Aweil North.

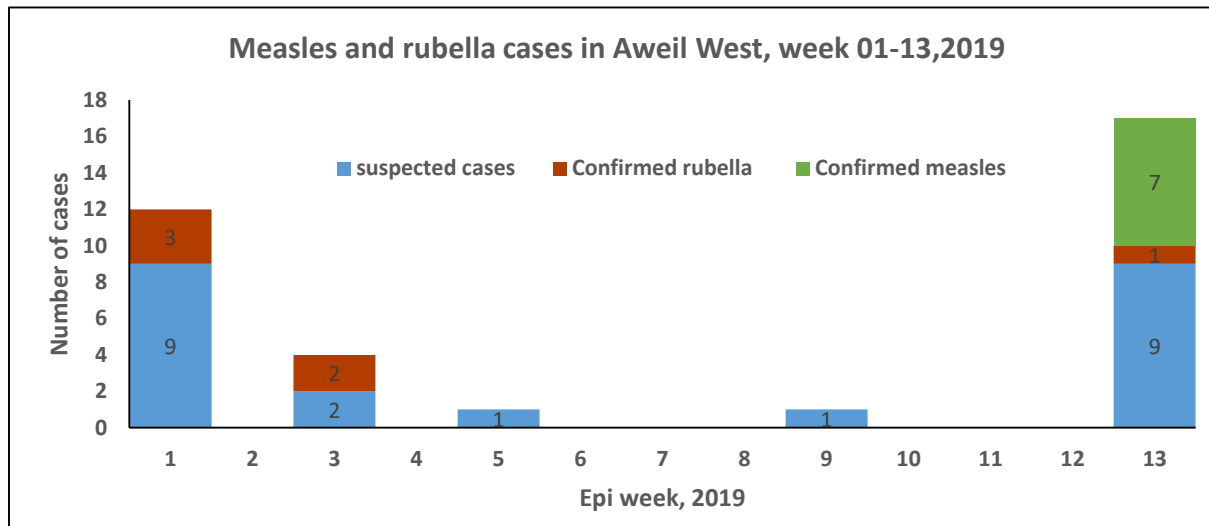
Descriptive Epidemiology

- Three of the measles confirmed cases are from Sikadit, and one from Dhalal and Nyalath.
- The mean age of the confirmed measles cases was 5.9 years with three of them being children <5 years
- No deaths have been reported.

Recommended response

1. A collaborative effort needed at the state level to develop an appropriate response plan for the two outbreaks.
 1. This should include a reactive vaccination campaign for measles, and proper case management for the suspected cases of measles and rubella.
2. An Intensification of the surveillance activities to ascertain the magnitude and geographical extent of the outbreak
3. Scaling of the routine immunization activities with clear plans to reach at risk populations in hard to reach areas
4. Collection of more samples and active case search in Aweil East and North is recommended.

Confirmed Measles and Rubella outbreak – Aweil West



Introduction

- Aweil West County becomes the third county from Aweil to be affected with the ongoing measles outbreaks. The outbreak was confirmed on 4th April 2019 after 7 samples tested positive for measles.
- Aweil West County has been having rubella cases since early January, 2019. One sample tested positive for rubella in week 13, 2019.

Descriptive Epidemiology

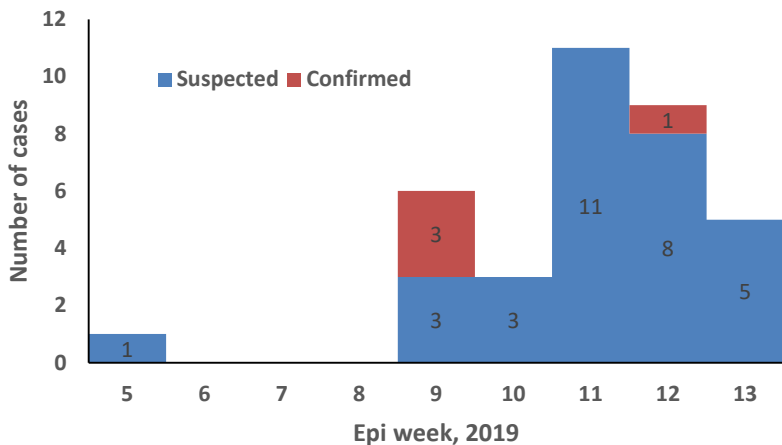
- The confirmed measles cases are from Ayuang (5) and Sikahadid (2) payams
- Six out of the 7 confirmed measles cases are children < 5 years
- No deaths have been reported.

Recommended response

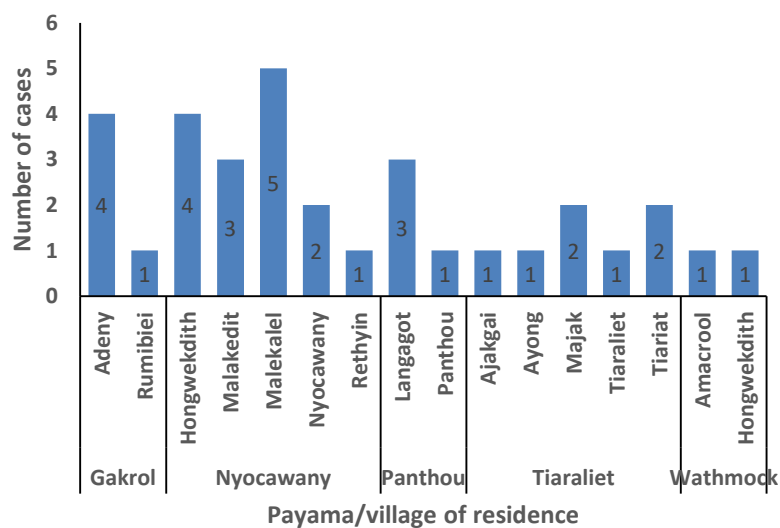
1. A collaborative effort needed at the state level to develop an appropriate response plan for the two outbreaks.
 1. This should include a reactive vaccination campaign for measles, and proper case management for the suspected cases of measles and rubella.
2. An Intensification of the surveillance activities to ascertain the magnitude and geographical extent of the outbreak
3. Scaling of the routine immunization activities with clear plans to reach at risk populations in hard to reach areas
4. Monitoring of rubella infection among pregnant mothers is also recommended.

Confirmed Measles outbreak – Aweil South

Measles cases in Aweil South, week 5-13, 2019



Measles in Aweil South, week 5-13, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1		3	3	9.1	9.1
1-4	7	13	20	60.6	69.7
5-9	2	8	10	30.3	100.0
Total cases	9	24	33	100.0	

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
- Cumulatively, a total of 33 cases have been line listed. One case tested positive for rubella IgM antibodies.
- The index case has a history of travel to the neighboring Gogriell West County which has a confirmed ongoing measles outbreak

Descriptive Epidemiology for measles cases in Aweil South

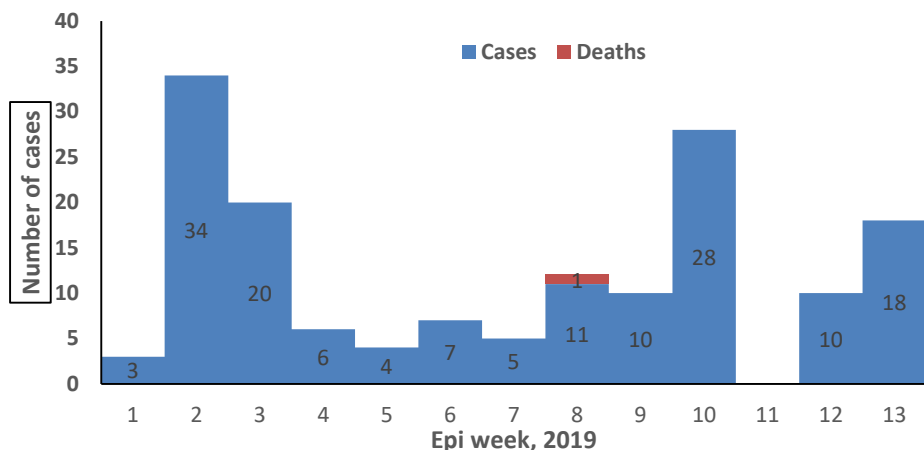
- The majority (70%) of cases are children <5 years
- Nyocawany Payam has most cases with 15 (45.5%) cases coming from five villages. Five payams affected by the outbreak.
- Eighteen (54.5%) cases have not received measles vaccination prior to their illness

Recommended response

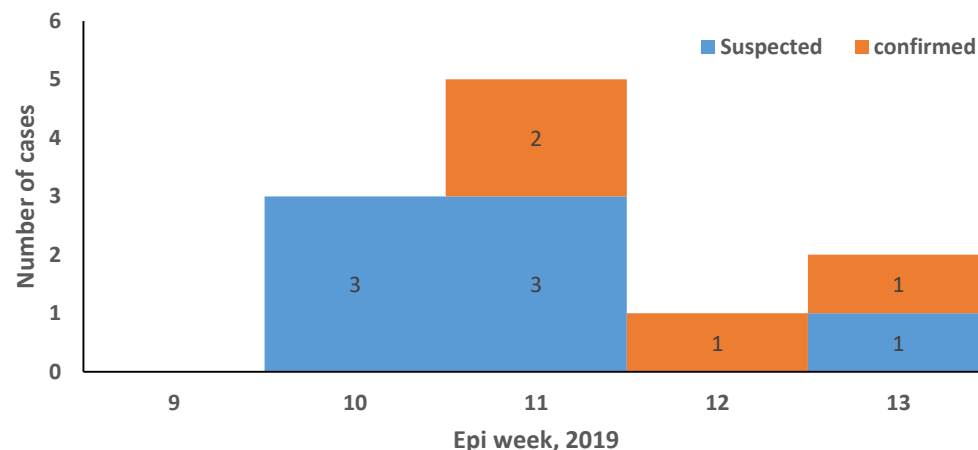
1. A micro-plan for a reactive vaccination campaign has been developed where 22 071 children aged 6 months to 5 years are to be vaccinated
 - The campaign is ongoing having started on 8th April 2019 with IOM as the lead the agency with support from other partners
2. Other recommended interventions include active case search by surveillance officers in the health facilities and communities, case management,
3. The health facilities and partners in Aweil East, Aweil West and Aweil North 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 – Gogrial West and Gogrial East

Measles cases in Gogrial West, week 01-13, 2019



Measles cases in Gogrial East, week 10-13, 2019



Descriptive Epidemiology

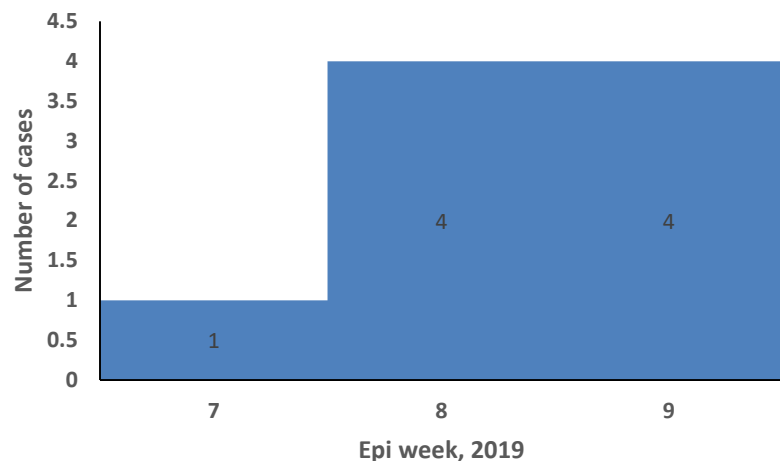
- The outbreak threshold for measles has been reached in Gogrial East County after 4 cases tested positive for measles IgM antibodies
 - There are 11 cases in total as at end of week 13, 2019. No deaths have been reported.
 - Seven (7) payams have been affected with Toch East (4 cases) and Toch North (2) having the most cases.
 - Gogrial East borders Gogrial West County with an ongoing active outbreak for several weeks
- In Gogrial West, there are 156 cases reported as at end of week 13 with one (1) death being reported in week 08,
 - Three (3) cases are laboratory-confirmed. Children < 5 years of age constituted 60% (103) of all the cases.
 - The payams with most cases are Alek West (56 cases) and Kuach North (97 cases) accounting for over 98% of all the cases in the county.
 - Most (82.1%) of the cases have never been vaccinated against in measles prior to the illness indicating poor routine vaccination coverage in the county.

Recommended response

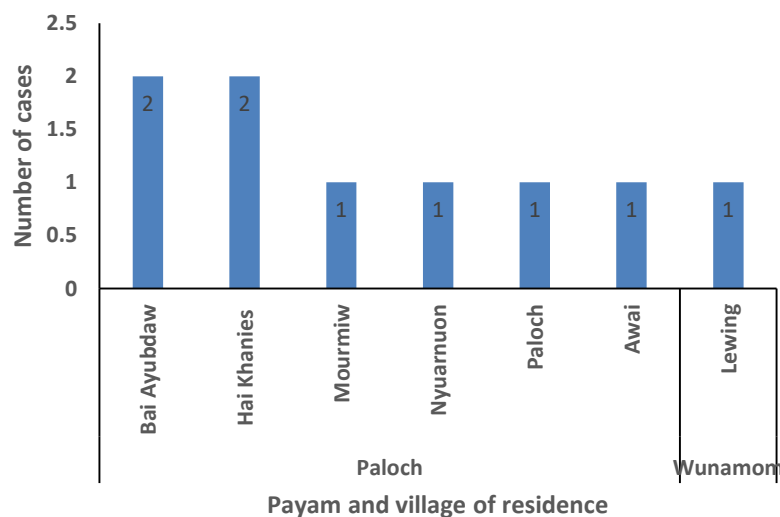
- SMoH and partners advised to plan and extend the ongoing campaign in Gogrial West to Gogrial East County
- Continued strengthening of both routine surveillance and immunization in both counties
- A reactive vaccination campaign targeting 76024 children aged between 6-59 months is ongoing in all the 9 payams.
 - According to preliminary data representing 84% of all the data that was expected, 71,849 (94.5%) children aged 6-59 months have been vaccinated

Confirmed Measles outbreak – Melut

Measles cases in Melut, week 7-9, 2019



Measles cases in Melut, week 7-9, 2019



Introduction

- A measles outbreak has been confirmed in Melut following laboratory confirmation of three (3) suspected samples in week 11. There are nine (9) suspected measles although active case search for more cases in the facilities and in the communities are ongoing.

Descriptive Epidemiology for measles cases in Melut

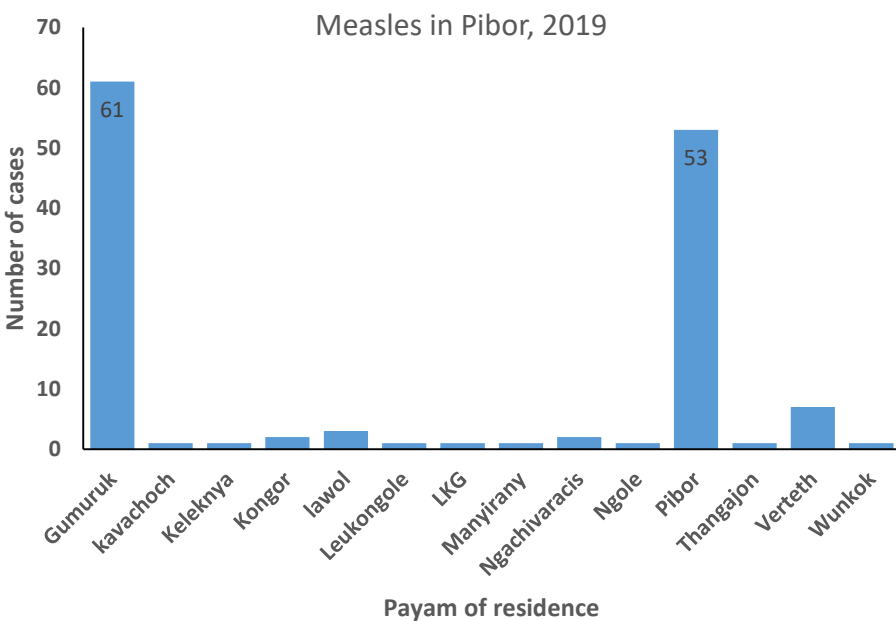
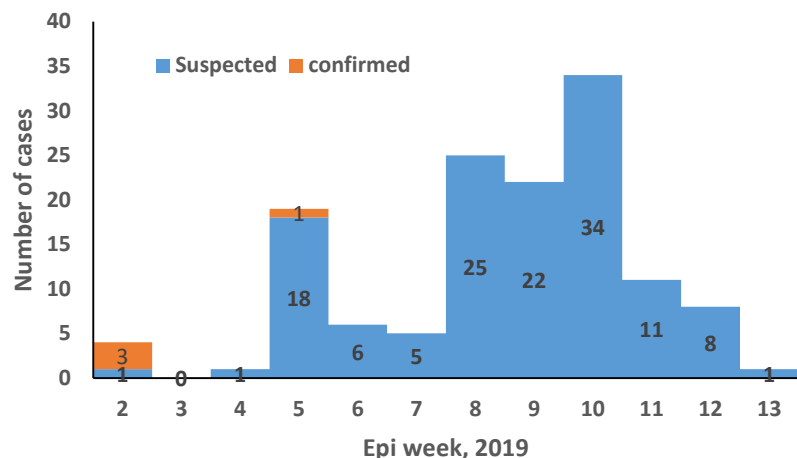
- The first cases among the line listed cases reported that their skin rash started in week 07, 2019.
- No deaths have been reported
- Out of the 9 cases, 8 (88.9%) are children < 5 years. The mean age for the cases is 1.5 years (SD=1.3)
- The majority of the cases are from Paloch Payam with 8 (88.9%) cases out of the 9 cases. Two payams affected out of the six payams.
- Six (66.7%) reported not receiving measles vaccination prior to their illness

Recommended response

- A response plans which includes a micro-plan for a reactive vaccination campaign has been developed through engagement between SMOH and the partners
 - The emergency campaign is targeting 15,502 children aged 6 months to 5 years.
 - The campaign expected to start on 10th April 2019
- Other recommended interventions include active case search by surveillance officers in the health facilities and communities, quality case management to improve outcome
- Intensification of the surveillance activities to ascertain the magnitude and geographical extent of the outbreak
- Scaling of the routine immunization activities and communication sensitization exercises
- The health facilities and partners in Malakal (2) and Renk (1) where laboratory confirmed cases have been reported are advised to enhance their surveillance as well as collecting more samples for testing.

Confirmed Measles outbreak – Pibor

Measles cases in Pibro, week 02-13, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	13	7	20	14.7	14.7
1-4	20	47	67	49.3	64.0
5-9	21	15	36	26.5	90.4
10-14	2	3	5	3.7	94.1
15+	3	5	8	5.9	100.0
Total cases	59	77	136	100.0	

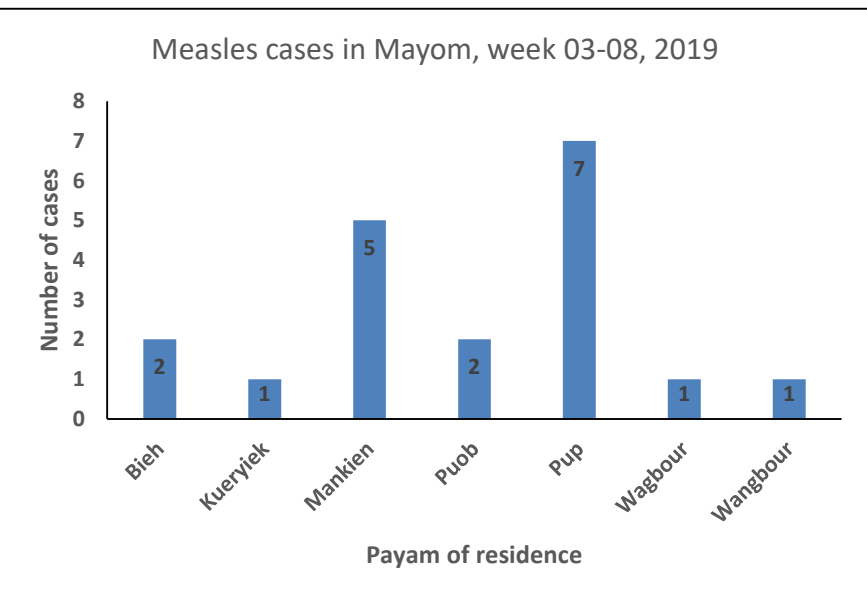
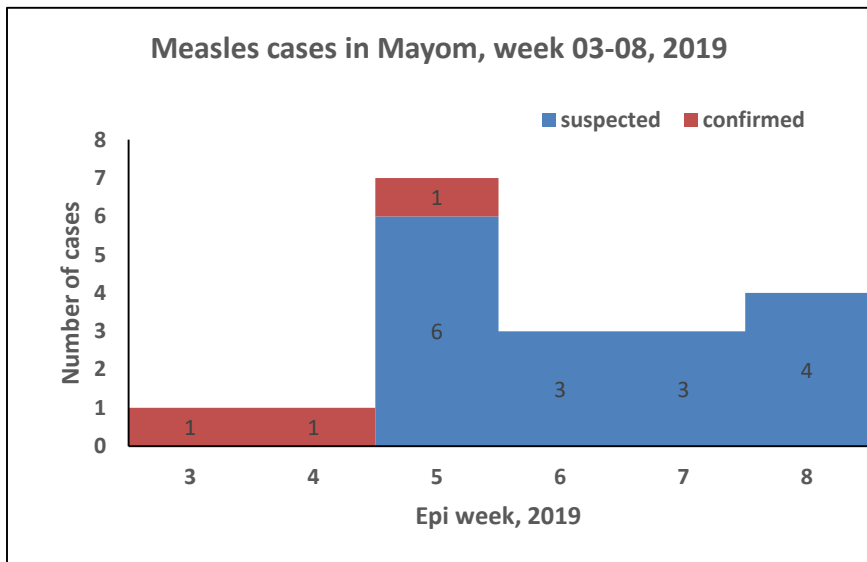
Descriptive Epidemiology

- Cumulatively a total of 136 measles cases have been reported as at end of week 13, 2019.
 - One (1) suspected case was reported in week 13, 2019
 - No deaths have been reported since the start of the outbreak
- Majority of the cases are from Gumuruk (61) and Pibor (53) contributing about 84% (114) of all the cases
- About 64% (87) of the cases are children <5 years
- More than half (58.1%) of the cases have either no history of prior vaccination against measles or don't know their vaccination status.
- Number of cases being reported at the health facilities are decreasing since the campaign

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. About 4,000 additional 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 perform payam and village level analysis of the campaign coverage to identify areas with low vaccination coverage and prioritize them for either a mop-up campaign or scaling up of routine vaccination activities.

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

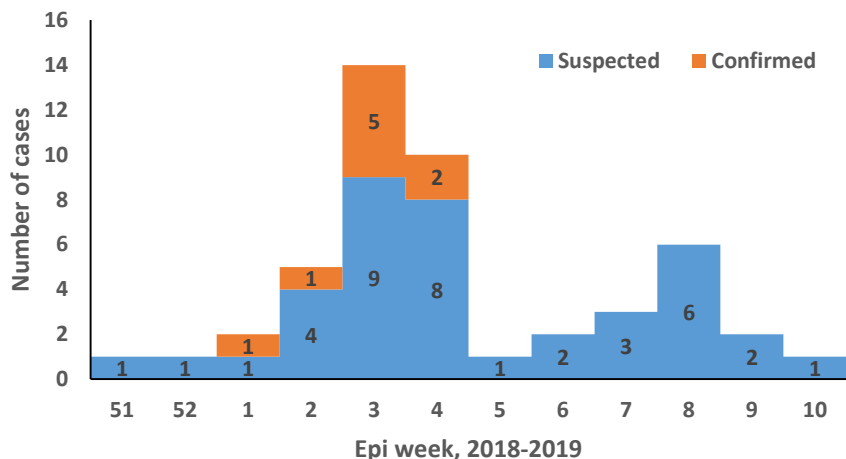
- Nineteen (19) suspected measles cases were reported in Mayom between week 03, 2019 and week 08, 2019.
 - Three cases have been confirmed positive for Measles IgM antibodies
 - No deaths have been reported
- The payams with the most cases are Pup (7) and Mankien (5) Payam
- Majority (89.4%) of the cases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

Recommended response

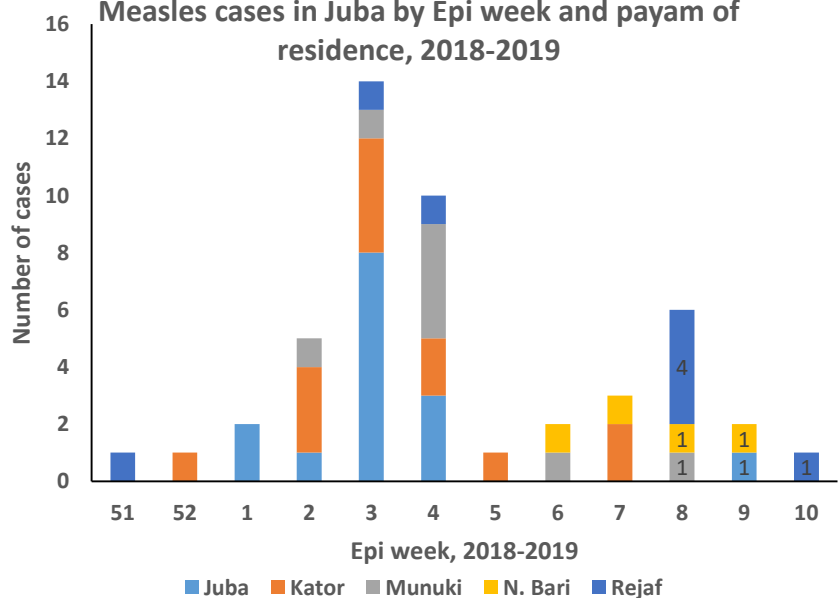
1. A reactive vaccination campaign targeting 37, 193 children aged 6-59 months in 10 payams in Mayom started on 6th and ended on 12th March 2019
 1. 56, 647 (152%) children were vaccinated as at the end of the campaign.
2. Other recommended interventions include active case search in the health facilities and communities, case management, routine surveillance and social mobilization

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

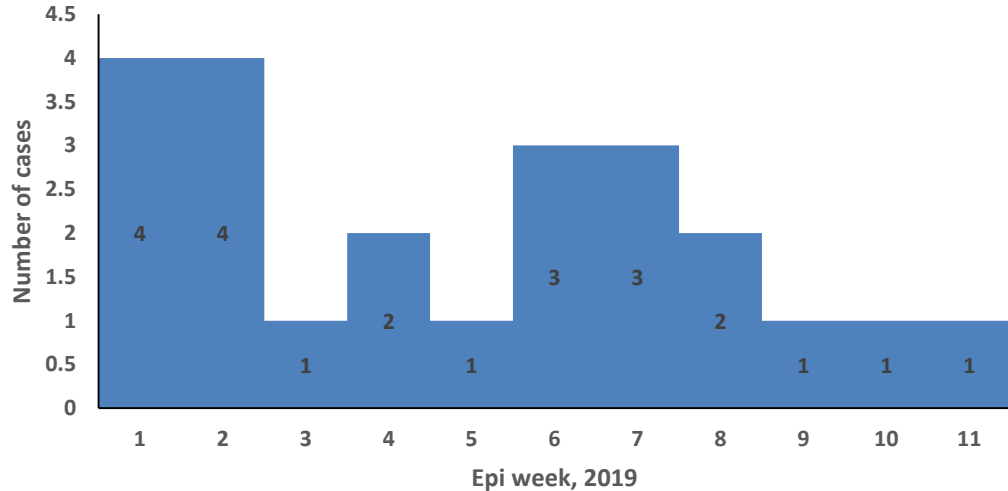
- A total of 48 suspected measles cases were reported from Juba as at end of week 10.
 - Most cases are from Juba 15 (31.3%) and Khator 13 (27.1%) payams
 - Ten (10) confirmed cases; 6 from Khator, 3 from Amarat and 1 from Rejaf
 - Three (CFR 6.3%) deaths reported; two (2) from Amarat and One (1) from 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

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. No cluster of cases have been identified as of now.
- Increase community awareness through social mobilization both in the communities and at the health facilities
- Continue with surveillance and routine immunization

Hepatitis E, Bentiu PoC

HEV cases in Bentiu PoC, week 01-11, 2019



Bentiu PoC

- There has been persistent transmission of HEV in Bentiu PoC since early 2018
- Cumulatively, there are 23 suspected HEV cases that have been reported in Bentiu PoC since the beginning of 2019. One (1) new case was reported in week 11.
- There were 159 HEV cases reported in 2018
- None of the cases were admitted
- All the recent cases have recovered
- Slightly more than half (52.2%) of the cases are males
- Age groups 1-4 years had the most cases with 7 cases (30.4%).
- Out of the 11 females cases that were reported, three (3) cases are 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	3	4	7	30.4	30.4
5-9 years	2	0	2	8.7	39.1
10-14 years	3	3	6	26.1	65.2
15-44 years	3	3	6	26.1	91.3
45+years	0	2	2	8.7	100.0
Total cases	11	12	23	100.0	

Malaria trends

Current malaria trends

Malaria was the leading cause of morbidity and mortality accounting for 45.8% of all morbidities and 18.8% of all mortalities in week 13, 2019. The trend analyses showed at least 6 counties in five 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. **Kwajok hub(Tonj South)**
2. **Wau hub(Wau)**
3. **Rumbek hub(Rumbek Center, Rumbek East)**
4. **Aweil hub(Aweil East)**
5. **Unity hub(Mayom)**

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
22 nd Mar 19	1	0	Juba		Nd	-ve	-ve	Investigated on 22 nd Mar 19
26 th Mar 19	1	0	Ezo		Nd	-ve	-ve	Investigated on 26 th Mar 19

- Blood samples have been obtained from nine (9) Ebolavirus alerts; all 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 06th Apr 2019

Current situation

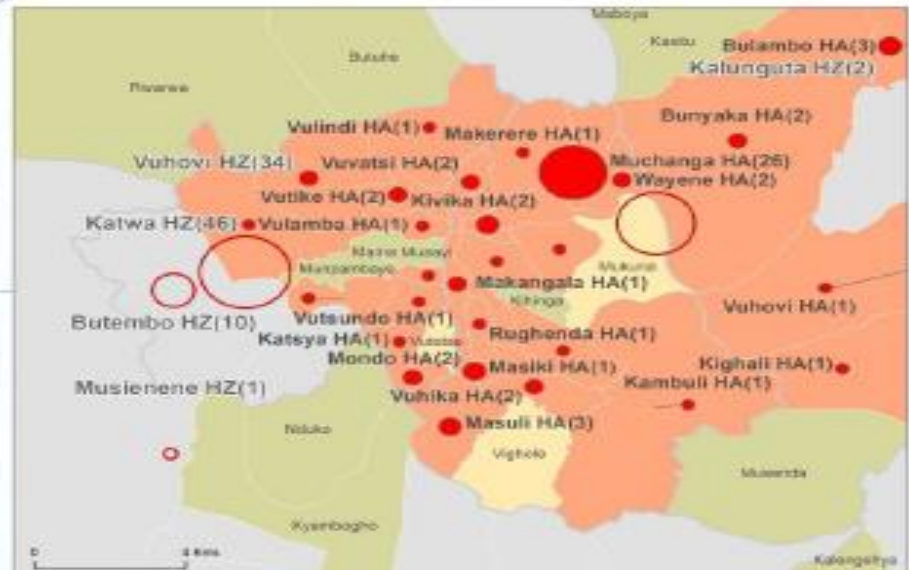
- Currently in 34th week of the outbreak
- **1146** Cases [1080 confirmed & 66 probable]
- **721** Deaths [655 confirmed & 66 probable]
- **81** Health workers [28 dead]

Response update

- **7210** contacts under surveillance [83-86% followed up]; 93 686 vaccinated

Affected health zones

- **2** provinces [North Kivu & Ituri]
- **19** health zones [14 North Kivu & 5 Ituri]
- **164** cases in last 21 days (11-31 March); Katwa (46), Vuhovi (34), Mandima (25), Masereka (19), Beni (12), Butembo (10), Oicha (8), Kayna (3), Lubero (3), Kalunguta (2), Bunia (1) and Musienene (1).



Confirmed cases for the last 21 days

Numbers in brackets represent confirmed cases for the last 21 days
 HZ stands for Health Zones; HA stands for Health Areas

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

Number of days since the last confirmed case(s)

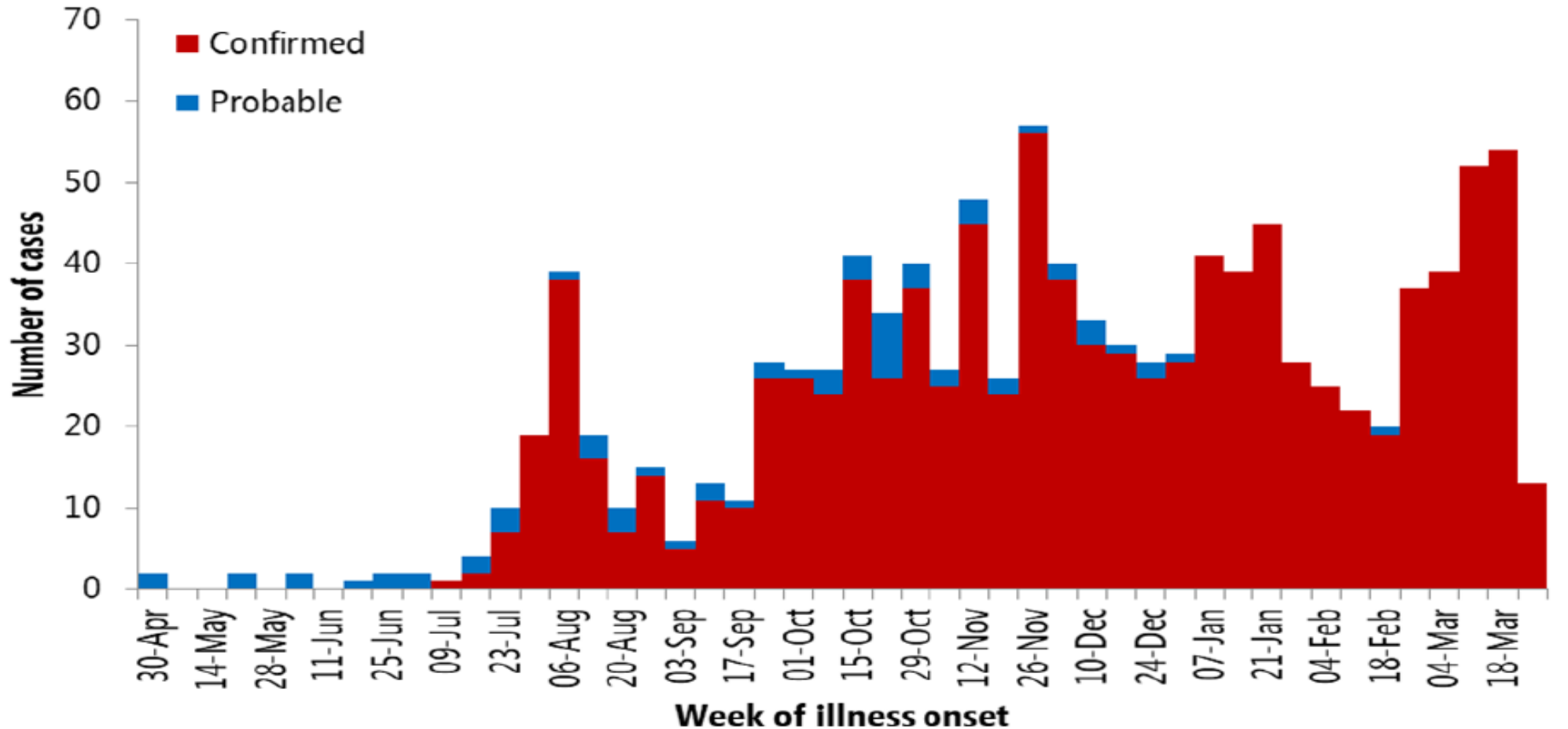
- < 22 days
- 22 - 42 days
- No confirmed cases for more than 42 days
- Non-affected areas in affected Health Zones (HZ)
- Other non-affected areas



Data as of the 31st of March 2019
 By Health Emergency Programme
 Source: MINSANTE
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EVD trends & case distribution in DR Congo



- A notable increase in the number of Ebola virus disease (EVD) cases was noted in the week, with 72 newly confirmed cases and one new probable case reported in the last seven days; the largest proportion of which were from Katwa and Vuhovi health zones

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
Kor Kaya PoE	3,534	0	0	0	0	0
Bangangal	0	0	0	0	0	0
Basukangbi	0	0	0	0	0	0
Bazi Border	1,765	0	0	0	0	0
Dukudu-Olo	0	0	0	0	0	0
Ezo	0	0	0	0	0	0
Gangura Border	0	0	0	0	0	0
James Dico	0	0	0	0	0	0
Juba International Airport	0	0	0	0	0	0
Kaya	2,655	0	0	0	0	0
Kaya Border	0	0	0	0	0	0
Khorjo	2,419	0	0	0	0	0
Makpandu	0	0	0	0	0	0
Maridi Airstrip	24	0	0	0	0	0
Nimule Airstrip	0	0	0	0	0	0
Nimule Border	0	0	0	0	0	0
Okaba	1,782	0	0	0	0	0
Panjala Docking River	0	0	0	0	0	0
Pure	2,847	0	0	0	0	0
Sakure Border	0	0	0	0	0	0
Salla Musala	2,759	0	0	0	0	0
Sangua 1	0	0	0	0	0	0
Tikori	94	0	0	0	0	0
Wau Airport	0	0	0	0	0	0
Yambio Airport	0	0	0	0	0	0
Yei Airport	10	0	0	0	0	0
Yei RRC	18	0	0	0	0	0
South Sudan	17,917	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 13, 17,917 travellers 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.

Outbreaks in 2019

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 GneneXpert and PCR testing.
17/01/2019	Measles	1	Gogriol 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
4/04/2019	Measles	0	Gogriol East		11 cases out of which four were laboratory confirmed for measles
4/04/2019	Measles	0	Aweil Centre		Five cases tested positive for measles

**This bulletin is produced by the Ministry of Health with
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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>

