

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W17 2019 (Apr 22, 2019- Apr 27, 2019)



- The completeness for IDSR reporting at the county level was 59% in week 17 of 2019. The completeness for EWARS reporting from IDPs was 84%.

- Measles (17), malaria (12), acute watery diarrhea (12) and bloody diarrhea (11) were the top common alerts generated through EWARS in week 17, 2019.

- Measles vaccination campaign in response to the ongoing outbreak in Juba has started on 6th May 2019 targeting to vaccinate 114,642 children aged 6-59 months in five payams, Mangatain IDP sites and Juba 1&3 PoC.

- Suspected cases of food poisoning have been reported from Padeah, Gandor and Toch-riak in Leer County. A total of about 22 cases and one (1) death have been reported since 18 April 2019. Food samples have been collected for laboratory analysis while MoH and WHO team has been deployed to investigate and collect samples from the affected cases.

- Cumulatively, there are 39 Hepatitis E Virus cases reported in Bentiu PoC since the beginning of 2019. There were three (3) suspected cases in week 16, 2019. No cases reported in week 17, 2019.

- Since week 12 of 2019, a total of 32 ILI/SARI samples have been collected and tested at Uganda Virus Research Institute (UVRI) with 25 being negative; two (2) positive for Influenza B (Victoria); and five (5) positive for Influenza A (H3).

- 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 (W17 2019)

Hub	Reporting		Performance	
	# counties	# reports received	Completeness	Timeliness
Aweil	5	5	100%	100%
Bentiu	9	6	67%	44%
Bor	11	10	91%	91%
Juba	6	2	33%	33%
Kuajok	7	3	43%	43%
Malakal	13	7	54%	54%
Rumbek	8	4	50%	50%
Torit	8	8	100%	100%
Wau	3	0	0%	0%
Yambio	10	2	20%	20%
South Sudan	80	47	59%	56%

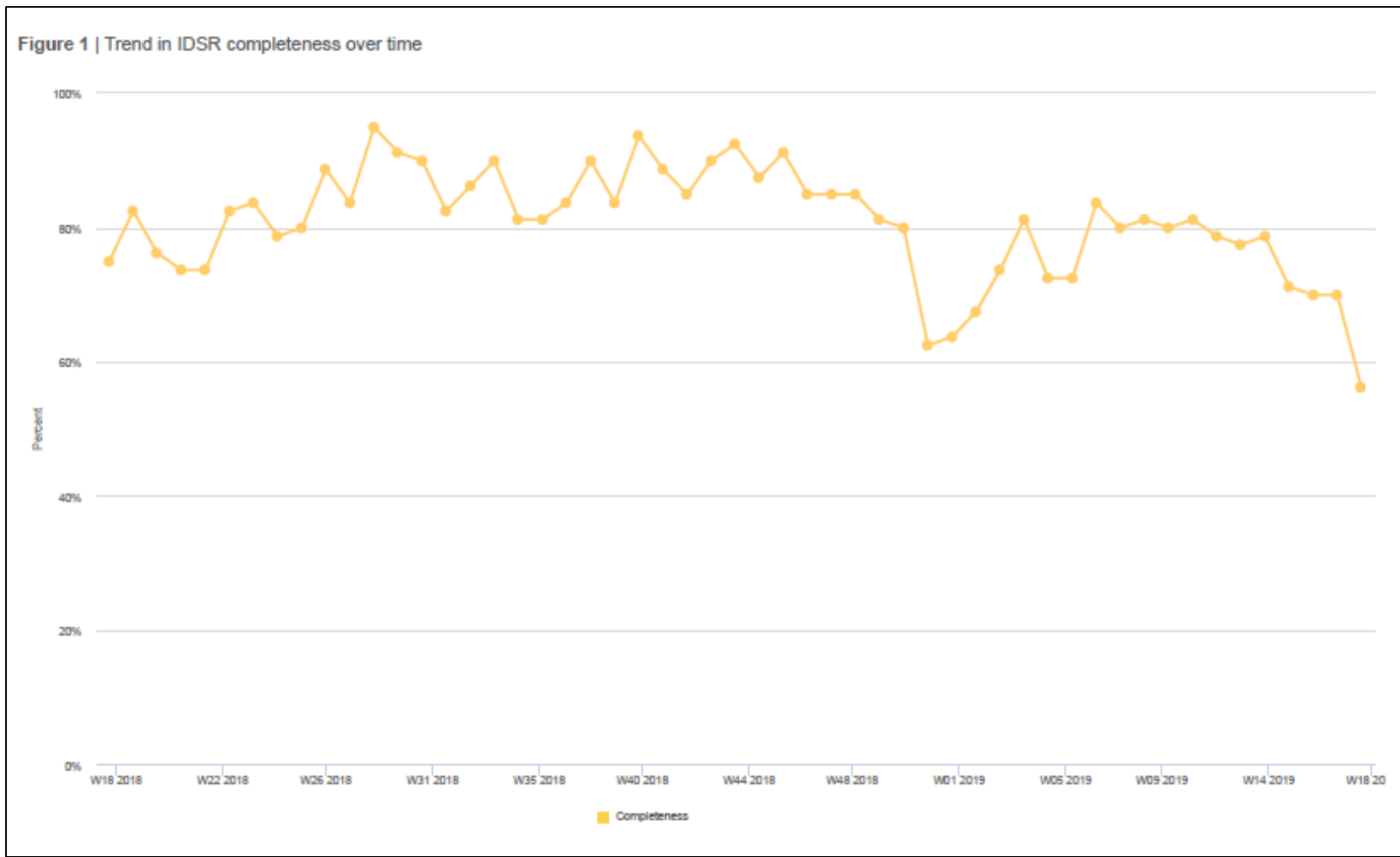
Table 2 | Summary of key IDSR surveillance indicators

W17	Cumulative (2019)	
80	-	Number of counties
59%	74%	Completeness
56%	57%	Timeliness

Table 3 | IDSR report submissions

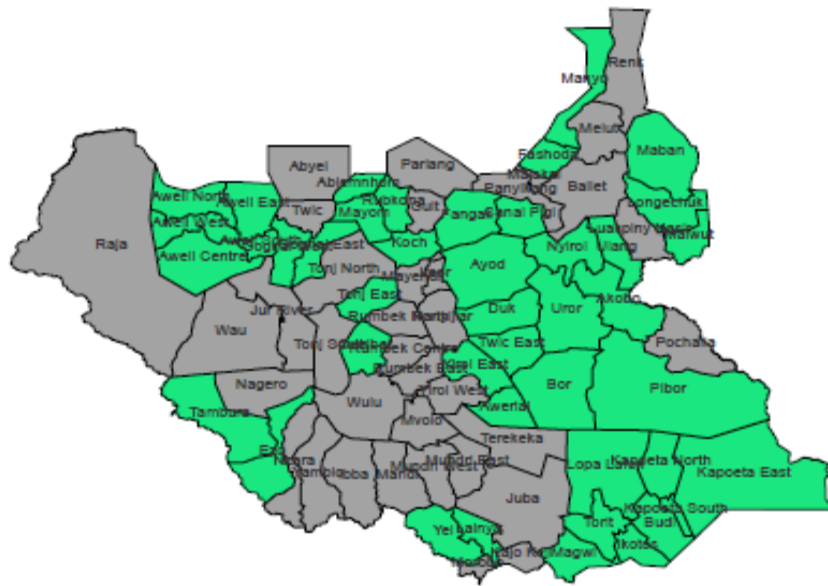
W17	Cumulative (2019)	
47	1,060	total submissions
9	0	submissions by mobile
38	0	submissions by web

- Both the completeness and timeliness for IDSR reporting at the county level were 59% in week 17, 2019 while the cumulative completeness and timeliness was 74% and 57% respectively 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.

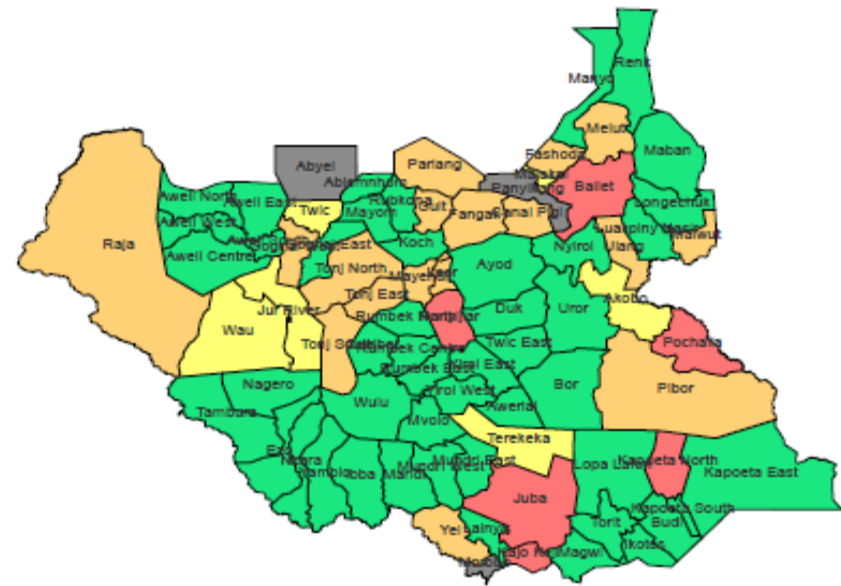


The graph shows completeness for the weekly IDSR reporting at the county level

Map 1a | Map of IDSR completeness by county (W17 2019)



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



- Counties that submitted their IDSR reports in week 17, 2019 are shown in green in map 1a.
- Counties that did not submit their IDSR reports in week 17, 2019 are shown in grey in map 1a.

Table 4 | EWARS surveillance performance indicators by partner (W17 2019)

Partner	Performance		Reporting	
	# sites	# reports received	Completeness	Timeliness
CMD	3	3	100%	100%
GOAL	2	2	100%	100%
HFO	2	2	100%	100%
HLSS	1	1	100%	100%
IMA	7	7	100%	100%
IMC	5	5	100%	100%
IOM	11	10	91%	91%
IRC	1	1	100%	100%
Medair	2	2	100%	100%
MSF-E	2	1	50%	50%
MSF-H	3	0	0%	0%
SMC	7	5	71%	71%
UNIDO	1	1	100%	100%
UNKEA	2	2	100%	100%
World Relief	1	1	100%	100%
TRI-SS	2	2	100%	100%
LIVEWELL	1	1	100%	100%
Total	57	48	84%	84%

Table 5 | Summary of key EWARS surveillance indicators

W17	Cumulative (2019)	
57	-	Number of EWARS reporting sites
84%	70%	Completeness
84%	67%	Timeliness

Table 6 | EWARS report submissions

W17	Cumulative (2019)	
48	745	total submissions
1	26	submissions by mobile
47	719	submissions by web

- Both the completeness and timeliness for EWARS reporting by partners was 84% for week 17, while the cumulative completeness and timeliness were 70% and 67% respectively for 2019

EVENT-BASED SURVEILLANCE

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

Table 7 | Alert performance indicators by Hub

Hub	W17		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Aweil	4	0%	42	76%
Bentiu	4	75%	78	87%
Bor	0	0%	39	67%
Juba	4	50%	110	57%
Kuajok	3	0%	39	13%
Malakal	2	50%	52	77%
Rumbek	26	15%	265	84%
Torit	9	22%	107	64%
Wau	5	20%	74	47%
Yambio	11	100%	111	73%
South Sudan	68	35%	917	70%

Table 8 Summary of key alert indicators

W17	Cumulative (2019)	
68	917	Total alerts raised
35%	70%	% verified
0%	0%	% auto-discarded
6%	6%	% risk assessed
1%	4%	% requiring a response

- Out of 68 alerts received in week 17, a total of 35% were verified, 6% were risk assessed and 4% required a response.

Table 9 | Alert performance indicators by event

Event	W17		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	12	33%	107	70%
AWD	12	42%	368	68%
Bloody Diarr.	11	27%	176	68%
Measles	17	18%	242	67%
Meningitis	0	0%	0	0%
Cholera	1	100%	26	77%
Yellow Fever	1	100%	11	100%
Guinea Worm	2	50%	32	63%
AFP	1	0%	82	73%
VHF	0	0%	8	88%
Neo. tetanus	0	0%	10	90%
Event-based surveillance				
EBS total	2	100%	21	81%

Table 10 | Event risk assessment

W17	Cumulative (2019)	
1	18	Low risk
23	23	Medium risk
1	15	High risk
0	3	Very high risk

- Measles (17), malaria (12), AWD (12) and bloody diarrhea (11) were the top common alerts generated through EWARS in week 17, 2019.

Alert by disease and county in W17 2019

Counties	ARI	AWD	Bloody Diarrhea	AFP	Guinea Worm	Yellow Fever	EBS	Cholera	Malaria	Measles	Total Alerts
Cueibet	2		2								4
Tambura	1	1	1			1			1		5
Aweil East	1										1
Rubkona										1	
Wulu	1				1						2
Kapoeta South	1										1
Rumbek Centre	1	2							3		6
Yambio	1	1									2
Lofa/Lafon		1									1
Torit		1									1
Rumbek East		1	2						2		5
Mvolo		1							1		2
Yirol east		2							1	5	8
Jur River		1									1
Gogrial west				1						2	3
Morobo			1								1
Abiemnhom			1								1
Ikotos									1		
Leer	1										
Wau			2							2	4
Juba			1							1	2
Terekeka		1									
Ezo								1	1		2
Magwi							1				1
Torit							1		2		3
Yirol West					1						1
Kapoeta east			1								1
Longechuk										1	1
Aweil south										1	1
Malakal										1	1
Aweil North										1	1
Aweil West										1	1
Total Grand	9	12	11	1	2	1	2	1	12	16	67

Suspected measles outbreak in Wau and Jur River counties

Suspected measles cases have been reported from Wau and Jur River counties

- In Wau County, 25 suspected cases have been reported since week 04, 2019. Three (3) cases were reported in week 17, 2019. One (1) case tested positive for measles IgM in week 17.
- In Jur River County, three (3) suspected cases have been reported since early February, 2019. A case reported in February tested positive for rubella while another case that was reported in week 16, tested positive for measles.

The facilities and partners in these counties are advised to collect more samples from the subsequent cases in the health facilities.

Suspected measles outbreak in Longochuk

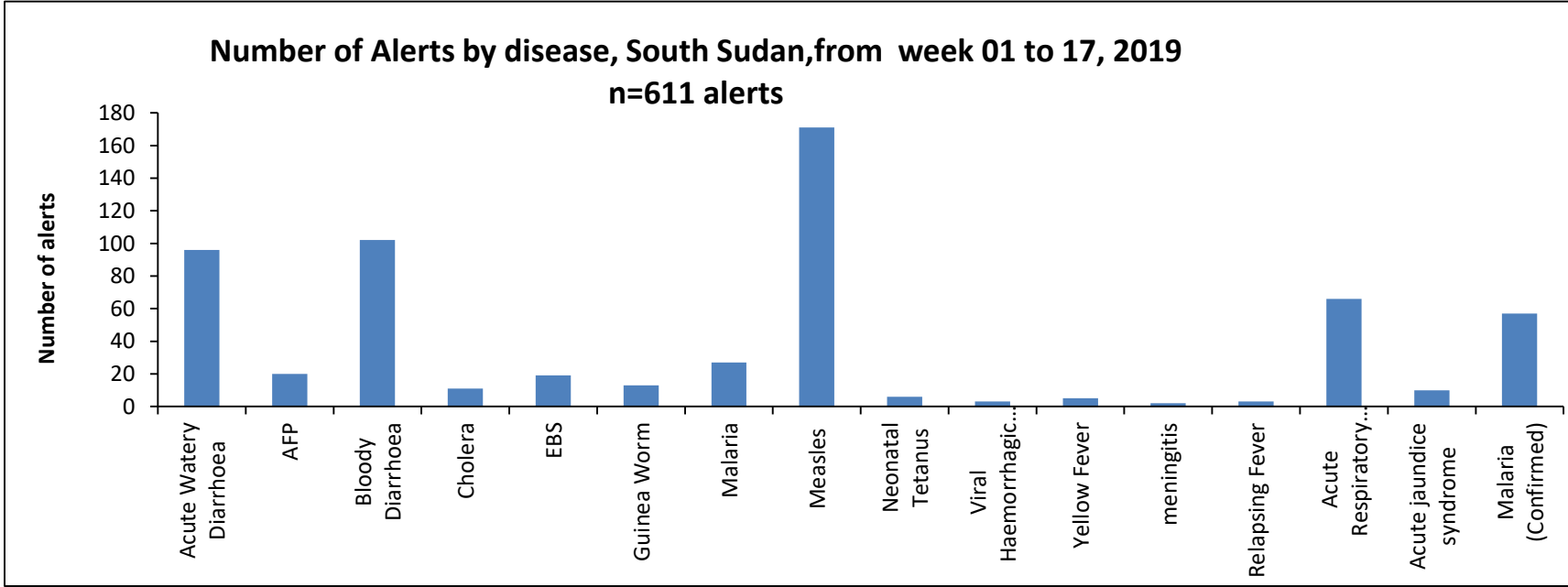
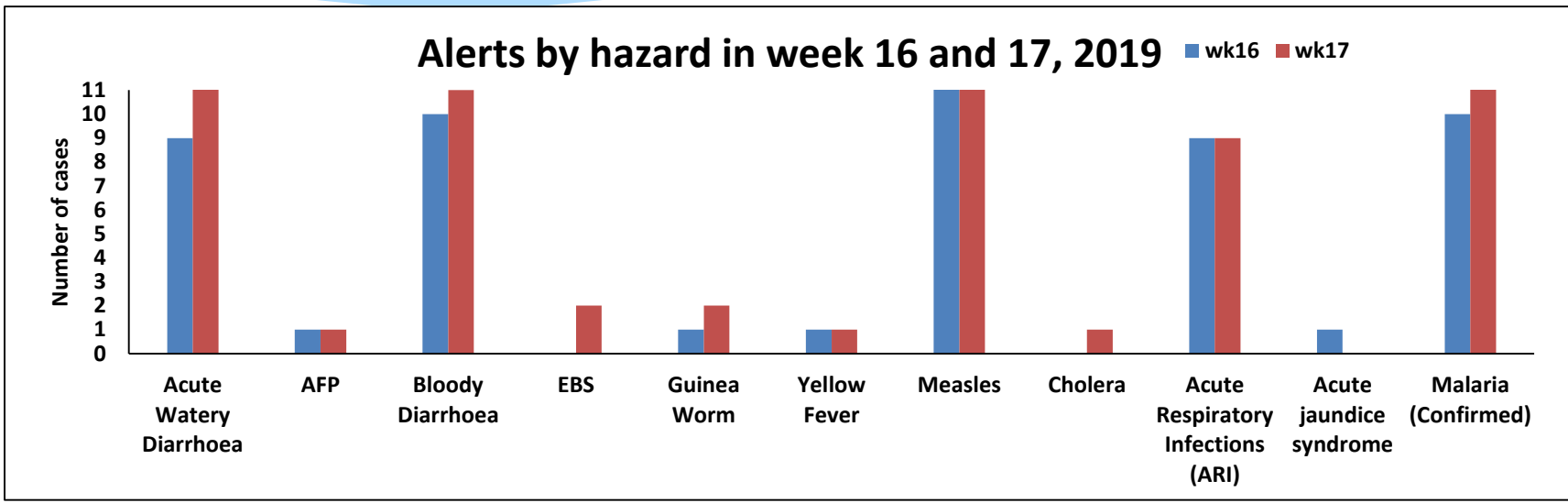
- Twenty six (26) suspected measles cases have been reported from Longochuk County; 22 cases from Mathiang Payam and four (4) cases from Watber Payam.
- Recommended responses include samples collection from cases who have not been vaccinated recently and continuation with routine immunization, case management and community sensitization.

Suspected food Poisoning in Leer

- Suspected cases of food poisoning have been reported from Padeah, Gandor and Toch-riak. A total of about 22 cases and one (1) death have been reported.
- Food samples have been collected for laboratory analysis.
- MoH and WHO team deployed to investigate and collect samples

Yellow Fever Alert in Kapoeta East

- The yellow fever alert that was generated from Kapoeta East in week 16 has been verified and later discarded.



The Figures show comparison of alerts by hazards reported in week 16 and 17, 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 Diarrhoea	3	1	92	96
AFP			20	20
Bloody Diarrhoea	2	2	98	102
EBS	4		15	19
Guinea Worm			13	13
Neonatal Tetanus			6	6
Viral Haemorrhagic Fever			3	3
Yellow Fever			5	5
Measles	19	5	147	171
Cholera			11	11
Malaria			27	27
meningitis	2			2
Relapsing Fever			3	3
Acute Respiratory Infections (ARI)	6	1	59	66
Acute jaundice syndrome	2		8	10
Malaria (Confirmed)	1		56	57
Total Alerts	39	9	563	611

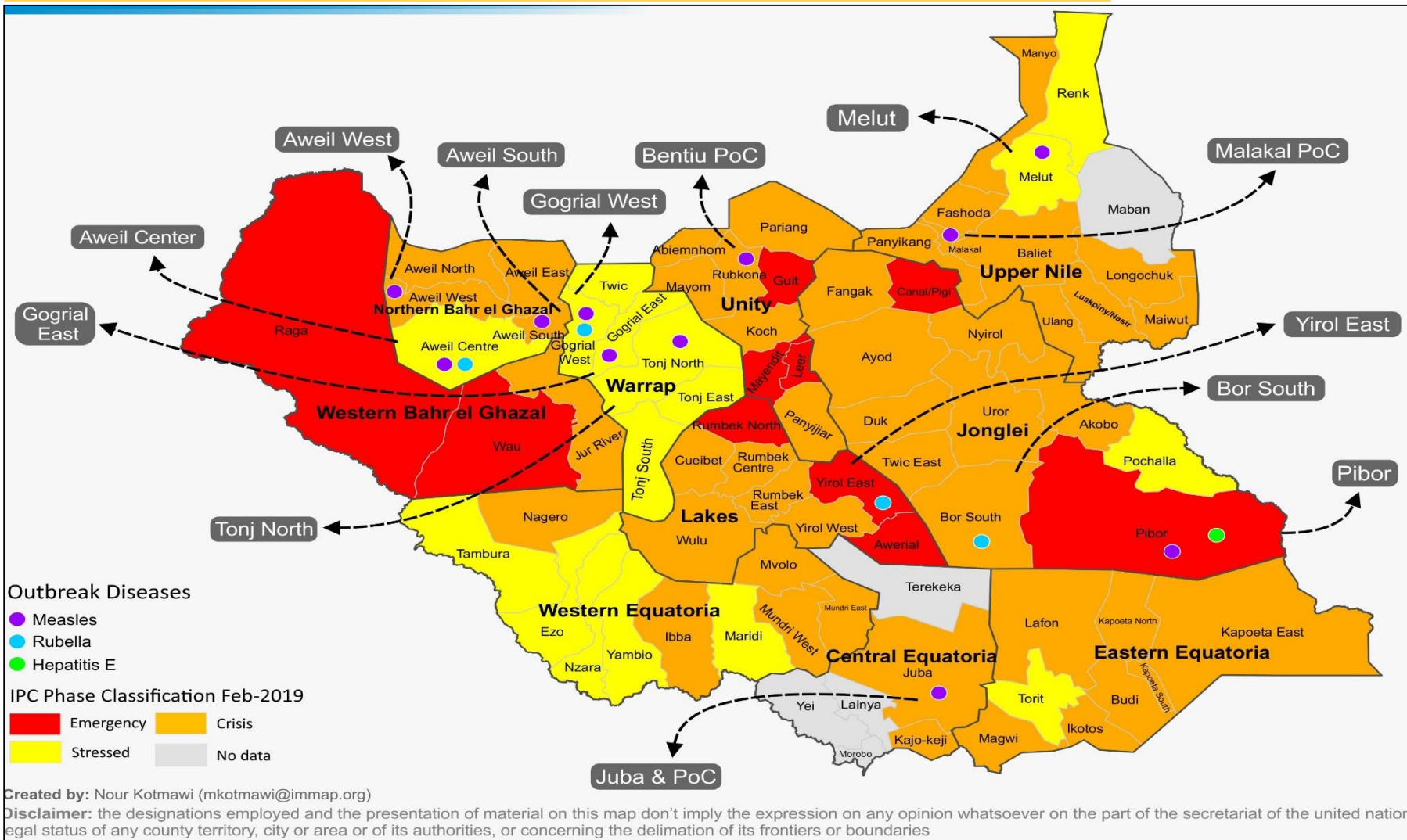
- The table shows the cumulative alerts by risk assessment status in 2019
- Of the 611 alerts reported in 2019; 563 (92.1%) alerts were verified and nine (1.5%) underwent risk assessment..

OUTBREAKS IN 2019

Major suspected and confirmed outbreaks in
South Sudan in 2019

Confirmed Outbreaks South Sudan – As at 7th May 2019

- The map show outbreaks confirmed in 2019
- The confirmed outbreaks include: HEV in Bentiu PoC; Yellow Fever in Nzara; Rubella in Bor South, Yirol East, Aweil Centre and Gogrial West; Measles in Juba; Measles in Pibor; Measles in Gogrial West; Measles in Aweil South, Melut, Tonj North, Gogrial East, Aweil West and Aweil Centre



Suspected Outbreaks South Sudan – As at 7th May 2019

- New alerts in the week
 - Suspected Measles outbreak in Longochuk, Wau, Jur River and Aweil East
 - Suspected HEV in Pibor

Measles

Measles

Longochuk

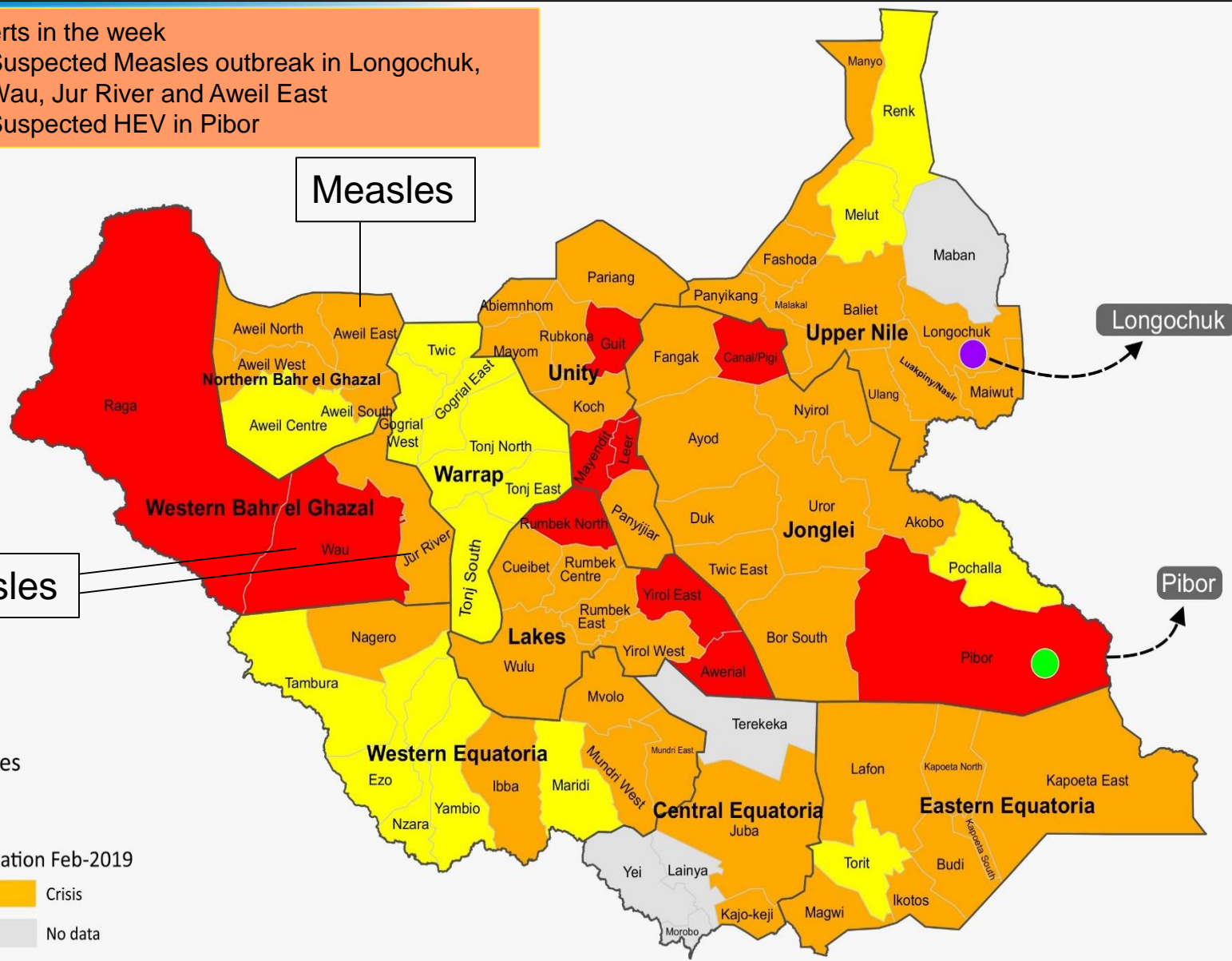
Pibor

Outbreak Diseases

- Measles
- Hepatitis E

IPC Phase Classification Feb-2019

- Emergency
- Crisis
- Stressed
- No data



Created by: Nour Kotmawi (mkotmawi@immap.org)

Disclaimer: the designations employed and the presentation of material on this map don't imply the expression on any opinion whatsoever on the part of the secretariat of the united nations on the legal status of any county territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries

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								
Hepatitis E	Bentiu PoC	03/01/2018	0	36 (0.011)	Yes	No	Yes	Yes
Measles	Juba & PoC	15/01/2019	0	68 (0.01)	Yes	Yes	Yes	N/A
Measles	Pibor	17/01/2019	0	246 (1.1.0)	Yes	Yes	Yes	N/A
Measles	Gogrial West	04/02/2019	0	156 (0.025)	Yes	Yes	Yes	N/A
Rubella	Aweil Center/NBG		0	35 (0.028)	Yes	No	Yes	N/A
Measles	Aweil South	15/03/2019	0	46 (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	2/04/2019	0	20 (0.01)	Yes	Yes	Yes	N/A
Measles	Gogrial East	4/04/2019	0	30 (0.003)	Yes	Yes	Yes	N/A
Measles	Aweil Centre	4/04/2019	0	10 (0.005)	Yes	Yes	Yes	N/A
Measles	Aweil West	4/04/2019	0	28 (0.01)	Yes	Yes	Yes	N/A
Measles	Bentiu PoC	24/04/2019	6	8 (0.01)	Yes	Yes	Yes	N/A
Measles	Malakal PoC	24/04/2019	0	2 (0.01)	Yes	Yes	Yes	N/A

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
Controlled 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
Measles	Abyei	12/02/2018	0	306 (0.40)	Yes	Yes	Yes	N/A
Measles	Mayom	17/01/209	0	19 (0.010)	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 – Bentiu PoC and Malakal PoC

Bentiu PoC

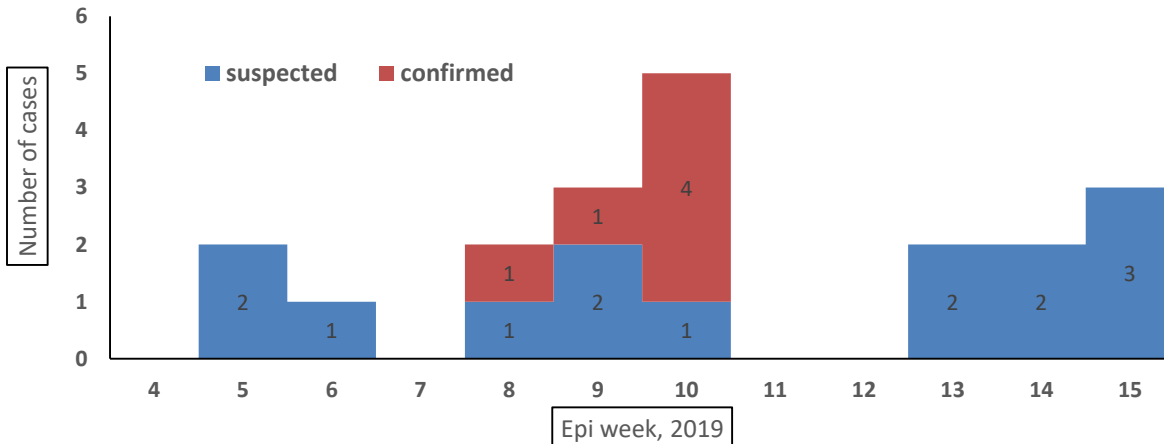
- Bentiu PoC has been reporting suspected measles/rubella cases since beginning of the year
 - A total of 23 suspected measles cases reported since January 2019
 - None tested positive for measles IgM antibodies until week 15 when two tested positive for measles
 - The two confirmed measles cases reside in Sector 5
 - Six (6) suspected measles cases reported in week 17, 2019
 - Between weeks 01-14, four (4) cases tested positive for rubella IgM antibodies

Malakal PoC

- Two measles confirmed cases
- **Recommendation**
 - Case investigation to establish whether the confirmed cases are residents of the PoCs or new arrivals into the PoCs.
 - Active case search to identify more cases within the community
 - Development of response plans and implementation of vaccination campaigns within the PoCs by the partners operating within the PoCs
 - Continue with routine immunization and community sensitization activities

Confirmed Measles outbreak – Tonj North

Measles cases in Tonj North, week 05-15, 2019



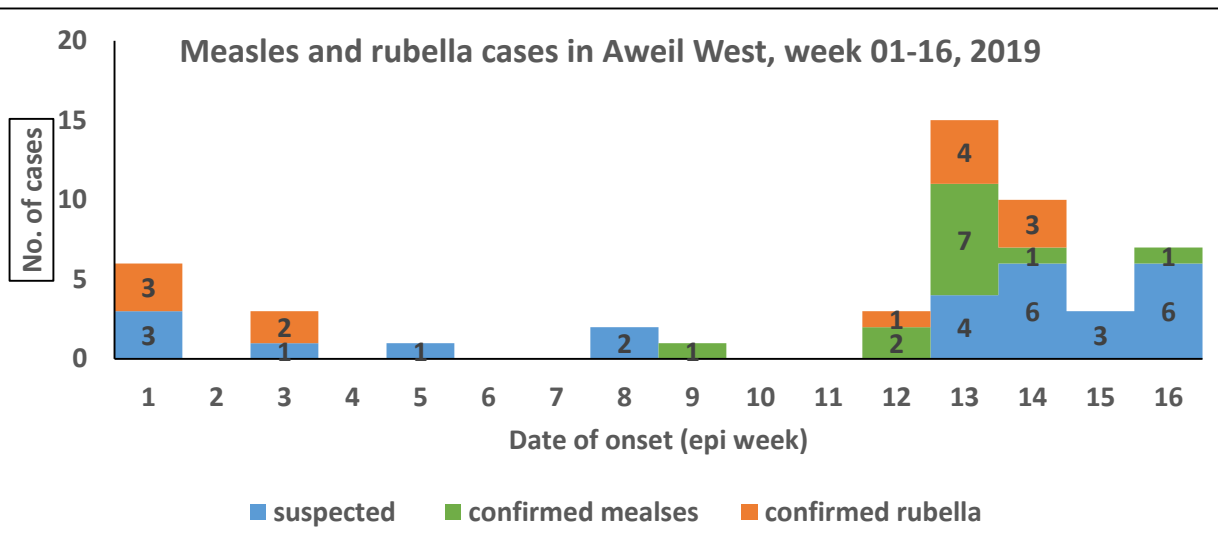
Outbreak description

- The Outbreak started on 2.2.2019 with cases detected in Akop PHCU, Tonj North. Six samples were collected and all tested positive for Measles IgM antibodies.
- Cumulatively, there are 20 cases as at end of week 15, 2019.
- Two deaths (CFR=10%) have been reported.
- All the cases are from Akop Payam with Akop (8), Paduoc (4), Ariik (3) and Aguoch (2) villages contributing most of the cases.
- Most (80%) of the cases are children < 5 years.
- Only one (5%) case was managed as an inpatient case.

Recommended response

- A micro-plan for a reactive vaccination campaign has been finalized and shared with partners supporting the campaign
 - 80,251 children aged 6-59 months targeted for vaccination
- 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 West



Introduction

- Measles outbreak was confirmed on 4th April 2019 after 5 samples tested positive for measles.
- Aweil West County has been having rubella cases since early January, 2019. Overall, 13 cases have been confirmed positive for rubella virus.

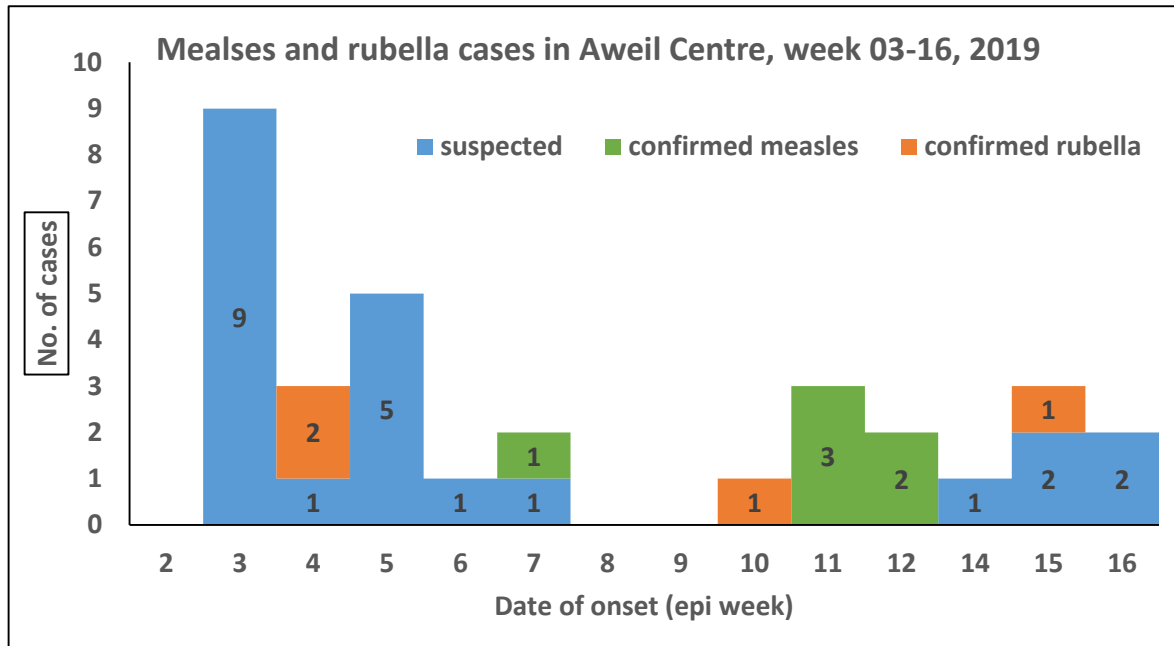
Descriptive Epidemiology

- Cumulatively, 54 mixed cases of measles and rubella have been line listed in Aweil West
- From the epicurve, it appears the first measles case became symptomatic in week 09, 2019.
 - There have been 36 suspected measles cases since week 09 with 12 confirmed measles cases and eight (8) confirmed rubella cases.
- Among the payams with suspected and confirmed measles cases are: Aweil Town (17 cases), Nyamllel (10 cases), Ayuung (4 cases) and Maluilakoong (8 case).
- The majority (65%) of the reported cases reported are children < 5 years
- No deaths have been reported.
- A majority (72%) of the cases are either never vaccinated against measles or unsure of their status

Recommended response

1. A collaborative effort needed at the state level to develop an appropriate response plan for the two outbreaks.
 1. This includes a reactive vaccination campaign for measles, and proper case management for the suspected cases of measles and rubella.
 2. A micro-plan targeting 28,488 children aged 6-59 months from Aweil West and Aweil Center has been developed
 3. The reactive vaccination campaign expected to begin within a week.
2. An Intensification of the surveillance activities to ascertain the magnitude and geographical extent of the outbreak
3. Scaling up 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 and Rubella outbreak – Aweil Centre



Recommended response

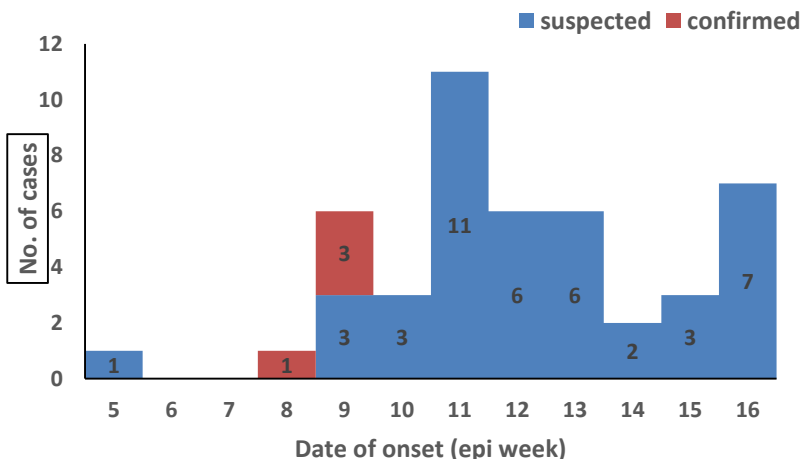
1. A collaborative effort needed at the state level to develop an appropriate response plan for the two outbreaks.
 1. This should include a reactive vaccination campaign for measles, and proper case management for the suspected cases of measles and rubella.
 2. The emergency campaign expected to begin within the next one week.
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.

Introduction

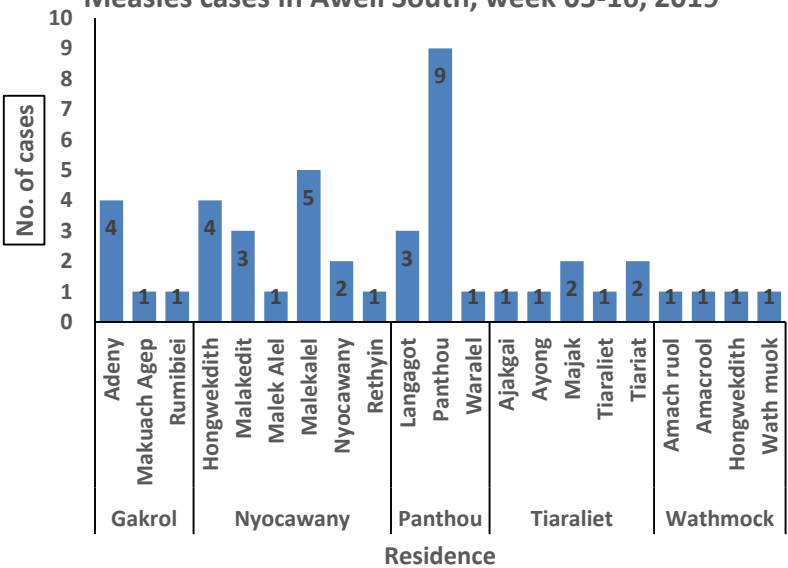
- A measles outbreak has been confirmed in Aweil Centre , a county with an ongoing rubella outbreak and an ongoing measles outbreak in a neighboring county of Aweil South.
- Thirty-one (32) cases line listed
 - Six (6) suspected cases confirmed positive for measles IgM antibodies. The samples tested negative for rubella IgM antibodies.
 - Four cases (4) tested positive for rubella IgM antibodies
 - Clinically, it may not be easy to differentiate suspected measles and suspected rubella cases in a setting with mixed infection of measles and rubella.
- The epicurve suggests that the measles outbreak started in week 11, 2019.
 - There have been 11 cases since then including five (5) laboratory confirmed cases
- In Aweil East, two suspected measles cases tested positive for measles IgM antibodies. Aweil East also reported two (2) positive measles cases in February, 2019 more than a month before the current confirmed cases.

Confirmed Measles outbreak – Aweil South

Measles cases in Aweil South, week 05-16, 2019



Measles cases in Aweil South, week 05-16, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	1	7	8	17.4	17.4
1-4	9	18	27	58.7	76.1
5-9	2	9	11	23.9	100.0
Total cases	12	34	46	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 46 cases have been line listed. One case tested positive for rubella IgM antibodies.
- The index case has a history of travel to the neighboring Gogrieli West County which has a confirmed ongoing measles outbreak

Descriptive Epidemiology for measles cases in Aweil South

- The majority (76.1%) of cases are children <5 years
- Nyocawany Payam (16 cases) and Panthou Paym (13 cases) have the most cases contributing about 63% of all the cases
- Thirty one (67.4%) cases have not received measles vaccination prior to their illness

Recommended response

1. A micro-plan for a reactive vaccination campaign was developed where 22 071 children aged 6 months to 5 years are to be vaccinated
 - The campaign was completed with 24261 (116%) children being vaccinated
 - According to post-campaign evaluation conducted by independent monitors, the coverage based on the finger marking was 95.7%.
2. The health facilities and partners in Aweil East 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 East and Gogrial West

Descriptive Epidemiology

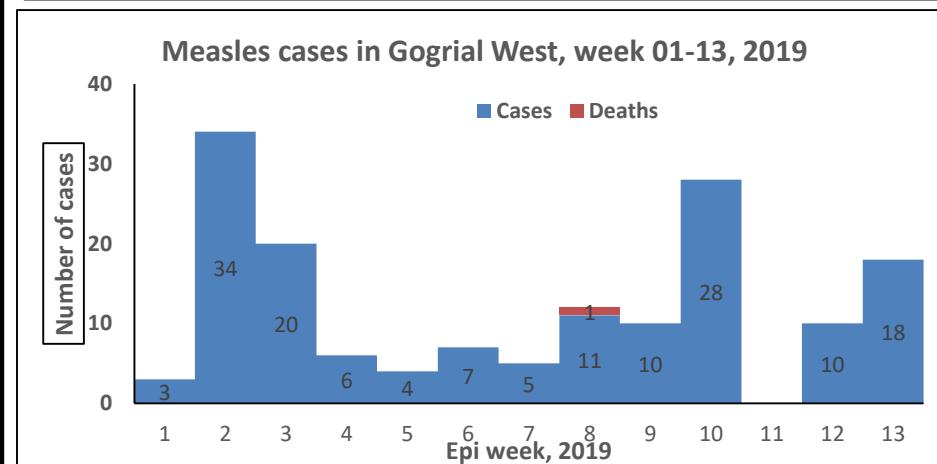
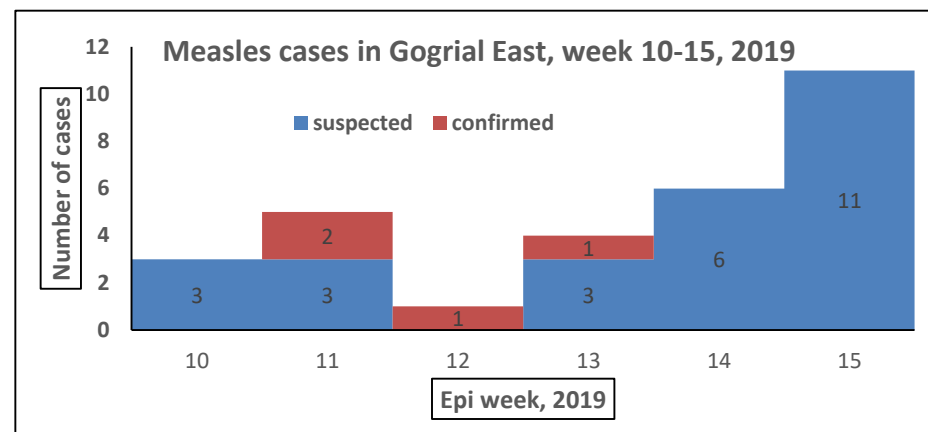
The measles outbreak in Gogrial East is active with 6 cases in week 14 and 11 cases in week 15.

There are 30 cases as at end of week 15, 2019. One death (CFR=3.3%) have been reported.

- Four (4) payams have been affected with Nyang (20) and Toch East (8) cases) having most cases. A case has been reported from both Toch North and Toch West payams. Most (83.3%) of the cases are children < 5 years.
- 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 measles indicating poor routine vaccination coverage in the county.

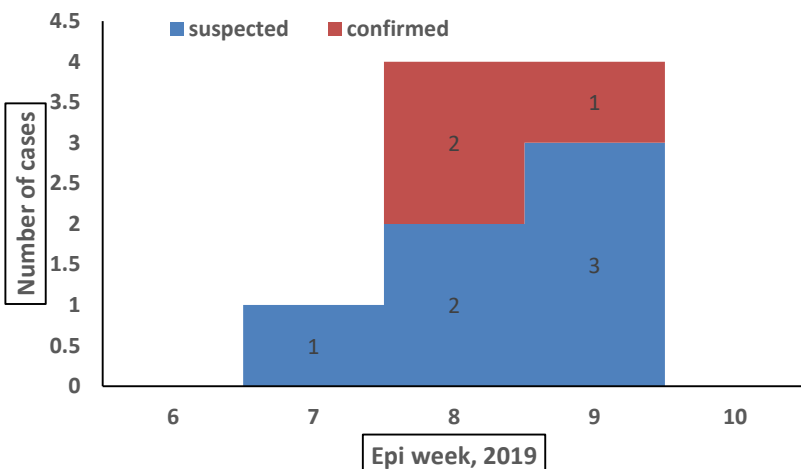


Recommended response

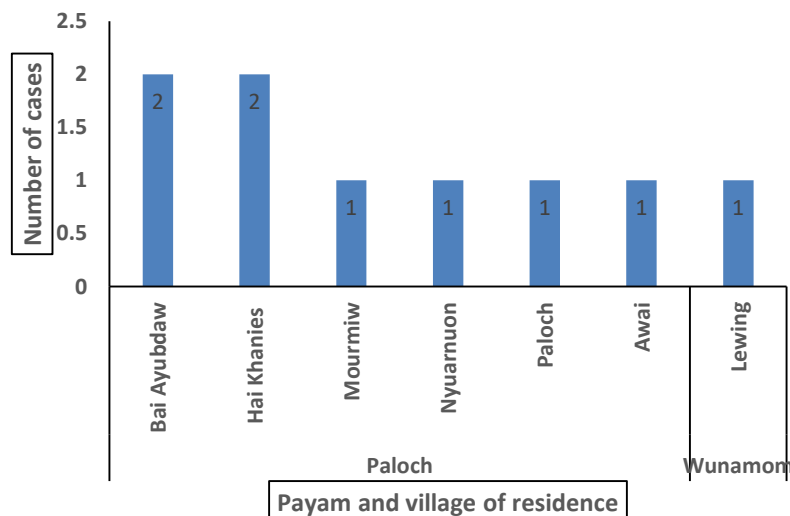
1. A focused response which includes vaccination campaign in the four affected payams, active case search to identify more cases and establish extend of the magnitude, and scaling up of routine vaccination activities
 1. The number targeted for vaccination is 62,535 children aged 6-59 months. The campaign expected to kick off on 9th May 2019.
2. Continued strengthening of both routine surveillance and immunization in both counties
3. A reactive vaccination campaign targeting 188 061 children aged between 6 months to <15 years has been concluded in Gogrial West.
 - According to preliminary data over 193, 958 (103%) children aged 6 month to <15 years have been vaccinated.
 - Post-campaign coverage survey showed a coverage of 97.2%.

Confirmed Measles outbreak – Melut

Measles cases in Melut, week 07-09, 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.

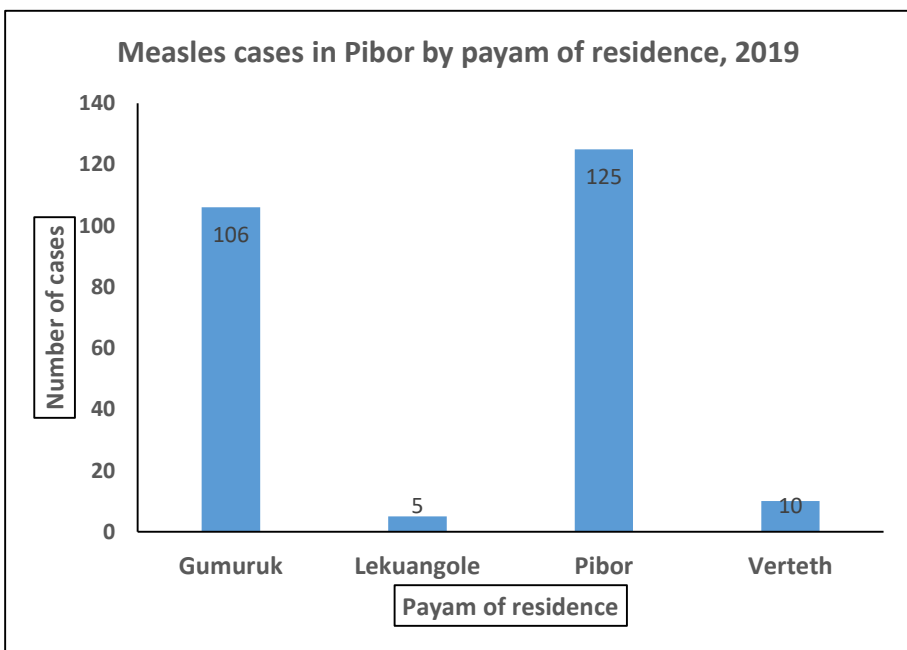
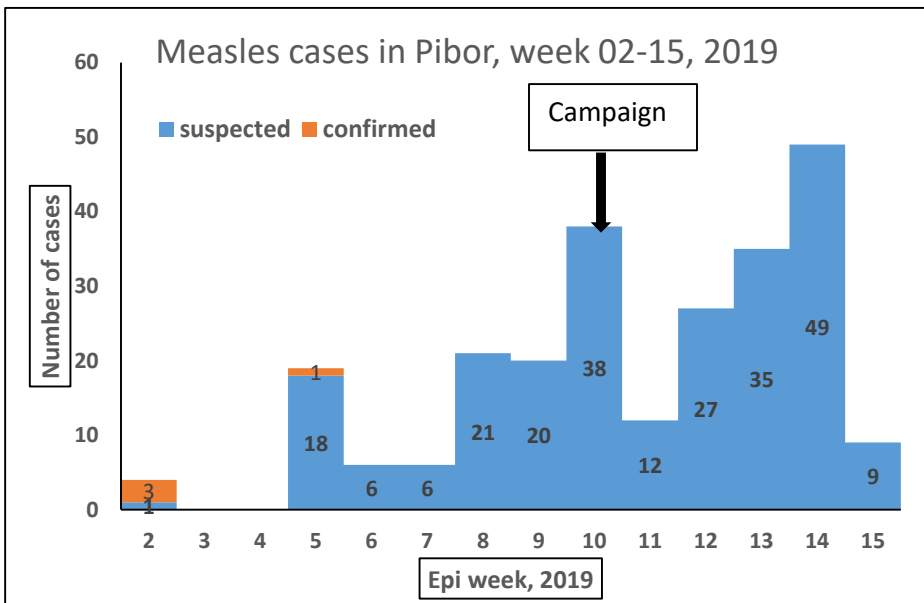
Descriptive Epidemiology for measles cases in Melut

- 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 reactive vaccination campaign was conducted between 8th and 16th April 2019 where 12,035 (78%) children aged 6-59 months were vaccinated.
 - Household survey by independent monitors found a coverage of 89% based on verbal reporting and a coverage of 39% based on finger marking.
 - Improvement in quality and numbers of indelible markers provided based on the micro-plan
- 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



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	18	19	37	15.0	15
1-4	58	69	127	51.6	66.6
5-9	28	20	48	19.5	86.1
10-14	8	4	12	4.9	91.0
15+	9	13	22	8.9	100.0
Total cases	121	125	246	100.0	

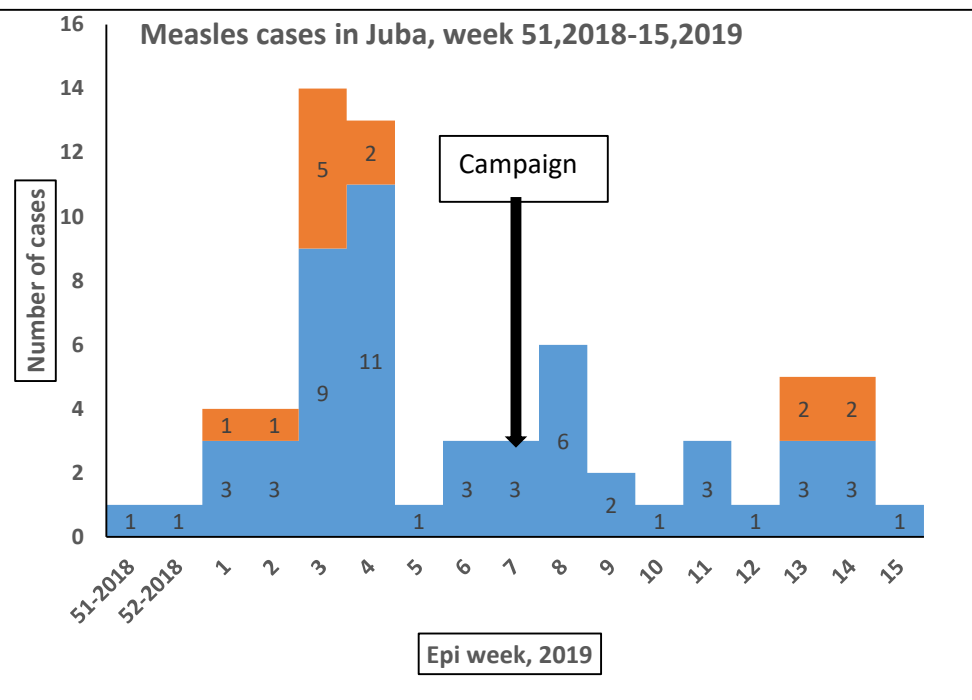
Descriptive Epidemiology

- Cumulatively a total of 246 measles cases have been reported as at end of week 15, 2019.
 - Nine (9) suspected case was reported in week 15, 2019
 - No deaths have been reported since the start of the outbreak
- Majority of the cases are from Pibor (125) and Gumuruk (106) contributing about 94% (231) of all the cases. The bomas with most cases in Pibor are Pibor (36) and Manyirany (10), and Tangnyang (26), Kelero (16) and Gumuruk (11) in Gumuruk Payam.
- About 67% (127) of the cases are children <5 years
- Upsurge in cases are noted in Epi weeks 12, 13 and 14 despite the initial drop in cases observed one (1) week after the reactive campaign

Recommended response

1. Collection of samples for confirmation from cases who were not vaccinated during the reactive campaign that was done in week 10, 2019
2. A reactive vaccination campaign targeting 47,328 children aged 6 months to 15 years in all the payams was conducted where a total of 13882 (30%) children vaccinated. About 4,000 additional children had been vaccinated by MSF-OCB before the campaign started.
3. Partners advised to continue strengthening routine immunization with focus on the areas with poor coverage during the emergency campaign

Confirmed Measles outbreak – Juba

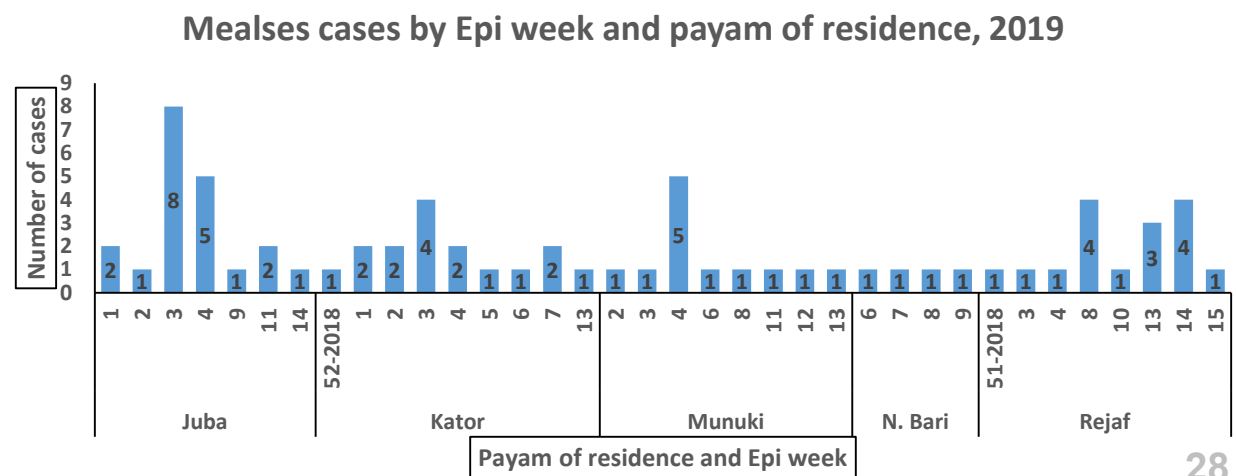


Descriptive Epidemiology

- A total of 68 measles cases reported from Juba as at end of week 15. This include five cases reported from Juba PoC (1 from PoC1 and 4 from PoC 3)
 - Nine cases identified during the active case exercise that was conducted to ascertain presence of more cases in the community
 - Thirteen lab confirmed cases including two (2) confirmed cases from Juba PoC 3.
 - Three (CFR 6.3%) deaths reported; two (2) from Amarat and One (1) from Khator. All the deaths are among <5 children.
- A majority (81%) of the cases are children < 5 years. Two of the case the PoC are children < 5years with the youngest being 9 months old.
- All the five payams continue having cases almost two months after the campaign.

Recommended response

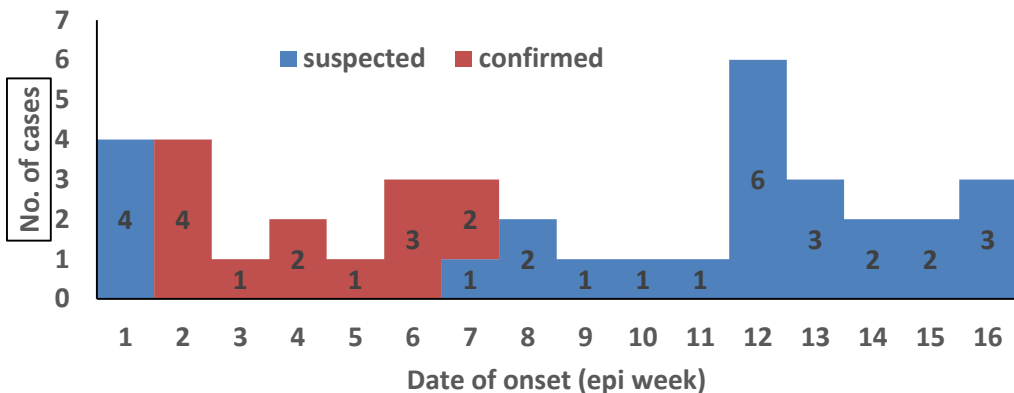
- A reactive vaccination campaign in Juba and Juba PoCs are ongoing having started on 6th May 2019 and 7th May 2019 respectively.



- Training for supervisors and vaccinators to be done on 3rd and 4th May respectively.
- 2. Enhance surveillance and routine immunization activities in all the areas
- 4. Increase community awareness about measles case management as some communities have been reported to be using traditional home remedies.
- 5. Continue verification and investigation of alerts and reports from the communities.

Hepatitis E, Bentiu PoC

HEV cases in Bentiu PoC, week 01-16, 2019



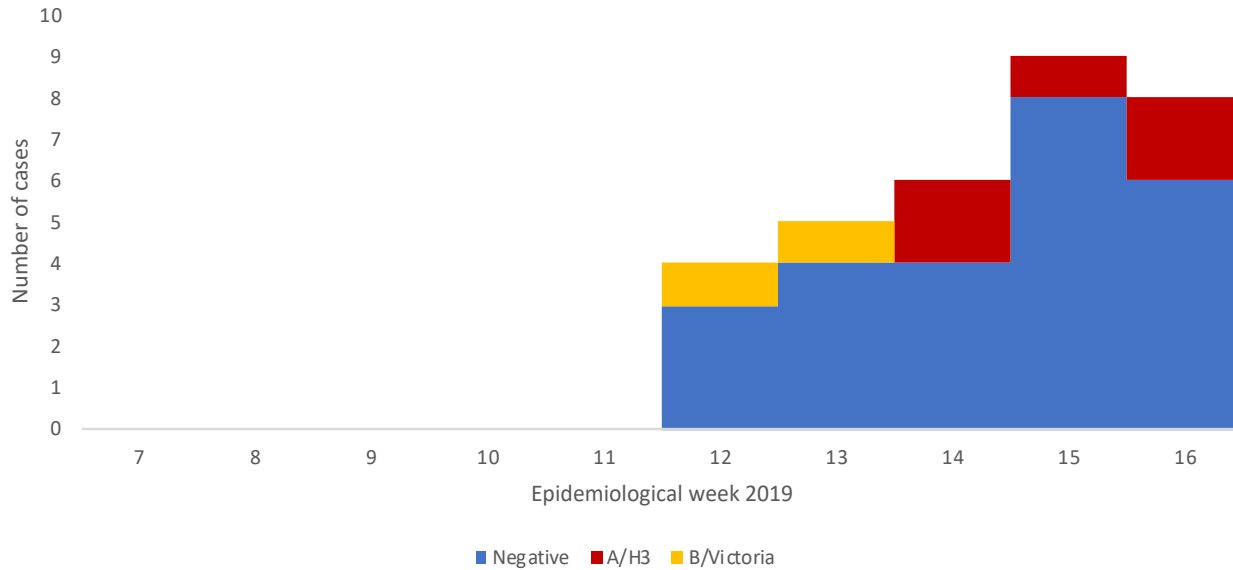
Bentiu PoC

- The persistent transmission of HEV in Bentiu PoC continues with cumulative caseload of 39 cases as at end of week 16, 2019
 - Thirteen (13) cases confirmed on PCR testing
 - Three new cases were reported in week 16, 2019
- All the cases were managed as outpatient cases except for two cases who were admitted on 23rd February, 2019 and 11th April, 2019
- The case admitted on 11th April 2019 died on 12th April 2019
- Over half (51.3%) of the cases are male.
- Age group 15-44 years had the most cases with 13 cases (33.3%).
- Of the 19 female cases, 4 (21.1) 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
- Recommended response
 - 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 %
1-4 years	6	4	10	25.6	25.6
5-9 years	1	5	6	15.4	41.0
10-14 years	5	3	8	20.5	61.5
15-44 years	5	8	13	33.3	94.8
45+years	2	0	2	5.1	100.0
Total cases	19	20	39	100.0	

Routine Sentinel Surveillance | Human Influenza

Influenza isolates from sentinel sites in Juba, weeks 9-16, 2019



In week 12, 2019, South Sudan started conducting case-based investigation for Influenza Like Illness (ILI) and Severe Acute Respiratory Infection (SARI) cases through systematic collection of epidemiological and virological information.

There are currently two designated Influenza sentinel surveillance sites in Juba (Juba Teaching Hospital and Al Sabah Children’s Hospital) that are collecting epidemiological data and samples from ILI/SARI cases for virological testing.

Since week 12 of 2019, a total of 32 ILI/SARI samples have been collected and tested at Uganda Virus Research Institute (UVRI) with 25 being negative; two (2) positive for Influenza B (Victoria); and five (5) positive for Influenza A (H3)

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
22 nd Apr 19	1	0	Ezo		Nd	-ve	-ve	Investigated on 22 nd Apr 19

- Blood samples have been obtained from 10 (10) 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 1ST May 2019

Current situation

- Currently in 39th week of the outbreak
- **1510** Cases [1444 confirmed & 66 probable]
- **994** Deaths [928 confirmed & 66 probable]
- **92** Health workers [33 deaths]

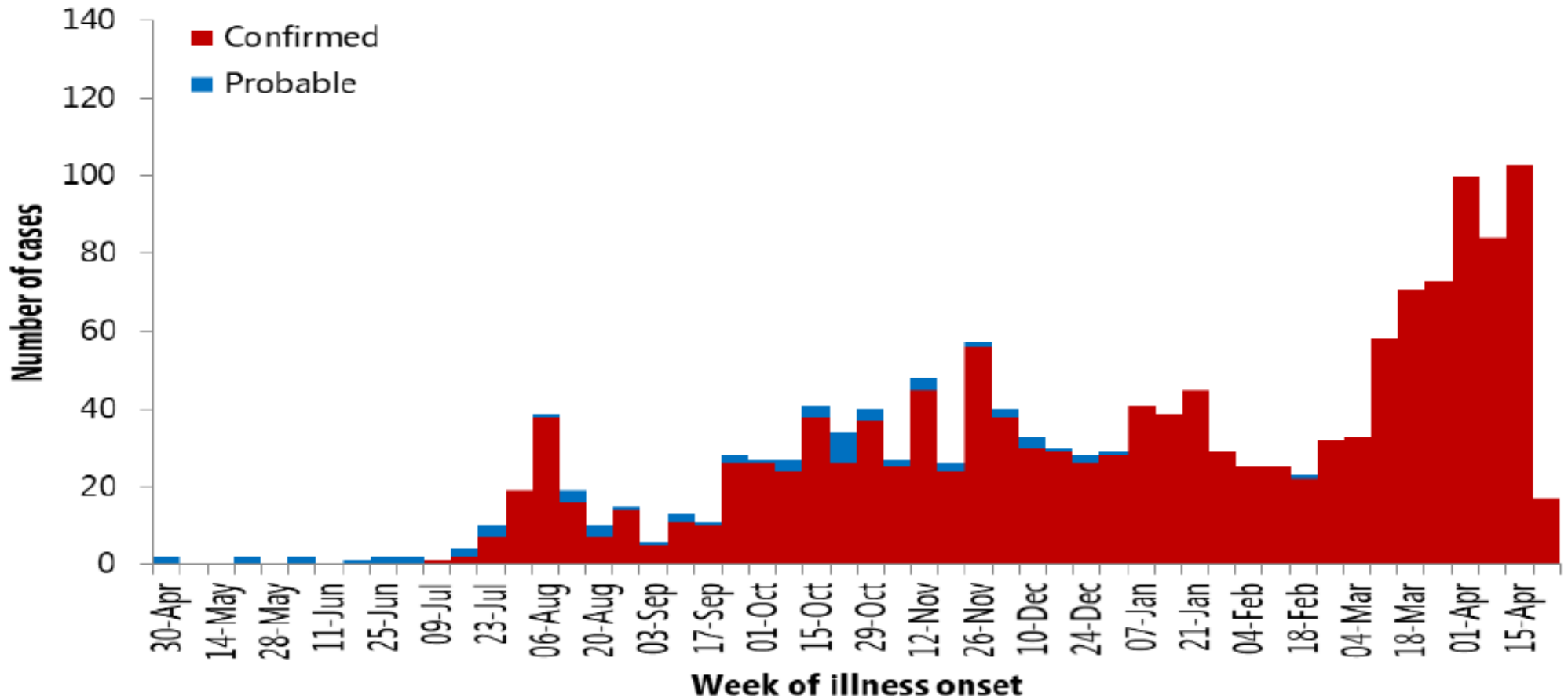
Response update

- **12 506** contacts under surveillance [>80% followed up]; 106 872 vaccinated

Affected health zones

- **2** provinces [North Kivu & Ituri]
- **19** health zones [14 North Kivu & 5 Ituri]
- **297** cases in last 21 days (8-28 April 2019); Katwa (141), Butembo (33), Mandima (33), Vuhovi (23), Mabalako (19), Beni (14), Musienene (14), Kalunguta (10), Masereka (5), Biena (1), Kyondo (1), Mutwanga (1), Oicha (1), and Komanda (1)

EVD trends & case distribution in DR Congo



- Active transmission with continued increase in the number of new Ebola virus disease (EVD) cases in the affected geographical regions.

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 have finalized the EVD contingency plan for the next six months of EVD preparedness and readiness in the country.
- Detailed preparedness update can be accessed <https://www.afro.who.int/publications/weekly-update-ebola-virus-disease-evd-preparedness-south-sudan>

Year: 2019

Week number: W17

From: 2019-04-22

To: 2019-04-28

Name of PoE	Passengers Screening Information			EVD Alerts		
	# screened	# Isolated	# under Voluntary Home Quarantine	# reported	# validated	# suspects
Kor Kaya PoE	0	0	0	0	0	0
Bangangal	0	0	0	0	0	0
Basukangbi	0	0	0	0	0	0
Bazi Border	1,681	0	0	0	0	0
Birgo	1,742	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	2,788	0	0	0	0	0
Kaya Border	0	0	0	0	0	0
Kenwa	2,114	0	0	0	0	0
Khorjo	0	0	0	0	0	0
Lasu	50	0	0	0	0	0
Makpandu	0	0	0	0	0	0
Maridi Airstrip	7	0	0	0	0	0
Nimule Airstrip	0	0	0	0	0	0
Nimule Border	0	0	0	0	0	0
Okaba	1,804	0	0	0	0	0
Panjala Docking River	0	0	0	0	0	0
Pure	0	0	0	0	0	0
Sakure Border	18	0	0	0	0	0
Salla Musala	0	0	0	0	0	0
Sangua 1	0	0	0	0	0	0
Tikori	93	0	0	0	0	0
Wau Airport	0	0	0	0	0	0
Yambio Airport	8	0	0	0	0	0
Yei Airport	23	0	0	0	0	0
Yei RRC	2	0	0	0	0	0
South Sudan	10,330	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 17, 10,330 travellers were screened at various screening points in the country.

MAJOR SUSPECTED AND CONFIRMED OUTBREAKS & EVENTS REPORTED IN 2019

Listing of all 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

Date of report	Disease suspected	Number cases (deaths)	County	Payam	Status of investigations
2/04/2019	Measles	2	Tonj North		Six tested positive for measles
4/04/2019	Measles	0	Aweil West		10 positive for measles
24/04/2019	Measles	0	Bentiu PoC		Two tested positive for measles
24/04/2019	Measles	0	Malakal PoC		Two tested positive for measles

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

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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>

