

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Bulletin W20 2019 (May 13-May 19)

- Completeness and Timeliness for week 20 is 48% and 69% respectively and completeness for EWARS from the IDPs sites is 70%___

- A total of 53 alerts received in week 20, 45% of them were verified. 2% were risk assessed and 2% required a response.
- Acute Bloody Diarrhea (12), Measles (9), malaria (8) were the top common alerts generated through the EWARS in week 20, 2019.

- A new measles outbreak has been confirmed in Wau POC-AA and Wau County. This was following laboratory confirmation of three suspected cases.

- Cumulatively, there are 41 Hepatitis E Virus cases reported in Bentiu PoC since the beginning of 2019. There were two (2) suspected cases in week 18, 2019. There are 13 PCR confirmed Hepatitis E Virus cases since January 2019.

- Since week 12 of 2019, a total of 40 ILI/SARI samples have been collected and tested at Uganda Virus Research Institute (UVRI) with 31 being negative; two (2) positive for Influenza B (Victoria); and seven (7) 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 (W20 2019)

Hub	Reporting		Performance	
Hub	Reporting # counties	# reports received # reports	Performance Completeness	Timeliness
Aweil	5	1	20%	20%
Bentiu	9	5	56%	44%
Bor	11	7	64%	64%
Juba	6	2	33%	33%
Kuajok	7	1	14%	14%
Malakal	13	9	69%	69%
Rumbek	8	7	88%	38%
Torit	8	8	100%	100%
Wau	3	0	0%	0%
Yambio	10	4	40%	30%
South Sudan	80	44	55%	48%

Table 2 | Summary of key IDSR surveillance indicators

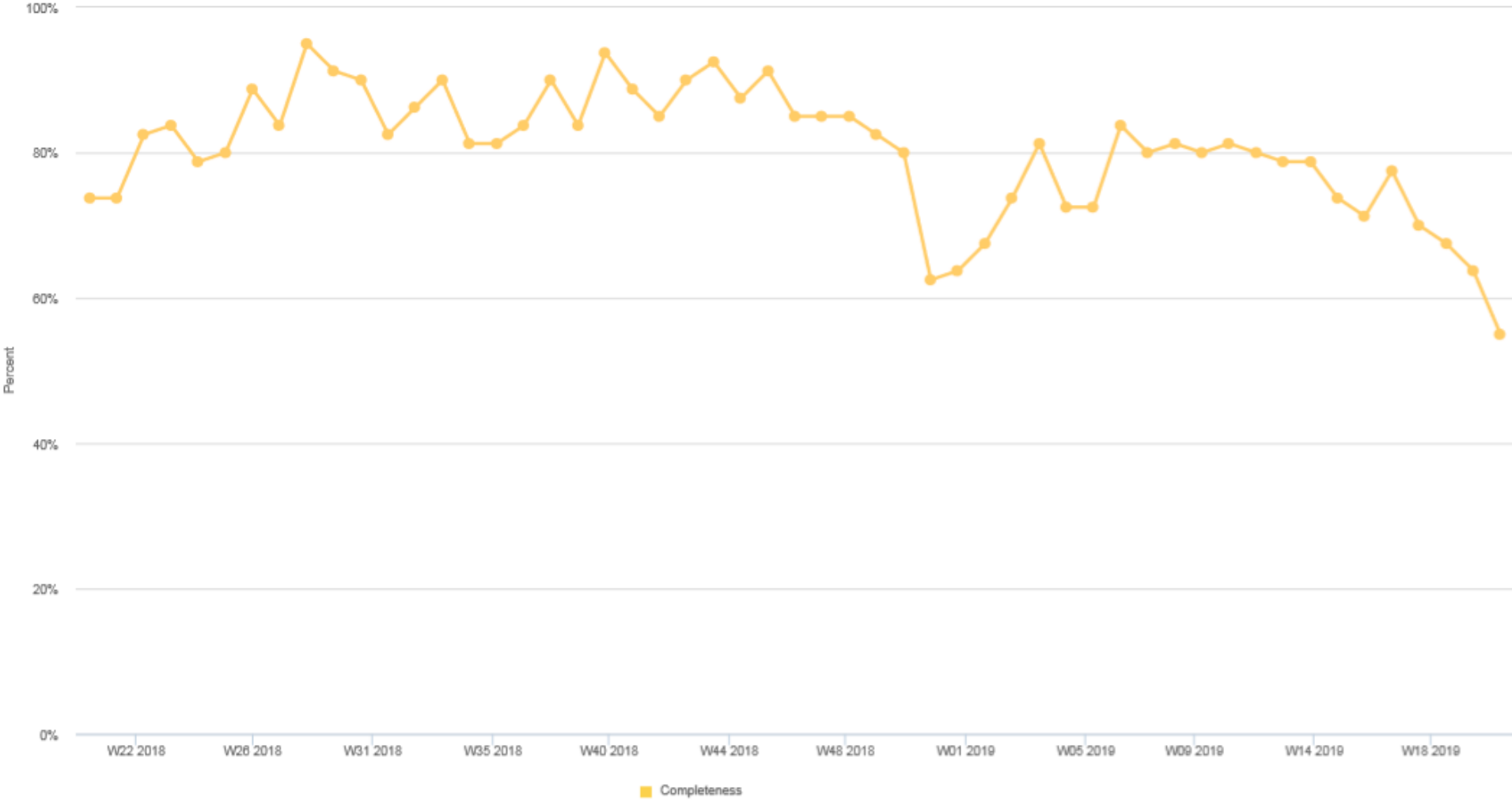
W20	Cumulative (2019)	
80	-	Number of counties
55%	74%	Completeness
48%	57%	Timeliness

Table 3 | IDSR report submissions

W20	Cumulative (2019)	
44	1,241	total submissions
5	0	submissions by mobile
39	0	submissions by web

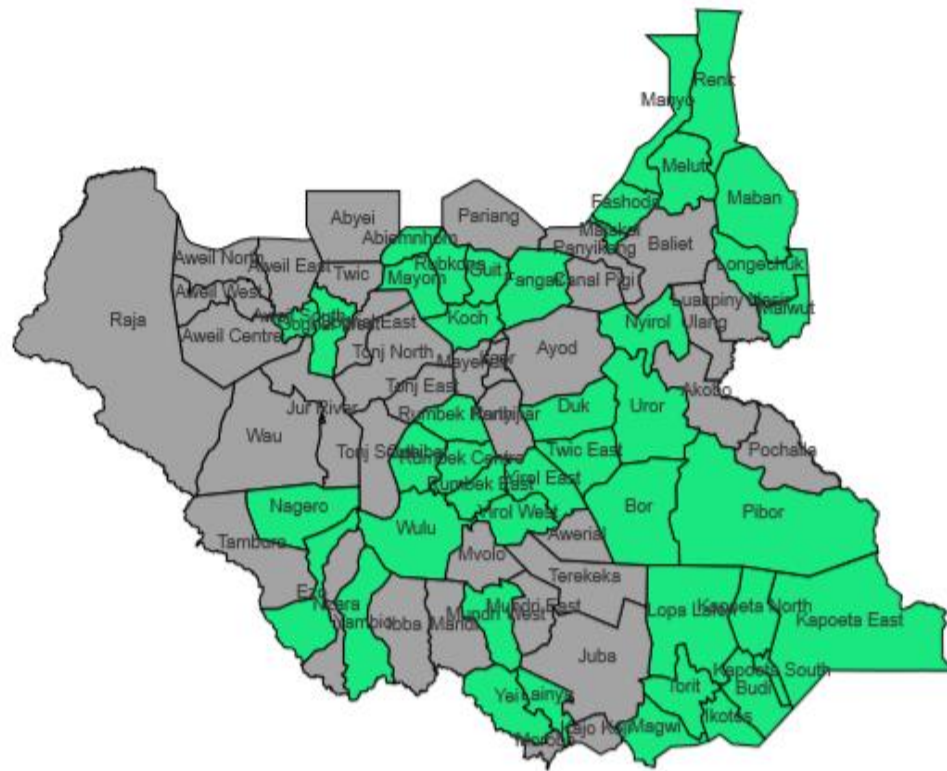
- In this week 20 the Completeness is 55% and the Timeliness is 48% while the cumulative completeness and timeliness was 74% and 57% respectively for 2019.
- The rolling out of the mobile phones for reporting to the health facilities is ongoing. This has affected the completeness of the surveillance system as the reports from the health facilities are captured separately. And secondly the Health workers strike due to incentives has negatively affected the completeness and timeliness.

Figure 1 | Trend in IDSR completeness over time



The graph shows completeness for the weekly IDSR reporting at the county level over time from 2018 to week 20 2019

Map 1a | Map of IDSR completeness by county (W20 2019)



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

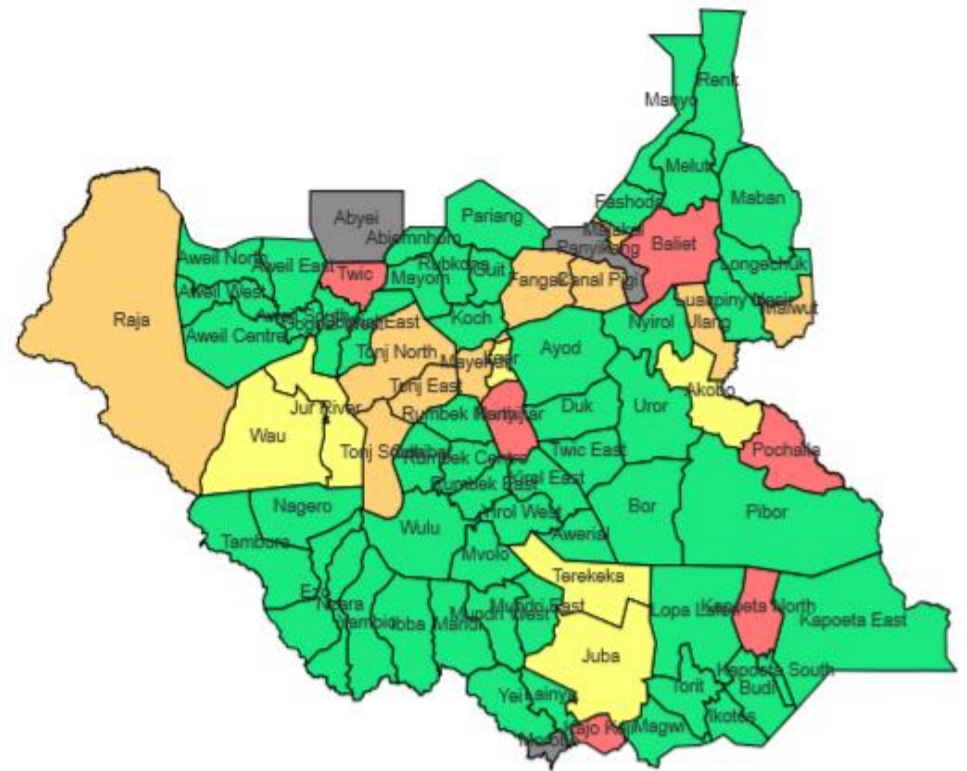


Table 4 | EWARS surveillance performance indicators by partner (W20 2019)

Partner	Performance		Reporting	
	# sites	# reports received	Completeness	Timeliness
CMD	3	3	100%	100%
GOAL	2	2	100%	100%
HAA	2	2	100%	0%
HFO	2	2	100%	100%
HLSS	1	1	100%	100%
IMA	7	6	86%	86%
IMC	5	5	100%	100%
IOM	11	10	91%	91%
IRC	1	1	100%	100%
LIVEWELL	1	1	100%	100%
Medair	2	2	100%	100%
MSF-E	2	0	0%	0%
MSF-H	3	1	33%	33%
RHS	2	0	0%	0%
SMC	7	3	43%	43%
TADO	3	3	100%	0%
TRI-SS	2	2	100%	100%
UNIDO	1	0	0%	0%
UNKEA	2	2	100%	100%
World Relief	1	1	100%	100%
Total	64	49	77%	69%

Table 5 | Summary of key EWARS surveillance indicators

W20	Cumulative (2019)	
64	-	Number of EWARS reporting sites
77%	70%	Completeness
69%	66%	Timeliness

Table 6 | EWARS report submissions

W20	Cumulative (2019)	
49	956	total submissions
1	29	submissions by mobile
48	927	submissions by web

- Completeness was 77% and timeliness was 69% for EWARS reporting by partners was 77% and 69% for week 20, while the cumulative completeness and timeliness were 70% and 66% respectively for 2019

EVENT-BASED SURVEILLANCE

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

Table 7 | Alert performance indicators by Hub

Hub	W20		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Aweil	4	100%	59	100%
Bentiu	5	60%	98	90%
Bor	1	100%	53	57%
Juba	2	0%	126	56%
Kuajok	4	0%	87	22%
Malakal	2	50%	71	73%
Rumbek	9	67%	293	85%
Torit	12	58%	158	67%
Wau	11	55%	99	55%
Yambio	10	10%	165	70%
South Sudan	60	48%	1209	70%

Table 8 Summary of key alert indicators

W20	Cumulative (2019)	
60	1209	Total alerts raised
48%	70%	% verified
0%	0%	% auto-discarded
3%	6%	% risk assessed
3%	4%	% requiring a response

- A total of 60 alerts received in week 20, 48% of them were verified. 3% were risk assessed and 3% required a response.

Table 9 | Alert performance indicators by event

Event	W20		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	9	44%	149	70%
AWD	9	78%	416	70%
Bloody Diarr.	13	46%	246	66%
Measles	10	40%	293	68%
Meningitis	0	0%	0	0%
Cholera	0	0%	35	80%
Yellow Fever	0	0%	12	100%
Guinea Worm	1	100%	35	66%
AFP	4	25%	90	71%
VHF	1	100%	12	83%
Neo. tetanus	0	0%	12	75%
Event-based surveillance				
EBS total	1	0%	24	75%

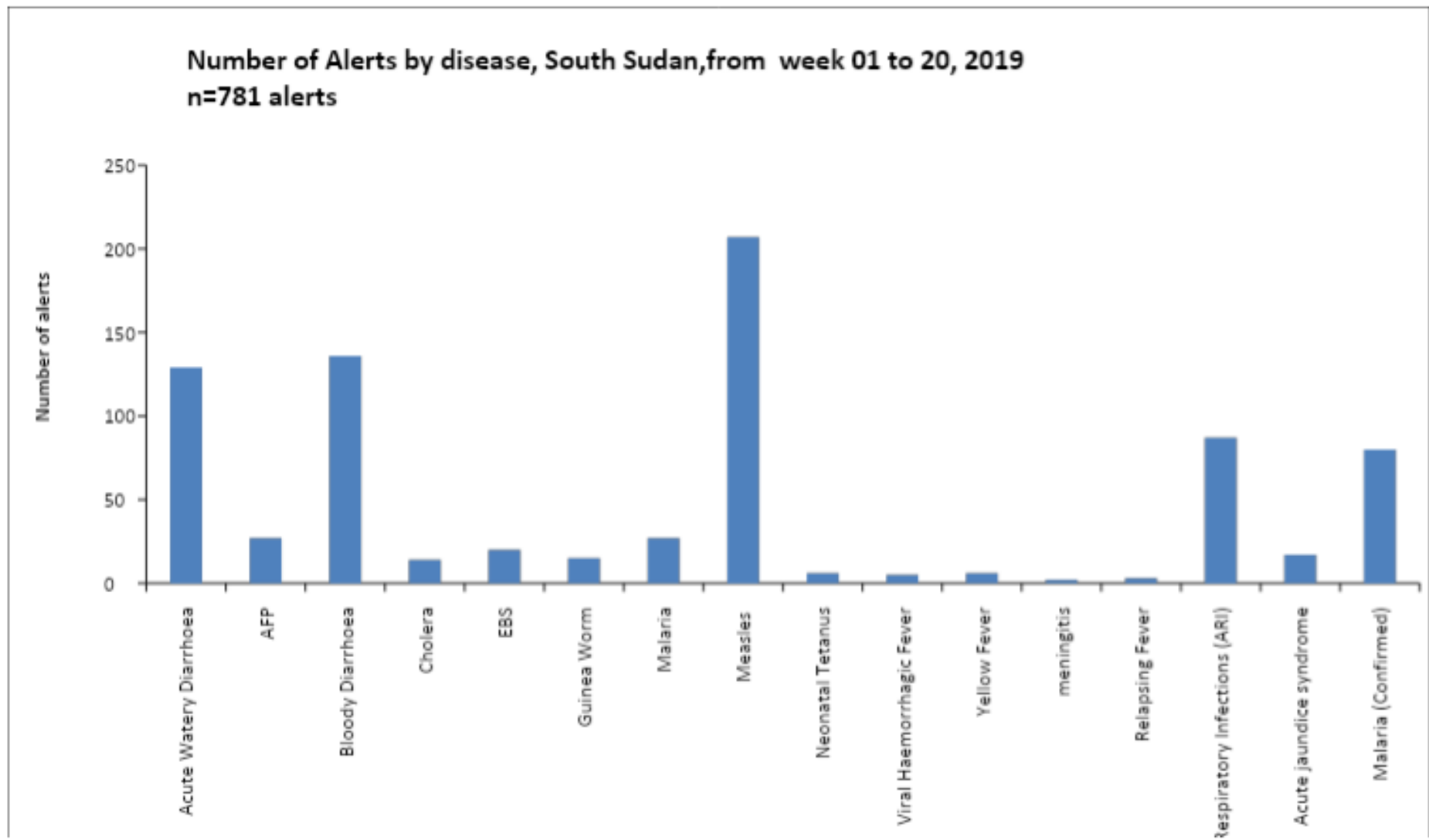
Table 10 | Event risk assessment

W20	Cumulative (2019)	
0	18	Low risk
26	26	Medium risk
1	21	High risk
0	5	Very high risk

- Acute Bloody Diarrhea (13), Measles (10), malaria (9) were the top common alerts generated through the EWARS in week 20, 2019.

A total of 58 event specific alerts generated by Hubs

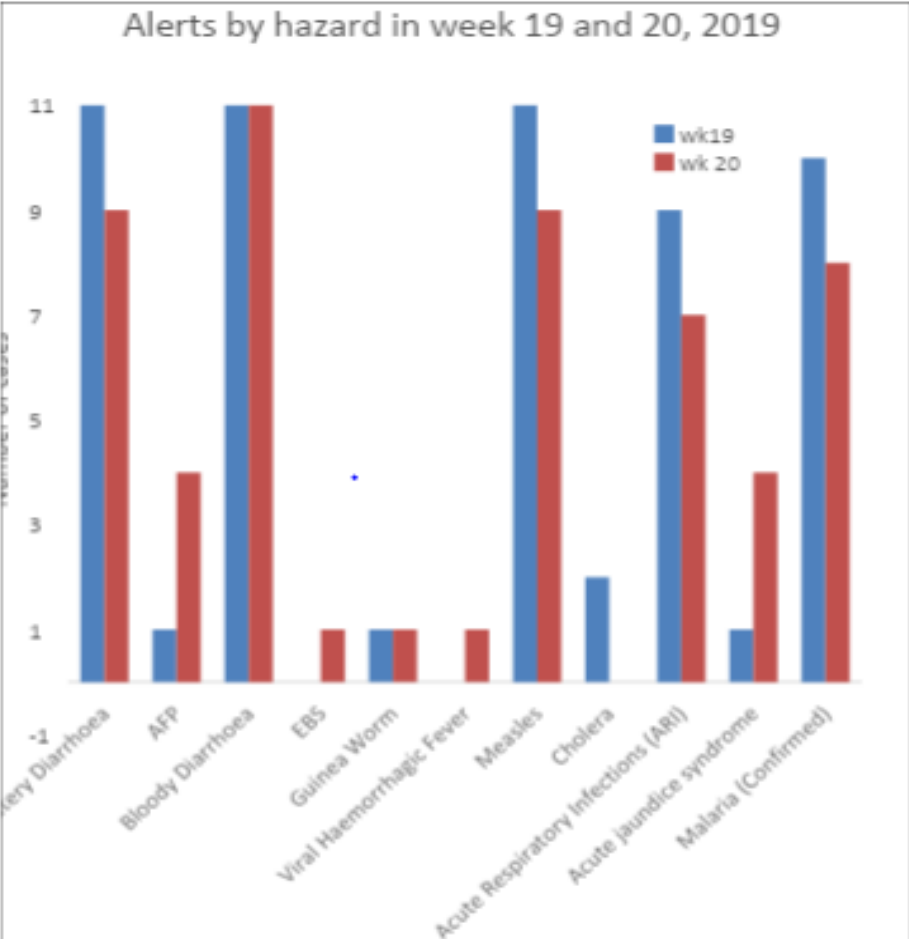
Hub	AJS	ARI	VHF	AWD	Bloody Diarrhoea	A F P	G.W	EBS	Malaria	Measles	Total
Torit	2			3	2				4		11
Bentiu	2	1			1					2	6
Malakal		2			1						3
Yambio		2		1	4	3					10
Rumbek		1		3	2	1			1		8
Juba		1								1	2
Kuajok										3	3
Aweil			1		1					1	3
Wau				2	2		1	1	3	2	11
Bor	1										1
Total	3	7		9	13	4	1	1	8	9	58



The Figures show number of cumulative alerts from week 1 to 20. More common alerts are Measles, Bloody diarrhoea, Acute watery diarrhoea, Acute respiratory illness and Malaria

Comparison between alerts received in week 19 and 20, by disease

Row Labels	wk19	wk 20	Total alerts
Acute Watery Diarrhoea	16	9	25
AFP	1	4	5
Bloody Diarrhoea	13	13	26
EBS		1	1
Guinea Worm	1	1	2
Viral Haemorrhagic Fever		1	1
Measles	15	9	24
Cholera	2		2
Acute Respiratory Infections (ARI)	9	7	16
Acute jaundice syndrome	1	4	5
Malaria (Confirmed)	10	8	18
Total alerts	68	57	125



Cumulative alerts by risk assessment stage in 2019

County	OUTCOME	RISK ASSESSED	VERIFICATION	Total Alerts	
Acute Watery Diarrhoea		5	1	123	129
AFP				27	27
Bloody Diarrhoea		2	2	132	136
EBS		4		16	20
Guinea Worm				15	15
Neonatal Tetanus				6	6
Viral Haemorrhagic Fever				5	5
Yellow Fever				6	6
Measles		21	5	181	207
Cholera				14	14
Malaria				27	27
meningitis		2			2
Relapsing Fever				3	3
Acute Respiratory Infections (ARI)		6	1	80	87
Acute jaundice syndrome		2		15	17
Malaria (Confirmed)		1		79	80
Total Alerts		43	9	729	781

- The table shows the cumulative alerts by risk assessment status in 2019
- Of the 781 alerts reported in 2019; 729 (93%) alerts were verified and nine (1.2%) underwent risk assessment..

OUTBREAKS IN 2019

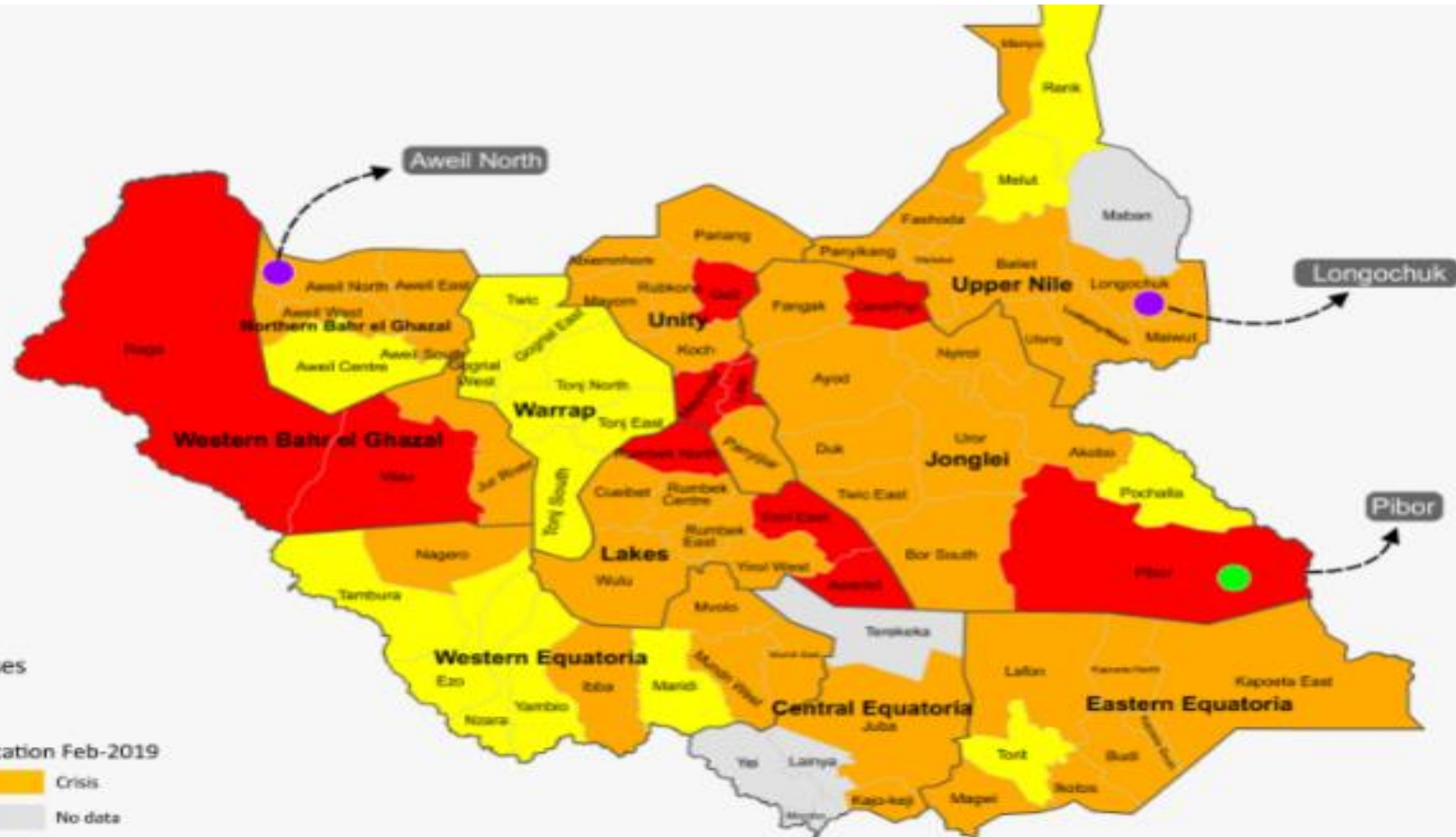
Major suspected and confirmed outbreaks in
South Sudan in 2019

Suspected Outbreaks in South Sudan (2019)

- Suspected measles cases have been reported from Jur River county
 - 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 Longechuk
 - Twenty six (26) suspected measles cases have been reported from Longechuk County; 22 cases from Mathiang Payam and four (4) cases from Watber Payam.
 - Nine (9) blood samples were tested; one (1) tested positive for measles while three (3) tested positive for rubella
 - Recommended responses include continuation with routine immunization, case management and community sensitization.
- Suspected pertussis cases in Jalle
 - Five (5) suspected cases of pertussis have been reported from an island in Jalle.
 - Collection of nasopharyngeal swab recommended for laboratory confirmation
- Suspected Hepatitis E Virus in Pibor
- Suspected Ebola Virus Diseases (EVD) in Yambio
 - A suspected case of EVD was identified in Yambio for a 51 year old Man. But has tested negative for both Gene X pert and PCR

Suspected Outbreaks South Sudan – As at 19th May 2019

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



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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	12	435 (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 West	4/04/2019	7	48 (0.02)	Yes	Yes	Yes	N/A
Measles	Bentiu PoC	24/04/2019	1	24 (0.01)	Yes	Yes	Yes	N/A
Measles	Malakal PoC	24/04/2019	0	2 (0.01)	Yes	Yes	Yes	N/A
Measles	Aweil East	13/05/2019	2	19 (0.004)	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	17/01/2019	0	19 (0.010)	Yes	Yes	Yes	N/A

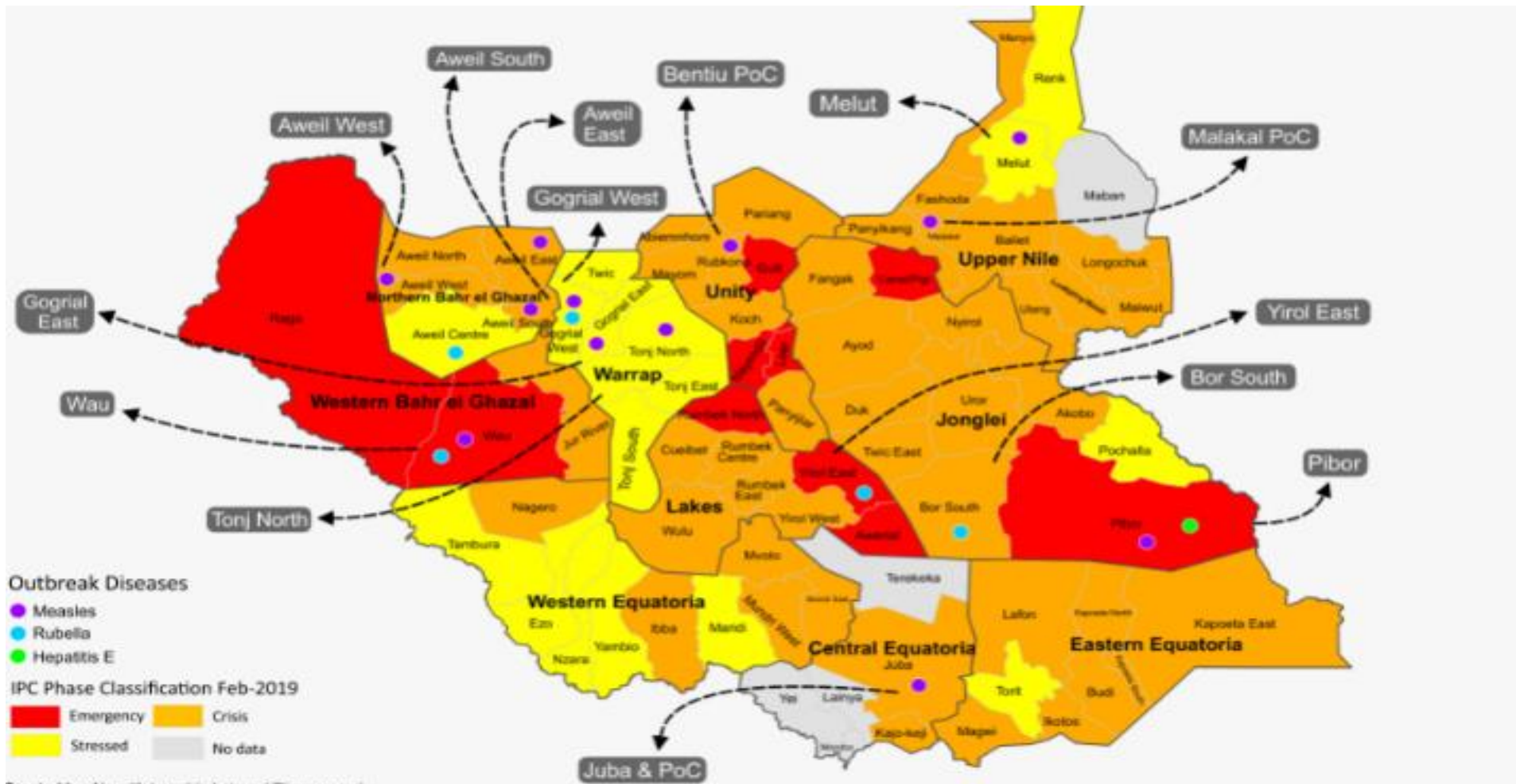
ACTIVE OUTBREAKS AND PUBLIC HEALTH EVENTS

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

Confirmed Outbreaks in South Sudan – As at 19th May 2019

The map show outbreaks confirmed in 2019

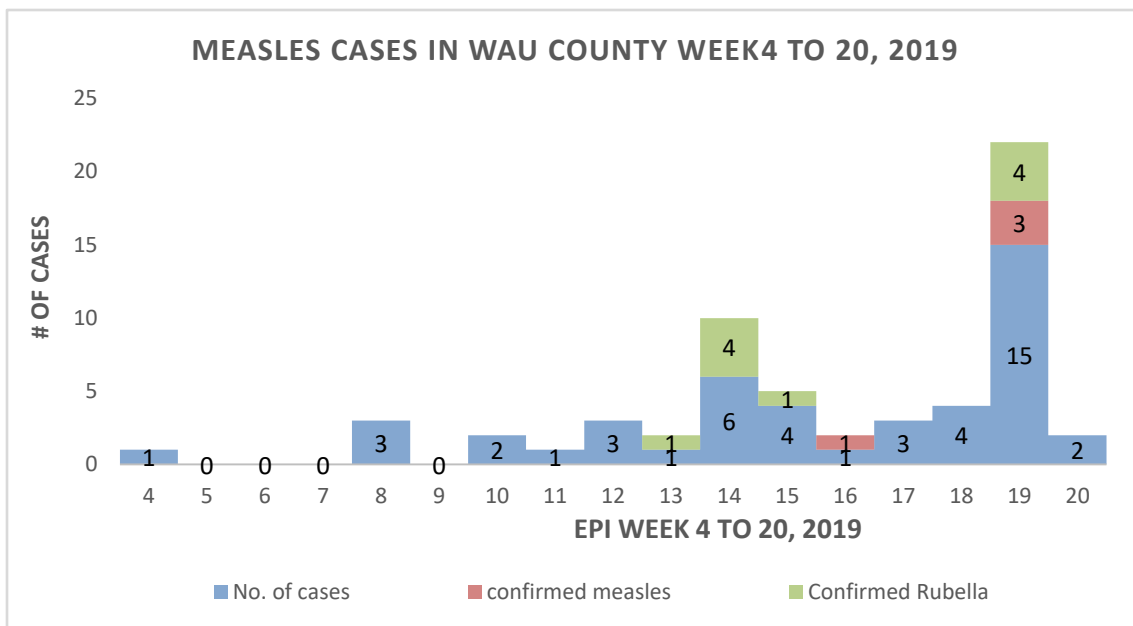
The confirmed outbreaks include: HEV in Bentiu PoC; Yellow Fever in Nzara; Measles and Rubella in Wau ,Rubella in Bor South, Yirol East, Aweil Centre and Gogrial West; Measles in Juba; Measles in Pibor; Measles in Gogrial West; Measles in Aweil South, Melut, Tonj North, Gogrial East, Aweil West , Aweil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



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Confirmed Measles Outbreak in Wau County and POCAA



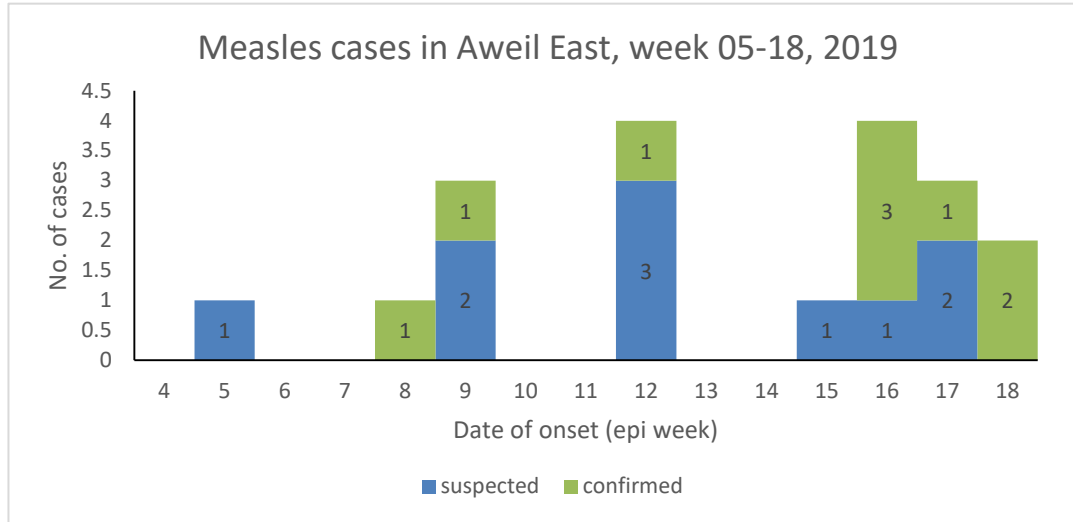
Introduction

- A new measles outbreak was confirmed in Wau county following the confirmation of 3 measles samples in Wau county and the POC AA.
- Wau county started seeing measles cases from as early as week 4 of 2019, but cases peaked in week 19 with 3 measles and 4 Rubella IgM positive.

Descriptive Epidemiology:

- A total of 49 Suspected cases from week 4 to 20 in Wau county
- 29(59%) are of age group 0 to 4yrs of age, 15 (30%) are of age group 5 to 14yrs
- 51% of the cases are from the POC-AA
- Other payams affected are: Wau South and Wau North
- **Response and recommendations**
 - IOM to do reactive vaccination campaign in Wau, with support from UNICEF and State Ministry of Health
 - WHO to lead the trainings in collaboration with the SMOH and partners and Post Campaign Evaluations (PCE)
 - TOT training to start on Friday 31st June, followed by county/payam level training on Saturday 1st June
 - Social mobilization to start on Saturday 1st June
 - Campaign to start on Monday 3rd June.
 - Continue Active case Search and Community mobilization

Confirmed Measles outbreak – Aweil East



• Response and Recommendation

- IRC is preparing to do a reactive vaccination Campaign on the 7th of June with HPF partner in the county
- WHO and MOH to conduct Post campaign Evaluation

Introduction

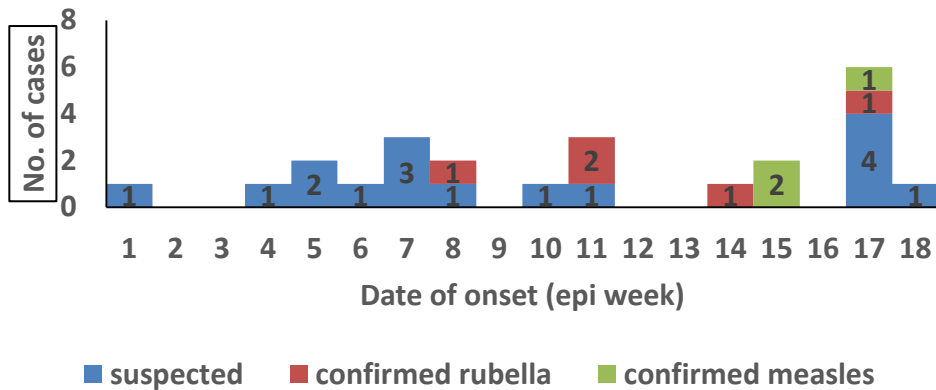
- A measles outbreak has been confirmed on Aweil East on 13th May 2019. This was following laboratory confirmation of three samples, bringing the total of laboratory-confirmed cases to 7 in total since beginning of the year. Currently no response

Descriptive Epidemiology

- Cumulatively, there are 20 suspected cases in total. No deaths have been reported.
- Several payams have been affected which include Yargot (4 cases), Madhol (4 cases), Malual Baai (4 cases), Mangok (3 cases) and Baac (2 cases).
- The majority (79%) of the line listed cases are children < 5 years.
- Fifteen (79%) cases out of the 20 cases have not been vaccinated prior to their illnesses.

Confirmed Measles outbreak – Bentiu PoC and Malakal PoC

Rubella and measles cases in Bentiu PoC, week 01-18, 2019



Response and Recommendations

- Case investigation to establish whether the confirmed cases are residents of the PoCs or new arrivals into the PoCs.
- IOM is preparing to start vaccination in the Bentiu POC to start on 27th to 31st May and MSF Spain has completed reactive vaccination
- Continue with routine immunization and community sensitization activities

Bentiu PoC

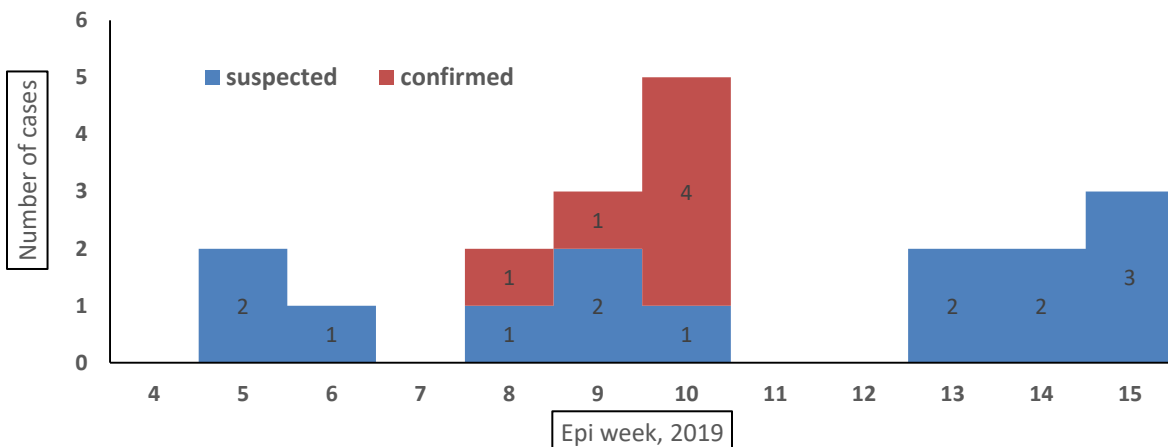
- Bentiu PoC has been reporting suspected measles/rubella cases since beginning of the year
 - A total of 24 suspected measles cases reported since January 2019
 - First measles cases were confirmed in week 15 when two tested positive for measles. There are three confirmed measles cases as at end of week 18, 2019.
 - Six (6) suspected measles cases reported in week 17, 2019
 - Between weeks 01-17, five (5) cases tested positive for rubella IgM antibodies
 - All the cases are children <5 years except one case

Malakal PoC

- Two measles confirmed cases in week 15, 2019
- Malakal PoC has had confirmed rubella outbreak since early January, 2019

Confirmed Measles outbreak – Tonj North

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



Outbreak description

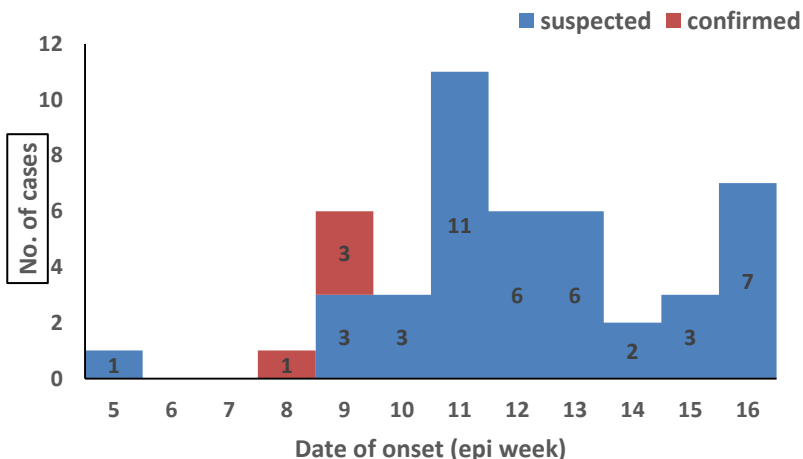
- The Outbreak started on 2.2.2019 with cases detected in Akop PHCU, Tonj North. Six samples were collected and all tested positive for Measles IgM antibodies.
- Cumulatively, there are 20 cases as at end of week 15, 2019.
- Two deaths (CFR=10%) have been reported.
- All the cases are from Akop Payam 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

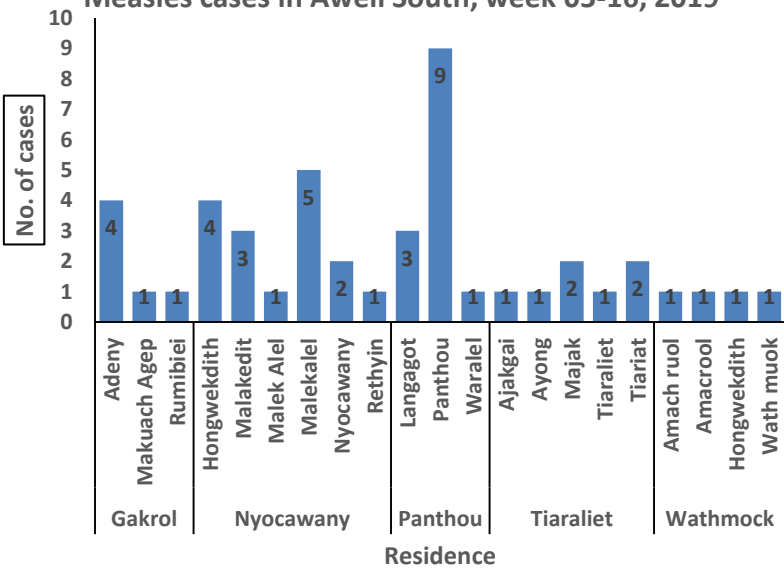
- Vaccination Campaign will kick off by UNKEA on the 3rd of June
- Vaccination coverage report will be shared
- Active case search both in the facilities and communities to identify the missed cases and to establish the magnitude and extent of the outbreak
- Training of health workers on case management of measles cases (supportive management including vitamin A supplementation) was done
- Post Campaign Evaluation will be done by MoH and WHO

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 Payam (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

Response and Recommendation

- **24,261 children vaccinated with a coverage of 116%**
- **Continue with routine vaccination and active case search**

Confirmed Measles outbreak – Gogrial East and Gogrial West

Descriptive Epidemiology

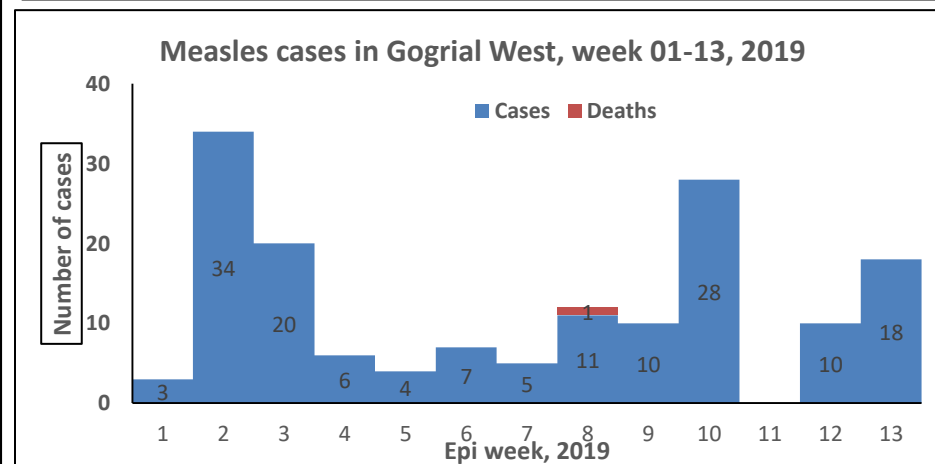
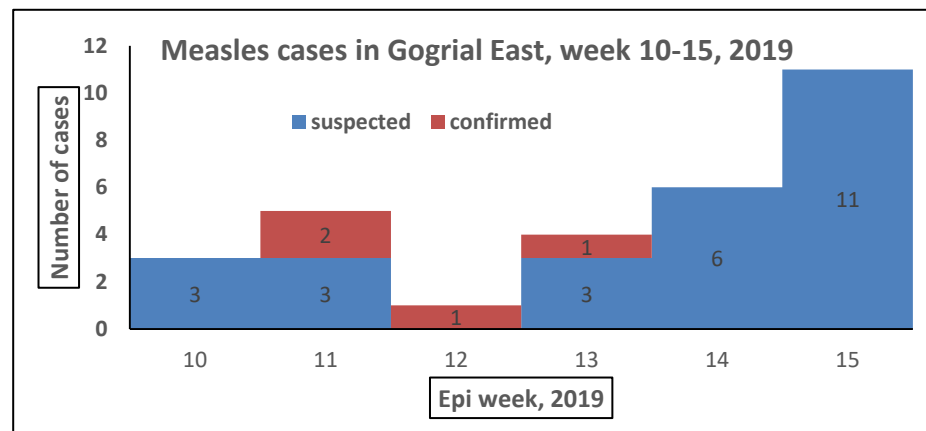
The measles outbreak in Gogrial East is active with 6 cases in week 14 and 11 cases in week 15.

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,

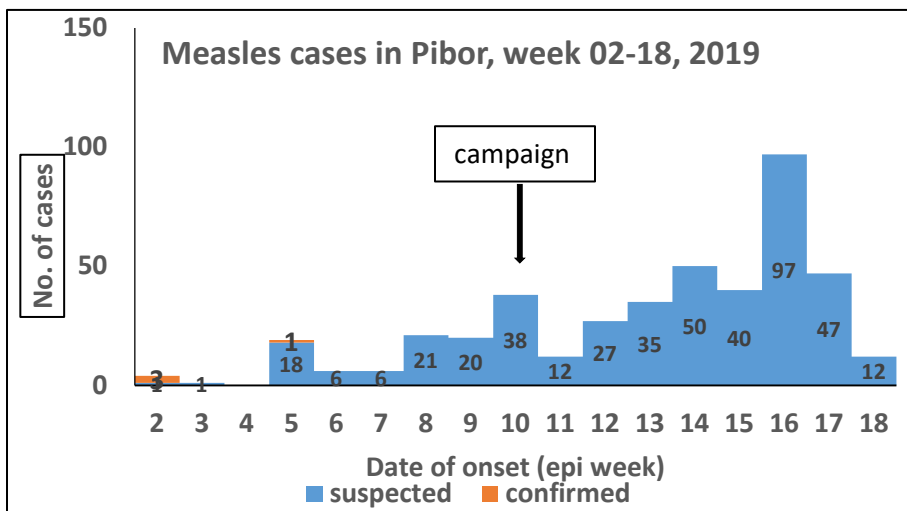
- Three (3) cases are laboratory-confirmed. Children < 5 years of age constituted 60% (103) of all the cases.
- The payams with most cases are Alek West (56 cases) and Kuach North (97 cases) accounting for over 98% of all the cases in the county.
- Most (82.1%) of the cases have never been vaccinated 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 has been concluded
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 was 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 – Pibor



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	38	46	84	19.4	19.4
1-4	106	111	217	50.1	69.5
5-9	44	39	83	19.2	88.7
10-14	11	8	19	4.4	93.1
15+	15	15	30	6.9	100.0
Total cases	214	219	433	100.0	

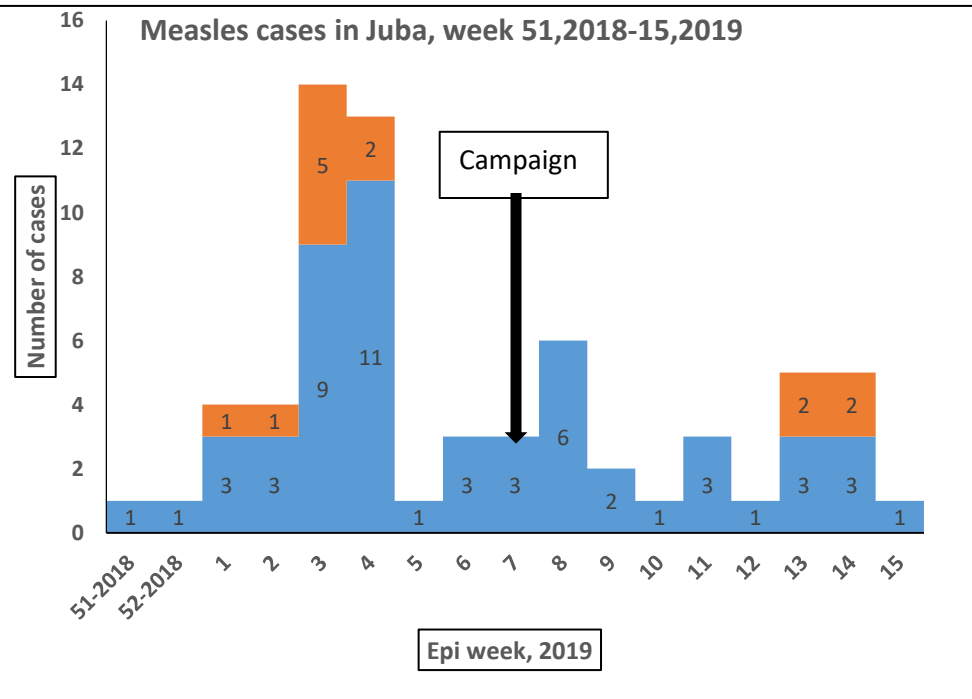
Descriptive Epidemiology

- Cumulatively a total of 435 measles cases have been reported as at end of week 18, 2019.
 - Four (4) laboratory confirmed measles cases
 - Twelve (12) suspected case was reported in week 18, 2019
 - No deaths have been reported since the start of the outbreak
- More than half (55%) of the cases are from Pibor (131) and Gumuruk (108). Multiple other payams and cattle camps are reporting suspected measles cases. About 135 measles cases reported falling ill while in cattle camps. The affected camps include Kong Kong (90 cases), Baaz (31 cases), Jom (9 cases) and Nanam (5 cases)
- Almost 70% of the cases are children <5 years
- Upsurge in measles cases is noted beginning week 12 with the highest number of cases being reported in week 16 when 97 cases were reported. This indicates an ongoing active transmission in the area despite the emergency campaign conducted in week 10, 2019.
- 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.

Recommended response

- Collection of blood samples from subsequent samples for laboratory confirmation.
- Targeted scale up of routine immunization in areas reporting new cases with emphasis on areas missed or with poor coverage during the emergency campaign. Special consideration and planning to reach the affected cattle camps should be put in place.
- Enhance routine surveillance to detect and report measles cases from hard to reach areas to guide scale up of routine immunization

Confirmed Measles outbreak – Juba

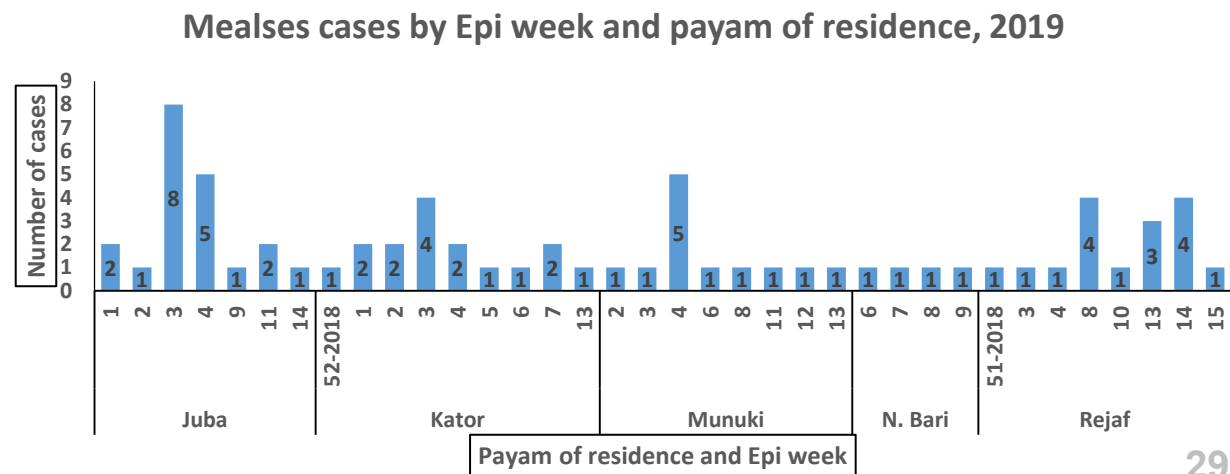


Descriptive Epidemiology

- 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.

Response and Recommendations

1. A reactive vaccination campaign in Juba and Juba PoCs has concluded. The campaign was held 6th May 2019 and 12th May 2019.



Results on the vaccination coverages achieved is being awaited .

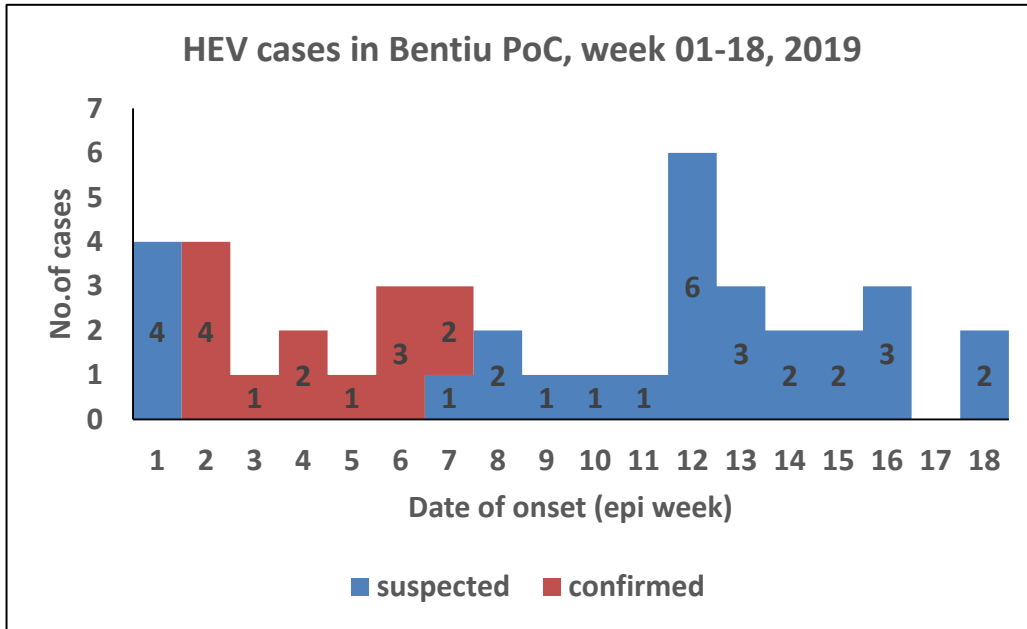
2. 11,712 children were vaccinated with a coverage of 21%

3. MoH and WHO to conduct a post Campaign Evaluation

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



Bentiu PoC

- The persistent transmission of HEV in Bentiu PoC continues with 41 cases since beginning of 2019
 - Thirteen (13) cases confirmed on PCR testing
 - Two new cases were reported in week 18, 2019
- All the cases were managed as outpatient cases except for two cases who were admitted on 23rd February, 2019 and 11th April, 2019
- One death on 12th April 2019
- Over half (51.3%) of the cases are male.
- Age group 15-44 years had the most cases with 14 (34.1%) cases.
- Of the 20 female cases, 6 (30%) 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	5	11	26.8	26.8
5-9 years	1	5	6	14.6	41.5
10-14 years	5	3	8	19.5	61.0
15-44 years	6	8	14	34.1	95.1
45+years	2	0	2	4.9	100.0
Total cases	20	21	41	100	

Malaria trends

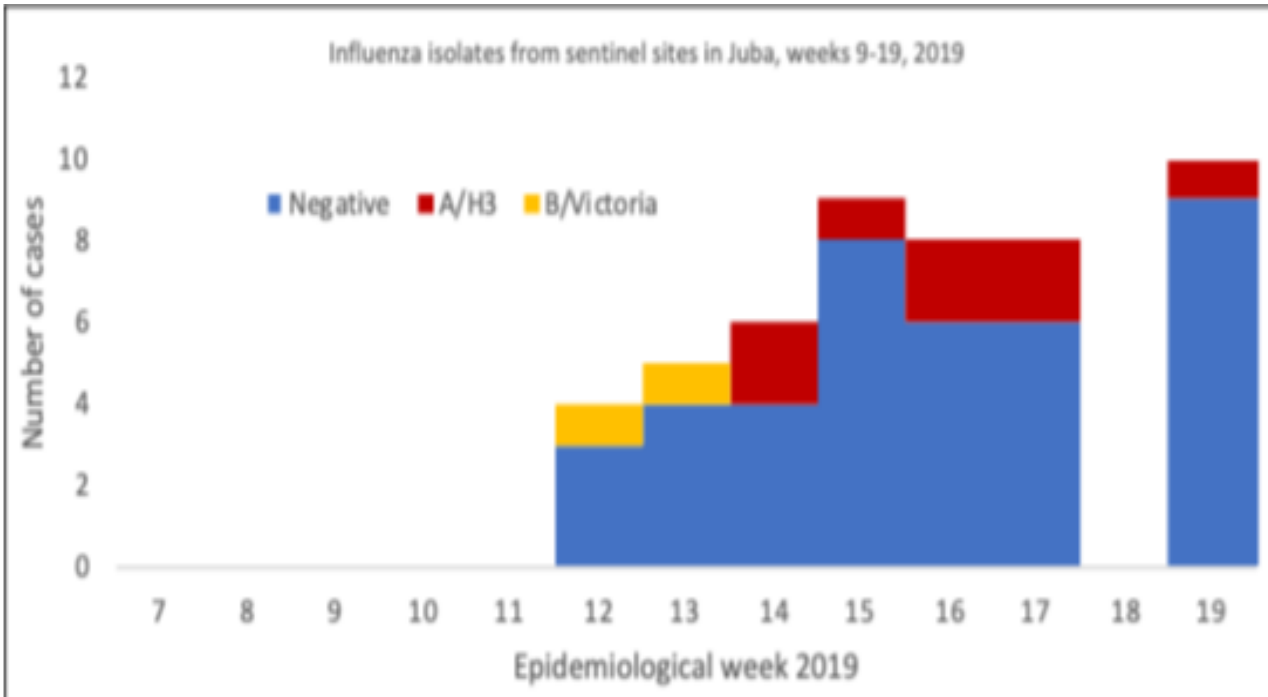
Current malaria trends

- Malaria was the leading cause of morbidity and mortality accounting for 50.4% of all morbidities and 6.6% of all mortalities in week 20, 2019. The trend analyses showed no counties with malaria trends that are significantly higher than the expected levels
- Counties with malaria trends that exceed the threshold (third quartile of trends for the period 2013-2017) and these include:
 - Rumbek hub(Cueibet)
 - Juba hub(Yei,Juba)
 - Wau hub(Wau)
 - Torit hub(Torit)

Proposed public health actions

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

Routine Sentinel Surveillance | Human Influenza



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 50 ILI/SARI samples have been collected and tested at Uganda Virus Research Institute (UVRI) with 40 being negative; two (2) positive for Influenza B (Victoria); and seven (8) 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 8th May 2019

Current situation

- Currently as of 19th May, 2019
- **1826** Cases [1726 confirmed & 88 probable]
- **1218** Deaths [1130 confirmed & 88 probable]
- 102 Health workers [34 deaths]

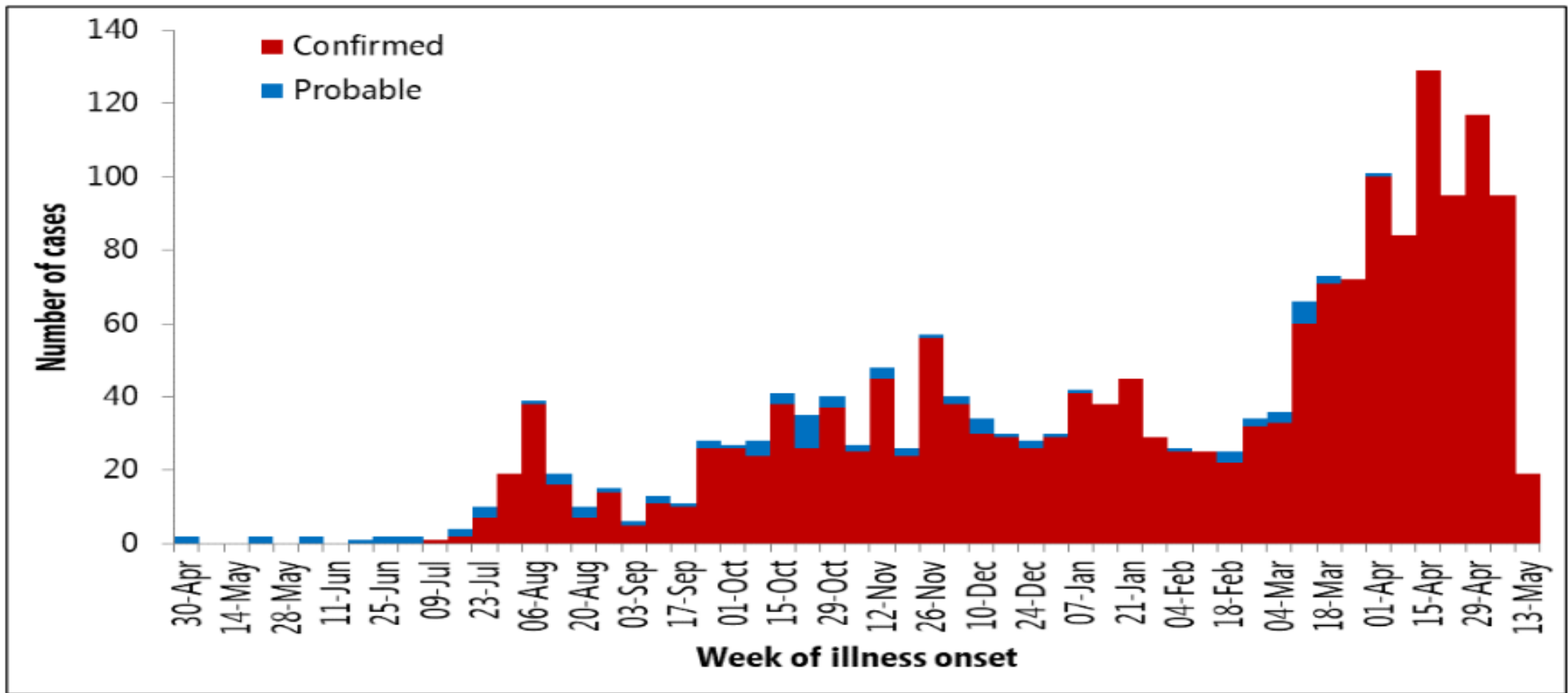
Response update

- **16510** contacts under surveillance [84% followed up]; 114, 498 vaccinated

Affected health zones

- **2** provinces [North Kivu & Ituri] In the 21 days between 29 April to 19 May 2019, 86 health areas within **16** health zones reported new cases, representing 48.6% of the **177** health areas affected. A total of **338** confirmed cases were reported, the majority from the health zones of Katwa (22%, n=75), Mabalako (18%, n=62), Butembo (13%, n=44), Beni (11%, n=36), Kalunguta (10%, n=33), Mandima (9%, n=32) and Musienene (9%, n=31).

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

Ebola preparedness in South Sudan

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: W20

From: 2019-05-13

To: 2019-05-19

Name of PoE	Passengers Screening Information			EVD Alerts		
	# screened	# isolated	# under Voluntary Home Quarantine	# reported	# validated	# suspects
Kor Kaya PoE	4,870	0	0	0	0	0
Bangangai	0	0	0	0	0	0
Besukangbi	0	0	0	0	0	0
Bazi Border	1,854	0	0	0	0	0
Birigo	1,876	0	0	0	0	0
Bori	855	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	2,809	0	0	0	0	0
Kaya	3,638	0	0	0	0	0
Kaya Border	0	0	0	0	0	0
Kenwa	2,265	0	0	0	0	0
Khorijo	1,905	0	0	0	0	0
Lasu	45	0	0	0	0	0
Lobone border	0	0	0	0	0	0
Makpandu	0	0	0	0	0	0
Maridi Airstrip	5	0	0	0	0	0
Yambio Airport	0	0	0	0	0	0
Yei Airport	14	0	0	0	0	0
Yei RRC	81	0	0	0	0	0
South Sudan	61,615	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 20, A total of 61,615 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	2	Juba	Keter and	

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 GneXeprt 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
19/05/2019	Measles	0	Wau		3 tested positive for measles

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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>

