

South Sudan

Integrated Disease Surveillance and Response (IDSR)

Epidemiological Update W06 2019 (Feb 04, 2018- Feb 10, 2019)



- The completeness for IDSR reporting at the county level was 65% in week 6 of 2019 . The completeness for EWARS reporting from IDPs was 87%. Out of the 52 reports submitted, 10 (19.2%) reports were submitted via mobile phones following roll out of use of mobile phones for reporting by health facilities.

- In epi week 6 of 2019, Measles (12), malaria (5) and AWD (4) were the three most frequently reported alerts in the country.

- A measles outbreak has been confirmed in Mayom after three (3) suspected cases tested positive for measles IgM antibodies. There are five (5) cases cumulatively all of which are children < 5 years with a mean age of 1.6 years (SD = 0.8). Two cases are from Wangbone Payam while the other two are from Pup Payam. SMOH with support from the partners on the ground are planning for a response plan.

- A reactive vaccination campaign targeting 47,328 children aged 6months to 15 years in Pibor will be conducted starting on 2nd March 2019. There are 34 cases reported to date. A similar campaign will be conducted in Gogrial West with support from partners who are currently planning for the campaign.

- The suspected EVD case that was reported from the military hospital in Juba on 09th February 2019 has tested negative for Ebola Zaire virus and other viral hemorrhagic fevers.

- A total of 15 suspected HEV cases have been reported in Bentiu PoC since the beginning of 2019. There were three (3) new cases reported in week 6. Cumulatively, there were 159 HEV cases reported in 2018.

- 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 (W6 2019)

Hub	Reporting		Performance	
Hub	Reporting # counties	# reports received # reports	Performance Completeness	Timeliness
Aweil	5	5	100%	100%
Bentiu	9	5	56%	56%
Bor	11	9	82%	82%
Juba	6	3	50%	50%
Kwajok	7	5	71%	71%
Malakal	13	5	38%	38%
Rumbek	8	8	100%	100%
Torit	8	0	0%	0%
Wau	3	2	67%	67%
Yambio	10	10	100%	100%
South Sudan	80	52	65%	65%

Table 2 | Summary of key IDSR surveillance indicators

W6	Cumulative (2019)	
80	-	Number of counties
65%	62%	Completeness
65%	56%	Timeliness

Table 3 | IDSR report submissions

W6	Cumulative (2019)	
52	349	total submissions
10	0	submissions by mobile
42	0	submissions by web

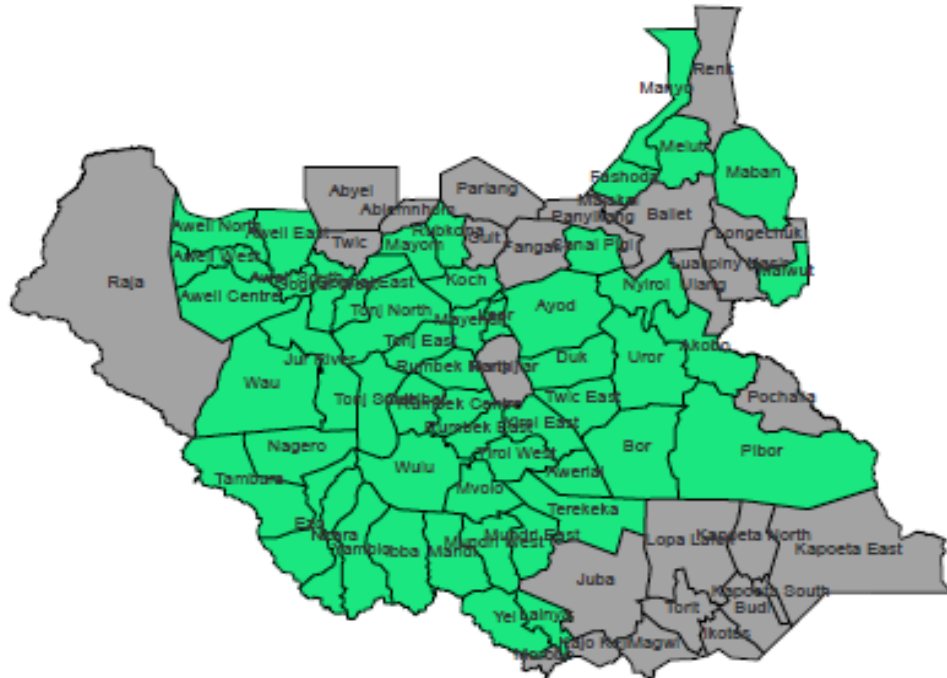
- Completeness for IDSR reporting at the county level was 65% in week 6, 2019 and cumulatively at 65% for 2019.
- Timeliness for IDSR reporting at the county level was 65% in week 6 and cumulatively at 56% for 2019.
- Out of the 52 reports submitted, 10 (19.2%) reports were submitted via mobile phones.

Figure 1 | Trend in IDSR completeness over time

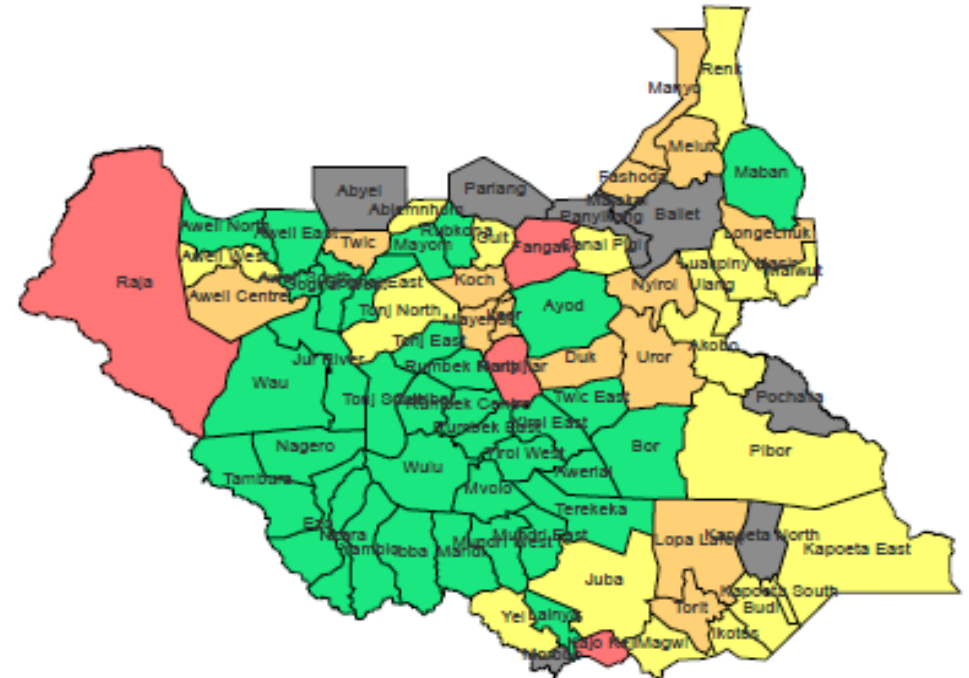


The graph shows completeness for the weekly IDSR reporting at the county level.

Map 1a | Map of IDSR completeness by county (W6 2019)



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



- Counties that submitted their IDSR reports in week 06, 2019 are shown in green in map 1a.
- Counties that did not submit their IDSR reports in week 06, 2019 are shown in grey in map 1a.

Table 4 | EWARS surveillance performance indicators by partner (W6 2019)

Partner	Performance		Reporting	
	# sites	# reports received	Completeness	Timeliness
CMD	3	3	100%	100%
GOAL	2	2	100%	100%
HLSS	1	1	100%	100%
IMA	7	7	100%	86%
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	1	33%	33%
SMC	6	3	50%	50%
UNIDO	1	1	100%	100%
UNKEA	2	2	100%	100%
World Relief	1	1	100%	100%
TRI-SS	7	7	100%	100%
LIVEWELL	4	4	100%	100%
Total	61	53	87%	85%

Table 5 | Summary of key EWARS surveillance indicators

W6	Cumulative (2019)	
61	-	Number of EWARS reporting sites
87%	74%	Completeness
85%	72%	Timeliness

Table 6 | EWARS report submissions

W6	Cumulative (2019)	
53	350	total submissions
2	14	submissions by mobile
51	335	submissions by web

- The completeness and timeliness for EWARS reporting stand at 87% and 85% respectively for week 06, while the cumulative completeness and timeliness are 74% and 72% respectively for 2019

EVENT-BASED SURVEILLANCE

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

Table 7 | Alert performance indicators by Hub

Hub	W6		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Aweil	0	0%	8	33%
Bentiu	3	67%	19	68%
Bor	3	67%	8	75%
Juba	7	57%	25	84%
Kwajok	1	100%	8	50%
Malakal	3	33%	13	69%
Rumbek	1	100%	15	87%
Torit	1	0%	4	25%
Wau	1	0%	25	44%
Yambio	5	100%	23	83%
South Sudan	25	64%	144	68%

Table 8 Summary of key alert indicators

W6	Cumulative (2019)	
25	144	Total alerts raised
64%	68%	% verified
0%	0%	% auto-discarded
0%	2%	% risk assessed
0%	1%	% requiring a response

Out of 25 alerts that were received in week 06, 64% were verified and none were risk assessed.

Table 9 | Alert performance indicators by event

Event	W6		Cumulative (2019)	
	# alerts	% verif.	# alerts	% verif.
Indicator-based surveillance				
Malaria	5	60%	19	68%
AWD	4	50%	248	74%
Bloody Diarr.	1	100%	24	63%
Measles	12	67%	57	70%
Meningitis	0	0%	0	0%
Cholera	1	0%	4	75%
Yellow Fever	1	100%	1	100%
Guinea Worm	0	0%	5	60%
AFP	1	100%	57	67%
VHF	0	0%	0	0%
Neo. tetanus	0	0%	0	0%
Event-based surveillance				
EBS total	0	0%	8	38%

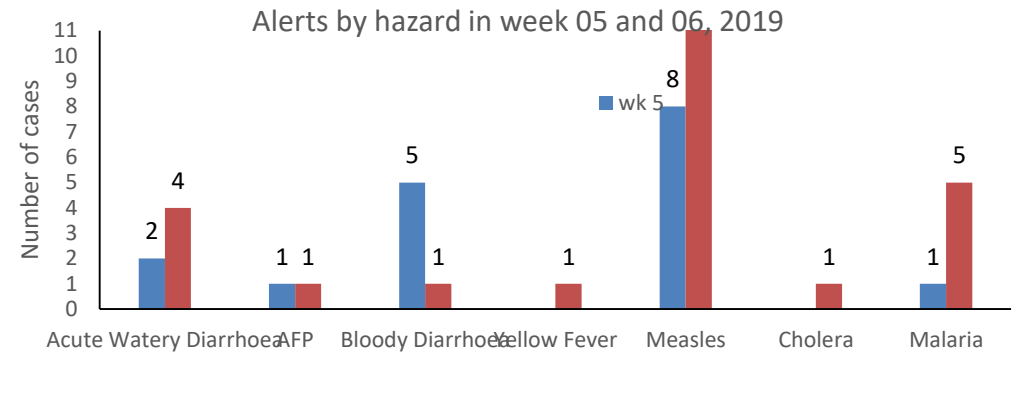
Table 10 | Event risk assessment

W6	Cumulative (2019)	
0	2	Low risk
0	0	Medium risk
0	1	High risk
0	0	Very high risk

In epi week 6 of 2019, Measles (12), malaria (5) and AWD (4) were the most frequently reported infectious diseases.

Alert by disease and county in W06 2019

County/Facility	AWD	Bloody Diarrhoeas	Measles	Malaria	AFP	Cholera	Yellow Fever	Total Alerts
Luri-Rokwe PHCU	1							1
Tambura	1	1		1				3
Torit Civil Hospital	1							1
Yambio	1							1
UNKEA Mandeng PHCC					1			1
CMD Padek PHCC				1				1
UNIDO Leer TPA Clinic				1				1
Duk				1				1
Nagero				1				1
Munuki PHCC			2					2
Kator PHCC			1					1
MDM Island Mobile Clinic			1					1
Malakal PoC Hospital MSF SP			1					1
MSF-E Malakal Town PHCC			1					1
Yirol East			1					1
Lainya			1					1
Gogrial West			1					1
Mayom			1					1
MSF-H Bentiu PoC Hospital			1					1
Muktah PHCC						1		1
Ghabat PHCC							1	1
El-Sabah Children Hospital			1					1
Total Alerts	4	1	11	5	1	1	1	25



Confirmed measles outbreak in Mayom.

- A measles outbreak has been confirmed in Mayom after three (3) suspected cases tested positive for measles IgM antibodies. There are five (5) cases cumulatively all of which are children < 5 years with a mean age of 1.6 years (SD = 0.8). Two cases are from Wangbone Payam while the other two are from Pup Payam. No death reported. SMOH with support from the partners on the ground are planning for a response plan.

Suspected Measles cases in Bentiu PoC

- Five (5) suspected Measles cases reported in Bentiu PoC. All the cases are children < 5 years with mean age of 1.7 years (SD = 0.9). No deaths.

Suspected Measles cases in Twic

- Three suspected measles cases have been reported from Twic with one case testing positive for measles IgM antibodies.

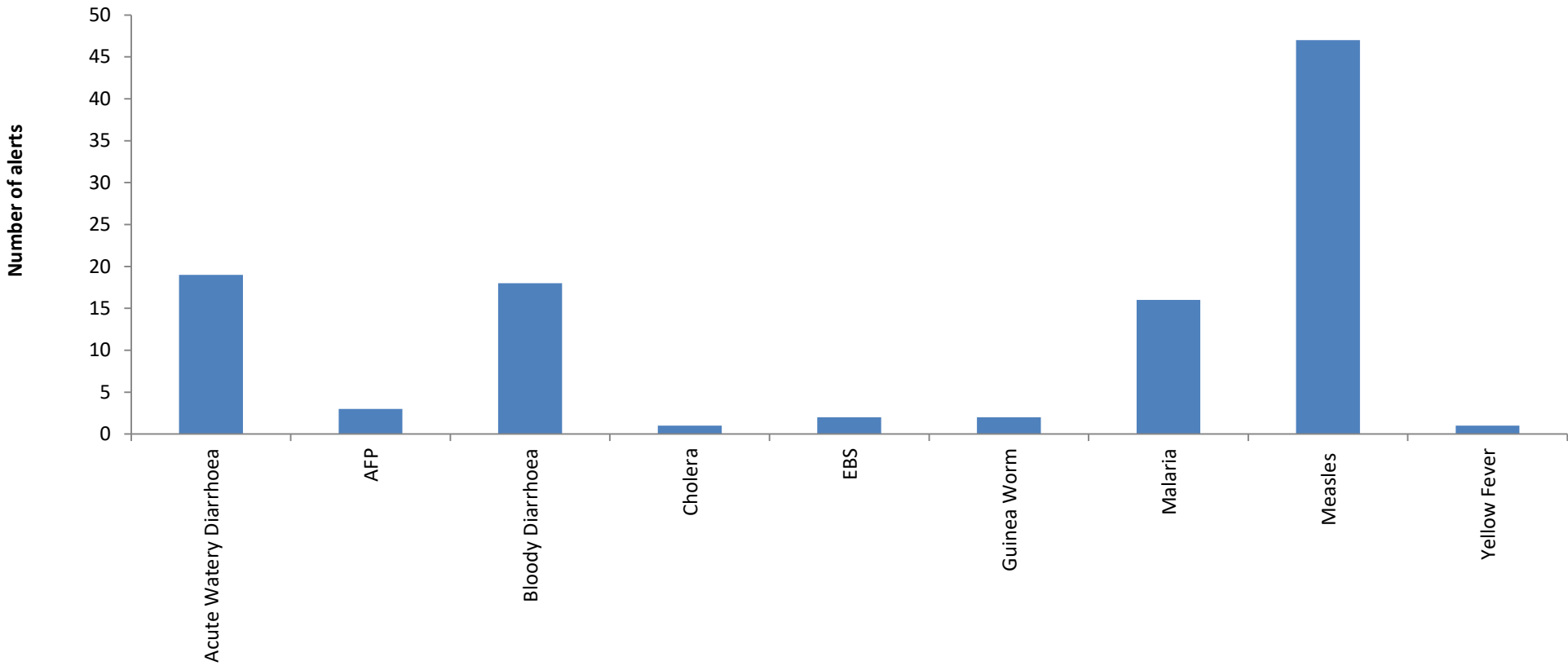
Suspected Measles cases in Bor

- Five suspected measles cases have been reported in Bor. Three cases were reported in week 7, 2019. Most (4/5) of the cases are children < 5 years with mean age of 4 years. No deaths. Samples have been collected for laboratory testing.

Suspected Meningitis in Yei

- There was one alert of meningitis reported from Yei and CSF was collected for laboratory confirmation.

Number of Alerts by disease, South Sudan, week 01-06, 2019
n=109 alerts



The Figure shows the cumulative number of alerts triggered in 2019 by hazard.

County	OUTCOME	RISK ASSESSED	VERIFICATION	Total Alerts
Acute Watery Diarrhoea		1	18	19
AFP			3	3
Bloody Diarrhoea		1	17	18
EBS	1		1	2
Guinea Worm			2	2
Yellow Fever			1	1
Measles	2	1	44	47
Cholera			1	1
Malaria			16	16
Total Alerts	3	3	103	109

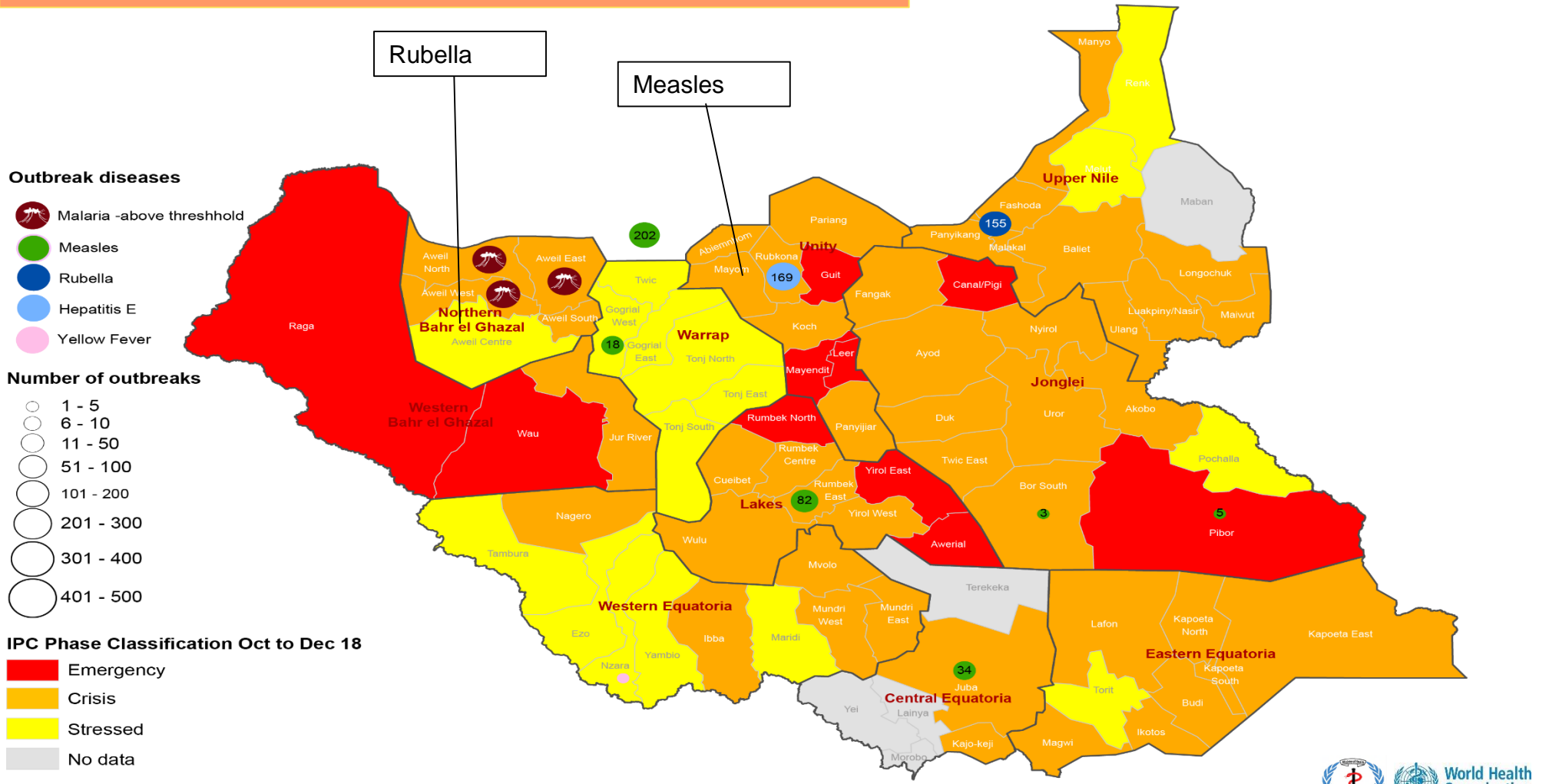
- The Figure shows the cumulative alerts by risk assessment state in 2019
- Of the 109 alerts reported in 2019; 75 (94.5%) alerts were verified and three (2.8%) underwent risk assessment..

OUTBREAKS IN 2019

Major suspected and confirmed outbreaks in
South Sudan in 2019

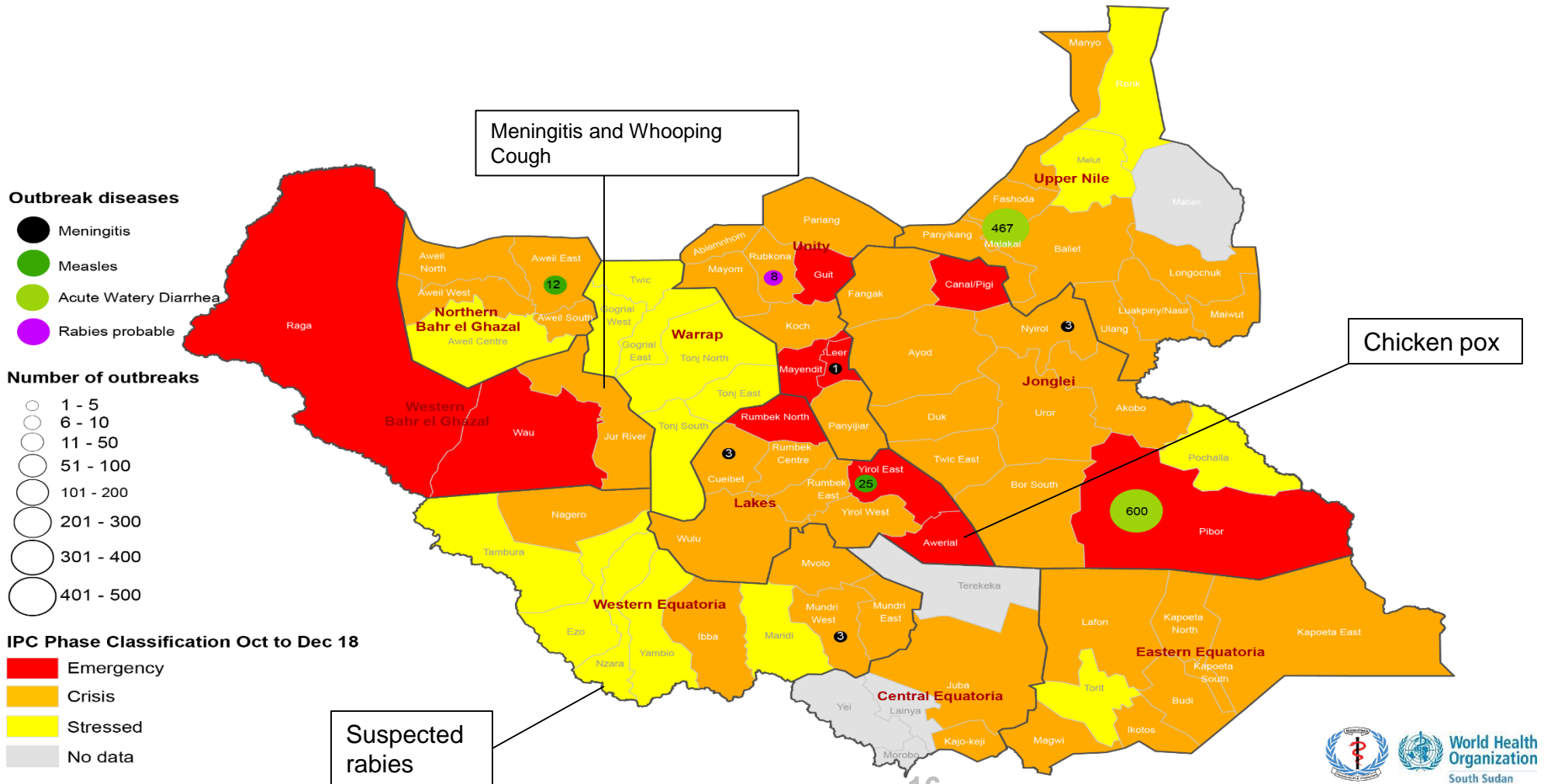
Confirmed Outbreaks South Sudan – As at 10th February 2019

- The map show outbreaks confirmed in 2018-2019
- The active outbreaks include: HEV (Bentiu PoC); possible malaria upsurge in 6 counties; measles in Bor PoC; Measles in Rumbek East; Yellow Fever in Nzara; Measles in Abyei, Rubella in Malakal PoC; Aweil Center, Measles in Juba; Measles in Pibor; Measles in Gogriell West; Rubella in NBG; Measles in Mayom



Suspected Outbreaks South Sudan – As at 10th February 2019

- Map shows suspect outbreaks reported in 2018-2019
- New alerts in the week
 - Suspected rabies in Bentiu PoC and Nzara
 - Suspected meningitis in Lankien, Leer, Mundri, Cueli-Bet, Jur River County
 - Suspected Measles outbreak in Yiol East, Bentiu PoC, Bor and Twic
 - Suspected Chicken Pox in Awerial
 - Whooping Cough in Jur River County



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	19	174 (0.079)	Yes	No	Yes	N/A
Yellow Fever	Nzara	23/11/2018	0	1 (0.001)	Yes	No	Yes	N/A
Measles	Rumbek East	09/10/2018	0	82 (0.043)	Yes	No	Yes	N/A
Measles	Bor PoC	20/10/2018	0	3 (0.15)	Yes	No	Yes	N/A
Hepatitis E	Bentiu PoC	03/01/2018	0	169 (0.123)	Yes	No	Yes	Yes
Measles	Abyei	12/02/2018	19	221 (0.28)	Yes	No	Yes	N/A
Measles	Juba	15/01/2019	5	39 (0.006)	Yes	Yes	Yes	N/A
Measles	Pibor	17/01/2019	9	34 (0.015)	Yes	Yes	Yes	N/A
Measles	Gogriell West		49	67 (0.017)	Yes	Yes	Yes	N/A
Rubella	Aweil Center/NBG		6	35 (0.028)	Yes	No	Yes	N/A
Measles	Mayom	17/01/2019	5	5 (0.003)	Yes	Yes	Yes	N/A

Ongoing outbreaks in week 06, 2019

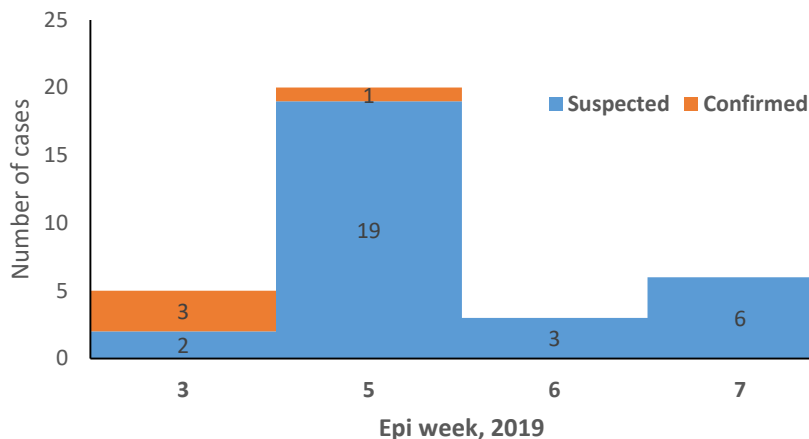
1. Rubella Malakal PoC
2. Yellow Fever in Nzara county
3. Measles in Rumbek East county
4. Measles in Bor PoC
5. Hepatitis E Virus (Bentiu PoC);
6. Measles in Abyei
7. Measles in Juba
8. Measles in Pibor
9. Measles in Gogriell West
10. Rubella in NBG
11. Measles in Mayom

ACTIVE OUTBREAKS AND PUBLIC HEALTH EVENTS

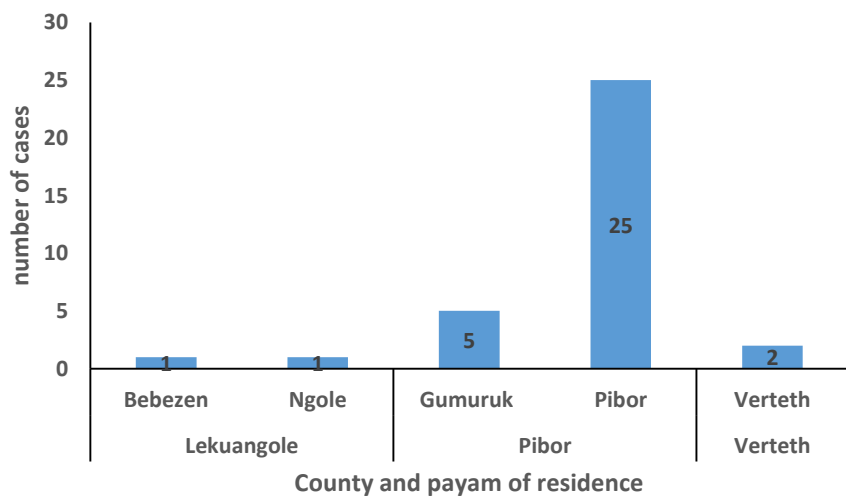
Brief epidemiological description and public health response for active outbreaks and public health events

Confirmed Measles outbreak – Pibor

Measles cases in Pibor, week 03-07, 2019



Measles cases in Pibor, week 03-07, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	1	1	2	5.9	5.9
1-4	9	10	19	55.9	61.8
5-9	6	4	10	29.4	91.2
10-14	1	0	1	2.9	94.1
15+	1	1	2	5.9	100.0
Total cases	18	16	34	100.0	

Descriptive Epidemiology

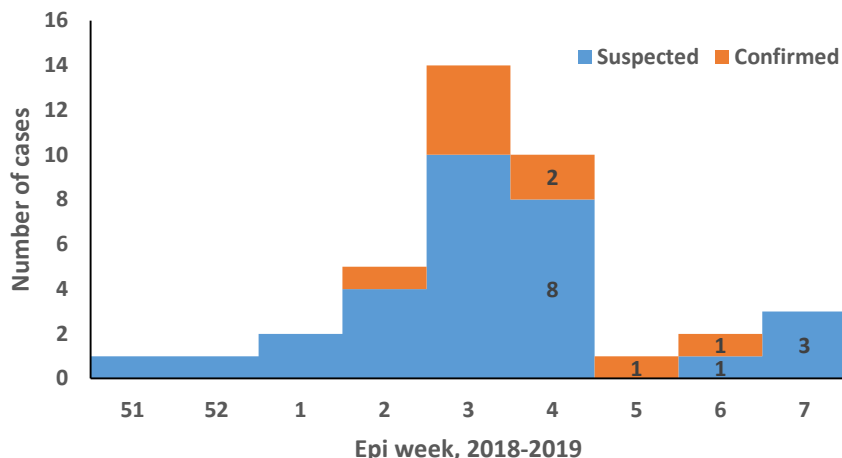
- A total of 34 suspected measles cases have been reported as at end of week 7, 2019.
 - Four cases have been confirmed positive for Measles IgM antibodies
 - No deaths have been reported
- Most of the cases are from Pibor County with Gumuruk (5) and Pibor (25) having the most cases.
- About 62% (21) of the cases are children <5 years
- Almost all the cases have no history of prior vaccination against Measles or don't know their vaccination status.

Recommended response

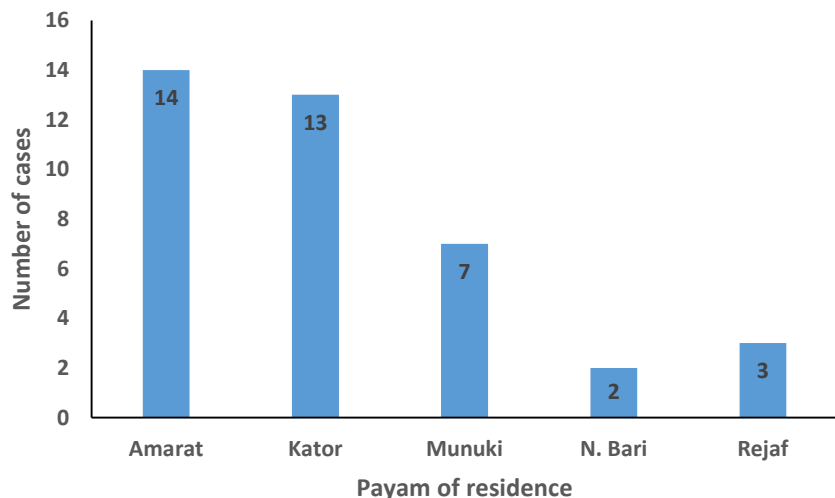
1. A reactive vaccination campaign targeting 47,328 children aged 6months to 15 years in all the payams will be conducted starting on 02nd March, 2019.
2. Active case search in the health facilities and communities
3. Training of health workers on surveillance and case management
4. Continue with surveillance, routine immunization and increasing community awareness

Confirmed Measles outbreak – Juba

Measles cases in Juba, week 51, 2018-07, 2019



Measles cases in Juba, week 51, 2018-07, 2019



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	4	11	15	38.5	38.5
1-4	5	15	20	51.3	89.8
5-9		1	1	2.6	92.3
10-14	1	1	2	5.1	97.5
15+		1	1	2.6	100.0
Total cases	10	29	39	100.0	

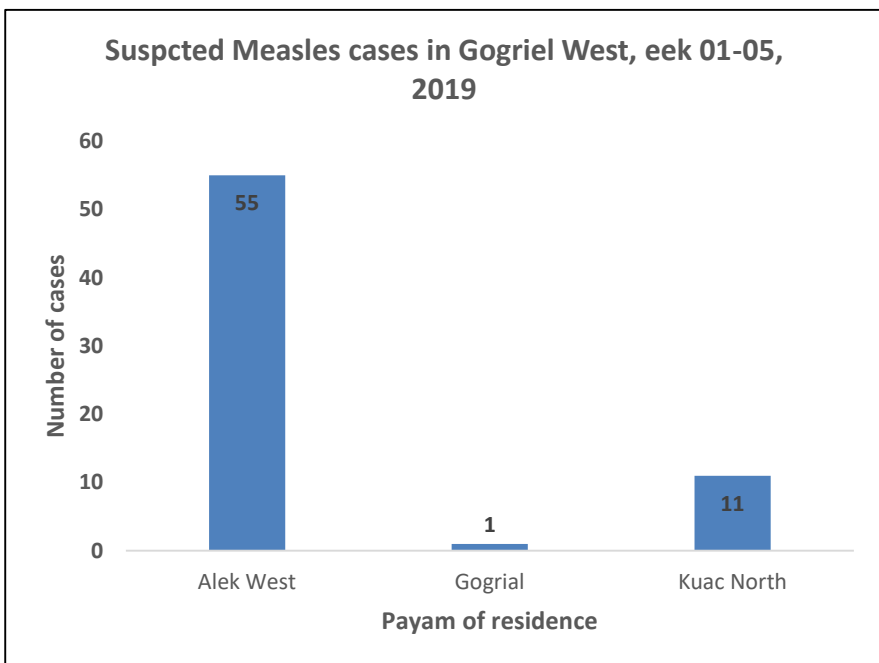
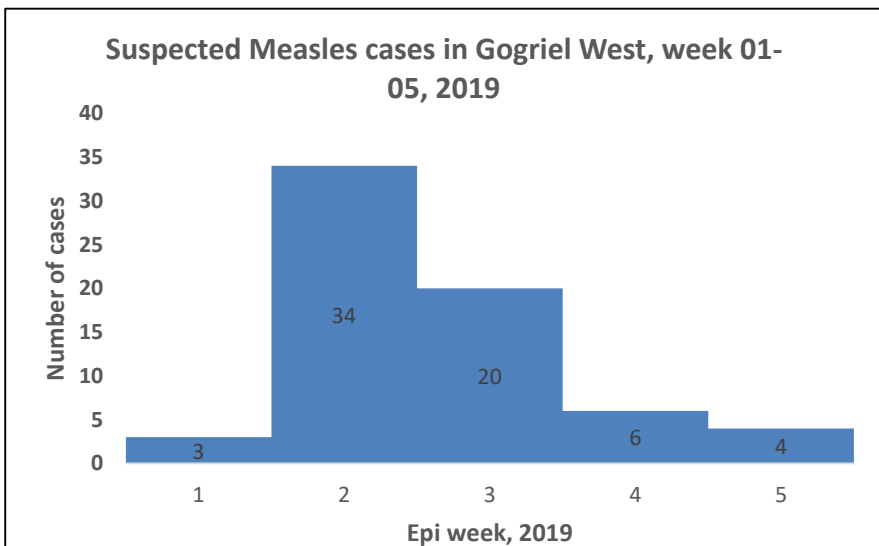
Descriptive Epidemiology

- A total of 39 suspected measles cases were reported from Juba as at end of week 7.
 - Most cases are from Amarat 14 (35.9%) and Khator 13 (33.3%) payams
 - Ten (10) confirmed cases; 6 from Khator, 3 from Amarat and 1 from Rejaf
 - Three (CFR 8.8%) 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, 35 (89.8%) while 29 (74.4%) are male

Recommended response

- A reactive vaccination campaign covering three payams of Amarat, Khator and Rejaf started on 11th February, 2019 and ended on 17th February, 2019
 - Plans to conduct an expanded campaign covering other payams is being finalized with support from MSF-F.
- Active case search in the health facilities and communities
- Distribution of case definitions to health facilities and health workers
- Increase community awareness through social mobilization
- Continue with surveillance and routine immunization

Confirmed Measles outbreak – Gogrial West



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	5	4	9	13.4	13.4
1-4	8	15	23	34.3	47.7
5-9	13	12	25	37.3	85.0
10-14	3	3	6	9.0	94.0
15+	3	1	4	6.0	100.0
Total cases	32	35	67	100.0	

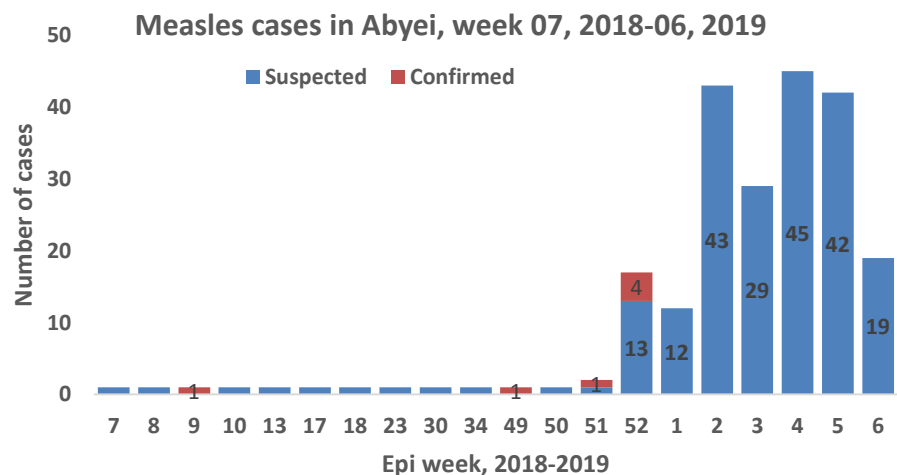
Descriptive Epidemiology

- About 67 suspected Measles cases reported between week 01, 2019 and week 05, 2019.
 - Three (3) cases are laboratory-confirmed
 - No deaths reported
- Most of the cases are from Alek West Payam with 55 (82.1%) suspected cases.
- More than half (52.3%) of the cases are older than 5 years
- Only 5 (7.5%) cases reported history of receiving Measles vaccination prior to the illness

Recommended response

1. A reactive vaccination campaign targeting children between 6 months and 15 years of age in the 9 payams is being finalized
2. Active case search in the health facilities and communities
3. Increase community awareness through social mobilization
4. Continue with surveillance, case management and routine immunization

Confirmed Measles outbreak – Abyei



Age groups	Female	Male	Total	Percentage, %	Cumulative %
<1	42	36	78	35.5	35.5
1-4	36	47	83	37.7	73.2
5-9	4	3	7	3.2	76.4
10-14	5	9	14	6.4	82.8
15+	16	22	38	17.3	100.0
Total cases	103	117	220	100.0	

Background

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

Descriptive Epidemiology

- A total of 221 suspected cases reported between week 7, 2018 and week 03,2019. Of all the cases, 211 (95.5%) were reported between week 49, 2018-06, 2019.
- Six (6) cases were confirmed between week 49-52, 2018, triggering declaration of an outbreak
- No deaths reported
- Majority of the cases are children <5 years accounting for 73.2% (161). Males are more than female accounting for 53.2% (117). Sex variable was missing for one case.
- Among the 211 cases reported since week 49 of 2018; 153 (72.5%) of the cases are children <5 years
- Rumammer county had the most cases with 180 (81.4%)
 - The villages with most cases include Agok (20),Mabony (20), Juoljok (19) and Mading (14).

Recommended response

- A reactive vaccination was conducted between week 04 and 05, 2019 targeting four counties of Abyei, Rumammer, Alal and Mijak achieving an overall coverage of 88% (13335/15204).
- A mop plans for the counties with low coverages achieved during the campaign are underway

Confirmed Rubella outbreak – Malakal PoC

Background

- Suspect measles cases reported from Sector 1; Block 1 of Malakal PoC starting 27 Oct 2018. The initial three samples were IgM negative for measles and rubella.

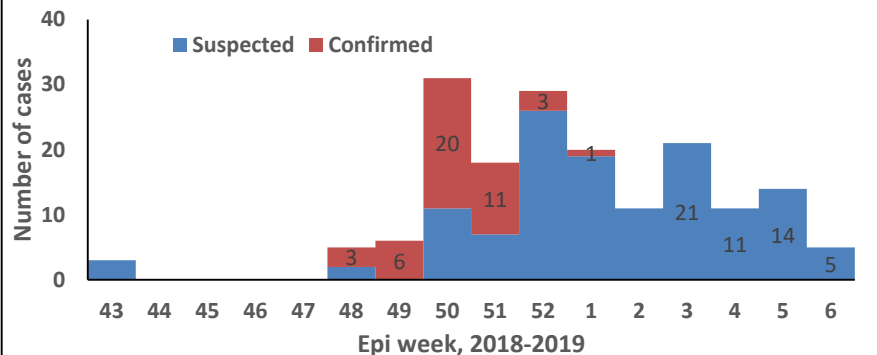
Descriptive Epidemiology

- A total of 174 suspected rubella cases have been reported since week 43-05, 2019
- No deaths reported
- A majority of cases are children <5 years, 102 (66.2%)
- More males, 82 (53.2%) than females affected. Sex variable missing for 20 cases.
- There are no cases reported among females within reproductive age groups (15-49 years)
 - Rubella infection in pregnancy associated with congenital rubella syndrome,
- The outbreak started in sector 1 which remains the most affected sector
- 44 cases are laboratory confirmed

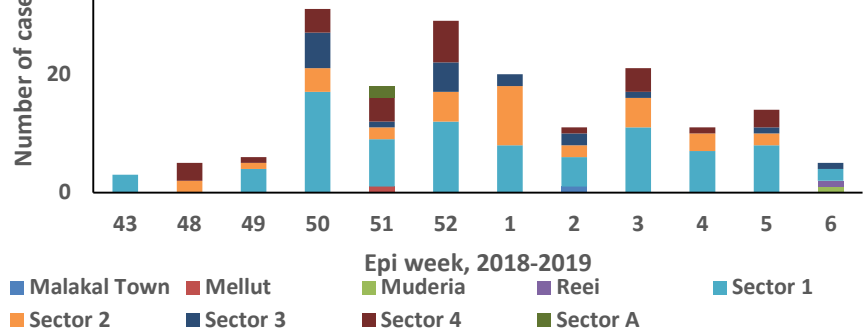
Recommended response

- Continue line listing and analyzing the epidemiology to describe the high-risk groups
 - Women of reproductive age group, 15-49 years
- Provide supportive symptomatic care to new cases
- Sensitize the communities to enhance routine immunization.

Rubella cases in Malakall PoC, week 43, 2018-06, 2019

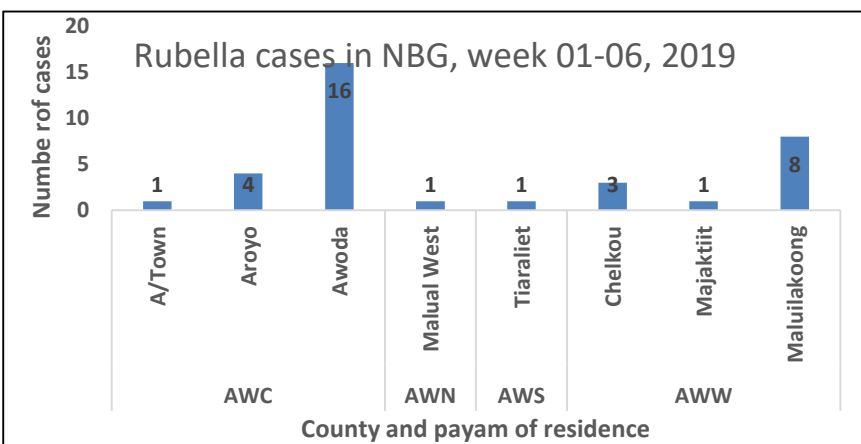
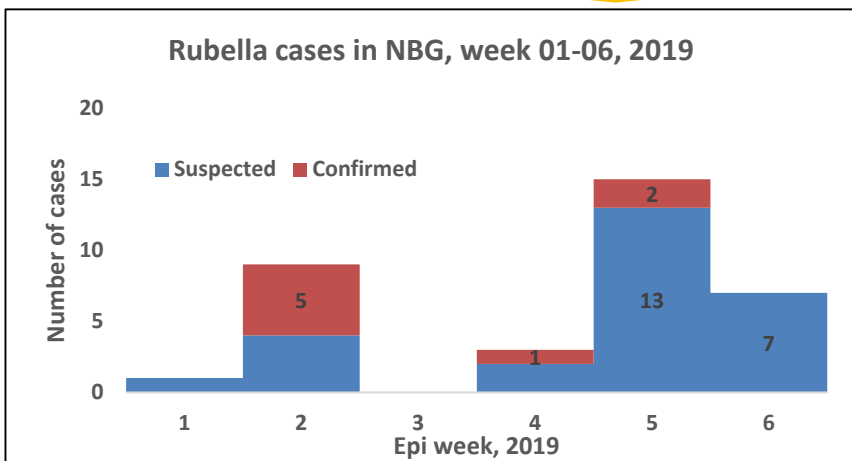


Rubella cases in Malakal, week 43, 2018-06, 2019



Age Groups	Female, n	Male, n	Total, n	Percent, %	Cumulative %
<5	42	60	102	66.2	66.2
5-9	28	15	43	27.9	94.1
10-14	2	6	8	5.2	99.3
15+	0	1	1	0.6	100.0
Total	72	82	154	100.0	

Rubella outbreak – Aweil Center County



Background

- Suspected Measles cases were reported from Aweil Center of Aweil state. As at end of week 6, 2019 there were 35 suspected cases. Eight (8) samples have tested positive for rubella IgM antibodies.

Descriptive Epidemiology

- A total of 35 cases as at the end of 6, 2019. All the cases are children < 15 years of age.
- More males than females as 63% (22) of cases are males
- No deaths reported
- There are no cases reported among females within the reproductive age groups (15-49 years)
- Awoda Payam in Aweil Center had the most cases with 16 (45.7%) cases

Recommended response

1. Supportive symptomatic management of the cases
2. Continue with routine immunization and community awareness.
3. Perform descriptive analysis to monitor for infection among pregnant mothers and females in the reproductive age.

Age Groups	Female, n	Male, n	Total, n	Percent, %	Cumulative %
<5	6	12	18	51.4	51.4
5-9	4	6	10	28.6	80.0
10-14	3	4	7	20.0	100.0
15+	0	0	0	0.0	
Total	13	22	35	100.0	

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

Epidemiological update

- As of 19 Dec 2018, only one (1) PCR confirmed Yellow Fever case in the country
- Out of 35 samples collected by investigation team during active case search and contact tracing, two (2) samples tested presumptively yellow fever IgM positive

Entomological update

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

Laboratory update

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

Recommendations and Ongoing Activities

- Surveillance and laboratory investigation of new suspect cases
- Definitive laboratory results from the samples collected in Sakure during investigation are expected at the end of the month
- Reactive yellow fever vaccination microplan has been submitted to the ICG. The plan targets targets 19,578 individuals aged 9 months to 65 years in Sakure payam, Nzara county, Gbudue state

Suspected Meningitis

Jur River

- **One case** from Kuarjena PHCC in January, 2018; **five cases** from Mapel PHCC with the latest being on 5th Feb, 2019.
- **Three deaths** reported from Maple PHCC
- Cases at Maple PHCC are from Akaow and Mathwoni which are under opposition group
- Preliminary investigation conducted on 9th Feb, 2019

Cuei-Bet

- No new cases have been reported from Cuei-Bet since 11th January
- **Three cases (2 deaths)** were reported between week 52, 2018 and week 02, 2019

Lankien

- Reported from MSF Lankien Facility
- **Three (3) cases**; One (1) in week 02, 2019 and two (2) week 03, 2019
- Cases are from Lankien payam
- Two children aged 6 months and 2.5 years, and an adult aged 43 years
- First case reported onset of illness as 6th Jan, 2019. Latest case reported onset of illness as 18th Jan, 2019
- **One** child died on 20th Jan, 2019. One sample (from the last case) was collected for testing.

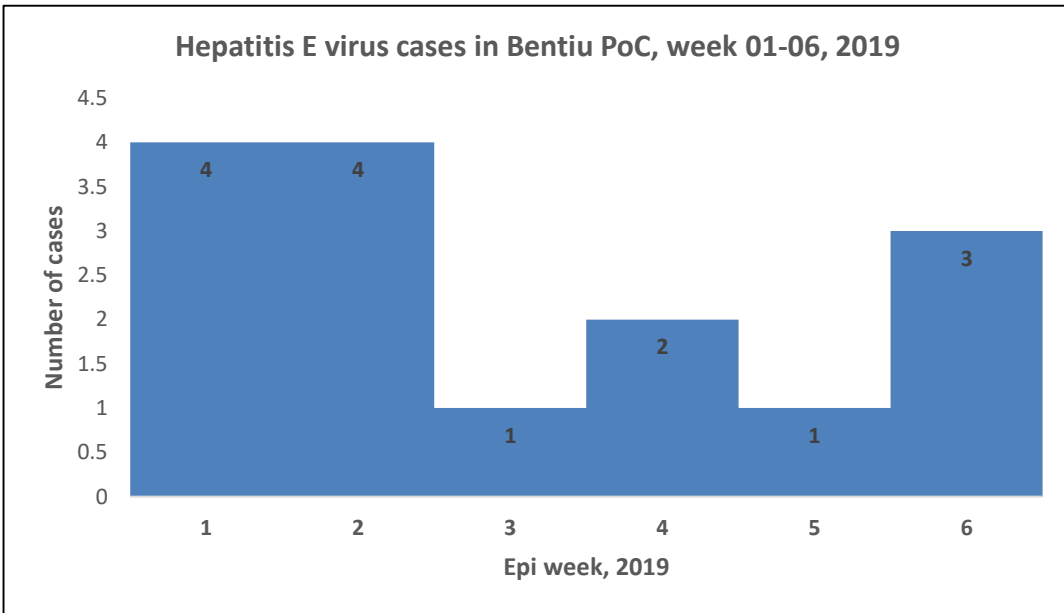
Leer

- **One** suspected case of meningitis reported from MSF ICCM
- 10 years old male from Gueny village
- Date of onset of illness was 18 Jan, 2019. Patient is reported to have recovered

Mundri

- **Three (3) cases** from Mundri ER; 1 from Kotobi and 2 cases from Mundri West counties
- Cases aged between 6 months and 13 years
- First case's date of onset was 27th Dec, 2018 and 20th Jan, 2019 for the last two cases

Hepatitis E, Bentiu PoC



Bentiu PoC

- There has been persistent transmission of HEV in Bentiu PoC
- A total of 15 suspected HEV cases have been reported in Bentiu PoC since the beginning of 2019. There were three (3) new cases reported in week 6.
- There were 159 HEV cases reported in 2018
- All the recent cases have recovered and discharged
- Females constituted 53% (8/15) of the cases
- Age groups 15-44 and 1-4 years had the most cases with 5 (33.3%) cases each.
- Out of the 8 females cases that were reported, one(1) cases is aged 15-44 years
 - At risk of adverse outcomes if infected in the 3rd trimester of pregnancy
- Use of stagnant water likely to be source of infection
- UNICEF has disseminated key HEV messages - on radio [Kondial FM & Bentiu FM] and through community sensitizations.
- Case identification and follow up in the communities and WASH interventions are ongoing.

Age groups	Female, n	Male, n	Total, n	Percent, %	Cumulative %
<1 year	0	0	0	0.0	0
1-4 years	4	1	5	33.3	33.3
5-9 years		1	1	6.7	40.0
10-14 years	1	1	2	13.3	53.3
15-44 years	1	4	5	33.3	86.7
45+years	2		2	13.3	100.0
Total cases	8	7	15	100.0	

Malaria trends

Current malaria trends

Malaria was the leading cause of morbidity and mortality accounting for 57.5% of all morbidities and 70% of all mortalities in week 06, 2019. The trend analyses showed at least 5 counties in three state hubs having malaria trends that are significantly higher than the expected levels. Counties with malaria trends that exceeded the threshold (third quartile of trends for the period 2013-2017) include:

1. **Kwajok hub (Gogrial East, Tonj South, Tonj East)**
2. **Wau hub(Wau)**
3. **Rumbek hub (Rumbek Center)**

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

- The latest EVD alert that was reported from Juba on 09th February 2019 has tested negative Ebola Zaire virus and other viral hemorrhagic fevers.
- In 2019; samples have been obtained from three (3) Ebolavirus alerts; all the three (3) samples tested negative for Ebolavirus and other viral hemorrhagic fevers including RVF, Marburg; Yellow Fever; and CCHF.

EBOLA VIRUS DISEASE[EVD] PREPAREDNESS IN SOUTH SUDAN

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

Ebola update DRC 16th Feb 2019

Current situation

- Currently in 28th week of the outbreak
- **838** Cases [773 confirmed & 65 probable]
- **534** Deaths [469 confirmed & 65 probable]
- **68** Health workers [54 confirmed; 21 dead]

Response update

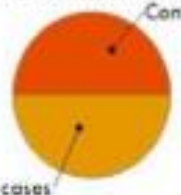
- **8057** contacts under surveillance [83-87% followed up]; **77 680** vaccinated

Affected health zones

- **2** provinces [North Kivu & Ituri]
- **18** health zones [13 North Kivu & 4 Ituri]
- **104** cases in last 21 days; Katwa (65), Butembo (10), Beni (7), Kyondo (4), Manguredjipa (4), Oicha (3), Vuhovi (3), Biena (2), Kalunguta (2), Mabalako (1), Kayna (1), Masereka (1), and Mutwanga (1).

Map date: 12 February 2019

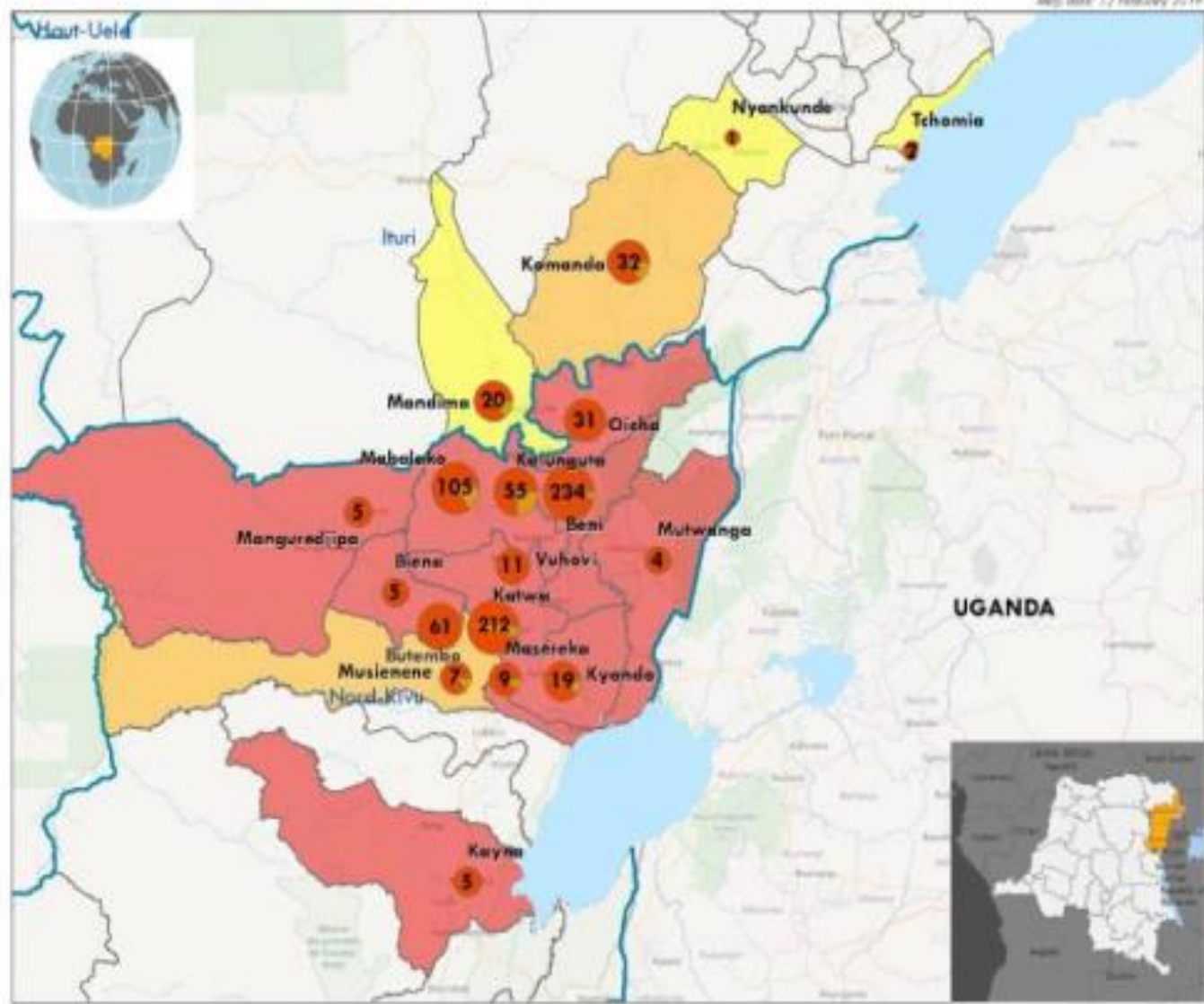
Boundaries and Locations Subject to Confirmation



No. days since last confirmed case reported

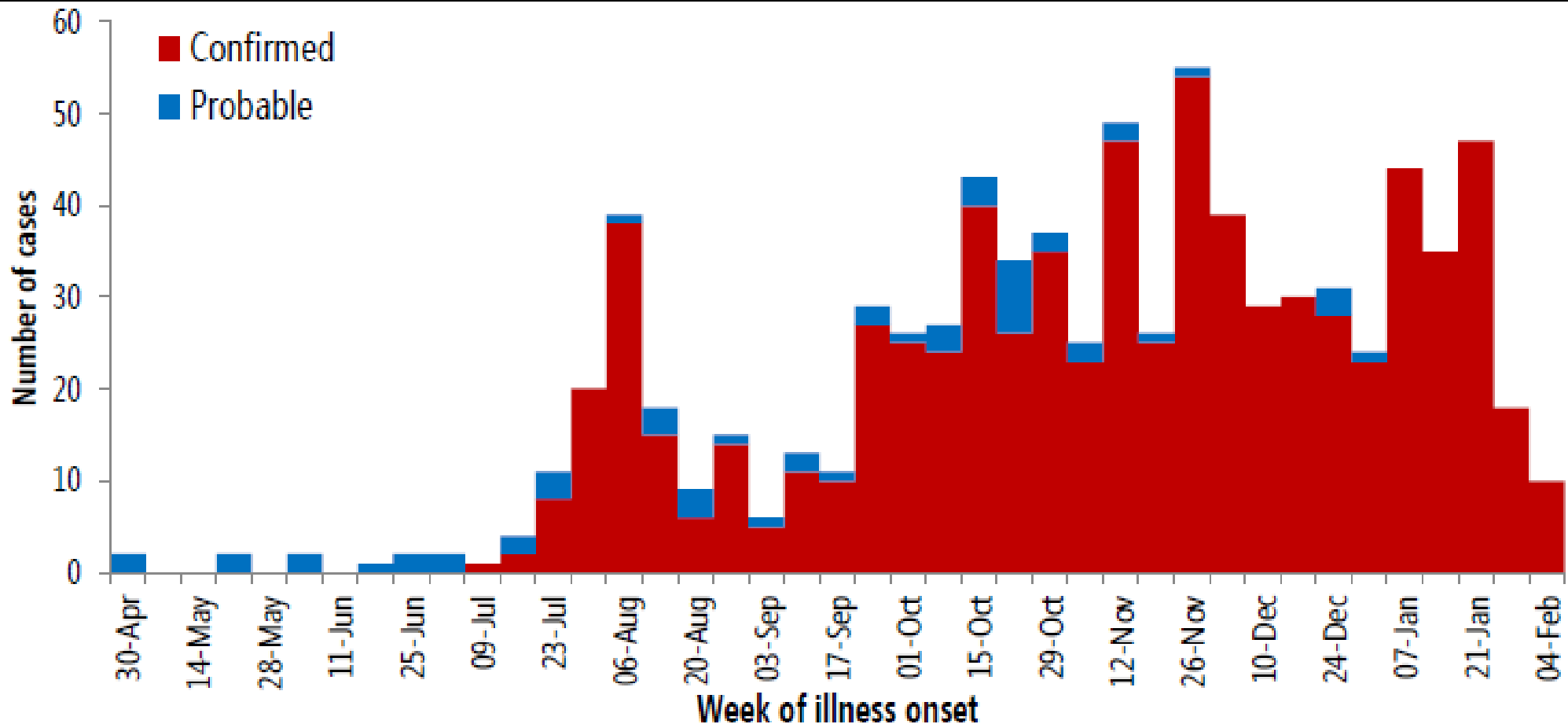


Province	ZS	Date of last reported confirmed case	No. of days since last case
NORD KIVU	Gives	10-02-2019	0
NORD KIVU	Bunamba	9-02-2019	1
NORD KIVU	Vuhovi	9-02-2019	1
NORD KIVU	Kyondo	7-02-2019	3
NORD KIVU	Oicha	7-02-2019	3
NORD KIVU	Kalunguta	3-02-2019	7
NORD KIVU	Mabalako	2-02-2019	8
NORD KIVU	Manguredjpa	1-02-2019	9
NORD KIVU	Masereka	1-02-2019	9
NORD KIVU	Mutwanga	1-02-2019	9
NORD KIVU	Beni	31-01-2019	10
NORD KIVU	Biema	23-01-2019	18
NORD KIVU	Kiyia	22-01-2019	19
NORD KIVU	Musienene	17-01-2019	21
ITURI	Kamania	13-01-2019	30
ITURI	Nyankunde	23-12-2018	50
ITURI	Mandima	13-12-2018	61
ITURI	Tchomia	24-09-2018	140



The boundaries and names shown on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area, or its authorities, or concerning the delimitation of its boundaries. It is intended to be used for general informational purposes only and does not constitute an endorsement or approval by the World Health Organization of the quality or value of the products mentioned or of the claims made for them by its manufacturers or distributors.

EVD trends & case distribution in DR Congo



- Trends in case incidence reflect an increase in the number of cases since the start of the year and continuation of the outbreak across a geographically widely dispersed area

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>

Year: 2019

Week number: W6

From: 2019-02-04

To: 2019-02-10

Name of PoE	Passengers Screening Information			EVD Alerts		
	# screened	# Isolated	# under Voluntary Home Quarantine	# reported	# validated	# suspects
Bazi Border	758	0	0	0	0	0
Ezo	0	0	0	0	0	0
Gangura Border	0	0	0	0	0	0
Juba International Airport	2,985	0	0	0	0	0
Kaya	3,107	0	0	0	0	0
Kaya Border	0	0	0	0	0	0
Khortjo	3,812	0	0	0	0	0
Makpandu	0	0	0	0	0	0
Maridi Airstrip	27	0	0	0	0	0
Nimule Border	0	0	0	0	0	0
Okaba	785	0	0	0	0	0
Panjala Docking River	0	0	0	0	0	0
Pure	2,327	0	0	0	0	0
Sakure Border	0	0	0	0	0	0
Tikori	140	0	0	0	0	0
Wau Airport	56	0	0	0	0	0
Yambio Airport	0	0	0	0	0	0
Yei Airport	25	0	0	0	0	0
Yei RRC	17	0	0	0	0	0
South Sudan	14,039	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 06 of 2019, 14, 039 individuals were screened at various screening points in the country.

MAJOR SUSPECTED AND CONFIRMED OUTBREAKS & EVENTS REPORTED IN 2019

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

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

Outbreaks in 2019

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

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 GgeneXpert and PCR testing.
17/01/2019	Measles	0	Gogriol West		18 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
	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

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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>

