

# South Sudan

## Integrated Disease Surveillance and Response (IDSR)

Annexes W18 2018 (April 30 – May 06)



**World Health  
Organization**  
South Sudan



Ministry of Health  
Republic of South Sudan

## Access and Utilisation

Slide 2 **Map 1** Map of consultations by county (2018)

## Indicator-based surveillance

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## Disease trends and maps

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### Acute Watery Diarrhoea (AWD)

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### Bloody diarrhoea

Slide 10 **Trend in bloody diarrhoea cases over time**

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### Measles

Slide 12 **Trend in measles cases over time**

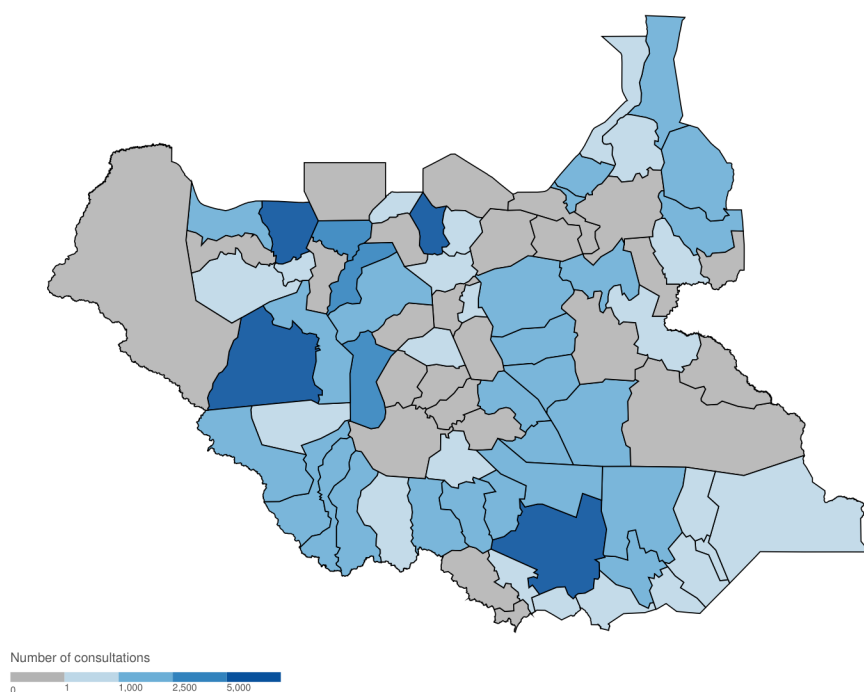
Slide 13 **Measles maps and alert management**

## Sources of data

1. Weekly IDSR Reporting Form
2. Weekly EWARS Reporting Form

## Access and Utilization | Map of consultations by county

Map 1 | Map of total consultations by county (W18 2018)

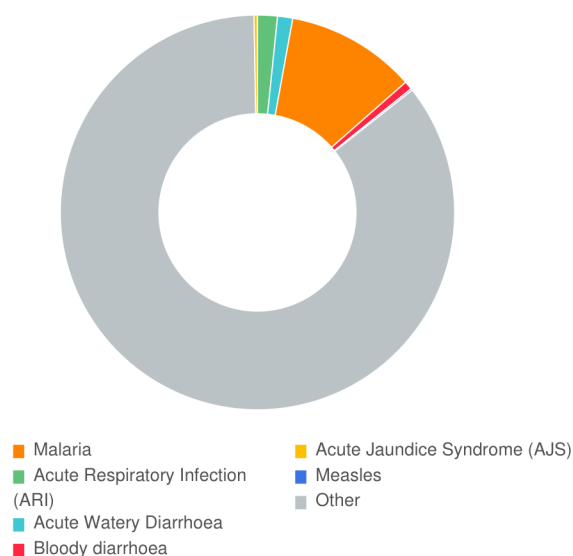


Hub	W18	2018
Aweil	8,396	240,201
Bentiu	9,459	286,865
Bor	7,939	198,917
Juba	10,218	166,494
Kwajok	9,933	414,454
Malakal	8,962	182,308
Rumbek	3,943	272,820
Torit	5,187	99,787
Wau	9,151	146,830
Yambio	12,676	195,656
<b>South Sudan</b>	<b>85,864</b>	<b>2,204,332</b>

The total consultation in the country since week 1 of 2018 is 2,204,332, by hub, Bentiu registered the highest number of consultations as indicated in the table above. The total number of consultations by county is indicated in the map above. See the key for more information.

# Proportional mortality

Figure 1 | Proportional mortality (2018)

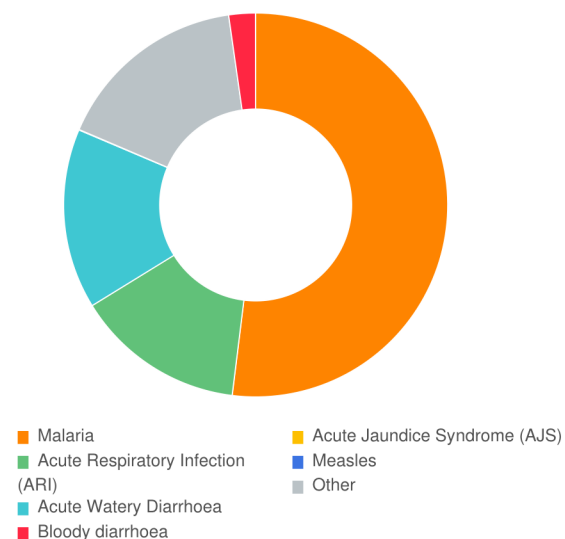


Syndrome	W18		2018	
	# deaths	% mortality	# deaths	% mortality
Malaria	0	0.0%	78	10.7%
ARI	0	0.0%	12	1.6%
AWD	0	0.0%	9	1.2%
Bloody diarrhoea	0	0.0%	5	0.7%
AJS	0	0.0%	2	0.3%
Measles	0	0.0%	1	0.1%
Other	2	100.0%	624	85.4%
<b>Total deaths</b>	<b>2</b>	<b>100%</b>	<b>731</b>	<b>100%</b>

Figure 1, above shows the proportional mortality for 2018, with malaria being the main cause of mortality accounting for 10.7% of the deaths since week 1 of 2018, followed by ARI, acute watery diarrhoea, and bloody diarrhoea.

# Proportional morbidity

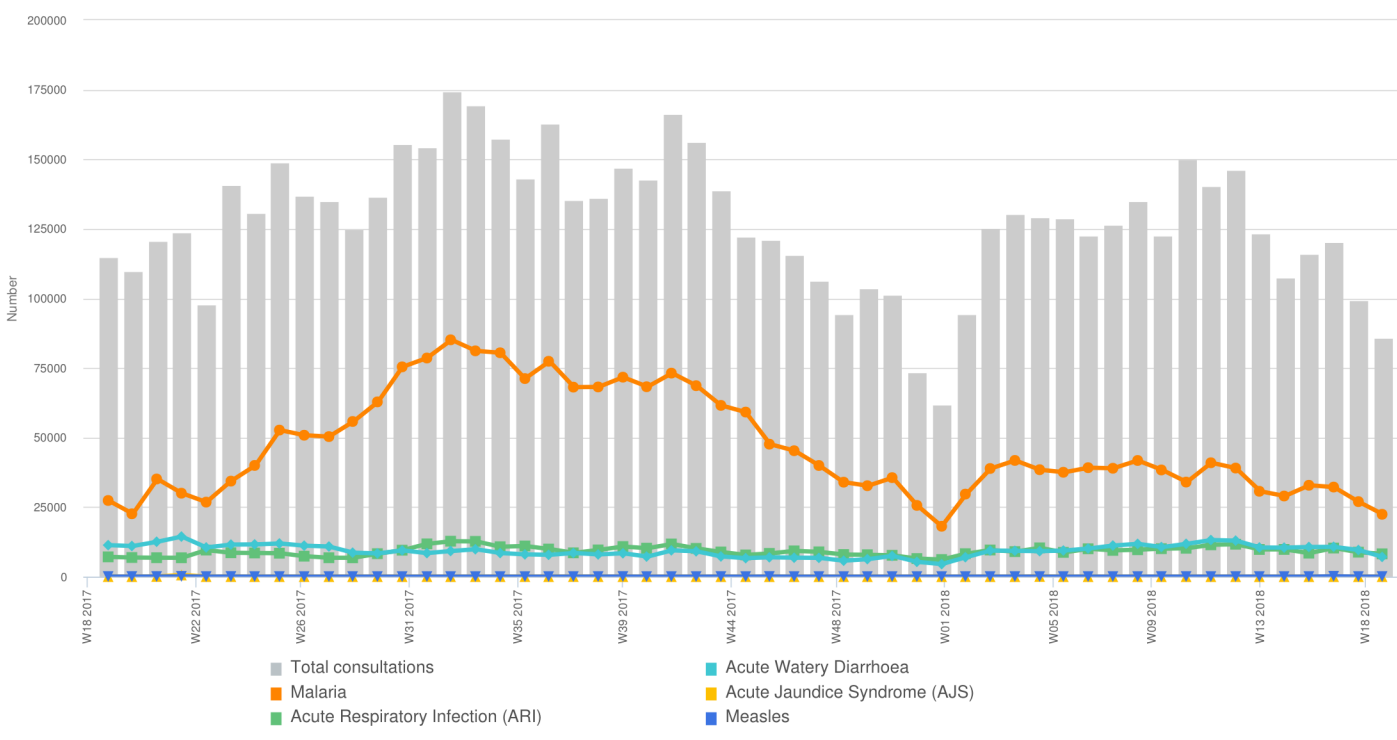
Figure 2 | Proportional morbidity (2018)



Syndrome	W18		2018	
	# cases	% morbidity	# cases	% morbidity
Malaria	22,407	45.5%	632,456	52.0%
ARI	8,197	16.7%	173,630	14.3%
AWD	7,104	14.4%	184,745	15.2%
Bloody diarrhoea	871	1.8%	27,319	2.2%
AJS	12	0.0%	82	0.0%
Measles	19	0.0%	299	0.0%
Other	10,597	21.5%	198,685	16.3%
<b>Total cases</b>	<b>49,207</b>	<b>100%</b>	<b>1,217,216</b>	<b>100%</b>

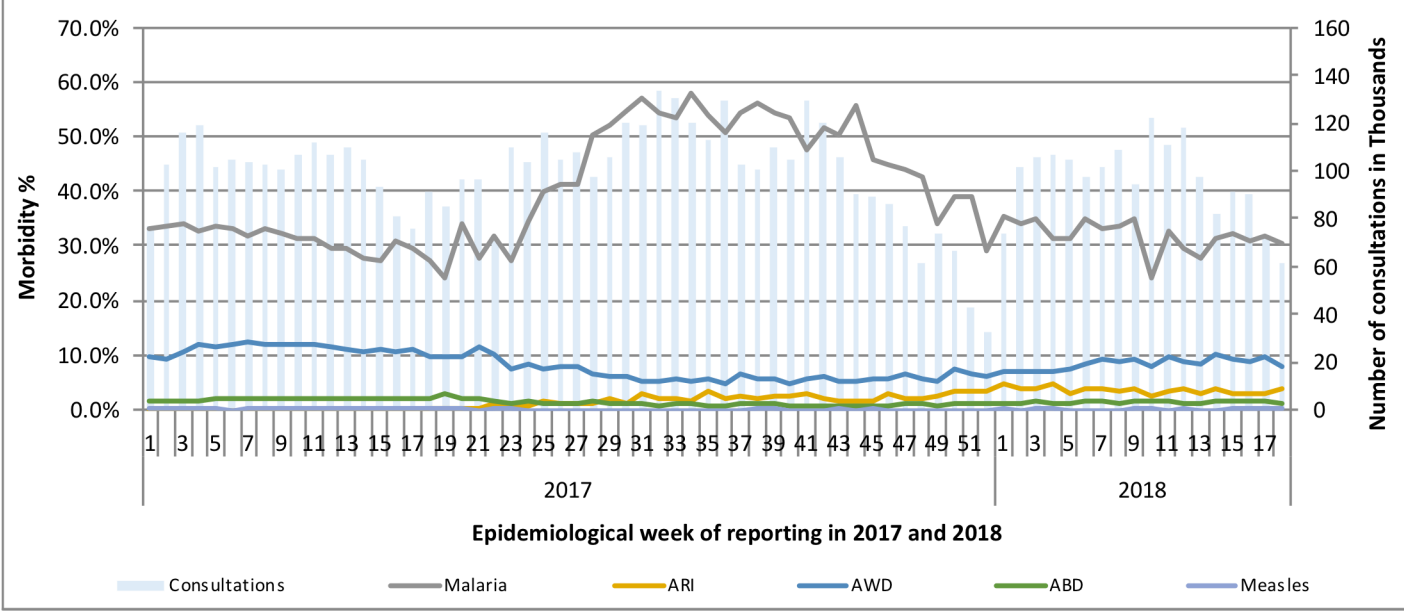
Figure 2, indicates the top causes of morbidity in the country, with malaria being the leading cause of morbidity 632,456 (52.0%) followed by ARI, AWD and ABD respectively since week 1 of 2018. refer to the figure above for more information.

**Figure 3 | Trend in total consultations and key diseases (W18)**



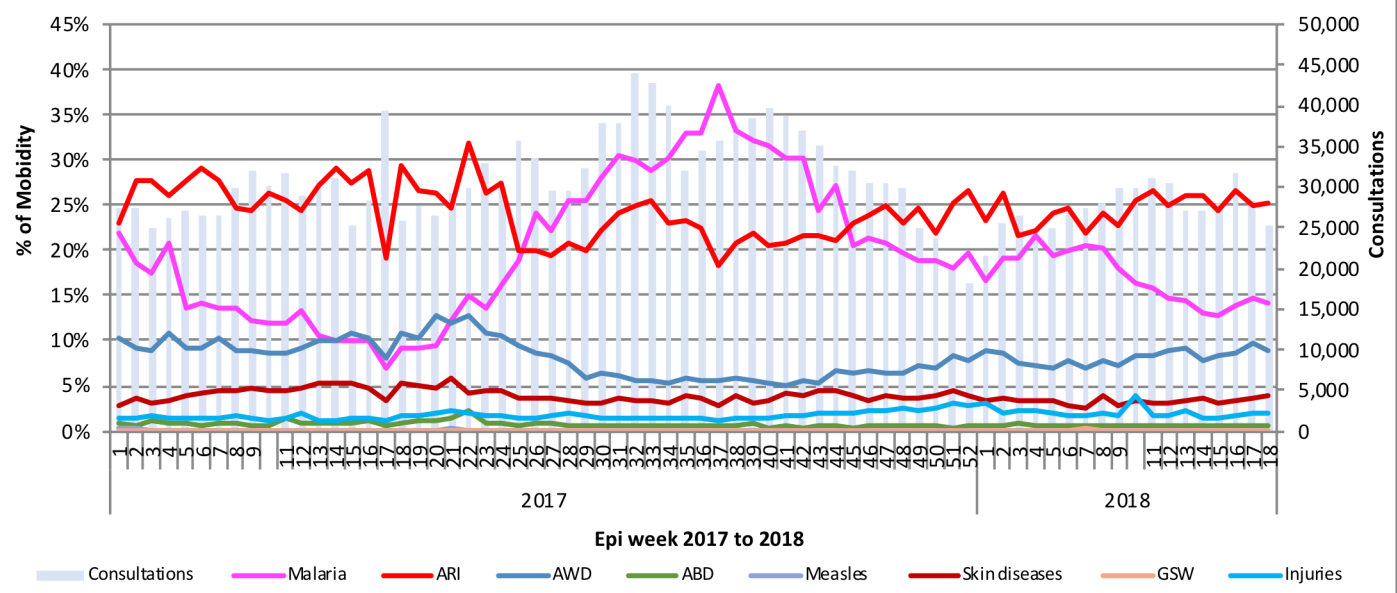
## IDSR Proportionate morbidity trends - in relatively stable states

**Fig. 1 | IDSR Proportionate morbidity trends, week 1, 2017 to 18, 2018**



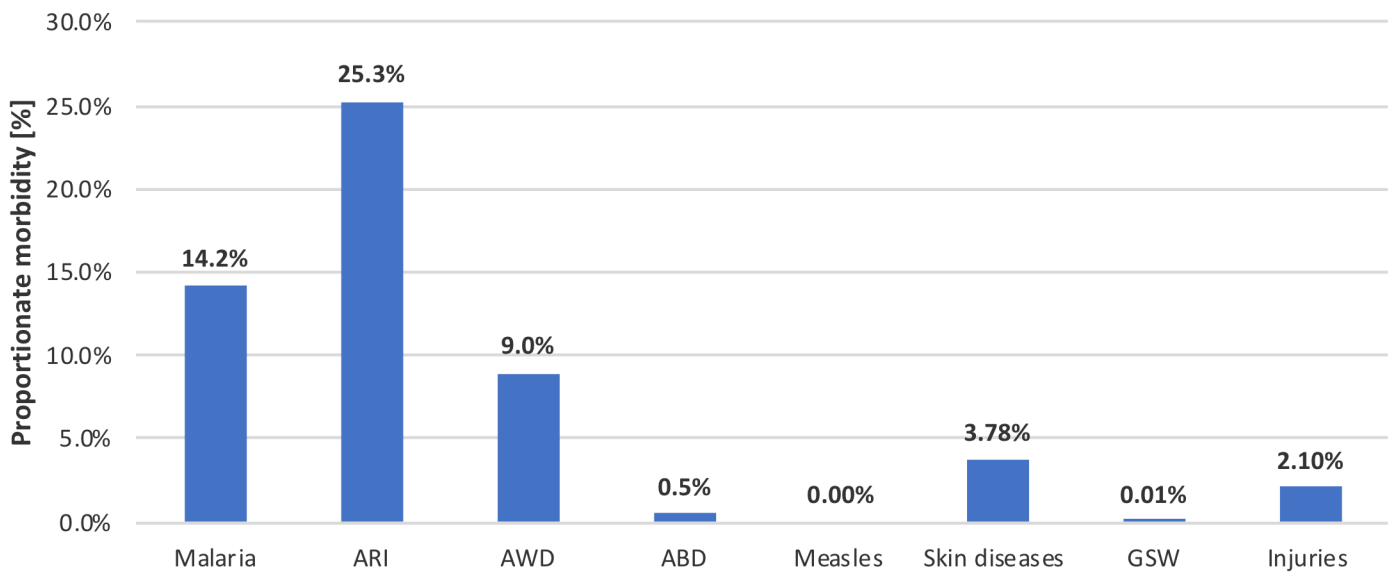
In the relatively stable states, malaria is the top cause of morbidity accounting for 30.5% of the consultations in week 18 (representing a decline from 31.8% in week 17).

Fig. 2 | IDP Proportionate morbidity trends, week 01, 2017, to week 18, 2018



Among the IDPs, ARI and malaria accounted for 25.3% and 14.2% of consultations in week 18. The other significant causes of morbidity in the IDPs include AWD, skin diseases, and injuries.

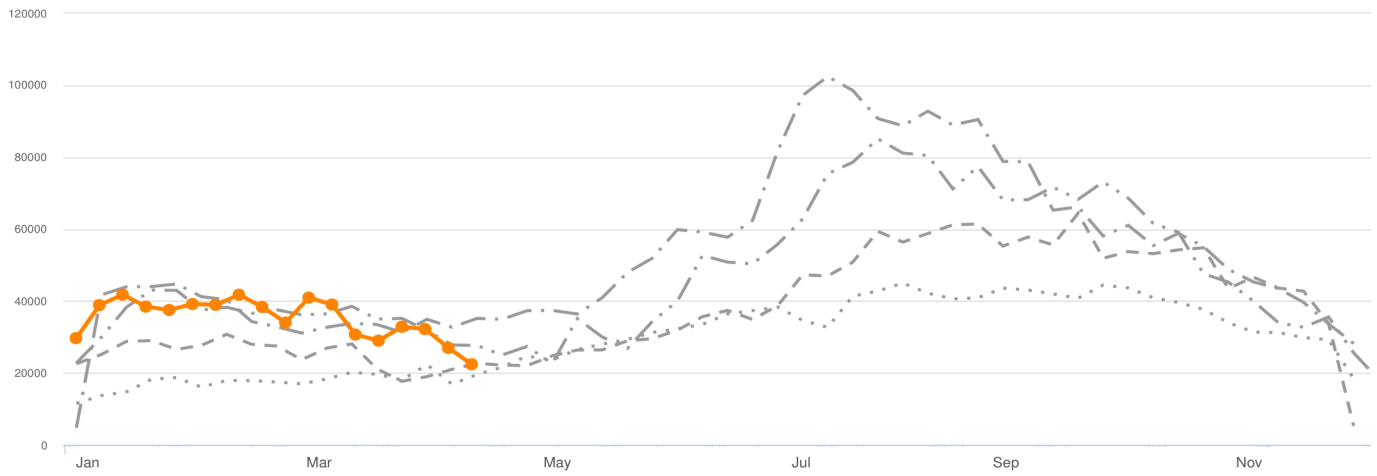
Causes of morbidity among the IDPs weeks 1 to 18, 2018



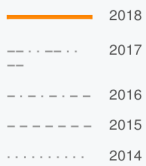
The top causes of morbidity in the IDPs in 2018 include ARI, malaria, AWD, skin diseases, injuries, and ABD.

# Malaria | Trends over time

**Figure 4a** | Trend in number of cases over time (South Sudan)



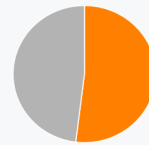
**Graph legend**



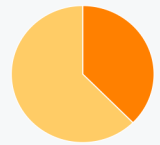
**Key malaria indicators (2018)**

**632,456** Cases  
**78** Deaths  
**42** Alerts

**Figure 4b** | % morbidity



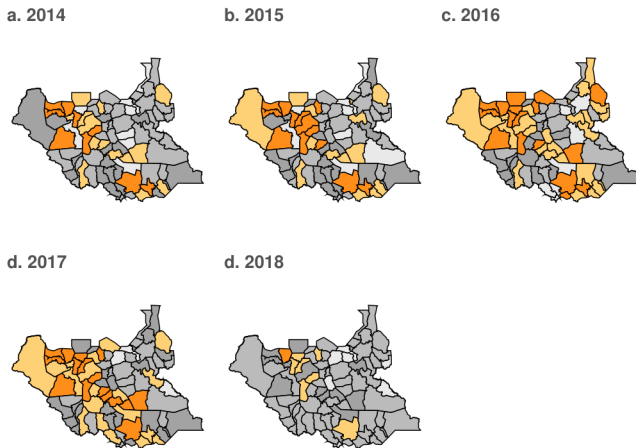
**Figure 4c** | Age breakdown



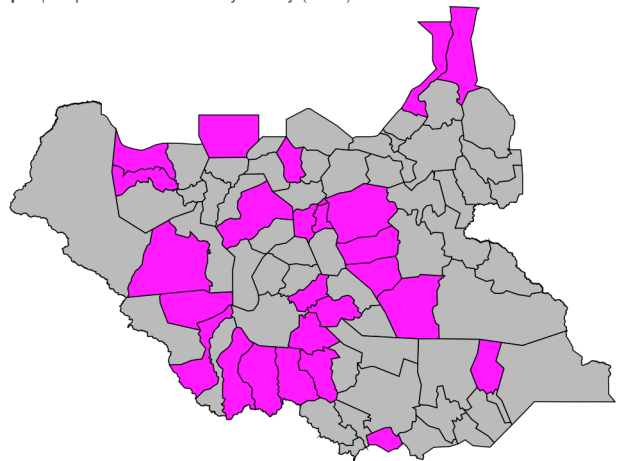
Malaria is the top course of Morbidity in the country, a total of 632,456 cases with 78 deaths registered since week 1 of 2018. malaria trend for week 18 of 2018 is above 2014, 2015, however, is below the trend for 2016 and 2017 as shown in the figure 4a, above.

## Malaria | Maps and Alert Management

**Map 2** | Map of malaria cases by county (2018)



**Map 3** | Map of malaria alerts by county (2018)



**Map legend**

Number of malaria cases



Number of malaria alerts



**Alert threshold**

Twice the average number of cases over the past 3 weeks. Source: IDSR

**42** Alerts  
**28** Verified

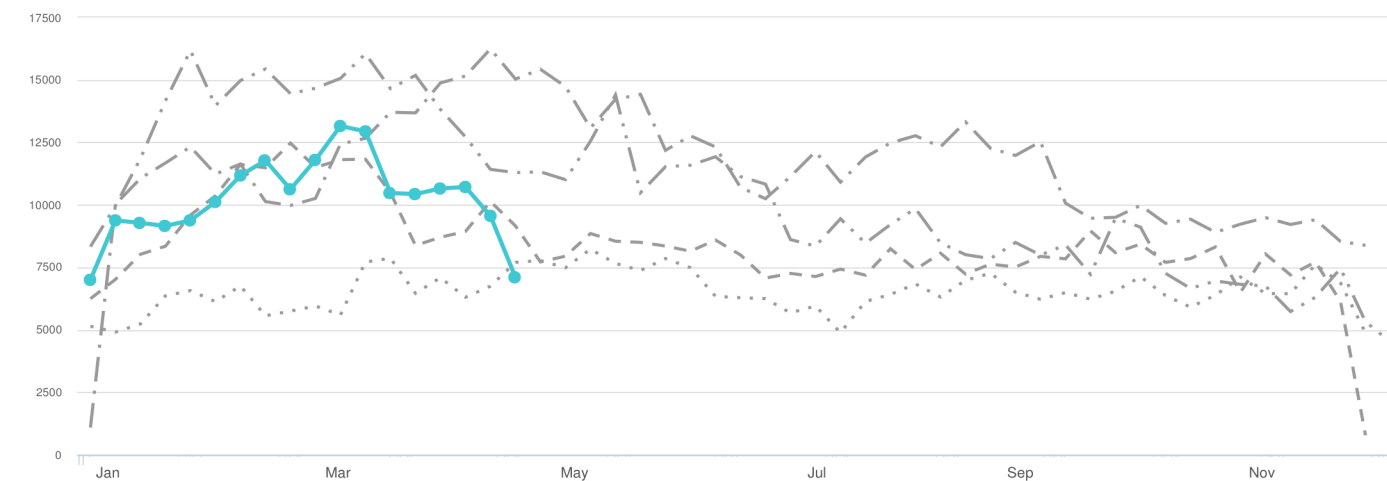
**Risk Assessment**



Since the beginning of the year, a total of 42 malaria alerts have been triggered, 28 of those were verified. The Maps above indicate the location reporting malaria alerts from 2014, 2015, 2016, 2017, and 2018.

# Acute Watery Diarrhoea | Trends over time

Figure 5a | Trend in AWD cases over time (South Sudan)

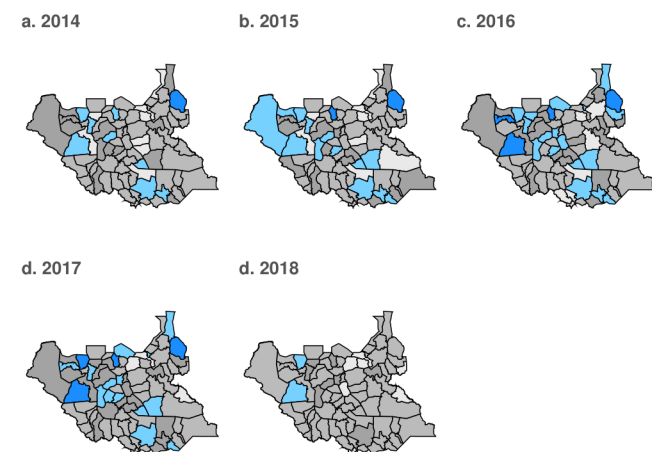


<p><b>Graph legend</b></p> <ul style="list-style-type: none"> <li>—●— 2018</li> <li>- - - - - 2017</li> <li>- - - - - 2016</li> <li>- - - - - 2015</li> <li>..... 2014</li> </ul>	<p><b>Key AWD indicators (2018)</b></p> <table border="0" style="width: 100%;"> <tr> <td style="font-size: 24px; font-weight: bold;">184,745</td> <td style="font-size: 24px; font-weight: bold;">9</td> <td style="font-size: 24px; font-weight: bold;">62</td> </tr> <tr> <td>Cases</td> <td>Deaths</td> <td>Alerts</td> </tr> </table>	184,745	9	62	Cases	Deaths	Alerts	<p><b>Figure 5b   % morbidity</b></p>	<p><b>Figure 5c   Age breakdown</b></p>
184,745	9	62							
Cases	Deaths	Alerts							

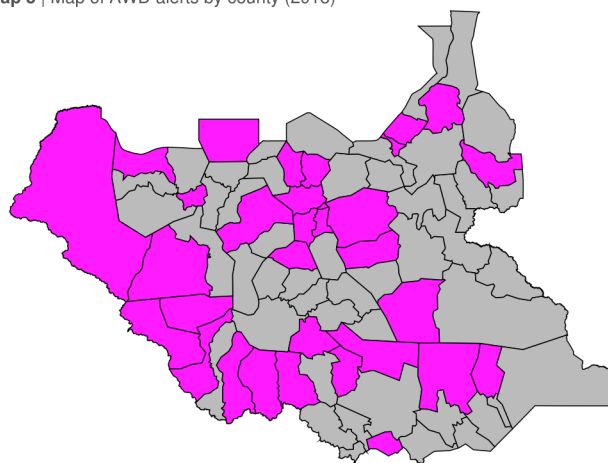
AWD is one of the top causes of morbidity in the country with 184,745 cases reported since week 1 of 2018 including 9 deaths. AWD trend for 2018 is below 2015, 2016, and 2017 as shown in figure 5a, above.

## Acute Watery Diarrhoea | Maps and Alert Management

Map 4 | Map of AWD cases by county (2018)



Map 5 | Map of AWD alerts by county (2018)

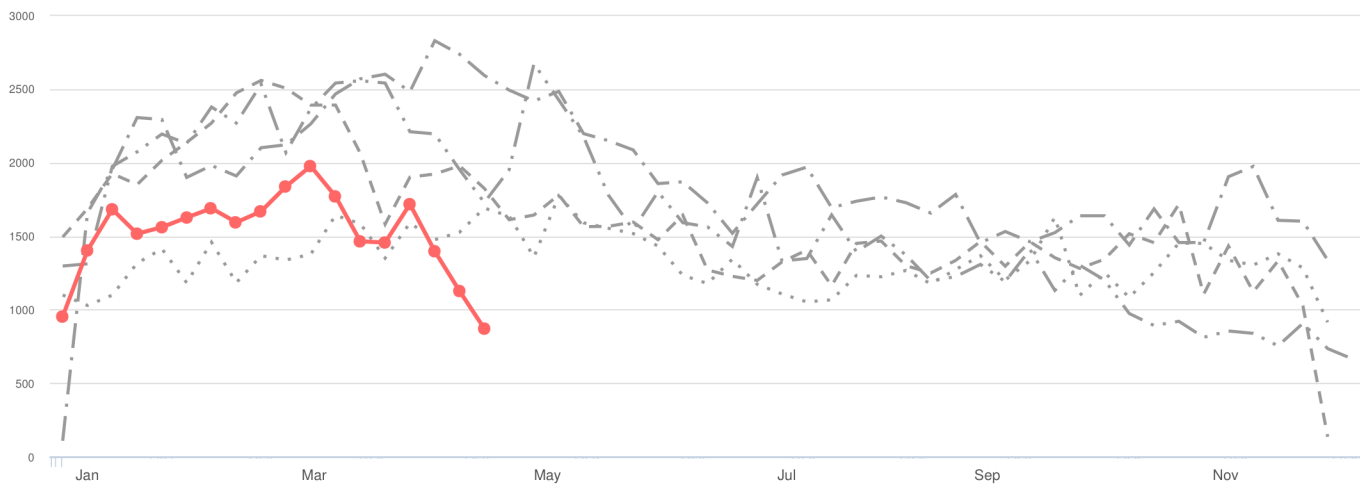


<p><b>Map legend</b></p> <p>Number of AWD cases</p> <p>Number of AWD alerts</p> <p><b>Alert threshold</b> Twice the average number of cases over the past 3 weeks. Source: IDSR</p>	<p><b>62</b></p> <p>Alerts</p>	<p><b>39</b></p> <p>Verified</p>	<p><b>Risk Assessment</b></p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="background-color: #28a745; color: white; font-weight: bold; font-size: 24px;">0</td> <td style="background-color: #ffc107; color: white; font-weight: bold; font-size: 24px;">0</td> <td style="background-color: #fd7e14; color: white; font-weight: bold; font-size: 24px;">0</td> <td style="background-color: #dc3545; color: white; font-weight: bold; font-size: 24px;">0</td> </tr> <tr> <td>Low Risk</td> <td>Moderate Risk</td> <td>High Risk</td> <td>Very High Risk</td> </tr> </table>	0	0	0	0	Low Risk	Moderate Risk	High Risk	Very High Risk
0	0	0	0								
Low Risk	Moderate Risk	High Risk	Very High Risk								

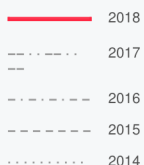
The number of AWD alerts triggered since week 1 of 2018 is 62, out of which 39 were verified. Maps above highlight the areas reporting AWD alerts from 2014 to 2018.

# Acute Bloody Diarrhoea | Trends over time

**Figure 6a** | Trend in bloody diarrhoea cases over time (South Sudan)



**Graph legend**



**Key bloody diarrhoea indicators (2018)**

**27,319**

Cases

**5**

Deaths

**78**

Alerts

**Figure 6b** | % morbidity



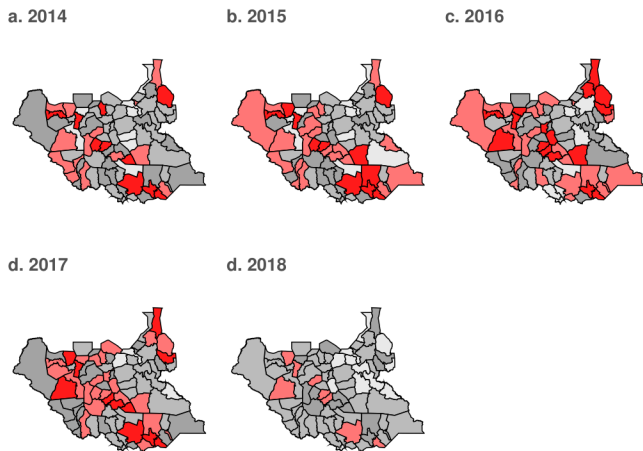
**Figure 6c** | Age breakdown



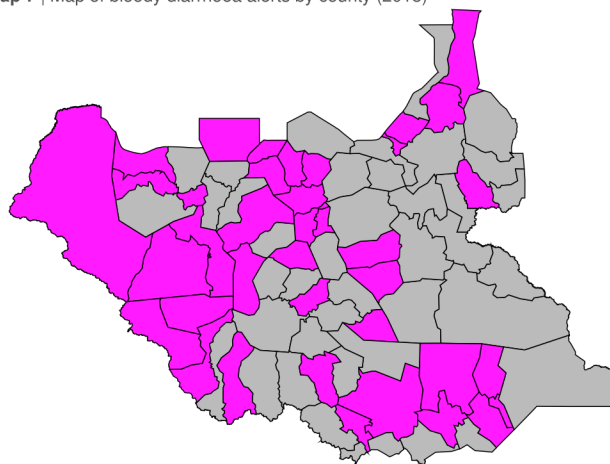
Since week 1 of 2018, a total of 27,319 cases of ABD have been reported country wide including 5 death. ABD trend for 2018 is below 2014, 2015, 2016, and 2017 respectively. Refer to figure 6a, above.

# Acute Bloody Diarrhoea | Maps and Alert Management

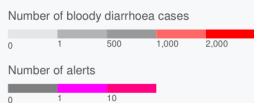
**Map 6** | Map of bloody diarrhoea cases by county (2018)



**Map 7** | Map of bloody diarrhoea alerts by county (2018)



**Map legend**



**78**

Alerts

**41**

Verified

**Risk Assessment**



**Alert threshold**

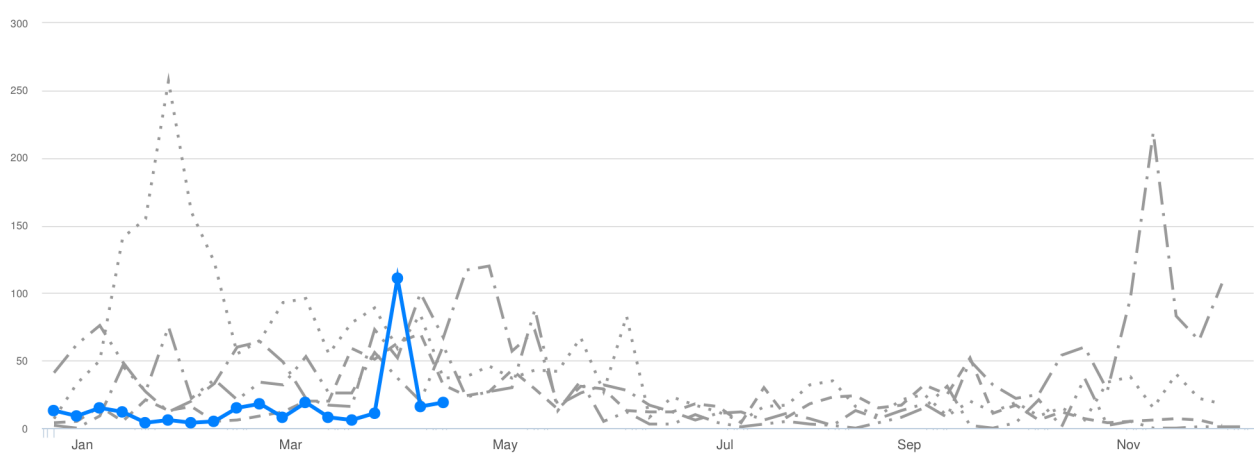
Twice the average number of cases over the past 3 weeks. Source: IDSR

Total of 78 alerts were generated since week 1 of 2018, of which 41 were verified by the county surveillance team. Maps indicating areas triggering alerts since 2014 to 2018 are shown above.



# Measles | Trends over time

Figure 7a | Trend in number of cases over time (South Sudan)

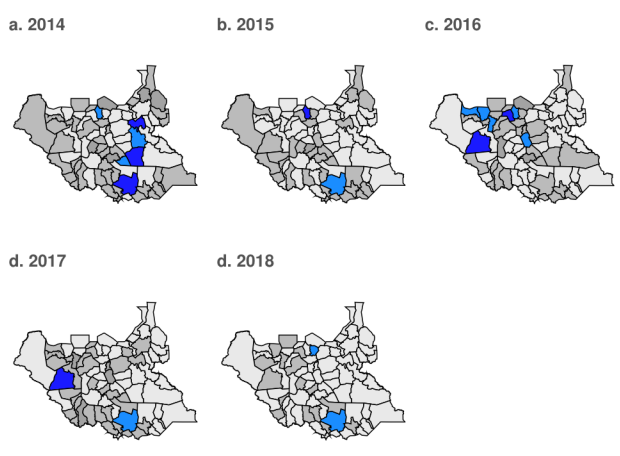


<b>Graph legend</b> — 2018 - - - 2017 - · - 2016 - - - 2015 ····· 2014	<b>Key measles indicators (2018)</b>  <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>299</b> Cases         </div> <div style="text-align: center;"> <b>1</b> Deaths         </div> <div style="text-align: center;"> <b>56</b> Alerts         </div> </div>	<b>Figure 7b   % morbidity</b> 	<b>Figure 7c   Age breakdown</b> 
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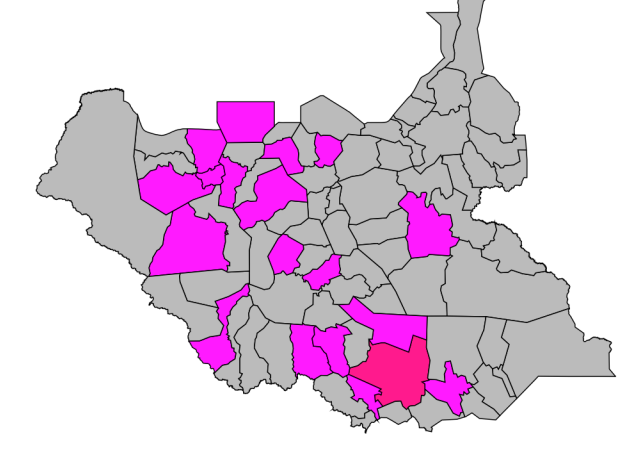
Since the beginning of 2018, at least 299 suspect measles cases including 1 death (CFR 0.33%) have been reported. Of these, 84 suspect cases have undergone measles case-based laboratory-backed investigation with 68 samples collected out of which 14 measles IgM positive cases; 14 clinically confirmed cases; and 3 cases confirmed by epidemiological linkage.

## Measles | Maps and Alert Management

Map 7 | Map of measles cases by county (2018)



Map 8 | Map of measles alerts by county (2018)



<b>Map legend</b> Number of measles cases 0 1 50 100 250 Number of measles alerts 0 1 10 <b>Alert threshold</b> 1 case. Source: IDSR	<b>56</b> Alerts	<b>41</b> Verified	<b>Risk Assessment</b> <div style="display: flex; justify-content: space-around;"> <div style="background-color: #2e8b57; color: white; padding: 5px; text-align: center;"> <b>1</b> Low Risk         </div> <div style="background-color: #ffd700; color: black; padding: 5px; text-align: center;"> <b>1</b> Moderate Risk         </div> <div style="background-color: #ffa500; color: black; padding: 5px; text-align: center;"> <b>0</b> High Risk         </div> <div style="background-color: #ff0000; color: white; padding: 5px; text-align: center;"> <b>0</b> Very High Risk         </div> </div>
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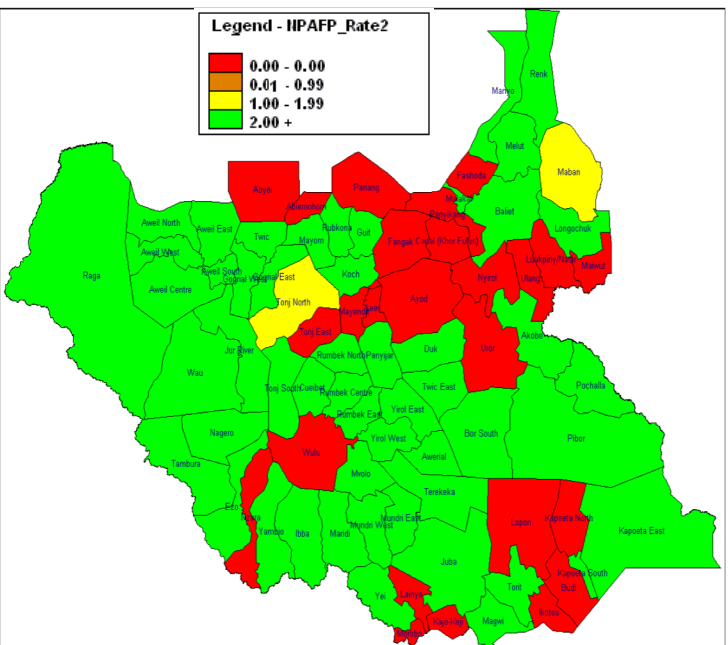
Since week 1 of 2018, 56 alerts of measles were triggered and 41 of those have been verified at county level. Maps of areas raising alerts from 2014 to 2018 are shown above.

In week 17, 2018, twelve (12) new AFP cases were reported from Central Equatoria, Unity, Western Bahr el Ghazal, and Western Equatoria hubs. This brings the cumulative total for 2018 to 123 AFP cases.

The annualized non-Polio AFP (NPAFP) rate (cases per 100,000 population children 0-14 years) in 2018 is 4.6 per 100,000 population of children 0-14 years (target  $\geq 2$  per 100,000 children 0-14 years).

Stool adequacy was 86% in 2018, a rate that is higher than the target of  $\geq 80\%$ .

Environmental surveillance ongoing since May 2017; with 23 samples testing positive for non-polio enterovirus (NPEV) in 2017 and seven NPEV positive samples in 2018.



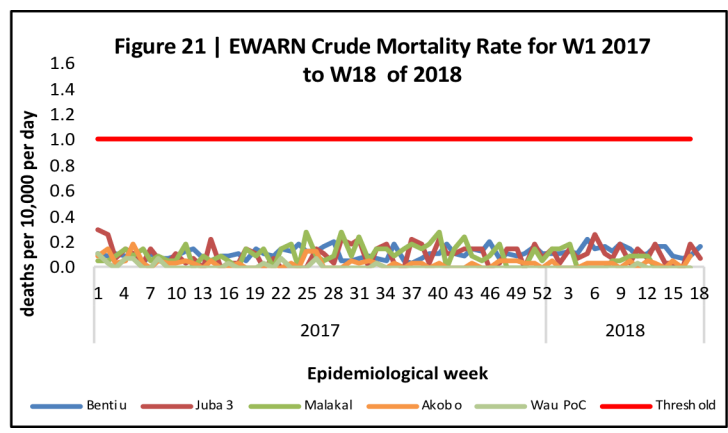
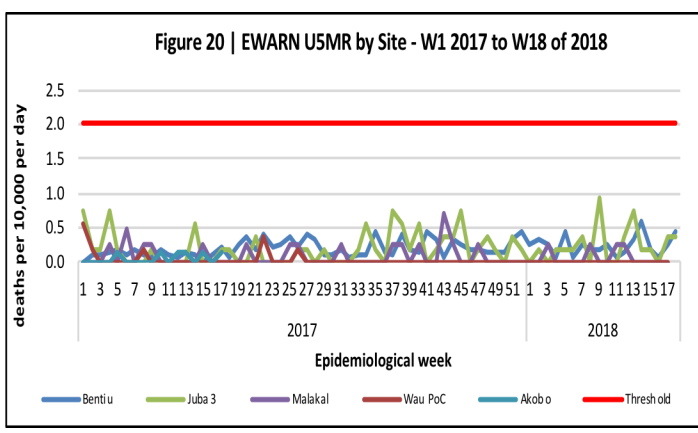
**Mortality in the IDPs** Source: South Sudan Weekly AFP Bulletin

**Table 6 | Proportional mortality by cause of death in IDPs W18 2018**

Cause of Death by IDP site	Bentiu		Juba 3	Total deaths	Proportionate mortality [%]
	<5yrs	$\geq 5$ yrs	<5yrs		
Acute watery diarrhoea		1		1	7
Perinatal death	2			2	13
SAM	2			2	13
Septicemia	1			1	7
TB/HIV/AIDS		2		2	13
HIV/AIDS			1	1	7
Burns	1			1	7
TB	1	1	1	3	20
Unkown		1		1	7
Multiorgan failure		1		1	7
<b>Total deaths</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>15</b>	<b>100</b>

Among the IDPs, mortality data was received from Bentiu PoC & UN House PoC in week 18. (Table 6). **A total of 15** deaths were reported during the week. During the week, 9 (60%) deaths were recorded among children <5 years in (Table 6).

The causes of death during week 18 are shown in Table 6.



The U5MR in all the IDP sites that submitted mortality data in week 18 of 2018 is below the emergency threshold of 2 deaths per 10,000 per day (Fig. 20).

The Crude Mortality Rates [CMR] in all the IDP sites that submitted mortality data in week 18 of 2018 were below the emergency threshold of 1 death per 10,000 per day (Fig. 21).

Mortality in the IDPs - Overall mortality in 2018

**Table 7 | Mortality by IDP site and cause of death as of W18, 2018**

IDP site	Acute watery diarrhoea	Cancer	Gunshot wound	Heart Failure	Kala-Azar	Malaria	Meningitis	Perinatal death	Pneumonia	Rabies	SAM	Sepsis	TB/HIV/AIDS	Trauma	HIV/AIDS	TB	Others	Grand Total
Bentiu	5	1	2	1	1	6	3	19	7	1	7	14	10	1	10		99	187
Juba 3	1	1		1		5		3	2		2		1		12	7	17	52
Malakal		1		2	1			1								2	11	18
Akobo			1		2	1			1		2	2	1	1	1	1	3	16
Wau PoC						1											0	1
<b>Grand Total</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>13</b>	<b>3</b>	<b>23</b>	<b>10</b>	<b>1</b>	<b>11</b>	<b>16</b>	<b>12</b>	<b>2</b>	<b>23</b>	<b>10</b>	<b>130</b>	<b>274</b>
<b>Proportionate mortality [%]</b>	<b>2%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>5%</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>	<b>0%</b>	<b>4%</b>	<b>6%</b>	<b>4%</b>	<b>1%</b>	<b>8%</b>	<b>4%</b>	<b>47%</b>	<b>100%</b>

- A total of 274 deaths have been reported from the IDP sites in 2018 [Table 7](#).
- The top causes of mortality in the IDPs in 2018 are shown in [Table 7](#).

## For more help and support, please contact:

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### Notes

WHO and the Ministry of Health gratefully acknowledge health cluster and health pooled fund (HPF) partners who have reported the data used in this bulletin. We would also like to thank ECHO and USAID for providing financial support.

The data has been collected with support from the EWARS project. This is an initiative to strengthen early warning, alert and response in emergencies. It includes an online, desktop and mobile application that can be rapidly configured and deployed in the field. It is designed with frontline users in mind, and built to work in difficult and remote operating environments. This bulletin has been automatically published from the EWARS application.

More information can be found at <http://ewars-project.org>

