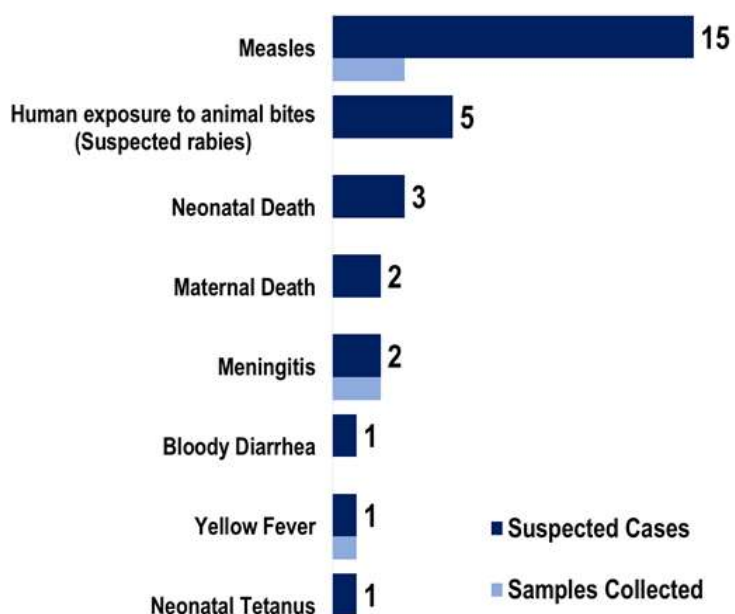


Country Population: 4,373,279 | Volume 09, Issue 47 Nov. 20-26, 2017 | Data Source: CSOs from 15 Counties and Lab

## Highlights

**Figure 1. Public Health Events Reported in Epi-week 47**



## Keynotes and Events of Public Health Significance

- A total of **30** suspected cases of immediately reportable diseases and events including **5 deaths** were reported from 6 counties
- Health facility reporting **completeness and timeliness are 23%** respectively
- **Eleven** confirmed cases of measles were reported Montserrado, Margibi, Rivercess and Nimba Counties
- **One** confirmed Lassa fever was reported from Bong County
- **One** confirmed yellow fever reported from Rivercess county

## Reporting Coverage

**Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 47, 2017**

County	Number of Expected Report from Health Facility	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	23	-	-	-	-
Bong	55	-	-	-	-
Gbarpolu	15	6	6	40	40
Grand Bassa	33	-	-	-	-
Grand Cape Mount	32	-	-	-	-
Grand Gedeh	24	-	-	-	-
Grand Kru	19	-	-	-	-
Lofa	59	59	59	100	100
Margibi	55	55	55	100	100
Maryland	25	-	-	-	-
Montserrado	283	-	-	-	-
Nimba	74	74	74	100	100
Rivercess	19	-	-	-	-
River Gee	19	19	19	100	100
Sinoe	35	35	35	100	100
<b>Liberia</b>	<b>770</b>	<b>174</b>	<b>174</b>	<b>23</b>	<b>23</b>

Legend	≥80	<80

- Six of the fifteen counties submitted weekly IDSR report on time
- The national target for weekly IDSR reporting is 80%

**174 (23%)**  
Health facilities out of 759 reported timely IDSR data

**31 (34%)**  
Health districts out of 91 reported IDSR data

**174(23%)**  
Health facilities reported IDSR data

## Vaccine Preventable Diseases

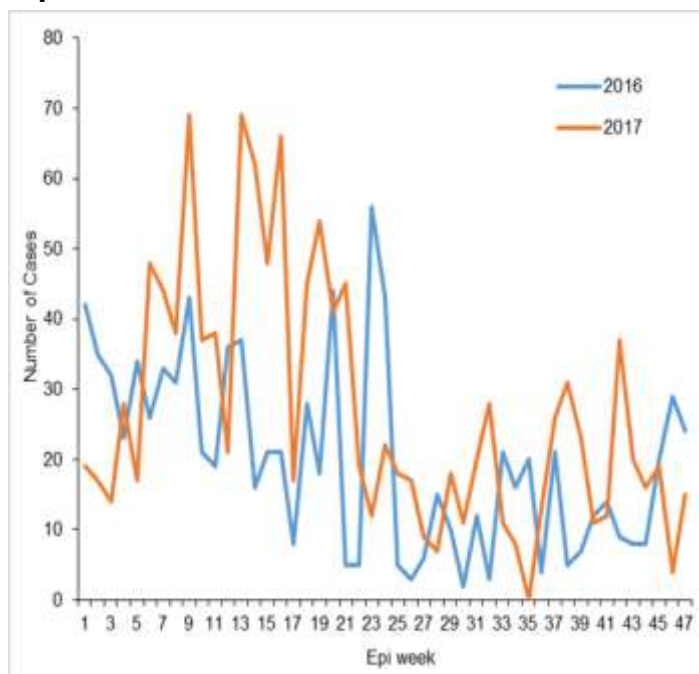
### Measles

- Fifteen suspected cases were reported from the following counties: Nimba (11), Margibi (2), Lofa (1), and Sinoe (1)
- Eleven (11) cases have been confirmed positive:
  - Montserrado County (Commonwealth - 2, Bushrod - 2, St. Paul - 1 and Somalia Drive - 2 Districts)
  - Nimba County (Tappita District - 1, Rivercess County (Doedain District - 1) and
  - Margibi County ( Maba Kaba District - 1)
- Of the 15 suspected cases reported this week, 4 (26.6%) were reported to have been previously vaccinated, 6 (40%) were not vaccinated, and 5 (33.3%) had unknown vaccination status
- All 15 of the suspected cases were  $\geq 5$  years of age
- Cumulatively, since Epi week one, 1586 suspected cases have been reported, of which 1082 were tested: 238 (21.9%) positive, 792 (73.2%) negative, and 52 (4.8%) equivocal. Four hundred sixty two (30.3%) of the suspected cases were compatible and epi-linked. Of the 840 equivocal and negative cases, 835 (98.6%) samples have been tested for rubella, of which, 342 (40.8%) were positive

### Public Health Actions

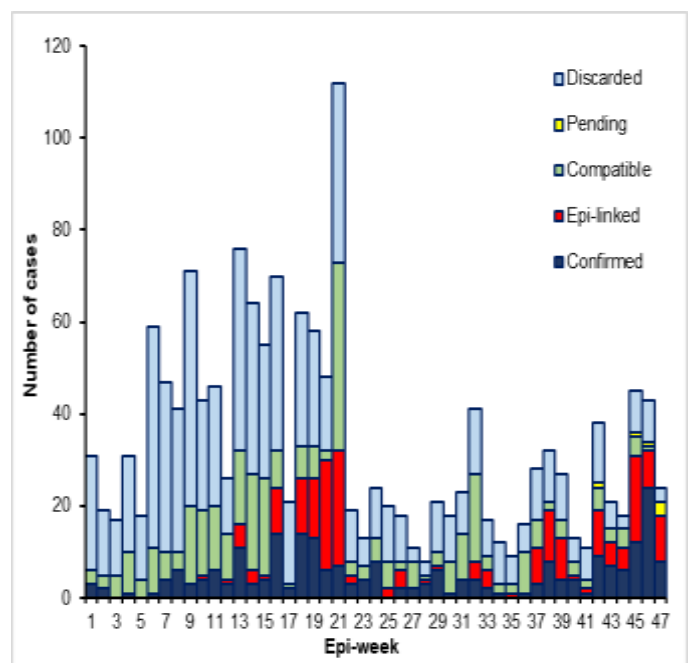
- Active case search ongoing
- Case management initiated for all suspected cases
- Samples were collected from 3 of the suspected cases and sent to the National Reference Laboratory for confirmation

**Figure 2. Comparative weekly trend of suspected cases of measles reported, Liberia, Epi weeks 1 – 47, 2016 & 2017**



Note: The x-axis showing only odd number of the Epi week

**Figure 3. Epi-classification of measles cases reported, Liberia, Epi weeks 1 – 47, 2017 (n=1586)**



### Acute Flaccid Paralysis (Suspected Polio)

- Zero cases of Acute Flaccid Paralysis were reported this week
- Cumulatively, since Epi week one, 75 Acute Flaccid Paralysis cases have been reported, of which, 73 (97.3%) have tested negative for poliovirus and 2 (2.7%) are pending laboratory confirmation

## Neonatal Tetanus

- One case of Neonatal tetanus was reported from Margibi County
- Cumulatively, since Epi-week one, 18 clinically diagnosed cases have been reported

## Viral Hemorrhagic Diseases

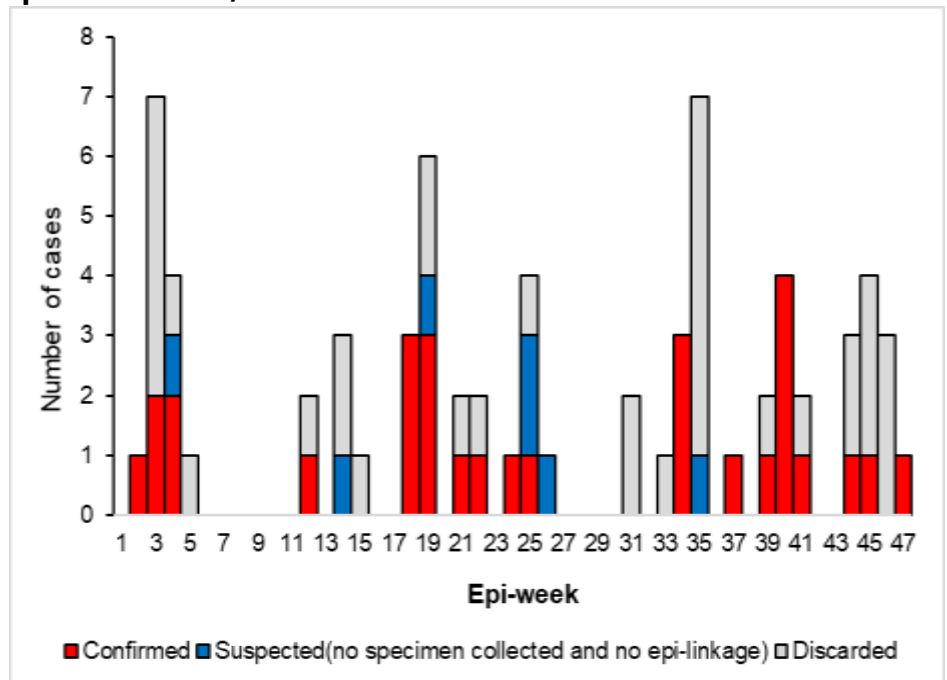
### Ebola Virus Disease (EVD)

- Zero EVD alerts were reported this week
- Cumulatively, since Epi-week one, 495 EVD alerts have been reported, all of which have tested negative by PCR

### Lassa fever

- Zero suspected cases of Lassa Fever were reported this week
- Cumulatively, since Epi-week one, 70 suspected cases have been reported to include 15 cases that were identified through laboratory record review
- Of the 70 suspected cases reported, samples have been collected for 66 of which 29 have been confirmed positive by RT-PCR (14), ELISA-Antibody (IgM) (11) and ELISA-Antigen (4), 35 negatives while one sample was not tested due to adequacy
- Of the 29 confirmed cases, six deaths were reported. The case fatality rate among confirmed cases is 20.7%

**Figure 4. Epi-classification of Lassa fever cases reported, Liberia, Epi weeks 1 – 47, 2017**



Note: The x-axis showing only odd number of the Epi week

### Yellow fever

- One confirmed case of Yellow Fever was reported from Rivercess County
- Cumulatively, since Epi-week one, 160 suspected cases have been reported, all of which have been tested negative

### Meningitis

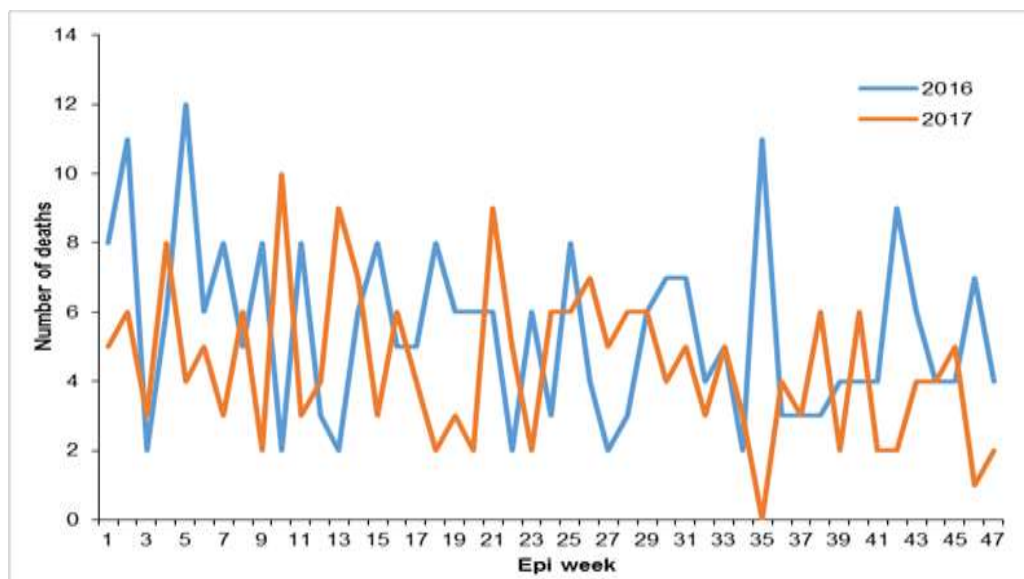
- Two suspected cases of meningitis were reported from Nimba County
- Cumulatively, since Epi-week one, 65 suspected cases have been reported
- Of the 65 suspected cases, 31 (including 13 deaths) were reported as part of an outbreak in four counties (Grand Bassa, Montserrado Sinoe and Grand Kru), with *Neisseria meningitidis* serogroup C confirmed in 14 cases, and 1 streptococcus pneumonia including 11 deaths (case fatality rate among confirmed cases is 80%)

## Events of Public Health Importance

### Maternal Mortality

- Two maternal deaths were reported from Gbarpolu and Sinoe Counties
- Reported cause of death were severe Malaria and Severe Anemia
- All of the deaths were reported to have occurred in the health facility
- Cumulatively, since Epi-week one, 213 maternal deaths have been reported (see Table 3 for causes of death)

**Figure 5. Comparison of the weekly trend of Maternal Deaths Reported, Liberia, Epi weeks 1 - 47, 2016 & 2017**



Note: The x-axis showing only odd number of the Epi week

**Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 47, 2017**

County	Annual Live birth <sup>1</sup>	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Kru	3002	0	7	3	758
Grand Bassa	11494	0	22	12	622
Bomi	4361	0	8	5	596
River Gee	3707	0	6	3	526
Margibi	10883	0	17	8	508
Grand Gedeh	6494	0	12	2	500
Bong	17289	0	25	11	470
Sinoe	5308	1	9	5	429
Maryland	7048	0	8	6	369
Nimba	23953	0	27	13	339
Gbarpolu	4323	1	5	2	376
Lofa	14354	0	13	8	294
Montserrado	57974	0	50	25	280
Rivercess	3463	0	3	1	188
Grand Cape Mount	6588	0	1	1	49
<b>Liberia (National)</b>	<b>180242</b>	<b>1</b>	<b>213</b>	<b>100</b>	<b>384</b>

Number of live birth is at 4.3% of the estimated population for 2017 (Source: EPI/MoH)

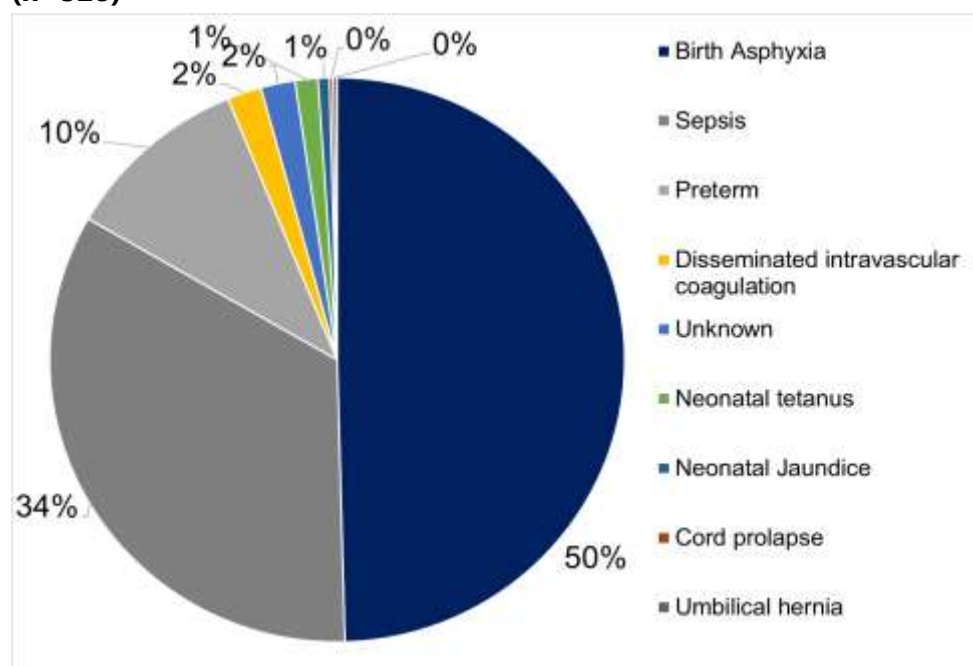
**Table 4. Causes of Maternal Death, Liberia, Epi weeks 1 - 47, 2017 (n=213)**

Maternal Death	Frequency	Percent (%)
Post-partum hemorrhage	72	34.1
Anemia	32	15.2
Sepsis	27	12.3
Eclampsia	20	9.5
Unknown	11	5.2
Ruptured uterus	10	4.3
Cardiac pulmonary failure	9	4.3
Renal failure	6	2.8
Congestive Heart failure	6	2.8
Pre-eclampsia	4	1.9
Abruptio placenta	3	1.4
Multiple organ failure	2	0.9
Obstructed labor	2	0.9
Respiratory Distress	2	0.9
Amniotic fluid embolism	2	0.9
Dissimilated intravascular coagulation	1	0.5
Umbilical Hernia (Omphalocele)	1	0.5
Spinal shock	1	0.5
Uterine Prolapsp	1	0.5
Prolong Labour	1	0.5
<b>Total</b>	<b>213</b>	<b>100</b>

## Neonatal Mortality

- Three Neonatal deaths were reported from Margibi (2) and River Gee (1) Counties
- Causes of death were:
  - Birth asphyxia (3)
- All of the deaths were reported to have occurred at health facility
- Cumulatively, since Epi week one, 528 neonatal deaths have been reported

**Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1 - 47, 2017 (n=528)**



**Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 47, 2017**

County	Annual Live birth 4.3% (EPI 2017)	Current Week	Cumulative Neonatal deaths	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate
River Gee	3707	1	38	7	33.3
Maryland	7048	0	51	10	23.5
Sinoe	5308	0	25	5	15.3
Grand Kru	3002	0	13	3	14.1
Rivercess	3463	0	13	3	12.2
Lofa	14354	0	51	10	11.5
Bong	17289	0	60	12	11.3
Grand Gedeh	6494	0	21	4	10.5
Montserrado	57974	0	186	36	10.4
Gbarpolu	4323	0	10	2	7.5
Grand Bassa	11494	0	18	3	5.1
Margibi	10883	2	19	4	5.7
Nimba	23953	0	16	3	2.2
Bomi	4361	0	3	1	2.2
Grand Cape Mount	6588	0	4	1	2
<b>Total</b>	<b>180242</b>	<b>3</b>	<b>528</b>	<b>100</b>	<b>9.5</b>

### **Human Exposure to Animal Bites (Suspected Rabies)**

- Five events of animal bites were reported from Margibi (3) and River Gee (2) Counties
- Cumulatively, since Epi-week one, 1,158 events of animal bites have been reported

### **Bloody Diarrhea (Shigellosis)**

- One suspected case of acute bloody diarrhea was reported from Margibi County
- Cumulatively, since Epi-week one, 246 cases of acute bloody diarrhea have been reported
- Stool specimens have been collected from 125 cases including 1 in the current week
- A total of 116 stool samples have been tested, 4 rejected due to poor sample quality, 1 positive and 3 pending epi classifications. Of the 116 tested, shigella was isolated through culture from 20 (16%) samples and no growth seen in 95 (84%) were negative.

### **Severe Acute Watery Diarrhea (Cholera)**

- Zero cases of cholera were reported this week
- Cumulatively, since Epi-week one, 146 suspected cases of cholera have been reported, including 5 deaths attributable to cholera
- A total of 64 stool samples have been collected including one in the current week and sent to the National Reference Laboratory. Sixty-one of the samples tested had no growth and two positive of vibro cholera



# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 47 (November 20-26, 2017)



## Outbreaks

### Bong Lassa Fever Outbreak update as of November 30, 2017

- Since 2017, Bong County have reported 21 suspected cases of which 7 have been confirmed positive with one sample pending laboratory confirmation. The case fatality rate among confirmed cases since this year is 71%
- All those cases were reported from Phebe Hospital Isolation Unit
- On 13<sup>th</sup> November, 2017, the Bong County Health Team (BCHT) notified the National Public Health institute of Liberia (NPHIL) about a confirmed Lassa fever case of a 5 years old female from Frog Island, Suakoko District, and Bong County. Since epi week 45, the number of suspected cases increased to Nineteen (19) with 3 deaths. The case fatality rate is 50% among confirmed cases.
- The index case is a 36 year-old male (business man) from Phebe Airstrip community (endemic zone of Lassa fever in Bong) who presented with clinical signs and symptoms were fever, diarrhea, vomiting and later on started bleeding from nose, rectum and mouth with date of onset 4<sup>th</sup> October 2017
  - Since epi week 45, eleven suspected cases have been reported from two Districts (Jorquelleh and Suakoko)
  - Three deaths have been recorded (1 death in confirmed and 2 in suspected).
  - One case still in admission and is currently stable at Phebe Hospital Isolation unit
  - Nine samples collected and sent to the National Reference Laboratory, of which 6 tested negative, two confirmed positive, while one pending laboratory confirmation
  - Seven of the cases are females while 4 are males

### Public Health Actions

- Contact monitoring has been initiated
- active case search is ongoing in affected communities
- Isolation and management cases ongoing at Phebe Hospital

### Rivercess Yellow Fever Outbreak

- On Monday, 28<sup>th</sup> November 2017, the National Public Health Institute of Liberia (NPHIL) and the Ministry of Health (MoH) notified the Rivercess County Health Team (RCHT) of a positive confirmed Yellow Fever case from Jowein District Rivercess County
- The case is a female age 35 years who seek health care at the Larkpazee Community Clinic Jowein District from Keyah #4 District, Grand Bassa County
- The case visited the health facility on November 21, 2017 and presented with yellow sclera, generalized body pain, fever, weakness, vomiting, headache, neck pain and cough
- Onset of symptoms was on November 16, 2017; specimen was collected and transported to reference Lab for confirmation. The patient was treated in the OPD and discharged. However, patient was educated to remain in the community for close monitoring by facility staff.

### Public Health Actions and Thematic Updates

#### Coordination

- All response pillars (Epi Surveillance, Case Management, Laboratory, IPC, Social Mobilization, Psychosocial, Dead body management and Coordination) are activated and fully operational
- Daily coordination meeting is ongoing at county level
- CHT has capacity to continue response efforts, with support from both national and WHO



# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 47 (November 20-26, 2017)



- Follow up on stock balances at county level include; YF vacc. 120 doses, LLITNs 1995 pcs, N/S 20 ctn, R/L 23 ctn, PCM 500mg 3 cans, Ibuprofen 0, hand hygiene products 0
- Routine health services are still being provided in the county
- A team is setup to conduct detail investigation in Yarnee district where we have a suspected case of Monkey Pox currently treated at the St. Francis hospital

## *Surveillance and contact tracing*

- Cumulative case count is 2, which include 1 lab. Confirmed & 1 suspected with 0% CFR
- A total of 14 contacts (Rivercess 8, Bassa 6) has been line listed for daily follow ups
- Active case search continues in affected district and all adjacent districts
- Surveillance activities are heightened at both community and health facility levels

## *Case Management*

- Symptomatic treatment for confirmed case is ongoing
- Distributed Long Lasting Insecticides Treated Nets (LLITNs) to confirmed patient household.

## *Social Mobilization and Community engagement*

- Conducted advocacy meetings with both community leaders and key stakeholders at county level
- Yellow fever messages have been developed for airing and distribution to all communities including adjacent districts in neighboring Nimba and Grand Bassa counties
- Community engagement meetings were conducted in Barchue town and Larkpazee towns in Jowein district
- Communication plan on yellow fever outbreak is being developed
- CHAs are being mobilized to create intensive community awareness in all communities in the county
- Radio talk show has been arranged for December 1, 2017 on radio RBS in Cestos city
- Jingle on Yellow Fever is been aired on RBS

## *Laboratory investigation*

- Additional sample was collected from confirmed case for further confirmation
- Further orientation of DSO on sample collection and packaging was conducted by team

## *Infection Prevention and Control (IPC)*

- Mentoring and strengthening of IPC practices at facilities and communities in affected district are ongoing
- Conducted inventory of supplies at county level; there are stock out on hand hygiene products

## Public Health Measures

### **National level**

- National response team has been dispatched to Bong County to support investigation of Lassa Fever Outbreak
- Weekly meeting with the laboratory to ensure data verification and harmonization
- Circulated zero draft of the National Action Plan for Health Security
- Work with Counties to determine response state of preparedness (lab specification for CSF collection and transportation, medical supplies and IPC)
- Follow up with counties to conduct maternal deaths investigation, revision of forms and implementation of recommendations made
- Counties are encouraged to conduct health education for all public health diseases based on risk
- Counties are encouraged to update their cholera preparedness plans and review existing stocks of supplies for repositioning





# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 47 (November 20-26, 2017)



## Notes

- *Completeness* refers to the proportion of expected weekly IDSR reports received (target:  $\geq 80\%$ )
- *Timeliness* refers to the proportion of expected weekly IDSR reports received by the next level on time (target:  $\geq 80\%$ ). Time requirement for weekly IDSR reports:
  - Health facility - required on or before 5:00pm every Saturday to the district level
  - Health district - required on or before 5:00pm every Sunday to the county level
  - County - required on or before 5:00pm every Monday to the national level
- *Non-polio AFP rate* is the proportion of non-polio AFP cases per 100,000 among the estimated population under 15 years of age in 2017 (annual target:  $\geq 2/100,000$ )
- *Non-measles febrile rash illness rate* refers to the proportion of discarded measles cases per 100,000 population
- *Annualized maternal mortality rate* refers to the maternal mortality rate of a given period less than one year and it is the number of maternal deaths per 100,000 live births
- *Annualized neonatal mortality rate* refers to the neonatal mortality ratio of a given period less than one year and it is the number of neonatal deaths per 1,000 live births
- *Epi-linked* refers to any suspected case that has not had a specimen taken for serologic confirmation but is linked to a laboratory confirmed case
- *Confirmed case* refers to a case whose specimen has tested positive or reactive upon laboratory testing, or has been classified as confirmed by either epidemiologic linkage with a confirmed case, or clinical compatibility with the disease or condition
- *Case Fatality Rate (CFR)* is the proportion of deaths among confirmed cases

# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 47 (November 20-26, 2017)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 47 and cumulative reports, Liberia, 2017

Counties	No. of Health Districts	No. of Health District reported	Acute Flaccid Paralysis (Polio)		Acute Bloody Diarrhoea (Shigellosis)		Severe Acute Watery Diarrhoea (Cholera)		Human Exposure to Animal bites (Suspected Rabies)		Lassa Fever		Measles		Meningitis		Maternal Mortality	Neonatal Mortality	Neonatal Tetanus		VHF (including EVD)		Yellow Fever		Other Diseases/Events		
			A	D	A	D	A	D	A	D	A	D	A	D	A	D	D	D	A	D	A	D	A	D	A	D	A
Bomi	4	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bong	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gbarpolu	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Grand Bassa	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Cape Mount	5	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Gedeh	6	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Kru	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lofa	6	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Margibi	4	4	0	0	1	0	0	0	3	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Maryland	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montserrado	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nimba	6	6	0	0	0	0	0	0	0	0	0	0	11	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Rivercess	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
River Gee	4	4	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Sinoe	10	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<b>Total Weekly</b>	<b>91</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Reported</b>			<b>75</b>	<b>0</b>	<b>246</b>	<b>0</b>	<b>145</b>	<b>5</b>	<b>1152</b>	<b>1</b>	<b>38</b>	<b>19</b>	<b>1350</b>	<b>2</b>	<b>61</b>	<b>2</b>	<b>213</b>	<b>526</b>	<b>14</b>	<b>4</b>	<b>36</b>	<b>275</b>	<b>151</b>	<b>1</b>	<b>1821</b>	<b>24</b>	
<b>Cumulative Laboratory Confirmed</b>			<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>4</b>	<b>234</b>	<b>0</b>	<b>1</b>	<b>0</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note: **A** = Alive  
**D** = Dead

**Editorial Team - MoH:** Roseline N. George –; Advertus N. Mianah – Surveillance Coordinator/DIDE; Irene Pewu & Himiede W. Wilson – Epidemiologist/DIDE; Sumo Nuwolo, Musand Kromah, Lasee W. Colee, T. Lafayette Hall, Alberta B. Corvah, Sumor Lomax Flomo & Samuel Zayzay – Disease Investigators/DIDE; Trokon O. Yeabah – Data Manager/DIDE;  
**Partners:** Dr. E. Kainne Dokubo – CDC; George Sie Williams, Kwuakuan D.M. Yealue & Jeremy Sesay – WHO

## **National Public Health Institute of Liberia (NPHIL)**

### **PURPOSE**

In collaboration with the Ministry of Health, NPHIL strengthens existing infection prevention and control efforts, laboratories, surveillance, infectious disease control, public health capacity building, response to outbreaks, and monitoring of diseases with epidemic potential.

### **OUR MISSION**

To prevent and control public health threats by promoting healthy outcomes and serving as a source of knowledge and expertise.

### **GOALS**

Contribute to the development and sustainability of the public health workforce

Develop, enhance, and expand the surveillance and response platform

Develop and strengthen the laboratory system and public health diagnostics

Develop, enhance, and expand process and structures to protect environmental and occupation health

Expand, conduct, and coordinate public health and medical research to inform Liberian public health policies

Ensure sustainable financing and operations of the NPHIL

Epidemiological bulletin published with support of WHO and CDC

#### **For comments or questions, please contact**

**Thomas K. Nagbe**, PA Dip., BSc, MPH

Director, Infectious Disease and Epidemiology Division

National IHR Focal Person

National Public Health Institute of Liberia

Republic of Liberia

Email: [tnknue31112@gmail.com](mailto:tnknue31112@gmail.com)

Phone: 0886 937386/0777442444

Website: [www.nationalphil.org](http://www.nationalphil.org)