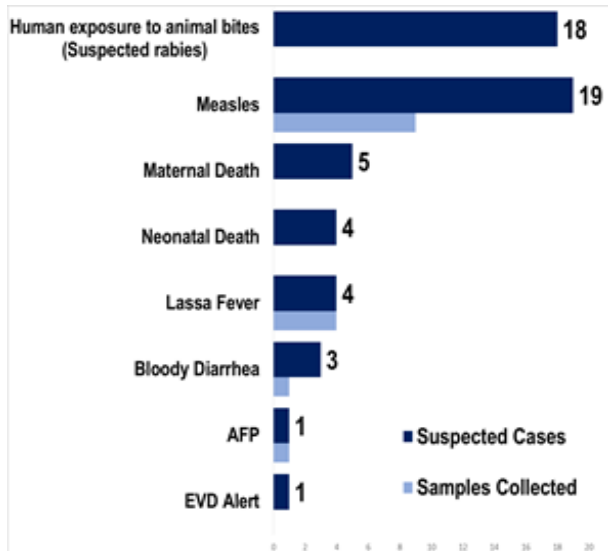


Country Population: 4,373,279 | Volume 09, Issue 45 Nov. 6-12, 2017 | Data Source: CSOs from 15 Counties and Lab

## Highlights

**Figure 1. Public Health Events Reported in Epi-week 45**



## Keynotes and Events of Public Health Significance

- A total of **57** suspected cases of immediately reportable diseases and events including **10 deaths** were reported from 15 counties
- Health facility reporting **completeness and timeliness are 63%** respectively
- **Ten** confirmed cases of measles were reported Nimba, Montserrado, Margibi, Bong and Grand Bassa
- **One** confirmed case of Lassa fever was reported from Bong County

## Reporting Coverage

**Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 45, 2017**

County	Number of Expected Report from Health Facility	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	23	23	23	100	100
Bong	55	-	-	-	-
Gbarpolu	15	-	-	-	-
Grand Bassa	33	14	14	42	42
Grand Cape Mount	32	32	32	100	100
Grand Gedeh	24	2	2	8	8
Grand Kru	19	-	-	-	-
Lofa	59	-	-	-	-
Margibi	44	44	44	100	100
Maryland	25	-	-	-	-
Montserrado	283	276	276	98	98
Nimba	74	74	74	100	100
Rivercess	19	-	-	-	-
River Gee	19	11	11	58	58
Sinoe	35	-	-	-	-
<b>Liberia</b>	<b>759</b>	<b>476</b>	<b>476</b>	<b>63</b>	<b>63</b>

<b>Legend</b>	<b>≥80</b>	<b>&lt;80</b>
---------------	------------	---------------

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

**476 (63%)**  
Health facilities out of 759 reported timely IDSR data

**37 (41%)**  
Health districts out of 91 reported IDSR data

**476(63%)**  
Health facilities reported IDSR data

## Vaccine Preventable Diseases

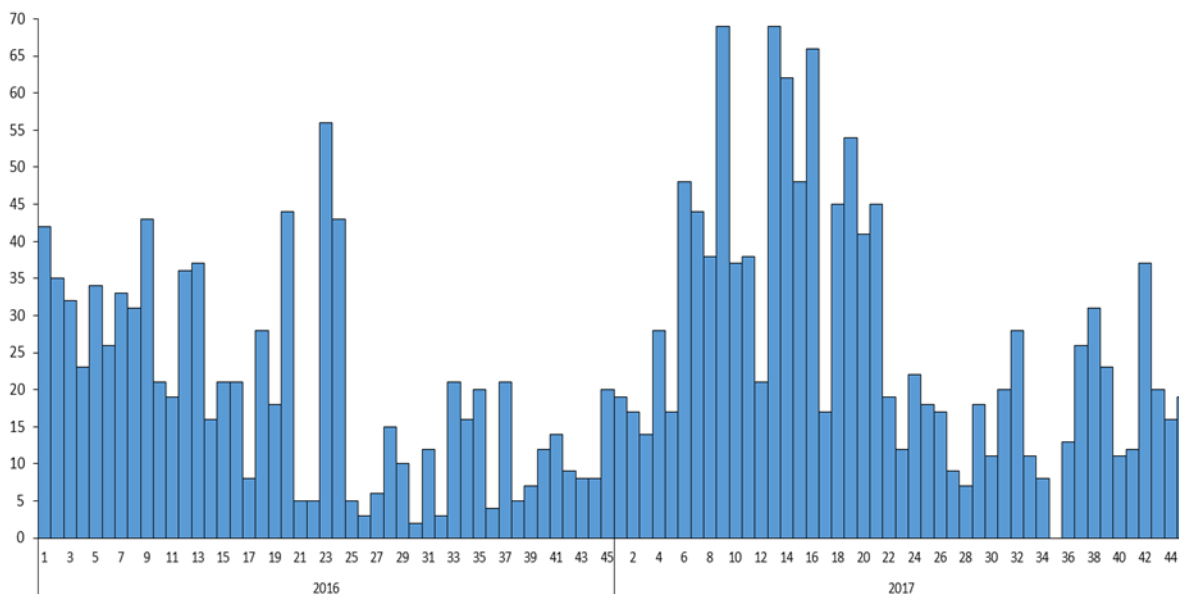
### Measles

- Nineteen suspected cases were reported from the following counties: Montserrado (8), Nimba (7) and Margibi (4)
- Ten (10) cases have been confirmed positive:
  - Montserrado County (Commonwealth -2, & Somalia Drive Districts -2)
  - Margibi County (Mamba kaba district -2)
  - Nimba County (Tappita-1, Sanniquellie-Mah districts-1)
  - Bong County (Suakoko district-1) and
  - Grand Bassa County (Buchanna district -1)
- Of the 19 suspected cases reported this week, 7 (37%) were reported to have been previously vaccinated, 9 (47%) had unknown vaccination status and 3 (16%) were not vaccinated
- Six (32%) of the suspected cases were <5 years and thirteen (68%) were ≥5 years of age
- Cumulatively, since Epi week one, 1525 suspected cases have been reported, of which 1018 were tested: 207 (19.4%) positive, 767 (75.4%) negative, and 52 (5.1%) equivocal. Five hundred seven (32.3%) of the suspected cases were compatible and epi-linked. Of the -819 equivocal and negative cases, -805 (98.2%) samples have been tested for rubella, of which, 335 (41.7%) were positive

### Public Health Actions

- Active case search ongoing
- Case management initiated for all suspected cases
- Samples were collected from 9 suspected cases and sent to the National Reference Laboratory for confirmation
- Conducted mini immunization campaign

**Figure 2. Weekly trend of suspected cases of Measles reported, Liberia, Epi weeks 1 – 45, 2016 & 2017**



### Acute Flaccid Paralysis (Suspected Polio)

- One case of Acute Flaccid Paralysis was reported from Montserrado County
- Cumulatively, since Epi week one, 74 Acute Flaccid Paralysis cases have been reported, of which, 70 (94.5%) have tested negative for poliovirus and 4 (5%) are pending laboratory confirmation

**Table 2: Non-polio AFP rate/100,000 <15yrs, Liberia, Epi weeks 1 - 45, 2017**

County	<15 years pop	# of AFP Cases Reported	# of Cases with Lab Result	Non-Polio AFP Rate	# of cases within 14 days specimen collected	% of stool <14days	# of NPENTs	% of NPENT
Bomi	45,639	4	4	9.9	4	100	1	25
Bong	180,932	5	5	3.1	5	100	0	0
Gbarpolu	45,243	1	1	2.5	1	100	0	0
Grand Bassa	120,281	3	3	2.8	2	67	2	67
Grand Cape Mount	68,945	2	2	3.3	2	100	0	0
Grand Gedeh	67,959	4	4	6.7	4	100	2	50
Grand Kru	31,421	1	1	3.6	0	0	0	0
Lofa	150,214	9	9	6.8	8	89	1	11
Margibi	113,895	8	8	7.9	8	100	2	25
Maryland	73,754	3	3	4.6	2	67	0	0
Montserrado	606,708	12	12	2.4	7	54	1	8
Nimba	250,675	8	8	3.6	8	100	1	13
Rivercess	36,237	6	6	18.7	5	83	3	50
River Gee	38,798	3	3	8.7	1	33	2	67
Sinoe	55,553	5	4	8.1	3	75	0	0
<b>Liberia</b>	<b>1,886,254</b>	<b>74</b>	<b>73</b>	<b>4.4</b>	<b>60</b>	<b>81</b>	<b>15</b>	<b>21</b>
<b>Non-Polio AFP Rate</b>	<b>&lt;2</b> <b>≥2</b>	<b>Stool Adequacy</b>		<b>&lt;80%</b> <b>≥80%</b>	<b>Non-Polio Enterovirus</b>	<b>&lt;10%</b> <b>≥10%</b>	<b>Silent</b>	

## Neonatal Tetanus

- Zero cases Neonatal tetanus were reported this week
- Cumulatively, since Epi-week one, 17 clinically diagnosed cases have been reported

## Viral Hemorrhagic Diseases

### Ebola Virus Disease (EVD)

- One dead EVD alert was reported from Margibi County
- Cumulatively, since Epi-week one, 481 EVD alerts have been reported, all of which have tested negative by PCR

### Lassa fever

- Five suspected cases of Lassa Fever were reported from Bong (4) and Nimba (1) Counties through the laboratory
- Bong county did not submit report for this week
- Specimens were collected for four of the five cases. Of the four samples tested one has been confirmed positive from Suakoko District, Bong County
- Cumulatively, since Epi-week one, 69 suspected cases have been reported to include 15 cases that were identified through laboratory record review
- Of the 69 suspected cases reported, samples have been collected for 61 of which 13 have been confirmed positive by RT-PCR and ELISA-Antigen, 47 negatives while one sample was not tested.
- Of the 13 confirmed cases, four deaths were reported. The case fatality rate among confirmed cases is 31%

### Public Health Actions

#### Bong

- Line-Listing and monitoring of six contacts
- In collaboration with Environmental Health conducted community awareness in affected areas
- Setup isolation unit for case management
- Planned to conduct refresher training for health facility staff
- Available in stock are 2,000 ampules of anti-ribavirin

## Yellow fever

- Zero cases of Yellow Fever were reported this week
- Cumulatively, since Epi-week one, 153 suspected cases have been reported, all of which have been tested negative

## Meningitis

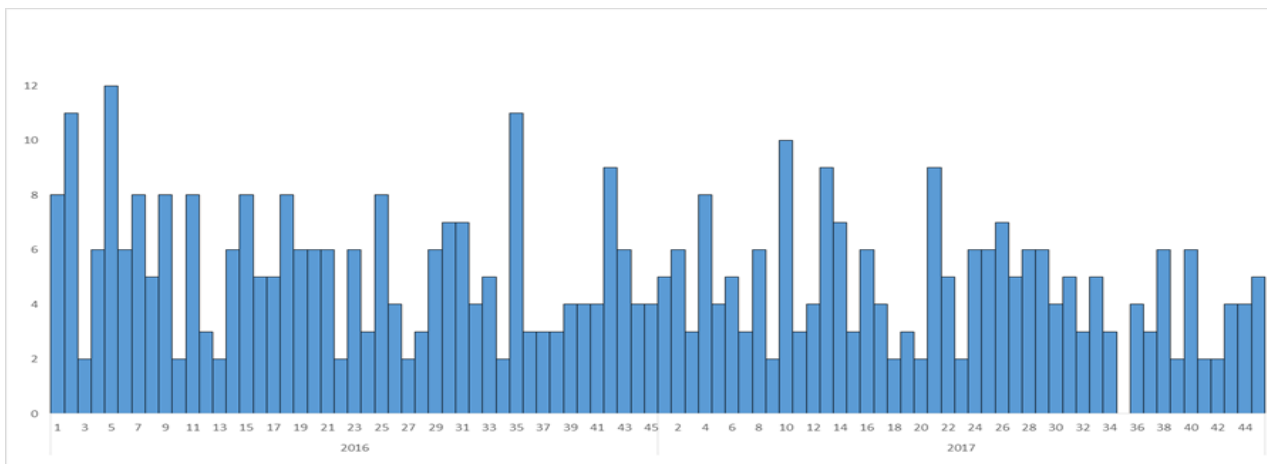
- Zero cases of meningitis were reported this week
- Cumulatively, since Epi-week one, 63 suspected cases have been reported
- Of the 63 suspected cases, 31 (including 13 deaths) were reported as part of an outbreak in four counties (Grand Bassa, Montserrado Sinoe and Grand Kru), with *Neisseria meningitidis* 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

- Five maternal deaths were reported from Montserrado (2), Margibi (1), Nimba (1), and Grand Gedeh (1), Counties
- Reported causes of deaths were: Cardio pulmonary arrest, amniotic fluid metabolism, complicated malaria and postpartum hemorrhage (2)
- Four of the deaths were reported to have occurred in the health facility and one from the community
- Cumulatively, since Epi-week one, 210 maternal deaths have been reported (see Table 3 for causes of death)

**Figure 3. Comparison of the weekly trend of Maternal Deaths Reported, Liberia, Epi weeks 1 - 45, 2016 & 2017**





# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 45 (November 6-12, 2017)



**Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 45, 2017**

County	Annual Live birth <sup>1</sup>	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Bassa	11494	0	22	12	622
Maryland	7048	0	8	6	369
Bomi	4361	0	8	5	596
Grand Kru	3002	0	7	3	758
Sinoe	5308	0	8	5	429
River Gee	3707	0	6	3	526
Montserrado	57974	2	50	25	280
Bong	17289	0	25	11	470
Margibi	10883	1	16	8	478
Nimba	23953	1	27	13	339
Lofa	14354	0	13	8	294
Rivercess	3463	0	3	1	188
Gbarpolu	4323	0	4	2	301
Grand Cape Mount	6588	0	1	1	49
Grand Gedeh	6494	1	12	2	500
<b>Liberia (National)</b>	<b>180242</b>	<b>5</b>	<b>210</b>	<b>100</b>	<b>379</b>

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

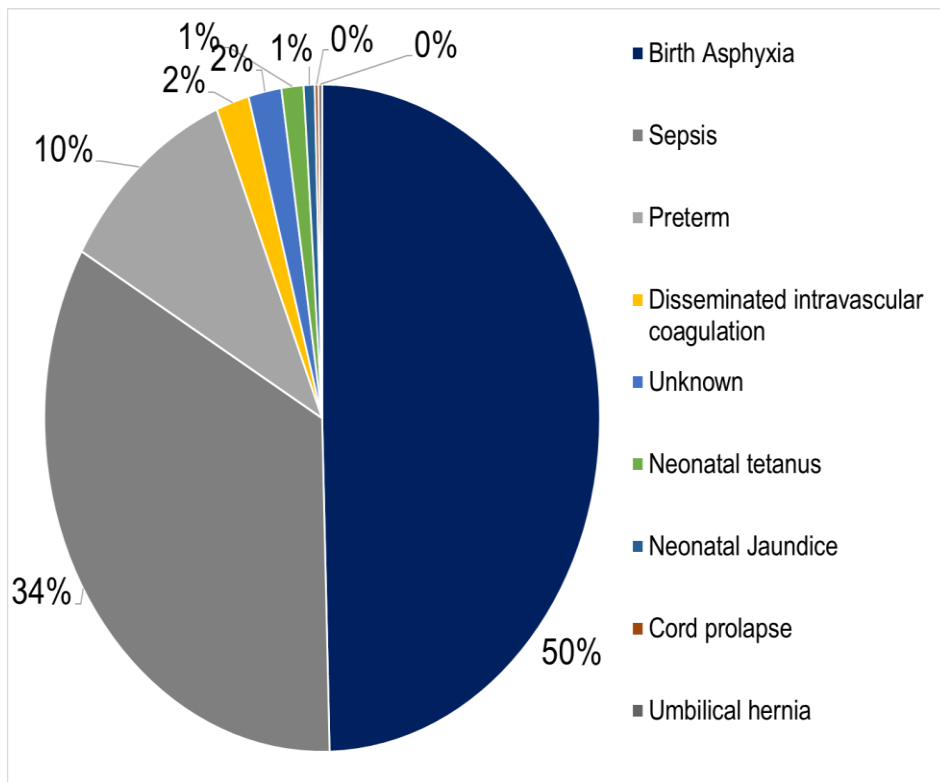
**Table 4. Causes of Maternal Death, Liberia, Epi weeks 1 - 45, 2017 (n=210)**

Maternal Death	Number	Percentage
Post-partum hemorrhage	73	34.2
Anemia	30	14.3
Sepsis	26	13.7
Eclampsia	20	10.3
Unknown	11	4.0
Ruptured uterus	9	4.0
Cardiac pulmonary failure	9	4.3
Renal failure	6	3.4
Congestive Heart failure	6	2.3
Pre-eclampsia	4	2.3
Abruptio placenta	3	1.7
Multiple organ failure	2	1.1
Obstructed labor	2	1.1
Respiratory Distress	2	1.1
Dissimilated intravascular coagulation	1	0.6
Amniotic fluid embolism	2	0.9
Umbilical Hernia (Omphalocele)	1	0.6
Spinal shock	1	0.6
Uterine Prolaps	1	0.6
Prolong Labour	1	0.6
<b>Total</b>	<b>210</b>	<b>100</b>

## Neonatal Mortality

- Four Neonatal deaths were reported from Montserrado (2) and RiverGee (2),
- Causes of death were:
  - Birth asphyxia (2)
  - Sepsis (1)
  - Preterm (1)
- All of the deaths were reported to have occurred at health facility
- Cumulatively, since Epi week one, 519 neonatal deaths have been reported

**Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1 - 45, 2017 (n=519)**



**Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 45, 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	2	36	7	31.6
Maryland	7048	0	51	10	23.5
Sinoe	5308	0	25	5	15.3
Grand Kru	3002	0	13	3	14.1
Montserrado	57974	2	186	36	10.4
Bong	17289	0	60	12	11.3
Rivercess	3463	0	13	3	12.2
Grand Gedeh	6494	0	18	3	9.0
Gbarpolu	4323	0	9	2	6.8
Grand Bassa	11494	0	18	3	5.1
Lofa	14354	0	50	10	11.3
Nimba	23953	0	16	3	2.2
Margibi	10883	0	17	3	5.1
Grand Cape Mount	6588	0	4	1	2.0
Bomi	4361	0	3	1	2.2
<b>Total</b>	<b>180242</b>	<b>4</b>	<b>519</b>	<b>100</b>	<b>9.4</b>



# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 45 (November 6-12, 2017)



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

- Eighteen events of animal bites were reported from Montserrado (6), Margibi (6), Bomi (3), Nimba (2), and Grand Gedeh (1) Counties
- Cumulatively, since Epi-week one, 1,141 events of animal bites have been reported

## **Bloody Diarrhea (Shigellosis)**

- Three cases of acute bloody diarrhea were reported from Montserrado County
- Cumulatively, since Epi-week one, 240 cases of acute bloody diarrhea have been reported
- Stool specimens have been collected from 123 cases including 1 in the current week
- A total of 108 stool samples have been tested, 4 rejected due to poor sample quality, and 4 pending epi classifications. Of the 113 tested, shigella was isolated through culture from 18 (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, 145 suspected cases of cholera have been reported, including 5 deaths attributable to cholera
- A total of 63 stool samples have been collected including one in the current week and sent to the National Reference Laboratory. Fifty-nine of the samples tested had no growth and two positive of vibro cholera



# Liberia IDSR Epidemiology Bulletin

2017 Epi Week 45 (November 6-12, 2017)



## Public Health Measures

### National level

- 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 prepositioning

## 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 maternal 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 45 (November 6-12, 2017)

## Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 45 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	4	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bong	8	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gbarpolu	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Bassa	8	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 Cape Mount	5	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	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Grand Kru	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lofa	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Margibi	4	4	0	0	0	0	0	0	6	0	0	0	4	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Maryland	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montserrado	7	7	1	0	3	0	0	0	6	0	0	0	8	0	0	0	2	2	0	0	0	0	0	0	0	0	0
Nimba	6	6	0	0	0	0	0	0	2	0	1	0	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Rivercess	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
River Gee	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Sinoe	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Weekly</b>	<b>91</b>	<b>37</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>4</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>0</b>
<b>Cumulative Reported</b>			<b>75</b>	<b>0</b>	<b>240</b>	<b>0</b>	<b>144</b>	<b>5</b>	<b>1140</b>	<b>1</b>	<b>42</b>	<b>19</b>	<b>1260</b>	<b>2</b>	<b>61</b>	<b>2</b>	<b>210</b>	<b>519</b>	<b>13</b>	<b>4</b>	<b>34</b>	<b>275</b>	<b>149</b>	<b>1</b>	<b>1821</b>	<b>24</b>	
<b>Cumulative Laboratory Confirmed</b>			<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>190</b>	<b>0</b>	<b>1</b>	<b>0</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

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## **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

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