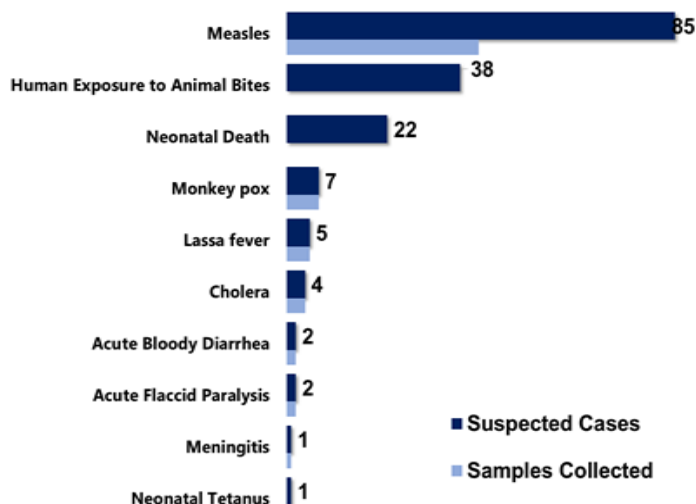


## Highlights

Figure 1. Public Health Events Reported in Epi week 9



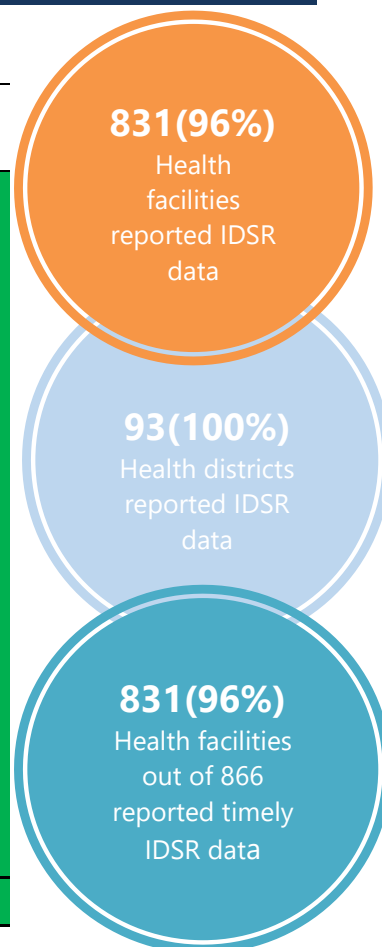
## Keynotes and Events of Public Health Significance

- A total of 167 events of public health importance including 23 deaths were reported
- Completeness and timeliness of health facility reports were both 98%
- Ongoing Measles outbreaks in three counties

## Reporting Coverage

Table 1. Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi week 9, 2019

County	Number of Expected Report from Health Facility	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	26	26	26	100	100
Bong	57	57	57	100	100
Gbarpolu	16	16	16	100	100
Grand Bassa	34	34	34	100	100
Grand Cape Mount	34	34	34	100	100
Grand Gedeh	24	24	24	100	100
Grand Kru	19	19	19	100	100
Lofa	59	59	59	100	100
Margibi	59	50	50	85	85
Maryland	26	26	26	100	100
Montserrado	351	341	340	97	97
Nimba	84	84	84	100	100
Rivercess	20	20	20	100	100
River Gee	20	20	20	100	100
Sinoe	37	37	37	100	100
<b>Liberia</b>	<b>866</b>	<b>831</b>	<b>830</b>	<b>96</b>	<b>96</b>



Legend: ≥80 <80

- The national target for weekly IDSR reporting is 80%
- All counties submitted weekly IDSR report on time to national level

## Vaccine Preventable Diseases

### Measles

- Eighty-five (85) suspected cases were reported from Gbarpolu (24), Sinoe (12), Montserrado (12), River Gee (8), Nimba (9), Margibi (5), Lofa (4), Rivercess (3), Grand Gedeh (3), Bong (2), Grand Kru (1), Grand Bassa (1) and Grand Cape Mount (1) Counties
- Forty (42) specimens were collected; thirty-five tested by the National Public Health Reference Laboratory
  - Five (5) lab-confirmed (positive): Grand Gedeh (2), Bong (1), River Gee (1) and Montserrado (1) Counties; 28 negative, 2 indeterminate and 7 pending laboratory confirmation
- Belleh and Bokomu Districts, Gbarpolu County, Commonwealth District, Montserrado County, and Greenville District, Sinoe County currently in outbreak phase
- Vaccination status:
  - Among suspected cases: 39 (45.8%) vaccinated, 25 (29.4%) not vaccinated and 21 (24.7%) unknown
  - Among confirmed cases: 3 (60%) vaccinated, 1(20%) not vaccinated and 1 (20%) Unknown
- Age distribution
  - Among suspected cases: <1 year: 4 (4.7%), 1 – 4 years: 21 (24.7%) and ≥5 years: 60 (70.5%)
  - Among confirmed cases : < 1year: 1 (20%) ≥5 years: 4 (80%)
- Cumulatively, since Epi-week one, 449 suspected cases have been reported; Of these, 249 have been tested by the laboratory and results showed 56 positive, 186 tested negative and 7 indeterminate
- Epi-classification is as follows: 248 (55.2%) confirmed cases (lab confirmed 56, clinically confirmed 131, epi-linked 61), 186 (41.4%) negative and indeterminate 7 (1.5%). Eight (1.7%) specimens are pending laboratory confirmation (See Table 2)
- Of the 186 specimen tested negative for Measles, 161 specimens were tested for Rubella; 79 tested positive, 72 negative and 10 indeterminate for Rubella

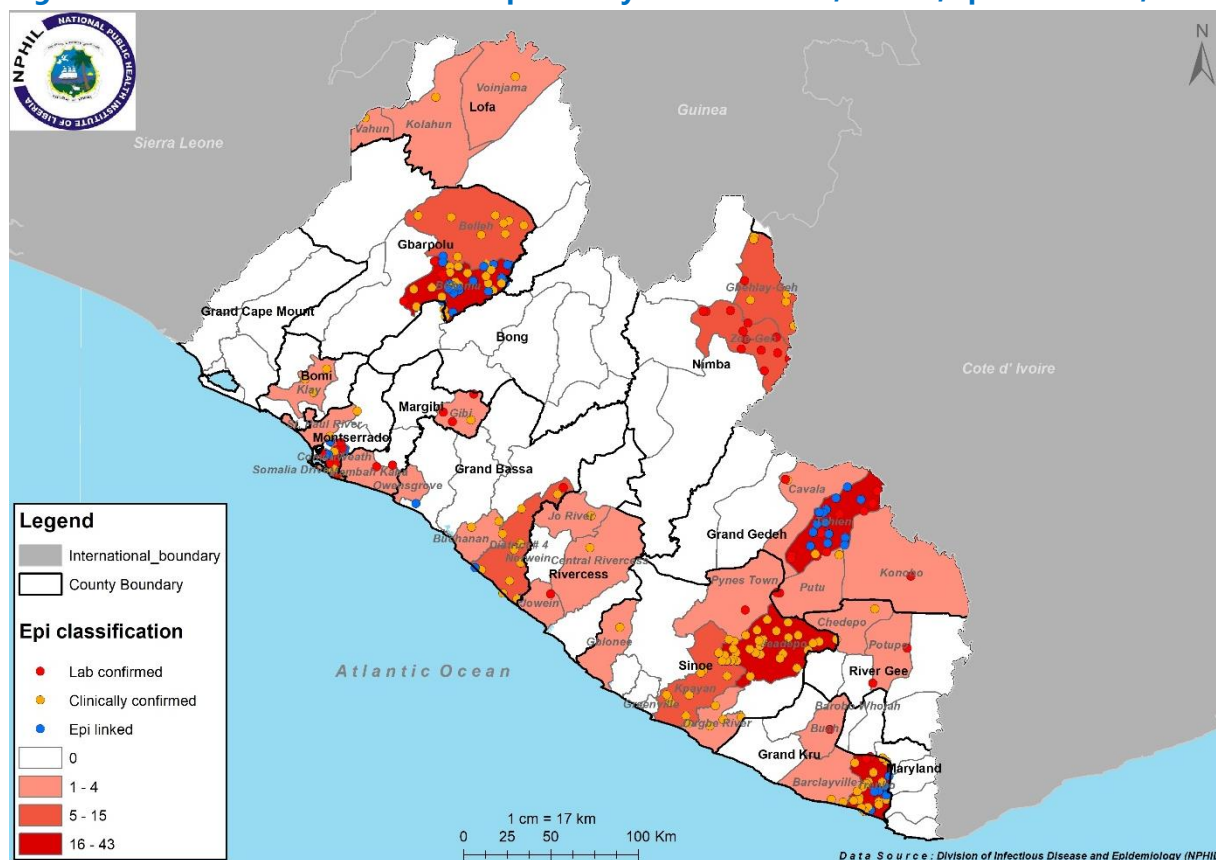
### Public Health Action

- Active case search, health education, and community engagement are ongoing in districts that reported

**Table 2. Cumulative Measles Cases Reported by County and Epi-classification, Liberia, Epi-week 1 - 9, 2019**

Reporting County	Epi-classification					Total	Annualized Non-Measles Febrile Rash Illness Rate
	Lab confirmed	Epi-linked	Clinically confirmed	Indeterminate (Equivocal)	Discarded (Negative)		
Bomi	0	0	3	0	3	6	16.4
Bong	8	0	1	1	12	22	15.9
Gbarpolu	4	21	29	0	6	60	33.1
Grand Bassa	2	2	12	0	14	30	29.0
Grand Cape Mount	0	0	0	0	5	5	18.1
Grand Gedeh	13	14	3	0	12	42	44.0
Grand Kru	7	20	4	0	8	39	63.5
Lofa	0	0	3	1	5	9	8.3
Margibi	5	0	1	1	16	23	35.0
Maryland	0	0	0	0	0	0	0.0
Montserrado	8	4	7	1	50	70	19.9
Nimba	2	0	17	1	18	38	17.9
River Gee	2	0	1	1	18	22	123.9
Rivercess	1	0	2	0	14	17	90.0
Sinoe	4	0	48	1	5	58	22.4
<b>Liberia</b>	<b>56</b>	<b>61</b>	<b>131</b>	<b>7</b>	<b>186</b>	<b>449</b>	<b>24.2</b>
Target Achieved	>=2		Below Target	<2			

**Figure 2. Confirmed Measles Cases Reported by Health District, Liberia, Epi-week 1 - 9, 2019**



### Acute Flaccid Paralysis (Suspected Polio)

- Two (2) cases reported from Montserrado County. Specimens were collected and pending shipment
- Cumulatively, since Epi week one, 13 cases have been reported, 3 tested negative and 10 pending laboratory confirmation (See Table 3)

**Table 3. Non-polio AFP rate per 100,000 population less than 15 years, Liberia, Epi-week 1 - 9, 2019**

County	< 15 years pop	# of AFP Cases Reported	# of Cases with Lab Result	Non-Polio AFP Rate	# of cases <14 days specimen collected	% of stool <14days	# of NPENTs	% of NPENT
Bomi	47576	0	0	0.0	0	0%	0	0%
Bong	196480	0	0	0.0	0	0%	0	0%
Gbarpolu	47163	0	0	0.0	0	0%	0	0%
Grand Bassa	125386	1	0	4.6	1	100%	0	0%
Grand Cape Mount	71872	1	1	8.0	1	100%	0	0%
Grand Gedeh	70844	0	0	0.0	0	0%	0	0%
Grand Kru	32755	0	0	0.0	0	0%	0	0%
Lofa	156050	0	0	0.0	0	0%	0	0%
Margibi	118729	1	1	4.9	1	100%	0	0%
Maryland	76884	1	0	7.5	1	100%	0	0%
Montserrado	653849	5	0	4.4	5	100%	0	0%
Nimba	261314	1	1	2.2	1	100%	0	0%
Rivercess	40444	0	0	0.0	0	0%	0	0%
River Gee	37775	0	0	0.0	0	0%	0	0%
Sinoe	57910	1	1	10.0	1	100%	0	0%
<b>Liberia</b>	<b>1995031</b>	<b>11</b>	<b>4</b>	<b>3.2</b>	<b>11</b>	<b>100%</b>	<b>0</b>	<b>0%</b>
<b>Non-Polio AFP Rate</b>	<b>&lt;2</b>			<b>&lt;80%</b>	<b>Non-Polio Enterovirus</b>	<b>&lt;10%</b>		
	<b>≥ 2</b>	<b>Stool adequacy</b>		<b>≥80%</b>		<b>≥10%</b>	<b>Silent</b>	



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## Neonatal Tetanus

- One dead case reported from Montserrado County
- Cumulatively, since Epi-week one, 3 clinically diagnosed cases have been reported

## Viral Hemorrhagic Diseases

### Ebola Virus Disease (EVD)

- Zero alert reported
- Cumulatively, since Epi-week one, 8 EVD alerts have been reported and tested negative

### Lassa fever

- Five (5) suspected cases reported from Bong (3) and Grand Bassa (2) Counties
  - Specimens were collected pending laboratory testing
  - Two deaths from Bong County
- Cumulatively, since Epi week one, 30 suspected cases have been reported including two deaths
  - Of these, eight have been tested by the laboratory. Epi-classification is as follows: 2 lab-confirmed, 6 not a case and 22 pending laboratory confirmation

### Yellow fever

- Zero cases reported
- Cumulatively, since Epi-week one, 16 suspected cases have been reported and tested negative

### Monkeypox

- Seven (7) suspected cases were reported from Bong County
  - Specimens were collected for all cases pending shipment
- Cumulatively, since Epi-week one, 46 suspected cases have been reported and no sample has been shipped

### Meningitis

- One (1) suspected case reported from Maryland County
  - Specimen was collected and tested negative
- Cumulatively, since Epi-week one, 11 suspected cases have been reported, 9 tested negative and 1 pending laboratory confirmation

## Events of Public Health Importance

### Maternal Mortality

- Zero death was reported
- Cumulatively, since Epi-week one, 32 maternal deaths have been reported

### Neonatal Mortality

- Twenty-two (22) deaths were reported from Montserrado (12), Margibi (4), Bong (2), Nimba (2), Grand Gedeh (1) and Grand Kru (1) Counties
- Thirteen (13) of the twenty-two deaths occurred in the reporting week
- Reported causes of deaths: Sepsis (11), Asphyxia (9), Neonatal Tetanus (1) and one pending investigation
- Nineteen (19) were reported to have occurred in health facility while three (3) deaths occurred in community
- Cumulatively, since Epi-week one, 118 neonatal deaths have been reported (*See Table 4*)

**Table 4. Annualized and Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi-week 1 - 9, 2019**

County	Estimated Annual Live birth (4.3%)	Current Week	Cumulative	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate/1000
Grand Kru	3130	1	8	7	14.8
Montserrado	62479	12	60	51	5.5
Maryland	7347	0	5	4	3.9
Lofa	14911	0	9	8	3.5
Grand Gedeh	6770	1	6	5	5.1
River Gee	3610	0	2	2	3.2
Margibi	11345	4	11	9	5.6
Bomi	4546	0	2	2	2.5
Bong	18775	2	11	9	3.4
Grand Bassa	11981	0	2	2	1.0
Gbarpolu	4507	0	0	0	0.0
Grand Cape Mount	6868	0	0	0	0.0
Nimba	24970	2	2	2	0.5
Rivercess	3865	0	0	0	0.0
Sinoe	5534	0	0	0	0.0
<b>Liberia (National)</b>	<b>190636</b>	<b>22</b>	<b>118</b>	<b>100</b>	<b>3.6</b>

## Other Reportable Diseases

### Animal Bites (Human Exposure to Rabies)

- Thirty-eight (38) cases were reported from Montserrado (19), Nimba (4), Bong (4), Lofa (3) Maryland (3), Margibi (3) and Sinoe (2) Counties
- Cumulatively, since Epi-week one, 319 suspected cases of animal bites have been reported in human

### Acute Bloody Diarrhea (Suspected Shigellosis)

- Two (2) suspected cases were reported from River Gee and Rivercess Counties
- Specimens were collected pending testing.
- Cumulatively, since Epi-week one, 42 acute bloody diarrhea cases have been reported with 26 stool specimens collected; 26 reached National Public Health Reference Laboratory, of these, 3 tested positive, 18 negative, 3 rejected and 2 pending testing. Seven (7) cases were picked up through record review

### Severe Acute Watery Diarrhea (Cholera)

- Four (4) suspected cases were reported Bomi (2) and one each from Grand Bassa and River Gee Counties
- Specimens were collected pending testing
- Cumulatively, since Epi-week one, 18 suspected cases have been reported with 16 specimens collected; 10 tested negative, 5 pending testing, 1 discarded and 2 not collected

### Unexplained Cluster of Health Events

- Zero cases reported
- Cumulatively, since Epi-week one, one case of unexplained death has been reported

## Other Health Events (Pertussis)

- Thirty-seven (37) clinically diagnosed cases were reported from Bong County for week 8
- Age ranging from 1 month – 24 years
- All reported cases were treated and discharged

## Points of Entry

- Zero IDSR alert detected and verified
- A total of 4119 travelers were recorded for the week (See Table 5)

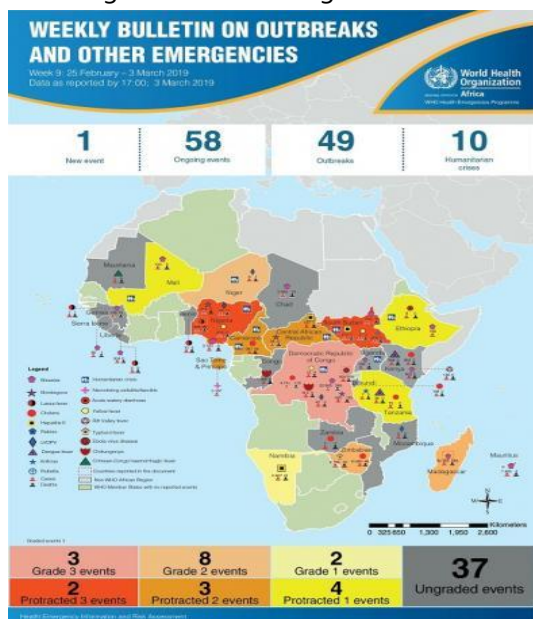
**Table 5. Total Travelers, IDSR Alerts Detected and Verified at Points of Entry, Liberia, Epi-week 9, 2019**

Type of Ports	Point of Entry	Weekly total	Arrival	Departure	Yellow Book Issued	Yellow Book Damage/Card Replaced	Travelers Vaccinated	IDSR Alerts	Alerts Verified
<b>Airport</b>	James S. Paynes	114	63	51	0	0	0	0	0
	Robert International Airport	2395	1173	1222	37	28	9	0	0
<b>Seaport</b>	Freeport of Monrovia	234	117	117	0	0	0	0	0
	Buchanan Port	126	63	63	0	0	0	0	0
<b>Ground Crossing</b>	Bo Water Side	742	262	480	57	20	37	0	0
	Ganta	324	172	152	22	10	12	0	0
	Yekepa	76	55	21	0	0	0	0	0
	Loguatu	108	81	27	6	6	0	0	0
	Nursing Division	124	100	24	124	54	70	0	0
<b>Total Traveler for the Week</b>		<b>4119</b>	<b>2086</b>	<b>2157</b>	<b>246</b>	<b>118</b>	<b>128</b>	<b>0</b>	<b>0</b>

**Note: Yellow book issue for both arrival and departure; Vaccination coverage for both arrival and departure**

## AFRO Public Health Events

The National Public Health Institute of Liberia continues to monitor acute public health emergencies and outbreaks occurring in the African Region in order to ensure preparedness and preventive measures are implemented



During this week, 59 events are being monitored through WHO Health Emergencies Program in the African Region. Key events highlighted during the week include the following:

- Ebola Virus disease in the Democratic Republic of Congo
- Measles in Madagascar
- Lassa Fever in Nigeria
- Humanitarian crisis in Nigeria
- Humanitarian crisis in South Sudan

Source: WHO Week 9 Bulletin on Outbreaks and Other Emergencies



## Outbreaks

### Belleh and Bokomu Districts, Gbarpolu County: Measles

- Reported 24 new suspected cases (Belleh 19, Bokomu 6)
- All reported cases were treated discharged
- Two weeks vaccination campaign ongoing (March 1-14, 2019) targeting children 6-59months
- 94% and 57.3% Vaccination coverage for Belleh and Bokomu Districts

### Greenville District, Sinoe County: Measles

- Reported 11 suspected cases
- Two out of the 11 suspected cases are isolated and undergoing treatment
- Plan to conduct mini campaign in 19 communities
- Reinforced IPC practices
- Radio talk show at the voice of Sinoe radio station

### Gbelay-Geh District, Nimba County: Measles

- Reported and treated 7 new suspected cases

## Public Health Measures

### National level

- Providing technical remote support to Counties
  - Heighten surveillance in affected and surrounding communities

### County level

- Case management for all reported cases ongoing
- Active case search ongoing in affected communities for Measles and Lassa fever

## 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 Negative 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



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- *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



## Immediately reportable diseases, conditions, and events by County during Epi week 9 and cumulative reports, Liberia, 2019

Counties	No. of Expected Health District		No. of Health District Reported		Acute Flaccid Paralysis (Suspected Polio)		Acute Bloody Diarrhea (Shigellosis)		Severe Acute Watery Diarrhoea (Cholera)		Human Exposure to Animal bites (Suspected Rabies)		Lassa fever		Measles		Meningitis		Maternal Mortality		Neonatal Mortality		Neonatal Tetanus		Ebola Virus Disease		Yellow fever		Monkeypox		Dengue fever		Buruli Ulcer		MDR Tuberculosis		Yaws		Unexplained Cluster of deaths		Unexplained Cluster of Health Events/Disease		Other Diseases/Events		
	A	D	A	D	A	D	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	D	A	D	A	D	A	D	A	D	A	D			
Bomi	4	4	0	0	0	0	2	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	0	0	0	0	0	0	0	0	0	0			
Bong	9	9	0	0	0	0	0	0	4	0	3	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Gbarpolu	5	5	0	0	0	0	0	0	0	0	0	0	24	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	0	0	0	0	0	0	
Grand Bassa	8	8	0	0	0	0	1	0	0	0	2	0	1	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	0	0	0	0	0		
Grand Cape Mount	5	5	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Gedeh	6	6	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	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	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lofa	6	6	0	0	0	0	0	0	3	0	0	0	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	0	0	0	0	0		
Margibi	4	4	0	0	0	0	0	0	3	0	0	0	5	0	0	0	0	0	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		
Maryland	6	6	0	0	0	0	0	0	3	0	0	0	0	0	1	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	0	0	0	0	
Montserrado	7	7	2	0	0	0	0	0	19	0	0	0	12	0	0	0	0	0	12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nimba	6	6	0	0	0	0	0	0	4	0	0	0	9	0	0	0	0	0	2	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	
Rivercess	6	6	0	0	1	0	1	0	0	0	0	0	3	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	0	0	0	0	0	0	
River Gee	6	6	0	0	1	0	0	0	0	0	0	0	8	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	0	0	0	0	0	0	
Sinoe	10	10	0	0	0	0	1	0	2	0	0	0	12	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	0	0	0	0	0	0	
<b>Total Weekly</b>	<b>93</b>	<b>93</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</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>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Cumulative Reported</b>			<b>13</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>319</b>	<b>0</b>	<b>28</b>	<b>2</b>	<b>449</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>32</b>	<b>118</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>16</b>	<b>0</b>	<b>46</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>	<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>Cumulative Laboratory Confirmed</b>			<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>56</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>	<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>	<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>	<b>0</b>	<b>0</b>

**D** = Dead  
**A** = Alive

**Editorial Team -NPJIL:** Roseline N. George; Advertus N. Mianah – Surveillance Coordinator/DIDE; Irene Pewu – Epidemiologist/DIDE; Sumo Nuwolo, Godwina B. Williams, Lasee W. Colee, T. Lafayette Hall, Sumor Lomax Flomo & Samuel Zayzay – Disease Investigators/DIDE; Trokon O. Yeabah – Data Manager/DIDE;  
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## **National Public Health Institute of Liberia (NPHIL)**

### **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

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### **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: [tnkue31112@gmail.com](mailto:tnkue31112@gmail.com)

Phone: +231 886 937386/777442444

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

**Ralph W. Jetoh**, MD

Deputy Director

Infectious Disease and Epidemiology Division

National Public Health Institute of Liberia

Republic of Liberia

Email: [ralphica2000@gmail.com](mailto:ralphica2000@gmail.com)

Phone: +231 886526388/777372655

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