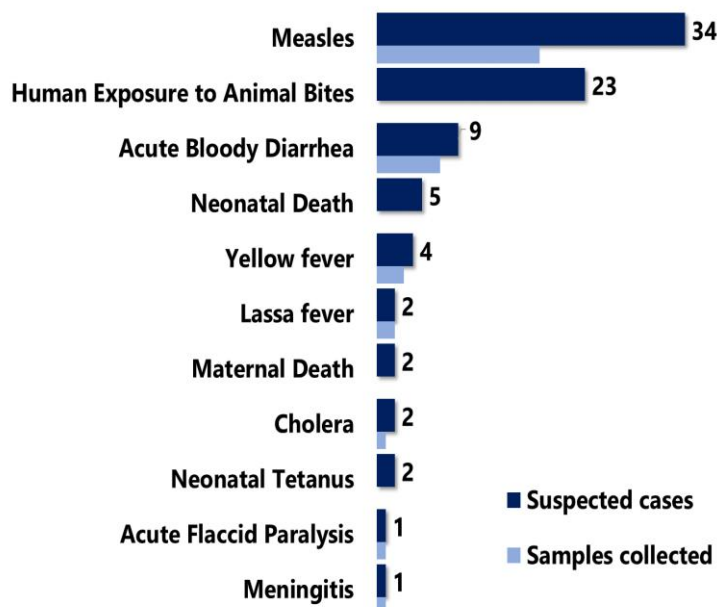


Highlights

Figure 1. Public Health Events Reported during this week



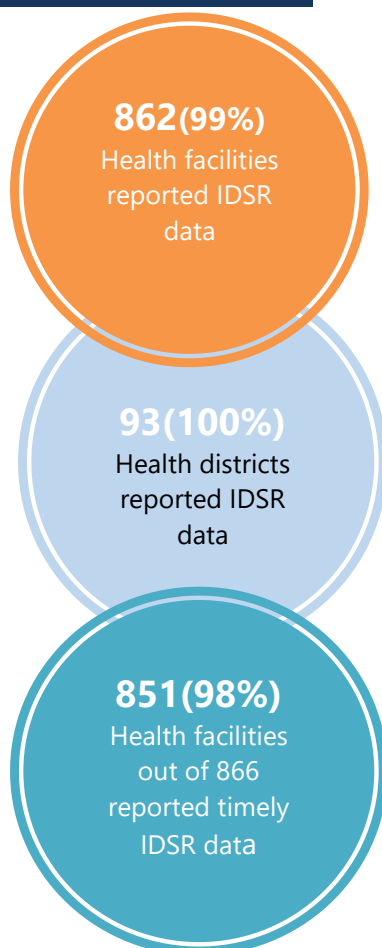
Keynotes and Events of Public Health Significance

- A total of 85 events of public health importance including 10 deaths were reported
- Completeness and timeliness of health facility reports were 100% and 98% respectively
- Ongoing suspected Measles outbreaks in five counties
- Ongoing Lassa fever outbreaks in three counties

Reporting Coverage

Table 1. Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi week 15, 2019

County	Expected report from health facility	Reports received	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	59	59	100	100
Maryland	26	26	26	100	100
Montserrado	351	347	336	99	96
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
Liberia	866	862	851	99	98



Legend: ≥80 <80

- The national target for weekly IDSR reporting is 80%
- Health facility timeliness is monitored at County level
- All counties submitted weekly IDSR report on time to national level except for Nimba County

Vaccine Preventable Diseases

Measles

- Thirty-four (34) suspected cases were reported from Bong (6), Montserrado (6), Sinoe(5), Lofa (4), River Gee (3), Margibi (2), Nimba(2), Gbarpolu (2), Grand Kru (2), Grand Bassa (1), and Grand Gedeh (1) Counties
- Eighteen (18) specimens were collected pending laboratory confirmation
- Sanoyea and Fuamah Districts, Bong County, Firestone District, Margibi County and Kolahun and Voinjama Districts, Lofa County are currently in outbreak phase
- Vaccination status:
 - Among suspected cases: 23 (67.6%) vaccinated, 2 (5.9%) not vaccinated and 9 (26.5%) unknown
- Age distribution
 - Among suspected cases: <1 year: 3 (8.8%), 1 – 4 years: 7 (20.6%), ≥5 years: 24 (70.6%)
- Cumulatively, since Epi-week one, 748 suspected cases have been recorded; Of these, 293 have been tested by the laboratory and results showed 65 positive, 222 negative and 6 indeterminate
- Epi-classification is as follows: 520 (68%) confirmed (65 lab confirmed, 386 clinically confirmed, 69 epi-linked), 222 (45.6%) negative and 6 (1.2%) indeterminate (*See Table 2*)
 - Of the 222 specimens tested negative for measles, 173 specimens were tested for Rubella; 83 positive, 80 negative and 10 indeterminate for rubella

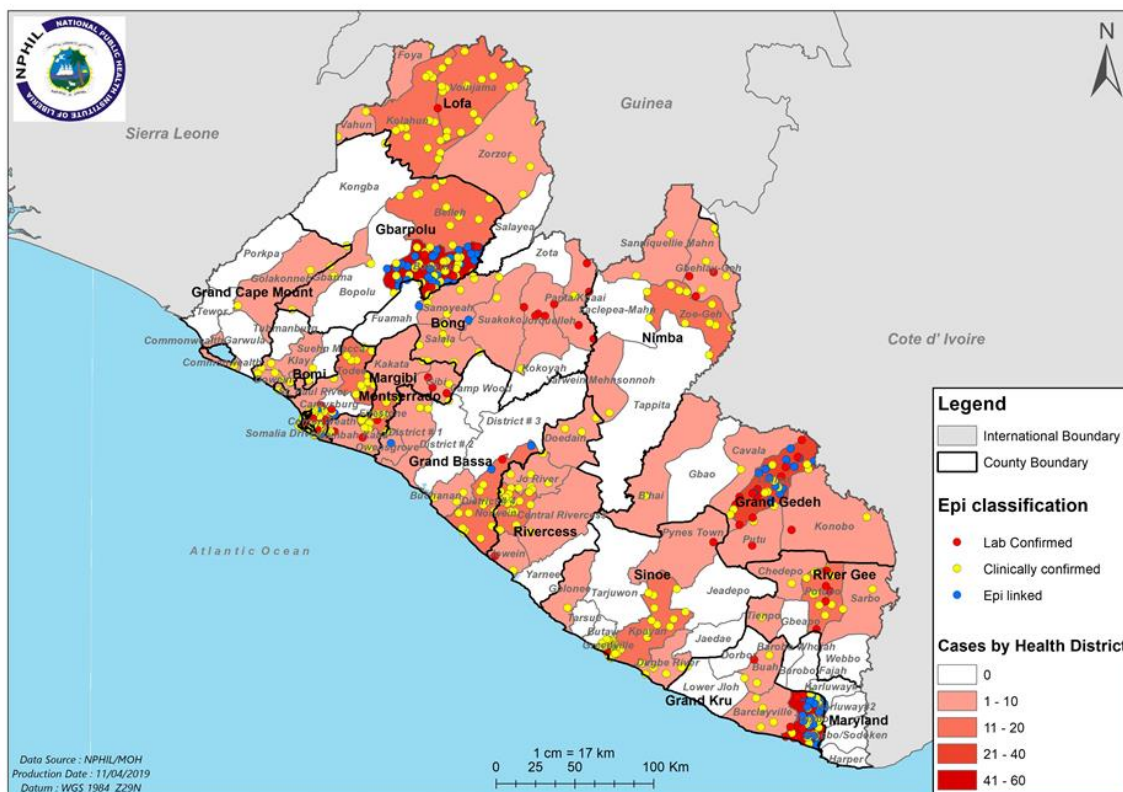
Public Health Action

- Case Management, 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 - 15, 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	8	0	4	12	13.1
Bong	9	2	21	1	11	44	8.7
Gbarpolu	4	27	46	0	5	82	16.5
Grand Bassa	2	2	20	1	15	40	18.7
Grand Cape Mount	0	0	4	0	8	12	17.4
Grand Gedeh	13	14	14	0	14	55	30.8
Grand Kru	8	20	25	0	9	62	42.9
Lofa	1	0	44	0	6	51	6.0
Margibi	6	0	24	1	20	51	26.3
Maryland	0	0	0	0	1	1	2.0
Montserrado	9	4	49	1	55	118	13.1
Nimba	3	0	21	1	27	52	16.1
River Gee	5	0	16	0	21	42	86.7
Rivercess	1	0	29	0	20	50	77.1
Sinoe	4	0	65	1	6	76	16.2
Liberia	65	69	386	6	222	748	17.4
Target Achieved	>=2		Below Target	<2			

Figure 2. Confirmed Measles Cases Reported by Health District, Liberia, Epi-week 1 - 15, 2019



Acute Flaccid Paralysis (Suspected Polio)

- One case reported from Montserrado County with no specimen collected for shipment
- Cumulatively, since Epi week one, 19 cases have been recorded, 9 tested negative and 9 pending laboratory confirmation (See Table 3)

Table 3. Non-polio AFP rate per 100,000 population less than 15 years, Liberia, Epi-week 1 - 15, 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	1	0	1.8	1	100%	0	0%
Gbarpolu	47163	0	0	0.0	0	0%	0	0%
Grand Bassa	125386	1	1	2.8	1	100%	0	0%
Grand Cape Mount	71872	1	1	4.8	1	100%	0	0%
Grand Gedeh	70844	1	0	4.9	1	100%	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	2.9	1	100%	0	0%
Maryland	76884	2	1	9.0	2	100%	0	0%
Montserrado	653849	7	3	3.7	6	86%	0	0%
Nimba	261314	1	1	1.3	1	100%	0	0%
Rivercess	40444	0	0	0.0	0	0%	0	0%
River Gee	37775	1	0	9.2	1	100%	0	0%
Sinoe	57910	3	1	18.0	3	100%	0	0%
Liberia	1995031	19	9	3.3	18	95%	0	0%
Non-Polio AFP Rate	<2			<80%	Non-Polio Enterovirus	<10%		
	≥ 2	Stool adequacy		≥80%		≥10%	Silent	



Liberia IDSR Epidemiology Bulletin

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Neonatal Tetanus

- Two (2) cases reported from Bong County
- Cumulatively, since Epi-week one, 13 clinically diagnosed cases have been recorded of which six were dead

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- Zero alert reported
- Cumulatively, since Epi-week one, 7 EVD alerts have been recorded with negative results

Lassa fever

- Two (2) suspected cases reported from Grand Bassa and Montserrado Counties
 - Specimens were collected and pending testing
- Cumulatively, since Epi week one, 54 suspected cases have been recorded including six deaths
 - Of the total suspected cases, forty-six (46) have been tested by the laboratory. Epi-classification is as follows: 19 positive, 32 negative and 3 pending laboratory confirmation

Yellow fever

- Four (4) suspected cases reported from Lofa (2), and Grand Kru (2) Counties
 - Three specimens were collected and tested negative
- Cumulatively, since Epi-week one, 31 suspected cases including one death have been recorded. Of these, 29 have been tested negative and two remains suspected

Monkeypox

- Zero suspected case reported
- Cumulatively, since Epi week one, 49 suspected cases have been reported and no specimen has been shipped

Meningitis

- One suspected case reported from Grand Kru County
 - Specimen was collected and tested negative
- Cumulatively, since Epi-week one, 15 suspected cases have been recorded, 14 tested negative, and one specimen not collected

Events of Public Health Importance

Maternal Mortality

- Two (2) deaths reported from Gbarpolu and Montserrado Counties
- Reported cause is: postpartum hemorrhage (2)
- All deaths were reported to have occurred in health facility
- Cumulatively, since Epi-week one, 59 maternal deaths have been recorded (*See Table 4*)

Table 4. Annualized and Cumulative Maternal Deaths Reported by Counties, Liberia, Epi-week 1 - 15, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Maryland	7347	0	5	8	236
Bong	18775	0	9	15	166
Grand Gedeh	6770	0	3	5	154
Gbarpolu	4507	1	2	3	154
Nimba	24970	0	11	19	153
Sinoe	5534	0	2	3	125
Margibi	11345	0	4	7	122
Grand Bassa	11981	0	4	7	116
River Gee	3610	0	1	2	96
Rivercess	3865	0	1	2	90
Montserrado	62479	1	14	24	78
Bomi	4546	0	1	2	76
Grand Cape Mount	6868	0	1	2	50
Lofa	14911	0	1	2	23
Grand Kru	3130	0	0	0	0
Liberia (National)	190636	2	59	100	107

Neonatal Mortality

- Five (5) deaths were reported from Margibi (2), Grand Gedeh (1), Lofa (1), and Montserrado (1) Counties
- Reported causes of deaths: Sepsis (3) and Asphyxia (2)
- All deaths were reported to have occurred in health facility
- Cumulatively, since Epi-week one, 184 neonatal deaths have been reported (*See Table 5*)

Table 5. Annualized and Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi-week 1 - 15, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Ratio/1,000
Grand Kru	3130	0	13	7	14.4
Grand Gedeh	6770	1	14	8	7.2
Margibi	11345	2	18	9	5.2
Montserrado	62479	1	84	46	4.7
Bong	18775	0	21	11	3.9
Rivercess	3865	0	4	2	3.6
Maryland	7347	0	6	3	2.8
Lofa	14911	1	11	6	2.6
River Gee	3610	0	2	1	1.9
Bomi	4546	0	2	1	1.5
Gbarpolu	4507	0	1	1	0.8
Nimba	24970	0	5	3	0.7
Grand Bassa	11981	0	2	1	0.6
Sinoe	5534	0	1	1	0.6
Grand Cape Mount	6868	0	1	1	0.5
Liberia (National)	190636	5	185	100	3.3

Other Reportable Diseases

Animal Bites (Human Exposure to Rabies)

- Twenty-three (23) cases were reported from Montserrado (9), Bong (3), Nimba (3), Rivercess (3), Maryland (2), Grand Bassa (1), Grand Gedeh (1), and Lofa (1) Counties
- Cumulatively, since Epi-week one, 535 cases of animal bites have been recorded

Acute Bloody Diarrhea (Suspected Shigellosis)

- Nine (9) suspected cases were reported from Sinoe (4), Margibi (3), Bong (1), Grand Gedeh (1) Counties
- Seven specimens were collected and pending laboratory confirmation
- Cumulatively, since Epi-week one, 82 acute bloody diarrhea cases have been recorded with 56 stool specimens collected; 31 tested, 6 positive, 25 not a case (negative), 10 pending and 41 were not tested

Severe Acute Watery Diarrhea (Cholera)

- Two (2) suspected cases reported Margibi and Bong Counties
- One specimen was collected
- Cumulatively, since Epi-week one, 36 suspected cases have been recorded with 20 specimens collected; 18 tested negative and 2 pending testing

***The two pending cases fall in week 12 and week 14

Unexplained Cluster of Health Events

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

Points of Entry

- Zero IDSR alert detected and verified
- A total of 5893 travelers were recorded for the week (See Table 6)

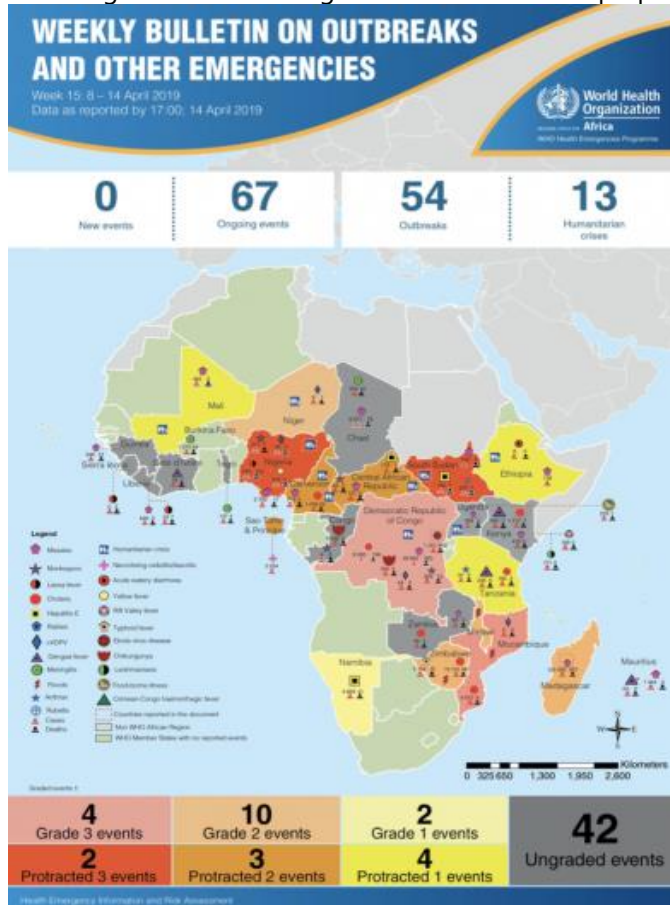
Table 6. Total Travelers, IDSR Alerts Detected and Verified at Points of Entry, Liberia, Epi-week 15, 2019

Type of Ports	Point of Entry	Weekly total	Arrival	Departure	Yellow Book Issued	Yellow Book Damage/Card Replaced	Travelers Vaccinated	IDSR Alerts	Alerts Verified
Airport	James S. Paynes	80	25	55	0	0	0	0	0
	Robert International Airport	4159	1960	2199	46	31	15	0	0
Seaport	Freeport of Monrovia	132	66	66	0	0	0	0	0
	Buchanan Port	24	12	12	0	0	0	0	0
Ground Crossing	Bo Water Side	638	208	430	43	3	40	0	0
	Ganta	422	201	221	37	12	25	0	0
	Yekepa	75	53	22	0	0	0	0	0
	Loguatuo	226	126	100	0	0	0	0	0
	Nursing Division	137	119	18	137	61	76	0	0
Total Traveler for the Week		5893	2770	3123	263	107	156	0	0

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

- Humanitarian crises in South Sudan
- Humanitarian crises in North East Nigeria
- Ebola virus disease outbreak in the Democratic Republic of the Congo
- Cholera outbreak in Kenya
- Measles outbreak in Madagascar

Outbreaks:

Measles:

Sanoyea and Fuama Districts, Bong County: Measles

- Fuamah District reported 50 suspected cases
- Measles outreach was conducted in 27 communities, Vaccinated 43 children ages 6-59 months

Kolahun and Voinjama Districts, Lofa County

- Reported 4 new suspected cases (Kolahun 3, Voinjama 0 & Zorzor 1
- Cases treated and discharged
- Conducted mini measles campaign from April 8-12, 2019 targeting 13,000 children in the two districts

- Treated and discharge
- Community engagement and active case search ongoing

Firestone, Margibi County

- Reported 2 suspected cases
- Treated and discharged
- Measles outreach was conducted, vaccinated 85 (65%) out of 129 children targeted in affected and surrounding communities from April 4-5, 2019
- Community engagement and health education ongoing



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Lassa Fever:

- NPHRL Confirmed one case from District #3 A & B Grand Bassa County
- case is 21 years old, four weeks post-partum moth and a residence of Trola town
- The patient presented with high fever (>38.6°C) weakness, poor appetite, painful throat, swollen neck, difficulty breathing, cough and diarrhea
- Specimen was collected and tested positive on April 16, 2019
- A total of 9 contacts were line listed and follow up is ongoing

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 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

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2019 Epi-week 15(April 8– 14, 2019)

Counties	No. of Expected Health District		Acute Flaccid Paralysis (Suspected 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		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						
	No. of Health District Reported		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	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	1	0	1	0	3	0	0	0	50	0	0	0	0	2	0	2	0	0	0	0	0	0	0	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	2	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				
Grand Bassa	8	8	0	0	0	0	0	0	1	0	1	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Grand Gedeh	6	6	0	0	1	0	0	0	1	0	0	0	1	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			
Grand Kru	5	5	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	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		
Lofa	6	6	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	1	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		
Margibi	4	3	0	0	3	0	1	0	0	0	0	2	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	0	0		
Maryland	8	8	0	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	0	0	0	0	0	0	0	0	0	0	0	0	
Montserrado	7	7	1	0	0	0	0	1	9	0	1	0	6	0	0	0	1	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		
Nimba	6	6	0	0	0	0	0	0	3	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	
Rivercess	6	6	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	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	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sinoe	10	10	0	0	4	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	
Total Weekly	95	94	1	0	9	0	2	1	23	0	2	0	78	0	1	0	2	7	0	2	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		
Cumulative Reported			1	0	8	0	3	1	53	0	5	6	79	0	1	0	5	18	6	6	5	2	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cumulative Laboratory Confirmed			0	0	6	0	0	0	0	0	1	9	65	0	0	0	14	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

D = Dead

A = Alive

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