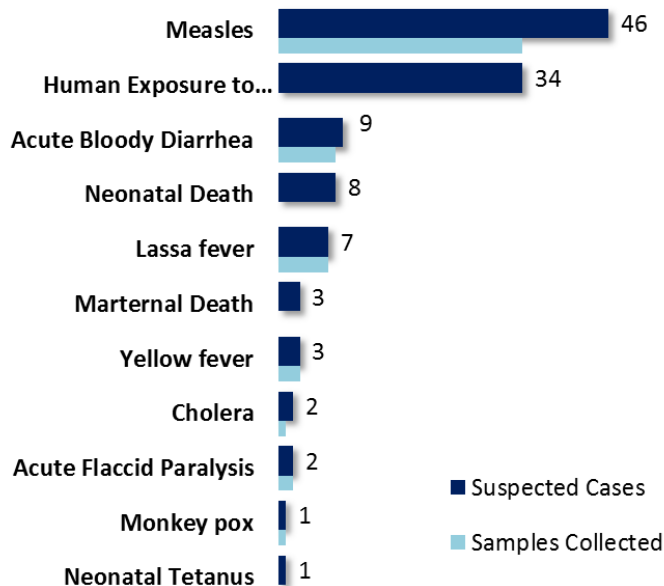


Country Population: 4,433,398 Volume 11, Issue 10, March 4 – 10, 2019 Data Source: CSOs from 15 Counties and Lab

Highlights

Figure 1. Public Health Events Reported in Epi week 10



Keynotes and Events of Public Health Significance

- **A total of 116** events of public health importance including **13** deaths were reported
- **Completeness and timeliness** of health facility reports were **both 99 and 98%**
- **Ongoing Measles outbreaks** in three counties

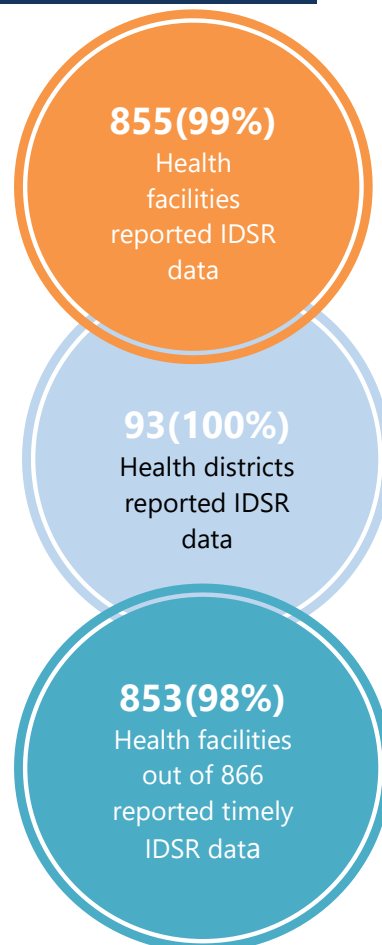
Reporting Coverage

Table 1. Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi week 10, 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	58	58	98	98
Margibi	59	59	59	100	100
Maryland	26	26	26	100	100
Montserrado	351	341	339	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
Liberia	866	855	853	99	98

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

- Forty- eight (46) suspected cases were reported from Nimba (10), Rivercess (7), Grand Kru (6), Margibi (3), Grand Gedeh (3), Montserrado (3), Lofa (3), Sinoe (2), Grand Bassa (2), Grand Cape Mount (2), River Gee (2), Bong (1), Bomi (1), and Mary land (1) Counties
- Thirty-four (34) specimens were collected; thirty (30) tested by the National Public Health Reference Laboratory
 - Two (2) lab-confirmed (positive), 27 negative, 1 indeterminate and 4 pending laboratory confirmation
- Belleh and Bokomu Districts, Gbarpolu County, Gbelaygeh District, Nimba County, and Greenville District, Sinoe County currently in outbreak phase
- Vaccination status:
 - Among suspected cases: 14 (30.4%) vaccinated, 4 (8.6%) not vaccinated and 28 (60.8%) unknown
 - Among confirmed cases: 1 (50%) vaccinated, 1(50%) not vaccinated and 1 (2%) Unknown
- Age distribution
 - Among suspected cases: <1 year: 2 (4.3%), 1 – 4 years: 12 (26%) and ≥5 years: 32(69.5%)
 - Among confirmed cases : < 1year: 1 (50%) ≥5 years: 1 (50%)
- Cumulatively, since Epi-week one, 499 suspected cases have been reported; Of these, 293 have been tested by the laboratory and results showed 65 positive, 222 tested negative and 6 indeterminate
- Epi-classification is as follows: 271 (54.3%) confirmed cases (65 lab confirmed, 145 clinically confirmed, 61 epi-linked), 222 (44.4%) negative and 6 (1.2%) indeterminate (*See Table 2*)
- Of the 222 specimen tested negative for Measles, 173 specimens were tested for Rubella; 83 tested positive, 90 negative and 10 indeterminate for Rubella

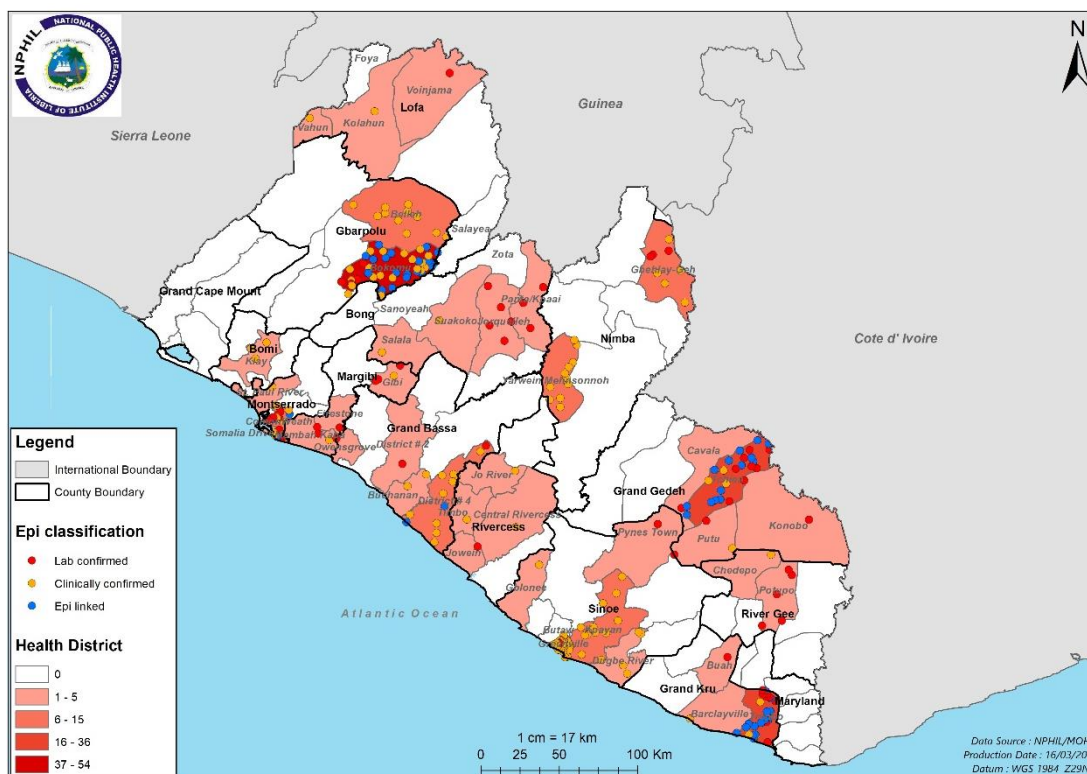
Public Health Action

- 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 - 10, 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	4	7	19.7
Bong	9	0	2	1	11	23	13.1
Gbarpolu	4	21	30	0	5	60	24.8
Grand Bassa	2	2	12	1	15	32	28.0
Grand Cape Mount	0	0	0	0	8	8	26.0
Grand Gedeh	13	14	4	0	14	45	46.2
Grand Kru	8	20	8	0	9	45	64.3
Lofa	1	0	4	0	6	11	9.0
Margibi	6	0	2	1	20	29	39.4
Maryland	0	0	0	0	1	1	3.0
Montserrado	9	4	7	1	55	76	19.7
Nimba	3	0	18	1	27	49	24.2
River Gee	5	0	2	0	21	28	130.1
Rivercess	1	0	3	0	20	24	115.7
Sinoe	4	0	50	1	6	61	24.2
Liberia	65	61	145	6	222	499	26.0
Target Achieved	>=2		Below Target	<2			

Figure 2. Confirmed Measles Cases Reported by Health District, Liberia, Epi-week 1 - 10, 2019



Acute Flaccid Paralysis (Suspected Polio)

- Two (2) cases reported from Montserrado and Grand Gedeh Counties. Specimens were collected and pending shipment
- Cumulatively, since Epi week one, 13 cases have been reported, 4 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 - 10, 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	4.1	1	100%	0	0%
Grand Cape Mount	71872	1	1	7.2	1	100%	0	0%
Grand Gedeh	70844	1	0	7.3	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	4.4	1	100%	0	0%
Maryland	76884	1	0	6.8	1	100%	0	0%
Montserrado	653849	6	0	4.8	6	100%	0	0%
Nimba	261314	1	1	2.0	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	9.0	1	100%	0	0%
Liberia	1995031	13	4	3.4	13	100%	0	0%
Non-Polio AFP Rate	<2	Stool adequacy	<80%	Non-Polio Enterovirus	<10%	Silent		



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Neonatal Tetanus

- One case reported from Grand Bassa County
- Cumulatively, since Epi-week one, 4 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- Zero alert reported
- Cumulatively, since Epi-week one, 7 EVD alerts have been reported and tested negative

Lassa fever

- Seven (7) suspected cases reported from Bong (2), Grand Bassa (2), Nimba (2), and Grand Kru (1) Counties
 - Specimens were collected pending laboratory testing
 - Two deaths reported from Bong County
- Cumulatively, since Epi week one, 38 suspected cases have been reported including four deaths
 - Of these, eight have been tested by the laboratory. Epi-classification is as follows: 2 lab-confirmed, 6 not a case and 29 pending laboratory confirmation

Yellow fever

- Three (3) suspected cases reported from River Gee, Lofa and Rivercess Counties
 - Specimens were collected: Two tested negative and one pending laboratory confirmation
- Cumulatively, since Epi-week one, 19 suspected cases have been reported of which 18 tested negative and one pending laboratory confirmation

Monkeypox

- One (1) suspected case was reported from Lofa County
 - Specimen was collected and sent to National Public Health Reference Laboratory pending shipment
- Cumulatively, since Epi-week one, 47 suspected cases have been reported and no sample has been shipped

Meningitis

- Zero suspected case reported
- Cumulatively, since Epi-week one, 11 suspected cases have been reported, 9 tested negative, one pending laboratory confirmation, and specimen was not collected

Events of Public Health Importance

Maternal Mortality

- Three (3) deaths were reported from Bong (2) and Maryland (1) Counties
- Reported causes are: Postpartum Hemorrhage (2) and Ruptured Uterus
- Two deaths were reported to have occurred in community and one in health facility
- Cumulatively, since Epi-week one, 35 maternal deaths have been reported (*See Table 4*)

Table 4. Annualized and Cumulative Maternal Deaths Reported by Counties, Liberia, Epi-week 1 - 10, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Gedeh	6770	0	3	9	230
Maryland	7347	1	4	11	283
Margibi	11345	0	3	9	138
Rivercess	3865	0	1	3	135
Grand Bassa	11981	0	3	9	130
Gbarpolu	4507	0	1	3	115
Nimba	24970	0	5	14	104
Bong	18775	2	5	14	138
Montserrado	62479	0	9	26	75
Lofa	14911	0	1	3	35
Bomi	4546	0	0	0	0
Grand Cape Mount	6868	0	0	0	0
Grand Kru	3130	0	0	0	0
River Gee	3610	0	0	0	0
Sinoe	5534	0	0	0	0
Liberia (National)	190636	3	35	100	95

Neonatal Mortality

- Eight (8) deaths were reported from Montserrado (5), Maryland (1), Cape Mount (1), and Bong (1) Counties
- Reported causes of deaths: Sepsis (6), Asphyxia (1), and one pending investigation
- Seven (7) were reported to have occurred in health facility while one (1) death occurred in community
- Cumulatively, since Epi-week one, 126 neonatal deaths have been reported (*See Table 5*)

Table 5. Annualized and Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi-week 1 - 10, 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	8	6	13.3
Montserrado	62479	5	65	52	5.4
Margibi	11345	0	11	9	5.0
Grand Gedeh	6770	0	6	5	4.6
Maryland	7347	1	6	5	4.2
Bong	18775	1	12	10	3.3
Lofa	14911	0	9	7	3.1
River Gee	3610	0	2	2	2.9
Bomi	4546	0	2	2	2.3
Grand Bassa	11981	0	2	2	0.9
Grand Cape Mount	6868	1	1	1	0.8
Nimba	24970	0	2	2	0.4
Gbarpolu	4507	0	0	0	0
Rivercess	3865	0	0	0	0
Sinoe	5534	0	0	0	0
Liberia (National)	190636	8	126	100	3.4



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Other Reportable Diseases

Animal Bites (Human Exposure to Rabies)

- Thirty-four (34) cases were reported from Montserrado (11), Nimba (6), Grand Bassa (4), Rivercess (3), Bong (3), Bomi (3), Grand Kru (1), Grand Cape Mount (1), Margibi (1), and Sinoe (1) Counties
- Cumulatively, since Epi-week one, 353 suspected cases of animal bites have been reported in human

Acute Bloody Diarrhea (Suspected Shigellosis)

- Nine (9) suspected cases were reported from Sinoe (2), Margibi (2), Grand Gedeh (1), Montserrado (1), Nimba (1), River Gee (1), and Rivercess (1) Counties
- Eight (8) specimens were collected: two tested negative, two rejected and four pending laboratory confirmation.
- Cumulatively, since Epi-week one, 52 acute bloody diarrhea cases have been reported with 36 stool specimens collected; 36 reached National Public Health Reference Laboratory, of these, 3 tested positive, 22 negative, 5 rejected and 6 pending testing.

Severe Acute Watery Diarrhea (Cholera)

- Two (2) suspected cases were reported from; Grand Kru County
- Specimen was collected for one pending laboratory confirmation
- Cumulatively, since Epi-week one, 20 suspected cases have been reported with 18 specimens collected; 14 tested negative, 3 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)

- Zero suspected cases reported
- Cumulatively, thirty-seven (37) clinically diagnosed cases were reported from Bong County

Points of Entry

- Zero IDSR alert detected and verified
- A total of 5302 travelers were recorded for the week (See Table 6)

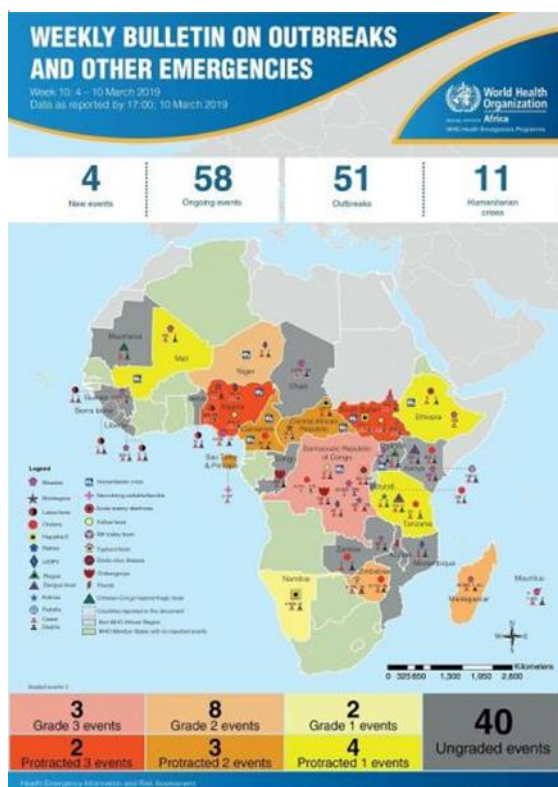
Table 6. Total Travelers, IDSR Alerts Detected and Verified at Points of Entry, Liberia, Epi-week 10, 2019

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	163	56	107	0	0	0	0	0
	Robert International Airport	3545	1692	1853	30	18	12	0	0
Seaport	Freeport of Monrovia	132	66	66	0	0	0	0	0
	Buchanan Port	0	0	0	0	0	0	0	0
Ground Crossing	Bo Water Side	578	188	390	45	15	30	0	0
	Ganta	445	216	229	28	28	0	0	0
	Yekepa	364	321	43	0	0	0	0	0
	Loguatuo	75	44	31	8	8	0	0	0
	Nursing Division	0	0	0	0	0	0	0	0
Total Traveler for the Week		5302	2583	2719	111	69	42	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, 62 events are being monitored through WHO Health Emergencies Program in the African Region. Key events highlighted during the week include the following:

- Plague in Uganda
- Ebola Virus disease in the Democratic Republic of Congo
- Hepatitis in Namibia
- Lassa fever in Nigeria

Source: WHO Week 10 Bulletin on Outbreaks and Other Emergencies

Outbreaks

Belleh and Bokomu Districts, Gbarpolu County: Measles

- No new case reported
- Two weeks vaccination campaign ongoing (March 1-14, 2019) targeting children 6-59 months
- 94% and 57.3% Vaccination coverage for Belleh and Bokomu Districts 2018

Gbelay-Geh District, Nimba County: Measles

- Nine (9) new suspected cases reported
- All reported cases were treated and discharged
- Mini campaign was conducted, vaccinated 131 out of 200 targeted (65.5%) 6-59 months

Greenville District, Sinoe County: Measles

- Two (2) new suspected cases reported
- Treated and discharged
- Total of 17 suspected cases reported (Lab-confirmed 3, Epi-linked 14)
- Conducted mini measles vaccination campaign in 14 communities, vaccinated 1876 children 6 – 59 months

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



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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

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Immediately reportable diseases, conditions, and events by County during Epi week 10 and cumulative reports, Liberia, 2019

Counties	No. of Expected Health District		Acute Flaccid Paralysis (Suspected Polio)		Acute Bloody Diarrhea (Shigellosis)		Severe Acute Watery Diarrhea (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	3	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			
Bong	9	9	0	0	0	0	3	0	0	2	1	0	0	0	2	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			
Gbarpolu	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		
Grand Bassa	8	8	0	0	0	0	4	0	2	0	2	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	
Grand Cape Mount	5	5	0	0	0	0	1	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	0		
Grand Gedeh	6	6	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	0		
Grand Kru	5	5	0	0	0	2	1	0	1	0	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	0	0	0	0	0	0	0		
Lofa	6	6	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Margibi	4	4	0	0	2	0	1	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	
Maryland	6	6	0	0	0	0	0	0	0	0	1	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	0	0
Montserrado	7	7	1	0	1	0	11	0	0	0	3	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	
Nimba	6	6	0	0	1	0	6	0	2	0	10	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	1	0	3	0	0	0	7	0	0	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
River Gee	6	6	0	0	1	0	0	0	0	0	2	0	0	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
Sinoe	10	10	0	0	2	0	1	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
Total Weekly	93	93	2	0	9	0	34	0	5	2	46	0	2	0	3	8	1	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cumulative Reported			13	0	52	0	353	0	33	4	499	0	11	0	35	126	2	2	6	2	19	0	47	0	0	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	3	0	0	0	2	0	56	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

D = Dead
A = Alive

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VISION

*A center of excellence to
create health outcomes for
Liberians through a strong
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