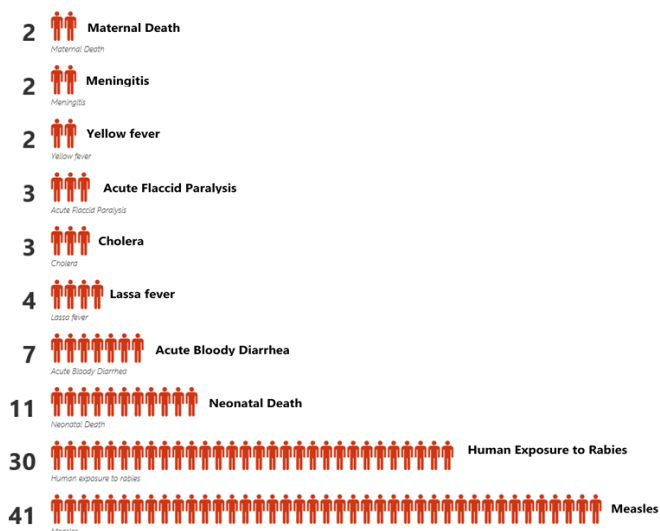


Highlights

Figure 1: Public Health Events reported during this week



Keynotes and Events of Public Health Significance

- ◆ **A total of 105** events of public health importance including **15** deaths were reported
- ◆ **Completeness and timeliness** of health facility reports were both **97%**
- ◆ **Measles outbreaks** in Rivercess and Grand Gedeh Counties

Reporting Coverage

Table 1. Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi week 28, 2019

County	Number of Expected Report	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	17	17	89	89
Lofa	59	57	57	97	97
Margibi	59	59	59	100	100
Maryland	26	26	26	100	100
Montserrado	351	332	332	95	95
Nimba	84	83	83	99	99
Rivercess	20	20	20	100	100
River Gee	20	20	20	100	100
Sinoe	37	37	37	100	100
Liberia	866	842	842	97	97

842(97%)
Health facilities reported IDSR data

92(99%)
Health districts reported IDSR data

842 (97%)
Health facilities out of 866 reported timely IDSR data

Legend: ≥80 <80

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

Vaccine Preventable Diseases

Measles

- ◆ Forty-one (41) suspected cases were reported from Rivercess (17), Grand Bassa (7), Grand Kru (4), Sinoe (3), Montserrado (3), Grand Gedeh (2), Bong (2), River Gee (2), and Bomi (1) Counties
 - Twenty-two specimens were collected and 18 tested, and the results show 10 positive, 7 negative, and 1 equivocal
- ◆ Vaccination status:
 - Among suspected cases: 23 (56.1%) vaccinated, 1 (2.4%) not vaccinated and 17 (41.5%) unknown
- ◆ Age distribution
 - Among suspected cases: <1 year: 0 (0%), 1 – 4 years: 10 (24.4%), ≥5 years: 31 (75.6%)
- ◆ Cumulatively, since Epi-week one, 1163 suspected cases have been recorded; Of these, 426 have been tested by the laboratory and results showed 120 positive, 297 negative and 9 indeterminate
- ◆ Epi-classification is as follows: 856 (73.6%) confirmed (120 lab confirmed, 646 clinically confirmed, 90 epi-linked), 297 (25.5%) negative, 9 (0.8%) indeterminate, and 1 (0.1%) pending (*See Table 2, Figure 2*)
 - Cumulative vaccination status among lab confirmed: 41 (34.2%) vaccinated, 34 (28.3%) not vaccinated, 45 (37.5%) unknown
 - Age distribution among lab confirmed: <1 year: 9 (7.5%), 1 – 4 years: 15 (12.5%), ≥5 years: 96 (80%)
 - Of the 297 specimens tested negative for measles, 210 specimens were tested for rubella, as follows: 102 positive, 99 negative, and 9 indeterminate

Public Health Action

- ◆ Case Management, active case search, health education, and community engagement are ongoing in districts that

Table 2. Annualized Non-Measles Febrile Rash Illness Rate by Counties, Liberia, Epi-week 1 - 28, 2019

Reporting County	Epi-classification						Total	Annualized Non-Measles Febrile Rash Illness Rate
	Lab confirmed	Epi-linked	Clinically confirmed	Indeterminate (Equivocal)	Discarded (Negative)	Pending		
Bomi	1	0	12	0	10	1	24	17.6
Bong	13	2	30	1	16	0	62	6.8
Gbarpolu	5	27	48	0	6	0	86	10.6
Grand Bassa	2	2	42	2	17	0	65	11.3
Grand Cape Mount	1	0	7	0	11	0	19	12.8
Grand Gedeh	21	14	18	0	14	0	67	16.5
Grand Kru	15	20	35	0	11	0	81	28.1
Lofa	7	0	85	0	17	0	109	9.1
Margibi	10	0	35	2	29	0	76	20.4
Maryland	0	0	0	0	1	0	1	1.1
Montserrado	12	4	84	1	67	0	168	8.6
Nimba	7	10	36	1	28	0	82	9.0
River Gee	13	0	59	0	26	0	98	57.5
Rivercess	7	11	49	1	36	0	104	74.4
Sinoe	6	0	106	1	8	0	121	11.5
Liberia	120	90	646	9	297	0	1163	12.4
Target Achieved	>=2		Below Target		<2			

Figure 2. Cumulative Epi-classification Measles Cases by Reporting weeks, Liberia, Epi-week 1 - 28, 2019

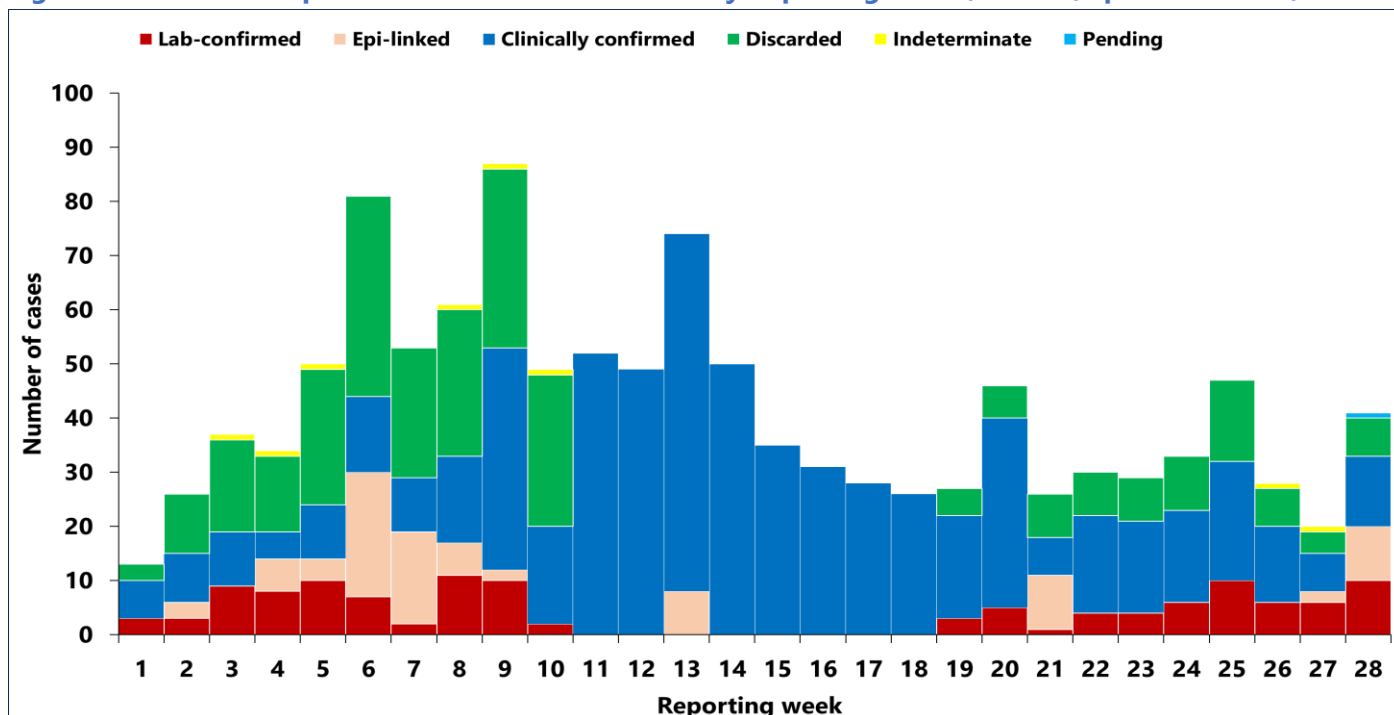
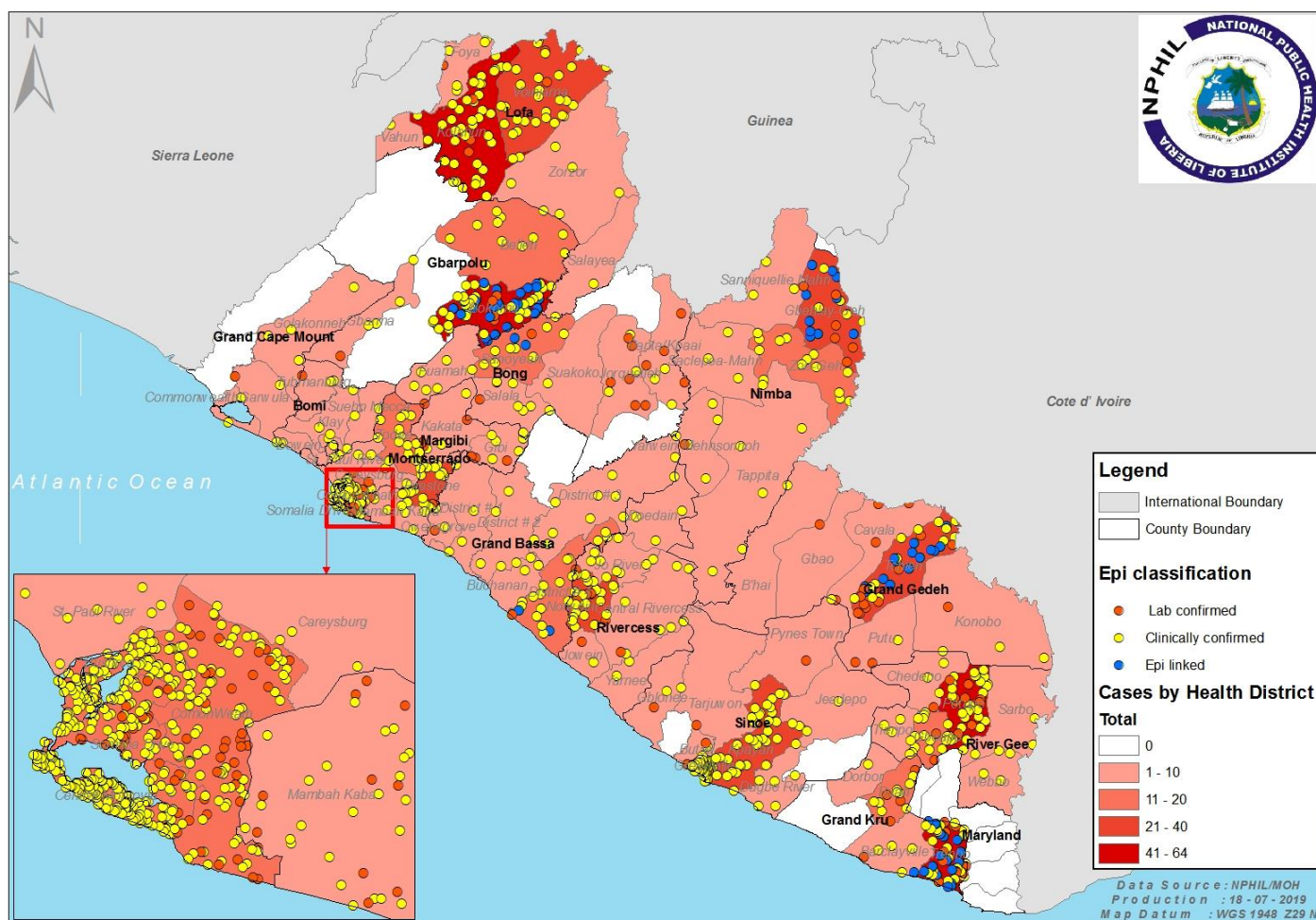


Figure 3. Cumulative Confirmed Measles Cases Reported by Health District, Liberia, Epi-week 1 - 28, 2019



Acute Flaccid Paralysis (Suspected Polio)

- ◆ Three (3) cases were reported from Lofa
- ◆ Specimens were collected pending laboratory confirmation
- ◆ Cumulatively, since Epi week one, 35 cases have been recorded:
 - Proportion of cases reported with sample collected and tested is 100%
 - Laboratory confirmed (+) zero

Neonatal Tetanus

- ◆ One (1) dead case was reported during record review from Bong County
- ◆ Cumulatively, since Epi-week one, 20 clinically diagnosed cases have been recorded:
 - Attributable death 35% (n=7)

Viral Hemorrhagic Diseases

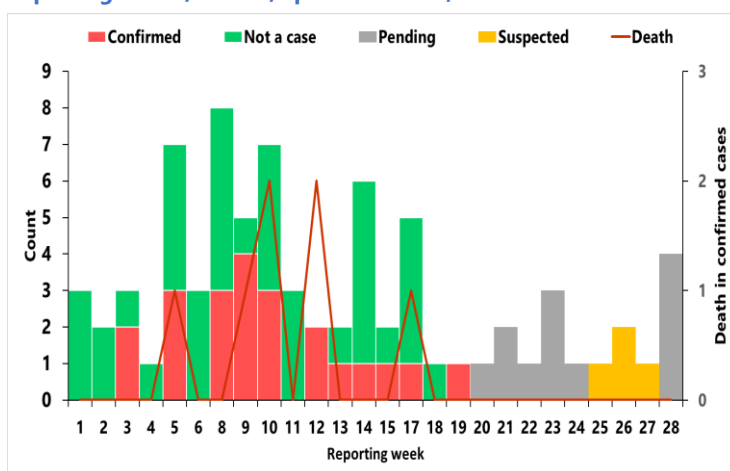
Ebola Virus Disease (EVD)

- ◆ Zero alert was reported
- ◆ Cumulatively, since Epi-week one, 11 EVD alerts have been recorded with 11 negative results

Lassa fever

- ◆ Four (4) suspected cases were reported from Nimba (2), Margibi (1) and Grand Bassa (1) Counties
 - Four specimens were collected and pending laboratory confirmation
- ◆ Cumulatively, since Epi week one, 77 suspected cases have been recorded:
 - Proportion of suspected cases reported with sample collected is 79%
 - Laboratory confirmed 30% (n=22)
 - Case fatality in confirmed cases is 36% (n=8)
 - Epi-classification is as follows: 22 positive, 39 negative and 16 pending laboratory confirmation

Figure 4. Cumulative Epi-classification of Lassa fever cases by reporting weeks, Liberia, Epi-week 1 - 28, 2019



Yellow fever

- ◆ Two (2) suspected cases were reported from River Gee County
- ◆ Specimens were collected and tested negative
- ◆ Cumulatively, since Epi-week one, 63 suspected cases have been recorded:
 - Zero laboratory confirmed
 - Proportion of suspected cases reported with sample tested is 83% (n=52)
 - Zero attributable death

Monkeypox

- ◆ Zero suspected case was reported
- ◆ Cumulatively, since Epi week one, 50 suspected cases have been reported and 12 specimens have been shipped to Atlanta for confirmation

Meningitis

- ◆ Two suspected cases were reported from Grand Kru and Nimba Counties
- ◆ Two specimens collected; 1 tested negative from Nimba County
- ◆ Cumulatively, since Epi-week one, 32 suspected cases have been recorded, 29 tested negative, and 2 specimens were not collected from Lofa and Maryland

Events of Public Health Importance

Maternal Mortality

- ◆ Two (2) deaths were reported from Nimba and Margibi Counties
- ◆ Causes of death: Postpartum Hemorrhage (2)
- ◆ Reporting sites: health facilities 1 (50%) and Community 1 (50%)
- ◆ Cumulatively, since Epi-week one, 156 maternal deaths have been recorded and the major attributable causes are : postpartum hemorrhage 77 (49%), eclampsia 21 (13.4%), and anemia 13 (8.3%) (*See Table 3*)

Table 3. Annualized and Cumulative Maternal Death Reported by County, Liberia, Epi-week 1 - 28, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Maryland	7347	0	11	7	278
Grand Gedeh	6770	0	10	6	274
Bong	18775	1	22	14	218
Margibi	11345	1	12	8	196
Gbarpolu	4507	0	4	3	165
Nimba	24970	1	22	14	164
Rivercess	3865	0	3	2	144
Montserrado	62479	0	46	29	137
Grand Cape Mount	6868	0	5	3	135
Sinoe	5534	0	4	3	134
Grand Bassa	11981	0	7	4	109
River Gee	3610	0	2	1	103
Bomi	4546	0	2	1	82
Lofa	14911	0	5	3	62
Grand Kru	3130	0	1	1	59
Liberia (National)	190636	3	156	100	152

Neonatal Mortality

- ◆ Eleven (11) deaths were reported from Montserrado (5), Gbarpolu (2), Maryland (2), Lofa (1), and Margibi (1) Counties
- ◆ Causes of deaths: Sepsis (5), Asphyxia (4), and Preterm (2)
- ◆ Reporting sites: health facilities 9 (82%) and community 2 (18%)
- ◆ Cumulatively, since Epi-week one, 419 neonatal deaths have been reported (*See Table 4*) and the major attributable causes are : asphyxia 193 (48.8%), sepsis 144 (35.5%) and preterm 31 (7.6%)

Table 4. Annualized and Cumulative Neonatal Death Reported by County, Liberia, Epi-week 1 - 28, 2019

County	Estimated Annual Live birth (4.3%)	Current Week	Cumulative	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate/1000
Grand Kru	3130	0	24	6	14.2
Grand Gedeh	6770	0	28	7	7.7
Montserrado	62479	5	181	43	5.4
Margibi	11345	1	30	7	4.9
Rivercess	3865	0	10	2	4.8
Bong	18775	0	48	11	4.7
Maryland	7347	2	18	4	4.5
Gbarpolu	4507	2	10	2	4.1
River Gee	3610	0	7	2	3.6
Sinoe	5534	0	9	2	3.0
Bomi	4546	0	6	1	2.5
Lofa	14911	1	19	5	2.4
Nimba	24970	0	24	6	1.8
Grand Cape Mount	6868	0	2	0	0.5
Grand Bassa	11981	0	3	1	0.5
Liberia (National)	190636	11	419	100	4.1

Other Reportable Diseases

Animal Bites (Human Exposure to Rabies)

- ◆ Thirty (30) cases were reported from Nimba (6), Bong (4), Montserrado (4), Grand Kru (3), Lofa (3), Maryland (3), Grand Gedeh (3), Margibi (2), Sinoe (1) and Grand Bassa (1) Counties
- ◆ Cumulatively, since Epi-week one, 1003 cases of animal bites have been recorded including five attributable deaths

Acute Bloody Diarrhea (Suspected Shigellosis)

- ◆ Seven (7) cases were reported from Grand Gedeh (3), Lofa (1), Bomi (1), Rivercess (1) and Margibi (1) Counties
 - Three specimens were collected pending laboratory confirmation
- ◆ Cumulatively, since Epi-week one, 153 acute bloody diarrhea cases have been recorded with 114 stool specimens collected and 82 tested. Result: 12 positive and 72 negative

Severe Watery Diarrhea (Cholera)

- ◆ Three (3) suspected cases were reported from Cape Mount, Grand Kru and Bomi Counties
 - Three specimens were collected and pending laboratory confirmation
- ◆ Cumulatively, since Epi-week one, 76 suspected cases have been recorded with 61 specimens collected out of which; 50 negative and 0 positive

Unexplained Cluster of Health Events

- ◆ Zero case reported
- ◆ Cumulatively, since Epi-week one, 11 cases of unexplained death has been reported

Points of Entry

- ◆ Zero IDSR alert detected and verified
- ◆ A total of 4860 travelers were recorded for the week (*See Table 5*)

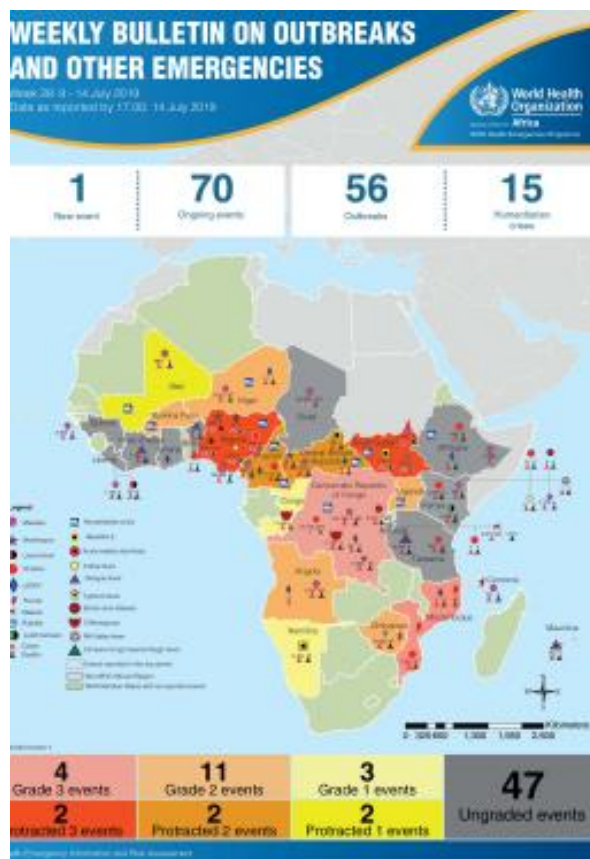
Table 5. Total Travelers, IDSR Alerts Detected and Verified at Points of Entry, Liberia, Epi-week 28, 2019

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	117	57	60	0	0	0	0	0
	Robert International Airport	3445	1625	1820	49	49	0	0	0
Seaport	Freeport of Monrovia	138	69	69	0	0	0	0	0
	Buchanan Port	32	16	16	0	0	0	0	0
Ground Crossing	Bo Water Side	456	108	348	0	0	0	0	0
	Ganta	490	228	262	60	60	0	0	0
	Yekepa	97	35	62	0	0	0	0	0
	Loguatu	102	48	54	21	21	0	0	0
Total Traveler for the Week		4877	2186	2691	130	130	0	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, 71 events are being monitored through WHO Health Emergencies Program in the African Region. Key events highlighted during the week include the following:

- Circulating vaccine-derived polio virus type 2 (environmental sample) in Ghana
- Ebola virus disease in Democratic Republic of the Congo
- Humanitarian crisis in Cameroon
- Humanitarian Crisis in Central African Republic

Source: WHO Week 28 Bulletin on Outbreaks and Other Emergencies

Public Health Measures

National level

- ◆ Providing technical remote support to Counties
 - Heighten surveillance in affected and surrounding communities
 - **URGENCY! URGENCY! URGENCY!**
 - There is no ribavirin to treat Lassa fever patients in Liberia as of June 30, 2019
 - There is no human rabies vaccine in country to provide post exposure prophylaxis
 - **ACTION! ACTION! ACTION!**
 - NPHIL requested WHO since April, 2019 for ribavirin;
 - NPHIL is sourcing money from Finance Ministry to procure rabies vaccine

County level

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

Outbreaks

Measles: Gbao District, Grand Gedeh County

- ◆ Three confirmed cases with ages 1, 9, 19 years
- ◆ Confirmed case fatality rate is zero
- ◆ Vaccination status in confirmed cases
 - Not vaccinated: 3 (100%)

Measles: Timbo District, Rivercess County

- ◆ Thirteen confirmed cases with age range from 3 to 25 years
- ◆ Confirmed case fatality rate is zero
- ◆ Vaccination status in confirmed cases
 - Vaccinated: 100%

Public Health Actions

- ◆ Cases managed in OPD
- ◆ **Grand Gedeh:** Plan to conduct mini campaign in affected and surrounding communities targeting 942 children below 15 years
- ◆ **Rivercess:** CHT is requesting partner support to conduct supplementary immunization activities

Notes

- ◆ *Completeness* refers to the proportion of expected weekly IDSR reports received (target: ≥80%)
- ◆ *Timeliness* refers to the proportion of expected weekly IDSR reports received by the next level on time (target: ≥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: ≥2/100,000)
- ◆ *Non-measles febrile rash illness rate* refers to the proportion of Negative measles cases per 100,000 population



Liberia IDSR Epidemiology Bulletin

2019 Epi-week 28 (July 8 – 14, 2019)



- ◆ *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

2019 Epi-week 28 (July 8 – 14, 2019)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 28 and cumulative report, Liberia, 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	1	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	0				
Bong	9	9	0	0	0	0	0	0	4	0	0	0	2	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			
Gbarpolu	5	5	0	0	0	0	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	0	0			
Grand Bassa	8	8	0	0	0	0	0	0	1	0	1	0	7	0	0	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	0	0	0	0	0	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	3	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			
Grand Kru	5	5	0	0	0	0	1	0	3	0	0	0	4	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	3	0	1	0	0	0	3	0	0	0	0	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			
Margibi	4	4	0	0	1	0	0	0	2	0	1	0	0	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			
Maryland	6	6	0	0	0	0	0	0	3	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			
Montserrado	7	7	0	0	0	0	0	0	4	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			
Nimba	6	6	0	0	0	0	0	0	6	0	2	0	0	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		
Rivercess	6	6	0	0	1	0	0	0	0	0	0	0	17	0	0	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	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Sinoe	10	10	0	0	0	0	0	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			
Total Weekly	93	93	3	0	7	0	3	0	30	0	4	0	41	0	2	0	2	11	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Cumulative Reported			35	0	141	0	76	0	1002	1	37	10	1043	0	32	0	156	419	19	1	11	0	11	0	63	0	49	0	0	0	0	0	0	0	0	11	0	0	0			
Cumulative Lab-confirmed			0	0	12	0	0	0	0	0	22	8	120	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

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For comments or questions, please contact

Thomas K. Nagbe, MPH

Director, Infectious Disease and Epidemiology Division
National IHR Focal Person
National Public Health Institute of Liberia
Republic of Liberia

Email: tnknie31112@gmail.com

Phone: +231 886 937386/777442444

Website: 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

Phone: +231 886526388/777372655

Website: www.nationalphil.org

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