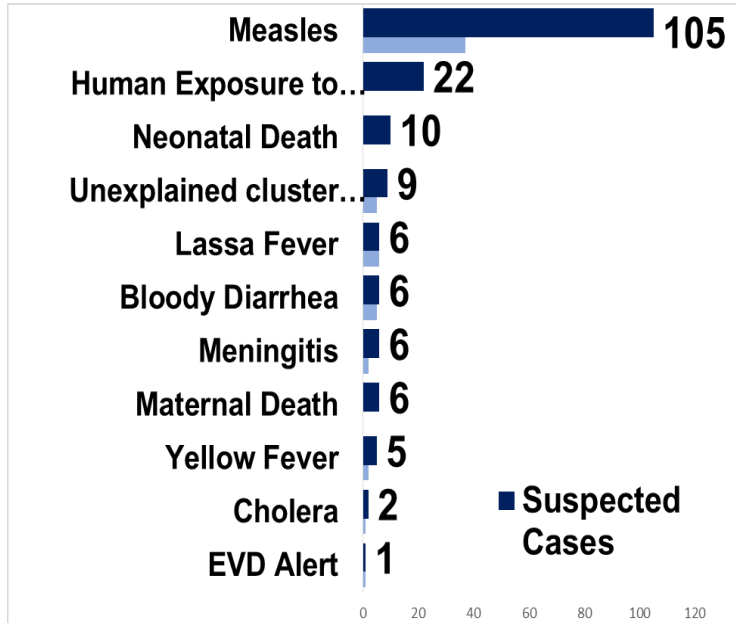


Highlights

Figure 1. Public Health Events Reported in Epi-week 2



Keynotes and Events of Public Health Significance

- A total of **178** suspected cases of immediately reportable diseases and events
- 26 deaths** were reported from **15 counties**. These include:
 - Three confirmed** Lassa fever were reported
- Confirmed** Measles outbreaks in Nimba and Montserrado Counties
- Health facility reporting **completeness and timeliness are both 98%**

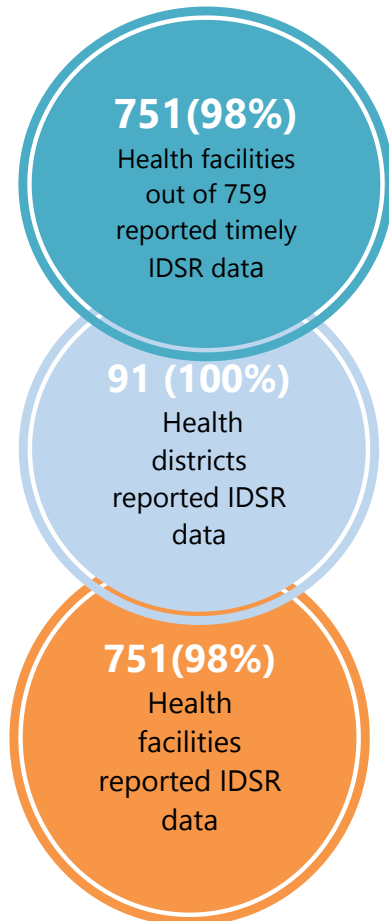
Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 2, 2018

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	55	49	49	89	89
Gbarpolu	15	15	15	100	100
Grand Bassa	33	33	33	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	44	44	44	100	100
Maryland	25	25	25	100	100
Montserrado	283	279	279	99	99
Nimba	74	71	71	96	96
Rivercess	19	19	19	100	100
River Gee	19	19	19	100	100
Sinoe	35	35	35	100	100
Liberia	764	751	751	98	98

Legend ≥80 <80

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



Vaccine Preventable Diseases

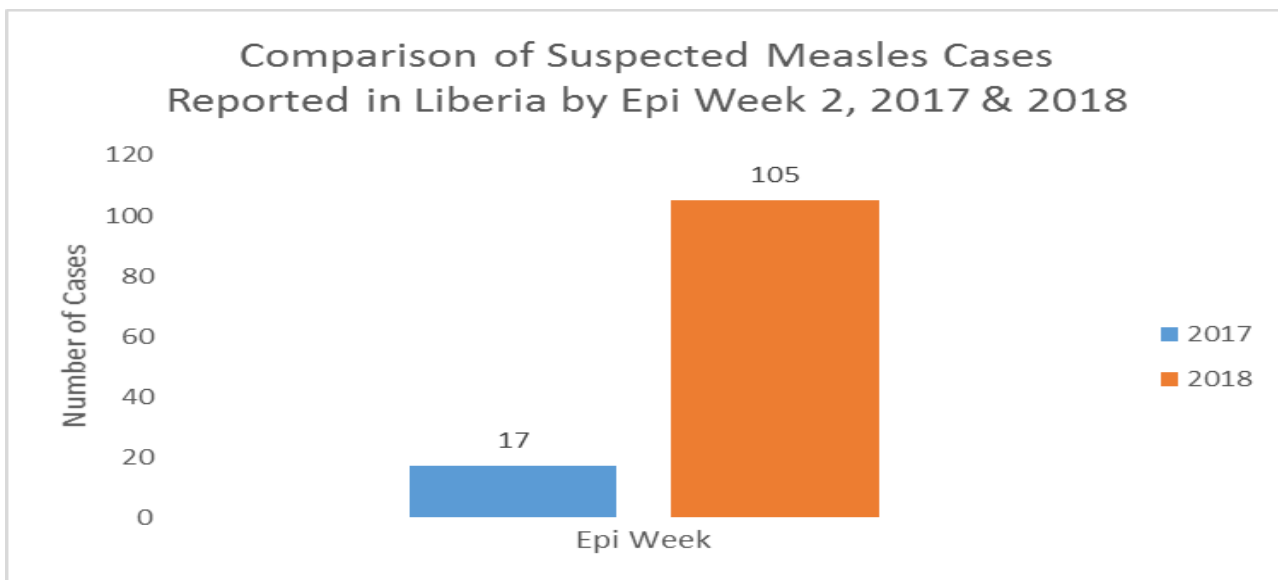
Measles

- One Hundred and Five (105) suspected cases were reported from Montserrado (45), Nimba (40), Grand Bassa (4) Bong (4), Margibi (3), Grand Kru (2), Grand Gedeh (2), Maryland (2), Bomi (1), Lofa (1) and Sinoe (1) Counties.
- Of the total cases reported, samples were collected for 16 and sent to the National Reference Laboratory for testing (Samples were not collected for Montserrado and Nimba due to the ongoing confirmed outbreaks)
- Out of the suspected cases reported this week, 44 (42%) were <5 years and 61 (58%) were ≥5 years
- Of the suspected cases reported, 45(43%) were reported to have been previously vaccinated, 10 (9%) were not vaccinated and 50 (48 %) had unknown vaccination status
- Cumulatively, since Epi week one, 167 suspected cases have been reported and have been classified as follow: 11 are laboratory confirmed 110 epi-linked, 7 clinically compatible, 1 discarded and 117 pending arrival at National Reference lab.

Public Health Actions

- Case management initiated for all the suspected cases and community engagement ongoing
- Active case search ongoing

Figure 2. –comparison of suspected measles cases reported in Liberia, Epi week 2, 2017 & 2018



Acute Flaccid Paralysis (Suspected Polio)

- Zero suspected case of Acute Flaccid Paralysis was reported this week
- Cumulatively, since Epi week one, 1 Acute Flaccid Paralysis case has been reported (*The one AFP case reported for epi week one was from Grand Bassa County and had a date of onset December 23, 2017*).

Neonatal Tetanus

- Zero case of Neonatal tetanus was reported this week.
- Cumulatively, since Epi-week one, 0 clinically diagnosed case has been reported



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- Seventeen EVD alerts was reported from Nimba (11), Lofa (3), Montserrado (2) and Bong (1) Counties
- Cumulatively, since Epi-week one, 18 EVD alerts have been reported and tested negative

Lassa fever

- Six suspected cases including five deaths (CFR - 83%) of Lassa fever were reported from Nimba (4) and Bong (2)
- Three deaths have been reported in confirmed cases by Real Time PCR, one from Suakoko District, Bong and two from Sanniquellie-Mah District, Nimba Counties.
- Cumulatively, since Epi-week one, 6 suspected cases has been reported of which 3 confirmed, 2 negative and 1 pending
- Contact tracing ongoing in affected counties (Bong-15 and Nimba-28 contacts)
- Contacts in Bong county have been followed for 7 days

Yellow fever

- Five suspected cases of Yellow Fever were reported from Grand Kru (3), Bomi (1) and Rivercess (1) Counties.
- Cumulatively, since Epi-week one, 7 suspected cases have been reported of which 1 presumptive positive from Buah District, Grand Kru County, 4 tested negative, 1 pending at the National Reference Laboratory (NRL) and 1 sample from Bomi County was not collected

Meningitis

- One suspected case of meningitis were reported from Maryland (1) County.
- Cumulatively, since Epi-week one, 3 suspected cases have been reported 2 tested negative and 1 pending arrival at the NRL

Events of Public Health Importance

Maternal Mortality

- Six maternal deaths were reported from Montserrado (2), Bomi (1), Grand Gedeh (1), Grand Kru (1) and Maryland (1) Counties
- Reported causes of death were: eclampsia (2), obstructed labor (1), seizure (1), transfusion reaction (1) and anemia (1)
- Five deaths was reported to have occurred in the health facility and one occurred in the community
- Cumulatively, since Epi-week one, 20 maternal deaths have been reported (see Table 3 for causes of death)



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



Table 2. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 2, 2018

County	Annual Live birth 4.3% (EPI 2018)	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio
Grand Bassa	11494	0	0	0	0
Maryland	7048	1	1	5	738
Bomi	4361	1	2	10.0	2385
Grand Kru	3002	1	1	5	1732
Sinoe	5308	0	0	0	0
River Gee	3707	0	0	0	0
Montserrado	57974	2	7	35.0	628
Bong	17289	0	1	5.0	301
Margibi	10883	0	0	0	0
Nimba	23953	0	2	10.0	434
Lofa	14354	0	2	10.0	725
Rivercess	3463	0	1	5.0	1502
Gbarpolu	4323	0	2	10.0	2406
Grand Cape Mount	6588	0	0	0	0
Grand Gedeh	6494	1	1	5	801
Liberia	180242	6	20	100	577

Number of live birth is at 4.3% of the estimated population for 2018 (Source: EPI/MoH)

Table 3. Causes of Maternal Death. Liberia. Epi weeks 1. 2018 (n=6)

Maternal Death	Frequency	Percent (%)
Congested heart failure	1	5.3
Septicemia	1	5.3
Rupture ectopic	1	5.3
Post-partum hemorrhage	3	15.8
Renal failure	2	10.5
Anemia	3	15.8
Obstructed labor	1	5.3
Septic abortion	2	10.5
Seizure	1	5.3
Eclampsia	4	21.1
Transfusion Reaction	1	5
Total	20	100.0

Neonatal Mortality

Ten Neonatal deaths were reported from Montserrado (6), Nimba (2), Grand Bassa (1) and Margibi (1) Counties

- Causes of death were birth asphyxia (5) and neonatal sepsis (5)
- All ten deaths were reported to have occurred at health facility
- Cumulatively, since Epi week one, 28 neonatal deaths have been reported

Table 4. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1-2, 2018

County	Annual Live birth 4.3% (EPI 2018)	Current Week	Cumulative Neonatal deaths	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate
River Gee	3707	0	0	0	0.0
Maryland	7048	0	1	4	7.4
Sinoe	5308	0	0	0	0.0
Grand Kru	3002	0	0	0	0.0
Montserrado	57974	6	12	43	10.8
Bong	17289	0	3	11	9.0
Rivercess	3463	0	0	0	0.0
Grand Gedeh	6494	0	1	4	8.0
Gbarpolu	4323	0	2	7	24.1
Grand Bassa	11494	1	2	7	9.0
Lofa	14354	0	0	0	0.0
Nimba	23953	2	5	18	10.9
Margibi	10883	1	1	4	4.8
Grand Cape Mount	6588	0	0	0	0.0
Bomi	4361	0	1	4	11.9
Total	180242	10	28	100	8.1

Number of live birth is at 4.3% of the estimated population for 2018 (Source: EPI/MoH)

Human Exposure to Animal Bites (Suspected Rabies)

- Twenty- two events of animal bites were reported from Montserrado (8), Bong (5), Grand Cape Mount (2), Rivercess (2), RiverGee (2), Grand Bassa (1), Grand Kru (1) and Grand Gedeh (1) Counties
- Cumulatively, since Epi-week one, 40 events of animal bites have been reported

Acute Bloody Diarrhea (Shigellosis)

- Eight suspected cases of acute bloody diarrhea were reported from Montserrado (2), RiverGee (1), Grand Kru (1) Sinoe (1), Lofa (1), Nimba (1) and Margibi (1) Counties
- Cumulatively, since Epi-week one, 13 cases of acute bloody diarrhea have been reported of which eight tested negative and five pending transport to the laboratory

Severe Acute Watery Diarrhea (Cholera)

- Two suspected cases of cholera were reported from Grand Kru (1) and Rivercess (1) Counties
- Cumulatively, since Epi-week one, 3 suspected cases of cholera have been reported. One tested negative and two pending arrival to the Lab



Outbreaks

Since Epi week one the total of five outbreaks have been reported from across the country

Unexplained cluster of illness and death in Lofa

- On 13 January 2018, at 2:20pm, the Lofa CHT notified the national level of a cluster of illness and death of an unknown etiology from Kelimabendu town, Foya district, and involving 5 cases with 4 deaths (CFR – 80%) Four of the cases are males and one is female. Cases aged from 3 to 45 years with a median age of 14 years.
- Based on the signs and symptoms as per the medical records and community informants updated as of the 16th of January; the most common signs and symptoms include vomiting (x3 cases), followed by fever, yellow eyes, body pains, weakness (x 2 cases);
- Ebola, Lassa fever, and Yellow fever have been ruled out in specimens collected from case 4 and 5.
- Meningococcal infection was ruled out in case 5 and Neisseria meningitidis sero group W was detected in oral swab case 4
- Specimens collected to-date, have been aliquoted for possible international referral, for additional laboratory testing.
- A total of 12 contacts have been identified and listed.

Yellow Fever

- One presumptive positive case was reported from Buah District, Grand Kru County. The case is a 29 year old female from Barforweih community.
- The 29-year old female presented with the following signs and symptoms at time of presentation at the facility: Jaundice, Headache, weakness and body itching for 13 days preceding care
- The 29 year old female patient previous vaccination history was not provided. The current location of the case patient is unknown and she is reportedly to be in one of the gold mines
- A blood sample collected from a 29-year old patient, tested positive for Yellow fever. The result is considered a presumptive positive while pending a confirmatory testing at the Institute Pasteur Laboratory in Dakar, Senegal including a range of other viral hemorrhagic fever
- Five contacts have been initially identified and monitored



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



Lassa fever

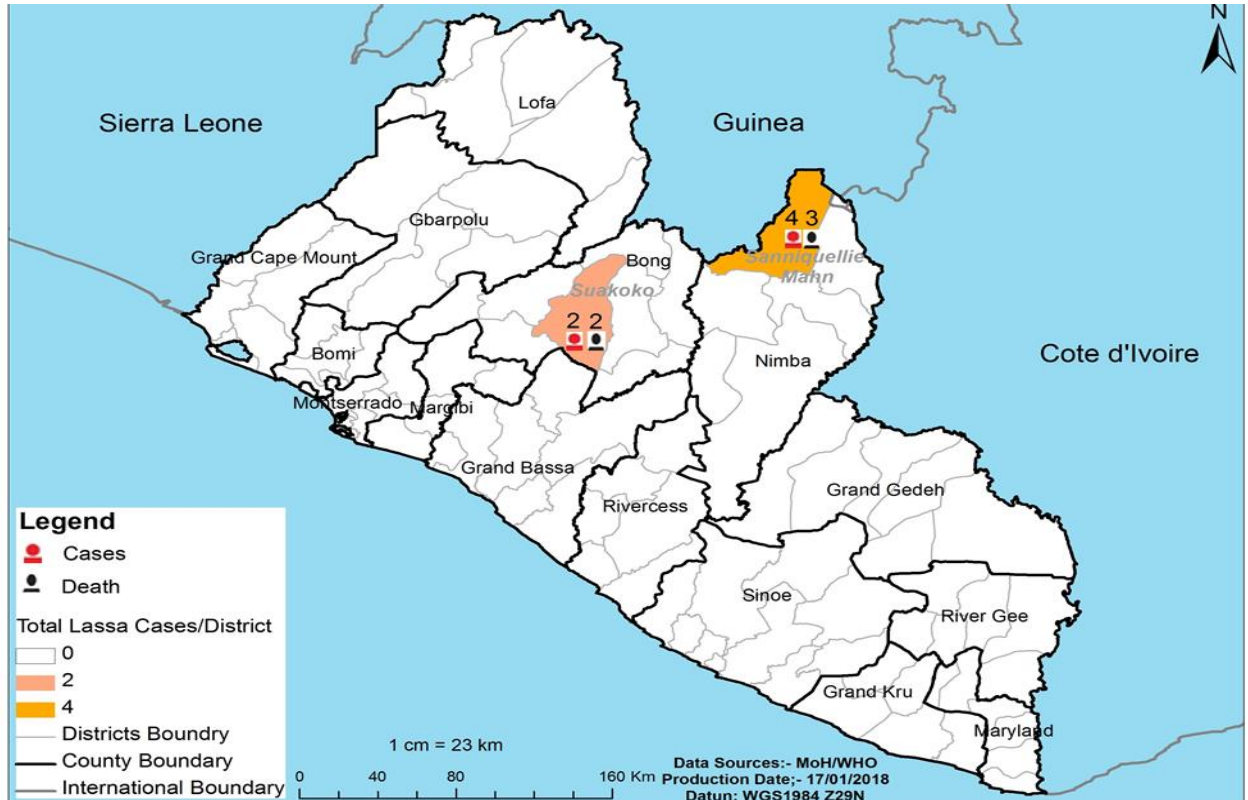
Nimba County

- On 12 January 2018, Nimba County was notified by the national level (NPHIL & WHO) of Lassa fever confirmed case. The 37-year-old female (deceased patient) from Guinea had symptom onset on 29 December 2017
- She presented with neck pain, fever, body pain and vomiting at the Ganta Methodist Hospital where she was admitted for treatment on 9 January 2018 and died two days later, on 11 January 2018.
- A total of four cases including three deaths had been reported with CFR – 75%. (2 positive & 2 negative)
- Two of the cases are males and two are females with age range from 10 months – 50 years and a median of 14 years
- 28 contacts have been line listed from Ganta Hospital (16) and family members (12)

Bong County

- On the 8th January 2018, the Isolation Unit nurse of the Phebe Hospital notified the Suakoko DSO of a suspected Lassa fever case.
- This 16 months old female deceased patient presented with fever, weakness, swollen limbs lobe, bleeding from the mouth on 7 January 2018.
- On 11 January, 2018, the samples were tested positive for Lassa fever and the CHT and WHO Bong Team County were notified by the NPHIL and WHO.
- From Epi week1-2, 2018, a total of three (3) suspected cases including 3 deaths have been reported (CFR – 100%): 1 confirmed and 1 result still pending.
- All two cases are females with ages 16 months to 3 years
- 15 contacts have been line listed from the affected communities are being monitored

Map showing Lassa fever outbreaks in Bong and Nimba Counties, 2018



Measles

- One hundred five (105) new suspected cases including zero deaths were reported from 11 counties in week 2 – Montserrado (45), Nimba (40), Grand Bassa (4) Bong (4), Margibi (3), Grand Kru (2), Maryland (2), Grand Gedeh (2), Bomi (1), Sinoe (1) and Lofa (1).
- Epi-classification of the suspected cases reported during week two are as follow:
 - Laboratory confirmed (0):
 - Epi-linked (85): Montserrado (45) and Nimba (40)
 - Clinically compatible (20): Grand Bassa (4), Bong (4) Margibi (3), Grand Kru (2), Maryland (2), Grand Gedeh (2), Bomi (1), Sinoe (1) and Lofa (1).
 - Discarded (0):
- Age distribution among confirmed cases (laboratory confirmed, epi-linked, and clinically compatible) were as follow: <5: 57 (54%) and ≥5 years: 48 (46%)
- Vaccination status among confirmed cases (laboratory confirmed, epi-linked, and clinically compatible) were as follow: Vaccinated – 45 (42.9%), Not vaccinated – 8 (7.6%), Unknown – 42 (40%)
- Active transmission is still ongoing in Montserrado and Nimba Counties
- Reactive measles campaign has ended



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



Montserrado Outbreak Description

- Since week 42, 2017 a total of 188 outbreak cases (93 lab confirmed and 95 epi-linked) have been reported from five districts in Montserrado. CFR – 0%
- Age distribution of outbreak cases in Montserrado are as follow: <1 year old: 30 (15.9%), 1 – 4years: 97 (51.5%), ≥5 years: 61 (32.4%)
- Vaccination status among outbreak cases in Montserrado are as follow: Vaccinated – 57 (30.3%), Not vaccinated – 39 (20.7%), Unknown – 92 (48.9%)

Nimba Outbreak Description

- A protracted outbreak of measles has been taking place since week 29, involving 192 cases (50 lab confirmed and 142 epi-linked) reported from four districts. CFR – 0%
- Age distribution of outbreak cases in Nimba are as follow: <1 year old: 36 (18.8%), 1 – 4years: 97 (50.5%), ≥5 years: 59 (30.7%)
- Vaccination status among outbreak cases in Nimba are as follow: Vaccinated – 38 (19.8%), Not vaccinated – 42 (21.9%), Unknown – 112 (58.3%)

Unexplained cluster of Health Event

- A total of 9 cases including 1 death (CFR – 11%) was reported from Karnplay, Gbehley Geh district, Nimba County on 10 January 2018
- The cases reportedly ate coconut purchased from a street vendor on 7 January 2018
- Out of seven cases with available data, five develop signs and symptoms on the same day (7 January 2018) and the other two the next day (8 January 2018)
- The first case was admitted at Karnplay health center on 7 January and died within an hour of admission after signs and symptoms of vomiting and severe weakness
- Five of the cases were admitted on 8 January 2018 at Karnplay Health Center with symptoms of chest pain (5), abdominal pain (4), severe weakness (1), fever (1), sleeplessness (1), fast heart rate (1)
- On 9 January 2017, another case belonging to the same cluster also sought care at Karnplay Health Center.
- Four unexplained deaths from Foya district and one attributable death of meningitis from Lofa County



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



Public Health Measures

National Level:

- Providing technical guidance for outbreak investigation and response to all affected counties
- Providing operational and financial support
- The official launch of Ivermectin drug for scabies was done at Zone 1000, Central Monrovia District, Montserrado County

County level:

- All counties with outbreaks has activated IMS to assess outbreak trends, mobilizes resources and monitor progress of implementation for measles response activities
- The completion of the mini re-active measles campaign in Montserrado County targeting affected and surrounding communities
- Case management initiated for all suspected cases and community engagement ongoing
- Active case search and contact tracing have been initiated in affected Counties
- Radio talk show have been initiated for scabies across the nation as well as Lofa County for the cluster of deaths in Foya District



Liberia IDSR Epidemiology Bulletin

2018 Epi Week 2 (January 8-14, 2018)



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 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

2017 Epi Week 2 (January 8-14, 2018)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 2 and cumulative reports, Liberia, 2018

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	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0
Bong	8	8	0	0	0	0	0	0	5	0	2	0	4	0	0	0	0	0	0	0	1	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
Grand Bassa	8	8	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Grand Cape Mount	5	5	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
Grand Gedeh	6	6	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Grand Kru	5	5	0	0	1	0	1	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	3	0	0	0	0
Lofa	6	6	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	4	
Margibi	4	4	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Maryland	6	2	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Montserrado	7	7	0	0	2	0	0	0	8	0	0	0	45	0	0	0	2	6	0	0	2	0	0	0	0	0	0
Nimba	6	6	0	0	1	0	0	0	0	0	4	0	40	0	0	0	0	2	0	0	11	0	0	0	5	1	
Rivercess	6	6	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
River Gee	4	4	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinoe	10	10	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Weekly	91	91	0	0	8	0	2	0	22	0	6	0	105	0	1	0	6	10	0	0	17	0	5	0	6	5	
Cumulative Reported			1	0	13	0	3	0	40	0	6	0	165	2	3	0	20	28	0	0	18	0	7	0	6	5	
Cumulative Laboratory Confirmed			0	0	0	0	0	0	0	0	0	0		0	0	0			0	0	0	0	0	0	0	0	0

Note: A = Alive
D = Dead

Editorial Team - MoH: Roseline N. George –; Advertus N. Mianah – Surveillance Coordinator/DIDE; Irene Pewu & Himiede W. Wilson – Epidemiologist/DIDE; Sumo Nuwolo, Musand Kromah, Lasee W. Colee, T. Lafayette Hall, Alberta B. Corvah, Sumor Lomax Flomo & Samuel Zayzay – Disease Investigators/DIDE; Trokon O. Yeabah – Data Manager/DIDE;
Partners: Dr. E. Kainne Dokubo – CDC; George Sie Williams, Kwuakuan D.M. Yealue & Jeremy Sesay – WHO

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

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: tnknue31112@gmail.com

Phone: 0886 937386/0777442444

Website: www.nationalphil.org