# Liberia IDSR Epidemiology Bulletin
2017 Epi Week 43 (October 23 – 29, 2017)

Country Population: 4,373,279 I Volume 09, Issue 43 October 23 – 29, 2017 I Data Source: CSOs from 15 Counties and Lab

Highlights

Figure1. Public Health Events Reported in Epi-week
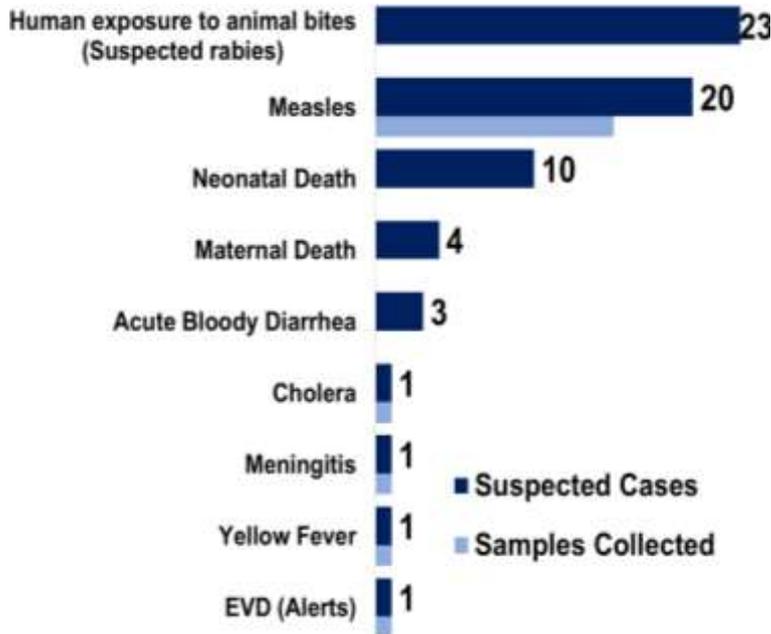
Keynotes and Events of Public Health Significance

- A total of **63** suspected cases of immediately reportable diseases and events including **14 deaths** were reported from 15 counties

- Health facility reporting **completeness and timeliness are 98%** respectively

- **Seven confirmed cases of measles** reported from Bong, Nimba, Montserrado and Grand Bassa Counties

Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 43, 2017

County	Number of Expected Health Facility Report	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	23	23	23	100	100
Bong	55	54	54	98	98
Gbarpolu	15	15	15	100	100
Grand Bassa	33	33	33	100	100
Grand Cape Mount	32	32	32	100	100
Grand Gedeh	24	23	23	96	96
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	273	273	96	96
Nimba	74	74	74	100	100
Rivercess	19	19	19	100	89
River Gee	19	19	19	100	100
Sinoe	35	35	35	100	100
Liberia (National)	**759**	**747**	**747**	**98**	**98**

747 (98%) Health facilities out of 759 reported timely IDSR data

91 (100%) Health districts reported IDSR data

747 (98%) Health facilities reported IDSR data
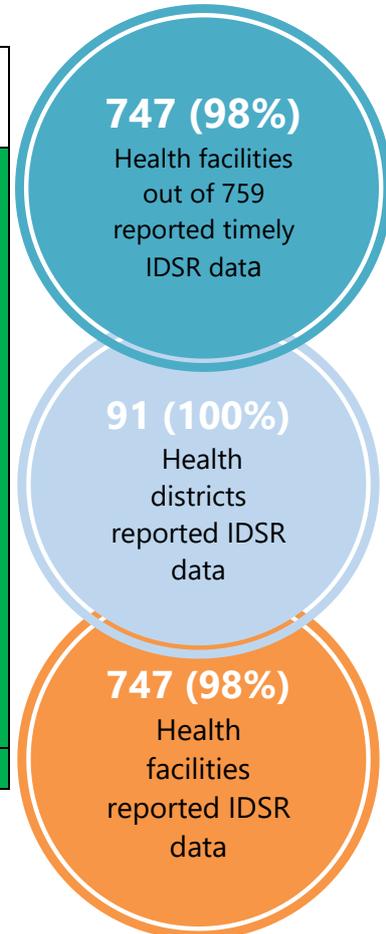
Legend	≥80	<80

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

Vaccine Preventable Diseases

Measles

- Twenty suspected cases were reported from the following counties: Nimba (5), Bong (5), Grand Bassa (3), Montserrado (2), Lofa (2), Maryland (1), Margibi (1) and Bomi (1) Counties
- Samples were collected from 15 cases, of which, seven were confirmed positive
- The seven confirmed cases were reported from Gbehlay-Geh (1) and Tappita (1) districts in Nimba County, Somalia Drive (2) district in Montserrado County, Buchanan (1) district in Grand Bassa County, and Suakoko (2) district in Bong County
- Of the 20 suspected cases reported this week, 6 (30%) were reported to have been previously vaccinated, 4 (20%) had unknown vaccination status and 10 (50%) were not vaccinated
- Twelve (60%) of the suspected cases were <5 years and 8 (40%) were ≥5 years of age
- Cumulatively, since Epi week one, 1488 suspected cases have been reported, of which 1007 were tested: 189 (18.8%) positive, 766 (76.1%) negative, and 52 (5.1%) equivocal. Four hundred eighty-one (32.3%) of the suspected cases were compatible and epi-linked. Of the 818 equivocal and negative cases, 803 (98.2%) samples have been tested for rubella, of which, 335 (41.7%) were positive

Public Health Actions

- Active case search ongoing
- Case management initiated for all suspected cases
- Samples were collected from 15 suspected cases and sent to the National Reference Laboratory for confirmation

Figure 3. Weekly trend of suspected cases of Measles reported, Liberia, Epi weeks 1 – 43, 2016 & 2017
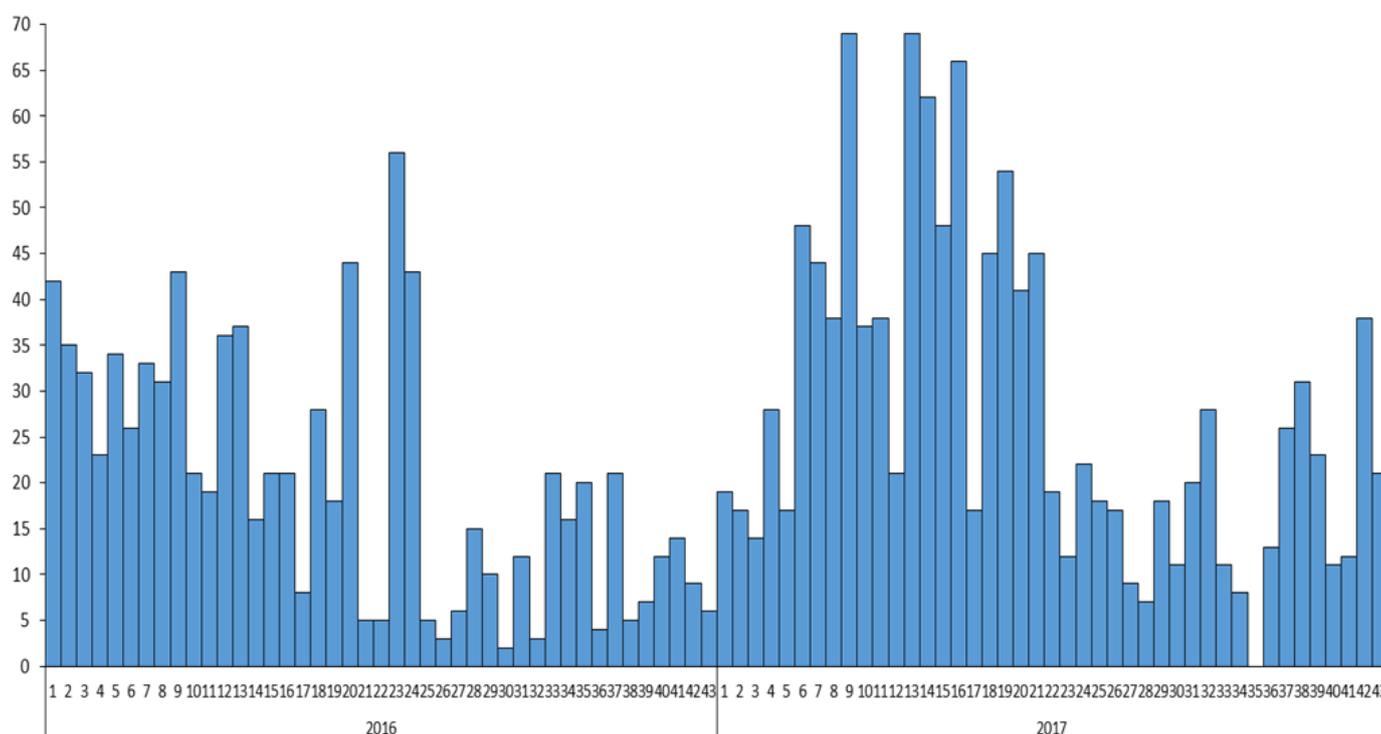
Acute Flaccid Paralysis (Suspected Polio)

- Zero cases of Acute Flaccid Paralysis were reported this week
- Cumulatively, since Epi week one, 73 Acute Flaccid Paralysis cases have been reported, of which, 70 (95.8%) have tested negative for poliovirus and 3 (4%) are pending laboratory confirmation

Neonatal Tetanus

- Zero cases of Neonatal tetanus were reported this week
- Cumulatively, since Epi-week one, 16 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- One EVD alerts were reported this week from Montserrado County
- Cumulatively, since Epi-week one, 309 EVD alerts have been reported, all of which have tested negative by PCR

Lassa fever

- Zero suspected cases of Lassa Fever were reported
- Cumulatively, since Epi-week one, 53 suspected cases have been reported, and samples were collected from the two cases
- Of the 53 suspected cases reported, samples have been collected for 51 of which 11 have been confirmed positive by RT-PCR and ELISA-Antigen and 18 negatives. There are 23 cases pending laboratory confirmation and final epi-classification
- Of the 11 confirmed cases, four deaths were reported. The case fatality rate among confirmed cases is 36.4%

Yellow fever

- One suspected case of yellow fever was reported from Nimba County
- Cumulatively, since Epi-week one, 147 suspected cases have been reported, all of which have been tested negative

Meningitis

- One suspected case of meningitis was reported from Maryland County
- Cumulatively, since Epi-week one, 61 suspected cases have been reported
- Of the 61 suspected cases, 31 (including 13 deaths) were reported as part of an outbreak in four counties (Grand Bassa, Montserrado Sinoe and Grand Kru), with *Neisseria meningitidis* serogroup C confirmed in 14 cases, and 1 streptococcus including 11 deaths (case fatality rate among confirmed cases is 80%)

Events of Public Health Importance

Maternal Mortality

- Four maternal deaths were reported from Bong (2), Lofa (1) and Grand Kru (1) Counties
- Reported causes of deaths were: postpartum hemorrhage (3) and Anemia (1)
- Three of the deaths were reported to have occurred in the health facility and one from the community
- Cumulatively, since Epi-week one, 201 maternal deaths have been reported (see Table 3 for causes of death)

Figure 4. Comparison of the weekly trend of Maternal Deaths Reported, Liberia, Epi weeks 1 - 43, 2016 & 2017
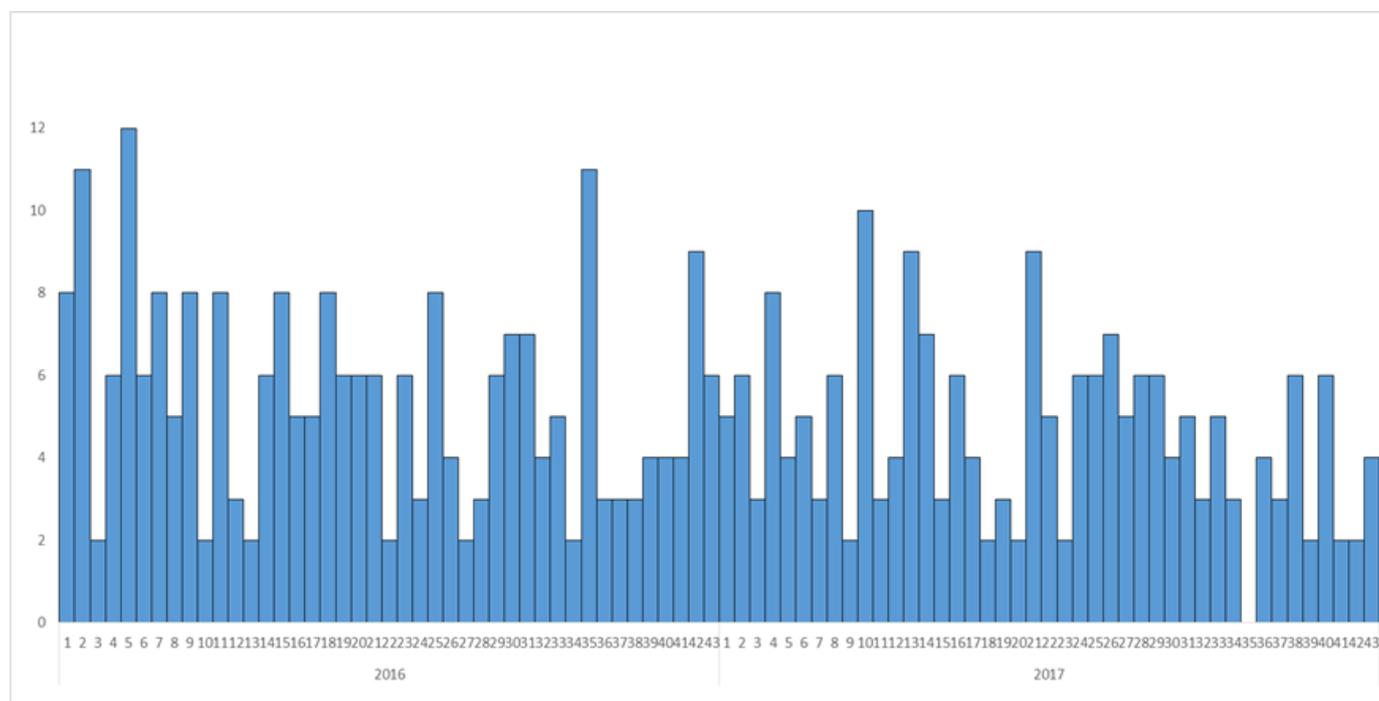
Table 3. Causes of Maternal Death, Liberia, Epi weeks 1 - 43, 2017 (n=201)

Maternal Death	Number	Percentage
Post-partum hemorrhage	69	34.3
Anemia	29	14.4
Sepsis	25	12.4
Eclampsia	20	10.0
Unknown	10	5.0
Ruptured uterus	9	4.5
Renal failure	6	3.0
Cardiac pulmonary failure	8	4.0
Congestive Heart failure	6	3.0
Pre-eclampsia	4	2.0
Abruptio placenta	3	1.5
Multiple organ failure	2	1.0
Obstructed labor	2	1.0
Respiratory Distress	2	1.0
Dissimilated intravascular coagulation	1	0.5
Amniotic fluid embolism	1	0.5
Umbilical Hernia (Omphalocele)	1	0.5
Spinal shock	1	0.5
Prolong Labour	1	0.5
Hepatitis B Others	1	0.5
Total	**201**	**100**

## Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 43, 2017

County	Annual Live birth [1]	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Kru	3002	1	7	3	758
Grand Bassa	11494	0	22	12	622
Bomi	4361	0	8	5	596
River Gee	3707	0	6	3	526
Grand Gedeh	6494	0	10	2	500
Bong	17289	2	25	11	470
Margibi	10883	0	15	8	448
Sinoe	5308	0	7	5	429
Maryland	7048	0	8	6	369
Nimba	23953	0	25	13	339
Gbarpolu	4323	0	4	2	301
Lofa	14354	1	13	8	294
Montserrado	57974	0	48	25	269
Rivercess	3463	0	2	1	188
Grand Cape Mount	6588	0	1	1	49
Liberia (National)	**180242**	**4**	**201**	**100**	**362**

Number of live birth is at 4.3% of the estimated population for 2017 (Source: EPI/MoH)

Neonatal Mortality

- Ten Neonatal deaths were reported from Montserrado (3), Lofa (2), Gbarpolu (2), Grand Bassa (2), and River Gee (1) Counties
- Reported causes of death were:
  - Sepsis (5)
  - Birth asphyxia (2)
  - Preterm (1)
  - Aspiration Pneumia (1)
  - Anemia (1)
- All of the deaths were reported to have occurred at health facility
- Cumulatively, since Epi week one, 503 neonatal deaths have been reported

Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1 - 43, 2017 (n=503)
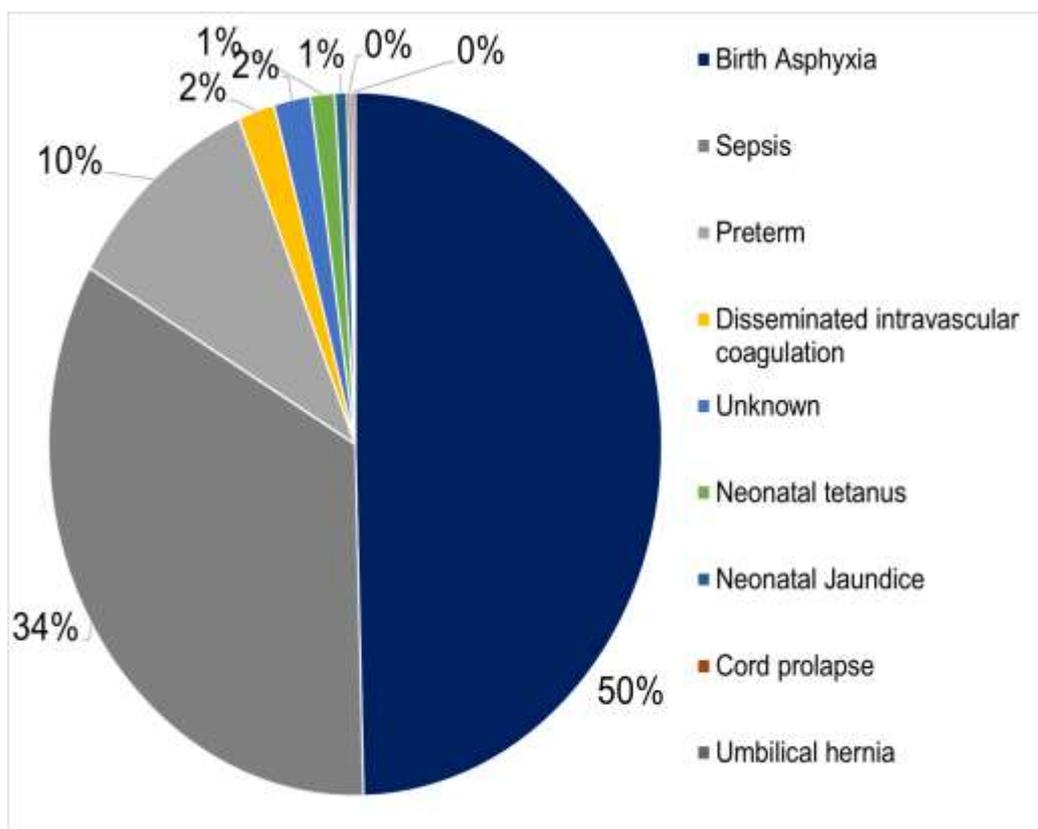
Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 43, 2017

County	Annual Live birth 4.3% (EPI 2017)	Current Week	Cumulative Neonatal deaths	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate
River Gee	3707	1	33	7	28.9
Maryland	7048	0	51	10	23.5
Sinoe	5308	0	25	5	15.3
Grand Kru	3002	0	13	3	14.1
Rivercess	3463	0	13	3	12.2
Bong	17289	0	60	12	11.3
Lofa	14354	2	49	10	11.1
Montserrado	57974	3	180	36	10.1
Grand Gedeh	6494	0	17	3	8.5
Gbarpolu	4323	2	8	2	6
Grand Bassa	11494	2	17	3	4.8
Margibi	10883	0	16	3	4.8
Bomi	4361	0	3	1	2.2
Nimba	23953	0	15	3	2
Grand Cape Mount	6588	0	3	1	1.5
Total (National)	**180242**	**0**	**503**	**100**	**9.1**

Human Exposure to Animal Bites (Suspected Rabies)

- Twenty-three events of animal bites were reported from Margibi (6), Montserrado (4), Rivercess (3), Nimba (3), Grand Cape Mount (2), Sinoe (2), Bong (1), Maryland (1) and Lofa (1) Counties
- Cumulatively, since Epi-week one, 1,105 events of animal bites have been reported

Bloody Diarrhea (Shigellosis)

- Three cases of acute bloody diarrhea were reported from Montserrado (2) and Margibi (1) Counties
- Cumulatively, since Epi-week one, 232 cases of acute bloody diarrhea have been reported
- Stool specimens have been collected from 117 cases including 1 in the current week
- A total of 104 stool samples have been tested, 4 rejected due to poor sample quality, and 4 pending epi classifications. Of the 103 tested, shigella was isolated through culture from 18 (17.5%) samples and no growth seen in 85 (82.5%) were negative.

Severe Acute Watery Diarrhea (Cholera)

- One suspected case of cholera was reported from Sinoe County
- Cumulatively, since Epi-week one, 144 suspected cases of cholera have been reported, including 4 deaths attributable to cholera
- A total of 62 stool samples have been collected including one in the current week and sent to the National Reference Laboratory. Fifty-eight of the samples tested had no growth and two positive of vibro cholera

Public Health Measures

National level

- Weekly meeting with the laboratory to ensure data verification and harmonization
- Developed a zero draft of the National Action Plan for Health Security
- Work with Counties to determine response state of preparedness (lab specification for CSF collection and transportation, medical supplies and IPC)
- Follow up with counties to conduct maternal deaths investigation, revision of forms and implementation of recommendations made
- Counties are encouraged to conduct health education for all public health diseases based on risk
- Counties are encouraged to update their cholera preparedness plans and review existing stocks of supplies for prepositioning

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 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 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
- *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

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 43 and cumulative reports, Liberia, 2017

Counties	No. of Health Districts	No. of Health District reported	Acute Flaccid Paralysis (Polio) A	D	Acute Bloody Diarrhoea (Shigellosis) A	D	Severe Acute Watery Diarrhoea (Cholera) A	D	Human Exposure to Animal bites (Suspected Rabies) A	D	Lassa Fever A	D	Measles A	D	Meningitis A	D	Maternal Mortality D	Neonatal Mortality D	Neonatal Tetanus A	D	VHF (including EVD) A	D	Yellow Fever A	D	Other Diseases/Events A	D
Bomi	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Bong	8	8	0	0	0	0	0	0	1	0	0	0	5	0	0	0	2	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	2	0	0	0	0	0	0	0	0
Grand Bassa	8	8	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	18	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
Grand Gedeh	6	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
Grand Kru	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Lofa	6	6	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	2	0	0	0	0	0	0	0	0
Margibi	4	4	0	0	1	0	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Maryland	6	6	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Montserrado	7	7	0	0	2	0	0	0	4	0	0	0	2	0	0	0	0	3	1	0	0	0	0	0	0	0
Nimba	6	6	0	0	0	0	0	0	3	0	0	0	5	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
River Gee	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Sinoe	10	10	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Total Weekly	**91**	**91**	**0**	**0**	**3**	**0**	**1**	**0**	**23**	**0**	**0**	**0**	**20**	**0**	**1**	**0**	**4**	**10**	**0**	**0**	**0**	**0**	**1**	**0**	**18**	**0**
Cumulative Reported			73	0	232	0	143	5	1105	1	34	19	1223	2	60	2	201	503	14	3	34	274	146	1	1821	24
Cumulative Laboratory Confirmed			0	0	17	0	2	0	0	0	3	4	180	0	1	0			0	0	0	0	0	0	0	0

Note: **A** = Alive
D = Dead

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

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