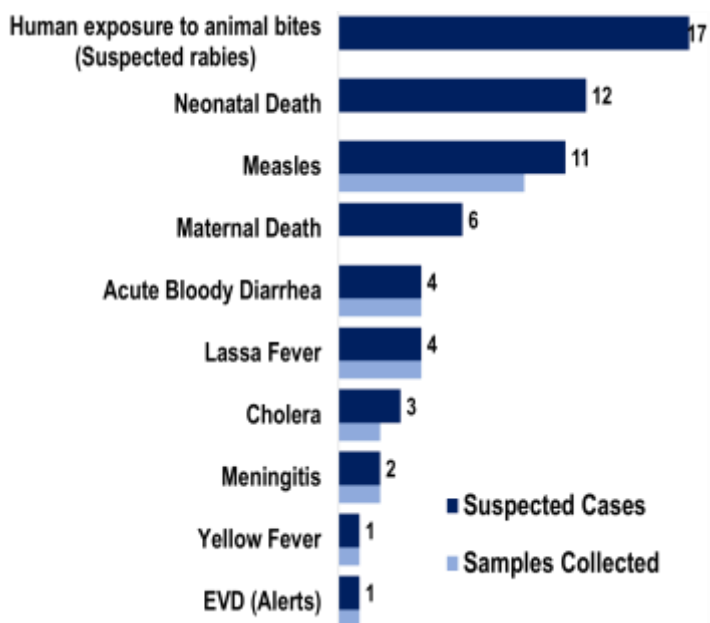


Country Population: 4,373,279 | Volume 09, Issue 40 October 1 – 8, 2017 | Data Source: CSOs from 15 Counties and Lab

Highlights

Figure 1. Public Health Events Reported in Epi-week 40



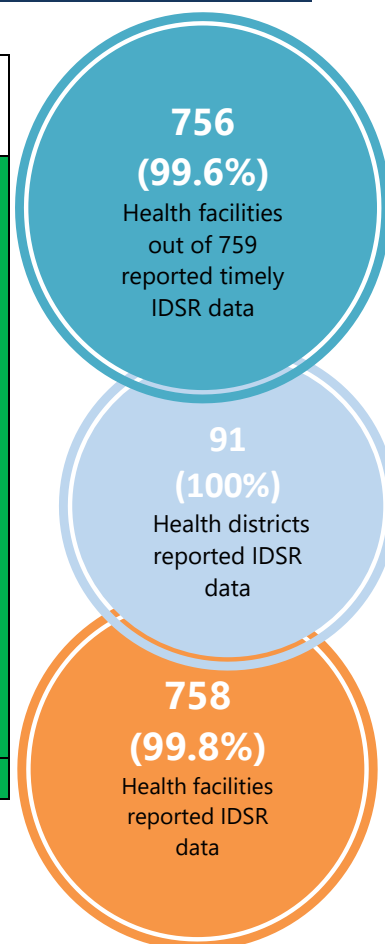
Keynotes and Events of Public Health Significance

- A total of **61** suspected cases of immediately reportable diseases and events including **19 deaths** were reported from 15 counties
- Health facility reporting **completeness and timeliness** are **99.8%** and **99.6%** respectively
- **Four confirmed cases of Measles** reported from Margibi, Nimba, Grand Bassa, and Lofa Counties

Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 40, 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	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	283	283	100	100
Nimba	74	74	74	100	100
Rivercess	19	19	17	100	89
River Gee	19	19	19	100	100
Sinoe	35	35	35	100	100
Liberia (National)	759	758	756	99.8	99.6



Legend ≥80 <80

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

Vaccine Preventable Diseases

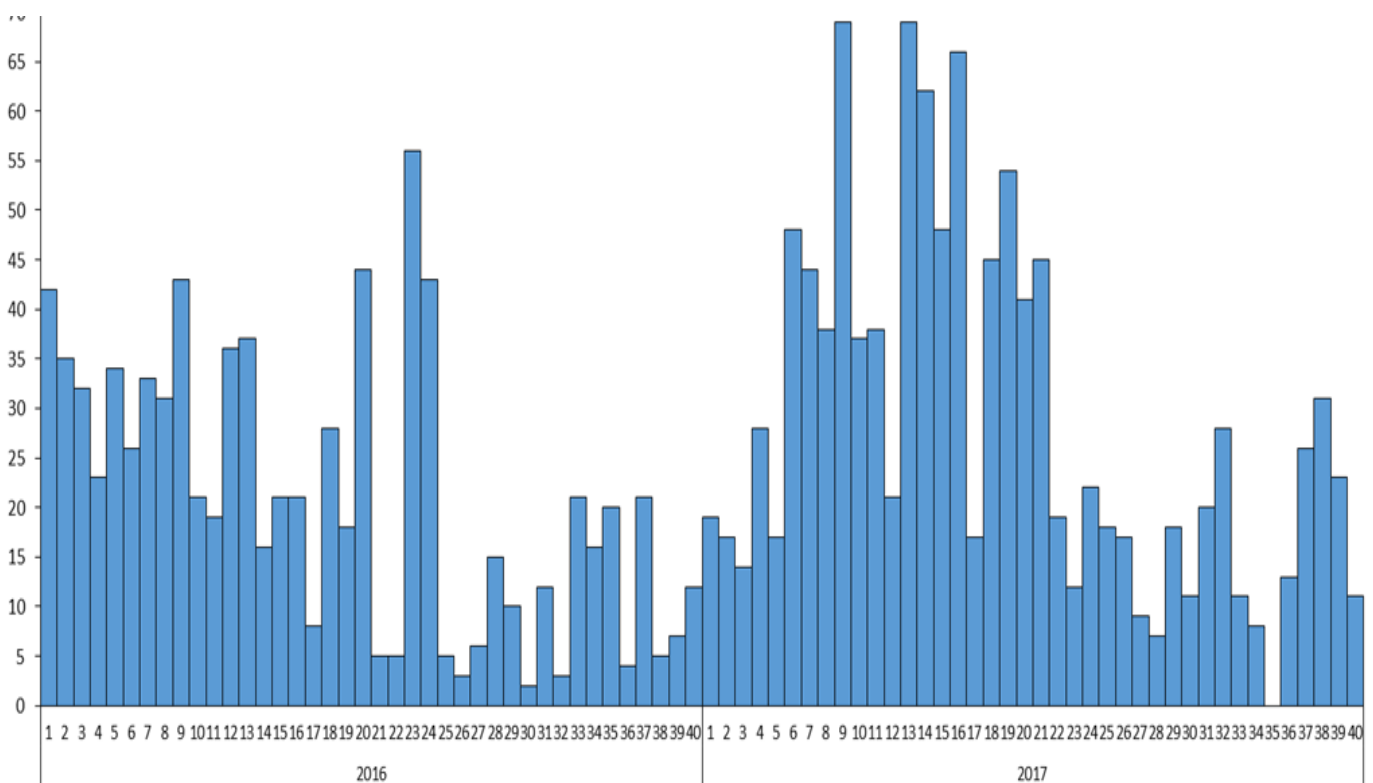
Measles

- Eleven suspected cases were reported from the following counties: Sinoe (5), Nimba (3), Montserrado (2), and Grand Bassa (1) Counties
- Of the 11 suspected cases reported this week, 1 (9.0%) were reported to have been previously vaccinated, 9 (81%) had unknown vaccination status and 1 (9.0%) were not vaccinated
- Five (45%) of the suspected cases were <5 years and 6 (55%) were ≥5 years of age
- Of the cases reported, eight samples were collected out of which four have been laboratory confirmed from Nimba, Margibi, Grand Bassa and Lofa Counties
- Cumulatively, since Epi week one, 1,154 suspected cases have been reported, of which 957 were tested: 167 (17.5%) positive, 741 (77.4%) negative, 52 (5.4%) equivocal. One hundred seventy-eight of the suspected cases were compatible and epi-linked. Of the 793 equivocal and negative cases, 783 (95.5%) samples have been tested for rubella, of which, 327 (42.6%) were positive

Public Health Actions

- Case management initiated for all suspected cases
- Samples were collected from 8 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 – 40, 2016 & 2017



Acute Flaccid Paralysis (Suspected Polio)

- Zero cases of Acute Flaccid Paralysis reported
- Cumulatively, since Epi week one, 70 AFP cases have been reported, of which, 68 (97%) have tested negative for poliovirus and 2 (3%) are pending laboratory confirmation



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Neonatal Tetanus

- Zero cases of Neonatal tetanus were reported this week
- Cumulatively, since Epi-week one, 14 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- One EVD dead alert was reported from Sinoe county
- Cumulatively, since Epi-week one, 308 EVD alerts have been reported, all of which have tested negative by PCR

Lassa fever

- Four suspected cases of Lassa Fever were reported from Grand Bassa (2), Margibi (1) and Grand Kru (1) Counties
- Cumulatively, since Epi-week one, 51 suspected cases have been reported, and samples were collected from the four cases
- Of the 51 suspected cases reported, 11 have been confirmed positive by RT-PCR and ELISA-Antigen and 18 negatives. There are 21 cases pending laboratory confirmation and final epi-classification
- Of the 11 confirmed cases, 4 deaths were reported. The case fatality rate among confirmed cases is 36.4%

Yellow fever

- One case of suspected yellow fever reported from Maryland
- Cumulatively, since Epi-week one, 145 suspected cases have been reported, all of which have tested negative

Meningitis

- Three suspected cases of meningitis were reported from Grand Kru (2) and Montserrado (1) Counties
- Of the three, two samples tested negative by PCR
- Cumulatively, since Epi-week one, 58 suspected cases have been reported
- Of the 56 suspected cases, 31 (including 13 deaths) were reported as part of an outbreak in three counties (Grand Bassa, Montserrado and Sinoe), with *Neisseria meningitidis* serogroup C confirmed in 13 cases, including 11 deaths (case fatality rate among confirmed cases is 85%)

Events of Public Health Importance

Maternal Mortality

- Six maternal deaths were reported from Montserrado (2), Bong (2), River Gee (1) and Nimba (1) Counties
- Reported causes of deaths were: postpartum hemorrhage (2), cardiac failure (2), herbal intoxication
- Five of the deaths were reported to have occurred in the health facility and one in the community
- Cumulatively, since Epi-week one, 193 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 - 40, 2016 & 2017

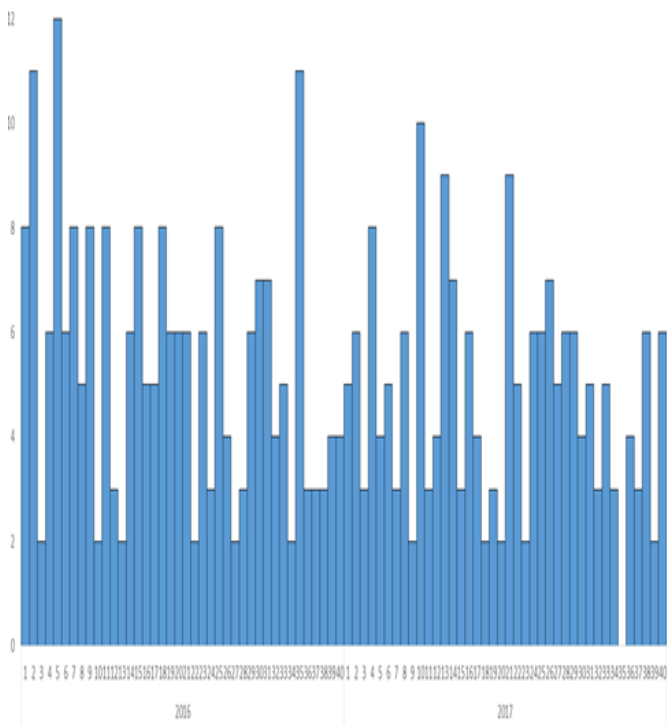


Table 3. Causes of Maternal Death, Liberia, Epi weeks 1 - 40, 2017 (n=193)

Maternal Death	Number	Percentage
Post-partum hemorrhage	66	34.2
Anemia	27	14.0
Sepsis	25	13.0
Eclampsia	20	10.4
Unknown	9	4.7
Ruptured uterus	9	4.7
Renal failure	6	3.1
Cardiac pulmonary failure	8	4.1
Congestive Heart failure	4	2.1
Pre-eclampsia	4	2.1
Abruptio placenta	3	1.6
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	1	0.5
Total	193	100

Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 40, 2017

County	Annual Live birth ¹	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Bassa	11494	0	21	12	594
Maryland	7048	0	8	6	369
Bomi	4361	0	8	5	596
Grand Kru	3002	0	6	3	649
Sinoe	5308	0	7	5	429
River Gee	3707	1	6	3	526
Montserrado	57974	2	48	25	269
Bong	17289	2	22	11	414
Margibi	10883	0	15	8	448
Nimba	23953	1	23	13	312
Lofa	14354	0	12	8	272
Rivercess	3463	0	2	1	188
Gbarpolu	4323	0	4	2	301
Grand Cape Mount	6588	0	1	1	49
Grand Gedeh	6494	0	10	2	500
Liberia	180242	6	193	100	348

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

Neonatal Mortality

- Twelve neonatal deaths were reported from Montserrado (5), Bong (4), Nimba (1), Maryland (1), and Rivercess (1) Counties
- Reported causes of death were:
 - Birth asphyxia (7)
 - Sepsis (3)
 - Congenital Abnormalities (2)
- Eleven of the deaths were reported to have occurred at health facility and one in the community
- Cumulatively, since Epi week one, 468 neonatal deaths have been reported

Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1 - 40, 2017 (n=468)

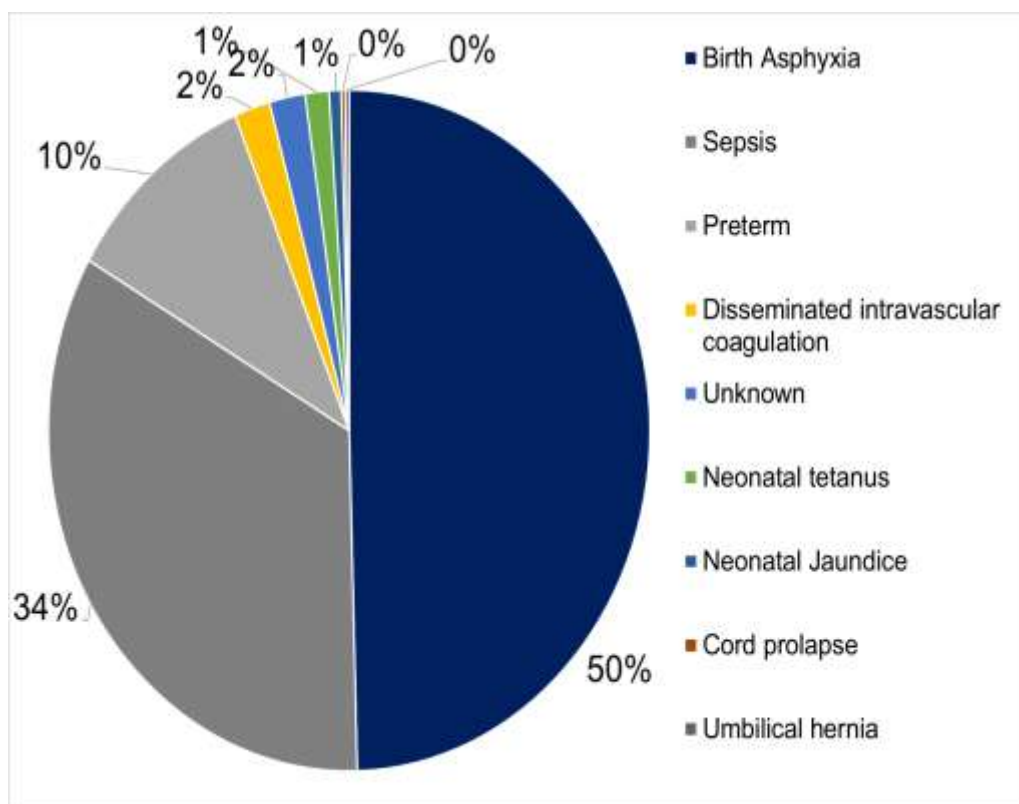


Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 40, 2017

County	Annual Live birth	Current Week	Cumulative Neonatal deaths	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate/1000
River Gee	3707	0	32	7	28.1
Maryland	7048	1	49	10	22.6
Sinoe	5308	0	24	5	14.7
Grand Kru	3002	0	12	3	13.0
Montserrado	57974	5	165	36	9.2
Bong	17289	4	56	12	10.5
Rivercess	3463	1	13	3	12.2
Grand Gedeh	6494	0	16	4	8.0
Gbarpolu	4323	0	6	1	4.5
Grand Bassa	11494	0	15	3	4.2
Lofa	14354	0	45	10	10.2
Nimba	23953	1	15	3	2.0
Margibi	10883	0	14	3	4.2
Grand Cape Mount	6588	0	3	1	1.5
Bomi	4361	0	3	1	2.2
Liberia	180242	12	468	100	8.2



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Human Exposure to Animal Bites (Suspected Rabies)

- Seventeen events of animal bites were reported from Montserrado (3), Nimba (3), Bong (2), Margibi (2), Bomi (2), Grand Kru (1), Rivercess (1), Gbarpolu (1), Maryland (1) and Sinoe (1) Counties
- Cumulatively, since Epi-week one, 1,046 events of animal bites have been reported

Bloody Diarrhea (Shigellosis)

- Four cases of bloody diarrhea were reported from Margibi (2), Lofa (1) and Sinoe (1) Counties.
- Cumulatively, since Epi-week one, 215 cases of bloody diarrhea have been reported
- Stool specimens have been collected from 109 cases including 4 in the current week
- A total of 101 stool samples have been tested, 4 rejected due to poor quality, and 4 pending epi classification. Of the 101 tested, shigella was isolated through culture from 17 (16.8%) samples and no growth seen in 84 (83.2%) were negative.

Severe Acute Watery Diarrhea (Cholera)

- Three suspected cases of cholera were reported from Sinoe (2) and Nimba (1) Counties; specimens were collected from two cases
- Cumulatively, since Epi-week one, 142 suspected cases of cholera have been reported, including 4 deaths attributable to cholera
- A total of 60 stool samples have been collected including two 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

Outbreaks and Event of Public Health Concern

Measles Outbreak

- A total of 20 suspected cases of measles were reported from G.W. Harley Hospital and St. Mary's clinic in Sanniquellie-Mah District, Nimba County between September 18 – October 1, 2017
- The National Reference Laboratory confirmed 6 of the cases as IgM positive and 1 equivocal
- Age range (6 months- 30 years), 60% of cases were < 5years and 40% >5 years
- Sixty percent of the cases had unknown vaccination status while 20% had known vaccination status and 20% were not vaccinated
- Twelve of the cases were admitted, treated and discharged while 8 were treated on OPD basis
- A three days mini-measles vaccination campaign was conducted in affected communities in Sanniquellie-Mah District from 27-29 September 2017 which targeted age group 6-59 months
- The total of 607 children received a dose of measles vaccine and vitamin A during the mini campaign

Event of Public Health Concern (Chemical Spill over)

- Vaccination of 169 dogs in Montserrado County on World Rabies Day (September 28, 2017)
- Planned expansion of the Auto Visual AFP Detection and Reporting (AVADAR) to Grand Bassa and Nimba counties
- Weekly meeting with the laboratory to ensure data verification and harmonization
- 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 repositioning



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Public Health Measures

National level

- Vaccination of 169 dogs in Montserrado County on World Rabies Day (September 28, 2017)
- Planned expansion of the Auto Visual AFP Detection and Reporting (AVADAR) to Grand Bassa and Nimba counties
- IDSR Supportive Supervision ongoing in 7 counties (Montserrado, Sinoe, Rivercess, RiverGee, Grand Gedeh, Grand Kru and Maryland) covering 41 health districts
- Weekly meeting with the laboratory to ensure data verification and harmonization
- 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 repositioning

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 40 (October 2 – 8, 2017)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 40 and cumulative reports, Liberia, 2017

Counties	No. of Health Districts	No. of Health District reported	Acute Flaccid Paralysis (Polio)		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	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Bong	8	8	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Gbarpolu	5	5	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
Grand Bassa	8	8	0	0	0	0	0	0	0	0	2	0	1	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
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	0
Grand Kru	5	5	0	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Lofa	6	6	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
Margibi	4	4	0	0	2	0	0	0	2	0	1	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	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
Montserrado	7	7	0	0	0	0	0	0	3	0	0	0	2	0	0	0	2	5	0	0	0	0	0	0	0	0	0
Nimba	6	6	0	0	0	0	1	0	3	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Rivercess	6	6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0	0	0	0	0
Sinoe	10	10	0	0	1	0	2	0	1	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Total Weekly	91	91	0	0	4	0	3	0	17	0	4	0	11	0	2	0	6	12	0	0	1	0	1	0	0	0	0
Cumulative Reported			70	0	215	0	141	5	1164	1	33	18	1154	2	25	2	193	468	12	3	34	274	145	1	1803	24	
Cumulative Laboratory Confirmed			0	0	17	0	2	0	0	0	3	4	168	0	1	0			0	0	0	0	0	0	0	0	0

Note: A = Alive

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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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