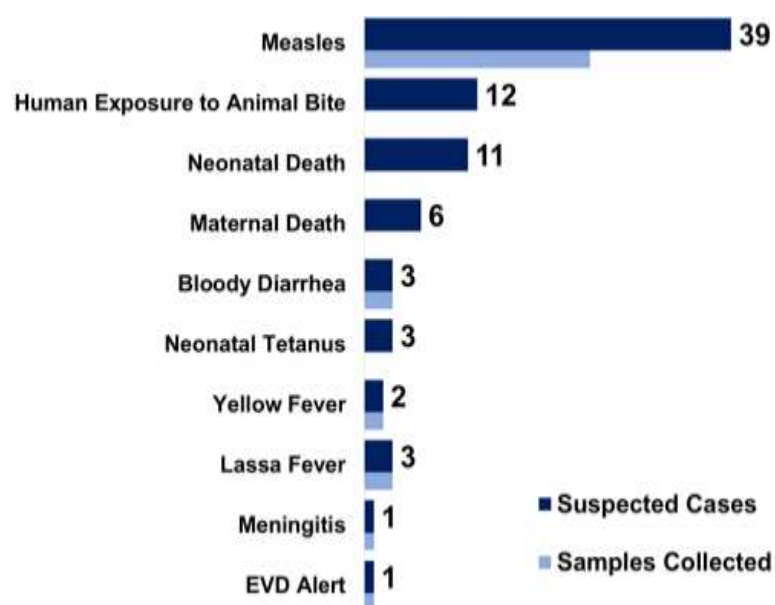


Country Population: 4,373,279 | Volume 09, Issue 51 Dec. 18-24, 2017 | Data Source: CSOs from 15 Counties and Lab

Highlights

Figure 1. Public Health Events Reported in Epi-week 51



Keynotes and Events of Public Health Significance

- A total of **81** suspected cases of immediately reportable diseases and events including **17 deaths** were reported from **15 counties**
- Health facility reporting **completeness and timeliness are 96%** respectively
- Seventeen** confirmed cases of measles were reported from Montserrado, Margibi, Nimba and Grand Bassa Counties

Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 51, 2017

County	Number of Expected Report from Health Facility	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	23	19	19	83	83
Bong	55	44	44	80	80
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	272	272	96	96
Nimba	74	74	74	100	100
Rivercess	19	19	19	100	100
River Gee	19	19	19	100	100
Sinoe	35	35	35	100	100
Liberia	759	732	732	96	96

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

732(96%)
Health facilities out of 759 reported timely IDSR data

91 (100%)
Health districts reported IDSR data

732(96%)
Health facilities reported IDSR data

Vaccine Preventable Diseases

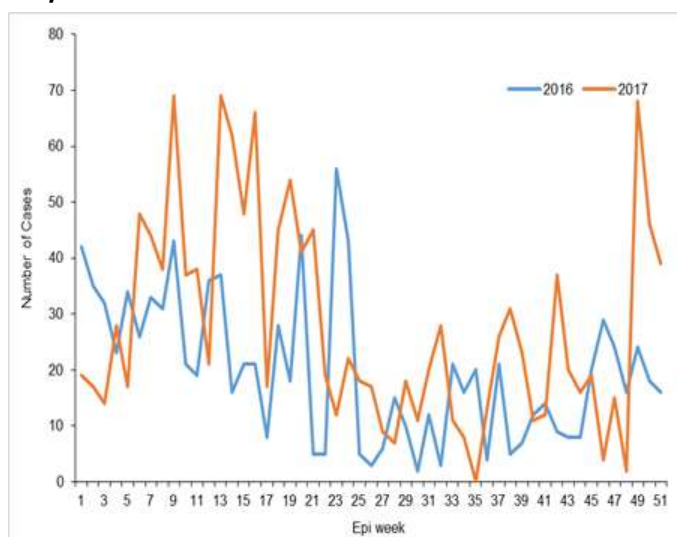
Measles

- Thirty-nine (39) suspected cases were reported from Montserrado (14), Nimba (8), Bong (6), Maryland (4) Grand Bassa (4), Margibi (2) and Grand Kru (1) Counties.
- Of the total reported cases, samples were collected for 24 and sent to the National Reference Laboratory for testing
- Seventeen (17) cases have been confirmed positive from the following Districts:
 - Montserrado County (Somalia Drive – 6, Commonwealth – 2 and Bushrod Island – 3)
 - Nimba County (Sanniquellie-Mah – 2)
 - Grand Bassa County (Buchanan – 2)
 - Margibi (Mamba Kaba-2)
- Seventeen (43.6%) of the suspected cases reported this week were <5 years and 16(41%) were ≥5 years
- Of the suspected cases reported, 6(18%) were reported to have been previously vaccinated, 11(28.2%) not vaccinated and 16(48%) had unknown vaccination status
- Cumulatively, since Epi week one, 1,759 suspected cases have been reported and have been classified as follow: 304 are laboratory confirmed, 264 epi-linked, 354 compatible, 834 discarded, and 3 pending arrival at the lab. Of the 890 equivocal and negative cases, 873 (97%) samples have been tested for rubella, of which, 348 (40%) were positive

Public Health Actions

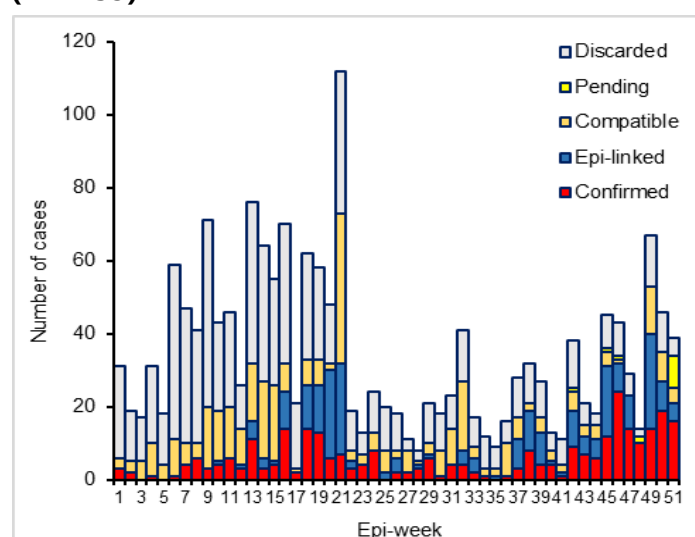
- Case management initiated for all the suspected cases and community engagement ongoing
- Active case search and community sensitization

Figure2. Comparative weekly trend of suspected cases of measles reported, Liberia, Epi weeks 1 – 51, 2016 & 2017



Note: The x-axis showing only odd number of the Epi week

Figure 3. Epi-classification of measles cases reported, Liberia, Epi weeks 1 – 51, 2017 (n=1759)



Acute Flaccid Paralysis (Suspected Polio)

- Zero suspected case of Acute Flaccid Paralysis was reported this week
- Cumulatively, since Epi week one, 79 Acute Flaccid Paralysis cases have been reported, of which, 75 (95%) have tested negative for poliovirus and 4 (5%) are pending laboratory confirmation

Neonatal Tetanus

- Three cases of Neonatal tetanus were reported from Grand Bassa (2) and Gbarpolu (1) Counties
- Cumulatively, since Epi-week one, 21 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

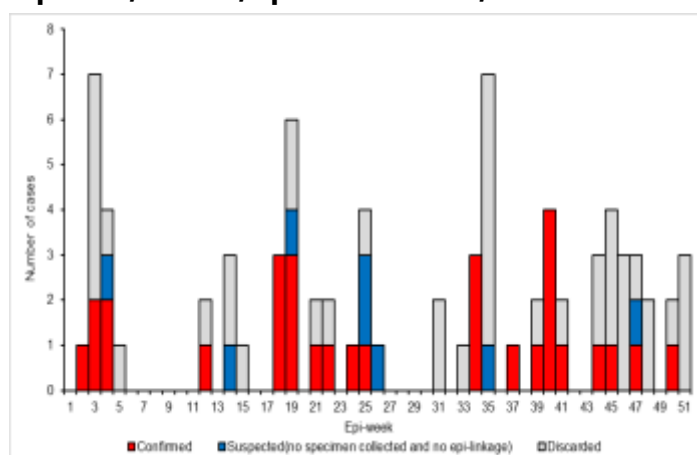
Ebola Virus Disease (EVD)

- One EVD alert was reported from Montserrado County
- Cumulatively, since Epi-week one, 513 EVD alerts have been reported, all of which have tested negative by PCR

Lassa fever

- Three suspected cases were of Lassa fever were reported from Bong County
- Samples were collected for the three suspected cases
- Cumulatively, since Epi-week one, 81 suspected cases have been reported to include 15 cases that were identified through laboratory record review
- Of the 81 suspected cases reported, samples have been collected for 75 of which 30 have been confirmed positive. Of the 30 confirm, RT-PCR (20), ELISA-Antibody (IgM) (9) and ELISA-Antigen (1), 39 negatives while 9 are considered as suspected cases due to lack of adequate samples for testing
- A total of 12 deaths have been recorded among confirmed cases. The case fatality rate among confirmed cases is 40%.

Figure 4. Epi-classification of Lassa fever cases reported, Liberia, Epi weeks 1 – 51, 2017



Note: The x-axis showing only odd number of the Epi week

Yellow fever

- Two suspected cases of Yellow Fever were reported from Grand Gedeh and Bomi Counties
- Cumulatively, since Epi-week one, 172 suspected cases have been reported of which 170 of the samples collected have been tested negative at the National Reference Laboratory (NRL)
- A presumptive-positive test result was released by the NRL for a sample from Rivercess County in week 47. The sample has been sent to Institute Pasteur Laboratory in Dakar, Senegal for confirmatory testing

Meningitis

- One suspected case of meningitis was from Nimba County.
- Cumulatively, since Epi-week one, 68 suspected cases have been reported of which 49 samples have been collected
- Of the 68 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 pneumonia including 11 deaths (case fatality rate among confirmed cases is 80%)

Events of Public Health Importance

Maternal Mortality

- Six maternal deaths were reported from Bong (2), Grand Bassa (1) Grand Kru (1), Montserrado (1) and Sinoe (1) Counties
- Reported causes of death were anemia (2), Sepsis (2), hypoglycemic shock (1), postpartum hemorrhage (1)
- Four of the deaths were reported to have occurred in the health facility and two occurred in the community
- Cumulatively, since Epi-week one, 230 maternal deaths have been reported (see Table 3 for causes of death)

Figure 6. Comparison of the weekly trend of Maternal Deaths Reported, Liberia, Epi weeks 1 – 51, 2016 & 2017

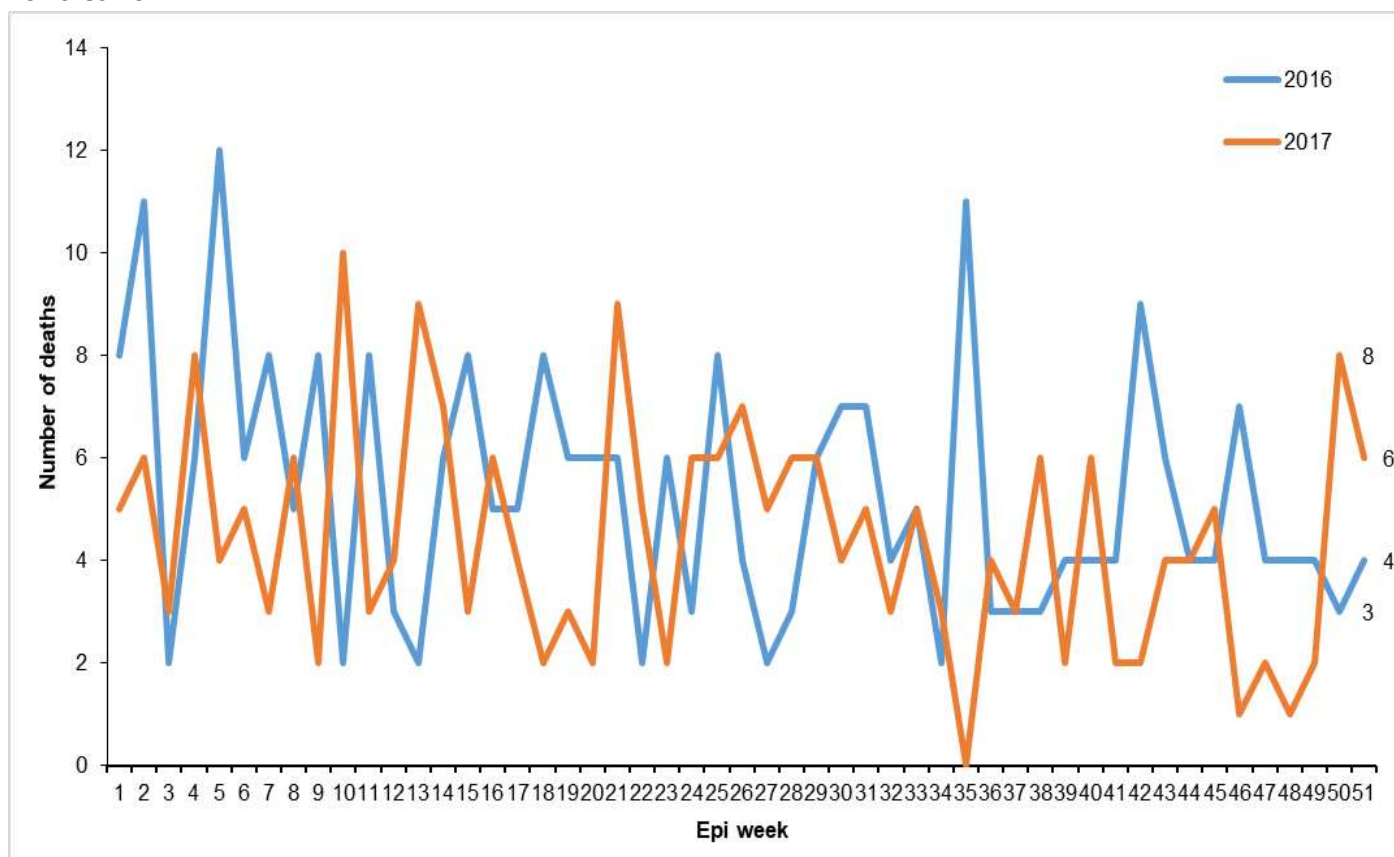


Table 2. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 51, 2017

County	Annual Live birth ¹	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Kru	3002	1	8	3	866
Grand Bassa	11494	1	23	12	622
River Gee	3707	0	7	3	614
Bomi	4361	0	8	5	596
Bong	17289	2	29	11	545
Margibi	10883	0	17	8	508
Grand Gedeh	6494	0	12	2	500
Sinoe	5308	1	11	5	429
Maryland	7048	0	9	6	415
Gbarpolu	4323	0	5	2	376
Nimba	23953	0	30	13	339
Lofa	14354	0	14	8	317
Montserrado	57974	1	53	25	297
Rivercess	3463	0	3	1	188
Grand Cape Mount	6588	0	1	1	49
Liberia (National)	180242	6	230	100	415

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



Liberia IDSR Epidemiology Bulletin

2017 Epi Week 51 (December 18 – 24, 2017)



Table 3. Causes of Maternal Death, Liberia, Epi weeks 1 - 51, 2017 (n=230)

Maternal Death	Frequency	Percent (%)
Post-partum hemorrhage	76	33.0
Anemia	37	16.0
Sepsis	28	12.1
Eclampsia	21	10.3
Unknown	11	4.7
Ruptured uterus	11	4.0
Cardiac pulmonary failure	6	3.4
Renal failure	11	3.4
Congestive Heart failure	6	2.3
Pre-eclampsia	4	2.3
Abruptio placenta	3	1.7
Multiple organ failure	2	1.1
Obstructed labor	2	1.1
Respiratory Distress	2	1.1
Amniotic fluid embolism	1	0.6
Dissimilated intravascular coagulation	1	0.6
Umbilical Hernia (Omphalocele)	1	0.6
Spinal shock	1	0.6
Uterine Prolapsp	1	0.6
Prolong Labour	1	0.6
Total	230	100

Neonatal Mortality

- Eleven Neonatal deaths were reported: Lofa(4), Bong (3), Grand Bassa (2), Montserrado (1), Grand Kru (1) Counties
- Causes of death were birth asphyxia (11)
- Eight of the deaths were reported to have occurred at health facility and three in the community
- Cumulatively, since Epi week one, 570 neonatal deaths have been reported

Table 4. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 51, 2017

County	Annual Live birth ¹	Current Week	Cumulative Neonatal deaths	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Rate
River Gee	3707	0	41	7	35.9
Maryland	7048	0	53	9	24.4
Sinoe	5308	0	27	5	16.5
Grand Kru	3002	1	18	3	19.5
Montserrado	3463	1	194	34	10.9
Lofa	14354	4	66	12	12.4
Bong	17289	3	13	2	12.2
Grand Gedeh	6494	0	22	4	11.0
Rivercess	57974	0	12	2	9.0
Gbarpolu	4323	0	20	4	5.7
Grand Bassa	11494	2	57	10	12.9
Margibi	10883	0	18	3	2.4
Nimba	23953	0	22	4	6.6
Bomi	4361	0	4	1	2.0
Grand Cape Mount	6588	0	3	1	2.2
Total	180242	11	570	100	10.3



Liberia IDSR Epidemiology Bulletin

2017 Epi Week 51 (December 18 – 24, 2017)



Human Exposure to Animal Bites (Suspected Rabies)

- Twelve events of animal bites were reported from Bong (2), Maryland (2), River Gee (2), Grand Gedeh (2), Montserrado (1), Grand Cape Mount (1), Margibi (1) and Grand Bassa (1) Counties
- Cumulatively, since Epi-week one, 1,228 events of animal bites have been reported

Bloody Diarrhea (Shigellosis)

- Three suspected cases of acute bloody diarrhea were reported from Margibi (2), and Montserrado (1) Counties
- Cumulatively, since Epi-week one, 262 cases of acute bloody diarrhea have been reported
- A total of 143 stool samples have been tested, 4 rejected due to poor sample quality, and 5 pending epi classifications. Of the 143 tested, Shigella was isolated through culture from 24 (17%) samples and no growth seen in 95 (84%) were negative.

Severe Acute Watery Diarrhea (Cholera)

- Zero suspected case of cholera was reported this week
- Cumulatively, since Epi-week one, 154 suspected cases of cholera have been reported, including 5 deaths attributable to cholera
- A total of 76 stool samples have been collected including one in the current week and sent to the National Reference Laboratory and is negative. Sixty-two of the samples tested had no growth and four positive of vibrio cholera

Public Health Measures

- Case management initiated for all suspected cases and community engagement ongoing
- Active case search and contact tracing still ongoing in response to the Lassa fever outbreak in Nimba
- No new Lassa fever case have been reported across the country

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 51 (December 18 – 24, 2017)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 51 and cumulative reports, Liberia, 2017

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
Bomi	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Bong	8	8	0	0	0	0	0	0	2	0	3	0	6	0	0	0	2	3	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	1	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	1	2	2	0	0	0	0	0	0	0
Grand Cape Mount	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
Grand Gedeh	6	6	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Grand Kru	5	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
Lofa	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
Margibi	4	4	0	0	2	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Maryland	6	2	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Montserrado	7	7	0	0	1	0	0	0	1	0	0	0	14	0	0	0	1	1	0	0	1	0	0	0	0	0
Nimba	6	6	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	0	0	0	0	0	0	0	0	0
Rivercess	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
River Gee	4	4	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinoe	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Total Weekly	91	91	0	0	3	0	0	0	0	0	3	0	39	0	1	0	6	11	3	0	1	0	2	0	0	0
Cumulative Reported			79	0	262	0	151	6	1228	1	43	19	1758	2	66	2	230	570	17	4	37	275	171	1	1821	24
Cumulative Laboratory Confirmed			0	0	18	0	2	0	0	0	29	4	304	0	1	0			0	0	0	0	1	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: Gulu Gwesa – CDC; George Sie Williams, Kwuakuan D.M. Yealue – 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

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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