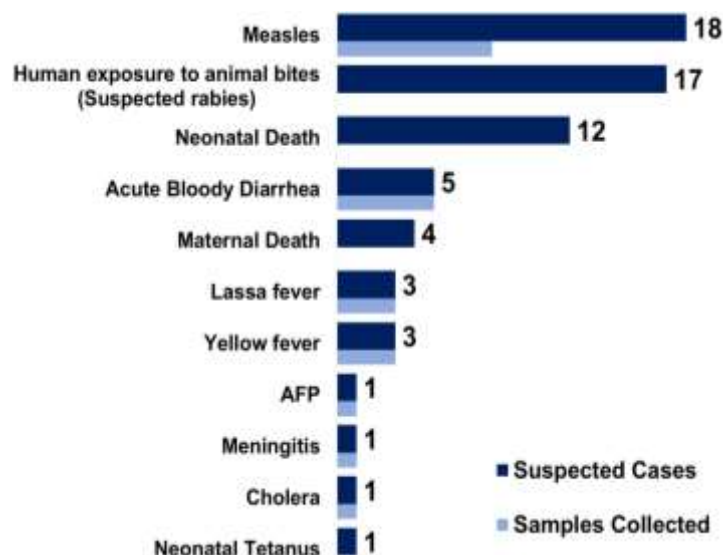


Country Population: 4,373,279 | Volume 09, Issue 44 Oct. 30 – Nov. 5, 2017 | Data Source: CSOs from 15 Counties and Lab

Highlights

Figure 1. Public Health Events Reported in Epi-week 44



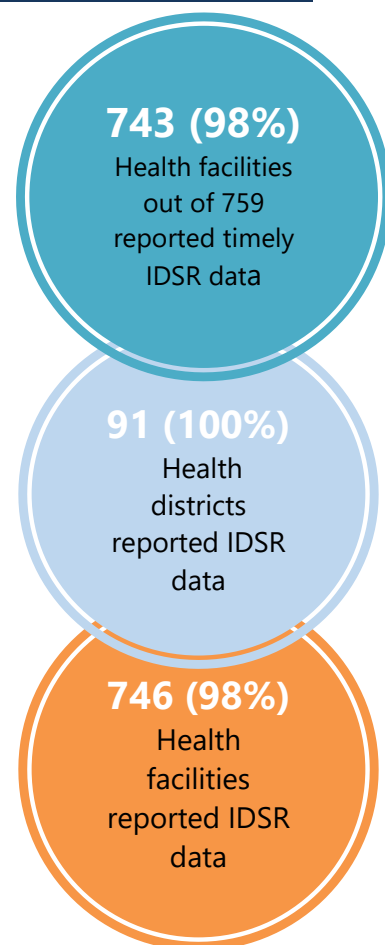
Keynotes and Events of Public Health Significance

- A total of **66** suspected cases of immediately reportable diseases and events including **17 deaths** were reported from 15 counties
- Health facility reporting **completeness and timeliness are 98%** respectively
- **Nine** confirmed cases of measles were reported Nimba, Montserrado and Grand Bassa

Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 44, 2017

County	Number of Expected Report from Health Facility	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	12	100	80
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	746	743	98	98



Legend

≥80

<80

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

Vaccine Preventable Diseases

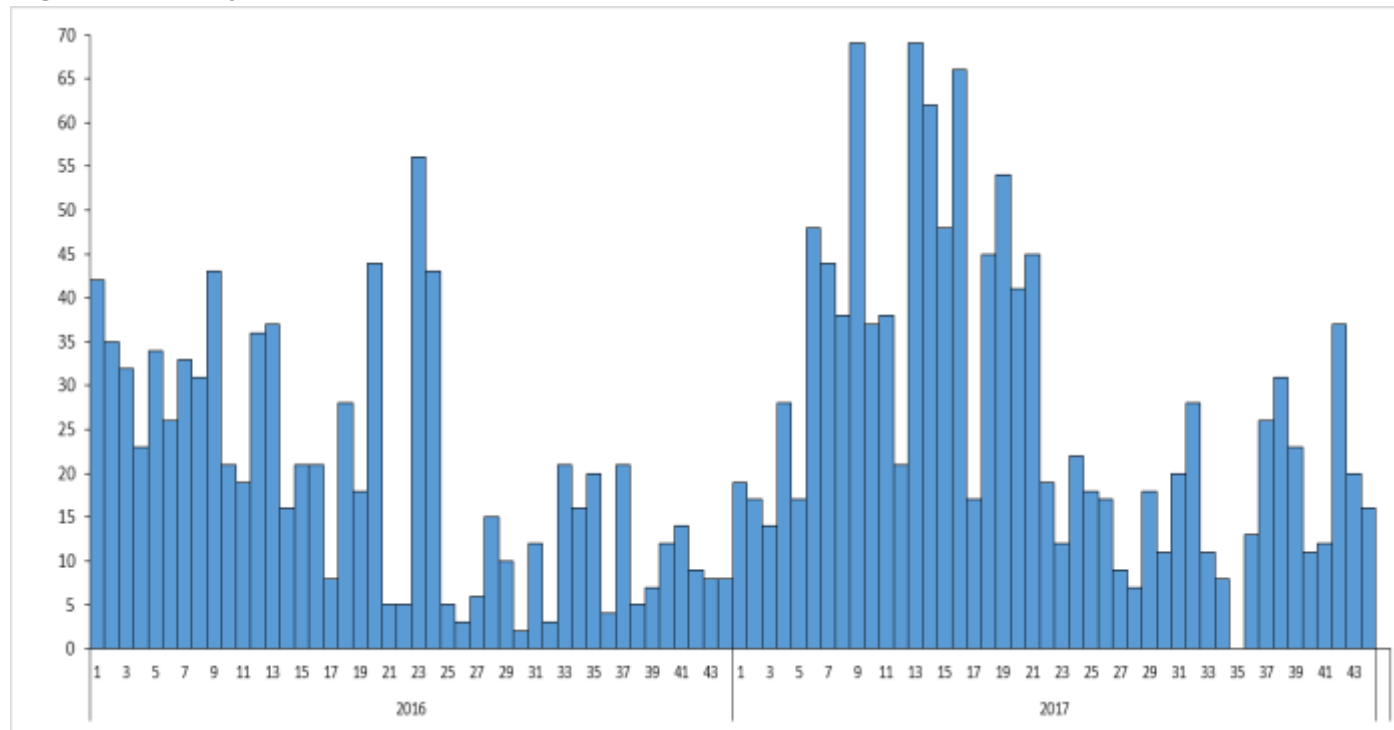
Measles

- Eighteen suspected cases were reported from the following counties: Bong (6), Montserrado (5), Grand Bassa (3), Sinoe (2), Lofa (1), and Margibi (1) Counties
- Samples were collected from 8 cases, of which, nine were confirmed positive.
- Three (3) from Zoengehn community, Tappita district Nimba County, One (1) from Battery factor community, Somalia drive district, and one each from Congo town and Soul clinic communities, Commonwealth district, Montserrado County and three (3) from double bridge community, compound #3 district in Grand Bassa County
- Of the 18 suspected cases reported this week, 3 (17%) were reported to have been previously vaccinated, 9 (50%) had unknown vaccination status and 6 (33%) were not vaccinated
- Seven (38%) of the suspected cases were <5 years and Eleven (91%) were ≥5 years of age
- Cumulatively, since Epi week one, 1506 suspected cases have been reported, of which 1018 were tested: 198 (19.4%) positive, 768 (75.4%) 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, 804 (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 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 – 44, 2016 & 2017



Acute Flaccid Paralysis (Suspected Polio)

- One case of Acute Flaccid Paralysis was reported from Sinoe County
- Cumulatively, since Epi week one, 74 Acute Flaccid Paralysis cases have been reported, of which, 70 (94.5%) have tested negative for poliovirus and 4 (5%) are pending laboratory confirmation

Table 2: Non-polio AFP rate/100,000 <15yrs, Liberia, Epi weeks 1 - 44, 2017

County	<15 years pop	# of AFP Cases Reported	# of Cases with Lab Result	Non-Polio AFP Rate	# of cases within 14 days specimen collected	% of stool <14days	# of NPENTs	% of NPENT
Bomi	45,639	4	4	10.4	4	100	1	25
Bong	180,932	5	5	3.3	5	100	0	0
Gbarpolu	45,243	1	1	2.6	1	100	0	0
Grand Bassa	120,281	3	2	2.9	2	67	2	100
Grand Cape Mount	68,945	2	2	3.4	2	100	0	0
Grand Gedeh	67,959	4	4	7.0	4	100	2	50
Grand Kru	31,421	1	1	3.8	0	0	0	0
Lofa	150,214	9	9	7.1	8	89	1	11
Margibi	113,895	8	8	8.3	8	100	2	25
Maryland	73,754	3	2	4.8	2	67	0	0
Montserrado	606,708	12	12	2.3	6	50	1	8
Nimba	250,675	8	8	3.8	8	100	1	13
Rivercess	36,237	6	6	19.6	5	83	3	50
River Gee	38,798	3	3	9.1	1	33	2	67
Sinoe	55,553	5	4	10.6	4	80	0	0
Liberia	1,886,254	74	71	4.6	60	81	15	21
Non-Polio AFP Rate	<2	Stool Adequacy		<80%	Non-Polio Enterovirus	<10%	Silent	
	≥2			≥80%		≥10%		

Neonatal Tetanus

- One Neonatal tetanus death was reported from Montserrado County
- Cumulatively, since Epi-week one, 17 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

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

Lassa fever

- Three suspected cases of Lassa Fever were reported from Grand Bassa (2) and Nimba (1) Counties
- Cumulatively, since Epi-week one, 56 suspected cases have been reported, and samples were collected from the three cases
- Of the 56 suspected cases reported, samples have been collected for 54 of which 11 have been confirmed positive by RT-PCR and ELISA-Antigen and 20 negatives. There are 24 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

- Three suspected cases of Yellow Fever were reported from Grand Gedeh (2) and Rivercess (1) Counties
- Cumulatively, since Epi-week one, 150 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, 63 suspected cases have been reported
- Of the 63 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 Nimba (1), Grand Gedeh (1), Sinoe (1) and Rivercess (1) Counties
- Reported causes of deaths were: Post-partum hemorrhage (2), post-partum sepsis (1) and severe 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, 205 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 - 44, 2016 & 2017

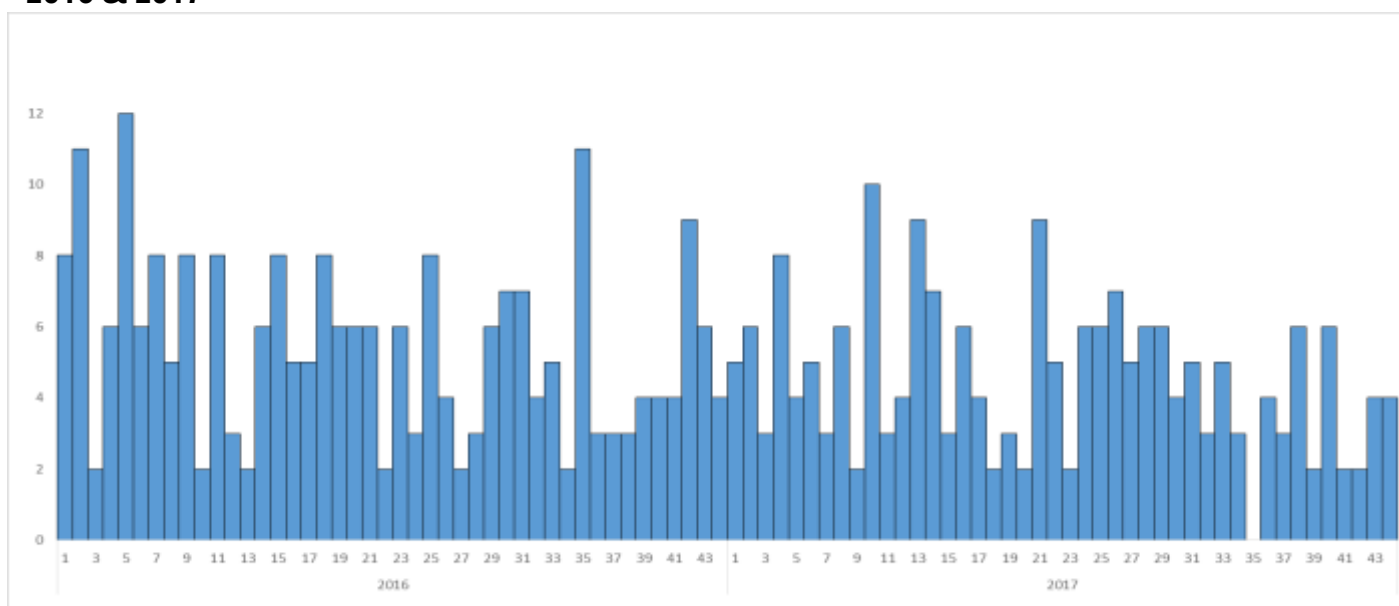


Table 3. Causes of Maternal Death, Liberia, Epi weeks 1 - 44, 2017 (n=205)

Maternal Death	Number	Percentage
Post-partum hemorrhage	71	34.3
Anemia	30	14.3
Sepsis	26	13.7
Eclampsia	20	10.3
Unknown	10	4.0
Ruptured uterus	9	4.0
Cardiac pulmonary failure	8	3.4
Renal failure	6	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
Dissimilated intravascular coagulation	1	0.6
Amniotic fluid embolism	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	205	100

Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1 - 44, 2017

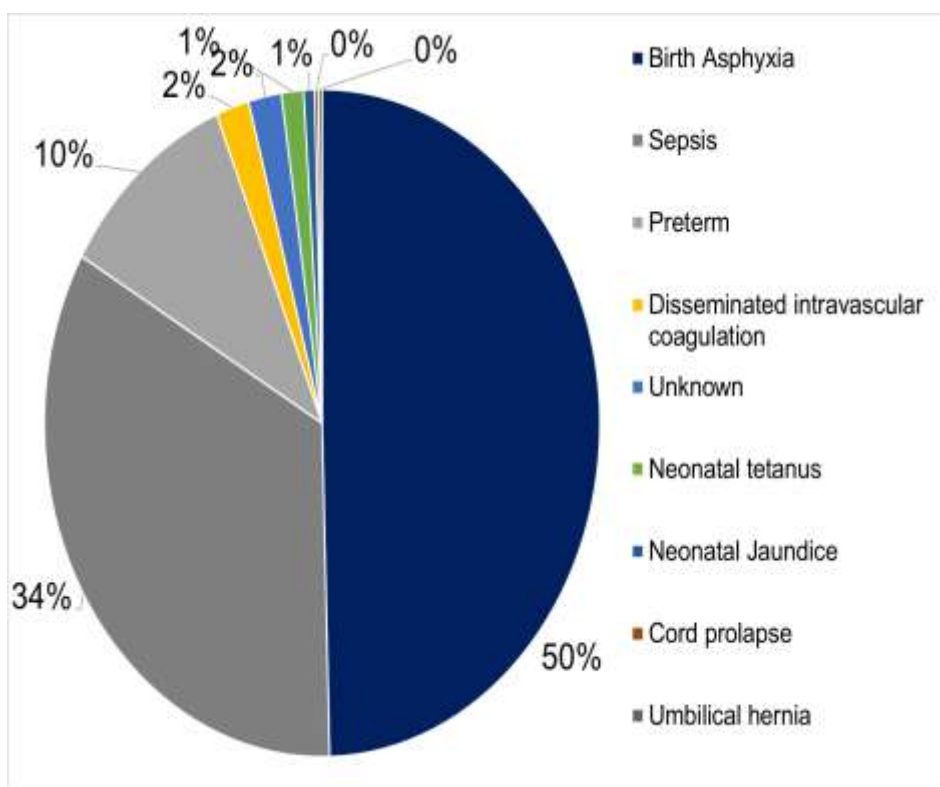
County	Annual Live birth ¹	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Grand Bassa	11494	0	22	12	622
Maryland	7048	0	8	6	369
Bomi	4361	0	8	5	596
Grand Kru	3002	0	7	3	758
Sinoe	5308	1	8	5	429
River Gee	3707	0	6	3	526
Montserrado	57974	0	48	25	269
Bong	17289	0	25	11	470
Margibi	10883	0	15	8	448
Nimba	23953	1	26	13	339
Lofa	14354	0	13	8	294
Rivercess	3463	1	3	1	188
Gbarpolu	4323	0	4	2	301
Grand Cape Mount	6588	0	1	1	49
Grand Gedeh	6494	1	11	2	500
Liberia (National)	180242	4	205	100	362

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), Lofa (1), Grand Gedeh (1), Grand Bassa (1), RiverGee (1), Margibi (1), Grand Cape Mount (1), Gbarpolu (1) and Nimba (1) Counties
- Reported causes of death were:
 - Birth asphyxia (5)
 - Respiratory depression (2)
 - Sepsis (2)
 - Neonatal Juandice (1)
 - Anemia (1)
 - Neonatal tetanus/ death (1)
- All of the deaths were reported to have occurred at health facility
- Cumulatively, since Epi week one, 515 neonatal deaths have been reported

Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1 - 44, 2017 (n=515)





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Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1 – 44, 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	34	7	29.8
Maryland	7048	0	51	10	23.5
Sinoe	5308	0	25	5	15.3
Grand Kru	3002	0	13	3	14.1
Montserrado	57974	5	184	36	10.3
Bong	17289	0	60	12	11.3
Rivercess	3463	0	13	3	12.2
Grand Gedeh	6494	1	18	3	9.0
Gbarpolu	4323	1	9	2	6.8
Grand Bassa	11494	1	18	3	5.1
Lofa	14354	1	50	10	11.3
Nimba	23953	1	16	3	2.2
Margibi	10883	1	17	3	5.1
Grand Cape Mount	6588	1	4	1	2.0
Bomi	4361	0	3	1	2.2
Total	180242	12	515	100	9.3

Human Exposure to Animal Bites (Suspected Rabies)

- Seventeen events of animal bites were reported from Bong (2), Grand Bassa (2), Bomi (2), Montserrado (2), Sinoe (2), Nimba (2), Gbarpolu (1), River Gee (1), Grand Cape Mount (1) and Margibi (1) Counties
- Cumulatively, since Epi-week one, 1,122 events of animal bites have been reported

Bloody Diarrhea (Shigellosis)

- Five cases of acute bloody diarrhea were reported from Margibi (3), Rivercess (1) and Grand Bassa (1) Counties
- Cumulatively, since Epi-week one, 237 cases of acute bloody diarrhea have been reported
- Stool specimens have been collected from 122 cases including 1 in the current week
- A total of 108 stool samples have been tested, 4 rejected due to poor sample quality, and 4 pending epi classifications. Of the 108 tested, shigella was isolated through culture from 18 (17.5%) samples and no growth seen in 87 (80.5%) were negative.

Severe Acute Watery Diarrhea (Cholera)

- One suspected case of cholera was reported from Rivercess County
- Cumulatively, since Epi-week one, 145 suspected cases of cholera have been reported, including 5 deaths attributable to cholera
- A total of 63 stool samples have been collected including one in the current week and sent to the National Reference Laboratory. Fifty-nine of the samples tested had no growth and two positive of vibrio cholera



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2017 Epi Week 44 (October 30 – November 5, 2017)



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: $\geq 80\%$)
- *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 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



Liberia IDSR Epidemiology Bulletin

2017 Epi Week 44 (October 23 – 29, 2017)

Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 44 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	A
Bomi	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	0
Bong	8	8	0	0	0	0	0	0	2	0	0	0	6	0	0	0	0	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	1	0	0	0	3	0	2	0	3	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	1	0	0	0	0	0	0	0	0	1	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	1	1	0	0	0	0	2	0	0	0	0
Grand Kru	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
Lofa	6	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Margibi	4	4	0	0	3	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Maryland	6	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Montserrado	7	7	0	0	0	0	0	0	2	0	0	0	5	0	0	0	0	5	0	1	0	0	0	0	0	0	0
Nimba	6	6	0	0	0	0	0	0	2	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Rivercess	6	6	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
River Gee	4	4	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
Sinoe	10	10	1	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Total Weekly	91	91	1	0	5	0	1	0	17	0	3	0	18	0	1	0	4	12	0	1	0	0	3	0	18	0	
Cumulative Reported			74	0	237	0	144	5	1122	1	37	19	1241	2	61	2	205	515	13	4	34	274	149	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	0

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

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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

Epidemiological bulletin published with support of WHO and CDC

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