

Adverse Events Following Immunization/Adverse Drug Reaction (AEFI)

### **Reporting Coverage**

### Table 1: Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi-week 33, 2023

	Expected					956(98%)
	Reports From	Reports	<b>Received on</b>	Completeness	Timeliness	Health
County	HF*	Received	Time	(%)	(%)	facilities
Bomi	28	28	28	100	100	reported
Bong	67	67	67	100	100	IDSR data
Gbarpolu	18	18	18	100	100	
Grand Bassa	37	37	37	100	100	
Grand Cape Mount	34	34	34	100	100	
Grand Gedeh	24	24	24	100	100	98(100%)
Grand Kru	24	24	24	100	100	Health
Lofa	60	60	60	100	100	districts
Margibi	66	66	66	100	100	reported
Maryland	28	28	28	100	100	IDSR data
Montserrado	418	396	393	95	93	
Nimba	92	92	92	100	100	
Rivercess	21	21	21	100	100	
River Gee	20	20	20	100	100	953 (97%)
Sinoe	41	41	41	100	100	Health
Liberia	978	956	953	98	97	facilities

• The national target for weekly IDSR reporting is 80%. Health facility timeliness is monitored at the health district level

• All counties reported on time to the national level

Legend:

≥80 <80

# Vaccine-Preventable Diseases

**Measles** 

Thirty-two (32) suspected cases were reported from 12 Counties (see distribution in Table 2)

One specimen was collected and pending testing

Fifteen (15) were vaccinated (see distribution in Table 3)

 Table 2: Distribution of Measles cases per county and epi-classification, Liberia, Epi week 33, 2023

COUNTY	Cases Week	Lab confirmed Epi Week		SIFICATI ED CASE 1-33	ON OF 5, EPI WEEK	Deaths	CFR (%)	CUMULATIVE # SUSPECTED CASES, EPI	CUMULATIVE # CONFIRMED CASES, EPI
	33	33	Lab confirmed	Epi Linked	Clinically Compatible		(//)	WEEK 1-33	WEEK 1-33
Bomi	0	0	2	13	51	0	0.0	75	66
Bong	2	0	2	6	196	1	0.5	204	204
Gbarpolu	2	0	0	0	36	0	0.0	37	36
Grand Bassa	1	0	0	0	166	0	0.0	168	166
Grand Cape Mount	0	0	1	2	62	0	0.0	73	65
Grand Gedeh	4	0	4	26	279	0	0.0	352	309
Grand Kru	0	0	6	72	643	2	0.3	723	721
Lofa	1	0	0	0	112	0	0.0	120	112
Margibi	1	0	1	8	190	0	0.0	201	199
Maryland	10	0	0	0	662	0	0.0	664	662
Montserrado	4	0	4	53	990	2	0.2	1055	1047
Nimba	4	0	2	33	290	3	0.9	327	325
River Gee	0	0	0	0	109	0	0.0	129	109
Rivercess	1	0	1	0	28	0	0.0	34	29
Sinoe	2	0	4	11	94	0	0.0	123	109
Grand Total			27	224	3,908	8	1.9	4,285	4,159

## Table 3: Vaccination Status of Measles Cases, Liberia, Epi-week 33, 2023

			Number of Dos	ses Received
County	Vaccinated	One Dose	Two Doses	<b>Doses Not Indicated</b>
Bomi	0	0	0	0
Bong	0	0	0	0
Gbarpolu	2	0	0	2
Grand Bassa	1	0	0	1
Grand Cape Mount	0	0	0	0
Grand Gedeh	1	1	0	0
Grand Kru	0	0	0	0
Lofa	1	0	0	1
Margibi	1	1	0	0
Maryland	0	0	0	0
Montserrado	4	4	0	0
Nimba	2	2	0	0
River Gee	0	0	0	0
Rivercess	1	1	0	0
Sinoe	2	0	0	2
National	15	9	0	6

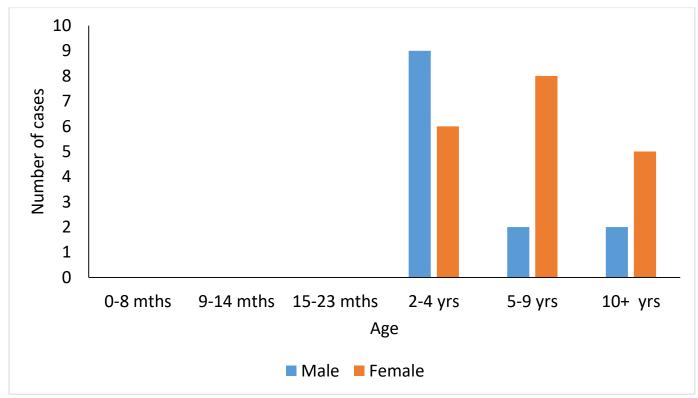
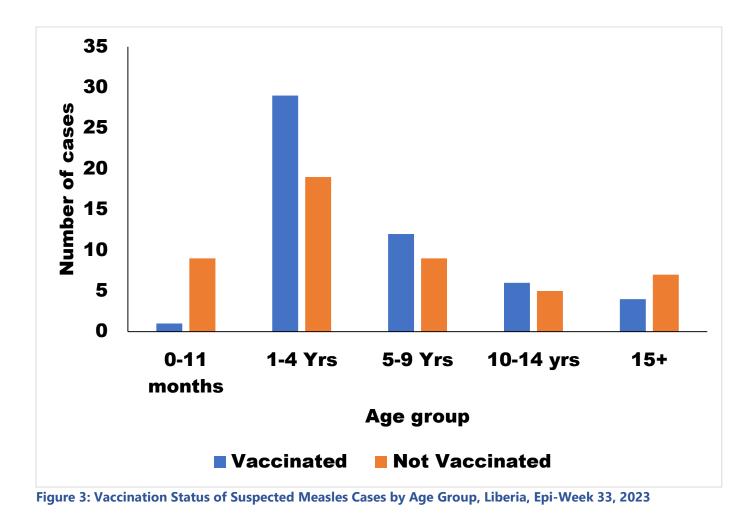


Figure 2: Distribution of Measles Cases by Age Group and Sex, Liberia Epi Week 33, 2023



#### **Outbreak Section**

Table 4: Cumulative Distribution of Measles Cases and Deaths, December 13, 2021- August 20, 2023

COUNTY	CUMULA TIVE SUSPECT	CUMULATI VE CONFIRME D CASES	CLASSIFICATION OF CONFIRMED CASES				SIFICATI IRMED D		CUMUL ATIVE DEATHS	CFR (%)	# CONFIR MED CASES	# CONFIRM ED CASES WEEK 33	% CHANGE	Outbreak Status
	ED CASES	D CASES	Lab confirmed	Epi Linked	Clinically Compatible	Lab confirmed	Epi Linked	Clinically Compatible			WEEK 32			
Montserr ado	5, 409	5,322	145	165 7	3, 520	3	61	5	69	1.3	10	12	20	Ongoing
Nimba	1, 089	1,058	37	187	834	0	1	3	4	0.4	6	9	50	Ongoing
Margibi	827	803	34	136	633	0	0	1	1	0.1	0	0	-	Ongoing
Grand Bassa	943	905	40	212	653	1	0	6	7	0.9	0	0	-	Ongoing
Lofa	353	284	32	66	186	0	0	0	0	0	4	0	-	Ongoing
Bong	599	574	22	21	531	0	1	2	3	0.5	0	0	-	Ongoing
Marylan d	1044	1024	24	308	697	0	0	0	0	0	5	18	260	Ongoing
Grand Gedeh	590	430	34	48	348	0	0	0	0	0	1	8	-700	Ongoing
Sinoe	284	231	36	84	111	0	0	0	0	0	0	0	-	Ended
Bomi	183	147	34	27	86	1	2	2	5	3	0	0	-	Ended
Grd Cape Mt	215	187	17	18	152	0	2	1	3	1.6	0	0	-	Ended
Grand Kru	978	949	22	106	821	0	0	2	2	0.2	4	2	-50	Ongoing
Gbarpolu	67	46	4	2	40	0	0	0	0	0	0	0	-	Ended
Rivercess	112	84	23	54	7	0	1	0	1	1.1	0	0	-	Ended
River Gee	103	79	0	0	79	0	0	0	0	0	0	0	-	Ended
Total	12,796	12,206	504	2,9 26	8,698	5	68	22	95	7.8	30	49		

#### Public Health Response

#### I. Coordination

• IMS meeting is held weekly for coordination and mobilization of resources in response counties

#### II. Epidemiological Surveillance

• Active case search ongoing in affected counties

#### III. Case management

o All reported cases were treated and sent home from isolation in Nimba County

### **IV. Immunization**

o Routine immunization ongoing in affected counties

#### **V. Laboratory**

- Specimens were collected from 4 districts in 4 counties (Grand Kru-Barclayville, Lofa-Foya, Nimba Zoe-Geh, and Grand Gedeh-Trehn)
- Five hundred nine (509) cases have been confirmed by the laboratory from December 13, 2021 August 23, 2023

### **VI. Risk Communication and Community Engagement**

• Community engagement ongoing in affected counties

### VII. Challenges

- DSO in Bong, Grand Gedeh, and Montserrado Counties are constrained in submitting reports due to a lack of computers
- o Limited functional laptop computers for DSOs (Gbarpolu, Bomi, Bong, Montserrado, Rivercess, and Margibi)
- o Limited specimen collection kits for priority diseases in Montserrado County

### Acute Flaccid Paralysis (AFP)

- Two (2) suspected cases were reported from Nimba County
- Specimens were collected and pending testing
- Cumulatively, thirty-four (34) cases were reported
  - Ten (10) tested negative
  - Twenty-four (24) pending

### Neonatal Tetanus

- Zero cases were reported
- Cumulatively, forty-two (42) cases including 6 deaths reported

### Influenza-Like Illnesses

### Influenza

- Two (2) cases were reported from Maryland County
- Cumulatively, eighty-four (84) suspected cases reported

### Viral Hemorrhagic Diseases

Lassa fever

- 🖙 Seven (7) suspected cases were reported from Bong (4), Montserrado (2), and Grand Bassa (1) Counties
- Specimens were collected and tested: 2 positive and 5 negative
- Cumulatively, one hundred sixty-two (162) suspected cases reported
  - Proportion of suspected cases with a sample collected (147/162) 91%
  - Proportion of suspected cases with sample tested (147/147) 100%

### Current Outbreak

Lassa fever disease

- From Grand Bassa and Bong Counties
- Cumulatively, eighty-seven (87) laboratory-confirmed cases including 26 deaths reported (CFR=30%)

### Table 5: Summary of confirmed cases reported in epi week 33, 2023

Ag (Yr:	e Sex	Outcome	Occupation	Community of resident	District of outbreak	Reporting County	Date of Onset	Date of Admission	Hospital	Signs & symptoms	Date specimen collected	Date specimen sent to Lab.	Date specimen received Lab	Date ribavirin initiated	confirmed	Total contacts generated		Epi Link
16 vrs	F	Alive	Student	Piavata	Suakoko	Bong	9-Aug-23	15-Aug-23		fever, several weakness, vomiting & poor appetite		15-Aug-23	15-Aue-23	15-Aug-23	21-Aug-23	8	4	No
21							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1	high fever (>38.5°C), engorged breasts, weakness, vomiting, headache, and generalized body								
yrs	F	Alive	Student	Old Gorzohn	District 3AB	G. Bassa	9-Aug-23	16-Aug-23	LAC hosp	pain	18-Aug-23	19-Aug-23	19-Aug-23	18-Aug-23	21-Aug-23	13	5	No

### Table 6: Summary of Lassa fever Outbreak, Liberia, Sept 9, 2022, to August 20, 2023

County	Outbreak Districts	Outbreak Start Date	suspected	Total confirmed cases	Deaths in HCWs	Total Deaths	CFR %	Total Contacts	# HCW contacts	Contacts_ became cases	HCW became confirmed case	Contacts under follow up	Contacts completed	Days in countdown	Outbreak Status
Montserrado	Bushrod	13-Feb-23	15	2	0	1	50%	29	21	0	0	0	29	Completed	Over
moniscitudo	Central Monrovia	3-Mar-23	28	1	0	1	100%	28	27	0	0	0	28	Completed	Over
	Suakoko	21-Apr-23	139	37	2	8	21%	342	168	6	4	8	334	Active	Ongoing
Bong	Sanoyea	5-Apr-22	1	1	0	1	100%	31	15	0	0	0	31	Completed	Over
	Jorquelleh	6-Jan-22	13	9	1	2	25%	107	69	3	3	0	107	Completed	Over
Grand Bassa	District 3A&B	9-Sep-22	86	31	0	9	30%	177	35	2	0	18	159	Active	Ongoing
	Buchanan	11-Aug-23	2	1	0	1	100%	4	2	0	0	4	0	Active	Ongoing
	Sanniquellie-Mah	6-Feb-23	36	2	0	0	0%	43	35	8	0	0	43	Completed	Over
Nimba	Tappita	13-Mar-23	12	1	0	1	100%	36	17	4	0	0	36	Completed	Over
	Bain-Garr	1-Jun-23	9	2	0	2	100%	30	25	0	0	0	30	Active	Ongoing
Total	8		341	87	3	26	30%	827	414	23	7	30	797		

### **Public Health Measures**

• NPHIL continues to provide technical support to the affected counties

#### I. Surveillance:

- o Heightened case detection and reporting in affected communities and districts
- o Situational reports are produced and shared regularly at the national level
- Daily follow-up/monitoring of contacts

#### II. RCCE

- o Health education in affected and surrounding communities
- Health workers and visitors are encouraged to enhance IPC practices by regular washing of hands

### III. Case Management

o The case was isolated and ribavirin treatment was administered but later expired

#### IV. IPC

 Affected communities were empowered with the WASH package to enable them to undertake short-term interventions that will improve the sanitation situation in each community thereby helping in Lassa fever prevention and control

#### Yellow fever

- Four (4) suspected cases were reported from Grand Gedeh (2), and Grand Bassa (2) Counties
- Specimens were collected and pending testing
- Cumulatively seventy-six (76) suspected cases were reported
  - Three (3) samples (3/63) 5% not transported (Epi week 5 from Grand Gedeh, River Gee, and Grand Kru Counties)
  - The proportion of samples tested is (40/60) 67%
  - The proportion of samples pending testing is (20/60) 33%

#### **Dengue Fever**

Zero cases were reported

#### Ebola Virus Disease

Zero cases were reported

#### Diarrheal Diseases

#### Acute Bloody Diarrhea (Suspected Shigellosis)

- Fifteen (15) cases were reported Sinoe (4), Nimba (4), Grand Gedeh (3), Lofa (1), Montserrado (1), Rivercess (1), and River Gee (1) Counties
- Three (3) specimens were collected and pending testing

- Cumulatively, four hundred forty-eight (448) cases were reported
  - $\circ$  One hundred fifty-four (154) specimens were collected
    - 76 tested negative
    - 7 specimens rejected
    - 71 specimens were not transported

### Severe Acute Watery Diarrhea (Suspected Cholera)

- Twenty-two (22) suspected cases were reported Nimba (7), Grand Kru (5), Margibi (3), Bong (3), Lofa (2), Grand Gedeh (1), and Maryland (1) Counties
- Three (3) specimens were collected and pending testing
- Cumulatively, six hundred one (601) cases reported
  - One hundred eighty-seven (187) specimens collected
  - 65 tested negative
  - 7 specimens rejected
  - 115 specimens were not transported

### **Other Reportable Diseases**

### Animal bite (Human Exposure to Rabies)

### Eighty-nine (89) animal bites reported

 Table 7: Distribution of Animal Bite Cases and PEP Administration per County, Liberia, Epi week 33, 2023

Counties	Cases	Person receiving PEP	PEP doses administered	Cumulative cases (Wk 1-33)	Cumulative PEP administered (Wk 1-33)
Bomi	2	2	2	49	29
Bong	5	1	1	155	67
Gbarpolu	1	1	1	20	1
Grand Bassa	7	0	0	198	16
Grand Cape Mount	0	0	0	54	34
Grand Gedeh	3	1	1	76	10
Grand Kru	7	0	0	180	15
Lofa	3	1	0	164	63
Margibi	5	1	1	127	60
Maryland	5	3	2	126	45
Montserrado	20	3	3	661	168
Nimba	22	5	5	334	126
Rivercess	3	0	0	40	51
River Gee	0	0	0	90	0
Sinoe	6	0	0	87	6
Total	89	18	16	2,361	691

### **Public Health Actions**

Ongoing monitoring and follow-up of cases

### **Meningitis**

- $\ensuremath{\,^{\ensuremath{\wpmulti}}}\xspace$  Two (2) cases were reported from Lofa and Sinoe (dead) Counties
- One specimen was collected and pending testing
- Cumulatively, thirty-one (31) suspected cases reported
  - Proportion of suspected cases with samples collected (26/31) 84%
  - Proportion of sample tested (21/26) 81%
  - o 17 negative and 4 positive (Streptococcal-3 & Hemophilus Influenzae)

#### <u>Mpox</u>

- One (1) case was reported from Rivercess County
- Specimen was collected and pending testing
- ☞ Cumulatively, one hundred seven (107) suspected cases reported
  - Seven (7) confirmed

#### Unexplained cluster of deaths

Zero cases reported

### **Events of Public Health Importance**

#### Maternal Mortality

- Five (5) deaths were reported: Montserrado (2), Grand Cape Mount (1), Nimba (1), and Grand Bassa (1) Counties
- Reported causes: Eclampsia (2), postpartum hemorrhage (1), obstructed labor (1), and septic shock (1)
- Reporting Site:
- Health facility (5/5) 100%
- Cumulatively, two hundred twelve (212) deaths reported
  - Proportion of death reviewed (42/212) 20%
    - Proportion of community death (27/212)13%

#### Neonatal Mortality

- Seven (7) deaths were reported: Montserrado (4), and Nimba (3) Counties
- Reported causes: birth asphyxia (4), neonatal sepsis (2), and prematurity (1)
- Reporting sites:
  - Health facility (7/7) 100%
- Cumulatively, five hundred sixteen (516) deaths reported

#### Adverse Events Following Immunization (AEFI)/Adverse Drug Reaction (ADR)

- Twenty-eight (28) cases were reported from Sinoe (8), Rivercess (6), Grand Gedeh (4), Bomi (3), Montserrado (2), Lofa (2), Grand Kru (1), Grand Bassa (1), and Maryland (1) Counties
- All reported cases were non-serious
- Related vaccine:
  - Penta (9/28) 32%
  - o COVID-19 (6/28) 21%
  - Others (13/28) 46%
- Cumulatively, four hundred forty-six (443) events were reported and COVID-19 accounted for (165/443) 37%

#### **Neglected Tropical Diseases**

#### <u>YAWS</u>

- Zero cases were reported
- No specimen was collected
- Cumulatively, one hundred eighty-four (184) cases have been reported

#### **Buruli Ulcer**

- Zero suspected cases reported
- Cumulatively, one hundred nineteen (119) cases have been reported

A total of 4,715 travelers were recorded for the week with incoming travelers accounting for 46% (2,162/4,715)

								Travelers Vaccinated			Evidence of
					Total	Yellow		against YF	Alerts	COVID-	COVID-19
Type of Ports	Point of Entry	Weekly total	Arrival	Departure	traverlers with YB	Book Damage	Card Replaced	& Issued book	detected/ Verified	19 Reactive	vaccination card/certificate
	James S. Paynes	133	63	70	12	0	0	0	0	0	12
Airport	Robert Int'l Airport	3646	1612	2034	3579	67	67	0	0	0	3583
Seaport	Freeport of Monrovia	132	66	66	123	0	0	0	0	0	132
	Buchanan Port	88	44	44	88	0	0	0	0	0	88
	Bo Water Side	389	204	185	381	5	5	3	0	0	238
Land Crossing	Ganta	125	60	65	60	0	0	0	0	0	36
Land Crossing $\frac{\sigma}{\gamma_e}$	Yekepa	100	69	31	44	0	0	0	0	0	57
	Loguatuo	102	44	58	82	0	0	0	0	0	44
Total		4,715	2,162	2,553	4,369	72	72	3	0	0	4,190

 Table 8: Border activity at the PoE for incoming and outgoing travelers, Liberia, Epi week 33, 2023

Note: Yellow book issue for both arrival and departure; Vaccination coverage for both arrival and departure

# Public Health Measures

National level

Community engagement and border meeting airing messages on Lassa fever, Mpox, COVID-19, and Measles in Nimba, Grand Cape Mount, and Grand Bassa Counties

- Review and validation of AEFI guidelines and SOP
- Providing remote technical and operational support to counties
- Produced and disseminated situation reports (Lassa fever, Measles, and Mpox outbreaks)

### **County-level**

### Coordination

- o Partner coordination and resource mapping
- Surveillance
  - o Publication of situational reports
  - o Active case search ongoing in affected and surrounding communities

### Case Management

- Administration of PEP
- o Management of measles cases ongoing

p. of Expected	of Immediately Reportable D	Dise	ease	es, C	ond	litio	ns, a	and	Eve	nts	by (	Coui	nty							_
o. of Health D																				_
o. of Health D						e	Mount	h					lo					ly	Reported	Cumulative Lab-confirmed
o. of Health D			Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	Rivercess	River Gee	Sinoe	Total Weekly	Cumulative Reported	Cumulative
	l Health District		4	9	5	0	5	6	5	6	4	6	0	6	6	6	10	93		
e Disea	istrict Reported	_	4	9	5	0	5	6	5	6	4	6	0	6	6	6	10	93		
a	Acute Flaccid Paralysis (Suspected Polio)	A D	0	0	0	0	0	0	0	0	0	0	0	2 0	0	0	0	2	34 0	0
lde	Measles	A	0	2	2	1	0	4	0	1	1	10	4	4	1	0	2	32	4,285	27
ent		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2
Prev	Neonatal Tetanus	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	(
ine		D A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 4	6 76	(
/acc	Yellow fever	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<u>.</u>		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	(
hag	Dengue fever	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
norr	Ebola Virus Disease	Α	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
Hen		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Viral	Lassa fever	A D	0	4 0	0	1	0	0	0	0	0	0	2	0	0	0	0	7 0	131 31	2
lik			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ıza-L	COVID-19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
luen			0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	84	1
Inf			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dise	Acute Bloody Diarrhoea (Shigellosis)	A	0	0	0	0	0	3	0	1	0	0	1	4	1	1	4	15	448	
leal		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
iarrh	Severe Acute Watery Diarrhoea (Cholera)	A D	0	3 0	0	0	0	1 0	5 0	2 0	3 0	1 0	0	7 0	0	0	0	22 0	601 0	
	Maternal Mortality	D	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5	212	
Healtl	,																			·
blic F	Neonatal Mortality	D	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	7	516	
Ind .	AEFI	A D	3 0	0	0	1	4	0	1 0	2 0	0	1 0	2 0	0	6 0	0	8	28 0	443 0	
ts of		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Events	Unexplained Cluster of Health Events/Disease	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ш		A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	107	
S	Мрох	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
seas		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
e Di	Tuberculosis	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
tabl	Human Exposure to Rabies (Suspected Human – Meningitis –		2	5	1	7	0	3	7	3	5	5	20	22	3	0	6	89	2,361	
por			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Reportable Diseases			0	0	0	0	0	0	0	1 0	0	0	0	0	0	0	1 0	2 0	31 0	
ŌŦ		D A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-	Unexplained Cluster of deaths	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Ē	Dum di I llana	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	
ctec	Buruli Ulcer	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Neglected Tr	Yaws	Α	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184	
z		D TAL	0 5	0 14	0 3	0 13	0	0 13	0	0 10	0	0 <b>19</b>	0 0	0 <b>43</b>	0 0	0	0 21	0 216	0 9716	( 5

**D** = Dead **A** = Alive

#### 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%). The time requirement for weekly IDSR reports:
  - Health facility required on or before 5:00 pm every Saturday to the district level
  - Health district required on or before 5:00 pm every Sunday to the county level
  - County required on or before 5:00 pm every Monday to the national level
- Image: 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 Negative measles cases per 100,000 population
- Annualized maternal mortality rate refers to the maternal mortality rate of a given period of 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 of 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 been 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

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## For comments or questions, please contact

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# National Public Health Institute of Liberia (NPHIL)

#### MISSION

To prevent and control public health threats by promoting healthy outcomes and serving as a source of knowledge

### VISION

A center of excellence to create health outcomes for Liberians through a strong preventive health system and expertise

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#### Data sources

Data and information is provided by the fifteen County Surveillance Officers and National Public Health Reference Laboratory via regular weekly reports, telephone calls and email exchanges. Situations are evolving and dynamic therefore numbers stated are subject to change.