



Liberia IDSR Epidemiology Bulletin

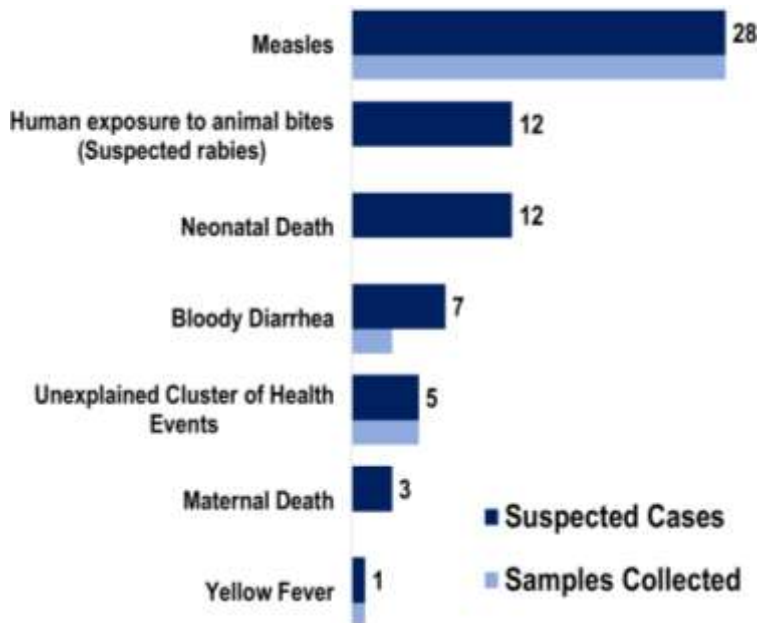
2017 Epi Week 32 (Aug 7-13, 2017)



Country Population: 4,373,279 | Volume 09, Issue 32 Aug. 7 – 13, 2017 | Data Source: CSOs from 15 Counties and Lab

Highlights

Figure 1. Public Health Events Reported in Epi-week 32



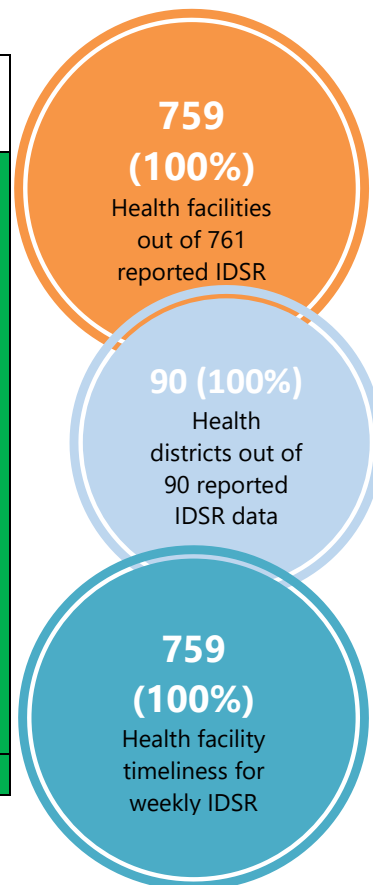
Keynotes and Events of Public Health Significance

- A total of sixty-eight suspected cases of immediately reportable diseases and events with 19 death were reported from 15 counties
- Hundred percent (100%) reporting for completeness and timeliness from health facilities respectively
- One Measles death was reported from Nimba County

Reporting Coverage

Table 1. Weekly IDSR Reporting Coverage, Liberia, Epi week 32, 2017

| County | Number of Health Facility Report Expected | Number of Reports Received | Number Received on Time | Completeness (%) | Timeliness (%) |
|------------------|---|----------------------------|-------------------------|------------------|----------------|
| Bomi | 23 | 23 | 23 | 100 | 100 |
| Bong | 55 | 55 | 55 | 100 | 100 |
| 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 | 19 | 100 | 100 |
| River Gee | 19 | 19 | 19 | 100 | 100 |
| Sinoe | 35 | 35 | 35 | 100 | 100 |
| Liberia | 759 | 759 | 759 | 100 | 100 |



Legend

≥80

<80

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



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Vaccine Preventable Diseases

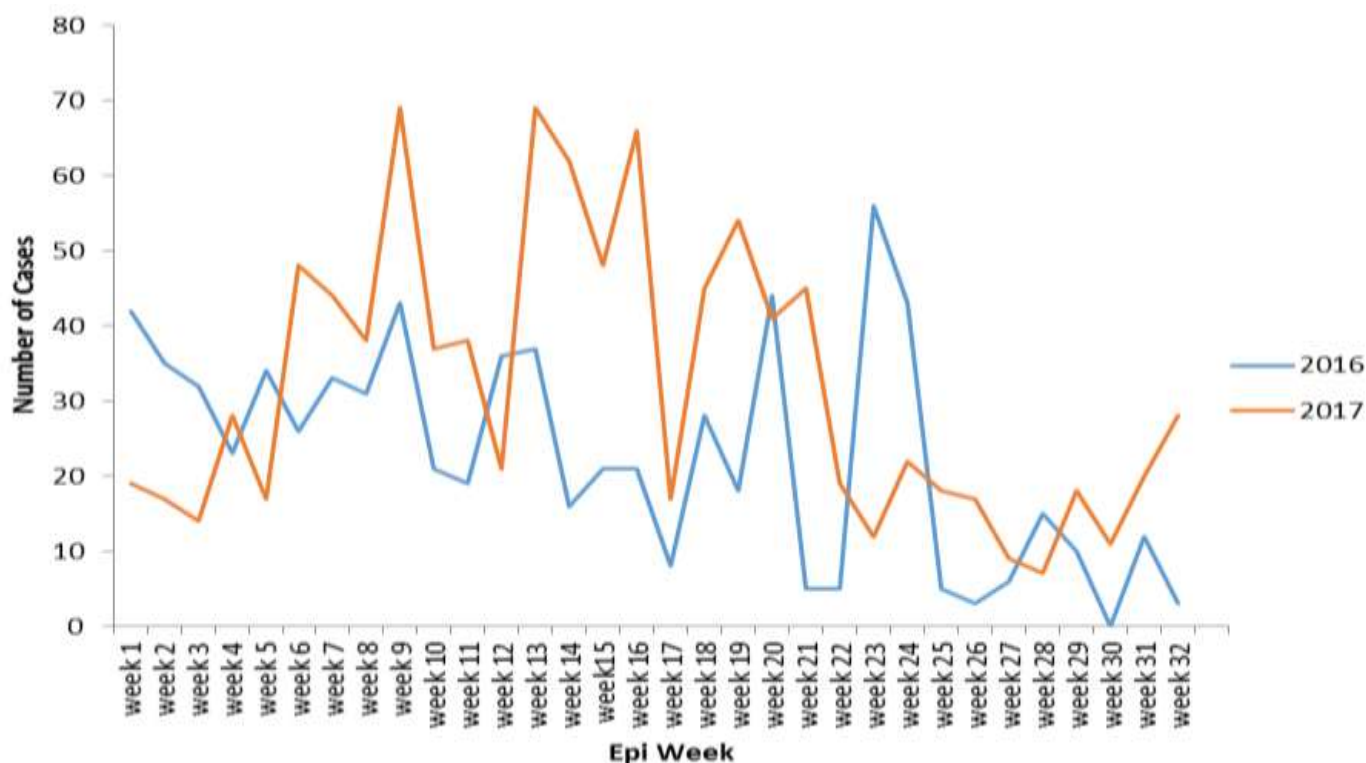
Measles

- Twenty-eight suspected cases were reported from Nimba (15), Margibi (4), Lofa (3), Grand Gedeh (3), Bong (1) Gbarpolu (1) and Grand Cape Mount (1) Counties
- Five confirmed cases reported from Zoe-Geh, Nimba.
- Of the 28 suspected cases reported this week, 7 (25%) were reported to have been previously vaccinated and 16 (57%) had unknown vaccination status and 5 (18%) not vaccinated
- Fourteen (50%) of the suspected cases were <5 years and fourteen (50%) were ≥5 years of age
- Cumulatively, since Epi week one, 1,027 suspected cases have been reported, of which 859 were tested: 143 (16%) positive, 671 (78%) negative, 45 (5%) equivocal and 12 pending. One hundred four-eight of the suspected cases were compatible and epi-linked. Of the 705 equivocal and negative cases, 608 (87%) samples have been tested for rubella, of which, 305 (50%) were positive

Public Health Actions

- Active surveillance ongoing in Counties
- Samples were collected from 28 suspected cases and sent to the National Reference Laboratory for confirmation
- Case management initiated for all suspected cases

Figure 3. Comparison of Suspected Cases of Measles Reported, Liberia, Epi weeks 1 – 32, 2016 & 2017



Acute Flaccid Paralysis (Suspected Polio)

- Zero cases of Acute Flaccid Paralysis were reported
- Cumulatively, since Epi week one, 68 AFP cases have been reported, of which, 61 (90%) have been tested negative for poliovirus and 7 (10%) are pending laboratory confirmation



Neonatal Tetanus

- Zero cases of Neonatal tetanus were reported
- Cumulatively, since Epi week one, 10 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- Zero alerts of EVD were reported
- Cumulatively, since Epi week one, 307 EVD alerts have been reported, all of which have been tested negative

Lassa fever

- Zero cases of Lassa fever were reported
- Cumulatively, since Epi week one, 37 suspected cases have been reported including seventeen deaths. Of the total cases, seven (7) have been confirmed positive by RT-PCR and ELISA-Antigen, 10 negative and 20 are pending Epi classification. The case fatality rate in confirmed cases is 57%

Public Health Actions

- Active surveillance ongoing in counties

Yellow fever

- One suspected case was reported from Margibi County
- Cumulatively, since Epi-week one, 133 suspected cases have been reported, 120 samples tested negative and 13 are pending laboratory confirmation. One case with date of onset in 2016 was confirmed positive for ELISA IgM, but PCR testing done in 2017 was negative

Public Health Actions

- Specimen was collected from the two suspected cases and pending laboratory confirmation
- Active surveillance ongoing in counties

Meningitis

- Zero suspected cases of meningitis were reported
- Cumulatively, since Epi week one, 15 suspected cases have been reported. An additional 31 cases (including 13 deaths) have been 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 and 3 alive)

Events of Public Health Importance

Maternal Mortality

- Four maternal deaths were reported from Bong (2) Grand Gedeh (1) and Grand Kru (1) Counties
- Reported causes of deaths were: Postpartum hemorrhage (3) and Hepatitis B (1)
- The three deaths were reported to have occurred in the health facility
- Cumulatively, since Epi-week one, 163 maternal deaths have been reported (see Table 3 for causes of death)



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Figure 4. Comparison of the trend of Maternal Deaths Reported, Liberia, Epi weeks 1-32, 2016 & 2017

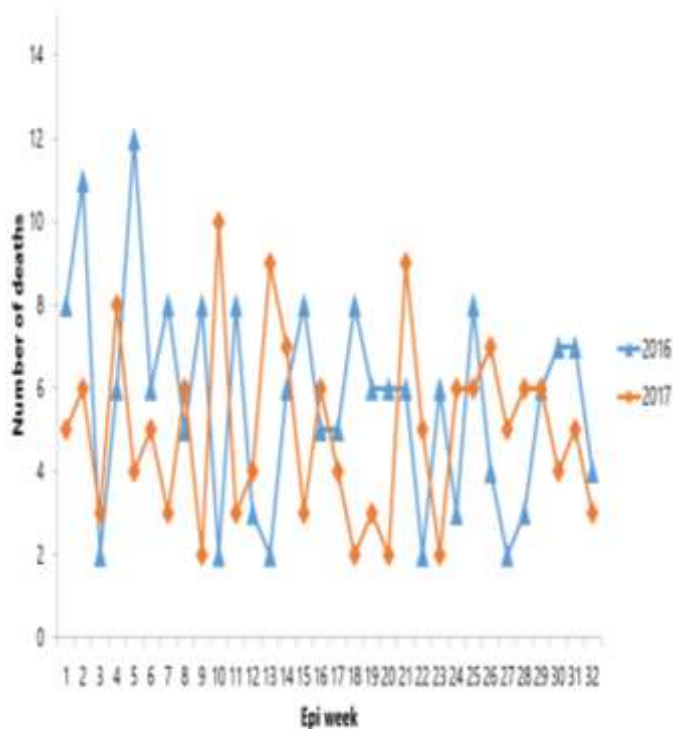


Table 3. Causes of Maternal Death, Liberia, Epi weeks 1-32, 2017 (n=163)

| Maternal Death | Number | Percentage |
|---|------------|------------|
| Post-partum hemorrhage | 53 | 31.1 |
| Sepsis | 23 | 27.4 |
| Anemia | 22 | 26.2 |
| Eclampsia | 15 | 17.9 |
| Ruptured uterus | 7 | 8.3 |
| Renal failure | 6 | 7.1 |
| Cardiac pulmonary failure | 6 | 7.1 |
| Congestive Heart failure | 4 | 4.8 |
| Pre-eclampsia | 4 | 4.8 |
| Abruptio placenta | 3 | 3.6 |
| Multiple organ failure (herbal ingestion-1) | 2 | 2.4 |
| Obstructed labor | 2 | 2.4 |
| Dissimilated intravascular coagulation | 1 | 1.2 |
| Amniotic fluid embolism | 1 | 1.2 |
| Respiratory Distress | 1 | 1.2 |
| Umbilical Hernia (Omphalocele) | 1 | 1.2 |
| Spinal shock | 1 | 1.2 |
| Prolong Labour | 1 | 1.2 |
| Hepatitis B | 1 | 1.2 |
| Total | 163 | 100 |

Table 5. Cumulative Maternal Deaths Reported by Counties, Liberia, Epi weeks 1-32, 2017

| County | Annual Live birth ¹ | Current week | Cumulative Maternal deaths | % of Cumulative Maternal deaths | Annualized Maternal Mortality Ratio/ 100,000 |
|------------------|--------------------------------|--------------|----------------------------|---------------------------------|--|
| Bomi | 4361 | 0 | 8 | 5 | 596 |
| Grand Bassa | 11494 | 0 | 18 | 11 | 509 |
| Grand Kru | 3002 | 1 | 5 | 3 | 433 |
| Sinoe | 5308 | 0 | 7 | 5 | 429 |
| Margibi | 10883 | 0 | 13 | 8 | 388 |
| Maryland | 7048 | 0 | 8 | 6 | 369 |
| River Gee | 3707 | 0 | 4 | 2 | 351 |
| Bong | 17289 | 2 | 16 | 10 | 301 |
| Gbarpolu | 4323 | 0 | 4 | 2 | 301 |
| Grand Gedeh | 6494 | 1 | 6 | 2 | 300 |
| Nimba | 23953 | 0 | 19 | 13 | 258 |
| Montserrado | 57974 | 0 | 42 | 26 | 235 |
| Lofa | 14354 | 0 | 10 | 8 | 226 |
| Rivercess | 3463 | 0 | 2 | 1 | 188 |
| Grand Cape Mount | 6588 | 0 | 1 | 1 | 49 |
| Liberia | 180242 | 4 | 163 | 100 | 292 |

¹ Number of live birth is at 4.3% of the estimated population for 2017 (Source: EPI/MoH)



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Neonatal Mortality

Twelve neonatal deaths were reported from Lofa (3), Montserrado (2), Margibi (2), Bong (2), Gbarpolu (1), Grand Bassa (1) and Grand Gedeh (1) Counties

- Reported causes of death were:
 - Neonatal sepsis (6)
 - Birth asphyxia (3)
 - Preterm (3)
- All Twelve deaths were reported to have occurred at health facility.
- Cumulatively, since Epi week one, 382 neonatal deaths have been reported

Figure 5. Causes of Neonatal Death, Liberia, Epi weeks 1-32, 2017 (n=382)

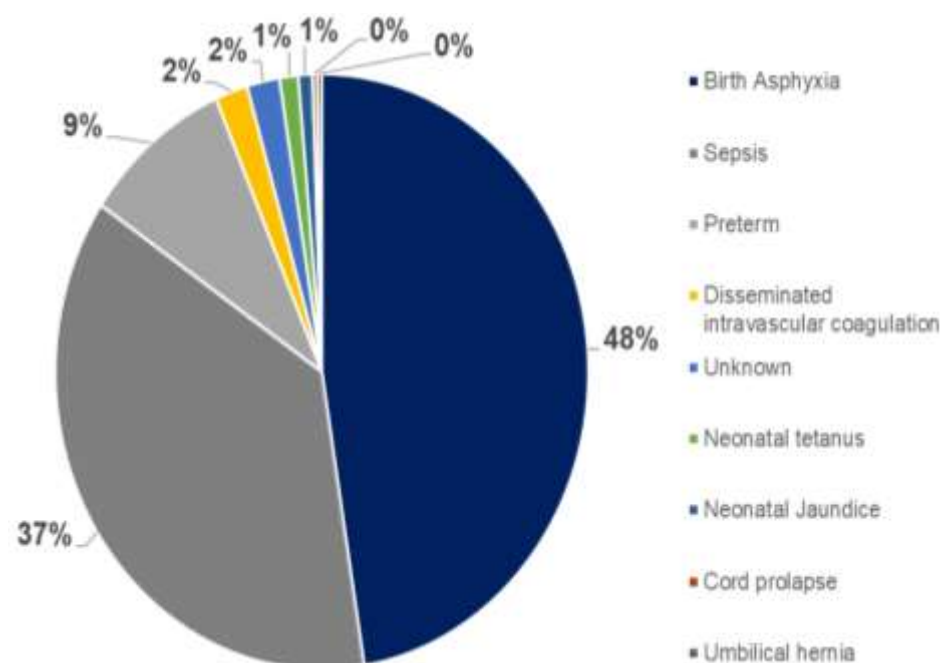


Table 5. Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi weeks 1-32 2017

| County | Annual Live birth ² | Current week | Cumulative Neonatal Deaths | % of Cumulative Neonatal Deaths | Annualized Neonatal Mortality Ratio/1,000 |
|------------------|--------------------------------|--------------|----------------------------|---------------------------------|---|
| River Gee | 3707 | 0 | 26 | 7 | 22.8 |
| Maryland | 7048 | 0 | 43 | 11 | 19.8 |
| Sinoe | 5308 | 0 | 21 | 5 | 12.9 |
| Grand Kru | 3002 | 0 | 11 | 3 | 11.9 |
| Lofa | 14354 | 3 | 38 | 10 | 8.6 |
| Rivercess | 3463 | 0 | 9 | 2 | 8.4 |
| Montserrado | 57974 | 2 | 139 | 36 | 7.8 |
| Bong | 17289 | 2 | 40 | 10 | 7.5 |
| Grand Gedeh | 6494 | 1 | 12 | 3 | 6.0 |
| Margibi | 10883 | 2 | 11 | 3 | 3.3 |
| Gbarpolu | 4323 | 1 | 4 | 1 | 3.0 |
| Grand Bassa | 11494 | 1 | 10 | 3 | 2.8 |
| Bomi | 4361 | 0 | 3 | 1 | 2.2 |
| Nimba | 23953 | 0 | 14 | 4 | 1.9 |
| Grand Cape Mount | 6588 | 0 | 1 | 0 | 0.5 |
| Liberia | 180242 | 12 | 382 | 100 | 6.9 |

² Number of live birth is at 4.3% of the estimated population for 2017 (Source: EPI/MoH)



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Human Exposure to Animal Bites (Suspected Rabies)

- Twelve cases of animal bites were reported from Margibi (3), Bong (2), Rivercess (2), River Gee (2), Montserrado (1), Grand Bassa (1) and Maryland (1) Counties
- Cumulatively, since Epi week one, 889 events of animal bites have been reported

Public Health Actions

- Case management was initiated for all cases of animal bites

Bloody Diarrhea (Shigellosis)

- Seven cases of bloody diarrhea were reported from Montserrado (3), Margibi(2), Lofa (1) and Rivercess (1) Counties
- Cumulatively, since Epi week one, 165 cases of bloody diarrhea have been reported, of which 5 (3%) were confirmed positive for shigella, 55 (36%) were negative and 89 (53%) are pending laboratory testing

Severe Acute Watery Diarrhea (Cholera)

- Zero suspected case of cholera was reported
- Cumulatively, since Epi week one, 122 suspected cases of cholera have been reported, including 4 deaths attributable to cholera. Of the 42 samples collected, 2 (5%) were confirmed positive, 35 (88 %) tested negative and 5 pending

Public Health Measures

National level

- National Reference Laboratory has received samples of cases from the Counties and are being processed for analysis
- 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)
- Implementation of an Auto Visual AFP detection and reporting (AVADAR) surveillance in 4 districts in Montserrado County
- 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



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- *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



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Appendix 1: Summary of immediately reportable diseases, conditions, and events by County during Epi week 32 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 | 0 | 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 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gbarpolu | 5 | 5 | 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 |
| Grand Bassa | 8 | 8 | 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 Cape Mount | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 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 | 3 | 0 | 0 | 0 | 1 | 1 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lofa | 6 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Margibi | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Maryland | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Montserrado | 7 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nimba | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rivercess | 6 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 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 | 0 |
| Sinoe | 10 | 10 | 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 |
| Total Weekly | 90 | 90 | 0 | 0 | 7 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| Cumulative Reported | | | 68 | 0 | 165 | 0 | 122 | 5 | 889 | 1 | 20 | 17 | 1027 | 2 | 13 | 2 | 163 | 382 | 8 | 2 | 32 | 271 | 133 | 1 | 1799 | 23 | |
| Cumulative Laboratory Confirmed | | | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 3 | 4 | 143 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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

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