FIELD WORK 2
-Expanded Surveillance Report-
-Measles outbreak Investigation Report-

Leroy S. Maximore
County Surveillance Officer
Margibi County Health Team
Expanded Surveillance Report
Introduction

- Margibi County, located on the west of Liberia.
- Internal borders: Bong, Grand Bassa, Montserrado Counties
- External border: Atlantic Ocean
- Population: 242,795
- 4 Districts, 42 health facilities
Disease Summary 1/2

• Zero reporting requirements were met by all four reporting districts.

• Classification of cases:
  – EVD 1073 (S), 121(D), 0(C) (All suspected cases came out negative)
  – AWD 364(S), 0(D), 0(C)
  – Measles 66(S), 5(D), 3(C)
  – Rabies (Dog Bite) 2 (S), 0(D), 0(C)
  – Bloody Diarrhoea 2(S), 0(D), 0(C)
  – Maternal Death 1(C)

• Lab results for suspected measles cases are pending

*S = Suspected Case  C = Confirmed case  D=Death*
Disease Summary 2/2

Summary of reported key notifiable diseases, Margibi County, week 31-42, 2015

<table>
<thead>
<tr>
<th>Disease</th>
<th>Kakata</th>
<th>Mamba Kabah</th>
<th>Firestone</th>
<th>Gibi District</th>
<th>Cumulative (Wk 31—42)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C D CFR</td>
<td>C D CFR</td>
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<td>C D CFR</td>
<td>C D CFR</td>
</tr>
<tr>
<td>Acute Watery Diarrhea</td>
<td>135 0 0%</td>
<td>26 0 0%</td>
<td>15 0 0%</td>
<td>188 0 0%</td>
<td>364 0 0%</td>
</tr>
<tr>
<td>Acute Bloody Diarrhea (Shigella)</td>
<td>1 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>1 0 0%</td>
<td>2 0 0%</td>
</tr>
<tr>
<td>AFP Susp</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
</tr>
<tr>
<td>Meningitis</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
</tr>
<tr>
<td>Suspected EVD</td>
<td>719 56 7.78%</td>
<td>214 34 15.8%</td>
<td>12 19 0%</td>
<td>78 12 15.3%</td>
<td>1073 121 11.2%</td>
</tr>
<tr>
<td>Susp Rabies (Dog Bite)</td>
<td>0 0 0%</td>
<td>1 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>1 0 0%</td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
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<tr>
<td>Lassa Fever</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
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<tr>
<td>Cholera</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
</tr>
<tr>
<td>Measles</td>
<td>17 0 0%</td>
<td>44 5 11.4%</td>
<td>0 0 0%</td>
<td>0 0 0%</td>
<td>66 5 7.6%</td>
</tr>
<tr>
<td>Maternal Death</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Neonatal Death</td>
<td>1</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

*C = Cases; D = Deaths; CFR = Case Fatality Rate*
# Timeliness and completeness of reporting by districts, Margibi County, 2015

<table>
<thead>
<tr>
<th>District</th>
<th>WEEKS</th>
<th>Timeliness WK 31-42</th>
<th>Completeness WK 31-42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31</td>
<td>32</td>
<td>33</td>
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<tr>
<td>Kakata</td>
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<td>Mamba Kabah</td>
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<td>Firestone</td>
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<tr>
<td>Gibi</td>
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<td>MEANS</td>
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<table>
<thead>
<tr>
<th>This week</th>
<th>On time</th>
<th>Late</th>
<th>No report received</th>
<th>% Cumulative</th>
<th>&gt;=80% on time/Complete</th>
<th>&gt;=50-79.9% on time/Complete</th>
<th>&lt;50% on time/Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T</td>
<td>L</td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- **T**: On time
- **L**: Late
- **NR**: No report received
- **>=80% on time/Complete**: 100%
- **>=50-79.9% on time/Complete**: 83%
- **<50% on time/Complete**: 50%
Timeliness and completeness of reporting by district, Margibi County, 2015

(Kakata District, Mamba kabah District, Firestone District, Gibi District)

- % Timeliness
- % Completeness
Trend of suspected EVD, Margibi County, Epi week 31-42, 2015

- Suspected cases
- Death

Weeks

# of cases
Trend of suspected measles, Margibi County, Epi week 31-42, 2015

Graph showing the trend of cases and deaths in Margibi County from Epi week 31 to 42 in 2015.
Activities carried out between week 31-42

- Suspected measles outbreak investigation in all four districts
- Roll out of IDSR training in health facilities in the county
- Case investigation of Maternal death
- Follow up on suspected cases of Rabies in Gibi and Mamba Kabah
- Performance feedback to districts and health facilities
- Surveillance review meeting with district health teams, Traditional and spiritual healer
Outbreak investigation Report

Measles outbreak
Introduction 1/2

- Measles is a contagious disease and spread through contact with infected mucus and saliva.

- Total of 352 cases (CFR = 2%) were reported in Margibi County in the first 9 months of 2015.

- In the week of 5th October, 2015, Margibi County recorded 8 suspected cases of measles from kataka district.
Introduction 2/2

• The first case was reported to the county surveillance office on 7\textsuperscript{th} October, 2015

• Investigation commenced on 8\textsuperscript{th} October, 2015

• Objectives;
  – verifying the outbreak
  – determine the source of the outbreak
  – implement control and preventive measures.
Methods

• Reviewed medical records of suspected cases
• We interviewed the Health care workers
• Community entry:
  – visited affected household and interviewed parents and guardians of cases
  – Conducted an active case search in the community
  – Assessed the vaccination status of the cases.
• Specimen were collected for laboratory confirmation.
Methods 1/2

• **A suspected case:** any person residing in Kollieken Town from 3\textsuperscript{rd} September - 28\textsuperscript{th} October, 2015
  – Fever and Maculopapular rash with
  – Cough or coryza or conjunctivitis
    Or
  – Any person in whom a clinician suspect measles

• Data was analyzed using Microsoft excel version 2010
Results

• Eight suspected cases identified
• Age range: 5 – 18 years (Median age: 9 years)
• Females accounted for 63% (5/8) of cases
• Attack Rate: 1 case per 1000 population, no deaths
• Lab results are still pending
• Out of 8 cases identified, 1 was vaccinated
Results

• Index case:
  – Sixteen (16) year old male (not vaccinated against measles)
  – Travelled to Mondserrado County from 4\textsuperscript{th} – 18\textsuperscript{th} September, 2015.
  – Onset of symptoms: 24\textsuperscript{th} September, 2015
  – Diagnosed of Measles at Larkay-ta clinic on the 4\textsuperscript{th} October 2015

• The additional cases identified were all friends of index who were in the same school.
The index case presented with signs and symptoms on September 24, 2015.

The rest of the cases started presenting with signs and symptoms from 4th to 7th of October, 2015.
Discussion

- A point source outbreak of measles occurred in Kollieken town
- Probable source of outbreak: Mondserrado county
- Unvaccinated contacts contributed to the spread

Public health action
- Cases were treated with vitamin A, antibiotics, calamine lotion and tetracycline eye ointment.
- Affected homes were supplied with rice and beans to keep cases in isolation.
- Conducted health education on measles
The investigation team interviewing parents of suspected cases and collecting sample
Acknowledgement

• Ministry of Health, Liberia
• Field Epidemiology Training Programme, Liberia
• Emory University
• Centers for Disease Control and Prevention
• African Field Epidemiology Network
• World Health Organization
• My Mentors – Stephen and Joseph