

# CDC's Ebola Response in Liberian Counties: Oct 15 – Nov 14, 2014

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# Mission

- ❑ “Provide technical assistance in epidemiology and surveillance”
- ❑ Five tenants: **Do not ever**
  - 1) Enter an Ebola Treatment Unit (ETU)
  - 2) Provide patient care
  - 3) Collect specimens yourself
  - 4) Enter the home of a contact or
  - 5) Interview cases or contacts within 3 feet



**“Don’t enter any room if you don’t know what’s on the other side.”  
– Greg Thorne, CDC**





# County Response

Surveillance  
and County  
Reporting

Laboratory  
and Linkage

Health  
Promotion  
& Social  
Mobilization

Dead Body  
Mgmt.

Infection  
Prevention and  
Control &  
CCC support

Operational  
Studies





Guinea-Bissau

Mali

Guinea

Sierra Leone

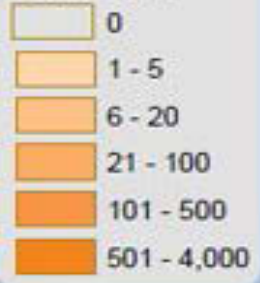
Côte d'Ivoire

Nimba

Liberia

Sinoe

Total Cases



Newly Infected

Source: WHO: Ebola Response Roadmap 07 January 2015

# Nimba County

Population ~ 400,000

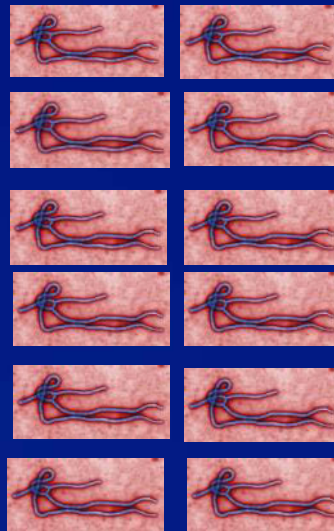
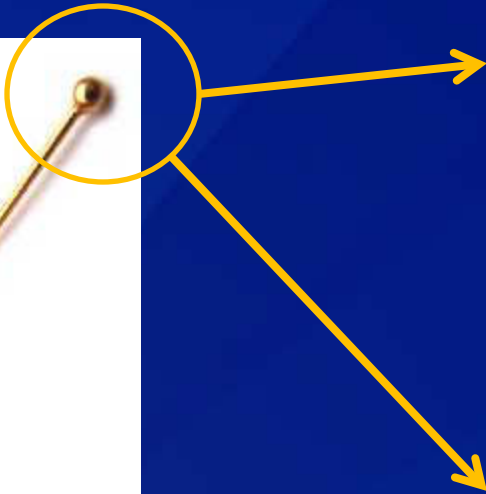
Borders Guinea and Ivory Coast.

65 healthcare facilities:

- All functional
- 3 hospitals
- 280 C/S/P Ebola cases on arrival
- 1 ETU in Ganta as of Oct 11<sup>th</sup>



# Ebola Training



**20 Million  
Ebola Viruses**



**EBOLA IS REAL. TOGETHER WE CAN STOP THE SPREAD!  
YOU CAN SURVIVE EBOLA!**



TELL YOUR COMMUNITY LEADER



Call 4455 quick-quick! It is FREE!



DO NOT RUN AWAY OR HIDE  
SICK PEOPLE

**KNOW THE SIGNS AND SYMPTOMS**

IF YOU GET A FEVER THAT STARTS QUICK-QUICK,  
AND ANY OF THESE OTHER SIGNS, CALL 4455

**Other signs:**



WEAKNESS, PAIN IN  
THE BODY, HEADACHE,  
OR SORE THROAT



RUNNING STOMACH



VOMITING



RASH OR BUMPY ON THE SKIN



RED EYES OR BLEEDING  
FROM THE NOSE OR MOUTH

Together we can stop the spread





# We Can Prevent Infection of Healthcare Workers

- Screen EVERY patient for symptoms of Ebola
- Immediately isolate patients suspected of having Ebola
- Assume every patient is infectious
- Put on appropriate level of PPE when seeing patients
  - Change gloves and other soiled PPE between every patient
- Put on, wear, and take off PPE properly
- Wash your hands before and after taking off PPE









# Part of the Process





# Molars Intact?



# Ambulance Chaser

[video]







# Social Mobilization

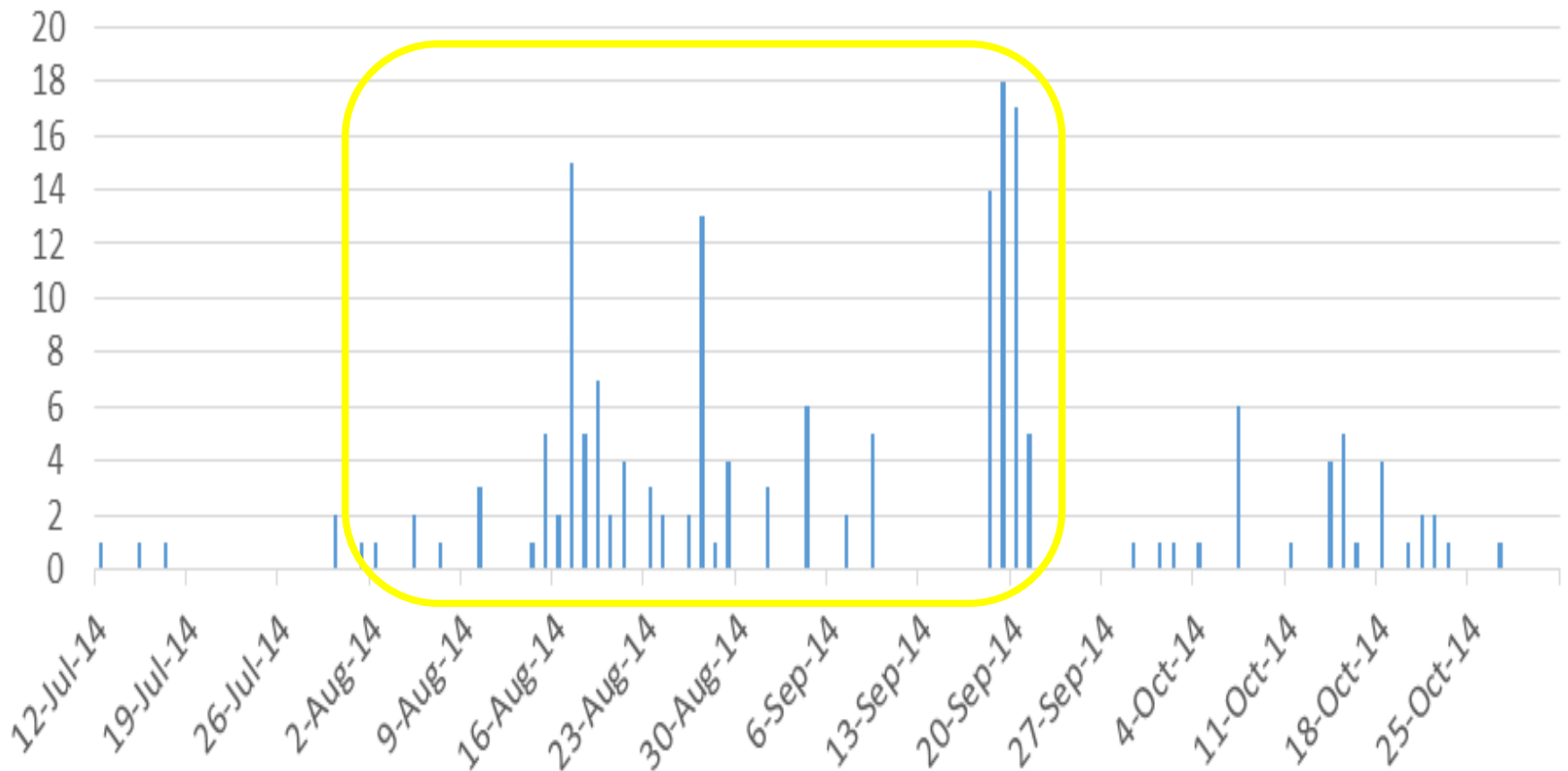






# Surveillance

Nimba EVD Epidemic curve, July-Oct 2014



# Nimba Case Series (retrospective)

45 year old  
index case

Grandmother and 6  
y/o granddaughter

- 6 relatives and 3 neighbors care for grandmother
- Traditional funeral
- 6 bodies in 12 days after funeral
- 34 confirmed and suspected cases

Mother and  
1 y/o son

- 8 family members and relatives die from EVD
- 3 neighbors exposed, 2 survive

Traditional healer

- Returns home and 4 family members die, 2 survive
- 9 neighbors die, 3 survive

65 total cases from 3 villages  
- Case fatality rate 72% (47 of 65)





# Nimba Case Series

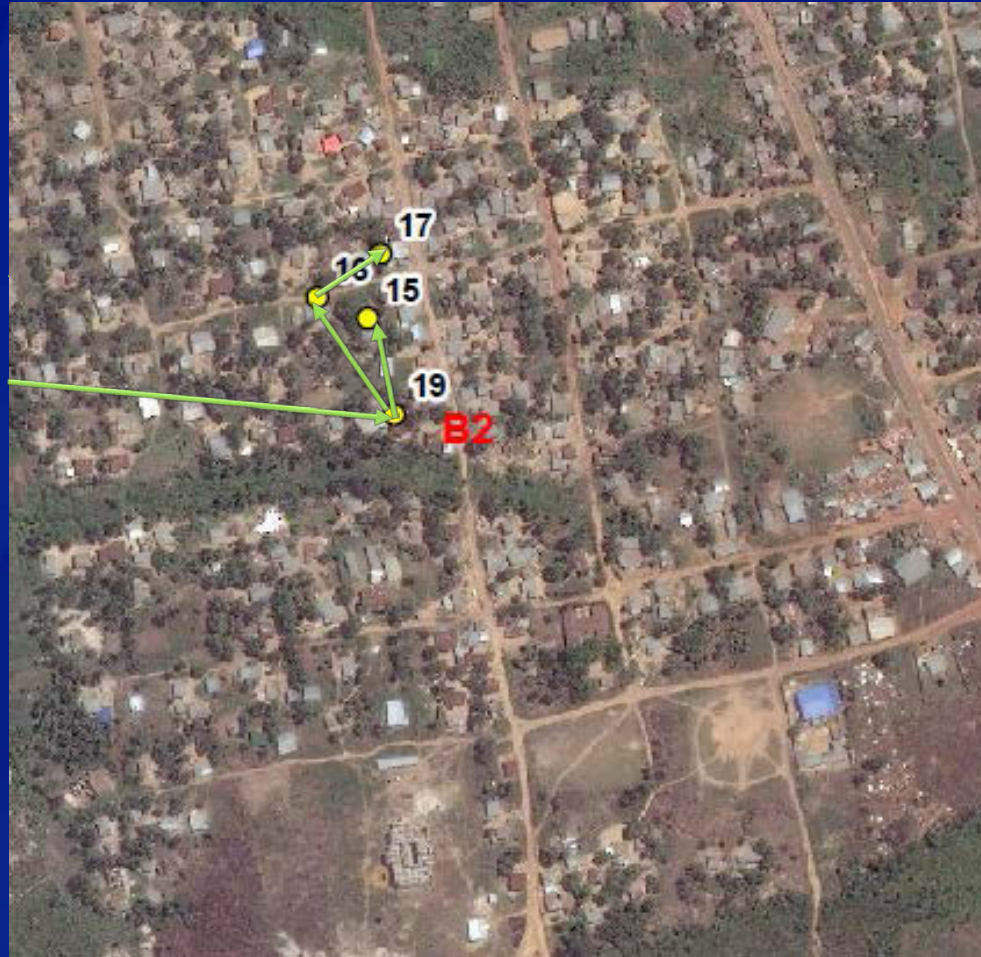
## □ Take home points

- Lack of EVD awareness
- Denial of symptoms and exposure history
- Traditional funerals -> high risk
- Notify healthcare workers promptly
  - Contact tracing, isolation of sick and exposed and social mobilization
- Early treatment improves survivability
- Work with tribal elders -> high impact





# Nimba Project



## Bahn Refugee Center (prospective)

- ❑ **Overseen by the United Nations High Commissioner for Refugees (UNHCR)**
  - Originally established in 2011
  - 3,500 refugees mostly from Ivory Coast
  
- ❑ **Index case arrived at Bahn health clinic on Oct 15**
  - Attended traditional funeral
  - 5 days of symptoms before ETU admission
  - Initial contact investigation revealed 28 contacts
    - Home quarantine for contacts for 21 days
    - Additional cases identified → 58 contacts (4 homes)
  - No secondary cases!







# Calculating Risk







# Sinoe County

- ❑ Population ~ 104,000
- ❑ 34 Healthcare facilities
  - All open and functional
  - 3 hospitals
  - 25 C/S/P Ebola cases on arrival
- ❑ 1 Mini-ETU/Holding Center in Greenville
  - Bed capacity = 4
  - No separation of confirmed cases
  - Max patients at one time = 6
- ❑ Prior CDC team left early















2014/11/10

# Government Camp

- ❑ **Rebels from Liberian civil war who became illicit gold miners**
  - 6,200 migrant workers from all Liberian tribes and Ivory Coast
  - Young workers wanting fast money (no village elders)
  - Community resistance and distrust
- ❑ **Investigate possible “hot spot”**
  - Sinoe County Health, CDC, WHO, UNICEF, eHealth, African Union and Medical Team International staff members meeting
  - Placement of a Clinical Care Center













CDC identified at least 32 contacts that were lost to follow up.

Patient #1 funeral  
Deceased 10/13/2014

Patient # 2  
Deceased 10/31/2014

Boyfriend  
(Missing)

Daughter  
(Missing)

Brother  
(Missing)

House #1  
(3 individuals)

House # 2  
(5 individuals)

Patient # 3  
Admitted to ETU  
10/27/2014

Girlfriend  
(Missing)

Patient # 4  
Admitted to ETU  
10/27/2014

Girlfriend  
(Missing)

19 other contacts in  
Community

???

# Issues Abroad and Upon Return

- ❑ **Asymptomatic quarantine of healthcare workers**
  - DoD – mandatory 21 days of isolation
  - Kaci Hickox and NJ Governor
  
- ❑ **Exposure risk to family and coworkers upon return**
  - “See you in 21 days”
  - Active monitoring - head cold
  
- ❑ **4 week deployment vs. national healthcare workers**
  - PPE availability
  - Risk of ongoing Ebola exposure
  - Injuries at Government Camp



Questions?

