Surveillance in Data Management in the DRC Ebola Response

Experiences from Goma

CDR James Coburn, MSc, CPH

Office of Counterterrorism and Emerging Threats
Office of the Chief Scientist
Brief Background

• Initial DRC Ebola Cases in 2018
Goma Background

• Major city and transit hub close to the outbreak
  – Location of the DRC national coordination
  – Central point for DRC, local, U.S. Government and NGO personnel to meet and work
  – Active groups include DRC MoH, CDC Africa, WHO, Unicef, IFRC, MSF CDC, US AID, others.

• Two cases in Goma in July 2019

• Put city on high alert and increased the surveillance and data collection activities
What goes into disease surveillance?

• Collecting biological samples from suspected or confirmed cases
  – Laboratory testing
  – Genetic sequencing

• Identifying and collecting other data from a population

• Aggregating and managing data

• Data analysis and Statistics
My role in the DRC Ebola response

- **Detailed** to the Centers for Disease Control

- **Embedded** within the surveillance section of the Provincial Department of Health (Goma DPS)

- **Goal:** Improve data collection and management for potential and validated alerts through standardizing procedures and creating better software tools

- **Scope:** Work with surveillance & alert data (not case data) in sub-commissions
  - Surveillance
  - Infection Prevention and Control
  - Safe and Dignified Burial
  - Vaccination
  - Medical support
  - Security
  - Point of Entry
  - Laboratory
  - Psychosocial Support
  - Communications
  - Logistics
  - Follow-up
How was surveillance done in Goma?

• Passive Research
  – FOSAs call or send in alerts that they identify
  – Numbers only – typically no forms provided
  – System put in place to confirm receipt of a “no alerts” message differentiating from “no contact”
  – Allows for alert investigation outside of standard daily visit

• Two difficulties with passive data
  – People often don’t always have access or can’t afford medical clinics that do passive reporting
  – There is a stigma with Ebola that will sometimes make people hide when they think they have it or flee if they are told they are a suspect case.
How was surveillance done in Goma?

- **Active Research**
  - Daily activities
    - Teams (2-3/area, ~50 people total) go to the FOSAs (medical facilities)
    - Relais Communitaires (>150 total), each visit 25 homes per day
    - Everyone is connected by cell phone / whatsapp
    - Teams meet twice a day 7 days a week
  
  - Data collected
    - **FOSA teams**: incoming patients with symptoms meeting alert definition
    - **Recos**: Go house to house identifying sick household members and refer as alerts if necessary
Active Research is intensive
Data collected on patients who:

- Came through clinic intake
- Have possible symptoms
- For each patient:
  - interviewed by team
  - Check against case definition
  - Transferred to CTE if necessary

- Recos can have very different neighborhoods in which to work (see pictures)
  - Different languages spoken
  - Using technology (phones) not always appropriate
FOSAs also vary widely


Heal Africa, NGO supported hospital

Traditional Practitioner’s clinic
Active Research could be complicated
Active Research could be complicated

- Interviews and handwritten logbooks in either French, Swahili, or tribal language
- Hard to track patients who stop in quickly
  - Metadata only collected when alert is validated
  - Demographics hard to verify
- Incentives to create alerts
  - Number of alerts is a WHO metric for “success”
  - Investigate more rigorously to meet quotas
- Poor tracking of time to completing investigation
Digitizing data is not trivial
Digitizing data is not trivial

• Views and alerts transferred to white board

• Aggregate data from each team entered into computer by hand

• Sheets typed by hand
  – (names are hard to track, addresses don’t often exist)

• Validated alerts given separate sheets and a unique identifier

• Re-entered into system that communicates with National Coordination
Where does the data go?

• Daily briefings with key indicators and dashboards to sub-commission
• Data from validated alerts sent to national coordination (Epi-Info VHF)
• All data sent to national coordination weekly
• Ideally: Sub-commissions can monitor trends to allocate resources
• Data flow from national level to areas without a current case or outbreak is often reduced.
  – Need for local capabilities
What about other subcommissions?
How well could we combine data?

- Each sub-commission had a database
- Names could not always be matched (formatting)
- Addresses & birthdates were not always accurate
- Unique identifiers applied to validated alerts were usually followed from transfer to Ebola Treatment Center
- Alerts being followed could not easily be tracked
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**SURVEILLANCE**

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So much data – how do we make sense?

• Summary tables, dashboards, and figures
  – Reported on separately to sub-coordination
  – Sent separately to national level

• Reports performed daily
  – Little time to perform trends or analysis locally
  – Deep knowledge within each team of the data contents
Difficulties with data: Technical

- Manual/paper collection and transfer can lead to anomalies
- Data needs constant upkeep and cleaning (eg dates, names)
- Databases don’t align or synchronize
- Sample processing or other possible errors are not captured in lab databases
- Understanding the limits of data quality
Difficulties with Data: other

- Human incentives and disincentives for responders can unintentionally bias the field data
  - Quotas
  - Workload / effort

- Reporting tempo (daily)

- Target levels for specific indicators

- Inter-organizational communications

- Community reluctance or local instability
Strengths of DRC data

• Dedicated teams

• Training is leading to improvements

• Case tracking is well established

• Lots of data for modeling
Training can help increase confidence

- Requested by Ministry of Health
- Responders were eager to participate and learn
- Focuses on real needs for daily workload
- Plans to expand nationally
Acknowledgements

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  - Kristen Pettrone, MD
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