VHF OUTBREAK CONTROL: Uganda Case Study

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by
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Introduction

Uganda as pearl of Africa

- Lying at equator / nice climate
- Confluence of vegetation
- Diverse flora and fauna
- Many fresh water bodies
- Biodiversity hotspot
What is good for people is also good for many other organisms.

Thus Uganda has many organisms, which keep on jumping from animals to humans. Many zoonotic diseases

Most feared are the deadly Ebola and Marburg Virus Diseases

- 5 EVD and 4 MVD outbreaks since 2000
- 2 retrospective infections in tourists in 2007
# Episodes EVD and MVD outbreaks in Uganda

<table>
<thead>
<tr>
<th>Year</th>
<th>Disease</th>
<th>Area</th>
<th>Total number of cases</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>June, 2012</td>
<td>Ebola VD (Sudan)</td>
<td>Kibale district (Western Uganda)</td>
<td>43</td>
<td>Ministry of Health, Uganda; ProMed Mail</td>
</tr>
<tr>
<td>October, 2012</td>
<td>Marburg VF</td>
<td>Kabale, Kamwenge, Ibanda districts (Western Uganda)</td>
<td>14</td>
<td>Ministry of Health, Uganda; ProMed Mail</td>
</tr>
<tr>
<td>November, 2012</td>
<td>Ebola VD (Sudan)</td>
<td>Luwero district (Central Uganda)</td>
<td>7</td>
<td>Ministry of Health, Uganda; ProMed Mail</td>
</tr>
<tr>
<td>September, 2014</td>
<td>Marburg VD</td>
<td>Mpigi district (Central Uganda)</td>
<td>1</td>
<td>Ministry of Health, Uganda; ProMed Mail</td>
</tr>
</tbody>
</table>
Uganda VHF Surveillance: Objectives

- Improve reporting capability for endemic viral hemorrhagic fever cases
- Improve laboratory capacity in identification of viral pathogens
- Detect incident cases of suspect viral hemorrhagic fevers
- Report to the National level in a timely and complete manner
- Improve case investigation and outbreak response
- Integrate with existing surveillance systems so that forms, personnel and resources are used more efficiently and effectively
- Generate and improve the quality of information for decision making and disease control efforts
How have we managed to control the outbreaks quickly?

- Active national multi-sectoral task force for coordination, including Police and Army plus development partners

- Trained Rapid response teams at district, regional and national levels – daily contact follow (21 days)

- Continued surveillance: Active and passive – all rumours investigated: rumour books at Health center II upwards

- Preparedness plans at district, regional and National levels/rapid response kits
How have we managed to control the outbreaks quickly?

- National specimen referral system (DHI2 system)
- Good personnel training (PPE, Epidemiology, Lab, infection control, burial teams, etc.)
- Sensitizing through Health education for the communities, opinion leaders, traditional healers, politician, religious leaders. (signs and symptoms and reporting immediately)
- Maintaining a High index of suspicion all the time
- Daily communication/avoid bad roulours
How have we managed to control the outbreaks quickly?

- Availability of in-country diagnostic capability
  - Quick identification
  - Ability to separate the sick for isolation
  - Ability to identify those who are completely recovered for release

- Political will

- Regional and international assistance
2015 VHF Surveillance Sites
Pre- and post-implementation of enhanced VHF surveillance and diagnostics in Uganda, 2000-2014

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulu, Ug 2000</td>
<td></td>
<td>EBOLA-Sudan</td>
<td>425</td>
</tr>
<tr>
<td>Kitaka, Ug 2007</td>
<td></td>
<td>MARBURG</td>
<td>4</td>
</tr>
<tr>
<td>Bundibugyo, Ug 2007</td>
<td></td>
<td>EBOLA-Bundibugyo</td>
<td>131</td>
</tr>
<tr>
<td>Luweero, Ug 2011</td>
<td></td>
<td>EBOLA-Sudan</td>
<td>1</td>
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<tr>
<td>Kibaale, Ug 2012</td>
<td></td>
<td>EBOLA-Sudan</td>
<td>24</td>
</tr>
<tr>
<td>Isiro, DRC 2012</td>
<td></td>
<td>EBOLA-Bundibugyo</td>
<td>52</td>
</tr>
<tr>
<td>Kabale, Ug 2012</td>
<td></td>
<td>MARBURG</td>
<td>26</td>
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<tr>
<td>Luweero, Ug 2012</td>
<td></td>
<td>EBOLA-Sudan</td>
<td>6</td>
</tr>
<tr>
<td>Ug 2013 CCHF</td>
<td></td>
<td></td>
<td>5</td>
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<tr>
<td>Ug 2014 Marburg</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Time in days between notification and confirmation:
- Gulu, Ug 2000: 0, 16, 21
- Kitaka, Ug 2007: 0, 16, 21
- Bundibugyo, Ug 2007: 0, 16, 21
- Luweero, Ug 2011: 0, 16, 21
- Kibaale, Ug 2012: 0, 16, 21
- Isiro, DRC 2012: 0, 16, 21
- Kabale, Ug 2012: 0, 16, 21
- Luweero, Ug 2012: 0, 16, 21
- Ug 2013 CCHF: 0, 16, 21
- Ug 2014 Marburg: 0, 16, 21

Centers for Disease Control and Prevention
GHS - UVRI Laboratories

Prevent – Detect - Respond

Nationwide Lab Network Including UVRI

Real-Time Reporting via DHIS-2

Emergency Operations Centre

National Specimen Referral and Transportation Network June 2015

CPHL
AGENCY
CDC (47)
DOD (3)
USAID (50)
PPP Labs

Kampala
Mango Lab
Naguru lab

Uganda Ministry of Health Public Health Emergency Operations Centre
Acknowledgements

- Department of Arbovirology, Emerging and Re-Emerging Viral Infections
- UVRI
- MOH
- Sentinel site staff
- Sentinel site in-charges
- CDC Atlanta
- CDC Uganda
- WHO- County Office
- WHO AFRO
- USA DoD
- All collaborators, service providers and suppliers