The 2013-2016 West African Ebola Epidemic
-An overview of central aspects

Author: Olga Bellos, MK-13

Supervisor: Professor Ørjan Olsvik, Department of medical biology
Introduction

• The 2013-2016 West African Ebola Epidemic became an epidemic with the most substantial impact ever caused by this virus.

• Overall purpose: overview of different aspects that contributed to the magnitude

  1. What distinguishes this outbreak from the previous epidemics, with a specific focus on its origin, spread, demographic and ecological contributors. This will include an overview of previous epidemics.

  2. One particularly serious feature in this epidemic was the substantial number of infected health care workers. How were the features and contributing factors?

  3. What are some of the key elements to stop an Ebola outbreak and how are they conducted?
Methods

- Literature review based on references retrieved through PubMed, available WHO and CDC documents and personal communication
- Inclusion and exclusion criteria:
  a. Documents must regard the 2013-2016 epidemic
  b. Literature in other languages than English were excluded
  c. References must be available in free full text through University of Tromsø’s online library or from supervisor
Results

Part 1: what distinguishes this Epidemic from previous ones?
• Ebola virus novel agent in West Africa. Correct identification of causative agent of epidemic took three months
• Epicentre was in a rural area of Guinea, had experienced 80% forest loss over past years and was in close proximity to Liberia and Sierra Leone (together the three worst affected countries)
• Convenient cross border traffic and highly mobile populations
• Case amplification: burial ceremonies and health facilities

Part 2: Infected Health workers
• 01.01.14-31.03.15: 815 (3.9%) probable and confirmed health worker infections identified
• Male predominance, as work group nurses were worst affected
• Most of the infected health workers worked outside dedicated Ebola Treatment Units (ETUs), e.g. other health facilities
• Several risk factors in work settings existed, but so did opportunity for community-acquired infections

Part 3: Containment measures
• Ebola Treatment Units
• Safe burials
• Contact tracing
• Vaccination
Discussion and conclusion

- Due to the recentness of the 2013-2016 WA Ebola epidemic, comprehensive analyses have not yet been completed, I needed to develop my own parameters in early phase of research
- This thesis only covers three main aspects of the epidemic and not a complete picture
- This is only a snapshot, new information continues to become available
- Many problems during epidemic, I wanted to review several aspects, to extensive with three research questions?

Conclusion:
1. Old virus in new context: West Africa’s lack of experience with Ebola, delayed identification, geographical and demographical characteristics contributed to scale of The Epidemic.
2. A high number of infected health workers were identified with many potential risk factors, both inside and outside work settings. This undermined the overall response.
3. Preventative measures aim to break subsequent transmission chains. (These were challenging and contributed to the magnitude of The Epidemic).