

Ebola Virus an Endemic Public Health Menace in Congo



1. This Gabon/Congo border area has had highest frequency of Ebola virus outbreaks.
2. Kikwit and Yambuku are not so far from that region, suggesting that other parts of Congo (Sangha and Likouala) provinces may experience outbreaks sometime in future.
3. History of Ebola virus difficult to establish due to cultural backdrop.
4. Ebola might breakout in the Kinshasa/Brazzaville twin cities where 12 million people live!

Leroy et al. (2004) Multiple Ebola Virus Transmission Events and Rapid Decline of Wildlife in Central Africa. *Science*, 303: 387-390.

Economic Impact of Ebola Epidemics

1. Ebola virus outbreaks provide dreadful publicity for Tourism and Investment.
2. Bushmeat is an essential component of Congolese eating habits, particularly in areas with highest risks for Ebola virus outbreaks. Hence,
 - During outbreaks Government and international organization must provide for all the food which is imported from outside the area.
 - However, inhabitants are not interested in alternatives to readily available traditional foods.
 - Gorilla- or Chimpanzee-meat part of tradition and social maturation. Some traditional customs incite young men to hunt down apes, and thereafter consume their heart to gain bravery and demonstrate hunting skills.
3. During outbreaks women are not allowed go to the fields to maintain crops and fish.

Social Impact of Ebola Epidemics : During and After

Women are mostly affected by disease because they process the bushmeat for conservation and meal preparation. They also mourn the dead with tendency to physical contact with corpse.

People have lived off bushmeat for ages in this part of the world and Ape-meat has reputed effects that urge certain village opinion makers to designate scapegoats!

- Sometime accuse Ecologists of having imported the disease...
- Congolese Red Cross volunteers accused of witchcraft !

Families of those who have been infected are stigmatized and smeared even long after the epidemic outbreak has been declared over!

Need to continue Education of population on Ebola virus!

Need to make periodic Communication for Behavior Change campaigns!

Political Impact of Ebola Epidemics

At the national level:

- Across the spectrum unity in both Executive and Legislative bodies.
- Elected officials from the area of Cuvette Ouest form a very active and united lobby.
- Politicians attentive to scientific advances in Ebola control.

Opportunity for sponsorship by political officials of field interventions and research activities!

At the local level:

- Epidemic is used to smear opponents, witchcraft practices!
- Volunteers and health care provide at high risk!

NB: Apparent contradiction with Communication for Behavior Change campaign goals : same happens for HIV, which some like to portray as a manifestation of a curse.

National Laboratory of Public Health : Mandates

- Travel Medicine and Immunizations
- Diagnostic biomedical testing
- Research in Medical Biology
- Quality Insurance for all Laboratories
- Central Laboratory for public sector
- Reference Laboratory for Epidemiologic surveillance
- Sanitary Assessment of food, soil and water
- Training of laboratory technicians
- Advisor to the government

However, like the rest of the Public Health System of Congo, the National Laboratory of Public as been dismantled in recent years and is dire need for capacity strengthening!



Objectives of a National Ebola virus Control Plan in Congo

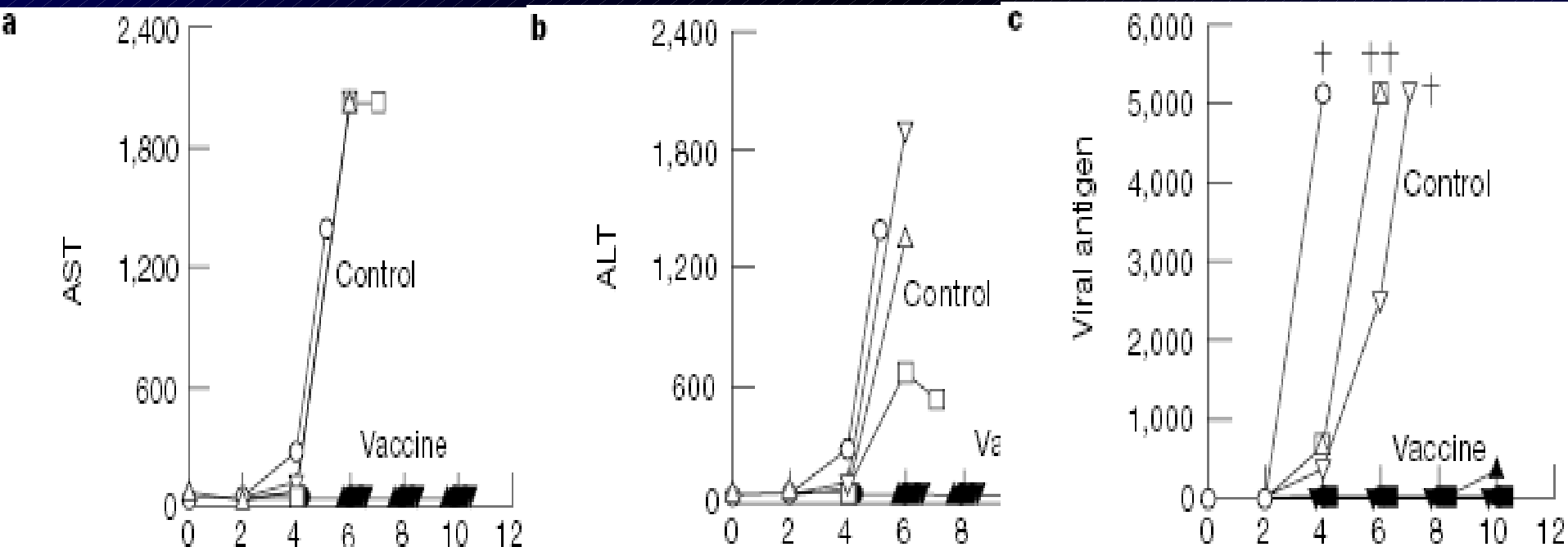
1. Develop a community-based surveillance of fauna in remote areas.
2. Monitor sanitary quality of bushmeat for Ebola virus and other pathogens and use results as deterrents in CCB campaigns.
3. To implement a coded contingency plan, including outbreak control in rural and urban settings.
4. To improve biomedical preventive and treatment approaches.
5. To conduct research on the determinants of Ebola virus in emergence.
6. To conduct research into the existence of less virulent Ebola viral strains in Congo



Research Capacity Strengthening to Host Vaccine Trials

Effective vaccine approaches seem to be around the corner. Vaccine will primarily protect health care providers and investigators!

- We must create an environment favorable to research.
- We need to examine operational use and safety of vectors.



Sullivan, Sanchez, Rollin, Yang, Nabel (2000). Development of a preventive vaccine for Ebola virus infection in primates. *Nature*, 408: 605-608.

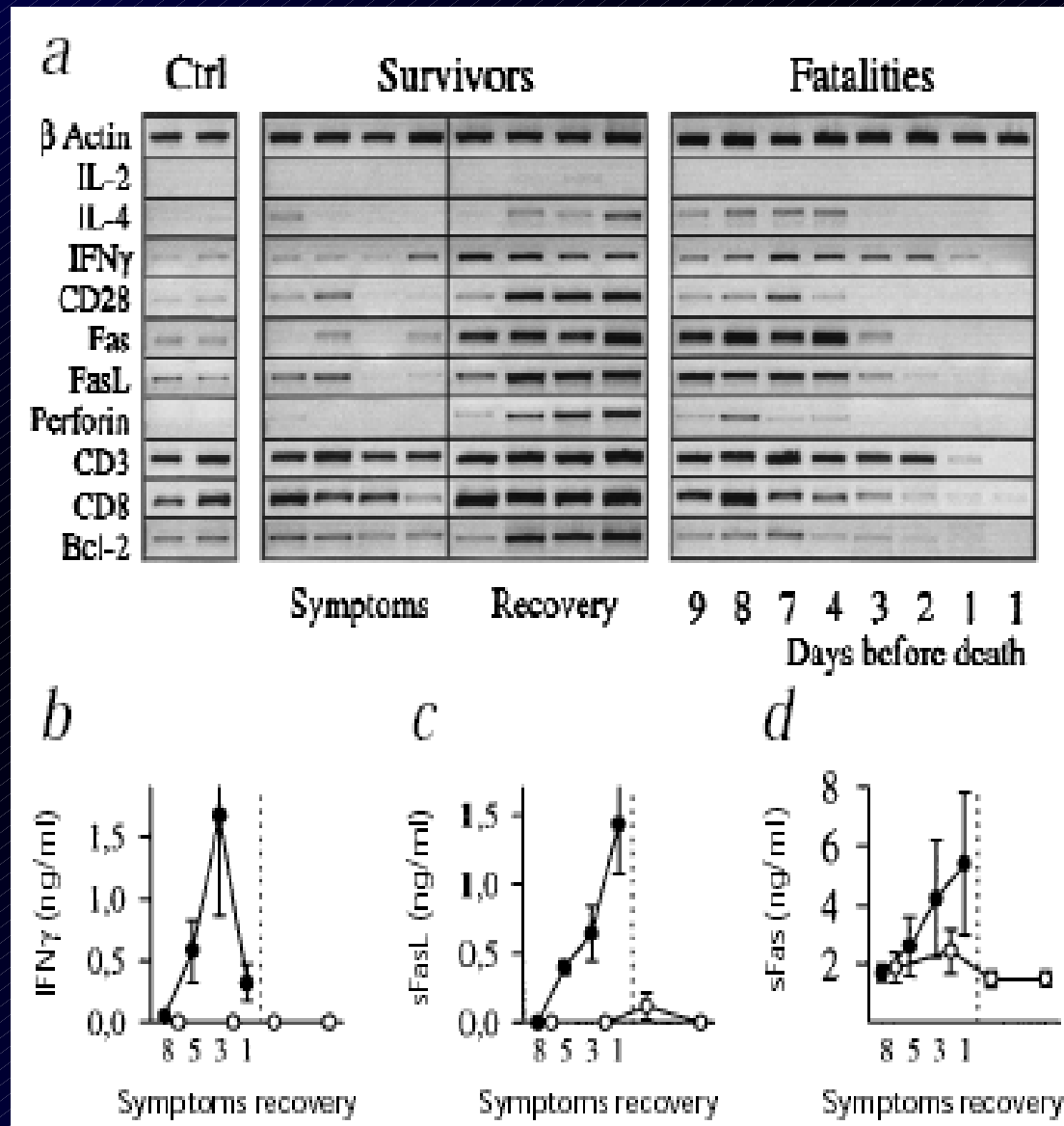
Improve Clinical Management of Contact Patients

Develop Mobile Laboratory

- To diagnose infection
- To monitor cytokines
- To count immune cells
- To assess vascular function
- To evaluate liver function

Develop a clinical trial facility

- To test safety of rNAPc2
- To assess antiviral sera
- To study novel anti-Ebola drugs



Baize et al. (1999). Nature Medicine, 5: 423-426.

Ebola and Congo River Basin's Biodiversity

1. Timber industry is second most important revenue source in Congo and Gabon!
2. Ecotourism is favored strategy for biodiversity-conscious sustainable development in area.
3. Fauna of the Congo River is directly threatened by virus.
4. Apes and chimpanzees are threatened of extinction by Ebola virus and by humans!

A comprehensive multidisciplinary strategy is called for!

