

### **Case Study**

You are a District health officer posted at one of the backward districts of the state. In a peak summer, your district faces an outbreak of infection by Nipah virus. The virus has a high mortality rate and is geographically limited as of now. The availability of information and study on this new virus is very limited because it's comparatively new and rare.

The virus is mainly spread from pigs, bats and other animals. This disease can be transferred to humans from animals and from human to human as well. It can cause severe diseases in both animals and humans. The outbreak triggered widespread panic all across the country.

You get to know that the outbreak of the disease was first reported in Malaysia and also it has occurred second time in India. Currently, there are no vaccines available for the virus. People infected with Nipah virus need intensive care. However, public hospitals in the district do not have the required infrastructure and staff to meet the demand of the situation.

- a. What immediate steps would you take in such a situation?
- b. Suggest long term measures to tackle such future outbreaks.

### **Approach**

- **Identify the stakeholders**
- **Identify the issues involved in the case**
- **Suggest immediate solutions**
- **Suggest long-term solutions**

### **Answer**

#### ***Stakeholders***

- Me as a district health officer
- Citizens of my district, state and country
- State and Central government
- Malaysian government
- World Health Organisation
- Humans and animals as a whole

#### ***Issues Involved In The Case***

- Outbreak of infection by Nipah virus
- No cure or vaccination available
- Providing intensive care to the affected population
- Lack of staff and infrastructure in public hospitals
- Lack of information about the virus and its cure
- Neglect of previous outbreaks
- Life of human and animals at stake
- Country in a panic situation

#### ***Immediate Solutions***

- This is a disease which may not have a vaccine or a complete cure but can be contained from spreading further. Hence, I will immediately issue preventive measures, which will include:

##### **For general public:**

- Avoid drinking toddy brewed in open containers near palm trees.
- Maintain a distance from the patient and sanitise and wash your hands properly.
- Clean your clothes, utensils and bathroom items like mugs and buckets separately.

- Ensure that they are all maintained hygienically.
- While carrying the dead body of anyone who dies of Nipah infection, it is important to cover your face properly and avoid any contact with the dead person.
- Relatives or friends of the deceased person must avoid hugging or kissing the dead person.
- Cultural practices like sharing of beds and utensils with patients must be avoided.
- It can be prevented by avoiding exposure to sick pigs and bats in areas where the infection is endemic.
- The infection can be prevented by not consuming fruits which have fallen off of trees and not drinking the sap of raw date palms.

**For hospital staff engaged** in infection-control measures

- Isolate patients and arrange for isolated patient ward in public hospitals.
  - Use surgical masks, gloves, and decontaminating surfaces, etc.
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- I will write to the State Health Ministry and the Union Health Ministry to send a team of experts to my district in order to assist people who are struggling to cope with the outbreak.
  - I will ask the state government to invite qualitative investigators from the National Institute of Virology for researching on the source and cure of the disease.
  - I will cooperate with the Investigation team for collection of samples of the disease vectors.
  - I will take the help of NGOs, civil society and media to spread the prevention messages with an interactive strategy with the aid of photos showing the types of contact that can lead to NiV transmission from bats to humans.
  - During outbreaks, one-way behaviour change communication without meaningful causal explanations is unlikely to be effective.
  - Based on the cultural context, interactive communication strategies in lay language with supporting evidence can make biomedical prevention messages credible in affected communities.
  - I will ask the district and state administration to control media outlets effectively to prevent spread of any false news related to the outbreak which may aggravate the panic situation.
  - Rather, I would ask for media help to publish preventive measures for the general public.
  - I would ask for the help from private hospitals in the district for fulfilling the requirement of infrastructure and staff.
  - I will also ask state govt to arrange the staff from neighboring districts or states on deputation.

**Long-term Solutions**

- We need a detailed epidemiological study to get anywhere close to a conclusion about the source and geographical distribution of the virus. Hence, I would cooperate with the team of virologists in their investigation till they reach any conclusion.
- This is not the first outbreak but still the international community is not prepared to fight it and the virus also can be a probable bioterrorism agent. Hence, the need of the hour is to prepare ourselves for future outbreaks of such virus.
- International community in collaboration with WHO must come together for research in this area.
- They must collaborate in developing vaccinations for the Nipah virus. I will write to the state and central government for initiating proposals in this regard.
- Such a disease becomes virulent when there is a stress on the animal. Such stress could be because of a loss of habitat, or not getting sufficient food for survival. Hence, I would also make an effort for generating awareness about conservation of natural habitat of animals.
- I will make an effort for capacity building of public hospitals in my district in terms of infrastructure as well as human resource.