NIPAH OUTBREAK IN KERALA-

QUESTIONS IT RAISES FOR KERALA’S HEALTH SYSTEM

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During the period May 2nd to May 19th at least 19 persons were infected with Nipah Virus.

17 of the infected persons died (Case fatality rate 89.47%). Two survivors are under follow up.

2649 contacts were traced, house quarantined and followed up during the incubation period.

At the end of 42 days from the last known infection the outbreak was declared closed.
The host (s)

- It is now confirmed that fruit bat (Pteropus Giganteous) is the primary host from whom the infection spread to index case. Secondary hosts need to be ruled out.
- Since bats will continue to infect each other and will not be affected by the virus the percentage of infected bats will grow.
- Fruit bats are commensal and exist in most parts of Kerala making the study of bat behaviour important for public health messages.
- Since bats do not fly more than 50 kms from their colony it is likely that bat populations in other parts of India must be infected.
Bat to human transmission

- What are the conditions which make a bat infectious, especially when human contact occurs?
- Saliva is known to carry the virus. What is the degree of risk in eating bat handled fruits and bat meat? What are the other modes of transmission?
- Are secondary hosts involved?
The outbreak send a clear message that our health system has to be vigilant about all emerging viruses listed by WHO and be prepared to handle them should they occur.

Kerala is developing guidelines to screen for such cases focusing on acute infections of immunocompetent patients, atypical presentations and Encephalitis of unknown etiology.
Of the 18 infections, 15 were from the index case.

All transmissions took place either in the home of the index case or in one of the hospitals.

Given Kerala’s health seeking behaviour hospitals will remain the location where most infections outside home would happen.

While there were a large number of direct contacts in many locations, only few persons were infected.
Vulnerability to Transmission

- What were the characteristics that made some persons vulnerable and gave virtual immunity to others?
- No child, including one who was breastfed, was affected. How to explain this?
- Most of the cases were picked up when neurological and pulmonary complications were evident, making treatment less effective. Are there biomarkers that could make earlier detection possible, especially in known contacts?
Case management

- In setting up treatment centre we followed the MSF guidelines on setting up the Ebola Management Centres.
- These were slightly modified due to health seeking behaviour of the state and the way the response was organised.
- Case management was based on critical care guidelines.
- But it is necessary to develop Nipah specific management guidelines and have a standardised data recording tools for future guidance.
- Case management will be strengthened by availability of reliable point of care diagnostics in identified management centres.
Treatment

- Initially Ribavirin was the only drug available to us. Effectiveness of the drug has since been questioned.
- Human monoclonal antibody, m102.4, was made available thanks to the support of Dr. Broder, the generosity of the Henry Jackson Foundation and the Queensland government.
- ICMR facilitated its import.
- It was not used as there were no fresh cases after its arrival. But led to the possibility of the clinical trial
- Any other candidate drug that should be tried?
Tasks for the health system

- Primary prevention against infection from the known host.
- Surveillance for the viruses identified as capable of causing severe epidemics, including diseases X.
- Effective Infection Prevention and Control measures to prevent nosocomial spread and to protect health workers.
- Upgrading laboratory capacity to deal with outbreaks of unknown viruses.
- Ramping up critical care capabilities to deal with severe unknown infections.
- Isolation facility to manage such cases.
- Long term follow up of survivors