Just-In-Time Learning Series:

MANAGEMENT OF THE PATIENT EXPOSED TO HENIPAVIRUS

Region 8 MOUNTAIN PLAINS Regional Disaster Health Response System

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Henipavirus

Hendra and **Nipah** Viruses

- RNA viruses
- Reservoirs are Fruit Bats and Flying Foxes
- Identified in the last decade

Hendra Virus

- found in limited distribution in humans in Australia
- Transferred to humans by direct contact with horses
- no human – human transmission reported
- Encephalitis, respiratory and renal failure
- 60% case fatality rate

Nipah Virus

- **1999 Malaysia outbreak** was first identified in humans who had contact with sick pigs
- Bats were found to be eating fruit, pigs then ate the fruit which had contact with bats
- No Human-human transmission in Malaysia
- **2001 Bangladesh outbreak** identified as sperate strain
- Consumption of fruit/date palm sap, which had contact with bats that would eat sap
- Human to human transmission seen (close contact – HCW/family care providers)
- Low-resource healthcare environment where PPE not available/standard likely led to human-to-human transmission

PROCEDURE FOR DEALING WITH A PERSON POTENTIALLY EXPOSED TO *HENIPAVIRUS*

(Focus on Nipah virus as it's the one that has caused outbreaks and is most likely to be imported into an area in which people are not familiar)

1.IDENTIFY THE THREAT

If patient presents with:

- Undifferentiated fever
- Generalized rash (not typical for Nipah)
- Respiratory symptoms

Ask:

- Travel and exposure history
- Where – how long, living conditions, etc.
- Doing what – occupation (health care worker?), entertainment, in hospitals, attended funeral, etc.
- Exposed to – Insects, food (uncooked, unpeeled), animals/animal excreta, ill persons/dead persons

Clinical Presentation:

- Incubation period usually 4-14 days, but delayed presentations, up to 2 months later, have occurred. Rarely, recurrence has been documented.

Symptoms:

Relatively abrupt onset:

- Fever
- Headache
- Possibly vomiting
- Encephalitis with or without respiratory failure
- Respiratory symptoms found to be more likely in Bangladesh strain with cough and copious secretions – which leads to increased human-human spread
- Severe disease progresses to encephalitis and respiratory failure and death

3. INFORM:

- Make a phone call to infection control at your personal institution and to **local public health authorities.** They will help to determine how high the risk is – may set stage to possible transfer to your Regional Emerging Special Pathogen Treatment Center (RESPTC)
- Any institution may have to care for a patient, at least for the initial part of evaluation and investigation
- Coordinate with local authorities for testing – specimen likely sent to Laboratory Response Network facility (LRN) or CDC

2. ISOLATE THE THREAT

1. Put mask on patient
2. Move to single room (ideally negative pressure)
3. Get the rest of patient history while in PPE and initiating care

CDC PPE Recommendations (same a Viral Hemorrhagic Fever (VHF)):

- **Stable patient, unconfirmed diagnosis:** (no active vomiting, diarrhea, respiratory secretions, hemodynamically stable etc.)
  - Gown, gloves, eye protection, and N95 respirator or higher
- **Unstable patient, confirmed diagnosis:**
  - **Full VHF PPE** – covering all skin and clothing, impermeable gown or coverall, PAPR with shroud or N/95 with head/neck covering and face shield, boot covers, double gloves, apron

4. INITIATE CARE:

- **Respiratory support** – consider infection control issues with high-flow, positive pressure non-invasive ventilation, may lead to aerosolization of respiratory secretions. Consider early planned intubation if failing – controlled process – but this is an ongoing discussion
- **Laboratory support** - Discuss infection control for sending routine labs, will you lab accept? What are your alternatives? (If lacking ability, transfer to higher level biosafety facility) - Empiric treatment? (especially if lab limited) antibiotics, antimalarials (just in case), antivirals
- **Primarily supportive care** (seizure meds, usually pressor support, etc.) - Monoclonal antibodies in development – only available through FDA and with consult with CDC and local RESPTC facility

YOU ARE NOT ALONE!

Even before diagnosis, if there is concern for special pathogen such as Nipah, call for help first. Call local authorities (public health) first, CDC, or your Regional and Emerging Special Pathogens Treatment Center. Contacts are available through NETEC (national and emerging special pathogens treatment center) website

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