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Discussion: 1 Unit 3

Public Health and Emergency

Preparedness and Response

Ebola Symptomatic

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Four days prior, a 39-year-old male, traveling alone, arrived from a country that was experiencing an Ebola outbreak. Three days after his arrival, he went to a hospital EMC. Upon examination, he was found to be presented symptoms of Ebola. He was immediately put into isolation. When questioned, the patient disclosed that he had close contact with his sister and wife since his return. His sister works at a local grocery store and his wife is a cook at a local restaurant. None of his contacts are symptomatic

**Ebola**

Ebola should be treated as soon as possible only because it could be fatal. Having a close contact with significate others was a very dangerous move. Having said that none of the contact was symptomatic which mean its good news. Keeping in mind when considering the need for appropriate care and infection control of identified patients and persons under investigation, coordinate with healthcare facilities, healthcare coalitions, and emergency management to develop local and state emergency operations plans that address the concerns and unique needs of healthcare facilities for Ebola response. Assess the readiness for Ebola response within your jurisdiction’s hospitals, inpatient and outpatient healthcare facilities, clinician practices, and other clinical settings. Patients can progress from the initial nonspecific symptoms after about 5 days to develop gastrointestinal symptoms such as severe watery diarrhea, nausea, vomiting, and abdominal pain. Other symptoms such as chest pain, shortness of breath, headache, or confusion also may develop. Patients often have conjunctival injection. Hiccups have been reported. Seizures may occur, and cerebral edema has been reported. Bleeding is not universally present but can manifest later in the course as petechiae, ecchymosis/bruising, or oozing from venipuncture sites and mucosal hemorrhage. In the current outbreak unexplained bleeding has been reported in only 18% of patients, most often blood in the stool (about 6%). Patients may develop a diffuse erythematous maculopapular rash by day 5 to 7 (usually involving the neck, trunk, and arms) that can desquamate. Pregnant women may experience spontaneous miscarriages.

**Emergencies preparedness**

Whose global alert and response activities and the Outbreak Alert and Response Network represent a major pillar of global health security aimed at the detection, verification and containment of epidemics. In the event of the intentional release of a biological agent these activities would be vital to effective international containment efforts. The IHR (2005) provide a framework for WHO epidemic alert and rapid response activities already being implemented in collaboration with countries to control international outbreaks and to strengthen international public health security. Epidemiological data and operational information about outbreaks is dynamic and changes rapidly. WHO has developed a comprehensive “event management system” to manage critical information about outbreaks and ensure accurate and timely communications between key international public health professionals, including WHO Regional Offices, Country Offices, collaborating centers and partners in the Global Outbreak Alert and Response Network.

**Pathogenesis**

Ebola virus enters the patient through mucous membranes, breaks in the skin, or parenterally and infects many cell types, including monocytes, macrophages, dendritic cells, endothelial cells, fibroblasts, hepatocytes, adrenal cortical cells, and epithelial cells. The incubation period may be related to the infection route 6 days for injection versus 10 days for contact.

**Laboratory Findings**

When doing a research about having Laboratory findings at admission may include leukopenia frequently with lymphopenia followed later by elevated neutrophils and a left shift. Platelet counts often are decreased in the 50,000 to 100,000 range. Amylase may be elevated, reflecting pancreatic involvement inflammation/infection.

**Risk of Exposure**

Healthcare providers caring for Ebola patients and family and friends in close contact with Ebola patients are at the highest risk of getting sick because they may come in contact with infected blood or body fluids. Ebola also can be spread through direct contact with objects (like clothes, bedding, and needles.

**Treatment**

Recovery from Ebola depends on good supportive care and the patient’s immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer. It is not known if people who recover are immune for life or if they can become infected with a different species of Ebola.

Despite this overall progress, one of the most devastating epidemics in human history occurred during the 20th century: the 1918 influenza pandemic that resulted in 20 million deaths, including 500,000 in the United States, in less than 1 year--more than have died in as short a time during any war or famine in the world. HIV infection, first recognized in 1981, has caused a pandemic that is still in progress, affecting 33 million people and causing an estimated 13.9 million deaths. These episodes illustrate the volatility of infectious disease death rates and the unpredictability of disease emergence.

Public health action to control infectious diseases in the 20th century is based on the 19th century discovery of microorganisms as the cause of many serious diseases cholera and TB. Disease control resulted from improvements in sanitation and hygiene, the discovery of antibiotics, and the implementation of universal childhood vaccination programs. Scientific and technologic advances played a major role in each of these areas and are the foundation for today's disease surveillance and control systems. Scientific findings also have contributed to a new understanding of the evolving relation between humans and microbes. The last major rat-associated outbreak of plague in the United States occurred during 1924-1925 in Los Angeles. This outbreak included the last identified instance of human-to-human transmission of plague (through inhalation of infectious respiratory droplets from coughing patients) in this country.

As they once said conceptually, the NII is like a giant electronic web that will allow each user's computer, telephone, and television to interconnect with others, regardless of their location or the distance between them, and will enable each user to communicate with everyone else who is connected to the web. Over this network, public and private information sources and data processing utilities will be able to transmit, store, process, and display information in many forms (such as data, voice, and images) and provide information retrieval and processing services on demand, as if connected in the next room.