Prairie Dog Die-Off Related to Teenager’s Death Case Study

In August of 1996, a teenage girl living in Colorado was seen in the local hospital emergency department. Her presenting symptoms were numbness in her left arm accompanied by pain in the axilla region. Her temperature, pulse rate, blood pressure, and chest film were all within normal ranges. She reported recently having fallen from a trampoline. She was released from the emergency department with a diagnosis of possible nerve injury to her left arm and a prescription for painkillers.

Four days later, she was back in the emergency room in very bad shape. She was semiconscious, had a fever of 102.5°F, and pulse of 170 beats per minute. A new chest X-ray revealed bilateral pulmonary edema. She experienced respiratory failure while in the emergency room and was intubated. Blood and cerebrospinal fluid (CSF) samples were taken for culture, cell count, glucose and protein analysis, and for Gram staining. Gram-positive diplococci were detected in the blood. At this point, she was diagnosed with septicemia, disseminated intravascular coagulation, adult respiratory distress syndrome, and possible meningitis. A Gram stain of sputum revealed no bacteria. Treatment for gram-positive sepsis was initiated.

The patient died later that day. Two days later, her blood and CSF cultures revealed an unidentified gram-negative rod and *Streptococcus pneumoniae .* As part of the epidemiological

investigation after her death, health officials visited her home. The only possibly relevant information they found was a family cat with a healing abscess in its jaw and evidence of an extensive prairie dog die-off in the vicinity.

* *What do you suppose was the cause of death in this case?*
* *How is the pain in the left arm and underarm related to her infection?*