Problem Solving/ Critical Thinking: Bacterial Diseases

Read the descriptions of various bacterial diseases. For each disease, the bacterial agent is given in italics. Then diagnose the bacterial disease of fictitious patients based on the case histories presented.

**Botulism**: very dangerous form of food poisoning; *Clostridium botulinum*; symptoms include headache, weakness, constipation, and nerve paralysis; may cause death if respiratory organs are paralyzed

**Cholera**: common in areas where sanitation is very poor; acute and infectious; *Vibrio cholerae*; symptoms include severe diarrhea and vomiting, extreme dehydration, muscle cramps, and prostration

**Diphtheria**: highly contagious childhood disease; *Corynebacterium diphtheriae*; symptoms include sore throat, fever, headache, and nausea; a yellowish membrane forms in the throat that restricts breathing

**Gonorrhea**: a sexually-transmitted disease; *Neisseria gonorrhoeae*; attacks the reproductive system; symptoms do not appear immediately and include painful urination, pus discharged from the penis or vagina; if untreated, may result in sterility

**Lobar Pneumonia**: inflammation of the lung; leading cause of death in infants and elderly; *Streptococcus pneumoniae*; solidified lung tissue prevents air from entering alveoli

**Scarlet Fever**: contagious childhood disease; Group A *beta-hemolytic streptococci*; symptoms include sore throat, swelling of lymph nodes in neck, bright red rash, nausea, hot dry skin, and fever

**Tetanus**: fatal unless treated; *Clostridium tetani*; symptoms include lockjaw, muscle spasms, convulsions, stiffness, restlessness, headache, and chills; bacterial organisms enter body through a puncture wound

**Typhoid Fever**: transmitted by contaminated water and food; *Salmonella typhosa*; symptoms include sore throat, high fever, loss of appetite, diarrhea and constipation, and periods of sweating and chills

**Whooping Cough**: infectious disease common in children under 10; *Bordetella pertussis*; symptoms include chills, vomiting, and bluish skin because extreme coughing prevents air from entering the alveoli

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Patient A: 82 years old; has generally poor health; has sharp chest pains, blood-streaked saliva, high fever, and rapid pulse rate; X ray confirms solid material in lung tissue

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Patient B: 6 years old; mother thought child had a slight cold until a red rash broke out; child is listless and has a slight fever

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Patient C: recently traveled to an undeveloped county and unknowingly consumed contaminated food and water; proper toilet facilities were nonexistent; exhibits severe muscle cramps and dehydration

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Patient D: food handler in rural areas where proper toilet facilities are not always available; exhibits a very high fever and the chills; blood is in his stool

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Patient E: 30 years old, recently discovered a whitish fluid being discharged by penis; has had severe pain in urination for the last several weeks; additional tests have shown that inflamed testes have resulted in sterility

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Patient F: teenager walking barefoot in a construction area has been punctured with a rusty nail; several days later he exhibited mild convulsions that rapidly became more severe

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Patient G: has recently eaten food from a damaged can; has difficulty seeing, swallowing, and breathing