# Clinical Manifestations of Bacterial Infection.

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## Introduction

Every organ in the human body is vulnerable to bacterial infection. Every bacterial species has a preference for infecting some organs over others. For instance, Neisseria meningitides can infect the lungs and cause pneumonia in addition to typically infecting the meninges (covering) of the central nervous system, which results in meningitis. But it doesn't lead to skin infections. People typically carry Staphylococcus aurous on their skin or mucous membranes, which frequently causes skin and soft tissue infections. However, Staphylococcus aurous also readily spreads throughout the body via the bloodstream and can infect the lungs, abdomen, heart valves, and nearly any other site [1].

Disease may result from an organism destroying bodily cells or from the immune system's reaction to an infection. When the disease symptoms are the consequence of the body's attempts to get rid of the bacteria, antibiotics may be ineffective or even harmful. The systemic inflammatory response syndrome (SIRS), which is typically brought on by a bacterial infection, is a severe inflammatory reaction to an infection that is characterized by the release of a great deal of cytokines and the development of infection-related symptoms as well as preliminary hemodynamic instability. Patients with SIRS who are allowed to proceed may eventually develop sepsis, which can lead to multiorgan failure and death. Even the most potent medicines frequently fail to stop the cascade of events once it has started [2].

Many bacterial illnesses are spread by humans, and in other cases, humans are the only natural hosts for the bacterium. A person is referred to as a carrier when they have a pathogen colonizing them but do not have any symptoms of illness. Passive carriers are those who carry diseases without ever being ill. Passive carriers who have Neisseria meningitides in their respiratory tracts frequently spread the severe meningitis that it causes. An individual who is harboring and potentially transmitting an infection throughout the infection's incubation period (the interval between acquisition and sickness manifestation) is known as an incubatory carrier. People who have not yet developed symptoms frequently spread sexually transmitted illnesses. Convalescent carriers have recently displayed symptoms of an infectious disease and are still carrying the organism while they are recovering. Active carriers are those who have fully recovered from a sickness and continue to harbor the organism. A bacterial infection like Salmonella, particularly Salmonella Typhi, the cause of typhoid fever, can result in a prolonged carrier state without the person experiencing it being aware of it. Salmonella can remain dormant in organs like the gallbladder for extended periods of time. These people might keep spreading the disease to their contacts. Typhoid Mary was Mary Mallon, a cook in New York City in the early 1900s, who spread the typhoid virus to several people [3].

Zoonosis and zoonotic diseases are infections that are contracted from animal reservoirs. Animals can cause illness in humans either through direct contact, as with pets or farm animals, through ingestion of the animal or inhalation of bacteria from its hide, or through an insect vector that bites the human and spreads the pathogen. Salmonella can induce diarrhea while handling turtles and coming into contact with their excrement. It can also cause diarrhea when eating undercooked poultry that has been contaminated with the germ. People who have just skinned a rabbit are frequently diagnosed with the condition tularemia, which is brought on by the bacteria Francis Ella tularensis. Similar to other anthrax diseases, Bacillus anthracic anthrax results from either inhaling spores from dead animals or hides or from spores entering a wound. The deer tick spreads the spirochete Borelli from the white-footed mouse to people, causing Lyme disease [4].

A phenomenon that is especially important to zoonotic illnesses is overflow. Using the case of Lyme disease, it can be seen that the cycle of transmission between tick hosts and animal hosts (such as deer and mice) results in the presence of infected ticks that can infect people. As a result, the cycle makes it possible for Lyme bacteria to infect humans outside of the normal cycle of infection. For instance, it has been demonstrated that killing diseased deer on a New England island significantly lowers the amount of infected ticks and virtually completely eradicates human illness [5].

## Conclusion

In some circumstances, antibiotic prophylaxis is used to stop bacterial infections. Since infection with resistant organisms would be expected to arise in response to antibiotic use, it is not very successful as a mass preventative strategy. However, it is particularly helpful in preventing infection in close contacts of meningococcal meningitis and pertussis patients, in preventing the development of STIs in those exposed, and in preventing life-threatening illness in known diphtheria and tuberculosis carriers. Patients with significant immunosuppression brought on by solid organ or bone marrow transplantation may benefit

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from antibiotic prophylaxis to avoid postoperative infection and during certain surgical operations.

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