

Food borne illnesses are caused by consuming contaminated foods or beverages. There are many different disease-causing microbes, or pathogens. In addition, poisonous chemicals, or other harmful substances can cause food borne illnesses if they are present in food. More than two hundred and fifty different food borne illnesses have been described; almost all of these illnesses are infections. They are caused by a variety of bacteria, viruses, and parasites that can be food borne. (Center 1) Food safety is an increasingly important public health issue.

Governments all over the world are intensifying their efforts to improve food safety. Food borne illnesses are diseases, usually either infectious or toxic in nature, caused by agents that enter the body through the ingestion of food. "In industrialized countries, the percentage of people suffering from food borne diseases each year has been reported to be up to 30%. In the United States of America, for example, around 76 million cases of food borne diseases, resulting in 325,000 hospitalizations and 5,000 deaths, are estimated to occur each year." (Geneva 2) The most commonly recognized food borne infections are those caused by the bacteria *Campylobacter*, *Salmonella*, and *E. coli* 0157:H7, and by a group of viruses called Calicivirus, also known as the Norwalk viruses. "Thousands of types of bacteria are naturally present in our environment, but not all bacteria cause disease in humans." (Schmutz 1) *Campylobacter* is a bacterial pathogen that causes fever, diarrhea, and abdominal cramps

It is the commonly identified bacterial cause of diarrhea illness in the world. These bacteria live in the intestines of birds, and most raw poultry meat has the bacteria in it. Eating undercooked chicken or other food that has been contaminated with the juices dripping from raw chicken is the most frequent source of this particular infection. *Salmonella* is also a bacterium that is widespread in the intestines of birds, reptiles, and mammals. It can spread to the human species a variety of different ways; through foods or animal origins. Some examples of food involved in outbreaks are eggs, poultry and other meats, raw milk and chocolate. The illnesses it causes are typically fever, diarrhea, and abdominal cramps. In people with poor underlying health or weakened immune systems, it can invade the bloodstream and causes life-threatening infections.

*E. coli* 0157:H7 is a bacterial pathogen that reservoir in cattle. Human illness typically follows consumption of food or water that has been contaminated with microscopic amounts of cow feces. The illness it causes is often a severe and bloody diarrhea and a painful abdominal cramp. In 3% to 5% of cases, a complication called hemolytic uremic syndrome can occur several weeks after the initial symptoms. These severe complications include temporary anemia, profuse bleeding, and kidney failure. Although their incidence is relatively low, their severe and sometimes fatal health consequences, particularly among infants, children, and the elderly.

Calicivirus or Norwalk virus is an extremely common cause of food borne illness, though it is rarely diagnosed, because the laboratory test is not widely available. It causes an acute gastrointestinal illness, usually with more vomiting than diarrhea that resolves within two days. Unlike many food borne pathogens that have animal reservoirs, it is believed that Norwalk viruses spread primarily from one infected person to another. Infected kitchen workers can contaminate a salad or sandwich, which they are preparing, if the virus is present on the hands. Cholera is a major public health problem in developing countries, also causing enormous economic losses. The disease is caused by the bacterium *Vibrio cholerae*.

In addition to water, contaminated foods can be the vehicle of infection. Different foods, including rice, vegetables, millet gruel and various types of seafood have been implicated