Cholera is a deadly infection of the small intestine and can cause a person to die within a few hours if not treated properly. Cholera often shows no symptoms, but if symptoms are present, they are usually very severe. Only 5% of the people infected with cholera will show symptoms. These symptoms include: diarrhea, vomiting, and leg cramps.

Cholera is often found where water sanitation and hygiene facilities do not exist. Although cholera is not very common in the U.S., it is very common in Latin America, Africa, and Europe. Cholera is often found by a body of water or on the coastline of an ocean. Cases of cholera in Europe have been reported back to the mid-1800s. These cases were caused from eating raw seafood and drinking unclean water. Cholera has found its way through almost every country on the globe.

Cholera is caused by an infection of the intestine with the bacterium Vibrio cholerae. The toxin causes rapid and deadly dehydration and electrolyte imbalance in the infected person. Cholera is common in undeveloped countries, but has caused epidemics in all parts of the world. The bacterium spreads through the intake of contaminated food and water and is extremely unlikely to be spread directly from person to person. Vibrio cholerae produces a toxin that is heterodimeric, consisting of A and B subunits. The B subunit consists of five identical protein chains. These five chains are what binds to the surface of the cell and allows the catalytic part of the molecule to enter the cell. Once inside the cell, the catalytic A subunit seeks out the G protein, and attacks. With the G protein now corrupt, the cell becomes confused and sends mass amounts of sodium and water out of the cell. This action causes the flooding of the intestine and ultimately the diarrhea that can lead to deadly dehydration. Although this illness can be fatal, it is surprisingly easily cured. A person can be treated simply by getting rehydrated with clean uncontaminated water to replace the lost electrolytes. Currently there are two oral cholera vaccines available, although they are only 50-90% effective. Shanchol and Euvac, the current vaccines, provide protection for up to two years. Vaccines are often given to people travelling abroad, as opposed to those who are staying permanently.

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