Cholera Strain Causing Outbreak in Haiti Matches South Asian Strain

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The cholera strain that caused the current outbreak of the disease in Haiti has been characterized by genetic testing as matching strains found in South Asia, according to laboratory tests by the US Centers for Disease Control.

But the genetic matching of the does not necessarily prove that the outbreak strain was brought from South Asia directly to Haiti, according to CDC laboratory experts.

This strain may be found in other parts of the world. Transmission may have occurred through unrecognized routes and the outbreak strain may have been introduced to Haiti from a different region than South Asia.

Although these results indicate that the strain is endemic to South Asia, cholera strains can move between different areas due to global travel and trade. In most instances, cholera does not spread widely within a country if drinking water and sewage treatment are adequate. When water and sewage treatment is inadequate in a situation with people living in camps, as in Haiti, cholera can spread rapidly.

Laboratory experts say genetic analyses are unlikely to determine the route that cholera traveled to Haiti. Cholera is found naturally in the environment in many areas around the world and can easily move from place to place via contaminated water or food, or infected people.

Some persons can carry the bacterium even without falling ill or knowing they have it. A person in Haiti could have traveled to an endemic area and back, or a carrier could have brought it from an endemic region into Haiti. This could have happened some time before cases became more frequent and the outbreak was noticed.

In Haiti, the national reference laboratory identified the first cases of cholera and confirmed the cause as Vibrio cholerae O:1, serotype Ogawa.

"DNA fingerprinting" tests done by CDC show that all 13 Vibrio cholerae O:1 isolates from Haiti were identical, suggesting they are all the same strain and likely came from a common source. The strain from Haiti was matched in a PulseNet library, and has been matched nine times since 2005, the last time being in May 2010. Of these nine fingerprints from PulseNet, four of the "fingerprints" were from people who had reported travel to South Asia.

Antibiotic susceptibility profiles were available for eight of nine isolates from the "cholera library" and all had identical profiles. The outbreak strain from Haiti has an antibiotic resistance profile identical to the eight PulseNet isolates. It is resistant to trimethoprim-sulfamethoxazole, furazolidone, nalidixic acid, sulfisoxazole, and streptomycin.