

# Strategy may help stem tide of cholera in Haiti: study

March 8 2011, By Paul Cantin

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A new study by a U of T professor and colleagues outlines the path of the cholera outbreak in Haiti and identifies immediate strategies for controlling the epidemic.

Control strategies are needed, as [Haiti](#) is in the midst of a cholera epidemic that has killed 4,000 people, and sickened at least 217,000 more in all of Haiti's ten geographical "departments."

The study has been published early online in *Annals of Internal Medicine*. Researchers used publicly available data to produce a "gravity" model to predict the spread of cholera between Haiti's regions based on the population of the departments and the distance between them. The model also assessed the impact of two distinct interventions: limited-scale vaccination and provision of clean water at the same scale. Through an optimized vaccination scheme to 500,000 individuals, the researchers predict a three percent risk reduction of infection -- about twice the risk reduction clean water.

"Given the potential for thousands of additional cholera cases in Haiti, and the high case-fatality rate, a reduction of even a few percent in total case counts will translate into a substantial number of lives saved," said study co-author David Fisman, a professor at the Dalla Lana School of Public Health.

According to the authors' model, clean water distributed to a relatively small subset of the population had a much smaller impact on case counts

than vaccination of an identical number of individuals. This is because individuals who are protected from cholera via [clean water](#) are still vulnerable to infection through other routes, such as person-to-person transmission. Vaccinated individuals will not contract [cholera](#) or pass it along to others.

The authors of an accompanying editorial write that a comprehensive intervention strategy should include oral and intravenous rehydration and antibiotic therapy and cleaning up the public water and sanitation systems in addition to the vaccination program. In addition, surveillance must become part of Haiti's immediate epidemic response and its ongoing overall health infrastructure. Education, prevention, a secure supply chain, and treatment efforts must be integrated. As prevention and treatment interventions are expanded, evidence regarding their efficacy should guide future implementation strategies. Such mechanisms could strengthen Haiti's health system and give it the tools to respond to future health crises.

“Our study suggests that the [cholera epidemic](#) in Haiti is likely to last well into 2011,” said Fisman. “We hope that our research may spur the international community to provide the additional logistical, economic, and political support that is needed to quell this epidemic and save lives.”

**More information:** [www.annals.org/](http://www.annals.org/)

Provided by University of Toronto

Citation: Strategy may help stem tide of cholera in Haiti: study (2011, March 8) retrieved 28 April 2024 from <https://medicalxpress.com/news/2011-03-strategy-stem-tide-cholera-haiti.html>

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