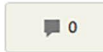


OPINION | RALPH R. FRERICHS

What the UN must do to wipe out cholera in Haiti



HECTOR RETAMAL/AFP/GETTY IMAGES

A child received the second dose of the cholera vaccine in Saut d'Eau in Haiti.

By **Ralph R. Frerichs** | AUGUST 22, 2016

IT IS NOT enough that the United Nations is finally beginning to acknowledge its involvement in the lethal cholera epidemic in Haiti. Now it must urgently do everything in its power to eliminate cholera in Haiti before thousands more die.

Cholera was brought to Haiti in October 2010 by UN peacekeepers from Nepal. Some of the Nepalese peacekeepers had been infected with the disease in their home country. And due to close quarters and poor sanitation practices, the disease quickly spread throughout the Nepalese camp near the interior town of Mirebalais.

Early on, some contaminated fecal waste from the

Nepalese camp leaked into a nearby stream, infecting a few Haitians. Then the accumulated camp waste was dumped into the local river by a poorly supervised UN vendor. This local river flowed on to the mighty Artibonite River, which runs through the breadbasket of Haiti before emptying into the Caribbean Sea.

An explosive epidemic ensued in communities along the Artibonite, eventually killing 10,000 or more persons, with more still dying every month. The deaths in this one poor country are comparable in number to all the deaths attributed to the Ebola epidemic that erupted in several nations of West Africa in 2014.

When epidemiologists from the World Health Organization and the US Centers for Disease Control and Prevention were not interested in finding the source of the cholera outbreak, the Haitian government turned to French epidemiologist Dr. Renaud Piarroux, who proceeded during a three-week field investigation to unravel what had occurred. The UN immediately began an active cover-up campaign that has lasted more than five years.

Meanwhile, Piarroux and his French and Haitian colleagues devised a strategy for eliminating cholera in Haiti. That strategy recognizes that the cholera bacteria spread least effectively during the dry season and gallop forward during the wet season. Piarroux stresses that if cholera can be stamped out during the dry season, there would be no more cholera to spread during the wet season, unless reintroduced by outside human activity.

Throughout the year, but more intensely during the dry season, the strategy uses rapid response and detailed mapping to identify households with cholera cases. A mobile team rushes out, treats the reported cases, and visits neighboring households with prophylactic measures, including chlorine for water, to limit spread from the initial household. This is repeated throughout the country.

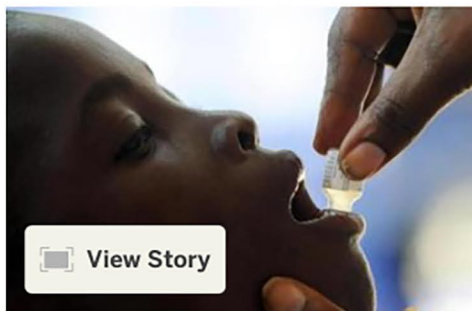
Unforgivably, the UN has not provided enough funding to keep the mobile teams active and sustain the supplies necessary to smother the epidemic.

Universal vaccination of the Haitian people could also be considered but, for the moment, neither the large

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A note of hope for Haitian cholera epidemic

The United Nations has acknowledged a role in the cholera epidemic; now it should push for aid to make sure it never happens again.

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vaccine stockpile nor the financing to distribute it is available.

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In the long term, a significant improvement in access to drinking water and sanitation is essential to permanently eliminate cholera. But it will take time, and right now the strategy favored by Piarroux and his group is the only way to immediately lessen the cholera impact. With sufficient funding, great strides could be made to rid the disease during the dry season, typically beginning around November.

The UN, having introduced cholera to Haiti, must now commit to eliminating cholera in Haiti. Time is of the essence, and many more lives hang in the balance.

Dr. Ralph R. Frerichs is professor emeritus of epidemiology at UCLA. He recently authored, in collaboration with Renaud Piarroux, "Deadly River: Cholera and Cover-up in Post-earthquake Haiti."

OP-ED AUGUST 24, 2016 7:17 PM

Cholera in Haiti shows U.N. must change its ways



The United Nations has accepted responsibility for the cholera epidemic that sickened at least 370,000 people in Haiti like the ones at this treatment center. **Eduardo Verdugo** - AP



BY RALPH R. FRERICHS
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Finally, the truth about the Haiti cholera outbreak is unarguable. U.N. peacekeeping soldiers from Nepal brought cholera to Haiti, a country they pledged to protect from strife and disorder. They arrived in October 2010 at a time of weak U.N. management, both in dealing with sanitation and water issues and in monitoring for infectious diseases.

This shoddy management resulted in leaking pipes at the soldiers' base near Mirebalais, allowing feces and urine to flow into a nearby stream. The waterway was regular used by Haitians to wash clothes and gather water for drinking and other household uses.

Although cholera was never before recorded in Haiti, a few cases appeared in October 2010 shortly after the arrival of the soldiers from Nepal. But this flow from leaking sewer pipes was not enough to start the greatest cholera epidemic in modern times.

That took much more.

U.N. officials had contracted with a vendor to move waste from the camp to two hilltop pits, one for solid garbage and the other for liquid waste, including fecal matter. During the first few days in the camp, the soldiers from Nepal developed symptoms of the disease, including constant diarrhea.

When their cholera-ridden waste was taken to the hillside pit, the driver found it was full. He called his U.N.-contracted employer, who told him to dump the load, which he did — right into the stream. The fecal-contaminated water flowed north to the Artibonite River, then northeast to the Caribbean coast, passing through Haiti's rich agricultural valley.

As people drank the water, cholera exploded in community after community, eventually making its way throughout the country.

The U.N.'s poor sanitary conditions were noted by reporters who first visited the camp a week after the epidemic began. A month later, the sanitary problems were again observed in U.N.-managed bases in Haiti by a U.N.-sponsored environmental health assessment team.

In February 2011, a group of four experts commissioned by the United Nations observed similar sanitation problems in and around the camp, although some improvements had been made.

The most recent review — done by the U.N.'s own Office of Internal Oversight Services covering July 2012 thru June 2014 — inspected all U.N. peacekeeping bases in Haiti. It found so many sanitary problems that the waste management score was deemed "unsatisfactory."

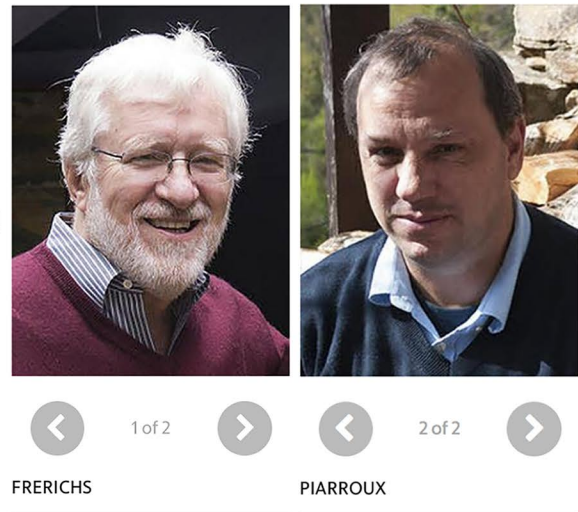
While all this was taking place, U.N. officials were denying responsibility for bringing cholera to Haiti, altering maps to hide their tracks, and engaging in all kinds of cover-up activities.

When we, as epidemiologists, investigate disease outbreaks, we always look for the source. We use this information to recommend policy or procedural changes to prevent future outbreaks. Since the United Nations refused to admit what happened, or even acknowledge the source, it made it much more difficult to effectively respond to the lethal epidemic.

Now that the U.N. has finally acknowledged that it was involved in the onset of the epidemic, which has taken 10,000 lives, it must accept the scientific facts surrounding the source and early spread of the epidemic and own up to its role.

The next step is to implement three urgently needed policy changes for all of its peacekeeping missions.

- Troops brought from one country to another should be tested, vaccinated or treated for common infectious diseases. This is done with troops from wealthier countries. and should be done by the U.N. too.



- Inbound troops should be observed for a set time period — similar to a quarantine but not so restrictive — to look for signs of various diseases.
- Most important, human waste should be decontaminated within each camp with a local and reliable wastewater treatment plant. If a gastrointestinal disease outbreak does occur, at least the infected matter will not find its way into the drinking water of indigenous communities.

This is the least the United Nations can do wherever it stations peacekeepers to ensure that its soldiers never repeat the catastrophe in Haiti.

Dr. Ralph R. Frerichs is professor emeritus of epidemiology at UCLA. He has recently authored, in close collaboration with Dr. Renaud Piarroux, “[Deadly River — Cholera and Cover-up in Post-earthquake Haiti.](#)” (Cornell University Press, 2016). Dr. Piarroux, a French epidemiologist commissioned by the Haitian government to investigate the cholera epidemic, is professor at Aix Marseille University, and heads the Laboratory of Parasitology and Mycology at the La Timone academic hospital in Marseille, France.

The Opinion Pages | OP-ED CONTRIBUTOR

The U.N.'s Responsibility in Haiti's Cholera Crisis

By RENAUD PIARROUX SEPT. 7, 2016



Cholera patients received treatment at the St. Nicholas Hospital in St.-Marc, in 2010.

Dieu Nalio Chery/Associated Press

Marseille, France In late 2010, the Haitian government asked me to investigate a cholera outbreak that struck that autumn following the arrival of a United Nations peacekeeping unit. It quickly became evident that some of the peacekeepers, who had been rotating through Haiti as part of a mission started in 2004 to provide security and stability, had introduced cholera from Nepal, where the disease had been flourishing.

By scrutinizing the most affected areas and using maps to trace the disease, I demonstrated how the epidemic originated with the

peacekeepers. I published my findings in a July 2011 article, and an independent scientific team confirmed my conclusions within a few months.

Despite the evidence, the United Nations refused to take responsibility for its role in the spread of the disease. As late as April 2012, a spokesman for Secretary General Ban Ki-moon said publicly it was not possible to conclude how cholera arrived in Haiti.

The denials lasted until last month when the United Nations finally admitted that it was involved in the cholera outbreak. A United Nations spokesman said the institution needs to “[do much more](#)” to come clean.

As a result of the United Nations’ introducing cholera in Haiti, then covering up its role and not doing enough to stop the epidemic, some 10,000 Haitians have lost their lives, and thousands are still being infected each month. This was a preventable calamity, and each time I return to Haiti to conduct field assessments, I am devastated by the loss of life.

Cholera is an acute bacterial disease that can cause uncontrollable diarrhea and kill within hours. A person becomes infected by ingesting contaminated food or water. It is fatal in up to 50 percent of victims who don’t get adequate rehydration therapy.

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The epidemic started after a United Nations-commissioned Haitian contractor emptied the peacekeeper camp’s septic tanks, which were teeming with cholera bacteria, into a tributary of the Artibonite River.

In face of the scientific evidence, the United Nations’ denials have been shocking. For years, starting days after the first batch of cases appeared, United

Nations officials did everything to suggest that the outbreak began in the brackish waters of the Artibonite River delta, far away from the peacekeepers' camp. Later, the emergence of cholera was attributed to climate anomalies. Poverty and poor infrastructure, weakened from the earthquake that had hit in January 2010, were also blamed.

The United Nations also did its best to deter epidemiologists from tracking the origin of the epidemic. And Nepalese peacekeepers, in an effort to hide evidence, removed the pipes that connected the camp's latrines to the stream below.

The United Nations' stonewalling had ripple effects. Convinced that the spread of the disease was the result of intractable problems like climate and poverty, the Haitian government wrote a response plan that assumed the bacteria would linger in the environment indefinitely and new cases would continue to pop up. Cholera became accepted as part of the daily life of Haitians. One Haitian official told me he was comfortable with the status quo, as "only" 1 percent of cholera patients were dying. By incorrectly blaming Haiti's climate and poverty, the United Nations crushed the hopes of Haitians.

The United Nations is developing a new strategy. Officially it will be the second phase of the plan drawn up in 2012 that was never fully put into place for lack of funding. This time, the United Nations will not be able to hide behind its fatalism. It has a second chance to clean up its own mess.

To rid Haiti of cholera, the United Nations needs to help reduce the vulnerability of the populations where the disease is rooted. In these areas, priority should be given to projects aimed specifically at improving access to clean drinking water. Only a little more than half of Haitians use a safe water source.

The United Nations must also help Haiti strengthen its ability to detect and control outbreaks. Field teams must respond immediately to cholera alerts, investigate the cause of the outbreak, educate the affected people, and secure clean drinking water through chlorination. The cholera response teams set up three years ago do extraordinary work, but they are too few and poorly equipped, and their funding is not guaranteed.

By admitting that it was involved in the outbreak, the United Nations made only a first and timid step toward a full assessment of its responsibility. The United Nations must continue to open up about what happened in Haiti, rectify the damage, and establish policies that prevent such disasters in the future. Its credibility is still on the line.

Renaud Piarroux, an epidemiologist, is a professor at Aix Marseille University and head of the parasitology and mycology laboratory at La Timone Hospital.

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