

nancially strapped and concerned about the cost of reform and its ability to meet their population's needs.

Maine, Florida, Iowa, and other states have already indicated that they will seek waivers for some insurance rules that could destabilize local insurance markets. A recent proposal by Senators Ron Wyden (D-OR) and Scott Brown (R-MA) would grant states additional flexibility but falls short of giving them full authority to develop their own reform approaches. Since reform cannot be implemented without them, states could choose to take a more independent role even if Washington is slow to give it to them.

Will the President's health care reform look burdensome and unworkable 2 years from now? Reform is no longer a 2000-page bill sitting on the desk of a senator or representative. The executive branch has been issuing guidance and regulations that are beginning to fill holes in the

legislation and will change the way the law works in practice. Much to the chagrin of the legislation's most ardent supporters, Secretary of Health and Human Services Kathleen Sebelius has been granting waivers when the rules don't work for everyone, albeit on a selective basis designed to avoid the worst political heat.<sup>3</sup> Although such decisions will soften the impact of reform, they neither alter the shift toward greater government control nor slow the growth of health care spending.

Despite the talk of repeal, Congress will not pass any major health legislation over the next 2 years, and the health sector and private employers will be hard at work preparing for 2014, when many ACA provisions take effect. That does not make health care reform a fait accompli. Absent a miracle, the country will still face crushing budget deficits when the next president takes office. A Republican president,

backed by a Republican Congress, would be wise to delay enrollment in the health insurance exchanges, using the time and money to develop a more targeted plan that closes off open-ended subsidies for health insurance and gets the economic incentives right. A Democratic president would do the same thing out of necessity — but it would take longer.

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## Responding to Cholera in Post-Earthquake Haiti

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Related article, p. 33

The earthquake that struck Haiti on January 12, 2010, decimated the already fragile country, leaving an estimated 250,000 people dead, 300,000 injured, and more than 1.3 million homeless. As camps for internally displaced people sprang up throughout the ruined capital of Port-au-Prince, medical and humanitarian experts warned of the likelihood of epidemic disease outbreaks. Some organizations responding to the disaster measured their success by the absence of such outbreaks, though

living conditions for the displaced have remained dangerous and inhumane. In August 2010, the U.S. Centers for Disease Control and Prevention (CDC) announced that a National Surveillance System that was set up after the earthquake had confirmed the conspicuous absence of highly transmissible disease in Haiti.

However, on October 20, more than 55 miles from the nearest displaced-persons camp, 60 cases of acute, watery diarrhea were recorded at L'Hôpital de Saint Nicolas, a public hospital in the

coastal city of Saint Marc, where Partners in Health has worked since 2008. Stool samples were sent to the national laboratory in Port-au-Prince for testing. The hospital alerted Ministry of Health representatives in the region and in the capital, as well as World Health Organization representatives managing the Health Cluster, a coordinating group formed after the earthquake. In the next 48 hours, L'Hôpital de Saint Nicolas received more than 1500 additional patients with acute diarrhea.

By October 21, preliminary results from the national laboratory confirmed our clinical impressions: though cholera had not been seen in Haiti in at least a century and may never have been recorded in laboratory-confirmed cases, it had somewhat unexpectedly emerged in a densely populated zone with little sanitary infrastructure and limited access to potable water. As the contours of the epidemic began to take shape, following the winding course of a large river in the Artibonite region, hospitals in central Haiti started recording rapidly increasing numbers of cases of acute diarrhea. Between October 20 and November 9, Partners in Health recorded 7159 cases of severe cholera. Among these patients, 161 died in seven of its hospitals in the Central and Artibonite regions.

In Port-au-Prince, sporadic cases were reported in the early phase of the outbreak; most were deemed “imported cases.” On November 8, 48 hours after Hurricane Tomas caused flooding and worsening of living conditions in Parc Jean-Marie Vincent, one of the largest settlement camps, Partners in Health reported seven clinical cases of cholera within the camp. On the same day, Doctors without Borders reported seeing as many as 200 patients with cholera in nearby slums. By November 9, the Ministry of Health had reported 11,125 hospitalized patients and 724 confirmed deaths from cholera.

Although we responded as quickly as we could, we were hampered by the rapidity with which the epidemic spread, overwhelming our hospitals with hundreds of patients and stretching already thin resources, staff, and materials. Because there was minimal

practical institutional knowledge about cholera in Haiti, we worked with other nongovernmental organizations to design treatment protocols and institute infection-control measures in affected hospitals. Our network of community health workers began distributing oral rehydration salts, water-purification systems, and water filters and instructing people about hygiene, hand washing, and decontamination of cadavers. Body bags were distributed to community leaders, and rehydration posts were set up throughout the countryside. A network of cholera treatment centers and stabilization centers was established in coordination with the Ministry of Health.

The cholera outbreak took most people by surprise. Unexpectedly, it was centered in rural Haiti and not in the displaced-person camps that are situated mainly in the greater Port-au-Prince area. But history would suggest that an epidemic outbreak of waterborne disease was just waiting to strike rural Haiti. It is well known that Haiti has the worst water security in the hemisphere. In 2002, it ranked 147th out of 147 countries surveyed in the Water Poverty Index.<sup>1</sup> After the earthquake, more than 182,000 people moved from the capital to seek refuge with friends or family in the Artibonite and Central regions, increasing stress on small, overcrowded homes and communities that lacked access to latrines and clean water. In addition, in many areas of Haiti, the costs associated with procuring water from private companies and the lack of adequate distribution systems have rendered potable water even less accessible for those most at risk.

Waterborne pathogens and fe-

cal-oral transmission are favored by the lack of sanitation in Haiti. Typhoid, intestinal parasitosis, and bacterial dysentery are common. Only 27% of the country benefits from basic sewerage, and 70% of Haitian households have either rudimentary toilets or none at all.<sup>2</sup> But the sudden appearance of cholera, a pathogen with no known nonhuman host, raises the question of how it was introduced to an island that has long been spared this disease. Speculations on this question have caused social and political friction within Haiti in recent weeks. Early in the epidemic, the CDC identified the cholera strain *Vibrio cholerae* O1, serotype Ogawa, biotype El Tor. Chin and colleagues (pages 33–42) report on DNA sequencing of two isolates from the recent outbreak, which showed that the cholera strain responsible for the Haitian epidemic originated in South Asia and was most likely introduced to Haiti by human activity. The implications of the appearance of this strain are worrisome: as compared with many cholera strains, it is associated with increased virulence, enhanced ability to survive in the environment and in a human host, and increased antibiotic resistance. These factors have substantial epidemiologic ramifications for the entire region and implications for optimal public health approaches to arresting the epidemic's spread.

As the infection makes its way to the capital city, there is debate about the likely attack rate inside displaced-person camps, as compared with the rate in surrounding communities. The latter often have worse access to water and sanitation than the former. But 521 of 1356 displaced-person

camps listed by the United Nations camp-management cluster reportedly have no water or sanitation agency, and most are far from reaching the established guidelines for sanitation in humanitarian emergencies.<sup>3</sup> The living conditions of most of Haiti's poor, whether they're living in camps or communities, are equally miserable in terms of the risk of diarrheal disease.

The reported numbers of cases and deaths, though shocking, represent only a fraction of the epidemic's true toll. We have seen scores of patients die at the gates of the hospital or within minutes after admission. Through our network of community health workers, we have learned of hundreds of patients who died at home or en route to the hospital. In the first 48 hours, the case fatality rate at our facilities was as high as 10%. Though it dropped to less than 2% in the ensuing days as the health system was reinforced locally and patients began to present earlier in the

course of disease, mortality will most likely climb as the disease spreads and Haiti's fragile health system falters.

This most recent crisis in Haiti has reinforced certain lessons regarding the provision of services to the poor. Complementary prevention and care should be the primary focus of the relief effort. Vaccination must be considered as an adjunct for controlling the epidemic, and antibiotics should be used in the treatment of all hospitalized patients. These endeavors should proceed in concert with much-needed improvements to sanitation and accessibility of potable water. More generally, reliable partnerships are essential, especially if local partners are dependable and have practical experience and complementary assets. Long-term reinforcement of the public-sector health system is a wise investment, permitting provision of a basic minimum set of services that can be built upon in times of crisis. And community

health workers who can be rapidly mobilized as educators, distributors of supplies, and first responders are a reliable backbone of health care. In Haiti, such workers can bring the time-sensitive lifesaving therapy of oral rehydration right to the patient's door.

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## Antibiotics for Both Moderate and Severe Cholera

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The 2010 Haitian cholera outbreak has pressed local and international experts into rapid action against a disease that is new to many health care providers in Haiti. The World Health Organization (WHO) has time-tested management protocols for emerging cholera outbreaks. These protocols have been used by the Haitian government to fight an epidemic that is merely one of several recent tragedies in Haiti. The use of these protocols has

allowed for a high standard of care in this complex and evolving medical landscape. But whereas the current WHO cholera-treatment protocol ([www.who.int/mediacentre/factsheets/fs107/en/index.html](http://www.who.int/mediacentre/factsheets/fs107/en/index.html)) recommends antibiotics for only severe cases, the approach of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), recommends antibiotics for both severe and moderate cases.

Several antibiotics are effec-

tive in the treatment of cholera, including doxycycline, ciprofloxacin, and azithromycin, assuming that the cholera strain is sensitive. Currently, the epidemic strain in Haiti is susceptible to tetracycline (a proxy for doxycycline) and azithromycin but is resistant to nalidixic acid, sulfisoxazole, and trimethoprim-sulfamethoxazole. The WHO advocates giving antibiotics to patients with cholera only when their illness is judged to be "severe." This recommen-