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Social Foundations for a Community-Based Public Health Cholera Campaign in Borgne, Haiti

John Mazzeo and Rose-Marie Chierici

The rapid and widespread progression of cholera in rural Haiti can be attributed to a “perfect storm” of conditions, including the widespread use of unprotected water sources, rudimentary sanitation, the lack of means to afford simple necessities, and the near absence of basic health services to treat the sick. Accessibility of essential health care and reliable sources of clean water in remote areas of rural Haiti are fundamental barriers to addressing acute public health emergencies, including the ongoing cholera epidemic. This article explores the notion that positive health outcomes for hard to reach populations can be achieved through community mobilization. The *gwoupman peyizan* (peasant movement) in Borgne has established an extensive, capillary-like social network that served as a model for the mobilization of volunteers in the fight against the cholera epidemic. This case study from Borgne, Haiti describes the role of Alyans Sante Borgne (ASB) in coordinating community mobilization efforts against the epidemic. It suggests that the treatment of cholera and other infectious diseases requires a model of care delivery that efficiently brings resources to remote areas and recognizes the value of existing models of social organization in this process.

Key words: Haiti, cholera, social activism, public health, community development

...[T]he arrangements of a society become most visible when they are challenged by crisis

— Wolf 1990:593

Adjusting his beret, Leon, the leader of *Koodinasyon Gwoupman Peyisan Borgne* (Peasant Organization Committee of Borgne or KGPB), looks around the crowded meeting hall in Tibouk where the group gathers for its weekly meeting. Then, Toc... Toc... Toc... He begins to tap his finger on the table...rhythmically, purposefully. Sitting along the wall, delegates representing communities from the seven rural districts of the Commune of Borgne in northern Haiti stop talking and settle down on their benches. Leon, seated behind a long table flanked by his assistants, also peasant leaders, takes a last look at the agenda for the day and opens his notebook. The rhythmic tapping continues until he has everyone’s attention then gradually shifts to a familiar beat, and, as one, the crowd stands to begin the group’s anthem.

It is an impressive performance, and Leon is an impressive figure. He is a strong man, around 45 years old,

sinewy, and stocky; his hands are those of one who works the land—rough and broad. He is intense and focused; he has the eyes of a hawk that take in everything around him. The men and women in the room are farmers and members of *gwoupman peyisan* (peasant groups). They are the voice of the peasantry, the backbone of rural Haiti, and a powerful social and political movement representing the interests of small farmers. We, the authors of this article, are guests of the group at this meeting, invited to talk about development projects of particular interest to KGPB such as a tree nursery and mobile clinics designed to bring health services to hard to reach localities in the area.

Our group started the trek from the town of Borgne while the morning mist still hung over the valley and the sun was barely rising. It is a tough but gorgeous two hour walk on a rocky road—barely a path really—that climbs rapidly then rushes down steep mountains and crosses the river Estere as it meanders north to reach the Caribbean Sea. Alongside the road are *lakou* (extended family compounds) and small garden plots where farmers till the land with machetes and hoes. Women walk hurriedly down hills balancing baskets heaped with produce on their heads, children play with toys built from empty plastic containers, and goats scamper on rocks. One could say that people are poor here—few families can afford to send their kids to school or even feed them one meal a day—and that development has bypassed this remote corner of the world. Aside from cultivating small gardens and selling goods at roadside stands or marketplaces, there are no other local ways to generate income. Labor migration, within and outside of Haiti, is risky but represents a

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potentially lucrative strategy for some households. Very few households in remote rural areas have access to a protected water source or properly constructed and maintained latrines. Drinking water comes from a variety of sources, including natural springs, but also from rivers and uncovered wells.

These everyday and challenging aspects of rural life— isolation, poor infrastructure, migration, ecological degradation, limited access to potable water and sanitation—assumed new significance as cholera spread through the region in 2010. At the same time, the resilient and extensive social networks, the populist ideology, and the development activities that defined KGPB and other kinds of community organizations would become the greatest strength of the population in combating cholera. Despite outside observers' negative evaluations of Haiti's capacity, especially in the wake of the tragic 2010 earthquake, this research illustrates that Haitian approaches to development and social mobilization can lead to significant and positive public health outcomes.

The introduction of cholera in Haiti in 2010 has been linked to the arrival of a Nepalese UN battalion from an area in Nepal where cholera is endemic. The first cases among Haitians occurred in Meille, a remote locality in the Artibonite area of central Haiti (Piarroux et al. 2012). The infection spread rapidly across Haiti and mostly affected rural areas through contaminated drinking water sources and inadequate sanitation. In the first year of the epidemic, fatality rates in rural areas were three times higher than in urban centers. Lower incidence and mortality rates were observed in urban areas, such as the capital city of Port-au-Prince, while in rural areas, higher risk for cholera is most often associated with being located downstream from an infected locality or being located on a coastal plain (Piarroux et al. 2012). As of December 2012, the cumulative number of cases of cholera at the national level was 625,899 with 7,787 related deaths (MSPP 2012).

This paper explores the social foundation of a community mobilization program and the development and implementation of a public health system that includes clean water, sanitation, and primary health care—also critical components of the cholera response program¹. Our focus for this article is to describe a model of resource delivery and planning that reverses long-standing power structures in Haiti that have historically concentrated on the benefits of development within urban and elite groups. This model recognizes the value of the peasant movement's principles of democracy and equality for mobilizing rural populations. Their approach informed the conceptual design of a community-based health program that directs resources from urban centers towards remote localities and ensures the equitable distribution of health resources among localities. Although health care delivery is not part of the peasant movement's mission, many current and former movement members participate in health projects and perceive this work as aligned with the movement's core values. Projects that aim to improve community well-being are at the core of the peasant movement's work.

Despite the recognized importance of collaborative partnerships between civil society groups and NGOs, it is

still unclear how civil society groups become instrumental in realizing the goals of community health development. How do these groups mobilize participation, ensure that projects have an equitable impact across the population, and articulate the rationale for these projects in terms that are congruent with popular views on health, disease, development, the material realities of rural life, and the conflicts that have historically defined struggles for social change? There is useful literature on civil society organization and on collaborative partnerships, but little research connects these subjects and specifically demonstrates how the organization of civil society groups can foster the process of community health development. This article presents a case study of the peasant movement in Borgne, Haiti and seeks to demonstrate that the movement's internal organization and its social influence in the commune provided the framework for the creation of a comprehensive community health project to fight cholera. With funding from the American Red Cross, Haiti Outreach - *Pwoje Espwa* (Haiti Outreach Project Hope or HOPE) sponsored the cholera initiative described in this article. This project includes activities to improve access to clean water, adequate sanitation, and primary health care.

The Peasant Movement and the Organization of its Social Base

A goal of this research is to understand the institutions and processes for promoting social change and improving the health and livelihoods of the peasantry. Anthropologists who study civil society organizations in rural Haiti point to the important role that these groups, in particular the *gwoupman peyizan* (peasant movement), have played in articulating local conceptualizations of development, mobilizing popular participation around this vision, and working collectively, *tet ansam* (putting our heads together), on projects towards these ends (Maguire 1979; Smith 2001; Smucker and Noriac 1996). Their research examines the prospects and challenges of partnerships between civil society groups and outside NGOs for the purposes of development. Among those challenges are differences in how each group envisions the process and goals of development, cross-cultural communication, and accountability (Vannier 2010). These challenges are not insurmountable. There are models of collaborative approaches that can lead to measurable and lasting positive impacts (Schuller 2012). In the area of improving rural health, there is convincing evidence in favor of collaborative partnerships as a strategy for reducing the incidence of preventable diseases and improving outcomes by delivering quality care to all (Ivers, Farmer, Almazor and Léandre 2010). Traditional forms of collective work groups such as *konbit* (collective work parties) and *eskwads* (paid work groups) fill the gap left by state neglect and the exploitation of rural resources by the powerful (Dupuy 1996). These indigenous models are the backbone of areas like Borgne and represent adaptive strategies and coping mechanisms that have proven to be effective over time to manage conditions of extreme poverty

Figure 1. The Commune of Borgne

*Town boundary in the key refers to Habitasyon boundaries (Source: Unknown).

(Maguire 1979). Gwoupman peyisan, or peasant groups, are a more recent type of civil society group—hybrids that retain elements of traditional groups yet are influenced by development ideologies and Liberation Theology. Contrary to traditional collective work groups, gwoupman focus on social change, political representation of the peasantry, and community development.

Gwoupman peyizan quickly spread through the work of trained change agents, called *animate*, who used consciousness-raising activities to mobilize the peasantry for social change. Working throughout the Department of the North and Northwest, Diocesan Institute for Adult Education (IDEA) trained about 500 animate and helped create over 1,500 peasant groups (Maguire 1979). By 1987, change agents in Borgne had successfully established a commune-wide peasant movement with a network of 57 peasant groups. Interviews with Borgne animators trained by IDEA in the 1970s reveal a great deal about how peasant leaders perceive the root cause of their poverty and the role of the peasant movement as an agent of change, or at least of empowerment. The movement's goal is to fight for the fair treatment of the peasantry and raise awareness through a process of critical education. They explain that "peasants have to realize their worth, and in order to get where they want to go, they have to see clearly" (Personal Interview, Leon, June 23, 2008). They stress that the system of exploitation of peasants by town-based elites has its roots in the urban-rural opposition, therefore between rich and poor.

Leaders of peasant organizations in the commune of Borgne still function under the structure and spirit established in the 1970s. The peasant movement provides a social platform for community development and is the channel through which resources are distributed to rural localities and leaders garner support for development activities and community projects. Leadership is shared, and although a few individuals are in positions of responsibility, no single person speaks for the group. The projects they undertake demonstrate their support of the peasantry through popular education, training, technical assistance, or material resources. Cultural notions about civic duty and what it means to be a moral citizen in the absence of State support for rural development guide their work.

The model of critical consciousness rising to promote empowerment originally piloted by IDEA still informs the practice of development in Borgne. A community organizer best describes the complementary roles of consciousness raising and community development:

Community development is voluntary action, but everyone benefits from it. Not everyone has to participate in it. For community development to work, it needs organization and to raise people's awareness. Development is not about building things; it requires you to change the ideas and thoughts of people.... You can't do community development from a distance. If I am sitting in town, I am not able to imagine the kinds of development that needs to happen in remote places. I need to go there to work. I need the support of the people to work with me. I cannot impose development. I need to increase the sensibilities

or awareness of others in order for people to become motivated to participate in development.

Members of KGPB emphasize that community development is achieved through collaboration and that its goal should be sustainability and self-reliance. A member of KGPB explains how the traditional values of civic responsibility and community he inherited from his father guide his work:

Here's how he lived. He lived together with everyone else who was in his environment. When he had work to be done, he would blow the conch and others would come help him. When other people needed help with their fields, he would go help them. Everything he did, he did it in collaboration with the others.

The peasant movement in Borgne is organized in a multi-tiered structure that begins at the level of the *habitasyon*, the basic building block of the *gwoupman peyizan*. Membership in *habitasyon* groups and the primary objective of these groups is to address the specific needs of the *habitasyon*. The communal section is the next rung of this system. The rural section group is composed of representatives from all the *habitasyon* in that section. Finally, rural section groups send representatives to the communal level of the *gwoupman* to form the coordinating committee which functions as an overseeing body (KGPB). Figure 1 is a map of the commune of Borgne that indicates the boundaries of the seven communal sections and the *habitasyon* within each section.

KGPB meetings provide opportunities for representatives from the communal sections to discuss activities and needs in their areas. KGPB's coordinating committee meets once a week to review and plan activities to address issues of concern to the commune. A member of KGPB explains, "[Communal section] representatives go [to KGPB meetings] and relay anything that is discussed to their communal section organization. It's the [set of] relations and interrelations with all of the sections that make up the central body of KGPB." The network of peasant groups generates a potential for community development greater than each of its autonomous groups. In the next section, we discuss how ASB's community health development model builds on the extensive network of groups to deliver its health services.

The Alyans Sante Borgne Health Care Delivery Model

As applied anthropologists who have been working in Borgne since 1996, we have observed firsthand a transformation of the commune through community-based development activities. Our research helps guide the work of HOPE, a volunteer organization, in its work with local partners, to deliver support for a range of projects including health, agriculture, sanitation, and education. We have followed the evolution of Alyans Sante Borgne, Borgne Health Alliance (ASB), a partnership formed in 2006 between HOPE and MSPP/DSN, Haiti Ministry of Health/Department of the North, to improve health services in the commune of Borgne.

The earthquake and subsequent cholera epidemic stressed the necessity of implementing a public health infrastructure built on popular participation and close partnerships with grassroots, local, and foreign organizations. The immediate result of these efforts has been to control the spread of cholera, reduce the number of deaths resulting from it, and to improve access to clean water and sanitary facilities.

HOPE's investment in rural community health since 1996 and the continuous support of these projects by peasant organizations offered a critical advantage when cholera arrived in the region on November 7, 2010. The community health approach developed by HOPE in 1996 has evolved into a capillary-like system that brings resources from the core to remote rural areas. This system includes a hospital, a clinic, mobile clinics, a cadre of community health workers, and volunteers. This system is modeled after the one used by KGPB to link peasant groups across the commune into a single peasant movement.

ASB, the partnership between HOPE and MSPP, has proven to be fruitful. It resulted in reopening and refurbishing the non-functional communal hospital with steady growth in the number of patients served and services offered. This enabled HOPE to increase the number of patients by seven fold, from 400 per month pre-ASB in 2006 to 2,800 per month in 2012. ASB operates the only health system in this commune of 80,000 and treats patients from a far larger geographic area attracted by the quality and affordability of ASB's services. ASB manages the hospital in the town of Borgne, the clinic in Tibouk, mobile clinics to remote areas, and a team of fieldworkers. The medical and administrative staff consists of well-trained Haitian professionals and paraprofessionals, several of whom are from Borgne.

ASB uses a capillary-like system to distribute health services in the commune through a network of health centers and programs (Table 1). ASB's delivery model is a three-tiered system with the hospital in Borgne as its core. The hospital houses basic services such as an in-patient facility, internal medicine, women's health, maternity, delivery, and prenatal and postnatal services, as well as a dental clinic, TB and full HIV/AIDS programs, and a lab and pharmacy. The secondary level includes a clinic centrally located in Tibouk, the second largest population center, and mobile clinics that travel to remote and underserved areas of the commune. Mobile clinics go out four times a month and rotate among different localities of the seven communal sections. Approximately 200-300 people attend each mobile clinic, and these events serve as opportunities for community health education. At the end of this capillary system is the tertiary level of health delivery: the local level (*habitasyon* or large settlement). Services at that level include a team of community health workers who provide health education and carry out public health activities such as vaccinations and Water-Sanitation (Wat-San) technicians who conduct disease surveillance, oversee clean water and sanitation programs, promote environmental protection, and manage a corps of health volunteers (AJ+) who assist the Wat-San on community projects.

Table 1. Peasant Movement, ASB's Health Delivery System, and Cholera Response Models Compared

Peasant Movement	Geographic Coverage
Primary Level Coordinating Committee (KGPB)	Commune
Secondary Level Rural Section Committees	Communal Section
Tertiary Level Peasant Groups	Habitasyon
Alyans Sante Borgne (ASB)	Geographic Coverage
Primary Level Hospital	Entire Commune
Secondary Level Clinic Mobile Clinics	Interior of Commune Communal Section
Tertiary Level Community Health Workers	Zones, Several Habitasyon
Cholera Program	Geographic Coverage
Primary Level Cholera Treatment Center, Hospital	Commune
Secondary Level Cholera Treatment Unit, Clinic	Interior of Commune
Tertiary Level Health Agent Volunteers (AJ+)	Habitasyon

The coordinator of the mobile clinic program is an active member of the peasant movement, an animator (community organizer) trained in the 1970s, and one of the first community health agents trained by HOPE in 1996. The mobile clinic program reflects the NGO's commitment to empower rural populations and redistribute resources traditionally held at the core. Mobile clinics are not satellite clinics operated by ASB but represent a collaboration between the communities that host the clinic, the local health workers that promote the clinics, and the peasant groups that help organize them; HOPE/ASB provides the staff, materials, and supplies.

The core values shared by ASB and the peasant movement include a commitment to social justice and collaborations as means to address community needs. Through its informal partnership with KGPB, HOPE/ASB has access to an organized and mobilized network of individuals from all parts of the commune committed to the objective of "complete and total change" to quote Leon. This extensive, capillary-like networked system helps to mobilize, direct, and distribute health resources to remote parts of the commune. Leon explains how ASB's community health work shares the same goals as the peasant movement:

I would say, particularly with respect to health, there have been extraordinary advances made for the partnership between ASB [and KGPB] and for the people who benefit from the services. The work being done is work

that has value, and the community appreciates and really benefits from it. The mobile clinic team provides services for people in their homes. Rather than the people having to seek out the services, they receive services at their home. More people, more children used to die as a result of not seeing a doctor because of distance. Through the work of the mobile clinic team, they can see a doctor. This improves their quality of life and is an added value [for the community].... I can see now everyone when they are speaking; they talk about health. As you know, there was the [government's] promise Health 2000, Health for Everyone, so it was nothing more than a slogan, but now everyone sees that what has happened in terms of health for Oboya [Borgne] is completely different, and they receive all of their services in their community.

The capillary-like system that defines ASB's model of health delivery is similar to the approach used by KGPB. This system forms a network that links people and organizations at various levels of the commune and allows for the flow of information and resources. It connects all rural areas and is therefore an effective means for the equitable distribution of health resources to the 64 habitasyon in the seven communal sections. ASB's model is likewise an effective vehicle in the response to the cholera epidemic and makes it possible to rapidly deploy a network of treatment points and mobilize volunteers for education and prevention projects. We will demonstrate how these concepts helped guide the response to the cholera epidemic in Borgne.

The Cholera Epidemic in Borgne, 2010-2012

The first confirmed case of cholera in Borgne was diagnosed on November 7, 2010 in a 45-year-old woman from Tibouk who worked as a *madam sara*, a woman who buys large quantities of produce from rural farmers to sell in urban marketplaces. This patient fell ill with diarrhea and vomiting when she returned from Cap Haitian, Haiti's second largest city, located 30 miles east of Borgne. At that time, Cap Haitian was already dealing with several cases of cholera. Her symptoms became severe that evening, but a tropical storm prevented her family from making the three hour trek to bring her to the hospital in Borgne. Mountain paths become dangerous when it rains, especially at night. The following day, after the storm had subsided, her family used the front door to their home as a makeshift stretcher to transport her to the hospital. She died soon after arriving. Over the next four days, eight members of her family fell ill with cholera and were admitted to the hospital for treatment (Bernard n.d.).

The rapid increase in the number of cholera patients admitted to the hospital quickly challenged ASB's existing in-patient capacity and ability to deal with the epidemic. This led HOPE to seek help from relief organizations such as Pan American Health Organization (UN/PAHO), Médecins Sans Frontières/Doctors without Borders (MSF), and Materials Management Relief Corps (MMRC) to ramp up services and set up a cholera treatment program. While the hospital was operating over capacity, there was also real cause for concern about an approach to cholera treatment that required people to travel long distances on foot or makeshift stretchers. Travel time from the most distant areas of the commune can easily exceed eight hours. By the time those who survived the trip arrived at the hospital, their conditions would have seriously deteriorated from rapid dehydration.

ASB recorded 4,051 cases of cholera between November 2010 and October 2012, roughly five percent of the 80,000 people estimated to be living in the commune. The epidemic was most intense during its first three months. From November 2010 to January 2011, 1,627 patients were admitted to the cholera treatment center (CTC) in Borgne; this accounts for 40 percent of the total 4,051 cases (see Figure 2). In December 2010, ASB opened a cholera treatment unit (CTU) in Tibouk that helped to reduce travel time for people living in the outlying communal sections. In addition, 18 oral rehydration points (ORPs) were set up in key locations around the commune and served as places where people could receive temporary care and oral rehydration therapy before continuing the journey to either the CTC at the hospital in Borgne or the CTU in Tibouk. The ORPs were most critical during the two acute outbreak periods, and during less active months they served as sites for the distribution of supplies and information.

Of those treated at an ASB site from November 2010 to October 2012, most were admitted at the CTC (70% or 2,779) and the CTU in Tibouk (24% or 973), while ORPs (6% or 252) served as a stabilization point for severe cases later transported to the CTC or the CTU (Voltaire 2012). However, the medical staff suspects that these numbers do not reveal the true extent of the epidemic and that a greater number of people have been affected. Surveillance reports only record those individuals who were admitted in the system, and many more may have been unable to reach one of the treatment sites.

Discussions with ASB staff suggest that most undocumented cases were in remote rural areas. Individuals from distant habitasyon may not survive the trek or may not have even attempted it. Since agriculture is the main source of livelihood in Borgne and produce is sold by women in local and distant marketplaces, market women are often vectors

Figure 2. Monthly Cases of Cholera for All Treatment Sites in Borgne, November 2010 to October 2012

Table 2. Cases and Fatalities at ASB Hospital by Place of Origin

Communal Section Name	Cases		Fatalities	
	%	N	% Cases in Section	N
Borgne (Town)	22%	547	2.2%	12
Cote de Fer	28%	679	1.0%	7
Margot	23%	567	3.7%	21
Tibouk	14%	349	3.4%	12
Boucan Michel	8%	204	4.4%	9
Champagne	2%	47	4.3%	2
Trou d'enfer	1%	29	0.0%	0
Molas	1%	23	4.3%	1
	100%	2,445	2.6%	64

of transmission who bring cholera back from urban areas to remote, mountainous habitasyon. In addition, market days in Tibouk and the town of Borgne draw large numbers of people from surrounding areas and places outside the commune. Finally, most households do not properly dispose of human waste; people often relieve themselves along riverbeds, some bury the waste in shallow holes, and few have access to latrines. During the rainy season, rainwater washes human waste into rivers and the environment, and infected wastewater seeps into surrounding water sources. This explains why cholera incidence rates increase during and following the rainy seasons and remains low during the dry season. The rate of spread of infection and the epidemic stabilized at a lower rate (>100 cases per month) during the dry season, between February and September 2011.

A significant tool in the fight against cholera is the vigorous and relentless cholera prevention and education campaign led by the Wat-San team. The Wat-San team responds to outbreaks by quickly deploying to affected areas with necessary supplies including camping gear and decontamination equipment. The team constantly moves through the region to conduct education programs that introduce prevention and behavior modification strategies such as community demonstrations, performances and role play in market places, schools, places of worship, and habitasyons. One of the most innovative programs uses a troupe of young comedians who performs skits based on local humor and folk characters that model healthy ways of preventing cholera and water borne illnesses. The Wat-San team also addresses the root causes of cholera by promoting and demonstrating simple technologies to purify water and dispose of human waste. They developed an effective capacity building and leadership program that households who participate in the latrine construction program have to attend. Participants also agree to assist other households and promote healthy behaviors in their neighborhoods.

An important part of the Wat-San strategy included setting up a network of 64 volunteer groups, one per habitasyon. These teams, named Aji Plis (AJ+) [loosely translated as Act More Efficiently] are active in their communities and

represent the tertiary level of the capillary network of care distribution. AJ+ volunteers reinforce good hygiene practices, improve water sources, and encourage members of their localities to change the behaviors that put them at risk for cholera and other diarrheal diseases. These structures and strategies helped to prepare Borgne against subsequent waves of cholera (Table 1).

Heavy rains during September and October 2011 caused major outbreaks in many locations in the northern region and other areas of Haiti (Humanitarian Response Network 2012). Borgne experienced significant rainfall, and the second outbreak peaked between October 2011 and January 2012. ASB recorded 1,554 cases (38% of all cases) during this period. However, fatality rates were significantly lower than during the original outbreak. Improved outreach to rural areas, staff training, continued community education, and improved CTC, CTU, and ORPs facilities and staffing were key to ASB's ability to keep the infection under control.

Place of origin information collected at the CTC offers useful insights into the relationship between geographical location and cholera fatality rates (Table 2). Most cases at the CTC came from the communal sections of Cote de Fer (28% or 679), Margo (23% or 567) and the town of Borgne (22% or 547)—which is located within the boundary of Cote de Fer. Margo and Cote de Fer are the communal sections closest to the hospital in Borgne. The other four communal sections are more distant from the CTC, especially Champagne (2% or 47), Molas (1% or 23), Boucan Michel (8% or 204) and Trou-d'Enfer (1% or 29); travel times from these areas can exceed eight hours when walking through rough mountainous terrain. Patients often fear falling as they are being transported on a stretcher or a door—at least one person being carried to the hospital died this way. A possible explanation for fewer recorded cases from remote communal sections is that the mountainous terrain in these areas is not as conducive to the spread of *Vibrio cholerae*, the bacterium that causes cholera. Areas where water can carry disease, such as river valleys, flood plains, and coastal areas tend to experience larger epidemics (Piarroux et al. 2012). This is the case for Cote de Fer, Molas, and Tibouk.

Figure 3. Weekly Number of New Cases Hospitalized and Hospital Fatalities for the Department of the North, January 1, 2011 to October 19, 2012 (MSPP 2012)

Fatality rates vary by place of origin and suggest that higher fatality rates at the CTC may be related to the decline in health that comes with strenuous and long travel from distant localities. Fatality rates were low for most communal sections (<20) but were highest for Boucan Michel, Champagne, and Molas. Fatality rates were lower for cases from the town of Borgne and the closest communal section, Cote de Fer.

Figure 3 compares the effects of the epidemic in the commune of Borgne with other communes in the Department of the North of which it is a part. While Borgne is the largest commune in the Department, it is also very different: it is the most rugged, least urbanized, poorest, and most remote from Cap Haitian. The most significant difference between Borgne and other communes in the Department of the North is the absence of a third outbreak in Borgne during June and July 2011. ASB reported 68 cases in the commune during June and July with one fatality in the month of June. Other than this difference, the epidemic trends in Borgne match those for the Department of the North. It is not certain why Borgne did not experience an outbreak during this period, but we argue that significant investments into public health education, hygiene supply distribution, and water source improvement may have played a preventative role. The contributions of the ASB staff and in particular the work of the Wat-San technicians and thousands of volunteers (AJ+) in the commune involved in these activities cannot be overstated.

A comparison of fatality rates for the two outbreak periods, 2010-2011 (November to January) and 2011-2012 (October to January) shows fewer fatalities for 2011-2012 (Table 3). The decline in fatality rates may represent increased immunity to cholera by local populations. Additionally, lower fatalities could be attributed to the improved capacity of ASB to effectively treat cases, prevention and community education programs, and greater public awareness about the disease prompting people to seek care as soon as symptoms begin. This is accomplished through extensive public awareness campaigns held by ASB that include music, public theatre, and household visits.

New Social Activists and Rural Public Health

ASB's strategy to tackle the cholera epidemic was based on a community outreach approach that included a massive public health campaign. The campaign was informed by early realizations that cholera posed the greatest risk to remote rural populations and that the transmission of cholera was related to poor hygiene, lack of sanitary infrastructure, limited knowledge of cholera transmission, and the lack of effective water treatment options. The outreach model developed by ASB builds on an existing network of community health agents, mobile clinics, and ORPs. This network links ASB to each of the communal sections. The network structure and the individual actors in the network are influenced by KGPB

Table 3. Cholera Fatality Rate Compared, 2010-2011 and 2011-2012 Outbreaks, All Treatment Sites

2010-2011 Outbreak Month	Fatality Rate	2011-2012 Outbreak Month	Fatality Rate
10-Nov	4.80%	11-Oct	1.10%
10-Dec	3.20%	11-Nov	1.50%
11-Jan	3.10%	11-Dec	1.10%
		12-Jan	0.00%
Cumulative	3.70%	Cumulative	1.50%

and its leadership. Thus, KGPB is influential in shaping community health outreach and provides the ideological force used to mobilize popular support for the cholera program.

Alyans Jèn (Youth/Young Adult Alliance) is a social movement designed to mobilize people to become more active in their communities. Members of the program are called AJ+, and their role is patterned after the role of animate or change agents that shaped the gwoupman peyizan. Alyans Jèn has more than 3,000 members organized into 64 groups, each representing one of the 64 habitasyon in the seven communal sections of the commune (Voltaire 2012). AJ+ groups function under the leadership of the Wat-San team, and their objectives are to address the causes of cholera and diarrheal disease, achieve behavior change through community education, educate the population on the importance of using a latrine, practice good personal hygiene, teach how to use different techniques to treat water, and maintain and improve water sources and trails. The long-term goals of the program are to help reduce the rate of cholera in the commune by 90 percent, to improve health conditions in all remote areas, educate and sensitize the population to understand and act on risk factors that contribute to cholera and other water borne illnesses, and improve access to proper care for all (Voltaire 2012).

The AJ program relies on the collaboration between AJ+ and ASB, while HOPE/ASB covers material and labor costs. Decisions about projects are made collaboratively based on the evaluation of epidemiological data from ASB and community needs. During an interview, Patrick, who spearheaded the AJ+ program, works at ASB and informally serves as the commune's resident historian and anthropologist. He explains how the AJ+ teams coordinate these projects:

People [AJ+ and other community members] pool what they can such as food and tools, and they work together. We're able to stay here tonight because everyone is donating a little bit of yam, mango, some coconuts, bread, and coffee. People will give you a little bit of what they have, but if you need to get work done, they need stuff like pickaxes, buckets, cement. You can't find these things here; they need to come from somewhere else. It all starts with an idea, but it needs a technique that involves everyone working together hand in hand. When people

from the zone work together, their efforts are effective. The people are connected to their work because it's in the place they live.

The movement solidified quickly because the social infrastructure and ideology were already in place (Table 1), and ASB recognized the importance of using a capillary-like model to confront the cholera. Patrick describes the early days of the movement:

It started with an idea that Dr. Thony had [during the first outbreak]. He and I had a meeting in which he asked me to assemble people from all over the commune into a unified movement against cholera and to promote sanitation. [During the next several months], I worked quickly. Currently, we have 3,600 people from 64 localities working as AJ+. Their role is to do water and sanitation improvement projects. These projects include repairing trails, so they can deliver supplies and meet with people affected by cholera, clearing and cleaning springs in order to prevent the contamination of water sources for communities, and building and repairing latrines so that people who are sick with cholera do not contaminate others.

Following up on the formation of AJ+, a member explains:

Creating AJ+ requires sacrifice and commitment by everyone. The most important thing is forming the group. It needs to have a strong organization. Good group building is about "feeding" the members to make it grow.

The AJ+ provides the labor necessary for a public health response. According to the AJ+, the "+" represents the many different roles they assume from education to infrastructure repair. They interpret the "+" to mean that they are making a positive social impact and are improving their lives through service. A volunteer from Fond LaGrange explains what AJ+ means:

Positive means when we are positive in our actions. Alyans is when we work together, like we are married to each other or when we get together, foreigners too, to talk. We form alliances with groups from other areas, Tibouk [and other places]. We need to work together so we don't fall apart.

The challenges faced by AJ+ in fulfilling their vision include a lack of work tools, the large geographical area they need to cover, the difficulty of accessing remote areas, and the complications of traveling and working during the rainy season when anti-cholera activities are also most critical (Voltaire 2012). In spite of these challenges and with limited funding from the cholera intervention program, AJ+ has demonstrated its potential to become an agent of change in the community. Securing funds for the group would increase its ability to address the root causes of cholera and water borne illnesses and reduce risk factors for these diseases throughout the commune.

In collaboration with HOPE/ASB and Wat-San technicians, AJ+ participated in a commune-wide campaign that

included community education, distribution of basic supplies, and infrastructure repairs. Between June 2011 and December 2012, Wat-San visited 3,586 households to investigate cases of cholera and deliver supplies and information. AJ+ helped Wat-San distribute hygiene supplies to households in their localities: chlorine tabs, oral rehydration solution, buckets, drinking water, bleach, and bathing soap. They also conducted public education sessions about cholera and water borne illnesses. Between November 2011 and June 2012, Wat-San held education sessions for over 84,000 participants.

Distribution of chlorine-based water purifying agents such as aquatabs and *gadyen dlo* in combination with the sale of these items in the marketplace have made this the most accessible way to disinfect water. In a follow up assessment conducted by AJ+ in 2012, nearly all (99%) households surveyed claimed to have used chlorine tablets to prepare drinking water. This shows an improvement in clean drinking water practices compared to the start of the epidemic. This figure is also higher than the 73 percent of households in the Department of the North that use some form of drinking water treatment (IHE 2012).

AJ+'s engagement with cholera and community health draws on similar principles and structures as the peasant movement. There is an AJ+ group in each habitasyon of the seven communal sections. AJ+ members from habitasyon in the same communal section organize into coordination groups and send representatives to the communal level coordination group. AJ+ members also conceptualize development in similar ways as gwoupman peyizan do and express their conceptions of collective civic engagement with similar metaphors (e.g., *tet ansam*). Their approach involves a combination of popular education and development projects. Many AJ+ members belong to other local organizations, such as a gwoupman peyizan or a community development group.

Patrick explains the collective ethic that drives many people to join AJ+ and is critical to the foundation of the group:

They're all volunteers. I don't pay them. They move the sand, they mix the rocks, they do everything. There's a desire to help one another, pitching in, *men nan men* (hand in hand helping one another). I can go into an area [unannounced] and work on a project. People will see me working, and they will help. They will all contribute, and we will do a good job.

During an interview with a member of a local peasant group in a rural locality called Robin, he explains how he sees the work of AJ+ fulfilling a civic mission:

AJ+ [and other local groups] represent the principles of democracy, but they are not political. These groups have projects that are about addressing local needs.... With the AJ+, now families are given aquatabs [chlorine tabs] to treat their water against disease, are taught about how disease is carried by bad sanitation practices, are given soap to wash their hands so they don't spread cholera. Democracy is about how people from all over can benefit from the actions of these groups.

Development is a concept that has been localized in Borgne and has acquired its own meaning. Each AJ+ group has projects they want to pursue in addition to water and sanitation work. In the words of a group of AJ+ members talking about their work:

Development is when we get together.... We support activities, we work with our heads together, we advance together.... Development is about life. It's about improving life. Development is the first thing that is important in the population. Without development, we will live in a place that is not good. Development involves working with others [foreigners] to talk about what can be done in the zone. What is the consequence of not [improving]? There is sickness, like cholera, and suffering. If you don't have development in the country, people will suffer. For example, Haiti is underdeveloped, and many people die and children suffer. We need development to prevent children and youth from suffering. When people learn what they can do to develop the zone, they put their heads together and organize themselves.

Addressing water and sanitation for cholera prevention is seen as part of the larger process of development. AJ+ volunteers understand the connections between poverty and health and the value of cooperation and popular social mobilization. The lessons learned by the AJ+ will not end with cholera. Like the animate and other people in Borgne who are involved in community development projects, the AJ+ members are new social activists who will continue to use their knowledge, training, and social networks to shape future projects.

Conclusions

This article has explored the model of health care delivery and response to the cholera epidemic that was inspired by the peasant movement in Borgne as a means for mobilizing rural populations to participate in social change. It has described this model in terms of its social organization, geographic representation, and the ways in which its members promote social change through development activities. This model provided the structure and ideology for the rapid and effective mobilization of AJ+ to address the cholera epidemic in coordination with ASB. AJ+ aims to use a development approach to eliminate cholera in Borgne by addressing conditions such as contaminated water sources, overall lack of sanitary infrastructure, water treatment, community health education, and basic health services. Like the peasant movement, AJ+ sees the solution to cholera and other diseases as a model of development that reverses long-standing power structures that historically concentrate the benefits of development within urban and elite groups.

A comparison of cholera cases for Borgne and all of Haiti suggests that the early efforts of ASB may be responsible for the substantial reduction in new cases between June and August 2011. This is an important difference because surrounding departments reported a significant peak in cases for that period. Fatality rates from cholera were low and remain lower than other parts of the Department of the North. A commitment to

rural outreach through a cholera treatment unit in the center of the commune and oral rehydration posts in remote rural localities helped to reduce the number of deaths by reducing the time between onset and treatment. Finally, there has been a significant increase in the use of chlorine tabs and other chlorine-based products to treat drinking water, in knowledge about cholera, and efforts by communities to change behaviours around hygienic practices and improvement of sanitation.

The work of AJ+ and ASB represents an alternative to the top-down models of development that dominates foreign assistance work in Haiti. The model we outline seeks to reinforce local institutions, relies on collaboration with a number of stakeholders and local organizations, and stresses grassroots involvement, community education, and development of human potential. This structure and the people involved need to be acknowledged, supported, and incorporated in development initiatives in order to bring about meaningful change.

The model of social change and mobilization implemented during the cholera response program demonstrates the important role that local institutions can play in public health campaigns. Some of the questions that deserve future consideration include: How must gains be leveraged in rural health outreach to bring sustained and lasting change? What additional work can be done to contain the cholera situation in Borgne through collaboration between ASB and AJ+? How can this model be adapted to address other diseases such as water-borne illnesses, malnutrition, and even chronic problems such as cardio-vascular disease? In summary, the strides being made in Borgne to disseminate care in order to improve health outcomes is part of a broader shift in how primary care is delivered across rural Haiti. The redefinition of community health infrastructures is representative of the ideology and practices of both social activists and community health agents. The gains made toward more equitable and just distributions of health resources are part of a much longer struggle by the peasant movement to bring about the complete and total transformation of society that Leon envisions.

Notes

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