



Women's Foreign Policy Group
March 24, 2010
Washington, DC

Greg Allgood, PhD
Director of Children's Safe Drinking Water Program,
Procter & Gamble

Ambassador Sally Cowal
Senior Vice President and Chief Liaison Officer,
Population Services International

Eric Mintz, MD, MPH
Team Lead, Global WASH Epidemiology,
Centers for Disease Control

Delivering Clean Drinking Water to Earthquake Stricken Haiti

Patricia Ellis: Good afternoon and welcome everyone. I am Patricia Ellis, President of the Women's Foreign Policy Group, which promotes women's leadership and women's voices on pressing international issues of the day such as today's topic: Delivering Clean Drinking Water to Earthquake Stricken Haiti. We will be getting corporate, NGO, and US government perspectives on relief and recovery efforts. On behalf of the Women's Foreign Policy Group board members, and three of them are here right now, so I'd just like to recognize them: Carolyn Brehm, Donna Constantinople, and Gail Kitch, we want to welcome everyone here for this extremely important and timely event. Special thanks to Carolyn Brehm and her team at Procter & Gamble for their support of this event. We're very excited about it.

The meeting is so timely. As you all know, it's World Water Week. In addition, yesterday on World Water Day, Secretary of State Hillary Clinton gave a major address, and announced the Obama administration's focus on water and its importance as a national security and foreign policy priority. In addition, UN Secretary General Ban Ki-Moon said that unsafe water kills more people than war, and we have our partners from the UN here. This is emerging as a major, major issue, and we're so glad we can really deal with this issue.

The program today is part of our ongoing coverage of Haiti and our efforts to continue to shine the spotlight on Haiti after the devastating earthquake and relief and recovery efforts, and also to continue during the reconstruction because obviously things do not go away after such a tragedy. In fact, there are many, many problems, some of which we will be discussing today. Our first program in this series was a very moving event with the Haitian ambassador and his wife. They gave us a sense of what was going on on the ground, what was going on in terms of the relief and

recovery efforts, their needs and their hopes for future. To many Haitians, they hope that this tragedy will turn out to be an opportunity, one that has been missed many times in terms of Haiti.

Today, we are looking at the delivery of safe drinking water. There's a lot of concern today about water because of the oncoming rainy season in Haiti. We are joined today by a number of diplomats. I'd like to recognize the Ambassador of Angola and representatives of various other embassies. Henrietta Holsman Fore was supposed to be with us today. You all know her as the former AID Administrator, and we're proud to say she's a WFPG Board member. Unfortunately, she will be unable to join us today due to the death of her mother, so all our prayers are with her.

It's now my pleasure to briefly introduce our panelists, and what's really nice this time around is we have representatives of different sectors. We have government represented, the NGO world, as well as the private sector. I'm going to just introduce them briefly in the order in which they will speak. We have distributed handouts, so you have their full bios, so I'll just say a few words about them.

Our first speaker is Greg Allgood. He's director of Children's Safe Drinking Water at Procter & Gamble. He's been there for 24 years and leads their efforts to provide safe drinking water throughout the developing world. Greg was in Haiti right after the earthquake, and his remarks will be preceded by a short video.

Next, Ambassador Sally Cowal, a former Foreign Service Officer whose postings have included Ambassador to Trinidad and Tobago and who currently serves as Senior Vice President and Chief Liaison Officer for Population Services International, an international global health organization that has programs targeting malaria, child survival, HIV, and reproductive health.

Next, Dr. Eric Mintz, who has been the team lead of Global WASH Epidemiology at CDC—he will explain that—for the past 15 years. His professional interests have included interventions to prevent cholera, dysentery, typhoid fever, and other waterborne diseases in the developing world. He also visited Haiti at the end of January after the earthquake.

After the panelists speak, we will go to the Q & A, which is a very important part of the WFPG tradition, so we hope that you will have lots of questions. Before I turn things over to our panelists, I just want to mention some of our upcoming programs. We've had a very exciting season with a number of programs, and we have some exciting things coming up. Our Celebration of Women Diplomats and then at the end of April, our annual briefings by top UN officials. I'm sure we will be dealing with some of the issues that we are discussing today. If you are not already a WFPG member, we hope you will become one. Please join me in welcoming our panelists, Greg.

VIDEO: Everyone deserves clean water, yet before the earthquake, almost half of the Haitian population struggled to get clean water every day. In the aftermath, obtaining fresh water is nearly impossible, but vital. Clean water is not only essential for life, it can help reduce the occurrence of deadly illnesses and other waterborne diseases. Children are especially vulnerable.

Within hours of the earthquake, Procter & Gamble's disaster response team began coordinating with many humanitarian relief partners to provide cash and basic personal needs products, including their PUR Purifier of Water packets. P&G's non-profit Children's Safe Drinking Water Program has rushed PUR packets to Haiti. Humanitarian partner organizations on the ground are distributing them, working around the clock with P&G personnel to make sure that Haitians understand the process of transforming once-contaminated water into clean drinking water.

PUR works in three ways. First, it removes the dirt, the worms, and the parasites. Second, it kills the bacteria and viruses. Third, it leaves lasting protection in the water. These simple-to-use PUR Purifier of Water packets were developed by P&G and the U.S. Centers for Disease Control and Prevention. They contain a powder able to transform ten liters of dirty, contaminated water into clean and clear drinking water in about 30 minutes.

As part of its Haiti relief commitments, P&G will provide at least 6 million PUR packets through their partners—enough to clean 60 million liters of water. You can help provide safe drinking water. A \$10 donation can provide 1,000 liters worth of clean water in Haiti. That's enough for a family of five for three months. Visit soshelpforhaiti.org.

Dr. Greg Allgood: It's a pleasure to be here. That's a video that was shown on the Black Entertainment TV SOS Haiti relief concert that raised—they haven't released their totals yet—but we know that it's more than a million dollars for program implementation in Haiti. It's a great pleasure to be here. Thank you Carolyn and Pat for asking me to be a part of this. I think Carolyn contacted me while I was in Haiti and asked if I would do this. Something about a threat about not coming home if I didn't agree to do it. [*Laughter.*] I was in the Léogâne part of Haiti where people were collecting water that looks a lot like this, and we're going to show you how to make it clean as part of my presentation.

What I'll do is give you an overview of the global water crisis, what we're doing with household water treatment. We'll clean the water, I'll tell you specifically what we're doing in Haiti and also a little bit about Chile, and then I'll tell you about some other things we're doing to raise awareness. But let me start by saying what a great pleasure it is to be on a panel with Ambassador Sally Cowal and Dr. Mintz. I've known both of them for about a decade now, and it's fantastic to be on the same panel. They've both done so much for child survival and public health in their long careers, so I know you'll enjoy hearing from them.

We'll start by talking about whether everybody has safe drinking water, and, of course, they don't. The statistic that keeps in my head is the fact that 4,000 children die everyday from unsafe drinking water. That's more than die from HIV/AIDS, malaria, and tuberculosis combined. It's not only in everyday situations but also in emergency situations like in Haiti. Just about 200 million people every year are impacted by natural disasters, most in which safe drinking water is critical.

Because of the need for safe drinking water, there are a variety of approaches that are needed. One approach is to treat water before it's used, like we're going to show you now. PSI, CDC, P&G, UNICEF, WHO, and a number of other organizations have joined together to create a

network that focuses on this approach of treating water at the household level. There are a number of proven technologies, and if you'd like to learn more about that network, I would encourage you to go to the WHO website and learn more. More than 120 organizations have joined now; we have a secretariat in Geneva at the World Health Organization that promotes this approach of household water treatment because it's proven, it's scalable, and it's extremely cost-effective.

One such approach is the one that we'll tell you about. It actually goes back to about 1995, I think, when we first started working directly with the CDC. It was after—speaking of natural disasters—it was after the cholera outbreak in Latin America. You can use bleach, which is chlorine, to disinfect water, and P&G happens to have the leading bleach in Central America. It's called White Magic or *Magia Blanca*. It's great; you can disinfect water with it; it'll kill the bacteria that causes typhoid and cholera. But the problem is that if people have really dirty water like this, you can overcome the chlorine—so you can add more—but people won't trust it because people can't see the water becoming clear. So that led to the development of this little packet called PUR, and we'll use it to treat the water.

It's pretty simple to use. You actually add one of these packets to ten liters. And then you stir until the water gets clear, which is about five minutes. It'll take less than that because we're using a smaller amount of water. Then you let it settle, and you pour it through a simple cloth, and then you wait twenty minutes for it to be fully disinfected and safe to drink. PUR has the exact same ingredients that we use in municipal water treatment, so essentially, this is a mini water treatment plant in a packet. If you think about it, that's a pretty cool idea because of course people in Haiti, people in far rural parts of Kenya, they deserve access to the same water we have, and this is a way for them to quickly have it. We can transport this very simply, it's very stable, so when you think about emergencies like Haiti, we're able to get it in within about 30 hours. We wished it would have been even sooner than that, but that's pretty good considering what happened in Haiti. Global Medic was the first group there; we also happen to have a program in the Dominican Republic with PSI so we were able to take it over land, but I'll tell you more about that in a minute—I'm getting ahead of myself.

PUR works in three ways. It has a little bit of chlorine, so it kills the bacteria and viruses—just like simple chlorine solutions—that cause cholera and typhoid fever. It has iron in it, so it will cause particles to get larger and larger until they're too large to stay suspended, and they'll fall out of solution. That physical process is called flocculation. (I'm not going to try and make a scientist out of you. There won't be a lot of words like that.) Flocculation and coagulation physically remove things in the water, including bugs that are chlorine-resistant like parasites, like giardia and cryptosporidium, that are likely to be in water that you might be sharing with your livestock. PUR very effectively removes cryptosporidium and giardia. Then it has chlorine residual in it, so even if the cloth you're going to filter through, if your containers aren't sterile—and I can guarantee you they won't be in Haiti and other places—the chlorine will kill the germs that are in the containers.

These are just to show you—in case you haven't traveled a lot in the developing world—these are all current drinking water sources. People are drinking water that looks even like the one on your far left. It was hard for me to understand that when I first started traveling in the developing

world. The truth is, this is all that some people have, so they have to drink it because you have to have water to survive. We say that about a billion people don't have access to safe water. Well, they have access to water or else they'd be dead, but they have to drink water that looks like this. All of them were treated with one packet per ten liters and resulted in the crystal-clear water you see on your right, and, importantly, microbiologically safe water as well.

PUR is very, very effective at taking out the bacteria, viruses, and even the chlorine-resistant parasites. I won't spend much time on it, but because it has iron, it also will kill any of that arsenic, and it removes greater than 98% of arsenic. In some countries that's a big problem. Arsenic that's naturally in the water can cause painful skin lesions, cancer of the bladder, and very painful death, and this removes it very effectively. With the CDC and also in one case with Johns Hopkins, we did randomized control trials, which are the gold standard of scientific studies, and we showed, on average, that when people use PUR, it reduces diarrheal illness by 50%. You can do the math: 4,000 kids dying everyday, if you can reduce it by 50%, it can have a huge impact on public health.

Our goal is to provide a visual signal that it's working for the woman in Guatemala who wanted to see something happening; she wanted to see that her water was getting clearer. People typically in the developing world will trust that this works because they can see it with their own eyes. It's great that we have recommendations from public health groups, but for them the most convincing thing is that they can see it with their own eyes. After we invented this, we tried at first to make it available for profit, but we didn't have the infrastructure at P&G to reach the people that needed it the most. So in 2004, we created a not-for-profit. The company is committed—our CEO and our board—that we'll never make money on this packet; we'll never do it for profit. We'll continue to make it available as long as it's needed—not for profit ever. We do that through providing it for emergency relief—working with groups like PSI—and also sustained efforts, where it can be provided at a small cost—a subsidized cost, and Sally will probably say a little bit about social marketing—but we do that in a number of countries. Since we're focused on the emergency relief response, I'm not going to talk about that here today, but it's another important part—that we have sustained efforts in more than a dozen countries, where people can get it on an everyday basis.

We did the laboratory studies, we did the randomized control trials, but we also took a careful approach when it came to providing it for emergency relief. We started by monitoring its use to see if it was used correctly, to see if it was acceptable to people. And it happened to be that one of those first studies was in Haiti in about 2005 after Hurricane Jeanne took out the town of Gonaïves with floods. PSI went in with their social marketing techniques of educating people in churches and schools, providing PUR—for free in this case because of the disaster—and then a month later the CDC sent in their EIS officers to go household to household in far rural Haiti with mostly illiterate people, asking them if they knew how to use PUR. And they could tell us unaided that you add one packet to ten liters, you stir for five minutes, you let it settle, you pour it through a cloth, then you wait for twenty minutes before it's ready to drink. And so they were able to tell us that. Then Johns Hopkins did a study in Liberia with internally displaced people in refugee camps, and they measured a 90% reduction in illness, essentially obliterating diarrheal illness compared to what people were already doing and giving them safe storage containers.

So we started with some pretty nasty water, and in a few minutes, we'll have crystal-clear water. It will take another 20 minutes before it's totally disinfected. That'll be about the time that either Eric or Sally is speaking, so they can drink it. [*Laughter.*] We've drunk it before in a lot worse situations!

Since we had this data, it shows that it's pretty well-accepted and easy to use, and it's been used for most major disasters. The biggest, first one was the Southeast Asia tsunami, where we provided more than 13 million packets, and more recently, for the Swat Valley crisis. There are cholera outbreaks all throughout Africa; it's a lot worse now than it was a few years ago, in fact. Just yesterday, schools in coastal Kenya were closed down because of cholera outbreaks, because they didn't want cholera to spread. For example, in Congo, we've learned to target areas that have cholera outbreaks early so it won't spread. In fact, the government of the Democratic Republic of the Congo commended PSI for saving lives with PUR, which is really great when a local government recognizes the potential.

Move to Haiti specifically. I'm sure you've heard this before, and probably in a more personal way from a Haitian. I went there a week after the disaster. I went from Mount Kilimanjaro to Haiti in a week and it was really coming down quite rapidly, both literally and emotionally. Within a week, it was pretty amazing that water was already pretty much re-established. Not necessarily safe water, but people were getting water in Port-au-Prince. I was really struck by the fact that Haitians are such survivors. The resiliency of those people is amazing. I think most Americans would have given up. I've been to the Southeast Asian tsunami, I've been to the Pakistan quake, I've been to the Indonesian quake, I've seen a lot of disasters, unfortunately. This one is far worse. It's far worse than anything I've ever seen. It goes on for about 50 miles with most buildings down. And yet, already, in the first week I was there, they were digging out, burying their dead, doing the things they needed to do to survive. I look at it as they need our help, they want our help, but they're going to survive with or without us. We should help them as much as we can. One way is to provide a tool like PUR for them to clean their water with. It's not really needed in Port-au-Prince because PUR is really best where the water is dirty, so we're reaching into more rural areas. I was in places—you saw the film that Queen Latifah narrated for the Black Entertainment concert, that was some work done by Global Medic—where we're providing it where people were collecting it from rivers and streams.

The way we're able to respond so quickly is because of our existing relationships with CDC, PSI, World Vision, Global Medic, and CARE. We've been working with them for a number of years; they have people that are already trained, and standard operating procedures, and we have trainer videos. PSI already had materials translated into Creole, and they were able to make more materials that they could share, so that's how we're able to respond to those disasters. We're providing some now; millions of packets are on the ground. We're committed to provide at least 6 million. In my opinion, the next thing that we really have to be ready for is the rains, as Pat mentioned, and even worse—God forbid—a hurricane hits. Because the people are in these camps, there is very low sanitation coverage, which we need to work on, and if rains come, sanitation will go into the water sources they have. A lot of groups are predicting it could be worse than what has already happened, or as bad, as far as if a cholera outbreak started there or something. That's what we need to prepare for; we need to stockpile products like PUR to treat water.

Let me say just a few words about Chile. I'll be going there on Saturday. We also used our relationship with World Vision and a number of other local NGOs. Unlike Haiti, we have a presence in Chile as a P&G business, so P&G Chile really stepped up and was able to help us get product in and use our employees to help distribute product. Mostly it's needed in the coastal areas that were hit by the tsunami that was triggered by the earthquake, and so I think I'll spend most of my time when I go down in Concepción, where we're providing enough water to treat more than 2.5 million liters of clean water there in Chile.

I wanted to end by giving a quick summary, then I'll end on a slide on some things we're doing to raise awareness. We created the Children's Safe Drinking Water Program in 2004, approximate use in about 57 countries, and we've been able to provide under 90 million of these packets. That's 1.9 billion liters of water as a not-for-profit effort. Actually, we should surpass the 2 billion liter mark next week. We know where the product goes. WHO has data on burden of disease and the CDC-generated data on clinical advocacy, so we can reliably estimate conservatively that the 1.9 billion liters has saved more than 10,000 lives and prevented more than 80 million days of diarrheal illness. It is only a drop in the bucket compared to what we need to do. We've committed to provide at least 4 billion liters by 2012, but I want us to scale up and do a lot more than that. The company is committed to doing that. We are just about complete with tripling our capacity to make the PUR packets, so we'll be able to make hundreds of millions in a year if they're needed.

Onto that slide about things we're doing to raise awareness. This week has been great for that. I'm so glad that Pat mentioned Secretary Clinton's groundbreaking, historic speech on water. Aaron Salzburg, who works in the State Department for water—I said, "Was it hard?" and he goes, "Well, it took about 15 years." [*Laughter.*] It's really groundbreaking that the US is putting such a priority, as they should. And there's the Paul Simon Water for the Poor Act and the funding through Paul Simon Water for the World Act. We'd like funding for that to go higher than the \$320 million that it is, hopefully over the next few years and get up to half a million at least.

But it's not just that. Household water treatment is the approach to make current health interventions even more effective—HIV/AIDS and like malnutrition programs. The global health initiative that's part of the major development focus of the US, safe drinking water should be part of that, should be part of the child health programs. At P&G, we are doing our part to help raise awareness. One of the things we focused on is the fact that we know that most Americans do not know that more children die from diarrhea than from HIV/AIDS and malaria combined. And they also don't know that there are practical interventions that are scalable, proven, and cost-effective. We believe that if they knew those two facts, it would create a groundswell and there would be more support from Congress and the Administration to support safe water.

This year, we have a number of things that we are doing. Probably the most exciting, personally, is hiking Mount Kilimanjaro with Jessica Biel, Emile Hirsch, Lupe Fiasco, and a musician called Kenna, who organized the effort. About 50% of people who try to climb Mount Kilimanjaro make it to the top. We had an army because we had a production crew—we produced an MTV documentary that's showing now—and so literally there were 250 porters and 45 people. Some

of them had never hiked before, and some of them had never camped before, and all of us—100%—made it to the summit, which is really remarkable. It's really because we were focused on the cause, and it was called a summit because everyday we had conversations about the safe drinking water crisis. These celebrities that have their own constituencies that are so dedicated to raising awareness. It didn't stop with the hike. Kenna has been back to Washington twice; he brought the whole summit team here two weeks ago and met with Congressman Blumenauer, and there'll be more effort to raise awareness.

Our P&G brands are getting behind the effort. Our Cover Girl brand—that's one of the reasons Queen Latifah is involved—has a program called "Cover Girl: Clean Makeup for Clean Water." We're going to provide more than 50 million liters through that program. Our PUR pitchers and faucet mounts—the product in the US that you can buy to make clean, healthy water—every time you buy one of the PUR products in the US, they provide one of these packets in the developing world. We have a brand saver; it's a coupon book that goes in the Sunday papers. One of the brand savers was in March and it focused on water, and every coupon that's redeemed will provide a person with a day of clean water. Now that's a pretty good scope as far as coverage for P&G because it reaches 55 million households with these messages that I mentioned. If every house redeemed just one coupon for great savings on Tide, then we'd provide more than 110 million liters of clean drinking water. Those are the efforts we've done to raise awareness. So with that, I'll stop and turn it over to my colleagues.

Ambassador Sally Cowal: Good afternoon. I'm delighted to be here with the Women's Foreign Policy Group, and I thank Pat and Carolyn for organizing this session to talk about clean water and recovery efforts in Haiti. PSI is a non-profit, non-governmental social marketing organization for which I have the honor to work. It's not an emergency relief organization, but it has a strong presence in the health sector in Haiti, and we've been there since 1988. We work in partnership with the Haitian government and other Haitian and international partners such as the Global Fund, USAID, and the German government in the vital areas of family planning, HIV/AIDS prevention, malaria prevention, and diarrhea prevention and treatment. As you know, after natural disasters, the risk for epidemics caused by water-borne and vector-borne diseases, such as diarrhea, malaria, and dengue, increases exponentially. But of course the needs for reproductive health and HIV prevention don't go away either.

Haiti is on everyone's radar screen these days. Bill Clinton and George W. Bush were there on Monday. The World Bank President, Bob Zoellick, announced that much of the Haitian debt to that institution is being forgiven. Next week in Paris, there's a major pledging conference to raise money from governments around the world. All of this to rebuild Haiti after the devastating earthquake on January 12th. Although I personally have not been able to visit since January 12th, Haiti is a country that I know fairly well. As the Deputy Assistant Secretary of State for Latin America in 1991, I helped negotiate the agreement to get General Avril—the last military dictator who had replaced Baby Doc, who had replaced Papa Doc—to leave power and to leave the country. This paved the way for elections, which resulted in Jean-Bertrand Aristide, a former Catholic priest from a poor area of Haiti, becoming president. I was honored to be there with Jimmy Carter on Election Day, and I remember the joy on people's faces when they realized that one of their own—Titid, as they called him—had been elected. They contemplated an end to the

dictators, an end to the military rule, an end to the US Marines, and all that had plagued Haiti for the 200 years since its independence.

The joy was short-lived. Not only did democracy remain elusive, as coups and counter-coups dominated the next ten years in Haiti, but by the mid-1990s, Haiti had emerged as the Caribbean country most affected by HIV and AIDS, with the highest prevalence rates in the world after some countries in sub-Saharan Africa. The epidemic was fueled by endemic poverty and high rates of illiteracy. By 1998, when I next visited Haiti, this time as the Deputy Director of UNAIDS, one in twenty Haitian adults was HIV-positive. There were no ARVs—anti-retroviral therapy. To stand as I did in the impersonal waiting room of the only government hospital which did HIV testing in Port-au-Prince and watch young women, most of them with small children in tow, receive red slips indicating an HIV-positive test result was to witness a death sentence.

And yet through all the poverty and misery and sheer bad luck—floods and hurricanes and AIDS epidemics and now this terrible earthquake—the indomitable spirit of the people, their artistry, their intelligence, and their entrepreneurial tendencies shine through. It's what Greg called "resilience," and I think for anyone who goes to Haiti, it's a remarkable attribute. Even amidst the rubble, communities survive. This past Sunday, a *New York Times* reporter found Mimrose Marson, who fled her devastated neighborhood to take up residence in a tent city on the grounds of the members-only Pétionville Country Club. She was hanging embroidered draperies at her tent's entrance while her grandson decorated a sign which read "our house" in Creole. The Pétionville Country Club, home to at least 44,000 displaced people living under tarpaulins on a steep slope, has a quasi-mayor, a ragtag security force, a marketplace, two movie theaters, three nightly prayer services, rival barbershops, and even a plastic-sheeted salon offering manicures and pedicures. Everything is for sale, like hair extensions and baggies, padlocks for the wooden doors many have installed for their tarp-covered shelters. Inside a USAID tent outfitted with freshly made benches, on a flat-screen TV, an entrepreneur charges 12 cents for screenings of *The Terminator*. Another very young entrepreneur rents out his PlayStation. A woman runs a bar on top of a crate. And you can bet that the world's oldest profession has found a place to operate, too. This is Haiti post-January 12th.

My organization, PSI, harnesses the vitality of this kind of a private sector—the entrepreneurs like the bar owner, the barber, the movie theater operator, the madam of the brothel, and even the PlayStation junior achiever—to deliver life-saving messages and products, such as PUR and dilute sodium hydrochloride to those in need of safe drinking water. They deliver those products along with the services that they're already delivering in the communities. One of the most important things we need to do is behavior-change communications so that people know they're at risk for malaria, for diarrhea, for HIV, and for unwanted pregnancies and so that they know how to take steps to protect themselves. It's really all about the power and dignity of choice.

We use communications tools to change behavior. That's what we've been doing before the earthquake in Haiti and that's what we're stepping up our efforts to do even more of now. That means mass communication through radio shows and informational spots and outreach sessions with mobile video units and PUR educators at gathering points such as the water and food distribution points that you saw in Greg's video and the clinics at the tent city at the country club and hundreds of other tent cities just like it which have sprung up all around Port-au-Prince.

Maybe that movie theater operator can run a video about hygiene and hand washing before *The Terminator* movie. Perhaps the bar owner can make sure that the water he uses to mix with the rum has been treated to remove viruses, worms, and bacteria. And the brothel owner can certainly make sure that condoms are available for sale on the spot. The Ministry of Health—its capacity, like so much of the government, severely damaged—has asked PSI to be, in effect, its communications arm until it can get itself restarted again.

Before the earthquake, diarrhea was the leading cause of death for children aged 1 to 11 months in Haiti and the second leading cause for children aged 12 to 59 months, and risk will obviously increase due to the ongoing, continuing lack of water and sanitation and living conditions in the makeshift settlements like the one at the Pétionville Country Club. There are some 500 settlements like that around the country. So PSI, as you've heard from Greg, teamed with Procter & Gamble to immediately ship in 1.1 million sachets of PUR to Haiti. These were sachets which we had stored in our warehouse in Panama in the eventuality of a disaster somewhere in the region that would need some quick attention. These 1.1 million sachets will treat 11 million liters of water, enough for that tent city of Pétionville for nearly four months. We also distributed other life-saving water treatment products in Haiti before the earthquake. L'Eau La Vie, which Eric may speak more about, is a dilute bleach solution. We had 35,000 bottles of it survive in our own warehouse in Port-au-Prince, and we allocated that immediately to the Red Cross and Christian Aid to put into hygiene kits being handed out to survivors. PSI trained the partners in the use of the product, and these bottles will treat drinking water for 100,000 people for three months.

But what happens after three months to ensure that products like L'Eau La Vie and PUR are accessible across a country like Haiti in both rural and urban areas? PSI distributes and sells them, not only through health clinics and pharmacies and grocery stores, but also through smaller outlets run by private entrepreneurs just like those operating in the Pétionville Country Club. We use social marketing techniques—branding, marketing, and advertising—to increase demand and use of these products. Prior to the earthquake, the kiosks in Carrefour Feuilles, one of the poorest peri-urban slums in Port-au-Prince, was just one of the tens of thousands of outlets where PSI products could be found. The products are sold at an easily affordable price which ensures the sustainability of their distribution. For example, PSI/Haiti has no donor funds to distribute its oral rehydration product called Cell La Vie which keeps children from dying of dehydration after a diarrhea attack. Yet hundreds of thousands of these products continue to circulate in the markets of Haiti because there's a demand for them, because there's a need for them. People know where to get them and they can afford the price at which they're sold.

We'll continue that plan post-emergency—using the refugee camps in Haiti and those refugees who have gone into the Dominican Republic across the border and are living in the *bateyes* in the Dominican Republic and elsewhere—to reach people with messages that can save their lives. First, we'll distribute for free, but later we will establish demand and sell products—water treatment, mosquito nets for the almost inevitable malaria outbreaks which will follow the rains that begin next month, condoms, oral contraceptives, ORS—through small and large entrepreneurs, allowing them to make small profits and ensuring the products remain available to those who need them long after Bill and George have gone home and the world turns its attention to the next crisis, whether that's Chile or somewhere else.

I just want to close by telling you a small story about two of our people in Haiti who were there during the earthquake. Anick Suplice is our deputy director and has the highest rank of Haitian employees working for PSI. She was preparing dinner in her kitchen when the earth began to shake uncontrollably. She and her husband scooped up their children, and they raced out of their small home in the hills near Port-au-Prince onto the relative safety of the front lawn. Instead of seeing the city—and you’ve seen the pictures—Anick saw a cloud of smoke rising and soon realized that for all the disasters that had happened before, this was the worst thing that had ever happened in Haiti. Camped out on her front lawn and handling two upset children, Anick could do little but wait until news began to trickle in. Most phones were down for over a week. Roads had become impassable. Food had become all but impossible to obtain. None dared enter the buildings they left because the aftershocks an hour later reminded everyone how precarious their situation was.

At the same time, our PSI country director, Alison Malmqvist, and her family made their way to Anick’s home, a haven because of its outdoor space—Alison and her family were in an apartment—and began to plan PSI’s response to the disaster. The first task for Anick and Alison was to account for missing staff members—we have about 100 staff in Haiti. As the good news that most of the staff had survived the quake trickled in, Anick and Alison started thinking bigger and plotted an organizational strategy that married PSI/Haiti’s traditional strengths to the urgency of the moment. They realized it wasn’t so much to move the product as to use the product, to inform the people about the health risks post-disaster and the way to mitigate those risks. Even as PSI’s work moved ahead, the mammoth task of doing PSI/Haiti’s work will fall ultimately to the very Haitians whose lives have been upended by this tragedy. “I’ve been through the emotional test of going back into this building, but that’s not the case for a lot of people,” Anick said from her office, where we are now operating again, “and every building you walk into is a new kind of test.”

PSI is very proud to be working with partners like Procter & Gamble, like the CDC, and especially with the Haitians—the government and the people of Haiti—for a new future in Haiti, one that will be built on the strength and courage and pride and resilience and entrepreneurship of the Haitian people. Thank you very much. And just to show I’m a woman of my word, I’ll have a delicious sip of Greg’s water.

Dr. Eric Mintz: Thank you very much. I’m not sure how much I can really add to those remarks but I’ll try and say a little bit about the US government’s role in responding to Haiti. I do want to echo remarks made by previous speakers about the marvelous opportunity we see in World Water Week. We’ve been partners, our three institutions, representing three different sectors—the private sector, the NGO sector, and the government sector—for well over a decade. I think Sally and I go back close to two decades now. It’s been remarkable for CDC, a technical agency whose mission is the same thing as its name—disease control and prevention—to be able to work with these two wonderful partners to harness the manufacturing, the marketing expertise, and all of the business, the behavioral change knowledge and wisdom that they have and to combine those with our technical skills in public health, epidemiology and research and disease prevention and work together. I think there are bright things ahead if we continue to do that, and we are encouraged and inspired by Secretary Clinton’s speech that that will be possible.

CDC has been in Haiti for nearly a decade through PEPFAR, the President's Plan for AIDS Relief, and we have over 100 local staff there as well as a permanent CDC presence there. During the earthquake, many of those staff lost their homes, many of them lost their belongings. One CDC employee from Atlanta—who was there on a temporary assignment—lost her life, and that's only the second time CDC has lost one overseas. But we continue, and in fact, we responded immediately by sending experts from our International Health and Emergency Refugee branch immediately after the earthquake and from the Injury branch and from Infectious Diseases to support the Ministry of Health, to support our other partners—the UN agencies—in responding to this disaster.

I work in diarrheal diseases, so I don't often get to go to disasters. Actually most disasters are not followed by diarrheal disease outbreaks; Haiti may be the exception because the scale and scope of this disaster, as Greg mentioned, is unlike anything we've ever seen before. Disaster response is predicated on the UN agencies' organizing different clusters. There's a health cluster, a nutrition cluster, a water and sanitation cluster, other clusters for shelter, telecommunications, logistics, et cetera. USAID, the Office for Foreign Disaster Assistance, and CDC play a role in this as well.

There's a parallel and integrated US government response in Haiti. This involved OFDA, the Department of Defense, CDC, HHS (Health and Human Services), and other agencies, organized sort of parallelly in the same structures. There were a lot of meetings going on, a lot of coordination, and that is one of the things that even though the UN headquarters in Haiti was destroyed—the government ministries were, of course, destroyed—people were able to work together under remarkably difficult circumstances to respond to things. And I think things have gone well.

I'll show a few slides to try and get at what the US government response was. Remember I work for only one agency—CDC—in one area—the health and human services area—so I really don't have complete information to share with you, even if I had time to do that. The four areas that I'm just going to touch on briefly are mapping, assessments, procurement, and logistics. I have a series of maps. This is a Google Earth map. I have to give a shout-out to Google. They responded; they sent a team to Haiti to assist with the mapping. They've updated their maps on the Internet in almost real-time; every two or three days they have a new satellite image of Haiti, which has provided us incredibly useful information for the response teams. This map shows where the earthquake intensity was, graded on a color scale, of course, with the epicenter around Léogâne, which was completely flattened by it, and that is very close to Port-au-Prince.

This is another kind of map, and I was just fascinated by these. I hope they publish an atlas, and I hope I'm not boring you. This one uses satellite imagery to look at population density, so without having to go out into the field—which takes forever to count people and get an estimate of where the people are—you can do this from satellite photos. This plots that on a gradient over the area around Port-au-Prince. You can then take that information using the color gradient for population density and super-impose on it things like water distribution so we can track things—like where are the tanker trucks going, how much water are they bringing, where are the bladders, how is that being treated—and see where the match-ups are and where they aren't.

This slide shows standing water. Sally mentioned the outbreaks of malaria; dengue is another mosquito-borne disease. These mosquitoes rely on standing water to breed, and so we track that visually, map that according to where the populations in the camps for internally displaced persons are, and can get a better idea of where can we target our spraying, where do we target our prevention? This can be followed in real time. We're very concerned because, of course, the earthquake has left innumerable pockets where water will collect and where mosquitoes can breed.

This is focused on Port-au-Prince; it's a little closer image. You can see it's urban, and you get the sense that it's mountainous around Port-au-Prince. The hospitals and emergency camps are represented in red and green. This takes that contour map and shows it a little more graphically. The yellow triangles represent camps for internally displaced persons, and you can see some of them are in very low-lying areas. You can then project on that—where are the zones of risk for flooding? That blue does not represent ocean—at least not currently. It represents where the water is going to collect when the rains come. You can see very clearly many of those camps are in those areas, and some are on higher ground, where the risk of flooding is much less.

You can go even further. This is probably too complex. I think this is the last map, but it compares the situation on January 25th—those are the yellow circles where the camps were at that time, camps of 50 people or more—and the purple circles are more recent—March 16th. You can see people have been moving more away from the flood areas. The size of the circle represents the size of the camp. All of this mapping has been extremely useful, and we've never had this before. I've never seen this in any other disaster. It's a combination of HHS, DOD, Google, CDC, and many other agencies with expertise.

Assessments. One of the things that CDC participated in with OFDA and USAID is assessments of water sanitation and hygiene conditions in the camps. We chose a sample of 308 camps—there are many more—for these internally displaced persons around Port-au-Prince and outside of Port-au-Prince. A very brief survey—talking with camp committees, looking at the water sources, testing the water, visiting the households, seeing if people had soap, counting the number of people and the number of available latrines, et cetera—enabled a report to be made that would help target where the resources need to go first, where the highest risk areas for outbreaks are.

Water, as Greg said, was pretty well taken care of. Most of the camps had decent water; most of it was chlorinated. There were small camps that had been completely missed, and some of those were identified and that has now been corrected. Sanitation has been a bit more difficult problem, as is often the case. Very few camps—I think only 5%—met the Sphere emergency response standard, which is one latrine for 50 persons. Actually, if you look at the data, it's only about another 5% or 6% that had 50 to 100 persons per latrine, and where you get a big step up is in the 100 to 500 persons per latrine. Some camps had no place for sanitation, so it's open defecation or the use of plastic bags, which creates a waste problem, especially as the rains pick up. As that is spread around, it's a recipe for a public health disaster, diarrheal diseases disaster. So we are working to correct that.

Another assessment we did is looking at point-of-use water treatment—what Greg was describing—so areas that are not getting tankered water, camps that are not big enough to not have bladders, have other water sources and can use products such as PUR. This is Water Guard, the dilute bleach solution. This is the brand that PSI markets in Kenya. I don't have L'Eau La Vie, which is the Haitian brand, which is also very popular. There are many other products. These are aqua-tabs, simple pills often used in emergency response, and many of those were donated to the response efforts in Haiti. At the bottom of the scale, you can actually make chlorine yourself. You can do this at home if you get the right machinery. It's very simple. You put electricity through salt water and that produces sodium hydrochloride, which is bleach. It's a low strength; it won't get your clothes whiter than white, but it will kill the bacteria in your drinking water.

We work with many faith-based institutions. Haiti is a very rural area, despite being a very small country. There's mountains and there's lots of small villages that are beyond the reach of social marketing, beyond the reach of the commercial sector, and in these remote areas, they too can treat their own water with a product that they can make locally from salt water. So it's a wide range of household treatment options.

In this assessment, we tested water in a number of places. We asked about knowledge, attitudes, and practices; where are the products going and are they targeting the right places? Obviously, PUR is extremely well-suited for turbid water; other products can be used where the water looks clean but is not safe to drink. That was, I think, very helpful to identify specific areas. All of this goes through the WASH cluster and gets fed back to the camp committees and to the different NGOs and relief agencies working there. Your water is good; your water doesn't have enough chlorine; there's soap in your houses; there's not soap in your houses.

This is procurement, which of course is one of the things that the US government does best. Through OFDA, 3,000 mobile latrines have been procured. Many of the camps are in areas where you can't actually build latrines. Those that are in the flood zones near the shore, when you dig a hole for the latrine, you get water and sludge. Those have been procured along with de-sludging trucks which you need to clean the latrines out so that they can continue to be useful over the long-term. Gerry cans—so that water which is treated, water that has chlorine, is safely stored and doesn't get re-contaminated by hands or other things getting into it. Hygiene kits—working with many partners, these were distributed.

And I think, finally, the DOD was extremely helpful from the beginning. My hat's off to all of them. They provided critical support for moving the latrines, the soap, the PUR—all of those things—into the airport. The airport was very badly damaged; the port, which was damaged, they rebuilt it, it was damaged again in the aftershocks. Being able to get goods into the country was extremely useful. Their helicopters made these assessments possible in rural areas. All of the mapping that I showed you used their skills and their logistics as well, and distribution of things to rural areas. So they've been wonderful. Now with the sanitation problem, we've decided that the new slogan should be "Send in the latrines." The Marines are great too. [*Laughter.*] That's all I have to say. Thank you.

Ms. Ellis: We are going right to the Q & A. We're going to take questions together. I'm going to just open up with two things. I'd like our panelists to address number one: everyone's talking about the rain. How are you really getting prepared for this? One of the things we keep hearing is people have to be moved out of Port-au-Prince. I don't know what you think of that, but what kind of measures can be taken? On the cooperation front, I've heard all of you talk about collaboration, but my question is: I've also read that more and more people are now jumping on the bandwagon on water. You have international organizations, national governments, NGOs, private sector, so many different groups. I'm wondering if you can all address coordination and how to make it effective and improved. Thank you.

Dr. Allgood: For us, PUR specifically, I think the important thing to do is stockpile the product there so we can be ready because logistics have been difficult. We over-landed some things through Santo Domingo; we need to get a stockpile there so we can respond rapidly.

I think coordination is getting better and better in the WASH sector, and it's come a long way since the tsunami when it was really bad. Still—and I didn't know about these maps—it's hard to emphasize how important they are because even a week after, it was still pretty frustrating. We had a big board where people could write who they were, where they were working, and what they were doing, and that's what we need: maps, so people know exactly and you can divide up who's working where and who's doing what.

Ambassador Cowal: Well, you asked specifically about what we're doing about malaria. In a public-private cooperation, we received a donation of 5,000 nets from Sumitomo—that's one of the big mosquito net producers in the world. That's en route, so we hope to be able to get those distributed. We're hoping to get another 40,000 donated from the Against Malaria Foundation. We'll do the distribution of those nets the same way as the water, in collaboration with some messages telling people that they're not wedding dresses or fishing nets, that they're made to be put over beds and people should sleep under them and who's most at risk are small children and pregnant women, so if you don't have enough nets for everybody, you should give priority to those who are most at risk. Of course, we'll work with other relief agencies as well as with the US government and the UN to coordinate that.

I would agree that in the WASH sector, I think things are getting much better. Certainly what we've seen this week is that the profile of making Americans recognize that diarrhea is a huge problem in the world. I think we've taken several steps in that direction this week, so I'm encouraged.

Dr. Mintz: I'll try and address both questions. For the rains, one of the things—actually what I was working on in Haiti during the two weeks I was there—was not WASH issues specifically, but we worked on surveillance. Within 12 days of the earthquake, there was a national surveillance system re-established for disease reporting. How many cases of bloody diarrhea, how many cases of fever that could be malaria, how many cases of measles or suspected measles across the country? We've learned that we can't prevent the rain, but if we can pick up disease outbreaks quickly—whether they're related to water sanitation, hygiene, or other factors—we can respond quickly and have a much better chance of containing them. We've worked with a laboratory to build their laboratory capacity. This will also transition. The earthquake was

already several months ago; the disaster is going to continue in chronic form for many years. This need to move away from the emergency response—putting out the wildfire now—to a broader vision of how we're going to transition to a sustainable, functioning government, how we're going to re-establish those institutions is an important part of our focus.

We're very concerned about the rains. There are plans to resettle people in areas of higher ground. I think they're struggling to find where those areas are, how they can move that many people, but that effort has begun. I agree with Greg and with Sally that the coordination of the WASH sector has been much better this time, and UNICEF has taken a leading role in making that happen.

Question: Hello, I'm Margaret Hayes with Evidence-Based Research. I'm especially interested in the process of learning lessons that have occurred over these various disasters. My specific question would go to your assessment of the capacity of the Haitian government. What role has it played from the beginning? I think you suggested that at least there was some initiative on the part of the Ministry of Health, but what attention do we also need to pay to the longer term capacity-building in that sector in Haiti?

Donna Constantinople: I wanted to ask about the rains, continuing on this water theme. To what extent will the rains, which we keep hearing about, literally wash away all the relief effort that's been done to date? Are they that drastic in terms of the impact, and if so, how long will it then take to re-create all that capacity? Where will it come from? Is that kind of contingency being planned for?

And a quick follow-up that has to do with housing. I know that tents have been housing of need at this point, but is there a reconstruction plan in any way, shape, or form afoot that would bring in pre-fab housing, something else that's going to be better as they face hurricanes and rains?

Question: My name is Jenni Rothenberg. I'm with the Modernizing Foreign Assistance Network. I'm just curious. We've touched on the fact that we're over the emergency stage and now we're focused on long-term development, or we're starting to get there. I think a lot of people will say that Haiti has been a failure as far as looking at it from a development stance, and I'm just curious as to what each sector is doing to ensure we're meeting long-term development goals and whether you're engaging—even when you're not the government side—on Capitol Hill through some of the processes that are ongoing right now, giving feedback into the QDDR, and if you're going to engage in the foreign assistance sector because I think there's a lot of room for private sector and NGOs to continue outreach.

Dr. Mintz: Great questions, all of you. In terms of the role of the Haitian government in response, we were sleeping in tents near the laboratory—actually on the roof of the laboratory—and it was pretty difficult. Each day, the laboratory workers and the director of epidemiology and laboratory research would come in and in getting to know them, we realized they were sleeping in worse conditions and enduring much worse conditions than we were. And they were there, and they were working. Sometimes they couldn't come in, and they'd apologize because they had to visit a relative in the hospital, they had to take a child to the doctor, they had to stay in

their house because there was no one there and if they didn't stay there, it could be looted. The resiliency that Greg mentioned and the incredible spirit of the Haitian people was very inspiring.

The government was decimated. The government may not have been in that strong of a position before the earthquake, and it's going to take a lot of time and a lot of work to rebuild those institutions: public health, transportation, the basic functions that government provides for its citizens. I do hope there will be a long-term commitment from the United States government, from other partners to see that through and hopefully end up with a stronger nation than before.

Our work at CDC is focused on the health sector. There is a supplemental that I think would go through the State Department and USAID and would help support the effort to train doctors, nurses, epidemiologists, and laboratory scientists, and ensure that there is a viable public health system to meet the needs—not just of today or next month when the rains begin, but going beyond that.

I don't know how bad the rains will be. The situations in some of the camps—as Sally mentioned, steep hillsides—are really quite precarious. All of us who have been there and seen it are very concerned. But we hope by working as quickly as possible, trying to get the sanitation, water, and hygiene in place, doing insect control, rodent control. It's incredibly important and it's not talked about very often. Maybe the *New York Times* will do a story on that soon. It's a huge problem. It's a huge problem after earthquakes. You have to go very far back in history. You have to look at Lisbon, which was decimated by an earthquake. London was destroyed by an earthquake. There are very few times when the disaster has occurred in the capital city of the country. And that has a unique effect in weakening government, weakening all those institutions that you just don't see when the tsunami is outside of Jakarta. There's much more of a viable local presence. There were opportunities there, too. London was redistricted. They just decided, okay, we're going to take 10% of everybody's land, and we're going to rebuild the city in a more sensible way. This may be possible in Port-au-Prince. It's a big opportunity but a very big challenge.

Ambassador Cowal: In terms of the Haitian government and the role it plays in capacity-building, what Eric said resonates with me as a person who happened to have been in Mexico City at the time of the 1985 earthquake in Mexico; that was a capital city earthquake as well. It did rebuild itself but in quite a different way—as Margaret knows—with quite different institutions. That earthquake, I think, led to end of the PRI and the beginning of a more multi-party, democratic system in Mexico because people had to rely on themselves, and they couldn't just rely on the government and wait for the government. This could well pave the way for a new look at Haiti.

I'm no longer a diplomat and not on the ground, but that would be my hope, that through these self-help groups and the entrepreneurs, people are really getting the sense that they *can* do things for themselves. This tremendous vibrancy should translate into getting a government in place that the people of Haiti do deserve. They are in certainly better shape than they were 10 years ago, 15 years ago, 20 years ago. I see the government of President Preval doing a very good job on the world stage. They are reaching out, they are getting into fora, they do have legitimacy, and I think that will certainly help these efforts.

I can't really comment much on the rains. We're looking at the possibility of not only increasingly bad sanitation and trying to get messages out to people, but also the dengue and the malaria. Dengue tends to be more prevalent in the Caribbean than malaria, and dengue is best controlled by fogging these ponds of stagnant water. We don't do that kind of thing; the government will do it. Other relief agencies will help people understand what it means, why you shouldn't have stagnant water around, how you protect yourself against the fogging and those kinds of things.

All the non-governmental organizations who work on the international scene—a lot of the private sector also—are very involved and engaged in QDDR, the whole foreign assistance reform through the global leadership organizations. We're all trying to track it and as far as possible, put our input to it. It was going to be announced this week and was delayed for a couple of weeks, so maybe that's to get all our input. Who knows?

Dr. Allgood: I'm encouraged that, more than during the tsunami, there's been a lot of discussion that we don't need to do relief, we need to move to recovery. Even before the tsunami hit, President Clinton was designated by the UN to help with Haiti pre-earthquake. That same group that had already formed that P&G was a part of has convened around the Haiti earthquake, and they're talking about not just relief but recovery, which was very encouraging. They have a conference coming up in I think about another week where they're talking about how to best design recovery in Haiti.

For our company, we've already committed or provided \$3.5 million in product or funds for Haiti. I'll go down sometime not too long from now and assess what's next. Products and our services for relief will continue at least for another year, and I'll base what we're going to do based on the trip I do down there. The best thing we can probably do as a company is help create jobs by selling our products down there. We have some small distributors but hopefully that will grow. The recovery of Haiti will be based on—as Sally described so eloquently—their enterprising spirit that was there within days of the earthquake. It will help build P&G's business and build jobs in Haiti.

Question: Jamie Bay with Devex. You were talking about all the response to Haiti, and I think the Ambassador mentioned that some resources were coming in from the Dominican Republic. My question is actually about the Dominican Republic. Obviously they are taking a lot of downstream impact from population migration. Eric, what is CDC doing with some of the metrics that you're tracking in Haiti? Is that process also happening in the Dominican Republic? Same thing with Procter & Gamble. Is there a presence not only in terms of transport from there and using that as a hub, but for actual distribution to some of the populations that have migrated into the Dominican Republic?

Question: Beatrice Daumerie from Population Action International. I have a very short question to Greg Allgood. I was just wondering if the packages of PUR, are they eco-friendly, and if not, is it possible to make them? Would it take a lot? Hundreds, 90 billion packages? It would be great.

Question: Hi, my name is Yaomin Chong, I'm with International Action, or haitiwater.org. Eric, I wonder if you have a map of Port-au-Prince that USAID created. It shows refugee camps and water pipelines, as well as water tanks. We have provided a list of the water tanks with the geographic coordinates to USAID, GIS team, Travelwide and his mapping team. They created a map of Port-au-Prince, which I can send you by email.

The second thing is that the US military shipped five tons of chlorine tablets to Haiti about a month ago, and it's sitting at our warehouse in Port-au-Prince. We reached out to other NGOs that provide water using private truckers, but we still get a report that they distribute contaminated water. I wonder if CDC can help us reach out to other NGOs and provide those chlorine tablets. There is no cost involved. We just provide them for free.

Dr. Mintz: Thank you very much for your question. I was working on surveillance—not on WASH—but we have a CDC person detailed to OFDA who was in Haiti for about eight weeks working with the WASH cluster and doing the assessment. The assessment I mentioned of the different camps—they tested the chlorine that was arriving in the camp via the tanker trucks, and they tested the chlorine in the homes where the water was being stored and being consumed. What they found was a good correlation. If there was a little chlorine in the tanker truck, that's good, but it didn't stay; there wasn't enough to last in the household environment, so the recommendation was made for those camps to increase the chlorine.

There were some camps where there was no chlorine. In fact, instead of receiving tanker water, they were receiving other water sources. Initially, most of the water was provided through the city of Haiti and was treated with reverse osmosis. It doesn't chlorinate the water, but it is a good process for getting bacteria out. But because the conditions in which people are living and drinking this water are so exposed to the open environment, we have very strongly recommended that there be residual chlorine in the water. They've moved away from reverse osmosis to chlorinated water. We'd be happy to work with you. I can give you my card after the presentation to try and make that happen for the camps that need it. Thank you.

Just one question that we didn't answer before that someone asked was about housing and pre-fabs, and I think we didn't answer it because we don't know the answer to it. I'm sorry about that. At least, I don't know the answer to it. It's a great idea; everybody has thought of it and talked about it. But we're talking about a million people. That's a lot of pre-fabs to move; that's even a lot of pre-fabs to find. There was talk about insecticide-impregnated plastic sheeting—people are living under plastic sheeting. There is a product that combines the same chemicals used in malaria bed nets into the sheeting, so it would be dual-purpose. Great idea, we contacted the manufacturer. They said, "How much do you need? Yep, we can have that ready by July, maybe August." So I think the pre-fab may be part of the same problem. I don't know because it's not a sector I work in, but remember, we're talking about a million people, and that takes a long time, even in the US, to construct that sort of housing. But I think that is the route to get to a healthy economy, the way to get to a more sustainable stage.

Dr. Allgood: I'll start with the packet question, and then there was a question about the Dominican Republic. Also, the product sitting in the warehouse, let me briefly comment on that. We've learned that it's not just the product, it's the education and training. So if the groups

aren't funded or don't have the capacity to train people on provision of these products, they do sit in a warehouse. Eric has said it to me before that trying to introduce a new technology in an emergency is like going to a fireman during a fire and saying, "Here, try this new hose." It's not the right time to introduce a new technology. Monday, we announced with USAID an alliance to not only stockpile product in Latin America but to train relief groups beforehand, which is really the right approach to take to make sure these products are used properly.

The packaging is to keep it stable. The enemy of chlorine is air and moisture, so it has a plastic lining. We don't have a way to keep it stable and not have that plastic lining. Most people we serve in Africa and other places still cook over open fires, and it burns readily and goes away. You can landfill it, but most people actually just burn it. What's in the ingredient is mostly iron and clay—those are the biggest two ingredients—so it's completely environmentally neutral. We hoped it would help grow plants, but we tested it, and it doesn't help. The earthworms are happy, but they're not any happier.

In the Dominican Republic, we do have a thriving business in the Dominican Republic, and they stepped up and helped Haiti. I don't know if you've been to the Dominican Republic and Haiti, but there's a little friction between the two countries, and it was, in my opinion, really, really heartening to see how the Dominican Republic responded to Haiti. It was really, really neat. In fact—don't tell Carolyn—but I had to hitchhike in and out of Haiti, and a gentleman who runs a concrete company in the Dominican Republic was gracious enough to give me transport. It's really cool how the two countries are coming together.

Ambassador Cowal: Let me just add on the Dominican Republic. We have had an office in the Dominican Republic—not for as long as we've been in Haiti, but for several years—and now we've established a second logistics office for Haiti in the Dominican Republic because it doubles our capacity. There are still great challenges to moving around Haiti, getting enough fuel, doing anything there. And the distances, fortunately, are not very great. We're providing a lot of what we're providing through the Dominican Republic, and yes, the cooperation has been very good.

Dr. Allgood: PUR itself, I mean, a lot of Haitians live in *bateyes*—sugar cane plantations that have now been abandoned—and so we're providing PUR in those sugar cane plantations. PSI is doing it for us on behalf of the Cover Girl brand.

Question: I'm Tanvi Nagpal from Global Water Challenge. Perhaps it's a little early to ask this question, but just a quick question regarding reconstruction that's coming up. What, if any, has been the role of the private sector that was nascent in Haiti before, in terms of the large families that really controlled a lot of the wealth in Haiti before? We heard that there were 40 to 50 that are really prominent business owners in Haiti, and they will be there for a really long time. I was wondering if you knew how they were going to be involved in the reconstruction of their own country.

Question: Nancy Berg. This is a question for Dr. Mintz. You showed the wiring diagram with all the different agencies that were working. It looked like really a whole government effort; I

think it was termed that. I just wondered how that worked. I think we're fairly new at that, so I was curious about how that had worked and whether there were some lessons learned from it.

Question: Hi, my name is Jeremy Mack. I'm from International Action, also haitiwater.org. My question is for Dr. Allgood. We've been focusing on chlorinating public water tanks and also water supplies for schools, clinics, and orphanages in and around Port-au-Prince. We have also been asked by the government to move our work over to Léogâne, but the areas between the two cities, there are a lot of rural areas that have not received water whatsoever and because of the conditions there, we cannot put in chlorination systems. They have a lot of destroyed wells and also open water sources. We've gotten many requests to help there, and I'm wondering: What is the process to get supplies of these PUR sachets? Also, where did you get the water sample you tested today?

Question: My name is Quentin Kelly. I'm chairman and CEO of World Water and Solar Technologies in Princeton, New Jersey. This isn't really a question, but I think you'll find it of interest what I'm about to say. First of all, it's really nice to hear of all the good cooperation between the private sector and the government and NGOs. By serendipity, we had shipped one of our solar water purification units to Haiti for a school. It was donated. Well, the earthquake hit, and our unit was buried. The French Red Cross and one of the people who knew about our system went looking for it, dug it out of the rubble, moved it over to the base camp of the International Federation of the Red Cross, and the system began to work. The solar water purification system pumped 30,000 gallons of purified water every day. So the Red Cross of Spain, France, Germany, and Belgium, they all began to come to the IFRC base camp, and we were supplying over 100,000 liters of clean water to the people in Port-au-Prince. For the first several days, we were the only ones until your PUR came in. And we have done this every day since. It's a 24-hour system. This is part of the sustainable answer, I believe. We now have shipped in more, and they are all producing this amount of water, so it will have some significant benefit there. I just thought you'd be interested in that because we were lucky that we were there when it happened.

Dr. Mintz: I'm picking up where we left off, the Dominican Republic, I'd agree, has been very helpful through PAHO and also directly from the ministry. When I was there, a pastor from the Dominican Republic who had come to Haiti after the earthquake to provide assistance became very ill—high fevers, stiff neck. He returned to the Dominican Republic and died of meningitis. Meningitis is a very communicable disease, and we were very concerned about the health of the people with whom he had come in contact. The Dominican Republic was very forthcoming. They sent us all of the information. They sent the islet to CDC to be tested for antimicrobial resistance. Fortunately, there were no other cases. The Dominican Republic, their laboratory provided free agents for measles testing to the Haitian laboratory when there were suspected measles cases in these camps, which would be another public health problem.

I do not know anything about the role of wealthy Haitians in reconstruction. Sorry, can't answer that one.

The whole of government approach, Nancy, you asked about that. I think it worked really well in Haiti in large tribute to Ron Waldman who was designated by the State Department and USAID

as the coordinator for all the different sectors, and there were many. Ron spent his days in meetings and somehow still found time to get out to the sites, to get out to the camps, to see firsthand what was being done, what were the problems on the USS Comfort that was doing surgeries in the first few weeks there, what were the problems with food distribution. He did a fantastic job. He's very experienced, and I think everyone felt inspired to collaborate across the government because of his insights.

Point-of-use in rural areas, yes, that's a very good point. I think in Port-au-Prince most of the water is tankered, it's provided in bladders, it's chlorinated centrally, and it isn't as necessary in many of the camps—not all of them—for people to add chlorine or treat it with PUR or with solar disinfection because it's coming to them as clean water and with a chlorine residual that will keep it safe from recontamination. In the rural areas, it's an entirely different story. Rehabilitating those wells is going to take many, many months before that can become a priority, so point-of-use treatment there is the best option. The fact that we had programs—all of us—in Haiti before the earthquake—materials in Creole language, public service announcements—that these are familiar products, makes it much easier, I think, than if we were starting from scratch and bringing a new hose to the fire, as it were. We'd be happy to talk further after this about how we can assist with the specific areas you identified. And solar technology is something that we work with. We work with the SODIS group out of Switzerland, and they have programs in a number of countries, and they're part of the network that Greg mentioned of organizations that provide household water treatment for those in need. That's all I had on my list.

Dr. Allgood: Usually, quickly, we don't respond to groups we've never worked with before, but in any disaster we find new groups to work with. We just counted up; we're now working with 93 organizations. It's a process of networking to form these networks to work with. We're very interested in working with you. In the central areas, PUR is not needed—in Port-au-Prince, more central places—but as Eric mentioned and the gentleman just said, in the rural areas we're probably going to see the need for PUR for at least another year, so we're very interested in doing that.

Ms. Ellis: I just want to thank our speakers so much. It's been an excellent program. We also had great questions. We will stay on top of this issue as it relates to Haiti and water, and we'll definitely keep following it and reconvene. I just wanted to thank you all so much. Let's give a round of applause for our speakers. [*Applause.*] And thank you all for coming. We'll see you next time. Thanks a lot.