

Perspectives: Hurricane Maria – global disaster, local response

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Introduction

When the editorial board of the Journal committed to an issue focused on Global Health, we could not have predicted the series of hurricanes that devastated the Caribbean and Puerto Rico in late 2017. Months later, some of Puerto Rico is still without power, and the disruption to the infrastructure, ecosystem, and residents of this beautiful island continue to this day. Life is slowly returning to a new normal for those affected, but it will doubtless take years for a full recovery.

In the days following the hurricane, one of the most difficult things was simply not being able to communicate with my grandparents, cousins, aunts and uncles, and with my friends. Communications gradually improved, with texting being one of the first, best ways to reconnect.

Even today, the power is still intermittent, and some areas may never be fully restored. The power lines and infrastructure were already in bad shape, Maria dealt a final blow. – Carla Aponte

Hurricane Maria formed in the Atlantic Ocean on September 16, 2017, made landfall on the island of Puerto Rico on September 20, and had dissipated by October 2. Maria lasted 17 days, and directly impacted Puerto Rico for over 24 hours. Even after internalizing the data, images, and news reports, it is difficult to imagine the magnitude of this disaster, both during and after the actual storm.

This article brings real, first person accounts of local recovery efforts. In the days after the storm, a group of concerned and affected employees at Christiana Care Health System (CCHS) quickly formed. We heard their stories, their anguish, and their uncertainty. These stories needed to be told: to inform, to inspire, to serve as a warning, and above all, to heal.

Background

According to the National Hurricane Center and strictly by the numbers, Category 5 Hurricane Maria is now regarded as “the worst natural disaster on record to affect Dominica and Puerto Rico.” It is the 10th most powerful Atlantic storm on record (in a hurricane season that was extremely active). With sustained winds of 175 miles per hour and up to 38 inches of rain, Maria caused 18 times more damage in the U.S. Territories than the second-costliest hurricane on record (Hurricane Georges, 1998). The actual death toll may never be known, but it is telling that while the official death toll is 65, a recent study in the *New England Journal of Medicine* estimates deaths at over 4000.¹ It is estimated that Maria cost \$90 billion in damages, devastating the entire island of Puerto Rico and its infrastructure.² To give some idea of the magnitude of this devastation, the 2019 budget for the State of Delaware (SB 235) is \$4.2 billion dollars.³

On October 30, 2017, a volunteer group from the Christiana Care Health System (CCHS) community (including Dr. Anand Panwalker (Internal Medicine, Infectious Disease), Jacqueline Ortiz (Diversity & Inclusion), and Dr. Omar Khan (Family Medicine, Global Health Residency

Track)) organized a global health education discussion to talk about the hurricane. During the meeting – which was open to both CCHS employees and residents of Delaware - support for colleagues and friends impacted by the disaster, probable health impacts to the residents of the island, and what type of response would be helpful were discussed.

Attendees had an educational, emotional and cathartic meeting. Participants spoke of a sense of helplessness and frustration at the official response (or lack thereof). There were several first person reports, both from those who had visited the island since the disaster and those who had been unable to communicate with relatives due to the total devastation to the communications infrastructure.

The group resolved to provide support to one another. Community resources were pooled and common strategies were discussed. Individual volunteers agreed to help fund generators sent to the island, to gather needed supplies, to help when able (and more importantly, to stay out of the way if warranted). Resources from the CCHS were reviewed, including the “Care for the Caregiver” program.

On November 6, 2017, at the annual meeting of the American Public Health Association, the Puerto Rico Public Health Association communicated their significant “on the ground needs” with which affiliates and local groups and individuals could assist.

Puerto Rico Public Health Association has 3 representatives here at APHA. They talked to us on Affiliate Day about the needs and also about their work getting supplies to those who need them the most. PRPHA works with community organizations to distribute supplies. Attached a list of items that can be very helpful to support the people in need in Puerto Rico. In addition, donations to PRPHA (tax deductible) will help with the expenses of distribution as well as supporting the Association in this challenging time. Please give what you are able. And please distribute this information.

ELECTRONICS: Batteries, Flashlights, Lanterns, Solar Lamps, Battery Operated Fans, Portable Radios, Water Filter Systems (Reverse Osmosis or Tested and Certified to NSF/ANSI Standards)

FIRST AID: First Aid Kits, Band-Aids, Gauze Pads, Antibacterial Wipes, Aspirin, Ibuprofen, Acetaminophen, Anti-Diarrheals

OTHER/MISCELLANEOUS: Mosquito Repellent, Sun Block, Work Gloves, Pop-Up Canopies, Tarps, Canned Pet Food, Condoms

HYGIENE ITEMS/TOILETRIES: Feminine Hygiene Products, Toilet Paper, Diapers, Wipes, Diaper Rash Ointment, Adult Diapers, Disposable Bed Liners, Toothpaste, Toothbrushes, Dental Floss, Soap, Shampoo, Hand Sanitizer, Paper Towels

FOOD: Canned Items, Nuts, Ready-to-Eat Meals or MREs, Nutrition Bars, Boxed Milk, Baby Formula, Baby Food, Powdered Ensure

For Monetary Donations you can visit our website www.saludpublicapr.org and in the home page the option for donations is labeled as “Haz tu Donación”.

The Delaware Academy of Medicine / Delaware Public Health Association response to the disaster was to step forward immediately to pay the 2017-2018 membership dues for our Puerto Rico sister affiliate. As a result, many other national affiliates joined in support. The Academy/DPHA also pledged to assist in raising awareness, to providing a forum for the affected, and a platform for scholarly and applied discussion on effective response.

During the months of October, November, and December, many Academy/DPHA colleagues travelled to and returned from the island. The environmental devastation and lack of power were frequently reported concerns, in addition to the reports of almost complete devastation to the inland mountainous areas of the island.

A follow-up meeting at CCHS was convened on January 25th, 2018. While the mood of the meeting was significantly more hopeful, a major theme remained – why had the U.S. government taken so long to respond, and (at that) done so unwillingly?

On February 1st, Hilda Medina (CCHS, Technician, Nuclear Medicine) emailed the following communication:

I returned yesterday, from PR, and I will say that things definitely are normalized/ing there. It depends on where you are as to whether it is normalizing, or normalized.

Many roads are clear of debris, but many roads are still full of potholes, and issues. You can get from point A to point B. I even went into sections of Utuado, and Jayuya, and it wasn't too bad. I was happy because of my back. Although you do have to drive slow because just when you pick up speed, you drop into a pothole.

In Utuado, and Jayuya, a lot of the roads that were affected by landslides have concrete barriers, or drums, to alert drivers to the issues. That was not the case in November. There were areas where you could see fences, or buildings, were still being affected by landslides, but overall the roads themselves were passable.

In Utuado, and Jayuya, there are generators (hooked up to electric poles) every so often, providing electricity. The generators were also being guarded so they don't get stolen. I saw MRE's and water being handed out in the Utuado town plaza. The plaza was extremely crowded with people because of this.

The airport is fully operational. B terminal, which was closed in November, is now open, and fully running.

I didn't encounter many issues. Chicken is still a bit hard to find, and pricey when you do find it. I find that odd being that it's an island, and people used to have chickens. Odd??!! My step-mom said the day she was able to find a whole chicken, it was going to

cost about \$10, and so she didn't buy it. The tax is in full effect again at 11.5%.

Walmart had, on the day I was there, received a massive delivery of supplies. There were pallets everywhere!! The next time I went to Walmart, supplies were stocked. There was plenty of items. Even the mosquito repellent items, like mosquito lamps, were available. There were none in November.

As far as the mosquitos, I did not get bit once. I didn't use any off spray either. There were mosquitos, but I didn't get bit. In November, they made mincemeat of my arms, and legs. LOL

As far as the coffee, I went to Yauco, but it was late in the day by the time I got there, and couldn't find much out. I did see a coffee plant (in town) and it had coffee beans on it. I would have to imagine it shouldn't be an issue? In Guanica, I saw a ton of banana plants. There were also rows, and rows, of new seedlings that had been planted. I imagine that should not be an issue.

Now, El Yunque [one of the national treasures of the United States, a national park and rainforest- the environmental heart of Puerto Rico] is closed indefinitely. The program they had to volunteer, to replenish forests, is also closed in the forest. This article will explain some of the effort going into El Yunque's re-growth.

<http://www.laht.com/article.asp?ArticleId=2448551&CategoryId=14092>

As far as volunteer opportunities, please look at the following articles. <http://www.delval.edu/news/planting-seeds-of-hope-for-puerto-ricos-farmers>

<https://www.nbcnews.com/storyline/puerto-rico-crisis/remote-areas-hurricane-ravaged-puerto-rico-volunteers-still-serve-crucial-n837646>

<https://www.goabroad.com/providers/tropic-ventures-research-education-foundation/programs/tropic-ventures-research-education-foundation-154033>

I had seen that volunteering programs were suspended, so don't be surprised if you contact the next link, and are told it is suspended for now. The conservation trust founded, and launched, Para La Naturaleza. Para La Naturaleza, has a goal of protecting 33% of the land, on the island, by 2033.

<http://www.paralanaturaleza.org/en/conservation-trust-of-puerto-rico-launches-para-la-naturaleza>. If you go to

<https://www.gooverseas.com/volunteer-abroad/puerto-rico/program/122938> you will be able to see what I mean about the program being temporarily suspended.

I will say that I didn't see much as signs of tourism. In La Parguera, all the bars were open, but empty. I believe tours into the Parguera (phosphorescent bay) might be open. We were there, at night, and were unable to see the bay light up. We were also unable to buy tickets for a tour, but there was a sign for tickets to purchase. It was truly heart breaking seeing all the bars open, and barely any customers.

In Guanica, and Arecibo, at the beaches, there were a couple of people there, but certainly not enough to sustain a tourist economy. I think it would be safe to say that tourism can start again, but the beaches are in poor shape. Broken bottles, empty bottles, diapers, plastic containers, lids, broken huts, etc. The beach in Guanica was much better, but I would not dare to go walk on the beach, or go into the beach, bare footed.

We did see a lot of electric brigades. We stopped, and spoke to one gentleman, on a Sunday, who said he was sitting there (admiring the beach) doing nothing because he had no line. Other brigades were able to work, and we took the time to shout a big 'THANK YOU' to them, and it almost caught them off guard. They shouted back 'YOU'RE WELCOME!'

On June 1, just eight months after hurricane Maria, the 2018 Atlantic Hurricane Season began. The season will last until November 30, and three named storms have already occurred: Alberto, Beryl, and Chris.

According to Mercy Corps, building resilience in Puerto Rico is more critical than ever, especially at the local community level.⁴ Residents of the Island are still suffering the after-effects of Maria, be it a lack of clean water, the need for medical supplies, or the need for tourism to provide an influx of money into the economy. As the 2018 hurricane season progresses, we must remember that essence of Global Health is to support one another – both near and far, in disasters and calm seas, in sickness and in health.

We will not forget that Hurricane Maria has affected thousands - if not hundreds of thousands - of our fellow Americans. We will continue to aid and assist members of the Academy/DPHA who continue their tireless efforts to help rebuild Puerto Rico.

In the spirit of 'all global is local' – we dedicate this issue of the Delaware Journal of Public Health to Puerto Rico; to all who have helped and will help; and to the ideal that together we will prevent such disasters in the future.

The level of anxiety about the upcoming hurricane season is high, however we support each other, we have been through this before, and we will carry on. – Laura Serrano

The goodwill generated locally, and the benefits to the Christiana Care Health System in terms of collaboration for global health programs, cannot be underestimated. The values of Love and Excellence plus the promotion of the Care for the Caregiver program was paramount in our minds. – Anand Panwalker

References

1. Sutter, J. D., & Santiago, L. (2018, May). Hurricane Maria death toll may be more than 4,600 in Puerto Rico. CNN. Retrieved from: <https://www.cnn.com/2018/05/29/us/puerto-rico-hurricane-maria-death-toll/index.html>
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