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Rebuilding for Resiliency: How Puerto Rico’s Environmental Health Department Managed Several Public Health Emergencies and Emerged Stronger

Editor’s Note: The National Environmental Health Association (NEHA) strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, NEHA features this column on environmental health services from the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In these columns, authors from CDC’s Water, Food, and Environmental Health Services Branch, as well as guest authors, will share insights and information about environmental health programs, trends, issues, and resources. The conclusions in these columns are those of the author(s) and do not necessarily represent the official position of CDC.

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The island of Puerto Rico endured several emergencies/disasters between 2017 and 2021 that threatened both its physical infrastructure and human resource capital. From a devastating hurricane to a worldwide pandemic, the Puerto Rico Department of Health (PRDOH) Environmental Health Program faced each challenge with the mission-minded resolve that is key for rising above seemingly insurmountable setbacks. When Hurricane Maria made landfall in September 2017, the catastrophic Category 5 storm brought a large storm surge, heavy rains, and wind gusts well above 100

mph, leaving devastating damage to roads, homes, powerlines, food service establishments, drinking water and wastewater systems, and healthcare facilities. As a result, most of the island’s population lost access to basic resources and services such as electrical power, clean water, wastewater systems, and healthcare.

The Centers for Disease Control and Prevention (CDC) supported three projects from 2018–2021 to assist PRDOH’s hurricane recovery efforts, specifically to help strengthen its ability to respond to these hazards and to revitalize environ-

mental health services, workforce, and IT infrastructure:

1. Build the environmental health workforce and improve environmental health protocols and processes (e.g., update equipment; hire staff; provide training for food/milk, water, and radiology divisions; and update regulations).
2. Develop environmental health IT infrastructure, collect and use data, standardize assessment procedures with electronic applications, and use REDCap (www.project-redcap.org) as an electronic assessment tool.
3. Design a long-term workforce development program for the department (e.g., develop and deliver classroom and field-based training on scientific, technical, and procedural aspects of environmental health).

Project activities involving facility inspections, equipment procurement, and IT infrastructure made rapid progress in 2018 but slowed in the subsequent years when Puerto Rico experienced seismic activity and COVID-19. In late December 2019, a series of daily earthquakes struck the island and the Puerto Rico Seismic Network registered 43 significant aftershock quakes. Again, the island’s population was left with unstable and unsafe working and living conditions, power outages, water contamination, emotional distress, and property loss (Photo 1). Many people were fearful of returning to their homes; temporary shelters were overrun with thousands of people seeking refuge (Photo 2). The large influx of people into shelters resulted in major logistical challenges, including caring for older adults, immunocompromised individuals, children,



Photo 1. The series of daily earthquakes that struck Puerto Rico in late 2019 left buildings unstable and residents fearful for their safety. Photo courtesy of the Puerto Rico Department of Health.



Photo 2. After the earthquake, thousands of refugees sought shelter, which increased the risk for foodborne illness and hygiene-related illness. Photos courtesy of the Puerto Rico Department of Health.

and other at-risk populations. Immediately, project staff and resources shifted from hurricane recovery to emergency response, specifically inspecting shelters, mobile medical units, food service facilities, and water supply trucks. The department also addressed issues involving stray animals, pests, food safety, water sanitation, and sewage. In total, the department developed 38 different educational resources for digital and print distribution to provide guidance and help improve food safety and water sanitation for the local population (Figure 1).

When COVID-19 cases increased in March 2020, the project-related work drastically slowed again as the pandemic required full staff attention. Furthermore, since staff were directed to work from home, conducting in-person inspections of facilities was nearly impossible. Once again, PRDOH redirected resources to develop COVID-19 procedures and protocols for inspectors and guidance for the community on hand-washing techniques, sanitary preparedness, and requirements for obtaining a sanitary license for food establishments.

After 3 years of tremendous personal and professional stress on PRDOH staff, department leaders realized staff needed help

managing their stress and emotions as first responders during the crises they had just endured. In response, PRDOH coordinated with Americares and the Federal Emergency Management Agency (FEMA) to deliver two resilience-building sessions—a one half-day workshop and a one half-day conference—to all environmental health personnel, including inspectors, regional directors, administrative personnel, division directors, and project contractors. During these activities, staff expressed their work-related stress and discussed strategies for self-care and how to prepare themselves to take care of others.

Puerto Rico's multiple public health emergencies posed challenges to the development and delivery of topic-specific trainings. The National Environmental Health Association (NEHA) intended to deliver in-person trainings on food safety, including topics on professional food managers, food safety during natural disasters, and temporary food establishments. The increase in COVID-19 cases, however, forced PRDOH and project partners to find alternate delivery methods. The group decided that self-guided online trainings would be the best solution but this required NEHA to redesign the trainings, which introduced another set of challenges

Project Highlights: Making Inspection Data Useful

Going Digital



Puerto Rico Department of Health began converting paper inspection forms to digital, starting with the Radiological Division.

Performing 11,374 Inspections



356 radiologic facilities like dentists, clinics, X-ray centers, and hospitals



4,410 public/municipal and private drinking water facilities



6,608 food establishments

and delays. Nevertheless, NEHA worked diligently with its partners to overcome these challenges and the trainings are now available on NEHA's website for PRDOH staff to take at their own pace.

Despite multiple challenges, progress in Puerto Rico moved forward, with nearly all

project activities completed on time. Progress of the project activities could only be possible through the teamwork of CDC, PRDOH, project staff, NEHA, the Association of State and Territorial Health Officials, FEMA, Americares, and the Food and Drug Administration. “We can only achieve success by respecting and valuing everyone’s role on the team,” says PRDOH Program Manager Aura Ortiz Sánchez. She demonstrated true resiliency by doing whatever was needed to keep public health a priority in Puerto Rico and helping department staff to manage the stress of their personal and professional responsibilities. As a result, the project activities have improved the island’s capacity to respond to future emergencies. PRDOH has not only improved and updated infrastructure and equipment to help them do their jobs but also has staff with resiliency skills and the resources they need to serve their community.

For more information on CDC’s disaster response and recovery activities for environmental health, visit www.cdc.gov/nceh/ehs/rra/index.html.

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FIGURE 1

Examples of Educational Resources to Improve Food Safety and Water Sanitation Developed by the Puerto Rico Department of Health

RECOMENDACIONES A CONSUMIDORES AL SELECCIONAR UN FOOD TRUCK

DOCUMENTOS Y PERMISOS

- El establecimiento cuenta con los permisos requeridos, incluyendo la Certificación Sanitaria del Departamento de Salud de Puerto Rico y los Certificados de Salud Individuales y vigentes de todo el personal.
- Mínimo una persona del equipo que maneja los alimentos posee la Certificación Profesional de Seguridad Alimentaria.

ÚLTIMO REPORTE DE INSPECCIÓN

- El establecimiento posee un aviso o rótulo visible a la clientela indicando disponibilidad del último reporte de inspección sanitaria.
- El último reporte de inspección sanitaria realizada está disponible a petición de la clientela.

USO DE GUANTES

- Se realiza lavado de manos correcto antes de utilizar guantes.
- Se cambian los guantes al ensuciarse, cuando se rompen y con cada cambio de tarea.
- No se reutilizan los guantes; son una protección entre las manos y los alimentos.

HIGIENE DEL PERSONAL

- Se protege correctamente el cabello, usando redcilla o gorra, y la barba, usando protector.
- No está enfermo, tiene uñas cortas y limpias, no utiliza gredas ni cocina y el uniforme está limpio; tomar estas precauciones ayuda a prevenir el riesgo de contaminación de los alimentos.

MANEJO DE ALIMENTOS

- Mantenimiento de temperatura de los alimentos es apropiada, en frío o caliente.
- Al servir, no se tocan alimentos listos para consumo con las manos directamente.
- Alimentos están protegidos.
- Los productos cuentan en su etiqueta con información del distribuidor y licencia sanitaria.

ALREDEDORES

- Limpios y libres de roedores, plagas y animales.
- Existe un rótulo indicando que está prohibido fumar en el establecimiento y sus alrededores según la Ley #40; incluyendo cigarrillo electrónico.

DEPARTAMENTO DE SALUD DE PUERTO RICO
SECRETARÍA AUXILIAR DE SALUD AMBIENTAL
DIVISIÓN DE HIGIENE DE ALIMENTOS
WWW.SALUD.GOV.PR

Limpie y Mantenga su Cisterna de Agua

LIMPIE

- Elimine los desechos y agua de la cisterna
- Restriegue el interior con un cepillo LIMPIO y detergente de lavar PLATOS
- Enjuague con agua limpia y vacíela

DESINFECTE CON CLORO

- Llene la cisterna de agua
- Cierre las llaves de paso a la cisterna
- Añada cloro, de uso casero: 3 tazas de cloro por cada 100 galones de agua
- Si la cisterna está conectada a las tuberías de la casa, abra las llaves y deje correr el agua hasta que huelga a cloro
- Cierre las llaves y deje reposar el agua al menos 12 horas
- NO BEBER / NO USAR ESTA AGUA**
- Vacíe toda el agua después de las 12 horas
- Vuelva a llenarla con agua fresca
- Abra cada llave y deje correr el agua hasta que NO huelga a cloro

* Período de mantenimiento cada 6 meses.

* Debe tener un filtro de sedimentación en la entrada y salida de la cisterna.

SECRETARÍA AUXILIAR DE SALUD
Secretaría Auxiliar Salud Ambiental

Procedimiento para el Lavado de Utensilios

Organizar y Rascar

Organizar todo el exceso de alimento en un zaldón.

Lavar

con un detergente en agua a 110°F o más

Enjuagar

con agua limpia para remover el detergente

Desinfectar

sumergir por 10 segundos en agua a 170°F o más con solución desinfectante aprobada.

Secar al aire

en un escurridor inclinado para el drenaje del agua. Nunca secar con papel toalla o paño.

BUSCANOS EN

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