

Public Health Branch Response Operations: during Hurricanes Irma and Maria in Puerto Rico and the U.S. Virgin Islands

Miguel A. Cruz, PhD, MPH

Emergency Management, Radiation, and Chemical Branch

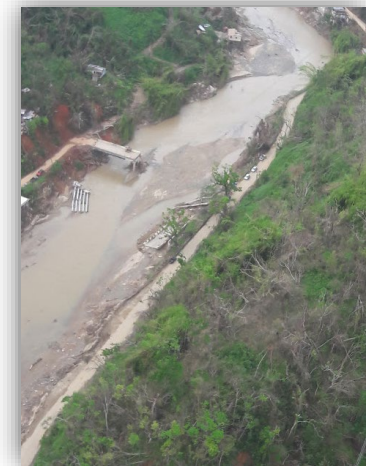
Division Of Environmental Health Science and Practice

Centers For Disease Control & Prevention

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention

Public Health Consequences of Disasters

- Impacts to:
 - Public health and medical facilities
 - Key infrastructure and services
- Morbidity and mortality
 - Direct: deaths and accidents
 - Indirect: exacerbation of pre-existing health issues
- Public health role: protect victims and disaster responders
- Irma and Maria Impacts in Puerto Rico and Virgin islands-- total devastation



Objectives

Describe:

- How the public health branch was organized
- ESF-8 public health support to Puerto Rico Department of Health (PRDOH)
- Challenges and opportunities for collaborations in future events



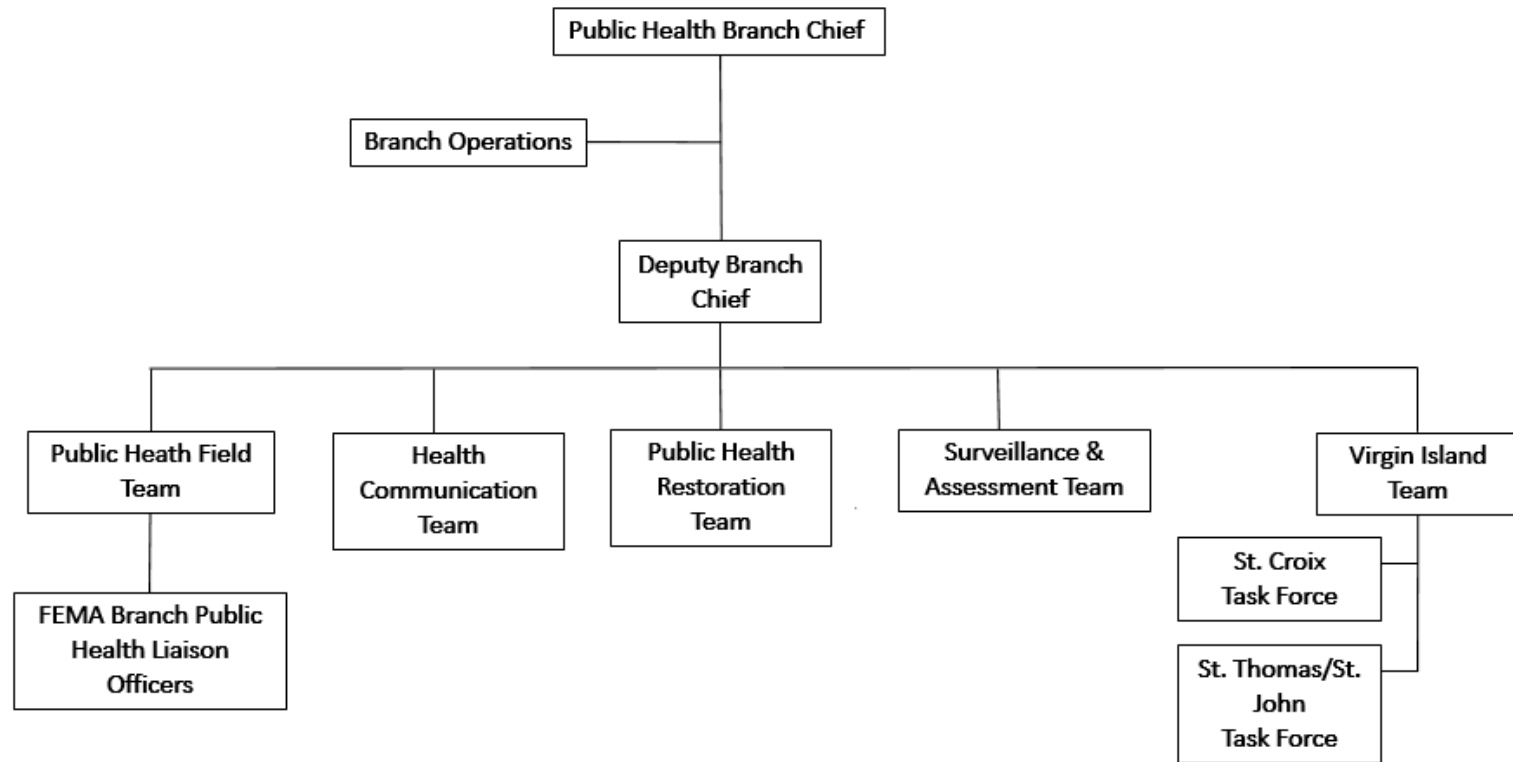
Public Health Needs: Hurricanes Irma & Maria

Mission:

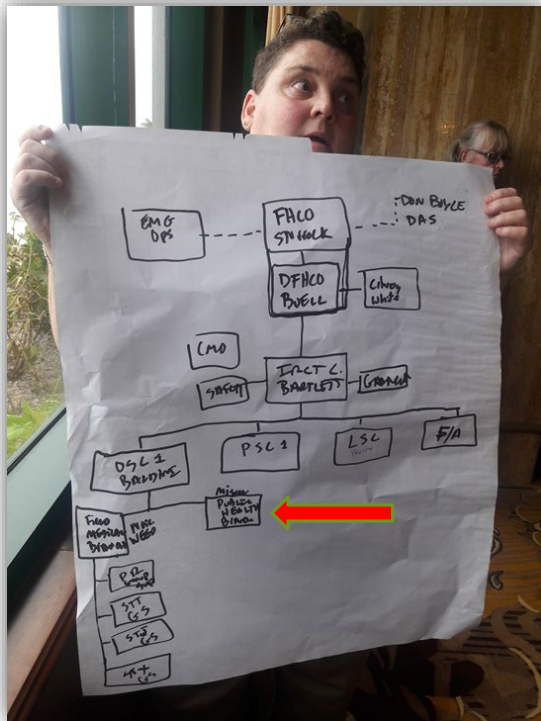
- Public health assessment team initially deployed to PR for Irma under HHS/IRCT
 - Subsequently redeployed to USVI and back to PR due to hurricane Maria
- Post-Hurricane Maria increased in scope of activities and staff requirements
 - Established a public health branch (PHBR)



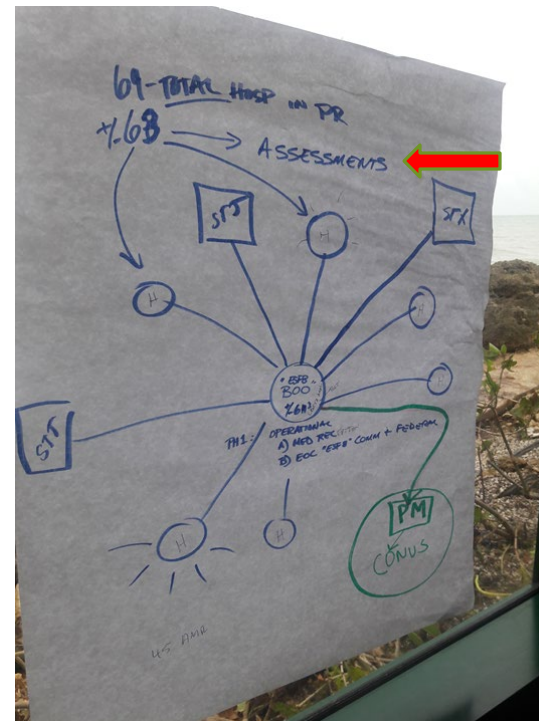
Organizational Structure of the Public Health Branch in PR



Public Health Branch Mission Priorities



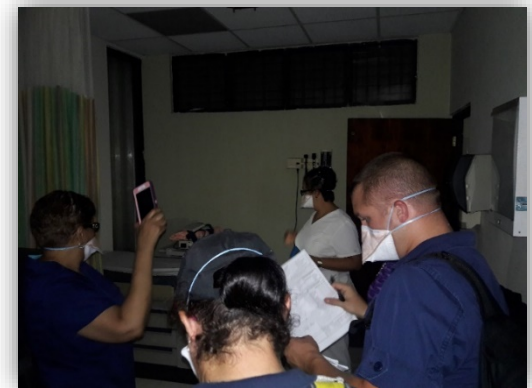
Robin Bishop, HHS/Plans holds the IMS for the IRCT for the Hurricane Maria response on day 1, which included a Public Health Branch. Charts were done in paper due to the lack of electricity



Initial assignment for the Public Health Branch was health care facility assessments across Puerto Rico

Surveillance and Assessment Team: Healthcare Facility Assessments

- First major ask by HHS and PRDOH
- Tiered approach for all hospitals and clinics
 - 65 hospitals and 186 clinics were assessed
- Mission support provided by DOD, Department of Homeland Security (DHS), and Federal Law Enforcement (ESF-13)



Hospital and Clinic Assessment Tools

MEDICAL FACILITY RAPID ASSESSMENT TOOL

FACILITY NAME			DATE OF ASSESSMENT			TIME (24 HR)		
ADDRESS			FACILITY CONTACT PERSON			BEST CONTACT METHOD		
CITY			BEST PHONE NUMBER			SECOND PHONE		
STATE			ZIP CODE			INDOOR TEMPERATURE (°F)		
SURVEY METHOD <input type="checkbox"/> AIR <input type="checkbox"/> DRIVE BY <input type="checkbox"/> DRONE <input type="checkbox"/> VISIT <input type="checkbox"/> PHONE <input type="checkbox"/> OTHER			EMAIL			SAT PHONE/OTHER CONTACT INFO		
FACILITY TYPE <input type="checkbox"/> HOSPITAL <input type="checkbox"/> CLINIC/CHC <input type="checkbox"/> ALF/NURSING HOME <input type="checkbox"/> OTHER			COMMUNICATIONS AVAILABLE: <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> LINK <input type="checkbox"/> PHONE <input type="checkbox"/> E-MAIL <input type="checkbox"/> SATPH <input type="checkbox"/> CELL <input type="checkbox"/> 2/W RADIO <input type="checkbox"/> OTHER			Overall Functionality Circle one: Open/Mostly Open Limited Closed Are you experiencing patient surge? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA		
# PATIENTS BEDS			# CURRENT COVID			NORMAL CAPACITY		
# BEDS (OCT)			Projected Admission (24 hour)					
BLOCK 1 FACILITY DAMAGE ASSESSMENT: Please provide specifics (see legend)				BLOCK 2 UNIT OPERATIONAL LEVEL (1-Fully, 2-Partial, 3-None, 4-UNK, 5-NA)				
1. Collapsed Structures? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 2. HAZMAT Issues? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 3. Flood/Water Damage? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 4. Wind damage? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 5. Working Elevators? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 6. Water System Operational? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 7. Power Grid Operational? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 8. Generator Operational? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA 9. Generator Type and power rating 10. Fuel Type Used: <input type="checkbox"/> Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Kerosene/Oil 11. Storage Capacity (gallons) Fuel Supply				1. Emergency Department 2. Patient Admissions 3. Medical Records 4. Laboratory 5. X-Ray/Imaging 6. ICU Ward 7. Med. Surgical Ward 8. Neurology Ward 9. Pediatric Ward 10. Mental/Behavioral Ward 11. Maternity Ward 12. Operation Rooms 13. Outpatient Clinic 14. Pharmacy 15. Blood Bank 16. IT Services 17. Food Preparation 18. Medical Supply/Storage Area 19. Distribution/Sterilization Area 20. Dialysis Ward 21. Pure Water for Dialysis 22. Total # Clients Dialysis 23. Daily # Clients Dialysis				
BLOCK 3 OTHER FACILITY NEEDS AND SERVICES (1-Adequate supply, 2-Shortage, 3-None Available, 4-UNK, 5-NA)				BLOCK 4 PATIENT MOVEMENT AND EVACUATION				
1. Medication 2. Blood products 3. Oxygen 4. PPE 5. Working toilets 6. Flood potable water 7. Safe drinking water 8. Ice 9. Food 10. Lighting 11. Medical staff 12. Clinical staff 13. Security staff 14. Outstaff staff 15. Generator fuel 16. Fuel for employees 17. Clean linen 18. Vaccines 19. Medical waste service 20. Municipal waste service 21. # of Mosque spaces 22. # of decreased being held 23. Operational Water Supply 24. Water Needs Per Day Drinking 25. HVAC Working? 26. Other				Patient Evacuation/Transfer Required? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA Evacuation Status? <input type="checkbox"/> Planned <input type="checkbox"/> In Progress <input type="checkbox"/> Completed <input type="checkbox"/> UNK <input type="checkbox"/> NA Type of Patients? Ambulatory _____ Utter _____ Ventilator _____ Number Pediatric Patients? _____ Number ICU/CCU Patients? _____ Number Mental Health Patients? _____ Number Geriatric Patients? _____ Any/Boat Evacuation Need? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> UNK <input type="checkbox"/> NA Comments:				

Comprehensive Disaster Assessment and Readiness Tools (CDART)





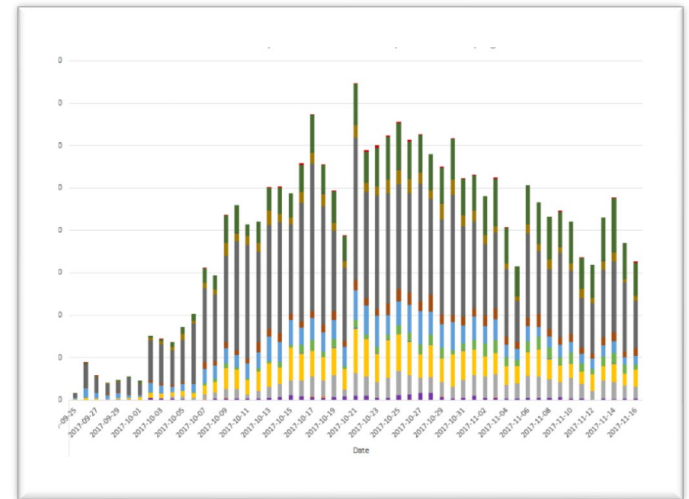
Public Health Field Teams

- Water systems in key facilities
- Disaster shelters/Federal Medical stations
- Billeting/Department of Defense (DOD) facilities
- Mosquito surveillance and control
- Federal Emergency Management Agency (FEMA) Branch Support



Surveillance and Assessment Team: Health Surveillance at Federal Sites

- Department of Health and Human Services
 - Disaster Medical Assistance Team/Federal Medical Stations
 - Syndromic surveillance reporting pulled daily from the ESSENCE website
- Department of Defense and Veterans Administration Health System
 - Development of DOD syndromic surveillance reporting by facilities
 - Active surveillance at three VA facilities



Isolated Community Assessments

- Mission requested by DHS
- Areas selected through aerial reconnaissance
- Teams deployed by air and ground
 - Focus on basic human needs
 - Access to services
 - Immediate health concerns
- Mission support: DOD, DHS



Health Communications Team

- FEMA Joint information Center
- Rumor control
- Educational material
- Organizing provider calls
- Outreach in isolated areas

Elimine los microbios con cloro

Al regresar a su casa luego de un huracán o inundación, sepa que el agua de la inundación puede contener microbios de las aguas negras y sustancias dañinas que lo pueden enfermar.

Use cloro para matar los gérmenes en las cosas que estuvieron en contacto con el agua de la inundación.

- Póngase botas y guantes de goma u otro material no poroso, y gafas protectoras mientras realiza la limpieza.
- Si hace calor y hay humedad, tome suficientes descansos en un lugar fresco y beba mucha agua.
- Lave las superficies con agua limpia tibia y jabón para quitar la suciedad y los residuos.

Luego, desinfecte las superficies con cloro de uso doméstico sin aroma:

1. Limpie con una mezcla de 1 taza de cloro diluido en 5 galones de agua. Use cloro que no tenga aromas añadidos (como limón).
2. Restriegue las superficies ásperas con un cepillo duro.
3. Deje secar al aire.

- Trate de no respirar los vapores del producto. Abra las puertas y ventanas para que entre aire fresco.
- Si no tiene cloro líquido de uso doméstico, use agua y jabón.

Nunca mezcle cloro con amoníaco ni con otros limpiadores domésticos. Esto puede producir vapores tóxicos peligrosos.

Busque atención médica si presenta signos inmediatos de exposición al cloro, como migraña, visión borrosa o dificultad para respirar.

Para obtener más información sobre cómo limpiar y desinfectar su casa después de un desastre natural, visite: <https://www.cdc.gov/healthysaferesponse/cleaning-santizina/household-cleaning-santizina-es.html>

Restoration of Services Team

- PRDOH facility assessments
- Restoring services
 - Laboratory and immunization services
 - Procuring vaccines, supplies
- Transition for long-term recovery
 - Follow up on repairs and contracts
- Mission support provided by:
 - FEMA, US Army Corps of Engineers (USACE), Association of Public Health Laboratories, and Centers for Disease Control and Prevention



Summary

Limitations and Challenges:

- Safety and environmental hazards, curfew, delays launching teams
- Staff language capabilities and skill sets
- Supplies and equipment shortfalls
- Redundancy of efforts

Successes and Opportunities:

- Fully staffed branch/teams
- Transition team for recovery phase
- Piloted new tools and techniques
- Interagency collaborations and support
 - DOD, VA, DHS/FEMA, USACE, Red Cross, others

Conclusions

- Caribbean region inherent risks and isolation challenges must be taken in consideration in future planning
- Disaster assessment elements must improve coordination, execution and sharing of information
- Joint collaborations and mission support must be standard, not a mission request

QUESTIONS?

Miguel A. Cruz

Mcruz@cdc.gov