CDC Environmental Health Nexus

Hurricane Safety and Preparedness Webinar
will begin at 1 p.m. ET
Health Impacts of Hurricanes

More Than Just Property Damage

Bill Rich, CEM, PHA, A.A.S., EMT-P
Senior Emergency Coordinator, CDC

June 2, 2021
2021 Hurricane Season Forecasts

- Activity for 2021 is predicted to be slightly higher in intensity compared to 2020.
- A total of 17 named storms, eight hurricanes, and four major hurricanes are expected this season per the Colorado State University prediction center.
- Do not count on the weather getting the memo.
- Prepare for the worst, then you will only have GOOD surprises.
Preparedness for 2021 Season

- Preparing self/family will enable you to prepare for your job.
- A direct storm impact is not required to have personal and professional impacts from a hurricane.
- Some of the worst historical damage is from slow moving or stalled tropical storms, not hurricanes.
- The storms will not read the warning models!
Medical Services Compromised

- Dialysis clinics
- Oxygen concentrators
- Home IV therapy
- Power loss at medical service companies
- Hospitals have limited fuel storage for generators
- Extremely limited radio communications backup at medical facilities
- Loss of medical refrigeration starts clock ticking on medication shelf life at home, pharmacy, hospital, and clinics
- Loss of security systems and lighting will require most facilities/stores to close
Direct Citizen Impacts

- Loss of home lighting and refrigeration
- Loss of news sources (radio, TV, internet)
- Outages will eventually impact landlines
- Loss of cell phone charging capability
- Loss of thermostability due to heating/air conditioning failure
- Many hotel companies have a policy to force evacuation if power is not available to limit liability.
Risk of Electric Shock

- **Fallen power lines**
  - Stay clear of fallen power lines. Call the electric company to report them.
  - Watch out for power lines overhead.

- **Flooded homes**
  - Turn off power to the home if you can stand in a dry place to do it.
  - Otherwise, have an electrician turn off power to the home.
  - Never turn power on or off, or use an electric tool or appliance, while standing in water.

- **Water-damaged power tools**
  - Never use an electrical device if it got wet.
  - If it’s still plugged in, turn off the power at the main breaker.
  - Wait for an electrician to check the device before using it.
Spoiled or Contaminated Food

- Spoiled or contaminated food and water can make people sick.
- If they get sick, they may have limited access to medical care.
- Encourage people to do the following:
  - Stockpile canned food ahead of time.
  - Keep food fresh.
  - Throw out spoiled food.
  - Clean off canned food. Storing canned goods in gallon zip bags buys time.
  - Use bottled water, if possible, or boiled water, if necessary, especially for infant formula. Only use treated water (disinfected or purified) if bottled and boiled water are not available.
Carbon Monoxide Poisoning: Advice for the Public

- Never use gas or coal-burning equipment inside your home, basement, or garage. Keep it outside and at least 20 feet from any window, door, or vent.
- Use a battery-operated or battery backup CO detector any time you use a generator or anything else that burns fuel.
- Never run a car or truck inside a garage attached to your home, even with the garage door open.
- Never heat your home with a gas oven.
- If you have a carbon monoxide detector and it starts beeping, leave your home right away and call 911.
Other Health Risks

- Driving through flood waters
- Animals and pests
- Psychological harm
- Injuries during cleanup
- Mold
- Hyperthermia and hypothermia
At-Risk Populations and Hurricane Preparedness

Rebecca Hall, M.P.H
Epidemiologist, CDC

June 2, 2021
Federal Legislation

- Pandemic and All-Hazards Preparedness Act (2006)
  - Passed by Congress following Hurricane Katrina to drive federal disaster support for every American community
  - Defined “at-risk populations” as children, pregnant women, senior citizens, and others who have special needs in a public health emergency and requires that governments plan for the needs of at-risk populations in emergencies
- Two subsequent administrations reauthorized PAHPA
  - Pandemic and All-Hazards Preparedness Reauthorization Act (2013)
  - Pandemic and All-Hazards Preparedness and Advancing Innovation Act (2019)
    - Includes “access and functional needs” language to bring HHS into consistency with the Department of Homeland Security

What is an At-Risk Population?

- “At-risk individuals” are people with access and functional needs (AFN) (temporary or permanent) that may interfere with their ability to access or receive medical care before, during, or after a disaster or public health emergency.

https://www.phe.gov/Preparedness/planning/abc/Pages/at-risk.aspx
What are Access and Functional Needs?

- **Access-based needs** include information and resources needed to maintain health before, during, and after an emergency.
  - Social services, information, transportation, medications

- **Function-based needs** make a person require assistance before, during, and after an emergency.
  - Children & adults who depend on caretakers, persons who use mobility equipment

- **C-MIST Framework**
  - Framework adapted by FEMA for use in emergency planning

[https://www.phe.gov/Preparedness/planning/abc/Pages/at-risk.aspx](https://www.phe.gov/Preparedness/planning/abc/Pages/at-risk.aspx)
What are Access and Functional Needs? (cont.)

- Transcend a specific diagnosis, status, or label
- Include a wide range of individuals who may need additional support
- People can have multiple access and functional needs
- Populations likely to have individuals with access and functional needs
  - Infants and children
  - Pregnant women
  - Older adults
  - Persons with disabilities
  - Persons belonging to racial & ethnic minority groups
  - Persons with limited English proficiency
  - Economically disadvantaged persons

https://www.phe.gov/Preparedness/planning/abc/Pages/at-risk.aspx
Functional vs. Population Approach in Emergency Planning

- The five C-MIST categories define the type of services needed but they do not specify how responders might locate vulnerable populations who have those needs.
- Populations can be defined by health conditions or by geographic, demographic, cultural, or socioeconomic characteristics, allowing responders to locate and enumerate sub-populations expected to have greater needs.
- The approaches are complementary, and both should be considered in emergency planning based on the context and purpose.
Hurricanes: Un-Natural Disasters

- Disasters—including hurricanes—tend to harm segments of the population that were already disadvantaged before a disaster.
- There is **differential vulnerability** for people by where they live, work, and play.

“There is no such thing as a natural disaster. In every phase and aspect of a disaster—causes, vulnerability, preparedness, results and response, and reconstruction—the contours of disaster and the difference between who lives and who dies is to a greater or lesser extent a social calculus.”

- Neil Smith
### Hurricane Katrina

- Among the deadliest hurricanes to hit the U.S.
  - Estimated 1,833 died in hurricane and subsequent flooding
  - >$108 billion in damages
- People ≥60 years were 15% of the population prior to Hurricane Katrina; however, >70% of people who died were elderly
- Orleans Parish: ~272,000 African Americans displaced, accounting for 73% of the population affected by the storm; in contrast 101,000 non-African Americans were displaced
- 183,000 children were displaced just as school had started
Hurricane Katrina: Root Causes of Differential Impact

- Half of New Orleans is below sea level; aging infrastructure
- Black communities with high concentrations of poverty live in low-lying areas, while more affluent white communities occupy higher ground in outlying areas

http://rootsofhealthinequity.org/hurricane-katrina-disaster.php
Incorporating At-Risk Populations in Preparedness Planning

- Ensure plans include at-risk populations.
  - Create a cross-walk (see table)
- Include representatives from at-risk groups in planning.
- Planning must be **intentional and specifically address** at-risk communities.
- Exercise the plans and include at-risk population scenarios.

<table>
<thead>
<tr>
<th>Functional Need</th>
<th>Population</th>
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<tbody>
<tr>
<td>Communication</td>
<td>Children</td>
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<td></td>
<td>Older Adults</td>
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<td>Limited English Proficiency</td>
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<td>Racial/Ethnic Minorities</td>
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<td>Medical Care</td>
<td>Individuals with Chronic Medical Conditions</td>
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<td>Independence</td>
<td>Individuals with Disabilities</td>
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<td>Supervision</td>
<td>Children</td>
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<td></td>
<td>Older Adults</td>
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<tr>
<td>Transportation</td>
<td>Older Adults</td>
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<tr>
<td></td>
<td>Individuals with Disabilities</td>
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</tbody>
</table>
The HHS emPOWER Map provides the total number of electricity-dependent Medicare beneficiaries in a geographic area for emergency planning purposes.

Severe weather from hurricanes can cause prolonged power outages, which can be life-threatening for individuals who rely on durable medical and assistive equipment and devices that run on electricity, such as ventilators.

https://empowermap.hhs.gov/
How Does CDC Work on Behalf of At-Risk Populations in Hurricanes?

- The At-Risk Task Force (ARTF) is a dedicated Task Force in CDC’s Emergency Operations Center.
- ARTF includes at-risk population subject matter experts from across CDC.
- ARTF participates year-round in preparedness planning for hurricanes and other public health threats.

Figure: ARTF Structure for 2017 Hurricanes Response
Hurricane Messaging and Educational Material

Vivi Siegel, M.P.H.
Crisis and Emergency Risk Communication Lead, CDC

June 2, 2021
Amending Messages for COVID-19: Mental Health

Acknowledge in words the difficulty of dealing with multiple disasters.

• Planning for hurricane season and other potential disasters can be stressful, and during the COVID-19 pandemic, it may be especially so.
• Taking care of emotional health helps people think clearly, react to urgent needs.
  • Provide resources for the community such as the SAMHSA Disaster Distress Helpline and CDC materials on stress and coping.
  • Provide parents resources for supporting children.
  • Responders may experience secondary traumatic stress.

CDC: Coping with a Disaster or Traumatic Event
CDC: COVID-19: Stress and Coping
SAMHSA Disaster Distress Helpline: 1-800-985-5990 or text “TalkWithUs” (for English) or “Hablanos” (for Spanish) to 66746.
Amending Messages for COVID-19: Before a Hurricane

- Give yourself more time than usual to prepare your emergency food, water, and medicine supplies.
- Take steps to protect your and others’ health when running essential errands and when filling prescriptions.
- Pay attention to local guidance about updated plans for evacuations and shelters, including potential shelters for your pets.
- Include items such as soap, hand sanitizer, masks in evacuation “go kits.”
- Follow distancing recommendations when checking on neighbors and friends.

CDC: Preparing for Hurricanes During the COVID-19 Pandemic
Amending Messages for COVID-19: After a Hurricane

Help people take COVID-19 precautions in addition to following regular safety guidance about power outages, food and water safety, and avoiding injuries.

- Continue to use preventive actions like washing your hands, wearing a mask in public if you are not yet vaccinated, and distancing during clean up or when returning home.
- It may take longer than usual to restore power and water if they are out.
- If you are injured or ill, contact your medical provider. Keep wounds clean to prevent infection. Accessing medical care may be more difficult than usual.
- It is natural to feel anxiety, grief, and worry. Coping with these feelings and getting help when you need it will help you, your family, and your community recover.

CDC: Preparing for Hurricanes During the COVID-19 Pandemic
Amending Messages for COVID-19: Shelters

Help people understand how to prevent infection if they need to go to a public shelter.

- Check with local officials to see if your shelter location is different this year, including for pets.
- Bring items to help you stay protected: soap, hand sanitizer, and masks for people 2 years and older.
- Practice distancing in the shelter and help children do the same. Stay at least 6 feet away from people outside of your household.
- Follow disaster shelter policies and procedures designed to protect everyone in the shelter.
- If you feel sick when you arrive at the shelter or start to feel sick while sheltering, tell shelter staff immediately.

CDC Going to a Public Disaster Shelter During the COVID-19 Pandemic
Hurricane Educational materials – by Topic and Language

https://www.cdc.gov/disasters/hurricanes/educationalmaterials.html
Coping After a Natural Disaster: Adolescents

Lives interrupted: Hurricanes left kids scrambling for normal

In Texas and Puerto Rico, Harvey and Maria upended life for all, but perhaps none more so than teenagers juggling the demands of school, home, and family.

--STAFF
SUSANNE GAMBA & NICOLE ALOVEJOY
May 31, 2018

Puerto Rican Students Displaced by Storm Adjust to Mainland Schools

Teens on edge

ROCKPORT, TEXAS -- Before Hurricane Harvey struck his hometown on the Gulf Coast, Ethan Dwyer was a promising 17-year-old offensive lineman entering his junior year of high school.

But then on Aug. 26, Rockport experienced six hours of 121 mph winds, with gusts topping out at 181 mph. Around 80 percent of the structures in Aransas County were damaged, and approximately 35 percent were destroyed.
Finding a New Normal: Life After a Natural Disaster

www.cdc.gov/disasters/teens
Finding a New Normal: Life After a Natural Disaster (cont.)

In the months after a wildfire damaged her neighborhood, Alexis found joy in her favorite sports.

“What helps me the most when I’m stressed and overwhelmed is swimming. I play water polo, I surf, and I’m on the swim team. So being in the water really helps me.”

If you’ve been through a natural disaster, it’s totally normal to feel overwhelmed. Getting active and doing things you love can help you feel better. Watch Alexis’s story and learn more ways to cope at www.cdc.gov/disasters/teens.

“Reaching out and helping people in the neighborhood made me feel good. Being able to help the older generation made me happy.”

www.cdc.gov/disasters/teens