

EPIsodes - Monthly Report

Spotlight on Hurricane Health Risks

Hurricane Irma, a Category 5 hurricane (185-mph winds), caused catastrophic damage in the Caribbean before moving northwest and making landfall in Florida on September 10, 2017, as a Category 4 hurricane. Wind damage compromised power lines, and a storm surge caused extensive flooding, primarily along the coast. Irma affected the entire state of Florida; 7 million residents were evacuated and 6.7 million utility customers lost power.¹

In 2004, during and after hurricanes Charley, Frances, Ivan, and Jeanne, the affected areas of Florida saw an increase in reports of foodborne illness, gastrointestinal illness, carbon monoxide (CO) poisoning, adverse health effects from exposure (e.g. chemicals or heat), injuries, and complications of chronic disease especially in older adults. Many of these health effects were due not to the storms themselves but rather to the interruption of electricity services.

The same pattern was observed after Irma. In September 2017, 529 cases (including 15 deaths) of CO poisonings were reported in Florida. Post-storm CO poisoning cases are usually due to improper use or placement of generators.

The Florida Department of Health in St. Lucie County's Epidemiology Program is tasked with many post-storm activities including; working with our local health care providers and the State Bureau of Epidemiology to establish increased syndromic surveillance for storm related conditions, investigating disease outbreaks or increased incidence of community health issues (such as those listed here), assessing health needs in disaster shelters as well as in the community at-large, and providing information, education, and guidance for common post-storm health concerns.

This issue of EPIsodes highlights some common post-storm health hazards and provides various resources available to health care providers and the public.



Post-Storm Health Concerns

Carbon Monoxide (CO) Poisoning:

Improper placement, ventilation, and maintenance of generators can lead to CO exposure and poisoning. CO is invisible, odorless, and tasteless. Exposure to CO can cause tiredness, weakness, chest pains, respiratory symptoms, gastrointestinal symptoms, headaches, confusion, loss of consciousness, and death. Generators should never be operated inside. Do not operate it near any open door, window or garage door. For more information about CO poisoning: floridahealth.gov/environmental-health/carbon-monoxide/index

Food Safety:

Inadequate refrigeration, storage, and undercooked food products can cause infectious bacterial growth. These bacterial infections commonly cause nausea, vomiting, and diarrhea. Some foodborne bacteria produce toxins that attack the nervous system and cause more severe illness. Bacterial infections can be further spread from person to person if improper hand and surface hygiene is not available and used. To help prevent foodborne illness; before the storm, turn refrigerator and freezer controls to the coldest settings and only open the refrigerator or freezer during a power outage when necessary. Food will stay frozen for up to 48 hours if a freezer is full and tightly packed. Food may keep for 24 hours in a partially-filled freezer. Throw away any questionable food, perishable foods not kept at proper temperatures, foods in damaged containers, jars, or cans.

Post-Storm Health Concerns continued on page 3

"Disease control and prevention are core functions of any public health agency. Protection of the public's health from existing, emerging, and re-emerging diseases requires diligence in all aspects of public health. The public health partners identifying and characterizing emerging trends in disease are the physicians, nurses, laboratorians, hospital infection preventionists, and other health care professionals who participate in reportable disease surveillance. Without their participation, the ability to recognize and intervene in emerging public health issues would be much more limited." [Florida Morbidity Statistics Report 2016](#)



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AFTER THE STORM SAFETY

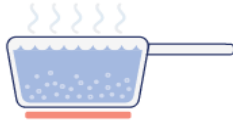
Emergency Information:
1-800-342-3557
floridadisaster.org

SAFE WATER

For drinking, cooking, washing wounds and brushing teeth, use bottled water, boiled water or disinfected water.

FOR BOIL WATER NOTICES

Hold a rolling boil for 1 minute to kill organisms.



7-8 drops (about 1/8 tsp.) bleach per gallon of water.



DISINFECTING

1. Add 8 drops of plain unscented household bleach (4-6% strength) or 7 drops of high strength bleach (8.25% strength) per gallon of water.
2. Mix and let stand for 30 minutes.
3. If the water is cloudy after 30 minutes, repeat once.



FLOOD WATER or DIRTY WATER

No one should play in flood water.

Soak dirty toys in clean, disinfected water.

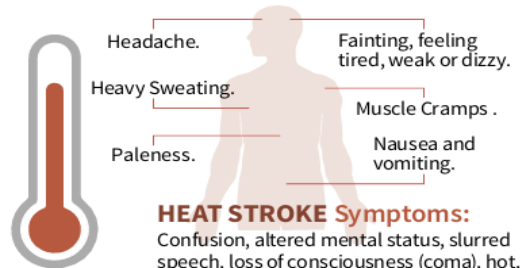
WASH YOUR HANDS OFTEN

Use soap and safe water. Wash hands before eating, after using the toilet and when cleaning and handling things dirtied by floodwater or sewage.

Keep open cuts or sores clean.

With clean hands, apply antibiotic ointment. If redness, swelling or drainage develops, see a doctor.

HEAT EXHAUSTION WARNING SIGNS



HEAT STROKE Symptoms:

Confusion, altered mental status, slurred speech, loss of consciousness (coma), hot, dry skin or profuse sweating, seizures, very high body temperature. Heat Stroke can be fatal if treatment is delayed.

Keep cool.

Drink cool, nonalcoholic beverages; take a cool shower, bath or sponge bath; wear lightweight clothing; and rest in an air-conditioned room.

FOOD



Keep refrigerator and freezer doors closed to maintain the cold temperature.

FREEZERS: Food is safe in a full freezer for about 48 hours and in a half-full freezer for about 24 hours, if the door remains closed. Food is safe if it has ice crystals or if it's at 40° F or below. To avoid leaks, empty the ice out of your freezer before it melts.

REFRIGERATORS: Food in an unopened refrigerator is safe for about 4 hours. After that time, throw out perishable food: meat, poultry, fish, soft cheeses, milk, eggs, leftovers and deli items.

Don't eat from bulged or opened cans.

Clean unopened cans dirtied by flood water: remove labels and, using clean, disinfected water, soak the cans for at least 30 minutes. Assume that home-canned foods are unsafe.

Never taste a food to determine its safety.

Breastfeeding is best for babies.

If breastfeeding, continue to breastfeed often. For formula-fed infants, use sanitized bottles and nipples. Discard any prepared formula that baby has not drunk within one hour. If water is safe, prepare powdered formula with clean water. If safe water is not available: use ready-to-feed (RTF) formula. Any opened RTF formula that is not used within an hour should be refrigerated or discarded.

AVOID FIRE DAMAGE



Use battery-powered lanterns and flashlights.

If you must use candles, put them in safe holders away from curtains, paper, wood or other flammable items.



CARBON MONOXIDE (CO) POISONING

It's invisible, odorless and tasteless gas. It can cause tiredness, weakness, chest pains, shortness of breath, upset stomach, vomiting, headaches, confusion, impaired vision, loss of consciousness and death.

Prevent CO poisoning:

Never use gas-powered generators inside. Keep portable generators or gasoline engines at least 20 feet away from open windows, doors, window air conditioners, or exhaust vents. Don't burn charcoal inside or leave any gas-powered engine running in any enclosed or partially enclosed space. Install battery-powered or plug-in CO alarms (with battery backup) in your home.



Suspect CO poisoning?

Open doors and windows, turn off gas appliances, go outside and call 911 or the Poison Information Center at 1-800-222-1222.

STANDING WATER BREEDS MOSQUITOES

Cover your skin.

Wear shoes, socks, long pants and long sleeves. Mosquito spray is not safe for children under 2 months old, use mosquito netting to protect them. Fix broken screens on windows, doors, porches and patios.

SPRAY BARE SKIN AND CLOTHING WITH REPELLENT.



Drain standing storm water.

Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots or any other containers where water has collected.



Use spray with DEET, picaridin, oil of lemon eucalyptus or IR3535. Follow label instructions.



Throw away storm debris as soon as possible.

Check and maintain your swimming pool's chemistry.

Empty plastic swimming pools.



Continued from page 1

Water Safety:

Water is responsible for several post-storm hazards that can cause injury or illness. If flooding occurs, gather emergency supplies and evacuate as directed by emergency services. Storm surge, excessive rainfall, and electrical outages can disable lift stations necessary to transport sewage away from residential neighborhoods, leading to overflows and spills. Stay out of flood waters if possible and do not drive through flooded areas. Ensure water is safe to drink. Watch for Boil Water Notices. Do not use water that may be contaminated; boiling may not be sufficient if water is contaminated by fuel or toxic chemicals.

Animal Hazards:

Wildlife, rodents, snakes, and even abandoned or lost pets can pose a danger after storms. Local animal control agencies should be called for help with domesticated animals and the Florida Fish and Wildlife Conservation Commission for help with wildlife issues. Be aware of snakes that may be swimming in water or hiding in debris. If a snake bite occurs, call 911 or Poison Control at 1-800-222-1222. Homes and businesses should be kept as rodent-proof as possible by using environmental sanitation, proper food storage, trapping, and, as permitted by law, poisoning. For more information see: cdc.gov/disasters/rodents

Rabies virus is present in some wildlife (particularly raccoons and bats) in Florida and can spread to unvaccinated pets. Rabies is nearly 100% fatal in humans and pets but is also 100% preventable. After storms, wildlife and pet behavior can be affected and reports of bites and other encounters tend to increase. Get pets vaccinated and report any bites or scratches from high-risk animals to local animal control agencies, 911, or the Florida Department of Health in St. Lucie County Epidemiology Program at 772-462-3883. For more information on rabies prevention and control: floridahealth.gov/diseases-and-conditions/rabies

Mosquitoes:

Flooding and standing water after a storm facilitate breeding and hatching of new mosquitoes. To avoid mosquito bites and the diseases that may be transmitted by mosquitoes—**DRAIN and COVER**; cover skin with an EPA approved mosquito repellent or clothing, drain standing water, and repair broken screens, windows, and doors to keep mosquitoes out of homes and offices.

Mold:

Mold can be present in a building that has been exposed to excess water during a storm. People with asthma, allergies, or other breathing conditions may be more sensitive to mold. Controlling moisture is the most critical factor in preventing mold growth. If mold is present, [cleaning up safely](#) will be necessary. For more information see: cdc.gov/disasters/mold/index

Psychological Health:

Storms can create upheaval in life and that can naturally lead to stress, anxiety, grief and worry. Everyone reacts differently and at different times before, during, and after a storm. Responders, medical providers, and every member of the community should take care of their emotional health. Common signs of distress include but are not limited to; feelings of shock, numbness, and disbelief; changes in activity and energy levels, difficulty concentrating, changes in appetite, sleeping problems, feeling anxious or fearful, physical reactions such as headaches, stomach problems or rash; excess use of alcohol or drugs, and anger or irritability. The SAMHSA Distress Helpline provides year-round immediate crisis counseling, 1-800-985-5990 or text TalkWithUs to 66746. Resources and links to training can be found at the Disaster Behavioral Health section of FloridaHealth.gov.

Disaster Resources	
Before the Storm:	ready.gov floridahealth.gov/programs-and-services/emergency-preparedness-and-response/prepare-yourself/index cdc.gov/disasters/hurricanes redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/hurricane
After the Storm:	For everyone: cdc.gov/disasters/hurricanes/after For response workers: cdc.gov/disasters/hurricanes/info-hcp-workers Food and Water Safety: cdc.gov/disasters/foodwater/facts
Weather:	nhc.noaa.gov spaghettimodels.com

1Issa A, Ramadugu K, Mulay P, et al. Deaths Related to Hurricane Irma — Florida, Georgia, and North Carolina, September 4–October 10, 2017. MMWR Morb Mortal Wkly Rep 2018;67:829–832. DOI: <http://dx.doi.org/10.15585/mmwr.mm6730a5>

Preliminary Cases of Select Reportable Diseases in St. Lucie County and Florida, June 30, 2017 and 2018*

Disease Category	Year to Date January 1 - June 30, 2017 and 2018					
	St. Lucie County			Florida		
	2017	2018	% change	2017	2018	% change
Sexually Transmitted Diseases						
Gonorrhea	128	118	-7.81%	15,521	15,488	-0.15%
Chlamydia	594	674	13.47%	49,736	50,821	2.18%
Early Latent Syphilis	16	37	131.25%	2,700	3,194	18.30%
Tuberculosis						
TB Cases	3	3	0.00%	265	283	7%

*Data from the current year (2018) is considered provisional and therefore should not be used to confirm or rule out an increase in newly reported cases in St. Lucie County, or Florida. The final counts are generated in July of the following year. If during the review period a case is identified as previously diagnosed, or reported from another state, these duplicate cases are removed from the dataset and the related numbers will be adjusted. Increase in Reported HIV Infection Cases may be a result of increased testing.

Preliminary Cases and Incidence of Reportable Diseases/Conditions in St. Lucie County and Florida, Year to Date May 29, 2017 and 2018

Note that this table includes preliminary confirmed and probable cases (2018 data) reported in Florida residents (regardless of where infection was acquired) by date reported to the Bureau of Epidemiology as captured in the reportable disease surveillance system (Merlin).

Data for 2017 is final; data for 2018 is preliminary and will change. 2018 preliminary case counts are current as of the date above, but may change with additional review. A percentage of cases will be determined not to be cases after additional review and this percentage varies by disease.

Please note that counts presented in this table may differ from counts presented in other tables or reports, depending on the criteria used.

[^]Case definition for reported lead poisoning changed in 2018

^{**}From 2015 to 2016, the probable case classification for campylobacteriosis included non-culture tests for symptomatic people with no culture result available and no other enteric pathogen detected. Beginning in 2017, the probable case classification was revised to include non-culture tests for symptomatic people, independent of a culture result or detection of another enteric pathogen.

^{^^}Beginning in 2017, the probable case classification for salmonellosis, shigellosis, and vibriosis included non-culture tests, independent of the presence of symptoms

Disease Category	YTD Sept. 1, 2017		YTD Sept. 1, 2018	
	St. Lucie	Florida	St. Lucie	Florida
Vaccine-Preventable Diseases				
Measles (Rubeola)	0	3	0	11
Mumps	0	44	0	37
Pertussis	2	269	0	227
Varicella (Chickenpox)	3	450	9	553
CNS Diseases and Bacteremias				
Creutzfeldt-Jakob Disease (CJD)	0	21	0	13
Haemophilus influenzae Invasive Disease	1	186	0	230
in children 5 years or younger	0	25	0	31
Listeriosis	0	33	0	30
Meningitis, Bacterial or Mycotic	3	79	6	69
Meningococcal Disease	0	16	0	15
Streptococcus pneumoniae Invasive Disease	-	-	-	-
Drug-Resistant	3	163	2	161
Drug-Susceptible	8	226	2	276
Enteric Infections				
Campylobacteriosis**	37	2,972	65	3,331
Cryptosporidiosis	4	322	1	390
Cyclosporiasis	2	107	0	69
Escherichia coli, Shiga Toxin Producing (STEC)	0	106	6	562
Giardiasis, Acute	10	686	10	745
Salmonellosis^^	44	3,695	94	4,093
Shigellosis^^	1	900	7	1,016
Typhoid Fever (Salmonella serotype Typhi)	0	13	0	10
Viral Hepatitis				
Hepatitis A	0	177	1	184
Hepatitis B, Acute	12	494	7	573
Hepatitis B, Chronic	57	3,504	50	3,538
Hepatitis B, Surface Antigen in Pregnant Women	13	329	6	274
Hepatitis C, Acute	12	270	13	476
Hepatitis C, Chronic	327	17,917	367	17,289
Hepatitis D, E, G	0	5	1	6
Vectorborne, Zoonoses				
Chikungunya	0	1	0	3
Dengue Fever	0	15	0	20
Ehrlichiosis/Anaplasmosis	0	21	0	36
Lyme Disease	4	144	4	108
Malaria	1	41	0	36
Rabies, Animal	0	54	1	103
Rabies, Human	0	0	0	1
Rabies, Possible Exposure	70	2,247	92	2,767
Rocky Mountain Spotted Fever/Rickettsiosis	0	17	0	22
West Nile Virus Disease	0	2	0	7
Others				
Botulism, Foodborne	0	0	0	0
Botulism, Infant	1	1	0	1
Brucellosis	0	5	0	9
Carbon Monoxide Poisoning	1	106	1	110
Ciguatera Fish Poisoning	0	17	4	45
Lead Poisoning^	17	1,118	16	1,948
Legionellosis	4	260	5	297
Mercury Poisoning	2	28	0	35
Vibriosis (Excluding Cholera)^^	1	169	3	162

Final Case Count of Select Reportable Diseases in St. Lucie County and Florida, 2016 and 2017*

Disease Category	2016 and 2017 Final Data					
	St. Lucie County			Florida		
	2016	2017	% change	2016	2017	% change
HIV/AIDS						
Reported HIV Diagnoses	51	66	29.41%	4,805	4,949	3.00%
Reported AIDS Diagnoses	29	23	-20.70%	2,116	2,044	-3.40%
Prevalence (persons living with HIV/AIDS)	1,663	1,730	4.03%	115,266	116,944	1.46%

*see note on page 3