

- If you see a snake, back away from it slowly and do not touch it.
- If you or someone you know are bitten, try to see and remember the color and shape of the snake, which can help with treatment of the snake bite.
- Keep the bitten person still and calm. This can slow down the spread of venom if the snake is poisonous. Seek medical attention as soon as possible. Dial 911 or call local Emergency Medical Services. Poison Control Centers can also be a source of help and can be reached at 1-800-222-1222. Apply first aid if you cannot get the person to the hospital right away. Lay or sit the person down with the bite below the level of the heart.
 - Tell him/her to stay calm and still.
 - Cover the bite with a clean, dry dressing.

Plague:

There are reports that floodwaters bring a danger of plague. This is FALSE. Plague is rare in the United States. It is spread through fleas, not floodwater. CDC is not expecting to see an increased risk of plague from Hurricane Harvey. To learn more about plague, visit <https://www.cdc.gov/plague/>

MOSQUITOES AND HURRICANES

- Adult mosquitoes do not generally survive high winds during a hurricane.
- Immediately following a hurricane, flooding may occur. Mosquito eggs laid in the soil by floodwater mosquitoes during previous rain or floods hatch. This results in very large populations of floodwater mosquitoes. Most of these mosquitoes are considered nuisance mosquitoes.
- In general, nuisance mosquitoes do not spread viruses that make people sick. The types of mosquitoes that can spread viruses may increase 2 weeks to 2 months after a hurricane, especially in areas that did not flood but received more rainfall than usual.
- In areas with *Aedes aegypti* mosquitoes and local spread of Zika, chikungunya, or dengue, increased rainfall may result in increased hatching of *Ae. aegypti* eggs from water-holding containers. People may be at more risk of getting infected with these viruses, and they should take steps to protect themselves from mosquito bites.
- Because people spend more time outside cleaning up after a hurricane or flood, they are more likely to be bitten by nuisance mosquitoes. CDC does not expect to see a substantial increase in diseases spread by mosquitos, but CDC is not able to clearly predict if mosquito-borne diseases will increase in hurricane-affected areas. CDC continues to work with state and territorial health departments to monitor the situations and provide technical assistance as requested in areas impacted by recent hurricanes. CDC will share information with all its partners as it becomes available.
- Large numbers of nuisance mosquitoes can affect recovery efforts. For this reason, local or state mosquito control experts will often take steps to control these mosquitoes.
- Although flooding caused by hurricanes can be severe and an increase in mosquito populations is expected in the coming weeks, CDC does not expect to see a substantial increase in the



number of people getting sick from diseases spread by mosquitoes. CDC will work closely with state and local health officials to monitor the situation and take action if necessary.

MOSQUITOES AFTER HURRICANES HARVEY, IRMA, AND MARIA

- Populations of mosquitoes are expected to increase in areas affected by the hurricanes, including Texas, Florida, Puerto Rico, and the US Virgin Islands (USVI).
- At this time, CDC has not received reports of an increase in mosquito-borne diseases in any of the hurricane-affected areas.
- No data are available on the impact of back-to-back hurricanes, but impact is not expected to differ from impact of one severe hurricane.
- CDC continues to work with state and territorial health departments to monitor the situations and provide technical assistance as requested in areas impacted by recent hurricanes. CDC will share information with all its partners as it becomes available.
- CDC is not able to predict if mosquito-borne diseases will increase in hurricane-affected areas.
 - Many areas in the United States have the type of mosquitoes that can become infected with and spread Zika, dengue, and chikungunya (*Ae. aegypti* and *Ae. albopictus*) and West Nile viruses (*Culex spp.*).
 - CDC will maintain and improve our ability to identify and test for Zika and other mosquito-borne diseases.

PREVENT MOSQUITO BITES

The best way to prevent diseases spread by mosquitoes is [to protect yourself and your family from mosquito bites](#).

- Wear long-sleeved shirts and long pants.
- Stay in places with air conditioning and window and door screens to keep mosquitoes outside.
- Treat your clothing and gear with permethrin or buy pre-treated items (except in Puerto Rico, where permethrin is not effective).

Use Environmental Protection Agency (EPA)-registered insect repellents on exposed skin. Use a repellent with one of the following active ingredients: DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone.

- See EPA's search tool [here](#).
- Always follow the product label instructions.
- Reapply insect repellent as directed.
- Do not spray repellent on the skin under clothing.
- If you are also using sunscreen, apply sunscreen first and insect repellent second.

For babies and children:



- Dress your child in clothing that covers arms and legs.
- Cover crib, stroller, and baby carrier with mosquito netting.
- See insect repellent recommendations for children below.

[Take steps to control mosquitoes inside and outside your home](#)

- After a hurricane or flood, the health department or mosquito control district will often take steps to reduce the mosquito population.
- Residents can take steps to help control mosquitoes in and around their homes to prevent mosquito bites.

DENGUE

- Dengue is a disease caused by any one of four closely related dengue viruses (DENV 1, DENV 2, DENV 3, or DENV 4).
- The viruses are spread to people through the bite of an infected mosquito.
- It is estimated that there are over 100 million cases of dengue worldwide each year.

Dengue after Hurricanes Harvey, Irma, and Maria:

- Before Hurricanes Harvey and Irma, there was no local spread of dengue spread by *Aedes* mosquitoes in Houston or Florida, or other areas affected by flooding.
- Locally spread Zika and dengue have been reported in Puerto Rico and USVI this year. Although the flooding caused by recent hurricanes is severe and we do expect to see an increase the mosquito population in the upcoming weeks, we do not expect to see cases of dengue appear in the affected areas because of the flooding.

WEST NILE

- [West Nile](#) is a virus most commonly spread to people by mosquito bites.
- In North America, cases of West Nile virus (WNV) occur during mosquito season, which starts in the summer and continues through fall.
- WNV cases have been reported in all of the continental United States.
- There are no vaccines to prevent or medications to treat WNV. Fortunately, most people infected with WNV do not have symptoms.
- About 1 in 5 people who are infected develop a fever and other symptoms.
- About 1 out of 150 infected people develop a serious, sometimes fatal, illness.
- Though pregnant women are not at higher risk for WNV infection, they should take steps to prevent mosquito bites.

West Nile after Hurricanes Harvey and Irma:

- Cases of West Nile virus have been reported in Texas and Florida this summer.



- Although the flooding caused by Hurricanes Harvey and Irma is severe and we do expect to see an increase the mosquito population in the upcoming weeks, West Nile virus cases are not expected to increase in the affected areas as a result of flooding.

ZIKA

- [Zika](#) is a virus spread mostly by the bite of an infected *Aedes* species mosquito (*Ae. aegypti* and *Ae. albopictus*).
- It can also be passed through sex without a condom with an infected person, even if that person does not show symptoms.
- If a pregnant woman is infected with Zika virus, it can be passed to her fetus and potentially cause birth defects, including microcephaly and other severe fetal brain defects.
- Many people infected with Zika virus won't have symptoms or will only have mild symptoms. For those who do have symptoms, they are usually mild and last for several days to a week.
- Signs and symptoms of Zika virus infection include fever, rash, headache, joint pain, conjunctivitis (red eyes), and muscle pain.
- No specific treatment is available for Zika virus disease.
- The best way to prevent Zika and other viruses spread by mosquitoes is to prevent mosquito bites.
- Condoms can reduce the chance of getting Zika from sex.
 - Not having sex eliminates the risk of getting Zika from sex.

Zika after Hurricanes Harvey, Irma, and Maria:

- Prior to Hurricanes Harvey, Irma, and Maria, Zika outbreaks had occurred throughout the Americas, and in the US territories, Puerto Rico and US Virgin Islands (USVI). Local spread of the virus had been reported in [Texas](#) and [Florida](#). For more information, see [Areas with Risk of Zika](#).
- The types of mosquitoes that spread Zika [live in many areas](#) of the United States, including Texas and Florida, and in the US territories, Puerto Rico and USVI.
- On June 2, 2017, the yellow area designation was removed for Miami-Dade County, Florida.
- As of August 29, 2017, CDC, in collaboration with the Texas Department of State Health Services, has updated guidance for people who travel to or live in Brownsville, Texas, to lift the Zika cautionary (yellow) area designation.
- Although the level of risk of Zika virus transmission after a yellow area is removed is not known, it is likely to be low. However, sporadic cases may still occur.
- For this reason, CDC recommends that people living in or traveling to Miami-Dade County, Brownsville, Texas, Puerto Rico, and USVI continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- After the designations were lifted in these areas, before Hurricanes Harvey and Irma, there was no local spread of Zika spread by *Aedes* mosquitoes in Houston or Florida, or other areas in the continental United States affected by flooding. However, in 2017, local spread has been occurring in Puerto Rico and USVI.
- Continental US states: Although the flooding caused by the hurricanes is severe and we do expect to see an increase the mosquito population in the upcoming weeks, we do not expect to see cases of Zika appear in affected areas because of the flooding.



TEXAS

- Hurricane Harvey made landfall along the Middle Texas Coast on August 25, 2017.
- Brownsville, Texas was previously designated as a Zika cautionary (yellow) area, but that designation was lifted on August 29, 2017. This means that there are no longer any travel recommendations related to Zika virus for Brownsville. However, sporadic cases may still occur in Brownsville or the surrounding areas (e.g., Lower Rio Grande Valley). For this reason, CDC recommends that people living in or traveling to Brownsville and the southernmost areas of the state continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- The Texas Department of State Health Services is working with counties that have requested mosquito control assistance to coordinate spraying.
- Updates on mosquito control in Texas can be found at: <http://dsHS.texas.gov/news/releases/2017/20170906.aspx>

FLORIDA

- Hurricane Irma made landfall in the lower Florida Keys on September 10, 2017.
- Miami-Dade County was previously designated as a Zika cautionary (yellow) area, but that designation was removed on June 2, 2017. This means that there are no longer any travel recommendations related to Zika virus for Miami-Dade County, Florida. Although the level of risk of Zika virus transmission after a yellow area is removed is not known, it is likely to be low. However, sporadic cases may still occur. For this reason, CDC recommends that people living in or traveling to Miami-Dade County continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- Mosquito control activities including spraying are occurring in South Florida.

US TERRITORIES

- Puerto Rico and USVI have the type of mosquitoes that can become infected with and spread Zika, dengue, and chikungunya (*Ae. aegypti* and *Ae. albopictus*).
- CDC will continue to work with the Puerto Rico and USVI departments of health as requested.
- Puerto Rico did not see a significant increase in dengue cases after Hurricane Georges in 1998.
- Central America also did not see a significant increase in dengue cases after Hurricane Mitch in 1998.

PUERTO RICO

- Hurricane Irma and Hurricane Maria caused widespread flooding and devastation in Puerto Rico in September, 2017.
- Locally spread cases of Zika and dengue have been reported in Puerto Rico this year.
- No cases of chikungunya have been reported in 2017.
- Puerto Rico did not spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Irma.
- CDC is not aware if Puerto Rico will spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Maria.



US VIRGIN ISLANDS

- Hurricane Irma and Hurricane Maria caused widespread flooding and devastation in the US Virgin Islands in September, 2017.
- Local cases of Zika and dengue have been reported in USVI in 2017.
- No cases of chikungunya have been reported in 2017.
- USVI did not spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Irma.
- USVI officials are preparing a request to FEMA for aerial larvicide application.

For more information about Zika virus, click here: <https://www.cdc.gov/zika/about/index.html>

For more information about Zika virus and pregnancy, click here:
<https://www.cdc.gov/zika/pregnancy/index.html>

For more information about Zika virus prevention, click here:
<https://www.cdc.gov/zika/prevention/index.html>

CHEMICAL AND OIL EXPOSURES

- Use extreme caution when returning to your area after a flood. Be aware of potential chemical hazards you may encounter during flood recovery. Flood waters may have buried or moved hazardous chemical containers of solvents or other industrial chemicals from their normal storage places.
- If any propane tanks (whether 20-lb. tanks from a gas grill or household propane tanks) are discovered in a previously flooded area, do not attempt to move them yourself. These represent a very real danger of fire or explosion, and if any are found, police or fire departments or your State Fire Marshal's office should be contacted immediately.
- Car batteries, even those in flood water, may still contain an electrical charge and should be removed with extreme caution by using insulated gloves. Avoid coming in contact with any acid that may have spilled from a damaged car battery.
- Containers of dry chemicals that may have become wet due to flooding in your home or garage can be dangerous. When in doubt about how to safely handle these chemicals, contact your local fire department.
- Avoid Oil Spills
 - Crude oil is a mixture of chemicals that could be released into the environment during an emergency such as a hurricane and flood. In flood situations, some parts of the oil will float on water and can be seen as a film on the surface, and other parts will sink to the bottom. Other parts of the oil can become fumes in the air. People can come into contact with these chemicals by getting them on their skin or by breathing them in the air. If you notice oil in the water, stay away from it and contact local authorities or EPA at 1-800-424-8802. Emergency responders and workers should use appropriate clothing and personal protective equipment when working in these hazardous conditions.

