

**This is an official**  
**CDC HEALTH ADVISORY**

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## **Advice for Health Care Providers Treating Patients in or Recently Returned from Hurricane-Affected Areas, Including Puerto Rico and the US Virgin Islands**

### **Summary**

The Centers for Disease Control and Prevention (CDC) is working with federal, state, territorial, and local agencies and global health partners in response to recent hurricanes. CDC is aware of media reports and anecdotal accounts of various infectious diseases in hurricane-affected areas, including Puerto Rico and the US Virgin Islands (USVI). Because of compromised drinking water and decreased access to safe water, food, and shelter, the conditions for outbreaks of infectious diseases exist.

The purpose of this HAN advisory is to remind clinicians assessing patients currently in or recently returned from hurricane-affected areas to be vigilant in looking for certain infectious diseases, including leptospirosis, dengue, hepatitis A, typhoid fever, vibriosis, and influenza. Additionally, this Advisory provides guidance to state and territorial health departments on enhanced disease reporting.

### **Background**

Hurricanes Irma and Maria made landfall in Puerto Rico and USVI in September 2017, causing widespread flooding and devastation. Natural hazards associated with the storms continue to affect many areas. Infectious disease outbreaks of diarrheal and respiratory illnesses can occur when access to safe water and sewage systems are disrupted and personal hygiene is difficult to maintain. Additionally, vector borne diseases can occur due to increased mosquito breeding in standing water; both Puerto Rico and USVI are at risk for outbreaks of dengue, Zika, and chikungunya.

Health care providers and public health practitioners should be aware that post-hurricane environmental conditions may pose an increased risk for the spread of infectious diseases among patients in or recently returned from hurricane-affected areas; including leptospirosis, dengue, hepatitis A, typhoid fever, vibriosis, and influenza. The period of heightened risk may last through March 2018, based on current predictions of full restoration of power and safe water systems in Puerto Rico and USVI.

In addition, providers in health care facilities that have experienced water damage or contaminated water systems should be aware of the potential for increased risk of infections in those facilities due to invasive fungi, nontuberculous *Mycobacterium* species, *Legionella* species, and other Gram-negative bacteria associated with water (e.g., *Pseudomonas*), especially among critically ill or immunocompromised patients.

Cholera has not occurred in Puerto Rico or USVI in many decades and is not expected to occur post-hurricane.

## Recommendations

**These recommendations apply to healthcare providers treating patients in Puerto Rico and USVI, as well as those treating patients in the continental US who recently traveled in hurricane-affected areas (e.g., within the past 4 weeks), during the period of September 2017 – March 2018.**

- Health care providers and public health practitioners in hurricane-affected areas should look for community and healthcare-associated infectious diseases.
- Health care providers in the continental US are encouraged to ask patients about recent travel (e.g., within the past 4 weeks) to hurricane-affected areas.
- All healthcare providers should consider less common infectious disease etiologies in patients presenting with evidence of acute respiratory illness, gastroenteritis, renal or hepatic failure, wound infection, or other febrile illness. Some particularly important infectious diseases to consider include leptospirosis, dengue, hepatitis A, typhoid fever, vibriosis, and influenza.
- In the context of limited laboratory resources in hurricane-affected areas, health care providers should contact their territorial or state health department if they need assistance with ordering specific diagnostic tests.
- For certain conditions, such as leptospirosis, empiric therapy should be considered pending results of diagnostic tests— treatment for leptospirosis is most effective when initiated early in the disease process. Providers can contact their territorial or state health department or CDC for consultation.
- Local health care providers are strongly encouraged to report patients for whom there is a high level of suspicion for leptospirosis, dengue, hepatitis A, typhoid, and vibriosis to their local health authorities, while awaiting laboratory confirmation.
- Confirmed cases of leptospirosis, dengue, hepatitis A, typhoid fever, and vibriosis should be *immediately* reported to the territorial or state health department to facilitate public health investigation and, as appropriate, mitigate the risk of local transmission. While some of these conditions are not listed as reportable conditions in all states, they are conditions of public health importance and should be reported.

## For More Information

- General health information about hurricanes and other tropical storms: <https://www.cdc.gov/disasters/hurricanes/index.html>
- Information about Hurricane Maria: [https://www.cdc.gov/disasters/hurricanes/hurricane\\_maria.html](https://www.cdc.gov/disasters/hurricanes/hurricane_maria.html)
- Information for Travelers:
  - Travel notice for Hurricanes Irma and Maria in the Caribbean: <https://wwwnc.cdc.gov/travel/notices/alert/hurricane-irma-in-the-caribbean>
  - Health advice for travelers to Puerto Rico: [https://wwwnc.cdc.gov/travel/destinations/traveler/none/puerto-rico?s\\_cid=ncezid-dgmq-travel-single-001](https://wwwnc.cdc.gov/travel/destinations/traveler/none/puerto-rico?s_cid=ncezid-dgmq-travel-single-001)
  - Health advice for travelers to the U.S. Virgin Islands: [https://wwwnc.cdc.gov/travel/destinations/traveler/none/usvirgin-islands?s\\_cid=ncezid-dgmq-travel-leftnav-traveler](https://wwwnc.cdc.gov/travel/destinations/traveler/none/usvirgin-islands?s_cid=ncezid-dgmq-travel-leftnav-traveler)
  - Resources from CDC Health Information for International Travel 2018 (the Yellow Book):
    - Humanitarian Aid Workers: <https://wwwnc.cdc.gov/travel/yellowbook/2018/advising-travelers-with-specific-needs/humanitarian-aid-workers>
- Post-travel Evaluation: <https://wwwnc.cdc.gov/travel/yellowbook/2018/post-travel-evaluation/general-approach-to-the-returned-traveler>

- Information about infectious diseases after a disaster:
  - <https://www.cdc.gov/disasters/disease/infectious.html>
  - Dengue: <https://www.cdc.gov/dengue/index.html>
  - Hepatitis A: <https://www.cdc.gov/hepatitis/HAV/index.htm>
  - Leptospirosis: <https://www.cdc.gov/leptospirosis/>
  - Typhoid fever: <https://www.cdc.gov/typhoid-fever/index.html>
  - Vibriosis: <https://www.cdc.gov/vibrio/index.html>
  
- Information about other infectious diseases of concern:
  - Conjunctivitis: <https://www.cdc.gov/conjunctivitis/>
  - Influenza: <https://www.cdc.gov/flu/index.htm>
  - Scabies: <https://www.cdc.gov/parasites/scabies/index.html>
  - Tetanus and wound management: <https://www.cdc.gov/disasters/emergwoundhcp.html>
    - Tetanus in Areas Affected by a Hurricane: Guidelines for Clinicians  
<https://emergency.cdc.gov/coca/cocanow/2017/2017sept12.asp>

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**Categories of Health Alert Network messages:**

<b>Health Alert</b>	Requires immediate action or attention; highest level of importance
<b>Health Advisory</b> incident or situation	May not require immediate action; provides important information for a specific incident or situation
<b>Health Update</b> incident or situation	Unlikely to require immediate action; provides updated information regarding an incident or situation
<b>HAN Info Service</b>	Does not require immediate action; provides general public health information

##This message was distributed to state and local health officers, state and local epidemiologists, state and local laboratory directors, public information officers, HAN coordinators, and clinician organizations##