NATIONAL ASSOCIATION OF
Community Health Centers®

HEALTH CENTER

ENVIRONMENTAL HEALTH & CLIMATE CHANGE

QUICKSTART GUIDE

TABLE OF CONTENTS

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ENVIRONMENTAL HEALTH, CLIMATE CHANGE & HEALTH EQUITY

INTRODUCTION: HEALTH CENTERS, ENVIRONMENTAL HEALTH, AND HEALTH EQUITY

Community Health Centers (CHCs) are critical safety net providers in America's public health system. "Neighborhood Health Centers" were launched to improve the lives of Americans living in poverty and in need of health care and serve as one of the largest primary care systems in the United States of America. Today, there are over 1,400 health centers that operate approximately 15,000 service delivery sites across every U.S. state, territory, and the District of Columbia.[1]

Health centers provide care to many of America's systemically marginalized populations that face inequitable health impacts from environmental and climate issues because of practices like redlining and community divestment.[2][3] Nationwide, 19% of health center patients are uninsured; 61% are publicly insured; 90% are low-income; 64% are people of color; and 41% are rural residents.[4] These populations are hit hardest by environmental and climate change issues like air pollution, smoke, and poor indoor air quality; water contamination and drought; chemical and lead exposure; climate-fueled weather events and extreme heat; changes in vector ecology; and food insecurity, among others.

Further, health centers have played a historical role in addressing environmental and climate issues within their communities. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure.[5] Through their missions to provide comprehensive primary care services, health centers have demonstrated an effective track record and ability to protect their patients and communities from environmental and climate issues.

[1] NACHC, (2023). Health Centers by the Numbers.
[2] HHS, (2022). Climate Change and Health Equity.
[3] Lane et al. (2022). Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities.
[4] NACHC, (2023). Health Centers by the Numbers.
[5] Section 330 Public Health Services Act, (1978).

BUILDING HEALTH CENTER RESILIENCE TO ENVIRONMENTAL & CLIMATE ISSUES

Health centers can follow the four-step process outlined below to identify and prepare for environmental and climate change issues. This process was adapted from the Centers for Disease Control and Prevention's (CDC) Building Resilience Against Climate Effects (BRACE) framework.[6]

4 Evaluate & iterate

Assess health impacts of environmental & climate change issues

1

Review resources, possible strategies & interventions

2

3 Develop a plan & implement

Step 1: Assess health impacts of environmental & climate change issues.
Use publicly available data to assess environmental and climate trends in your local area. Additionally, consider empaneling patients or using social drivers of health screening data to identify those who might be most impacted by an environmental issue or climate event.

Step 2: Review resources, possible strategies & interventions
Identify and review already available resources to guide planning and action to address environment and climate challenges.

You may find a need for a more foundational understanding of the way the environment and climate impact health. Consider taking the Climate for Health training, which offers three continuing education credits at no cost.

Step 3: Develop a plan & implement
After understanding health impacts/issues in your community and reviewing resources, create a plan to protect patients and health center operations.

Step 4: Evaluate and iterate
After implementing your plan, evaluate outcomes, successes, and challenges. Iterate and refine as is needed.

[6] CDC, (2022). BRACE Framework.

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OVERVIEW OF THE QUICKSTART GUIDE

The sections of the QuickStart Guide will address Step 1 and Step 2 of the resilience cycle. The intended audience is for health center clinicians and operations staff. The topics included are:

- Assessing the health impacts of environmental and climate change issues: Publicly available data
- Resources for heat
- Resources for wildfires
- Resources for flooding
- Resources for hurricanes

While there are many environmental and climate change issues faced by health centers and their communities, climate-fueled weather events are becoming increasingly more frequent and severe. Furthermore, they pose many threats to health, water quality, air quality, and can impact housing and transportation. Each section of the guide is intended to stand alone and can be shared independently from other sections, depending on what is relevant to a specific health center or community.

Using the Guide
Each section of the guide will:

- Begin with an overview of why the issue is important for health centers
- Discuss what health centers can do
- Share a curated list of resources
- Provide an infographic to help health centers get started, which can be shared with operations and clinical staff

ASSESSING HEALTH IMPACTS OF ENVIRONMENTAL & CLIMATE CHANGE ISSUES

PUBLIC DATASETS

WHY IS THIS IMPORTANT?

Environmental and climate change issues like extreme heat, extreme weather events, and poor air and water quality pose significant threats to human health and well-being. Unfortunately, systemically marginalized groups, like people of color and individuals with limited income, are inequitably impacted.

Health centers have a long history of addressing environmental health challenges. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure, among others. In a recent assessment by the NACHC environmental health team, over 60% of health center sites were located in areas that are disproportionately impacted by environment and climate issues.[7] By using publicly available data, health center personnel can identify and plan to address these issues that impact their patient populations.

WHAT DATA ARE AVAILABLE?

There are many publicly available federal datasets that include many environmental indicators to support health centers in identifying environment and climate change issues and hazards in their areas. It is beyond the scope of this QuickStart Guide to offer a comprehensive list and comparison of these data sets. Instead, data sets that are especially relevant or already utilized by health centers have been included. Note that many data sets do not have complete data for US territories. Additional data and mapping resources for specific topics (e.g.: extreme heat, wildfires, etc.) are included in other sections of the guide.

[7] Council on Environmental Quality, (2022). Climate and Economic Justice Screening Tool.

PUBLICLY AVAILABLE DATA & MAPS

Resource	Description
Centers for Disease Control and Prevention (CDC): National Environmental Public Health Tracking Network (Tracking Network)	Comprehensive health and environmental data from national, state, and city sources.
Council on Environmental Quality: Climate and Economic Justice Screening Tool	Highlights disadvantaged census tracts across all 50 states, DC, and territories. Tracts are considered disadvantaged If they are in low-income and meet at least one threshold for identified categories of burden (climate, energy, health, etc.).
Federal Emergency Management Agency (FEMA): National Risk Index	Illustrates the US communities most at-risk for 18 natural hazards.
Federal Emergency Management Agency (FEMA): Community Disaster Resilience Zones (CDRZ)	483 communities identified to create focus for financial and technical assistance for community disaster preparedness.
Environmental Defense Fund and Texas A&M University: Climate Vulnerability Index	184 sets of data to rank census tracts that face the greatest challenges from the impacts of a changing climate
Environmental Protection Agency (EPA): Environmental Justice Screening and Mapping Tool (EJ Screen)	Environmental justice screening tool that provides national data to highlight places with higher environmental burdens and vulnerable populations. Creates 13 environmental justice indexes.

5 STEPS TO ASSESS
ENVIRONMENT & CLIMATE ISSUES

1 GET TRAINING

- Bolster your knowledge of environment & climate impacts to health by taking the free Climate for Health training.
- 3 continuing education credits for various health professions offered.

2 ASSESS THE ISSUES

Review publicly available data sets (see summary).

3 COMMUNICATE

- Communicate your findings with leadership.
- Consider creating a short summary of risks and issues.

4 REVIEW & PLAN

- Review available (or create new) resources for environmental and climate risks and issues.
- Craft an action plan.

5 GET CONNECTED

- Get connected to other health centers and primary care associations working to address environmental and climate issues.
- Join NACHC's Environmental Health and Climate Change Interest Group for monthly newsletters, office hours, and in-person gatherings.

HEAT

RESOURCES FOR ACTION
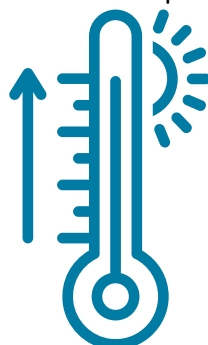
WHY IS THIS IMPORTANT?

Environmental and climate change issues like extreme heat, extreme weather events, and poor air and water quality pose significant threats to human health and well-being. Unfortunately, systemically marginalized groups, like people of color and individuals with limited income, are inequitably impacted.

Health centers have a long history of addressing environmental health challenges. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure, among others.

Extreme heat is a key environmental issue and is defined as "summertime temperatures that are much hotter and/or humid than average."[8] Heat impacts health center patients by causing heat related illnesses (like heat exhaustion and heat stroke), worsening air quality, and increasing the demand for power that can lead to blackouts. Ultimately, heat causes more deaths each year than hurricanes, floods, and tornadoes combined.[9] With a changing climate, heat is becoming more frequent, more intense, and lasting for longer periods of time. Older adults, children, people who work outside, and people with disabilities or chronic diseases are most likely to face negative impacts from heat.

WHAT CAN HEALTH CENTERS DO?

Health centers are in a unique position to prepare their staff, patients, and infrastructure for extreme heat. They can use the resources and infographic on the following pages to get ready for the next heat season and play an important part in reducing the number of preventable heat-related illnesses in their communities.

[8] CDC, (2023). About Extreme Heat.
[9] Scientific American, (2023). Extreme Heat Is Deadlier Than Hurricanes, Floods and Tornadoes Combined.

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KEY RESOURCES FOR HEAT

A curated list of resources that can support health centers to prepare fo heat.

Resource	Description
Administration for Strategic Preparedness and Response (ASPR) TRACIE: Plans, Tools and Templates for Extreme Heat	Resources part of the Topic Collection on Natural Disasters.
Americares and Harvard: Climate Resilience for Frontline Clinics Toolkit	Resources for providers, patients, and administrators for extreme heat.
Centers for Disease Control and Prevention (CDC): HeatRisk Forecasting tool, Clinical Heat Guidance, and Heat and Health Tracker	Provides local heat and health information so communities can better prepare for and respond to heat events.
CHARGE (Community Health Access to Resilient Green Energy)	Provides financing, design, and installation for solar microgrids so that health centers can build climate resilience.
Federal Emergency Management Agency (FEMA): Extreme Heat	Resources to prepare for before, during, and recovery after extreme heat.
Low-Income Home Energy Assistance Program	Provides assistance to some families to support energy costs. Eligibility criteria differ by state.

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KEY RESOURCES FOR HEAT

Resource	Description
Migrant Clinicians Network: Heat-Related Illness	Heat-related clinician's guides, webinars, bilingual training for farmworkers, and others.
National Integrated Heat Health Information System (NIHHIS): Heat.Gov	Includes tools, resources for preparation, and webinars.
National Oceanic and Atmospheric Administration (NOAA): Heat Safety Tips and Resources	Heat safety tips for before, during, and after a heat event. Also, stay up-to-date with heat forecasts.
Office of Climate Change and Health Equity: Climate and Health Outlook	Forecasts how health may be affected by climate events and provides resources to take proactive action.
Ready.Gov: Heat	Resources to prepare for before, during, and recovery after extreme heat.

6 STEPS TO PREPARE FOR HEAT

1 GET TRAINING

- Bolster your knowledge of environment & climate impacts on health by taking the free Climate for Health training.
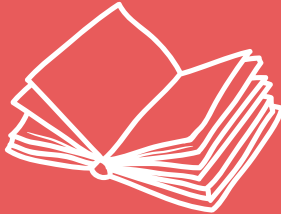- 3 continuing education credits for various health professions offered.

2 ASSESS THE ISSUES

- Use the CDC's HeatRisk Dashboard to forecast heat issues in your local area and the Heat and Health Tracker for heat-related health information.
- Review the Office of Climate Change and Health Equity's Climate and Health Outlook.
- Review other public datasets here.

3 REVIEW RESOUCES

- CDC clinical guidance for pregnant people, children with asthma, and people with cardiovascular diseases
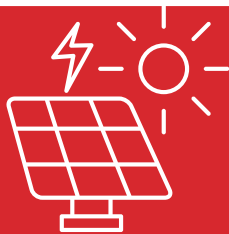- Americares and Harvard C-CHANGE heat planning guidance for providers, patients, and administrators.

4 PLAN

Share guidance and craft action plans for patients & health center operations. For patients, consider:
- Patient risk for heat exposure
- Helping access weather reports
- Access to air conditioning
- Planning to stay hydrated and cool
- Medications & air quality

5 BUILD RESILIENCE

- Unprecedented climate resilience funding and incentives are available within the Inflation Reduction Act.
- Connect with CHARGE for solar microgrid financing, design, and installation to withstand outages.

6 GET CONNECTED

Join NACHC's Environmental Health and Climate Change Interest Group for monthly newsletters, office hours, and in-person gatherings.

WILDFIRES

RESOURCES FOR ACTION

WHY IS THIS IMPORTANT?

Environmental and climate change issues like extreme heat, extreme weather events, and poor air and water quality pose significant threats to human health and well-being. Unfortunately, systemically marginalized groups, like people of color and individuals with limited income, are inequitably impacted.

Health centers have a long history of addressing environmental health challenges. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure, among others.

Wildfires have a variety of natural and man-made causes and can occur in can anywhere at any time. Wildfires have drastic implications for human health, including injury and particle pollution from smoke that can trigger coughing/wheezing, bronchitis, asthma attacks, heart attacks, and strokes.[10]

WHAT CAN HEALTH CENTERS DO?

Health centers are in a unique position to prepare their staff, patients, and infrastructure for wildfires. Health centers can use the resources and infographic on the following pages to prepare for wildfires.

[10] EPA, (2023). Wildfire Smoke and Your Patients' Health.

KEY RESOURCES FOR WILDFIRES

A list of resources that can support health centers to- prepare for wildfires.

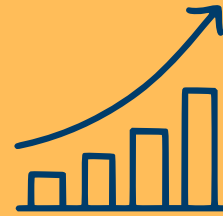| Resource	Description
Administration for Strategic Preparedness and Response (ASPR) TRACIE: Plans, Tools and Templates for Fires and Wildfires	Suite of resources that are a part of the Topic Collection on Natural Disasters.
AirNow: Fire and Smoke Map. There is also an Air Quality Map.	Federal government resource labeled as "your one stop shop for air quality data."
Americares and Harvard: Climate Resilience for Frontline Clinics Toolkit	Resources for providers, patients, and administrators for extreme heat, flooding, hurricanes, and wildfires.
Centers for Disease Control and Prevention (CDC): Natural Disasters and Severe Weather: Wildfires	Provides resources to prepare for and stay safe during a wildfire.
CHARGE (Community Health Access to Resilient Green Energy)	Provides financing, design, and installation for solar microgrids so that health centers can build climate resilience.
Federal Emergency Management Agency (FEMA): Wildfires	Resources to prepare for before, during, and recovery after wildfires.
Office of Climate Change and Health Equity: Climate and Health Outlook	Forecasts how health may be affected by climate events and provides resources to take proactive action.
Ready.Gov: Wildfires	Resources to prepare for before, during, and recovery after wildfires.

6 STEPS TO PREPARE FOR WILDFIRES

1 GET TRAINING

- Bolster your knowledge of environment & climate impacts to health by taking the free Climate for Health training.
- 3 continuing education credits for various health professions offered.

2 ASSESS THE ISSUES

- Use AirNow's site to view air quality and fire/smoke maps.
- Review the Office of Climate Change and Health Equity's Climate and Health Outlook.
- Review other public datasets here.

3 REVIEW GUIDANCE

Americares and the Harvard C-CHANGE have created wildfire planning guidance for providers, patients, and administrators, found here.
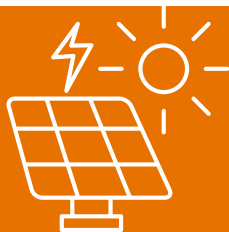
4 PLAN

Craft action plans for patients & health center operations.
For patients, consider:
- Weather and air quality reports
- Knowing when air quality is unsafe
- Creating an emergency kit
- Planning for power outages
- Planning for evacuation

5 BUILD RESILIENCE

- Unprecedented climate resilience funding and incentives are available within the Inflation Reduction Act.
- Connect with CHARGE for solar microgrid financing, design, and installation to withstand outages.

6 GET CONNECTED

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FLOODING

RESOURCES FOR ACTION

WHY IS THIS IMPORTANT?

Environmental and climate change issues like extreme heat, extreme weather events, and poor air and water quality pose significant threats to human health and well-being. Unfortunately, systemically marginalized groups, like people of color and individuals with limited income, are inequitably impacted.

Health centers have a long history of addressing environmental health challenges. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure, among others.

Flooding can occur suddenly and rapidly, typically due to heavy rain, coastal storms, and storm surges that overflows dams and other water systems. Flooding is the most common natural disaster in the United States. Failing to prepare and evacuate during flooding or entering flood waters can result in serious injury or even death for health center patients.

WHAT CAN HEALTH CENTERS DO?

Health centers are in a unique position to prepare their staff, patients, and their infrastructure from flooding. Floods can occur within minutes and can damage buildings, roads, cause power outages, and pollute drinking water, all which can be threatening to health center staff and their patients.[11] Health centers can use the resources and infographic on the following pages to prepare for the next flood.

[11] FEMA, (2024). Flood.

KEY RESOURCES FOR FLOODING

A curated list of resources that can support health centers to prepare for flooding.

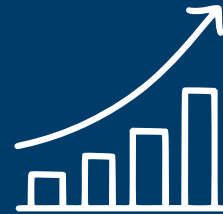| Resource	Description
Administration for Strategic Preparedness and Response (ASPR) TRACIE: Plans, Tools and Templates for Flooding	Suite of resources that are a part of the Topic Collection on Natural Disasters.
Americares and Harvard: Climate Resilience for Frontline Clinics Toolkit	Resources for providers, patients, and administrators for extreme heat, flooding, hurricanes, and wildfires.
Centers for Disease Control and Prevention (CDC): Guide for Preparing for a Flood	Resources to prepare for a flood.
CHARGE (Community Health Access to Resilient Green Energy)	Provides financing, design, and installation for solar microgrids so that health centers can build climate resilience.
Federal Emergency Management Agency (FEMA): Flood	Resources to prepare for before, during, and recovery after a flood.
National Oceanic and Atmospheric Administration (NOAA): Flood Safety Tips and Resources	Flood safety tips for before, during, and after a flooding event. Also stay up to date with flood forecasts and get access to educational materials.
Ready.Gov: Floods	Resources to prepare for before, during, and recovery after a flood.

6 STEPS TO PREPARE FOR FLOODING

1 GET TRAINING

- Bolster your knowledge of environment & climate impacts to health by taking the free Climate for Health training.
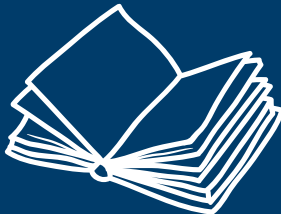- 3 continuing education credits for various health professions offered.

2 ASSESS THE ISSUES

- Use the National Risk Index and Flood Maps to view flooding risk in your local area.
- Review other public datasets here.

3 REVIEW GUIDANCE

Americares and the Harvard C-CHANGE have created flooding planning guidance for providers, patients, and administrators, found here.
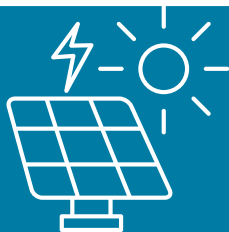
4 PLAN

Craft action plans for patients & health center operations.
For patients, consider:
- Helping access weather reports
- Risk for flood exposure
- Creating an Emergency Kit
- Planning for power outages
- Planning for evacuation

5 BUILD RESILIENCE

- Unprecedented climate resilience funding and incentives are available within the Inflation Reduction Act.
- Connect with CHARGE for solar microgrid financing, design, and installation to withstand outages.

6 GET CONNECTED

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HURRICANES

RESOURCES FOR ACTION

WHY IS THIS IMPORTANT?

Environmental and climate change issues pose significant threats to human health and well-being. Unfortunately, systemically marginalized groups, like people of color and individuals with limited income, are inequitably impacted.

Health centers have a long history of addressing environmental health challenges. In fact, Section 330 of the Public Health Services Act authorizes health centers to provide environmental health services related to the detection and alleviation of unhealthful conditions associated with water supply; chemical and pesticide exposures; air quality; and lead exposure, among others.

Hurricanes are dangerous and can cause catastrophic damage from storm surges, wind, and flooding. Historically, storm surges are the leading cause of hurricane-related deaths. Hurricanes are also not just a coastal problem, and rain, wind, and even tornadoes can occur far inland from where a hurricane has made landfall.[12]

WHAT CAN HEALTH CENTERS DO?

Health centers are in a unique position to prepare their staff, patients, and their infrastructure from hurricanes. Planning and preparing before a hurricane strikes can help manage the impact of high winds and storm surges for individuals and facilities. Health centers can use the resources and infographic on the following pages to prepare for the next hurricane.

[12] FEMA, (2024). Hurricane.

KEY RESOURCES FOR HURRICANES

A curated list of resources that can support health centers to prepare for hurricanes.

Resource	Description
Administration for Strategic Preparedness and Response (ASPR) TRACIE: Plans, Tools and Templates for Hurricanes	Suite of resources that are a part of the Topic Collection on Natural Disasters.
Americares and Harvard: Climate Resilience for Frontline Clinics Toolkit	Resources for providers, patients, and administrators for extreme heat, flooding, hurricanes, and wildfires.
Centers for Disease Control and Prevention (CDC): Guide to Prepare for a Hurricane	Resources for before and after a hurricane.
CHARGE (Community Health Access to Resilient Green Energy)	Provides financing, design, and installation for solar microgrids so that health centers can build climate resilience.
Federal Emergency Management Agency (FEMA): Hurricane	Resources for before, during, and recovery after a hurricane.
National Oceanic and Atmospheric Administration (NOAA): National Hurricane Center and National Hurricane Preparedness	Collection of resources that includes risk, how to prepare before hurricane season, how to understand forecast information, and more.
Ready.Gov: Hurricanes	Resources for before, during, and recovery after a hurricane.

6 STEPS TO PREPARE FOR HURRICANES

1 GET TRAINING

- Bolster your knowledge of environment & climate impacts to health by taking the free Climate for Health training.
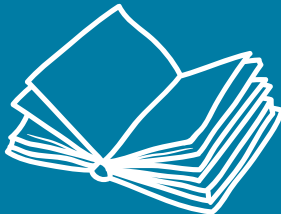- 3 continuing education credits for various health professions offered.

2 ASSESS THE ISSUES

- Use the National Risk Index to understand overall risk.
- Review the National Hurricane Center for current updates.
- Review other public datasets here.

3 REVIEW GUIDANCE

Americares and the Harvard C-CHANGE have created hurricane planning guidance for providers, patients, and administrators, found here.

4 PLAN
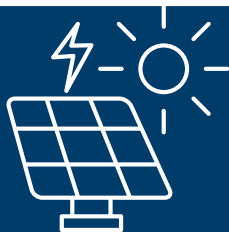
Craft action plans for patients & health center operations.
For patients, consider:
- Helping access weather reports
- Risk for hurricanes
- Creating an Emergency Kit
- Planning for power outages
- Planning for evacuation

5 BUILD RESILIENCE

- Unprecedented climate resilience funding and incentives are available within the Inflation Reduction Act.
- Connect with CHARGE for solar microgrid financing, design, and installation to withstand outages.

6 GET CONNECTED

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