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# **The Impact of Extreme Weather on Older Adult Patients: Considerations for Preparedness**

This issue brief is intended for health center providers and staff who serve older patients and their caregivers. It explores brief examples of how extreme weather events can impact older adults, as well as ways in which health centers can effectively prepare them for natural disasters. **For more information about the National Center for Equitable Care for Elders, visit [ece.hsds.harvard.edu](https://ece.hsds.harvard.edu).**



## The Issue

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Life-threatening weather events such as floods, droughts, hurricanes, extreme heat, and wildfires are increasing in frequency and intensity.<sup>1</sup> In 2024, weather-related events were among the highest and most costly on record in the U.S.<sup>2</sup> During the 2024 hurricane season, multiple severe storms, including Hurricanes Helene and Milton, overwhelmed disaster relief agencies' abilities to address the needs of those in affected areas. While natural disasters have the potential to impact the health and well-being of all health center patients, they may cause significant harm to older adults. Extreme weather often disrupts access to stable housing, medications, health care, social support, and a general sense of well-being. Older adults with limited physical, financial, or social resources have an increased risk of being in harm's way before, during, and after a catastrophic event.

The ability of our bodies to handle the effects of specific environmental hazards can decrease as people age. Older adults are more likely to have health conditions that increase their sensitivity to heat and air pollution, which can worsen their existing illnesses. The National Council on Aging estimates that nearly 95% of individuals aged 65 and older have at least one chronic condition, and almost 80% have two or more conditions, increasing their vulnerability to weather-related illnesses.<sup>3</sup> The use of medications that impair the body's response to heat can complicate chronic conditions such as heart disease, mental illness, poor blood circulation, and obesity.

Health centers must recognize the level of risk experienced by older adults during extreme weather and natural disasters. Understanding how and why disasters increase the morbidity and mortality rates of older

populations—more so than any other age group—is crucial for effective preparedness planning.

## Extreme Heat

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When extreme heat occurs on consecutive days (known as a heat wave), or in areas with reduced green spaces (known as urban heat islands), older adults are among the most affected by its impacts. Between 2019 and 2023, heat-related deaths in the United States increased by 117%.<sup>4</sup> Furthermore, 2024 was recorded as the warmest year to date.<sup>5</sup>

While temperature measured by a thermometer is a factor, it does not fully capture the risks associated with heat. The heat index, which combines air temperature and relative humidity to reflect perceived temperature, is a critical measure for assessing heat-related risks. Recent studies reveal that the heat index is rising faster than air temperatures alone due to increasing humidity levels, which may pose more significant health risks. Research indicates that a 3°F rise in temperature can feel like a 10°F increase when humidity is factored in, highlighting the importance of monitoring the heat index.<sup>6</sup> Heat-related illnesses include heat cramps, heat exhaustion, and heatstroke. It is essential for healthcare providers and older patients to understand and monitor the heat index and adhere to related health advisories.

Targeted public health interventions are crucial for protecting older populations during extreme temperature events, including both heat and cold. **Health center staff should be aware of where publicly available cooling or heating centers will be in case of an emergency, as well as if transportation arrangements can be proactively made for older patients to access them.**

## Water-Related Illnesses

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Hurricanes and floods often heighten the risk of waterborne illnesses for older adults from a number of possible contaminated water sources. Living with one or more chronic conditions can leave older patients less able to cope with these environmental exposures, intensifying the severity of waterborne diseases and complicating recovery.<sup>7</sup> Limited mobility, often associated with aging and chronic conditions, further increases the risk of exposure to contaminated water.<sup>8</sup>

In the United States, tropical cyclones on the East Coast have been linked to a rise in waterborne infectious diseases including gastrointestinal illnesses.<sup>9</sup> Following Hurricane Harvey in 2017, floodwaters in Texas, contaminated with sewage and industrial waste, led to outbreaks of GI and other infections.<sup>10</sup> Additionally, after Hurricane Florence in 2018, North Carolina recorded elevated levels of waterborne pathogens in floodwaters, raising concerns about potential outbreaks of waterborne diseases.<sup>11</sup>

**Health centers should provide patient education on steps to ensure water is safe to use during and after an emergency.**

## Diminished Air Quality

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Prolonged elevated temperatures and wildfire disasters, such as the 2025 Los Angeles fires fueled by the Santa Ana winds, can lead to increased levels of ground-level ozone, wildfire smoke, and airborne particulate matter, all of which compromise air quality. Older adults suffering from respiratory conditions, including asthma and chronic obstructive pulmonary disease (COPD), are particularly at risk, as poor air quality can exacerbate their conditions.<sup>7</sup>

Overall, air pollution is linked to various health risks, such as lung disease, heart disease, dementia, and osteoporosis. Among the most impacted are older adults and individuals with hypertension, who are at a greater risk of these complications.<sup>12</sup> **Health center staff should have patient educational material available on controlling or reducing exposure to environmental hazards that could impact existing lung diseases or their general health.**

## **Other Considerations**

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Age-related challenges, including social isolation, limited mobility, pre-existing chronic conditions, and cognitive decline, often intensify mental health issues following extreme weather events. The destruction of homes, belongings, and neighborhoods, along with the experience of evacuation and the threats to life, can contribute to post-traumatic stress disorder, depression, and anxiety.<sup>13</sup> When housing lacks proper insulation or adequate heating and air conditioning, older adults are at greater risk of heatstroke during heatwaves and hypothermia in cold spells.<sup>7</sup> **State-based low-income energy assistance programs (LIHEAP) can offer targeted services for home weatherization.**

Many older patients depend on a consistent routine of community services and support, including regular medical appointments, caregivers, and tailored programming. Disruptions in service delivery and decreased access to medical supplies or medications as a result of unexpected weather events can negatively impact both physical and psychological health outcomes.<sup>13</sup> **Offering early prescription refills prior to severe weather events and facilitating the delivery of medications to homebound patients can help ensure older adults have the medications they require on hand during an emergency.**

Those with limited social connections may be at risk for further experiences of isolation or feelings of loneliness. For older adults with cognitive impairments such as dementia, the stress associated with extreme weather events can accelerate cognitive decline in addition to the disruption of care. **Health centers should plan for the availability of mental health services—including counseling, crisis intervention, or support groups—during and after these emergencies.**

## **Preparing Older Adults for Weather-Related Emergencies**

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Providers and staff should prioritize the development and updating of tailored emergency preparedness plans that account for individual patients' risk factors and regional weather hazards. In addition to integrating this preparedness into preventive care efforts, community health workers (CHWs) are well-suited to be trained as “weather ambassadors”, visiting older adults and their caregivers in more rural or isolated areas to provide personalized information and support. The trust and rapport between CHWs and older patients can help better identify gaps in their social network or anticipate individual health challenges that could occur during a weather-related disaster.

Tailoring weather-related alerts, health advice, and emergency instructions for older patients and local populations will often entail providing material in multiple languages and a variety of formats (such as large print, braille, and audio messages). Automated emergency notifications through phone, email, or text messaging can be used to keep older adults informed about weather conditions, health advice, and available services. Wellness checks and symptom monitoring for adverse health events can be carried out in multiple ways depending on external conditions, including in-home visits, phone calls, and telehealth appointments. The expansion of telehealth

capabilities has increasingly allowed older adults to access health care remotely, which will be of great importance during extreme weather conditions.

Local Area Agencies on Aging (AAAs), senior centers, and disability support organizations should also be engaged to ensure emergency services are well-coordinated. These community partnerships can also allow for increased social connection, including check-ins and virtual programming for older adults and their caregivers.

## Conclusion

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Health centers are vital in ensuring that older adults stay safe, healthy, and connected during extreme weather events. The issues described in this brief underscore the need for individualized emergency preparedness plans, clear communication strategies, and tailored services to ensure older patients have the resources they need to safely navigate natural disasters and their after-effects.

## Resources

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- **Take Control in 1, 2, 3: Disaster Preparedness Guide for Older Adults** (Ready.gov)
- **State-by-State Emergency Preparedness Guide** (National Council on Aging)
- **Older Adults and Disaster: Preparedness and Response** (American Association for Geriatric Psychiatry)
- **Preparing for Emergencies** (Alzheimer's Association)

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