CMS Quality 2023 Conference

Building Resilient Communities:

Having an Equitable Foundation for Quality Healthcare

Climate Change: Implications and Opportunities for Healthcare Quality

HHS Office of Climate Change and Health Equity (OCCHE), May 2023

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AGENDA

- *Objective One:* Describe the health and health care challenges associated with climate change.
- *Objective Two:* Explain how climate change impacts care quality for beneficiaries.
- *Objective Three:* Introduce potential solutions to climate-related threats and relevant government resources.

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Medical Journals Call Climate Change the ‘Greatest Threat to Global Public Health’

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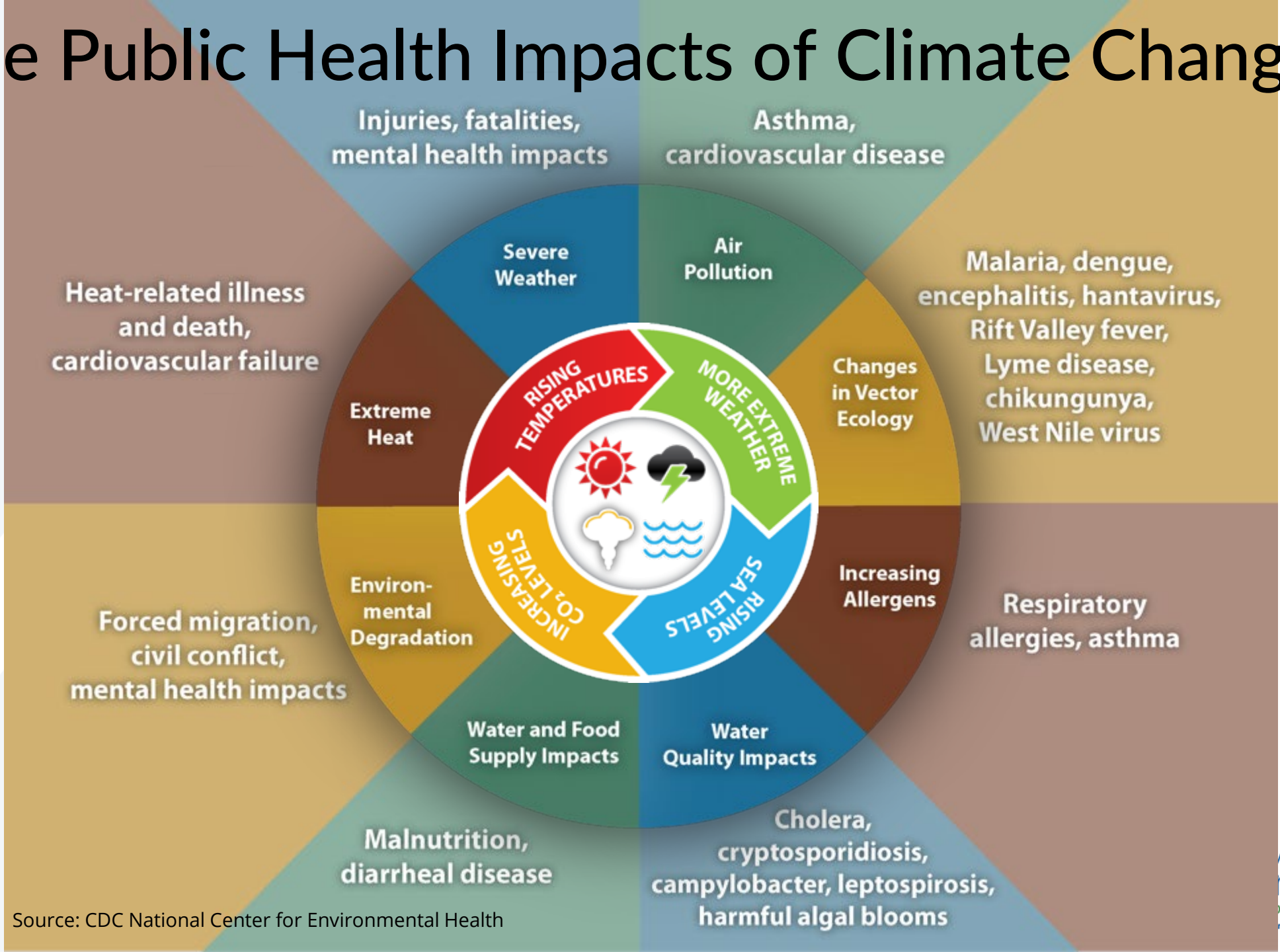
An editorial published by more than 200 journals worldwide warned of ‘catastrophic harm to health that will be impossible to reverse.’

Massive Climate-Related Risks

The Public Health Impacts of Climate Change



Source: CDC National Center for Environmental Health

Climate Change and Environment are Social Determinants of Health

People are at risk of experiencing climate change impacts when they are both **exposed** and **vulnerable** to **climate hazards.**

Figure 1.1 – Climate Change Risk Framework

Figure ES.1 – Primary Climate Change Impacts Analyzed in this Report

AIR QUALITY AND HEALTH
New asthma diagnoses in children age 0 to 17 due to particulate air pollution, and premature deaths in adults ages 65 and older due to particulate air pollution.[4]

COASTAL FLOODING AND TRAFFIC
Traffic delays due to high-tide flooding and extreme temperature and precipitation.[5]

EXTREME TEMPERATURE AND HEALTH
Deaths due to extreme temperatures.

COASTAL FLOODING AND PROPERTY
Property inundation due to sea level rise, and exclusion from protective adaptation measures.

EXTREME TEMPERATURE AND LABOR
Labor hours lost by weather-exposed workers due to high-temperature days.

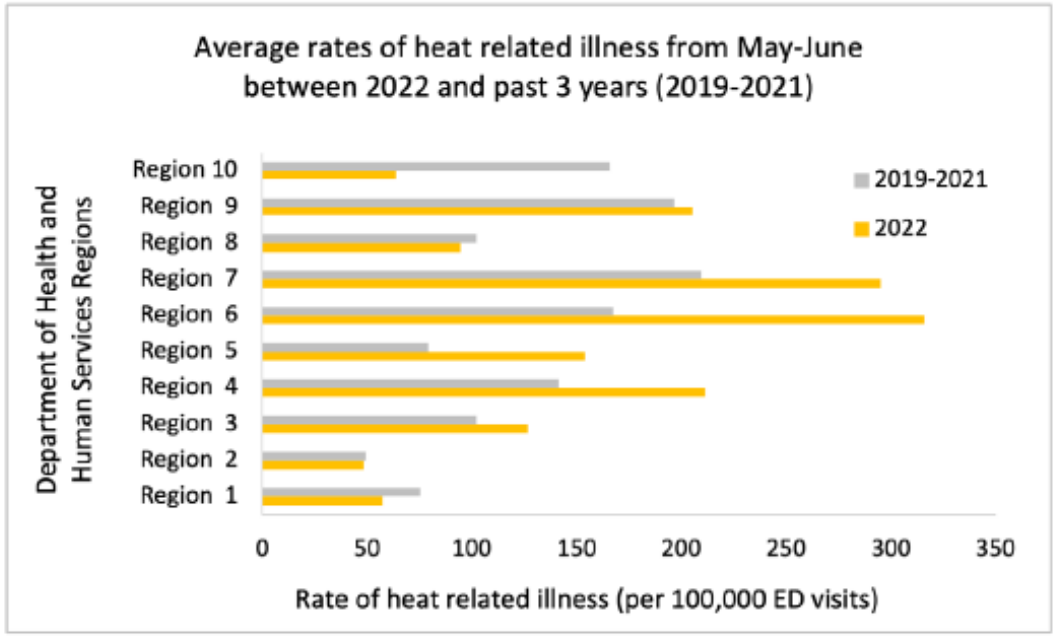
INLAND FLOODING AND PROPERTY
Property damage or loss due to inland flooding.

Images from *Climate Change and Social Vulnerability in the United States*, EPA, 2021

Implications of Climate Change for Beneficiaries (Outcomes) (1 of 3)

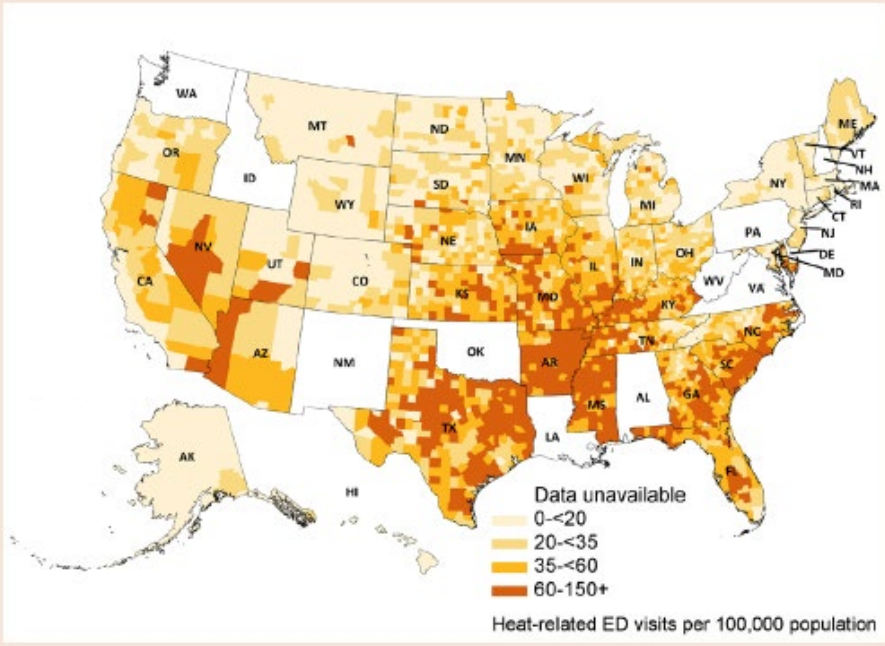
- Elderly populations
  - Heat-related mortality and morbidity: 350,000 heat-related deaths globally in 2019, 80% more than the average between 2000-2005 (Romanello, et al. 2021)
  - Increased catastrophic events with disproportionate impacts on disabled people (compromised ability to shelter, access to transportation)
  - Increased air pollution effects (e.g., cardiovascular impacts of particulate pollution)
  - Increase of infectious diseases (e.g., West Nile Virus)

Is heat related illness worse in 2022 compared to last three years?



Implications of Climate Change for Beneficiaries (Outcomes) (2 of 3)

- Low-income populations
  - Disproportionately impacted by extreme heat and climate-related events, exacerbated by social determinants of health and lack of resilient infrastructure
  - Data from AHRQ highlights that a larger proportion of rural than large metropolitan counties experience a high rate of heat-related illness



Emergency Department Visits with a Diagnosis Directly Indicating Heat Exposure per 100,000 Population, 2016-2019. Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Emergency Department Databases (SEDD) and State Inpatient Databases (SID), 2016-2019.

Implications of Climate Change for Beneficiaries (Outcomes) (3 of 3)

- Racial and ethnic minority populations
  - Black people 40% more likely to live in areas with projected increases in heat-related mortality (Schramm, et al. 2020) and suffering much higher asthma rates due to increased particulate matter
  - Significantly higher heat exposures and coastal exposures for black, indigenous and LatinX populations (EPA)
  - Data to the left describe the 291 counties across 16 states are estimated to have “extremely high,” “relatively high,” or “relatively moderate” hurricane risk by the National Risk Index (FEMA)

Risk factors vary across the 291 counties identified by FEMA. Of these counties:

49 (17%) have a high number of people aged 65 or over, living alone.

153 (53%) have a high number of people without health insurance.

70 (24%) have a high number of uninsured children.

35 (12%) have a high number of people living in rural areas.

235 (81%) have a high number of Black or African American persons.

118 (41%) have a high number of people with frequent mental distress.

154 (53%) have a high number of people living in poverty.

57 (20%) have a high number of people spending a large proportion of their income on home energy.

157 (54%) have a high number of people with severe housing cost burden.

Implications for CMS (Operations and Costs)

- Operations
  - Almost 75% of hospital evacuations between 2000-2017 climate-related (Salas, et al. 2020).

- Costs
  - 2012 study (Limaye, et al. 2019) looked at ten climate-related catastrophes with health care costs totaling $10B-plus, more than half of which was borne by Medicare.
  - OMB (2022) estimates that federal healthcare spending could increase between $824 million and $22 billion each year by the end of the century commensurate with expected public health effects of climate change (does not include CVD)

Put Another Way…

There is simply no dimension of quality that climate change doesn't impact, for example:

- **S**afety (e.g., disruptions in essential services)
- **T**imeliness (e.g., disruptions in access to care during emergencies)
- **E**ffectiveness (e.g., evolving, incomplete evidence base)
- **E**quity (e.g., disproportionate harm to vulnerable populations)
- **E**fficiency (e.g., unexpected costs and burdensome waste)
- **P**atient-centeredness (e.g., overburdened staff, further fragmented care)

Origins of the Office of Climate Change and Health Equity (OCCHE)

E.O. 14008 - "Tackling the Climate Crisis"

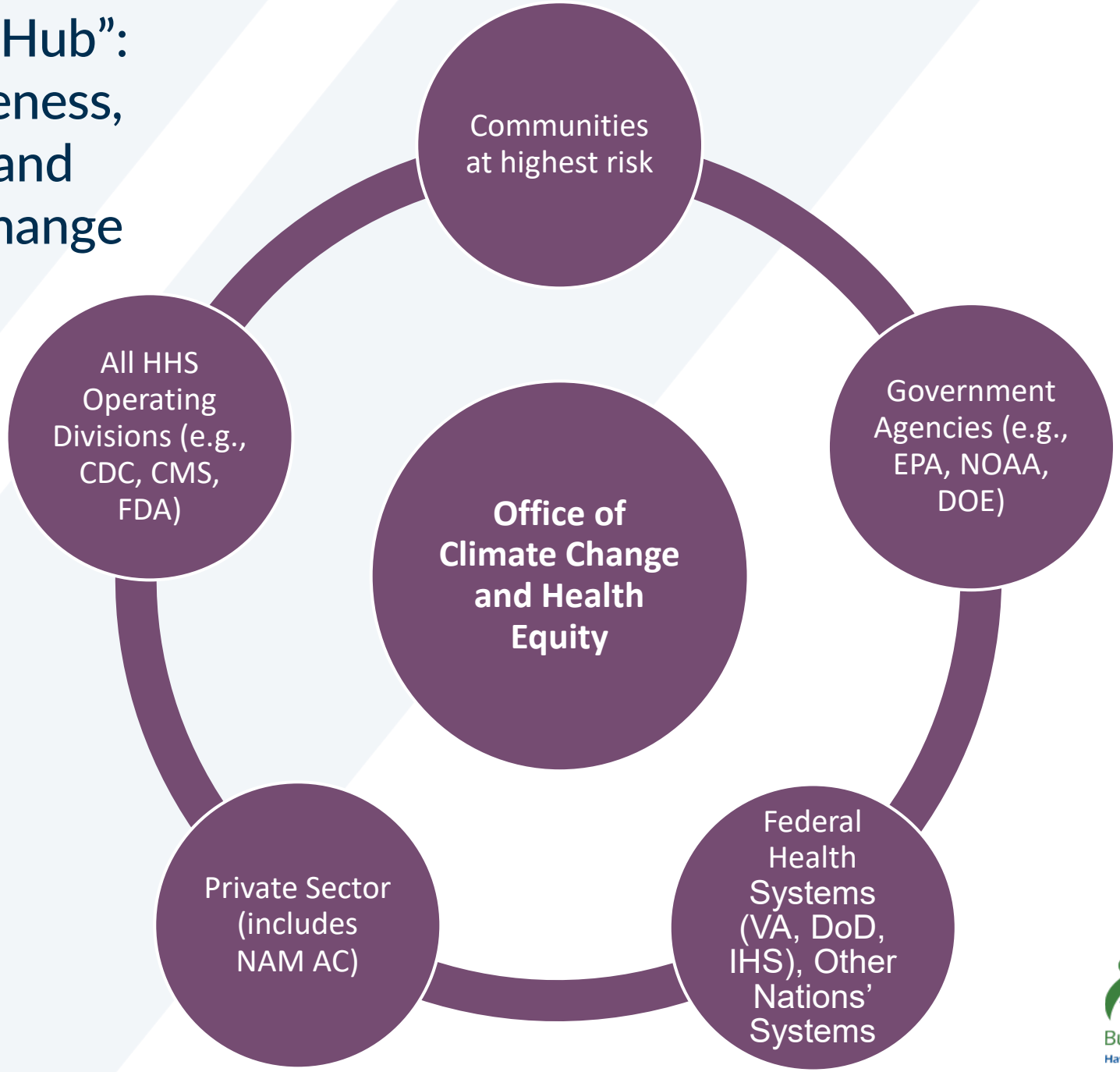
- HHS mandates (Section 222(d))
  - ✓Office of Climate Change and Health Equity
  - ✓Interagency Working Group to Decrease Risk of Climate Change to Children, the Elderly, People with Disabilities, and the Vulnerable
  - ✓Biennial Health Care System Readiness Advisory Council

Vision for Climate Health and Equity

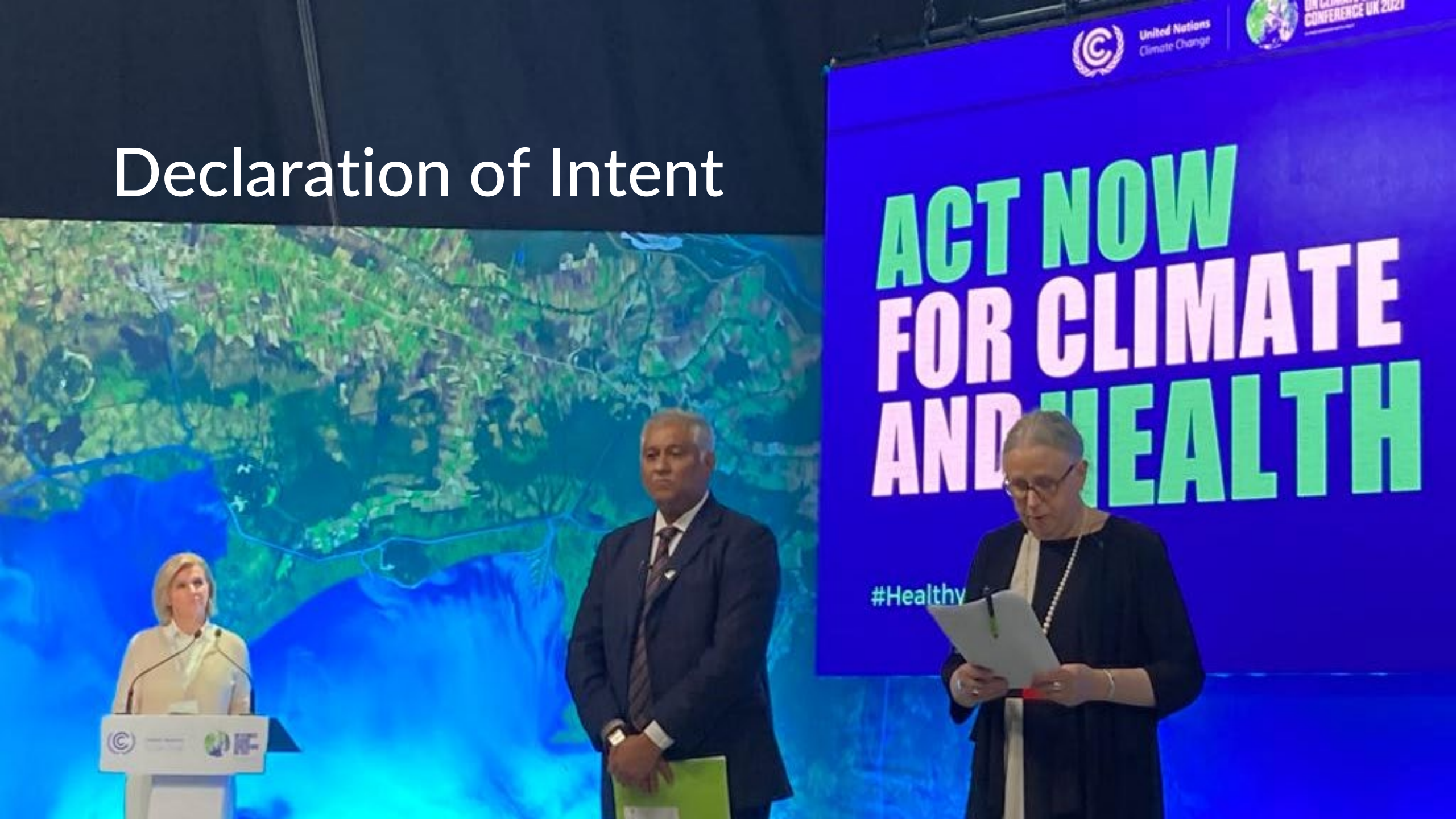
In the next 5 years, communities and the healthcare organizations that serve them are transformed…

- Every community, health system and provider in every U.S. geography is prepared for both disruptive and chronic climate impacts on its most vulnerable patient populations.
- Every healthcare institution is prepared for long-term operation, and can support community resilience, in the face of climate catastrophes (emphasis on safety-net providers).
- Every hospital and health system in the United States is publicly tracking its greenhouse gas emissions and is on a path to net zero by tackling Scope 1, Scope 2 and Scope 3 emissions.
- Public sector investments to reduce greenhouse gas emissions and fossil fuel dependence address improvement of health and health equity.
- *All HHS Operating Divisions and other relevant agencies are contributing toward these goals…*

The OCCHE "Hub": Raising Awareness, Building Will and Supporting Change



Declaration of Intent



White House/HHS Pledge

THE WHITE HOUSE

MENU

BRIEFING ROOM

FACT SHEET: Health Sector Leaders Join Biden Administration's Pledge to Reduce Greenhouse Gas Emissions 50% by 2030

JUNE 30, 2022 • STATEMENTS AND RELEASES

Health Sector Steps Up to Protect Public Health and Lower Costs

Today, the Biden-Harris Administration announced that 61 of the largest

Compendium of Supports

Forecasting Resources

Climate Change & Health Equity, and Environmental Justice at HHS
Climate Change and Health Equity
What's New
Climate and Health Outlook
Actions
Health Care Sector Pledge
Resources
Environmental Justice
Actions
Justice40 Initiative
Environmental Justice Index
Resources
Glossary of terms
About the Office of Climate Change and Health Equity (OCCHE)
About the Office of Environmental Justice (OEJ)

Climate and Health Outlook

Welcome to the fifth edition of the Climate and Health Outlook from the Department of Health and Human Services (HHS) Office of Climate Change and Health Equity (OCCHE). The Climate and Health Outlook is an effort to inform health professionals and the public on how our health may be affected in the coming month(s) by climate events and provide resources to take proactive action. This edition provides a seasonal outlook for the climate-related health hazards of wildfire, drought, extreme heat, hurricanes, and Lyme Disease. This webpage includes additional resources and information excluded from the PDF summary.

Download the Climate and Health Outlook for September 2022* - PDF

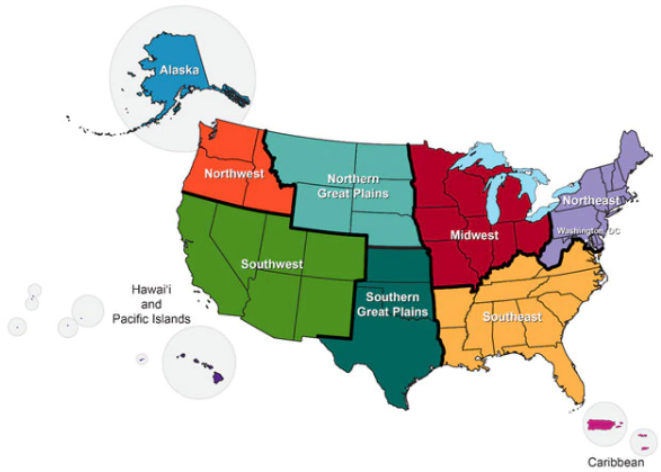


Image source: https://scenarios.globalchange.gov/regions_nca4

U.S. Seasonal Forecast for Health: September 2022

Regional health forecasts for heat, wildfire, drought, and hurricanes

Alaska: Normal wildland fire* potential is expected for Alaska through the rest of the 2022 wildfire season, after a very busy June and first half of July.

Northwest: One county in Idaho is projected to have more than 5 heat exceedance days in September 2022. Drought is favored to persist in parts of southern Idaho, southern and central Oregon, and central Washington. Above normal wildland fire* potential is projected for much of Idaho, southern and central Oregon, and central and southern Washington.

Southwest: Counties in California (10), Arizona (5), and Utah (2) , are projected to have more than 5 heat exceedance days in September 2022. Drought is favored to persist in California, Nevada, and Utah as well as parts of Arizona Colorado, and New Mexico. However, drought removal is favored in southern and central Arizona and much of New Mexico. Above normal wildland fire* potential is projected for northern California and north-western Nevada.

Climate and Health Outlook

ISSUED SEPTEMBER 2022

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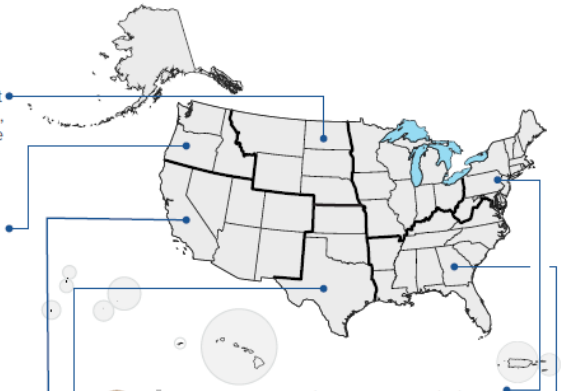

Northern Great Plains Drought is favored to persist or develop in Nebraska as well as parts of Montana, North Dakota, South Dakota, and Wyoming. Above normal wildland fire* potential is projected for western Montana.

Northwest: One county in Idaho is projected to have more than 5 heat exceedance days in September 2022. Drought is favored to persist in parts of southern Idaho, southern and central Oregon, and central Washington. Above normal wildland fire* potential is projected for much of Idaho, southern and central Oregon, and central and southern Washington.

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Southern Great Plains: Counties in Texas (2) are projected to have more than 5 heat exceedance days in September 2022. Drought is favored to persist in Kansas, much of Oklahoma and northern Texas. However, drought removal and improvement is favored in most of Texas and eastern Oklahoma. Above normal wildland fire* potential is projected for much of Oklahoma.

Northeast: Drought is favored to persist in parts of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Drought is favored to develop in parts of Delaware. Above normal wildland fire* potential is projected for Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, as well as eastern New York and the northern tips of New Jersey and Pennsylvania.

Southeast: The Atlantic basin is forecasted to have an above-average hurricane season with 14 – 20 named storms with winds of 39 mph or higher, with 6 –10 of those possibly becoming hurricanes with winds of 74 mph or higher, and 3 – 5 possibly becoming major hurricanes with winds of 111 mph or higher. One county in Florida is projected to have more than 5 heat exceedance days in September 2022. Drought is favored to develop in parts of North Carolina and South Carolina. However, drought removal/improvement is favored in parts of Arkansas, Mississippi, and Tennessee.

Drought Heat Hurricane Wildfire

*Smoke from wildfires can impact health hundreds of miles from site of the fire.
A "heat exceedance day" is when the daily maximum temperature is above the 95th percentile value of the historical temperature distribution in that county.
Developed with data from the Centers for Disease Control and Prevention, National Oceanic and Atmospheric Administration, and National Interagency Fire Center.

We want to hear from you! Please send your feedback on ways to improve the Climate and Health Outlook to ocche@hhs.gov. 1

Momentum on Resilience

- Letter on Implementing Supplemental Benefits for Chronically Ill Enrollees (April 24, 2019)
- Medicaid coverage of air filters and air conditioners, including the Oregon Health Plan 1115 Demonstration Waiver
- Community Benefit investments in several systems
- Development of “summer suite” of supports for vulnerable populations

JULY 28,2021

Wyden Calls on Oregon Insurers to Provide Seniors With Cooling and Air Filters

Wyden-Authored Law Allows Medicare Advantage Plans to Fund Preventative Non-Medical Safeguards to Keep Seniors Out of the Hospital

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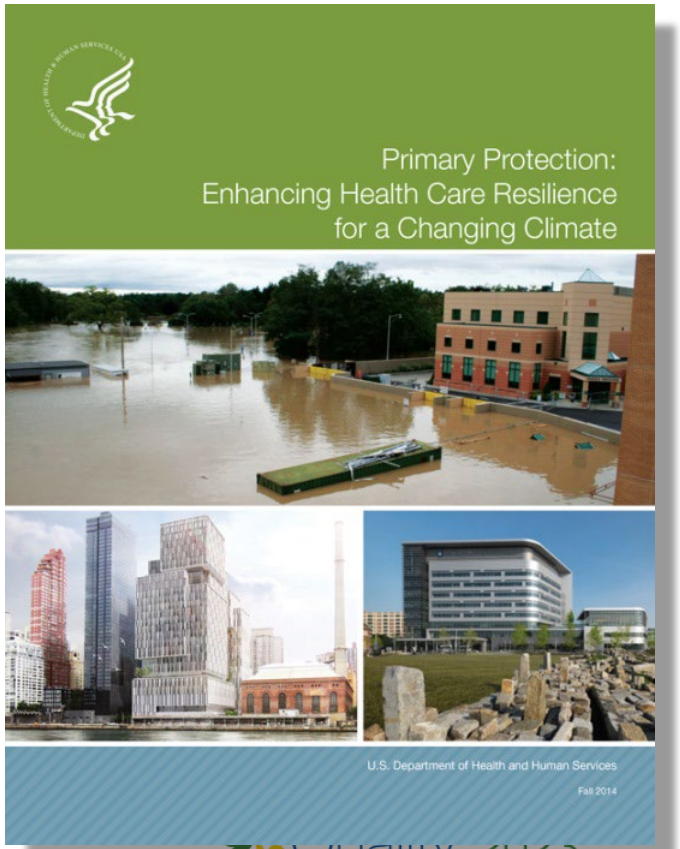
Sustainable and Climate-Resilient Health Care Facilities Toolkit ("Change Package")

This online toolkit provides a sequence of steps for achieving resilience:

1. Understanding exposure
2. Assessing vulnerability and risks
3. Investigating options for actions
4. Prioritizing and planning
5. Taking action



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This online toolkit provides a sequence of steps for achieving resilience:

1. Understanding exposure
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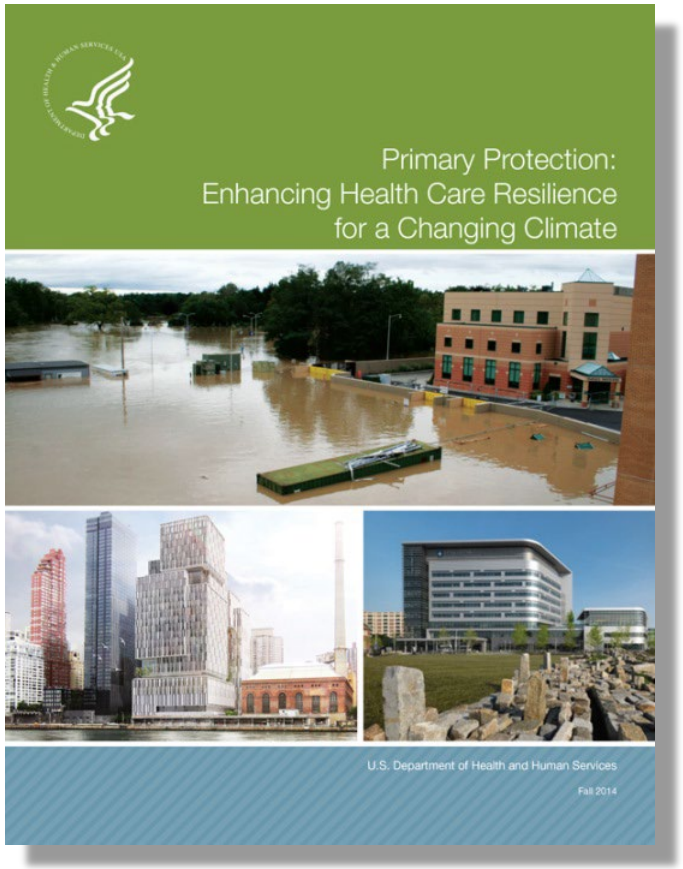
Aligned with:

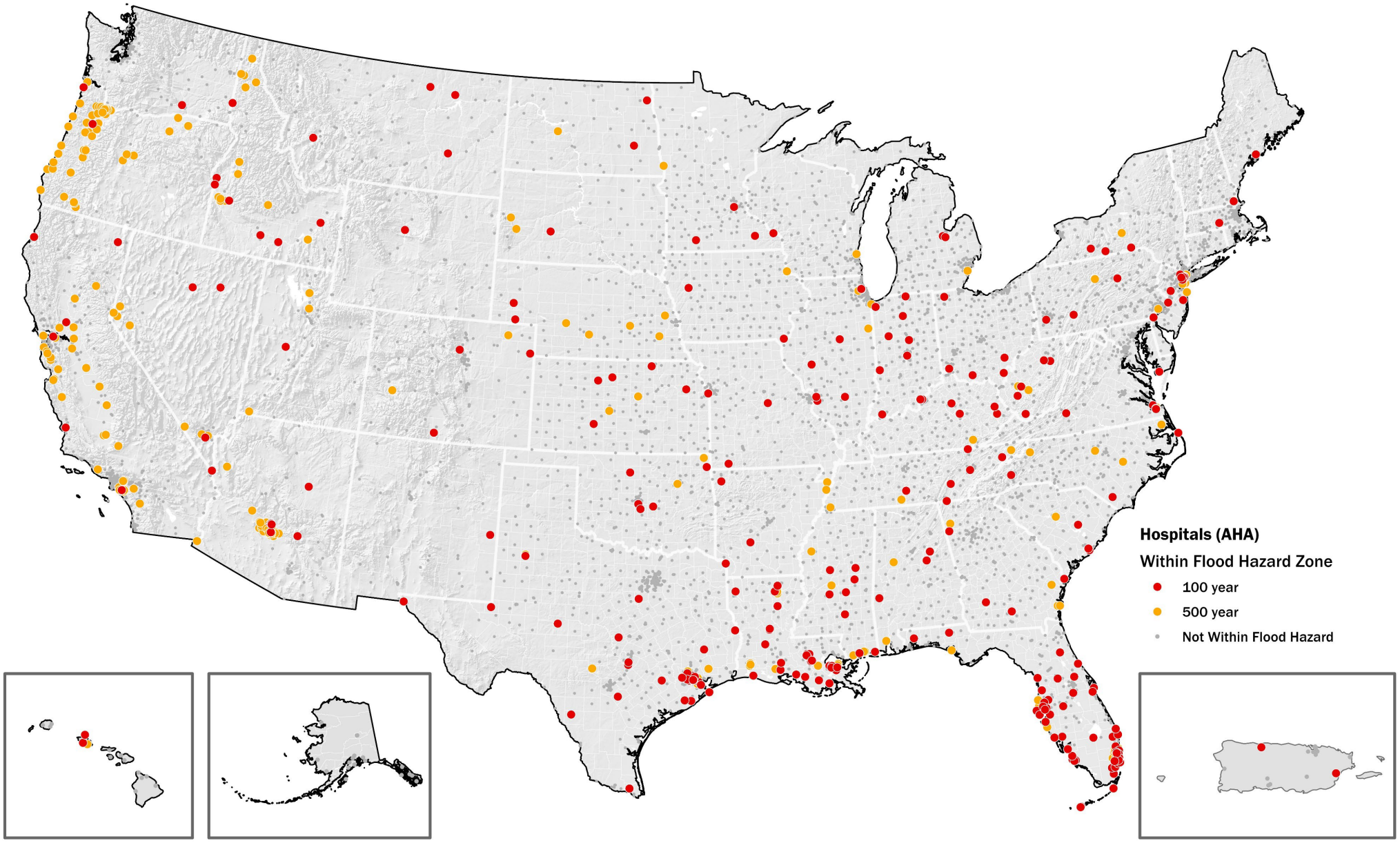
- Emergency Preparedness Rule compliance
- RISC 2.0
- Hospital Preparedness Program



SCRHCFI Version 2.0

Dimension	Current Version	Planned Updates
Understanding exposure	Background information on climate-related threats	Updated studies, illustrations and links to dynamic mapping tools
Assessment	Static PDFs and Excel Files for self assessment	Updated assessment questions to determine strengths and gaps
Investigating options for actions	Potential actions and case studies	Updated case studies and connections to new resources (e.g., funding, IRA incentives and technical assistance)
Prioritizing and planning	Tools and templates to prioritize action	Production of recommended actions, ROI calculator
Taking action	Instruction on improvement and implementation science	Tools to measure improvement and progress; access to peers and experts

Flooding Risk to Medical Infrastructure – Hospitals



Facilities Within Flood Hazard Area (NFHL or EPA)

	Hospitals	Nursing Homes	Dialysis Clinics	Pharmacies
High or Moderate to Low Flood Risk (100-year or 500-year floodplain)	643	1,546	770	7605
Percent of Total	9.3%	10.2%	10.9%	12.1%
N	6881	15133	7047	62516

Manangan, et al., 2020. Flooding Risk to Medical Infrastructure. Work in progress.

IRA Opportunities

THE WHITE HOUSE

AUGUST 17, 2022

FACT SHEET: Inflation Reduction Act Advances Environmental Justice

BRIEFING ROOM ▸ STATEMENTS AND RELEASES

Most Significant Climate Legislation in U.S. History Delivers for Overburdened Communities

By signing the Inflation Reduction Act, President Biden is delivering on his promise to build an economy that works for working families, including communities that have been underinvested and underserved for

Inflation Reduction Act: Potentially Relevant Incentives, Grants and TA

Mitigation (examples)

- Expansion of 179D Commercial Buildings Energy-Efficiency Tax Deduction
- Grants to enable low-income / disadvantaged communities to deploy or benefit from zero-emission technologies
- Low Emissions Electricity Program (LEEP) to advance GHG reductions from electricity generation focused on consumers, low-income and disadvantaged communities, state/tribal/local governments and industry
- Incentives for state/local governments to implement updated building codes, including for commercial buildings that meet or exceed the ANSI/ASHRAE/IES Standard 90.1—2019

Resilience and Adaptation (examples)

- Funds for coastal communities, including for technical assistance to prepare for extreme storms and other changing climate conditions
- Appropriations for grants, contracts or financial assistance to address the impacts of drought in the Reclamation States (17 Western states)
- Support for activities addressing climate and health risks from urban heat islands, extreme heat, and wildfire events
- Support for air quality monitoring in low-income communities

Benefits and Savings of Action

Health co-benefits from air pollution and mitigation costs of the Paris Agreement: a modelling study

Anil Markandya, Jon Sampedro, Steven J Smith, Rita Van Dingenen, Cristina Pizarro-Irizar, Iñaki Arto, Mikel González-Eguino

Summary

Background Although the co-benefits from addressing problems related to both climate change and air pollution have been recognised, there is not much evidence comparing the mitigation costs and economic benefits of air pollution reduction for alternative approaches to meeting greenhouse gas targets. We analysed the extent to which health co-benefits would compensate the mitigation cost of achieving the targets of the Paris climate agreement (2°C and 1·5°C) under different scenarios in which the emissions abatement effort is shared between countries in accordance with three established equity criteria.

looked forward to 2050 in accordance with the socioeconomic narrative Shared Socioeconomic Pathways 2.

Findings The health co-benefits substantially outweighed the policy cost of achieving the target for all of the scenarios that we analysed. In some of the mitigation strategies, the median co-benefits were double the median costs at a

> "The health co-benefits substantially outweighed the policy cost of achieving the target for all of the scenarios that we analysed."

https://www.thelancet.com/action/showPdf?pii=S2542-5196%2818%2930029-9