Accelerating the Transition to Climate-Smart Health Care

Health Leaders Fellowship Program
Ecology Center
August 25, 2020

Jessica Wolff, MBA, MSN
U.S. Director of Climate and Health
Health Care Without Harm | Practice Greenhealth

As the only sector with healing as its mission, health care has an opportunity to use its ethical, economic, and political influence to create ecologically sustainable, equitable, and healthy communities.

Health Care Without Harm

1996

Health Care Without Harm works to transform health care worldwide so that it reduces its environmental footprint, becomes a community anchor for sustainability and becomes a leader in the global movement for environmental health and justice.

36,000

Our reach includes 36,000 hospitals and health centers in 60 countries worldwide.
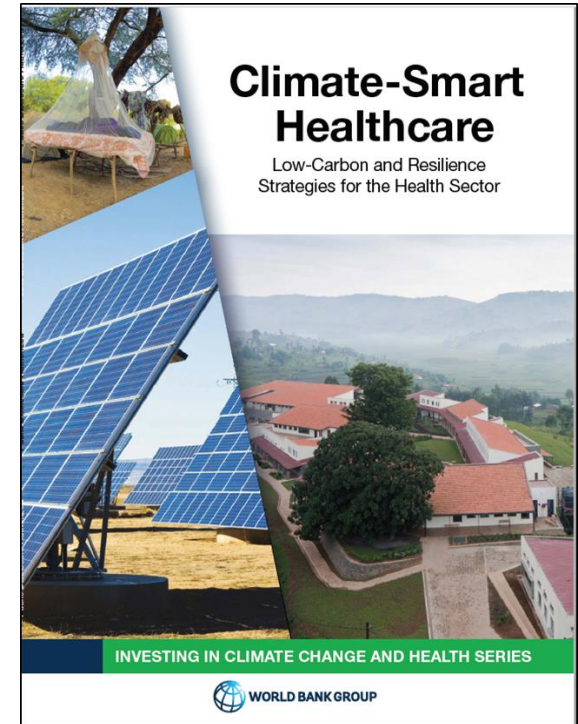
HCWH Network – Sister Organizations

MEMBERSHIP ARM

The leading nonprofit membership and networking organization for sustainable health care, Practice Greenhealth delivers environmental solutions to more than 1,100 members, lending support to create better, safer, greener workplaces and communities.

WORLDWIDE NETWORK

Global Green and Healthy Hospitals is a worldwide network of hospitals, health systems, and health organizations aimed toward building a global community committed to sustainable health care and healthy communities.

GREEN PURCHASING

Created by Practice Greenhealth, Health Care Without Harm, and leading health systems committed to sustainability, Greenhealth Exchange is a purchasing cooperative that makes buying products and services that are good for people, the planet, and the bottom line much easier.

Our approach | By embedding sustainability into health care operations, we drive the health care sector from within to lead broader societal change.

Innovate

We identify and pilot opportunities for health care to implement economical, science-based solutions to environmental health problems.
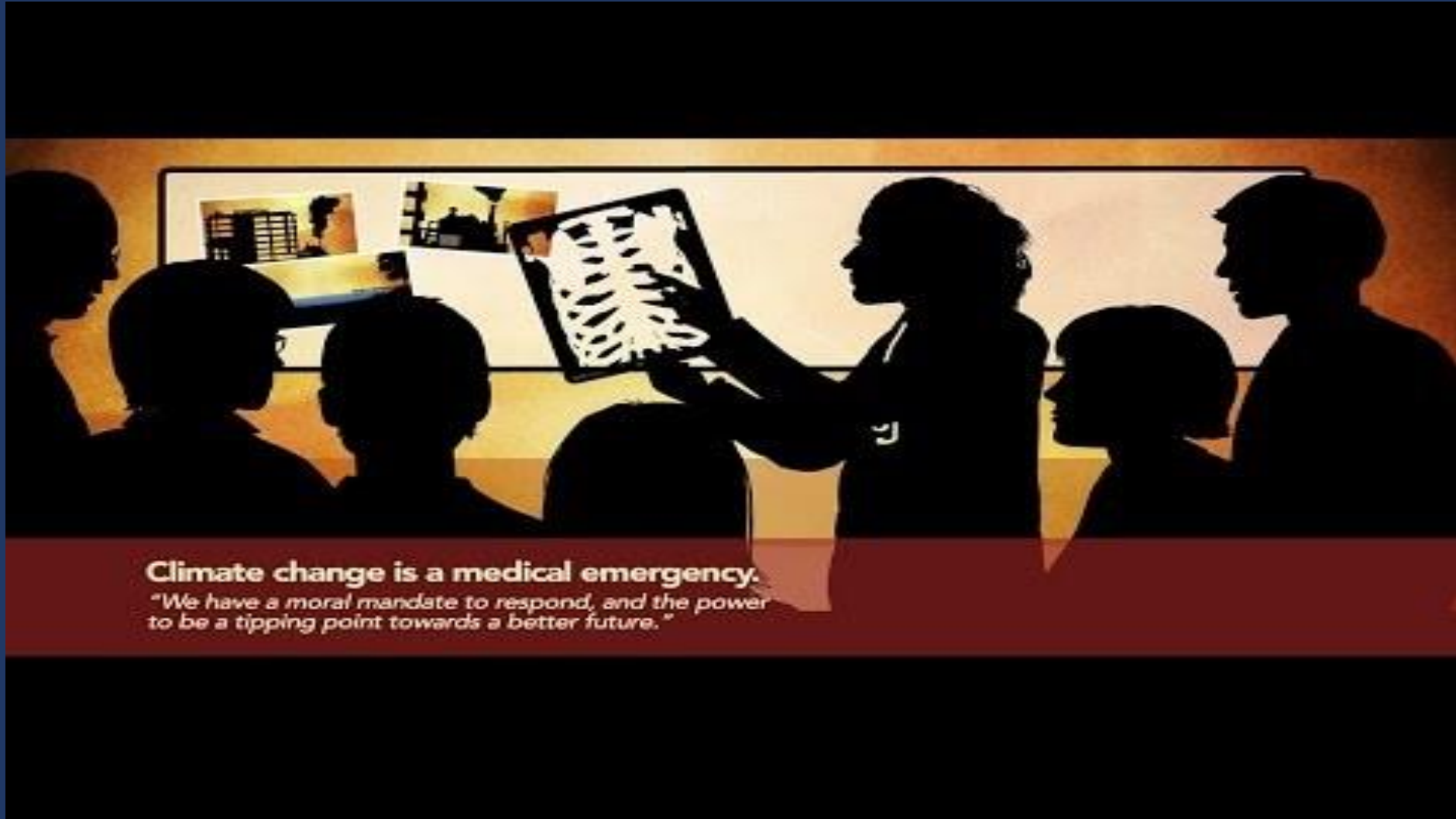
Scale

We educate, build implementation tools, train health care professionals, and scale solutions across our national and global health care networks.

Transform

We aggregate the influence and purchasing power of health care to drive the marketplace toward sustainability and policies that will create worldwide change.

Health Care Without Harm Video: Do No Harm

Climate change is a medical emergency.
"We have a moral mandate to respond, and the power to be a tipping point towards a better future."

Climate Change, Health and Health Care

Climate change and our health | Climate change causes widespread harm to our health.
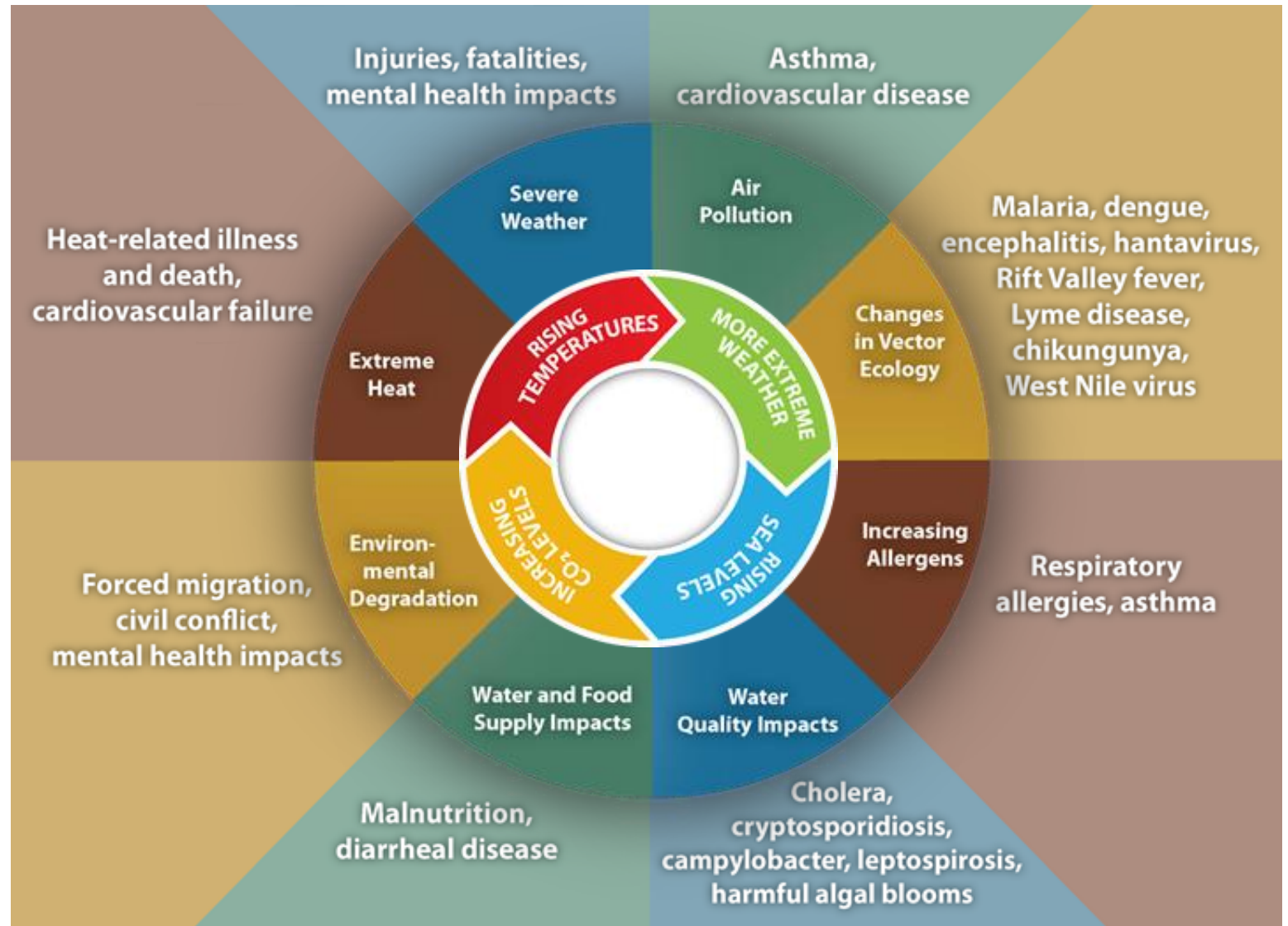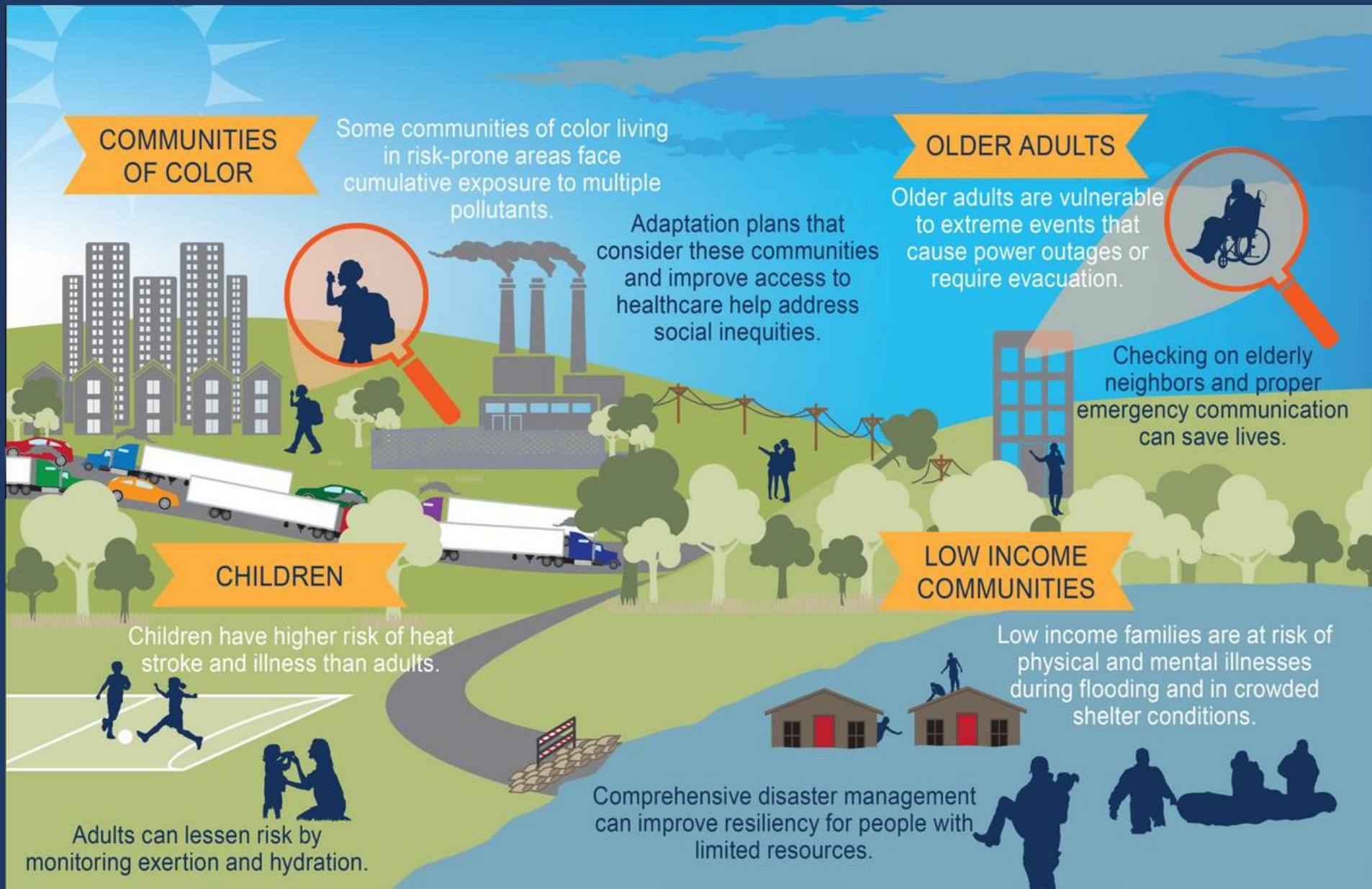
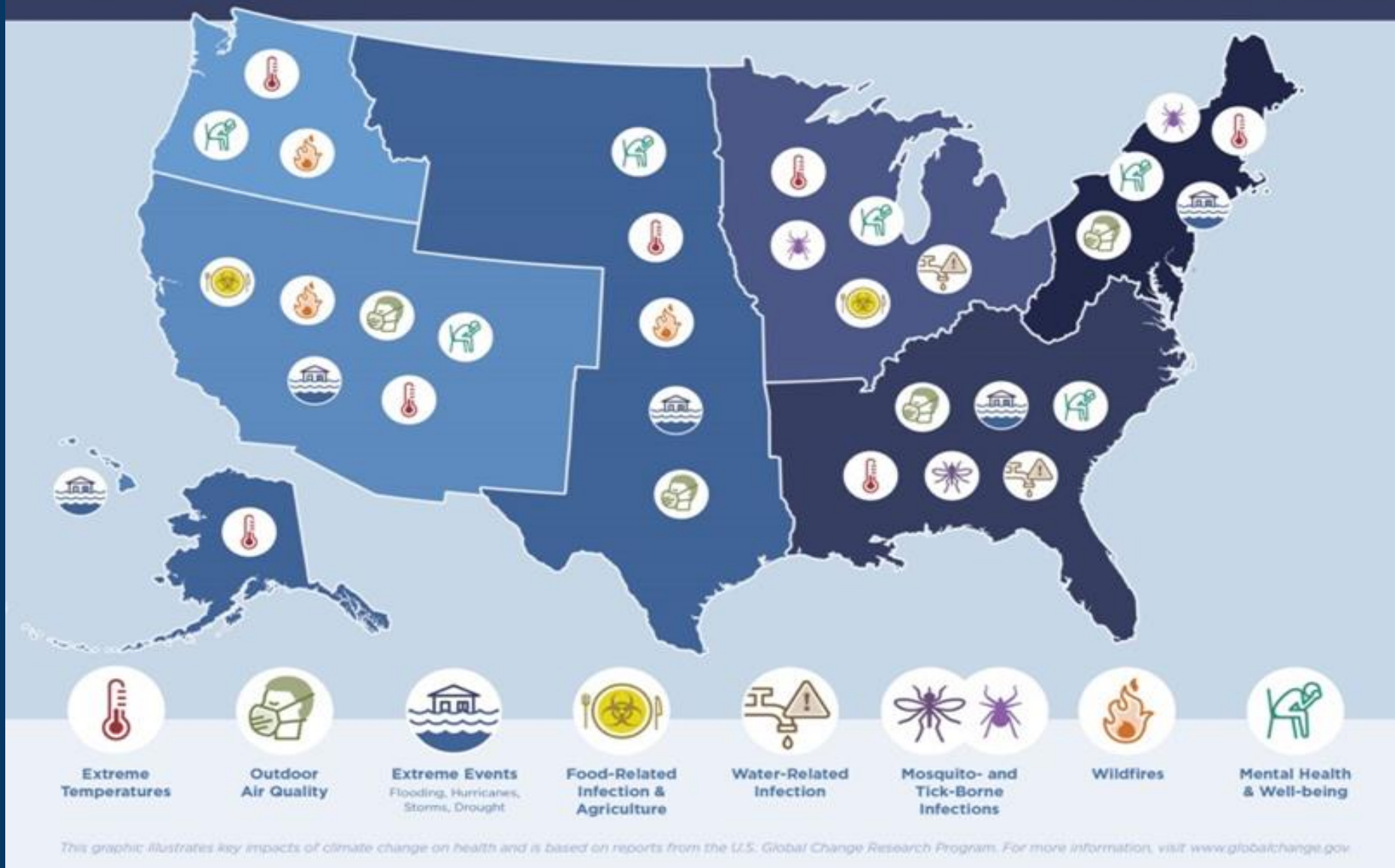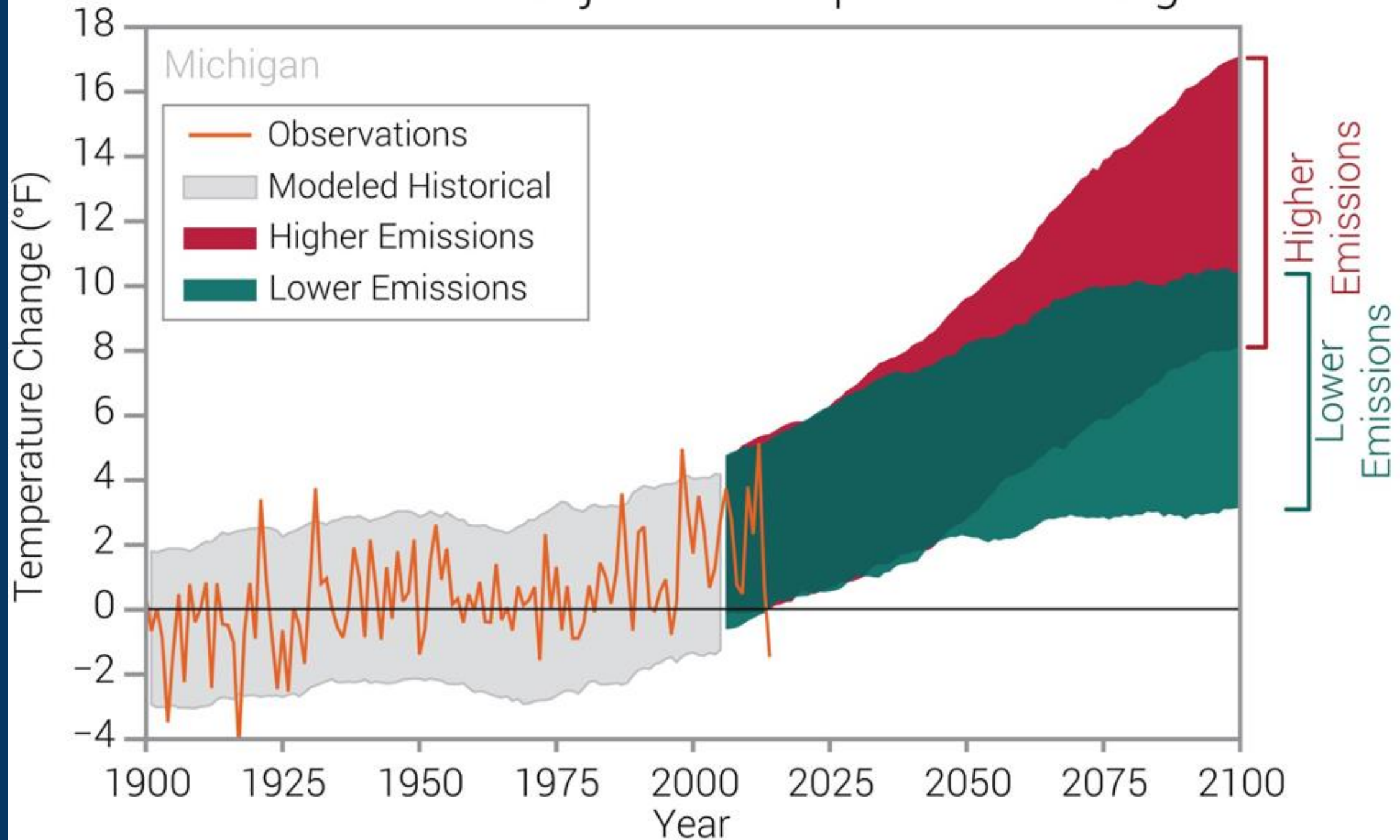Fourth National Climate Assessment, Figure 14.2

How Our Health is Harmed by Climate Change:
Impacts Differ by Geographic Region

The Medical Society Consortium
ON CLIMATE & HEALTH

Extreme Temperatures

Outdoor Air Quality

Extreme Events
Flooding, Hurricanes, Storms, Drought

Food-Related Infection & Agriculture

Water-Related Infection

Mosquito- and Tick-Borne Infections

Wildfires

Mental Health & Well-being

This graphic illustrates key impacts of climate change on health and is based on reports from the U.S. Global Change Research Program. For more information, visit www.globalchange.gov
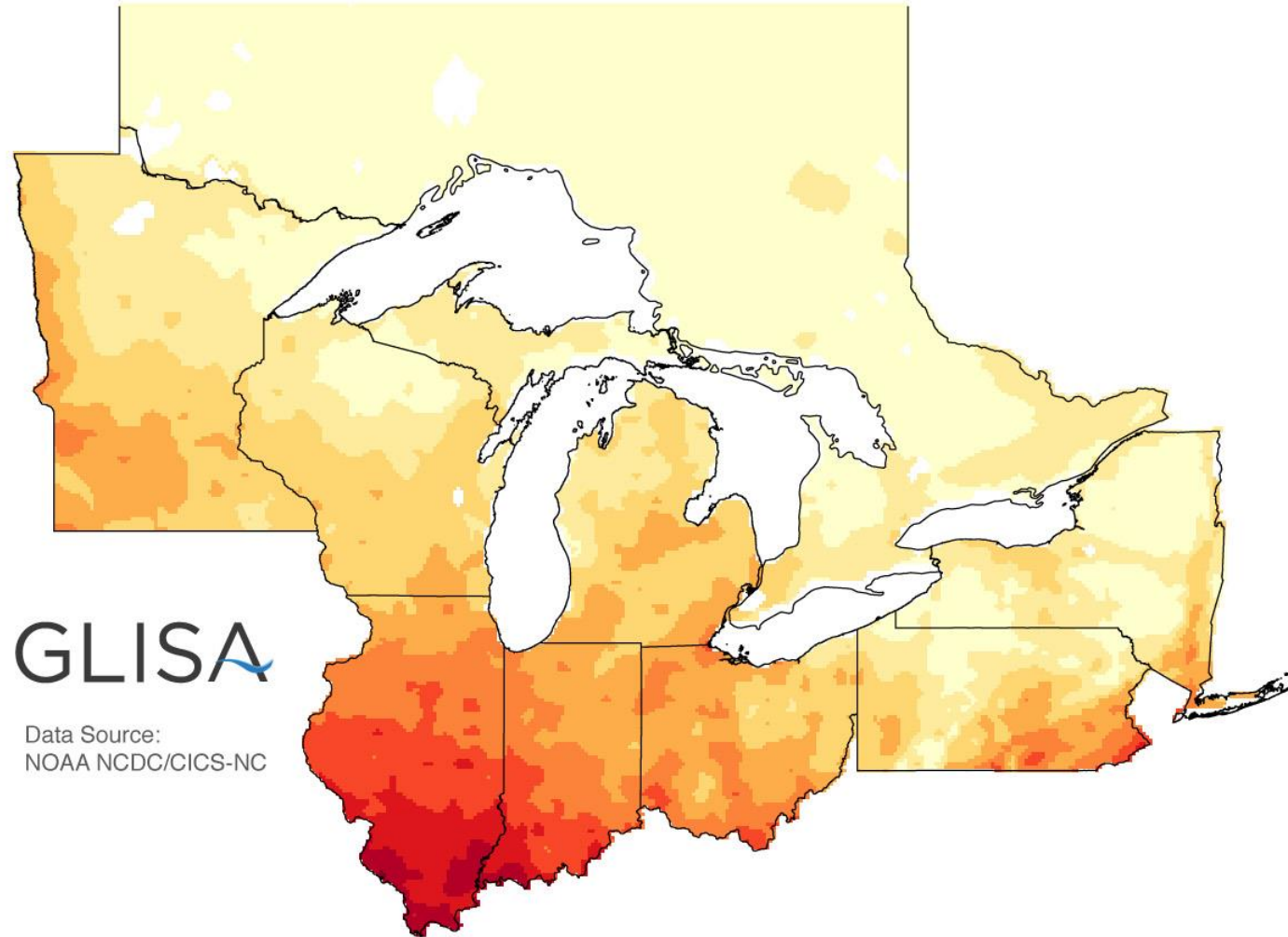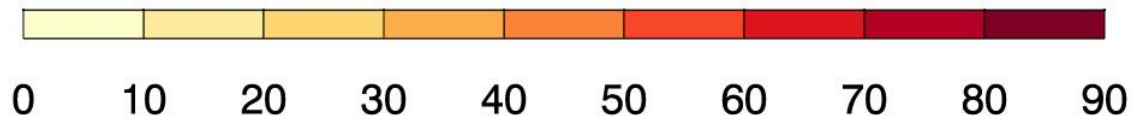
Health Care Without Harm

Observed and Projected Temperature Change

Projected Change in Number of Days Over 90°F
Period: 2041-2070 | Higher Emissions: A2

Change In Number of Days Per Year

0   10   20   30   40   50   60   70   80   90

Heat Wave Days Projected to Increase

(Bar chart showing projected heat wave days)

Year	Value
2000	~11
2030	~34
2050	~50

Y-axis: 0, 10, 20, 30, 40, 50, 60
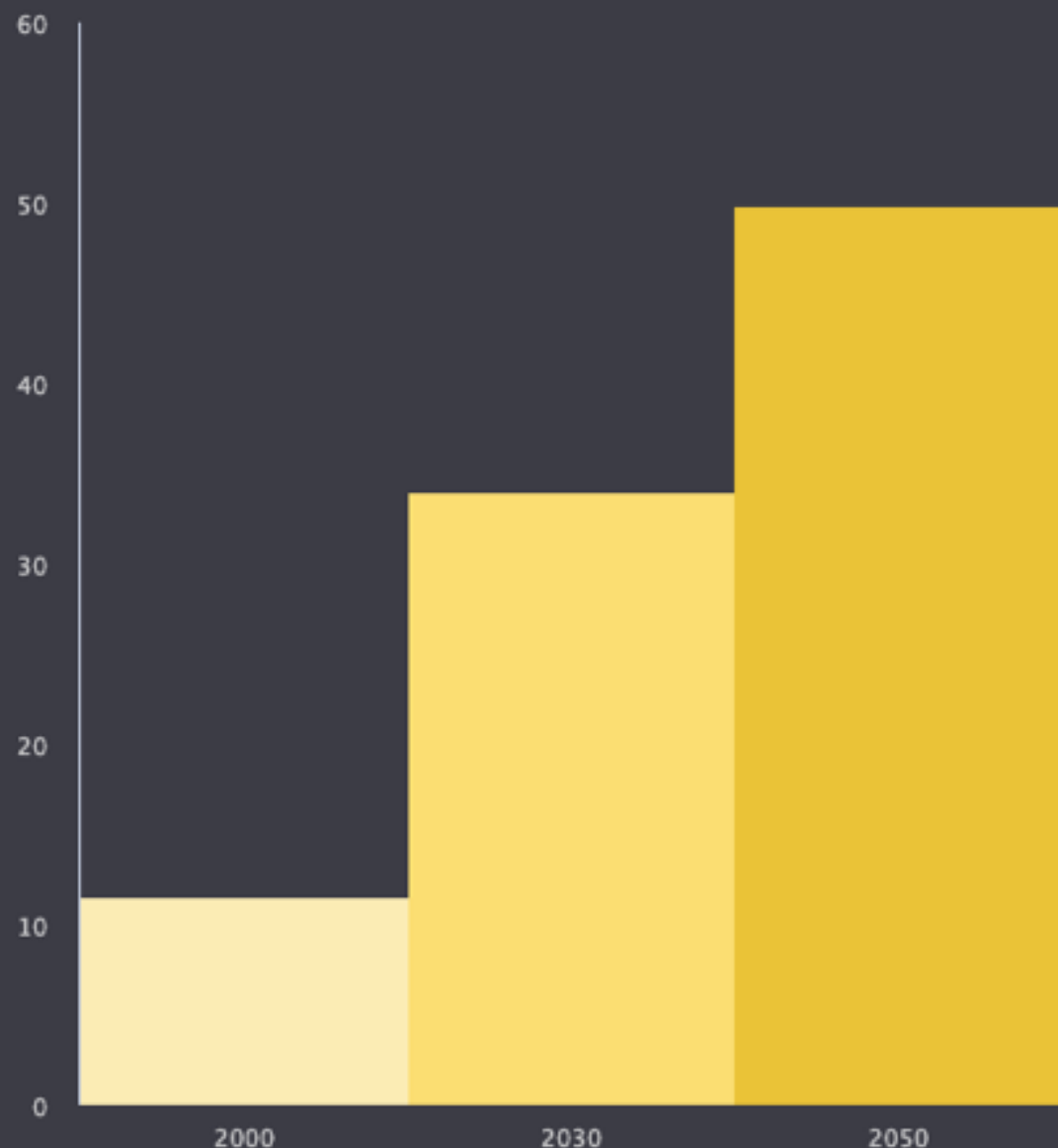
More than

270,000

people living in Michigan
ARE ESPECIALLY VULNERABLE
to extreme heat

*Especially vulnerable people are under 5 years old
or 65 and older, living in poverty

Observed Number of Extreme Precipitation Events
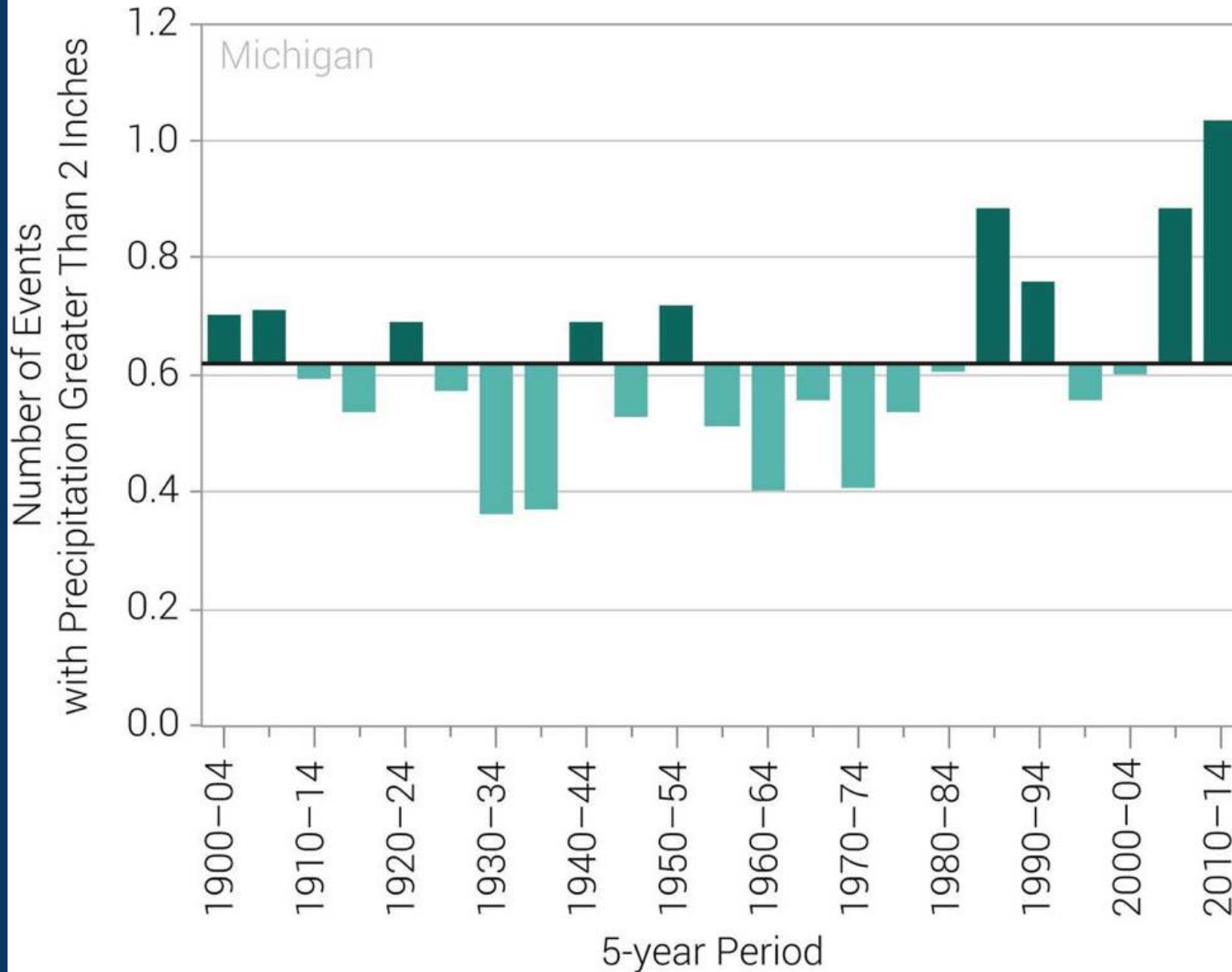
Projected Change in Number of Heavy Precipitation Days
Period: 2041-2070 | Higher Emissions: A2

GLISA

Data Source:
NOAA NCDC/CICS-NC

Change In Number of Days Per Year

0.0   0.5   1.0   1.5   2.0
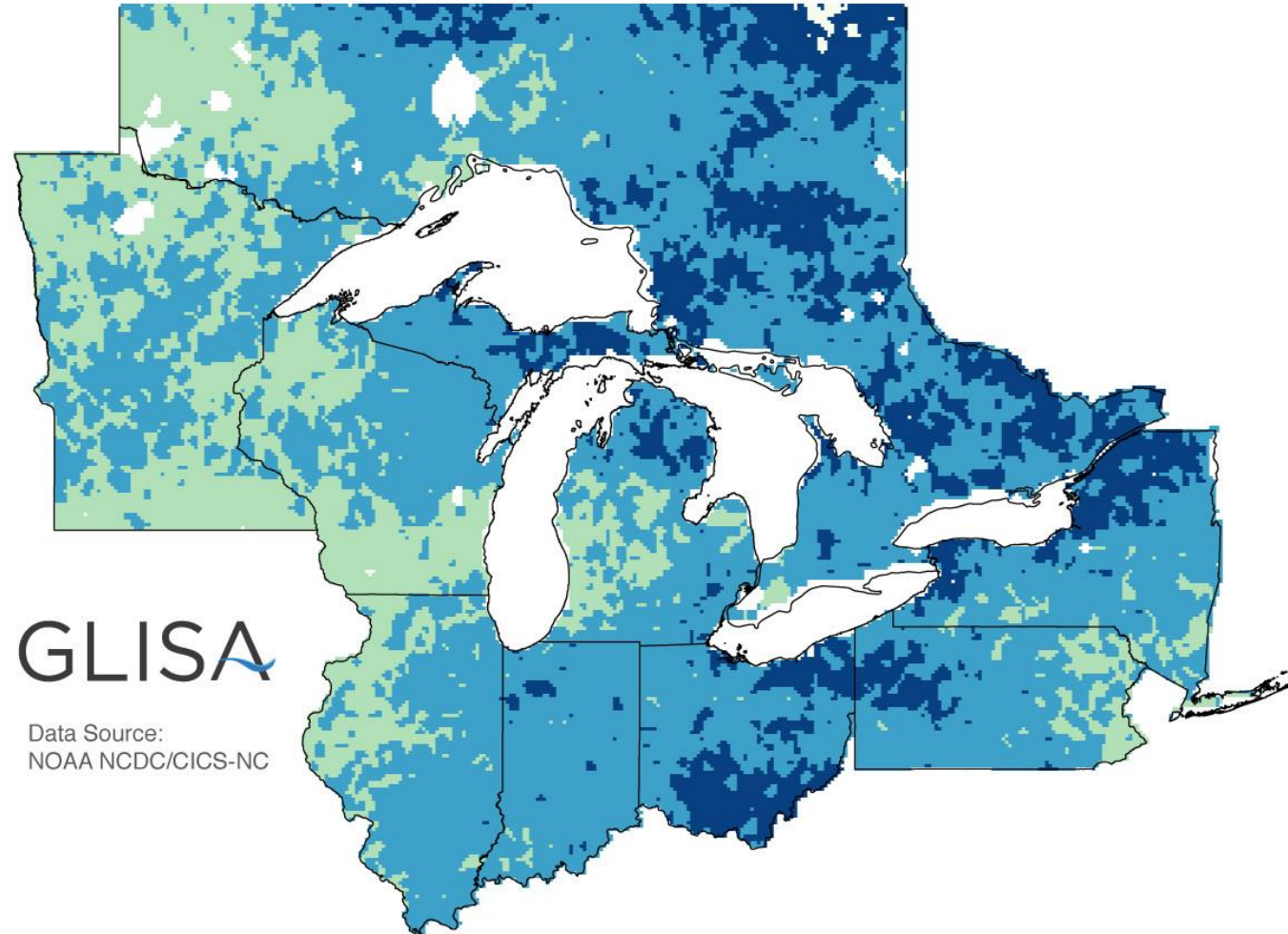
GREAT LAKES WARMING
LAKE MICHIGAN

52°
51°
50°
49°
48°
47°
46°

1995

2018

CLIMATE ∞ CENTRAL

FIGURE 2. COUNTIES IN MICHIGAN WHERE BLACKLEGGED TICKS WERE REPORTED (FEWER THAN SIX TICKS OF A SINGLE LIFE STAGE) OR ESTABLISHED (SIX OR MORE TICKS OR TWO LIFE STAGES) IN 1996 AND 2015.
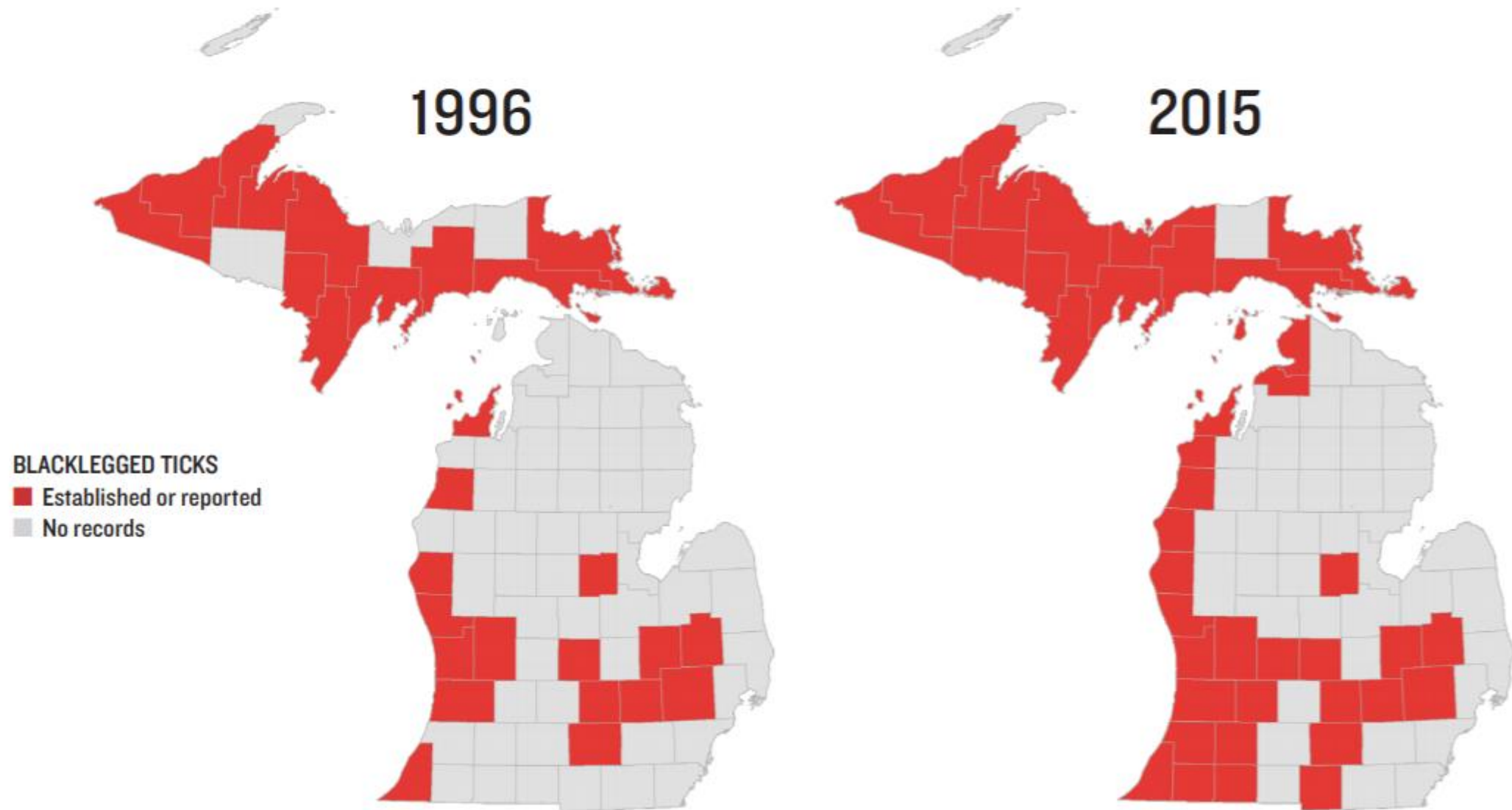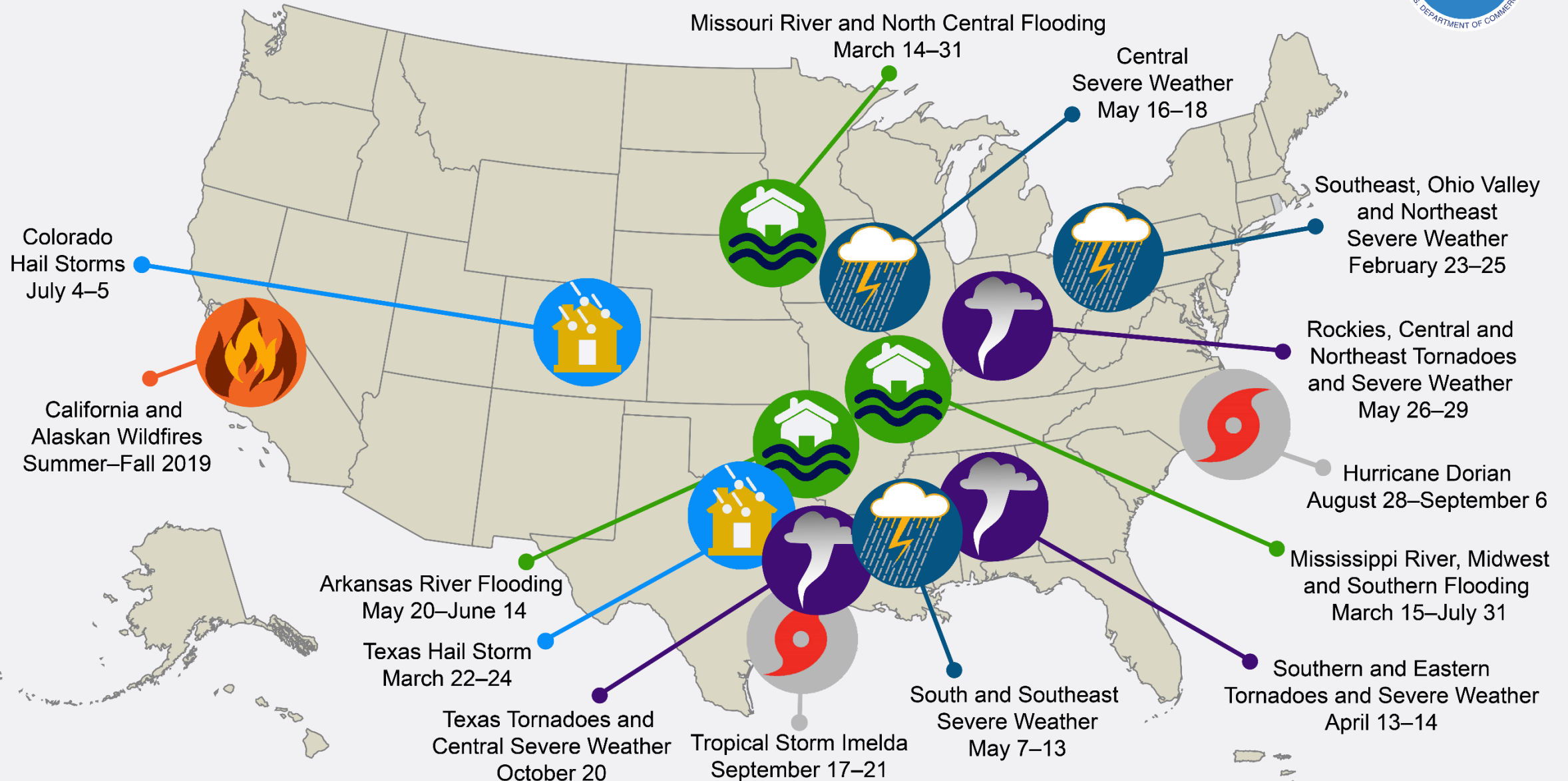
BLACKLEGGED TICKS
Established or reported
No records

Figure adapted from Eisen et al., *Journal of Medical Entomology* 53 (2016).

U.S. 2019 Billion-Dollar Weather and Climate Disasters

Missouri River and North Central Flooding
March 14–31

Central
Severe Weather
May 16–18

Southeast, Ohio Valley
and Northeast
Severe Weather
February 23–25

Colorado
Hail Storms
July 4–5

California and
Alaskan Wildfires
Summer–Fall 2019

Rockies, Central and
Northeast Tornadoes
and Severe Weather
May 26–29

Hurricane Dorian
August 28–September 6

Arkansas River Flooding
May 20–June 14

Texas Hail Storm
March 22–24

Mississippi River, Midwest
and Southern Flooding
March 15–July 31

Southern and Eastern
Tornadoes and Severe Weather
April 13–14

Texas Tornadoes and
Central Severe Weather
October 20

Tropical Storm Imelda
September 17–21

South and Southeast
Severe Weather
May 7–13

This map denotes the approximate location for each of the **14 separate billion-dollar weather and climate disasters** that impacted the United States **during 2019**.

On the front line of climate change

Health care's climate footprint is equivalent to 4.4% of global net emissions

HEALTH CARE'S CLIMATE FOOTPRINT

HOW THE HEALTH SECTOR CONTRIBUTES TO THE GLOBAL CLIMATE CRISIS AND OPPORTUNITIES FOR ACTION

Health Care Without Harm

ARUP

Health Care Without Harm
Climate-smart health care series
Green Paper Number One

Produced in collaboration with Arup
September 2019

THIS PAPER

- Establishes the first-ever global estimate of health care's climate footprint.
- Is based on full global coverage of spending data, together with detailed information from 43 countries.
- Identifies key sources of health care emissions while allowing for a comparison between nations and among many regions of the world.
- Makes a set of recommendations to align global health goals with global climate goals.

PRACTICE Greenhealth

Health Care Without Harm
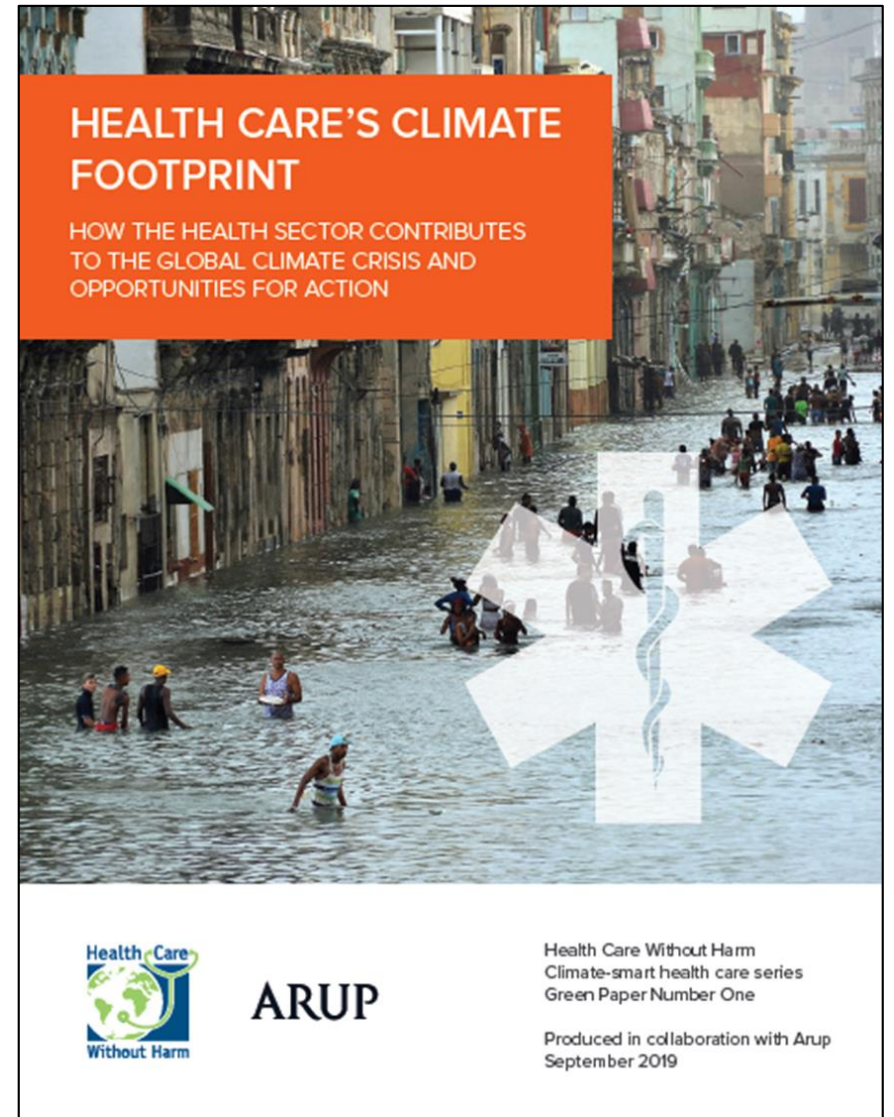
Health Care's Climate Footprint

	Health care country/region emissions by ranking	Total country/region emissions by ranking
1	United States	China
2	China	United States
3	European Union	European Union
4	Japan	India
5	Russia	Russia
6	Brazil	Japan
7	India	Brazil
8	South Korea	Canada
9	Canada	South Korea
10	Australia	Mexico
	Mexico (11)	Australia (17)

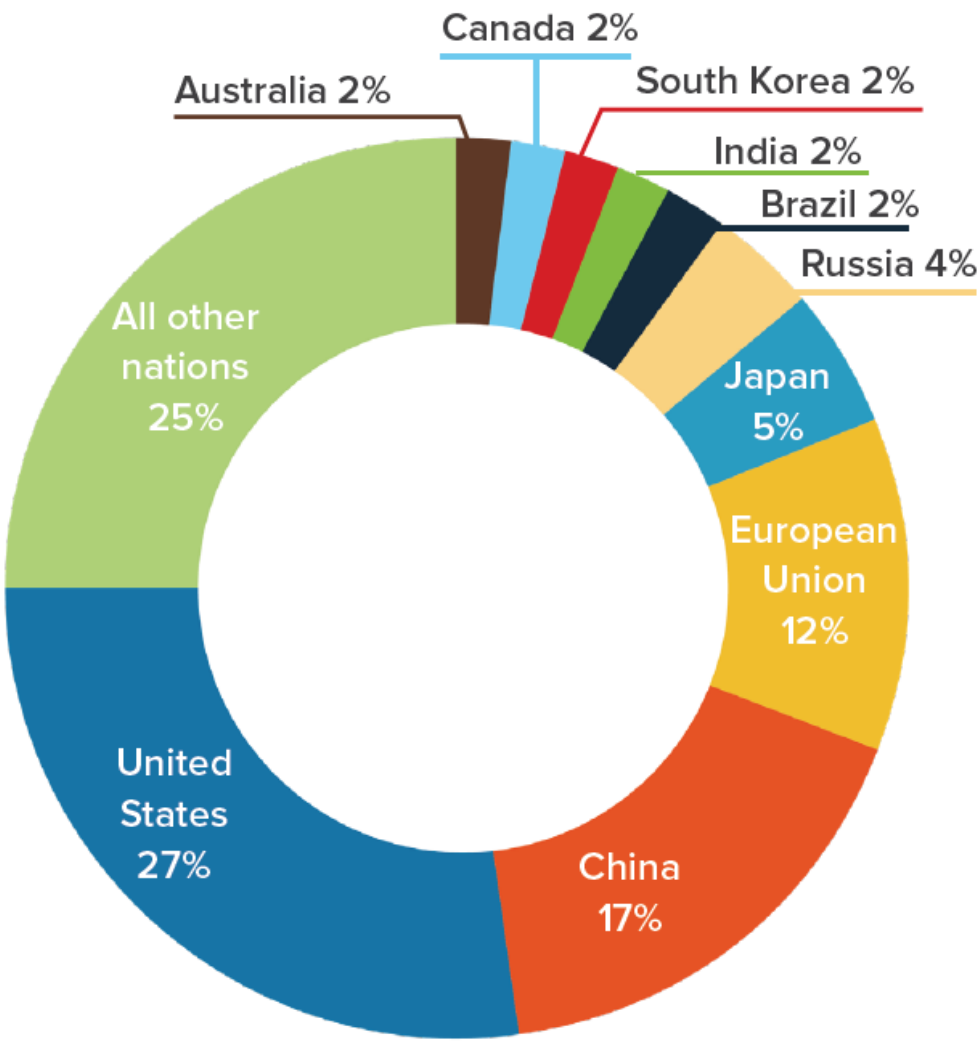Table 1: Top ten health care carbon emitters compared to total top ten emitters

Figure 8: Top ten emitters as percentage of global health care footprint.

Business as usual scenario could triple health care's emissions

Global health spending is rapidly growing at the same time that the world is committed to reducing greenhouse gas emissions.

A business as usual scenario could triple health care's already significant contribution to emissions.
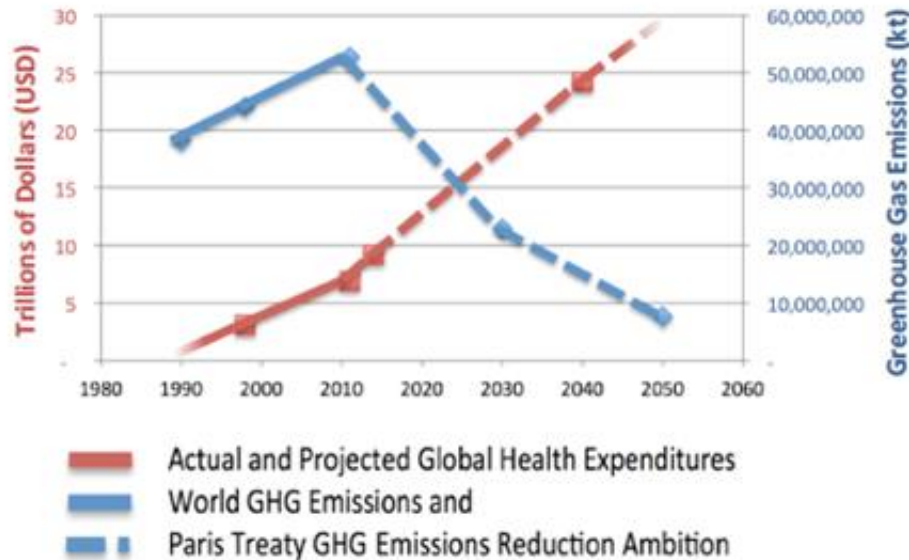
Source: HCWH
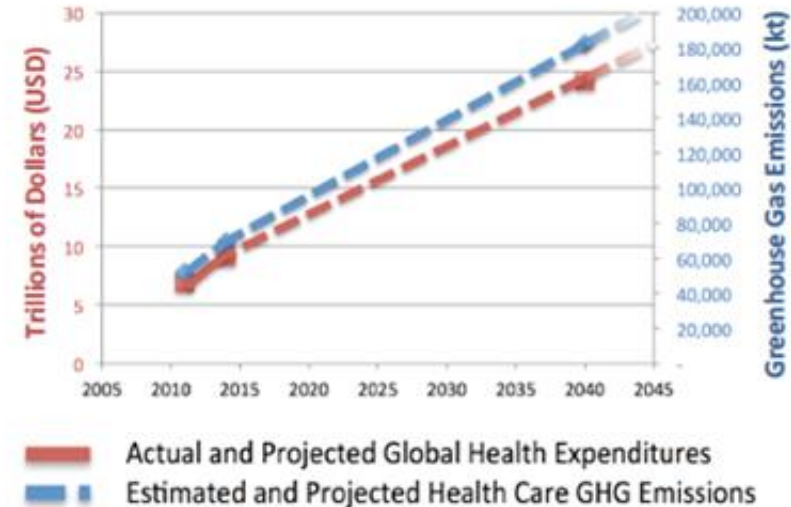
Climate-Smart Health Care

We envision health care as a climate-smart, innovative sector that protects public health from climate change and accelerates the transition to a low-carbon economy while improving community resilience, health equity, and access to care.

Climate-Smart Health Care

LEADERSHIP
Leverage the moral, political, and economic influence of the health care sector to change policy and markets.

Healthy people, healthy planet

MITIGATION
Reduce the carbon footprint of hospital operations.

RESILIENCE
Prepare hospital facilities for climate impacts and build community health and resilience.

Health Care Without Harm

U.S. Health Care Climate Council Members

Health Care Climate Council

Health system leaders driving the transformation
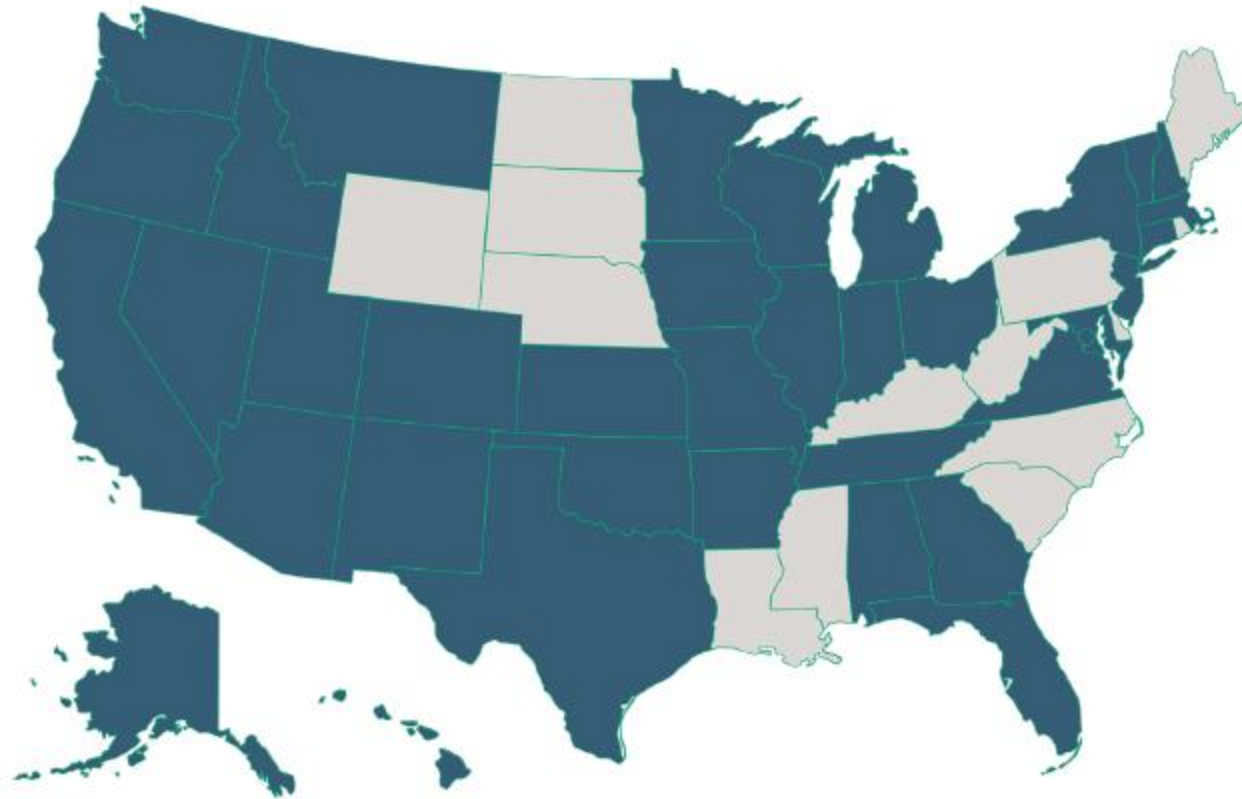to climate-smart health care

500 hospitals

75 million
patients served
annually

1 million
employees

Over $215
billion in annual
operating
revenue

36 states

Climate-Smart Health Care

LEADERSHIP
Leverage the moral, political, and economic influence of the health care sector to change policy and markets.

Healthy people, healthy planet

MITIGATION
Reduce the carbon footprint of hospital operations.

RESILIENCE
Prepare hospital facilities for climate impacts and build community health and resilience.

Health Care Without Harm
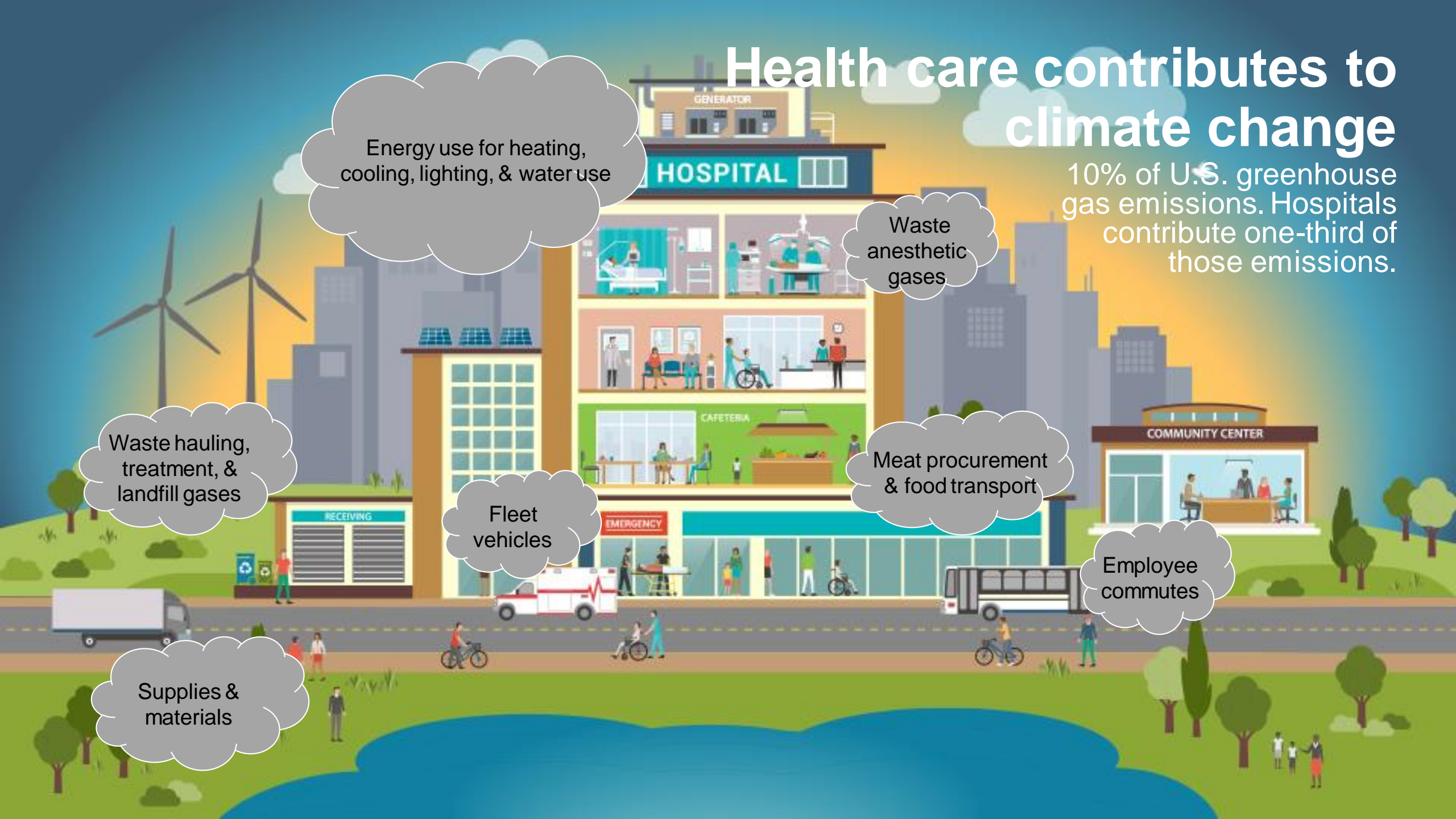
The Health Care Climate Challenge mobilizes health care institutions around the world to protect public health from climate change.

200 participants representing 22,000 health care facilities in 33 countries

Health System GHG Reduction Goals

Advocate Aurora Health: 100% renewable electricity by 2030

Boston Medical Center: 25% by 2020, 100% by 2050

Cleveland Clinic: Carbon neutral by 2027

Dartmouth-Hitchcock Health: 25% by 2020

Dignity Health: 40% by 2020

Gundersen Health: Energy independence - 2014

Kaiser Permanente: Carbon net positive by 2025

Memorial Sloan-Kettering: 50% by 2025

Montefiore Health System: 50% by 2025

NYU Langone: 50% by 2025

Ohio State Wexner Medical Center: Carbon neutral by 2050

Partners HealthCare: 25% by 2020, 100% by 2050

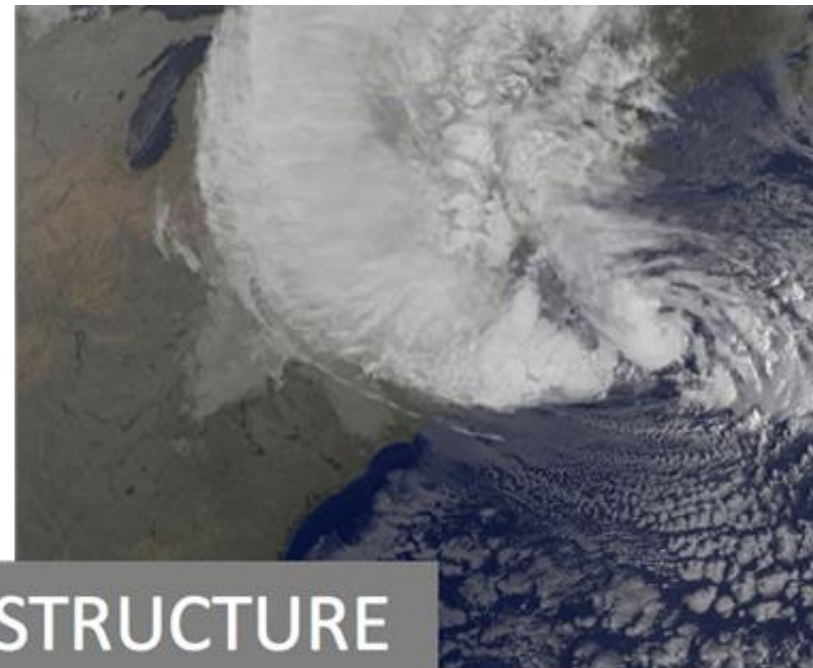**Providence Health**: Carbon negative by 2030

Rochester Regional Health: 100% renewable electricity by 2025

Sutter Health: 50% by 2025, 80% by 2030

University of California Health: Carbon neutral by 2025

Health Care
Without Harm

Climate-Smart Health Care

IS OUR HEALTHCARE INFRASTRUCTURE RESILIENT TO EXTREME WEATHER?

Superstorm Sandy and NYU Langone

The cost of Superstorm Sandy for NYU Langone

Superstorm Sandy hits New York City
14 foot storm surge
17% of city flooded

- Forced evacuation of all 322 patients
- >15M gallons of water flooded basements and sub-basements in 30 minutes
- 10,000 carefully-bred rodents lost
- 2-month suspension of surgery
- 18-month closure of the Emergency Department
- 500 NYU providers sought privileges elsewhere

Total costs >$1.4B

Est. lost revenue >$400M

Total impact: >8x the 2012 operating margin[32]

PRACTICE Greenhealth   Health Care Without Harm

A Lesson in Preparedness: Texas Medical Center

Hurricane Allison in 2001
→ Not prepared

Hurricane Harvey in 2017
→ Open for business

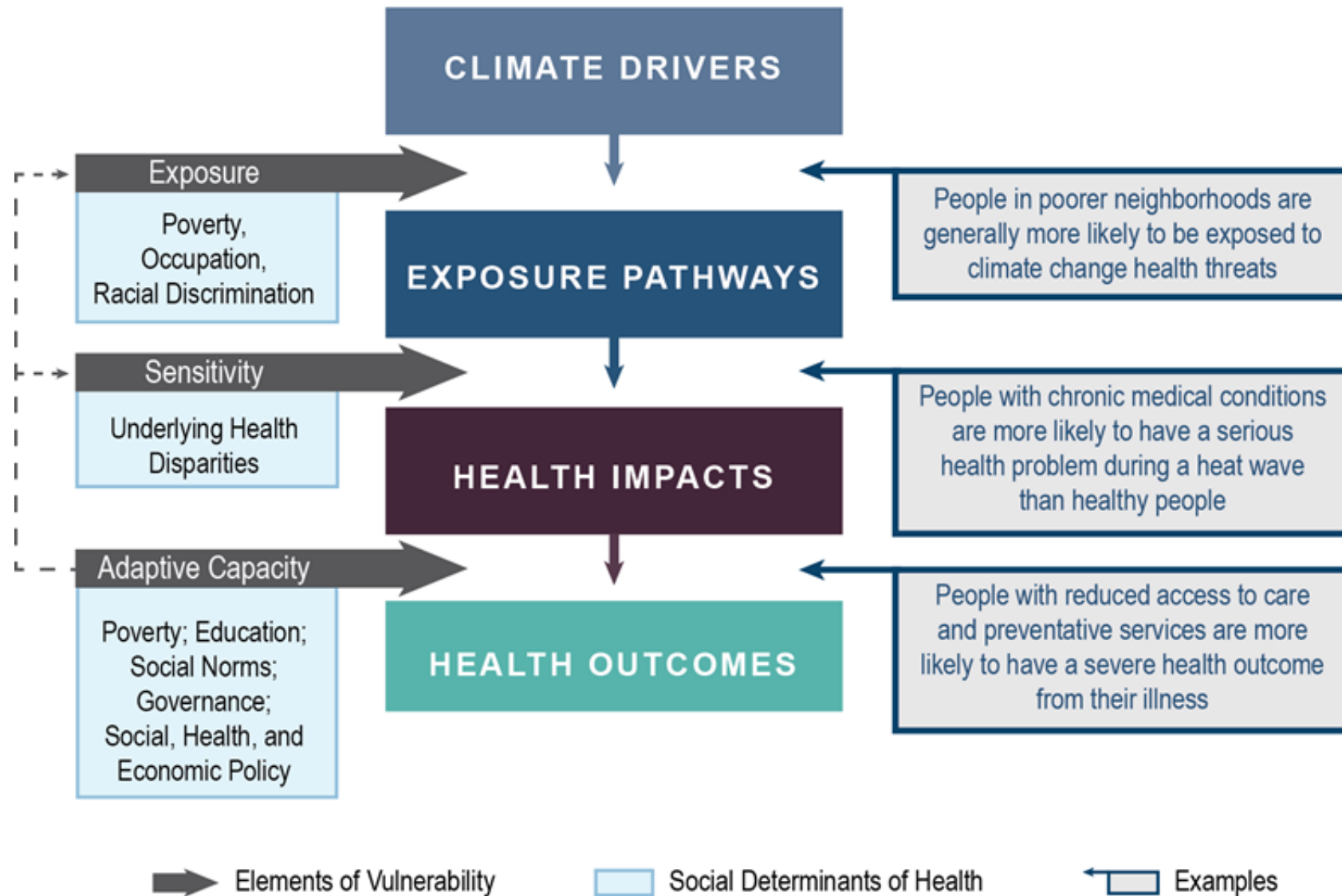**Texas Medical Center: Learning from the past**

1. The event: Devastation during Hurricane Allison
- 1,000-year historic flood with 3 feet of rain
- 22 dead, $5B in damages to county
- Widespread systems failure and property damage at TMC
- Lost $2B in TMC research (e.g., 60K tumor samples, 30K research animals)

2. The lessons: Protocols & infrastructure
- Housing of vital utility and mechanical controls in the complex's basements made it extremely vulnerable to flooding
- Insufficient infrastructural and engineering fortification against flood damage
- Lack of flood protocols made it difficult to coordinate an emergency response

3. The rebuild: $50M in infrastructure upgrades
- Hazard Mitigation Plan
- Flood Management Group
- Sustainable design measures
- Engagement of stakeholders
- On-site utility plant
- Flood alert system

4. The rebound: Preparedness for Hurricane Harvey
- Largest amount of rainfall on an urban area in US history
- All 23 hospitals and emergency rooms in the complex stayed operational
- Storm gates protected all basements and subterranean parking on campus

5. The focus now
- Mitigating future business continuity risks by sharing lessons learned with local authorities
- Advocating for improved regional resilience measures like elevating streets and improving flood protection

PRACTICE Greenhealth

Health Care Without Harm

HCWH Resilience Summits

Intersection of Social Determinants of Health and Climate Vulnerability

US Global Change Research Program, 2016

Resilient Cleveland:
Evergreen Cooperatives and Climate Neighborhood Ambassadors

Evergreen Energy Solutions

Green City Growers

Evergreen Cooperative Laundry

DOUGLAS J. GUTH | THURSDAY, OCTOBER 20, 2016

Climate Ambassadors: street-level environmental activism

SHARE

90% of a child's brain is developed by the time they are 5 years old. High-quality preschool provides a strong foundation.

Climate Ambassador
Slavic Village
Resilient Cleveland

PRACTICE Greenhealth

Health Care Without Harm
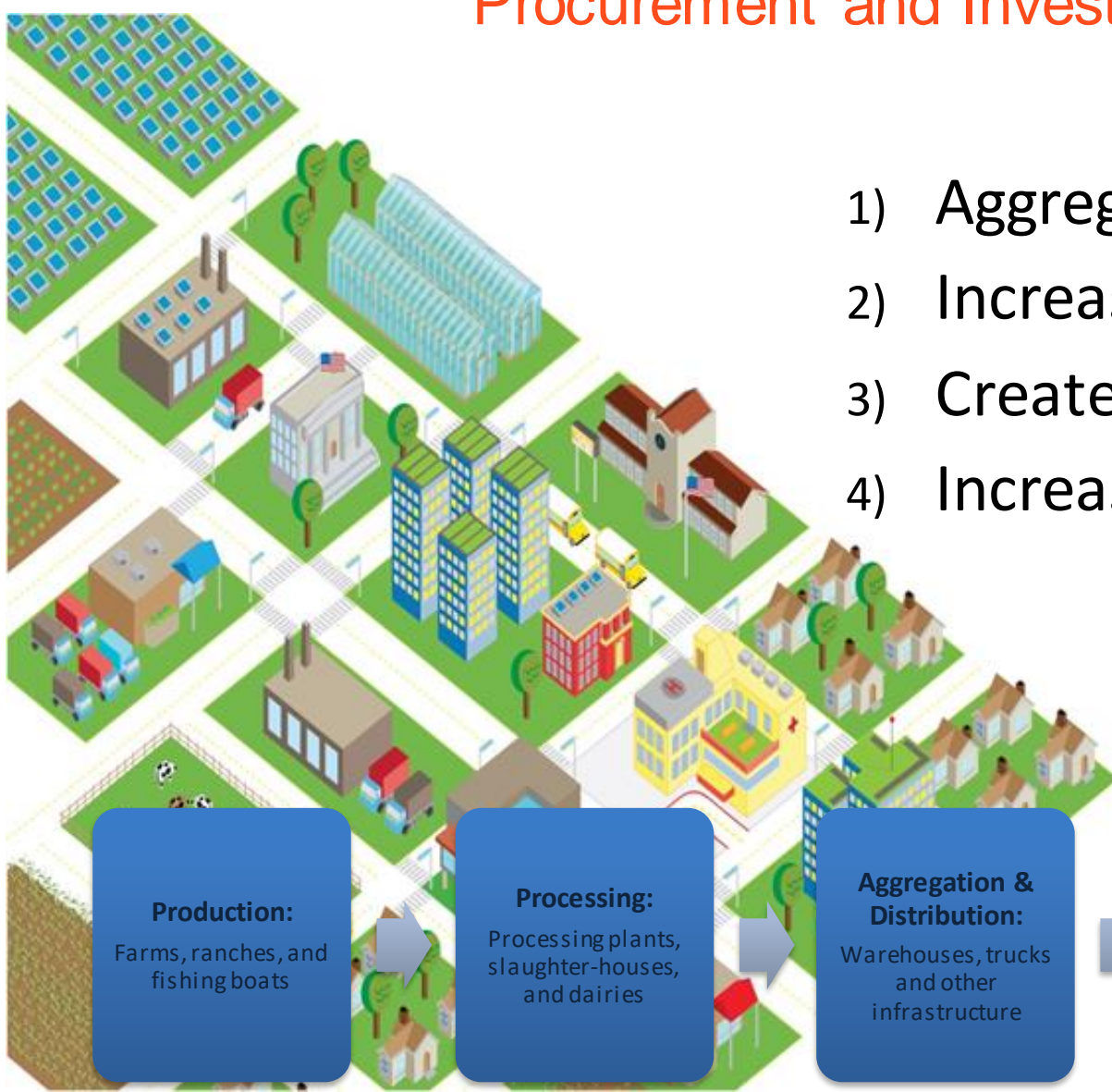
Anchors in Resilient Communities (ARC)

A multi-stakeholder initiative that addresses the social determinants of health by leveraging the assets and capacities of Bay Area anchor institutions and community-based partners, with a focus on expanding community wealth and ownership, improving health outcomes, and strengthening the capacity of communities of color and low and moderate-income residents to be resilient in the face of climate and economic disruption.

Localizing the Food Economy

Procurement and Investment: *A Powerful Combination*

1) Aggregate demand for healthy food products
2) Increase community access to healthy foods
3) Create jobs for community residents
4) Increase markets for local producers

Production:
Farms, ranches, and fishing boats

Processing:
Processing plants, slaughter-houses, and dairies

Aggregation & Distribution:
Warehouses, trucks and other infrastructure

Retail/Institutional Markets

Food Services:
Mobile food vendors and commercial kitchens

Waste Management

Food Processing Center

- 56,000 sq. ft - Food processing, Meal Preparation & Food Business incubator
- 200,000 healthy, locally-sourced, prepared meals for hospitals, school districts, senior centers, military personnel
- Community participation from the start – cooperative ownership model, job training, collaboration with existing food system infrastructure and production
- Starting with 20+ union employees – growing to 250+ employees
- **Opening in Fall 2020**

Climate-Smart Health Care

LEADERSHIP
Leverage the moral, political, and economic influence of the health care sector to change policy and markets.

Healthy people, healthy planet

MITIGATION
Reduce the carbon footprint of hospital operations.

RESILIENCE
Prepare hospital facilities for climate impacts and build community health and resilience.

Health Care Without Harm

W ARE STILL IN

WHO'S IN

BUSINESSES & INVESTORS
2,271

CITIES & COUNTIES
290

COLLEGES & UNIVERSITIES
353

CULTURAL INSTITUTIONS
84

HEALTH CARE ORGANIZATIONS
31

FAITH GROUPS
53
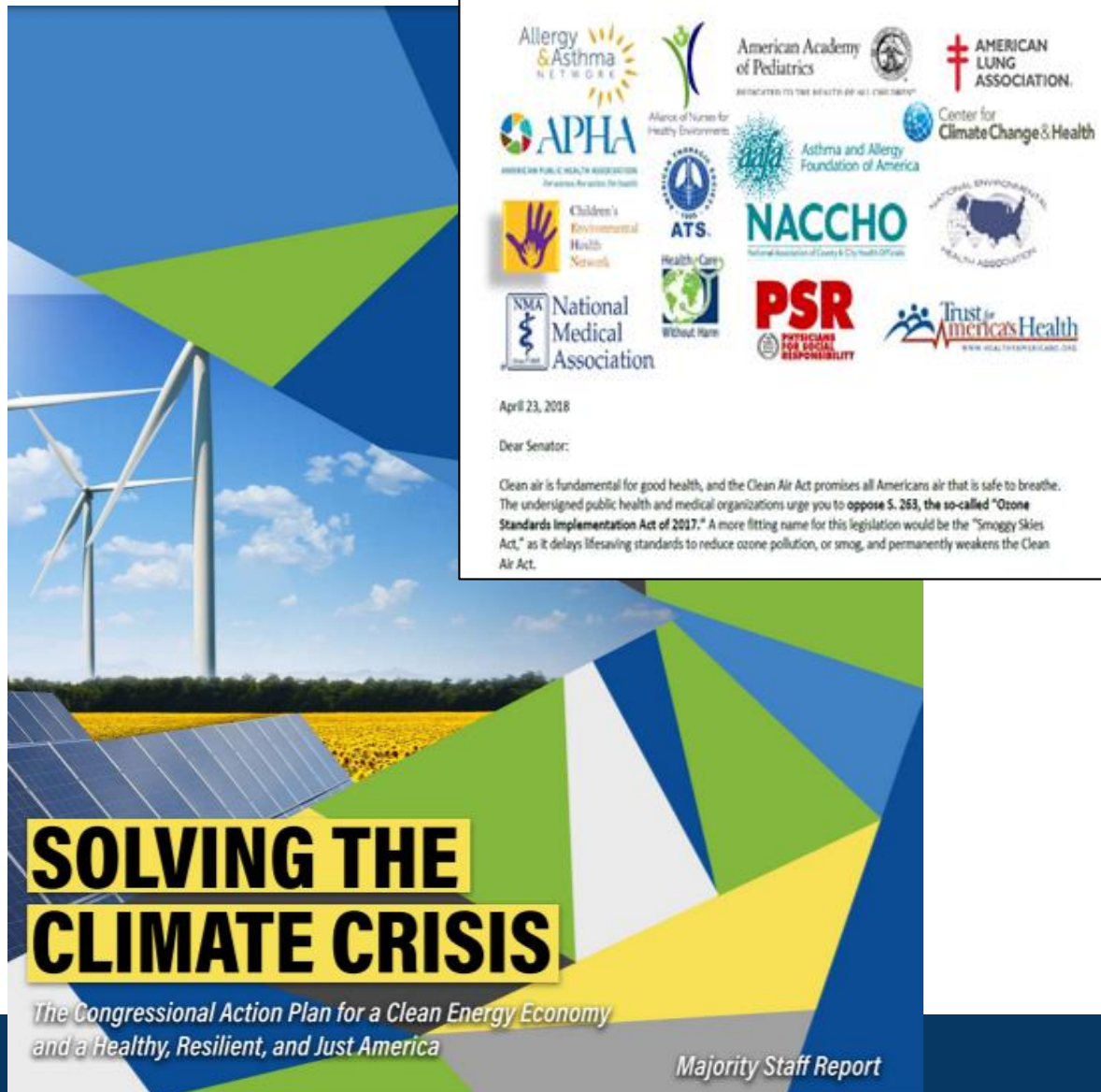
STATES
10

TRIBES
12

U.S. Federal Policy Advocacy

Allergy & Asthma NETWORK
American Academy of Pediatrics
AMERICAN LUNG ASSOCIATION.
APHA AMERICAN PUBLIC HEALTH ASSOCIATION
Alliance of Nurses for Healthy Environments
Center for Climate Change & Health
Children's Environmental Health Network
ATS
aafa Asthma and Allergy Foundation of America
NACCHO National Association of County & City Health Officials
NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION
NMA National Medical Association
Health Care Without Harm
PSR PHYSICIANS FOR SOCIAL RESPONSIBILITY
Trust for America's Health

April 23, 2018

Dear Senator:

Clean air is fundamental for good health, and the Clean Air Act promises all Americans air that is safe to breathe. The undersigned public health and medical organizations urge you to oppose S. 263, the so-called "Ozone Standards Implementation Act of 2017." A more fitting name for this legislation would be the "Smoggy Skies Act," as it delays lifesaving standards to reduce ozone pollution, or smog, and permanently weakens the Clean Air Act.

SOLVING THE CLIMATE CRISIS

The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America

Majority Staff Report

U.S. CALL TO ACTION
ON CLIMATE, HEALTH, AND EQUITY:
A POLICY ACTION AGENDA

2019

Climate change is one of the greatest threats to health America has ever faced—it is a true public health emergency. The health, safety and wellbeing of millions of people in the U.S. have already been harmed by human-caused climate change, and health risks in the future are dire without urgent action to fight climate change. As former Surgeon Generals Richard Carmona and David Satcher said: "We're all at risk and our leaders must lead on global warming. Now." But the health crisis caused by climate change also presents a major health opportunity. Building healthy energy, transportation, land use, and agriculture systems now will deliver immediate and sustained health benefits to all and reduce future health risks from climate change.

Health Care Without Harm

State Policy Advocacy

"Transitioning our state quickly away from fossil fuels and toward renewable energy sources will not only help combat climate change, but it will also have immediate benefits in improving the quality of our air and our health."

"Our stories are our patients' stories: Ohio doctors know that to act on climate is to protect human health."

Ohio Environmental Council

Health systems committed to bring health care's expertise, experience, and trusted voice to education, outreach, and the legislative and regulatory process for climate-smart policies related to energy, transportation, food, waste, and infrastructure and community resilience.

Thank you for listening

Questions?

Jessica Wolff
jwolff@hcwh.org