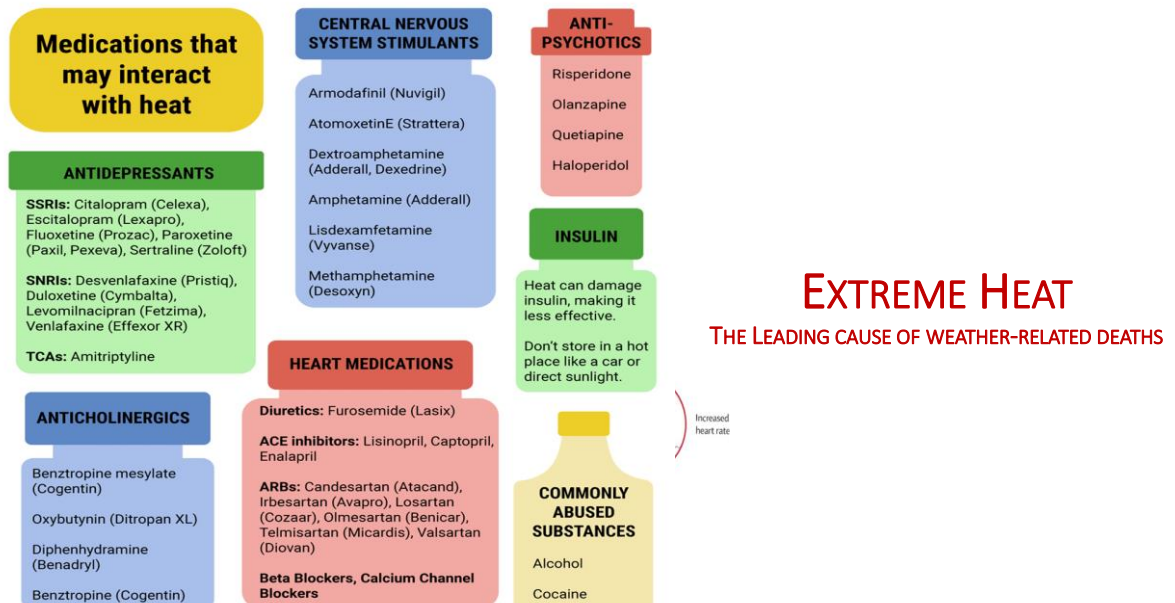


STIFLING INEQUITIES: HEAT'S HEALTH BURDEN AND THE CLINICIAN'S ROLE

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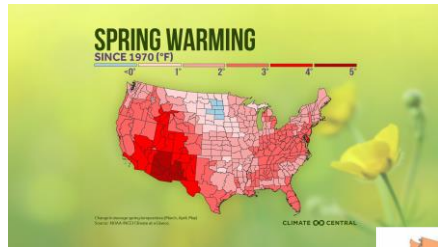
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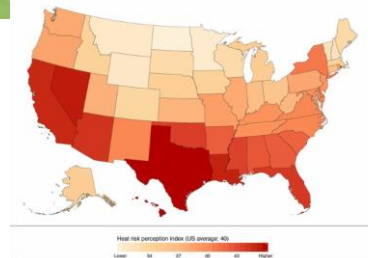
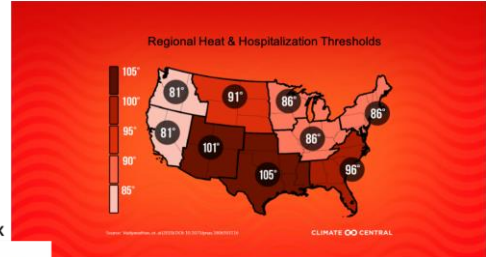
Infographic: Samantha Harrington for Yale Climate Connections | Sources: Ebi. (2021). Hot weather and heat extremes: health risks. / Westaway. (2015). Medicines can affect thermoregulation and accentuate the risk of dehydration and heat-related illness during hot weather. / World Health Organization

2

CLIMATE CONSIDERADATIONS IN MINNESOTA HOT SPRING, HEAT INDEX & HEAT AWARENESS



Heat Risk Perception Index

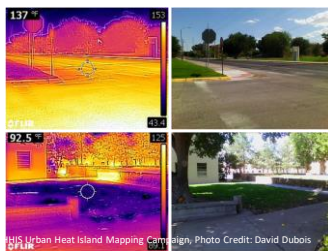


Public Perceptions Howe, Leiserowitz 2019

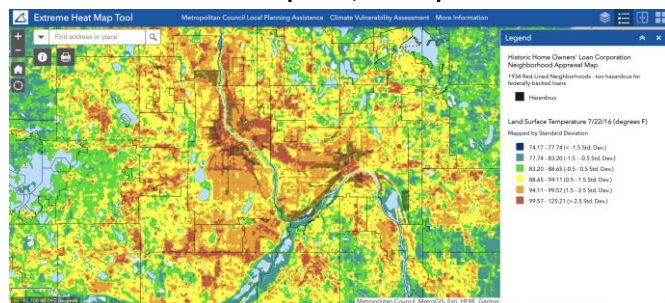
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URBAN HEAT ISLANDS, HISTORIC REDLINING & HEALTH

Urban Heat Islands



Extreme Heat Map Tool, Metropolitan Council



Source: Extreme Heat Map Tool, Metropolitan Council Local Planning Assistance

Heat worsens Air Quality



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PATIENT-CENTERED EXTREME HEAT ADAPTATION AS A CLINICIAN



VULNERABILITY ASSESSMENT FRAMEWORK

Fig 1. Vulnerability Assessment Framework, figure adapted from Turner et al, 2003

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PATIENT-CENTERED EXTREME HEAT ADAPTATION AS A CLINICIAN

| | Sasha AGE: 6 BLACK | Mary AGE: 23 WHITE | Cesar AGE: 42 LATINK | Young AGE: 85 ASIAN |
|--------------------------|---|--|--|---|
| KEY HEALTH RISK | Asthma attack from air pollution | Birth complications | Death from heatstroke | Heat-related heart failure |
| SUSCEPTIBILITY | <ul style="list-style-type: none"> Child Asthma Otherwise healthy | <ul style="list-style-type: none"> Young adult Pregnant Healthy | <ul style="list-style-type: none"> Middle age High blood pressure Medication increases heat sensitivity | <ul style="list-style-type: none"> Older age Heart condition Medication increases heat sensitivity |
| EXPOSURE | <ul style="list-style-type: none"> Person of color* Lives by sources of air pollution Air pollution worsened by heat | <ul style="list-style-type: none"> Apartment with poor insulation Subway to work doesn't have A/C A/C at work | <ul style="list-style-type: none"> Person of color* Works outside in the sun No A/C at home | <ul style="list-style-type: none"> Person of color* Room on top floor Poor A/C in nursing home |
| ABILITY TO ADAPT | <ul style="list-style-type: none"> Inadequate health insurance Middle class Good family support | <ul style="list-style-type: none"> Health insurance Poor Lack of social support | <ul style="list-style-type: none"> No health insurance Undocumented immigrant Good social support | <ul style="list-style-type: none"> Health insurance Middle class Limited mobility |
| HEALTH OUTCOME | Visits emergency department for an asthma attack | Struggles to protect herself from heat but delivers a healthy baby | Develops heatstroke and nearly dies | Long hospitalization for heart failure |
| ADAPTATION ACTION | Real-time air-quality surveillance program sends warnings to vulnerable residents when pollution levels are high | Doctor is further educated on how heat impacts clinical practice and proactively counsels on heat risk throughout pregnancy | State health officials institute new heat safety regulations to protect outdoor workers | Nursing home implements a heat emergency protocol to protect patients and invests in A/C improvements |

HEAT SAFETY PLAN
 Limit Exposure
 Cool down
 Hydrate responsibly
 Adjust medication plan
 Know the warning signs
 Enlist help

Salas et al, 2019

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EXTREME HEAT ADAPTATION RESOURCES

What does heat have to do with my health?

- Cars & trucks, industry and power plants all create climate pollution and air pollution.
- Climate pollution makes the world warmer and changes our climate.
- Climate change will lead to more extreme heat.
- Extreme heat can cause heart attacks, asthma attacks, and problems with diabetes, kidney disease, and mental health.

THE URBAN HEAT ISLAND EFFECT
If you live in a city, it can get a lot hotter than if you lived in a nearby suburb or rural area. Trees and green space provide shade and keep your neighborhood cool.

Who is most at risk? Older adults and young children • People with existing health problems like heart, lung and kidney disease and diabetes • People who live alone • People taking medicines for mental health problems • People who work or play outdoors, like farm and construction workers or athletes • People without air conditioning or cool shade

You can take action today to make sure we have a healthy planet with healthy places for healthy people!

- Healthy YOU!**
 - Cool off by using air conditioning or going to an air conditioned public space, taking more breaks when playing or working outdoors, and taking cool showers and baths.
 - Drink more water than normal and avoid alcohol and sugary or caffeinated drinks.
 - Check local news for alerts and safety tips.
- Healthy PLACES**
 - Check on family, friends, neighbors and animals.
 - Find out how you can be energy efficient or buy clean energy, like wind and solar.

LANCET COUNTDOWN: TRACKING PROGRESS ON HEALTH AND CLIMATE CHANGE

americares

Providers

- COVID, ESRD, and Heat
- COVID, Asthma, and Heat
- COVID and Heat
- Demencia and Heat
- Diabetes and Heat
- Mental Health Disorders and Heat
- MS and Heat
- Pregnancy and Heat
- How to Establish a Heat Action Plan
- How to Access Weather Alerts

Patients

- Heat Epi Sheet - General
- Heat Epi Sheet - COVID, ESRD
- Heat Epi Sheet - COVID, Asthma
- Heat Epi Sheet - COVID
- Heat Epi Sheet - Demencia
- Heat Epi Sheet - Diabetes
- Heat Epi Sheet - Mental Health Disorders
- Heat Epi Sheet - MS
- Heat Epi Sheet - Pregnancy
- Heat Action Plan - General
- Heat Action Plan - COVID, Asthma

Administrators

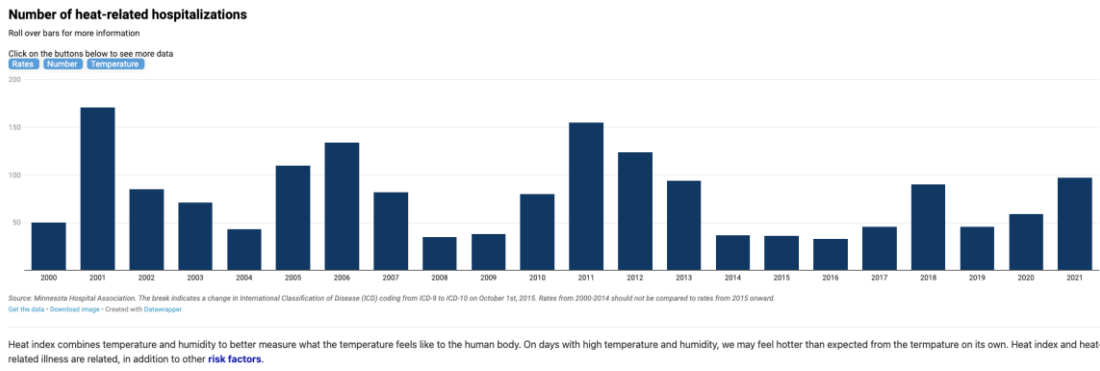
- Heat Action Plan Guidance and Checklist
- Health Center Power-Outage Guidance
- Extreme Heat Operational Guidance
- Extreme Heat High-Risk Outage Guidance
- Extreme Heat Facility Preparedness Guidance
- Extreme Heat Immediate Response Checklist
- Extreme Heat Communications Templates
- Long-Term Climate Resilience and Sustainability

Toolkit

Health Care and Subcontractor

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PATIENT-CENTERED EXTREME HEAT ADAPTATION AS A CLINICIAN & AN EDUCATOR

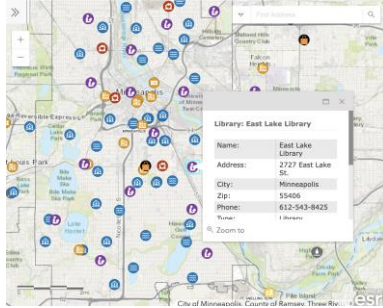


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PATIENT-CENTERED EXTREME HEAT ADAPTATION AS A QUALITY IMPROVEMENT PROJECT LEADER

Health systems as Cooling Centers

Air Conditioning Saves Lives!



Green Cooling Measures



11

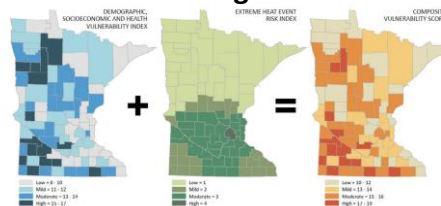
PATIENT-CENTERED EXTREME HEAT ADAPTATION AS AN IMPLEMENTATION RESEARCHER

Painting the town white!

Community- Led Urban Greening



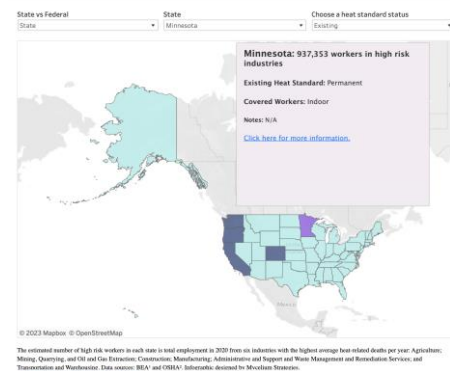
Communicating extreme heat



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PATIENT-CENTERED EXTREME HEAT ADAPTATION AS A COMMUNITY- CONSULTANT & PHYSICIAN ADVOCATE

Big River Farms – Health Professionals for a Healthy Climate Heat safety training session, 2023



MN has no Outdoor Worker Extreme Heat Legislation

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