Heat and its Effect on HEALTH

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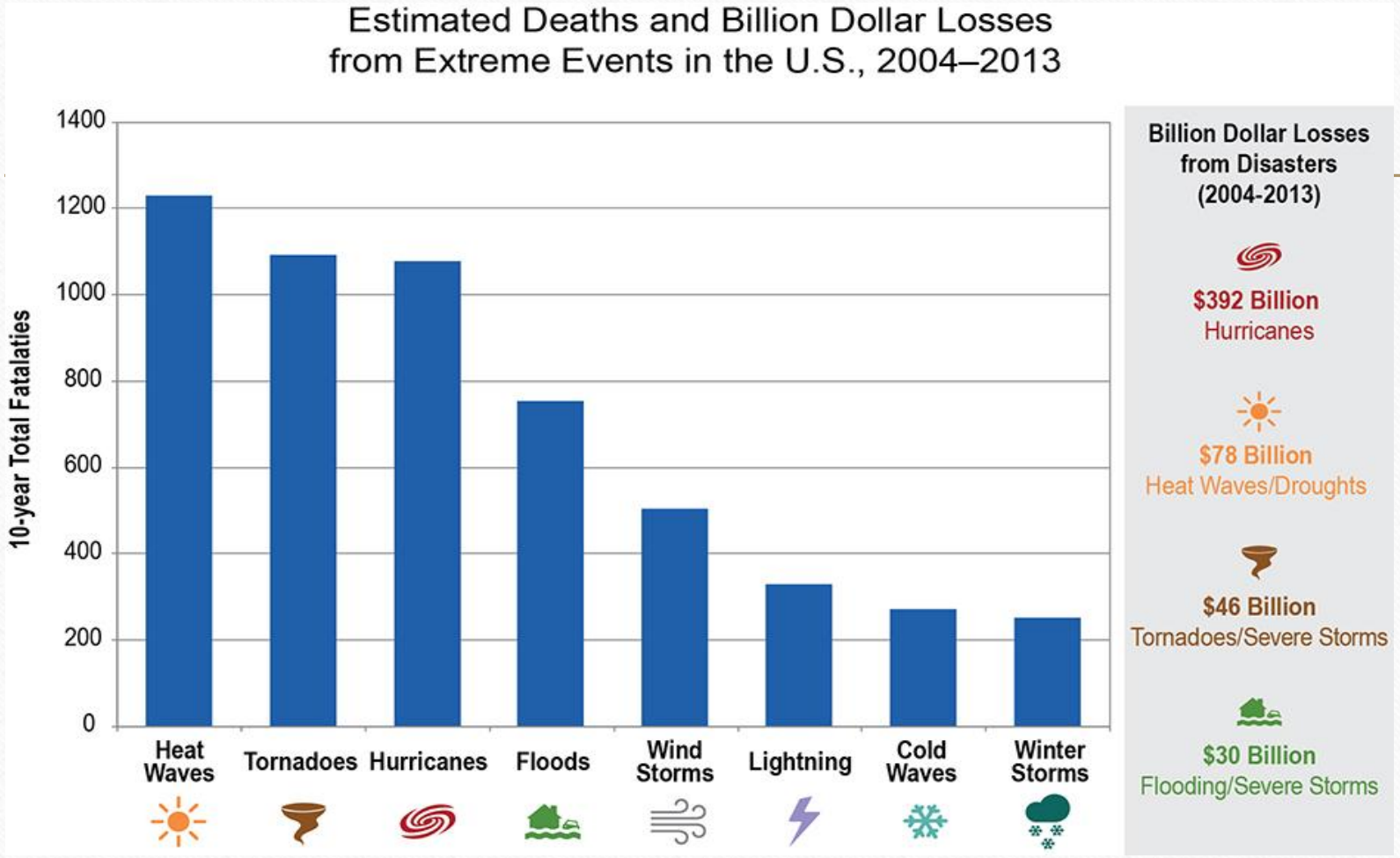
Mortality

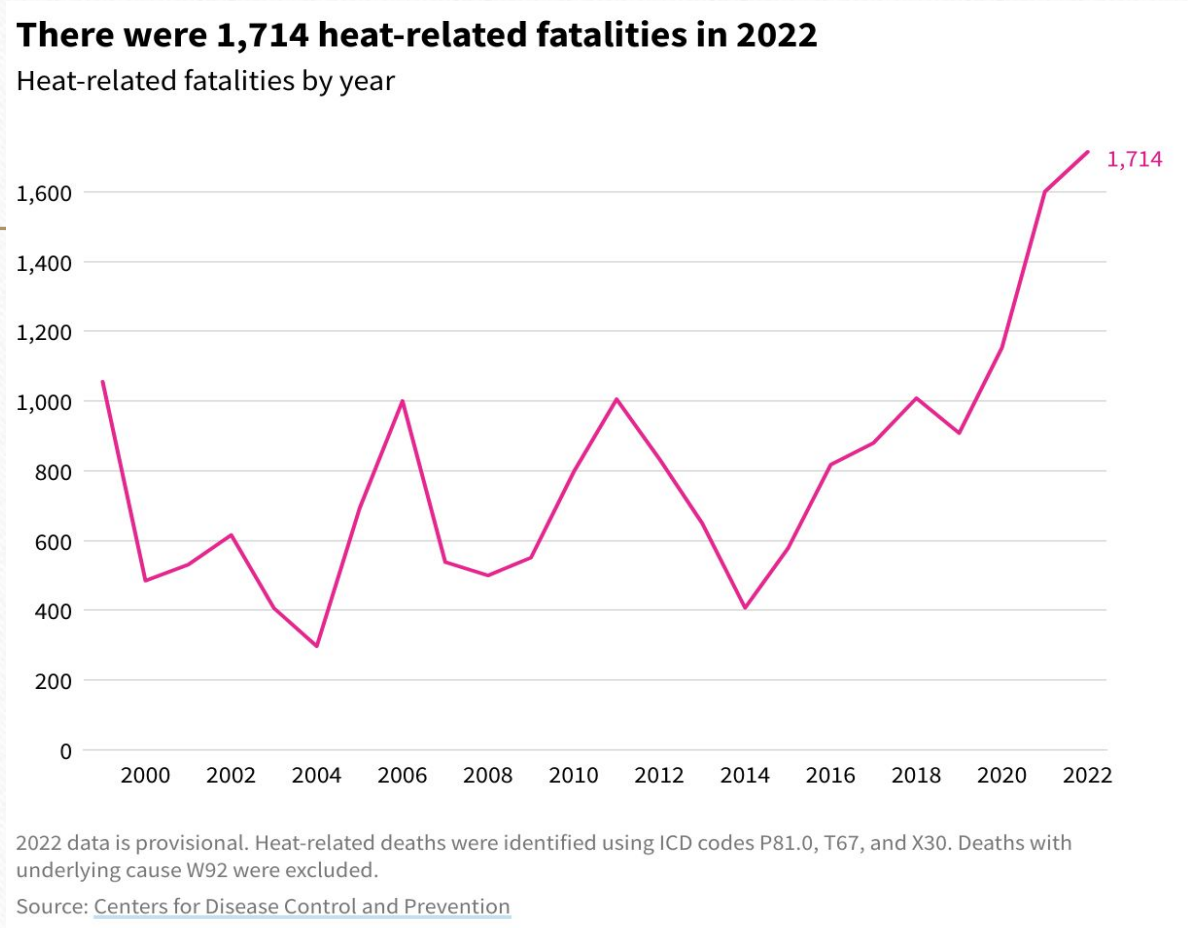
The World Health Organization estimates:

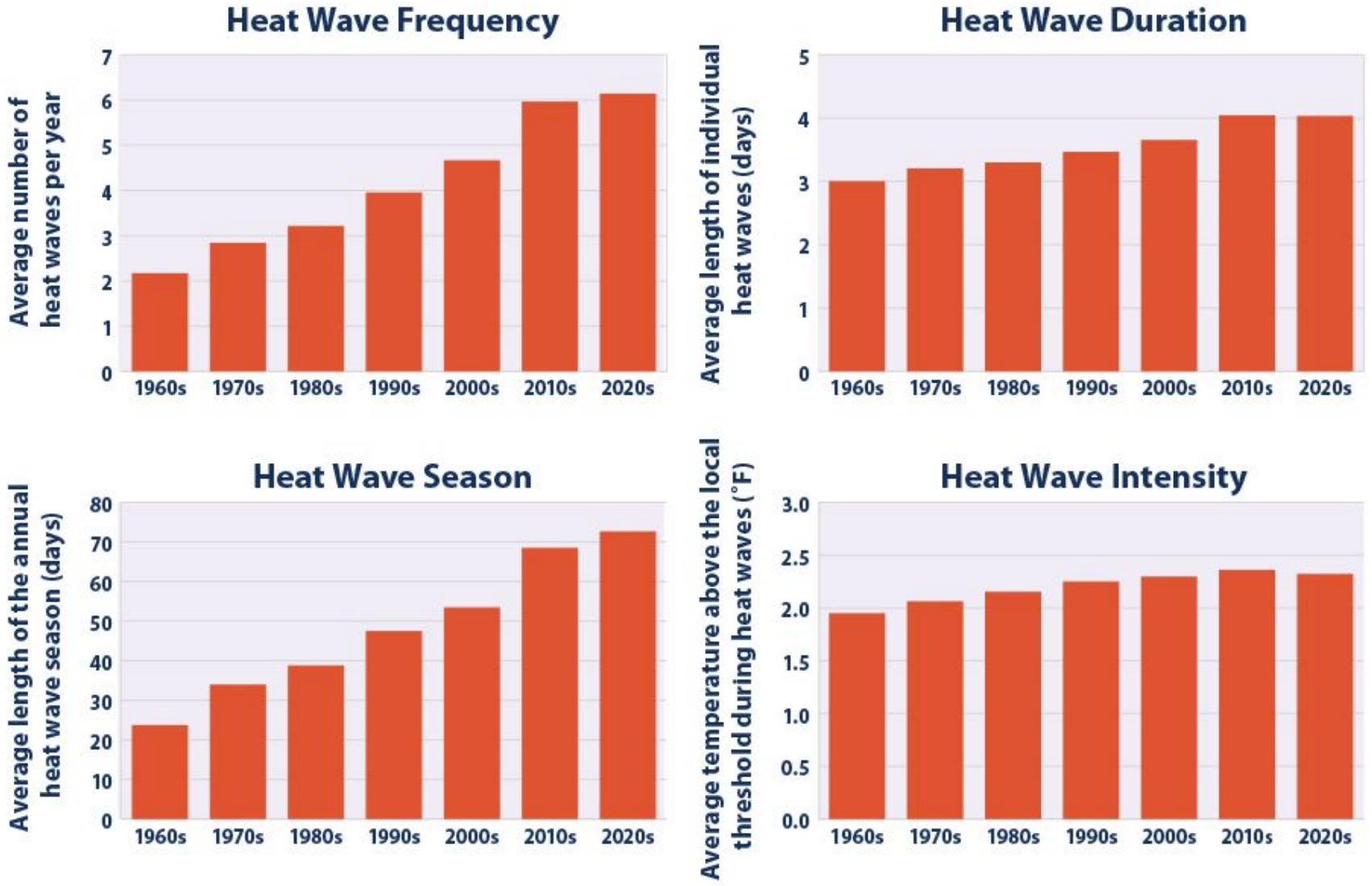
- 125 million people were exposed to extreme heat stress between 2000-2016
- Globally, 5 million deaths were associated with extreme heat between 2000-2016
- Deaths due to extreme heat outnumber other natural disasters
- Mortality is under-reported. Most deaths are associated with pre-existing conditions that are exacerbated by extreme heat.

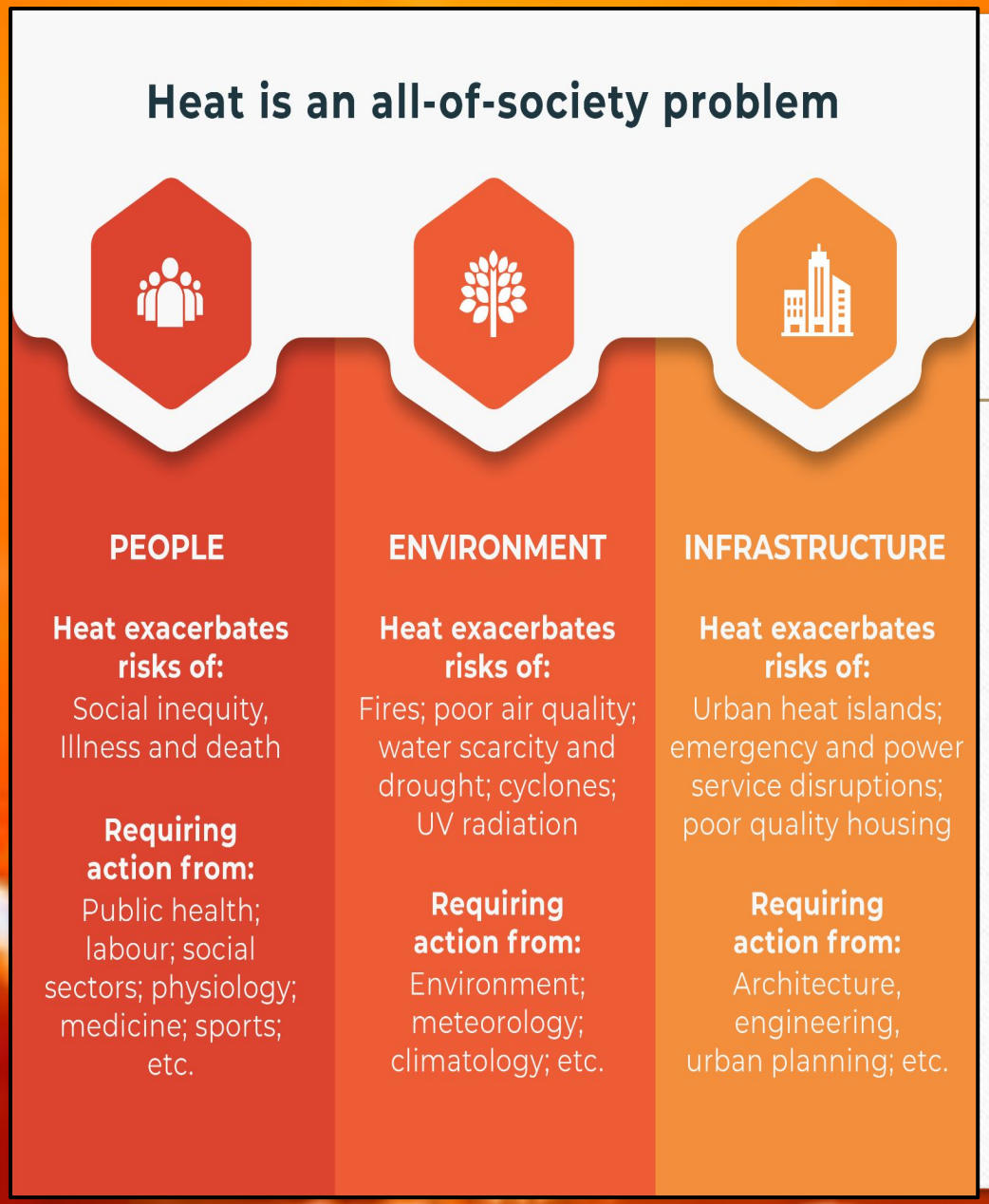
Extreme Event Comparisons



United States Heat-Related Fatalities



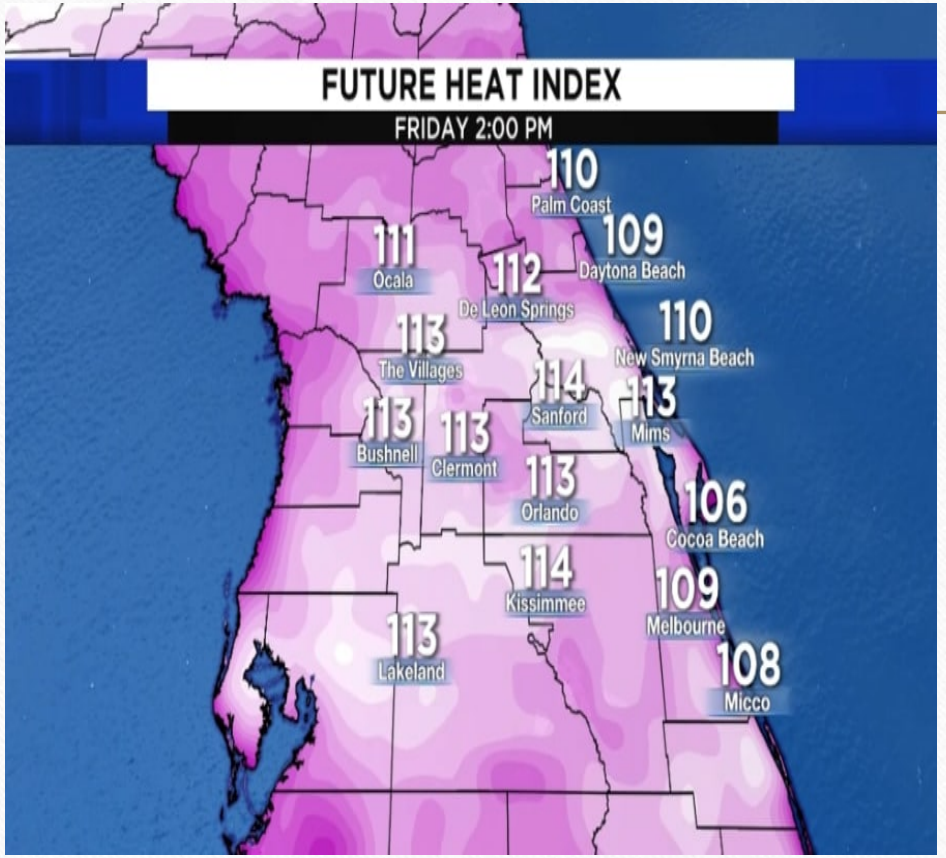

Heat Wave Frequency
Average number of heat waves per year
0
1
2
3
4
5
6
7
1960s
1970s
1980s
1990s
2000s
2010s
2020s
Heat Wave Duration
Average length of individual heat waves (days)
0
1
2
3
4
5
1960s
1970s
1980s
1990s
2000s
2010s
2020s
Heat Wave Season
Average length of the annual heat wave season (days)
0
10
20
30
40
50
60
70
80
1960s
1970s
1980s
1990s
2000s
2010s
2020s
Heat Wave Intensity
Average temperature above the local threshold during heat waves (°F)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1960s
1970s
1980s
1990s
2000s
2010s
2020s
Decade



Extreme Heat Trends

- Three hottest years on record
- Increased frequency, duration of extreme heat days
- Heat intensity is greater in urban areas where people experiencing homelessness congregate to access services
- Humidity exacerbates heat effects

Extreme Heat Events



- **Orlando** had 32 days of heat index exceeding 100 degrees
- Orlando experienced a 20% increase in heat-related illness
- 115% increase in the number of visits to urgent care centers

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- **Phoenix** went from 28 days of extreme heat in 2002 to 53 days in 2020
- Heat-related ER visits increased 65% from 2011 to 2020
- 580 heat-related deaths in 2023, more than half of them among people experiencing unsheltered homelessness

Extreme Heat Events

Houston

- 16 days in 2023 with temperatures over 100 degrees
- 1,400 heat-related emergency room visits
- 334 heat-related deaths in Texas, more than any other year

How Extreme Heat Affects Health

- Prolonged heat exposure exacerbates existing illnesses
- Increase in cardiovascular mortality
- Exacerbation of chronic respiratory disease
- Exacerbation of mental illness and increased suicidality
- Increased confusion, decreased sleep
- Increased accidents, including overdose
- Increased preterm deliveries and stillbirths
- Food/medication storage challenges

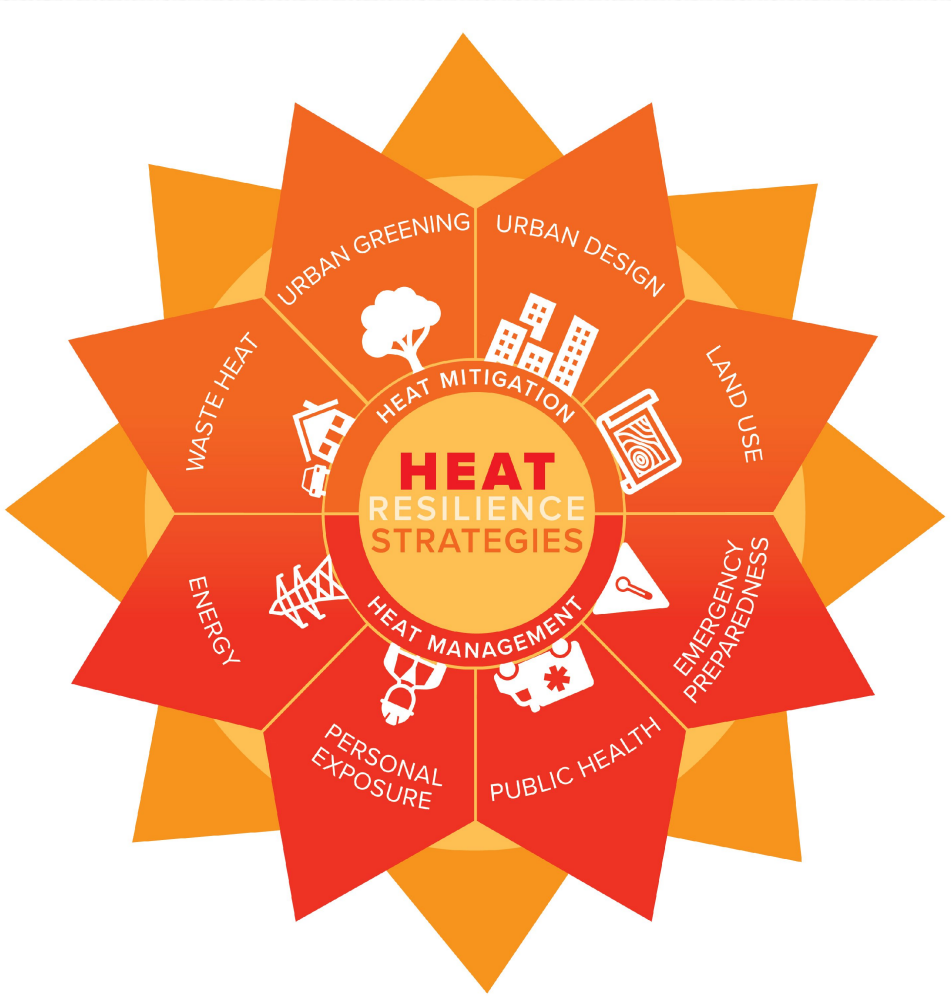
Implications for Persons Experiencing Homelessness (PEH)

- Unsheltered population nationally has increased over 35% in the last 7 years. There is an acute shortage of emergency shelter beds.
- Central Florida has had a 75% increase in unsheltered PEH since 2019 due to increase rents, lack of affordable housing and stagnant wages.
- Laws criminalizing public camping create more obstacles for PEH, including moving them farther from existing centralized services and jobs.

Symptoms of Heat Exposure

- Heat cramps: muscles tighten from lack of fluid and electrolytes
- Heat exhaustion: body temperature over 100 degrees, profuse sweating, nausea, vomiting, headache
- Heat stroke: most severe — no sweating, skin is dry, body temperature over 104 degrees, nausea, vomiting, seizures
- Effects profound with minimal nighttime cooling, especially in urban areas


People living in unsheltered conditions are at increased risk for heat-related illness.
#VisualizeHomelessness
Heatstroke
Heat index 130°F +
Heat Exhaustion
Heat index 90-130°F
Heat Cramps
Heat index 90-130°F
www.nhchc.org
Source: Healing Hands: Exposure-Related Conditions: Symptoms and Prevention Strategies



Ways to Mitigate Heat

- Reduce greenhouse gas emissions
- Prioritize investments for vulnerable populations
- Expand training on heat-related illness for healthcare/shelter workforce
- Enhance early-warning system
- Provide water
- Distribute cooling packs
- Direct/transport to cooling centers

Best Practices

- Houston has 3-digit number (like 211) for information related to cooling center locations
- City collaborates with local CoC, faith community and parks department to create heat action plan allocating space/staffing
- Target outreach to high-need localities
- Extend cooling center hours when nighttime cooling is minimal
- Focus on sustainable solutions, especially affordable housing

Best Practices

Phoenix:

- Has developed heat action plan that coordinates programs/policies to mitigate heat exposure and protect the public
- Tracks trends, collects data
- Collaborates with faith community, academic partners, medical examiner's office

Miami:

City appoints a 'Chief Heat Officer' responsible for improving coordination with partners, accelerating heat-protection efforts

Recommendations

Develop Heat Action Plan incorporating the following:

- Appoint an agency to recruit and collect list of safe spaces for people to go
- Leaders work with local weather authorities to expedite information sharing
- All municipalities appoint someone responsible for issues relating to homelessness who
  - Attends homeless Continuum of Care members meetings
  - Collaborates with stakeholders on heat response

Recommendations (cont.)

- Develop data collection with emergency management on heat related calls and intervention
- Improve reporting on heat related ER visits, hospitalizations and mortality
- Increase public awareness
- Provide emergency utility assistance
- Engage academic partners to study issues and assist with compiling necessary data

- Opening low-barrier cooling centers
- Use of existing public facilities – libraries, community centers, churches, schools
- Hours contingent on heat index
- Staffed by peer support, case management
- Provide water stations and air conditioning
- Locate near most vulnerable areas
- Low-barrier – no IDs, allowance for pets

"*I feel like I'm in Hell*" - N.Y.T. Video

Thank You

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