Southeast Florida Climate Compact: Workshop on Heat and Climate Change

From Heat Surveillance To Community Empowerment & Engagement

Climate and Health Program
Office of Epidemiology
Maricopa County Department of Public Health

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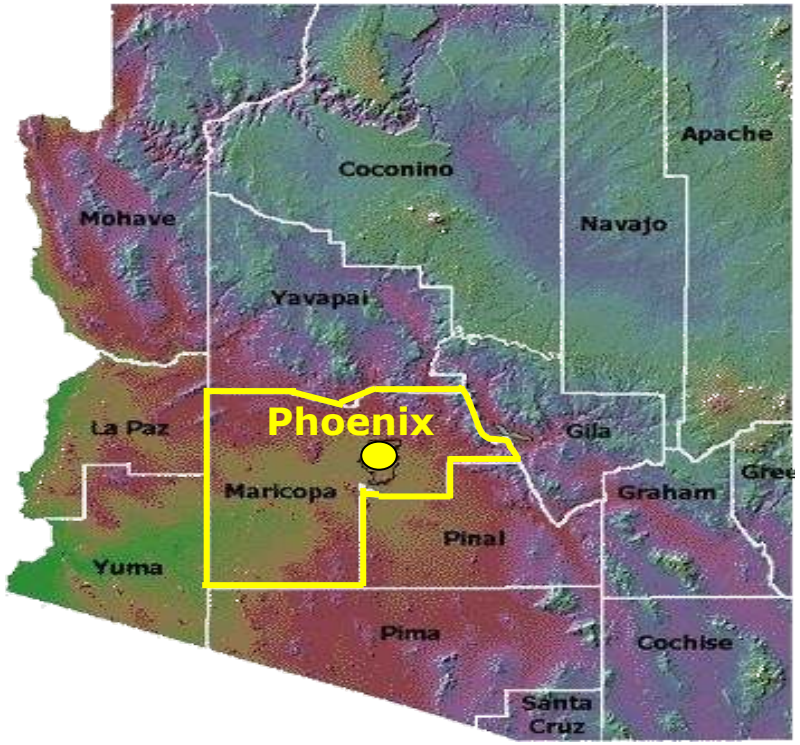
Heat is Public Health Concern in Maricopa County

One of the largest urban centers to experience the nation's most extreme heat



Environmental temperatures ≥ 100°F	Start: mid-May End: 1st week October 110 days(average) 144 days – 2020
Days where max. temp ≥ 110°F (119°F)	26 days (average) 53 days – 2020 15 days (115°F) or higher)
Days where min. temp ≥ 90°F (95°F)	13 days (average) 28 nights - 2020

Vision:

"A healthy, safe and thriving community"

Mission:

"To make healthy lives possible"

Guiding Principles:

Accountability
Collaboration
Community
Equity
Maximum Impact

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2015 – Present

Climate and Health Program

2006 - Heat Surveillance Program

DATA

Partnership

Collaboration

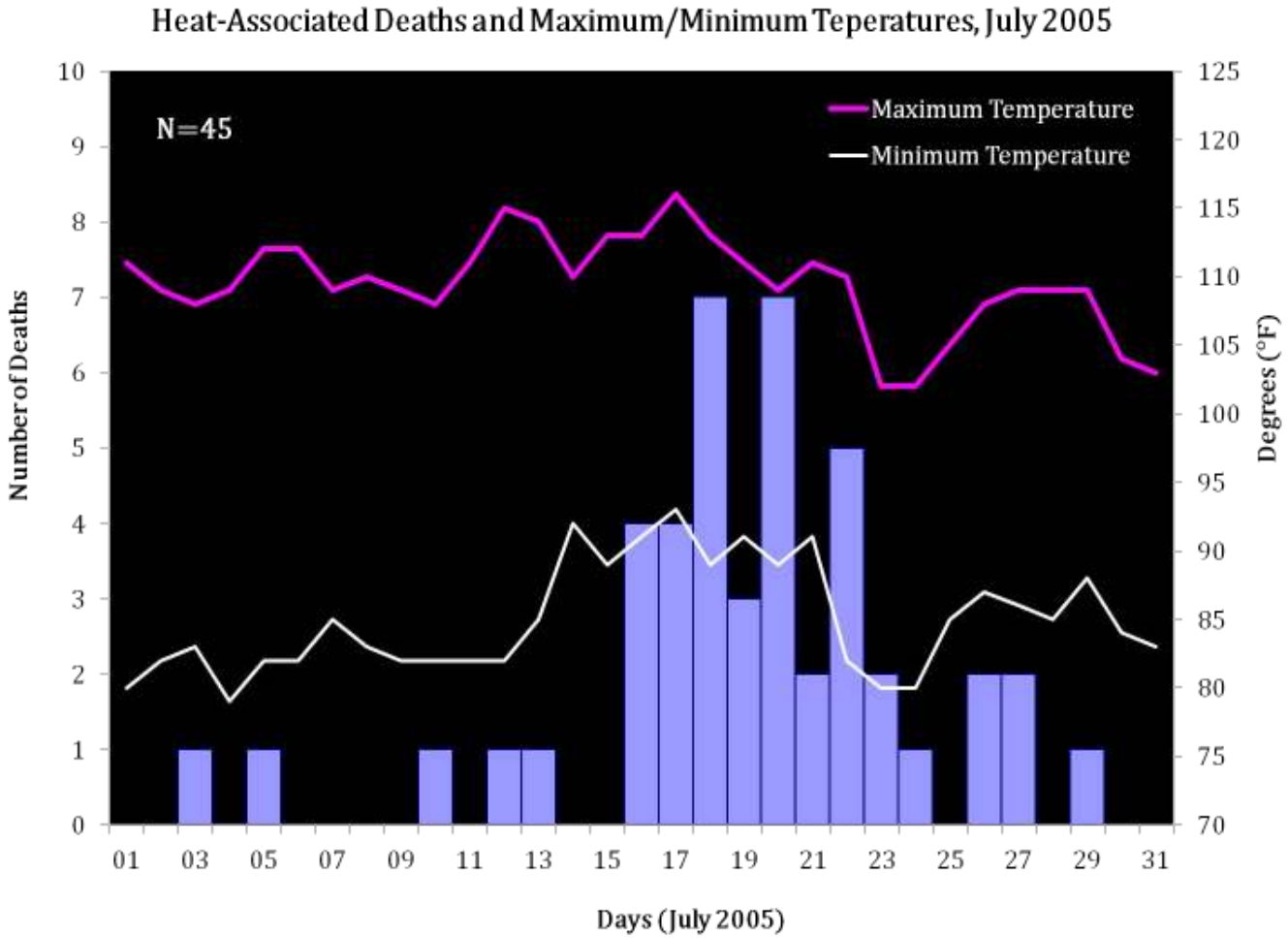
Funding

Connecting

Networking

MCDPH IMPLEMENTED A SYSTEM FOR TRACKING HEAT-ASSOCIATED DEATHS IN 2006

- Exceptionally high temperatures
- Media Reports:
  - "Many heat deaths may go uncounted"
  - "Heat deaths catch officials off-guard"
  - "Heat wave claims 18 lives in 5 days"
- No surveillance system for heat-associated deaths in place



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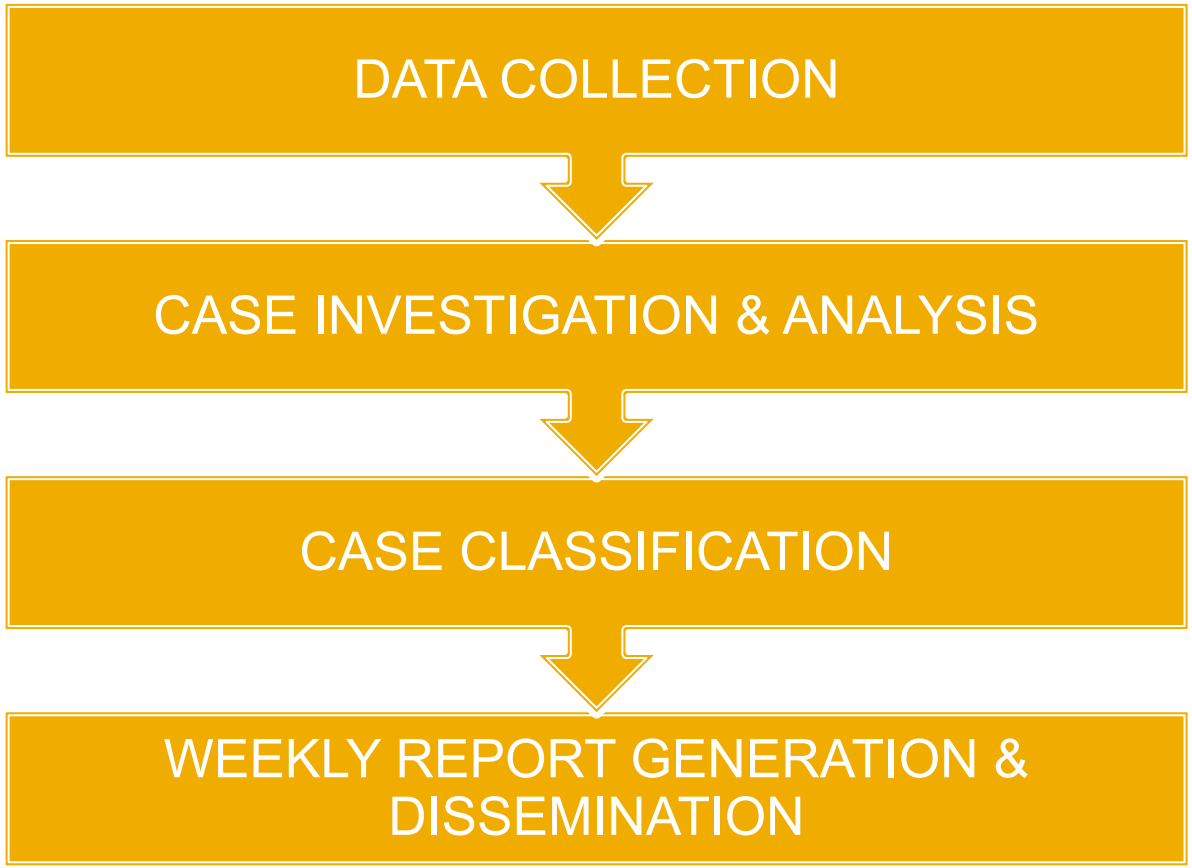
MCDPH HEAT SURVEILLANCE SYSTEM

Heat surveillance begins in May and continues through the end of October



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DATA SOURCES

1. Office of the Medical Examiner (OME)
2. Local Hospitals (ED and IPs) & HDD
3. Death Certificates (OVR)
4. Syndromic Surveillance Data (Essence Data)
5. Media Reports

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ICD-10 Codes for Heat Caused and Heat Related Deaths

Corresponding Definition
Exposure to excessive natural heat
Effects of heat and light
Environmental hyperthermia of newborn

AND/OR

Key Phrases:

- HEAT EXPOSURE
- ENVIRONM
- EXHAUSTION
- SUN
- HEAT STRESS
- HEAT STROKE
- HYPERTHERMIA

Collected Info:

- Demographic information (age, DOB, DOD, place of residence, years living in AZ, others)
- Location of injury and death (urban, rural, indoor, outdoors, others)
- Circumstances surrounding death (work/ recreational activity, working AC, ambient temperature, others)
- Multiple causes of death certification (underlying causes sequence and other contributory but not causal conditions)
- Medical Examiner findings

CASE DEFINITION AND CLASSIFICATION

The Determining Source
of Information to
Classify the Cases is
the **Death Certificate**

DEFINITION AND CLASSIFICATION

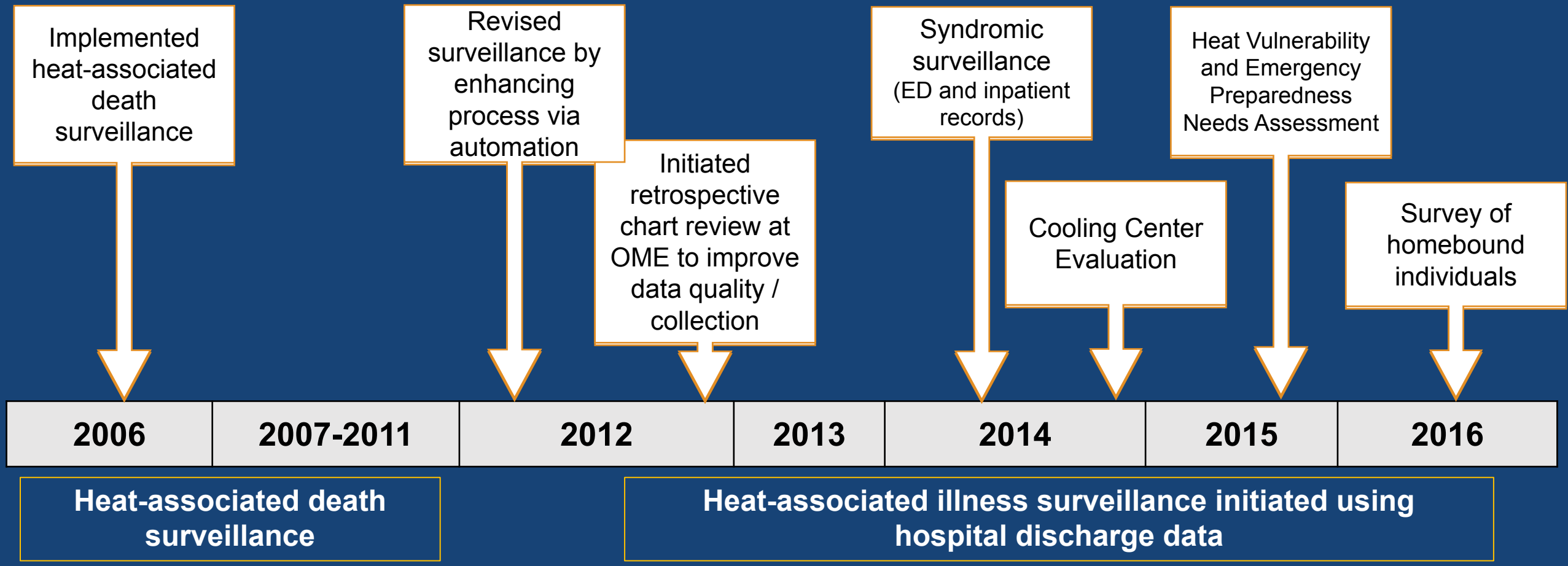
1. **Heat caused death** – death due directly to exposure to environmental heat (as mentioned in Part I of the Medical Cause of Death in the death certificate)

2. **Heat related death** - death due to other health condition or disease, to which heat exposure was a contributor (as mentioned in Part II of the Medical Cause of Death in the death certificate)

3. **Pending** - a suspect heat-associated death still being investigated

4. **Ruled Out** – death found not related to environmental heat; not mentioned anywhere on death certificate

Developing Heat Surveillance Program: 2006-2016



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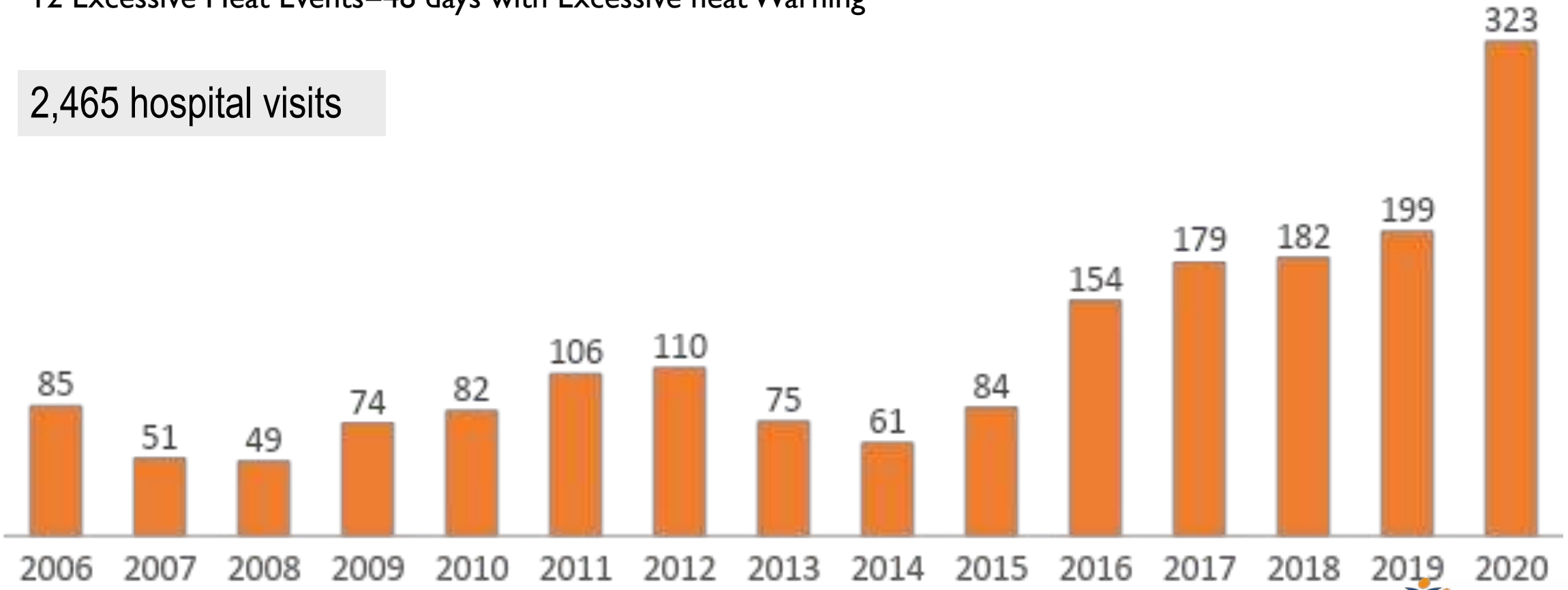
Maricopa County had 1,814 heat-associated deaths from 2006 - 2020

12 Excessive Heat Events=48 days with Excessive heat Warning

2,465 hospital visits



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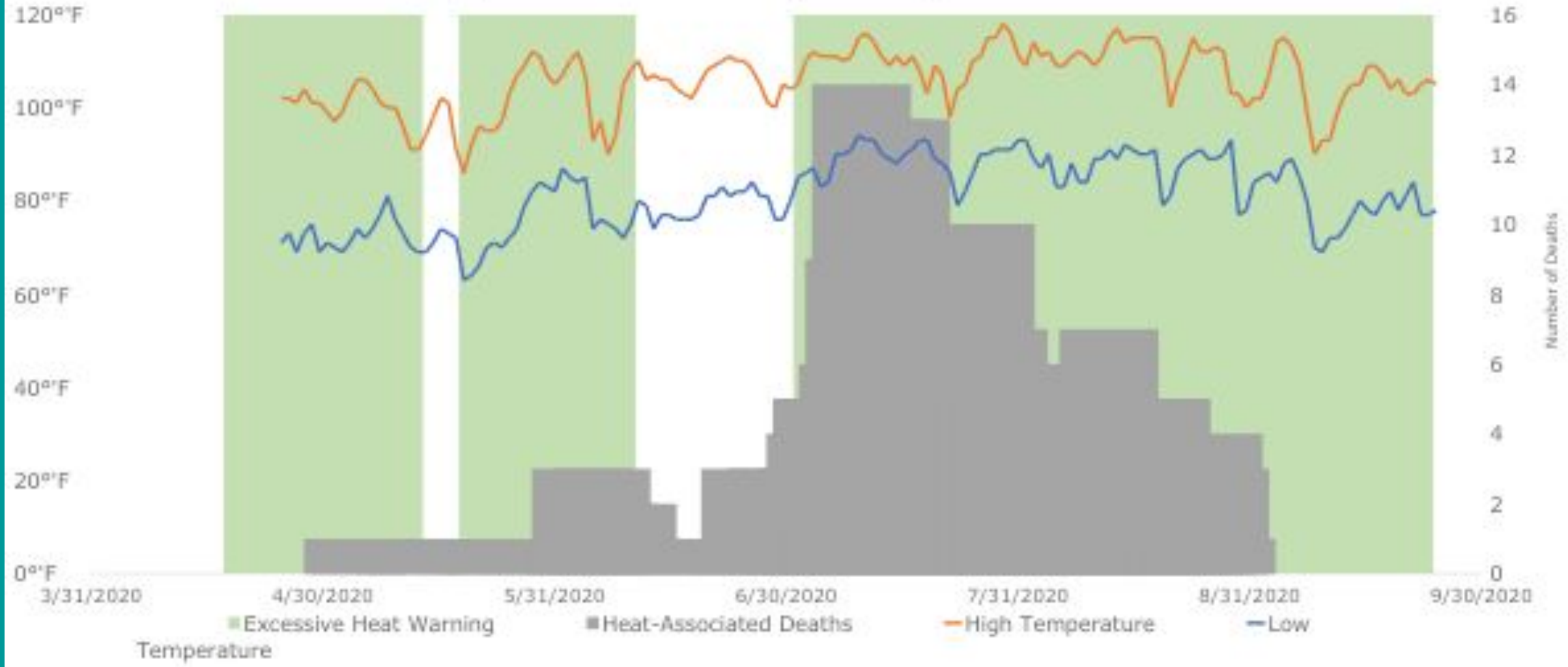
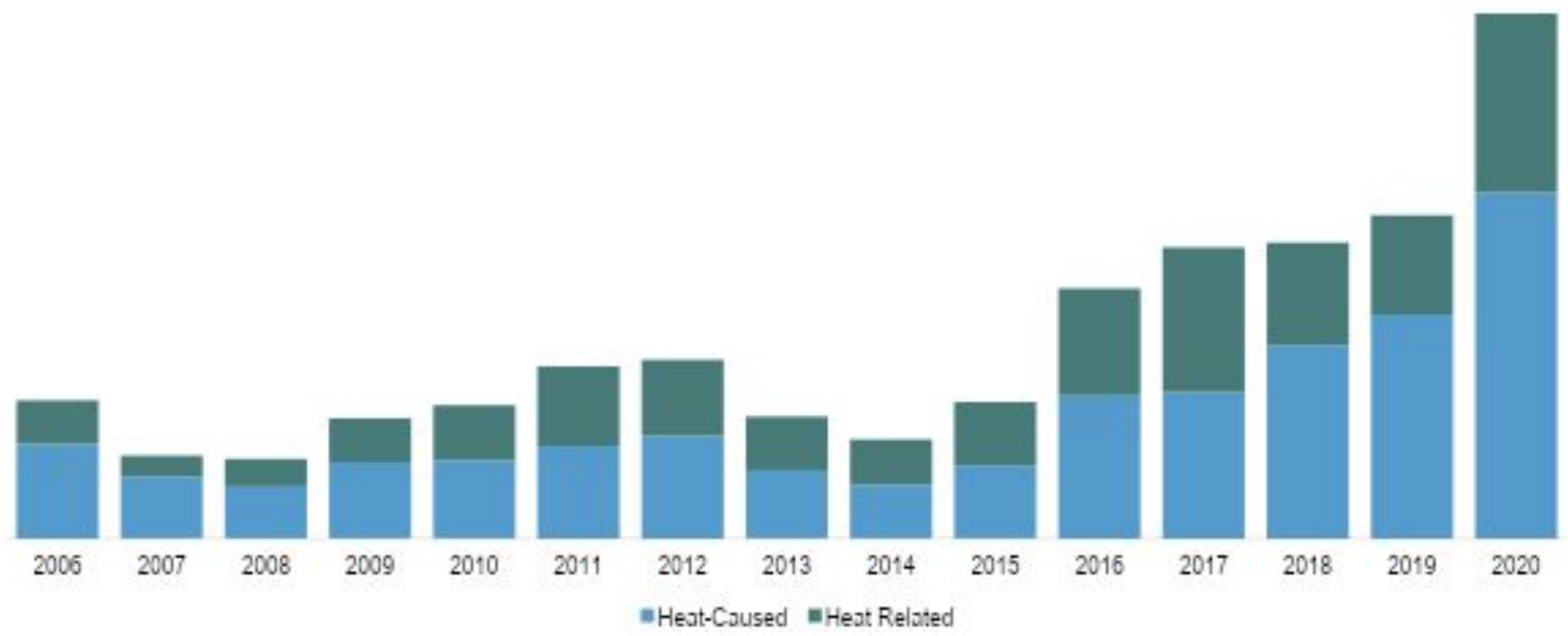
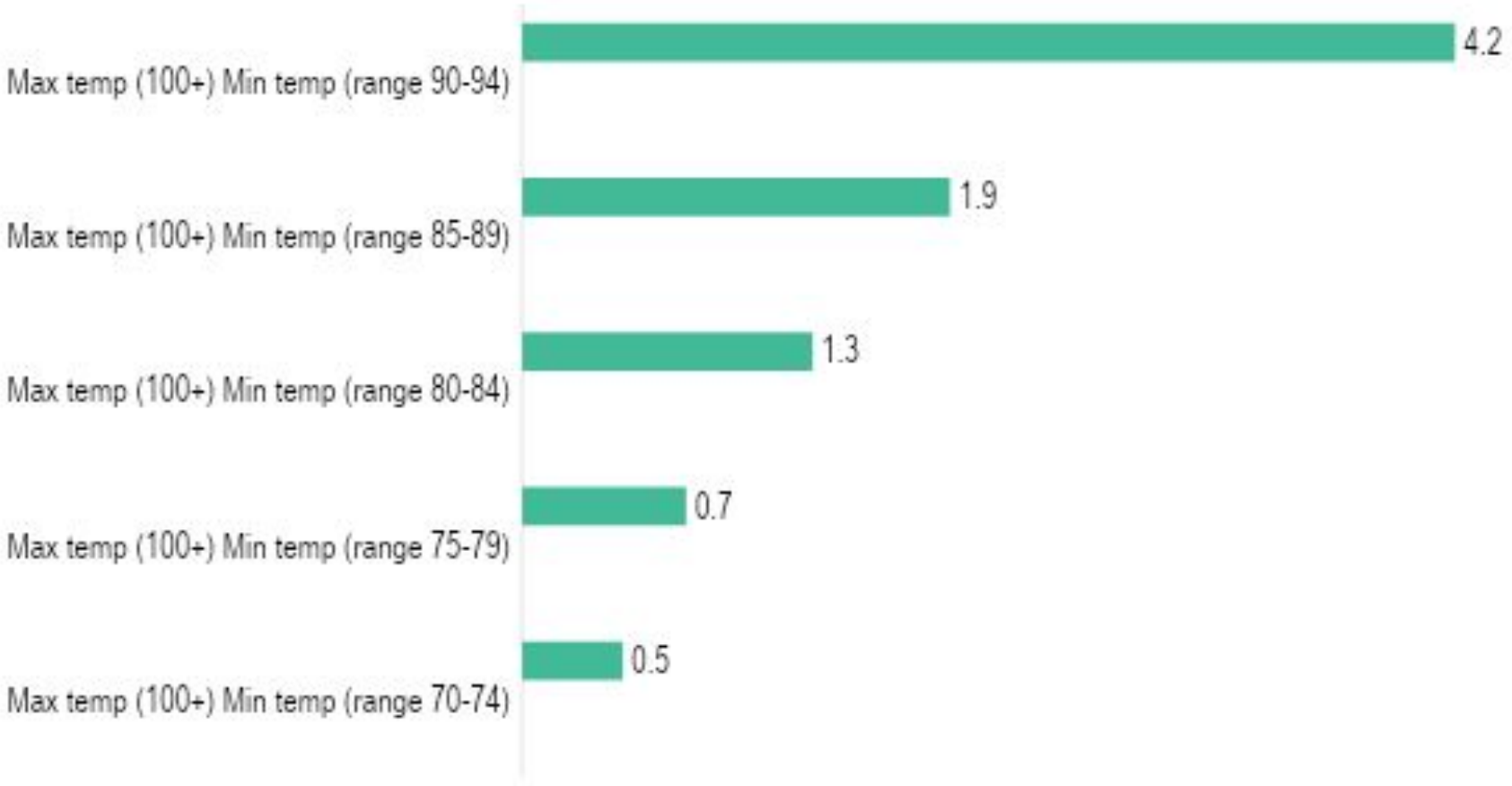
Fifty-two percent of heat-associated deaths occurred on days for which an excessive heat warning has been issued. (N=161)



Sixty-one percent of heat-associated deaths since 2006 have been classified as heat-caused (N=1,814)



AVERAGE DEATHS PER DAY FOR 2016 - 2020 CORRESPONDING TO MIN AND MAX TEMPS



SOME COMMUNITY MEMBERS ARE AT HIGHER RISK OF HEAT-ASSOCIATED DEATH

6 in 10
were at least 50 years old

Certain races were disproportionately affected

Heat-Associated Death Rates	
Native American	4.9
African American	5.3
White	**2.5**

63%
had lived in Arizona for 20 years or more

~30% of all heat deaths occurred indoors

76% of all heat deaths occurred among men

Heat Deaths by ZIP Code – Heat Story Map

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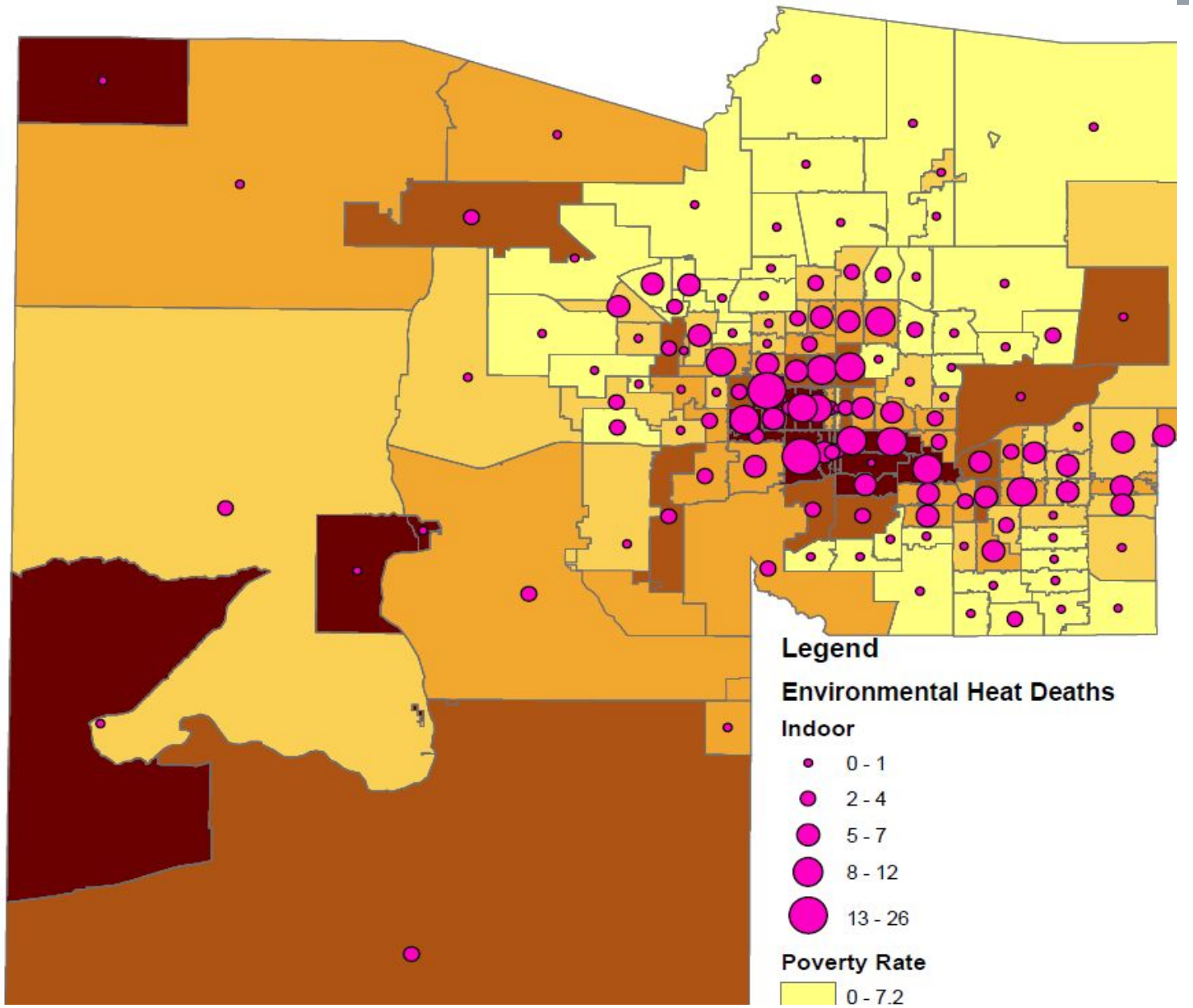
HEATMAP OF INDOOR DEATHS BY POVERTY RATE (2006-2018)

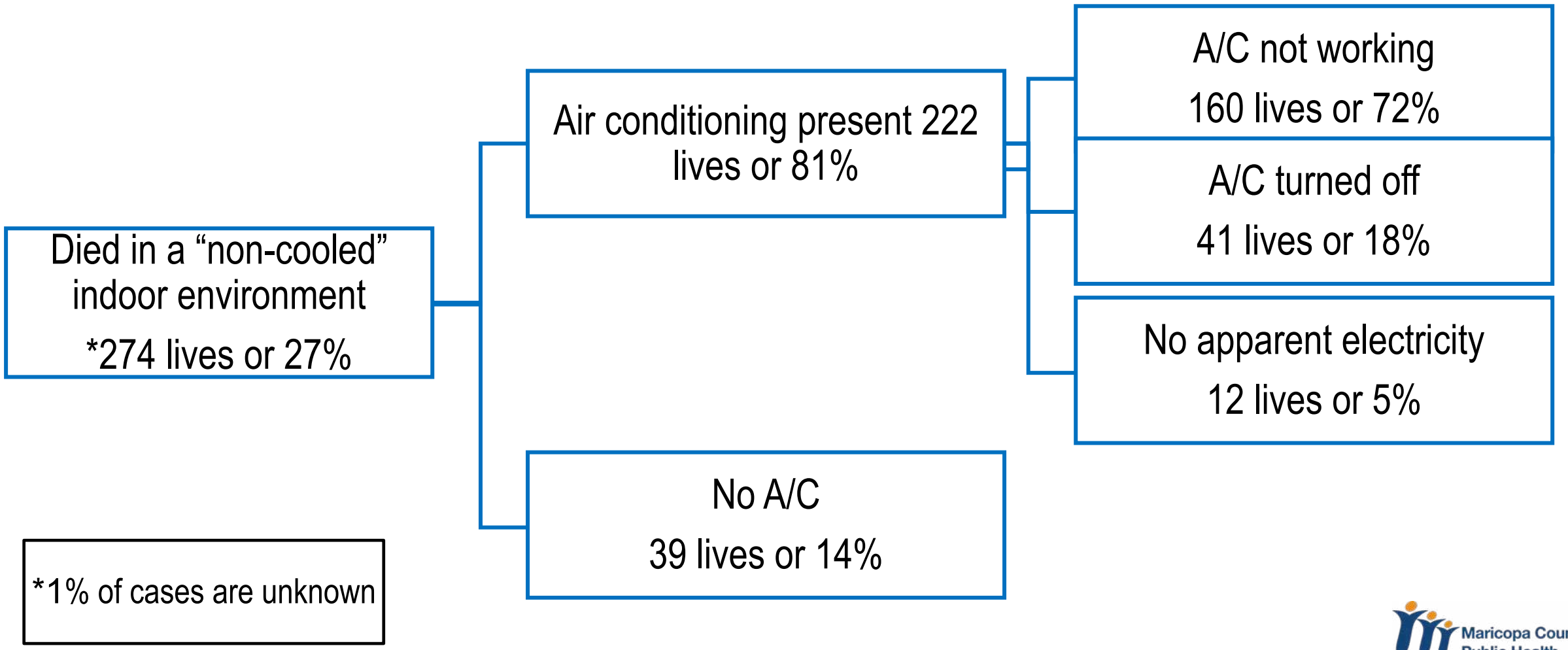
Story Map About Heat: The Silent Killer

http://bit.ly/HeatStoryMaricopa



WHY ARE PEOPLE DYING INDOOR?

Air Conditioning Status of Indoor Heat Deaths (2016 -2020)



*1% of cases are unknown

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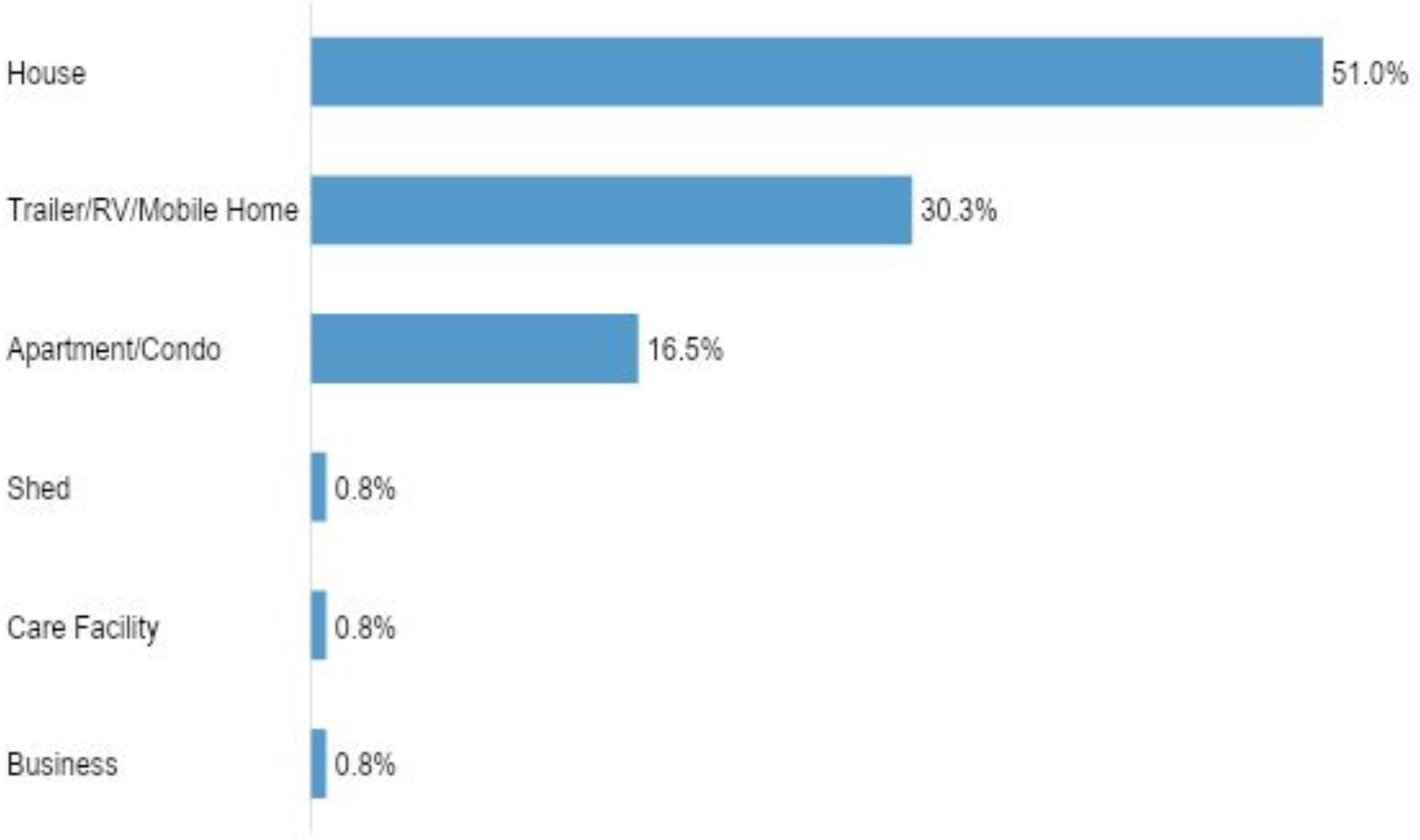
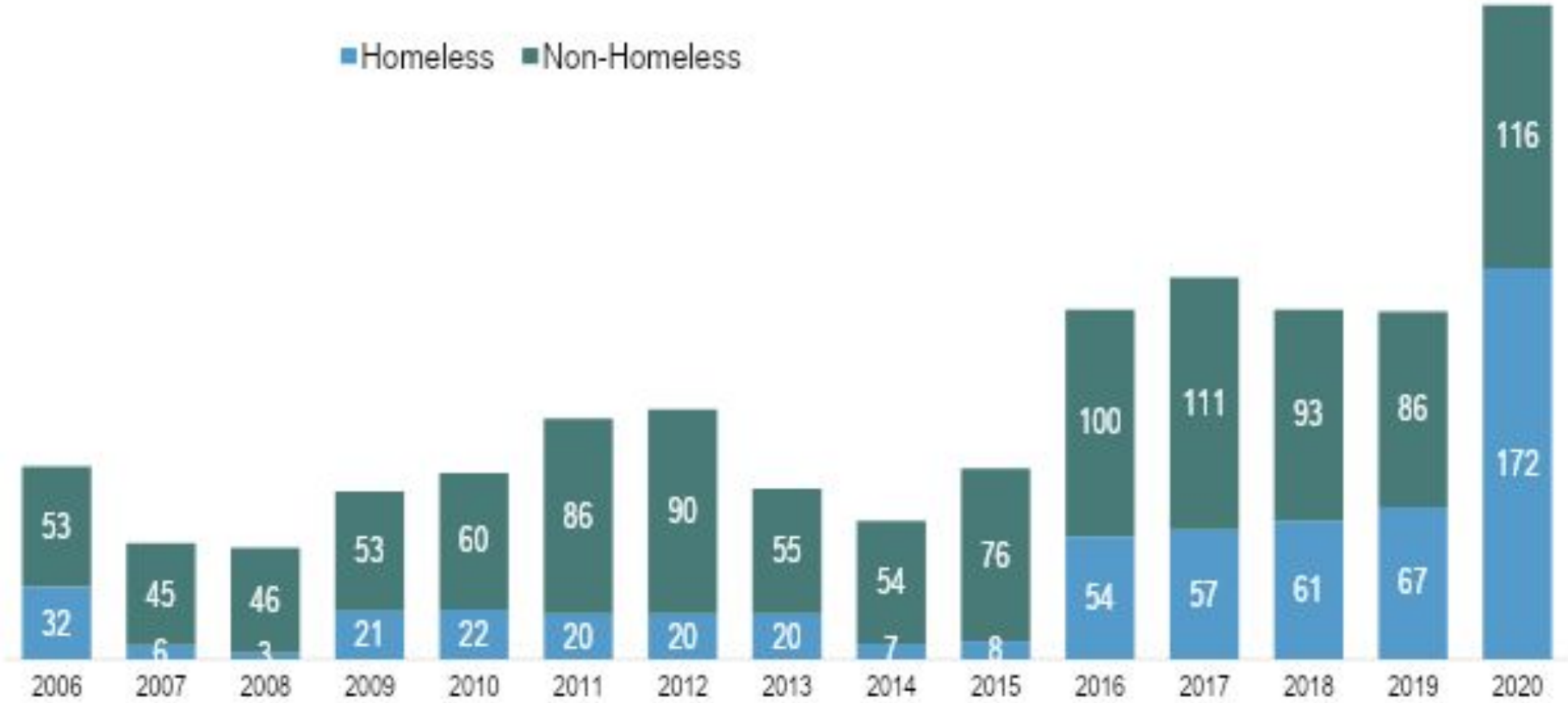
OF THE TOTAL 274 INDOOR DEATHS FROM 2016 TO 2020, 133 OF THEM OCCURRED IN A HOUSE (N=261).



From 2016-2020, There Has Been Nearly A 140% Increase In Drug Use Related To Heat Deaths

Living Situation: the Number Of Homeless People Affected By Heat-associated Deaths Has Increased From 2014 To 2020.



PROFILES OF HEAT ASSOCIATED DEATHS AMONG:

- Substance Use
- Living in Cars
- Living in Single Homes
- Living in Apartments or Condos
- Living in Mobile Homes
- Injured Indoor
- Injured Outdoor
- Homeless
- Female
- Individuals 50-64 Years Old
- Youth
- African Americans
- American Indians
- Asian Pacific Islanders
- Hispanics

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Funding and Expanding Partnerships

Public Health Institute (2015-2016)

Center for Climate Change & Health

The Climate Change and Public Health Learning Collaborative for Urban Health Departments

BRACE GRANT: JUNE 2017

Bridging Climate Change and Public Health (BCCPH) Coalition

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Strategic Plan for Climate and Health

- ✔ Identified 5 Strategic Directions (Action Team for each direction)
- ✔ Established Celebrating Success and Champions – Recognition Program
- ✔ Recognize Nominated Individuals, Organizations, Researcher, Business, and Youth (3rd year)

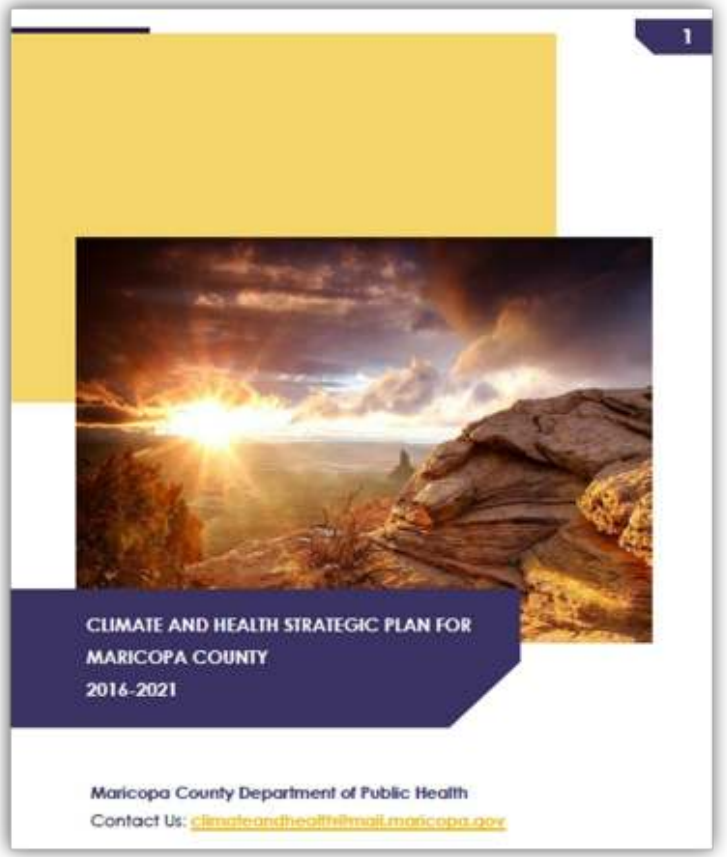
RECOGNITION

EDUCATION

COMMUNICATION

RESEARCH

ACTION



Program: MC Celebrating Success
and Champions

Community Engagement in Mobile Home Community In Central Phoenix

- ASU Healthy Urban Environments Initiative Grant (2019-2020)
- Community Engagement through Community Health Workers (CHW)
- Two surveys administered (preheat season and post heat season)
- Provided Heat Toolkit and Posters with information about heat

Raising Awareness about Extreme Heat, Safety Tips, and Available Community Resources

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Energy Insecurity And Public Health: Going Further Through Cross-sector Collaboration

RWJF – Interdisciplinary (2019-2022)

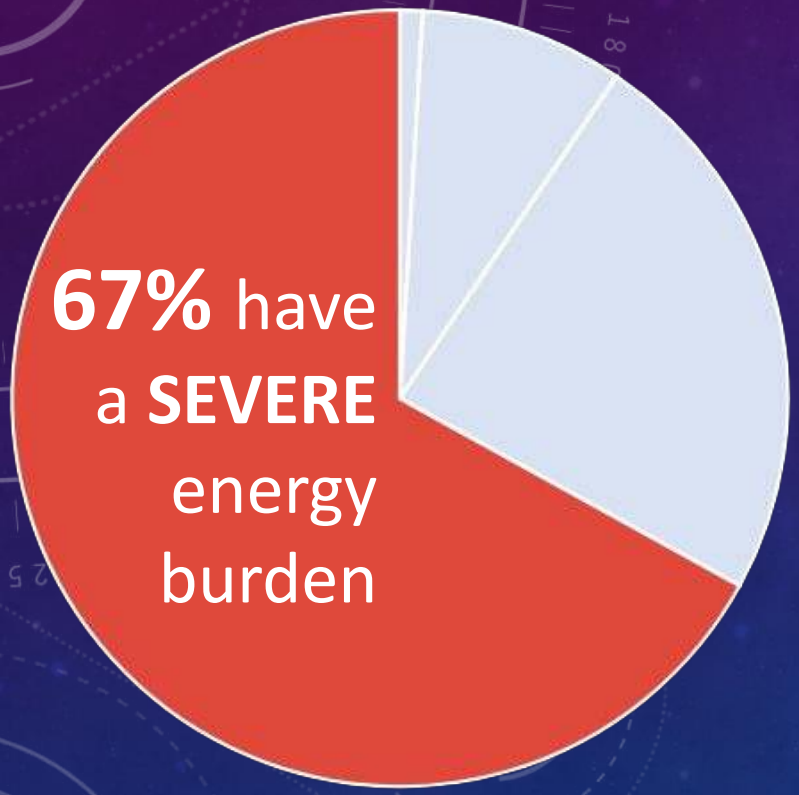
Priorities:

1. Understand the experience and social distribution of energy insecurity among residents in Maricopa County
2. Develop a tool kit-Energy Insecurity Index (EII)-that will be utilized by stakeholders to identify vulnerable communities
3. Advance more collaborative policies and initiatives that increase access to affordable and reliable energy

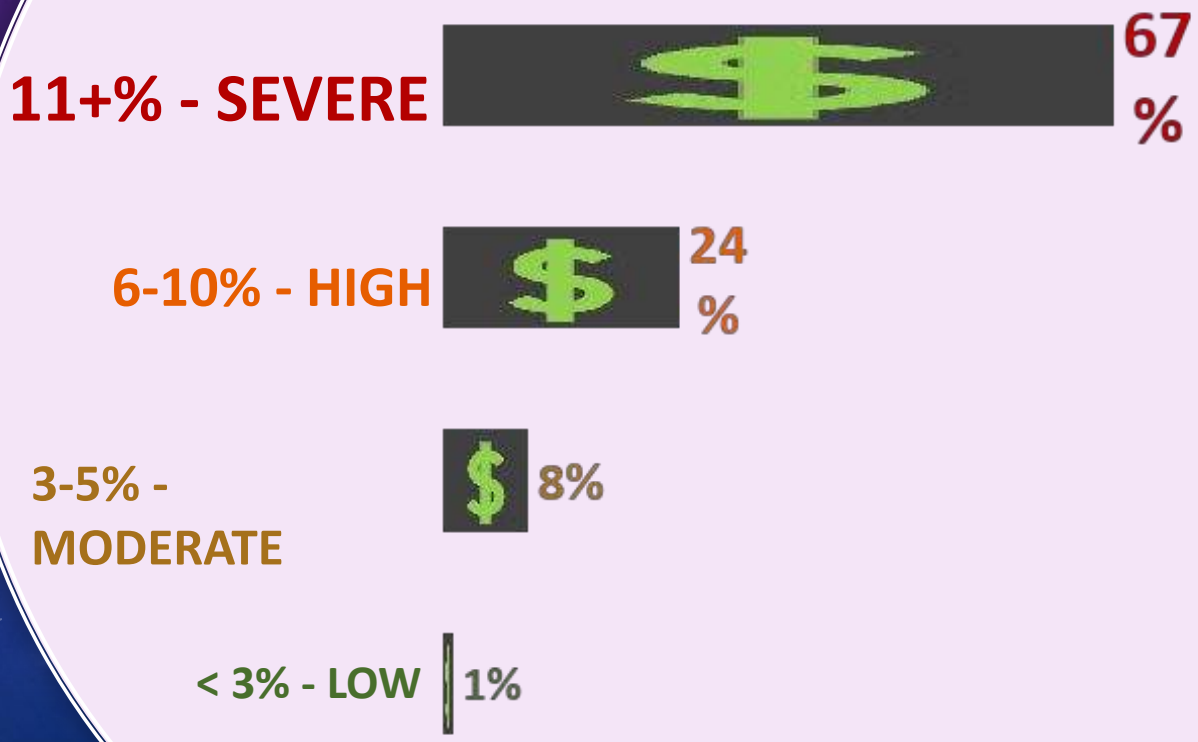
South Phoenix Community: Unlimited Potential Community Based Organization (CBO)

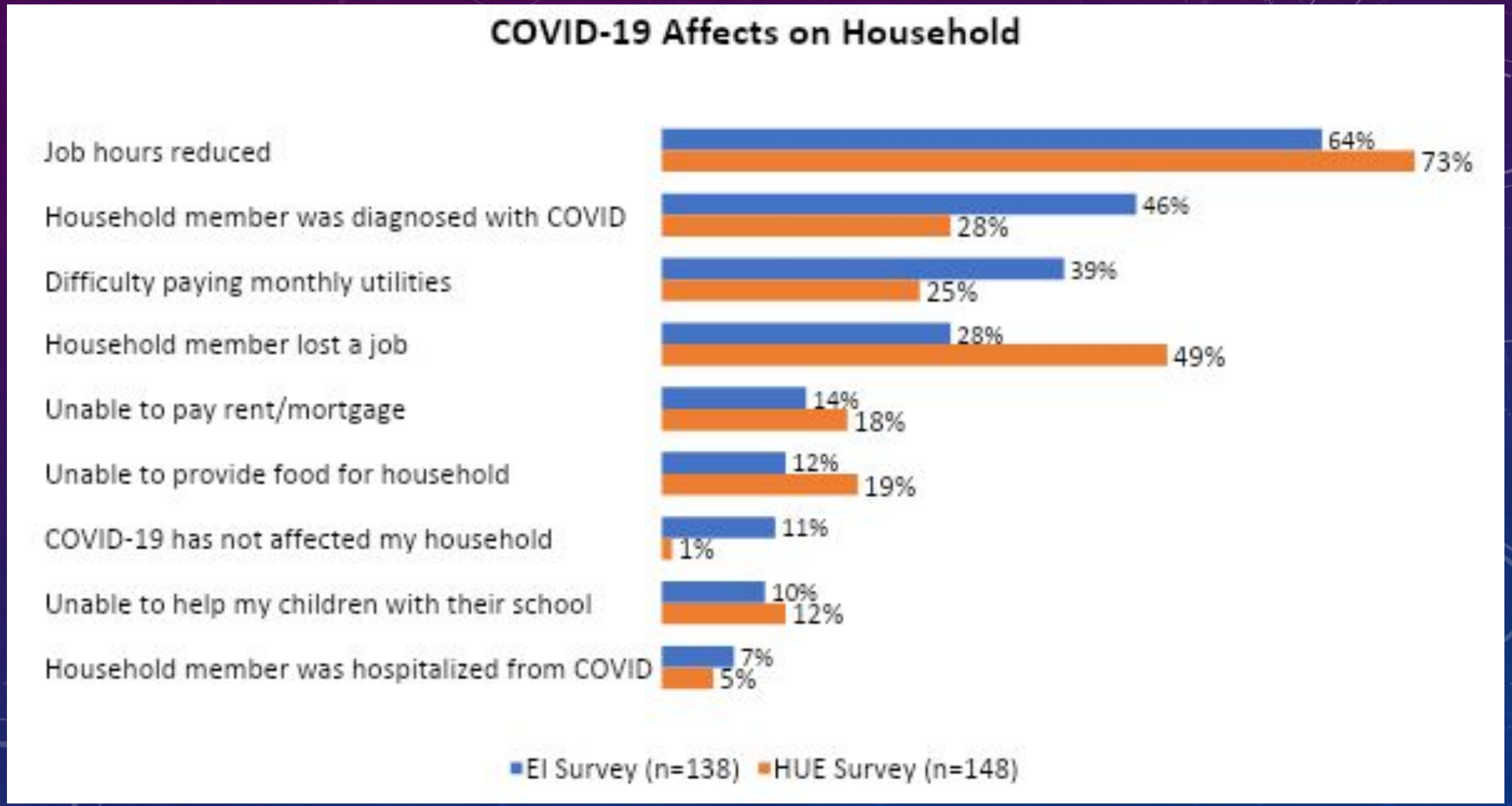
- Action Oriented
- Community Engagement
- Equity Focused

ENERGY BURDEN



ENERGY BURDEN: % of household income spent on energy bills




COVID-19 Affects on Household
Job hours reduced
64%
73%
Household member was diagnosed with COVID
46%
28%
Difficulty paying monthly utilities
39%
25%
Household member lost a job
28%
49%
Unable to pay rent/mortgage
14%
18%
Unable to provide food for household
12%
19%
COVID-19 has not affected my household
11%
1%
Unable to help my children with their school
10%
12%
Household member was hospitalized from COVID
7%
5%
EI Survey (n=138)
HUE Survey (n=148)

Solutions Proposed by Residents

- **WORKSHOP on How to Maintain Mobile Homes and Cooling Systems**
  - Workshop Held on October 23, 2021
- Energy Insecurity Community Partners Responded Including:
  - Utilities (APS and SRP)
  - Foundation for Senior Living (FSL) Training Center
  - Solari, 2-1-1, Transportation Program
  - Public Health (Climate and Health and Built Environment Staff)
  - Unlimited potential, CBO
  - Salud en Balance, CBO
  - **RESIDENTS f**rom South and Central Phoenix

RESOURCES

Story Map About Heat: The Silent Killer

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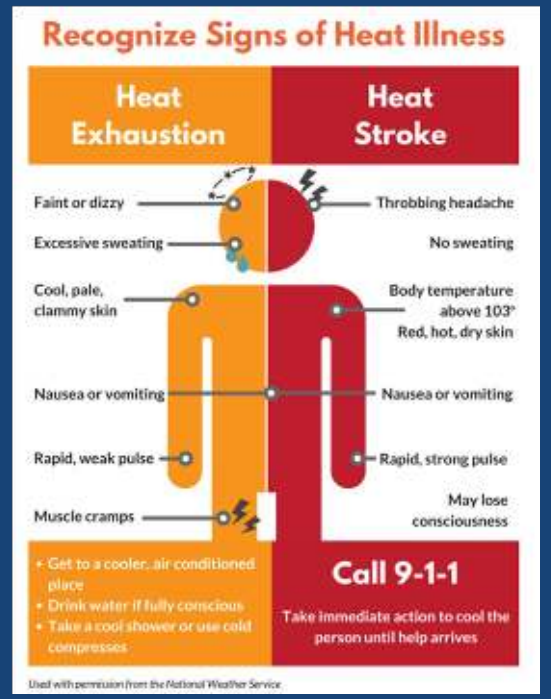

Contact Information

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- Tony Bishop, Epi Data Analyst
- Tianna Baker. Epi data Analyst
- Vjollca Berisha, Epidemiologist

Bridging Climate and Public Health

http://bit.ly/climatehealthmaricopa

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