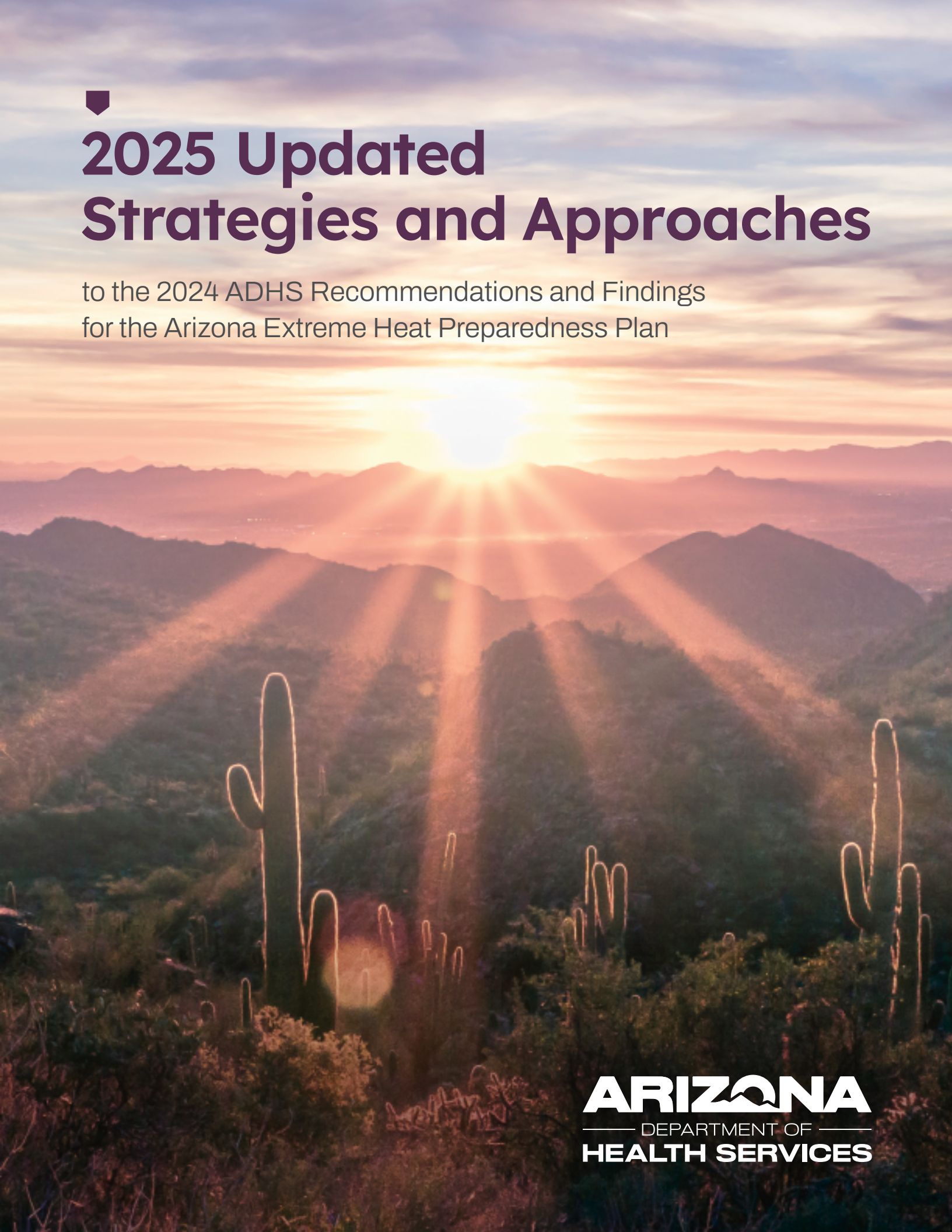

2025 Updated Strategies and Approaches

to the 2024 ADHS Recommendations and Findings for the Arizona Extreme Heat Preparedness Plan

ARIZONA
DEPARTMENT OF
HEALTH SERVICES

Bell Rock Loop is just north of Oak Creek and south of Sedona in Yavapai County, Arizona.

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Acknowledgment

The Arizona Department of Health Services (ADHS) extends our deepest gratitude to everyone who contributed to the ADHS Recommendations and Findings for the Arizona Extreme Heat Preparedness Plan. Your invaluable efforts have been instrumental in advancing heat resiliency work across Arizona.

We sincerely thank our partners in the community, academic institutions, and local, state, federal, and Tribal agencies. Your time, experiences, and insights—shared during the 2nd Arizona Heat Summit—were essential to this process. Your dedication to participating in focused discussions and consensus workshops was pivotal in turning Arizonans' vision into actionable outcomes.

We are especially grateful to our dedicated workgroups, which included cooling center facility managers, university researchers, public health and healthcare practitioners, first responders, emergency preparedness professionals, city planners and managers, outreach and communication experts, and policy and decision-makers. Your expertise, thoughtful input, and tireless dedication were instrumental in advancing this critical work, and we deeply appreciate the effort and commitment you brought to bringing this initiative to fruition.

Finally, we extend our sincere thanks to Governor Hobbs for the leadership and support that allowed us to build upon existing efforts and foster new partnerships. Together, we have taken significant strides to enhance the resilience of Arizona communities in the face of extreme heat.

Thank you for your continued collaboration and commitment to a more sustainable and resilient future for Arizona.

INTRODUCTION

In 2024, ADHS and its partners identified four overarching goals to protect Arizona communities from the escalating threats of extreme heat:

- Driving Heat Relief Activities
- Reducing Heat-Related Illnesses and Deaths
- Preparing for Extreme Heat
- Fostering Innovative Solutions

Achieving these goals will be a shared journey, propelled by the collaboration of individuals, communities, and organizations who bring diverse perspectives, unique expertise, and a unified commitment to ending heat-related illnesses and deaths in Arizona.

The 2024 ADHS Recommendations and Findings for the Arizona Extreme Heat Preparedness Plan Heat Report was developed with input from stakeholders. These goals were then translated into actionable activities, milestones, and deliverables, employing a statewide, multi-partner approach that envisioned possibilities unconstrained by funding or capacity limitations.

Since then, ADHS has worked closely with Arizona leadership, stakeholders, and partner-led initiatives—including workgroups, meetings, briefings, and conferences—to align its activities with available resources and operational capacity.

This report provides an update on the strategies and approaches led by ADHS or where the agency played a pivotal role in driving meaningful progress toward these goals. It reviews key activities from 2024 for each recommendation, highlighting significant progress and key deliverables. Additionally, the report outlines ADHS's strategy and vision for 2025, building on the successes of the past year.

Tracking Performance Measures

2024 Performance Measure	2024	2025 Updated Performance Measure
By June 30, 2025, make progress on 100% of recommendations in the Extreme Heat Action Plan.	Met - progress was made on all recommendations in 2024	By June 30, 2026, make progress on 100% of strategies in the updated 2025 work plan.
By June 30, 2025, increase the number of facilities reporting heat-related illnesses into the syndromic surveillance system. (baseline: n = 89/98).	Met: 90/98 facilities are reporting heat-related illnesses into the syndromic surveillance system.	By June 30, 2026, increase the number of facilities reporting heat-related illnesses into the syndromic surveillance system.
By June 30, 2025, stabilize the number of heat-related emergency department visits. (baseline: n = 3,286 (2022) HRI ED Visits).	Heat-related emergency department visits totaled 4,298* in 2023, the most recent year available.	By June 30, 2026, stabilization of the number of heat-related emergency department visits. (HRI ED Visits)
By June 30, 2025, stabilize the number of heat-related hospitalizations. (baseline: n = 1,039 (2022) HRI hospitalizations).	Heat-related hospitalizations totaled 1,322* in 2023, the most recent year available.	By June 30, 2026, stabilization of the number of heat-related hospitalizations. (HRI hospitalizations)
By June 30, 2025, complete a baseline assessment of the AZ Heat Preparedness Network collaboration effectiveness using a third-party assessment tool.	In progress - ADHS is working with federal partners to develop a multidisciplinary team to design and implement an evaluation plan.	By June 30, 2026, complete an evaluation plan and begin gathering baseline data.

* 2023 data is the next available year. However, this data is prior to the implementation efforts of 2024.

2024 Updates and Accomplishments

GOAL 1: Drive Heat Relief Activities

The **2024 ADHS Recommendations and Findings for the Arizona Extreme Heat Preparedness Plan** highlighted opportunities to enhance the statewide coordination of heat relief activities. In response, ADHS undertook a multifaceted approach to address the report's goals. Key efforts included:

- Securing increased funding support
- Engaging leadership
- Implementing a resource-sharing platform
- Establishing a legislative strategic outline
- Leading state agency workgroups alongside five interdisciplinary workgroups

These workgroups focused on developing tangible solutions and producing practical tools to support local agencies and community organizations. ADHS provided essential leadership, guidance, and resources to these workgroups while ensuring transparency by disseminating findings to stakeholders. Community partnerships were instrumental in expanding access to heat relief resources and facilities. Collaborations with organizations such as the American Red Cross, Arizona Faith Network, Goodwill, and Petco strengthened networks and connected local partners with organizations capable of delivering innovative solutions and critical support. This coordinated effort underscores ADHS's commitment to building a more resilient heat relief infrastructure across Arizona.

The 2024 report divided Goal 1 into four recommendations targeted at improving statewide coordination, supporting heat relief legislation and educating policymakers, identifying and securing sustainable funding, and creating a public policy and prioritization framework to guide statewide heat preparedness and response. These four key recommendations serve as the foundation for Arizona's strategy to enhance heat preparedness and resilience. Below is a closer look at each recommendation and the specific actions taken to address them.

Performance Measures

- 9 established cross-collaborative teams
- 23 leaders from 18 state agencies, Tribes, and the Governor's office engaged in shaping and driving heat relief efforts
- 100% of counties with identified points of contact
- 20 Tribes with identified points of contact
- One heat relief bill passed in the 2024 AZ legislative session
- 4 funding opportunities shared on Civic Roundtable
- 137 individuals from 80 organizations on Civic Roundtable
- COMPLETE - By June 30, 2025: Complete a legislative outline

Statewide Coordination

Recommendation: Unify coordination of grassroots heat response activities with state agency efforts

SUMMARY OF HIGHLIGHTS

Leadership

ADHS demonstrated strong leadership by appointing the nation's first Chief Heat Officer and a statewide Heat Relief Coordinator to provide strategic oversight and coordination at the state level. These leadership roles were pivotal in driving initiatives, fostering collaboration, and ensuring the implementation of the 2024 report's recommendations. ADHS's structured framework facilitated streamlined communication between the community and state leadership, creating an environment where priorities and needs could be effectively shared and addressed at all levels.

ADHS's leadership extended policy discussions at the state and national levels. At the Governor's Subcabinet meetings, ADHS contributed to resilience and infrastructure discussions, ensuring heat relief was integrated into broader resilience planning. The Chief Heat Officer also engaged in conversations with the Centers for Disease Control and Prevention (CDC), Dr. Aaron Bernstein (Director for the National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry), and local public health leadership to address evidence-based heat preparedness gleaned from decades of work in Arizona. The Chief Heat Officer also discussed state and federal approaches to heat resiliency with Health and Human Services (HHS) Secretary Becerra, Governor Katie Hobbs, and the Governor's staff. Additionally, ADHS was active in national conversations, including a call with the Association of State and Territorial Health Officers (ASTHO) to discuss the role and priorities of the Arizona Chief Heat Officer, further establishing Arizona as a leader in heat preparedness.

Workgroups, Collaboration, and Education

Participants in the 2024 Arizona Heat Planning Summit emphasized the need to engage and train leaders on the importance of heat relief efforts to empower communities, raise awareness, and build capacity while leveraging expertise, maximizing resources, ensuring unified messaging, and strengthening networks.

Building on this foundation, ADHS held bi-weekly workgroup meetings throughout the heat season, fostering a multi-sector and multi-jurisdictional approach to developing solutions and guidance for Arizona's heat challenges. In addition to the workgroups, partner-led sessions, briefings, and meetings engaged stakeholders statewide to promote a unified, collaborative approach. Specific task forces, such as the Medication and Heat Task Force and the Public Information Officer (PIO) Task Force, addressed targeted challenges, demonstrating a tailored and efficient approach to pressing issues.

A significant milestone in enhancing collaboration was the implementation of Civic Roundtable, a virtual community platform. This platform enabled stakeholders—including state agencies, nonprofits, and local organizations—to share events, updates, webinars, and resources. During Civic Roundtable's visit to Arizona, key informant interviews with cooling centers provided

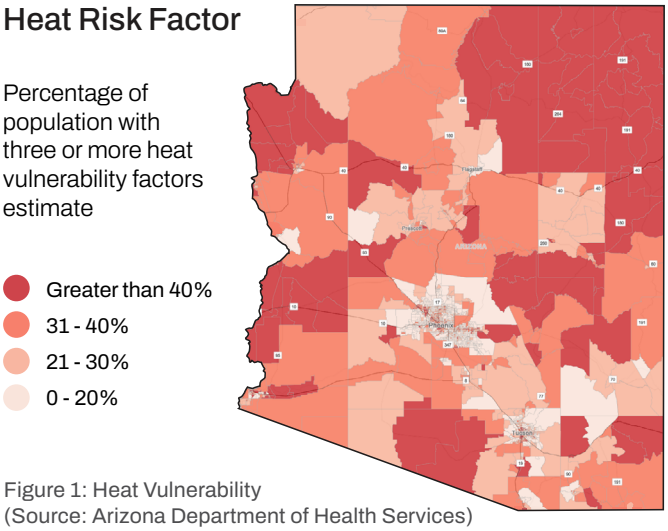


Figure 1: Heat Vulnerability
(Source: Arizona Department of Health Services)

valuable insights, further strengthening resource-sharing and communication.

Community and local engagement were central to ADHS's efforts to ensure heat relief resources were accessible. The team participated in the Red Cross Community Briefing Event and the Federation of American Scientists (FAS) Heat Resilience Policy Strategy Session and Workshop, collaborating with various organizations to discuss and refine heat resilience strategies. Additionally, ADHS took part in a Pima County heat season after-action review, followed by a debrief with the Maricopa County Department of Public Health (MCDPH) Heat Relief Network. These reflections helped identify lessons learned and opportunities to improve future responses. Additionally, ADHS held a press conference on school and heat safety, ensuring that heat-related safety measures were clear for both parents and educators.

To further expand awareness, the Chief Heat Officer presented to the Creighton School of Medicine's class on planetary health and heat, fostering the next generation's awareness of heat-related health risks. During Heat Awareness Week, ADHS held a joint press conference, working in tandem with state and local partners to raise public awareness about extreme heat risks. This collaborative approach extended to federal engagements, including a site visit with the CDC Director to discuss heat relief and resilience strategies. As a critical component of its efforts and demonstration of ADHS' dedication to equitable support, ADHS met with Tribal partners to discuss heat sharing and mobile cooling units, ensuring that communities with diverse needs were represented and supported.

Engaging Historically Underserved Communities

ADHS placed a strong emphasis on partnering with organizations that serve Arizona's historically underserved communities, including Tribal nations, the disability community, and rural areas, to ensure equitable access to heat relief resources and support. By collaborating with Tribal health partners, ADHS worked to incorporate culturally relevant practices into heat preparedness efforts while addressing unique challenges faced by Tribal communities, such as infrastructure limitations and geographic isolation. Partnerships with organizations advocating for individuals with disabilities are helping to prioritize accessibility in heat relief planning, ensuring that cooling centers, resources, and communications meet the needs of this community.

Additionally, ADHS is working with rural, local public health departments and community-based organizations (CBOs) to bridge resource gaps and distribute vital supplies like water, cooling towels, and sunblock. These collaborative efforts aimed to create a more inclusive and effective heat response strategy, demonstrating ADHS's commitment to serving all Arizonans equitably.

Cooltainers

ADHS supported the Governor's office and ADOA in deploying Cooltainers—self-sufficient cool spaces repurposed from shipping containers. While not as mobile as buses or RVs, these solar-powered, air-conditioned units offered a reliable, mobile solution for heat relief in heat emergencies and can be set up within a day.

Figure 2: ADOA Cooling Centers
(Source: Arizona Department of Health Services)

Cooltainers

1818 W. ADAMS | 1601 W. JEFFERSON

Visitors per Week

June – October 2024

6/5	6/12	6/19	6/26	7/3	7/10	7/17	7/24	7/31	
69	148	156	146	142	129	177	225	173	
103	228	215	238	195	215	181	219	203	
8/7	**8/14**	**8/21**	**8/28**	**9/4**	**9/11**	**9/18**	**9/25**	**10/2**	**10/9**
197	169	174	185	127	141	132	195	186	211
201	256	309	177	219	267	330	323	286	262

Visitors per Month

June – October 2024

	June	July	August	September	October
	490	714	825	633	420
	752	890	1043	1137	605
TOTAL	1242	1604	1868	1770	1025

Number of US Veterans Served

Cooltainer Season | 75 | 244 | TOTAL: 319

Visitors by Age

18–24	25–34	35–44	45–54	55–64	65+
82	856	972	631	442	97
150	729	1519	1291	642	96
232	1585	2491	1922	1084	193

Visitor's Travel Distance (in miles)

0–1	1–2	2–5	5+	10+	15+
630	1071	410	103	6	3
589	1380	444	36	7	1
1219	2451	854	139	13	4

Personal Stories

First-hand accounts from Arizonans who have been positively impacted by cooling centers

Female mid 40s unsheltered: Came to the respite center and requested a bottle of water. She intended only to get the water and leave, but after noticing her breathing and profuse sweating, I encouraged her to come into the center to cool off. I gave her the National Weather Service signs of heat illness diagram handout we had at our partner locations. While cooling off, she read the document and realized she was in the phase of heat exhaustion. She came to me and thanked me for recognizing she was in trouble and did not know it. I requested she share what she learned.

Female late 20s unsheltered: Came to the Cooltainer to hydrate and cool off. She stated she had pain in her extremity from a spider bite. It was about 115 degrees outside. Although the medical facility was within five miles, due to the heat it was unsafe for her to walk with her current condition. The area was red, swollen, and painful. She was grateful to get an Uber to take her to the emergency room.

Male mid 40s unsheltered: Came to the Cooltainer to cool off for the day. He was thinner than usual, appeared to often respond to internal stimuli. He stated he was unsheltered, and he missed the opportunity for housing due to being late. He was referred to 211 and a community resource partner to assist with available resources.

Anonymous unsheltered: Due to bad family circumstances, I am living on the streets in West Phoenix.

Every day this summer, I was able to get bottles of water distributed by an outreach team from Arizona Friends of the Homeless. They really cared about me staying safe in the heat. I was able to get multiple bottles and sometimes a tote bag with sunscreen, an extra hat, sunglasses, and a refillable water bottle. Also, AFOH made sure we had nutritious food and even fruit.

The other thing the outreach team provided was a list of places to get other services. This included cooling or respite centers in the west part of Phoenix and some libraries. When it was really ridiculous out there, I could take time in a temporary center to cool off and use the restroom.

Thank you to Arizona Friends of the Homeless for keeping me alive and to Maricopa County and the Governor for giving that agency items to pass out. If we don't have homes or apartments to protect us, we really need help. There is not a lot of shade.

We are very vulnerable on the street, but the summer heat makes it a thousand times worse.

Typed by Barbara Lewkowitz, Board member, outreach and Treasurer from Arizona Friends of Homeless

Female early 20s unsheltered: She came to receive hydration, a snack, and to cool down. She was cachectic and a substance user. I noticed she had a foul odor. I checked the multiple wounds on her hand, and the back of her lower extremity which had multiple areas of foul odorous, pus drainage. She was encouraged to follow up with emergency care. When she returned to the center, her wounds were healed, and she had gained weight.

Male mid 40s unsheltered: He was found outside the cooling center, unresponsive. Narcan was given by staff and 911 initiated. The fire department arrived after Narcan #2 was given and they used cooling fans and cooling blankets. He was then transported to the hospital.

Female unsheltered: As she was cooling down and resting, she reported that her bladder had burst. 911 was initiated and she received care at the emergency department.

Male late 50s unsheltered veteran: This AFN year, we added assessment for veteran status to our intake form. Our contracted member's veteran status was discovered during training while asking intake questions for a community member. He was referred to a community resource person who assists veterans with services. He and his wife were assisted and housed.

Resources and Funding

In response to stakeholder feedback, ADHS prioritized educating stakeholders on existing standardized resource allocation processes and highlighting their importance. Partners had expressed concern with the cumbersome process and hesitated to use it. By emphasizing the use of standardized systems like the Bureau of Operational Readiness and Response (BORR)/Department of Emergency and Military Affairs (DEMA) request form, the state can collect more detailed information on local resource gaps, enabling the development of targeted solutions, including identifying alternative or supplementary funding sources. To supplement this process, an ADHS form was created to solicit smaller resource needs from counties and Tribes, which ADHS used to distribute essential heat relief supplies—including water bottles, electrolytes, cooling towels, and sunblock—to bolster local heat response efforts.

In 2024, ADHS applied for the Building Resilient Infrastructure and Communities (BRIC) Grant and supported partners in applying for the U.S. Environmental Protection Agency (EPA) Community Change Grant. ADHS also collaborated with the Governor's office on the Tabletop Challenge to foster innovative solutions for heat-related challenges. Additionally, ADHS actively shared funding opportunities, captured partner priorities through surveys, and updated the heat relief site onboarding survey to better identify resource needs such as training, funding, and staffing.

Collaboration with organizations like the American Red Cross, Arizona Faith Network, Goodwill, and Petco expanded access to heat relief centers, resources, and community support services, further strengthening Arizona's heat relief infrastructure. The implementation of Civic Roundtable will also serve as a solution where partners can share resources needed and resources available, fostering collaboration and maximizing the efficiency of shared efforts.

Heat Relief Legislation

Recommendation: Propose impactful policy change to be accomplished through legislative actions

SUMMARY OF HIGHLIGHTS

Legislative Collaboration

The ADHS legislative liaison collaborated closely with the Chief Heat Officer and the Heat Program to monitor active legislation and provide education and subject matter expertise through appropriate channels. While the Arizona Department of Health Services' role does not include advocating for state-level legislative changes, it focuses on educating stakeholders, presenting data, and addressing inquiries from legislators and the Governor's office. Notably, ADHS contributed valuable input to the mobile home bill (HB 2146 amending ARS 33-1452), which protects the rights of mobile home residents to install cooling devices such as window or portable air conditioning units.

Actual text from bill: 33-1452.9

Prohibit a tenant from installing reasonably necessary cooling methods to reduce energy costs and prevent heat-related illness and death, including temporary window-mounted ventilation or air conditioning, wall-mounted mini-split air conditioners, commercial window coverings, shutters, window film, shade awnings, skirting or other commercial cooling methods.

Identifying Key Legislative Changes

ADHS' partners worked to identify key legislative changes with the potential to protect vulnerable populations from heat-related conditions. In 2024, ADHS expanded its efforts by engaging with state and federal agencies to explore solutions that could bolster Arizona's resilience to heat emergencies and extreme heat. These efforts included examining how existing programs like the Low Income Home Energy Assistance Program (LIHEAP) could enhance access to energy assistance and collaborating with state agencies, such as the Arizona Health Care Cost Containment System (AHCCCS), to improve funding access for air conditioner repairs.

National and Federal Efforts

Arizona participates in national conversations aimed at recognizing heat as a natural disaster, a step in securing funding support for jurisdictions. Additionally, federal agencies are advancing policy changes, with the Occupational Safety and Health Administration (OSHA) proposing new rules aimed at strengthening protections for outdoor workers exposed to extreme heat. These collective efforts underscore a coordinated approach to addressing heat-related challenges and improving statewide heat preparedness.

Finally, ADHS's involvement in national and state-level discussions—including participation in the White House Extreme Heat Summit and the Fortune Impact Initiative: Warming and Well-Being: Why the Climate Crisis is Leading to a Health Crisis panel—further solidified the state's role in addressing extreme heat as a public health issue. These efforts were part of ADHS's continued commitment to enhancing Arizona's resilience to extreme heat, engaging partners and stakeholders at every level of government and community to ensure a unified and effective response.

Sustainable Funding

Recommendation: Invest in heat mitigation through grant and funding opportunities

Grants

Securing a single, sustainable funding source for statewide heat activities remains a challenging goal. However, targeted and limited funding opportunities are available. Investing in heat mitigation through grants and partnerships is crucial to improving heat relief infrastructure and strengthening a coordinated statewide response.

To address the heat relief community's call for sustainable funding and resource sharing, ADHS has implemented several key initiatives. One of the primary efforts included submitting a grant application through AZ DEMA for Federal Emergency Management Agency (FEMA)'s BRIC program. This application aims to fund a scoping project designed to advance statewide planning initiatives and enhance access to resilience hubs across Arizona.

ADHS also encouraged partners to apply for the EPA Community Change Grant, participated in grant evaluation committees, and utilized the Civic Roundtable platform—launched in late 2024—to enhance communication, engagement, and resource sharing. This platform enabled partners to share experiences, resources, and collaboration opportunities while fostering access to funding opportunities.

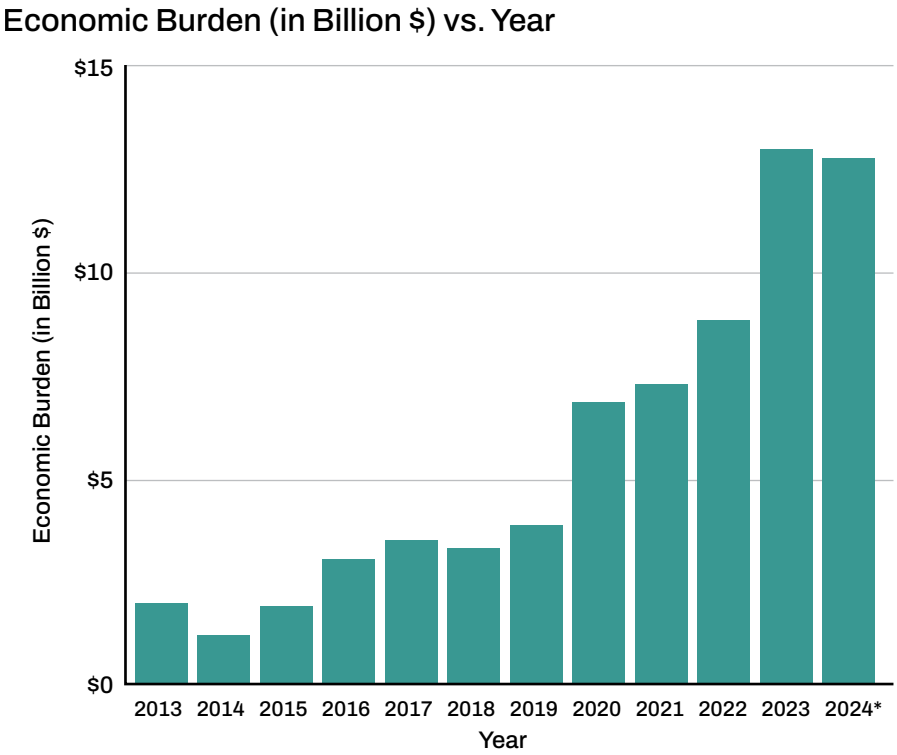


Figure 3: Economic Burden of Heat-Related Deaths in Arizona from 2013–2024 (Source: Arizona Department of Health Services) *Preliminary

Strategic Investment and Partnerships

ADHS secured funding to support the positions of Chief Heat Officer and Heat Relief Coordinator. Utilizing state and federal funds ADHS supports efforts such as coordination, heat relief supplies, resource-sharing platforms, and information dissemination.

ADHS actively promoted various funding opportunities through the Civic Roundtable platform, provided letters of support, met data needs for grant applications, and participated in grant review committees. The department also expanded its funding efforts by engaging national nonprofits and public-private partnerships. For example, Goodwill was invited to workgroup meetings to share strategies for organizing community-level heat relief donation drives.

Public Policy Prioritization Framework

Recommendation: Create public policy and a prioritization framework

SUMMARY OF HIGHLIGHTS

Framework and Coordination

The framework created under this initiative served as a platform for ADHS to engage with state leaders and community partners to advance heat relief work in a coordinated manner. ADHS implemented a structure designed to facilitate information flow from state leaders to community partners and vice versa. The Chief Heat Officer met regularly with the Governor's Office of Resiliency and the Intra-Agency Resiliency Forum and led the State Agency Workgroup, which consisted of state agency leads.

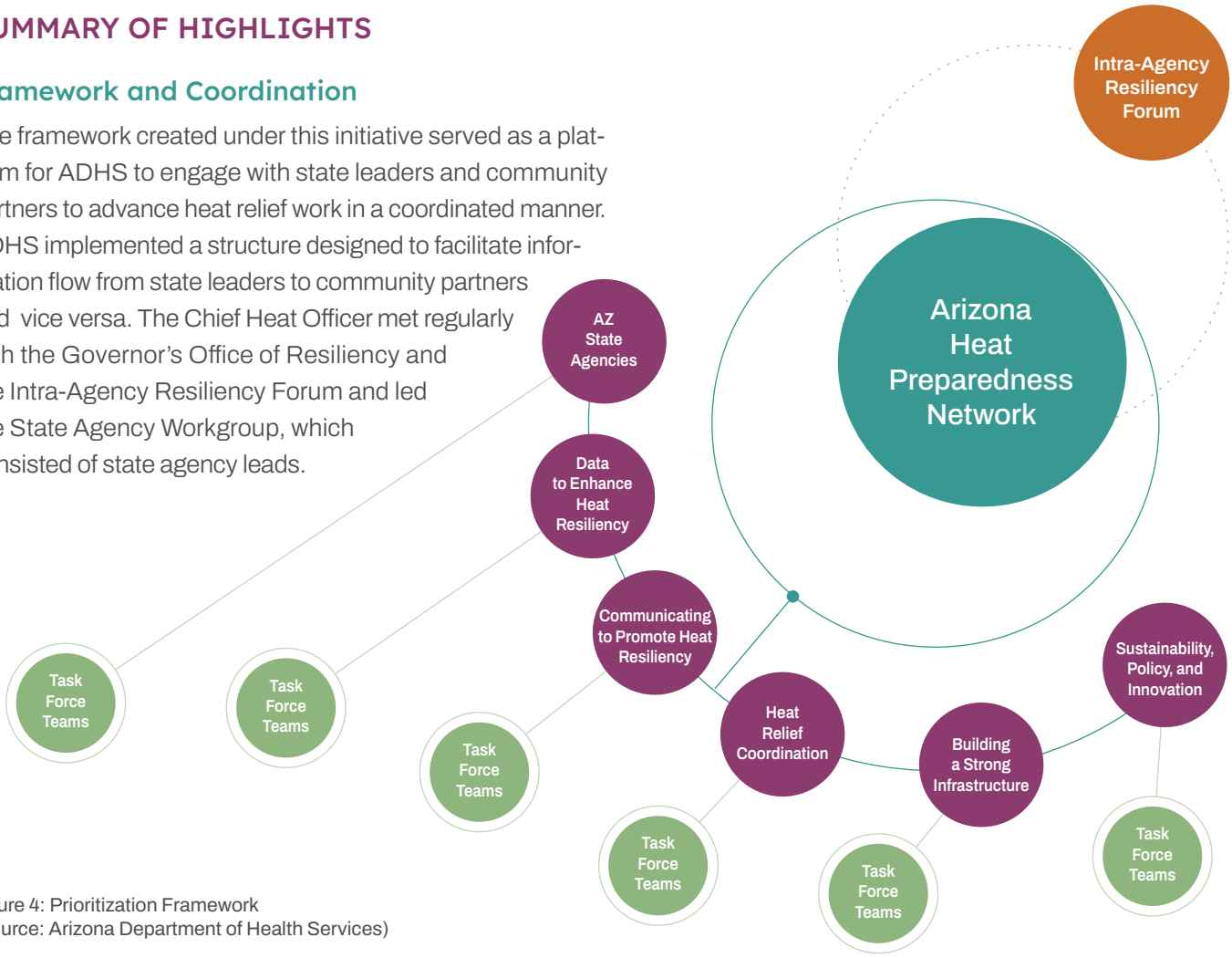


Figure 4: Prioritization Framework
(Source: Arizona Department of Health Services)

Arizona Heat Preparedness Network

Partners working in heat relief were invited to join the Arizona Heat Preparedness Network, where members were asked to join workgroups.

In 2024, there were five workgroups:

1. Data
2. Communications
3. Heat Relief Coordination
4. Sustainability and Innovation
5. Policy and Infrastructure

Additionally, two task forces were established to tackle specific projects:

- Heat and Medication Task Force, jointly led by ADHS and the University of Arizona
- PIO Task Force, with county and state PIOs

Communication Flow

The structure created by the 2024 report facilitated effective communication flow from the community to state leadership and from state leadership to the community. Workgroup activities were directed by the 2024 report and its members, who helped to research, develop, and distribute resources. Workgroups also facilitated connections and surveyed partners.

GOAL 2:
Reduce Heat-Related Illnesses and Deaths

Process Measures

- 15 materials distributed through workgroup meetings, emails to partners, ADHS portal, and online on our heat ADHS website
- 1,149,847 impressions and 18,717 engagements from ADHS social media, topics including: heat awareness, heat safety, heat, heat awareness week, kid in cars, heat vlog, and check on your neighbor
- 15 translated materials were shared with partners to promote standardized communication materials
- 9 flyers, bi-weekly heat-risk communications, and 8 toolkits were distributed.
- 408 cooling centers onboarded

Multi-Modal Communication Approach

Recommendation: Implement a multi-modal communication plan promoting heat mitigation activities and resources

SUMMARY OF HIGHLIGHTS

ADHS has implemented a multi-modal communication strategy to promote heat mitigation activities and resources. This approach involves utilizing all communication platforms in multiple languages, maintaining situational awareness with weekly updates, using public transportation and school buses to disseminate messages, and distributing information about cooling centers and resources using a wide variety of communication channels.

Heat Alerts

ADHS launched an online public-facing heat tier map and developed email notifications tailored to the heat tier system for local public health officials to coordinate heat messaging. Additionally, ADHS partnered with DEMA to further enhance coordination of heat alerts

Email Notifications

Figure 5: Email Subscribers, Growth, and Bulletin Distribution (Source: Arizona Department of Health Services)

48,226
Total Subscribers on all Heat Listserv
(excessive heat warnings, schools, and Heat Preparedness Network)

+12,863
New Subscribers
(January – December 2024)

46,688
Heat Alert Subscribers
(general public + schools)

+10,712

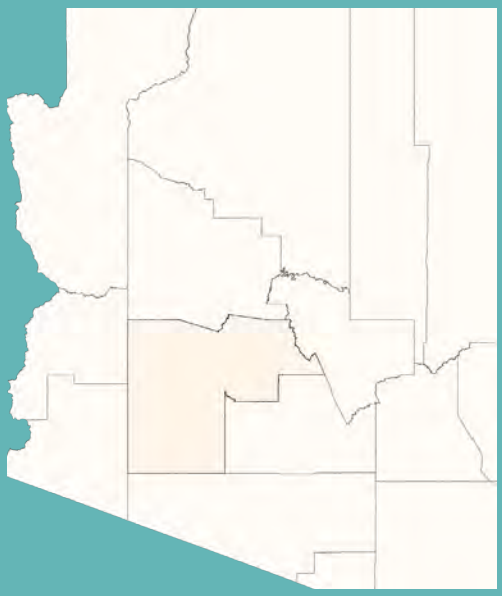
Bulletins Distributed	96
Total Delivered	1,208,102
Open Rate	27.4%
Click Rate	39.7%

2024 Heat Season Started Earlier and Ended Later Than 2023

Figure 6: Heat Alerts, 2023–2024 (Source: Arizona Department of Health Services)

Heat Tier Map

Figure 7: Heat Tier Map by County
(Source: https://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/heat-safety/index.php#heat-dashboard-heat-tier-by-county)



County: Maricopa
Date: 04/01/2025
Heat Tier: Heat Season
Response Activities: Opening heat relief centers (cooling centers, hydration stations, and respite centers); Heat Alerts; Partner meetings; Cooling center workgroups; 211 assistance; Social media campaigns; Heat relief centers map; Coordinate resources; Heat Illness Dashboard; Free or reduced bus passes and/or rideshare vouchers (rural areas).

Apache	Heat Season
Cochise	Heat Season
Coconino	Heat Season
Gila	Heat Season
Graham	Heat Season
Greenlee	Heat Season
La Paz	Heat Season
Maricopa	Heat Season
Mohave	Heat Season
Navajo	Heat Season
Pima	Heat Season
Pinal	Heat Season
Santa Cruz	Heat Season
Yavapai	Heat Season
Yuma	Heat Season

during extreme heat events, ensuring timely and effective communication. The Arizona Heat Safety Resource Guide was updated to include the latest points of contact for local health officials, current research, and information on cooling centers for the public.

Public Speaking Engagements

Throughout the heat season, ADHS, under the leadership of the Chief Heat Officer and the PIO, took proactive steps to engage various stakeholders through media interviews, townhalls, community presentations, and conferences, conveying the dangers of heat and directing people to multi-language, digitally accessible heat safety resources.

Social Media Tags

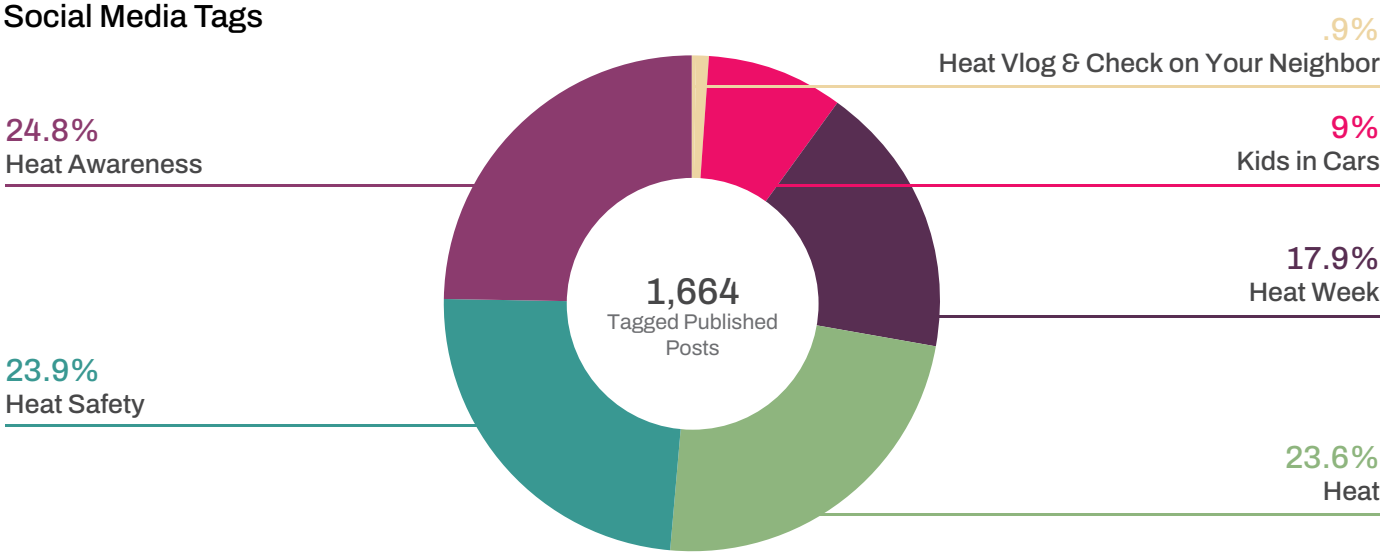


Figure 8: Tagged Published Posts 2024 (Source: Arizona Department of Health Services)

Facebook Posts and Engagement

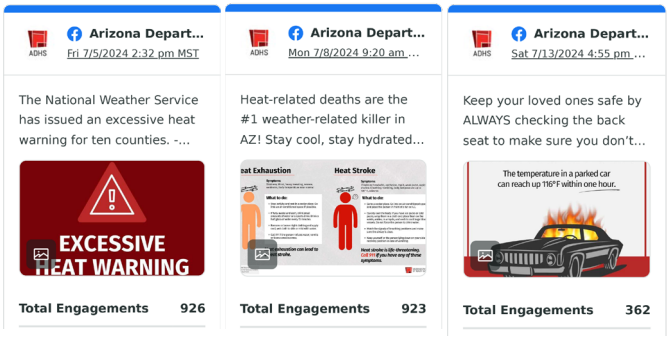


Figure 9: @azdhs Facebook Posts

Social Media Statistics

1,149,847
Impressions

18,717
Engagements

Figure 10: @azdhs Statistics for X, Instagram, Facebook, and LinkedIn

Online and Print

Coordination was established with the Arizona Department of Transportation (ADOT) and Arizona Lottery for heat-related messages on prominent signs. The latest information from the National Weather Service and CDC heat risk pages, available in multiple languages, was promoted online and encouraged partners to reference the information and print it for their community needs. The ADHS cooling center map was expanded and promoted through various channels. ADHS worked with AHCCCS to provide information on heat resources, which were promoted via 211. Co-brandable Heat Awareness Week materials and ADHS heat safety flyers were shared via the ADHS portal for county point of contacts to share on platforms like NextDoor, Facebook, and other social media platforms to improve virtual outreach strategies.

Partner Communications and Briefings

The Chief Heat Officer participated in Pima County's weekly heat briefings, ensuring that local authorities remained aligned with statewide heat relief efforts. In addition, ADHS remained consistently engaged through monthly meetings of the 10X Resilience Network, contributing to ongoing resilience discussions. ADHS further played a vital role in the review of extreme heat events alongside Governor's Office of Resiliency (GOR) and DEMA, working collaboratively with other agencies to evaluate the response and improve future strategies. In addition to weekly briefing notes shared with the GOR, regular briefings with Governor Hobbs allowed for continuous alignment on extreme heat strategies, ensuring a unified approach at all levels of government. ADHS also strengthened communication between ADHS, counties, PIOs, and Arizona Local Health Officers Association (ALHOA), creating a space for cooling center coordination via Civic .

Tailored Education and Outreach

Recommendation: Develop multilingual and tailored education and outreach materials to reach vulnerable populations

SUMMARY OF HIGHLIGHTS

To ensure clear and effective heat safety guidance for all Arizonans, particularly those at risk of heat-related illness, ADHS prioritized tailored education and outreach in 2024. Leveraging insights from heat workgroups, ADHS developed multilingual materials designed to meet the diverse needs of the community. These efforts included standardizing key messages and translating them into necessary languages, as well as conducting targeted outreach to vulnerable populations. Educational resources and tools such as heat safety videos, a comprehensive glossary, media toolkits, a heat resource guide, tier email updates, blogs, hydration flyers, and more were created and shared. Additionally, ADHS amplified its messaging through news interviews, podcasts, and other media platforms to ensure widespread dissemination of critical heat safety information.

Heat-Related Illness Inpatient Admissions

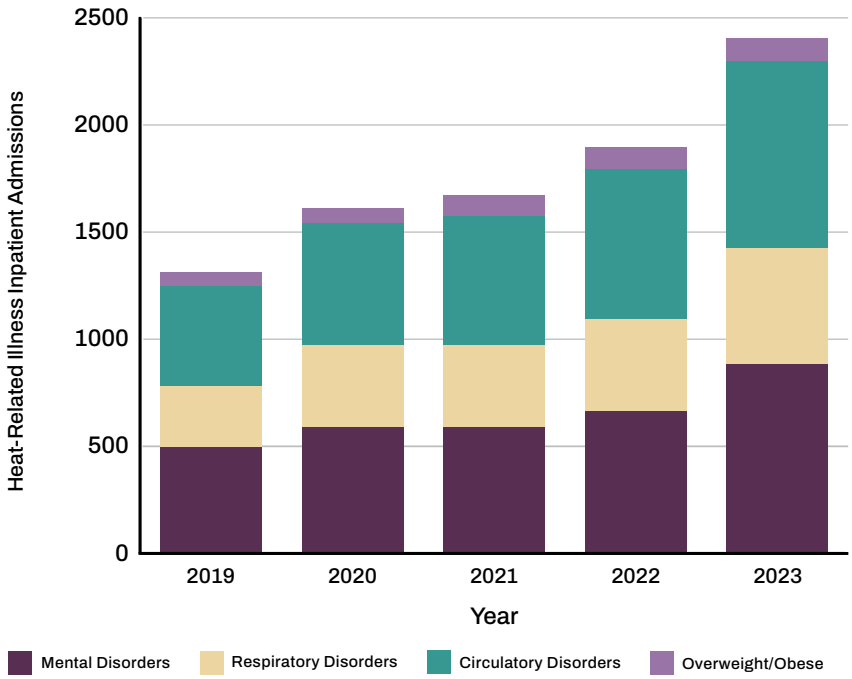


Figure 11: Heat-Related Illness Inpatient Admissions (Hospitalizations) by Comorbidity from 2019–2023. The top four comorbidities of heat-related illnesses are mental disorders, circulatory disorders, respiratory disorders, and overweight/obese. (Source: Arizona Department of Health Services)

Education — National and Regional Conferences and Workshops

ADHS made significant contributions at various workshops, conferences, and national forums. The Chief Heat Officer participated in panel discussions at the National Oceanic and Atmospheric Administration (NOAA)/ National Weather Service (NWS) Regional Collaboration Network (RCN) annual workshop and the Federation of American Scientists conference in Washington, D.C. These forums provided an opportunity to share insights and best practices regarding heat resilience on a national stage. At the National Integrated Heat Health Information System (NIHHIS) National Meeting, ADHS presented and participated in Q&A sessions, while also joining discussions at the Interagency Resiliency Forum Meeting and the Western Governors' Association Western Prosperity Forum heat panel. ADHS was actively involved in FEMA's SummerReady Extreme Heat Summit, where key strategies for addressing heat resilience were discussed, and also presented at the Maricopa Association of Governments (MAG) Staff Regional Council Meeting to further advance heat preparedness.

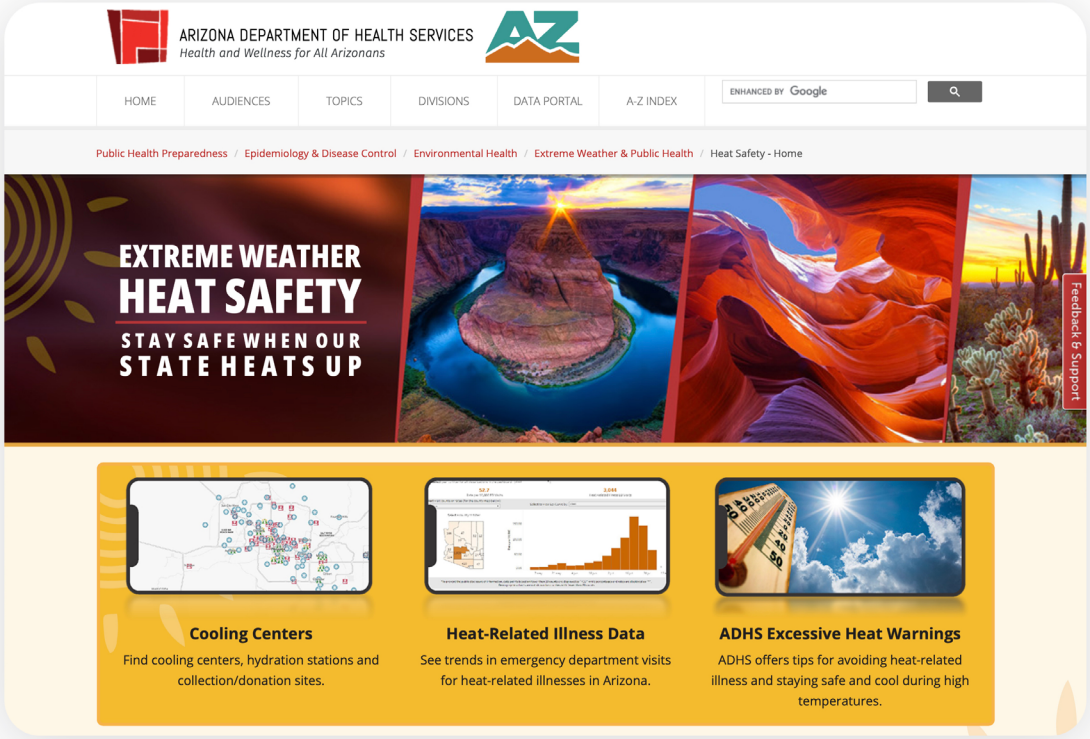


Figure 12: Heat Safety Website at azdhs.gov

Best practices were shared at the local level through school presentations and partnerships with refugee resettlement agencies. These efforts incorporated messaging developed by key partners, including the Red Cross, CDC, and Arizona State University's (ASU) innovative "Beat the Heat" computer game, ensuring broad and engaging community outreach.

Flyers

The ADHS updated its heat safety flyers with input from the heat network to address the needs of at-risk populations. Multilingual educational and outreach materials were developed and promoted on topics relevant to heat-sensitive groups, based on feedback from the network. By identifying gaps in public information, ADHS collaborated with partners to create culturally appropriate resources. These materials included guidance on air conditioning usage tailored for refugee populations unfamiliar with operating such systems along with those who experience housing instability, ensuring greater accessibility and safety during extreme heat events. Through the efforts of a Heat and Medication Task Force, guidance on adverse effects of heat and certain medications was created and distributed through partner networks.

Website Updates and Toolkits

In 2024, ADHS developed Key Heat Safety Messages and Toolkits to provide customizable resources for community sites and local officials. These toolkits include essential heat safety information and offer distribution strategies to ensure the content reaches its intended audience. Designed for flexibility, the toolkits can be co-branded and adjusted to meet the unique needs of at-risk populations. Each toolkit incorporates the CDC's core heat safety themes of stay cool, stay hydrated, stay informed, and be sun-wise, while introducing an expanded theme, stay connected, to foster community engagement and support.

The addition of the stay connected theme inspired a "Check on Your Neighbor" social media campaign, featuring inclusive imagery and messaging to encourage outreach and mutual support during extreme heat events. ADHS also expanded its website resources to cover a wider range of topics, including dedicated sections for employers of outdoor workers, resources for refugees and migrants, and additional heat safety guidance. These updates aimed to ensure comprehensive access to heat safety information and support for all Arizonans.

Heat Relief Coordination

Recommendation: Improve statewide heat relief coordination to mitigate heat risk

SUMMARY OF HIGHLIGHTS

To mitigate heat risk effectively, ADHS has committed to improving statewide heat relief coordination through a variety of measures. The key initiatives undertaken include hiring heat relief coordinators to develop a cohesive work plan, creating a social service resource guide, improving cooling centers, utilizing a platform of resources, distributing heat safety resources and kits, and identifying donation supplies.

Unified County Coordination

In 2024, significant progress was made. Heat relief coordinators at the state department and Maricopa County developed a synergistic coordination work plan. County-specific heat relief resources were added to the ADHS heat page to ensure broader access to localized information.

Heat-Related Deaths: Counties

2013-2024

10	73	52	28	12	0	78	3329
Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa

385	16	738	222	51	40	261
Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma

Figure 13: Arizona Heat-Related Deaths by County from 2013–2014 (Source: Arizona Department of Health Services)

Maricopa County Heat-Related Deaths in the Homeless Population

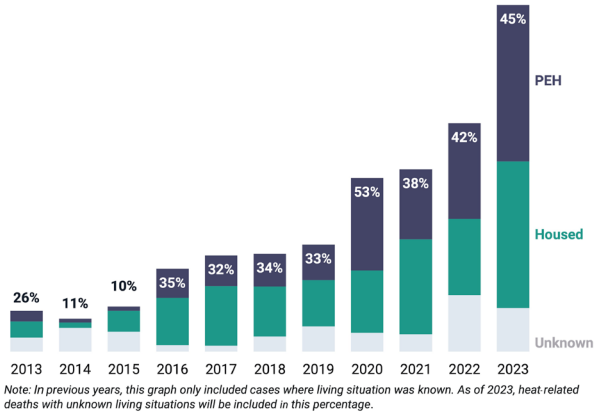


Figure 14: Maricopa County Heat-Related Deaths in the Homeless Population from 2013–2023. Among deaths where the living situation is known, people experiencing homelessness (PEH) have accounted for an increasingly large share of all heat-related deaths in Maricopa County. (Source: Maricopa County, Department of Public Health, Division of Epidemiology and Informatics, 2023 Heat Related Deaths Report)

Number of Individuals Experiencing Homelessness

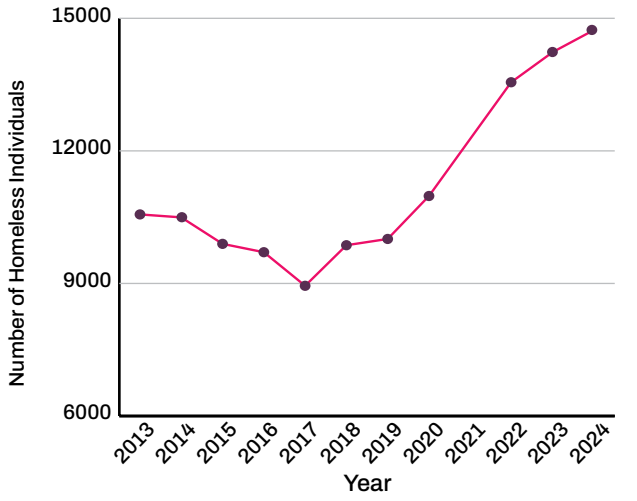


Figure 15: Homelessness in Arizona from 2012–2023. 2021 point-in-time count has been excluded due to the COVID-19 pandemic. (Source: Arizona Department of Economic Security, State of Homelessness Services, Homelessness in Arizona Annual Report 2023, December 2023)

Heat-Related Deaths by Year

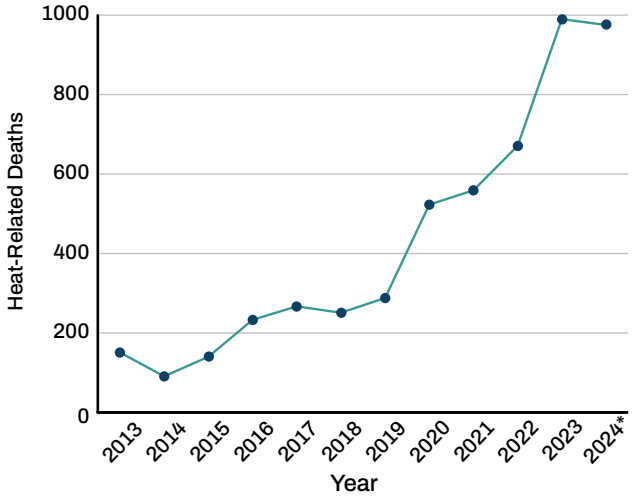


Figure 16: Heat-Related Mortality in Arizona from 2013–2023 (Source: Arizona Department of Health Services) *Preliminary

Civic Roundtable

The online community space fosters connections among diverse stakeholders, including jurisdictional partners, local heat relief sites, and businesses. Representing over 80 unique organizations statewide within the Extreme Heat Preparedness Network, this platform streamlines coordination efforts. Heat Relief Centers, comprising cooling centers, hydration stations, respite centers, and donation collection sites, benefit from enhanced resource sharing. The community space also supports social service navigation, staff and volunteer training, and collaboration through an organized network, ensuring comprehensive support for organizations providing aid to those impacted by extreme heat.

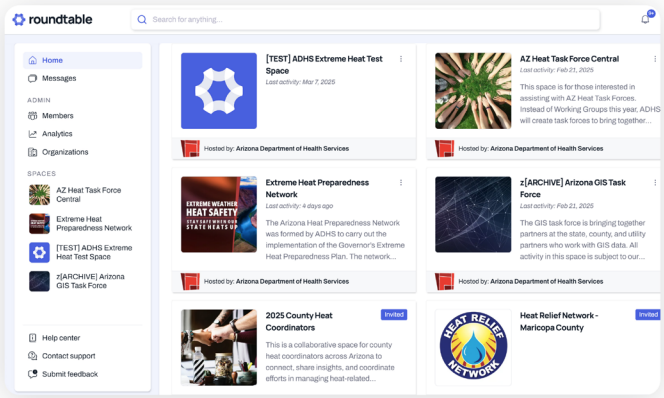


Figure 17: Civic Roundtable

Heat Safety Kits

ADHS distributed over 900 heat safety kits containing essential heat relief items such as cooling towels, electrolytes, re-usable water bottles, and an informational flyer in English and Spanish. Five counties and seven Tribes received heat safety kits that were distributed by hospitals, cooling centers, nonprofits, senior centers, wellness centers, and university organizations to:

- Individuals experiencing homelessness, including those visiting cooling and water sites.
- Low-income populations facing socio-economic challenges.
- Seniors, vulnerable adults, and children, including individuals with disabilities.
- Tribal community members, including employees and members of the Cocopah Indian Tribe.
- Community members utilizing cooling centers and related resources.
- Highway walkers and other at-risk individuals exposed to extreme heat.

A list of the most frequently requested heat relief donation items by at-risk populations was compiled and shared with partners, along with social assistance programs to guide ongoing and future relief efforts. Partnerships with organizations such as Goodwill, the American Red Cross, and the Salt River Project were established to increase donation request accessibility and distribution pathways.

GOAL 3: Prepare for Extreme Heat

Data to Action

Recommendation: Improve current data systems for management of resources and data-driven decision making

Process Measures

- 7 counties sharing location information on the statewide cooling center map of regional areas
- 85 new cooling centers added to the statewide cooling center map

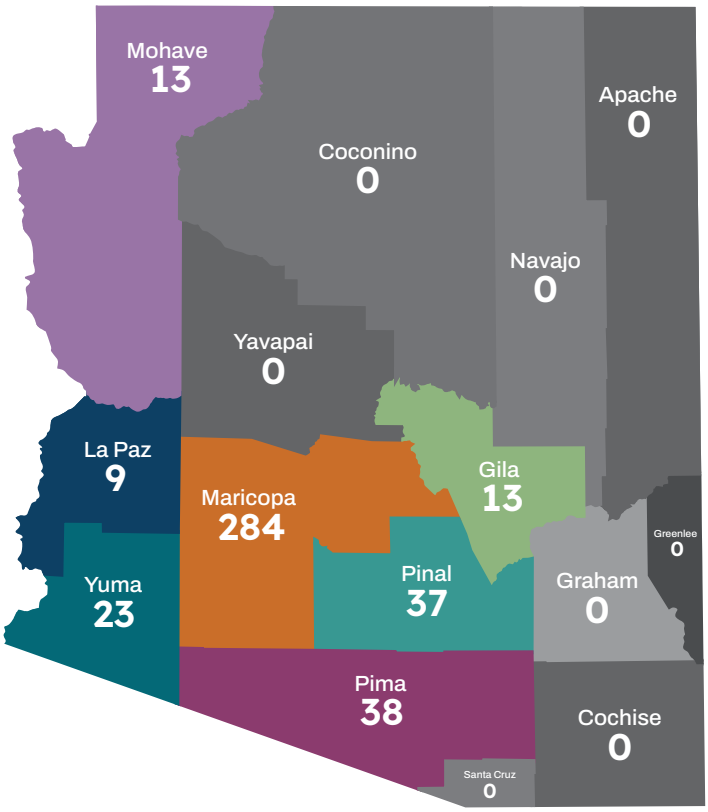
SUMMARY OF HIGHLIGHTS

Extreme heat poses an increasingly urgent threat to Arizona's communities, demanding innovative solutions, collaborative partnerships, and accessible resources. Central to ADHS's preparedness efforts are data-driven tools, such as the ADHS cooling center map, which connects communities to vital, life-saving resources, and the Heat Alert Network, a notification system that ensures public health and emergency response professionals stay informed about evolving heat risks.

This section highlights ADHS's multi-faceted approach under Goal 3, showcasing how data is converted into actionable insights that guide decision-making, strengthen response frameworks, and foster community outreach. By advancing mapping, data integration, and targeted interventions, ADHS effectively takes data to action to protect Arizona residents from extreme heat. Strategic partnerships and innovative approaches enable ADHS to help communities tackle the growing challenges of heat-related health outcomes.

Increasing Access to Cool Places through Data-Driven Solutions

To enhance Arizona's heat relief efforts, ADHS maintained and updated its cooling center map application. Since 2022, this map has served as a comprehensive resource, showing all cooling centers, hydration stations, and respite sites across Arizona, providing access to life-saving relief during the summer months. In 2024, the map expanded to include sites from seven counties, a 50 percent increase in the number of counties from previous years. To help inform partners on real-time trends of extreme heat and excessive heat, a



In 2024, the cooling center map expanded to include sites from seven counties, a 50% increase in the number of counties from previous years for a total of 417 cooling centers.

Figure 18: Arizona Department of Health Services Cooling Center Map

warning layer was added to the map. This feature allows counties to focus their heat response efforts on regions experiencing the most severe conditions.

Additionally, three new counties, including areas within Tribal communities, were added to the statewide cooling center map ensuring broader access to cooling resources for even more Arizonans, particularly those in historically underserved regions. The cooling center map proved to be a vital resource throughout the summer, with over 15,705 views recorded in 2024.

Heat Response Activation Tiers, Thresholds, and Activities

ADHS developed the **Heat Response Activation Tiers, Thresholds, and Activities model**. This system establishes clear trigger points that determine when specific heat response actions should be activated. The model allows for clear communication of heat preparedness, response, and recovery activities so that community parties know what actions to take before, during, and after the heat season. This initiative is part of ADHS's broader strategy to streamline and centralize communications around heat response, making them more agile and efficient when time is of the essence.

Arizona Heat-Related Deaths by Months

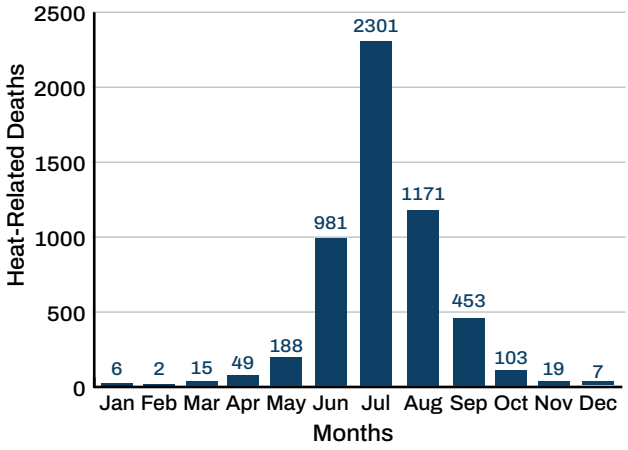


Figure 19: Arizona Heat-Related Deaths by Months (2013–2024). Heat-related deaths can happen in any month in Arizona; however, the high temperatures between June through September cause the most heat-related deaths. (Source: Arizona Department of Health Services)

Heat-Related Illness Dashboard

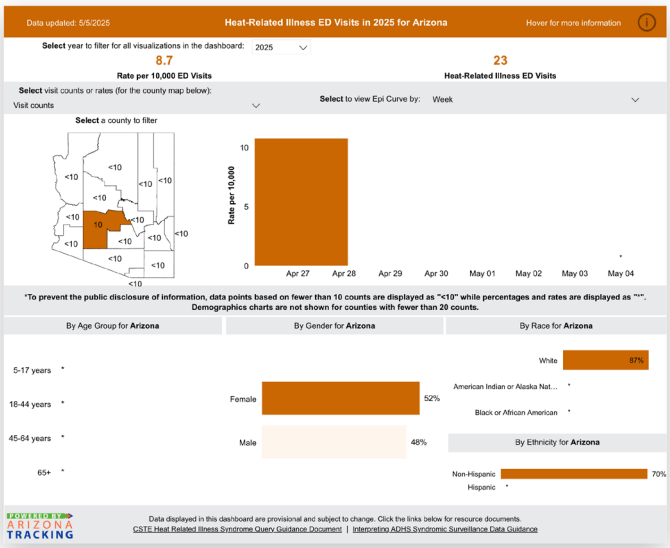


Figure 20: ADHS Heat-Related Illness Dashboard (Source: https://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/heat-safety/index.php#heat-dashboard)

Arizona Heat-Related Deaths by Region and Residence Location (2013–2023)

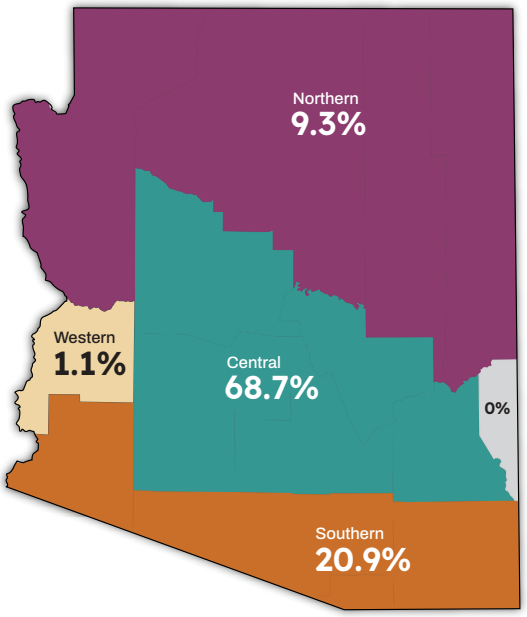


Figure 21: Arizona Heat-Related Deaths by Region and Residence Location from 2013–2023 (Source: Arizona Department of Health Services)

Dashboards and Annual Reports

The ADHS has updated its dashboards and annual reports to include the latest heat-related illness data, providing a clearer and more accurate picture of heat risks and health outcomes. These updates aim to enhance decision-making by equipping stakeholders with up-to-date insights into the impacts of extreme heat.

To pinpoint areas most affected by heat, heat mortality and heat-related Emergency Medical Services (EMS) data were mapped, highlighting regions with the highest burdens from heat-related deaths and emergency calls. This data guided the strategic placement of Cooltainers throughout the state, ensuring heat relief interventions reached the communities most in need.

Looking ahead, ADHS plans to investigate methods to centralize state and county-level data into unified, user-friendly dashboards. This effort will ensure that essential information is readily available to stakeholders, healthcare providers, and the public, supporting more effective heat response and relief efforts statewide.

Collaboration and Data Needs

Collaboration with local, state, and community partners has been instrumental in these efforts. ADHS compiled a comprehensive list of data needs from the heat relief network to help improve heat response efforts. Special emphasis was placed on rural communities, where the challenges to the availability of air-conditioning, EMS services, and water resources may be different than in urban communities.

Emergency Preparedness and Communications

Emergency Response

Recommendation: Activate emergency response protocols

Process Measures

- 12,863 individuals signed up for ADHS Heat Alerts and Heat Tier Notifications
- There are a total of 48,226 current subscribers

SUMMARY OF HIGHLIGHTS

Heat Emergency Communications

To improve Arizona's response to extreme heat, ADHS developed a comprehensive communication model designed to enhance coordination and clarity. A key feature of this model is the establishment of tiered response levels, which help to define action thresholds and communicate heat risks in a clear and actionable way. This system ensures that both the public and emergency responders are aware of the severity of heat events and can take appropriate action.

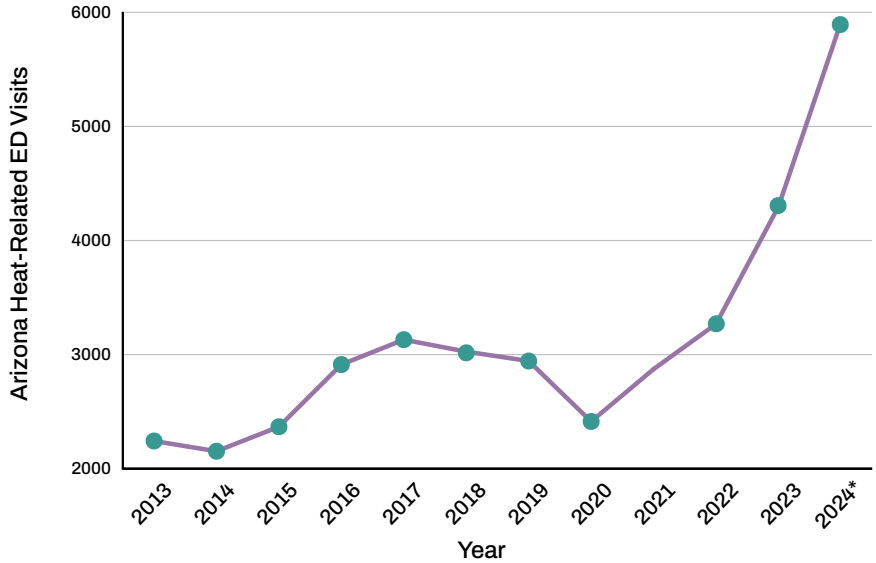


Figure 22: Arizona Heat-Related ED Visits from 2013–2024 (Source: Arizona Department of Health Services) *Preliminary

A major component of this initiative was the creation of the Arizona Heat Preparedness Network, which has significantly improved the coordination and flow of information between key stakeholders. As part of this effort, ADHS worked closely with county and city PIOs to ensure consistency in the dissemination of heat-related messaging. This collaboration was crucial in main-

taining a unified communication approach across the state.

To better serve at-risk populations, ADHS developed the HeatRisk communication template, which was shared with county PIOs to help tailor messages for vulnerable groups. This template allows local officials to effectively communicate heat risks and provide relevant information to those who may be most affected by extreme heat events.

Expanded Communication Efforts

In 2024, ADHS expanded heat response communications, by creating the Arizona Heat Preparedness Network listserv, a dedicated communication channel aimed at county public health and emergency response professionals. This listserv has been instrumental in sharing important updates, including biweekly communications on heat tier status, recommended actions, and forecasts from the NWS.

The Arizona Heat Preparedness Network listserv has seen substantial growth, with 2,151 registered participants over the summer with an engagement rate of 52 percent, reflecting its critical role in keeping Arizona informed and prepared during extreme heat events.

To ensure effective communication with Arizona's diverse population, the heat tier framework was translated into Spanish and shared as a graphic for use in 2025. This graphic will be used to communicate heat risks to Spanish-speaking communities, ensuring that language barriers do not impede access to life-saving information.

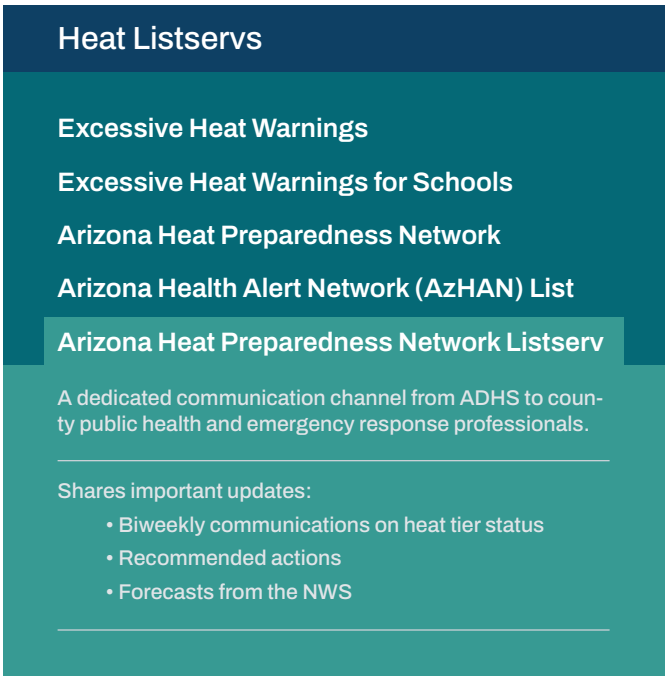


Figure 23: Heat Listservs (Source: Arizona Department of Health Services)

Partner Collaboration

ADHS has been proactive in fostering collaboration with community partners to address heat-related challenges. ADHS held discussions with county medical examiners to standardize the reporting and record-keeping of heat-related deaths, ensuring consistent and accurate data collection across the state. This effort is critical for informing future heat response activities and improving overall preparedness.

Finally, regular debriefs with county partners were conducted to identify emerging needs, share new resources, and refine emergency preparedness protocols. These discussions have helped ensure that ADHS and its partners are continuously improving their strategies and responses to heat emergencies.

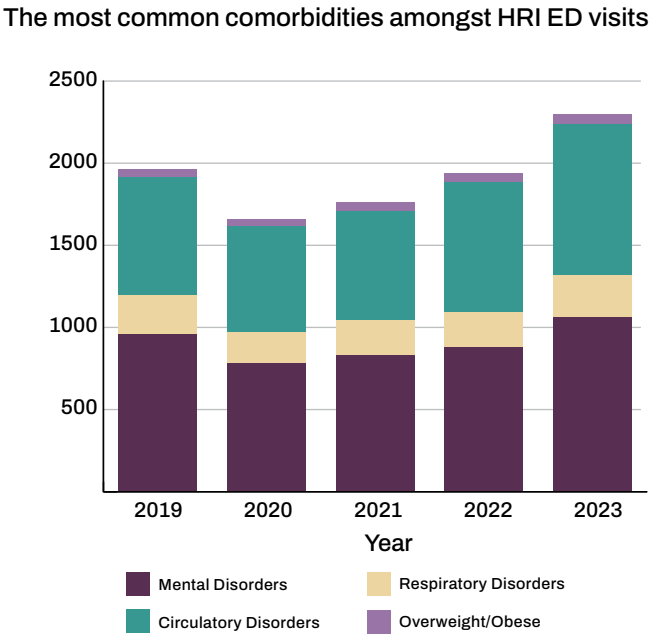


Figure 24: Heat-Related Illness Emergency Department Visits by Comorbidity. The top four comorbidities of heat-related illnesses are mental disorders, circulatory disorders, respiratory disorders, and overweight/obese. (Source: Arizona Department of Health Services)

ADHS remains committed to enhancing data-driven decision-making, improving heat emergency preparedness, and fostering partnerships to address extreme heat. Ongoing evaluation and refinement of the Heat Response Activation Tiers, centralized dashboards, and communication strategies will ensure that communities statewide are better equipped to handle extreme heat events.

GOAL 4: Foster Innovative Solutions

Building Capacity and Stakeholder Input

Recommendation: Build capacity and increase stakeholder input through year-round heat coordination

Process Measures

- 80 organizations on Civic Roundtable and partnerships with Goodwill, Red Cross, and Salvation Army
- 36 counties and organizations participated in the ADHS-led workgroups
- Over 275 schools, organizations, and jurisdictional partners signed up and received heat messaging through the ADHS heat listserv
- 96 bulletins were sent to 48,226 subscribers from diverse stakeholders with an open rate of 27.4% and click rate of 39.7%
- 408 of cooling centers established and 85 newly added in 2024
- Developed resources for standardizing heat relief operations, including heat relief site operations guide, visitor survey bank, and Civic Roundtable for sharing resources year-round

SUMMARY OF HIGHLIGHTS

Addressing the growing challenges posed by extreme heat requires a forward-thinking approach that combines capacity building, stakeholder engagement, and innovative solutions. This section outlines ADHS's comprehensive efforts to strengthen heat response capabilities through partnerships, data-driven strategies, and targeted interventions.

From establishing leadership networks and enhancing community engagement to standardizing operations and advancing research, ADHS continues to drive impactful change, ensuring Arizona's communities are prepared to meet the intensifying challenges of extreme heat.

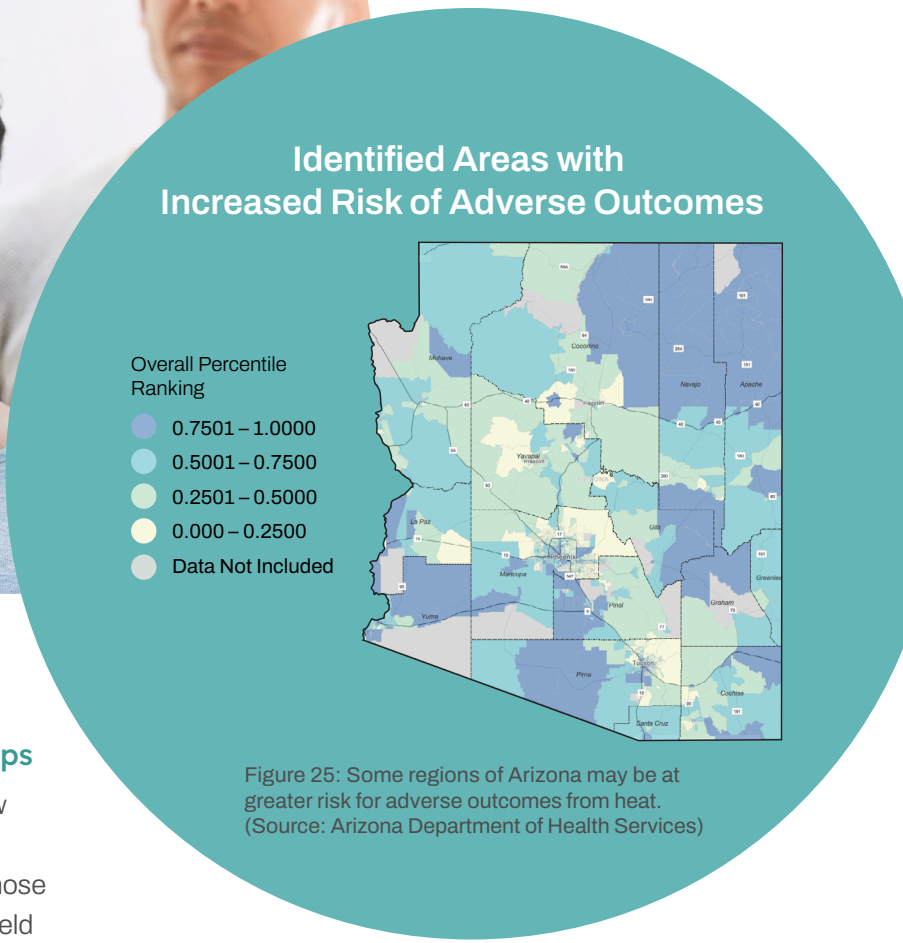


Figure 25: Some regions of Arizona may be at greater risk for adverse outcomes from heat. (Source: Arizona Department of Health Services)

Expanded Representation and Partnerships

In 2024, workgroups were convened to discuss how to engage community partners to build support and resilience for at-risk populations, including those whose voices are often missing. Listening sessions were held for the Navajo Nation and planned for the disability community to better understand their unique needs, while ADHS leadership's participation in webinars focused on heat, health, and safety for agricultural farmers further strengthened partnerships with a key population. Workgroup members promoted several educational and training programs, including ASU's "Beat the Heat" game to teach children heat safety skills, the American Red Cross's "Prepare with Pedro for Extreme Heat" program to educate children about heat preparedness, OSHA's Heat-Related Illness training and resources for employers and employees, and Arizona Department of Safety and Health's (ADOSH) Heat Stress Awareness webpage. By continuing to build capacity and incorporating diverse stakeholder input, ADHS aims to strengthen heat resilience and ensure comprehensive support for all community members.

Community Needs and Resilience

In 2024, ADHS prioritized addressing community needs and enhancing resilience through targeted initiatives informed by advanced tools and data. A key resource was ADHS's Arizona-specific vulnerability assessment tool (AZSVI), launched in early 2024, which integrates diverse datasets to assess heat vulnerability across the state, such as:

- U.S. Census Bureau Community Resilience Estimates (CRE), including CRE for Heat (2019–2020) developed in partnership between the U.S. Census Bureau and the ASU Knowledge Exchange for Resilience. This data utilizes American Community Survey (ACS) data for detailed insights into household and community-level risks.

- NOAA, NWS, and the National Aeronautics and Space Administration (NASA)'s environmental and meteorological data.

Future plans include incorporating tree cover, as well as temperature data, that triggers extreme heat warnings.

The newly developed optimization model serves as a tool to guide the placement of future cooling center locations. Community engagement was further strengthened through cooling center surveys and site visits, participation in local events, and outreach activities like canvassing conducted by the Red Cross and targeted efforts in mobile home communities. Additionally, feedback was collected to assess and refine strategies intended to build community resilience, ensuring that resources and interventions were aligned with the needs of Arizona's most vulnerable populations.

Leadership Networks

Through the Civic Roundtable initiative, ADHS created a dynamic, year-round network that connected partners with essential resources, training, and events. This initiative also facilitated the sharing of state agency updates and critical information, offering clear points of contact to address questions and foster collaboration. Building on this foundation, ADHS actively strengthened intra- and inter-agency relationships by engaging with statewide workgroups and task forces.

These collaborative efforts were further enriched through diverse activities, including online discussions, webinars, and meetings with county representatives, universities, and organizations such as the Red Cross, Library Association, and Goodwill. By integrating these connections with broader initiatives, ADHS participated in impactful processes including grant reviews, federal policy discussions, and high-profile events such as the Heat Summit, while utilizing communication tools like the ADHS portal and PIO county meetings to streamline coordination and amplify stakeholder input.

Standardization

Recommendation: Improve consistency through collective standards of heat relief operations, data, and messaging

SUMMARY OF HIGHLIGHTS

ADHS is committed to enhancing consistency in heat relief operations, data collection, and messaging through the implementation of collective standards.

Visitor Surveys

In 2024, significant progress was made toward these goals, including the development of an initial draft of a standardized cooling center visitor survey question bank. This tool enables statewide analysis of data collected from sites, allowing for comparisons beyond county or regional levels. The survey questions address key data points such as air-conditioning status, home type, and other factors prioritized by the partners. Counties utilized Medical Reserve Corps members and public health liaisons to visit heat relief sites and assist with survey implementation.

Heat Relief Site Mapping

Workgroups also advanced efforts to improve public-facing information on cooling center mapping by drafting a standardized onboarding survey for heat relief sites, including cooling centers, hydration stations, and respite centers. This survey collects essential data points such as pet policies, ADA accessibility, family spaces, social services offered, and other community-requested details to reduce barriers to access.

Standardizing Common Terminology

Additionally, ADHS worked on creating a heat glossary to standardize definitions across statewide heat relief efforts, minimizing confusion among new staff, partners, and the public. Current initiatives include the development of a Heat Relief Location Best Practices document to serve as a resource for current and potential sites. These collective efforts aim to ensure that heat relief operations across Arizona are consistent, efficient, and effective, providing comprehensive support that removes barriers and ensures access for all community members in a way that reflects community needs.

Innovative Solutions, Research, and Resources

Recommendation: Support emerging initiatives and research

SUMMARY OF HIGHLIGHTS

ADHS is committed to supporting emerging initiatives and research to address heat-related challenges. The activities under this initiative include identifying available regional resources, triangulating comorbidities and environmental conditions, analyzing heat research and solutions, and conducting network analysis involving utilities, NGOs, and other sources of data.

Heat and Health Research

In 2024, ADHS made significant strides in advancing innovative solutions and research to address heat-related challenges in Arizona. A list of environmental conditions that exacerbate comorbidities was drafted, and efforts began to identify data sources for Arizona-specific analyses. Partners' literature reviews were compiled and analyzed to inform these efforts, laying the groundwork for targeted interventions. ADHS and university partners continued to conduct literature reviews and evaluations of heat relief initiatives, linking heat-health outcomes to existing programs and policies.

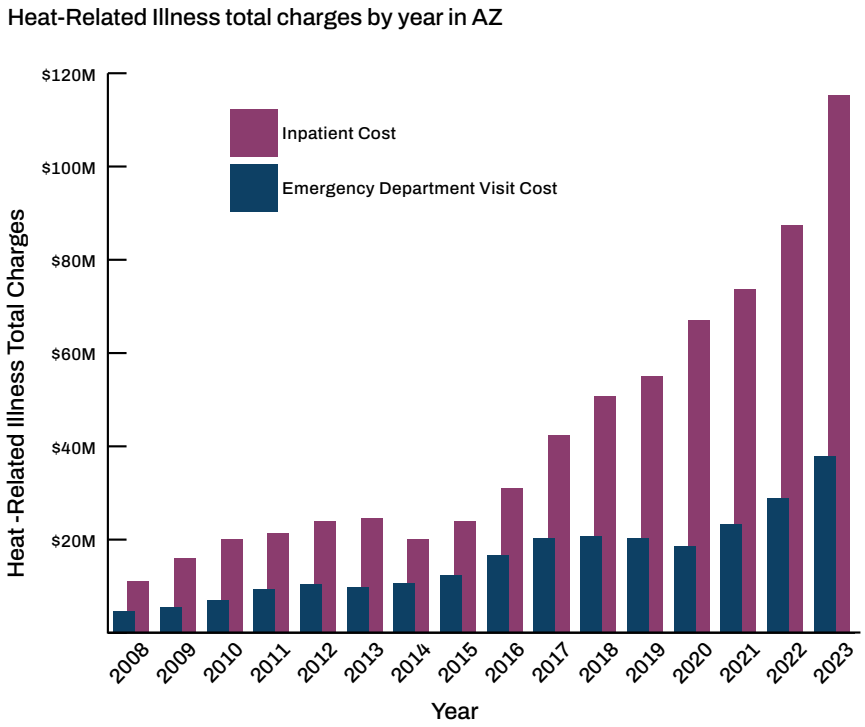


Figure 26: Heat -Related Illness Total Charges by Year in AZ
(Source: Arizona Department of Health Services)

Key initiatives included exploring weatherization programs, the Low Income Home Energy Assistance Program (LIHEAP), the use of portable in-home air conditioners, and systematic reviews under the Building Resilient Infrastructure and Communities (BRIC) program. Innovative approaches, such as deploying mobile screening vans with integrated cooling capabilities, were considered to address heat-related health concerns directly.

Efforts are also underway to update the onboarding survey for heat relief sites to identify available and needed resources for heat preparedness. The revised survey aims to capture critical information, including training needs, funding gaps, staffing requirements, and volunteer availability, ensuring sites are well-equipped to serve their communities. By leveraging research and innovative solutions, ADHS continues to enhance heat relief efforts and improve the resilience and well-being of Arizona residents.

Products Created and Solutions Implemented

- Civic Roundtable
- Arizona Heat Preparedness Network structure
- Workgroup calendar, notes, products
- State agencies workgroup
- Legislative strategic outline
- Mobile home bill HB2146
- Statewide heat point of contact directory (used internally)
- List of heat initiative priorities
- Funding opportunities
- Grant application
- Heat and medications information sheet for healthcare providers
- Arizona Heat Safety Resource Guide
- ADHS heat relief request Google form
- Heat relief kits and supplies distributed
- Updated extreme weather heat safety program website
- Updated cooling center maps
- Updated data dashboards
- Heat Tier dashboard
- Arizona Social Vulnerability Index (AZSVI): Heat Vulnerability

Focus for 2025

Approach

ADHS will continue to leverage established processes and channels to execute the strategies outlined below. For 2025, ADHS is aligning its efforts with available resources and scope, refining its approach to better serve both ADHS and its partners. The framework developed last year will remain in place, with the Governor's Office of Resiliency and the State Agency Workgroup leading statewide coordination. This framework ensures continued collaboration with federal partners to secure resources and policies that support heat relief activities, as well as coordination across state agencies and with local jurisdictions and partners.

ADHS will host Arizona Heat Preparedness Network regular briefings and transition workgroups to an online format via the Civic Roundtable platform. Task forces will be established as needed, convening only for the duration necessary to complete their designated projects. These meetings will focus on specific projects with clear objectives and goals.

Updated Strategies for 2025

Performance Measures

- Number of materials distributed and where
- Number of standardized communication materials translated and shared with partners

GOAL 1:
Drive Heat Relief Activities

Strategy 1.1 Work with partners and state leaders to prioritize the most impactful heat response activities

Strategy 1.2 Lead the state agency workgroup to accomplish the goals of the Arizona Extreme Heat Preparedness Plan

Strategy 1.3 Promote and onboard partners to Civic Roundtable

Strategy 1.4 Monitor and provide ADHS insight and subject matter expertise on heat relief legislation

Strategy 1.5 Maintain open communication with federal and local partners

Strategy 1.6 Engage legislative liaison or other appropriate entity with active legislation according to the legislative strategic outline

Strategy 1.7 Promote funding opportunities on Civic Roundtable and recruit partners when appropriate

Proposed Deliverables

- List of new activities implemented
- Meeting notes
- Summaries and notifications on Civic Roundtable
- Number of Civic Roundtable members added after January 1, 2025
- List of heat relief legislation introduced in AZ in 2025
- List of opportunities to discuss legislation or policy with federal and local partners
- Civic Roundtable posts regarding funding opportunities

GOAL 2:
Reduce Heat-Related Illnesses and Deaths

Strategy 2.1 Promote heat safety through multiple channels

Strategy 2.2 Maintain situational awareness with routine updates

Strategy 2.3 Promote solutions to connect residents to local resources in their communities (e.g. 211, findhelp.org)

Strategy 2.4 Promote the use of standardized messages and translate to community-needed languages

Strategy 2.5 Outreach to vulnerable populations

Strategy 2.6 Develop or identify materials for helping connect to wrap-around services and improve access to human service providers in cooling centers [task force]

Strategy 2.7 Develop a network map to help chart the organizations and services supporting heat relief

Proposed Deliverables

- Materials created (e.g., heat risk indicator similar to wildfire, marketing toolkit distribution, translations, map to PDF function on cooling center app, connections to wrap-around services)
  - Use of standardized messages
  - Translated
  - Co-branding
- Campaigns and outreach events (e.g., Heat Awareness Week and Check on Your Neighbor)
- Newsletter
- Messaging to advertise solutions and partners
- Targeted materials for vulnerable populations
  - Toolkits (e.g., congregate care facilities)
  - Update school heat guidance document and tools
- Network map

GOAL 3: Prepare for Extreme Heat

Strategy 3.1 Establish a GIS Task Force to address specific projects, such as optimization mapping or standardized cooling center onboarding surveys

Strategy 3.2 Establish a Heat Tier Evaluation Task force to refine the heat tier system, validate trigger points using data and community input, and ensure the system's practicality and effectiveness in mitigating heat-related risks

Strategy 3.3 Establish a Data Visibility and Accessibility Task Force to identify and prioritize key datasets and dashboards for inclusion in a centralized landing page, designed to support comprehensive heat preparedness and response efforts

Strategy 3.4 Maintain and enhance the Heat Tier Dashboard and Heat Tier notifications to ensure partners stay informed and prepared as dynamic conditions evolve throughout the summer

Proposed Deliverables

- Enhanced GIS features on cooling center maps
- Guidance for developing or using cooling center optimization mapping tools
- Centralized landing page for heat-related data
- Heat Risk templates
- Translated Heat Risk templates

GOAL 4: Foster Innovative Solutions

Strategy 4.1 Support collaboration and partnerships

Strategy 4.2 Include missing voices

Strategy 4.3 Share best practices

Strategy 4.4 Transform research into practical strategies, work collaboratively with partners to create innovative solutions, and effectively disseminate findings to enhance partner initiatives

Strategy 4.5 Host and participate in webinars, workshops, meetings, and other forums to exchange innovative ideas and foster the development of new solutions

Strategy 4.6 Use standardization to improve reliability and accuracy of data and systems

Strategy 4.7 Facilitate access to essential resources, promoting knowledge-sharing, ensuring consistency in approach, and strengthening coordination across various organizations involved in heat resilience efforts

Proposed Deliverables

- Summaries from workgroups, task forces, briefings
- Centralized database/repository with summaries, literature, and presentations
- Centralized portal for information and resource sharing
- Cooling center onboarding survey

Community Reflections | Collective Actions

Summary of Community Input from the

2024 Arizona Heat Summit

Goal: Our goal of the 2024 AZ Heat Summit was to hold space for those working in heat to share their feedback on the 2024 heat response, hear from partners, and contribute to shaping ADHS' 2025 heat work plan.

Community input from the 2024 AZ Heat Summit underscored several key priorities for Arizona, with a strong emphasis on maximizing impact and sustainable approaches to heat preparedness and relief. Participants provided a range of suggestions for ADHS to prioritize, advocating for both immediate and long-term strategies to tackle heat-related challenges. These recommendations reflect a comprehensive and multi-faceted approach to mitigating the effects of extreme heat, focusing on preparedness, resource distribution, and fostering collaboration among stakeholders. The input highlights the critical need for statewide policies, local collaboration, and cross-sector advocacy to strengthen Arizona's heat resilience efforts. The community's input also calls for systemic changes, enhanced legal protections, and a commitment to sustainable resource allocation to improve heat relief efforts across the state.

228 attendees from various agencies and organizations!

- National and state agencies
- Tribes
- Cities and counties
- Utilities
- Nonprofits
- Community organizations
- Business
- Universities
- Healthcare / mental health

Summary of Summit Attendees	
Number of Individuals Registered	232
Number of Organizations Registered	92
Cities	13
Counties	7
State Agencies	12
Tribes	6
Colleges and Universities	7
Community Organizations & Nonprofits	27
Utilities	2
Federal Agencies	5
Healthcare, Including Mental Health	9
Businesses	3

Morning Session

Focused Presentations

Speakers' slides are posted on Civic Roundtable, our new collaboration platform.

- ADHS Data Team
- ADHS Tribal Liaison
- Arizona Health Care Cost Containment System
- Arizona Division of Occupational Safety and Health
- Arizona Coalition for Health Care Emergency Response
- Arizona Healthcare Association
- Civic Roundtable
- City of Phoenix
- City of Tucson
- Department of Economic Security
- Maricopa County
- Maricopa County Medical Examiner
- National Weather Service
- Phoenix Fire
- Pima County
- Poison Control
- Yuma

The following is a summary of the insights, perspectives, and ideas shared by the 228 attendees during the summit. It reflects their collective input and does not necessarily represent the views or positions of ADHS or the state of Arizona.

Afternoon Session

Participants discussed probing questions with others at their table and reported themes and overviews to the room. Notes were collected by ADHS and used to inform the following summary.

STRENGTHS FROM 2024

What did you see this summer that we want to keep in place?

Drive Heat Relief Activities

- Volunteer and community support: Strengthened community engagement through increased volunteer participation and partnerships.
- Coordination and collaboration: Interagency efforts, emergency management systems, and strengthened city-county partnerships to optimize heat response strategies.
- Coordination and meetings: Regular and structured meetings enhance alignment and collaboration across agencies and stakeholders.
- Cooling and relief infrastructure: Expansion of cooling centers, innovative solutions like Cooltainers, and improvements in infrastructure for public relief.
- Resource distribution and innovation: Deployment of heat relief kits, water drives, and innovative cooling techniques; energy efficiency funding and partnerships.
- Communication and awareness: Unified messaging, multi-language campaigns, and transparent data sharing to increase public awareness and accessibility of resources.
- Transportation and accessibility: Enhanced access to cooling centers through transportation initiatives and resources for individuals with disabilities.
- Partnerships and outreach: Expanded collaborations with nonprofits, businesses, and organizations to address systemic challenges like homelessness and mental health.

Reduce Heat-Related Illness and Deaths

- Safety and support enhancements: Strengthened security and volunteer presence at cooling centers, along with case management to address operational challenges.
- Policy and advocacy: Implementation of utility moratoriums to prioritize public safety and support during extreme heat.
- Education and awareness: Broadened public understanding through simplified guidelines, targeted outreach to vulnerable populations, and collaborations with universities for research and education.
- Awareness and educational resources: Distribution of resource guides, heat illness information, and signage to improve accessibility to cooling centers and support.
- Healthcare and emergency response: Enhanced emergency measures, including rapid cooling initiatives, medical resource distribution, and public education on climate-health connections.
- Data and evaluation: Improved data availability and analysis, leveraging tools and research partnerships to inform heat mitigation strategies.

Prepare for Extreme Heat

- Digital tools and data access: Expanded use of dashboards and maps to provide real-time information on resources, accessibility, and heat-related metrics.
- Coordination and collaboration: Strengthened interagency cooperation through structured meetings and emergency management frameworks like Incident Command Structure (ICS).
- Official response and leadership: Formalized response structures and leadership roles, such as Maricopa's Office of Medical Examiners and the Chief Heat Officer, to streamline coordination and decision-making.
- Data and dashboards: Comprehensive data collection and visualization tools to monitor heat-related trends, resource usage, and health outcomes, supporting data-driven responses.
- Program implementation and funding: Allocation of federal funding and resources to enhance cooling centers, implement new programs, and support public heat management efforts.
- Policy and leadership: Proactive policies, strategic leadership, and advocacy for federal recognition of heat as a disaster to prioritize long-term preparedness and mitigation.

Foster Innovative Solutions

- Creative solutions: Innovative initiatives such as cool pavement, portable AC programs, and centralized tools to enhance coordination and address heat challenges.
- Programs and innovations: Development of accessible resources like the heat-relief toolkit and the implementation of innovative measures such as the Cold Ice Immersion Pilot Program.
- Sustainability and momentum: Emphasis on sustainable funding, improved data transparency, and annual summits to ensure long-term progress.
- Community resources: Expansion of services like Solari (211) to connect individuals with heat-relief resources effectively.

CHALLENGES IN 2024

What are the challenges or barriers you have experienced this summer? Was there anything you noticed this summer that we want to stop doing? For example, what was ineffective, redundant, or otherwise not helping us reach our goals?

Drive Heat Relief Activities

- Resource management: Challenges with insufficient cooling centers, limited supplies, unclear resource availability, and unmet demand for heat relief resources.

- Cooling center challenges: Staffing shortages, operational barriers, inadequate infrastructure, and insufficient hours of operation for cooling centers.
- Funding and support: Lack of sustainable funding and inadequate support, coupled with underutilized volunteer capacity.
- Transportation and accessibility: Limited public transportation, accessibility barriers, and inequitable access to relief services, excluding vulnerable populations.
- Infrastructure and services: Insufficient 24/7 cooling centers, frequent power outages, and gaps in services for medical and mental health emergencies.
- Housing and community support: Housing instability, limited wraparound services for unhoused individuals, and the need for an expansion of home repair programs to improve living conditions.
- Infrastructure and utilities: Power demands, utility affordability issues, and limited infrastructure at heat relief locations, including shade, Wi-Fi, and Automated External Defibrillators (AEDs.)
- Resource distribution and access: Struggles with distribution logistics, storage issues, and inequities in accessing heat relief services.
- Coordination and partnerships: Untapped collaboration with tribal communities, private companies, and rural areas, compounded by political and logistical challenges.

Reduce HRI and Deaths

- Education and messaging: Need for improved and expanded strategies and underutilized channels for educating diverse communities, including tourists, locals, and vulnerable groups, about heat risks and available resources.
- Community-Specific challenges: Disparities in housing, mental health services, and targeted outreach to groups such as domestic violence survivors, children, and seniors.
- Health and hospitalization: Increased hospital admissions, staffing shortages, and risks of exceeding hospital capacity during heat events.
- Policy and resiliency: Need for policies addressing systemic challenges in housing, transportation, and access to heat relief, with a focus on those most at risk.
- Cultural and behavioral challenges: Societal attitudes that normalize heat risks, reducing urgency and compliance with safety messaging.
- Communication and outreach: Fragmented, inaccessible, and underpublicized messaging efforts, with missed opportunities to partner with schools, churches, and community programs for broader outreach.
- Health and safety: Limited education for medical professionals, inadequate security at cooling centers, and need for improved outdoor worker safety measures.
- Accessibility and inclusivity: Barriers to transportation, pet-friendly shelters, technological resources, and accessible communication tools for disabled and non-technologically savvy populations.

Prepare for Extreme Heat

- Communication and coordination: Clarification of roles, enhancing collaboration, and refining communication strategies to strengthen outreach, particularly to vulnerable populations and non-traditional partners.
- Funding and resource allocation: Rigid and insufficient funding, slow distribution of resources, and lack of federal disaster designation for heat limit response effectiveness.
- Capacity and resource challenges: Lack of surge capacity and insufficient funding for cooling centers and programs to support extended hours.
- Data collection and standardization: Challenges in collecting, standardizing, and sharing heat-related data across agencies, with limitations stemming from heat not being a reportable condition.

- Operational challenges: Security concerns, logistical issues, and gaps in coordination between cooling and respite centers exacerbate service inefficiencies.
- Messaging and outreach: Over-reliance on digital tools like QR codes, ineffective targeting of heat warnings, and inadequate promotion of cooling centers to avoid stigmatization.
- Infrastructure and accessibility: Limited operating hours, challenges with maintaining cooling center infrastructure, and barriers in serving specific populations like mobile home residents and the unhoused.
- Metrics and evaluation: Absence of unified evaluation metrics and inconsistent funding timelines hinder the assessment and improvement of heat relief programs.

Foster Innovative Solutions

- Policy and education: A need for equitable policies addressing systemic issues like racism, housing insecurity, and inaccessible transportation, alongside targeted education for tourists and new residents about extreme heat risks.
- Data and information gaps: Insufficient heat-related data, gaps in outreach targeting vulnerable populations, and a lack of streamlined systems and data-sharing agreements for effective operations.
- Environmental sustainability: Need for alternatives to single-use water bottles, alongside initiatives like Cooltainers and cool pavement, presents an opportunity to develop sustainable waste management practices and long-term plans.
- Funding and resource limitations: Uncertainty and inadequacy of funding for critical programs, utilities, staffing, and transportation, alongside the high costs of maintaining heat relief initiatives.

AREAS FOR IMPROVEMENT

What do we want to focus on as a system or network? What does success look like for Arizona in 2025?

Drive Heat Relief Activities

- Resource sharing and supply chain: Inefficient transportation and resource distribution that prevents supplies from reaching those who need them most.
- Meetings and communication: Holding too many redundant meetings and creating confusion with unclear communication practices, leading to inefficiency and lack of focus.
- Program and resource management: Relying too heavily on grants and ineffective resource distribution strategies that fail to address the real needs of cooling center attendees.
- Volunteer and staff management: Underutilizing volunteers, particularly at cooling centers, and failing to provide adequate mental health training for staff and volunteers, which compromises the quality of support.
- Meeting and task management: Excessively surveying sites and requiring too many meetings, which increases the workload of already burdened staff and diverts attention from critical tasks.
- Communication and coordination: Improving the direction of resource requests and clarifying points of contact will enhance coordination and streamline assistance efforts.
- Message clarity: Mixing climate change communications with heat risk messaging, which dilutes the focus and reduces the effectiveness of outreach efforts.

Reduce HRI and Deaths

- Variations in resource allocation challenges: Improvements in resource distribution, expanding cooling center policies regarding pet admittance, and mitigating urban heat island effects could reduce heat-related vulnerabilities for affected communities.

- Governance and policy issues: Lack of enforcement and fragmented partnerships between organizations that undermine the effectiveness of heat-related policies.
- Communication and coordination issues: Hoarding data between agencies, causing poor communication and confusion about who to contact for resources, which hinders effective collaboration.
- Counterproductive practices: Conducting redundant canvassing, allowing politics to influence heat response efforts, and continuing to plan for the next summer while still managing current extreme heat challenges.

Prepare for Extreme Heat

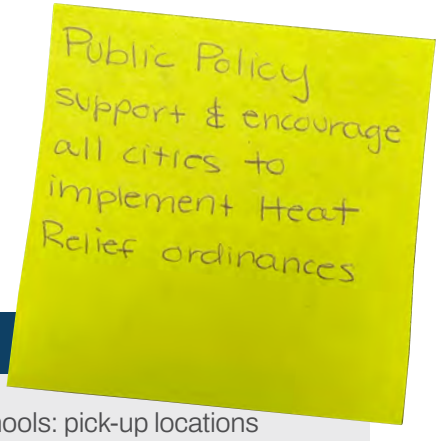
- Data sharing and transparency: Sharing data without clear transparency on sources and methodology, which creates confusion and undermines trust in public-facing information.
- Funding challenges: Relying on unstable, short-term funding that delays or limits resources for immediate needs, and using moratoriums based on dates rather than actual weather patterns, which wastes resources.
- Data and decision-making: Slowing down data collection and analysis, leaving little time to make necessary changes before the next heat season, and failing to use heat-related data to inform proactive decision-making.
- Operational and staffing challenges: Overpopulating and understaffing cooling centers, lacking mental health training for employees and volunteers, and poorly managing volunteer support and resource allocation.
- Operational inefficiencies: Running heat relief programs without measurable effectiveness, creating duplicative efforts due to overlapping responsibilities, and using bureaucratic processes that slow down needed actions.
- Transportation and cooling center integration: Failing to better integrate free transportation with public transit routes, which limits access to cooling centers and relief services.

Foster Innovative Solutions

- Processes and redundancies: Using inefficient mapping software, ineffective water distribution methods, and relying too heavily on 211, online services, and technology that exclude those without cell phones or Wi-Fi.
- Volunteering and local engagement: Pathways for volunteering at heat relief sites can be arduous and roles, expectations, and evolving site needs are unclear, reducing volunteer and local partner engagement.
- Frequent and redundant meetings: Holding excessive meetings that delay action and create duplicate efforts without clear leadership roles or decision-making.
- Day-to-day manual updates: Continuously updating heat relief networks manually, which leads to inefficiencies and slows down response efforts.
- General process improvements: “Reinventing the wheel” instead of following established protocols, and restricting access to essential tools like Google, which limits participation.
- Collaboration and communication: Allowing siloed efforts by nonprofits and relying too heavily on meetings instead of using alternative tools like project management platforms to improve collaboration and communication.

Poster Activity: What's next for 2025?

Engagement and Collaboration Opportunities



DRIVE HEAT RELIEF ACTIVITIES

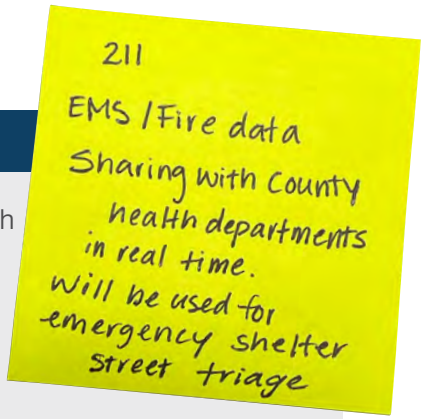
Potential Partners	Examples of Engagement
1. Local communities and organizations 2. Local schools 3. ADHS and state agencies 4. Innovative technologies and business 5. Tribal partners 6. Local culture representatives	• Strengthen partnerships with schools: pick-up locations for heat kits, supplies, distribute heat education materials, and supply drives, leveraging them as community hubs. • Strengthen coordination between all counties and tribes to ensure comprehensive coverage of heat relief efforts. • Reduce barriers for the community to access heat relief sites, such as increase free or low-cost transportation options, improve walkability and bike lanes. • Enhance access to funding by expanding grant opportunities and providing workshops and support with dedicated resources for rural counties and disadvantaged populations. Create detailed funding plans. • Disseminate culturally appropriate heat safety resources and messaging through public spaces, such as Phoenix Sky Harbor Airport, billboards, gas stations, and grocery stores to reach both residents and visitors.

REDUCE HRI AND DEATHS

Potential Partners	Examples of Engagement
1. Medical schools and pharmacies 2. Local schools - Red Cross 3. ADHS and state agencies 4. Innovative technologies and business 5. Mental health providers and universities 6. Data analysts	• Provide education on the interaction between medications and heat, including doctor and pharmaceutical warnings on risks during heat season. • Integrate mental health partners and school clinics into existing partnerships with heat relief centers to reinforce services. • Expand education and outreach programs to include heat and fire safety in primary and secondary schools. • Address heat as a factor in hazard mitigation plans, treating it as a natural disaster and incorporating emergency medical services (EMS) data. • Strengthen economic evaluation of heat relief programs to compare their effectiveness against other solutions, such as Universal Basic Income (UBI).

PREPARE FOR EXTREME HEAT

Potential Partners	Examples of Engagement
1. Community health workers and local organizations 2. County and organization Public Information Officers (PIOs) 3. ADHS and state agencies 4. Innovative technologies and business 5. At-risk population advocates and organizations 6. Emergency preparedness	• Train community advocates to reach vulnerable populations before heat season begins, focusing on culturally relevant, accessible, and localized messaging. • Open communication channels between jurisdictions to foster collaboration and mutual learning. • Involve PIOs and create a dedicated workgroup to enhance messaging consistency. • Integrate heat preparedness messaging at bus stops, schools, and social media platforms, starting well before heat season. • Develop a heat guideline planner to help jurisdictions and organizations prepare for and respond to heat events.



REDUCE HRI AND DEATHS

Potential Partners	Examples of Engagement
1. Emerging technology companies 2. Public communication experts 3. ADHS and state agencies 4. Innovative technologies and business 5. Environment and climate action advocates 6. Data analysts	• Implement and track the effectiveness of innovative solutions like portable AC loaner programs and ice immersion bags for heat stroke. • Incorporate environmentally sustainable practices into heat response practices and protocols to reduce waste, like reusable water bottles. • Incorporate public communication tools that can reach those without internet, smart phones, or consistent access to Wi-Fi and can easily be updated and disseminated. • Streamline data collection at heat relief sites to capture essential information while reducing the burden of those running services. • Facilitate collaboration of data with other organizations to understand and use data sources effectively across jurisdictions.

This report utilized ChatGPT, MS Copilot, and Grammarly to enhance sentence structure and clarity, identifying potential grammatical errors, suggesting alternative phrasing or order, summarizing or paraphrasing, and suggesting section titles. All AI-generated text or edits were reviewed and manually adjusted by the author to ensure accuracy and alignment with the intended message.

APPENDIX A:

Glossary of Terms

The Arizona Heat Glossary is a comprehensive resource developed by the Arizona Department of Health Services (ADHS) to standardize terminology related to heat, weather, and heat-related illnesses. Created in response to the increasing need for consistent language surrounding heat hazards, this glossary was informed by the National Oceanic and Atmospheric Administration (NOAA) Tabletop Exercise and defines a total of 33 terms, citing various credible sources. The primary aim of this glossary is to enhance communication about heat hazards among professionals and the public. As new developments emerge in this field, the glossary will be regularly reviewed and updated to reflect the latest information.

Acclimatization	The process of improving tolerance to heat by gradually increasing exposure to hot environments. The most effective method is to gradually increase exposure time over 1-2 weeks.
Air Temperature	A measure of how hot or cold the air is in a certain area. It indicates what the average temperature is at that particular time and place. It is measured using a thermometer and is expressed in degrees Fahrenheit or Celsius.
Body Heat Storage (BHS)	The heat generated and retained by the human body. It's a key concept in the human heat balance equation, which maintains the body's normal temperature by balancing heat production and heat loss to the environment. Factors such as metabolic rate, external activity, skin surface heat exchange, and evaporative heat loss contribute to the body's heat storage.
Cool Corridors	Innovative, one-mile-long pathways or trails situated alongside major roads, designed to protect pedestrians, cyclists, and transit riders, as well as offer an escape from the high temperatures of the urban desert environment. They feature a range of temperature-lowering design features such as natural and engineered shade, benches, and drinking water fountains.
Cooling Center Optimization	A process in which a geospatial model is utilized to provide an area with the best locations to implement cooling centers to provide access to heat relief for the population.
Dry Heat	The combination of unusually high temperatures relative to a location's climate and low relative humidity (generally 30% or less). Most often associated with desert locations.
Extreme Heat	Is generally defined as one or more days of unusually hot or humid weather conditions that can potentially harm human health. The definition of extreme heat varies based on many different factors, including location and weather. The Arizona Emergency Information Network has defined extreme heat as a period of at least 2-3 days of high heat with temperatures above 90 degrees.

Extreme Heat Warning	• **Risk Level:** "Major" (dangerous) or "Extreme" (deadly) heat, which can cause serious heat-related illness or health problems. • **Confidence Level:** High (over 80%) chance that extreme heat will happen. • **Timing:** Issued at least one day before the heat event and stays in place until the end of the event.
Extreme Heat Watch	• **Risk Level:** "Major" or "Extreme" heat, which can lead to serious heat-related illness, expected based on the HeatRisk forecast. • **Confidence Level:** Moderate (50%) chance that extreme heat will happen. • **Timing:** Issued 3-7 days before the heat event and may be followed by a warning or advisory.
Heat Advisory	• **Risk Level:** "Moderate" risk of heat-related illness or health issues based on the HeatRisk forecast. • **Confidence Level:** High (80% or more) chance that the heat will cause impacts. • **Timing:** Issued at least one day before the event and stays in place until the heat event ends.
Heat-Caused Deaths	Cases where environmental heat directly contributed to the conditions leading to death.
Heat Island Effect	The phenomenon in which urban or metropolitan areas experience higher temperatures than the surrounding rural areas. This temperature difference is due to man-made structures like buildings, roads, and other infrastructure absorbing and reflecting more heat than natural landscapes such as forests and water bodies. With dense urban areas packed with such structures and limited green spaces, they effectively become 'islands' of higher temperatures. During the day, these areas record temperatures about 1-7°F more, and during the night, about 2-5°F more compared to their rural surroundings. (EPA)
Heat Mitigation	Refers to limiting the impacts of extreme heat by providing reduced indoor and outdoor heat exposure.
Heat-Related Deaths	Cases where environmental heat played a role in the death, but it was not the primary cause. Other diseases or conditions were the main factors leading to death, with heat contributing as a secondary factor.

Heat-Related Illness

- **Heat Cramps** - Heat cramps are painful muscle spasms, usually in the legs, arms and abdomen, caused by loss of fluids and electrolytes as a result of sweating. Such cramps may also be a sign of heat exhaustion.
- **Heat Exhaustion** - A condition where the water and salt lost through excessive sweating are not replaced. It is a dangerous condition that can affect anyone, but some people are more susceptible than others. Older adults, people with high blood pressure, and those working in hot environments are the most likely to suffer from heat exhaustion.
- **Heat Rash** - Skin irritation caused by excessive sweating during hot, humid weather which makes your skin feel itchy and uncomfortable. Heat rash usually goes away on its own once the skin cools down.
- **Heat Stress** - Occurs when the body struggles to regulate its internal temperature, often due to exposure to extreme heat. This can lead to various health problems like heat stroke, exhaustion, cramps, or rashes. Certain individuals, such as those over 65, overweight, with heart disease, high blood pressure, or taking medications affected by heat, are more susceptible. Workers in hot environments like firefighters, farmers, and construction workers are also at risk.
- **Heat Stroke** - This is the most serious heat-related illness. It results from the body being unable to regulate its temperature due to prolonged exposure to hot conditions. During heat stroke, the body temperature rapidly rises, the sweat glands shut down, and the body cannot cool itself down. This can lead to organ failure and even death. It is a severe medical emergency that requires immediate medical attention.
- **Heat Syncope** - A situation where someone may faint or feel dizzy because they stood up for too long or suddenly got up after sitting or lying down. This can happen when the body is not used to the heat or when someone hasn't had enough fluids to drink.
- **Rhabdomyolysis (rhabdo for short)** - A medical condition where muscles break down quickly because of too much physical activity in hot temperatures. This can cause electrolytes and large proteins to go into the blood and damage the heart and kidneys.
- **Sunburn** - A sunburn happens when your skin gets too much UV radiation from the sun, causing it to become red, sore, and sometimes swollen. Sunburn can lead to long-term health issues, like skin cancer, early aging of the skin, eye problems, and a weaker immune system. Children are especially sensitive to these effects.

Heat Relief	• **Collection & Donation Site** - Water bottles can be donated here for use at heat relief locations and hydration stations. Some sites also accept other donations such as clothing, hats, sun protection, and toiletries.
	• **Heat Relief Locations**
	  • **Cooling Center:** Indoor, air-conditioned location that offers hydration.
	  • **Hydration Station:** Location that offers drinking water. Indoor or outdoor locations where individuals can go to receive bottled water and other collected donated items.
	  • **Respite Center:** Indoor, air-conditioned location that offers hydration and allows for rest.
	• **Heat Relief Network** - A regional network of partners (municipalities, tribal nations, nonprofit organizations, faith-based communities, businesses, and others) coordinating the mapping of heat relief locations and collection and donation sites to prevent heat-related illnesses and deaths among at-risk populations. The map and directories of each network are updated throughout the summer season.
	• **Resilience Hub** - A trusted, community-serving facility augmented to support residents as a gathering space to coordinate resource distribution and services before, during, or after a natural hazard event.

Heat Risk	A tool used by the National Weather Service (NWS) that gives a 24-hour forecast of how heat might affect people. It uses a color and number system to show how dangerous the heat could be, based on the time of year, day and night temperatures, and the duration of the heat. It also uses Centers for Disease Control and Prevention (CDC) data to assess if these temperatures might increase the risk of heat-related health issues. See Fig. A.01 for an example of a heat-risk map and potential heat risk levels.
Heat Season	Refers to the hottest months of the year, generally between May and September.
Heat Stress	Occurs when the body struggles to regulate its internal temperature due to extreme heat. This can lead to health problems such as heat stroke, exhaustion, cramps, or rashes. People over 65, those who are overweight, have heart disease, high blood pressure, or take medications affected by heat, as well as workers in hot environments like firefighters, farmers, and construction workers, are at higher risk.
Heat Wave	A period of abnormally hot weather, typically lasting two or more days. Heat waves can occur with or without high humidity. In Arizona, heat waves often occur without humidity, except during monsoon season. A prolonged period of abnormally hot weather exposes much of the population to heat-related illnesses.

Human Service Providers	Work directly with community members to assist them in finding stability. They provide assistance and resources for needs including, but not limited to food, housing, substance use, and other guidance.
Hydrated (during heat events)	Drink water before feeling thirsty; by the time you are thirsty, you are already mildly dehydrated. Drinking at shorter intervals is more effective than drinking large amounts infrequently.
Land Surface Temperature	The temperature of the Earth's surface to touch. It is a measurement of how hot or cold the land is. Scientists use thermal cameras to measure land surface temperature, which helps them understand how different areas of the Earth are affected by heat. (NASA)
Mean Radiant Temperature (MRT)	This is the temperature you feel when heat is radiated to or from your body. This happens through radiation from sources like the sun or surrounding surfaces such as walls and floors. When calculating MRT, it's important to account for both the air temperature and the temperatures of nearby surfaces radiating heat. For example, if you are standing in the sun on a hot concrete surface, you will feel a higher MRT than if you were standing in the shade next to cooler surfaces like grass or water.
Social Services	Is a network of programs and services that address the social and economic needs of the population. Social service programs include, but are not limited to, food assistance, unemployment and disability assistance, employment assistance, and shelter and housing.
Syndromic Surveillance	Is a type of public health surveillance that "provides public health officials with a timely system for detecting, understanding, and monitoring health events in near real-time (within 24 hours). By tracking symptoms of patients in emergency departments—before a diagnosis is confirmed—public health can detect unusual levels of illness to determine whether a response is warranted (CDC, 2023)." Currently, 91% (89/98) of emergency departments in Arizona report to the CDC's National Syndromic Surveillance Program, representing an estimated 96% of emergency department visits in Arizona. Public health practitioners in Arizona have access to this data through the BioSense ESSENCE tool to analyze data.
Trigger Points	Are pre-decided cues that aid in situation assessment and lead to decisions on action for implementation or change.

Vulnerable Populations (to heat)

Some groups face a greater risk of heat-related illness than others. These groups include, but are not limited to:

- Athletes
- Children
- Emergency responders
- Incarcerated people
- Indoor and outdoor workers
- Low-income communities
- Older adults
- People experiencing homelessness
- People with pre-existing conditions
- Pregnant people

Wet Bulb Globe Temperature (WBGT)

An experimental forecast tool indicating the expected measure of heat stress[2] the human body would experience in direct sunlight, which takes into account temperature, humidity, wind speed, sun angle, and cloud cover (solar radiation). (NWS)

Extreme (4)

Dangerous heat events that can cause serious heat-related illness or even death for anyone who doesn't have a way to cool down or has limited water access. Temperatures will be extremely high, likely breaking records, and last for more than two days.

Major (3)

Increased risk of serious heat-related illness or even death for anyone who doesn't have a way to cool down or has limited water access. Both days and nights will be much hotter than usual, with temperatures above normal.

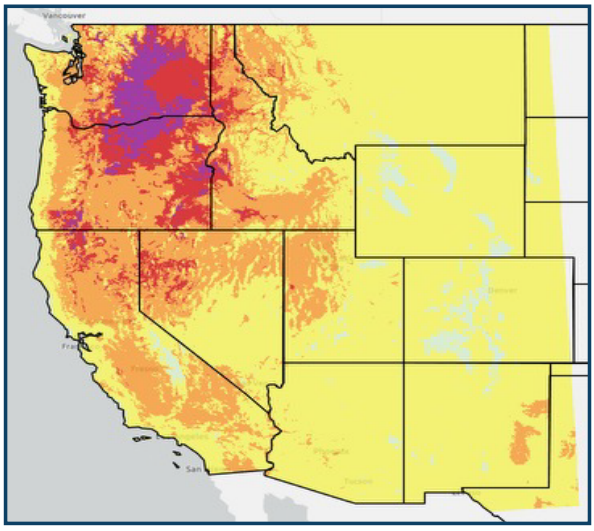


Figure A.01: Example of HeatRisk output

Moderate (2)

There's a moderate risk of heat-related illness, mainly in vulnerable people[1], and for anyone who doesn't have a way to cool down or has limited water access. It's not as likely to cause death, but there's still a chance. Daytime will be hot, and nights will stay warm, especially in cooler areas that don't usually get this kind of heat.

Minor (1)

There is a small risk of heat-related illness, mainly in vulnerable people[1]. The chance of serious problems, like death, is very low.

None (0)

There is little to no risk of health problems from the heat.

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[1]**Vulnerable population (to heat):** Certain groups are at higher risk of heat-related illness, including children, older adults, people without housing, those with pre-existing health conditions, indoor and outdoor workers, emergency responders, incarcerated individuals, low-income communities, pregnant people, and athletes.

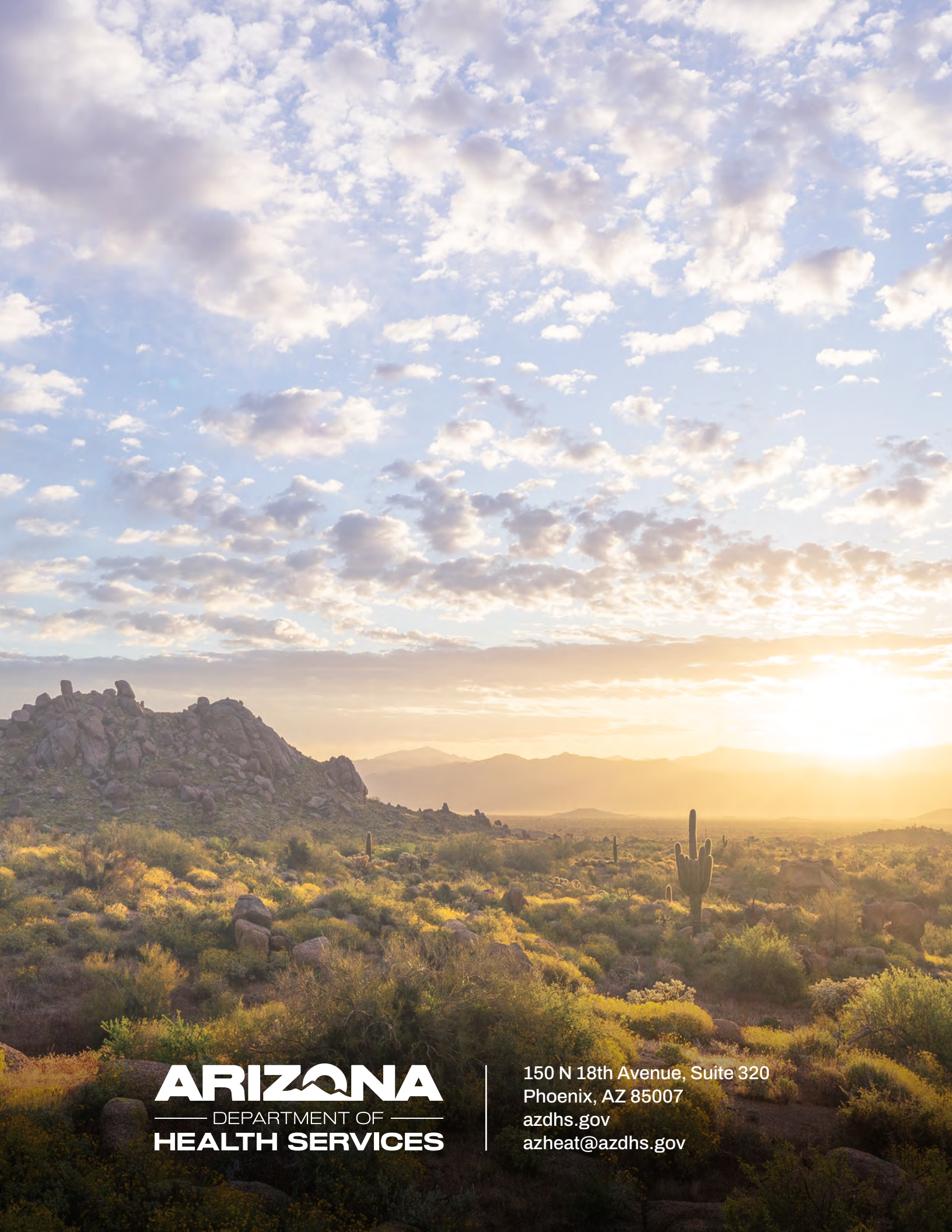
[2]**Heat Stress:** Occurs when the body struggles to regulate its internal temperature due to extreme heat. This can lead to health problems such as heat stroke, exhaustion, cramps, or rashes. People over 65, those who are overweight, have heart disease, high blood pressure, or take medications affected by heat, as well as workers in hot environments like firefighters, farmers, and construction workers, are at higher risk.

APPENDIX B:

Acronym List

AC	Air conditioning
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADES	Arizona Department of Economic Security
ADHS	Arizona Department of Health Services
ADOSH	Arizona Division of Occupational Safety and Health
ADOT	Arizona Department of Transportation

AFN	Arizona Faith Network
AHCCCS	Arizona Health Care Cost Containment System
ALHOA	Arizona Local Health Officers Association
ASU	Arizona State University
ASTHO	Association of State and Territorial Health Officers
AZ	Arizona
AZSVI	Arizona-specific vulnerability index tool
BORR	Bureau of Operational Readiness and Response
BRACE	Building Resilience Against Climate Effects
BRIC	Building Resilient Infrastructure and Communities Grant
CDC	Centers for Disease Control and Prevention
CLIMAS	Climate Assessment for the Southwest
CRE	Community Resilience Estimates
DEMA	Department of Emergency and Military Affairs
ED	Emergency department
EM	Emergency Management
EMS	Emergency medical services
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GIS	Geographic information system
HHS	Health and Human Services
HOA	Homeowners association
HRI	Heat-related illness
ICS	Incident Command Structure
IHS	Indian Health Service
LIHEAP	Low Income Home Energy Assistance Program
MAG	Maricopa Association of Governments
MAG STAFF	Maricopa Association of Governments Staff
MCDPH	Maricopa County Department of Public Health
NASA	National Aeronautics and Space Administration
NGO	Non-governmental organization
NIHHIS	National Integrated Heat Health Information System
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
OME	Office of Medical Examiner
OSHA	Occupational Safety and Health Administration
OTG	Office of the Governor
PHEP	Public Health Emergency Preparedness
PIO	Public information officer
POC	Point of contact
PSA	Public service announcement
RCN	Regional Collaboration Network
RMA	Roadside motorist assist
SOP	Standardized operating procedure
SVI	Social vulnerability index
UA	University of Arizona
UBI	Universal basic income
VOAD	Voluntary Organizations Active in Disaster
WIC	Women, infants, and children



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