

Maricopa County Manufactured and RV Homes: Raising Awareness about Extreme Heat, Safety Tips, and Available Community Resources

**HEALTHY URBAN ENVIRONMENTS
POST-HEAT SEASON (OCTOBER)
SURVEY RESULTS 2020**

ACKNOWLEDGEMENTS

The Maricopa County Department of Public Health (MCDPH), Office of Epidemiology: Climate and Health would like to thank the following agencies for their contributions to the Healthy Urban Environment (HUE) Project:

- ✚ Mobile Home Community, Phoenix AZ
 - Residents
- ✚ Iglesia Episcopal San Pablo, Salud en Balance
 - Community Health Workers (includes 6 Community Leaders)
 - Teresa Sosa
 - Elizabeth Yescas
 - Martha Alvarez
 - Yaneli Duran
 - Maria Larumbe
 - Flor Stamberger
 - Paulina Morales
- ✚ Arizona State University (ASU) Knowledge Exchange for Resilience
 - Patricia Solis, PhD, Executive Director
- ✚ Healthy Urban Environments (HUE) Initiative
- ✚ Maricopa County Department of Public Health (MCDPH): Office of Nutrition and Active Living
 - Gail LaGrander, Active Living Specialist
- ✚ The Arizona Association of Manufactured Home and RV Owners (AAMHO)
 - Eileen Green, AAMHO President
- ✚ Maricopa County Department of Public Health (MCDPH): Office of Epidemiology, Climate and Health
 - Aaron Gettel, MPH, Epidemiologist
 - Vjollca Berisha, MD, MPH, Senior Epidemiologist
 - Tony Bishop, MPH, Epidemiology Data Analyst
 - Emily Walsh, MS, Epidemiology Data Analyst
 - Jessica Whitney, Epidemiology Data Analyst

CONTACTS

- ✚ Vjollca Berisha, Senior Epidemiologist, MD, MPH (PHS), MCDPH: Vjollca.Berisha@maricopa.gov
- ✚ Gail LaGrander, Active Living Specialist, Office of Nutrition and Active Living, MCDPH: Gail.Lagrander@maricopa.gov
- ✚ Teresa Sosa, Leader of Salud en Balance, Iglesia Episcopal San Pablo: wellnessbb05@gmail.com
- ✚ Aaron Gettel, Epidemiologist, MPH (PHS), MCDPH: Aaron.Gettel@maricopa.gov
- ✚ Tony Bishop, Epidemiology Data Analyst, MPH (PHS), MCDPH: Tony.Bishop@maricopa.gov
- ✚ Emily Walsh, Epidemiology Data Analyst, MS (PHS), MCDPH: Emily.Walsh@maricopa.gov
- ✚ Jessica Whitney, Epidemiology Data Analyst (PHS), MCDPH: Jessica.Whitney@maricopa.gov
- ✚ Eileen Green, AAMHO President “Co-Operation Not Confrontation”: (717-574-4137)
- ✚ Patricia Solis, Executive Director, PhD, Knowledge Exchange for Resilience: patricia.solis@asu.edu

TABLE OF CONTENTS

ACKNOWLEDGMENTS	2	Knowledge and Use of Resources	43
CONTACTS	2	Effects of COVID-19 Pandemic	47
TABLE OF CONTENTS	3	Resources	52
EXECUTIVE SUMMARY	4	New Participants for October	54
Key Takeaways	4	Heat Perception	54
Objective	6	Knowledge of Heat and Illness	57
Methods	6	Coping Mechanisms	62
Results	6	Barriers To Cooling	67
Heat Perception	6	Knowledge and Use of Resources	69
Knowledge of Heat and Illness	6	Effects of COVID-19 Pandemic	73
Coping Mechanisms	7	RESOURCES AND POTENTIAL SOLUTIONS	78
Barriers To Cooling	7	DISCUSSION	84
Knowledge and Use of Resources	8	CONCLUSION AND NEXT STEPS	88
Effects of COVID-19 Pandemic	8	REFERENCES	90
Resources and Potential Solutions	8	APPENDICES	91
Conclusions	9	APPENDIX I: GOAL AND OBJECTIVES	91
BACKGROUND	10	APPENDIX II: DEFINITIONS	92
INTRODUCTION	11	APPENDIX III: HUE LOGIC MODEL AND NARRATIVE	93
GOAL AND OBJECTIVES	13	APPENDIX IV: 85008 ZIP CODE VS MARICOPA COUNTY	96
METHODS AND DATA STRATEGIES	14	APPENDIX V: HEAT-ASSOCIATED DEATHS BY HOUSING TYPE 2016-2020	99
SURVEY RESULTS	21	APPENDIX VI: SURVEY QUESTIONS - ENGLISH	101
Demographics	22	APPENDIX VII: SURVEY QUESTIONS - SPANISH	128
Repeat Participants from July	28	APPENDIX VIII: SURVEY RESULTS	155
Heat Perception	28	APPENDIX IX: HEAT TOOLKIT	159
Knowledge of Heat and Illness	31		
Coping Mechanisms	36		
Barriers To Cooling	41		

EXECUTIVE SUMMARY



KEY TAKEAWAYS

- Each year, 100 residents on average die from heat and more than 1,700 residents suffer heat-associated injuries. **In the last five years (2016 - 2020), this average has climbed to 207 deaths and 2,000 injuries.** Nearly 26% of these heat deaths occur indoors, and **30% of the indoor deaths occur in trailer/RV/mobile homes.**
- In 2020, MCDPH and partners **initiated a campaign to raise awareness about extreme heat, safety tips, and available community resources among residents living in a select mobile home community.** The campaign consisted of distribution of the *Heat Toolkit* to the selected community, which provided information on heat illness, heat safety tips, and community resources.
- **Two community surveys were carried out in two phases: 1) pre-heat season survey in July, and 2) post-heat season in October. An evaluation report was completed based on results from both surveys.** For detailed information on this initiative, refer to the following reports: July Survey Results report, **October Survey Results report**, and Evaluation report. 150 out of 156 completed the post-heat season survey (96% response rate).
- Survey results based on the Healthy Urban Environments Initiative conducted in July and October of 2020 in the selected mobile home community **find that chronic heat in Maricopa County remains a persistent challenge for this community in terms of adequately cooling their homes and accessing community and utility resources/programs.** Other challenges include transportation, access to health care, and unemployment.
- **Most residents (92%) feel at risk of heat-related illnesses,** yet 89% stay home and take no action when they feel ill. This is primarily due to a lack of health insurance (64%).
- **Residents limit the use of their home cooling systems (69%) - primarily due to cost of electricity (97%).**
- More than half of the residents (59%) **are aware of utility bill assistance programs,** but only 4% of residents have used these programs.

- 54% of residents are aware of home cooling repair assistance, but only 1% have used it.
- Many residents **did not apply to these assistance programs because they did not have the contact information (45%), assumed they did not qualify (28%), thought the process was too complicated (23%), or had no access to a computer (23%).**
- Half of the residents have heard of cooling centers, yet only 1% have used this service. They go to a friend's houses (65%) or the nearest supermarket (55%) to cool off instead.
- **The COVID-19 pandemic has had many adverse effects on residents, with a key one being reduced job hours (73%),** which has made it difficult for residents to pay for essentials such as utilities (25%) and rent (18%).
- Residents were asked about potential solutions, and **many requested more information as well as free and discounted services for cooling system repairs and medical check-ups.**
- Almost all (99%) of residents who received the educational *Heat Toolkit* prior to taking the survey **found it useful and would like to take advantage of the information provided to them.**¹
- Most residents have knowledge of the dangers of heat as well as tools and resources to help alleviate the effects of heat. Many limitations exist to accessing these resources, which suggests that **additional measures need to be taken in addition to increasing awareness.**²

¹ Pre-heat season was originally intended to take place in April but was extended to July due to the pandemic.

² This report discusses the post-heat season survey results from October.

The Greater Phoenix area is one of the largest urban areas to experience extreme heat. **Extreme heat is a threat to human health, with mobile home communities being disproportionately impacted.** Maricopa County Department of Public Health seeks to discover why the impact on heat is greater in mobile home communities.

OBJECTIVE

The aim of the HUE initiative is **to reduce the number of heat deaths among residents living in mobile home communities by raising awareness of heat illness/deaths and community resources to assist with utility cost and repairs.**

The specific objective of October report (objective 4) is to **capture and identify behavior modification in relation to heat exposure, safety tips, and use of heat resources, as well as to measure the changes that occur throughout the summer.**

METHODS³

To learn more about trailer/mobile home residents in relation to extreme heat, a community survey was designed and implemented in a selected mobile home community. The survey was carried out in two phases: 1) pre-heat season, and 2) post-heat season. Residents who completed the survey did so over the phone with a Community Health Worker. During pre-heat season, resources in the form of a *Heat Toolkit* were provided to residents. During post-heat season, analysis was conducted to see whether the resources provided during pre-heat season impacted the trailer/mobile home residents' heat perception, knowledge, coping mechanisms, barriers to cooling, and knowledge and use of community resources. Participants who participated in the first and second phase of the survey we refer to

“repeat participants”. Additionally, some residents who had not participated in the first phase of the survey, completed only the second survey we refer to “new participants”. This report shares the results of these two groups of participants. A separate evaluation report discusses any changes that have occurred from pre-heat season to post-heat season.

RESULTS

The results described below are from the **post-heat season survey conducted in October.** They include results from participants that took the survey in both pre-heat and post-heat season “repeat participants” as well as participants that only took the survey in post-heat season “new participants”.

Heat Perception

- **Most residents feel that their health is at risk due to high summer temperatures.**
- Residents of both groups feel too hot in their home at temperatures of 80°F and above, and they report feeling too hot in their home sometimes or most of the time.

Knowledge of Heat and Illness

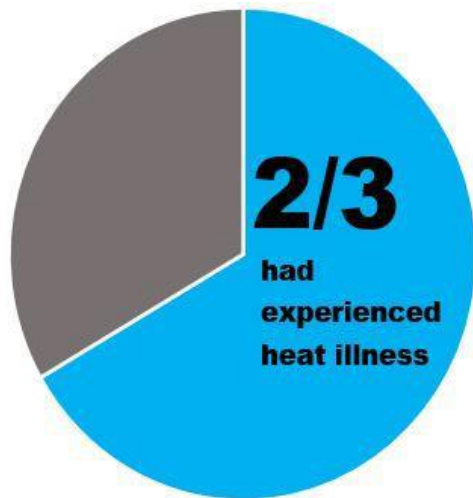
- Residents are aware of excessive heat warnings. Most residents hear of these warnings through TV.



Most residents feel their health is at risk due to high summer temperatures

³ Repeat participants refer to community members who took the survey in both July and October. New participants only took the survey in October.

- **About 2/3 of residents both, “repeat and new participants” could name heat illness symptoms.** The most commonly named symptoms: headache, blood pressure, and dizziness.
- Most residents reported experiencing heat illness.
- **The most common response to experiencing heat illness was staying home and taking no action.** Most reported not having health insurance as the reason for not taking actions.



Coping Mechanisms

- Most residents report leaving their home to go to an air-conditioned place to cool off. The locations that residents report going to most often are a friend's house or the supermarket.
- **Very few residents report using a cooling center.**

- Many residents state that they supplement their primary form of cooling system with additional cooling units such as fans, as well as trees for shade.

Residents report leaving their home to go to a friend or neighbor's place to cool-off



Barriers to Cooling

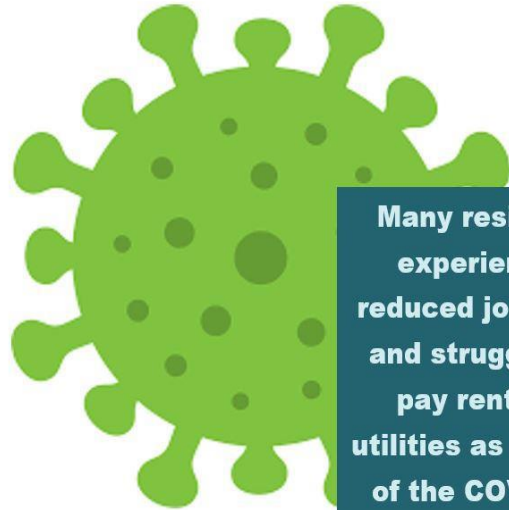
- Although home cooling systems were commonly used among the residents, **most reported limitations to their use (about 2/3 of both “repeat and new participants” reported limitations).**
- Many reported the **cost of electricity** as the primary reason for limiting the use of their home cooling systems.



Knowledge and Use of Community Resources

- Over 3/4 of repeat participants knew of assistance programs to help with cost of utility bills. **Only 1/4 of new participants knew of these programs.**
- Over 3/4 of repeat participants knew of assistance programs to help with cooling system repairs. **Only 1/4 of new participants knew of these programs.**
- Very few residents have used these assistance programs (both repeat and new participants).
- Residents reported not using these assistance programs due to reasons such as: **1) not having the contact information, 2) assuming they do not qualify, 3) feeling that the process is too complicated, and 4) not having access to a computer.**

- 28% of residents had at least one household member diagnosed with COVID-19.
- Over 3/4 of residents feared getting sick while almost 2/3 felt anxious or stressed due to COVID-19.



Many residents experienced reduced job hours and struggled to pay rent and utilities as a result of the COVID-19 pandemic

Very few residents have used utility cost and repair assistance programs



Resources and Potential Solutions

- Residents would like **more information** on heat alerts, heat illness symptoms, medical assistance, home cooling and mobile home maintenance and repairs, and discounted home cooling systems.
- Residents would like **training and workshops on first aid and home cooling system maintenance.**
- Residents would like guidance on applying for assistance or **an easier process** when it comes to applying for assistance programs for discounted utility bills and repairs.

Effects of the COVID-19 Pandemic

- **73% of participants experienced reduced job hours in the household, with 49% losing their jobs.**
- **Residents struggled to pay utilities (25%) and rent (18%), and 19% struggled to pay for necessities such as food.**

- Residents would also like resources, **preferably in Spanish**, to help them understand about utility cost and repair programs and how to apply to these services.

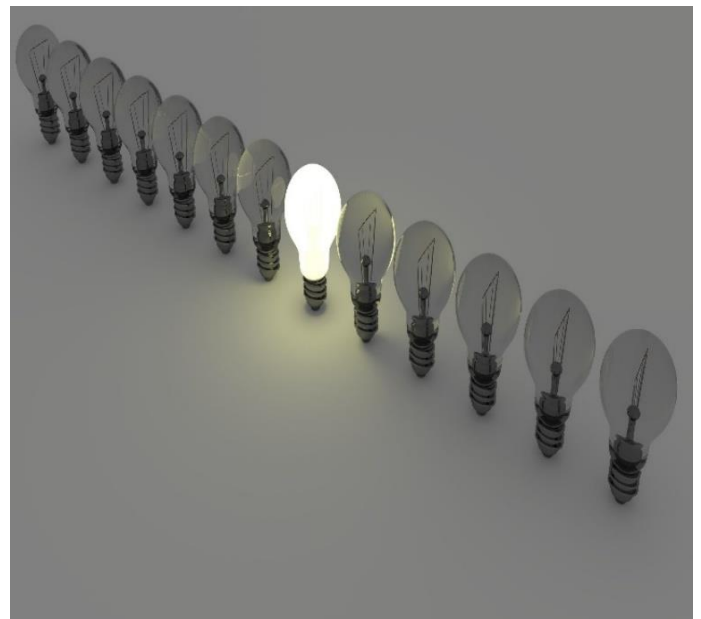


Residents requested more information as well as low-cost resources for utility repairs and medical check-ups



CONCLUSIONS

The results of this study show that many residents in the mobile home community are aware of excessive heat warnings and the dangerous impacts that heat can have on one's health. It further shows that most residents are aware of tools and resources to help mitigate the effects of extreme heat, but that numerous limitations exist to using these resources. This suggests that **while raising awareness is important, more needs to be done to effectively reduce the disproportionate impact that heat has on this mobile home community.**



BACKGROUND



The Greater Phoenix area is one of the largest urban areas to experience extreme heat. According to the Environmental Protection Agency, extreme heat is defined as weather that is much hotter than average on any particular day. Extreme heat is a threat to human health and preventing heat-associated morbidity and mortality is a public health priority in Maricopa County. The Maricopa County Department of Public Health (MCDPH), Office of Epidemiology is responsible for monitoring health trends and behavioral risk factors among its 4.5 million residents. MCDPH has been conducting heat surveillance since 2006 and, over the years, has surveyed community members to understand how they cope with extreme heat during the summer.

Every year, our populous county experiences continuous and long stretches of extreme heat and is home to many disproportionately impacted subpopulations. While all residents and visitors are affected by extreme heat, the elderly, those with underlying health conditions, people of color, outdoor workers, small children, and those living in poverty are among those most at risk. Exposure to high temperatures can cause serious health complications such as dehydration, heat cramps, heat-stroke, respiratory illness, cardiovascular illness, and even death.

Each year, 100 residents on average die from heat and more than 1,700 residents suffer heat-associated injuries. In the last five years (2016 - 2020), this average has climbed to 207 deaths and 2,000 heat-associated injuries. Nearly 26% of these heat deaths occur indoors. Most of the indoor deaths occur in residential units including single homes (50%), trailer/RV/mobile homes (30%), and apartments/condos (16%). Ninety-four percent of all heat-associated deaths occurring within mobile homes were among individuals 50 years and older. Furthermore, it is known that at time of death these individuals were not using their air-conditioning for several reasons, including not using AC (16%), having a non-functioning AC system (70%), or not having electricity (7%). For more information on heat-associated deaths by type of housing, refer to [Appendix V](#). Mitigation efforts from local government agencies and community-based organizations have included hydration stations and cooling centers. The purpose of cooling centers is to provide an air-conditioned public space to temporarily prevent the negative effects of extreme heat. In July of 2020, MCDPH, in partnership with the staff of a community-based organization, Salud en Balance, initiated a campaign to raise awareness about extreme heat, safety tips, and available community resources among residents living in the mobile home community in the Phoenix area.

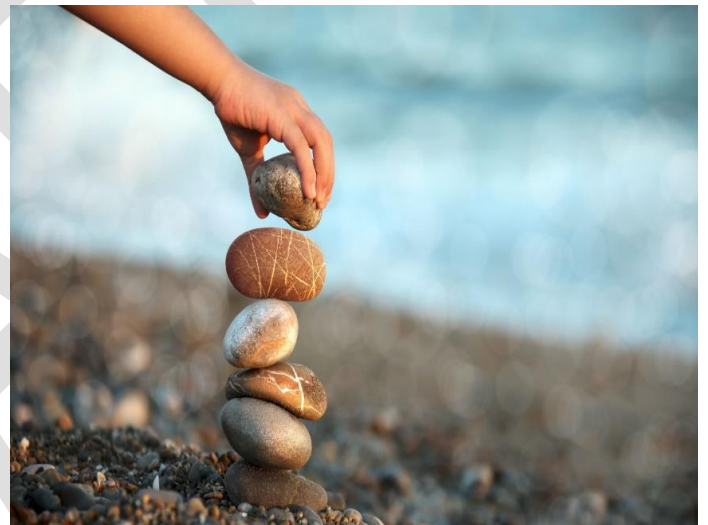
INTRODUCTION



In Maricopa County, extreme heat is a public health crisis. During the summer, some areas of Arizona, such as Maricopa County, can endure over 126 days of extreme heat with temperatures of more than 100°Fahrenheit. In 2020, Maricopa County endured 145 days of extreme heat, higher than average in the past years and rising. Extreme heat can impact daily life by hindering the ability to do things such as play outside, participate in outdoor recreational activities, grocery shop, and use public transportation. Heat can also cause increased utility expenses, illnesses, and even death. These impacts are even greater among disproportionately impacted communities, such as mobile home communities. Knowing this, MCDPH initiated a study to discover why the impact of extreme heat is higher in mobile communities. Maricopa County Department of Public Health, Office of Epidemiology seeks to gain a better understanding of trailer/mobile home residents' heat perception, knowledge, coping mechanisms, barriers to cooling, knowledge and use of community resources, and the effects COVID-19 has had on the community. MCDPH seeks to raise awareness and provide education to improve the knowledge of heat resources among residents. To implement the study, community partners were needed to assist in distributing resources and collecting information on the population of a mobile home community. While searching for community partners and a mobile home community to participate in the study, the MCDPH, Office of Epidemiology found that the Office of Nutrition and Active Living had been working with Community Health Workers who had an existing connection with mobile home communities.

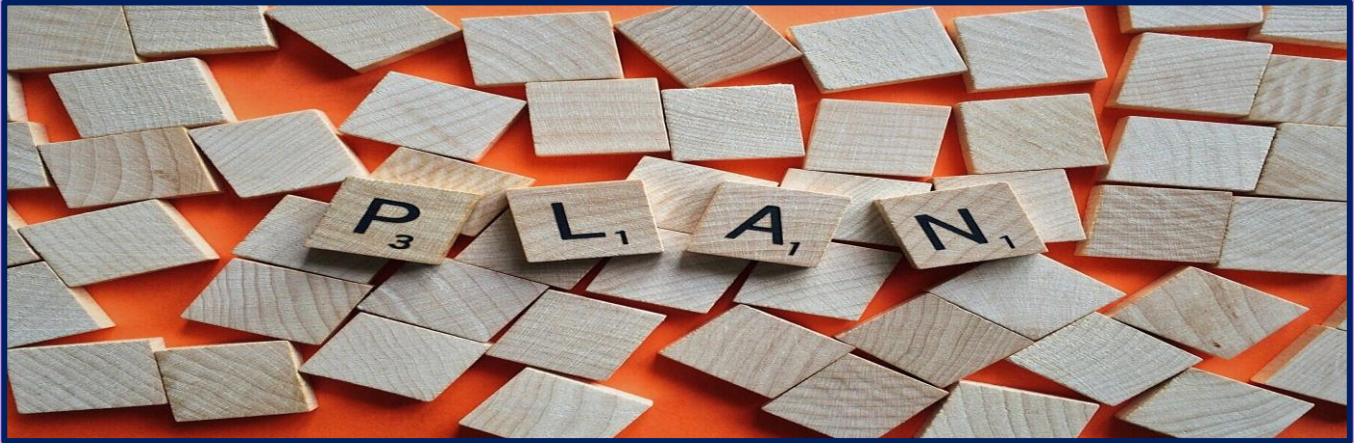
The Office of Nutrition and Active Living has been closely working with a faith-based organization, Iglesia Episcopal San Pablo, on a *Shared Use* funding opportunity. This funding opportunity is designed to support MCDPH's goal of increasing the number of spaces/facilities that will provide new or expanded access to physical activity and/or healthy eating opportunities at very little or no cost to community residents. Iglesia Episcopal de San Pablo has formed a six-member team of community health workers, *Salud en Balance* (Health in Balance) which is led by Ms. Teresa Sosa, and are lending office and classroom space to serve as a community center for neighborhood residents. The conversation and connection with both, the Office of Nutrition and Active Living and *Salud en Balance* staff, culminated in a longstanding partnership, which is still ongoing. The team agreed that a project on raising heat awareness would complement the existing initiative by MCDPH to promote the wellbeing of the residents of a mobile home community.

In July of 2020, MCDPH in partnership with the *Salud en Balance* staff initiated a campaign to provide educational heat materials including information about extreme heat, safety tips and available community resources in a mobile home community. In order to learn more from residents about these experiences, MCDPH, in collaboration with partners, designed a survey which was implemented and distributed to the residents of the mobile home community by *Salud en Balance* Community Health Workers along with a *Heat Toolkit* (see [Appendices VI](#), [VII](#), and [IX](#)).



GOAL AND OBJECTIVES

See [Appendix I](#)



OVERARCHING GOAL:

Reduction of heat deaths and illness in MC residents living in trailer/ mobile home communities by raising awareness about extreme heat, safety tips, and available community resources

- **Objective 1:** Provide information and resources related to heat – develop [Heat Toolkit](#)
- **Objective 2:** Train residents and Community Health Workers – *conduct workshops*
- **Objective 3:** Gain a better understanding of trailer/mobile home residents' heat perception, knowledge, coping mechanisms, barriers to cooling, and knowledge and use of community resources – *administer survey in pre-heat.*
- **Objective 4:** Capture and identify behavior modification in relation to heat exposure, safety tips, use of heat resources; measure the changes that occur throughout the summer – *administer [survey](#) in post-heat season*
- **Objective 5:** Compare information obtained from both surveys (during pre/post-heat season) - *analyze and evaluate data to learn if any behavioral changes has occurred regarding use of heat resources*
- **Objective 6:** Communicate Information to residents and Community Health Workers – *plan next steps*

* *Post-heat season (October) report specifically addresses objectives 1, 2, 3, and 4.*

* *Objectives 5 and 6 will be addressed in the Evaluation report.*

* *Pre-heat season covered objectives 1, 2, and 3.*

METHODS AND DATA COLLECTION STRATEGIES



In April 2020, MCDPH staff partnered with Salud en Balance and ASU to form a project team. The project team used the Community Health Assessment Toolkit from the Association for Community Health Improvement, 2017 as a model for this study (see [Figure 1](#)). This framework provides a nine-step pathway for identifying and analyzing community health needs and assets, prioritizing needs, and developing and implementing plans to address significant needs. In addition, this assessment tool focuses on community engagement, designing interventions, and implementing interventions. The ASU Institutional Review Board declared this assessment exempt based on not collecting personally identifiable information and being strictly intended for program implementation. Members of the assessment team completed training through the Collaborative Institutional Training Initiative (CITI) Human Research Curriculum.

Figure 1. Community Health Assessment Toolkit (Association for Community Health Improvement, 2017)



To conduct the HUE initiative, partners have used the following steps from the Community Engagement Health Assessment Toolkit:

Step 1: Reflect and Strategize:

How can we raise awareness about extreme heat, safety tips and available resources among residents living in a mobile home community?

There was already an existing partnership between Salud en Balance and MCDPH Office of Nutrition and Active Living with the mobile home community. MCDPH Office of Epidemiology joined this partnership

to initiate the HUE project with the mobile home community. Project goals were focused on solutions that fall under themes, including training, demonstration, and evaluation.

Two virtual workshops consisting of training and implementation strategies were planned during phase one (pre-heat season) in April and phase two (post-heat season) in October. These workshops serve to connect the HUE team with community partners in the mobile homes to talk about heat, answer their questions, provide educational resources included in the packet – *The Heat Toolkit* (see [Appendix IX](#)).

Because of the COVID-19 pandemic, phase one (pre-heat season in April) was extended to July; therefore, all materials in the *Heat Toolkits* were distributed during the peak of heat season in July.

To assess the knowledge about heat exposure, heat illness, available community heat resources, and ways residents cope with the heat, surveys were administered by Salud en Balance Community Health Workers following their participation in the educational workshop. Information provided through the survey helped to provide an understanding of how much residents know about heat exposure and types of heat illness; heat resources; and what coping mechanisms they use.

During phase two, through the second survey, behavior modifications were identified and additional changes that occurred throughout the summer were measured. Following residents request during this survey phase, an opportunity was provided in the survey, section “solutions” to record thoughts about potential solutions. This section was a great opportunity for their voices to be heard. Lastly, during this phase, an evaluation report has been generated, which provides the team a better sense of where to focus efforts and how to engage more community members. Possible solutions have also been discussed. It is strongly believed that this whole process will help raise awareness and open communication with the community about knowledge, barriers, resources, and solutions.

A third and final workshop was held in April of 2021 to discuss the October survey results and the findings of the evaluation report. This workshop was held for all the team members of HUE (Salud en Balance, the Office of Nutrition and Active Living, ASU leaders, and the Office of Epidemiology staff) and also included interpretation services to make the presentation accessible to Spanish speakers.

Step 2: Identify Stakeholders and Partnerships with the Community

What are the resources and how we can fulfil our plan to raise the awareness about heat among residents living in a mobile home community?

In March of 2020, Healthy Urban Environments at the Arizona State University (ASU) selected MCDPH’s proposed project and provided funding. In April of 2020, MCDPH initiated a conversation about the project with Salud en Balance. Since then, weekly meetings have been conducted and attended by the HUE project team. [Table 1](#) below describes the partners by type and role they have played in this project.

Step 3: Define the Community:

This assessment focused on the residents of a mobile home community with whom Salud en Balance already had an existing relationship. The mobile home community is in Phoenix, Arizona, in Maricopa County in the zip code 85008 and consists of 109 mobile homes. Within a quarter mile, which is considered walking distance, there is a bus route and a park. Within one mile of their homes, they have access to three supermarkets, one hospital, four public schools, one private school and three charter schools. The mobile home community is predominately Hispanic (based on the survey in October, 100%). See [Appendix IV](#) for comparisons of Census demographics, poverty, and employment information of Maricopa County to the zip code of 85008.

Table 1. List of Stakeholders Involved in HUE survey 2020

Partners	Type	Role Involved	Individuals (N)
Mobile Home Community	Community Members	Survey respondents	156
Iglesia Episcopal San Pablo, Salud en Balance	Community Partner	Supportive role in the study	6
		Planned and carried out survey distribution	
		Organized incentive plan	
		Assisted in planning and implementing project	
Maricopa County Department of Public Health (MCDPH): Office of Nutrition and Active Living	Local Public Health Department	Supportive role in the study	1
		Implementation	
		Consultation	
Healthy Urban Environments (HUE) Initiative	Community Partner	Provided funding for project	4
Arizona State University (ASU): Knowledge Exchange for Resilience	Academic Institution	Study design	1
		Implementation	
Maricopa County Department of Public Health (MCDPH): Office of Epidemiology, Climate and Health	Local Public Health Department	Study design	6
		Implementation	
		Assessment	
		Dissemination of study results	
The Arizona Association of Manufactured Home and RV Owners	Community Partner	Supportive role in the study	1

Step 4: Collect and Analyze Data:

In April - October of 2020, the team developed the *Healthy Urban Environments (HUE)* surveys, which included the pre-heat season survey for July and the post-heat season survey for October (see Appendices VI and VII). This was done through Qualtrics, a web-based survey tool that assists in creating and collecting survey responses as well as managing data. The October survey included 48 questions separated into the following topics (see [Figure 2](#)

below). The team also designed a [Heat Toolkit](#), which included different heat resources including information about extreme heat, types of heat illness, safety tips to stay cool, and available community resources. The *Heat Toolkit* was distributed in phase one of the project along with the July survey as well as phase two of the project to new participants who had not yet received the toolkit.

In October of 2020, Community Health Workers distributed surveys as well as the *Heat*

Toolkit to residents, both of which were available in Spanish and English (see [Appendix IX](#) for packet information). The last two weeks of October to mid-November were used by the Community Health Workers to administer the surveys to residents and distribute incentive cards (Walmart cards of \$50/each for those who participated in the survey).

COVID-19 infection rates were at high levels during both phases of the project; however, Salud en Balance Community Health Workers were able to complete survey distribution, provide masks, food, sanitizers, and other essentials during the pandemic. They also created an incentive tracking system to give gift cards to those who participated. Salud en Balance created a special bond with the community members by being there and helping the community. Without their team's dedication, the project would not have continued.

The data entry and analysis process are described in Figures [3](#) and [4](#) below. First, completed surveys were collected and submitted to the Office of Epidemiology at MCDPH. Surveys were then entered into Qualtrics, one survey at a time. After this, the raw Qualtrics data were exported to an Excel file. The data on this Excel file were then cleaned and tallied, resulting in a new Excel file that was used for analysis. Qualtrics, Excel and SAS were all used for data analysis and quality

control. Qualitative data, which included responses to open-ended questions in the "resources and potential solutions" section of the survey, were reviewed and coded to discover themes. The responses were further categorized into meta-themes to obtain a clear understanding of the needs of the community. Activities and outcomes were summarized in a logic model that was shared with others involved in the study (see [Appendix III](#) for the HUE logic model with its accompanying narrative).

Step 5: Prioritize Community Health Issues:

The Maricopa County Department of Public Health's mission is "*to make healthy lives possible*" and vision is "*a healthy, safe, and thriving community.*" To prevent heat-related deaths and illnesses, MCDPH focused on individuals that experience limitations to their home cooling systems or lack awareness of available programs to assist with resources about the cost of utilities and repairs. In light of this, MCDPH is working to increase the knowledge of available assistance programs and to improve accessibility of these programs. MCDPH staff believes that this is initial step to mitigating heat-related deaths among these communities. It is very important to note that other factors also influence limitations to home cooling systems and use of resources, such as eligibility criteria.

Figure 2. Survey Topics

Demographics	<ul style="list-style-type: none"> • Questions 1-10 • Age, Ethnicity, Employment Status
Knowledge of Heat and Illness	<ul style="list-style-type: none"> • Questions 11-17 • Heat warnings, Symptoms of Illness
Perceptions about Heat	<ul style="list-style-type: none"> • Questions 18-20 • Heat Inside Home
Home Cooling Systems	<ul style="list-style-type: none"> • Questions 21-26 • Types of Home Cooling Systems
Access to Resources	<ul style="list-style-type: none"> • Questions 27-30 • Awareness of Community Programs to Assist in Repairs and Utilities
Neighborhood Resources	<ul style="list-style-type: none"> • Questions 31-35 • Cooling Centers and Air-Conditioned Places
COVID-19 Questions	<ul style="list-style-type: none"> • Questions 36-40 • Effects of COVID-19 on Household, Pandemic Assistance
Resources and Potential Solutions	<ul style="list-style-type: none"> • Questions 41-48 • Helpful Resources, Comments and Solutions

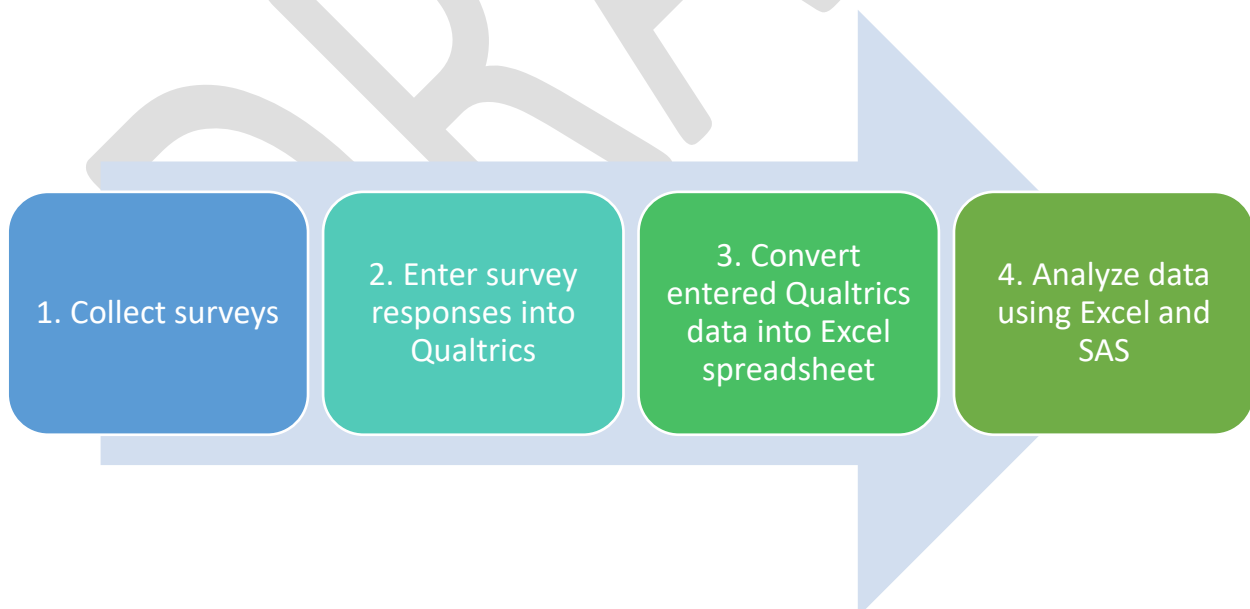
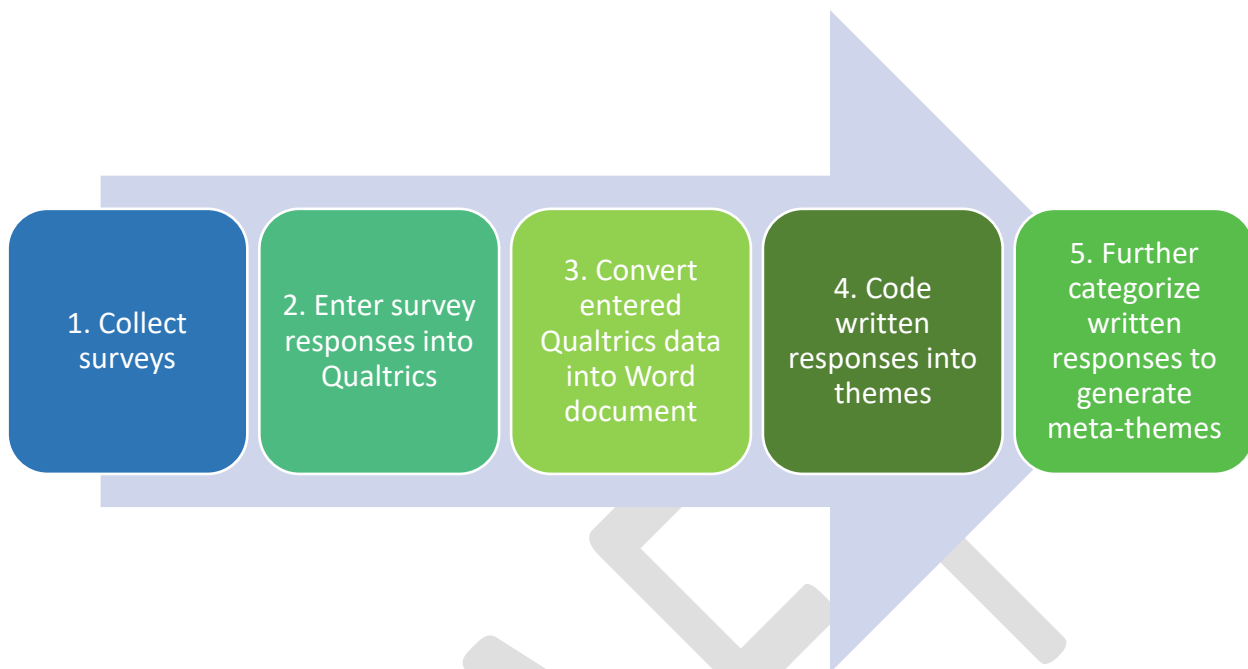
Figure 3. Quantitative Data Entry and Analysis Process

Figure 4. Qualitative Data Analysis Process



Step 6. Document and Communicate Results

Are there knowledge gaps about extreme heat, heat illness, safety tips, and available resources?

Is heat a priority for these residents?

During weekly meetings with the HUE team, initial findings and ideas were discussed for how to provide information to the residents regarding community resources. MCDPH project staff were very interested in hearing ideas of recommendations and solutions from the HUE team based on the feedback from the “resources and potential solutions” section that was added to the second survey to provide a space for residents to share their thoughts on potential solutions.

In April of 2021, MCDPH staff had a virtual meeting with the Salud en Balance team to share findings from the October survey report. The final presentation was also used to discuss the findings from the evaluation report and the overall impact the project had on the mobile home community. Proposed recommendations to help mitigate the effects of heat on the mobile home community have also been shared.

Step 7. Plan Implementation Strategies

From the results of the October report and evaluation report, recommendations will be developed that can potentially be implemented at a later time to help the mobile home community. Since this project does not have the capacity or funding to carry out these recommendations, implementation strategies will be drafted, but will need to be solidified at a later point if one decides to enact these recommendations.

Step 8. Implement Strategies

Implementation of strategies of solutions will be developed with partners including HUE team.

Step 9. Evaluate Progress.

Once the implementation strategies of solutions have been completed and approved, the programs and projects implemented will be evaluated.

SURVEY RESULTS



The survey was distributed to 156 households and 150 completed surveys were returned (response rate = 96%).

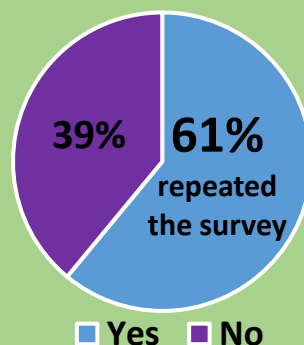
Figure 5. Response Rate



The results section is separated into participants that repeated the survey after phase one of the project in July and new participants that did not participate in the first phase of the survey but took the survey during phase two in October. There were 103 participants that took the survey in July and 91 of them repeated the survey in October for phase two (61%). There were 59 new participants that only took the survey in October during phase two (39%).

Graph 1. Repeat participants from July survey (N=150)

Most participants took the survey in July during phase one.



Demographics



The demographics include all survey respondents, both repeat participants from July and October and new participants from October only.

The survey respondents were Hispanic (100%) and lived in households with one or more members who did not speak English (85%). Most survey respondents had 4 or more household members (20% had 4 members, 15% had 5 members, and 37% had 6 or more members in their household). The maximum number of people in a household was 11 people. The most common age group was ages 5-19 (69%), followed by both ages of 35-49 (61%) and 20-34 (59%).

As for the number of household members employed, having one employed member was the most common response (65%). Having two employed household members was the second most common response at 27%. **However, the third most common response was that entire household was unemployed (5%).**

Many respondents (58%) reported that they received less than high school education, only completing primary and/or secondary school. The approximate equivalent of “secondary school” is middle school/junior high. Many respondents reported having a High School Diploma or GED, (36%). Of the households surveyed, over half stated that they owned their mobile home (51%), while 35% rent their mobile home.

The respondents answered questions about their household transportation. Participants stated that they had a personal vehicle (76%), used public transportation (81%), walked (42%), or got rides from friends (37%). Other participants responded that they would ride a bike (8%), take a taxi (7%), or use a ride source such as Lyft/Uber or other agencies (4%) to get to their destination.

Respondents were also asked how many personal vehicles they have access to at their household. Most participants had access to one vehicle (63%), **followed by having no vehicle at all at the house (23%).**

Table 2. Demographics and Characteristics of Respondents

DEMOGRAPHICS	N (%)
How Many People Live in Your Home? (N=150)	
1	3 (2%)
2	14 (9%)
3	26 (17%)
4	30 (20%)
5	22 (15%)
6	25 (17%)
7+	30 (20%)
What are the Age Groups in Your Household? (N= 150) *150 responses add to 419 to include all family members of participants (Percentage does not add to 100)	
Ages less than 4	53 (35%)
Ages 5- 19	103 (69%)
Ages 20- 34	88 (59%)
Ages 35- 49	91 (61%)
Ages 50- 64	64 (43%)
Ages 65+	20 (13%)
How Many Household Members are Employed? (N= 150)	
0	7 (5%)
1	97 (65%)
2	41 (27%)
3	3 (2%)
4+	2 (1%)
Family Member Does Not Speak English (N=150)	
Yes	128 (85%)
No	22 (15%)
Race (N=150)	
White	137 (91%)
Don't Know	13 (9%)
Ethnicity (N=150)	
Hispanic	150 (100%)
Not Hispanic	0 (0%)
Do You Own or Rent Your Home (N= 150)	
Own	77 (51%)
Rent	53 (35%)
Rent and Own	19 (13%)

Demographics

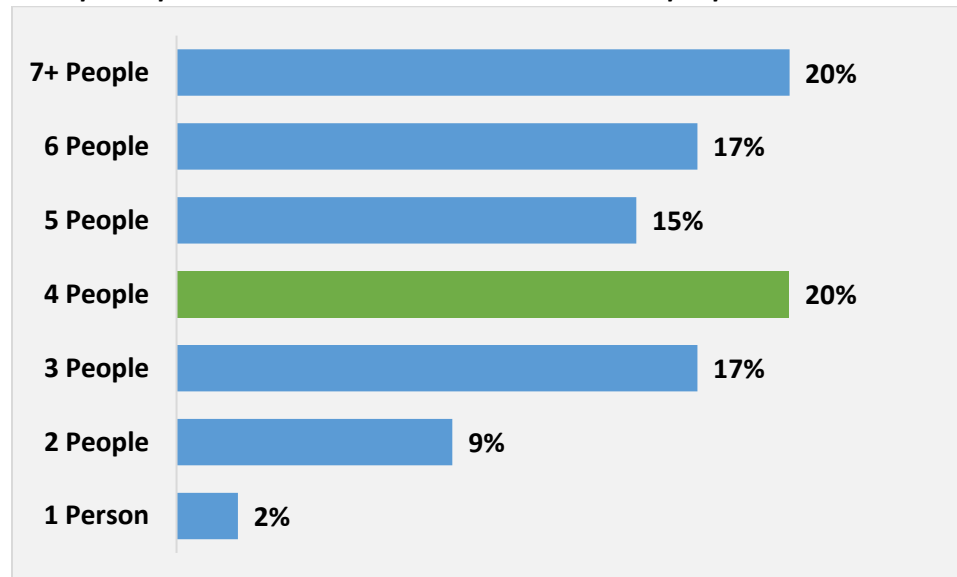
Survey Questions:

- 1.) How many people live in your household?
- 2.) What are the age groups in your household?
- 3.) How many are employed in your household?
- 4.) Is there any adult who does not speak English? (language spoken at home)
- 5.) What is your race and that of members of your household?
- 6.) What is your ethnicity and that of members of your household?
- 7.) Does your household own or rent this residence?

*Survey question 7 is in reference to whether participants own or rent their *mobile home*. Residents rent and make payments for the land their mobile home occupies and may own or rent the mobile home that sits on the rented land.

Graph 2. Number of People in Household (N=150)

Most participants lived in a household with 4 or more people



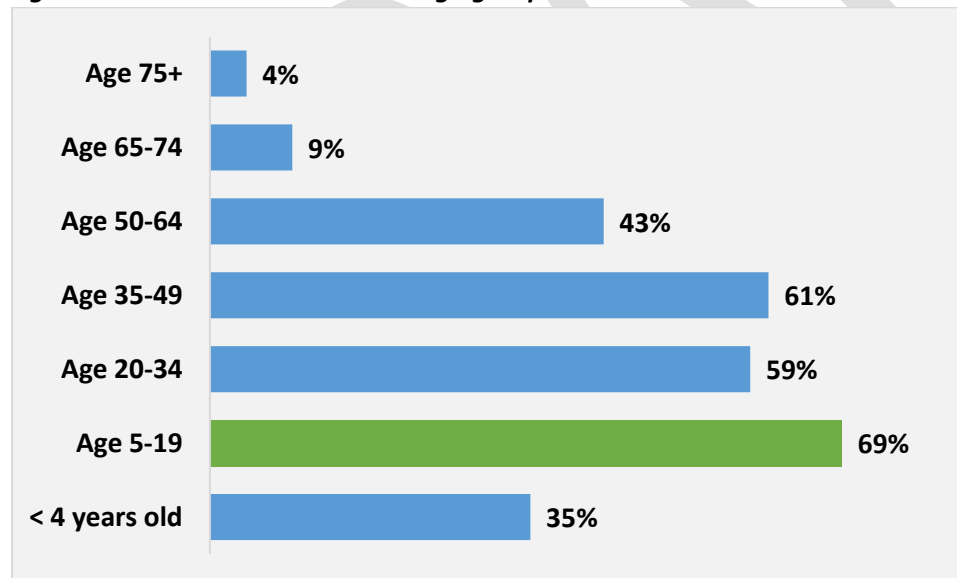
Graph 2.

Survey question 1:

How many people live in your household?

Graph 3. Age Range of Household Members (N=150)

Ages 5-19 was the most common age group in households



Graph 3.

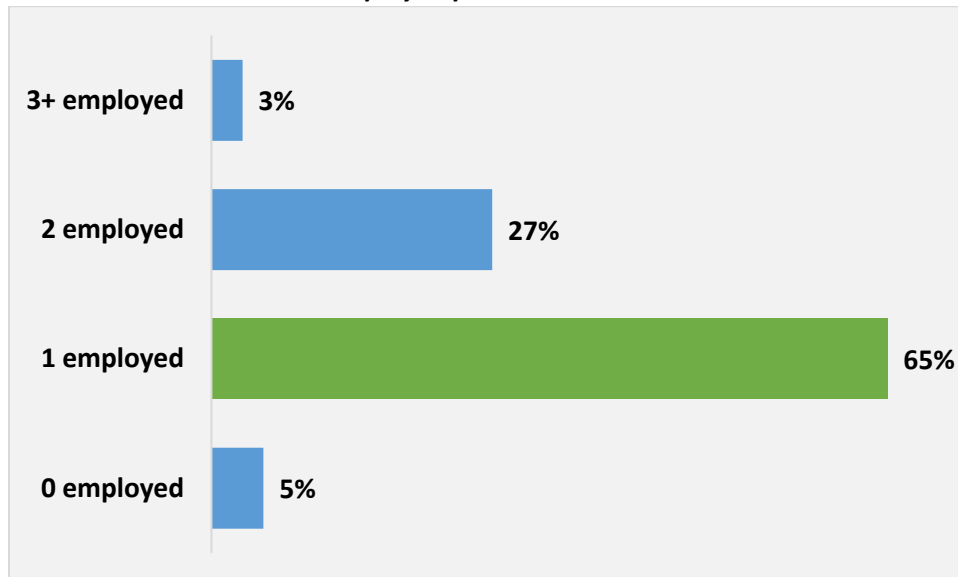
Survey question 2:

How many people in your household between the ages of:

*150 respondents answered for every individual in the household with responses adding to 419 people total; percentages add to more than 100%.

Graph 4. Employment Status of Household (N=150)

Most households had one employed person



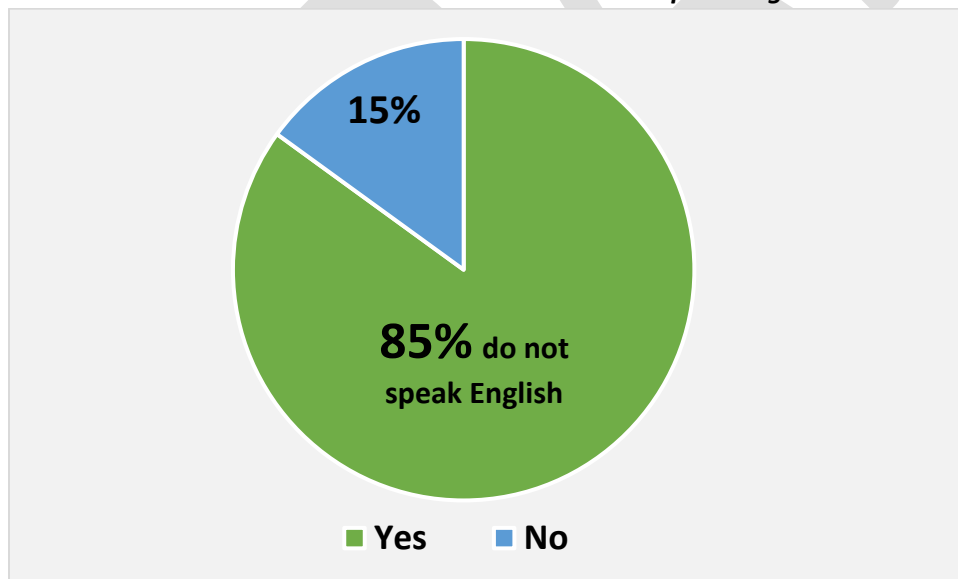
Graph 4.

Survey question 3:

How many people are employed in your household?

Graph 5. Household Language (N=150)

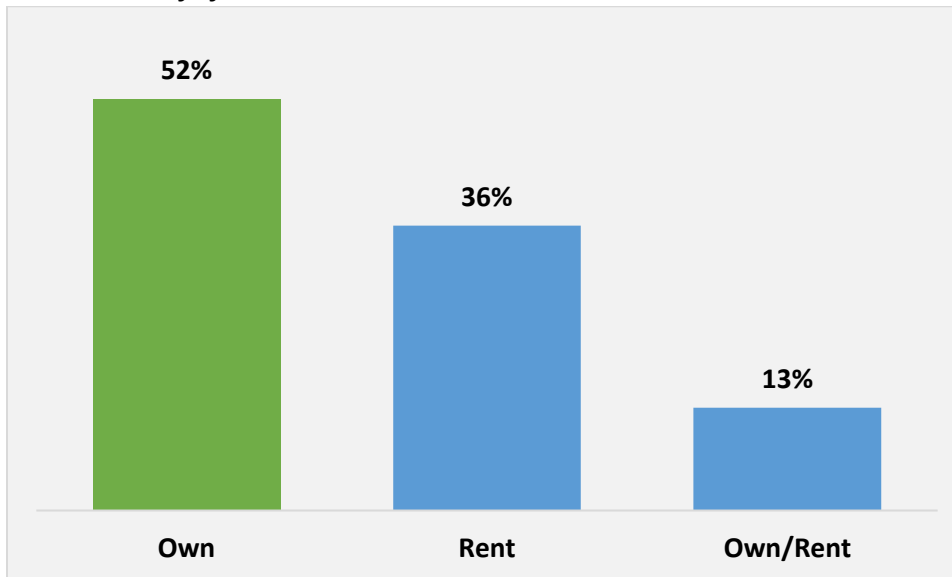
Most households had at least one adult who did NOT speak English



Graph 5.

Survey question 4:

Is there any adult who does not speak English? (language spoken at home)

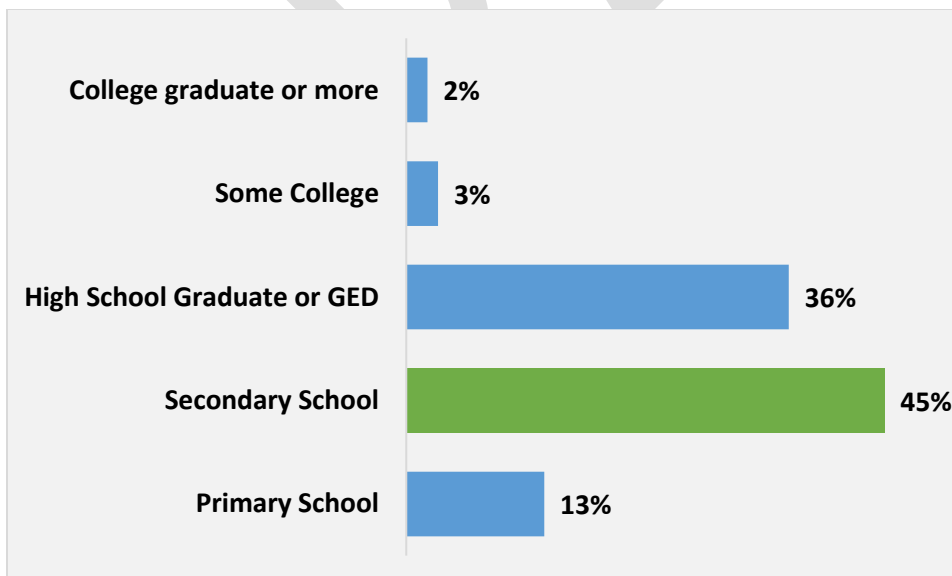
Graph 6. Household Property (N=149)**More than half of households own their mobile home**

*Excludes 1 person who refused to answer

Graph 6.

Survey question 7:

Does your household own or rent this residence?

Graph 7. Household Education (N=149)**Most households selected "secondary school" as the highest level of education achieved by a household member**

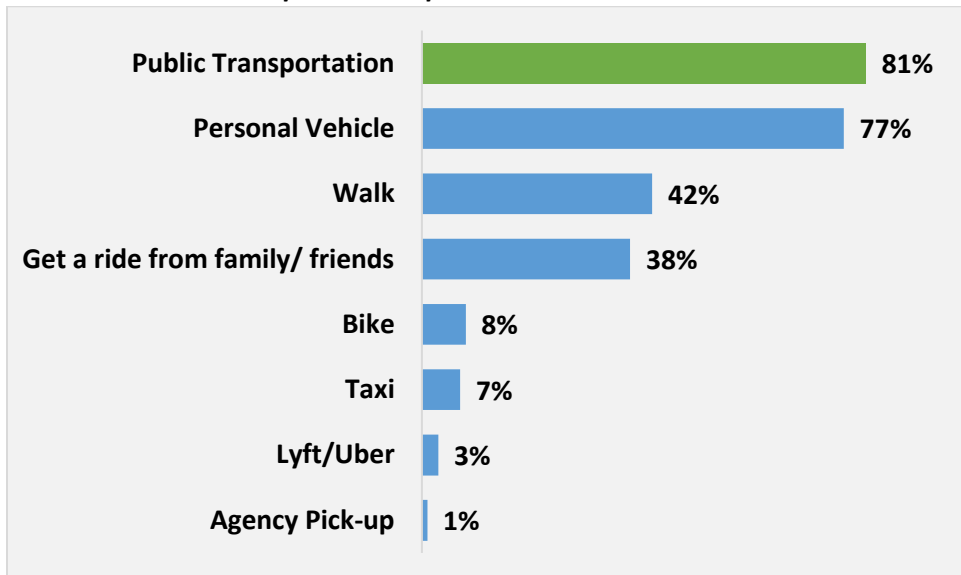
*Excludes one participant who left the response blank.

Graph 7.

Survey question 8:

What is the highest level of education achieved by a member of your household?

Graph 8. Household Transportation (N=149)
Most households used public transportation



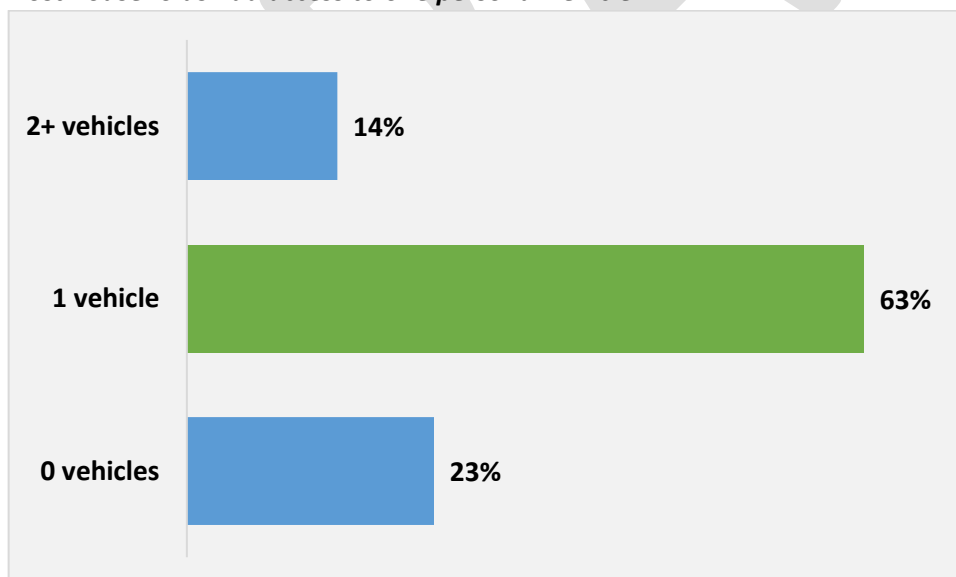
Graph 8.

Survey question 9:

What is the household's primary means of transportation?

*Excludes 1 participant who refused to answer. Survey respondents were able to choose more than one option. 384 responses were recorded for 150 participants; percentages add to more than 100%.

Graph 9. Vehicle Access (N=150)
Most households had access to one personal vehicle



Graph 9.

Survey question 10:

If personal vehicle was selected, how many vehicles does the household have the ability to use?

Repeat Participants from July

This section includes participants who took the survey both in July and October (N=91).

Heat Perception

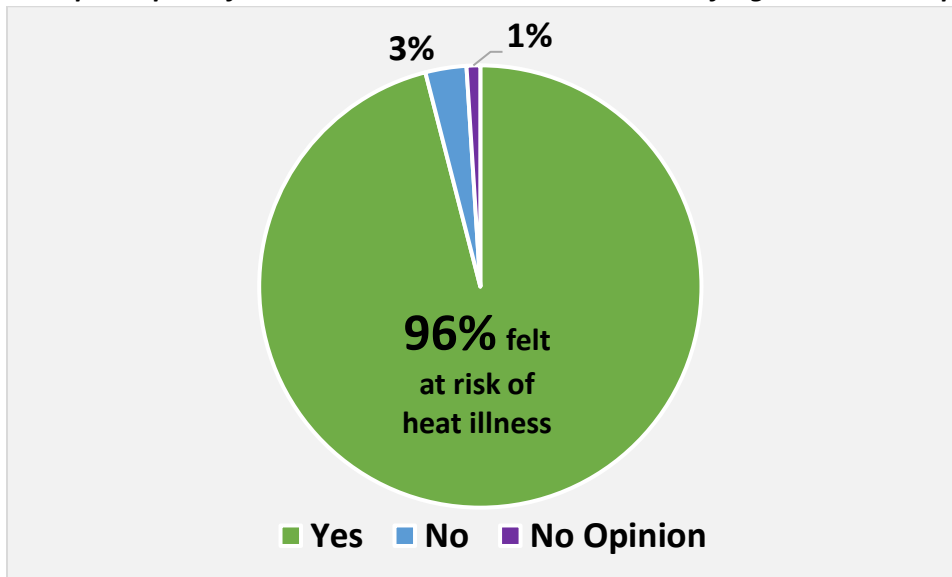


The participants were questioned if they felt they were at risk of heat-related illnesses and most respondents answered “yes” (96%). Only 3% believed that they were not at risk of any heat-related illnesses.

Of the households, 25% stated that their homes were always too hot while others stated that their homes were too hot most of the time (35%) or sometimes, but not often (37%). Seventy-eight percent stated that they felt too hot inside their home in a temperature range of 80-99 degrees Fahrenheit. Others responded that they felt hot inside their homes at temperatures of 100 degrees Fahrenheit or hotter (14%).

Graph 1A. Heat Risk (N=90)

Most participants felt that their health is at risk because of high summer temperatures

**Graph 1A.**

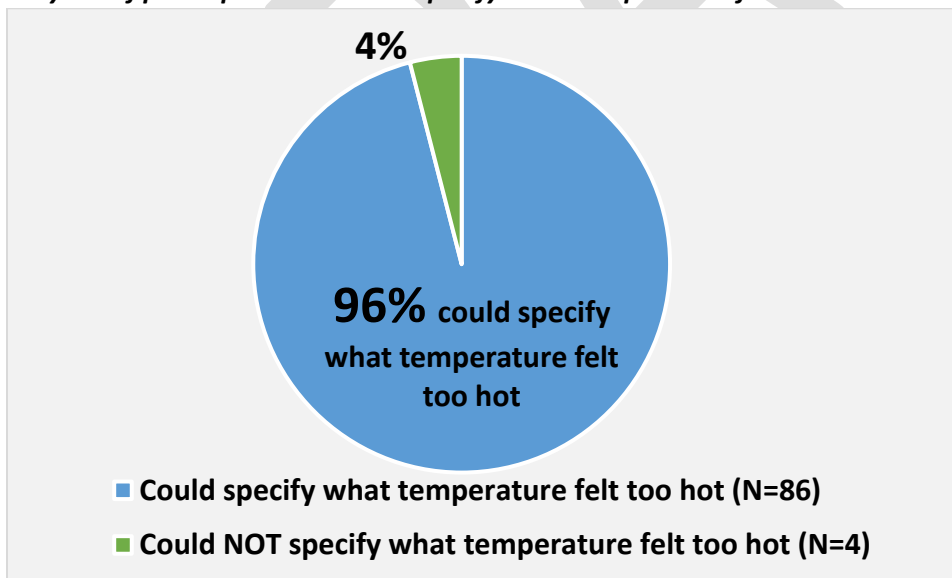
Survey question 18:

Do you feel that your health is at risk because of high summer temperatures?

*Excludes one respondent who did not answer.

Graph 2A. Heat Perception (N=90)

Only 4% of participants could not specify what temperature felt too hot inside their home

**Graph 2A.**

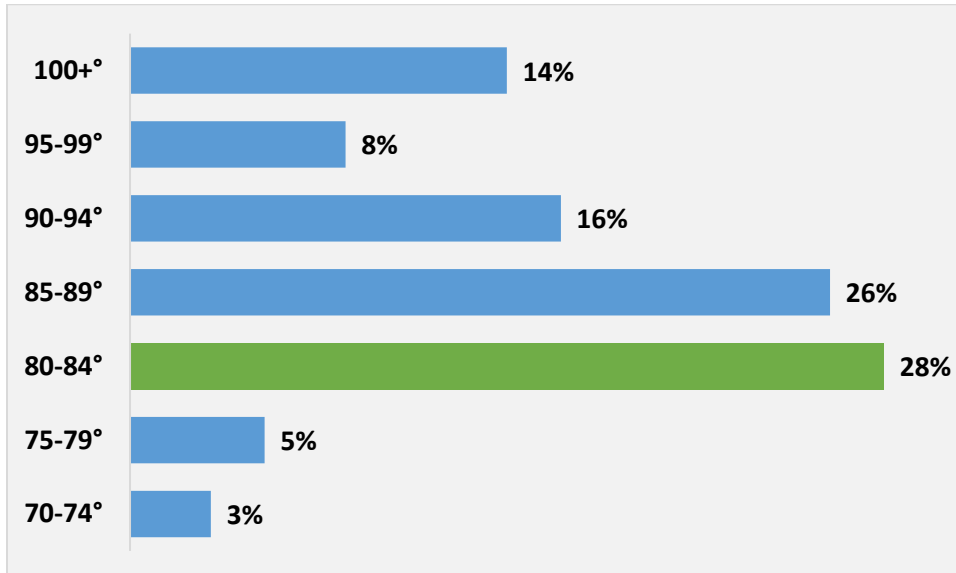
Survey question 19:

At what temperature do you start to feel too hot inside your home?

*Excludes one respondent who did not answer.

Graph 3A. Heat Perception Temperatures in Degrees Fahrenheit (N=86)

Most participants felt too hot inside their home at temperatures of 80°F and above

**Graph 3A.**

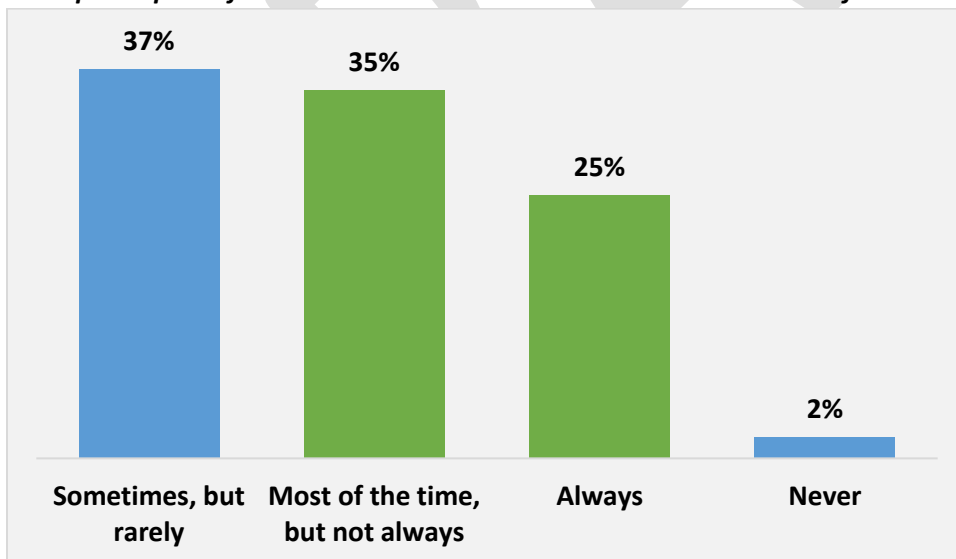
Survey question 19:
(Continued)

At what temperature do you start to feel too hot inside your home?

*Excludes one participant who did not respond and 4 who were not sure what temperature felt too hot in their home.

Graph 4A. Heat Perception in the Home (N=91)

Most participants felt too hot inside their home sometimes or most of the time

**Graph 4A.**

Survey question 20:

Did you or members of your household ever feel too hot inside your home during this summer?

Knowledge of Heat and Illness

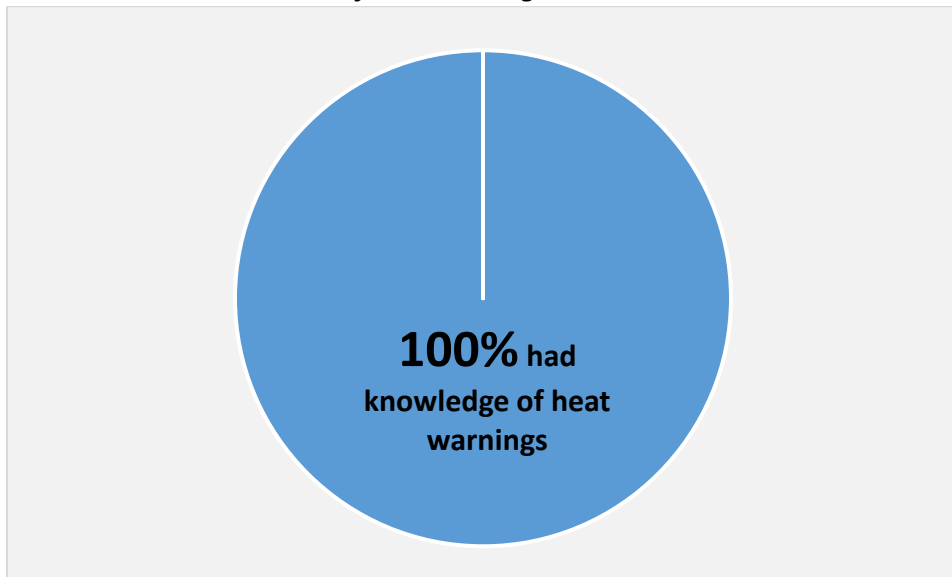


All the respondents were aware of heat warnings (100%). Many of the participants learned of heat waves through television (91%) and radio broadcasts (56%), as well as through word of mouth from neighbors and friends. Some also learned of heat waves through faith-based buildings (including churches, mosques, temples, or any other religious building). Others heard them through text messages, social media, and Internet access.

When asked to name health problems one could get from exposure to heat, headaches, changes in blood pressure, dizziness, and breathing issues were the most common responses. More than half of the participants involved in the survey knew that headaches are a symptom of exposure to heat (55%), while 33% knew that dizziness is a symptom and 31% knew that blood pressure changes are a symptom. Respondents also noted breathing issues as a possible symptom (22%), as well as dehydration (20%).

The participants were asked if they had ever experienced any illnesses caused by heat, and **78% surveyed reported experiencing a heat-related illness.** Only 21% reported not having experienced a heat-related illness. One household was unsure if they had ever experienced a heat-related illness.

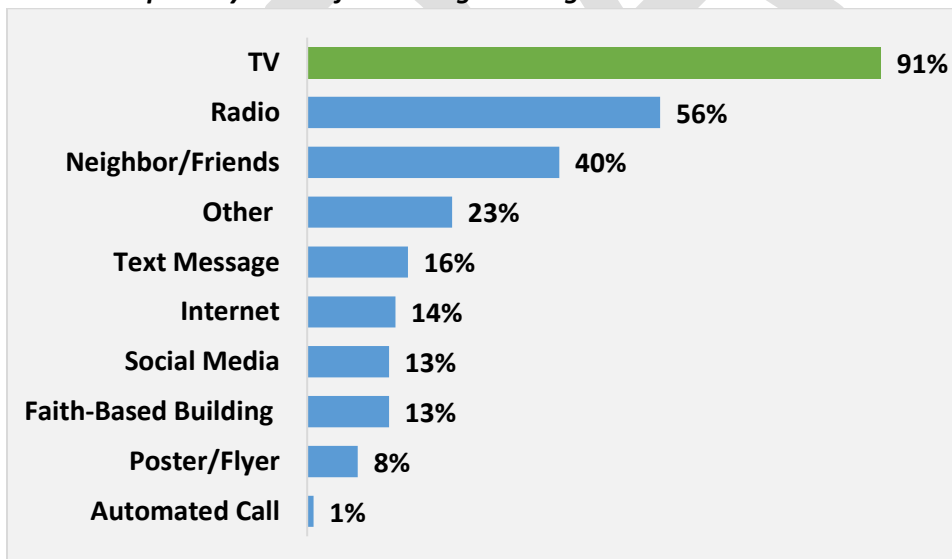
The respondents were asked what they did after they experienced symptoms, and **90% stated that they stayed home and took no action,** while 13% went to the emergency room or doctor's office, 4% called 911 for assistance, and 4% were admitted to a hospital. Unfortunately, one death was reported by the community. When asked why they decided to stay home and take no action as opposed to get help, **67% responded that they did not have health insurance.** Others stated that they did not have a doctor (42%), or their symptoms improved, and they felt better (42%).

Graph 5A. Heat Warnings (N=90)**All households were aware of heat warnings****Graph 5A.**

Survey question 11:

Do you or other members of your household remember hearing weather warnings about excessive heat this summer?

*Excludes one respondent who did not answer the question.

Graph 6A. Sources of Heat Warnings (N=90)**TV was the primary source for hearing warnings about excessive heat****Graph 6A.**

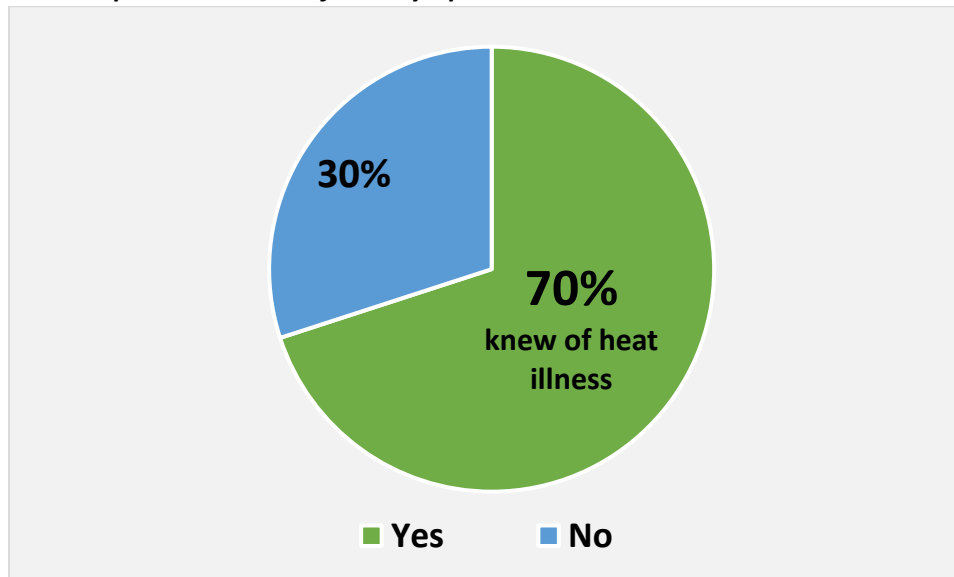
Survey question 12:

If you remember hearing weather warnings, what was your primary source of information?

*Excludes one respondent who did not answer. 248 responses were recorded from 90 participants who checked multiple forms of heat warnings; percentages add to more than 100%.

Graph 7A. Knowledge of Heat Illness (N=91)

Most respondents knew of heat symptoms



Graph 7A.

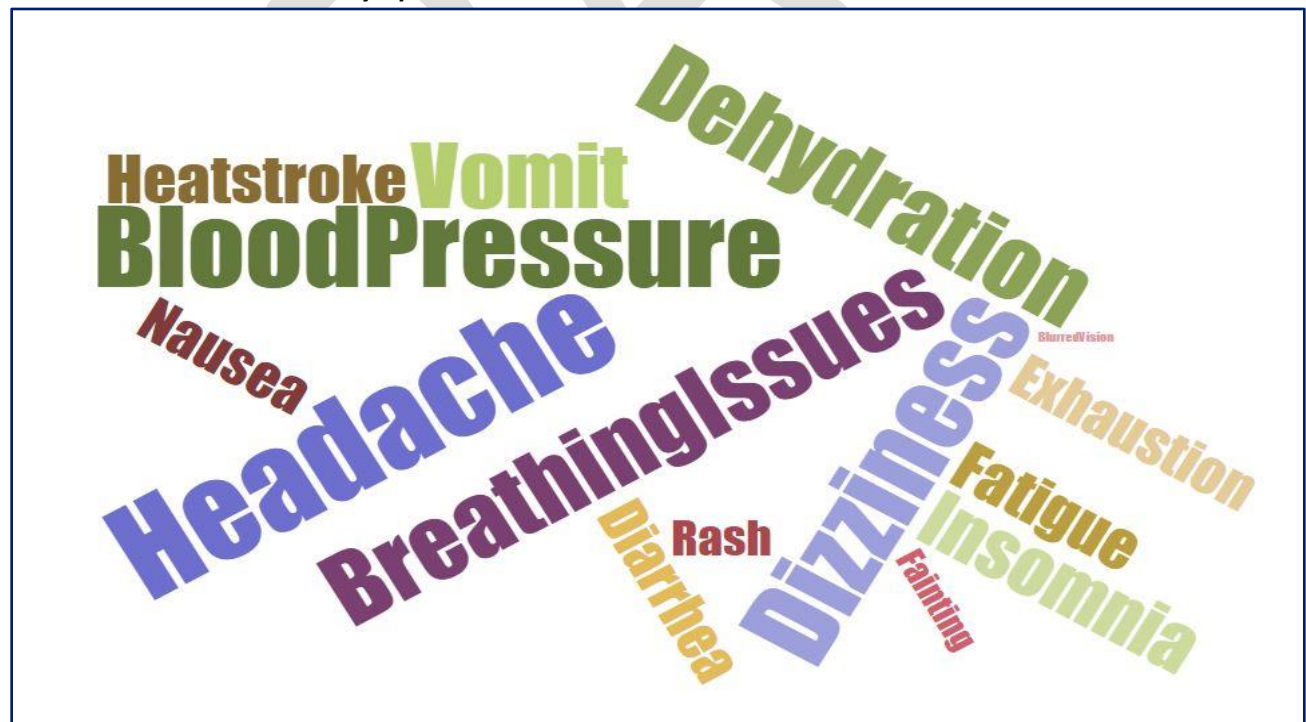
Survey question 13:

Can you tell me any health problems you or your household can get from exposure to heat?

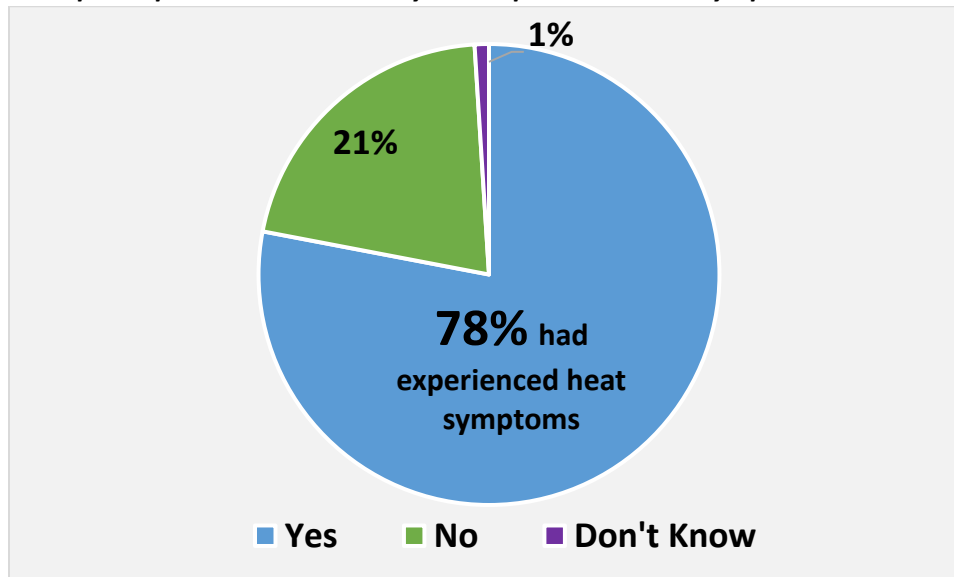
Figure 1A (Question 14). Health Problems Associated with Heat (N=64)

Q14: Please specify what health problems a household member can get from exposure to heat:

Headache was the common symptom listed

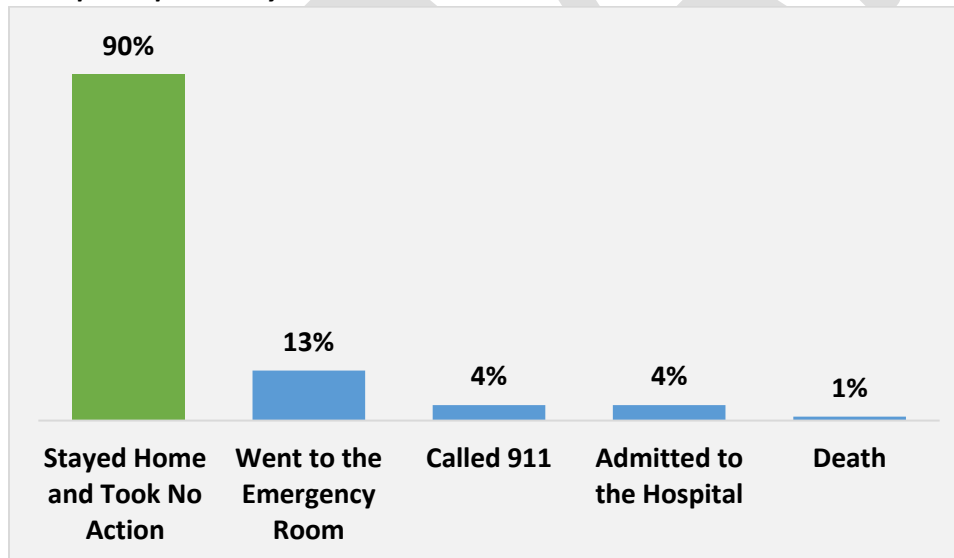


*Excludes 27 of the 30% of respondents who answered “no” to question 13 or who were not familiar with heat symptoms and left the response blank.

Graph 8A. Experience of Heat Symptoms (N=91)**Most participants stated that they had experienced heat symptoms****Graph 8A.**

Survey question 15:

Have you or a household member had symptoms this summer related to heat or high temperatures such as leg cramps, dry mouth, dizziness, fatigue, rapid heartbeat, or hallucinations?

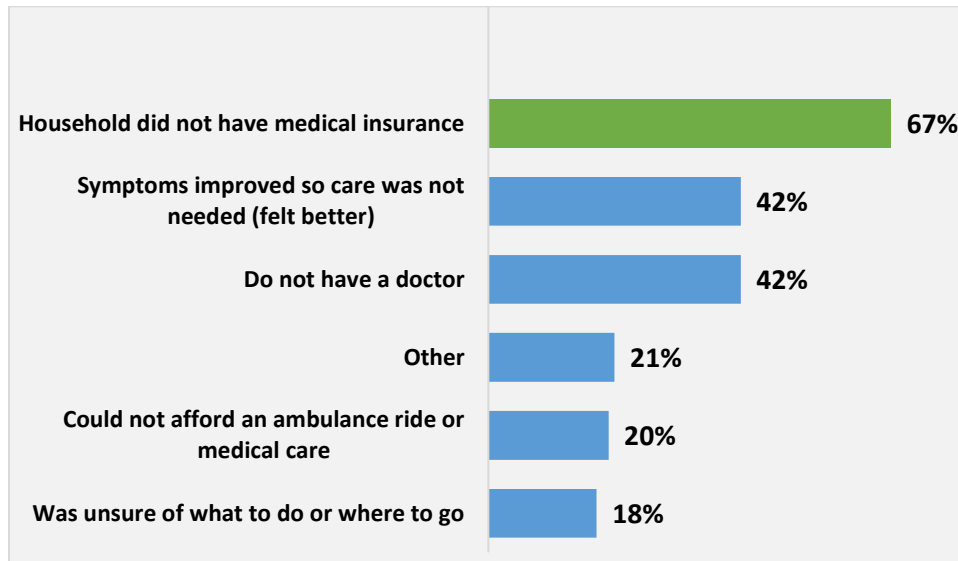
Graph 9A. Outcome of Illness (N=72)**Most participants stayed home and took no action****Graph 9A.**

Survey question 16:

What was the outcome of this heat-related illness?

*Excludes 19 respondents who did not answer "yes" to question 15 above or who did not answer the question. A total of 81 responses were recorded from 72 participants who were able to choose more than one answer; percentages will not add to 100%.

Graph 10A. Reason for Staying Home (N=66)
Most households did not have health insurance



Graph 10A.

Survey question 17:

If you stayed home and did nothing, what was the reason?

*Excludes 25 respondents who did not answer “stayed home and did nothing” to question 16 or who did not respond. 147 responses were recorded from 66 participants; percentages add to more than 100%. Those who checked “other” stated that they hydrate, take cold baths or showers, take part in home care, look for information on the internet, and wait to talk to a doctor when going for a checkup. Other stated that they did not have a legal ID, feared getting sick, or stated that medical care was too expensive.

Coping Mechanisms

Coping mechanisms include home cooling systems as well as ways people avoid the heat, such as leaving home to cool off.

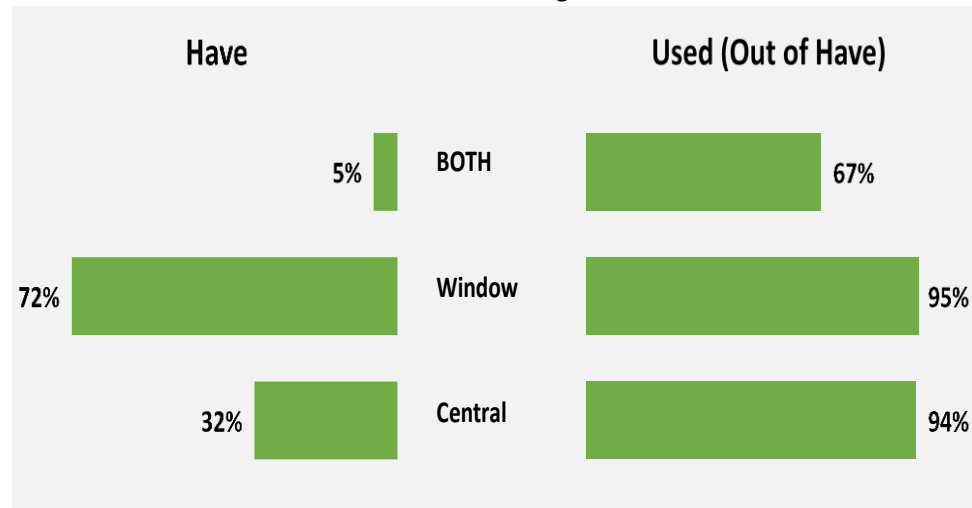
Due to discrepancies in home cooling system responses, 57 surveys were counted for questions 21, 22, and 24 (see [Appendix VI](#) and [VII](#)). **Almost three-quarters (72%) of the population surveyed stated that they own window air-conditioners and 95% of those worked in their home. Only 32% stated that they had central A/C in their home, and 83% of those central air-conditioners worked in their home.** Of the 57 participants, 5% of participants stated that they used no air-conditioners and only used supplemental units such as fans, misters, and trees or plants. It is important to note that here in Maricopa County, where there is extreme heat, that these three types of cooling systems are not sufficient by themselves, and often need to be supplemented with at least one of the other types of cooling systems. Fans do not provide cooling in extreme heat without also using cool water, mist, or ice cubes to cool the air, and therefore should be paired with misters or other cooling units if available.

Most households responded that they use their cooling system both all day and all night (84%), while 5% reported use in the afternoon or evening only, 8% reported use during the evening only, and 4% reported use in the afternoon only. This means that 17% of respondents limited the times of day they used their cooling units.

The community members who participated in the study were asked if they leave their home to go to an air-conditioned place to cool down. **One-quarter (25%) of the participants stated that they did not leave home to get to a place with A/C,** however, 74% of participants responded that they do leave home to get to a place with A/C. Participants were then asked where they are more likely to go to cool off when they leave home, and most households reported going to the supermarket (65%) and/or the mall (47%), or visiting a friend or neighbor (60%).

Community members were asked about their method of transportation to leave home to get to an air-conditioned place. Many of the households, (76%), used a personal vehicle to get to their preferred air-conditioned destination. Other households reported walking (51%), using public transportation (49%), or getting a ride from a friend (38%).

Graph 11A. Cooling Systems Have in Home vs Used in Home (N= 57)
Most households use window air-conditioning



Graph 11A.

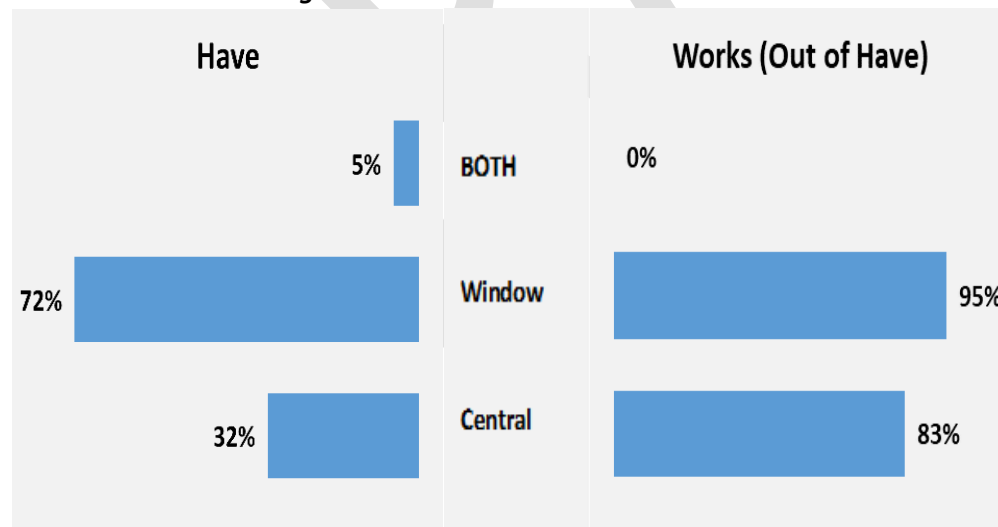
This figure combines questions

21: Which of the following does your household **have**?

22: Which of the following was **used** to cool your house this summer?

*It is important to note that there were many discrepancies in the data collected for air conditioners and their working conditions. For instance, many stated that central A/C worked in their home, but they did not have it or use it. The data was cleaned of these discrepancies, and we were left with 57 participants out of 91 repeat participants. This graph shows each air-conditioning unit that households have (62 responses) vs use in the house (58 responses). The participants use central A/C, window A/C, or both. Multiple responses were recorded per 57 participants; percentages add to more than 100%.

Graph 12A. Cooling Systems Have in Home and Its Working Condition (N=57)
Window air-conditioning works best



Graph 12A.

This figure combines questions

21: Which of the following does your household **have**?

24: Which cooling system **works** in your home?

*It is important to note that out of 91 repeat participants, 57 participants' responses were counted due to discrepancies in their responses. This graph shows each air-conditioning unit that people have in their home (62 responses) vs what worked in their home (54 responses). The participants use central A/C, window A/C or both. Multiple responses were recorded per 57 participants; percentages add to more than 100%.

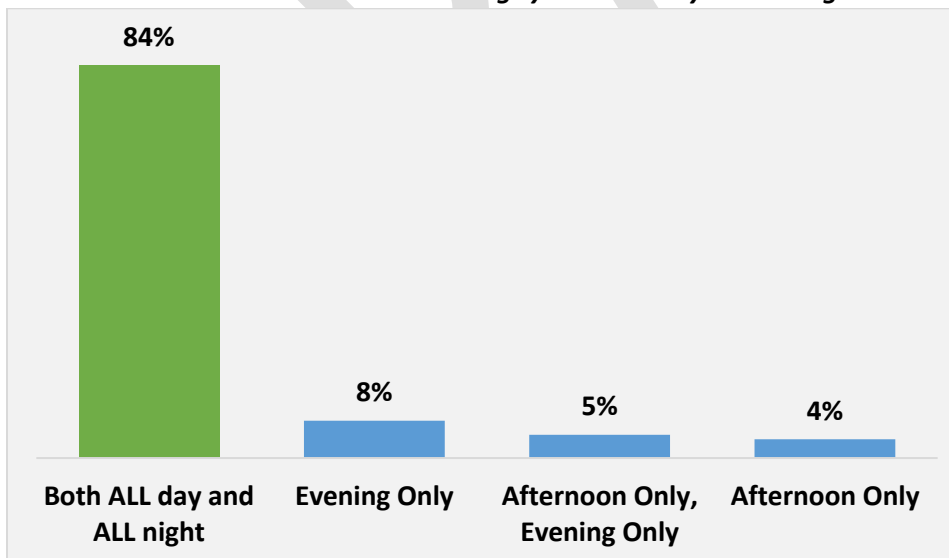
Table 1A. Cooling Systems in Home and Its Working Condition (N=57)

Unit	Have		Used (Out of Have)		Works (Out of Have)	
	Count	%	Count	%	Count	%
Central A/C	18	32%	17	94%	15	83%
Window A/C	41	72%	39	95%	39	95%
BOTH Central and Window A/C	3	5%	2	67%	0	0%
Fans	36	63%	35	97%	16	44%
Swamp	5	9%	3	60%	3	60%
Misters	1	2%	0	0%	0	0%
Trees or Plants	17	30%	11	65%	0	0%
Other	0	0%	0	0%	0	0%
N=	57					

*Due to receiving responses that did not make sense, the data was cleaned and retallied out of 57 participants who responded correctly. This table shows the responses for survey questions 21, 22, and 24. This shows the number and percentages of people who claimed to have the home cooling units listed above. The data were then tallied what was used and what worked out of what they had at home.

Graph 13A. Cooling System Use Throughout the Day (N=85)

Most households used their home cooling systems all day and all night

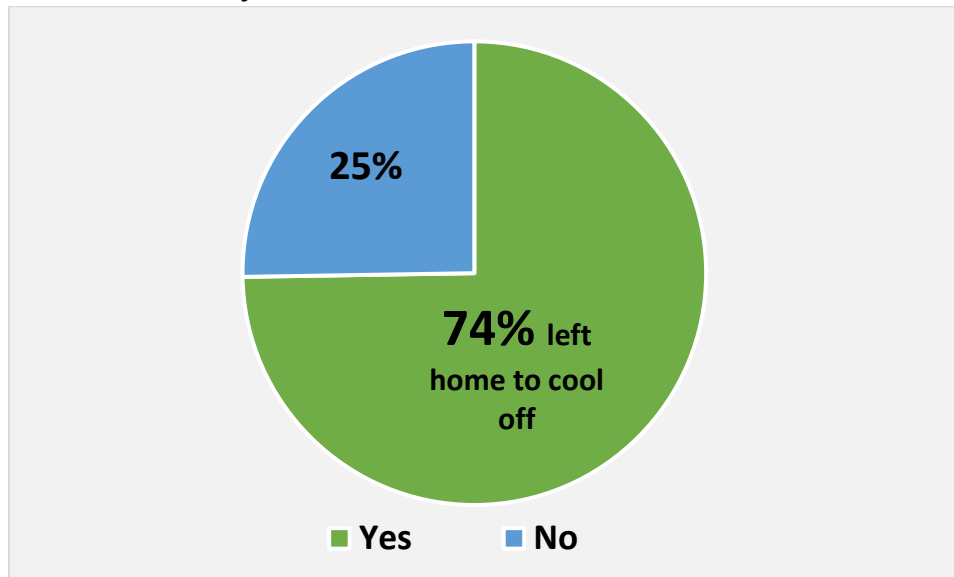
**Graph 13A.**

Survey question 23:

If your household used central air-conditioning/ window air-conditioning this summer, when did you use it?

*Excludes 6 participants who did not use Window or Central Air Conditioners.

Graph 14A. Leaving the House for Cool Air (N=91)
Most households left their house to cool down

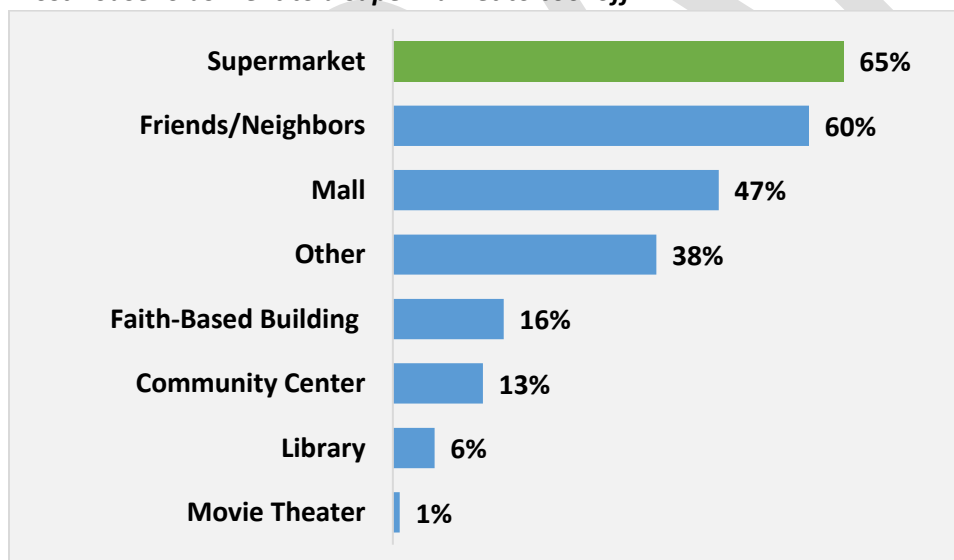


Graph 14A.

Survey question 31:

When the weather is very hot, do you or members of your household ever leave your home and go to an air-conditioned place to cool off?

Graph 15A. Air-Conditioned Places to Cool Off (N=68)
Most households went to a supermarket to cool off



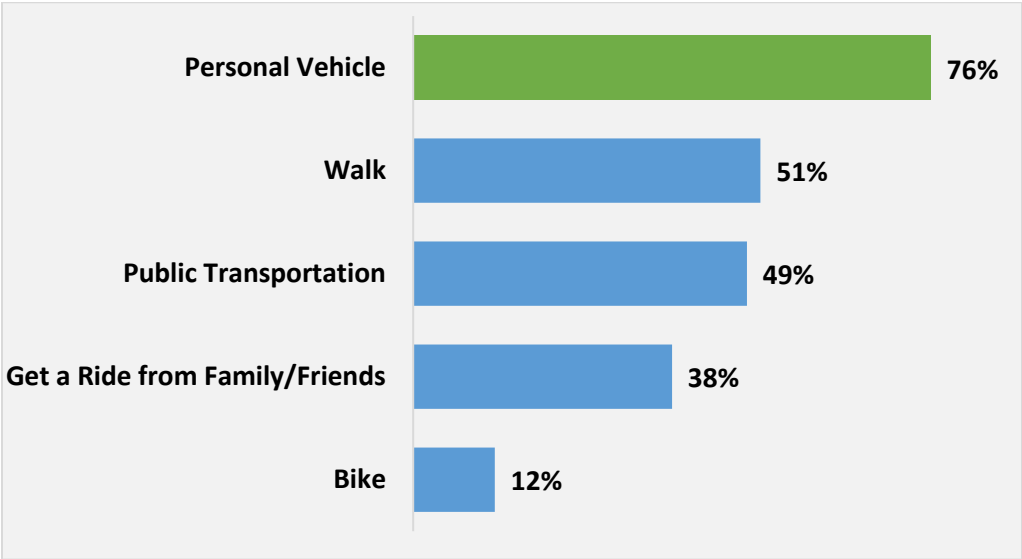
Graph 15A.

Survey question 32:

Where do you or members of your household go to cool off?

*Excludes 23 participants who did not leave their house to get air-conditioning. Includes 168 responses from 68 participants who were able to choose more than one option. Percentages will add to more than 100%. Those that chose "other" mentioned going to Walmart, parks, pools, rivers, work, or the hospital. Others would sit inside their car with A/C or sit under a tree for shade.

Graph 16A. Mode of Transportation to Air-Conditioned Locations (N=68)
Most households used a personal vehicle to get to an air-conditioned place



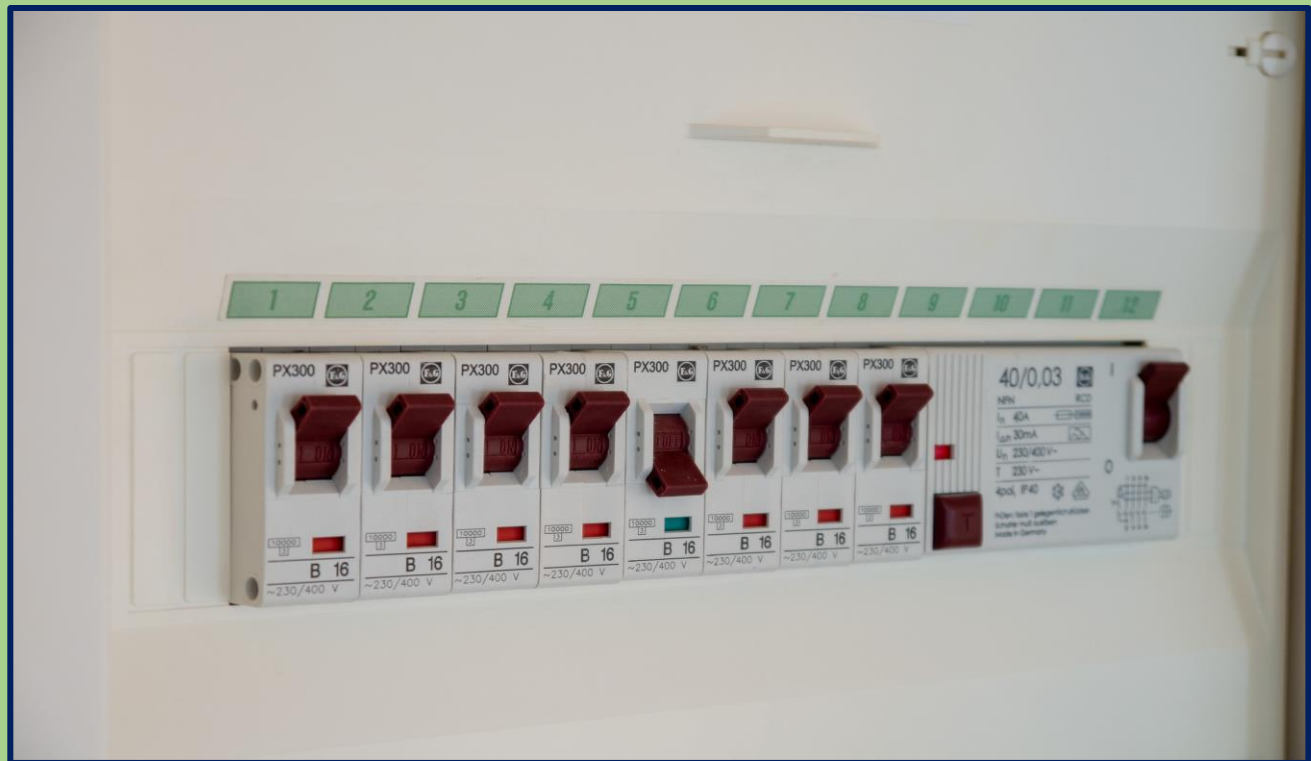
Graph 16A.

Survey question 33:

How does your household normally travel to the air-conditioned place?

*Excludes 23 participants who did not leave their house to get A/C. A total of 154 responses were recorded by 68 participants who were able to choose multiple answers. Percentages add to more than 100%.

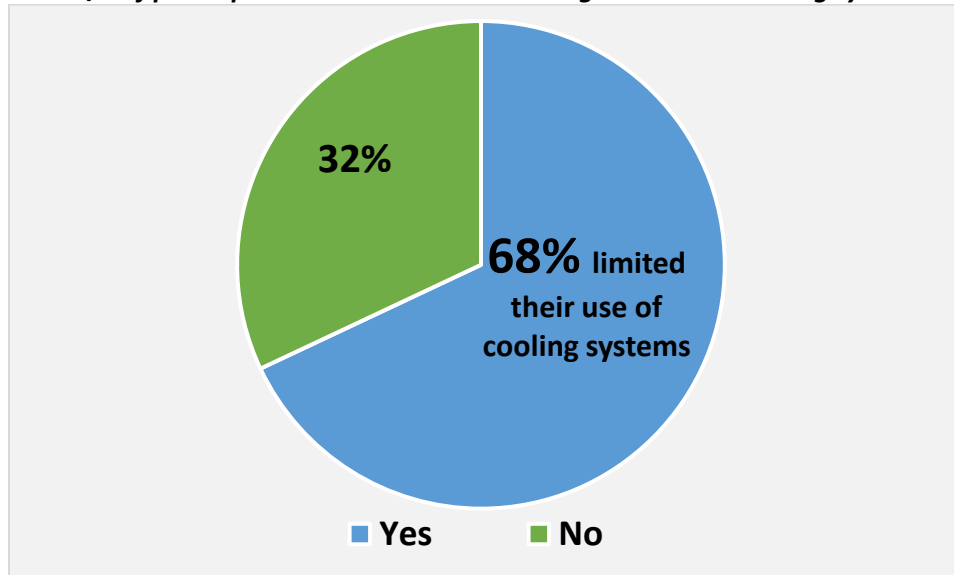
Barriers To Cooling



Although home cooling systems were commonly used among the participants, most reported limitations on their use. **Out of the 91 surveys received, 61 households (68%) said they had limitations to their home cooling.** Of those 61 households, **98% responded that they limited home cooling due to the cost of electricity and 41% responded that they limited use due to the cost of repairs.** Over one-quarter of households (32%) did not have limitations to using their home cooling systems.

Graph 17A. Limitations of Cooling Systems (N=90)

Over 2/3 of participants had limitations to using their home cooling system



*Excludes one participant who did not answer.

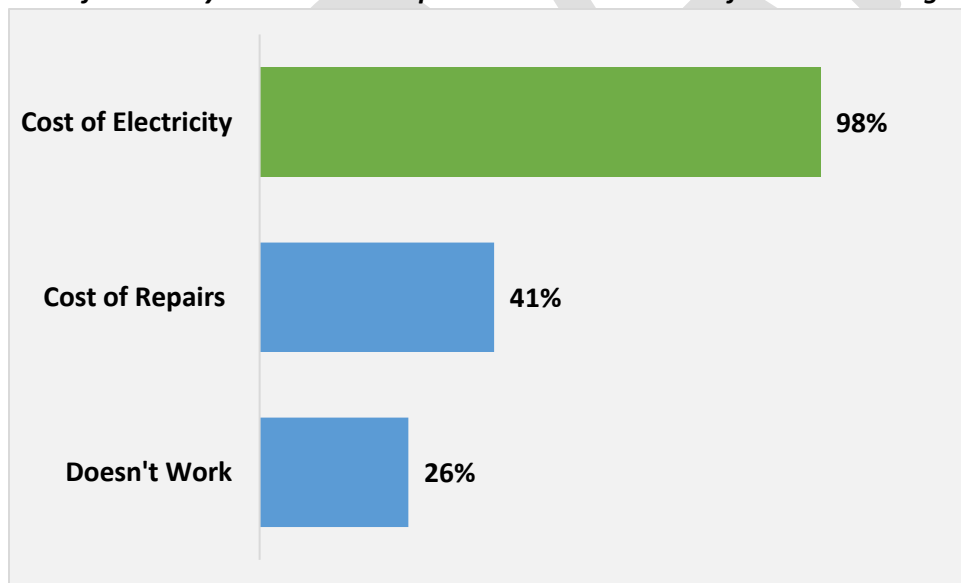
Graph 17A.

Survey question 25:

Does anything limit you from using your cooling system when you are hot?

Graph 18A. Reasons to Limit Home Cooling (N=61)

Cost of electricity was the most reported limitation to use of air-conditioning



*Excludes one participant who did not respond and 29 who did not limit their use of air-conditioning. Includes 101 responses from participants who chose more than one answer; percentages do not add to 100%.

Graph 18A.

Survey question 26:

What limits your household from using your air-conditioning?

Knowledge and Use of Community Resources

Throughout the project, the community members who agreed to participate were given materials listing resources and community programs available to them. This group of participants who repeated the survey had received resources in July about assistance with cost of utilities. Although 10% had not heard of these programs and services, 7% had used the programs and services, and **84% were aware of the services, but had never used them.**

Participants of the study were also given resources to assist with home cooling system repairs. Seventy-nine percent **of respondents had heard of these repair services but had never used them; however, 20% were not aware of the program.** Only 1% had ever used the repair service.

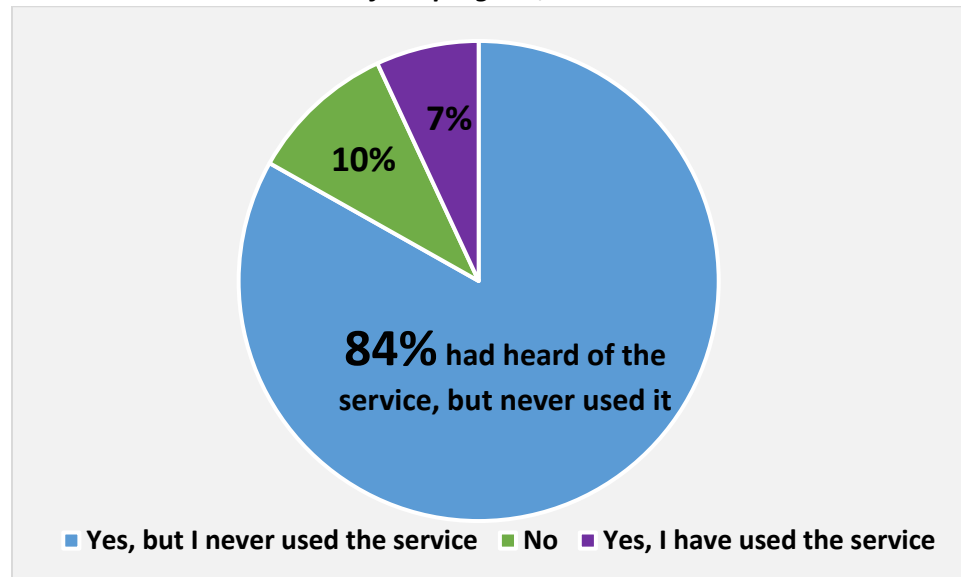
Of those that did not use the services to help with utilities, 29% stated that they assumed they did not qualify for assistance, **28% stated that they did not have the contact information,** 28% said they had no access to a computer, and 26% said it was a complicated process.

Participants were asked if they have ever applied to utility or repair services. Around 13% stated that they have applied to these programs, **however the other 87% of respondents did not apply for utility or repair services.** Of those who did not apply, 37% stated that they assumed they did not qualify, **while 29% were unaware that the services.**

Community households were asked if they were aware of cooling centers around Maricopa County. **A large percentage of households (74%) responded that they were aware of cooling centers around Maricopa County but had never used the services.** Some households (23%) had no knowledge of cooling centers. Only 2% had used a cooling center's services.

Participants were then asked why they hadn't used the cooling center's services and 44% stated that it was too far away, and 44% stated that they feared showing their identification. Another 17% feared being unwelcome. While many knew about cooling centers and had reasons such as distance and feeling unwelcome, **30% were unaware of the services and did not know about cooling centers.**

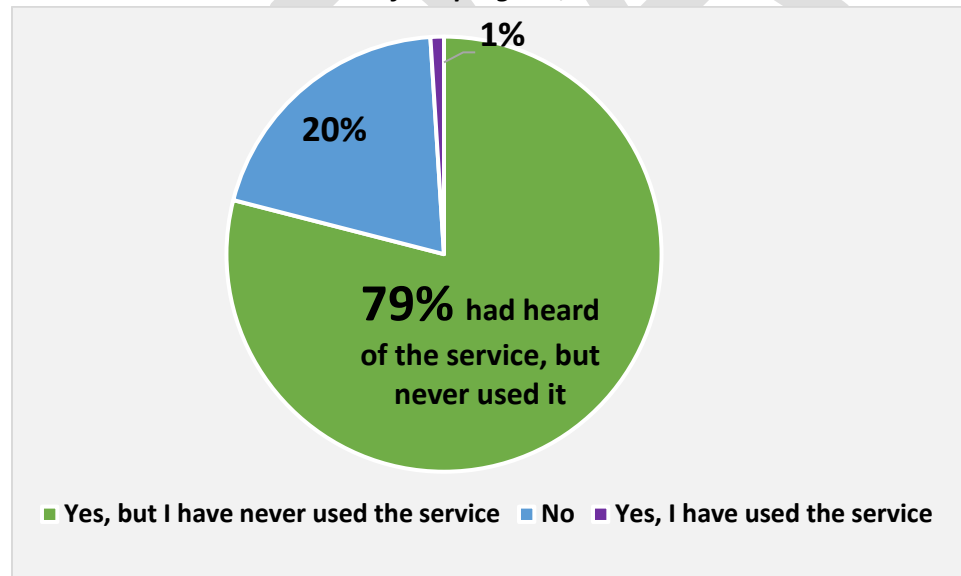
Graph 19A. Knowledge of Programs to Help with Cost of Utility Bills (N=91)
Most households had heard of the program, but had never used it



Graph 19A.

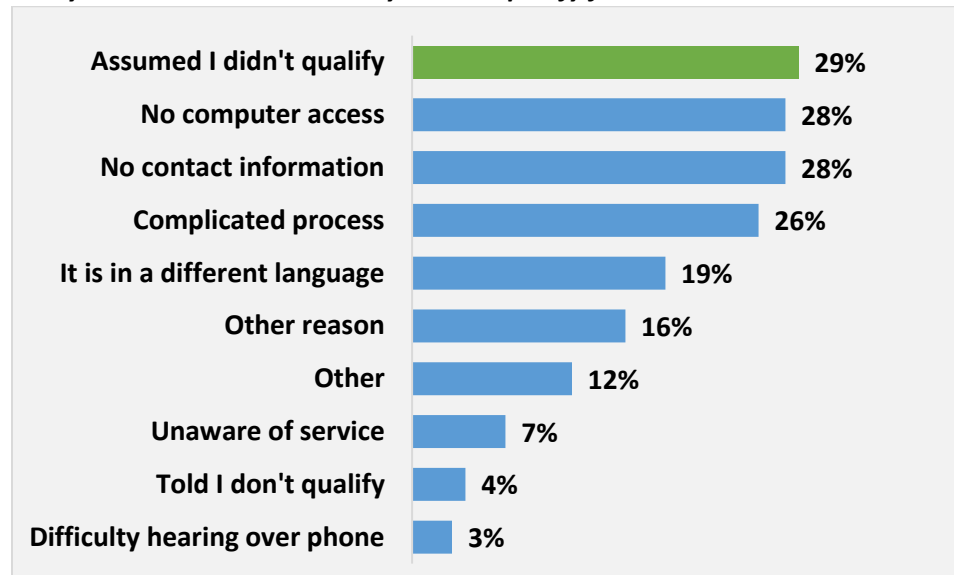
Survey question 27:
Are you aware of community programs or services to help you with the cost of utility bills?

Graph 20A. Knowledge of Cooling System Repair Programs (N=91)
Most households were aware of the program, but had never used it



Graph 20A.

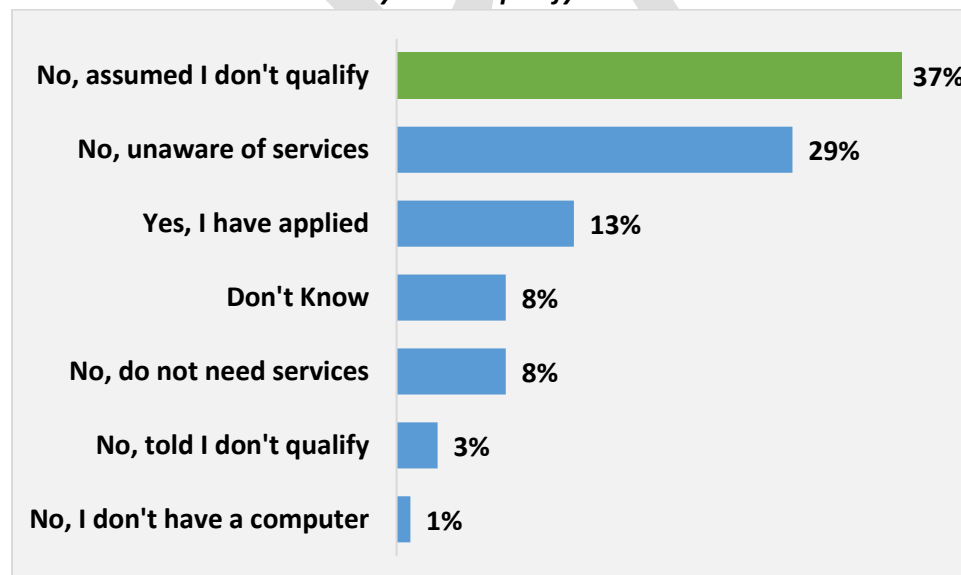
Survey question 28:
Are you aware of community programs or services to help you with home cooling system repairs?

Graph 21A. Reasons for Not Utilizing Services (N=89)**Many households assumed they did not qualify for assistance****Graph 21A.**

Survey question 29:

If you have NOT utilized any community assistance programs or services, please select your reason(s):

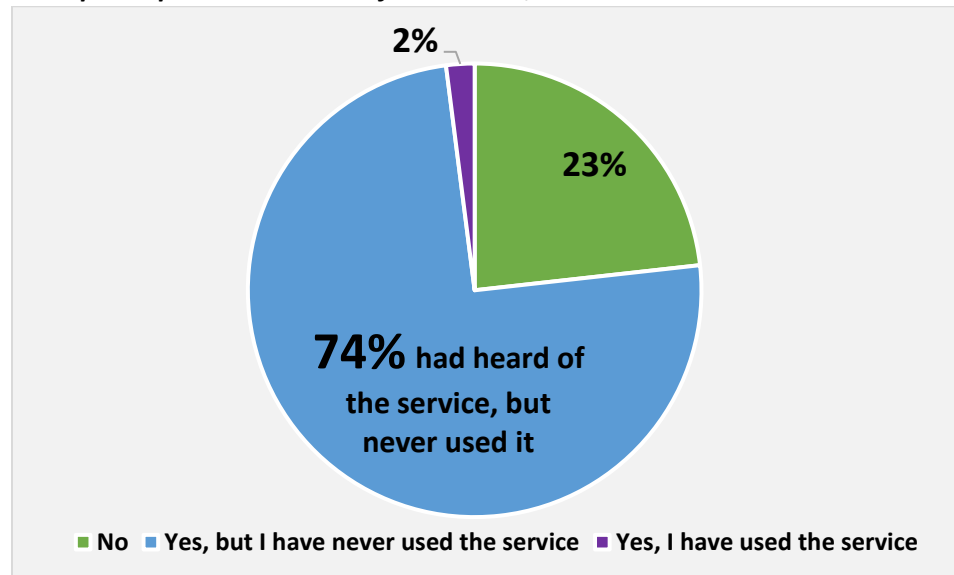
*Excludes 2 participants who had used the services and did not answer. Respondents were able to choose multiple options (89 participants responded with 154 responses); percentages do not add to 100%. Those who selected "other reason" or "other" reported a fear of showing IDs, while others stated there is a lot of paperwork.

Graph 22A. Application to Utility or Repair Services (N=86)**Most households assumed they did not qualify****Graph 22A.**

Survey question 30:

Have you or a member of your household ever applied for these utility assistance programs (cost of utility bills or for cooling system repairs)?

*Excludes 5 participants who did not respond.

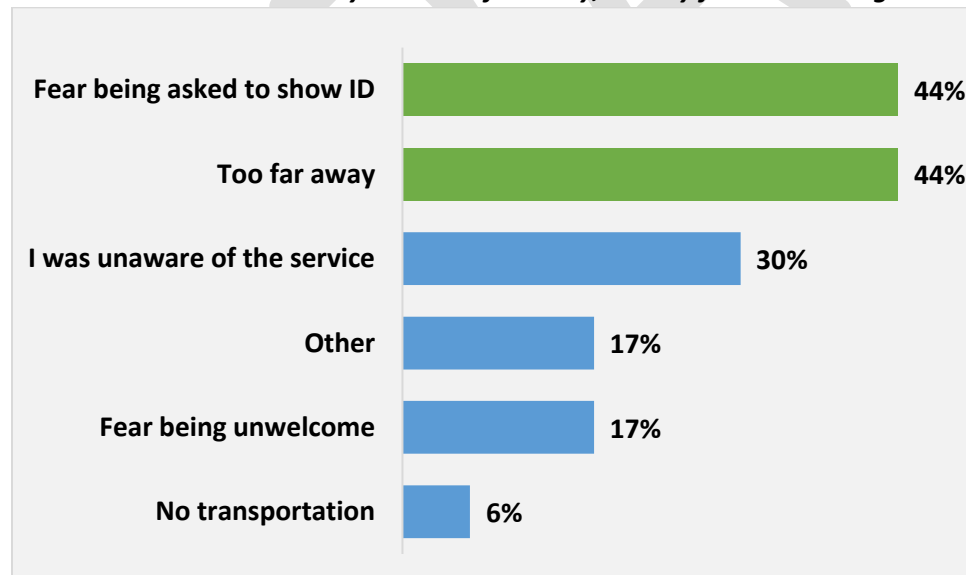
Graph 23A. Knowledge of Cooling Centers (N=90)**Most participants had heard of the service, but never used it**

*Excludes one respondent who did not answer.

Graph 23A.

Survey question 34:

Are you aware of the cooling centers in Maricopa County?

Graph 24A. Reasons for Not Using a Cooling Center (N=87)**Most households stated they were too far away, or they feared showing an ID**

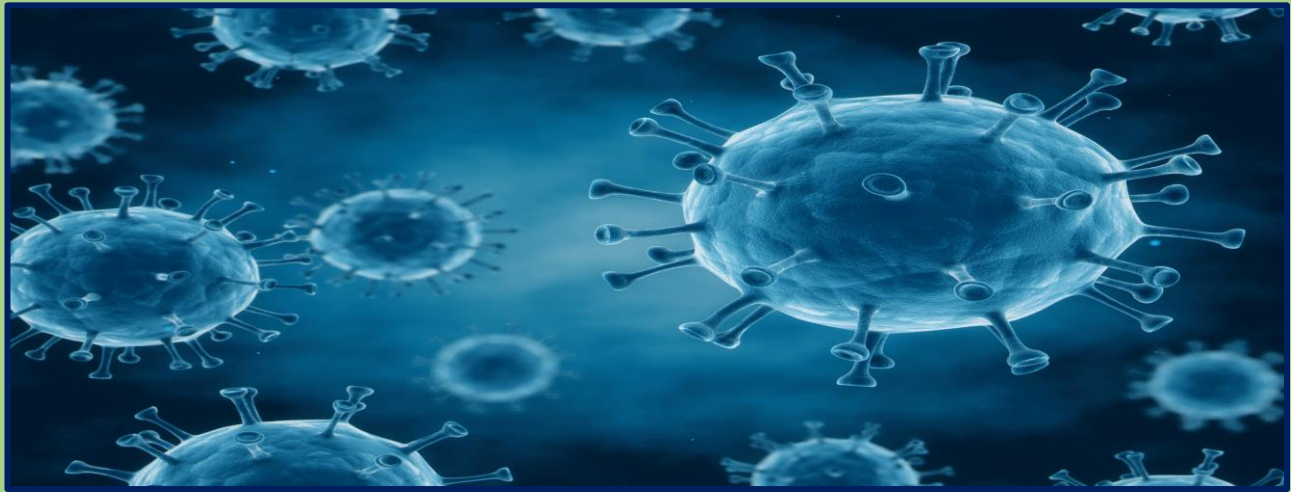
*Excludes 4 participants who did not respond. A total of 137 responses were recorded by 87 participants who were able to choose more than one answer; percentages add to more than 100%. Those who chose “other” reported that they have never seen any or there aren’t any around them. Others stated that they would like to try it when they are open, while some said it was not necessary for them to use it.

Graph 24A.

Survey question 35:

If you are unaware of or have not used a cooling center, why not?

Effects of the COVID-19 Pandemic



Many of the community members interviewed were dealing with the effects of the COVID-19 pandemic. In the majority of households (**71%**), **at least one family member experienced a reduction in job hours** and in **42% of households, at least one household member lost a job**. **Twenty-eight percent of households were unable to pay utilities**, 25% had their phone service cut, **15% were unable to pay their rent or mortgage**, and 13% were unable to provide their families with food and other essentials. Another 20% were unable to help their children with school. Around 30% of households had one or more members diagnosed with COVID-19, and 7% of households reporting that a household member had been hospitalized.

Because of the pandemic, **many participants feared getting sick (74%), felt anxious (66%), felt lonely or isolated (33%) or could not sleep (24%)**. Many participants had other personal effects caused by the pandemic (43%), such as stress, frustration, financial worries, and wishing the pandemic would end.

Participants were asked if they had received any assistance during the pandemic. **Many of the participants who took both surveys (in July and October) stated that they had received food assistance (93%) and supply assistance (69%)**. Others stated that they were given educational materials (43%), or some other form of assistance which mostly consisted of gift cards (60%), \$500 utility checks from CHISPA or Sueños Migrantes (14%) or a stimulus check (2%).

Many participants were given assistance from Salud en Balance (94%), Maricopa County Department of Public Health (MCDPH) (51%), a food bank (20%), schools (17%), or church (16%). Other providers are also listed below in [Figure 4A](#).

Figure 2A. Effect of COVID-19 on Households (N=89)
Most households experienced reduced job hours

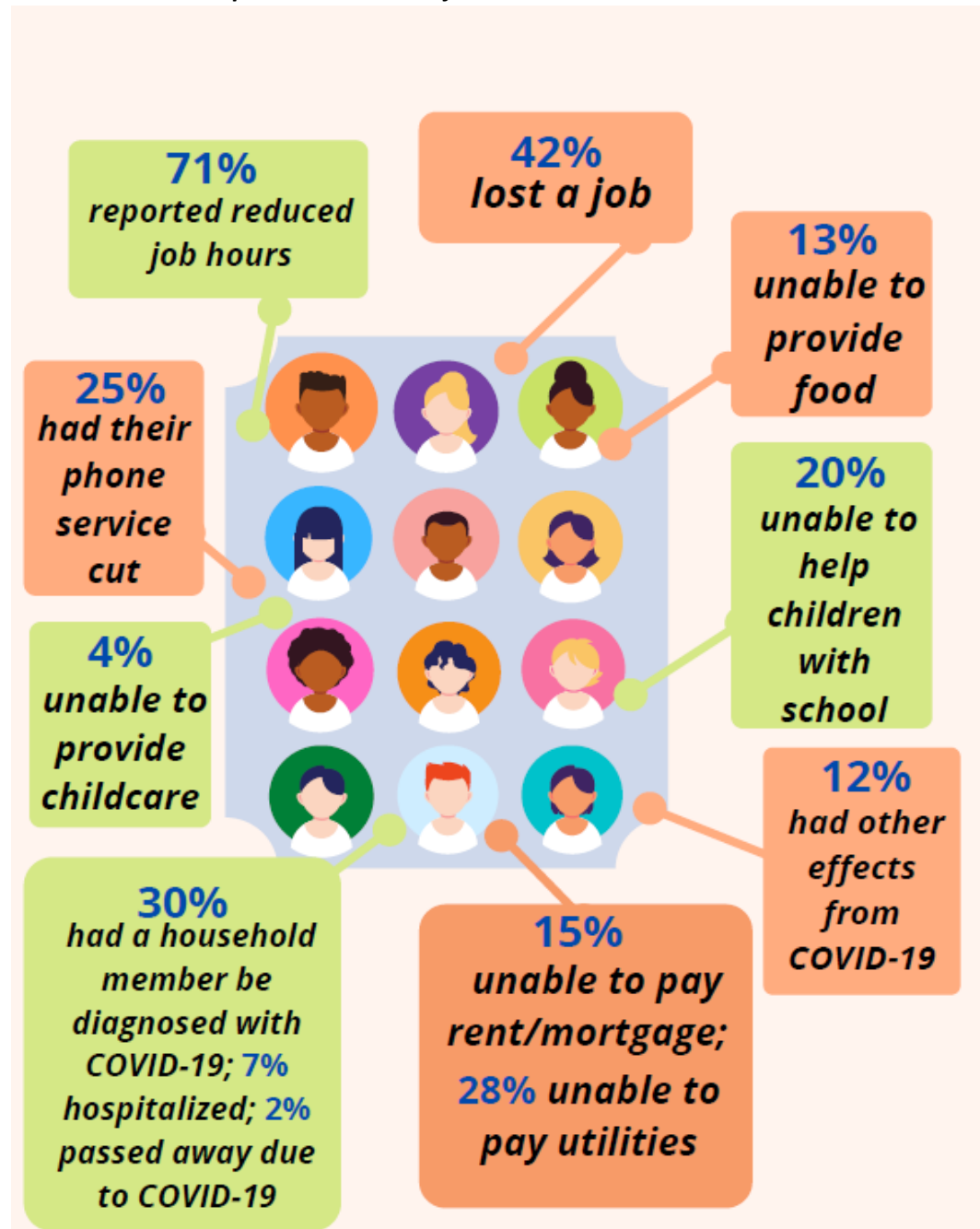


Figure 2A.

Survey question 36:

How is COVID-19 affecting your household's daily life?

* Excludes 2 respondents who did not answer. Includes multiple responses (240) from 89 participants who had more than one effect. Percentages will add to more than 100%.

Figure 3A. Personal Effects of COVID-19 (N=89)
Most respondents feared getting sick

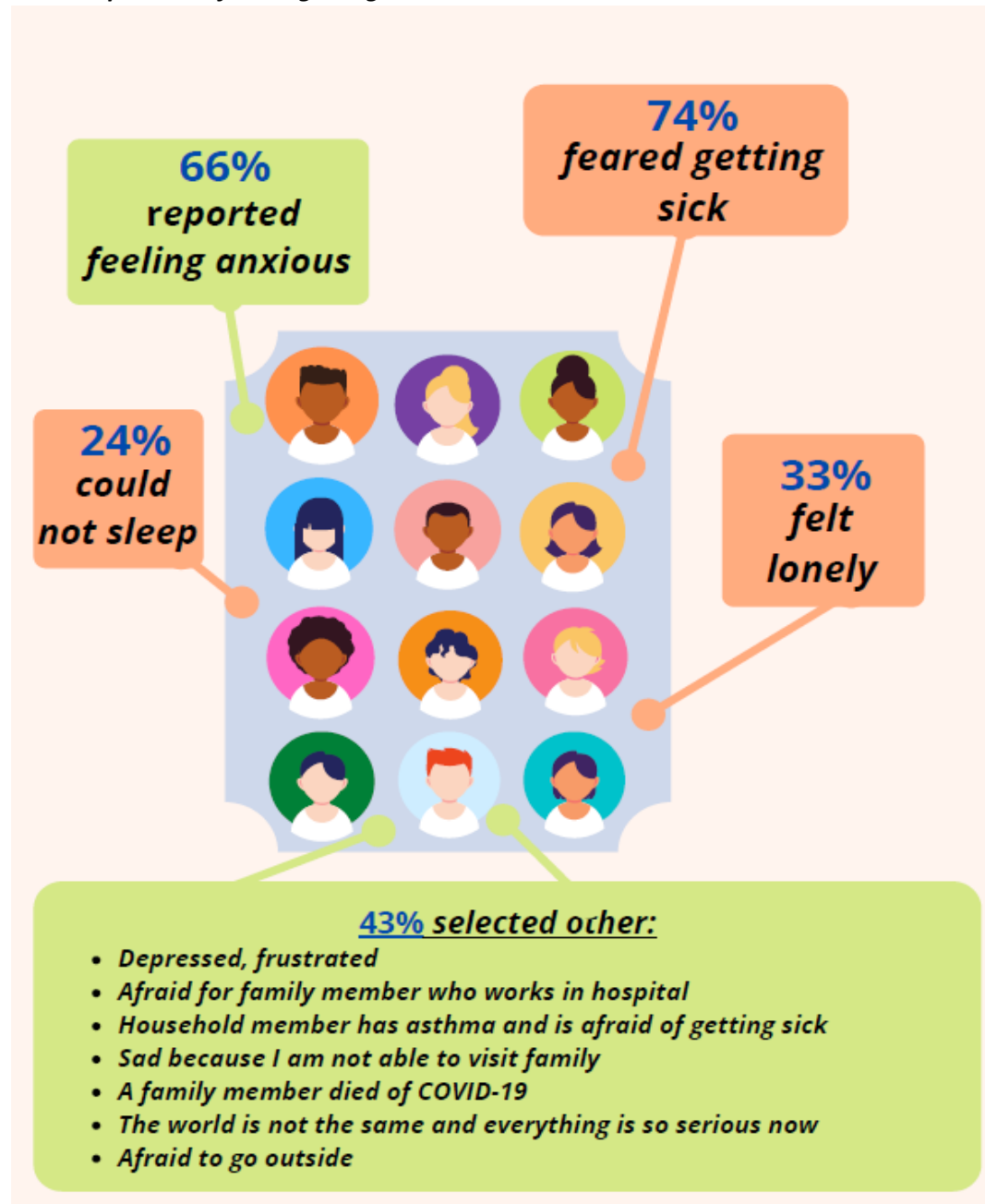
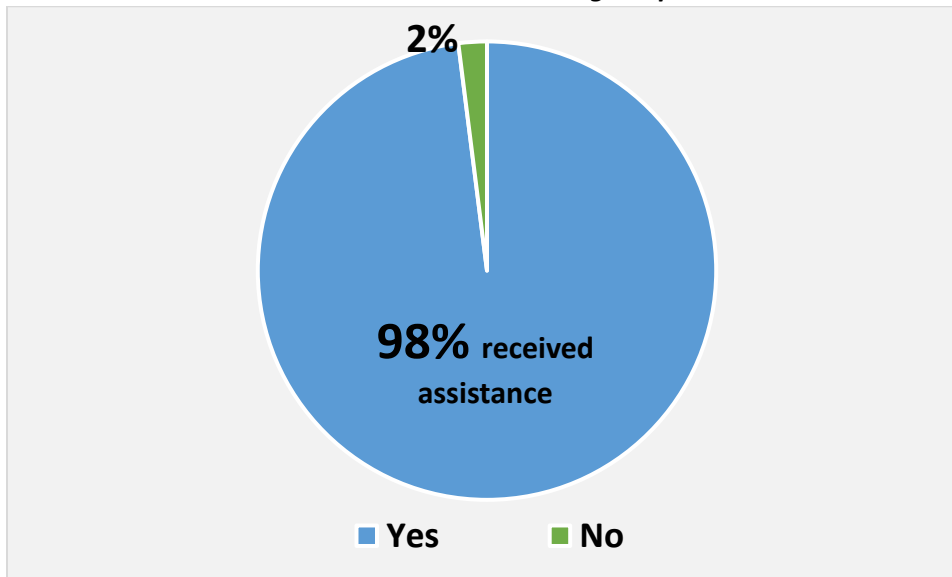


Figure 3A.

Survey question 37:

How is COVID-19 affecting you personally?

*Excludes 2 participants who did not respond. Includes multiple responses (213) from 89 participants who had more than one effect; percentages will not add to 100%.

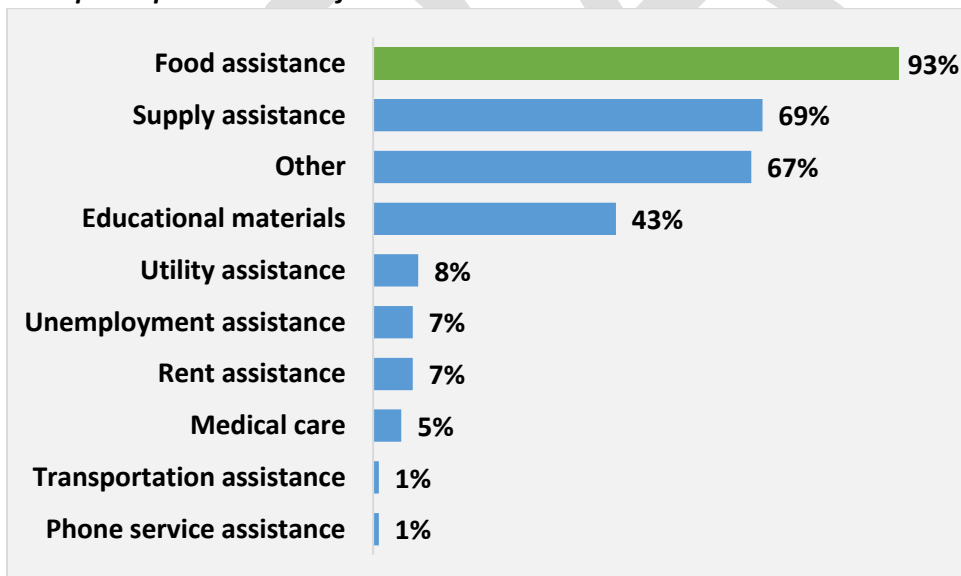
Graph 25A. Assistance During Pandemic (N=89)**Most households have received assistance during the pandemic**

*Excludes 2 respondents who did not answer.

Graph 25A.

Survey question 38:

Has your household received any assistance during the COVID-19 pandemic?

Graph 26A. Types of Assistance During the Pandemic (N=87)**Most participants received food assistance**

*Excludes 4 participants who did not respond. Multiple responses (271) were recorded from 87 participants who received more than one type of assistance during the pandemic; percentages will not add to 100%.

Graph 26A.

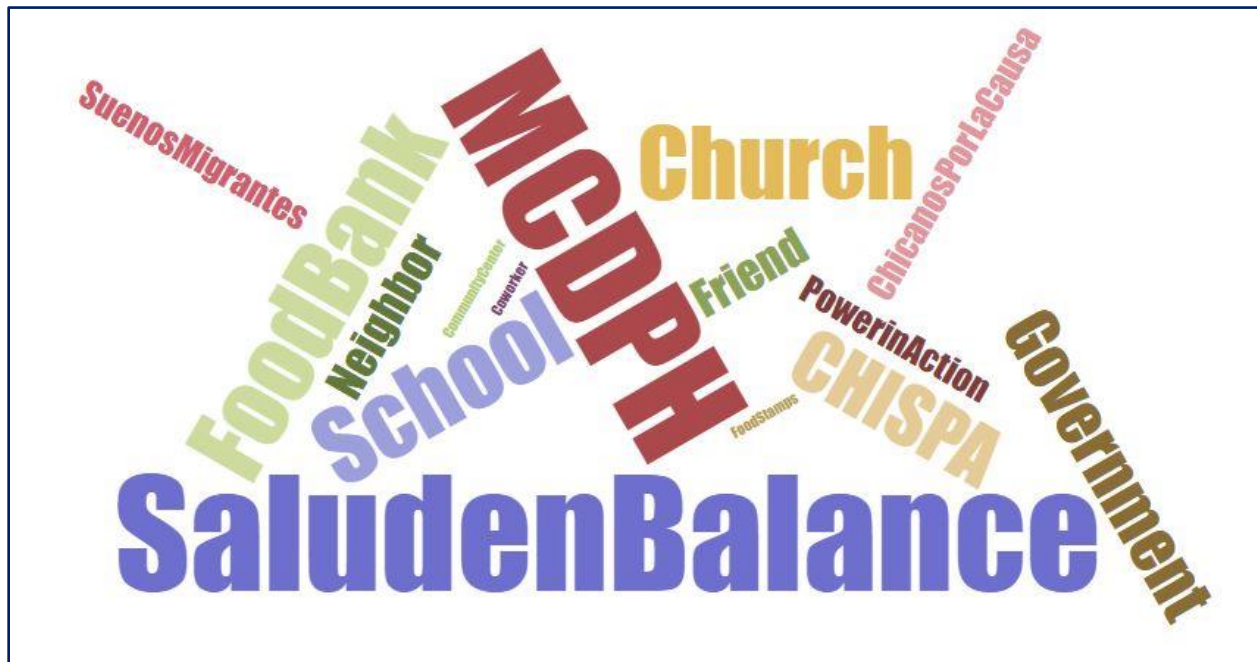
Survey question 39:

What type of assistance did your household receive?

Figure 4A (Question 40). Who Provided Assistance (N=86)

Q40: Who provided the Assistance?

Most households received assistance from Salud en Balance



*Excludes 5 participants who left the section blank or did not receive assistance.

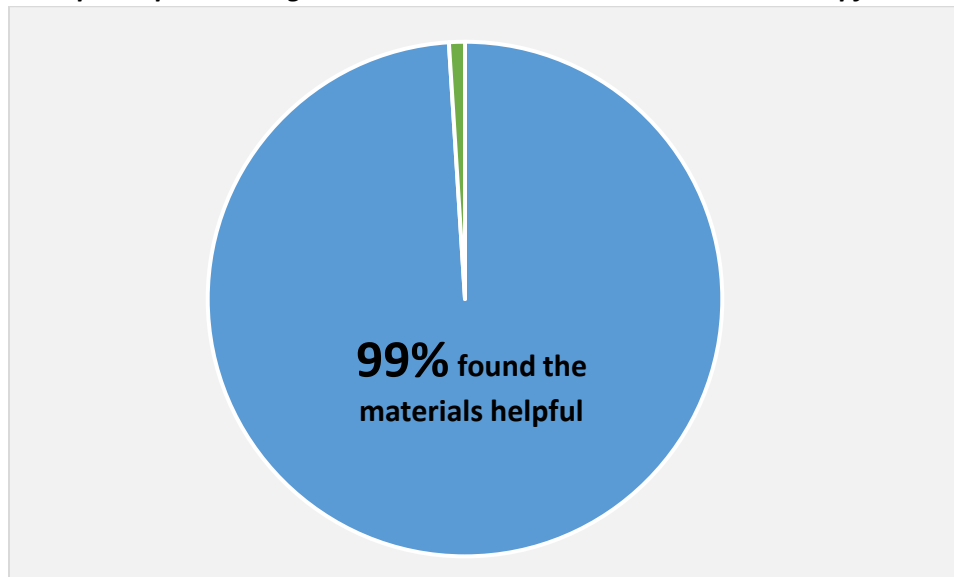
Resources



Survey respondents for this repeat section were given materials in a [Heat Toolkit](#) in July of 2020. They were asked if they had received the materials and if they thought these materials were helpful. Most respondents stated that they found the information to be helpful (99%), while 1 stated that they had not received the materials. They were then asked if they shared the information with others. **Many responded that they shared the information with family members and friends (73%), while 53% shared the information with neighbors.**

Graph 27A. Helpful Materials (N=91)

Most participants thought the materials in the Heat Toolkit were helpful



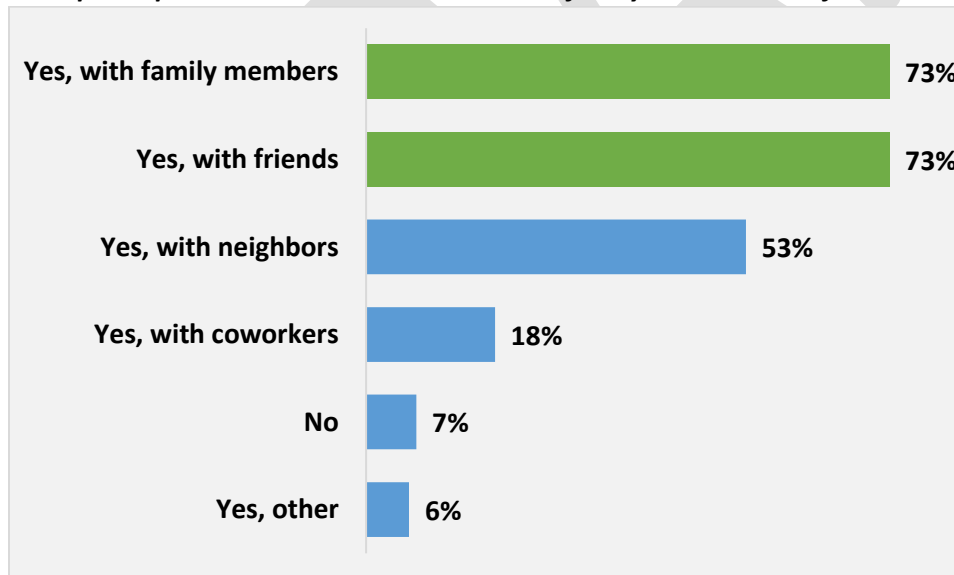
Graph 27A.

Survey question 41:

Maricopa County provided you with materials in July, did you find these materials helpful?

Graph 28A. Shared Materials (N=88)

Most participants shared their materials with family members and friends



Graph 28A.

Survey question 43:

Did you share any of the information or materials provided during this project with other people?

*Excludes 3 respondents who left this section blank.

New Participants for October

This section includes new participants who only took the survey in October (N=59).

Perceptions about Heat

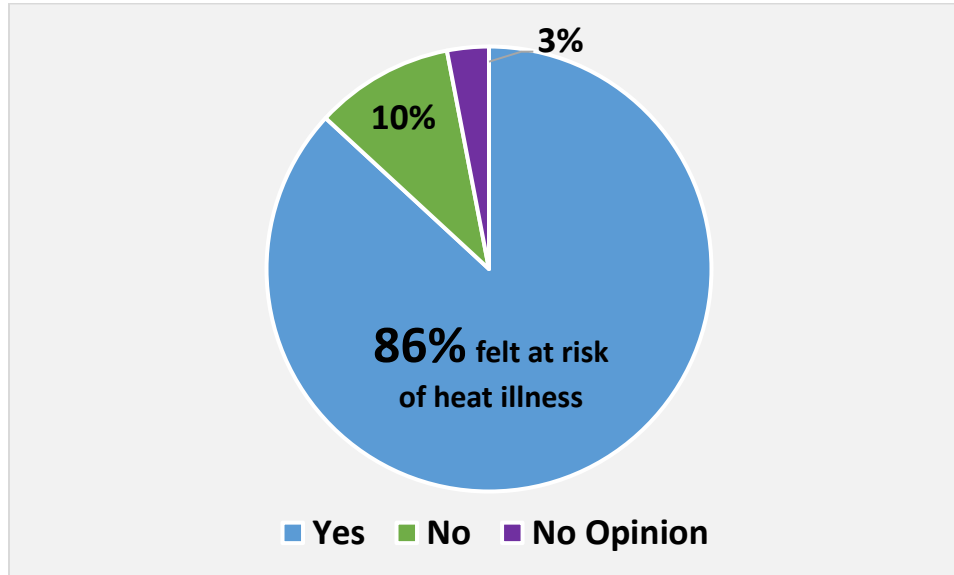


The participants were asked if they felt they were at risk of heat-related illnesses and most respondents answered “yes” (86%). Only 10% believed that they were not at risk of any heat-related illnesses and 3% had no opinion.

Of the households, 10% stated that their homes were always too hot while others stated that their homes were too hot most of the time (56%) or sometimes, but not often (29%). Only 5% responded that it was never too hot in their home. Seventy percent stated that they felt too hot inside their home in a temperature range of 80-99 degrees Fahrenheit. Others responded that they felt hot inside their homes at temperatures of 100 degrees Fahrenheit or hotter (16%).

Graph 1B. Heat Risks in Household (N=59)

Most participants felt at risk during heat season



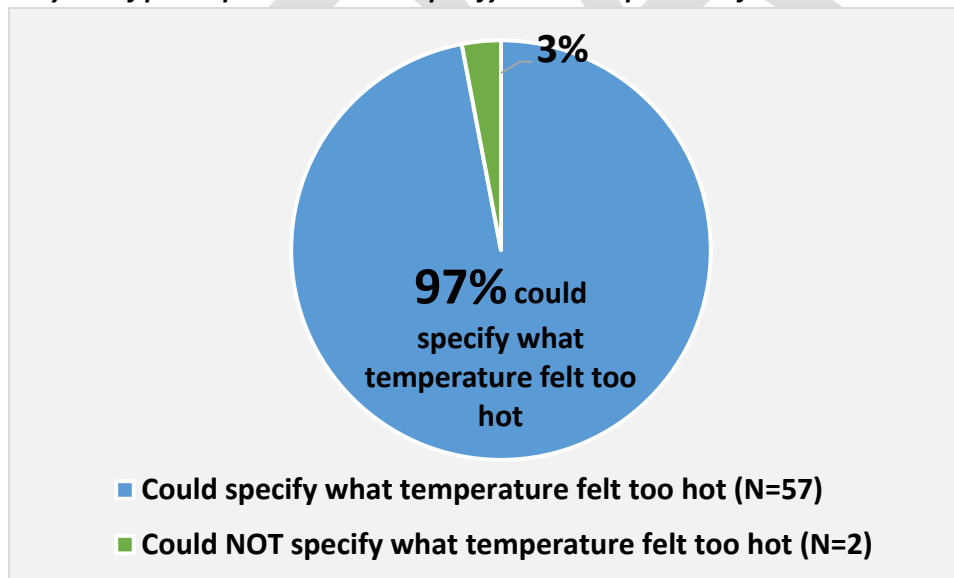
Graph 1B.

Survey question 18:

Do you feel that your health is at risk because of high temperatures?

Graph 2B. Heat Perception (N=59)

Only 3% of participants could not specify what temperature felt too hot inside their home



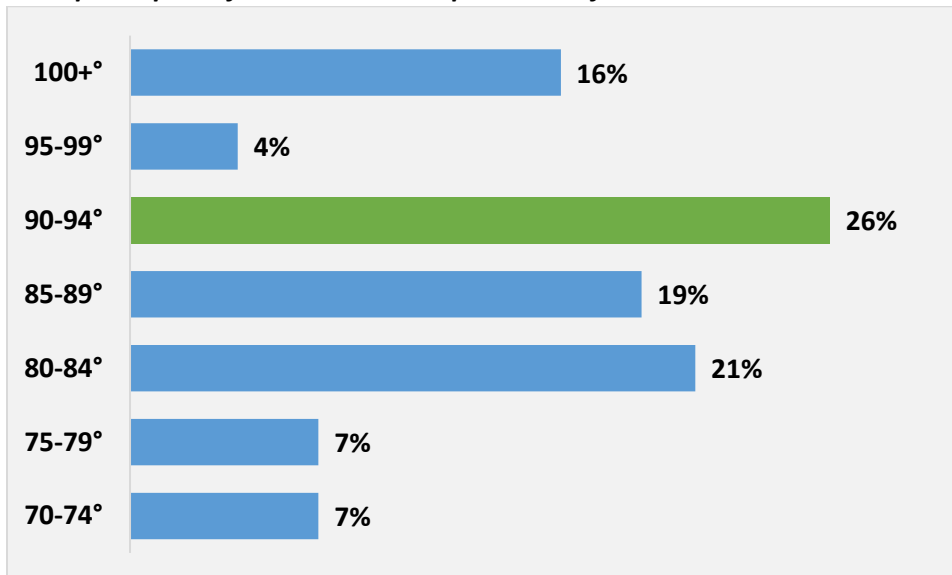
Graph 2B.

Survey question 19:

At what temperature do you start to feel too hot inside your home?

Graph 3B. Heat Perception Temperatures in Degrees Fahrenheit (N=57)

Most participants felt too hot at temperatures of 90°F and above

**Graph 3B.**

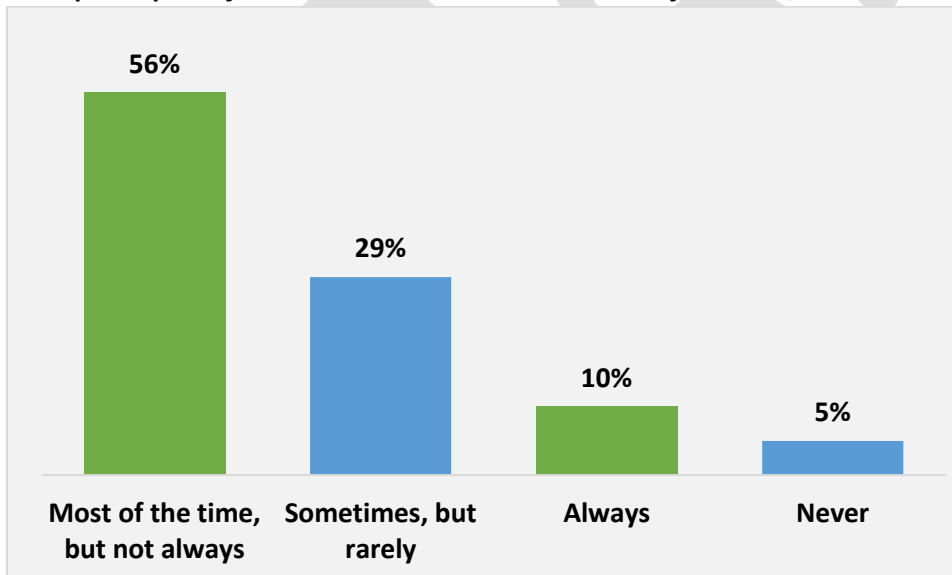
Survey question 19 (continued):

At what temperature do you start to feel too hot inside your home?

*Excludes 2 participants who could not specify what temperatures felt too hot in their home.

Graph 4B. Heat Perception in the Home (N=59)

Most participants felt too hot inside their home most of the time, but not always

**Graph 4B.**

Survey question 20:

Did you or members of your household ever feel too hot inside your home during this summer?

Knowledge of Heat and Illness



All the respondents were aware of heat warnings (100%). Most of the participants learned of heat warnings through television (97%), radio broadcasts (64%), or through text message (46%). Others relied on word of mouth from their friends, family, or neighbor for information (37%).

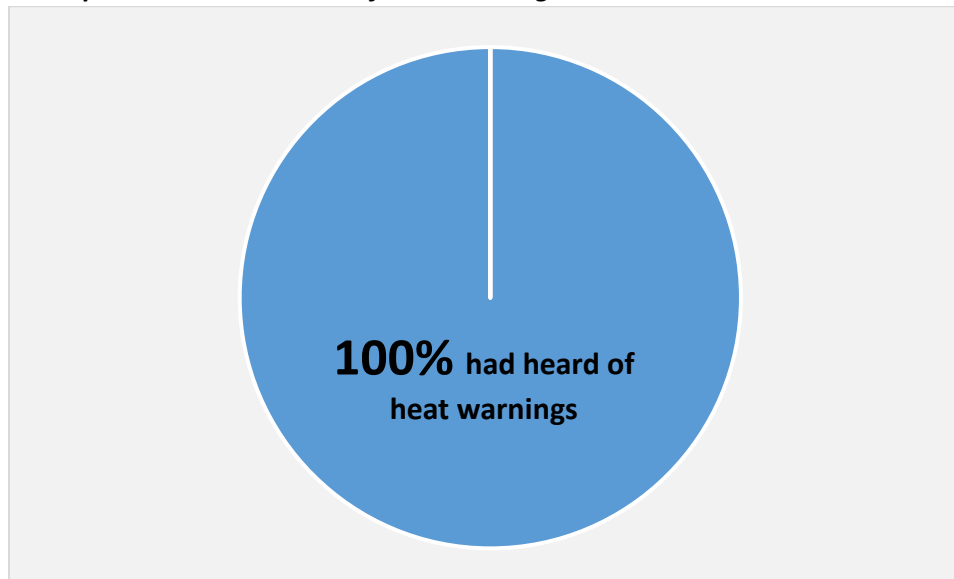
When asked to name health problems one could get from exposure to heat, 63% stated that they knew of heat symptoms while 37% could not name any symptoms. Headaches, changes in blood pressure, dizziness, and breathing issues were the most common responses. More than half of the participants involved in the survey knew that headaches are a symptom of exposure to heat (54%), while 27% knew that dehydration is a symptom, 24% knew that dizziness is a symptom, and 22% knew that vomiting is a symptom. Respondents also noted changes in blood pressure as a possible symptom (16%), as well as heatstroke (14%).

The participants were asked if they had ever experienced any illnesses caused by heat, and **73% surveyed reported experiencing a heat-related illness.** Only 25% reported not experiencing a heat-related illness. One household (2%) was unsure if they had ever experienced a heat-related illness.

The respondents were asked what they did after they experienced symptoms, and **93% stated that they stayed home and took no action,** while 2% went to the emergency room or doctor's office, and 9% were admitted to a hospital. Fortunately, no deaths were reported by this group. When asked why they decided to stay home and take no action as opposed to get help, 71% stated that their symptoms improved and they felt better, and **60% responded that they did not have health insurance.** Others stated that they could not afford an ambulance ride or medical care (40%), did not have a doctor (38%), or did not have transportation (33%).

Graph 5B. Heat Warnings (N=59)

All respondents were aware of heat warnings



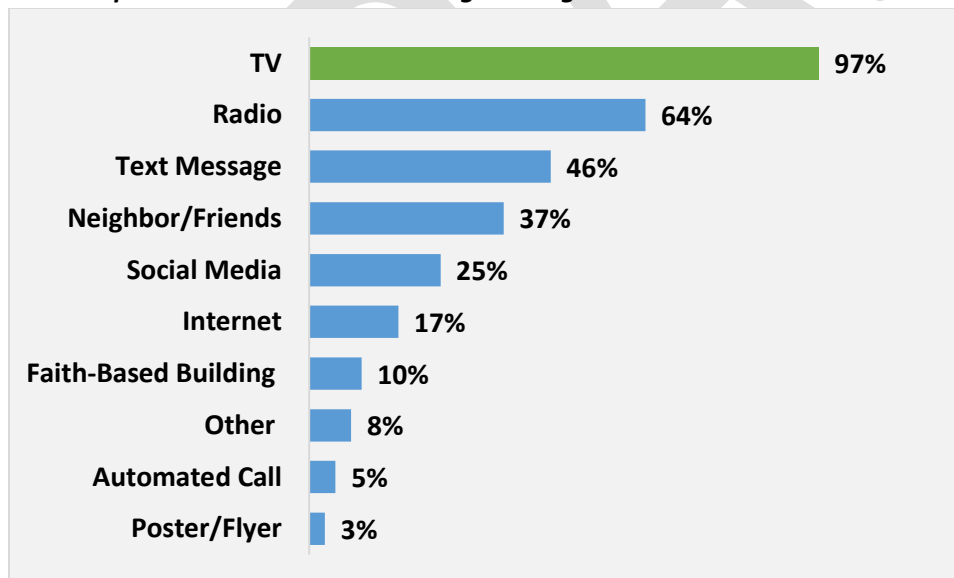
Graph 5B.

Survey question 11:

Do you or other members of your household remember hearing weather warnings about excessive heat this summer?

Graph 6B. Sources of Heat Warnings (N=59)

Most respondents heard heat warnings through television

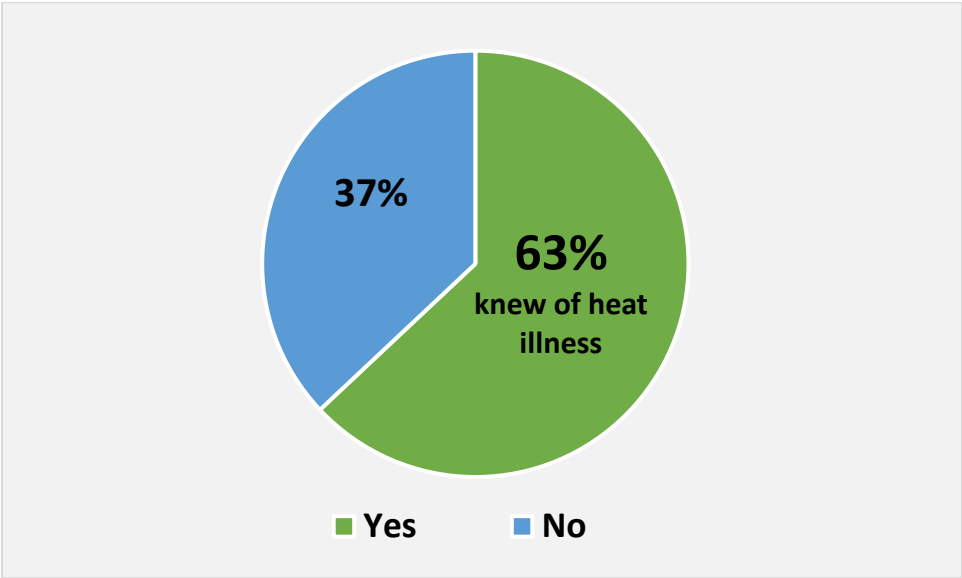


Graph 6B.

Survey question 12:

If you have heard of heat warnings, what is your primary source of information?

Graph 7B. Knowledge of Heat Illness (N=59)
Most participants knew of heat illnesses



Graph 7B.

Survey question 13:

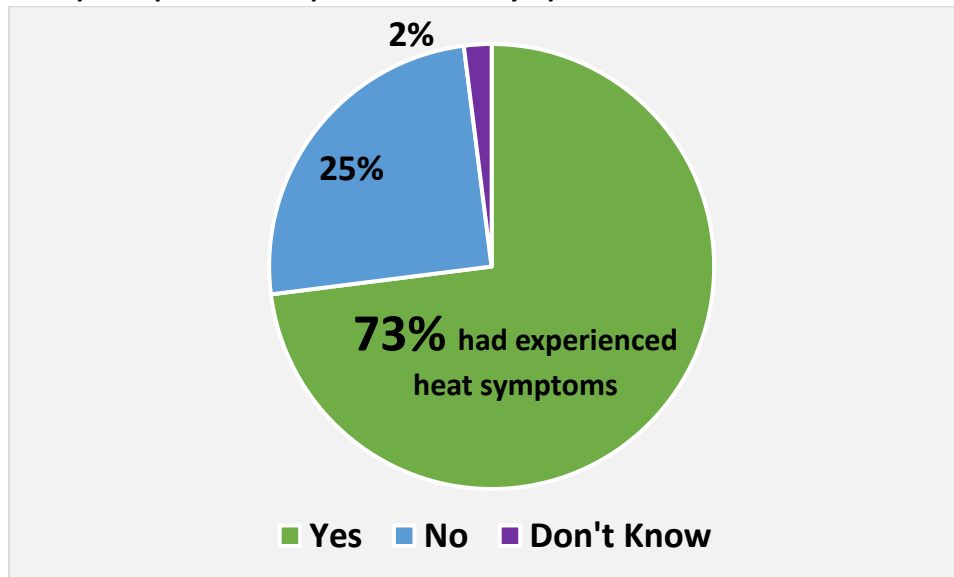
Can you tell me any health problems you or a household can get from exposure to heat?

Figure 1B (Question 14). Health Problems Associated with Heat (N=37)
Q14: Please specify what health problems a household member can get from extreme heat:
Headaches were the common symptom listed by respondents



Graph 8B. Experience of Heat Symptoms (N=59)

Most participants had experienced heat symptoms



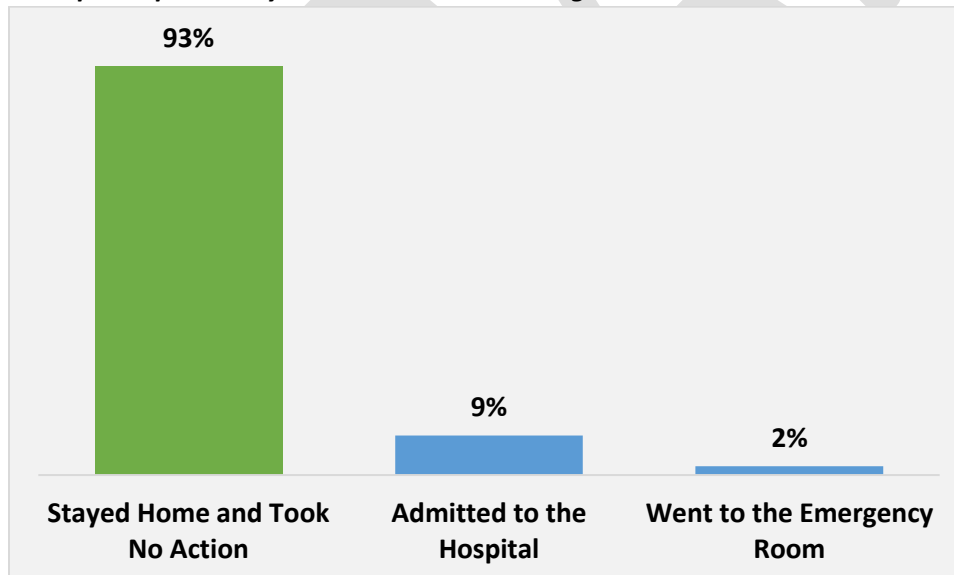
Graph 8B.

Survey question 15:

Have you or a member of your household had symptoms this summer related to heat or high temperatures such as leg cramps, dry mouth, dizziness, fatigue, rapid heartbeat, or hallucinations?

Graph 9B. Outcome of Illness (N=46)

Most participants stayed home and did nothing



Graph 9B.

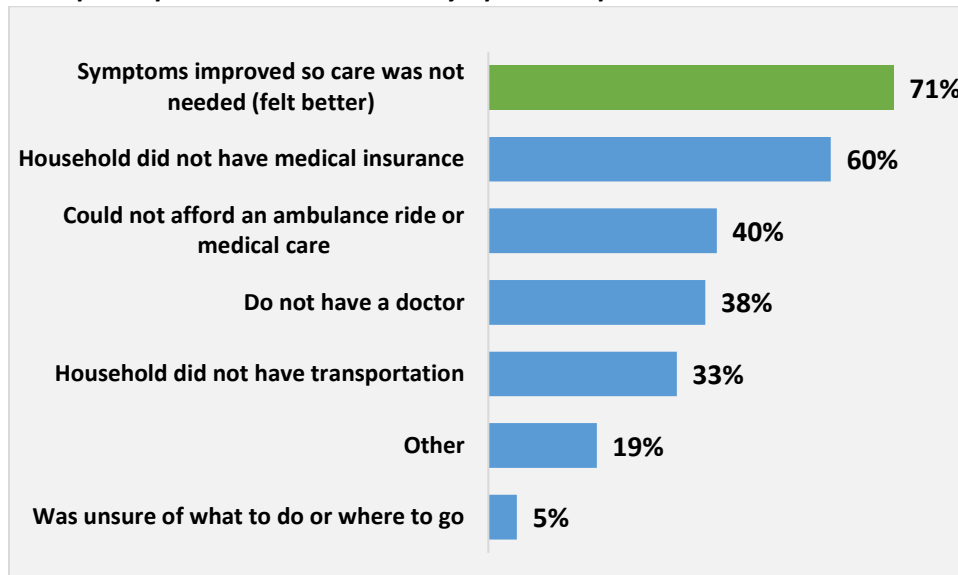
Survey question 16:

What was the outcome of this heat-related illness?

*Excludes 13 respondents who did not answer "yes" to question 15 or who left the question blank.

Graph 10B. Reason for Staying Home (N=42)

Most participants stated that their symptoms improved



Graph 10B.

Survey question 17:

If you stayed home and did nothing, what was the reason?

*Excludes 17 respondents who did not answer “stayed home and did nothing” to question 16. Those who answered “other” stated that they feared getting sick, stay hydrated, and go to the clinic for checkups when they can afford it.

Coping Mechanisms

Coping mechanisms include home cooling systems as well as ways people avoid the heat, such as leaving home to cool off.

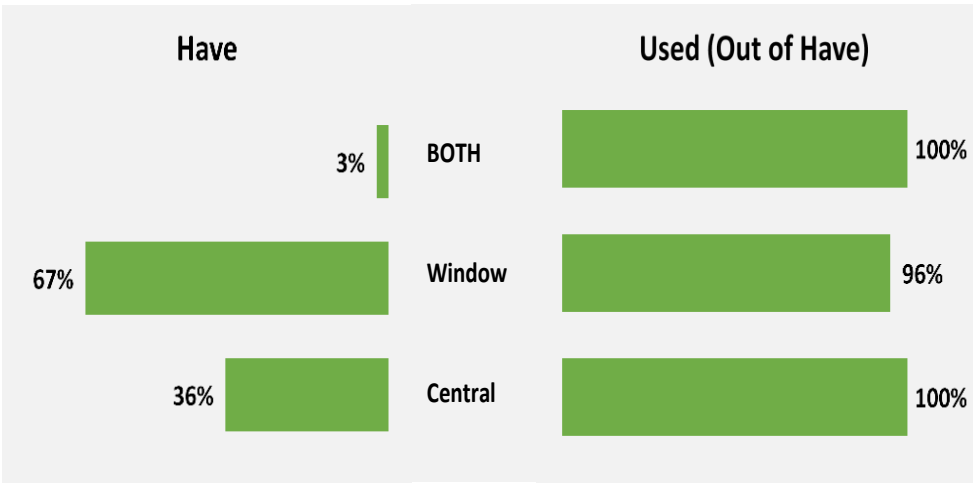
Due to discrepancies in home cooling system responses, 39 surveys were counted for question 21, 22, and 24. **More than two-thirds (67%) of the population surveyed stated that they have window air-conditioners and of those, 96% worked. Only 36% stated that they have central air-conditioner, however, 100% of those worked for new participants.** One participant (3%) stated that they used neither central or window air-conditioners and reported only use of fans, misters, and trees or plants. It is important to note that in Maricopa County, where there is extreme heat, that these three types of cooling systems are not sufficient by themselves, and often need to be supplemented with at least one of the other types of cooling systems. Fans will not work on their own during extreme heat and must be supplemented with mist or cool water to efficiently cool off.

Most households responded that they use their cooling system both all day and all night (95%), while 5% used theirs in the afternoon only, which limits the time of day they can use their home cooling system.

The community members who participated in the study were asked if they leave their home to go to an air-conditioned place to cool down. **Almost one-third (31%) of the participants stated that they did not leave home to get to a place with A/C,** however, 69% of participants responded that they do leave home to cool down. Participants were then asked where they are more likely to go to get A/C when they leave home and most households reported visiting a friend or neighbor (73%), the mall (68%), and/or the supermarket (39%).

Community members were asked about their method of transportation to leave home to get to an air-conditioned place. Many of the households, (61%), used a personal vehicle to get to their preferred air-conditioned destination. Other households reported using public transportation (61%), walking (56%), or getting a ride from a friend (54%).

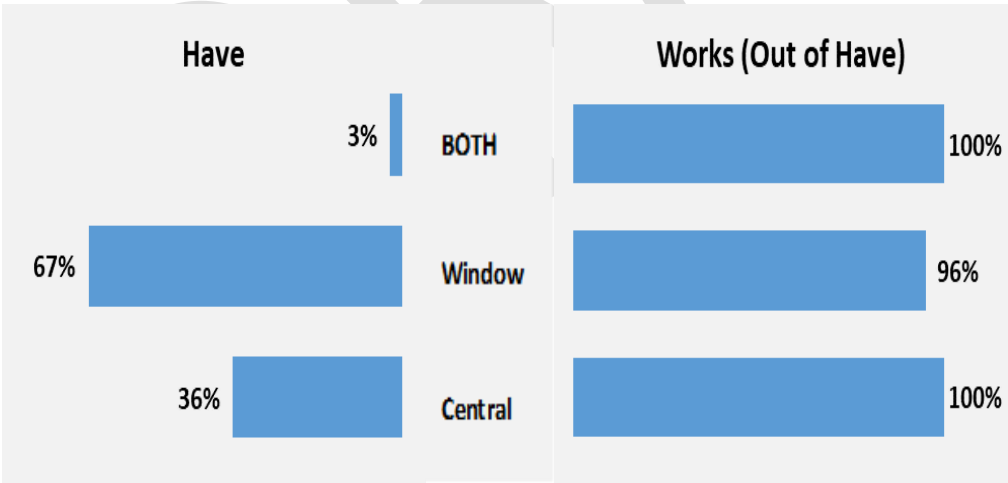
Graph 11B. Cooling Systems Have in Home vs Used in Home (N=39)
Most households use central air-conditioning.



Graph 11B.
This figure combines questions
21: Which of the following does your household **have**?
22: Which of the following was **used** to cool your house this summer?

* It is important to note that there were many discrepancies in the data collected for air conditioners and their working conditions. For instance, many stated that central A/C worked in their home, but they did not have it or use it. The data was cleaned of these discrepancies, and we were left with 39 participants out of 59 new participants. This graph shows each air-conditioning unit that household have (41 responses) vs use in the house (40 responses). The participants use central A/C, window A/C, or both. Multiple responses were recorded per 39 participants; percentages add to more than 100%.

Graph 12B. Cooling Systems Have in Home and Its Working Condition
Central air-conditioning works best



Graph 12B.
This figure combines questions
21: Which of the following does your household **have**?
24: Which cooling system **works** in your home?

*It is important to note that out of 59 new participants, 39 participants' responses were counted due to discrepancies in their responses. This graph shows each air-conditioning unit that people have in their home (41 responses) vs what worked in their home (40 responses). The participants use central A/C, window A/C, or both. Multiple responses were recorded per 39 participants; percentages add to more than 100%.

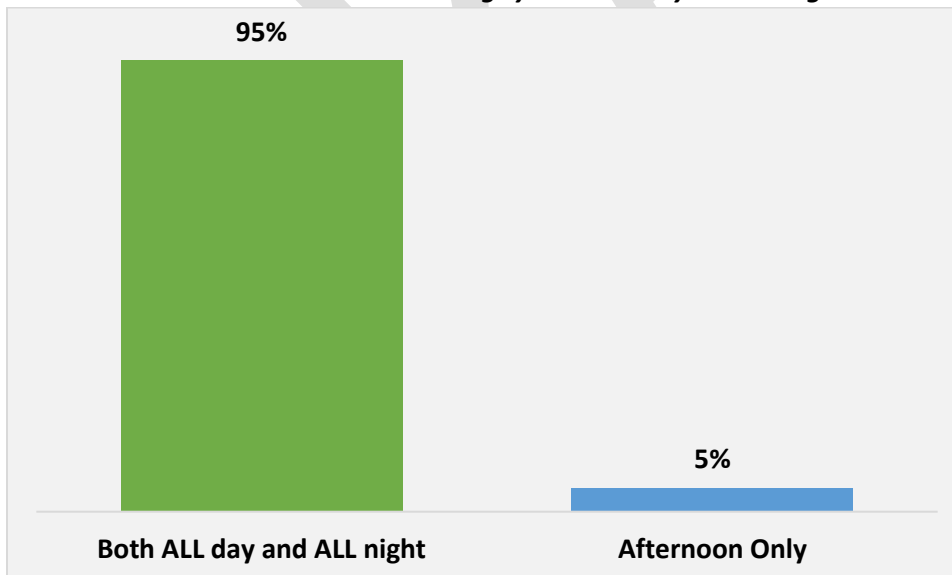
Table 1B. Cooling Systems in Home and Its Working Condition (N=39)

Unit	Have		Used (Out of Have)		Works (Out of Have)	
	Count	%	Count	%	Count	%
Central A/C	14	36%	14	100%	14	100%
Window A/C	26	67%	25	96%	25	96%
BOTH Central and Window A/C	1	3%	1	100%	1	100%
Fans	27	69%	26	96%	22	81%
Swamp	0	0%	0	0%	0	0%
Misters	0	0%	0	0%	0	0%
Trees or Plants	11	28%	9	82%	0	0%
Other	0	0%	0	0%	0	0%
N=	39					

*Due to receiving responses that did not make sense, the data was cleaned and retallied out of 39 participants who responded correctly. This table shows the responses for survey questions 21, 22, and 24. This shows the number and percentages of people who claimed to have the home cooling units listed above. The data were then tallied what was used and what worked out of what they had home.

Graph 13B. Home Cooling Use Throughout the Day (N=55)

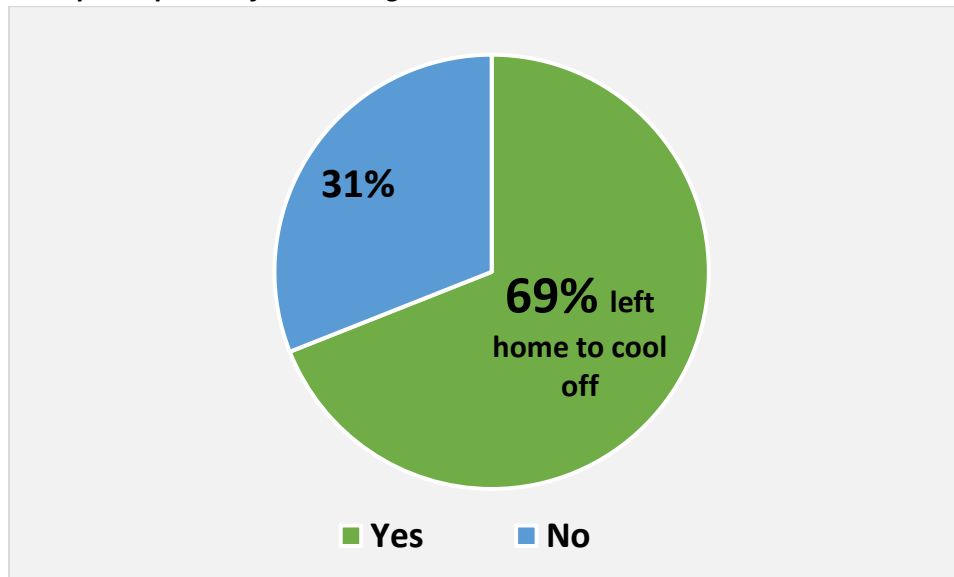
Most households use their home cooling systems all day and all night

**Graph 13B.**

Survey question 23:

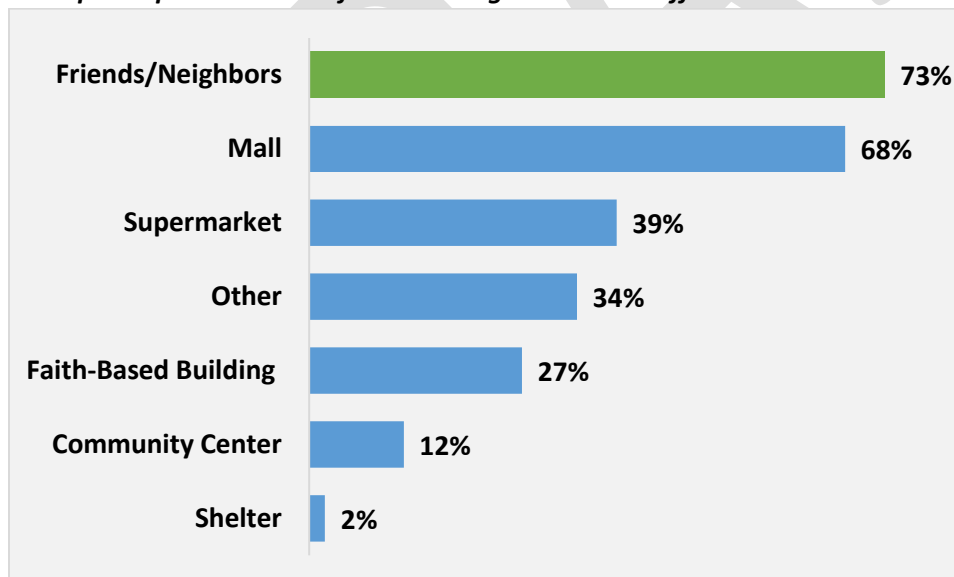
If your household used central air-conditioning/window air-conditioning this summer, when did you use it?

*Excludes 4 respondents who did not use Central or Window air conditioner

Graph 14B. Leaving Home to Get Cool Air (N=59)**Most participants left home to get cool air****Graph 14B.**

Survey question 31:

When the weather is very hot, do you or members of your household ever leave home and go to an air-conditioned place to cool off?

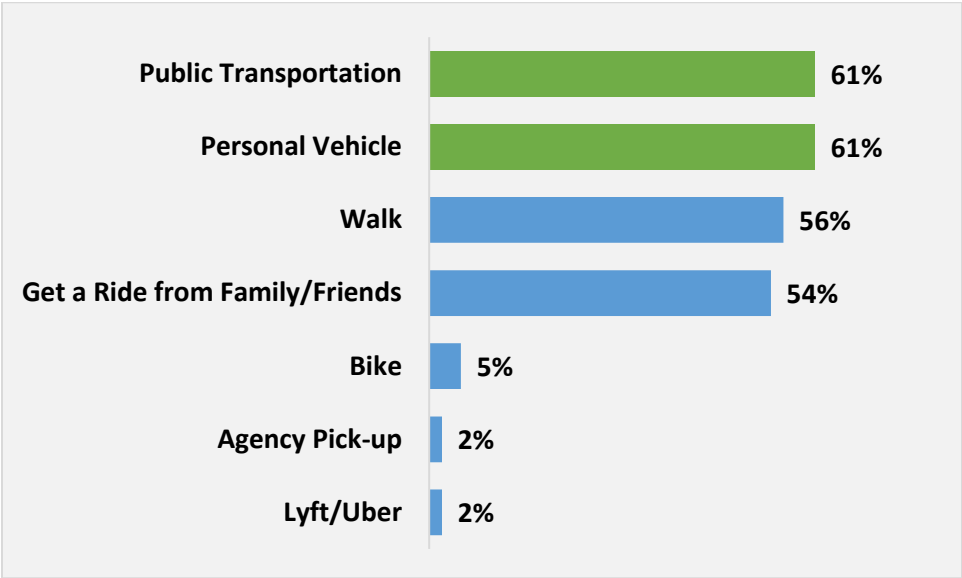
Graph 15B. Air-Conditioned Places to Cool Off (N=41)**Most participants visited a friend or neighbor to cool off****Graph 15B.**

Survey question 32:

Where do you or members of your household go to cool off?

*Excludes 18 participants who did not leave the house to cool off. Includes multiple responses (105) from 41 participants who were able to choose more than one option; percentages add to more than 100%. Those that chose "other" stated they went to Walmart or work.

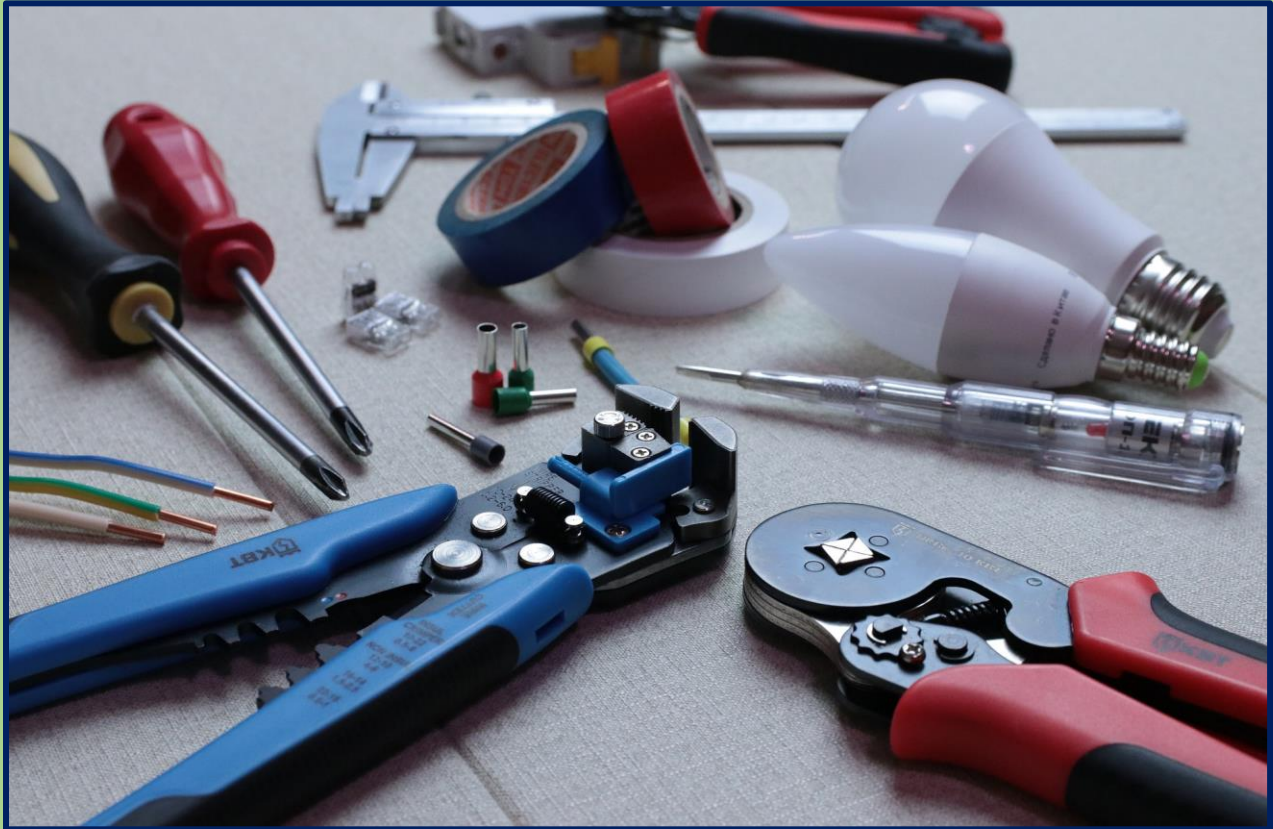
Graph 16B. Transportation Methods to Cool Off (N=41)
Most households used personal vehicles or public transportation



Graph 16B.
Survey question 33:
How does your household normally travel to air-conditioned places?

*Excludes 18 participants who did not leave home for A/C. Includes multiple responses (99) from 41 participants who were able to choose multiple responses. Percentages add to more than 100%.

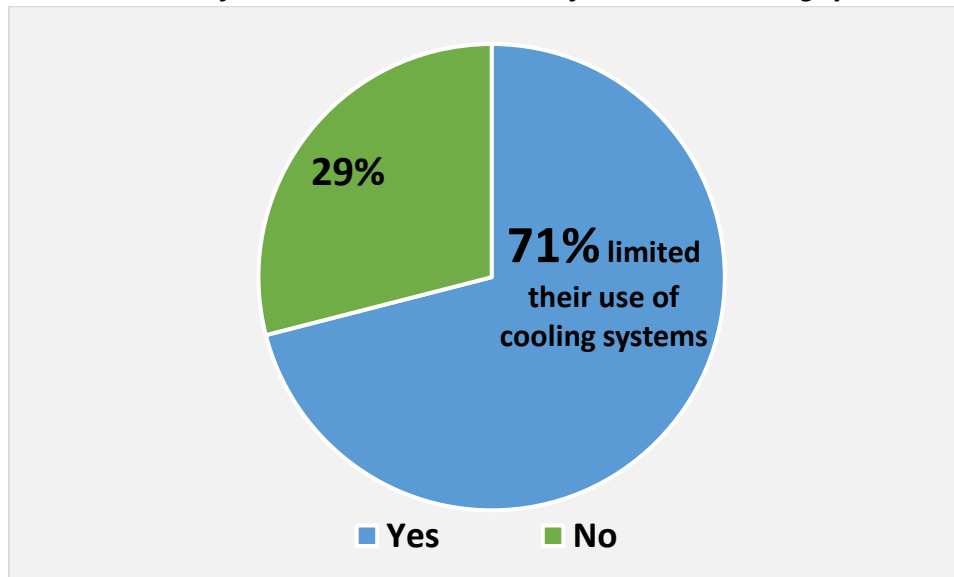
Barriers To Cooling



Although home cooling systems were commonly used among the participants, most reported limitations on their use. **Out of the 59 surveys received, 42 households (71%) said they had limitations to their home cooling.** Of those 42 households, **95% responded that they limited home cooling due to the cost of electricity, and 50% responded that they limited use due to the cost of repairs.** Another 38% stated that their air-conditioners or home cooling systems did not work. Over one-quarter of households (29%) did not have limitations to using their home cooling systems.

Graph 17B. Limitations of Home Cooling (N=59)

Over two-thirds of households limit their use of their home cooling system



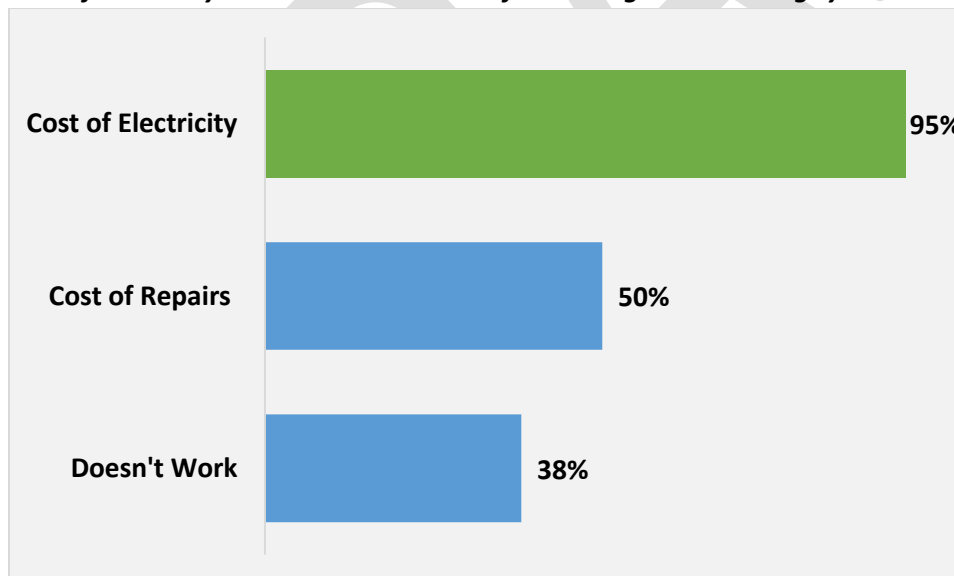
Graph 17B.

Survey question 25:

Does anything limit you from using your cooling system when there are high temperatures?

Graph 18B. Reasons for Limitations (N=42)

Cost of electricity was a common reason for limiting home cooling system use



Graph 18B.

Survey question 26:

What limits your household from using your cooling system?

*Excludes 17 respondents. Includes multiple responses (77) from 42 participants who limited their air-conditioning for multiple reasons; percentages add to more than 100%.

Knowledge and Use of Community Resources

Throughout the project, the community members who agreed to participate were given materials listing resources and community programs available to them. This group of new participants received the *Heat Toolkit* when they took the survey in October. **Most of the participants were unaware of the community programs offered to help them with utility bills.** Although 22% had heard of the service but never used it, **78% were completely unaware of these utility assistance services.**

Participants of the study were also given resources to assist with home cooling repairs. **Many of the households surveyed (86%) were unaware of these repair services provided by the community.** Only a handful of respondents (14%) were aware of the programs but had never used the service.

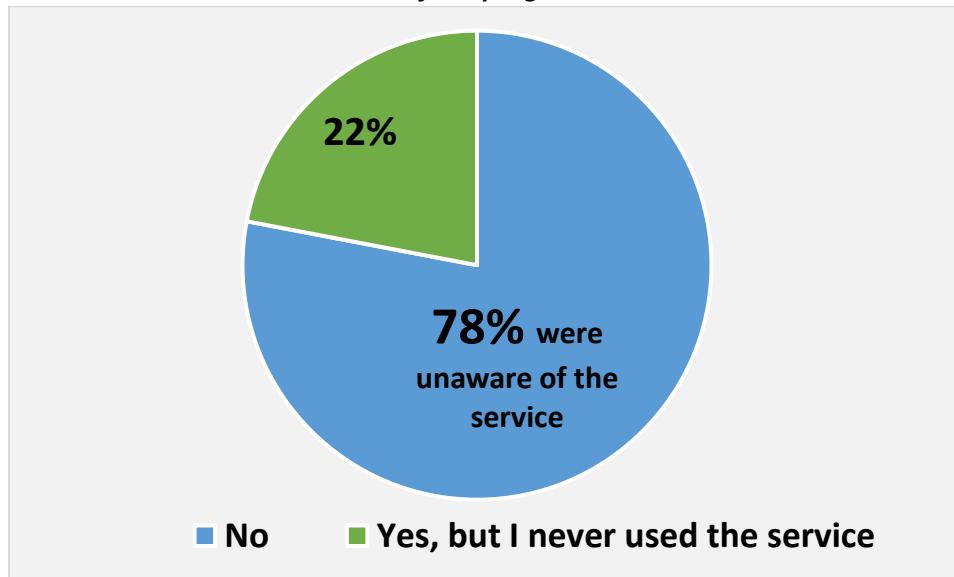
Of those that did not use the services to help with utilities, **71% stated that they did not have the contact information,** 27% stated that they assumed they did not qualify for assistance, 19% said it was a complicated process, 15% said they had no access to a computer, and **14% were unaware of the service.**

Participants were asked if they have ever applied to utility or repair services. Around 3% stated that they have applied to these programs, however, **the other 96% of respondents did not apply for utility or repair services. Of those who did not apply, 81% stated that they were unaware of the services, while 10% assumed they did not qualify.**

Community households were asked if they were aware of cooling centers around Maricopa County. **A large percentage of households (86%) responded that they were unaware of cooling centers around Maricopa County.** Some households (14%) knew about cooling centers but had never used the service.

Participants were then asked why they hadn't used the cooling center's services, **and 81% were unaware of the services and did not know about cooling centers.** Others feared having to show identification (16%), did not have transportation (9%), or thought it was too far away (9%).

Graph 19B. Knowledge of Programs to Help with Cost of Utility Bills (N=59)
Most households were unaware of the program

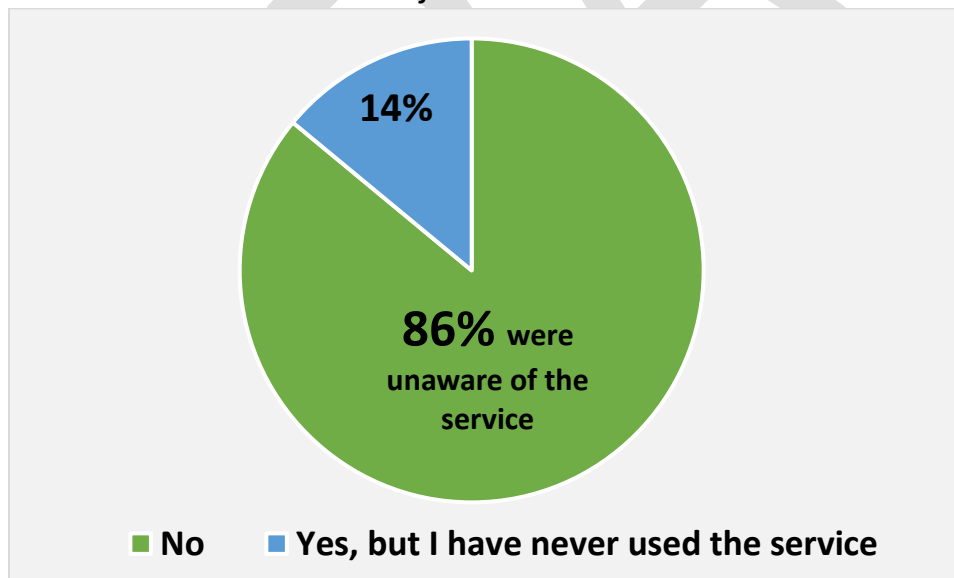


Graph 19B.

Survey question 27:

Are you aware of community programs or services to help you with the cost of utility bills?

Graph 20B. Knowledge of Cooling System Repair Programs (N=58)
Most households were unaware of the service



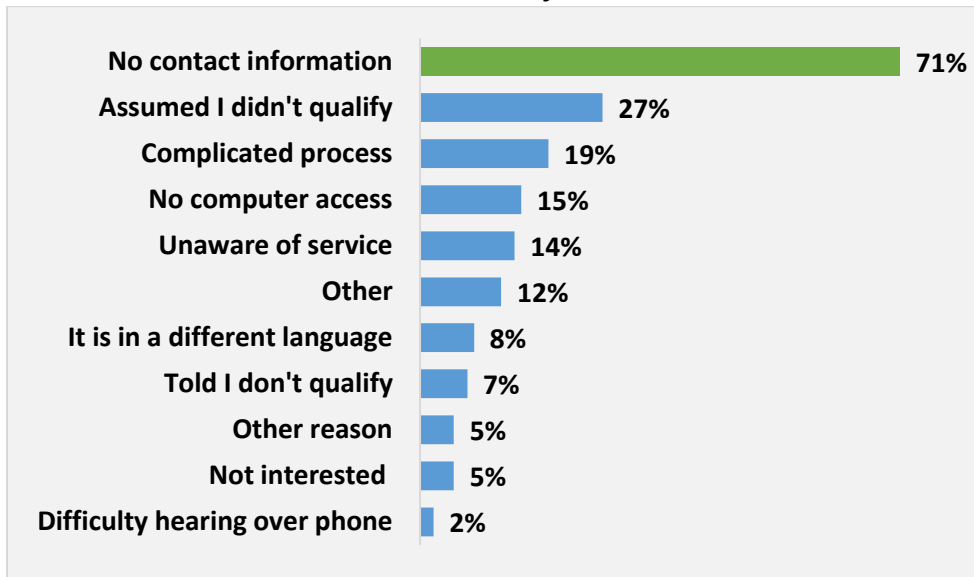
Graph 20B.

Survey question 28:

Are you aware of community programs or services to help you with cooling system repairs?

*Excludes one participant who did not answer.

Graph 21B. Reasons for Not Using Services (N=59)
Most households did not have the contact information



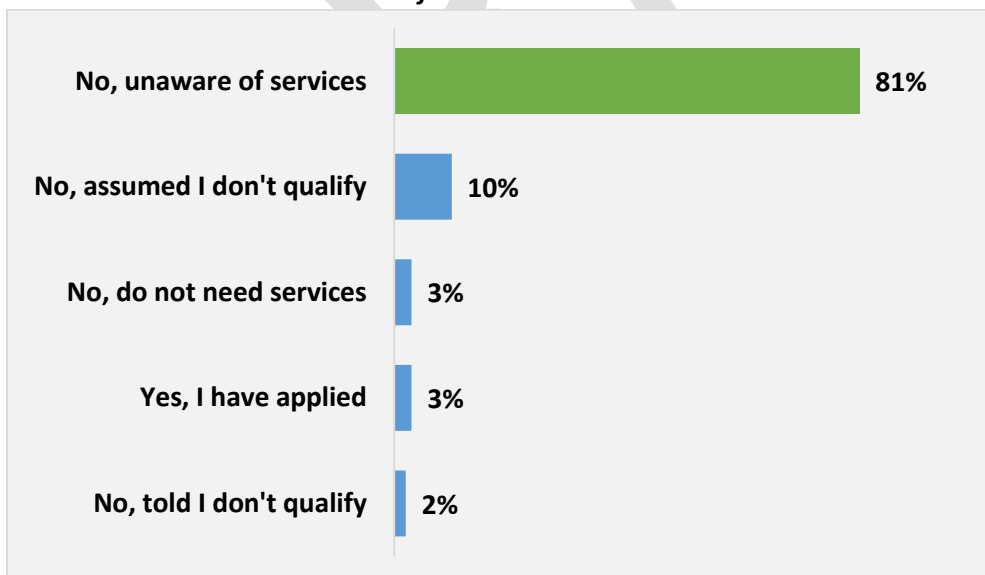
Graph 21B.

Survey question 29:

If you have NOT utilized any community assistance programs or services, please select your reason(s):

*Includes multiple responses (109) from 59 respondents who were able to choose multiple answers. Percentages add to more than 100%. Those who responded "other" or "other reason" stated that they ask for too many documents, there was not enough information, and they are scared to try it.

Graph 22B. Application to Utility or Repair Services (N=58)
Most households were unaware of the services



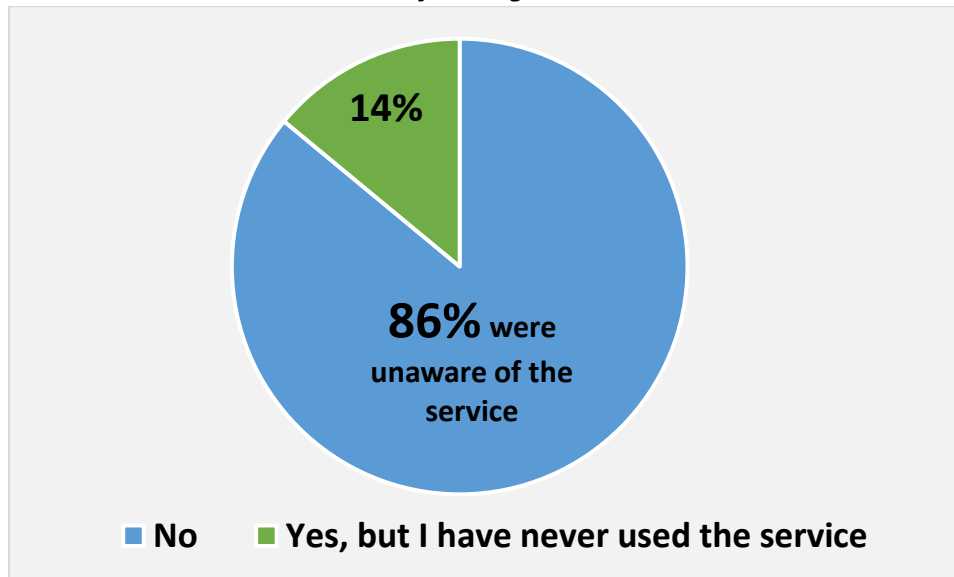
Graph 22B.

Survey question 30:

Have you or a member of your household ever applied for these utility assistance programs (cost of utility bills or for cooling system repairs)?

*Excludes one participant who did not respond.

Graph 23B. Knowledge of Cooling Centers (N=59)
Most households were unaware of cooling centers

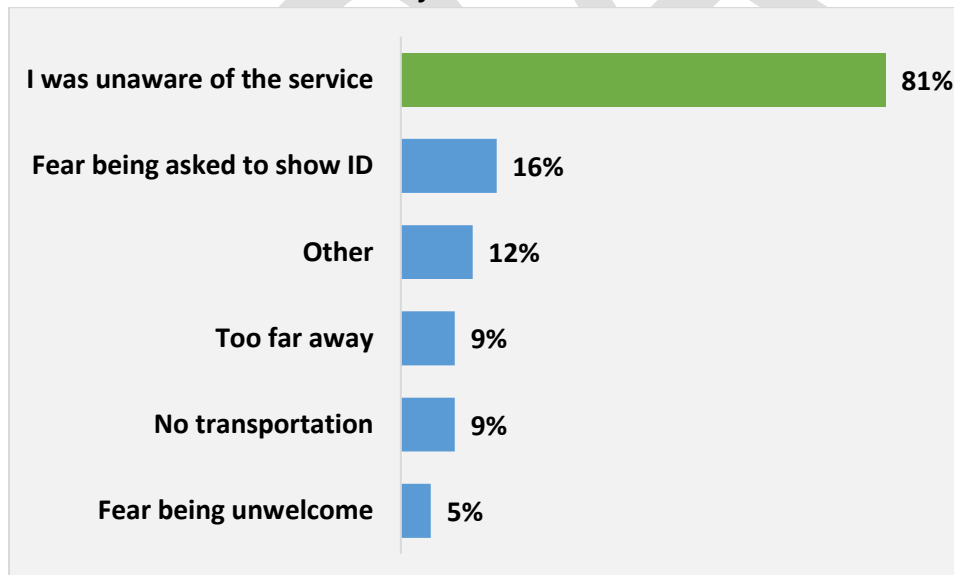


Graph 23B.

Survey question 34:

Are you aware of the cooling centers in Maricopa County?

Graph 24B. Reasons for Not Using Cooling Centers (N=57)
Most households were unaware of the service



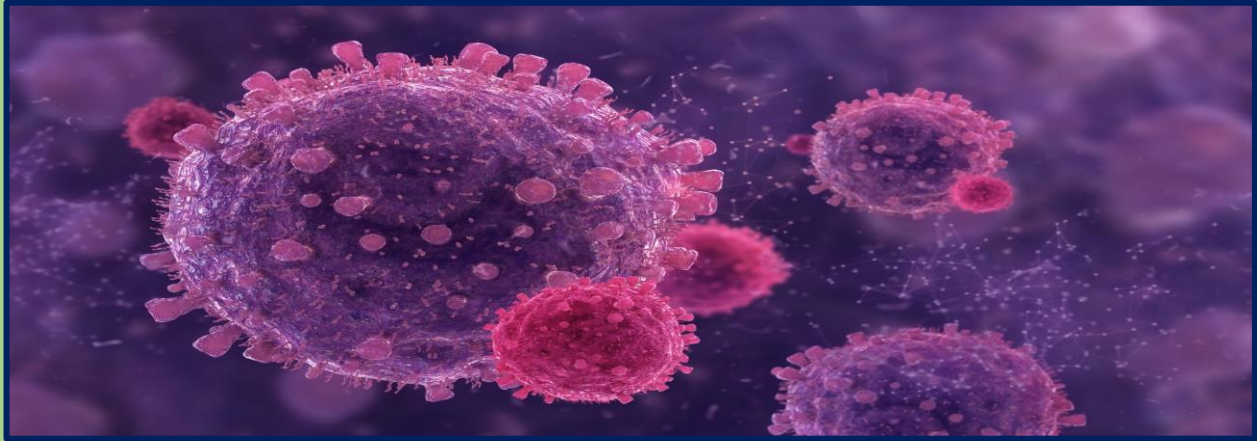
Graph 24B.

Survey question 35:

If you are unaware or have not used a cooling center, why not?

*Excludes 2 participants who did not respond. Includes multiple responses (75) from 57 participants who had multiple reasons for not visiting cooling centers. Percentages add to more than 100%. Those who responded other stated that they were afraid of going, do not know where to go, or said it was not necessary.

Effects of the COVID-19 Pandemic



Many of the community members interviewed were dealing with the effects of the COVID-19 pandemic. In the majority of households **(76%)**, **at least one family member experienced a reduction in job hours**, and in **59% of households**, **at least one household member lost a job**. **Twenty percent of households were unable to pay utilities**, 29% had their phone service cut, **24% were unable to pay their rent or mortgage**, and 27% were unable to provide their families with food and other essentials. Another 5% were unable to provide childcare. Around 25% of households had one or more members diagnosed with COVID-19 with 2% of households reporting that a household member had been hospitalized. Because of the pandemic, **many participants feared getting sick (88%)**, **felt anxious (60%)**, **felt lonely or isolated (38%)**, or **could not sleep (28%)**. Many participants had other personal effects caused by the pandemic (31%), such as stress or frustration, financial worries, or wanting the pandemic to end.

Participants were asked if they had received any assistance during the pandemic. Over three-quarters of participants had received assistance during the pandemic (79%). **Many of the October only participants stated that they had received food assistance (82%) and supply assistance (29%)**. Others stated that they received some other form of assistance, which mostly consisted of school help (7%), stimulus checks, economic incentives (9%), etc.

Many participants were given assistance from Salud en Balance (68%), schools (27%), a neighbor or friend (18%), a food bank (9%), or Community Center (9%). Others who provided assistance are included below in [Figure 4B](#).

Figure 2B. Effects of COVID-19 on Household (N=59)

Many households experienced reduced job hours during the pandemic

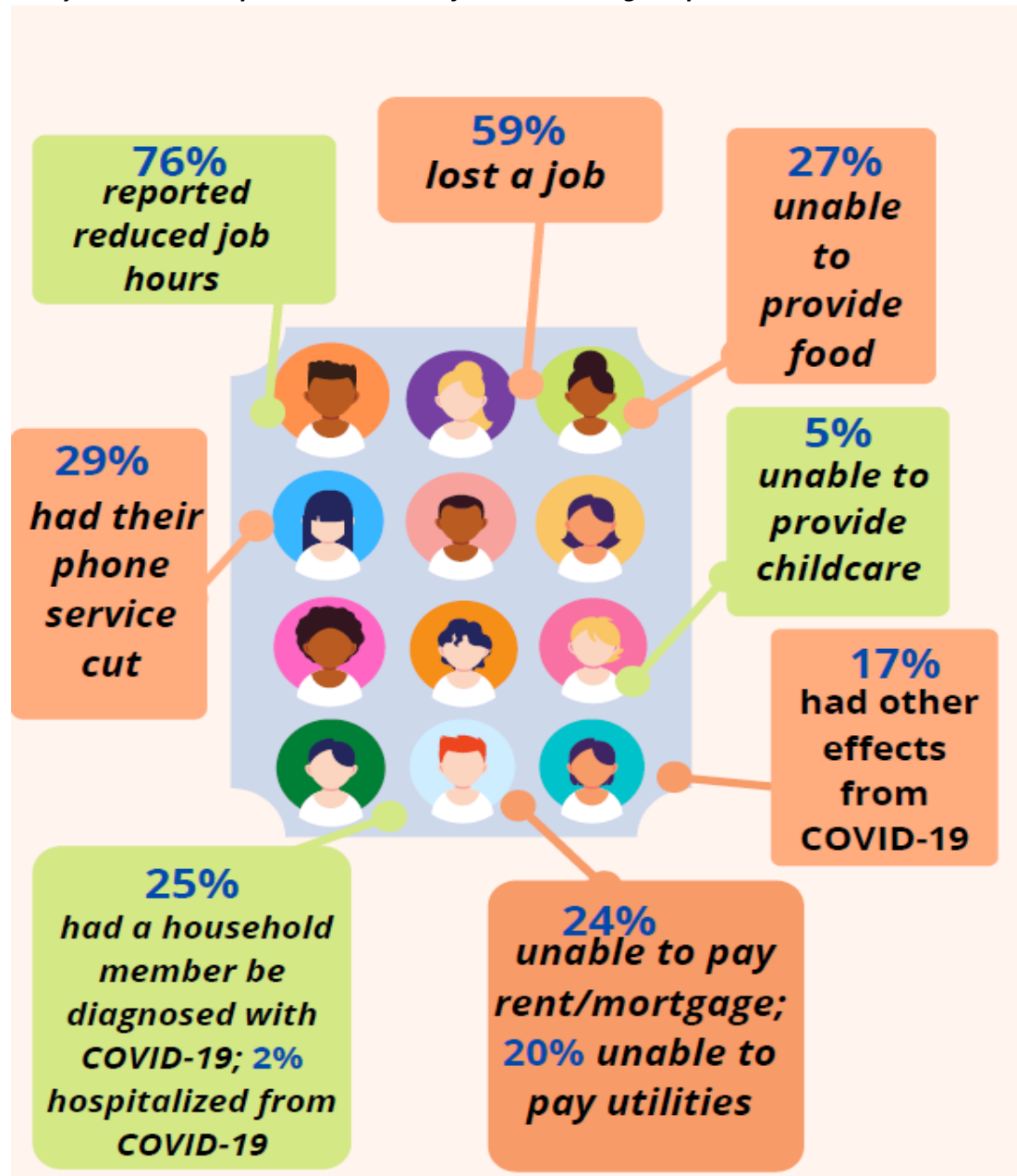


Figure 2B.

Survey question 36:

How is COVID-19 affecting your household's daily life?

*Includes multiple responses (169) from 59 participants who had multiple effects. Percentages add to more than 100%.

Figure 3B. Personal Effects of COVID-19 (N=58)

Most participants feared getting sick

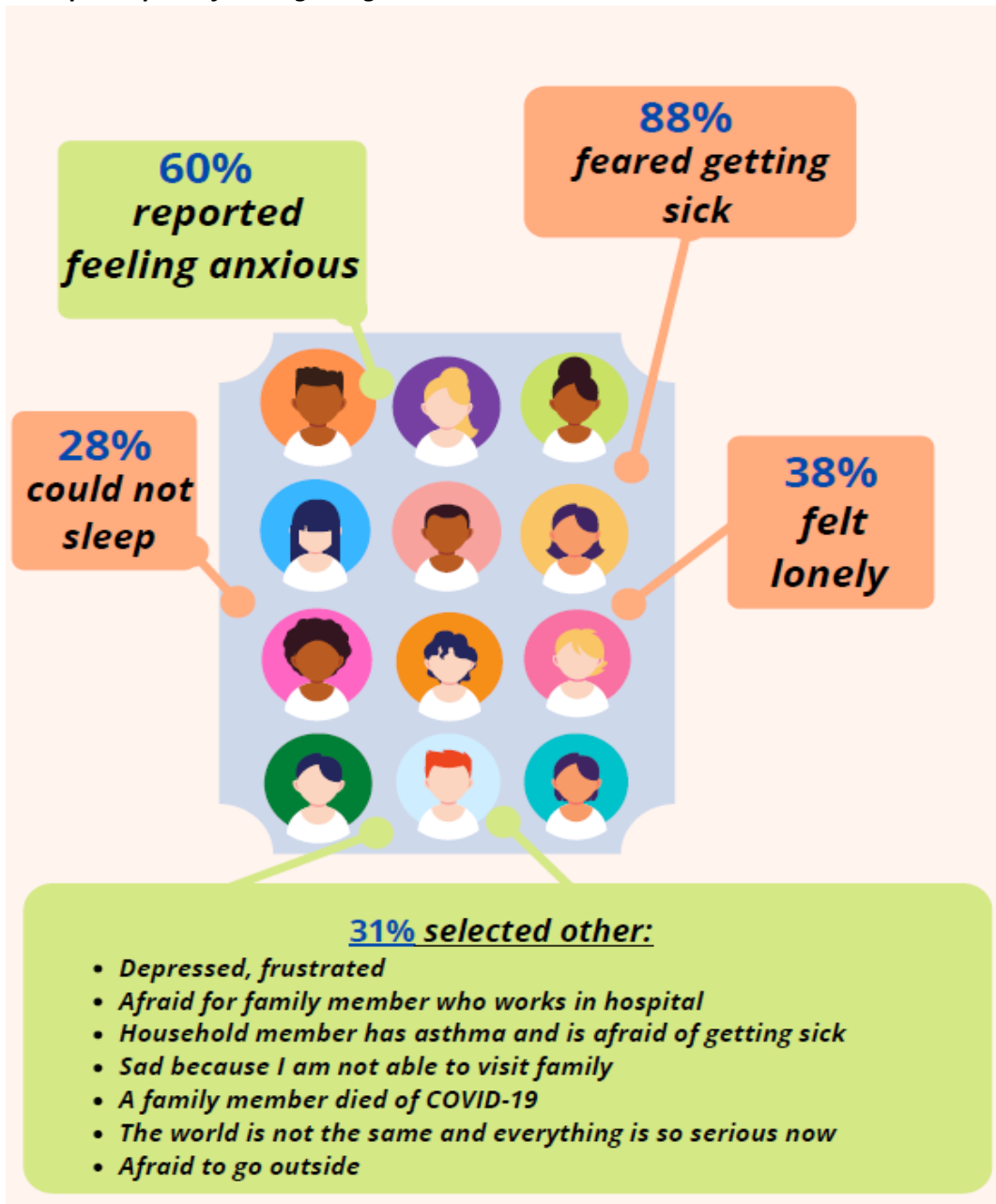
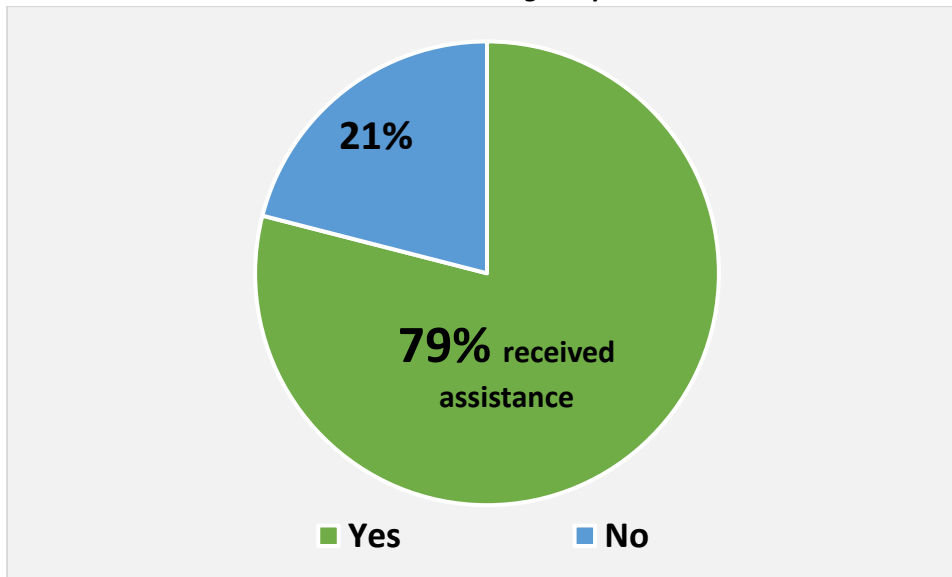


Figure 3B.

Survey question 37:

How is COVID-19 affecting you personally?

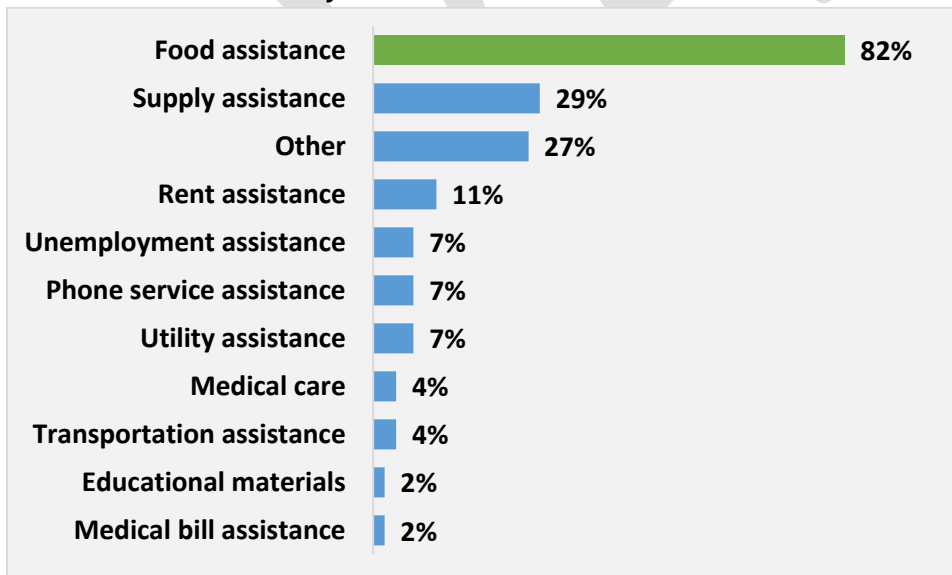
*Excludes one respondent who did answer. Includes multiple responses (142) from 58 participants who experienced multiple affects. Percentages do not add to 100%.

Graph 25B. Assistance During Pandemic (N=57)*Most households received assistance during the pandemic***Graph 25B.**

Survey question 38:

Has your household received any assistance during the COVID-19 pandemic?

*Excludes 2 participants who did not respond.

Graph 26B. Types of Assistance Received During Pandemic (N=45)*Most households received food assistance***Graph 26B.**

Survey question 39:

What type of assistance did your household receive?

*Excludes 14 respondents who did not receive any pandemic assistance. Includes multiple responses (82) for 45 participants. Percentages add to more than 100%.

Figure 4B (Question 40). Who Provided Assistance (N=44)

Q40: Who provided the assistance?

Most households received assistance from Salud en Balance



*Excludes 15 participants who did not receive assistance or left the answer blank. Multiple responses (67) were recorded for 44 participants. Percentages add to more than 100%.

RESOURCES AND POTENTIAL SOLUTIONS

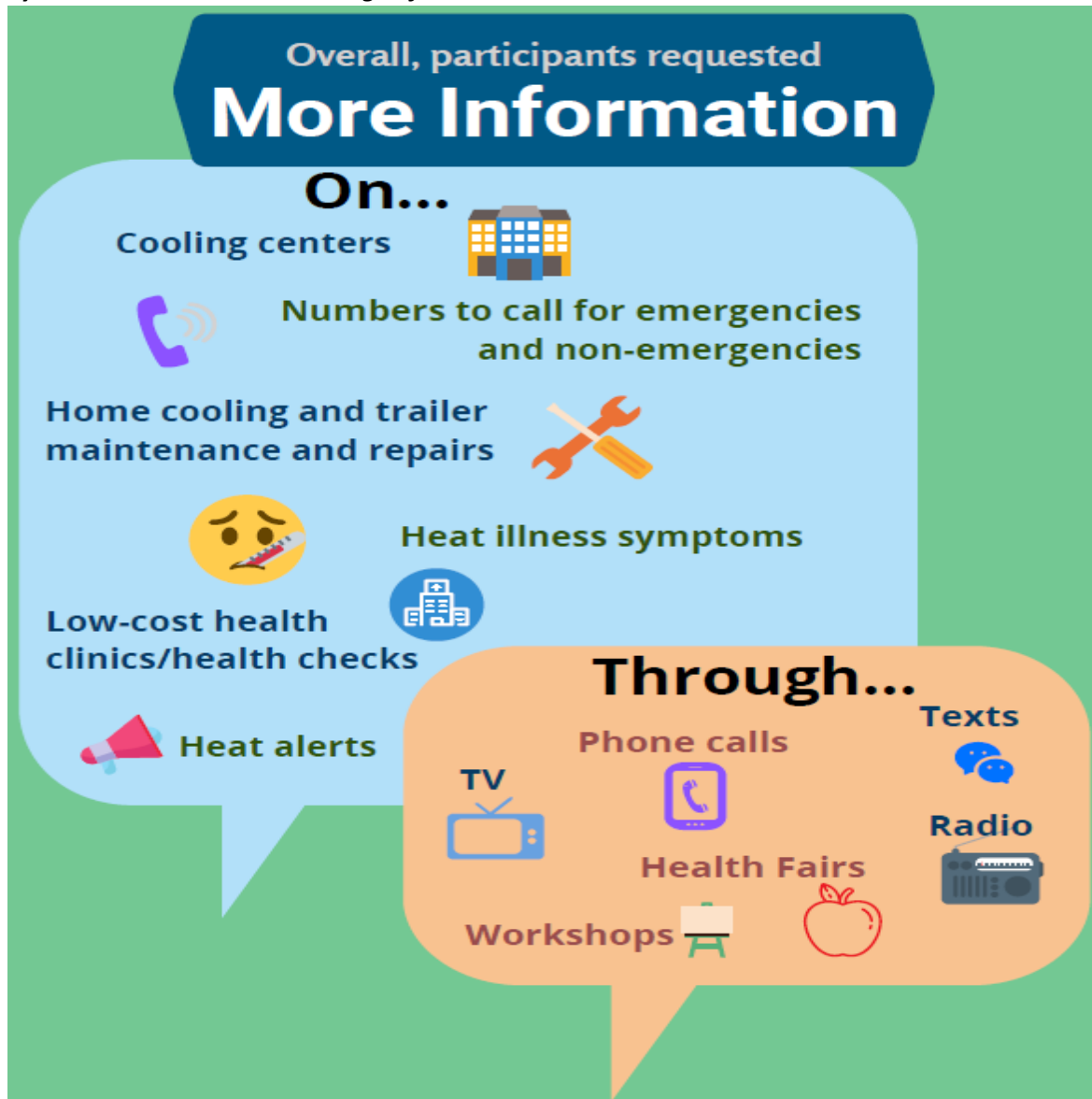
This section includes both repeat participants and new participants as it was a new section that was added to the second survey.



The October survey contained multiple open-ended questions to obtain a sense of what is needed in the community regarding resources and potential solutions to help mitigate the effects of heat. **Both repeat and new participants (N=150) had the opportunity to respond to these questions.**

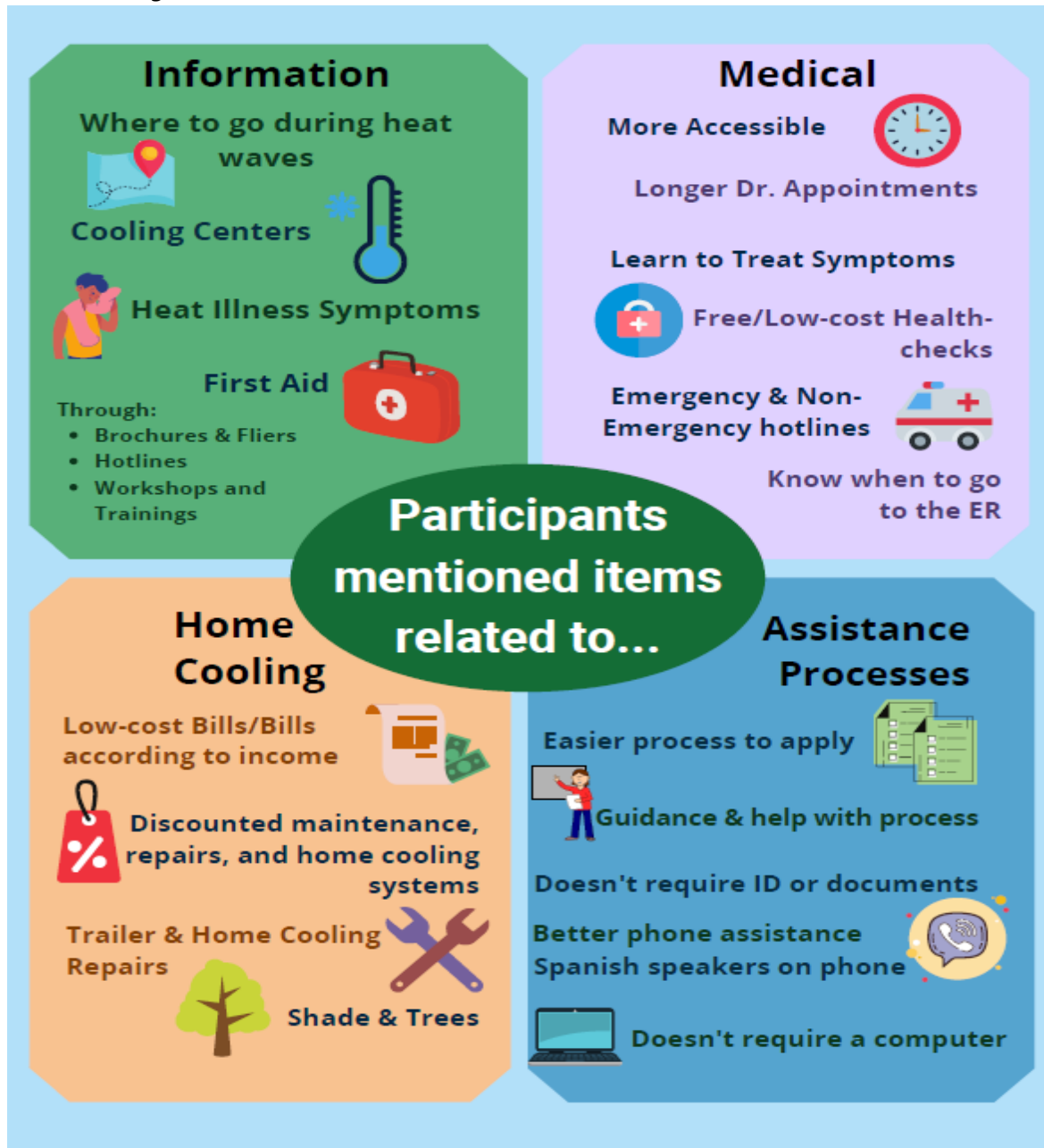
Question 44 (*Please write any additional comments you may have*) included 136 responses with the majority of participants **citing their appreciation for the information.** Additional comments included requests to receive more updated information, help with the process of applying for assistance programs, and knowledge on **how to obtain the contact information for the assistance services.**

Figure 6 (Question 45). What tools, resources, or services would be most helpful in ensuring that you and your household have knowledge of heat and heat-related illness?



Participants (146) answered question 45. The responses had an **overall theme of wanting more information**. They would like **more updated information, Spanish-language resources, alerts on heat warnings, discounts on bills and home cooling, repairs and maintenance, and medical help**. Many respondents would like free or low-cost medical clinics to check blood pressure and hydration. Others responded that they would like information on cooling centers and where to go to cool down. They also wanted information on who to call for non-emergencies and what to do in an emergency. Participants stated **that they would like their information in the form of alerts such as text alerts, phone calls, or through TV and radio**. Other participants also stated that they would like more information through workshops, trainings, or health fairs. They would like first aid training on heat symptoms and how to treat them. They would also like to learn what to do during heat waves and how to maintain their home cooling systems, as well as how to get repairs at an affordable price (see [Figure 6](#) above).

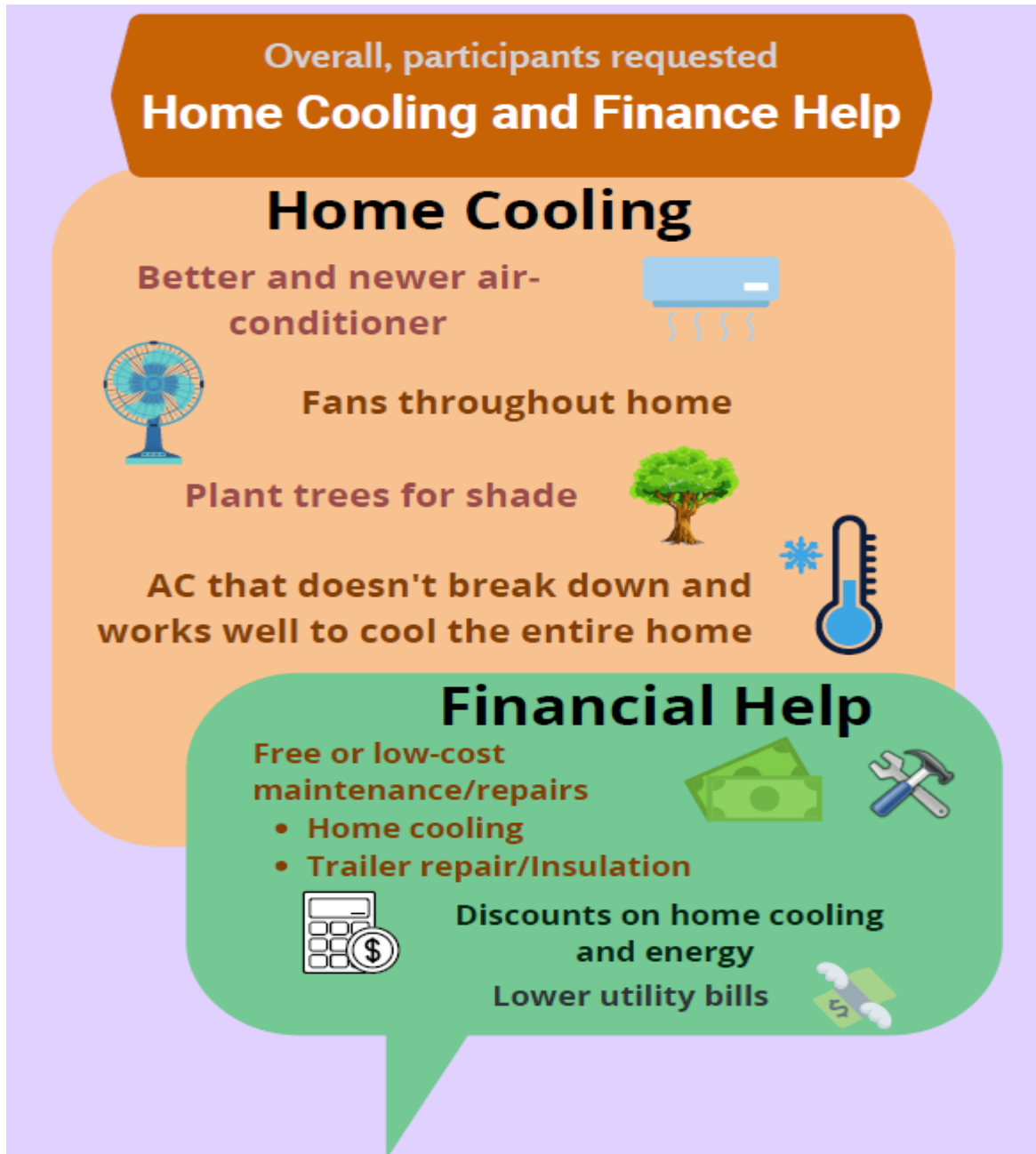
Figure 7 (Question 46). What would be most helpful to you and your household when assistance is needed to manage health conditions related to extreme heat?



Question 46 included 137 responses that included themes such as information, medical help, cooling centers, and processes for assistance. The information that the participants mentioned most included home cooling systems and maintenance at a discounted rate, a hotline they can call for non-emergencies, information on free or low-cost health clinics, and emergency symptoms. Many preferred updated information and resources in Spanish. Participants were also interested in getting medical help, which included more access to medical assistance and free health checks. They also added that they would like help with non-emergency symptoms and guidance on when to go to the hospital. Many respondents also wanted to know more about cooling centers and where to go to cool

off during heat waves. They would prefer to go to cooling centers if they are nearby or do not require documentation or identification. Other participants thought that the process to sign up for utility or repair assistance is too complicated and would like guidance or an easier process to sign up for the assistance, especially one that does not require documents or IDs (see [Figure 7](#) above).

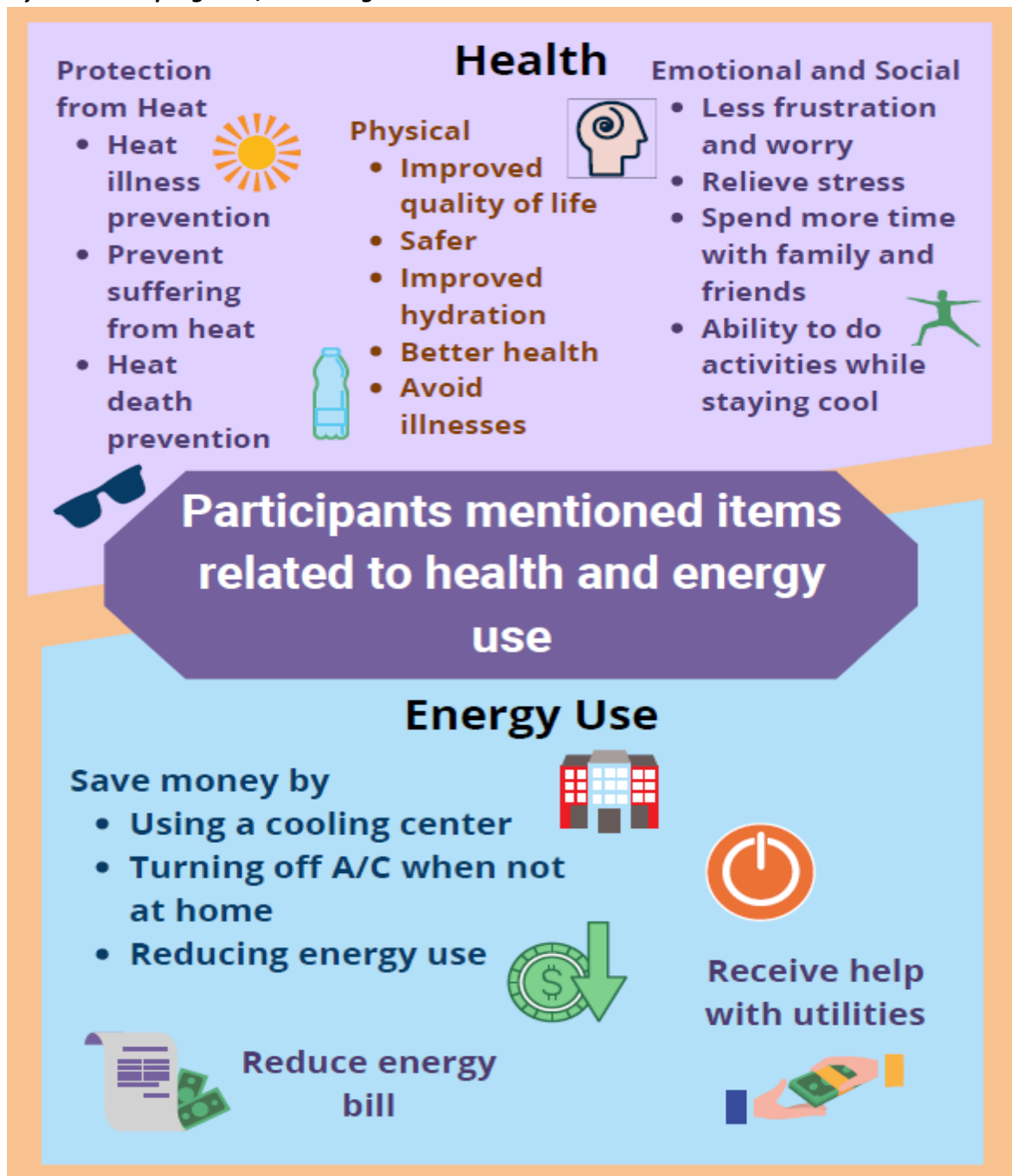
Figure 8 (Question 47). What would be most helpful to keep your home cool during the extreme heat?



Question 47 included 140 responses from participants that **included themes of home cooling and cost**. Many participants stated that they need a good air-conditioner that works well and doesn't break down. Others said that they would like more fans around the house, while some stated that they

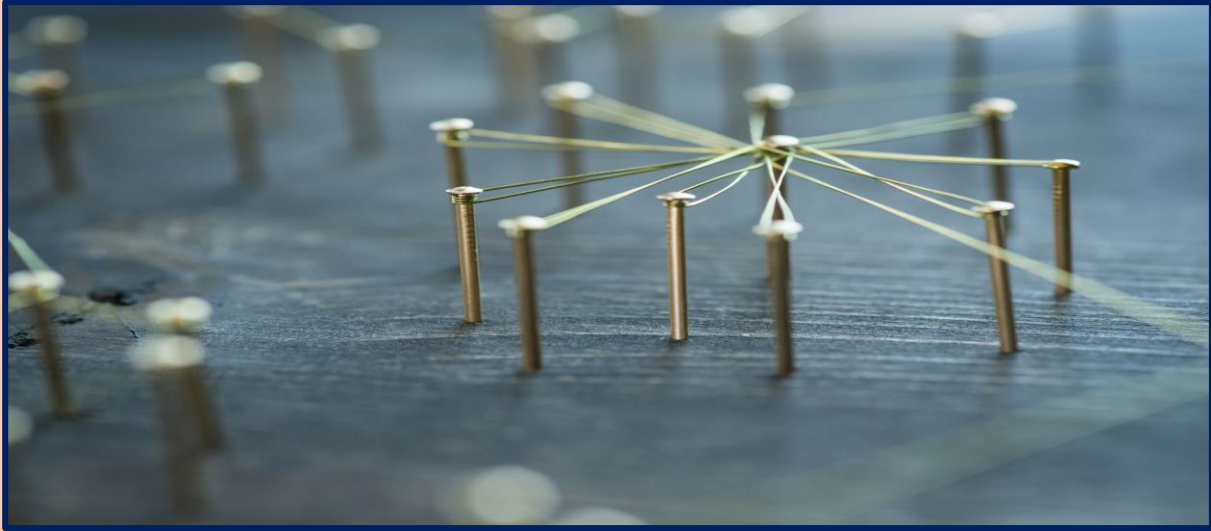
want to plant more trees in their yard to create shade around their homes. Respondents also stated that they would like help with the cost of home cooling and repairs. Many stated that they have home cooling systems that could use maintenance, while others need repairs and/or maintenance on their mobile homes for better insulation. **Respondents would also like to lower their utility and water bills and get discounts for their home cooling units and repairs** (see [Figure 8](#) above).

Figure 9 (Question 48). *What would increase you and your household's use of home cooling systems, utility assistance programs, or cooling centers?*



Question 48, which included 147 responses, was interpreted in a different way by most respondents. It is believed that some of the respondents interpreted the question as *“If the household’s use of home cooling systems, utility assistance, or cooling centers were increased or improved, how would you benefit?”* **The common themes of responses include health and energy use.** Many respondents stated that they would feel protected from the heat, experience less heat illness, feel safer, and overall experience a better quality of life. Others wrote about their mental/emotional health. For instance, many stated that they would feel less stressed, frustrated, or worried and they would be calmer during extreme heat waves. Because of this, their social life would improve by going to cooling centers and interacting with other people and spending time in a cool place with their family. Respondents also **mentioned reducing their energy bill and saving money** by turning off the electricity at home and using the cooling center’s services to stay cool (see [Figure 9](#) above).

DISCUSSION



The overarching goal of this study is to reduce heat deaths and illness in MC mobile home communities by raising awareness about extreme heat, providing safety tips and information, and providing information about available resources. **The following discussion is specific to the post-heat season and the survey results for all participants (both repeat and new participants).**

Demographics

Over 72% of respondents lived in households with four or more people. Many of these households had members with small children, teenagers, and young adults. Nearly 58% of the population ranged from the ages of infant- 34 years old while 42% ranged from the ages of 35-74. The community is isolated because within walking distance (a quarter mile), there is one bus route and a park. Within one mile, there are three supermarkets, and one hospital. In the mobile home community, only 14% of households had more than one car, while 23% had none. For those that have one car or less, public transportation is most relied on (81%), while walking was also a primary method of transportation for some (42%). Most of the households (95%) had at least one employed person, **however 5% of households had no employed members. COVID-19 had a huge impact on income and employment status, with 49% of households experiencing job loss and 73% experiencing reduced job hours.**

Heat Perception

Overall participants were aware of the risks related to heat, **as 92% felt at risk of high temperatures. Of those who felt at risk, 76% believed that they had experienced symptoms associated with extreme heat.** Sixty-three percent of participants reported feeling hot inside their homes most of the time or always. Of those that had reported that their houses were too hot, 85% felt hot at temperatures ranging from 80 degrees Fahrenheit to over 100 degrees Fahrenheit.

Knowledge of Heat and Illness

Overall, the participants responded that they were informed of heat waves (100%) but uninformed about resources to assist them with their home cooling systems during heat waves. **The most common forms of heat alerts were television (93%), followed by radio (59%), and word of mouth from friends, family, or neighbors (39%).** Residents know of the risks associated with heat, as they were able to name many symptoms, such as headaches, blood pressure changes, dizziness, and dehydration; however, many do not know what to do when they experience these symptoms. **Eighty-nine percent of respondents who had experienced symptoms chose to stay home and take no action** as opposed to taking actions, such as seeing a doctor. The majority of respondents had multiple reasons for staying home while feeling ill. **The most common reason was lack of health insurance (64%).** More than half also stated that their symptoms improved, and they felt better (54%). Others did not have a doctor (41%), could not afford an ambulance ride or medical care (28%), did not have transportation (20%), or were unsure of where to go or what to do (20%).

Coping Mechanisms

Many residents who felt too hot in their homes used multiple forms of cooling units. Most residents who used window air-conditioning would use their home cooling system both all day and all night (88%). **Most respondents supplemented their air-conditioning units by having fans (66%);** however, only 60% of those functioned. Others relied on trees for shade (29%) on a hot day; however, that did not work for any participant in keeping them cool. Around 4% stated that neither central air-conditioners nor window air-conditioners were used in their home. It is important to note that only 96 responses on home cooling units were counted out of the 150 participants due to discrepancies in their responses. This was due to participants stating that a home cooling unit worked or was used in their home when they did not have it in their home.

Many residents also left home or sometimes left home to cool off (73%). Many went to a friend or neighbor's house (65%), while others went to a nearby mall or supermarket (55%). **This was the preferred method to cope with the heat for most residents as many had never used a cooling center because they were unaware of the services (50%) or thought it was too far away (30%).**

Barriers To Cooling

Many of the respondents used multiple forms of cooling systems; however, not all systems worked properly. **Many residents had window air conditioners (70%), and 96% of them function.** One-third (33%) of participants reported having central air-conditioners, and 91% of those functioned. Even though participants reported using multiple forms of cooling systems throughout the day, **it was discovered that 69% had limitations to the use**

of these cooling systems. The biggest problem reported for limitations on cooling systems was the cost of electricity (97%) followed by the cost of repairs (45%).

Knowledge and Use of Community Resources

Many participants stated that they were not aware of community programs that assisted in the cost of utility bills (37%) or the cost of repairs (46%). Around 59% of respondents knew about the utility bill assistance programs yet had never used them. Only 4% of households surveyed had ever used the service to assist with utility bills. Fifty-four percent of respondents were aware of the service to assist with the cost of repairs yet had never used them, while only 1% had ever used the service. **Almost half of households (45%) responded that the main reason they did not use these services was because they did not have the contact information.** Other participants stated that they assumed they did not qualify (28%), had no access to a computer (23%), or thought the process was too complicated (23%). This highlights that while lack of awareness is one factor that plays a role in limitations to cooling systems and use of utility bill and repair assistance programs, that other critical factors also exist, such as program qualification requirements and complicated processes that deter program use.

Many respondents also did not know about cooling centers (48%). **Half of the participants (50%) had heard of cooling centers but had never used the services and only 1% have used the service.** Many who did not know about cooling centers found themselves going to a friend or neighbor's house (65%), to the nearest supermarket (55%), or mall (55%) to cool off. Other respondents found opportunities to cool off at a faith-based building (20%), Community Center (13%), or

some other cool place such as public pools, parks, Walmart, etc. (37%).

Effects of COVID-19

With COVID-19 hitting many neighborhoods throughout Maricopa County, many respondents were affected by the pandemic, especially during heat waves. **Seventy-three percent of respondents had their job hours reduced, and 49% had at least one household member lose their job. With the lack of work during the pandemic, 25% were unable to pay utilities, such as air-conditioning and water, and 18% were unable to pay the rent or mortgage.** Another 26% had their phone service cut, 19% of respondents were unable to provide food or other essentials, and 28% had at least one household member diagnosed with COVID-19.

Because of the stress of the pandemic, over three-quarters of the community feared getting sick (80%), while others felt anxious from stress or other issues (64%). Many of those who dealt with the effects of COVID-19 also reported feeling lonely (35%) and a lack of sleep (25%).

Resources and Potential Solutions

- Residents would like more information on heat alerts, heat illness symptoms, and medical assistance.
- Participants would like resources that are updated and easy to understand in forms such as brochures, fliers, text alerts, tv, radio, phone calls, and health fairs.
- Many also stated that they would like resources in Spanish, so they can understand the information better.

- Some would like to participate in trainings in first aid and how to treat heat illness symptoms, so they can be well prepared for high summer temperatures.
- Participants would like to learn how to respond to emergency situations.
- Residents would like trainings on home cooling system maintenance and repairs.
- Many households do not have medical insurance, so access to free or low-cost healthcare would benefit many residents living in the mobile home community.
- Many reported that they have cooling systems that they use in their house that do not function well and often need repairs or need to be replaced.
- Many stated that maintenance, repairs, and replacement systems are very expensive.
- Residents would like information on low-cost home cooling system repairs and maintenance as well as discounted home cooling systems.
- Residents would like an easier process to apply for assistance programs that does not require a computer or identification documents - some would like guidance in applying for these programs.
- Respondents stated that they would like to take advantage of cooling centers and the services they offer, but would prefer the cooling centers to be closer to where they live, so they can have easier access.



CONCLUSION AND NEXT STEPS



The funding for this project was from the ASU Healthy Urban Environments Initiative; however, during the summer, there was an opportunity for supplemental funding (\$6,500) from Robert Wood Johnson Foundation to help at-risk communities. The funding was granted to this project to help the community center at the church where Salud en Balance Community Health Workers will continue to assist and support community residents. The extra funding bought the community center a new computer and printer/copy machine as well as assistance with utilities during increased project hours. The remainder of the funding was used to purchase additional incentive gift cards of \$25 to distribute directly to each mobile home community household.

Phase one of this project included a pre-heat season survey and a [Heat Toolkit](#) that were distributed in July of 2020. Phase two of this project included a post-heat season [survey](#) that was distributed in October of 2020. This allowed for the collection and analysis of data to determine if there were any knowledge and behavior changes following phase one of the project. **These comparisons of the responses of the community members that took the survey in July (phase one) and repeated the survey in October (phase two) can be found in a separate evaluation report.**

The data suggests differences in knowledge of service programs between repeat participants and new participants. For instance, in repeat participants, only 10% were unaware of utility programs, while 84% knew of the services and 7% applied to the services. In the July survey, 84% were not aware of the services while only 14% were aware. **The percentage of participants that know of the services drastically increased during phase two in October after receiving the *Heat Toolkit* during phase one in July.** In the new participants who were not given the *Heat Toolkit* until they received the survey in October, only 22% were aware of the utility services and 78% had no knowledge of the services. None of the new participants had used the service. Seventy-one percent of new participants stated they did not apply for assistance because they did not have the contact information, and only 28% of the participants that repeated the survey stated they did not have the contact information. Participants that took the survey in both July and October did not apply because many assumed that they did not qualify or did not have access to a computer.

As for programs that assist with repair services, 13% of the participants that repeated the survey from July stated that they have applied to the services. Of those that did not apply, 79% were aware of the service, but had never used it, and only 20% had no knowledge of the service. The reasons the participants did not apply to the services were the following: 37% assumed that they did not qualify and 29% were unaware of the services. This differs from the original responses in the July survey, where 96% had no knowledge of the service and only 4% knew of the services but had never applied. **The participants that repeated this survey in October after taking the original survey in July shows the increase in knowledge of the repair service programs. However, the new participants that did not receive a toolkit in July were very unaware of programs that assist with repair services.** Only 14% knew of the services and 86% had no knowledge of these services. Three percent of those that were

aware of the repair service applied but did not receive the services, while 81% were unaware of the services and 10% believed that they would not qualify and did not apply.

The data suggests that the *Heat Toolkit* gave them the information they needed about the programs to assist with utility bills. Salud en Balance built relationships, engaged existing resident networks within the mobile home park, helped residents navigate and understand the information over the phone, and created communication bridges based on shared cultural and linguistic profile. Because of the relationship with the Community Health Workers at Salud en Balance and the knowledge shared with the participants, the residents have shown improvements in their knowledge of heat illnesses as well as their knowledge of programs that can assist them with repairs and utility costs.

The results of the Healthy Urban Environment (HUE) surveys suggest that community outreach and education are needed to ensure these communities are aware of existing programs and services available to them for assistance.

By spreading more awareness and sending resources to this community, they have been given the opportunity to utilize the information they were provided with. The results also suggest that the COVID-19 pandemic has had a large impact on the participants' ability to act and utilize various resources. This is a difficult time in the world, especially for those that lost a job and can no longer pay utilities. In Arizona's hot climate, it is difficult to stay cool, especially when utility costs are so high, and air-conditioners need maintenance. **Maricopa County Department of Public Health (MCDPH) plans to continue to work with this community to ensure that they are given proper resources and important information to assist them during extreme heat waves and climate changes.**

Recommendations and potential solutions to contribute to the community will be further discussed in the evaluation report.

REFERENCES

- Association for Community Health Improvement. (2017). Community Health Assessment Toolkit. Retrieved October 01, 2020, from <https://www.healthychcommunities.org/resources/community-health-assessment-toolkit>
- Centers for Disease Control and Prevention (CDC). (2017). Natural Disasters and Severe Weather. Extreme Heat. Retrieved from https://www.cdc.gov/disasters/extremeheat/heat_guide.html
- Environmental Protection Agency (EPA). (2016). Climate Change and Extreme Heat: What You Can Do to Prepare. Retrieved from <https://www.epa.gov/sites/production/files/2016-10/documents/extreme-heat-guidebook.pdf>
- Maricopa County Department of Public Health Office of Epidemiology. (2019). Heat- Associated Deaths in Maricopa County, AZ: Final Report for 2019. Retrieved from <https://www.maricopa.gov/ArchiveCenter/ViewFile/Item/4959>
- USGCRP, 2016: The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. Crimmins, A., J. Balbus, J.L. Gamble, C.B. Beard, J.E. Bell, D. Dodgen, R.J. Eisen, N. Fann, M.D. Hawkins, S.C. Herring, L. Jantarasami, D.M. Mills, S. Saha, M.C. Sarofim, J. Trtanj, and L. Ziska, Eds. U.S. Global Change Research Program, Washington, DC, 312 pp. Retrieved from <http://dx.doi.org/10.7930/J0R49NQX>
- United States Census Bureau. (2019). 4,485,414, Total Population in Maricopa County, Arizona. Source 2019 Population Estimates Null. Retrieved from <https://data.census.gov/cedsci/all?q=maricopa%20county>
- United States Census Bureau. (2019). 62,992 Total Population in ZCTA5 85008. Source 2018 American Community Survey 5-Year Estimates. Retrieved from <https://data.census.gov/cedsci/all?q=85008>

APPENDICES

APPENDIX I: GOAL AND OBJECTIVES

Overarching Goal: Reduction of heat deaths and illness in MC mobile home communities

Goal: To gain a better understanding of trailer/mobile home residents' heat perception, knowledge, coping mechanisms used, barriers to cooling, and knowledge and use of community resources

Figure 1. Goals and Objectives

Objectives	Pre-Heat Season (July)	Post-Heat Season (October-November)	Deliverables (completed/to be completed)
Provide information related to heat	Develop <i>Heat Toolkit</i> * and distribute to every household Pre-heat season survey included in the packet	Summarize pre-heat season survey results and produce report and infographics Administer post-heat season survey	<i>Heat Toolkit</i> including survey distributed to 165 households
Train residents/Community Health Workers	Conduct workshops to train Community Health Workers to administer the survey Community Health Workers administer the survey & distribute incentive cards	Conduct the second workshop with residents and Community Health Workers Community Health Workers will administer the survey & distribute incentive cards	First workshop with Community Health Workers held on 7/7/2020 Collected 103 completed surveys
Analyze and evaluate results from both surveys	Analyze the pre-heat season survey	Analyze the post-heat season survey and conduct evaluation	Survey analyses reports will be completed Evaluation report will be completed
Communicate and next steps	Communicate information with residents, funder, and partners	Communicate information with residents, funder, and partners	Replicate and implement the same procedures in additional communities as resources permit

*packet with information on types of heat illness, heat statistics, safety tips, and available resources

APPENDIX II: DEFINITIONS

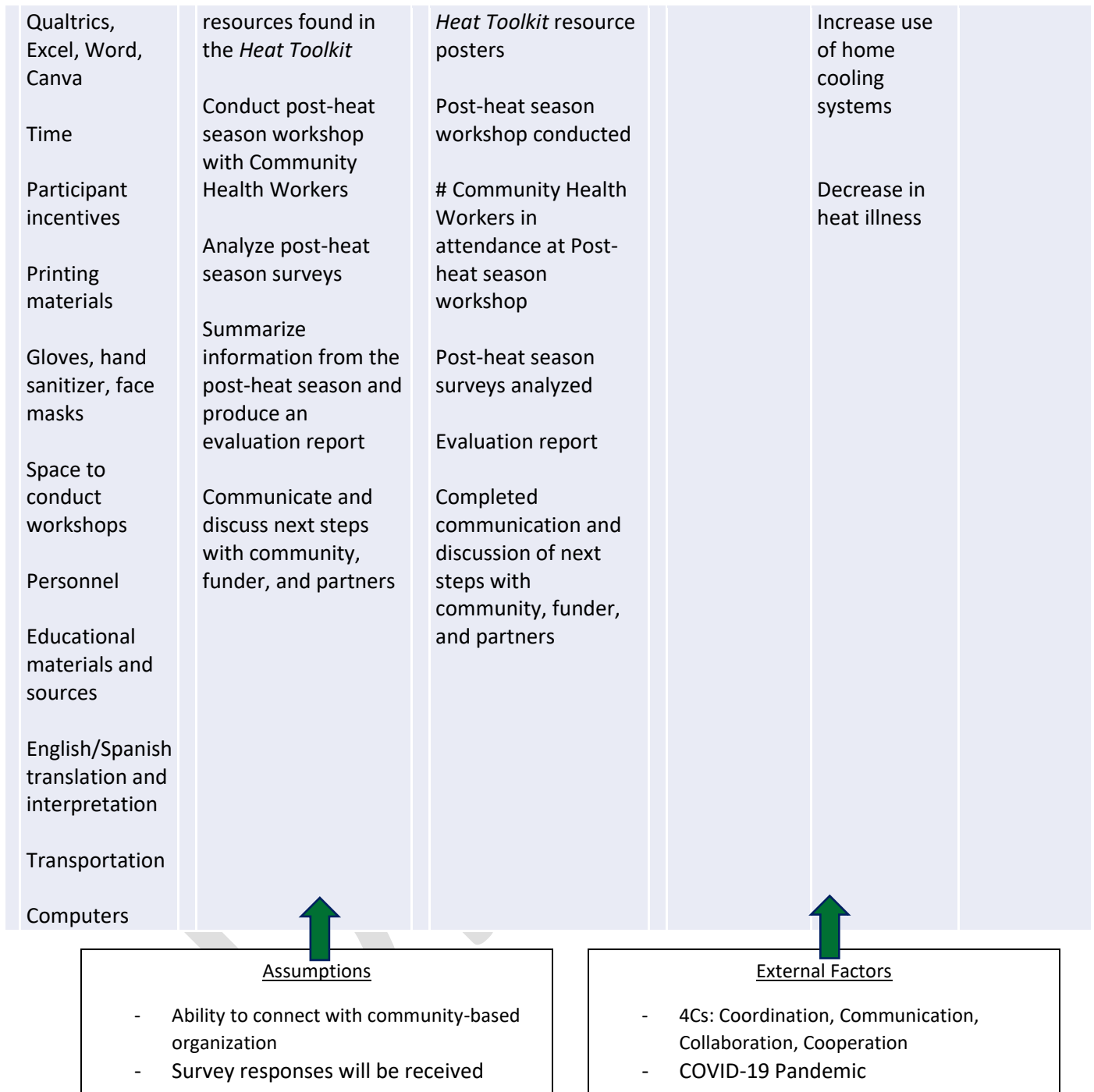
Table 1. Definitions

Item	Definition
Pre-heat Season	The time of year just before it gets hot that occurs between winter and summer.
Post-heat Season	The time of year following heat season that occurs after the hot summer months.
Cooling Center	An air-conditioned public space set up by local authorities to temporarily prevent negative health effects of extreme heat or to prevent overheating during heat waves.
Central Air-Conditioning	A cooling system in which air is cooled at a central location and distributed throughout multiple rooms through vents.
Window Air-Conditioning	A simple air-conditioning unit that is mounted on windows to cool the room.

APPENDIX III: HUE LOGIC MODEL AND NARRATIVE

Figure 1. Logic Model





Logic Model Narrative

This logic model is built on the assumptions that the project will have the ability to connect and collaborate with a Community-Based Organization and that survey responses will

be received from the project's target population. It also considers external factors including the 4Cs (collaboration, communication, coordination, cooperation) and the COVID-19 pandemic.

The outputs described on the logic model will be measured in a variety of ways. For many outputs, such as *Heat Toolkit*, pre-heat season survey, and evaluation report, the completion of activities will be used for evaluation. *Heat Toolkit* distribution numbers, attendance numbers, and survey completion numbers will also be used for evaluation to measure how many households received the *Heat toolkit*, how many Community Health Workers attended the pre-heat and post-heat season workshops, and how many pre-heat and post-heat season surveys were completed. Due to the pandemic, the only residents that were invited to attend the pre-season workshop were those who are also members of the Salud en Balance team.

Pre-heat and post-heat season surveys will be administered to measure participant knowledge of heat and illness, perceptions about heat, home cooling system use and barriers to use, awareness and use of utility assistance programs, awareness and use of neighborhood resources, and the effect of COVID-19 on the household and individual both pre-heat season (pre-intervention) and post-heat season (post-intervention).

Short-term, intermediate, and long-term outcomes are also illustrated in the logic model. Short-term and intermediate outcomes include but are not limited to increasing the community's knowledge of heat, increasing awareness of utility assistance programs, and gaining a better understanding of trailer/mobile home residents' heat perception, knowledge, coping mechanisms used, barriers to cooling, and knowledge and use of community resources. The long-term outcome listed in the logic model is reduction of heat deaths and illness in Maricopa County (MC) mobile home communities.

APPENDIX IV: 85008 ZIP CODE VS MARICOPA COUNTY

Table 1. Heat Deaths in 85008 Zip Code vs Maricopa County for Years 2016 – 2020

Zip Code 85008		Maricopa County	
Total # Confirmed Heat-Associated Deaths (%)			
Death rate: 4.5 per 100,000 residents		Death rate: 4.0 per 100,000 residents	
Ages of Those Experiencing Heat-Associated Death (%)			
0-4:	0%	0-4:	1%
5-19:	0%	5-19:	0%
20-34:	7%	20-34:	9%
35-49:	14%	35-49:	20%
50-64:	43%	50-64:	35%
65-74:	21%	65-74:	17%
75+:	14%	75+:	17%
Total Indoor Heat-Associated Deaths (%)			
21%		30%	
A/C Present:	67%	A/C Present:	81%
A/C Non-functioning:	50%	A/C Non-Functioning:	72%
No Electricity:	0%	No Electricity:	5%
Not in Use:	50%	Not in Use:	19%
Total Outdoor Heat-Associated Deaths (%)			
71%		69%	
Place of Injury		Place of Injury	
Urban Area:	50%	Urban Area:	57%
Desert Area/Trail:	10%	Desert Area/Trail:	14%
Residence:	30%	Residence/Garage:	20%
Car:	10%	Car:	6%
Work Site:	0%	Work Site:	1%
Care Facility:	0%	Care Facility:	0%
Unknown:	0%	Unknown:	2%
Living Situation		Living Situation	
Homeless:	36%	Homeless:	38%
Co-habiting/Roommate:	14%	Co-habiting/Roommate:	18%
Living Independently:	29%	Living Independently:	33%
Unknown:	21%	Unknown:	11%

✚ Data only include Maricopa County residents.

✚ Data pulled from “Final Data 2006 – 2018” Heat Database, 2019 Heat Database, and 2020 Heat Database generated by MCDPH

✚ MCDPH conducts heat associated mortality surveillance.

Table 2. Poverty Level of Zip Code 85008 vs. Maricopa County 2018

85008 Poverty Level 2018 Total Pop (N=62,436)		Maricopa Poverty Level 2018 Total Pop (N=4,355,605)	
Below Poverty	18,107 (29%)	Below Poverty	531,672 (12.2%)
Hispanic Total Pop	36,071	Hispanic Total Pop	1,363,296
Below Poverty	12,114 (33.6%)	Below Poverty	249,762 (18.3%)
White Total Pop	37,214	White Total Pop	3,430,487
Below Poverty	9,328 (25.1%)	Below Poverty	375,482 (10.9%)
American Indian or Alaska Native Total Pop	1,926	American Indian or Alaska Native Total Pop	88,937
Below Poverty	415 (21.5%)	Below Poverty	22,255 (25%)
Black or African American Total Pop	7,498	Black or African American Total Pop	253,229
Below Poverty	2,960 (39.5%)	Below Poverty	45,974 (18.2%)
Asian Total Pop	774	Asian Total Pop	182,137
Below Poverty	207 (26.7%)	Below Poverty	20,083 (11%)
Native Hawaiian or Pacific Islander Total Pop	185	Native Hawaiian or Pacific Islander Total Pop	10,331
Below Poverty	65 (35.1%)	Below Poverty	444 (4.3%)
Other Race Total Pop	12,589	Other Race Total Pop	221,416
Below Poverty	4,645 (36.9%)	Below Poverty	41,363 (18.7%)

✚ Data pulled from 2018 Census describes the total population and population by race that are below poverty level in Maricopa County and the zip code 85008.

Table 3. Demographics of Zip Code 85008 vs. Maricopa County 2018 Census

Zip code 85008 Total Population 2018		Maricopa County Total Population 2018	
Age Range (N=62,992)		Age Range (N=4,410,824)	
Less than 4	5,356 (9%)	Less than 4	279,484 (6%)
Ages 5-19	13,574 (22%)	Ages 5-19	890,280 (20%)
Ages 20-34	19,708 (31%)	Ages 20-34	934,984 (21%)
Ages 35-49	11,980 (19%)	Ages 35-49	858,820 (19%)
Ages 50-64	8,801 (14%)	Ages 50-64	778,057 (18%)
Ages 65+	3,573 (6%)	Ages 65+	669,199 (15%)
Employment (N=47,926)		Employment (N=3,478,309)	
Labor Force	73.10%	Labor Force	64.60%
Employment/ Population Ratio	68.30%	Employment/ Population Ratio	61.50%
Unemployment	6.30%	Unemployment	4.60%
Race (N=62,992)		Race (N=4,410,824)	
Hispanic	36,314 (57.6%)	Hispanic	1,379,637 (31.3%)
American Indian/ Alaska Native	2,509 (4%)	American Indian or Alaska Native	131,157 (3%)
White	38,944 (61.8%)	White	3,614,022 (81.9%)
Asian	1,287 (2%)	Asian	244,080 (5.5%)
Native Hawaiian or Pacific Islander	463 (0.7%)	Native Hawaiian or Pacific Islander	19,568 (0.4%)
Black or African American	8,740 (13.9%)	Black or African American	322,929 (7.3%)
Other Race	13,507 (21.4%)	Other Race	263,648 (6%)
Language (N=57,636)		Language (N= 4,131,340)	
English	25,807 (44.8%)	English	2,986,970 (72.3%)
Other	31,829 (55.2%)	Other	1,144,370 (27.7%)
Households (N= 21,902)		Households (N=1,611,722)	
Own	25%	Own	62.60%
Rent	75%	Rent	37.40%

✚ Data pulled from the 2018 Census describes the demographics of Maricopa County vs the zip code of 85008.

APPENDIX V: HEAT ASSOCIATED DEATHS BY HOUSING TYPE 2016-2020

Table 1. Heat-Associated Deaths by Housing Type for Years 2016-2020

Mobile Homes		Single Homes		Apartments/Condos	
30%		53%		16%	
Ages of Those Experiencing Heat-Associated Deaths (%)					
0-4:	1%	0-4:	0%	0-4:	0%
5-19:	0%	5-19:	0%	5-19:	0%
20-34:	1%	20-34:	1%	20-34:	5%
35-49:	4%	35-49:	4%	35-49:	9%
50-64:	34%	50-64:	30%	50-64:	33%
65-74:	33%	65-74:	26%	65-74:	33%
75+:	28%	75+:	38%	75+:	21%
Gender of Those Experiencing Heat-Associated Deaths (%)					
Male:	73%	Male:	56%	Male:	60%
Female:	28%	Female:	44%	Female:	40%
Race/Ethnicity of Those Experiencing Heat-Associated Deaths (%)					
Asian/Pacific Islander:	0%	Asian/Pacific Islander:	1%	Asian/Pacific Islander:	5%
Hispanic:	13%	Hispanic:	9%	Hispanic:	23%
White Non-Hispanic:	75%	White Non-Hispanic:	77%	White Non-Hispanic:	56%
American Indian:	0%	American Indian:	2%	American Indian:	2%
Black/African American:	4%	Black/African American:	8%	Black/African American:	7%
A/C Status (%)					
A/C NOT Present	23%	A/C NOT Present	11%	A/C NOT Present	2%
A/C Present:	71%	A/C Present:	84%	A/C Present:	95%
A/C Non-functioning:	70%	A/C Non-Functioning:	79%	A/C Non-Functioning:	56%
No Electricity:	7%	No Electricity:	5%	No Electricity:	2%
Not in Use:	16%	Not in Use:	14%	Not in Use:	39%
Month of Death (%)					
March:	0%	March:	1%	March:	0%
April:	0%	April:	0%	April:	0%
May:	3%	May:	1%	May:	0%
June:	25%	June:	17%	June:	21%
July:	33%	July:	45%	July:	35%
August:	34%	August:	22%	August:	35%
September:	4%	September:	13%	September:	7%
October:	1%	October:	0%	October:	0%
November:	1%	November:	0%	November:	2%
Living Situation (%)					
Homeless:	9%	Homeless:	4%	Homeless:	0%

Co-habiting/Roommate:	16%	Co-habiting/Roommate:	24%	Co-habiting/Roommate:	7%
Living Independently:	74%	Living Independently:	72%	Living Independently:	91%
Unknown:	1%	Unknown:	0%	Unknown:	2%

DRAFT

APPENDIX VI: SURVEY QUESTIONS - ENGLISH

Healthy Urban Environments (HUE) Initiatives

Survey Questions

Introduction

Maricopa County Department of Public Health is learning about the needs of residents living in manufactured and RV homes when it is hot in Arizona. The results of this survey will help us learn if residents know about and use community services and resources related to heat. Your participation in this project is completely voluntary. You may choose not to participate or leave blank any questions you don't wish to answer. All responses will be confidential. Results from this survey will only be reported as a total response (no individual results). If you agree to participate in this project, please answer the questions on the survey as best as you can.

Do you give us permission to give you this survey?

☐ Yes

☐ No

Did you take this survey in July?

☐ Yes

☐ No

Thank you for taking the time to participate.

End of Block: Introduction

Demographic Questions

First, we would like to ask you some general questions about your household and your home. Please respond for all members of your household.

Q1 How many people live in your household (including yourself)?

Q2 How many people living in your household are (should total the number of people listed in question 1):

- _____ Less than 4 years old
 - _____ 5-19 years old
 - _____ 20-34 years old
 - _____ 35-49 years old
 - _____ 50-64 years old
 - _____ 65-74 years old
 - _____ 75 years and older
 - _____ Don't know
 - _____ Refused
-

Q3 How many people are employed in your household?

- ☐ Write in number: _____
- ☐ Refused to answer
-

Q4 Is there any adult in your household who does not speak English?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Refused
-

Q5 How many people living in your household are: (Should total the number of people in question 1):

- _____ White
- _____ Black or African American
- _____ American Indian or Alaska Native
- _____ Asian
- _____ Native Hawaiian or Pacific Islander
- _____ 2 or more races (mixed race)
- _____ Don't know
- _____ Refused
-

Q6 How many people living in your household are: (Should total the number of people in question 1):

- _____ Hispanic
 - _____ Not Hispanic
 - _____ Don't know
 - _____ Refused
-

Q7 Does your household own or rent the trailer/mobile home?

- ☐ Own
 - ☐ Rent
 - ☐ Don't know
 - ☐ Refused
-

Q8 What is the highest level of education achieved by a member of your household?

- ☐ Primary School
 - ☐ Secondary School
 - ☐ High School graduate or GED
 - ☐ Some college
 - ☐ College graduate or more
 - ☐ Don't know
 - ☐ Refused
-

Q9 Place a (1) next to your household's primary means of transportation and a (2) next to your household's secondary means of transportation (what is used if the primary means of transportation is unavailable).

- ☐ Personal vehicle
- ☐ Walk
- ☐ Bike
- ☐ Public Transportation (light rail, bus, etc.)
- ☐ Taxi
- ☐ Agency Pick-up (dial-a-ride, shuttle, Veyo, etc.)
- ☐ Get a ride from family/friends
- ☐ Lyft/Uber
- ☐ Other
- ☐ Don't know
- ☐ Refused

Go To: Q10 If "Personal vehicle" is listed as primary or secondary means of transportation

Q10 If personal vehicle was selected, how many vehicles does the household have the ability to use (have access to and that work most of the time)?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 +

End of Block: Demographic Questions

Knowledge of Heat and Illness

Now, we would like to ask you about your experience with heat and other things you may know about heat-related illness. There is no right or wrong answer. For the following questions, we will be asking about events that happened during this summer, which is from May through July.

Q11 Do you or other members of your household remember hearing weather warnings about excessive heat this summer?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Refused

Skip To: Q13 If Q11 does not = Yes

Q12 If yes, select your **primary** source of information:

- ☐ TV
 - ☐ Radio
 - ☐ Text Message
 - ☐ Automated Call
 - ☐ Local Newspaper
 - ☐ Church, mosque, synagogue, or another religious site
 - ☐ Internet
 - ☐ Social Media
 - ☐ Neighbor/Friends/Word of Mouth
 - ☐ Poster/Flyer
 - ☐ Other _____
 - ☐ Don't know
 - ☐ Refused
-

Q13 Can you tell me any health problems you or a household member can get from exposure to heat?

- ☐ Yes
- ☐ No

Go To: Q14 If Q13 = Yes

Q14 If yes, please specify what health problems a household member can get from exposure to heat?

Q15 Have you or a member of your household had symptoms this summer related to heat or high temperatures such as leg cramps, dry mouth, dizziness, fatigue, rapid heartbeat, or hallucinations?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Refused

Go To: Q16 If Q15 = Yes

Q16 What was the outcome of this heat-related illness? (Select all that apply)

- ☐ Stayed home and did nothing
- ☐ Called 911
- ☐ Went to the Emergency Room
- ☐ Admitted to the hospital
- ☐ Death

Skip To: Q18 If Q16 does not = Stayed home and did nothing

Q17 If stayed home and did nothing, what was the reason? (Select all that apply)

- ☐ Household did not have medical insurance
- ☐ Household did not have transportation
- ☐ Could not afford an ambulance ride or medical care
- ☐ Do not have a doctor
- ☐ Symptoms improved so care was not needed (felt better)
- ☐ Was unsure of what to do or where to go
- ☐ Other _____

End of Block: Knowledge of Heat and Illness

Perceptions about Heat

These questions are about what steps you may take when it is hot outside.

Q18 Do you feel that your health is at risk because of high summer temperatures?

- ☐ Yes
 - ☐ No
 - ☐ No opinion
 - ☐ Refused
-

Q19 At what temperature do you start to feel too hot inside your home?

- ☐ Fahrenheit _____
 - ☐ Celsius _____
 - ☐ Don't know
-

Q20 Did you or members of your household ever feel too hot inside your home during this summer?

- ☐ Always
- ☐ Most of the time, but not always
- ☐ Sometimes, but rarely
- ☐ Never
- ☐ Don't know
- ☐ Refused

End of Block: Perceptions about Heat

Home Cooling Systems

These questions are about what type of cooling systems you have at home.

Q21 Which of the following cooling systems does your household have? (Select all that apply)

- ☐ Central air-conditioning
 - ☐ Window air-conditioning
 - ☐ Swamp or evaporative cooler
 - ☐ Fans
 - ☐ Misters
 - ☐ Trees or plants
 - ☐ Other _____
 - ☐ None
-

Q22 Which of the following was used to cool your household this summer?

- ☐ Central air-conditioning
- ☐ Window air-conditioning
- ☐ Swamp or evaporative cooler
- ☐ Fans
- ☐ Misters
- ☐ Trees or plants
- ☐ Other _____
- ☐ None

Skip To: Q24 If Q22 does not = Central air-conditioning or Window air-conditioning

Q23 If your household used central air-conditioning/window air-conditioning this summer, when did you use it?

- ☐ Morning time ONLY
- ☐ Afternoon ONLY
- ☐ Evening time ONLY
- ☐ Both, ALL day and ALL night

Q24 Which cooling system **works (is functional)** in your home? (Select all that apply)

- ☐ Central air-conditioning
 - ☐ Window air-conditioning
 - ☐ Electric fans (ceiling or portable)
 - ☐ Swamp cooler
 - ☐ Misters
 - ☐ Other _____
-

Q25 Does anything limit you from using your cooling system when there are high temperatures?

- ☐ Yes
- ☐ No

Go To: Q26 If Q25 = Yes

Q26 What limits your household from using your cooling system? (Select all that apply)

- ☐ Cost of electricity
- ☐ Doesn't work
- ☐ Cost of repairs
- ☐ Noise
- ☐ Medical reasons
- ☐ Household doesn't have a cooling system
- ☐ Nothing prevents household from using it
- ☐ Other _____

End of Block: Home Cooling Systems

[Access to Resources](#)

Next, we would like to know if you are aware of assistance programs and other community resources

Q27 Are you aware of community programs or services to help you with the **cost of utility bills**?

- ☐ No
- ☐ Yes, but I never used the service
- ☐ Yes, I have used the service

Q28 Are you aware of community programs or services to help you with home **cooling system repairs**?

- ☐ No
 - ☐ Yes, but I have not used the service
 - ☐ Yes, I have used the service
-

DRAFT

Q29 If you have **NOT** utilized any community assistance programs or services, please select your reason(s):

- ☐ I am not interested in this program
 - ☐ I don't have the contact information
 - ☐ I am unable to complete the application due to not having a computer or access to a computer
 - ☐ I am unable to complete the application due to not being able to understand it / it is in a different language
 - ☐ I am unable to complete the application for some other reason (please specify) _____
 - ☐ I have difficulty hearing on the phone
 - ☐ I assumed I don't qualify for this program (if selected, please state why this assumption was made) _____
 - ☐ I was told I don't qualify for this program
 - ☐ It is a complicated process
 - ☐ I was not aware of these services
 - ☐ Other _____
-

Q30 Have you or a member of your household ever applied for these **utility assistance programs (cost of utility bills or for cooling system repairs)**?

- ☐ Yes
- ☐ No, I was not aware of any utility assistance programs
- ☐ No, I did not need utility assistance
- ☐ No, I assumed I did not qualify for utility assistance
- ☐ No, I was told I did not qualify for utility assistance
- ☐ Don't know
- ☐ Refused

End of Block: Access to Resources

Neighborhood Resources

Now we would like to ask some questions about how you deal with the heat

Q31 When the weather is very hot, do you or members of your household ever leave your home and go to an air-conditioned place to cool off?

- ☐ Yes
- ☐ Sometimes
- ☐ No
- ☐ Refused

Skip To: Q34 If Q31 = No

Q32 Where do you or members of your household go to cool off? (Select all that apply)

- ☐ Mall
- ☐ Church, mosque, synagogue, or another religious site
- ☐ Community center
- ☐ Library
- ☐ Shelter
- ☐ Cooling center
- ☐ Movie theater
- ☐ Friends/Neighbors
- ☐ Supermarket
- ☐ Other _____

Q33 How does your household normally travel to the air-conditioned place? (Select all that apply)

- ☐ Personal vehicle
 - ☐ Walk
 - ☐ Bike
 - ☐ Public transportation (light rail, bus, etc.)
 - ☐ Agency Pick-up (dial-a-ride, shuttle, Veyo, etc.)
 - ☐ Get a ride from family/friends
 - ☐ Lyft/Uber
 - ☐ Other _____
-

Q34 Are you aware of the **Cooling Centers in Maricopa County** (Places where an individual can go during the day to cool down during extreme heat warning days)?

- ☐ No
- ☐ Yes, but I never used the service
- ☐ Yes, I have used the service

Go To: Q35 If Q34 = No or Yes, but I never used the service

Q35 If you are unaware of or have not used a Cooling Center, why not? (Select all that apply)

- ☐ I was unaware of the service
- ☐ I don't have a way to get there (no transportation)
- ☐ It is too far away
- ☐ I fear being unwelcome
- ☐ I fear being asked to show my ID
- ☐ Other (please specify) _____

End of Block: Neighborhood Resources

[COVID-19 Questions](#)

Q36 How is COVID-19 affecting your household's daily life? (Select all that apply)

- ☐ Household member lost a job
 - ☐ Job hours were reduced
 - ☐ Household member was diagnosed with COVID-19
 - ☐ Household member was hospitalized due to COVID-19
 - ☐ Household member passed away from COVID-19
 - ☐ Unable to provide food for family
 - ☐ Unable to pay my rent/mortgage
 - ☐ Unable to pay monthly utilities
 - ☐ Phone service cut
 - ☐ Unable to provide/afford childcare
 - ☐ Unable to help my children with their school
 - ☐ Other _____
 - ☐ COVID-19 has not affected my household
 - ☐ Refused
-

Q37 How is COVID-19 affecting you personally? (Select all that apply)

- ☐ I feel anxious
 - ☐ I fear getting sick
 - ☐ I feel lonely
 - ☐ I can't sleep
 - ☐ Other _____
 - ☐ COVID-19 is not affecting me personally
-

Q38 Has your household received any assistance during the COVID-19 pandemic?

- ☐ Yes
- ☐ No

Skip To: Q41 If Q38 = No

Q39 What type of assistance did your household receive? (Select all that apply)

- ☐ Utility assistance
 - ☐ Rent assistance
 - ☐ Phone service assistance
 - ☐ Medical bill assistance
 - ☐ Unemployment assistance
 - ☐ Transportation assistance
 - ☐ Food assistance
 - ☐ Supply assistance (gloves, hand sanitizer, face masks, cleaning supplies, etc.)
 - ☐ Medical care
 - ☐ Educational materials
 - ☐ Other (please specify) _____
-

Q40 Who provided the assistance?

End of Block: COVID-19 Questions

Resources and Potential Solutions

Q41 Maricopa County provided you with materials in July, did you find these materials helpful?

- ☐ Yes
- ☐ No
- ☐ I did not receive the materials in July - I am a new participant

Go To: Q42 If Q41 = Yes

Q42 Which of these materials did you find the most helpful? (Rank these materials from 1-, with 1 being the most helpful)

- _____ Community Survey - MCDPH (Maricopa County Department of Public Health) (Spanish & English)
- _____ Heat Deaths in Maricopa County 2006-2019 - MCDPH (Spanish & English)
- _____ Heat Kills in Maricopa County infographic - MCDPH (Spanish & English)
- _____ Heat Deaths in Mobile Homes infographic - MCDPH (Spanish & English)
- _____ Frequently Asked Questions (FAQ) About Heat - CDC (Spanish & English)
- _____ Climate Change and Extreme Heat infographic - CDC (Spanish & English)
- _____ Top 10 Tips for Staying Safe in the Arizona Heat - MCDPH (Spanish & English)
- _____ Stay Safe / Signs of Heat Illness card - MCDPH (Spanish & English)
- _____ Available Resources by City - MCDPH (Spanish & English)
- _____ Resources by Provided Services - MCDPH (Spanish & English)

Q43 Did you share any of the information or materials provided during this project with other people?
(Select all that apply)

☐

No

☐

Yes, with friends

☐

Yes, with family members

☐

Yes, with neighbors

☐

Yes, with coworkers or people I work with

☐

Yes, other (please specify) _____

Q44 Please write any additional comments you may have.

Q45 What tools, resources, or services would be most helpful in ensuring that you and your household have knowledge of heat and heat-related illness?

Q46 What would be most helpful to you and your household when assistance is needed to manage health conditions related to extreme heat?

Q47 What would be most helpful to keep your home cool during the extreme heat?

Q48 What would increase you and your household's use of home cooling systems, utility assistance programs, or cooling centers?

End of Block: Resources and Potential Solutions

Thank you for your time

APPENDIX VII: SURVEY QUESTIONS - SPANISH

Iniciativas de entornos urbanos saludables (HUE)

Preguntas de la encuesta - español

Introducción

El Departamento de Salud Pública del Condado de Maricopa está aprendiendo sobre las necesidades de los residentes que viven en casas prefabricadas y casas rodantes cuando hace calor en Arizona. Los resultados de esta encuesta nos ayudarán a saber si los residentes conocen y utilizan los servicios y recursos comunitarios relacionados con el calor. Su participación en este proyecto es completamente voluntaria. Puede optar por no participar o dejar en blanco cualquier pregunta que no desee responder. Todas las respuestas serán confidenciales. Los resultados de esta encuesta solo se informarán como una respuesta total (sin resultados individuales). Si acepta participar en este proyecto, responda las preguntas de la encuesta lo mejor que pueda.

¿Nos da permiso para hacer esta encuesta?

- ☐ Si.
- ☐ No.
-

¿Realizó esta encuesta en Julio?

- ☐ Si.
- ☐ No.
-

¡Gracias por su tiempo para participar!

End of Block: Introducción

Preguntas demográficas

Primero, nos gustaría hacerle algunas preguntas generales sobre su familia y su hogar. Responda por todos los miembros de su hogar.

Q1 ¿Cuántas personas viven en su hogar? (incluyéndose a usted mismo)

Q2 ¿Cuántas personas viven en su hogar? (debe sumar el número de personas en la pregunta uno):

- _____ menos de 4 años.
- _____ 5-19 años.
- _____ 20-34 años
- _____ 35-49 años.
- _____ 50-64 años.
- _____ 65-74 años.
- _____ 75 años y mas.
- _____ No lo se.
- _____ Rechazado.

Q3 ¿Cuántas personas viven en su hogar?

- ☐ escribe el número _____
- ☐ Rechazado.

Q4 ¿Hay algún adulto en su casa que no habla inglés?

- ☐ Si.
- ☐ No.
- ☐ No lo se.
- ☐ Rechazado.
-

Q5 ¿Cuántas personas viven en su hogar?: (debe sumar el número de personas en pregunta uno)

- _____ Blanco.
- _____ Afro-Americano
- _____ Indio americano o Nativo de Alaska
- _____ Asiático.
- _____ Isleño, nativo hawaiano o pacífico.
- _____ Dos o mas razas.
- _____ No se.
- _____ Rechazado.
-

Q6 ¿Cuántas personas viven en su hogar? (debe sumar el número de personas en pregunta uno)

- _____ Hispanic
- _____ No Hispanic
- _____ No lo sé.
- _____ Rechazado.
-

Q7 ¿Usted paga renta o es propietario?

- ☐ Propietario.
 - ☐ alquila.
 - ☐ No lo sé.
 - ☐ Rechazado.
-

Q8 ¿Cuál es el nivel más alto de educación alcanzado por un miembro de su hogar?

- ☐ escuela Primaria.
 - ☐ escuela secundaria.
 - ☐ Graduado de secundaria o GED.
 - ☐ Alguna educación superior.
 - ☐ Graduado Universitario o más.
 - ☐ No lo sé.
 - ☐ Rechazado.
-

Q9 Coloque un (1) junto al medio de transporte principal de su hogar y un (2) al lado del medio de transporte secundario de su hogar. (segunda opción que usa si el medio de transporte principal no está disponible).

- ☐ vehículo personal.
- ☐ caminar.
- ☐ bicicleta.
- ☐ transporte público.
- ☐ taxi.
- ☐ recogida por agencia (marcar un viaje, transporte, VEYO, etc.)
- ☐ Obtener un viaje de familiares / amigos.
- ☐ LYFT/UBER.
- ☐ Otro.
- ☐ No lo sé.
- ☐ Rechazado.

Skip To: Q10 If Q9 [vehículo personal.] ≥ 1

Q10 Si seleccionó que tiene un vehículo personal, ¿cuántos vehículos tiene disponibles para usar en su hogar (a los que tiene acceso y que funcionan la mayor parte del tiempo)?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 +

End of Block: Preguntas demográficas

Conocimiento del calor y las enfermedades.

Ahora, nos gustaría preguntarle sobre su experiencia con el calor y otras cosas que quizás sepa sobre las enfermedades relacionadas con el calor. No hay respuesta correcta o incorrecta. Para las

siguientes preguntas, estaremos preguntando sobre eventos que ocurrieron durante este verano, que es de mayo a julio.

Q11 ¿Usted u otros miembros de su hogar recuerdan haber escuchado advertencias meteorológicas sobre el calor excesivo en este verano?

- ☐ sí.
- ☐ no.
- ☐ no lo sé.
- ☐ rechazado.

Ignore Q12 si sen la Q11 fue negativa

Q12 En caso afirmativo, seleccione su principal fuente de información:

- ☐ televisión.
 - ☐ radio.
 - ☐ mensaje de texto.
 - ☐ llamada automatizada.
 - ☐ periódico local.
 - ☐ Iglesia, mezquita, sinagoga u otro lugar religioso.
 - ☐ internet.
 - ☐ redes sociales.
 - ☐ Vecinos / amigos / boca a boca.
 - ☐ póster / volante.
 - ☐ otro _____
 - ☐ no lo sé.
 - ☐ rechazado.
-

Q13 ¿Puede informarme sobre algún problema de salud que usted o un miembro de su hogar padecieron debido a la exposición del calor?

- ☐ sí.
- ☐ no.

Ignore la Q14 Si la Q13 fue negativo.

Q14 En caso afirmativo, especifique qué problemas de salud puede tener un miembro del hogar debido a la exposición del calor.

Q15 ¿Usted o alguien en su hogar ha tenido síntomas este verano relacionados con el calor o las altas temperaturas, como calambres en las piernas, boca seca, mareos, fatiga, latidos cardíacos rápidos o alucinaciones?

- ☐ sí.
- ☐ no.
- ☐ no lo sé.
- ☐ rechazado.

Ignore la Q16 Si la Q15 fue negativa.

Q16 ¿Cuál fue el resultado de esta enfermedad relacionada con el calor? (Seleccione todas las que correspondan)

- ☐ Se quedó en casa y no hizo nada.
- ☐ Llamar al 911.
- ☐ Fue a urgencias.
- ☐ ingresado en el hospital.
- ☐ muerte.

Ignore la Q17 si, end la Q16 no se quedó en casa y no hizo nada.

Q17 Si se quedó en casa y no hizo nada, ¿cuál fue la razón? (Seleccione todas las que correspondan)

- ☐ No tenía seguro médico.
- ☐ No tenía transporte.
- ☐ No podía pagar un viaje en ambulancia o atención médica.
- ☐ No tenía doctor.
- ☐ Los síntomas mejoraron, por lo que no se necesitó atención. (me sentí mejor)
- ☐ No estaba seguro de qué hacer ni adónde ir.
- ☐ Otro _____

End of Block: Conocimiento del calor y las enfermedades.

Percepciones sobre el calor.

Estas preguntas tratan sobre los pasos que puede tomar cuando hace calor afuera.

Q18 ¿Siente que su salud corre peligro por las altas temperaturas del verano?

- ☐ sí.
 - ☐ no.
 - ☐ sin opinión.
 - ☐ rechazado.
-

Q19 ¿A qué temperatura empieza a sentir demasiado calor dentro de su casa?

- ☐ Fahrenheit _____
 - ☐ Centigrados _____
 - ☐ no lo sé.
-

Q20 ¿Alguna vez usted o algún miembro de su hogar sintieron demasiado calor dentro de su casa este verano?

- ☐ siempre.
- ☐ la mayor parte del tiempo, pero no siempre.
- ☐ a veces, pero raramente.
- ☐ nunca
- ☐ no lo sé.
- ☐ rechazado.

End of Block: Percepciones sobre el calor.

Sistemas de refrigeración para el hogar.

Estas preguntas son sobre qué tipo de sistemas de enfriamiento tiene en casa.

Q21 ¿Cuáles son los siguientes sistemas de refrigeración que tiene su hogar? (Seleccione todas las que correspondan)

- ☐ aire acondicionado central.
 - ☐ aire acondicionado de ventana.
 - ☐ pantano o enfriador evaporativo.
 - ☐ ventiladores.
 - ☐ nebulizadores de agua.
 - ☐ árboles o plantas.
 - ☐ otro _____
 - ☐ ninguno.
-

Q22 ¿Cuál de los siguientes se usó para enfriar su hogar este verano?

- ☐ aire acondicionado central.
- ☐ aire acondicionado de ventana.
- ☐ pantano o enfriador evaporativo.
- ☐ ventiladores.
- ☐ nebulizadores de agua.
- ☐ árboles o plantas.
- ☐ otro _____
- ☐ ninguno.

Saltar a: Q24 Si en la Q22 no contesto aire acondicionado central o de ventana.

Q23 Si su casa usó aire acondicionado central / aire acondicionado de ventana este verano, ¿cuándo lo usó?

- ☐ Solo por la mañana.
- ☐ Solo por la tarde.
- ☐ Solo por la noche.
- ☐ Ambos, todo el día o toda la noche.

Q24 ¿Qué sistema de refrigeración funciona (sirve) en su hogar? (Seleccione todas las que correspondan)

☐

aire acondicionado central.

☐

aire acondicionado de ventana.

☐

ventiladores eléctricos.

☐

enfriador de pantano.

☐

nebulizadores de agua.

☐

otro _____

Q25 ¿Hay algo que limite el uso de su sistema de refrigeración a altas temperaturas?

☐ si

☐ no

continúe la Q26 Si la Q25 fue Si.

Q26 ¿Qué impide que en su hogar utilice su sistema de refrigeración? (Seleccione todas las que correspondan)

- ☐ costo de la electricidad.
- ☐ no funciona.
- ☐ costo de las reparaciones.
- ☐ ruido.
- ☐ razones médicas.
- ☐ la casa no tiene sistema de enfriamiento.
- ☐ nada impide que los hogares lo usen.
- ☐ otro _____

End of Block: Sistemas de refrigeración para el hogar.

[Acceso a recursos.](#)

A continuación, nos gustaría saber si conoce los programas de asistencia y otros recursos comunitarios.

Q27 ¿Conoce los programas o servicios comunitarios que lo ayudarán con el costo de sus facturas de servicios públicos?

- ☐ no.
- ☐ si, pero nunca he usado el servicio.
- ☐ si, he usado el servicio.
-

Q28 ¿Conoce los programas o servicios comunitarios que lo ayudarán con las reparaciones del sistema de enfriamiento del hogar?

- ☐ no
- ☐ si, pero nunca he usado el servicio.
- ☐ lo sé, he usado el servicio.
-

Q29 Si NO ha utilizado ningún programa o servicio de asistencia comunitaria, seleccione su (s) motivo (s):

- ☐ no estoy interesado en el programa.
 - ☐ no tengo la información de contacto.
 - ☐ No puedo completar la solicitud porque no tengo una computadora. o no tengo acceso a una computadora.
 - ☐ No puedo completar la solicitud porque no la entiendo / está en otro idioma.
 - ☐ No puedo completar la solicitud por cualquier otro motivo (especificar)

 - ☐ Tengo dificultad para escuchar por teléfono.
 - ☐ Asumí que no califico para este programa (si fue seleccionado, indique por qué se hizo esta suposición) _____
 - ☐ Me dijeron que no califico para este programa.
 - ☐ Es un proceso complicado.
 - ☐ no conocía estos servicios.
 - ☐ otro _____
-

Q30 ¿Alguna vez usted o algún miembro de su hogar solicitó estos programas de asistencia de servicios públicos (costo de facturas de servicios públicos o reparaciones del sistema de enfriamiento)?

- ☐ sí
- ☐ No, no conocía ningún programa de asistencia de servicio público.
- ☐ No, no necesitaba ayuda con los servicios públicos.
- ☐ No, asumí que no calificaba para recibir asistencia con los servicios públicos.
- ☐ No, me dijeron que no calificaba para recibir asistencia con los servicios públicos.
- ☐ no lo sé.
- ☐ rechazado.

End of Block: Acceso a recursos.

Recursos del vecindario.

Ahora nos gustaría hacerle algunas preguntas sobre cómo maneja el calor.

Q31 Cuando hace mucho calor, ¿usted o los miembros de su hogar alguna vez salen de su casa y van a un lugar con aire acondicionado para refrescarse?

- ☐ sí.
- ☐ algunas veces.
- ☐ no.
- ☐ rechazado.

Saltar a: Q34 Si Q31 = no

Saltar a: Q34 Si Q31 = rechazado

Q32 ¿A dónde van usted o los miembros de su hogar para refrescarse? (Seleccione todas las que correspondan)

- ☐ centro comercial.
- ☐ Iglesia, mezquita, sinagoga u otro lugar religioso.
- ☐ Centro comunitario.
- ☐ biblioteca.
- ☐ refugio.
- ☐ centro de enfriamiento.
- ☐ cine.
- ☐ Amigos / vecinos.
- ☐ supermercado.
- ☐ otro _____

Q33 ¿Cómo viaja normalmente desde su hogar al lugar con aire acondicionado? (Seleccione todas las que correspondan)

- ☐ vehículo personal.
- ☐ caminar.
- ☐ bicicleta.
- ☐ Transporte público (tren ligero, autobús, etc.)
- ☐ Recogida en agencia (dial-a-ride, shuttle, Veyo, etc.)
- ☐ Obtenga un transporte de familiares / amigos.
- ☐ Lyft/Uber
- ☐ otro _____

Q34 ¿Conoce los centros de enfriamiento en el condado de Maricopa (lugares a los que una persona puede ir durante el día para enfriarse durante los días de advertencia de calor extremo)?

- ☐ no.
- ☐ Sí, pero nunca usé el servicio.
- ☐ Sí, he utilizado el servicio.

Saltar a: Q35 Si Q34 = Sí, pero nunca utilicé el servicio.

Saltar a: Q35 Si Q34 = no.

Q35 Si no conoce o no ha utilizado un centro de enfriamiento, ¿por qué no? (Seleccione todas las que correspondan)

- ☐ no estaba al tanto del servicio.
- ☐ No tengo forma de llegar (sin transporte)
- ☐ está muy lejos.
- ☐ me temo que no soy bienvenido.
- ☐ Temo que me pidan que muestre mi identificación.
- ☐ otro _____

End of Block: Recursos del vecindario.

[Preguntas sobre COVID-19](#)

Q36 ¿Cómo afecta COVID-19 la vida diaria de su hogar? (Seleccione todas las que correspondan)

- ☐ Miembro del hogar perdió un trabajo.
 - ☐ Le redujeron las horas de trabajo.
 - ☐ Miembro del hogar fue diagnosticado con COVID-19.
 - ☐ Miembro del hogar fue hospitalizado por COVID-19.
 - ☐ Miembro del hogar falleció por COVID-19.
 - ☐ No puede proporcionar comida a la familia.
 - ☐ No puede pagar el alquiler / hipoteca.
 - ☐ No puede pagar los servicios públicos mensuales.
 - ☐ Corte del servicio telefónico.
 - ☐ No puede proporcionar / pagar el cuidado de los niños.
 - ☐ No puedo ayudar a mis hijos con la escuela.
 - ☐ Otro _____
 - ☐ COVID-19 no ha afectado mi hogar.
 - ☐ rechazado.
-

Q37 ¿Cómo le afecta el COVID-19 personalmente? (Seleccione todas las que correspondan).

- ☐ me siento ansioso.
 - ☐ Tengo miedo de enfermarme.
 - ☐ me siento solo.
 - ☐ no puedo dormir.
 - ☐ Otro _____
 - ☐ COVID-19 no me afecta personalmente.
-

Q38 ¿Su hogar ha recibido ayuda durante la pandemia de COVID-19?

- ☐ sí.
- ☐ no.

Skip To: End of Block If Q38 = no.

Q39 ¿Qué tipo de asistencia recibió su hogar? (Seleccione todas las que correspondan)

- ☐ Asistencia de servicios públicos.
 - ☐ Asistencia de alquiler.
 - ☐ Asistencia de servicio telefónico.
 - ☐ Asistencia con la factura médica.
 - ☐ Asistencia por desempleo.
 - ☐ Asistencia de transporte.
 - ☐ Asistencia alimenticia.
 - ☐ Suministro de asistencia (guantes, desinfectante de manos, mascarillas, artículos de limpieza, etc.)
 - ☐ Atención médica.
 - ☐ Materiales educativos.
 - ☐ Otro _____
-

Q40 ¿Quién brindó la asistencia?

End of Block: Preguntas sobre COVID-19

Recursos y posibles soluciones.

Q41 El condado de Maricopa le proporcionó materiales en julio, ¿le resultaron útiles estos materiales?

- ☐ sí.
- ☐ no.
- ☐ No recibí los materiales en julio; Soy un nuevo participante.

Saltar a: Q42 Si Q41 = Sí.

Q42 ¿Cuál de estos materiales le resultó más útil? (Clasifique estos materiales de 1 a 1, siendo 1 el más útil)

- _____ Encuesta comunitaria- MCDPH (español e inglés)
- _____ Muertes por calor en el condado de Maricopa - MCDPH (español e inglés)
- _____ El calor mata en el condado de Maricopa infografía- MCDPH (español e inglés)
- _____ Infografía sobre muertes por calor en casas móviles - MCDPH (inglés y español)
- _____ Preguntas frecuentes sobre el calor (FAQ) - CDC (inglés y español)
- _____ Infografía sobre cambio climático y calor extremo - CDC (español e inglés)
- _____ Los 10 mejores consejos para mantenerse seguro en el calor de Arizona - MCDPH (español e inglés)
- _____ Manténgase seguro / Tarjeta de signos de enfermedad por calor - MCDPH (español e inglés)
- _____ Recursos disponibles por ciudad - MCDPH (español e inglés)
- _____ Recursos para los servicios prestados - MCDPH (español e inglés)
-

Q43 ¿Compartió información o materiales proporcionados durante este proyecto con otras personas?
(Seleccione todas las que correspondan)

☐

no.

☐

si, con amigos.

☐

si, con familiares.

☐

si con vecinos.

☐

Sí, con compañeros de trabajo o personas con las que trabajo.

☐

Sí, otro (especificar) _____

Q44 Escriba cualquier comentario adicional que pueda tener.

Q45 ¿Qué herramientas, recursos o servicios serían más útiles para garantizar que usted y su hogar estén informados sobre el calor y las enfermedades relacionadas con el calor?

Q46 ¿Qué sería más útil para usted y su hogar cuando se necesita ayuda para manejar las condiciones de salud relacionadas con el calor extremo

Q47 ¿Qué sería más útil para mantener su casa fresca durante el calor extremo?

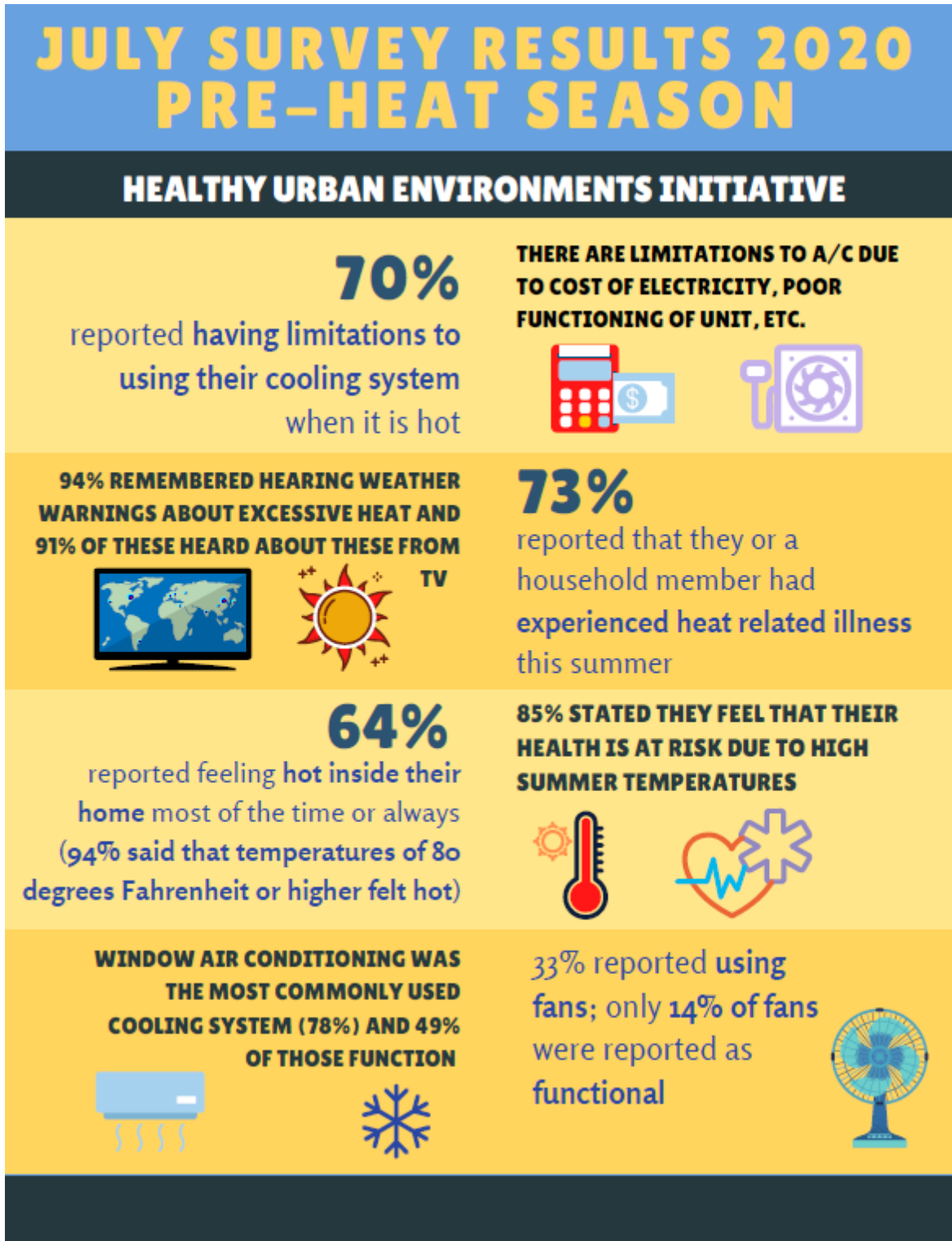
Q48 ¿Cuáles serían los beneficios para usted y su familia de utilizar los programas de asistencia de servicios públicos o el acceso a los centros de enfriamiento?

End of Block: Recursos y posibles soluciones.

¡Gracias por tu tiempo!

APPENDIX VIII SURVEY RESULTS

July Survey Results Infographic



**1/2 OF PARTICIPANTS REPORTED
THAT THEIR COOLING SYSTEMS ARE
OPERATIONAL**



100%

said cost of electricity
limited their use of their
cooling system

88%

were not aware of cooling
centers in Maricopa County
or did not know what cooling
centers are

31%

SAID THEY LEAVE THEIR HOME TO
GO TO A PLACE WITH A/C WHEN THE
WEATHER IS VERY HOT



DUE TO THE COVID-19 PANDEMIC...

28%

OF PARTICIPANTS STRUGGLED TO PAY
UTILITIES; **22%** STRUGGLED TO PAY
RENT AS A RESULT OF COVID-19

LOSS OF JOB

was the most common affect
on households (**74%**)



**73% FEARED GETTING SICK, 64% FELT
ANXIOUS, 35% COULD NOT SLEEP, AND 19%
FELT LONELY IN RESPONSE TO COVID-19**



CONTACT US



Español: Teresa Sosa: (602) 575-1445
2801 N 31st St 85008
English: Vjollca Berisha: (602) 372-4094



October Survey Results Infographic for Repeat and New Participants

OCTOBER SURVEY RESULTS 2020 POST-HEAT SEASON

HEALTHY URBAN ENVIRONMENTS INITIATIVE

KEY

Repeat participants (both July and October participants)

New participants (October only participants)



68%/71%

reported having limitations to using their cooling system when it is hot

98%/95%

said cost of electricity limits their use of their cooling system



100%/100% REMEMBERED HEARING WEATHER WARNINGS ABOUT EXCESSIVE HEAT AND 91%/97% HEARD ABOUT THESE WARNINGS FROM TV



78%/73%

reported that they or a household member had experienced heat-related illness this summer

90%/93%

reported staying home and taking no action for various reasons when they experienced heat-related illnesses; **67%/60%** who stayed home did not have health insurance

96%/86% STATED THEY FEEL THAT THEIR HEALTH IS AT RISK DUE TO HIGH SUMMER TEMPERATURES



WINDOW AIR CONDITIONING IS OWNED IN MOST HOMES (72%/67%) AND 95%/96% OF THESE COOLING UNITS WORK



63%/69% reported having fans; only **44%/81%** of those fans worked.





92%/86%

felt hot at temperatures of 80 degrees Fahrenheit and above

79%/14%

knew of REPAIR services but had not used them, 20%/86% were unaware. 84%/22% knew of UTILITY services but had not used them; 10%/78% were not aware of them at all

23%/86%

were not aware of cooling centers in Maricopa County or did not know what cooling centers are; 44%/16% feared showing IDs or said it was too far away (44%/9%)

74%/69%

SAID THEY LEAVE THEIR HOME TO GO TO A PLACE WITH A/C WHEN THE WEATHER IS VERY HOT



DUE TO THE COVID-19 PANDEMIC...

28%/20%

OF PARTICIPANTS STRUGGLED TO PAY UTILITIES; 15%/24% STRUGGLE TO PAY RENT

REDUCED JOB HOURS

was the most common affect on households (71%/76%); 42%/59% lost a job.



74%/88% FEARED GETTING SICK, 66%/60% FELT ANXIOUS, 24%/28% COULD NOT SLEEP, AND 33%/38% FELT LONELY



CONTACT US

Español: Teresa Sosa: (602) 575-1445
2801 N 31st St 85008

English: Vjollca Berisha: (602) 372-4094



APPENDIX IX: HEAT TOOLKIT

I. Toolkit Contents:

1. Environmental Heat Deaths in Maricopa County, Arizona 2006-2019 – Maricopa County Department of Public Health Graph (See [Figure 1. Heat Deaths in Maricopa County](#) below)
2. Heat Kills in Maricopa County Infographic – Maricopa County Department of Public Health (See [Figure 2. Heat Kills in Maricopa County Infographic](#) below)
3. Mobile Homes: Heat-Associated Deaths, Maricopa County 2006-2019 infographic – Maricopa County Department of Public Health (See [Figure 3. Mobile Homes: Heat-Associated Deaths in Maricopa County](#) below)
4. Climate Change and Extreme Heat – Centers for Disease Control and Prevention Infographic (See [Figure 4. Extreme Heat Infographic \(CDC\)](#) below)
5. Top 10 Tips for Staying Safe in the Arizona Heat – Maricopa County Department of Public Health (See [Figure 5. Top 10 Tips for Staying Safe Infographic](#) below)
6. Stay Safe and Know Signs of Heat Illness Card – Maricopa County Department of Public Health (See [Figure 6. Heat Illness and Safety Cards](#) below)
7. Cooling Centers/Hydration MAPs – Maricopa Association of Governments (MAG) (See [Figure 7. Map of Emergency Heat Relief and Cooling Centers](#) below)
8. Resources by Services Provided: Maricopa County Department of Public Health (See [Figure 8. List of Resources by Services Provided](#) below)

II. Survey (both Spanish and English versions):

- See [Appendix VI](#) above for the English survey
- See [Appendix VII](#) above for the Spanish survey

Figure 1. Heat Deaths in Maricopa County

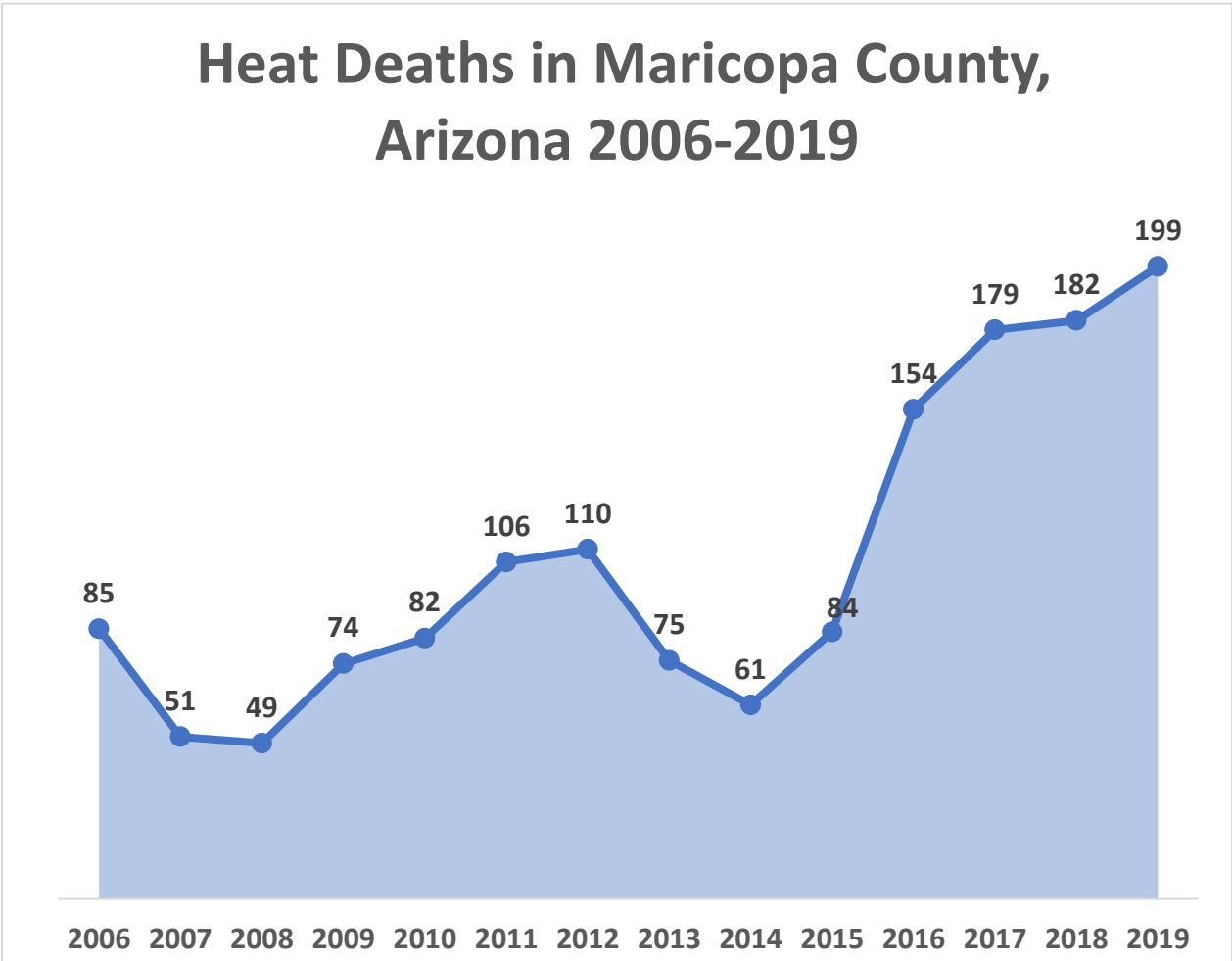


Figure 2. Heat Kills Infographic

HEAT KILLS

IN MARICOPA COUNTY

1,491

PEOPLE HAVE DIED
DUE TO HEAT
SINCE 2006

WHAT?

In 2019, excessive heat caused...



2,785
hospital visits



199
deaths

WHO?



Half

had lived in
Arizona for
20 years
or more



7 in 10
were at least
50 years old

WHEN?

Heat has killed in
every month from



March to November



Most deaths happened
when lows were

85°F or above

WHERE?



40%
of all deaths
occurred indoors

Most
women
died
indoors



Most
men
died
outdoors

Figure 3. Heat Deaths in Mobile Homes

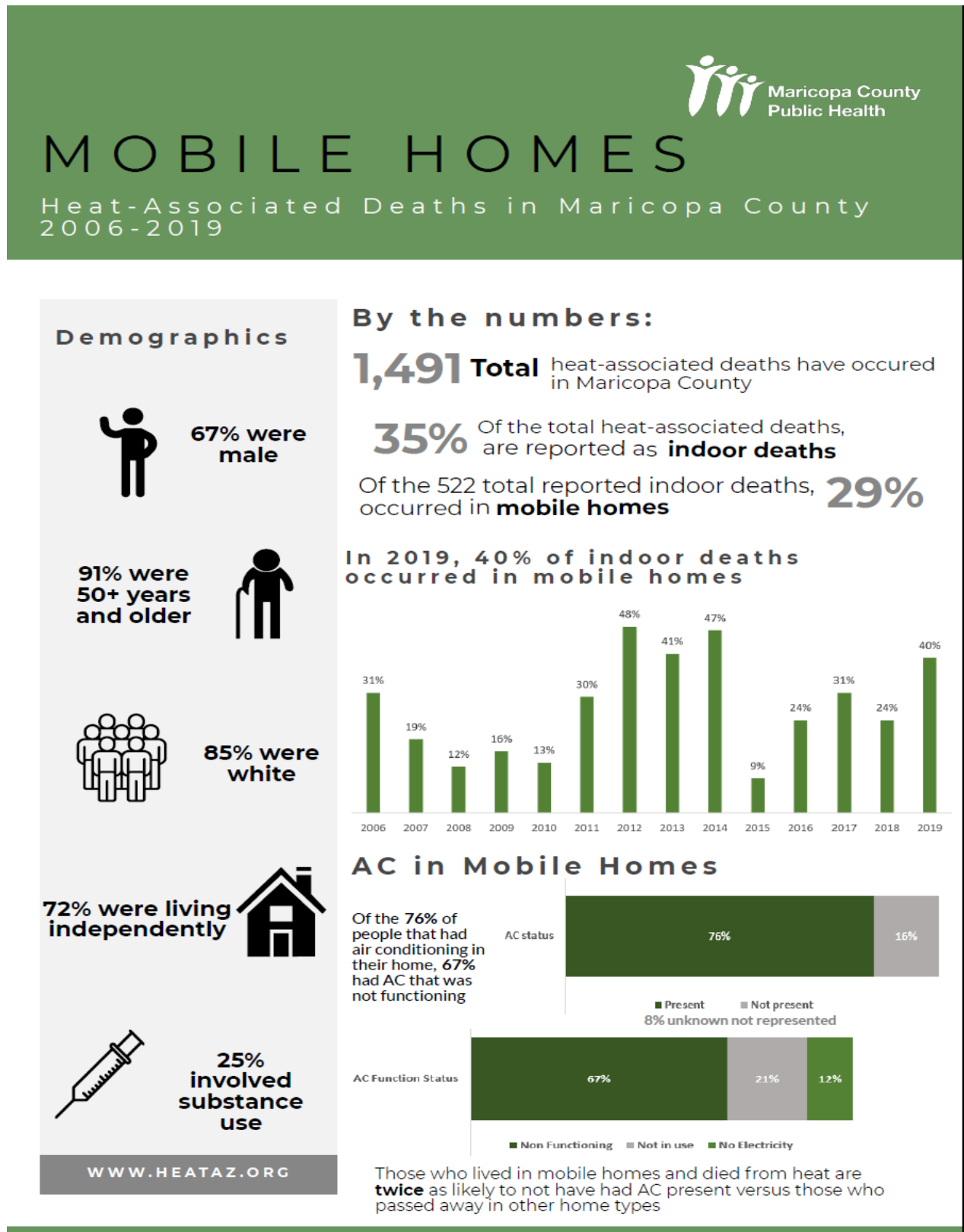


Figure 4. Extreme Heat Infographic (CDC)



Figure 5. Top 10 Tips for Staying Safe in Arizona Heat



Top 10 Tips for Staying Safe in the Arizona Heat



1. Drink plenty of WATER

Drink plenty of water EVERY DAY even when you are not thirsty.

2. Do NOT rely on a FAN as your primary source of air

A fan does NOT replace being in an air-conditioned location. It *dehydrates* your body.



3. Stay cool indoors

Stay in a cool, air-conditioned location. If you need help paying your electric bill, contact your utility company for possible special programs.

4. Take care of your pets

Make sure that your **pets** are provided with plenty of **water, shade and a cool place to rest**, since they can become dehydrated as well.



5. Cool down by taking a bath or shower

Taking a shower helps your body cool down. However, DO NOT take a shower immediately after becoming overheated, since your body may cool down too quickly and cause illness.

6. Wear LOOSE clothing

Allow your skin to **breathe** in the heat. Breathable fabrics like cotton are best.



7. NEVER leave kids in the car

Remember to NEVER leave children, pets or those needing special care in parked cars when the temperature is high - even for just a few minutes!

8. Limit outdoor exercise

Exercise outside during morning hours; exercise inside in air conditioning the rest of the day.



9. Check on friends and neighbors

Open windows are a sign that a neighbor could be having an air conditioning problem. Check to make sure they are staying cool.

10. For more information

For cooling locations or additional resources, visit HeatAZ.com.



Figure 6. Heat Illness and Safety Cards

Stay Safe in the Arizona Heat



Never leave children or pets in the car.



Keep your head covered and reapply sunblock every 2 hours.

Take breaks in the shade or in air conditioning.



Plan outdoor activities in the early morning or late evening to avoid the heat.



Visit heataz.org or call 211 for information on cooling centers, utility assistance, and more tips on staying cool.



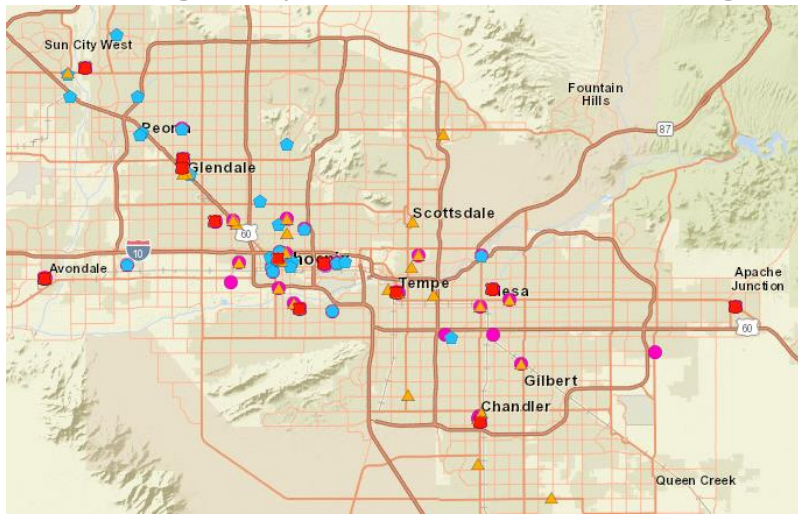
Know the Signs of Heat Illness





Used with permission from the National Weather Service

Figure 7. Map of Emergency Heat Relief and Cooling Centers


Map of Emergency Heat Relief/Cooling Centers



 **Hydration Stations:** Places where individuals can go to receive bottled water and other collected donated items.

 **Heat Refuges:** Cooled indoor locations that provide refuge from the heat during the day. Drinking fountains or bottled water is available.

 **Emergency Heat Relief Stations:** Locations offering hydration and heat refuge. Open on days with excessive heat warnings as issued by the National Weather Service. Pets are welcome, but **MUST** be leashed. Operated by the [Salvation Army](#).

 **Collection Sites:** Water bottles can be donated here for use at hydration and refuge locations. Some sites also accept other donations, such as cash; light colored, long-sleeved tee-shirts; socks; underwear; hats; lip balm; sun block; and pre-packaged snacks.

Information provided by the Maricopa Association of Governments Heat Relief Network for more information visit <https://azmag.gov/Programs/Homelessness/Heat-Relief-Regional-Network>

Figure 8. List of Resources by Services Provided

RESOURCE SERVICES ⁴

Utility Assistance

- City of Phoenix Family Services Centers – 602 534 2433
- A New Leaf / MESA CAN – 480 833 9200
- Avondale Community Action Program – 855 204 7797 or 623 333 2703
- Chandler Community Action Plan – 480 963 1423
- Gilbert Community Action Plan – 480 892 5331
- Friendly House – 602 345 0167
- Glendale Community Action Program – 623 930 2854 x 3
- Guadalupe Community Action Agency – 480 505 5375
- Lutheran Social Services of the Southwest – 480 654 4539
- Maricopa County Human Services Department – 602 506 5911
- Salvation Army, Phoenix Family Services – 602 267 4127
- St. Vincent de Paul – 602 850 6948
- Sun City Community Assistance Network – 623 933 7530
- Tempe Community Action Agency – 480 350 5880
- Tolleson Community Action Program – 623 936 2760
- Wickenburg Community Action Program – 928 684 7894
- APS Energy Support Programs – 602 618 1974
- APS Energy Support with Medical Programs – 602 618 1974
- APS Project SHARE - 602 618 1974
- SRP Residential Rebates and Discounts – 602 236 8888
- SRP Limited Income Weatherization Assistance Programs
 - City of Phoenix – 602 495 0700
 - Mesa Community Action Network – 480 833 9200
 - Maricopa County – outside Phoenix/Mesa – 602 506 5911
 - Pinal County – 520 466 1112
- 2-1-1

Rent Assistance

- Avondale Community Action Program – 855 204 7797 or 623 333 2703
- Chandler Community Action Plan – 480 963 1423
- Gilbert Community Action Plan – 480 892 5331
- Glendale Community Action Program – 623 930 2854 x 3
- Lutheran Social Services of the Southwest – 480 654 4539
- Maricopa County Human Services Department – 602 506 5911

⁴ The highlighted lines are services, programs, and/or organizations that are located in Phoenix or near the mobile home community of the report. These services would be the most convenient for them to use, but others are listed as well for those that shared resources in different areas of Arizona.

- Salvation Army, Phoenix Family Services – 602 267 4127
- Tempe Community Action Agency – 480 350 5880
- Tolleson Community Action Program – 623 936 2760
- Wickenburg Community Action Program – 928 684 7894
- 2-1-1

Weatherization

- City of Phoenix Family Services Centers – 602 534 2433
- Avondale Community Action Program – 855 204 7797 or 623 333 2703
- Glendale Community Action Program – 623 930 2854 x 3
- SRP Limited Income Weatherization Assistance Programs
 - City of Phoenix – 602 495 0700
 - Mesa Community Action Network – 480 833 9200
 - Maricopa County – outside Phoenix/Mesa – 602 506 5911
 - Pinal County – 520 466 1112
- 2-1-1

Eviction Prevention

- City of Phoenix Family Services Centers – 602 534 2433
- A New Leaf / MESA CAN – 480 833 9200
- Chandler Community Action Plan – 480 963 1423
- Gilbert Community Action Plan – 480 892 5331
- St. Vincent de Paul – 602 850 6948
- Maricopa County Human Services Department – 602 506 5911
- Salvation Army, Phoenix Family Services – 602 267 4127
- 2-1-1