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

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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

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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.

**METHODS**

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.

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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.

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.**

**Very few residents have used utility cost and repair assistance programs**

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.

- **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.

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.
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.

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.
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.*
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.
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

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<th>Type</th>
<th>Role Involved</th>
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<td>Community Partner</td>
<td>Supportive role in the study</td>
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<td>Maricopa County Department of Public Health (MCDPH): Office of Nutrition and Active Living</td>
<td>Local Public Health Department</td>
<td>Planned and carried out survey distribution</td>
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<td></td>
<td></td>
<td>Organized incentive plan</td>
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<td></td>
<td></td>
<td>Assisted in planning and implementing project</td>
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<tr>
<td>Healthy Urban Environments (HUE) Initiative</td>
<td>Community Partner</td>
<td>Supportive role in the study</td>
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<td>Arizona State University (ASU): Knowledge Exchange for Resilience</td>
<td>Academic Institution</td>
<td>Study design</td>
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<td>Maricopa County Department of Public Health (MCDPH): Office of Epidemiology, Climate and Health</td>
<td>Local Public Health Department</td>
<td>Implementation</td>
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<tr>
<td>The Arizona Association of Manufactured Home and RV Owners</td>
<td>Community Partner</td>
<td>Supportive role in the study</td>
<td>1</td>
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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 | • Questions 1-10  
| | • Age, Ethnicity, Employment Status |
| Knowledge of Heat and Illness | • Questions 11-17  
| | • Heat warnings, Symptoms of Illness |
| Perceptions about Heat | • Questions 18-20  
| | • Heat Inside Home |
| Home Cooling Systems | • Questions 21-26  
| | • Types of Home Cooling Systems |
| Access to Resources | • Questions 27-30  
| | • Awareness of Community Programs to Assist in Repairs and Utilities |
| Neighborhood Resources | • Questions 31-35  
| | • Cooling Centers and Air-Conditioned Places |
| COVID-19 Questions | • Questions 36-40  
| | • Effects of COVID-19 on Household, Pandemic Assistance |
| Resources and Potential Solutions | • Questions 41-48  
| | • Helpful Resources, Comments and Solutions |

**Figure 3. Quantitative Data Entry and Analysis Process**

1. Collect surveys
2. Enter survey responses into Qualtrics
3. Convert entered Qualtrics data into Excel spreadsheet
4. Analyze data using Excel and SAS
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.
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

<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Many People Live in Your Home?  (N=150)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>2</td>
<td>14 (9%)</td>
</tr>
<tr>
<td>3</td>
<td>26 (17%)</td>
</tr>
<tr>
<td>4</td>
<td>30 (20%)</td>
</tr>
<tr>
<td>5</td>
<td>22 (15%)</td>
</tr>
<tr>
<td>6</td>
<td>25 (17%)</td>
</tr>
<tr>
<td>7+</td>
<td>30 (20%)</td>
</tr>
</tbody>
</table>

**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)*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages less than 4</td>
<td>53 (35%)</td>
</tr>
<tr>
<td>Ages 5- 19</td>
<td>103 (69%)</td>
</tr>
<tr>
<td>Ages 20- 34</td>
<td>88 (59%)</td>
</tr>
<tr>
<td>Ages 35- 49</td>
<td>91 (61%)</td>
</tr>
<tr>
<td>Ages 50- 64</td>
<td>64 (43%)</td>
</tr>
<tr>
<td>Ages 65+</td>
<td>20 (13%)</td>
</tr>
</tbody>
</table>

**How Many Household Members are Employed? (N= 150)**

<table>
<thead>
<tr>
<th>Number Employed</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>7 (5%)</td>
</tr>
<tr>
<td>1</td>
<td>97 (65%)</td>
</tr>
<tr>
<td>2</td>
<td>41 (27%)</td>
</tr>
<tr>
<td>3 or more</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>4+</td>
<td>2 (1%)</td>
</tr>
</tbody>
</table>

**Family Member Does Not Speak English (N=150)**

<table>
<thead>
<tr>
<th>Do Not Speak English</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>128 (85%)</td>
</tr>
<tr>
<td>No</td>
<td>22 (15%)</td>
</tr>
</tbody>
</table>

**Race (N=150)**

<table>
<thead>
<tr>
<th>Race</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>137 (91%)</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>13 (9%)</td>
</tr>
</tbody>
</table>

**Ethnicity (N=150)**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>150 (100%)</td>
</tr>
<tr>
<td>Not Hispanic</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

**Do You Own or Rent Your Home (N= 150)**

<table>
<thead>
<tr>
<th>Home Status</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own</td>
<td>77 (51%)</td>
</tr>
<tr>
<td>Rent</td>
<td>53 (35%)</td>
</tr>
<tr>
<td>Rent and Own</td>
<td>19 (13%)</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Number of People</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>7+ People</td>
<td>20%</td>
</tr>
<tr>
<td>6 People</td>
<td>17%</td>
</tr>
<tr>
<td>5 People</td>
<td>15%</td>
</tr>
<tr>
<td>4 People</td>
<td>20%</td>
</tr>
<tr>
<td>3 People</td>
<td>17%</td>
</tr>
<tr>
<td>2 People</td>
<td>9%</td>
</tr>
<tr>
<td>1 Person</td>
<td>2%</td>
</tr>
</tbody>
</table>

Graph 3. Age Range of Household Members (N=150)
Ages 5-19 was the most common age group in households

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 75+</td>
<td>4%</td>
</tr>
<tr>
<td>Age 65-74</td>
<td>9%</td>
</tr>
<tr>
<td>Age 50-64</td>
<td>43%</td>
</tr>
<tr>
<td>Age 35-49</td>
<td>61%</td>
</tr>
<tr>
<td>Age 20-34</td>
<td>59%</td>
</tr>
<tr>
<td>Age 5-19</td>
<td>69%</td>
</tr>
<tr>
<td>&lt; 4 years old</td>
<td>35%</td>
</tr>
</tbody>
</table>

*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

- 3+ employed: 3%
- 2 employed: 27%
- 1 employed: 65%
- 0 employed: 5%

**Graph 5. Household Language (N=150)**
Most households had at least one adult who did NOT speak English

- 85% do not speak English
- 15% speak English

**Graph 4.**
Survey question 3:
How many people are employed in your household?

**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

![Bar chart showing ownership and rent]

- **Own**: 52%
- **Rent**: 36%
- **Own/Rent**: 13%

*Excludes 1 person who refused to answer

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

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>College graduate or more</td>
<td>2%</td>
</tr>
<tr>
<td>Some College</td>
<td>3%</td>
</tr>
<tr>
<td>High School Graduate or GED</td>
<td>36%</td>
</tr>
<tr>
<td>Secondary School</td>
<td>45%</td>
</tr>
<tr>
<td>Primary School</td>
<td>13%</td>
</tr>
</tbody>
</table>

*Excludes one participant who left the response blank.
**Graph 8. Household Transportation (N=149)**

*Most households used public transportation*

<table>
<thead>
<tr>
<th>Mode</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Transportation</td>
<td>81%</td>
</tr>
<tr>
<td>Personal Vehicle</td>
<td>77%</td>
</tr>
<tr>
<td>Walk</td>
<td>42%</td>
</tr>
<tr>
<td>Get a ride from family/friends</td>
<td>38%</td>
</tr>
<tr>
<td>Bike</td>
<td>8%</td>
</tr>
<tr>
<td>Taxi</td>
<td>7%</td>
</tr>
<tr>
<td>Lyft/Uber</td>
<td>3%</td>
</tr>
<tr>
<td>Agency Pick-up</td>
<td>1%</td>
</tr>
</tbody>
</table>

*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*

<table>
<thead>
<tr>
<th>Number of Vehicles</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2+ vehicles</td>
<td>14%</td>
</tr>
<tr>
<td>1 vehicle</td>
<td>63%</td>
</tr>
<tr>
<td>0 vehicles</td>
<td>23%</td>
</tr>
</tbody>
</table>

**Graph 8.**

Survey question 9:
What is the household’s primary means of transportation?

**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*

- **96%** felt at risk of heat illness
- **3%** answered yes
- **1%** answered no
*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*

- **96%** could specify what temperature felt too hot
- **4%** could not specify what temperature felt too hot
*Excludes one respondent who did not answer.

---

**Graph 1A.**

Survey question 18:

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

**Graph 2A.**

Survey question 19:

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

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>100+°</td>
<td>14%</td>
</tr>
<tr>
<td>95-99°</td>
<td>8%</td>
</tr>
<tr>
<td>90-94°</td>
<td>16%</td>
</tr>
<tr>
<td>85-89°</td>
<td>26%</td>
</tr>
<tr>
<td>80-84°</td>
<td>28%</td>
</tr>
<tr>
<td>75-79°</td>
<td>5%</td>
</tr>
<tr>
<td>70-74°</td>
<td>3%</td>
</tr>
</tbody>
</table>

*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 3A.
Survey question 19:
(Continued)
At what temperature do you start to feel too hot inside your home?

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

100% had knowledge of heat warnings

*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

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>91%</td>
</tr>
<tr>
<td>Radio</td>
<td>56%</td>
</tr>
<tr>
<td>Neighbor/Friends</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>23%</td>
</tr>
<tr>
<td>Text Message</td>
<td>16%</td>
</tr>
<tr>
<td>Internet</td>
<td>14%</td>
</tr>
<tr>
<td>Social Media</td>
<td>13%</td>
</tr>
<tr>
<td>Faith-Based Building</td>
<td>13%</td>
</tr>
<tr>
<td>Poster/Flyer</td>
<td>8%</td>
</tr>
<tr>
<td>Automated Call</td>
<td>1%</td>
</tr>
</tbody>
</table>

*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 5A.**

Survey question 11:

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

**Graph 6A.**

Survey question 12:

If you remember hearing weather warnings, what was your primary source of information?
**Graph 7A. Knowledge of Heat Illness (N=91)**
*Most respondents knew of heat symptoms*

![Pie chart showing 70% knew of heat illness, 30% did not.]

*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.*

**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*

![Word cloud with various health problems related to heat such as Heatstroke, Vomiting, Dehydration, Headache, Blood Pressure, Nausea, Breathing Issues, Dizziness, Fatigue, Insomnia, Rash, Diarrhea, Exhaustion, and Fainting.]

*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*

- 78% had experienced heat symptoms
- 21%
- 1%

**Graph 9A. Outcome of Illness (N=72)**

*Most participants stayed home and took no action*

- 90% Stayed Home and Took No Action
- 13% Went to the Emergency Room
- 4% Called 911
- 4% Admitted to the Hospital
- 1% Death

*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

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household did not have medical insurance</td>
<td>67%</td>
</tr>
<tr>
<td>Symptoms improved so care was not needed</td>
<td>42%</td>
</tr>
<tr>
<td>Do not have a doctor</td>
<td>42%</td>
</tr>
<tr>
<td>Could not afford an ambulance ride or</td>
<td>20%</td>
</tr>
<tr>
<td>medical care</td>
<td></td>
</tr>
<tr>
<td>Was unsure of what to do or where to go</td>
<td>18%</td>
</tr>
</tbody>
</table>

*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

*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

*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)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Have</th>
<th>Used (Out of Have)</th>
<th>Works (Out of Have)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
</tr>
<tr>
<td>Central A/C</td>
<td>18</td>
<td>32%</td>
<td>17</td>
</tr>
<tr>
<td>Window A/C</td>
<td>41</td>
<td>72%</td>
<td>39</td>
</tr>
<tr>
<td>BOTH Central and Window A/C</td>
<td>3</td>
<td>5%</td>
<td>2</td>
</tr>
<tr>
<td>Fans</td>
<td>36</td>
<td>63%</td>
<td>35</td>
</tr>
<tr>
<td>Swamp</td>
<td>5</td>
<td>9%</td>
<td>3</td>
</tr>
<tr>
<td>Misters</td>
<td>1</td>
<td>2%</td>
<td>0</td>
</tr>
<tr>
<td>Trees or Plants</td>
<td>17</td>
<td>30%</td>
<td>11</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>N=</td>
<td>57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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

*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

- **Yes**: 25%
- **No**: 74%

*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 15A. Air-Conditioned Places to Cool Off (N=68)**

Most households went to a supermarket to cool off

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>65%</td>
</tr>
<tr>
<td>Friends/Neighbors</td>
<td>60%</td>
</tr>
<tr>
<td>Mall</td>
<td>47%</td>
</tr>
<tr>
<td>Other</td>
<td>38%</td>
</tr>
<tr>
<td>Faith-Based Building</td>
<td>16%</td>
</tr>
<tr>
<td>Community Center</td>
<td>13%</td>
</tr>
<tr>
<td>Library</td>
<td>6%</td>
</tr>
<tr>
<td>Movie Theater</td>
<td>1%</td>
</tr>
</tbody>
</table>

*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?*

*Survey question 32: Where do you or members of your household go to cool off?*
Graph 16A. Mode of Transportation to Air-Conditioned Locations (N=68)
Most households used a personal vehicle to get to an 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%.

Survey question 33:
How does your household normally travel to the air-conditioned place?
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 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%.
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*

- 84% had heard of the service, but never used it
- 10% Yes, but I never used the service
- 7% Yes, I have used the service
- 7% No

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

- 79% had heard of the service, but never used it
- 20% Yes, but I have never used the service
- 1% Yes, I have used the service
- 7% No

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

**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

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumed I didn't qualify</td>
<td>29%</td>
</tr>
<tr>
<td>No computer access</td>
<td>28%</td>
</tr>
<tr>
<td>No contact information</td>
<td>28%</td>
</tr>
<tr>
<td>Complicated process</td>
<td>26%</td>
</tr>
<tr>
<td>It is in a different language</td>
<td>19%</td>
</tr>
<tr>
<td>Other reason</td>
<td>16%</td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
</tr>
<tr>
<td>Unaware of service</td>
<td>7%</td>
</tr>
<tr>
<td>Told I don't qualify</td>
<td>4%</td>
</tr>
<tr>
<td>Difficulty hearing over phone</td>
<td>3%</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, assumed I don’t qualify</td>
<td>37%</td>
</tr>
<tr>
<td>No, unaware of services</td>
<td>29%</td>
</tr>
<tr>
<td>Yes, I have applied</td>
<td>13%</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>8%</td>
</tr>
<tr>
<td>No, do not need services</td>
<td>8%</td>
</tr>
<tr>
<td>No, told I don’t qualify</td>
<td>3%</td>
</tr>
<tr>
<td>No, I don't have a computer</td>
<td>1%</td>
</tr>
</tbody>
</table>

*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

- 23% had heard of the service, but never used it
- 74% had heard of the service, but never used it

*Excludes one respondent who did not answer.

**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

- Fear being asked to show ID: 44%
- Too far away: 44%
- I was unaware of the service: 30%
- Other: 17%
- Fear being unwelcome: 17%
- No transportation: 6%

*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.
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.
Most households experienced reduced job hours

71% reported reduced job hours
42% lost a job
13% unable to provide food
25% had their phone service cut
20% unable to help children with school
4% unable to provide childcare
15% unable to pay rent/mortgage; 28% unable to pay utilities
30% had a household member be diagnosed with COVID-19; 7% hospitalized; 2% passed away due to COVID-19

* 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%.

Survey question 36:
How is COVID-19 affecting your household’s daily life?
Figure 3A. Personal Effects of COVID-19 (N=89)
Most respondents feared getting sick

- 66% reported feeling anxious
- 74% feared getting sick
- 24% could not sleep
- 33% felt lonely

43% selected other:
- Depressed, frustrated
- Afraid for family member who works in hospital
- Household member has asthma and is afraid of getting sick
- Sad because I am not able to visit family
- A family member died of COVID-19
- The world is not the same and everything is so serious now
- Afraid to go outside

*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%.
Most households have received assistance during the pandemic

![Graph 25A](image)

*Excludes 2 respondents who did not answer.

Most participants received food assistance

![Graph 26A](image)

*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%.
**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.*
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

99% found the materials helpful

---

**Graph 28A. Shared Materials (N=88)**

Most participants shared their materials with family members and friends

<table>
<thead>
<tr>
<th>Yes, with family members</th>
<th>73%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, with friends</td>
<td>73%</td>
</tr>
<tr>
<td>Yes, with neighbors</td>
<td>53%</td>
</tr>
<tr>
<td>Yes, with coworkers</td>
<td>18%</td>
</tr>
<tr>
<td>No</td>
<td>7%</td>
</tr>
<tr>
<td>Yes, other</td>
<td>6%</td>
</tr>
</tbody>
</table>

*Excludes 3 respondents who left this section blank.

---

Graph 27A.

Survey question 41:

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

Graph 28A.

Survey question 43:

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

- 86% felt at risk of heat illness
- 10% did not feel at risk
- 3% had no opinion

**Graph 2B. Heat Perception (N=59)**
Only 3% of participants could not specify what temperature felt too hot inside their home

- 97% could specify what temperature felt too hot
- 3% could not specify what temperature felt too hot

**Survey Question 18:**
Do you feel that your health is at risk because of high temperatures?

**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

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>100+°</td>
<td>16%</td>
</tr>
<tr>
<td>95-99°</td>
<td>4%</td>
</tr>
<tr>
<td>90-94°</td>
<td>26%</td>
</tr>
<tr>
<td>85-89°</td>
<td>19%</td>
</tr>
<tr>
<td>80-84°</td>
<td>21%</td>
</tr>
<tr>
<td>75-79°</td>
<td>7%</td>
</tr>
<tr>
<td>70-74°</td>
<td>7%</td>
</tr>
</tbody>
</table>

*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

- Most of the time, but not always: 56%
- Sometimes, but rarely: 29%
- Always: 10%
- Never: 5%

Graph 3B.
Survey question 19 (continued):
At what temperature do you start to feel too hot inside your home?

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 6B. Sources of Heat Warnings (N=59)
Most respondents heard heat warnings through television

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>97%</td>
</tr>
<tr>
<td>Radio</td>
<td>64%</td>
</tr>
<tr>
<td>Text Message</td>
<td>46%</td>
</tr>
<tr>
<td>Neighbor/Friends</td>
<td>37%</td>
</tr>
<tr>
<td>Social Media</td>
<td>25%</td>
</tr>
<tr>
<td>Internet</td>
<td>17%</td>
</tr>
<tr>
<td>Faith-Based Building</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
</tr>
<tr>
<td>Automated Call</td>
<td>5%</td>
</tr>
<tr>
<td>Poster/Flyer</td>
<td>3%</td>
</tr>
</tbody>
</table>

Graph 5B.
Survey question 11:
Do you or other members of your household remember hearing weather warnings about excessive heat this summer?

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

- **63%** knew of heat illness
- **37%** knew of heat illness

**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

- 73% had experienced heat symptoms
- 25% did not answer or left the question blank
- 2% do not know

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

Most participants stayed home and did nothing

- 93% stayed home and did nothing
- 9% admitted to the hospital
- 2% went to the emergency room

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

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.

Survey question 16:

What was the outcome of this heat-related illness?
**Graph 10B. Reason for Staying Home (N=42)**

*Most participants stated that their symptoms improved*

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms improved so care was not needed (felt better)</td>
<td>71%</td>
</tr>
<tr>
<td>Household did not have medical insurance</td>
<td>60%</td>
</tr>
<tr>
<td>Could not afford an ambulance ride or medical care</td>
<td>40%</td>
</tr>
<tr>
<td>Do not have a doctor</td>
<td>38%</td>
</tr>
<tr>
<td>Household did not have transportation</td>
<td>33%</td>
</tr>
<tr>
<td>Other</td>
<td>19%</td>
</tr>
<tr>
<td>Was unsure of what to do or where to go</td>
<td>5%</td>
</tr>
</tbody>
</table>

*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.*

---

**Graph 10B.**

Survey question 17:

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

- **Have**
  - BOTH: 3%
  - Window: 67%
  - Central: 36%

- **Used (Out of Have)**
  - BOTH: 100%
  - Window: 96%
  - Central: 100%

* 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

- **Have**
  - BOTH: 3%
  - Window: 67%
  - Central: 36%

- **Works (Out of Have)**
  - BOTH: 100%
  - Window: 96%
  - Central: 100%

* 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)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Have</th>
<th>Used (Out of Have)</th>
<th>Works (Out of Have)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
</tr>
<tr>
<td>Central A/C</td>
<td>14</td>
<td>36%</td>
<td>14</td>
</tr>
<tr>
<td>Window A/C</td>
<td>26</td>
<td>67%</td>
<td>25</td>
</tr>
<tr>
<td>BOTH Central and Window A/C</td>
<td>1</td>
<td>3%</td>
<td>1</td>
</tr>
<tr>
<td>Fans</td>
<td>27</td>
<td>69%</td>
<td>26</td>
</tr>
<tr>
<td>Swamp</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Misters</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Trees or Plants</td>
<td>11</td>
<td>28%</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td><strong>N=</strong></td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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

*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

- Yes: 69%
- No: 31%

*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 15B. Air-Conditioned Places to Cool Off (N=41)**

Most participants visited a friend or neighbor to cool off

- Friends/Neighbors: 73%
- Mall: 68%
- Supermarket: 39%
- Other: 34%
- Faith-Based Building: 27%
- Community Center: 12%
- Shelter: 2%

*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*

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Transportation</td>
<td>61%</td>
</tr>
<tr>
<td>Personal Vehicle</td>
<td>61%</td>
</tr>
<tr>
<td>Walk</td>
<td>56%</td>
</tr>
<tr>
<td>Get a Ride from Family/Friends</td>
<td>54%</td>
</tr>
<tr>
<td>Bike</td>
<td>5%</td>
</tr>
<tr>
<td>Agency Pick-up</td>
<td>2%</td>
</tr>
<tr>
<td>Lyft/Uber</td>
<td>2%</td>
</tr>
</tbody>
</table>

*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%.

Survey question 33:
How does your household normally travel to air-conditioned places?
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.
Over two-thirds of households limit their use of their home 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

- 78% were unaware of the service
- 22% were aware

*Excludes one participant who did not answer.

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

- 86% were unaware of the service
- 14% were aware

*Excludes one participant who did not answer.

Graph 19B.
Survey question 27:
Are you aware of community programs or services to help you with the cost of utility bills?

Graph 20B.
Survey question 28:
Are you aware of community programs or services to help you with cooling system repairs?
**Graph 21B. Reasons for Not Using Services (N=59)**

*Most households did not have the contact information*

- No contact information: 71%
- Assumed I didn't qualify: 27%
- Complicated process: 19%
- No computer access: 15%
- Unaware of service: 14%
- Other: 12%
- It is in a different language: 8%
- Told I don't qualify: 7%
- Other reason: 5%
- Not interested: 5%
- Difficulty hearing over phone: 2%

*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*

- No, unaware of services: 81%
- No, assumed I don't qualify: 10%
- No, do not need services: 3%
- Yes, I have applied: 3%
- No, told I don't qualify: 2%

*Excludes one participant who did not respond.*
Graph 23B. Knowledge of Cooling Centers (N=59)
Most households were unaware of cooling centers

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

*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

- 76% reported reduced job hours
- 59% lost a job
- 27% unable to provide food
- 29% had their phone service cut
- 5% unable to provide childcare
- 25% had a household member be diagnosed with COVID-19; 2% hospitalized from COVID-19
- 17% had other effects from COVID-19
- 24% unable to pay rent/mortgage; 20% unable to pay utilities

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

60% reported feeling anxious
88% feared getting sick
28% could not sleep
38% felt lonely

31% selected other:
- Depressed, frustrated
- Afraid for family member who works in hospital
- Household member has asthma and is afraid of getting sick
- Sad because I am not able to visit family
- A family member died of COVID-19
- The world is not the same and everything is so serious now
- Afraid to go outside

*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

- 21% received assistance
- 79% received assistance

*Excludes 2 participants who did not respond.

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

- Food assistance: 82%
- Supply assistance: 29%
- Other: 27%
- Rent assistance: 11%
- Unemployment assistance: 7%
- Phone service assistance: 7%
- Utility assistance: 7%
- Medical care: 4%
- Transportation assistance: 4%
- Educational materials: 2%
- Medical bill assistance: 2%

*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.
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).
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?

Overall, participants requested Home Cooling and Finance Help

Home Cooling

Better and newer air-conditioner
Fans throughout home
Plant trees for shade
AC that doesn't break down and works well to cool the entire home

Financial Help

Free or low-cost maintenance/repairs
- Home cooling
- Trailer repair/Insulation
Discounts on home cooling and energy
Lower utility bills

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.
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


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

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

*packet with information on types of heat illness, heat statistics, safety tips, and available resources
## APPENDIX II: DEFINITIONS

### Table 1. Definitions

<table>
<thead>
<tr>
<th>Item</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-heat Season</td>
<td>The time of year just before it gets hot that occurs between winter and summer.</td>
</tr>
<tr>
<td>Post-heat Season</td>
<td>The time of year following heat season that occurs after the hot summer months.</td>
</tr>
<tr>
<td>Cooling Center</td>
<td>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.</td>
</tr>
<tr>
<td>Central Air-Conditioning</td>
<td>A cooling system in which air is cooled at a central location and distributed throughout multiple rooms through vents.</td>
</tr>
<tr>
<td>Window Air-Conditioning</td>
<td>A simple air-conditioning unit that is mounted on windows to cool the room.</td>
</tr>
</tbody>
</table>
## APPENDIX III: HUE LOGIC MODEL AND NARRATIVE

### Figure 1. Logic Model

**HUE Logic Model**

**Purpose:** Reducing Heat Deaths and Illness in Maricopa County Mobile Home Communities

**Situation:** Heat Deaths and Illness adversely affect Maricopa County Mobile Home Communities

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>ACTIVITIES</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
</tr>
</thead>
</table>
| **Partners**
  Mobile Home Community
  Salud en Balance
  Iglesia Episcopal San Pablo
  ASU Knowledge Exchange for Resilience
  HUE Initiative
  The Arizona Association of Manufactured Home and RV Owners
  Maricopa County Department of Public Health
| **Heat Toolkit**
  Develop and distribute Heat Toolkit to households
  Develop and administer pre-heat season survey
  Conduct pre-heat season workshops to train residents/Community Health Workers
  Analyze pre-heat season surveys
  Summarize information from the pre-heat season in the form of an infographic and produce a report
  Develop and administer post-heat season survey
  Develop post-heat season survey definition card
  Develop 3 posters that are a compilation of
| **Heat Toolkit**
  # Households Heat Toolkit distributed to
  Pre-heat season survey
  # Pre-heat season surveys completed
  Pre-heat season workshop conducted
  # Residents/Community Health Workers trained
  Pre-heat season surveys analyzed
  Pre-heat season results infographic and report
  Post-heat season survey
  Post-heat season survey definition card
  # Post-heat season surveys completed
| **Output**
  **Short Term**
  Increase community’s knowledge of heat
  Change perceptions about heat
  Decrease barriers to use of home cooling systems
  Increase awareness of utility assistance programs
  Increase awareness of neighborhood resources
  Decrease effect of COVID-19 on the household and individual
| **Outcome**
  **Intermediate**
  Better understanding of trailer/mobile home residents’ heat perception, knowledge, coping mechanisms used, barriers to cooling, and knowledge and use of community resources
  Increase trailer/mobile home residents’ knowledge of heat
| **Outcome**
  **Long Term**
  Reduction of heat deaths and illness in MC mobile communities
  Increase trailer/mobile home residents’ use of existing cooling services
### 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

<table>
<thead>
<tr>
<th>Zip Code 85008</th>
<th>Maricopa County</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total # Confirmed Heat-Associated Deaths (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Death rate: 4.5 per 100,000 residents</td>
<td>Death rate: 4.0 per 100,000 residents</td>
</tr>
<tr>
<td><strong>Ages of Those Experiencing Heat-Associated Death (%)</strong></td>
<td></td>
</tr>
<tr>
<td>0-4:</td>
<td>0%</td>
</tr>
<tr>
<td>5-19:</td>
<td>0%</td>
</tr>
<tr>
<td>20-34:</td>
<td>7%</td>
</tr>
<tr>
<td>35-49:</td>
<td>14%</td>
</tr>
<tr>
<td>50-64:</td>
<td>43%</td>
</tr>
<tr>
<td>65-74:</td>
<td>21%</td>
</tr>
<tr>
<td>75+:</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total Indoor Heat-Associated Deaths (%)</strong></td>
<td></td>
</tr>
<tr>
<td>21%</td>
<td>30%</td>
</tr>
<tr>
<td>A/C Present:</td>
<td>67%</td>
</tr>
<tr>
<td>A/C Non-functioning:</td>
<td>50%</td>
</tr>
<tr>
<td>No Electricity:</td>
<td>0%</td>
</tr>
<tr>
<td>Not in Use:</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total Outdoor Heat-Associated Deaths (%)</strong></td>
<td></td>
</tr>
<tr>
<td>71%</td>
<td>69%</td>
</tr>
<tr>
<td>Place of Injury</td>
<td>Place of Injury</td>
</tr>
<tr>
<td>Urban Area:</td>
<td>50%</td>
</tr>
<tr>
<td>Desert Area/Trail:</td>
<td>10%</td>
</tr>
<tr>
<td>Residence:</td>
<td>30%</td>
</tr>
<tr>
<td>Car:</td>
<td>10%</td>
</tr>
<tr>
<td>Work Site:</td>
<td>0%</td>
</tr>
<tr>
<td>Care Facility:</td>
<td>0%</td>
</tr>
<tr>
<td>Unknown:</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Living Situation</strong></td>
<td><strong>Living Situation</strong></td>
</tr>
<tr>
<td>Homeless:</td>
<td>36%</td>
</tr>
<tr>
<td>Co-habitating/Roommate:</td>
<td>14%</td>
</tr>
<tr>
<td>Living Independently:</td>
<td>29%</td>
</tr>
<tr>
<td>Unknown:</td>
<td>21%</td>
</tr>
</tbody>
</table>

Data only include Maricopa County residents.


MCDPH conducts heat associated mortality surveillance.
Table 2. Poverty Level of Zip Code 85008 vs. Maricopa County 2018

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

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

<table>
<thead>
<tr>
<th>Age Range (N=62,992)</th>
<th>Zip code 85008 Total Population 2018</th>
<th>Maricopa County Total Population 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 4</td>
<td>5,356 (9%)</td>
<td>279,484 (6%)</td>
</tr>
<tr>
<td>Ages 5-19</td>
<td>13,574 (22%)</td>
<td>890,280 (20%)</td>
</tr>
<tr>
<td>Ages 20-34</td>
<td>19,708 (31%)</td>
<td>934,984 (21%)</td>
</tr>
<tr>
<td>Ages 35-49</td>
<td>11,980 (19%)</td>
<td>858,820 (19%)</td>
</tr>
<tr>
<td>Ages 50-64</td>
<td>8,801 (14%)</td>
<td>778,057 (18%)</td>
</tr>
<tr>
<td>Ages 65+</td>
<td>3,573 (6%)</td>
<td>669,199 (15%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment (N=47,926)</th>
<th>Zip code 85008 Employment (N=47,926)</th>
<th>Maricopa County Employment (N=3,478,309)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Force</td>
<td>73.10%</td>
<td>64.60%</td>
</tr>
<tr>
<td>Employment/ Population Ratio</td>
<td>68.30%</td>
<td>61.50%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>6.30%</td>
<td>4.60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (N=62,992)</th>
<th>Hispanic (57.6%)</th>
<th>American Indian/ Alaska Native (4%)</th>
<th>White (61.8%)</th>
<th>Asian (2%)</th>
<th>Native Hawaiian or Pacific Islander (0.7%)</th>
<th>Black or African American (13.9%)</th>
<th>Other Race (21.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>36,314 (57.6%)</td>
<td>2,509 (4%)</td>
<td>38,944 (61.8%)</td>
<td>1,287 (2%)</td>
<td>463 (0.7%)</td>
<td>8,740 (13.9%)</td>
<td>13,507 (21.4%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>American Indian or Alaska Native</td>
<td>White</td>
<td>Asian</td>
<td>Native Hawaiian or Pacific Islander</td>
<td>Black or African American</td>
<td>Other Race</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>1,379,637 (31.3%)</td>
<td>131,157 (3%)</td>
<td>3,614,022 (81.9%)</td>
<td>19,568 (0.4%)</td>
<td>322,929 (7.3%)</td>
<td>263,648 (6%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language (N=57,636)</th>
<th>Zip code 85008 Language (N=57,636)</th>
<th>Maricopa County Language (N=4,131,340)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>25,807 (44.8%)</td>
<td>2,986,970 (72.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>31,829 (55.2%)</td>
<td>1,144,370 (27.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Households (N=21,902)</th>
<th>Zip code 85008 Households (N=21,902)</th>
<th>Maricopa County Households (N=1,611,722)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own</td>
<td>25%</td>
<td>62.60%</td>
</tr>
<tr>
<td>Rent</td>
<td>75%</td>
<td>37.40%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30%</td>
<td>53%</td>
<td>16%</td>
</tr>
</tbody>
</table>

#### Ages of Those Experiencing Heat-Associated Deaths (%)

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>5-19</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>20-34</td>
<td>1%</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>35-49</td>
<td>4%</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>50-64</td>
<td>34%</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>65-74</td>
<td>33%</td>
<td>26%</td>
<td>33%</td>
</tr>
<tr>
<td>75+</td>
<td>28%</td>
<td>38%</td>
<td>21%</td>
</tr>
</tbody>
</table>

#### Gender of Those Experiencing Heat-Associated Deaths (%)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>73%</td>
<td>56%</td>
<td>60%</td>
</tr>
<tr>
<td>Female</td>
<td>28%</td>
<td>44%</td>
<td>40%</td>
</tr>
</tbody>
</table>

#### Race/Ethnicity of Those Experiencing Heat-Associated Deaths (%)

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian/Pacific Islander</td>
<td>0%</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13%</td>
<td>9%</td>
<td>23%</td>
</tr>
<tr>
<td>White Non-Hispanic</td>
<td>75%</td>
<td>77%</td>
<td>56%</td>
</tr>
<tr>
<td>American Indian</td>
<td>0%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>4%</td>
<td>8%</td>
<td>7%</td>
</tr>
</tbody>
</table>

#### A/C Status (%)

<table>
<thead>
<tr>
<th>Status</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/C NOT Present</td>
<td>23%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>A/C Present</td>
<td>71%</td>
<td>84%</td>
<td>95%</td>
</tr>
<tr>
<td>A/C Non-functioning</td>
<td>70%</td>
<td>79%</td>
<td>56%</td>
</tr>
<tr>
<td>No Electricity</td>
<td>7%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Not in Use</td>
<td>16%</td>
<td>14%</td>
<td>39%</td>
</tr>
</tbody>
</table>

#### Month of Death (%)

<table>
<thead>
<tr>
<th>Month</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>April</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>May</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>June</td>
<td>25%</td>
<td>17%</td>
<td>21%</td>
</tr>
<tr>
<td>July</td>
<td>33%</td>
<td>45%</td>
<td>35%</td>
</tr>
<tr>
<td>August</td>
<td>34%</td>
<td>22%</td>
<td>35%</td>
</tr>
<tr>
<td>September</td>
<td>4%</td>
<td>13%</td>
<td>7%</td>
</tr>
<tr>
<td>October</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>November</td>
<td>1%</td>
<td>0%</td>
<td>2%</td>
</tr>
</tbody>
</table>

#### Living Situation (%)

<table>
<thead>
<tr>
<th>Situation</th>
<th>Mobile Homes</th>
<th>Single Homes</th>
<th>Apartments/Condos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeless</td>
<td>9%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Co-habitating/Roommate:</td>
<td>16%</td>
<td>Co-habitating/Roommate:</td>
<td>24%</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----</td>
<td>------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Living Independently:</td>
<td>74%</td>
<td>Living Independently:</td>
<td>72%</td>
</tr>
<tr>
<td>Unknown:</td>
<td>1%</td>
<td>Unknown:</td>
<td>0%</td>
</tr>
</tbody>
</table>
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 +
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 ____________________________________________
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 ________________________________________________

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
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
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-RISE, 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) ________________________________________________
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?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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?

- Sí.
- No.

¿Realizó esta encuesta en Julio?

- Sí.
- No.
¡Gracias por su tiempo para participar!

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 más.
____ No lo sé.
____ 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 sé.
- 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 más 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.
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.

☐ 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?

☐ sí
☐ no

continúe la Q26 Si la Q25 fue Sí.
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.
- sí, pero nunca he usado el servicio.
- sí, he usado el servicio.

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

- no
- sí, 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, asumi 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.

Reursos 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.
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)

☐ vehículos 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 extemo)?

☐ 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

### JULY SURVEY RESULTS 2020

**PRE-HEAT SEASON**

**HEALTHY URBAN ENVIRONMENTS INITIATIVE**

- **70%** reported having limitations to using their cooling system when it is hot.

- **94%** remembered hearing weather warnings about excessive heat, and **91%** of these heard about these from TV.

- **73%** reported that they or a household member had experienced heat-related illness this summer.

- **64%** reported feeling hot inside their home most of the time or always (94% said that temperatures of 80 degrees Fahrenheit or higher felt hot).

- Window air conditioning was the most commonly used cooling system (78%) and 49% of those function.

- **85%** stated they feel that their health is at risk due to high summer temperatures.

- **33%** reported using fans; only **14%** of fans were reported as functional.
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
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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

74%/88% feared getting sick, 66%/60% felt anxious, 24%/28% could not sleep, and 33%/38% felt lonely

74% reduced job hours was the most common affect on households (71%/76%); 42%/59% lost a job.

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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

Heat Deaths in Maricopa County, Arizona 2006-2019

85 51 49 74 82 106 110 75 61 84 154 179 182 199
HEAT KILLS IN MARICOPA COUNTY

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

WHERE?
- 40% of all deaths occurred indoors
- Most women died indoors
- Most men died outdoors

Most deaths happened when lows were 85°F or above

Maricopa County Public Health
WeArePublicHealth.org

FOR TIPS ON STAYING SAFE IN THE HEAT OR FOR MORE INFORMATION VISIT HEATAZ.ORG.
Figure 3. Heat Deaths in Mobile Homes

MOBILE HOMES
Heat-Associated Deaths in Maricopa County 2006-2019

By the numbers:

1,491 Total heat-associated deaths have occurred in Maricopa County

35% Of the total heat-associated deaths, are reported as indoor deaths

Of the 522 total reported indoor deaths, 29% occurred in mobile homes

In 2019, 40% of indoor deaths occurred in mobile homes

Demographics

- 67% were male
- 91% were 50+ years and older
- 85% were white
- 72% were living independently
- 25% involved substance use

WWW.HEATAZ.ORG

AC in Mobile Homes

Of the 76% of people that had air conditioning in their home, 67% had AC that was not functioning

AC Function Status

- Present
- Not present
- 8% unknown not represented

Those who lived in mobile homes and died from heat are twice as likely to not have had AC present versus those who passed away in other home types
Figure 4. Extreme Heat Infographic (CDC)

**CLIMATE CHANGE & EXTREME HEAT**

Extreme heat events, or heat waves, are a leading cause of EXTREME WEATHER-RELATED DEATHS in the United States and the number of heat-related deaths is rising!

**WHO’S AT RISK?**

Adults over 65, children under 4, people with existing medical problems such as heart disease, and people without access to air conditioning.

**WHAT CAN YOU DO?**

**STAY COOL**
- Find an air-conditioned shelter
- Avoid direct sunlight
- Wear lightweight, light-colored clothing
- Take cool showers or baths
- Do not rely on a fan as your primary cooling device

**STAY HYDRATED**
- Drink more water than usual
- Don’t wait until you’re thirsty to drink more fluids
- Avoid alcohol or liquids containing high amounts of sugar
- Remind others to drink enough water

**STAY INFORMED**
- Check local news for extreme heat alerts and safety tips
- Learn the symptoms of heat illness

**LEARN MORE!**

Visit CDC’s Environmental Public Health Tracking Network to learn more about climate change and extreme heat at www.cdc.gov/ephtracking
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**

- **Drink plenty of water.**
- **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](http://heataz.org) or call 211 for information on cooling centers, utility assistance, and more tips on staying cool.

**Know the Signs of Heat Illness**

<table>
<thead>
<tr>
<th>Heat Exhaustion</th>
<th>Heat Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faint or dizzy</td>
<td>Throbbing headache</td>
</tr>
<tr>
<td>Excessive sweating</td>
<td>No sweating</td>
</tr>
<tr>
<td>Cool, pale, clammy skin</td>
<td>Body temperature above 103(^\circ)F</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>Red, hot, dry skin</td>
</tr>
<tr>
<td>Rapid, weak pulse</td>
<td>Rapid, strong pulse</td>
</tr>
<tr>
<td>Muscle cramps</td>
<td>May lose consciousness</td>
</tr>
</tbody>
</table>

**Call 9-1-1**

Take immediate action to cool the person until help arrives.

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

Information provided by the Maricopa Association of Governments Heat Relief Network for more information visit [https://azmag.gov/Programs/Homelessness/Heat-Relief-Regional-Network](https://azmag.gov/Programs/Homelessness/Heat-Relief-Regional-Network)
Figure 8. List of Resources by Services Provided

RESOURCE SERVICES  

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