Arizona, 2016

ASSESSING THE COOLING NEEDS OF HOMEBOUND INDIVIDUALS IN MARICOPA COUNTY, 2016

Maricopa County Department of Public Health

Contents

Introduction 3
METHODS 5
Step 1. Reflect and Strategize 7
Step 2. Identify and Engage Stakeholders 7
Step 3. Define the Community 9
Step 4. Collect and analyze Data 10
Step 5. Prioritize Community Health Issues 11
Step 6. Document and Communicate Results 11
Logic Model 13
RESULTS 15
Demographics and Household Characteristics 15
Perception of Heat 17
Availability of Cooling Systems 18
Limitations of Use of Cooling Systems 19
Awareness of Community Assistance Programs 20
DISCUSSION 23
Perception of Heat 24
Availability of Cooling Systems 24
Limitations of use of Cooling Systems 25
Awareness of Community Assistance Programs 25
REFERENCES 28
Appendix 30

Maricopa County
Department of Public Health
Office of Epidemiology

Assessing the Cooling Needs of Homebound Individuals in Maricopa County, Arizona, 2016

Abstract

Preventing heat-associated morbidity and mortality is a public health priority in Maricopa County, Arizona (United States). The objectives of this project were to identify the needs of homebound individuals during extreme heat events and determine whether the county's existing services are accessible to this vulnerable population. In order to better understand barriers to using home cooling systems and existing community services during heat events by homebound individuals, the Maricopa County Department of Public Health (MCDPH) administered a survey in 2016.

In partnership with Area Agency on Aging, the City of Phoenix Home Delivered Meals program, Arizona State University (ASU), and Maricopa County Human Services Department, MCDPH created a survey inquiring about: heat perception, availability and barriers to using home cooling systems, knowledge and utilization of community assistance programs, and demographic characteristics. The survey was distributed to homebound individuals enrolled in the Home Delivered Meals program.

Of the 1300 surveys distributed, 472 people responded (36%). Nearly one third of respondents (132) reported limitations on their use of home cooling systems. Of these individuals, 81% (105) cited "cost of bills" as a contributing factor. On average, over half of all respondents (57%) were unaware of community assistance programs. Amongst the respondents experiencing limitations on their cooling systems, the top three reasons for not using available programs were: not having contact information (48%); difficulty hearing on the phone (11%); and a complicated process (11%).

This project is among the first to systematically assess the needs and barriers of this vulnerable population with focus on the cooling systems. This work provides evidence for influencing future efforts towards minimizing the effects of high environmental heat on this vulnerable population, strengthening and expanding partnership in Maricopa County.

INTRODUCTION

Global climate models predict higher temperatures as well as more frequent, longer, and more intense extreme heat events over most of the world. These predictions have greatly increased estimates for future deaths due to heat (Intergovernmental Panel on Climate Change 2007). Most heat-related deaths continue to disproportionately affect vulnerable populations such as the homeless, elderly, pregnant women, children, individuals with disabilities, homebound, and those with underlying diseases. Living in poverty is also a key individual risk factor for death related to heat because it decreases odds of access to medical care and to protective resources. (Balbus and Malina 2009). Deaths from heat exposure also occur among people who lack access to cool environments or are physically active in hot weather.

Maricopa County (MC), Arizona is located in one of the hottest regions in the southwest. Over 4 million people reside in MC, which comprises 60% of Arizona's population. The Phoenix metropolitan area is located at its center and includes more than 20 municipalities and three tribal communities. Each year, MC experiences extreme temperatures and continues to experience two to three weeks (cumulative) of excessive heat warnings issued by the National Weather Service. MC experiences an average of 100 heat associated deaths and over 1,500 heat-associated injuries per year and nearly 40% of these deaths occur indoors. Despite more than 90% of MC homes having an indoor cooling system, people are still at risk for adverse health outcomes as a result of extreme heat in their homes.

Preventing heat-related illness is a public health priority in Maricopa County, therefore, local government agencies and community-based organizations provide heat-related prevention

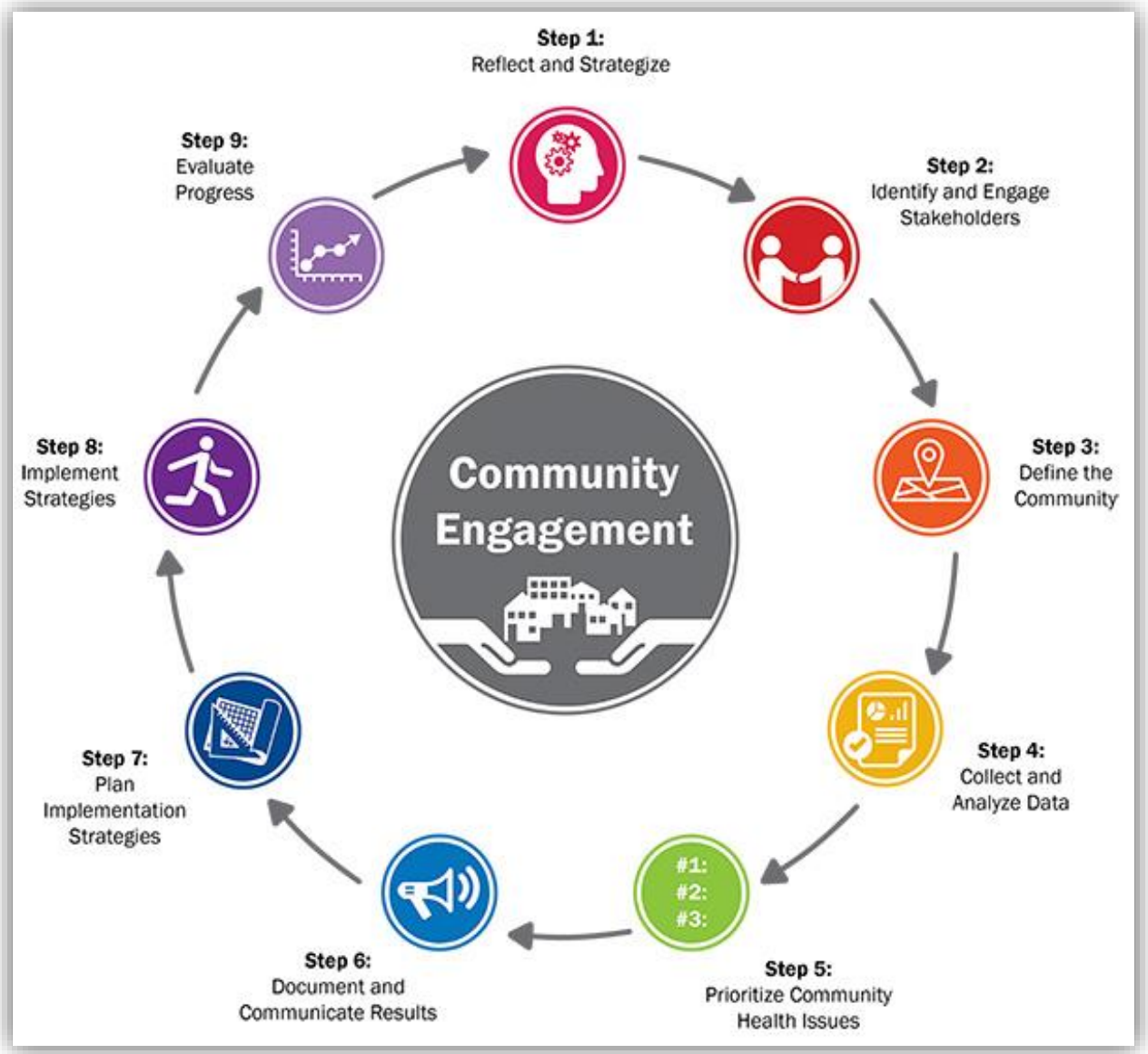
measures, such as community cooling centers, hydration centers, and utility rebates to offer financial assistance to those who can't afford to keep their cooling system running all summer. A cooling center is an air-contained public space set up by local authorities to temporarily prevent negative health effects of extreme heat or to prevent overheating during heat waves. A hydration center provides access to free, clean water. As evidenced by the continuing number of indoor heat-associated deaths, MCDPH and community partners continue to be concerned that people are either unaware or cannot access these resources.

The Area Agency on Aging (AAA) is a private non-profit organization that advocates, develops, and delivers essential services to enhance quality of life for older adults and persons with disabilities. AAA estimates their organization serves at least 1,000 homebound individuals a month. Home Delivered Meals is one of the services that AAA, in collaboration with City Of Phoenix's Human Services Department, provides on daily basis to the homebound individuals residing within the City of Phoenix. Since this population has limited mobility, we predicted that these individuals have unmet needs and experience greater barriers to resources during extreme heat events, putting them at a greater risk. In order to gain a better understanding on this issue, MCDPH in collaboration with AAA, City of Phoenix, and Arizona State University (ASU) initiated a study to identify the needs of homebound individuals during extreme heat events and determine whether the current existing services are accessible to this vulnerable population. Findings from this hard to reach population will be a great opportunity to increase community awareness about existing services and connect homebound individuals to the most effective and appropriate interventions to meet their needs.

METHODS

In January 2016, MCDPH partnered with the City of Phoenix Human Services Department, Maricopa County Human Services Department, AAA, ADHS, and ASU to form a study team. The study team used the Community Health Assessment Toolkit from the Association for Community Health Improvement as a model for this study (see Figure 1). This assessment is comprised of nine steps which focuses on community engagement, designing interventions, and implementing these interventions. The ASU Institutional Review Board declared this assessment exempt based on it not collecting personally identifiable information and being strictly intended for program implementation. Members of the assessment team completed training through the Collaborative Institutional Training Initiative (CITI) Human Research Curriculum.

Figure 1. Community Health Assessment Toolkit[8]



In order to develop the assessment of cooling needs, the study team utilized the following steps:

Step 1. Reflect and Strategize

How can we learn about homebound individuals' cooling needs at their residence?

In July of 2015, as the MCDPH Office of Epidemiology was preparing to submit an application for a funding opportunity from the *Climate Change and Public Health Learning Collaborative*, project ideas were being discussed by MCDPH staff. Based on our knowledge that approximately 40% of heat related deaths in MC occur indoors and 83% of indoor heat-related deaths occurred in homes that did not have an operational cooling systems at the time of death, our proposals were primarily centered on how homebound individuals were being affected by extreme heat events. During our discussions, the following were considered related factors: 1) limited mobility, 2) barriers to using their home cooling systems, 3) knowledge about and access to available community services, 4) prediction of unmet needs related to cooling during extreme heat events, and 5) how community groups can address their needs. In addition, thoughts about having processes in place that allows individuals to report their concerns/needs related to environmental hazards and for stakeholders to respond in a timely manner were discussed.

Step 2. Identify and Engage Stakeholders

What are the resources and how can we respond to the needs of the homebound individuals in a timely manner?

In order to get better insight about the needs and availability of resources associated with homebound individuals and extreme heat events, MCDPH recognized the need for greater partnership and collaboration with community members and organizations.

In January 2016, MCDPH met with multiple stakeholders which included: ADHS, MCDPH, ASU, AAA, MC Human Services, City of Phoenix, Selrico Inc., the contractor to deliver meals to the homes, and community members (Table 1). The Home Delivered Meals program is a referral-based program which prepares and delivers nutritionally balanced meals to homebound residents ages 60 and up and those with disabilities. Each provided valuable insight about available resources and how they are administered to the residents of Phoenix. MCDPH presented its ideas on conducting an assessment, which would focus on the needs of homebound individuals during extreme heat events. The stakeholders were instrumental in providing detailed information on homebound individuals and services that are provided to them. Discussions with the stakeholders defined the gap in knowledge regarding this vulnerable population. Based on discussions, the consensus among the group was to proceed with designing the assessment and creating a strategy for administering the survey.

Table 1. List of stakeholders involved by type and role, Maricopa County Homebound Survey 2016

Partners	Type	Role Involved	Individuals (N)
Maricopa County Department of Public Health (MCDPH)	Local public health department	Study design Implementation Assessment Dissemination of study results	10
Area Agency on Aging (AAA)	Community partner	Supportive role in the study; Provides funding for City of Phoenix's Home Delivered Meals Program	2
Arizona Department of Health Services (ADHS)	State health department	Supportive role in the study	1
Arizona State University (ASU)	Academic institution	Study design Implementation Assessment Dissemination of study results	1
City of Phoenix	Local government partner	Supportive role in the study; Administers Home Delivered Meals Program	1
Maricopa County Human Services	Local public service department	Supportive role in the study	1
Selrico Inc.	Community partner	Contracted by the City of Phoenix to conduct Home Delivered Meals Program Study implementation (survey distribution and collection)	20
Homebound Individuals	Community members	Survey respondents	472

Step 3. Define the Community

This assessment focused on homebound residents within the boundaries of Phoenix, which makes up 38% of the population in Maricopa County. A homebound individual is defined as someone unable to leave their home due to health issues and are unable to attend regular social activities such as a senior center or congregate nutrition sites. The homebound individual may be able to go to medical appointments, but needs escort assistance to do so safely. An individual without access to adequate nutrition and for whom transportation to a congregate site is unfeasible may be considered homebound. Since they are unable to leave the home they also

lack the ability to visit a Cooling Center and other cool spaces should they need to. There are approximately 5,000 homebound individuals in Phoenix and, at any given time, the AAA estimates that 1,000 homebound individuals receive meals from the City of Phoenix.

Step 4. Collect and analyze Data

During April-June of 2016, the assessment team developed an instrument, the *Homebound Community Survey,* to capture information from homebound individuals. A standard two page front and back paper questionnaire was developed both in English and Spanish (*See appendix*). The questionnaire included 15 questions regarding the following topics: (1) perception of indoor temperatures; (2) the types of cooling systems in the home and whether they were operational and/or in use; (3) reasons for not utilizing cooling systems, if applicable; (4) use of utility assistance programs and barriers to use; and (5) housing status, age, race/ethnicity, and other demographic characteristics.

The survey was pilot tested in June 2016 by MCDPH staff. In July 2016 field teams of three members were deployed to meet with Selrico staff at three different sites. Selrico staff received training on how to disseminate and collect completed survey questionnaires from their clients. Survey implementation occurred during the month of August 2016 and the surveys were filled out independently by the homebound individuals. A packet was distributed which included the following: the survey, "*Survey Completion Steps", "Top 10 Tips for Staying Safe in the Arizona Heat" and "Heat Fact Sheet".* The distributed materials were both in English and Spanish. The AAA and the City of Phoenix were instrumental in receiving completed survey from Selrico staff. The MCDPH team collected surveys weekly from the two agencies. Efforts were made to ensure survey completeness and remove any duplicates.

Quantitative data were summarized with descriptive statistics, and qualitative data were coded based on content and questions. Data entry, quality control, and analyses were completed using Qualtrics, Microsoft Excel, and SAS Enterprise Guide software.

Activities and outcomes were summarized in a logic model which was shared with others involved in the study (Fig 2).

Step 5. Prioritize Community Health Issues

Preventing heat deaths and illness is a priority in MC which is in accordance with MCDPH mission -"*To protect and promote the health and well-being of Maricopa County residents and visitors" and MCDPH vision –"A healthy and safe community".* In the interest of fulfilling our mission and vision, MCDPH focused on individuals that experience limitations on using their home cooling systems and also those that were unaware of the available programs currently available to assist with cooling system needs. Next, MCDPH looked towards improving equity by opening conversations between stakeholders on taking steps in order to provide better access to this necessity.

Step 6. Document and Communicate Results

Can we develop a process that would allow us to address the homebound individual's needs in a timely manner?

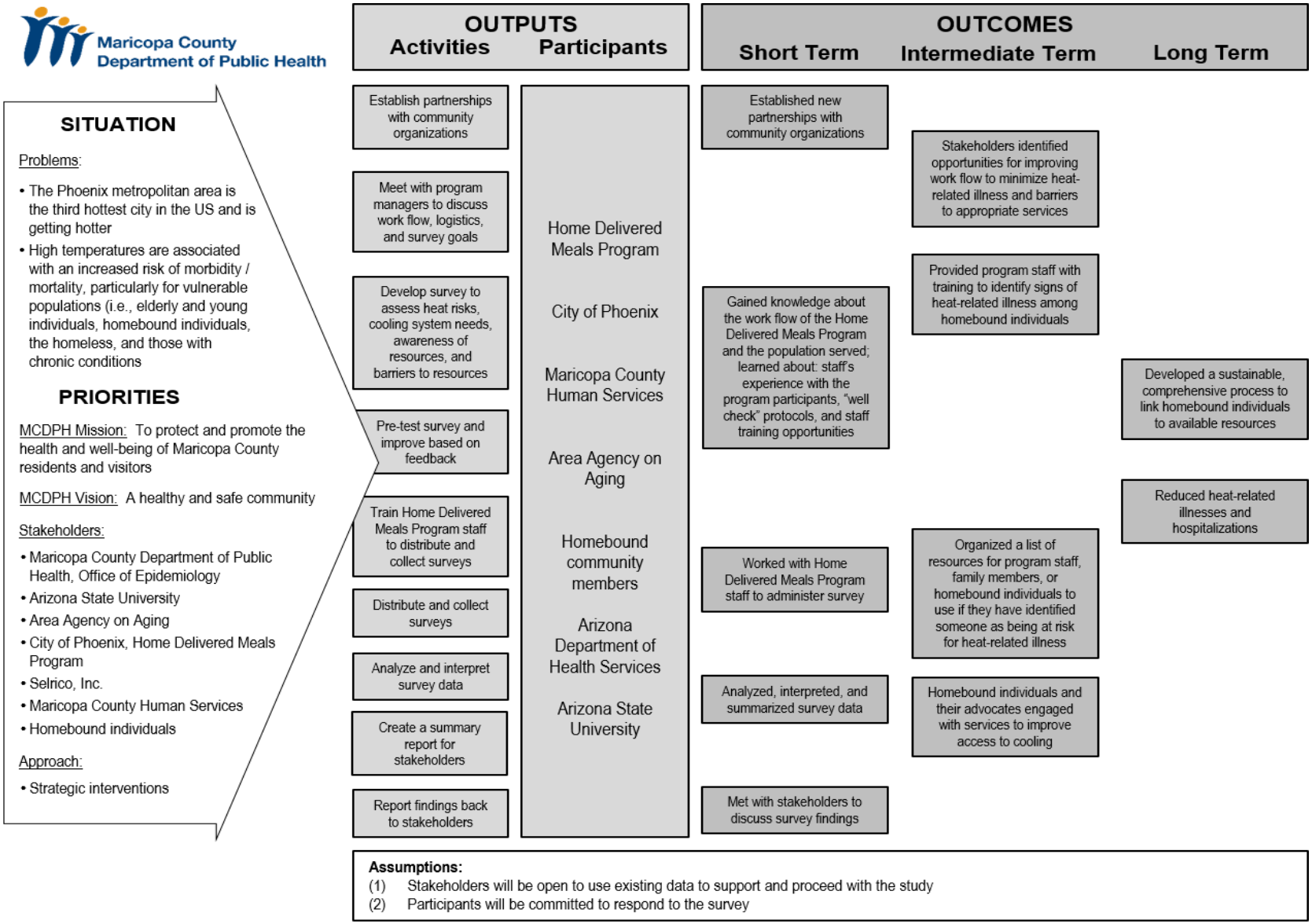
On November 16, 2016 at the Bridging Climate Change and Public Health stakeholders meeting, preliminary results from the Homebound Assessment were shared in a one-page info graphic brochure. In addition, On April 27, 2017, MCDPH staff met with stakeholders involved with the assessment to report the findings and discuss further steps. In our talks we discussed ideas for providing information to the homebound population regarding community resources.

We also discussed the feasibility for developing a sustainable process for reporting health and social needs and then providing an appropriate response that, if successful, could be extended to other vulnerable populations. These discussions remain in the beginning stage.

Strategies and plans for the last three steps of the Community Health Assessment toolkit: "*Step 7. Plan Implementation Strategies, Step 8. Implement Strategies, Step 9. Evaluate progress"* will continue to be discussed in the future as we onboard more stakeholders.

Logic Model

Figure 2. Assessing the Needs, Barriers, Knowledge, and Resources of the Homebound Population Logic Model, Maricopa County Homebound Survey, 201



RESULTS

Out of 1,300 surveys distributed to homebound individuals, 472 surveys were returned to MCDPH for a response rate of 36% (English, 455; Spanish, 17).

Demographics and Household Characteristics

More than half of the survey respondents were female and almost half of the homebound study participants were over the age of 75 years (Table 2). In terms of race/ethnicity, most of the participants were white, followed by Hispanic/Latino, and African American. Over half of homebound individuals reported living by themselves. More respondents rent as opposed to own their home. The two most common types of homes were apartment/condo and single-family homes (Table 3).

Table 2. Descriptive Characteristics of Maricopa County Survey respondents, 2016 (N=472)

Characteristic	N (%)	Maricopa County
Gender		
Female	284 (60%)	2,145,005 (51%)
Male	159 (34%)	2,097,992 (49%)
Age group		
25 - 34 years	3 (1%)	609,189 (22%)
35 - 44 years	8 (2%)	551,926 (20%)
45 - 54 years	23 (5%)	543,880 (19%)
55 - 64 years	79 (17%)	482,093 (17%)
65 - 74 years	115 (24%)	361,741 (13%)
75 years or older	217 (46%)	258,190 (9%)
Race/Ethnicity		
White	299 (63%)	2,380,041 (56%)
Hispanic/Latino	59 (13%)	1,302,419 (31%)
Black or African American	56 (12%)	223,023 (5%)
American Indian or Alaska Native	7 (1%)	71,185 (2%)
Asian	6 (1%)	176,751 (4%)
Other/Two or more	25 (5%)	89,578 (2%)

Table 3. Living Conditions of Maricopa County Survey respondents, 2016 (N=472)

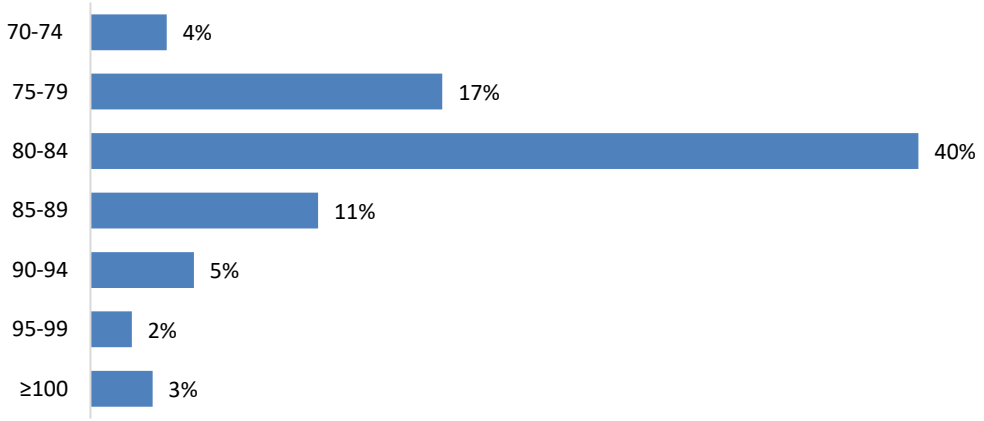
Living Condition	N (%)
How many people live in your home, including yourself?	
1 person	277 (59%)
2 persons	116 (25%)
3 persons	29 (6%)
4 or more persons	15 (3%)
Do you rent or own your home?	
Rent	259 (55%)
Own	179 (38%)
Other (not specified)	16 (3%)
Type of home	
Apartment/condo	209 (44%)
Single-family house	193 (41%)
Trailer	28 (6%)
Townhome	7 (1%)
Studio	2(<1%)
Guest house	1 (<1%)
HUD housing	1 (<1%)
Other (not specified)	9 (2%)

Perception of Heat

Participants were asked, *"At what temperature do you feel too hot in your own home?"* The most common responses fell in the range of 80-84°F, followed by 75-79°F and 85-89°F (Figure 3). An additional 19% (not included in Figure 3) said they did not know what temperature was too hot for them. Fewer participants responded feeling too hot under 75°F and above 90°F.

Figure 3. Perception of heat within the home, Maricopa County Homebound Survey 2016

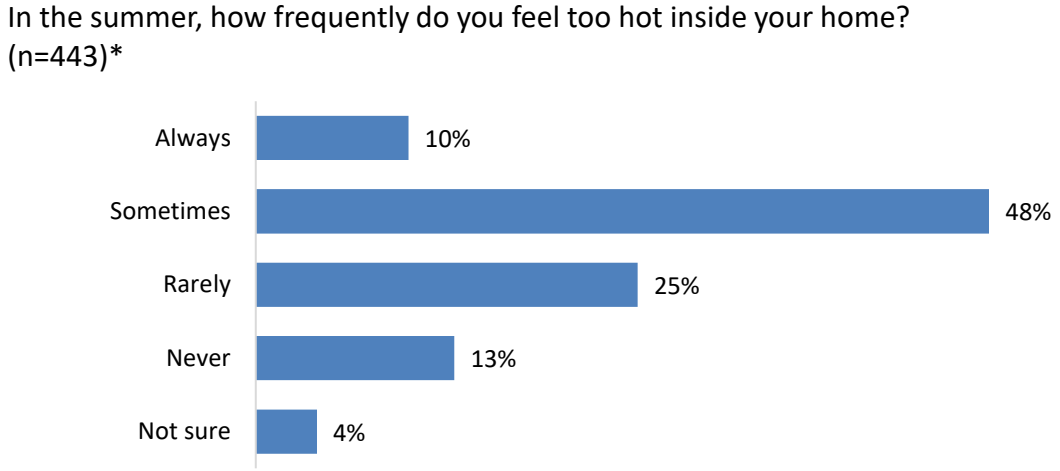
At what temperature do you feel too hot in your home? (n=436)*



*36 unknown responses were excluded

Additionally, respondents were asked how frequently they felt too hot in their home during the summer. The most popular response was "sometimes" followed by "rarely," "never," and "always." (Figure 4). Ten percent said they "always" felt too hot, and of these, 9% desired a temperature ≤ 74°F. This is over double the percentage of people who desired such temperatures overall (4%). Over half (66%) of the participants in the "always" group reported experiencing limitations on cooling system use.

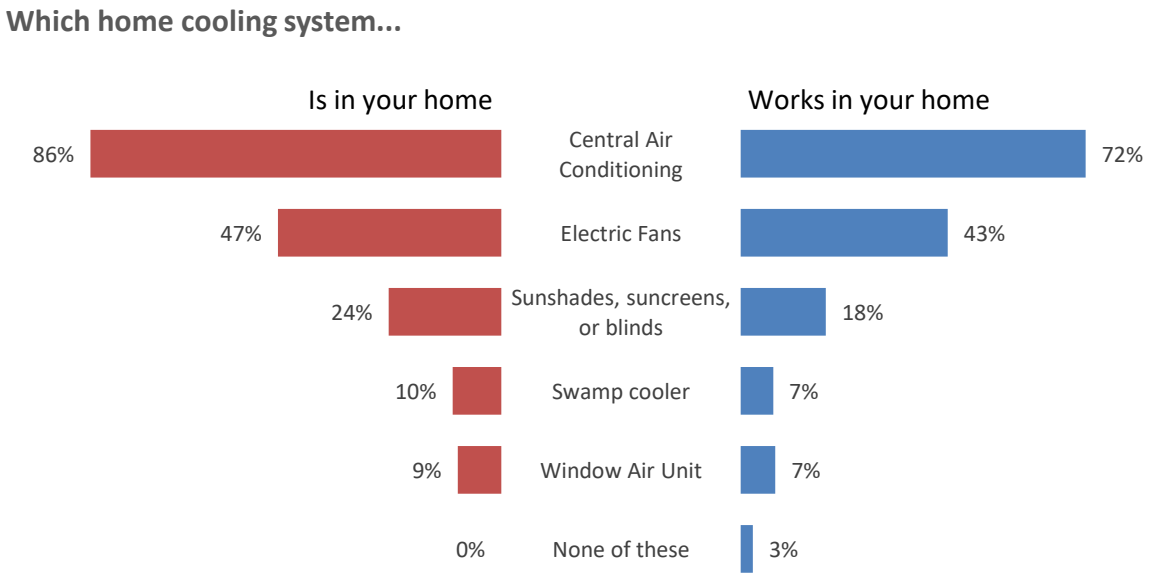
Figure 4. Perception of heat within the home during the summer, Maricopa County Homebound Survey 2016



*29 unknown responses were excluded

Availability of Cooling Systems

Figure 5. Cooling system in the home and its working condition, Maricopa County Homebound Survey 2016



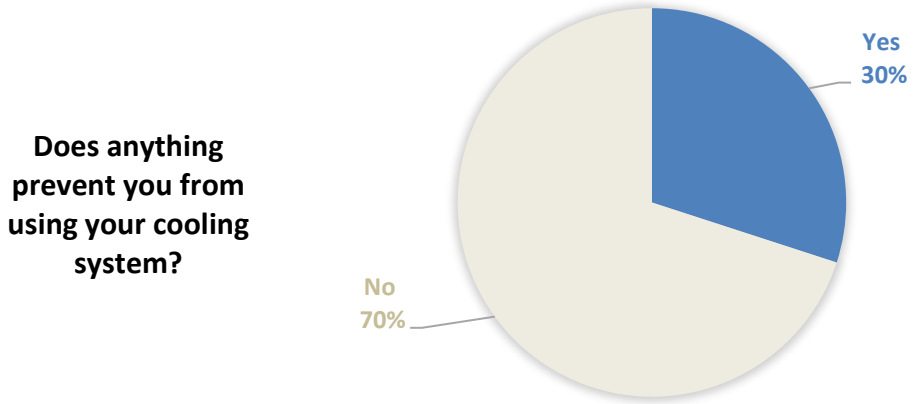
Respondents were asked which of their cooling systems were in their home and whether they were operational. Notably, 3% of respondents stated that none of their cooling systems worked at the time of the survey. Many respondents stated that at least one of their cooling devices

was not working at the time of the survey, including 14% of those with a central air conditioning unit (Figure 5).

Limitations of Use of Cooling Systems

About a third of the total respondents indicated that they were prevented from using their cooling system. (Figure 6)

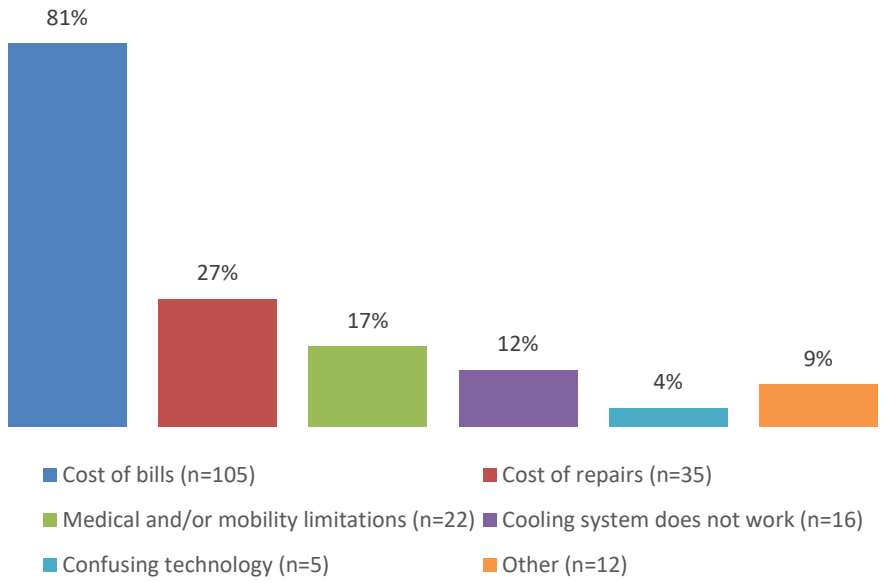
Figure 6. Limitation to use of cooling system, Maricopa County Homebound Survey 2016, (n=440)*



*32 unknown responses were excluded

Of those who experienced limitations (n=132), the majority cited "cost of bills" as a contributing factor, followed by "cost of repairs", "medical/mobility limitations", "cooling system does not work", and "confusing technology". Most responses in the "other" category listed landlord/complex management issues that limit use of cooling system. Because respondents were able to select more than one response, the following values represent the percentage of respondents that selected a given answer. (Figure 7)

Figure 7. Reasons for limitations on use of cooling system, Maricopa County Homebound Survey 2016 (n=130)*



*2 invalid answers were excluded

Awareness of Community Assistance Programs

Participants were asked whether they were aware of community programs or services that help with cost of utility bills, cooling system repairs, and prevention of overheating during hot days. Almost half of participants were not aware of assistance available with cost of utility bills. On average, 61% of participants with were not aware of assistance available with cooling system repairs or of prevention of overheating during hot days. More participants responded that they were aware of and used community assistance with cost of utility bills. However, fewer participants responded that they were aware of and used community assistance with cooling systems repairs, and only 5% of participants were aware of and used community assistance with prevention of overheating during hot days or cooling centers (Figure 8).

Figure 8. Awareness of community assistance programs/services amongst all respondents, Maricopa County Homebound Survey 2016

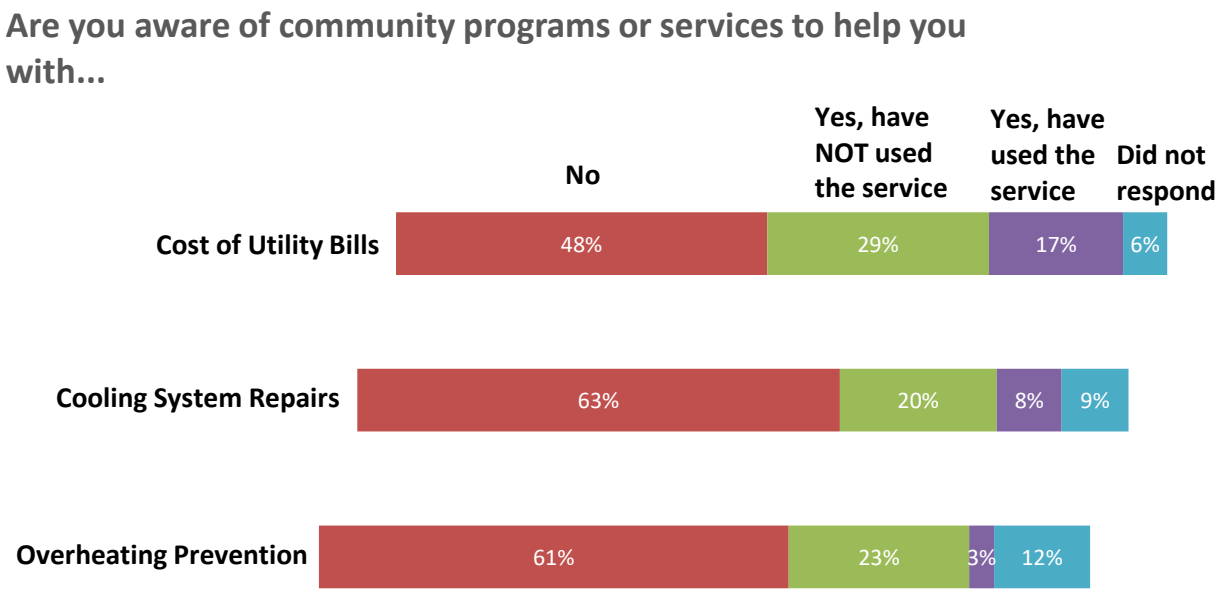
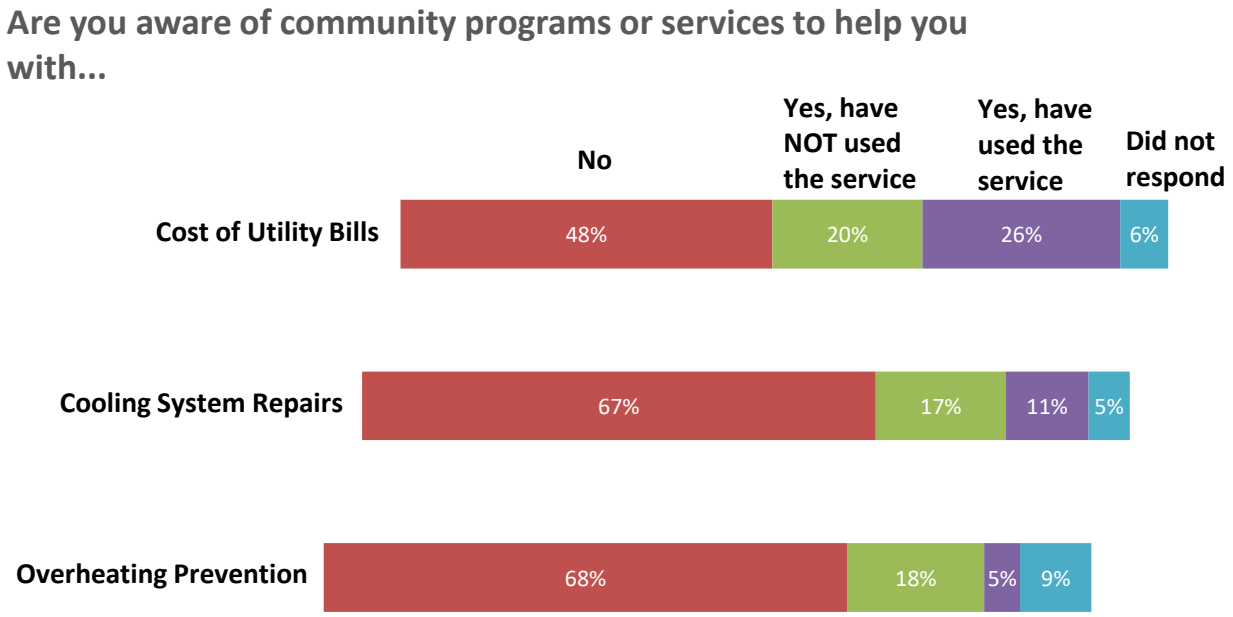
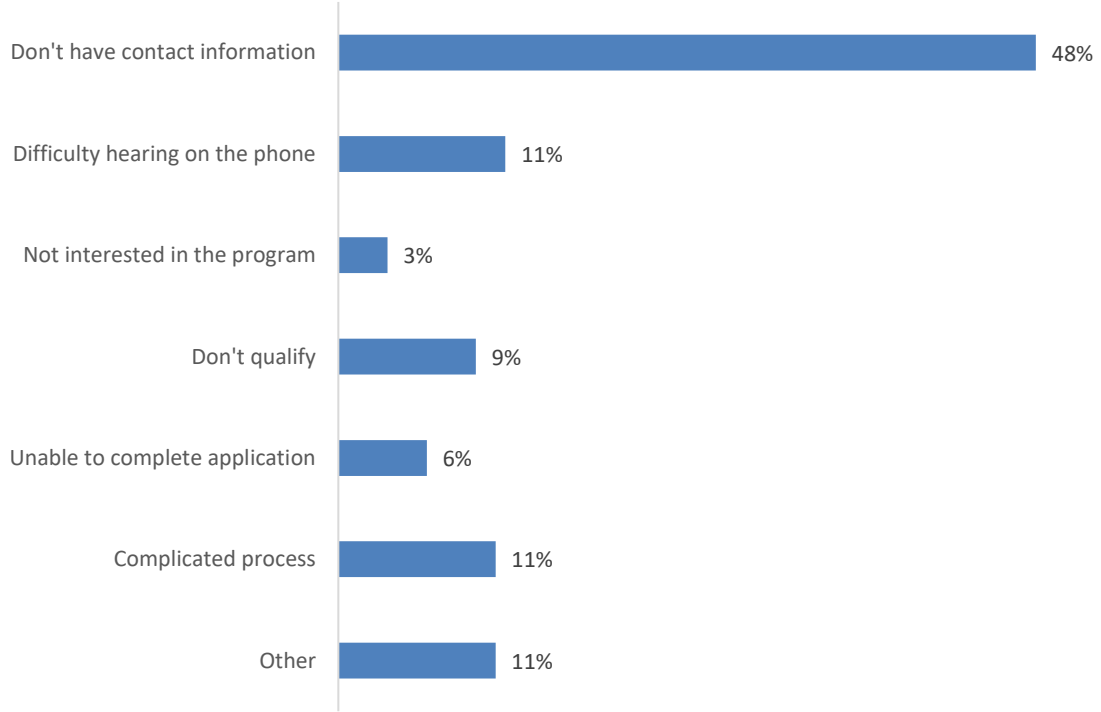


Figure 9. Awareness of community assistance programs/services amongst those experiencing limitations, Maricopa County Homebound Survey 2016



The most common reason for not utilizing any community programs/services was "lack of contact information" for both participants that did not express having limitations on use of cooling systems (30%) and for participants that expressed having limitations on use of cooling systems (48%) (Figure 10).

Figure 10. Reasons for not utilizing community assistance programs/services in respondents with limitations, Maricopa County Homebound Survey 2016 (n=148)*



*30 unknown responses were excluded

DISCUSSION

The results of this assessment provide important information about homebound individuals regarding heat perception, cooling systems availability in the homes they live in, limitations on use of their home cooling systems, awareness of community programs or services to help with cost of utility bills and cooling system repairs, as well as awareness of overheating during hot days. This information will allow us to determine the direct needs of this vulnerable population and implement change to improve the current conditions.

According to the U.S. Global Change Research Program (USGCRP), climate change and weather have an effect on human health.[6] Climate change, along with other stressors both natural and man-made, can exacerbate negative impacts on health and well-being in various ways. A recent (2016) climate and health assessment conducted by USGCRP stated that there are three vulnerability factors that determine whether an individual suffers from adverse health outcomes. The vulnerability factors include *exposure*, *sensitivity*, and *adaptive capacity*.[6]

Homebound individuals spend most, if not all, of their daily lives within their homes. Furthermore, pre-existing health conditions often make them more *sensitive* to additional stressors such as high temperatures. They are particularly vulnerable to prolonged heat *exposure* within their home due to insufficient cooling systems, reduced mobility, and pre-existing health conditions. This population's *adaptive capacity* may be compromised because of their pre-existing conditions or if they are unable to adjust their environment to meet their cooling needs. Examples include an inability to reach the thermostat if bedridden, move to a cooler room, or travel to a cooling center away from the home. Hence, this assessment (the first of its kind in

Maricopa County) was developed to evaluate the cooling needs of this particular vulnerable population.

Perception of Heat

Based on a previous assessment conducted by MCDPH in 2015[4], we found that the majority (92%) of households never or rarely felt too hot inside their homes during the summer while only 38% of Phoenix's homebound individuals could say the same. The majority of the homebound population reports feeling too hot between 80-84°F. Also, when asked how frequently they felt hot inside their home, 48% of individuals indicated that they felt hot sometimes. Ten percent said they "always" felt too hot, and of these, 9% desired a temperature ≤ 74°F. Over half (66%) of the participants in the "always" group reported experiencing limitations on cooling system use. Because the homebound population reports feeling hotter more than twice as often as the respondents in the CASPER report, this may suggest that the homebound population are indeed more susceptible to heat. This could also be a result of their reduced access to air conditioning.

Availability of Cooling Systems

Ninety-seven percent of households in CASPER study reported using central air conditioning as their main source of cooling, followed by fans (73.6%), and trees or plants (25.6%). However, 86% of the homebound study respondents report having air-conditioning in their homes, followed by fans (47%), sunshades and screens (24%), swamp cooler/window unit (19%). As far as functionality of home cooling systems for homebound individuals, we find that only 72% report that their air conditioning works at home followed by fans (43%), sunshades/screens (18%),

and swamp cooler/window unit (14%). 3% of homebound individuals reported not having any functioning home cooling system. These data show that the homebound population does indeed have less access to a functioning home cooling system. This could suggest that homebound individuals face more difficulties with home cooling systems. This could also mean they experience more barriers such as cost, and functionality when compared to the general population. It is evident that there is a need to get organized as a community to strategize on finding methods to help.

Limitations of use of Cooling Systems

About a third of the total homebound respondents indicated that they were prevented from using their home cooling system. Listed reasons for limitations on use of cooling systems, were the following: 81% "Cost of Bills", 27% "Cost of repairs", 12% "Non-working cooling system" and 17% "Mobility Limitations". While in CASPER study 24% of households reported that cost of electricity was a limitation. This suggests that while some residents of Maricopa County face limitations on use of cooling systems. These can include not being able to afford to keep the air conditioning running, not having a working unit, or even not having access to transportation to bring you to a cooling center. These limitations are more noticeable among homebound individuals living in Phoenix. Everyone should have easy access to heat refuge and it is obvious that this is not always the case, especially with the homebound population. We must make access to transportation for homebound individuals to escape the heat easier and also continue to discuss solutions to address the disproportionality of cooling system availability in MC.

Awareness of Community Assistance Programs

In this section of the survey homebound participants were asked whether they are aware of community programs or services to help with cost of utility bills, cooling system repairs, and prevention of overheating. We found that 48% were not aware of the cost of utility bills program, 63% were not aware about cooling system repairs program, and 61% did not know about overheating prevention. Overheating prevention refers to cooling centers and other cooling spaces in the community.

Reasons for not utilizing these community assistance programs/services were the following: lacked the contact information (48%), difficulty hearing on the phone (11%), and a complicated process (11%). The group of people who showed the largest lack of awareness of assistance programs were homebound individuals who also experienced limitations on their cooling systems. Oftentimes, these are the people that need access to these resources the most and they have less awareness than the rest of the population. There is certainly a problem with community awareness surrounding assistance programs for utility bill assistance, cooling system repairs, and overheating prevention. All of these barriers could be solved with better public education on the topic of available community resources. It is important for Maricopa County to implement changes in order to improve these current shortcomings.

It is clear that the homebound sample is a vulnerable population when compared to the entire county. This is evident from their reports of perception of heat, availability of cooling systems, limitations of using these cooling systems, and their awareness of assistance programs. The results from the homebound survey highlight areas where community outreach and education are needed to ensure our population at risk of heat related morbidity/mortality is

aware of existing services and resources available. We also, as a community, need to work on simplifying these process so residents would feel comfortable in using these resources.

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APPENDIX

Figure 1a. Homebound Community Survey (English version) Page 1, Maricopa County 2016

Maricopa County Public Health
WeArePublicHealth.org

Homebound Community Survey

Maricopa County Department of Public Health, Office of Epidemiology is assessing the needs of homebound individuals during extreme heat events. The results of this survey will help determine awareness and use of existing community services and resources. Your participation in this project is completely voluntary. The survey will take approximately 5 to 10 minutes to complete. You may decline altogether, or leave blank any questions you don't wish to answer. These responses should reflect the opinions of the homebound individual. All responses will be confidential and data from this survey will only be reported as a collective combined total. If you agree to participate in this project, please answer the questions on the survey as best you can. Thank you for taking the time to participate.

Our first few questions are about your home that you live in now.

1. At what temperature do you start to feel too hot inside your home? _____°F ☐ I don't know
2. In the summer, how frequently do you feel too hot inside your home?

   ☐ Always ☐ Sometimes ☐ Rarely ☐ Never ☐ Not sure

For the following two questions, please check all boxes that apply.

Which cooling system:	Central air Conditioning	Window unit air conditioning	Electric fans (ceiling or portable)	Sunshades, sunscreens, or blinds	Swamp Cooler	Other	None of these
3. is in your home?	☐	☐	☐	☐	☐	☐	☐
4. works in your home?	☐	☐	☐	☐	☐	☐	☐

If you checked "other", then please describe what those cooling systems are: _____

_____

Next, we'd like to know how you use your cooling systems and other community resources.

5. a. Does anything limit you from using your cooling system when you are hot? ☐ Yes ☐ No **If no, skip to question 6**

   b. If yes, then what? (Check all that apply)

   ☐ Cost of bills ☐ Medical and/or mobility limitations ☐ Does not work

   ☐ Cost of repairs ☐ Confusing technology

   ☐ Other (please list) _____

PLEASE FLIP TO BACK SIDE AND COMPLETE SURVEY

If you have any questions or need the survey to be provided in an alternative format or language, please contact our office at epidemiology@mail.maricopa.gov or (602) 372-4094.

Figure 11b. Homebound Community Survey (English version) Page 2, Maricopa County 2016

Maricopa County Public Health
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Homebound Community Survey

6. **Are you aware of community programs or services to help you with:**
   a. **the cost of utility bills?**
      ☐ No ☐ Yes, but never used the service ☐ Yes, I have used the service
   b. **cooling system repairs?**
      ☐ No ☐ Yes, but never used the service ☐ Yes, I have used the service
   c. **prevention of overheating during hot days?**
      ☐ No ☐ Yes, but never used the service ☐ Yes, I have used the service

7. If you have not utilized any community programs or services, please select your reason(s):

☐ Not interested in this program ☐ Unable to complete application ☐ Don't qualify

☐ Don't have the contact information ☐ Difficulty hearing on the phone ☐ Complicated process

☐ Other (please list) _____

Finally, we'd like to know a little bit about you and your household so that we can describe how survey respondents compare to the population of Maricopa County.

8. How many people live in your home, including yourself? ☐

9. How many people in your home are homebound, including ☐

10. What is your gender: ☐ Male ☐ Female ☐ Other

11. What is your race and / or ethnicity? (Check all that apply)

☐ Black or African American ☐ American Indian or Alaska Native ☐ Asian

☐ Native Hawaiian or Pacific Islander ☐ White ☐ Hispanic / Latino ☐ Other: _____

12. What is your age group?

☐ 18 – 24 years ☐ 25 – 34 years ☐ 35 – 44 years ☐ 45 – 54 years

☐ 55 – 64 years ☐ 65 – 74 years ☐ 75 years or older

13. Do you rent or own your home? ☐ Rent ☐ Own ☐ Other

14. How would you categorize your home?

☐ Apartment / condo ☐ Single-family house ☐ Trailer ☐ Townhome ☐ Other

15. What is your zip code? _____

If you have any questions or need the survey to be provided in an alternative format or language, please contact our office at epidemiology@mail.maricopa.gov or (602) 372-4094.

Figure 2a. Homebound Community Survey (Spanish version) Page 1, Maricopa County 2016

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Homebound Community Survey

La Oficina de Epidemiología del Departamento de Salud Pública del Condado de Maricopa está evaluando las necesidades de individuos que no pueden salir de casa durante eventos de calor extremo. Los resultados de este estudio ayudarán a determinar el conocimiento y el uso de servicios y recursos existentes para la comunidad. Su participación en este proyecto es completamente voluntaria. La encuesta tomara aproximadamente entre 5 a 10 minutos en ser completada. Usted puede dejar en blanco cualquier pregunta que no desee contestar. Estas respuestas deben reflejar las opiniones del individuo que se encuentra en casa sin salir. Todas sus respuestas serán confidenciales, y la información recopilada solo será reportada en un total colectivo combinado. Si desea participar en este proyecto, por favor, responda las siguientes preguntas lo mejor que pueda. Gracias por tomarse el tiempo de participar.

Las primeras preguntas son acerca de la casa en donde usted vive.

1. ¿A qué temperatura comienza a sentir demasiado calor dentro de su hogar? _____°F ☐ No lo sé

2. En el verano, ¿con qué frecuencia siente demasiado calor dentro de su hogar?

☐ Siempre ☐ A veces ☐ Rara vez ☐ Nunca ☐ No estoy seguro/a

Para las dos preguntas siguientes, por favor, seleccione todas las opciones que apliquen.

¿Qué sistema de refrigeración:	Aire acondicionado central	Unidad de ventana	Ventilador eléctrico (de techo o portátil)	Sombrillas, filtros solares, o persianas	Enfriador por evaporación	Otro	Ninguno
3. hay en su casa?	☐	☐	☐	☐	☐	☐	☐
4. funciona en su casa?	☐	☐	☐	☐	☐	☐	☐

Si usted selecciono "Otro", por favor, describa cuales son esos sistemas de refrigeración:

_____

A continuación, nos gustaría saber cómo utiliza sus sistemas de refrigeración y otros recursos para la comunidad.

5. a. ¿Existe algo que limita su utilización de su sistema de refrigeración cuando tiene calor?

☐ Sí ☐ No **Si "No", continúe a la pregunta 6**

b. Si "Sí", explique que limita la utilización de su sistema de refrigeración

(*Seleccione todo lo que aplique*)

☐ Costo de factura (bills) ☐ Limitaciones médicas y/o de movilidad ☐ No funciona

☐ Costo de reparaciones ☐ Tecnología confusa

☐ Otro (explique): _____

Continúe en la página siguiente

Si usted tiene alguna pregunta o necesita la encuesta en un formato o lenguaje alternativo, por favor, póngase en contacto al correo electrónico epidemiology@mail.maricopa.gov o al teléfono 602.372.4094

Figure 12b. Homebound Community Survey (Spanish version) Page 2, Maricopa County 2016

Maricopa County Public Health
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Homebound Community Survey

6. **¿Tiene usted conocimiento de los programas o servicios para la comunidad que le pueden ayudar con:**
   a. **el costo de las facturas de servicios públicos?**
      ☐ No ☐ Sí, pero nunca los he utilizado ☐ Sí, he utilizado los servicios
   b. **reparaciones de sistemas de refrigeración?**
      ☐ No ☐ Sí, pero nunca los he utilizado ☐ Sí, he utilizado los servicios
   c. **la prevención de sobrecalentamiento durante los días calurosos?**
      ☐ No ☐ Sí, pero nunca los he utilizado ☐ Sí, he utilizado los servicios

7. Si usted no ha utilizado los programas o servicios para la comunidad, por favor, seleccione sus razones:

☐ No interés en estos programas ☐ No ha podido completar la solicitud ☐ No califica

☐ No tiene información de contacto ☐ Dificultad para escuchar en el teléfono ☐ Proceso complicado

☐ Otro (explique) _____

Por último, nos gustaría saber un poco más acerca de usted y su hogar para poder describir cómo aquellos quienes respondieron a la encuesta se comparan con la población del Condado de Maricopa.

8. ¿Cuántas personas viven en su hogar, incluyendo a usted? ☐

9. ¿Cuántas personas en su hogar no pueden salir? ☐

10. Sexo: ☐ Masculino ☐ Femenino ☐ Otro

11. ¿Cuál es su raza o etnia? (*Seleccione todo lo que aplique*)
☐ Negra o Afroamericana ☐ Indoamericano o Nativo de Alaska ☐ Asiática
☐ Nativo de Hawái o Islas del Pacífico ☐ Blanca ☐ Hispana/Latina ☐ Otra: _____

12. ¿Cuál es su edad?
☐ 18 – 24 años ☐ 25 – 34 años ☐ 35 – 44 años ☐ 45 – 54 años
☐ 55 – 64 años ☐ 65 – 74 años ☐ 75 años o mayor

13. ¿Usted alquila o es dueño de su casa? ☐ Alquila/Renta ☐ Dueño ☐ Otro

14. ¿Cómo clasificaría usted su hogar?
☐ Apartamento/condominio ☐ Casa para una sola familia ☐ Casa móvil
☐ Casa adosada (*townhome*) ☐ Otro_____

15. ¿Cuál es su código postal? _____

Si usted tiene alguna pregunta o necesita la encuesta en un formato o lenguaje alternativo, por favor, póngase en contacto al correo electrónico epidemiology@mail.maricopa.gov o al teléfono 602.372.4094