



# **SANDHILLS COMMUNITY READINESS**

## **DETERMINING PILOT GROUPS FOR HEAT SAFETY PROGRAMMING**

Report compiled by Chelsea Austin, Kathie Cox, Lisa Garland, Sarah Shaughnessy,  
Sara Smith, Lauren Thie, Karen Woodell



NC DEPARTMENT OF  
**HEALTH AND  
HUMAN SERVICES**



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This report aims to provide background information on current efforts in each of four counties in the North Carolina Sandhills and to set the direction of future work by identifying target populations for heat-safety programming. For each county, we provide a summary of the stakeholder interviews, a demographic profile based on the most recent census data and identify a population focus for future heat-health programming based on a community readiness framework.

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# Introduction

## Heat Illness in North Carolina

While climate's impact on health is a global issue, the effects will vary across geographic regions and populations. In North Carolina, heat-related illness (HRI) is an annual concern. Model projections have suggested an annual increase of 15-20 days with maximum temperatures exceeding 95°F from 2041 to 2070. On average, there are approximately 4,000 emergency department visits for HRI during heat season (May 1 – September 30) in North Carolina. The majority of emergency department visits for HRI are males, particularly those between the ages of 25-34. Though anyone can be affected by complications from HRI, older North Carolinians (>65 years) are more likely to be hospitalized for HRI

1-4.

## Prevention Strategies

The aim of the NC BRACE program is to implement and monitor efforts at the state level that will reduce heat illness in the Sandhills region. Based on a review of evidence-based interventions for reducing heat illness and feedback from local stakeholders, the program has identified a heat alert system and educational program as two interventions which, implemented concurrently, have significant potential to reduce emergency department visits for heat illness.

NC BRACE can be most effective by building on current local efforts, utilizing local expertise, and working through existing channels of health and social service provision. However, local communities vary in their awareness of heat health issues, the type of heat illness prevention programs already in place, and the priority given to those programs. In order to survey current heat-illness prevention efforts, identify needed resources for future efforts, and select a target population for piloting NC BRACE programming, we interviewed 14 stakeholders who represented vulnerable populations in four counties in the Sandhills region: Bladen, Robeson, Sampson, and Scotland. These interviews and their analysis were guided by a framework adapted from the Community Readiness Model (CRM)<sup>5</sup>.

## The Community Readiness Model

Under this model, community readiness is defined as the degree to which a community is willing and prepared to take action on an issue, in this instance, on heat-related illness. For this analysis, NC BRACE has adapted the following dimensions of community readiness:

- Knowledge of the issue – How much does each vulnerable population know about the heat illness?
- Knowledge of existing efforts – How much does each population know about current programs and activities intended to address heat illness?
- Community climate – What is each population's attitude toward addressing heat illness?
- Resources – What are the resources that are being used or could be used to address heat illness?

In addition to knowledge and perceptions of efforts, we have considered what programs or efforts are currently being implemented for various vulnerable populations in each of the four counties.

## Purpose of Report

This report aims to provide background information on current efforts in each of the four counties and set the direction of future work by identifying target populations for heat-safety programming. For each county, we provide a summary of the stakeholder interviews, a demographic profile based on the most recent census data and identify a population focus for future heat-health programming based on the CRM results.

# BLADEN COUNTY

## POPULATION

We spoke with five stakeholders whose work in Bladen County serves migrant workers and their families, low-income families, racial and ethnic minorities, outdoor workers, mobile home residents, and older adults.

Based on their experience living and working in the area, these groups believe that farmworkers, individuals living in poverty, older adults, outdoor workers, and children are particularly vulnerable to heat-related illness. Some of these groups are more exposed to extreme heat, such as outdoor workers and individuals who cannot afford air conditioning, while others are more sensitive to extreme heat, such as the elderly and individuals who have not yet acclimatized to the heat. Those who experience high exposure and high sensitivity are particularly vulnerable, such as farmworkers who have recently immigrated.

## CONCERN FOR HEAT-RELATED ILLNESS

Stakeholders indicated a high level (7.5 out of 10) of concern for heat-related illness in Bladen County, noting that it becomes a high priority once people are aware of the frequency and the impact of heat illness.

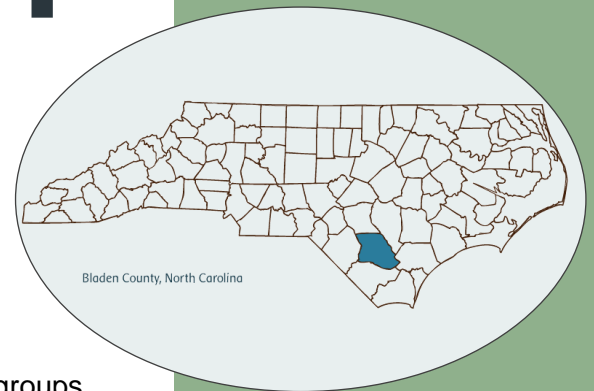
## CURRENT EFFORTS

Current efforts to address heat illness and promote heat safety include printed materials available in English and Spanish, presentations on heat safety, cooling centers, weatherization programs, and shade and hydration policies for outdoor workers. These programs are designed for farmworkers and their families, older adults, and individuals experiencing housing insecurity.

According to stakeholders, most county residents had limited awareness or were unaware of these efforts, however. Awareness was slightly higher among the efforts' intended recipients, but stakeholders felt that it should be increased as well.

## EXISTING RESOURCES

The sources and stability of funding for existing programs varied. Stakeholders reported that farmworker health programs are funded through the state of North Carolina, which is fairly stable. Energy assistance and weatherization programs for low-income families are funded through sponsorships and continuous fundraising, which is likely to continue as well. Funding for other heat-illness prevention work is often channeled through the state or local health departments, and is uncertain. Stakeholders were not aware of many additional resources such as staffing, technical expertise, or physical space that could be allocated to heat safety programs, and felt that existing efforts could be supported by a larger staff or consistent volunteers, increased funding,



## COUNTY PROFILE

### LAND AREA

884 square miles

### TOTAL POPULATION

34,720

### DENSITY

40 people / square mile

### AGE

22% Under 18

8.9% 18 – 24

22.1% 25 – 44

29.4% 45 – 64

17.6% 65 +

### SEX

52.5% Female

47.5% Male

### RACE

57.9% White

35.2% Black

4.5% Other

2.4% Native Am

### OCCUPATIONS

14.2% Manufacturing

10.4% Construction

6.1% Agriculture & Forestry

### MEDIAN INCOME

\$30,096

### POVERTY

22.8% Below FPL

### HEALTH INSURANCE

54% Private Health Coverage

43.9% Public Health Coverage

15.4% Uninsured<sup>6</sup>

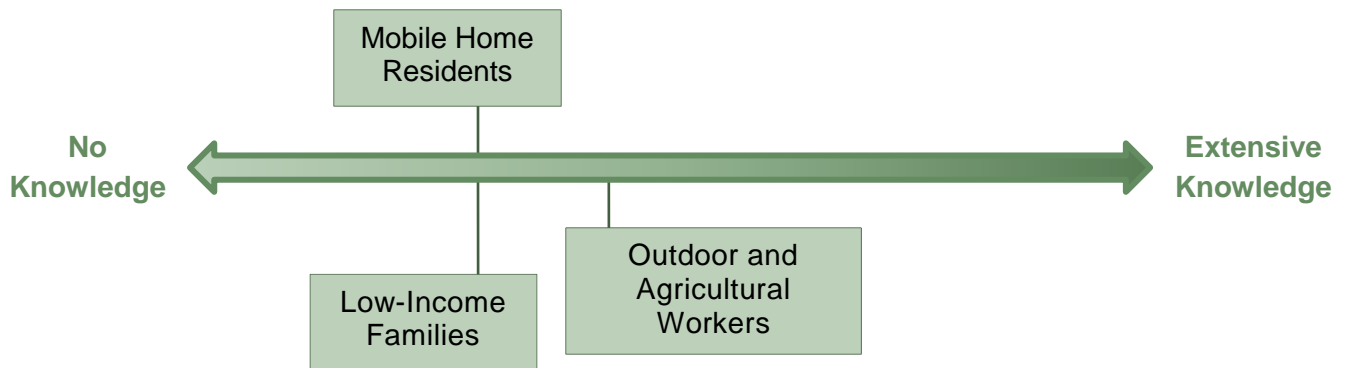
and informational materials on the causes of heat illness and heat illness prevention strategies.

### RECOMMENDATIONS

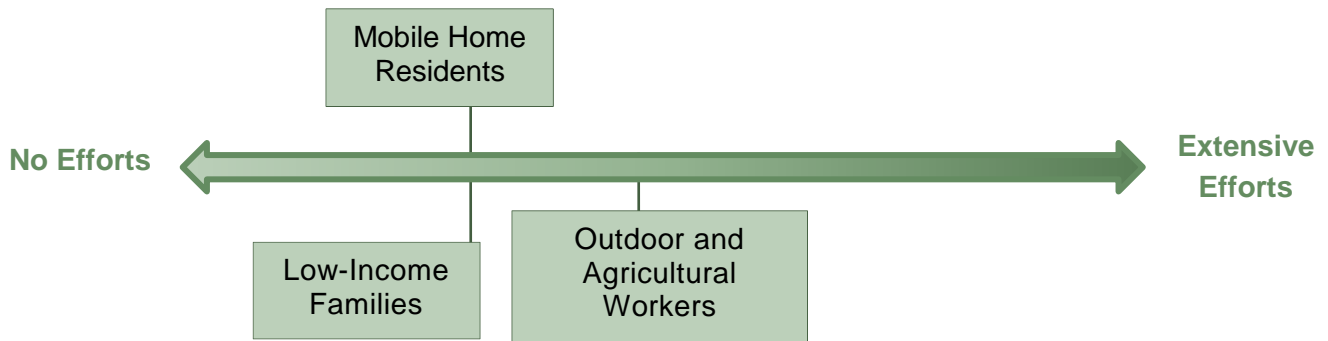
The stakeholders we spoke with believed that a targeted educational campaign and a heat alert system would both be effective ways to reduce emergency department visits for heat illness among their respective populations in Bladen County. Stakeholders also offered additional feedback:

- Communication around how the heat alert system works should be clear.
- A heat alert system targeted to growers and crew leaders would be most effective in impacting farmworkers.
- Programs should leverage existing resources and build on existing programming.
- Programs should include related health information to dispel misconceptions about heat-illness.

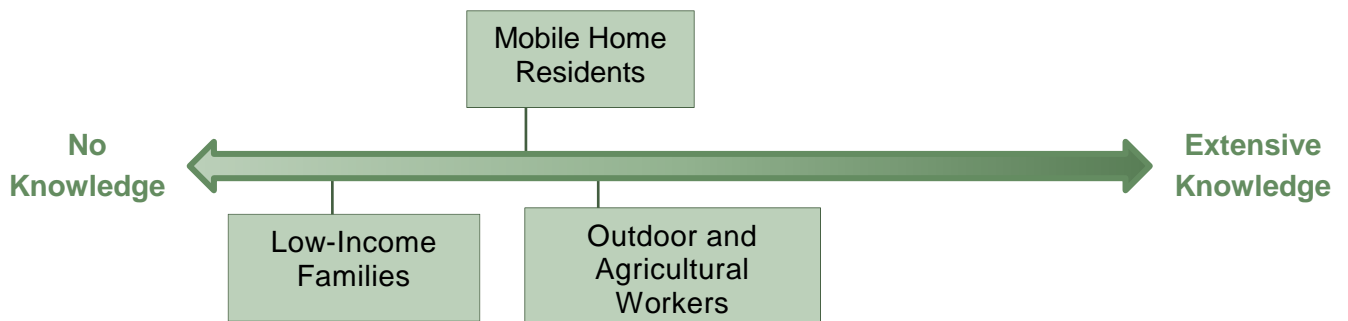
#### COMMUNITY KNOWLEDGE OF THE ISSUE



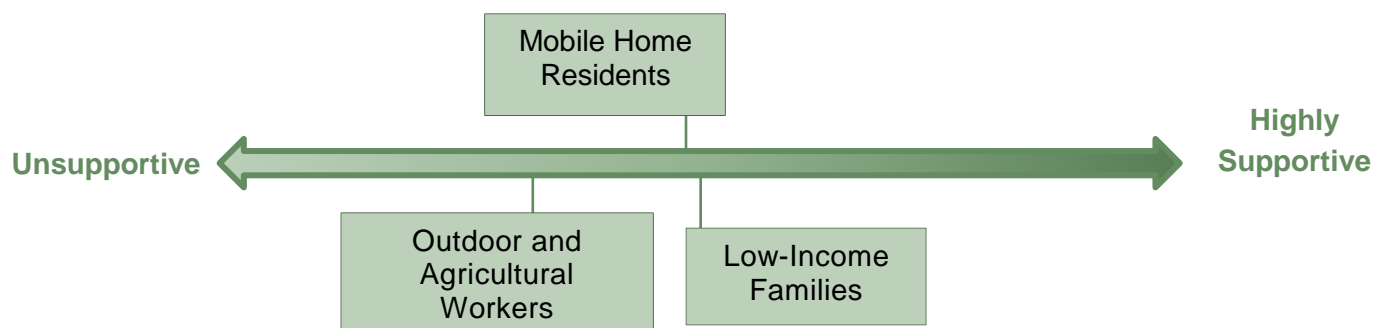
#### CURRENT EFFORTS



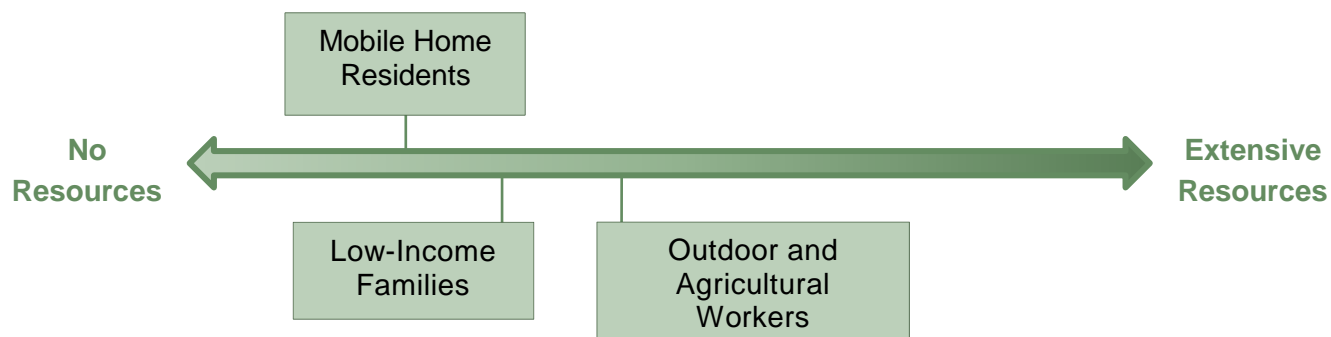
#### COMMUNITY KNOWLEDGE OF EFFORTS



### COMMUNITY CLIMATE



### RESOURCES



#### KEY THEMES:

- Existing programs to address heat illness include cooling centers, weatherization and energy assistance programs, and education and informational materials tailored to agricultural workers
- PowerUp, the NC Farmworker Health Program, and East Coast Migrant Head Start are actively engaged in heat-safety programming
- Stakeholders believe awareness of heat illness and existing efforts to address heat illness to be relatively low throughout the county, but highest among outdoor workers, due to their level of exposure

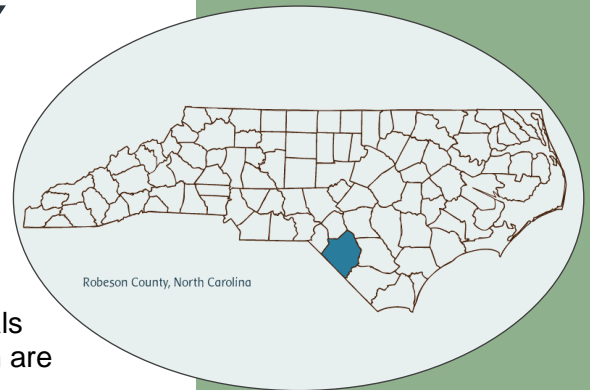
#### NC BRACE FOCUS:

Agricultural workers

# ROBESON COUNTY

## POPULATION

We spoke with two stakeholders whose work in Robeson County serves predominantly low-income earners and racial/ethnic minorities. Based on their experience living and working in the area, these groups believe that individuals living in poverty, older adults, outdoor workers, and children are particularly vulnerable to heat-related illness.



## CONCERN FOR HEAT-RELATED ILLNESS

*“People get a lot of direct exposure on the job...but many homes lack efficient cooling systems.”*

Stakeholders indicated a high level (7.5 out of 10) of concern for heat-related illness in Robeson County, noting that it becomes a high priority once people are aware of the frequency and the impact of heat illness. Stakeholders indicated that concern is

highest among individuals living in poverty who are unable to afford air conditioning, and homeless individuals and outdoor workers who are chronically exposed to extreme heat.

## CURRENT EFFORTS

Stakeholders were aware of two programs currently in place to address heat-related illness. The county has designated public spaces to serve as cooling centers that are open to the public during certain hours on days of extreme heat during the summer. Additionally, there are weatherization and energy assistance programs, such as PowerUp, to assist low-income individuals reduce the cost and afford the cost of cooling their homes. Stakeholders were unaware of how widely these programs are currently used, however, or how effective they are in preventing heat-illness. Lack of transportation was cited as the biggest obstacle to using cooling centers. Lack of awareness and perceived stigma of utilizing social service programs were cited as the biggest barriers to participating in weatherization and energy assistance programs.

## EXISTING RESOURCES

These latter programs are sponsored by the Department of Social Services and supplemented with funding from nonprofit organizations and for profit utility companies. Funding for additional programming in Robeson County is very limited. Stakeholders noted that such multidisciplinary collaboration would be a way to maintain and secure funding for heat health programs in the future.

## RECOMMENDATIONS

## COUNTY PROFILE

### LAND AREA

949 square miles

### TOTAL POPULATION

134,871

### DENSITY

142 people / square mile

### AGE

26.2% Under 18

11% 18 – 24

25.2% 25 – 44

25.1% 45 – 64

12.6% 65 +

### SEX

51.6% Female

48.4% Male

### RACE

30.1% White

24.1% Black

37.8% Native Am

8% Other

### OCCUPATIONS

14.2% Manufacturing

10.4% Construction

6.1% Agriculture & Forestry

### MEDIAN INCOME

\$30,608

### POVERTY

25.8% Below FPL

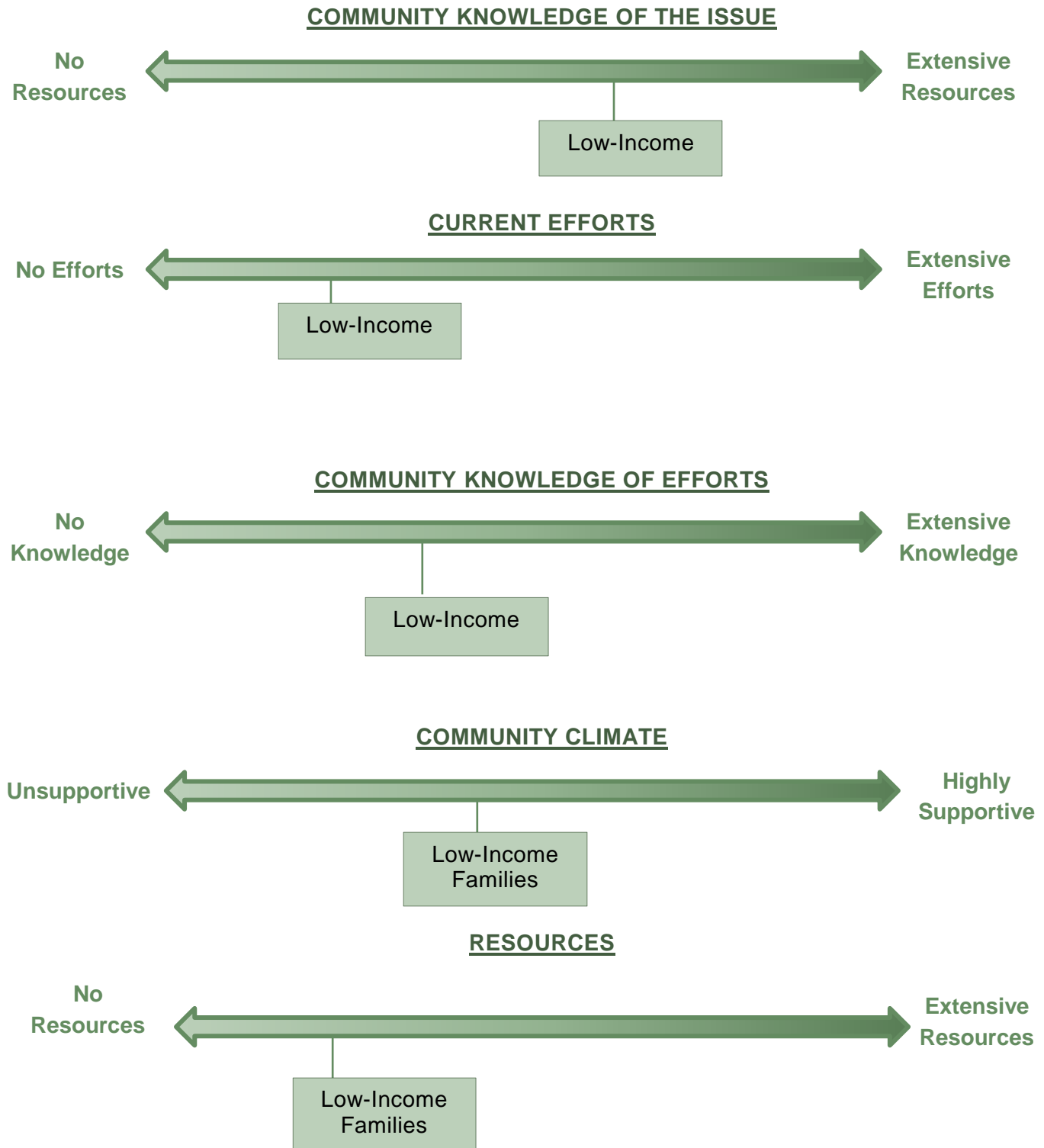
### HEALTH INSURANCE

43.4% Private Health Coverage

45.1% Public Health Coverage

19.9% Uninsured<sup>6</sup>

The stakeholders we spoke with believed that a targeted educational campaign and a heat alert system would both be effective ways to reduce emergency department visits for heat illness among their respective populations in Robeson County. To effectively implement these programs, it is recommended that NC BRACE partner with and support current agencies' efforts, begin evaluating the effectiveness of these efforts by collecting process evaluation data, and identify and utilize more effective modes of communication to disseminate information about heat illness and about how a heat alert system will be implemented.





### KEY THEMES

- Existing programs to address heat-illness include cooling centers and weatherization programs
- Many of these efforts address other heat concerns and serve multiple counties. As a result, resources are spread thinly
- 25.8% of the population falls below the federal poverty line
- Heat illness is a moderate concern for most community members due to both lack of awareness and competing priorities

### NC BRACE FOCUS:

Low-income families and individuals

# SAMPSON COUNTY

## POPULATION

We spoke with six stakeholders whose work in Sampson County serves farmworkers and their families, low-income families, racial and ethnic minorities, outdoor workers, mobile home residents, and older adults.

Based on their experience living and working in the area, these groups believe that farmworkers, individuals living in poverty, older adults, outdoor workers, and children are particularly vulnerable to heat-related illness. Among farmworkers, undocumented individuals, recent arrivals, and indigenous workers are perceived to be even more vulnerable due to fear of seeking help, lack of acclimatization, lack of awareness, and language barriers. Construction and road work were cited as specific vulnerable occupations.

## CONCERN FOR HEAT-RELATED ILLNESS

Stakeholders indicated a high level (7.8 out of 10) of concern for heat-related illness in Sampson County, however stakeholders noted that the level of concern and awareness about heat illness varies based on how long community members have lived and worked in the county and, relatedly how frequently they are exposed to extreme heat. In Sampson County, representatives of farmworkers were more aware of heat illness and expressed a higher level of concern than stakeholders who worked with children and low-income families.

## CURRENT EFFORTS

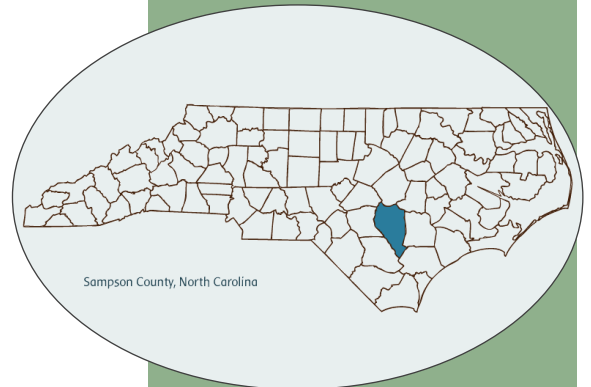
Current efforts to address heat illness and promote heat safety include printed informational materials, presentations and trainings related to heat safety, cooling centers, fan and energy assistance programs for low-income families and older adults, and shade and hydration policies for outdoor workers. These programs are designed for farmworkers and their families, older adults, individuals experiencing housing insecurity, and mobile home residents.

These efforts are publicized through flyers, monthly radio broadcasts, the local newspaper, word-of-mouth, and face-to-face communication. Despite this publicity, many stakeholders believed the community's

***“The information stops at the heart. There are no veins.”***

awareness of these efforts was low, suggesting that the information was not reaching everyone in the county, especially those who could benefit from it.

Sampson County is large and rural, making communication beyond more populated municipalities challenging. As one stakeholder noted, “the information stops at the heart. There are no veins.” Additional barriers include lack of transportation stigma around utilizing social services, and time constraints.



## COUNTY PROFILE

### LAND AREA

945 square miles

### TOTAL POPULATION

63,873

### DENSITY

68 people / square mile

### AGE

24.9% Under 18

8.5% 18 – 24

24.5% 25 – 44

26.4% 45 – 64

15.7% 65 +

### SEX

50.8% Female

49.2% Male

### RACE

61.2% White

25.7% Black

11.5% Other

1.6% Native Am

### OCCUPATIONS

11.4% Construction

9.6% Manufacturing

7% Agriculture & Forestry

### MEDIAN INCOME

\$35,490

### POVERTY

18.8% Below FPL

### HEALTH INSURANCE

51.2% Private Health Coverage

43% Public Health Coverage

18.6% Uninsured<sup>6</sup>

## **EXISTING RESOURCES**

The sources and stability of funding for existing programs varied. Stakeholders reported that farmworker health programs are funded through the state of North Carolina, which is fairly stable. Energy assistance and weatherization programs for low-income families are funded through sponsorships and continuous fundraising, which is likely to continue as well. County departments such as the Department of Aging and the Health Department allocate some funds to heat-related programming, however these funds are limited.

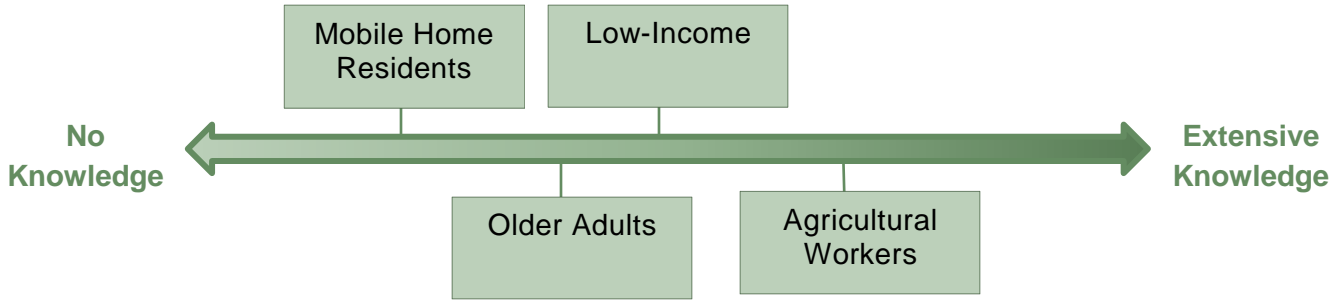
Stakeholders were not aware of many additional resources such as staffing, technical expertise, or physical space that could be allocated to heat safety programs, and felt that existing efforts could be supported by a larger staff or consistent volunteers, increased funding, and informational materials on the causes of heat illness and heat illness prevention strategies.

## **RECOMMENDATIONS**

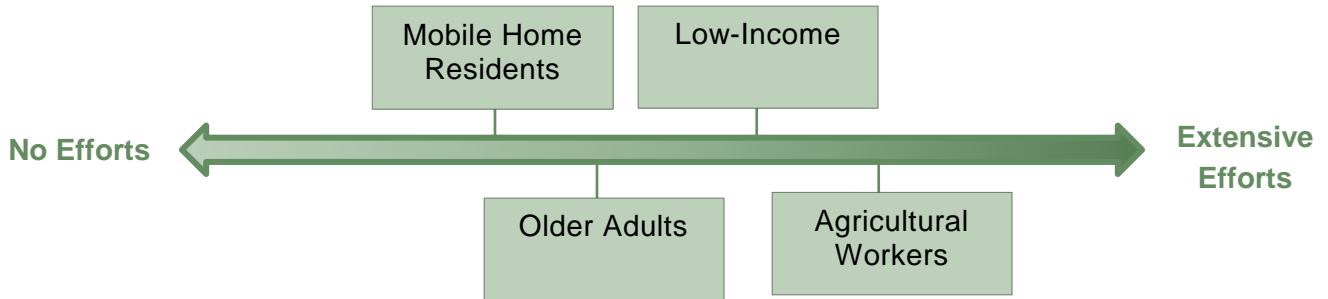
The stakeholders we spoke with believed that a targeted educational campaign and a heat alert system would both be effective ways to reduce emergency department visits for heat illness among their respective populations in Sampson County. Stakeholders also provided the following recommendations:

- Education campaigns could be successful but they would need to be supported by policies that promote heat safety
- All programs need to meet people where they are - programs may be more efficient if people are not required to travel to get needed information
- Handing out physical materials such as bandanas or church fans printed with heat safety information could be effective ways of sharing information
- Incentivizing events by providing food or door prizes would likely increase attendance
- A mobile heat alert system may work better than a stationary heat alert system, given how large and rural Sampson County is
- There are several programs and non-governmental organizations that work with low-income and aging populations that NC BRACE could partner with

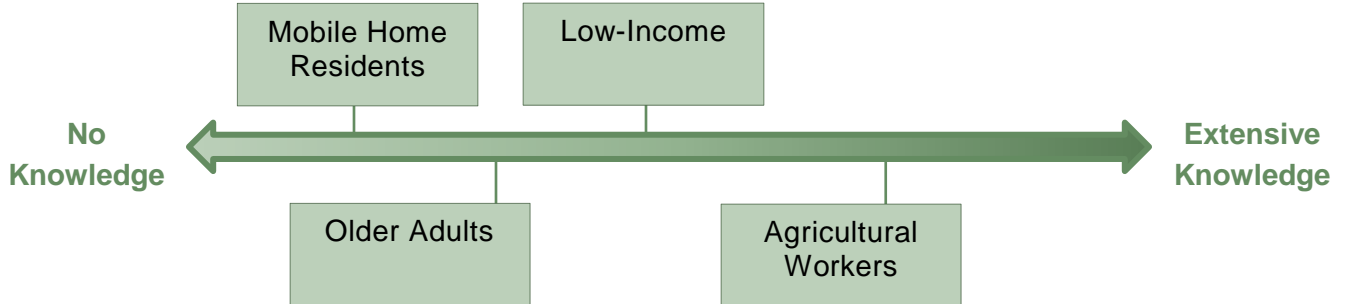
**COMMUNITY KNOWLEDGE OF THE ISSUE**



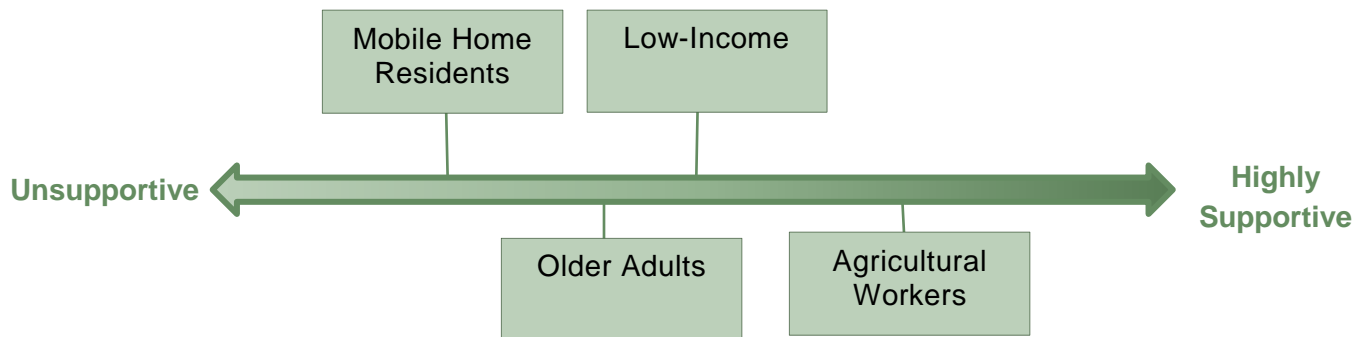
**CURRENT EFFORTS**



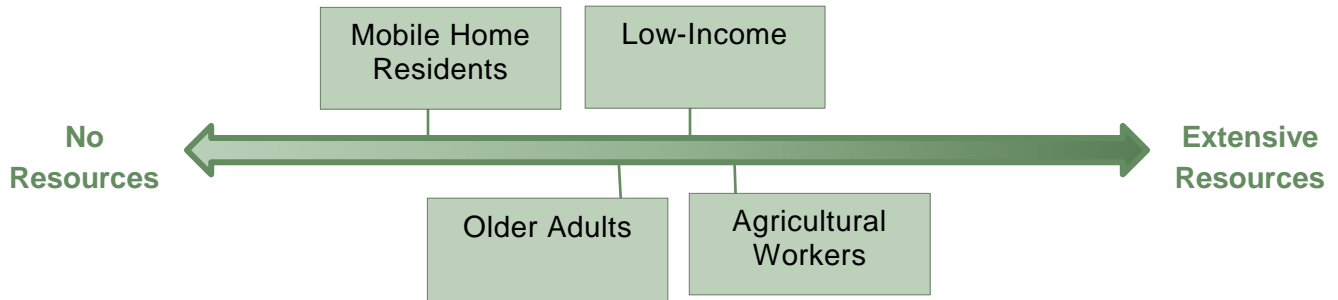
**COMMUNITY KNOWLEDGE OF EFFORTS**



**COMMUNITY CLIMATE**



## RESOURCES



### KEY THEMES:

- Stakeholders believe heat illness to be a high level of concern
- Current efforts to address heat illness include cooling centers, weatherization and energy assistance programs, and education campaigns, including those targeted specifically to farmworkers
- The size and rural character of Sampson County poses barriers to awareness and use of these efforts

### NC BRACE FOCUS:

Low-income and older adults

# SCOTLAND COUNTY

## POPULATION

We spoke with five stakeholders whose work in Scotland County serves the entire county including specific groups at an increased risk of heat-related illness, namely manufacturing workers, low-income families, youth and student athletes, and older adults.

These stakeholders had a strong understanding of both the causes and the incidence of heat-related illness in Scotland County and named a number of populations they believed were at an increased risk.

- Middle-aged men
- Those with pre-existing conditions
- People who have not acclimated
- Manufacturing employees
- Senior citizens
- Low-income
- Meat production and processing workers
- Ethnic/racial minorities
- Construction workers
- Children
- Outdoor workers

## CONCERN FOR HEAT-RELATED ILLNESS

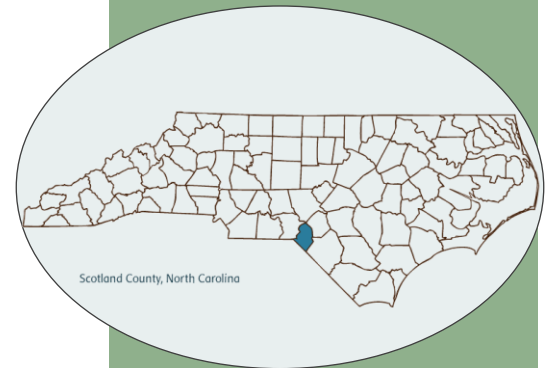
Stakeholders indicated a high level (7.5 out of 10) of concern for heat-related illness in Scotland County, with the greatest level of concern (9) among manufacturing workers.

## CURRENT EFFORTS

The Scotland County Health Department has begun a number of initiatives to promote heat safety and reduce heat-illness throughout the county. Specific efforts include trainings and informational materials made available to manufacturing employees, public service announcements and information circulated in local media, a monthly broadcast on a local radio station, an energy assistance program for low-income families, a fan program for older adults, designated cooling centers open to the public on high heat days, built environment interventions to increase shade, and collaboration among different municipal departments to disseminate information.

## EXISTING RESOURCES

Scotland County has a number of resources either currently used to address heat-illness or that could be leveraged to support heat-safety in the future. Heat programs for manufacturing workers are currently part of occupational safety programming and are privately funded by specific plants. These programs are required by law and in the best interests of the plant to continue and as such, are likely to continue.



## COUNTY PROFILE

### LAND AREA

319 square miles

### TOTAL POPULATION

35,932

### DENSITY

87 people / square mile

### AGE

23.7% Under 18

10.2% 18 – 24

23.8% 25 – 44

27.1% 45 – 64

15.3% 65 +

### SEX

50.5% Female

49.5% Male

### RACE

46.1% White

38.5% Black

10.4% Native Am

5% Other

### OCCUPATIONS

10.6% Manufacturing

6.7% Construction

1.1% Farming & Forestry

### MEDIAN INCOME

\$30,958

### POVERTY

27.3% Below FPL

### HEALTH INSURANCE

47.7% Private Health Coverage

48.3% Public Health Coverage

16% Uninsured<sup>6</sup>

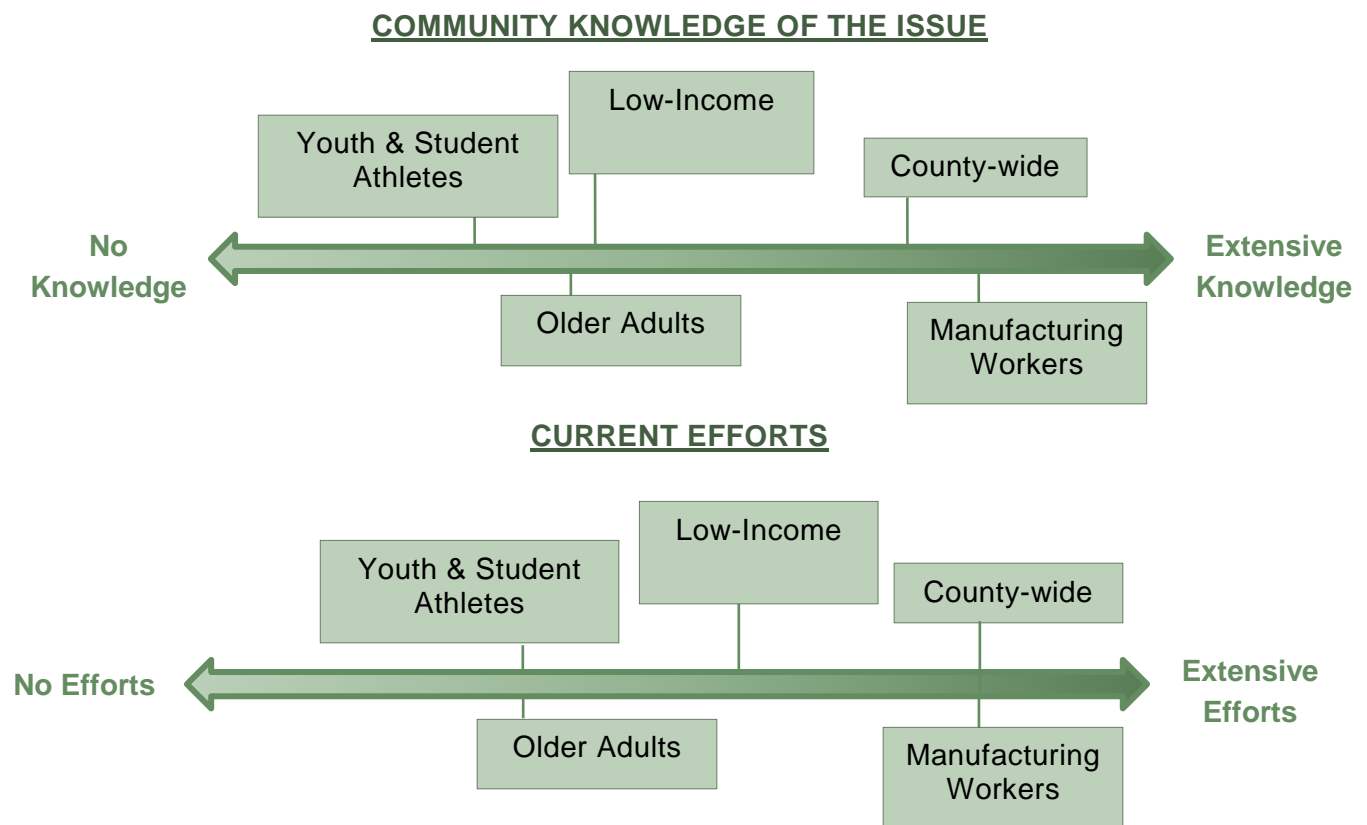
The county departments of health, preparedness, and parks and recreation allocate public funding toward heat safety efforts. Departments view heat-safety as a public health priority and this funding is likely to continue as well.

**RECOMMENDATIONS**

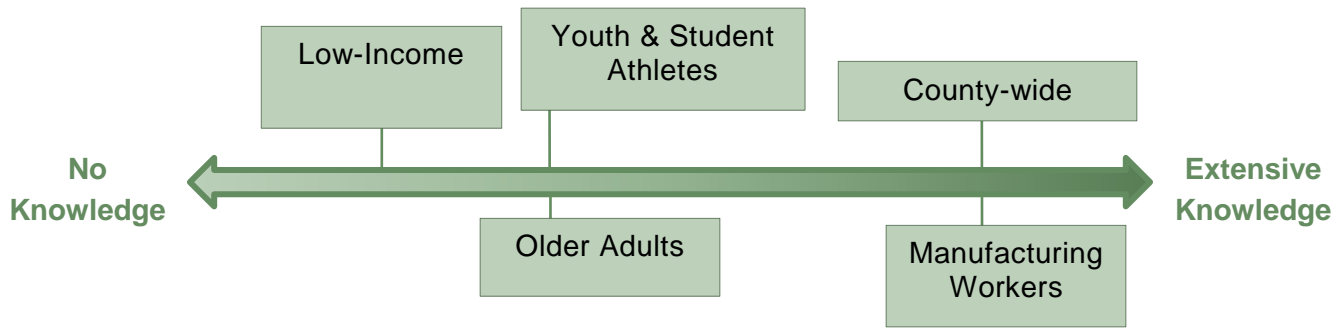
The stakeholders we spoke with believed that a targeted educational campaign and a heat alert system would both be effective ways to reduce emergency department visits for heat illness among their respective populations in Scotland County. Stakeholders also provided the following recommendations:

*“Access to information would make a huge difference. We need to meet people where they are, though.”*

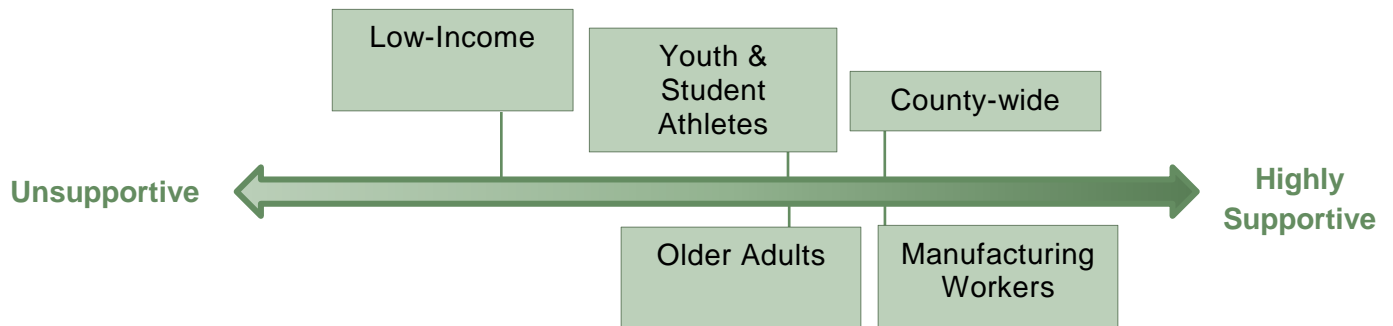
- Certain locations in the county, such as the Parks and Recreation Office, get a large amount of foot traffic and would be good places to disseminate informational materials.
- The Health Department is also willing to distribute NC BRACE materials.
- There is interest in partnering with non-profit organizations to provide mobile heat alerts.



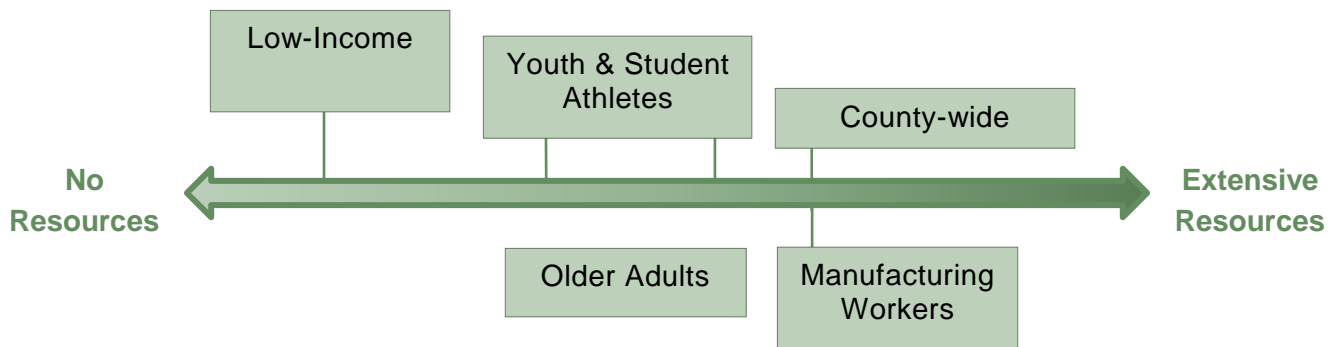
### COMMUNITY KNOWLEDGE OF EFFORTS



### COMMUNITY CLIMATE



### RESOURCES



#### KEY TAKEAWAYS:

- Stakeholders indicated a high level of concern for heat-illness in Scotland County
- The County Health department and other municipal agencies have undertaken significant efforts to address heat illness including weatherization programs, changes to the built environment, and education campaigns targeted toward school youth, farmworkers, and manufacturing workers
- NC BRACE should support and build on existing programs to extent their reach and efficacy

#### NC BRACE FOCUS:

Support health department's on-going efforts to address heat-illness countywide



Thank you to our stakeholders for generously contributing their time and expertise.

Thank you to Chelsea Austin for introducing us to the Community Readiness Model and guiding us through its application.

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