Community Health Needs Assessment

Duplin County

2025

ECU HEALTH
Duplin Hospital

ACKNOWLEDGEMENTS

This Community Health Needs Assessment (CHNA) represents the culmination of work completed by multiple individuals and groups. Health ENC – a group of stakeholders who help find ways to collaborate and share resources to improve the health of the population in eastern North Carolina – served an integral role in making this comprehensive assessment possible. To provide focused guidance throughout the assessment process, Health ENC convened a smaller decision-making group, which will be referred to as the Health ENC Steering Committee throughout this CHNA. The Steering Committee would like to extend its gratitude to all the focus groups participants, health leaders, and community members who provided information used in the development of this assessment.

The Health ENC Steering Committee

Name	Title	Organization
Lorrie Basnight	Executive Director	Eastern Area Health Education Center (AHEC)
Amanda Betts	Public Health Education Coordinator	Albemarle Regional Health Services (ARHS)
April Culver	Vice President, External Affairs	UNC Health Johnston
Caroline Doherty	Community Health Consultant	Roanoke Chowan Community Health Center (RCCHC)
Laura Ellis	Health Education	Halifax County Health Department
Sandra McMasters	Community Benefit Project Manager	Sentara Health
Claire Mills	Director	Eastern AHEC
Emmanuelle Quenum	Health Education Director	Greene County Department of Public Health (DPH)
Rose Ann Simmons	Director, Community Health Improvement	ECU Health
Michelle Wagner	Public Health Educator	Dare County Department of Health & Human Services (DCDHHS)

Duplin County CHNA Leadership

In addition to the Health ENC Steering Committee, the Duplin County CHNA was developed in partnership with representatives from the Duplin County Health Department (DCHD) and ECU Health Duplin Hospital.

Name	Title	Organization
Laura Maready, MBA	Director of Strategic Relations	ECU Health
Eve Stroud, BS	Community Health Improvement Coordinator	ECU Health
Maury Castillo, BS	Health Educator III/Coalition Coordinator	DCHD
Elizabeth Ricci, BSN RN	Nursing Support Coordinator	DCHD
Megan Gonzalez, MSN RN	Quality Nurse Specialist & Accreditation Program Manager	DCHD

Duplin County CHNA Stakeholders

In addition to the organizations listed above, the Duplin County CHNA was developed with input from additional representatives from local health providers, government officials, non-profit organizations, social service providers and community members.

Name	Title	Organization
Logan Smith Albertson	Sr. Regional Liaison, County Engagement Team	Blue Cross NC
Sharon King	Recruiter	Davita Dialysis
Laura Jones	Director	Duplin County Library
Angel Venecia	Director	Duplin County Public Transportation
Jasmine Williams	Program Coordinator	Duplin County Cooperative Extension
Kristen Hall	Chief Officer for District Effectiveness	Duplin County Schools
Melisa Brown	Program Director	Duplin County Senior Services
Kathleen Hoolihan	Nutrition Program Coordinator	Food Bank NC
Lynn Hardy	Recruiter	Goshen Medical Center
Osman Moncada	Bilingual Outreach Recruit	JSCC
Yesenia Cuello	Program Director	NC Field, Inc.
Amanda Hatcher	Program Director	NC Cooperative Extension: Duplin County Center
Rachel Ezzell	Family and Consumer Sciences Agent	NC Cooperative Extension
April Walker	Representative	Red Cross
Margarita Lira	Duplin County Domestic Violence Victim Advocate	Safe Haven of Pender
Crystal Martinez	Duplin County Domestic Violence Victim Advocate	Safe Haven of Pender
Jenean Kennedy	Community Outreach	Snow Hill OWF Baptist Church
Darlene Leysath	Director	The Cornerstone CDC
Yelena Howell	DNP/FNP student	UNCW
Kim Gore	Chief Operations Officer	WARM NC
Andy Jones	Director	WARM NC
Krista Horne	Director of Quality Improvement	ECU Health
David Long	Director of Administrative Operations	ECU Health
Becky Miller	Director of Patient Care Services	ECU Health
Christina Miller	Vice President of Patient Care Services	ECU Health
Tom Fife	Foundation Executive Director	ECU Health
Lucina Crawford	Financial Operations	ECU Health
Christy Cantrell	Manager: Case Management Services	ECU Health
Leigh Gurley	Duplin Board of Health Member	ECU Health
Eric Johnson	Practice Manager	ECU Health Physicians

In addition, the Health ENC Steering Committee and Duplin County CHNA Leadership would like to thank Kathryn Dail, Director of Community Health Assessment at the NCDHHS Division of Public Health, for her valuable guidance throughout the development of this assessment, as well as Ascendient Healthcare Advisors for directing the CHNA process and producing this report.

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EXECUTIVE SUMMARY

ECU Health Duplin Hospital

ECU Health Duplin Hospital, located in Kenansville, North Carolina, has 81 licensed-beds, and is a not-for-profit community hospital committed to high-quality, compassionate care and state-of-the-art services. The hospital's mission is to improve the health and well-being of eastern North Carolina. As part of the ECU Health system, ECU Health Duplin Hospital provides comprehensive primary care services to the community, with a focus on improving patient outcomes. The hospital is certified as a Primary Stroke Center by the Joint Commission. Additionally, ECU Health Duplin Hospital actively engages with the community through health fairs, wellness screenings, and education programs, promoting healthier lives for the people of Duplin County and surrounding areas.

ECU Health Duplin hospital provides a range of services to meet the needs of the community. Some of the additional services offered include radiology and diagnostic imaging, therapy and rehabilitation, stroke care, interpretation services, cancer care, emergency medicine, women's services, and sleep services. The hospital supports a Community Benefit Grants Program that aims to positively impact on the health of people in the communities it serves. The program focusses on early detection, wellness and prevention, community health initiatives, and direct health services. The hospital collaborates with community health organizations, businesses, and civic groups.

CHNA Overview

A Community Health Needs Assessment (CHNA) helps health leaders evaluate the health and wellness of the community they serve and identify gaps and challenges that should be addressed through new programs, services and policy changes. This report was developed as part of the Health ENC coalition's collaborative, regional 2024-2025 CHNA process. Health ENC – a group of stakeholders who help find ways to collaborate and share resources to improve the health of the population in eastern North Carolina – served an integral role in making this comprehensive assessment possible. The report adheres to North Carolina Local Health Department Accreditation standards, as well as Internal Revenue Service requirements for not-for-profit hospitals.

Vision Statement

The vision of this report is to offer meaningful understanding of the most pressing health needs across Duplin County, as well as to guide planning efforts to address those needs. Community health needs assessment (CHNA) is a core tool of public health, but the assessment can serve many purposes. The health status of a community plays a large role in social and economic prosperity; hence it is important that a community strives to continually improve and maintain its health. Successful health programming is a collaborative process among multiple partners and must also include input from community agencies and community members.

Duplin County CHNA Leadership

Several local health organizations came together to help develop this CHNA, including Duplin County Health Department and ECU Health Duplin Hospital.

Name	Title	Organization
Laura Maready, MBA	Director of Strategic Relations	ECU Health
Eve Stroud, BS	Community Health Improvement Coordinator	ECU Health
Maury Castillo, BS	Health Educator III/Coalition Coordinator	DCHD
Elizabeth Ricci, BSN RN	Nursing Support Coordinator	DCHD
Megan Gonzalez, MSN RN	Quality Nurse Specialist & Accreditation Program Manager	DCHD

Duplin County CHNA Partnerships

The CHNA process for Duplin County included a variety of different stakeholders who assisted with community engagement activities, provided feedback, and participated in the prioritization process. A summary of the partner organizations who participated in the process is below.

Type of Partner Organization	Number of Partners
Community Based	9
County Agencies	5
County Government	2
Duplin Schools	3
Faith Based Organizations	1
Healthcare organization/Hospital	2
Serving at-risk populations	5

The Health ENC Steering Committee and Duplin County CHNA Leadership contracted with Ascendient Healthcare Advisors to coordinate the regional CHNA process, including primary and secondary data analysis, relevant trainings for county partners and development of the contents of this report.

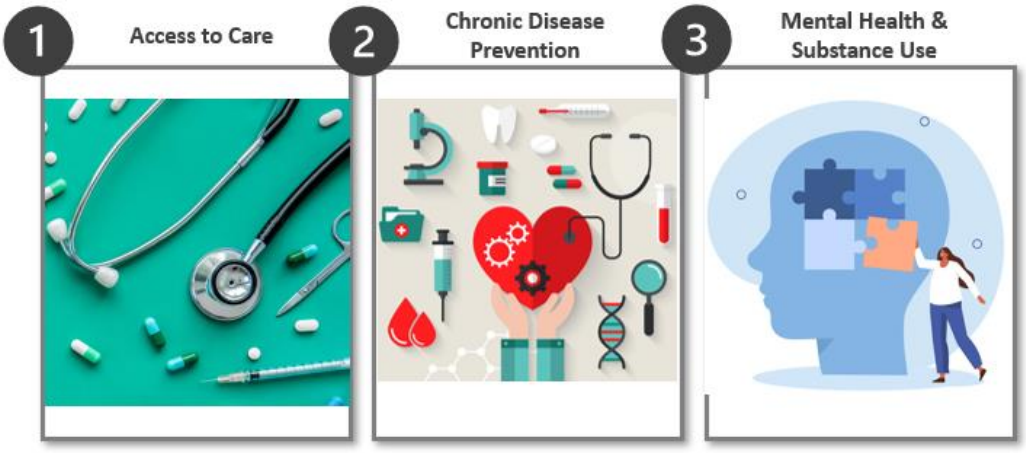
Duplin County CHNA Process

The process formally began with a collaborative meeting of all participating counties in February 2024. This included discussions on secondary data and primary data collection methods, such as surveys and focus groups. Subsequent priority-setting meetings were held to determine upcoming priorities, culminating in the delivery of a final report.

Secondary (existing) data is an important piece of the CHNA process. Key sources for secondary data included information provided by the Steering Committee and a variety of public data sources related to demographics, social and economic determinants of health, environmental health, health status and disease trends, mental/behavioral health trends, and individual health behaviors. Each data measure was also compared to state or national benchmarks to identify areas of specific concern for Duplin County. Top community needs identified through secondary data analysis included health concerns related to physical and behavioral health, and social or environmental concerns such as the built environment, employment and income, and family, community and social support, among others.

Primary (new) data were collected through focus groups and a web-based survey for community members, and included feedback from 506 people who live, work or receive healthcare in Duplin County. A total of three in-person focus groups were conducted, with a variety of community members from different backgrounds, age groups and life experiences. Primary data identified employment and income, healthcare access and quality, and physical health (chronic diseases, cancer, obesity) as top needs that impact the health and well-being of people living in Duplin County.

Representatives from Duplin County worked together to identify the priorities the county should focus on over the following three-year period. Leaders evaluated the primary and secondary data collected throughout the process to identify needs based on the size and scope, severity, the ability for hospitals or health departments to make an impact, associated health disparities, and importance to the community. Although it was not possible for every single area of potential need to be identified as a priority, Duplin County selected three top priority health needs (Access to Care, Chronic Disease Prevention, and Mental Health/Substance Use), which are shown here in alphabetical order:



Duplin County also compiled a Health Resources Inventory, which describes a variety of resources available to help Duplin County residents meet their health and social needs.

Following completion of this report, health leaders throughout Duplin County will use its findings to collaborate with community organizations and local residents to develop effective health strategies, new implementation plans and interventions, and action plans to improve the communities they serve.

INTRODUCTION

Background

ECU Health Duplin Hospital and the Duplin County Health Department with guidance from the Health ENC Steering Committee, local leaders, and community residents completed the assessment to document the greatest health needs. The CHNA process helps local leaders continuously evaluate how best to improve and promote the health of the community. It builds upon formal collaborations between the community partners to proactively identify and respond to the needs of Duplin County residents.

This report was created in compliance with Internal Revenue Service (IRS) requirements for not-for-profit hospitals to complete a CHNA every three years to maintain their tax exemption.[1] Specifically, the IRS requires that hospital facilities do the following:

- Define the community it serves;
- Assess the health needs of that community;
- Through the assessment process, take into account input received from people who represent the community's broad interests, including those with special knowledge of or expertise in public health;
- Document the CHNA in a written report and adopt an implementation strategy to meet the community health needs identified through the CHNA that is reviewed and adopted by the hospital facility's authorizing body; and
- Make the CHNA widely available to the public.

Process Overview

A significant amount of information has been reviewed during this planning process. Both existing (secondary) data and new (primary) data were collected directly from the community throughout this process. It is also important to note that, although unique to Duplin County, the sources and methodologies used to develop this report comply with the current NCLHDA and IRS requirements for health departments and not-for-profit hospital organizations.

The purpose of this study is to better understand, quantify, and articulate the health needs of Duplin County residents. Key objectives of this CHNA include:

- Identify the health needs of Duplin County residents;

[1] Source: *Community Health Needs Assessment for Charitable Hospital Organizations – Section 501®(3)* (2024). Internal Revenue Service. https://www.irs.gov/charities-non-profits/community-health-needs-assessment-for-charitable-hospital-organizations-section-501r3.

- Identify disparities in health status and health behaviors, as well as inequities in the factors that contribute to health challenges;
- Understand the challenges residents face when trying to maintain and/or improve their health;
- Understand where underserved populations turn for services needed to maintain and/or improve their health;
- Understand what is needed to help residents maintain and/or improve their health; and
- Prioritize the needs of the community and clarify/focus on the highest priorities.

There are twelve phases in the CHNA process, as shown in **Figure 1** below, beginning with pre-planning and assessing organizational capacity and ending with an evaluation of the process. Once the CHNA process is complete, county leaders must develop community health action plans to describe the specific activities they will implement to address the health and social needs identified in the CHNA.

Figure 1: The Community Health Assessment Process[2]

Report Structure

The outline below provides detailed information about each section of the report.

1) *Methodology* – The methodology chapter provides an overall summary of how the priority health need areas were selected as well as how information was collected and incorporated into the development of this CHNA, including study limitations.

2) *County Profile* – This chapter details the demographic (such as age, gender, and race) and socioeconomic data of Duplin County residents.

3) *Priority Health Need Areas* – This chapter describes each identified priority health need area for Duplin County and summarizes the new and existing data that support these prioritizations. This chapter also describes the impact of health disparities among various sub-groups in Duplin County.

4) *Health Resource Inventory* – This chapter documents existing health resources currently available to the Duplin County community.

[2] Source: NCDHHS Division of Public Health (2024). *North Carolina Community Health Assessment Guidebook.* Accessed April 7th, 2025 from https://schs.dph.ncdhhs.gov/units/ldas/docs/chaguidebook/NC-CHA-GuidebookOnlineRev1.pdf

5) *Next Steps* – This chapter briefly summarizes the next steps that will occur to address the priority health need areas discussed throughout this document.

In addition, the appendices discuss all of the data used during the development of this report in detail, including:

1) *State of the County Health Report* – Detailed information about actions taken to address the priority health needs identified in previous CHNAs are presented in **Appendix 1**.

2) *Detailed Summary of Secondary Data Measures and Findings* – Existing data measures and findings used in the prioritization process are presented in **Appendices 2-3.**

3) *Detailed Summary of Primary Findings* – Summaries of new data findings from community member surveys as well as focus groups are presented in **Appendices 4-5.**

Evaluation of Prior CHNA Implementation Strategies

A CHNA is an ongoing process that begins with an evaluation of the previous CHNA. In 2022, Duplin County completed its previous assessment. Associated implementation strategies focused on three priority areas, as listed below:

Figure 2: Duplin County 2022 Priority Need Areas

Below is a summary of the most recent CHNA implementation plan.

Previous CHNA Priority: Chronic Disease Prevention

- **Duplin Coalition for Health**: In collaboration with the DCHD, the hospital established the Duplin Coalition for Health in July of 2023. This coalition, funded by the Duke Endowment, aims to improve the care, management, and prevention of chronic diseases. So far, 44 organizations have participated, and quarterly meetings are held to discuss progress across three subcommittees.

- **Community Health Screenings and Education**: ECU Health Duplin Hospital's community outreach coordinator organizes health screenings and educational opportunities within the community. Metrics for this strategy show positive trends: health screenings increased from 326 in fiscal year 2022 (FY22) to 860 in FY23 and 1,040 in FY24. Additionally, health education participant encounters rose from 340 to 3,327, and then 4,741 over the same period.
- **Stroke Certification Standards**: ECU Health Duplin Hospital maintains "Get with the Guidelines" stroke certification standards. The number of stroke patients treated increased from 220 in FY22 to 244 in FY23, then decreased to 154 in FY24, the percentage of stroke patients receiving thrombolytics remained steady at 11% in FY22 and FY23, before rising to 17% in FY24.
- **Stroke Awareness Matters (SAM) Initiative**: The SAM initiative educates upper-elementary aged students about stroke prevention and detection. Implemented for third graders in Duplin County schools during FY23 and FY24, the program reached eight schools and 768 students in the first year. Of those students, 63% returned results from 30-day post-tests, with 50% achieving at least 80% proficiency. In FY24, seven schools and 609 students participated. Of these, 71% returned post-tests, and 46% of those students achieved at least 80% proficiency.
- **NC Maternity Center Breastfeeding-Friendly Designation Standards**: Promoting and supporting breastfeeding is crucial for the health and well-being of both babies and mothers. In FY23, the hospital had 420 live births, with 48 patients receiving advice on breastfeeding benefits and management. In FY24, there were 416 live births, with 27 patients receiving advice on breastfeeding. At discharge, the number of breastfeeding patients increased from 101 (24%) in FY23 to 104 (25%) in FY24.
- **Community Benefit Grants Program**: In FY22, ECU Health Duplin Hospital awarded $69,600 to nine organizations in Duplin County, serving115,981 clients, with 115,535 in financial need. In FY23, $52,000 was awarded to seven organizations, serving115,359 with 115,176 in financial need. In FY24, $68,700 was awarded to 11 organizations; client data for FY24 is pending.

Previous CHNA Priority: Access to Care

- **Developing Homegrown Healthcare Professionals**: In FY23, the hospital hosted 11 student volunteers from the Duplin Health Sciences Academy (DHSA), increasing to 18 in FY24 as part of an effort to nurture homegrown healthcare professionals. The hospital also partnered with James Sprunt Community College (JSCC) to provide 62 nursing students with clinical rotations in FY23, rising to 64 in FY24. The hospital hired 12 new nursing graduates from JSCC in both FY23 and FY24.
- **Increasing Primary Care Capacity**: The hospital focused on expanding primary care by supporting the Rural Family Medicine Residency Program. In FY24, two residents completed this program, with one remaining in Duplin County to practice. The provider turnover rate decreased from 8.3% in FY23 to a more desirable 5.5% in FY24. Additionally, provider engagement scores improved, averaging 3.85 in FY23 and 4.39 in FY24.
- **Offering Charity Care**: The hospital provided $8.9 million in charity care in FY23 and $8.72 million in FY24 for patients facing financial hardships.
- **Community Benefits Grant Program**: In FY22, the hospital awarded a total of $25,000 to two organizations in Duplin County and the surrounding area, benefiting 173 clients in financial need. In FY23, $12,000 was awarded to two organizations, benefiting 173 clients in financial need. In FY24, $8,000 was awarded to one organization; client data for FY24 is pending.

Previous CHNA Priority: Mental Health/Illness

- **Emergency Department (ED) Mental Health Assessments and Care Coordination**: Data shows a decrease in related behavioral health ED visits from 618 in FY21 to 458 in FY24. Patient transfers to mental health facilities fluctuated from 52 in FY21, to 54 in FY22, 75 in FY23 and 51 in FY24. The number of patients returning to the ED within 30 days for behavioral health treatment also fluctuated, from 70 in FY21 to 38 in FY24. Additionally, ongoing collaboration with local mental health services aimed at improving continuity of care is evidenced by 20 meetings in FY23 and 15 meetings for FY24.
- **Benefits Grants Program**: In FY23, the hospital awarded $21,200 in grant funds to three local organizations, serving 9,449 clients in financial need. In FY24, $10,000 was awarded to one organization; client data for FY24 is pending.

Information about previous county-level Community Health Improvement efforts, as referenced in the NCLHDA State of the County Health (SOTCH) report, can be found in **Appendix 1**.

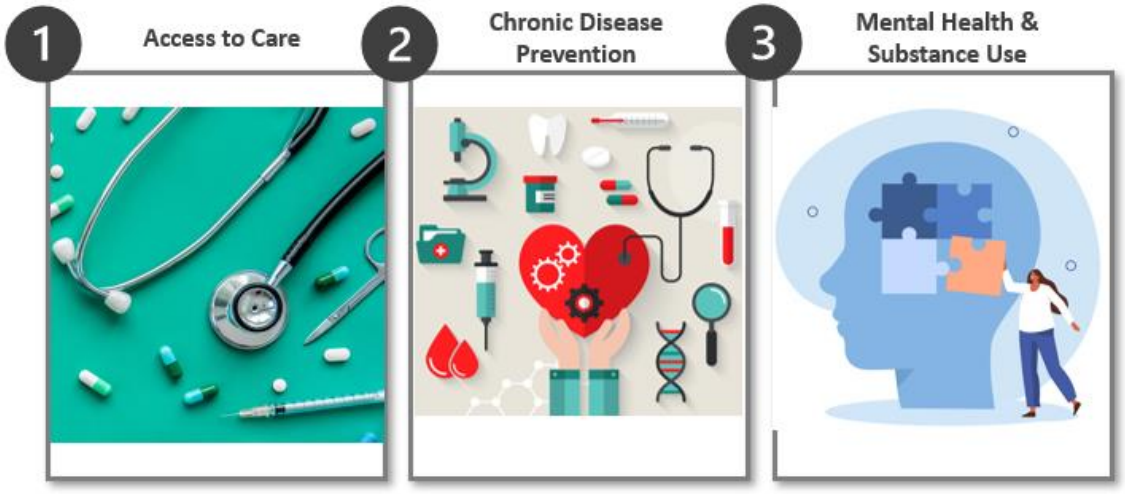
Summary Findings: Duplin County 2025 Priority Health Need Areas

To achieve the study objectives in the 2025 assessment, both new and existing data were collected and reviewed. New data included information from web-based surveys of adults (18+ years) and focus groups; various local organizations, community members, and health service providers within Duplin County participated. Existing data included information regarding the demographics, health and healthcare resources, behavioral health, disease trends, and county rankings. The data collection and analysis process began in February 2024 and continued through July 2024.

Throughout Duplin County, significant variations in demographics and health needs exist within the county. At the same time, consistent needs are present across the whole county and serve as the basis for determining priority health needs at the county level. This document will discuss the priority health need areas for Duplin County, as well as how the severity of those needs might vary across subpopulations based on the information obtained and analyzed during this process.

Through the prioritization process, the CHNA Stakeholders identified Duplin County's priority health need areas from a list of over 100 health indicators. Please note that the final priority needs were not ranked in any order of importance and county health leaders will engage in each of the three priority need areas. After looking at all relevant data and feedback, the Duplin focus areas identified as countywide priorities for the 2025 CHNA are Access to Care, Chronic Disease Prevention, and Mental Health and Substance Use as seen in **Figure 3**.

Figure 3: Duplin County 2025 Priority Health Needs[3]



Health, healthcare and associated community needs are very much interrelated, and often impact each other. Although this CHNA process considered these areas separately, their impact on each other should be considered when planning for programs or services to address community needs.

Many health needs are also related to underlying societal and socioeconomic factors. Research has consistently shown that income, education, physical environment, and other such demographic and socioeconomic factors affect the health status of individuals and communities. This CHNA acknowledges that link and focuses on identifying and documenting the greatest health needs as they present themselves today. As plans are developed to address these needs, the goal is to work with other community organizations to address underlying factors that could drive long-term improvements to the county population's health.

For additional discussion of current priority needs and the data that supports those priorities, please see **Chapter 3**.

[3] Note: All graphics in this image were licensed from Adobe Stock

CHAPTER 1 | METHODOLOGY

Study Design

The process used to assess Duplin County's community needs, challenges, and opportunities included multiple steps. Both new and existing data were used throughout the study to paint a more complete picture of Duplin County's health needs. While the CHNA Stakeholders largely viewed the new and existing data equally, there were situations where one provided clearer evidence of community health need than the other. In these instances, the health needs identified were discussed based on the most appropriate data gathered. Data analysis, community feedback review, and stakeholder engagement were all used to identify key areas of need.

Specifically, the following data types were collected and analyzed:

New (Primary) Data

Public engagement and feedback were received through a web-based community member survey along with community focus groups and significant input and direction from the CHNA Stakeholders. The Health ENC Steering Committee worked together to develop the survey questions for the web-based survey, and county leaders were provided with a set of target numbers based on their county population's race, ethnicity and age distribution to encourage recruitment of a representative sample of the community. Community members were asked to identify the most significant health and social needs in their community, as well as asked questions about topics specific to Duplin County, including access to care, mental health, physical health, substance use disorders, and transportation and transit. Focus group participants were asked a standard set of questions about health and social needs, in order to identify trends across various groups and to highlight areas of concern for specific populations. In total, the input was gathered from over 520 Duplin County residents and other stakeholders. This included web survey responses from over 500 community members and three focus groups that included over 20 community members and other people who live, work or receive healthcare in Duplin County.

For more information regarding specific questions asked as part of the focus groups and surveys, please refer to **Appendix 4.**

Existing (Secondary) Data

The primary source for existing data on Duplin County was the North Carolina Data Portal. This website is a joint effort by NCDHHS and the University of Missouri Center for Applied Research and Engagement Systems (CARES), which includes over 120 data indicators focused on demographics, health status and social determinants of health. In addition to information from the North Carolina Data Portal, a variety of other sources were leveraged in this assessment process, including:

- *County Health Rankings*, developed in partnership by Robert Wood Johnson Foundation (RWJF) and University of Wisconsin Population Health Institute
- *The Opportunity Atlas*, developed in partnership by the U.S. Census Bureau, Harvard University, and Brown University

- *Food Access Research Atlas*, published by the U.S. Food and Drug Administration
- *Social Vulnerability Index*, developed by the CDC and the Agency for Toxic Substances and Disease Registry (ATSDR)
- *Environmental Justice Index*, developed by the CDC and the ATSDR
- *American Community Survey*, as collected and published by the U.S. Census Bureau
- Community Health Assessment reports from Duplin County.

For more information regarding data sources and data time periods, please refer to **Appendix 2**.

Comparisons

To understand the relevance of existing data collected throughout the process, each measure must be compared to a benchmark, goal, or similar geographic area. In other words, without being able to compare Duplin County to an outside measure, it would be impossible to determine how the county is performing. For this process, each data measure was compared to outside data as available, including the following:

- *County Health Rankings* Top Performers: This is a collaboration between the RWJF and the University of Wisconsin Population Health Institute that ranks counties across the nation by various health factors.
- State of North Carolina: The Health ENC Steering Committee determined that comparisons with the state of North Carolina were appropriate.

For all available data sources, state and national averages were compared. The following methodology was used to assign a priority level to each individual secondary data measure:

- If the data were more than 5 percent worse = High need
- If the data were within or equal to 5 percent (better or worse) = Medium need
- If the data were more than 5 percent better = Low need

When viewing the secondary data summary tables in this report, please note that the following color shadings have been included to identify how Duplin County compares to North Carolina and the national benchmark. If both statewide North Carolina and national data was available, North Carolina data was preferentially used as the target/benchmark value.

Secondary Data Summary Table Color Comparisons

Color Shading	Priority Level	Duplin County Description
	Low	Represents measures in which Duplin County scores are **more than five percent better** than the most applicable target/benchmark and for which a low priority level was assigned.
	Medium	Represents measures in which Duplin County scores are comparable to the most applicable target/benchmark scoring **within or equal to five percent**, and for which a medium priority level was assigned.
	High	Represents measures in which Duplin County scores are **more than five percent worse** than the most applicable target/benchmark and for which a high priority level was assigned.

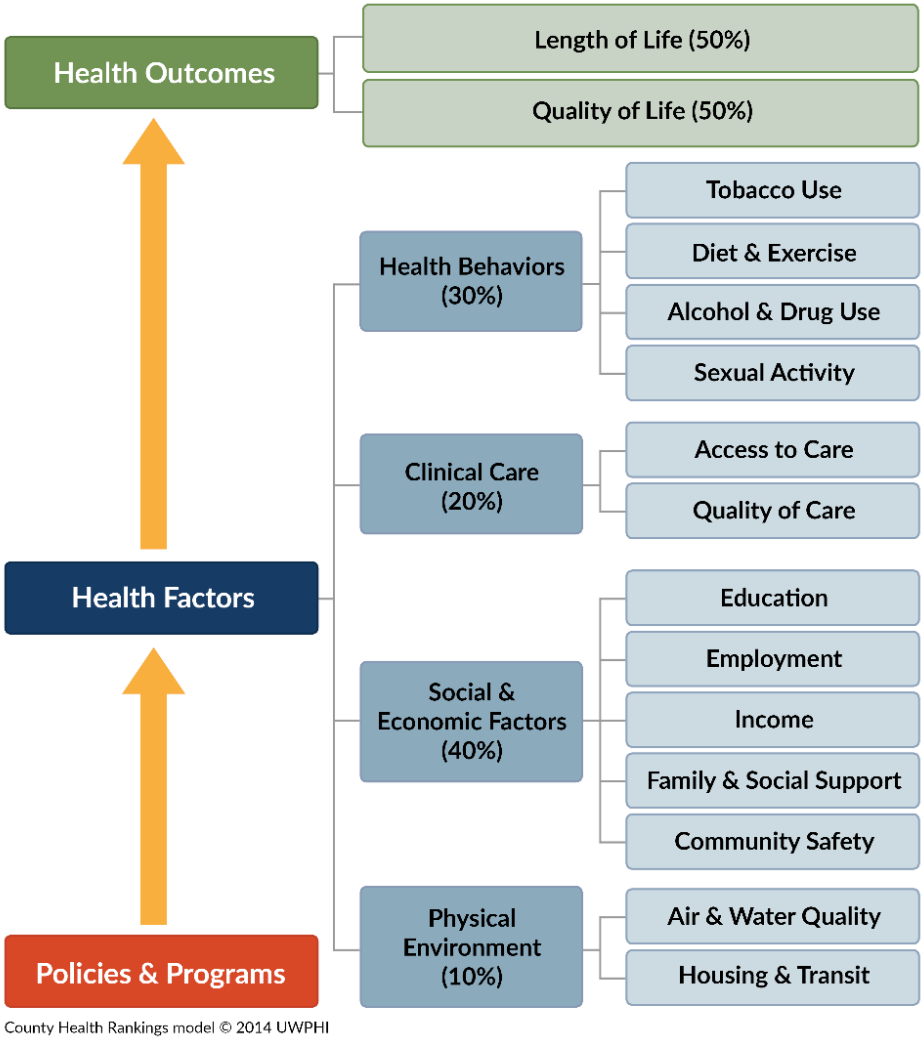
Please note that to categorize each metric in this manner and identify the priority level, the Duplin County value was compared to the benchmark by calculating the percentage difference between the values, relative to the benchmark value:

(Duplin Co Value – Benchmark Value)/(Benchmark) x 100 = % Difference Used to Identify Priority Level.

Population Health Framework

Using the population health framework as a guide for the CHNA process helps categorize many individual pieces of data in a way that connects the dots between health status and social drivers of health, in a way that helps local leaders better understand and address the health and well-being of the communities they serve. This understanding is critical in identifying potential interventions to address priority needs in the community, and to helping develop partnerships across sectors that can help drive these interventions forward. **Figure 1.1** below illustrates the broad categories and sub-categories within the population health framework.

Figure 4: Population Health Framework[4]



[4] Source: University of Wisconsin Population Health Institute (2024). County Health Rankings & Roadmaps. www.countyhealthrankings.org.

Figure 5: Social Determinants of Health[5]

Throughout the process, the Health ENC Steering Committee also considered *Healthy People 2030*'s "Social Determinants of Health and Health Equity." The CDC defines social determinants of health (SDoH) as the conditions in the environments where people are born, live, learn, work, play, worship and age that affect a wide range of health, functioning and quality of life outcomes and risks. These factors can include healthcare access and quality, neighborhood and built environment, social and community context, economic stability, and education access and quality, as outlined in **Figure 5**.

Recognizing that SDoH have an impact on health disparities and inequities in the community was a key point Duplin County leaders considered throughout the CHNA process. **Figure 8** describes the way various social and economic conditions may affect health and well-being.

Figure 6: SDoH and Health Disparities[6]

[5] Source: CDC (2022). Social Determinants of Health at CDC. Accessed March 7th, 2024 via https://www.cdc.gov/about/sdoh/index.html

[6] Source: Kaiser Family Foundation (2024). Disparities in Health and Health Care: 5 Key Questions and Answers. Accessed December 30, 2024 via https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/

Prioritization Process Overview and Results

The process of identifying the priority health needs for the 2025 CHNA began with the collection and analysis of hundreds of new and existing data measures. In order to create more easily discussable categories, all individual data measures were then grouped into six categories and 20 corresponding focus areas based on "common themes" that correspond to the Population Health Model, as seen in **Figure 4**. These focus areas are detailed further in **Appendix 2.**

Since a large number of individual data measures were collected and analyzed to develop these 20 focus areas, it was not reasonable to make each of them a priority. The Duplin County CHNA leadership considered which focus areas had data measures of high need or worsening performance, priorities from the primary data, and how possible it is for health departments or hospitals to impact the given need to help determine which health needs should be prioritized.

The Duplin County CHNA leadership presented the Duplin County CHNA information before the Duplin Coalition for Health and invited other key community stakeholders. The team covered the findings of the secondary and primary data, highlighting the county overview, including demographics, diversity, social and economic factors. The team reviewed the secondary data in the framework of the population health model using health outcomes and health factor variables. Categories that were considered high need in each section were discussed and relevant data were highlighted. After the data review, the group generated a list of 11 potential focus areas. The team instructed the group on the voting process to select the top three to four priority need areas. The team used the multi-voting technique for prioritization, considering the following factors:

- Size and scope of the health need;
- Severity and intensity of the health need;
- Whether possible interventions would be possible and effective;
- Health disparities associated with the need; and
- Importance the community places on addressing the need.

In round one, each person was allotted five votes. Meeting attendees used stickers to vote and had the option to place all votes on one priority need area or to spread them among the 11 potential areas. After the first round, there were six priority need areas that rose to the top (two topics were tied in number of votes). In the second round, each person received three stickers, and all were instructed to vote for one of each of the six topics. Three final priority need areas were chosen.

The final priority need areas were not ranked in any particular order of importance, and each will be addressed by the CHNA leaders in Duplin County. The following three focus areas (Access to Care, Chronic Health Conditions, and Mental Health/Substance Use) were identified as Duplin County's top priority health needs to be addressed over the next three years, as seen in **Figure 7** below:

Figure 7: Duplin County 2025 Priority Health Needs

The list of organizations below had members that participated in the prioritization voting process.

- Blue Cross NC
- Davita Dialysis
- Duplin County Cooperative Extension (4H Program)
- Duplin County Government
- Duplin County Health Department
- Duplin County Library
- Duplin County Public Transportation
- Duplin County Schools
- Duplin County Senior Services
- ECU Health Duplin Hospital
- ECU Health Physicians
- Food Bank NC
- Goshen Medical Center
- JSCC
- NC Cooperative Extension
- NC FIELD, Inc.
- Red Cross
- Safe Haven of Pender
- Snow Hill OWF Baptist Church
- The Cornerstone CDC
- Trillium Health Resources
- WARM NC

Study Limitations

Developing a CHNA is a long and time-consuming process. Because of this, more recent data may have been made available after the collection and analysis timeframe. Existing data typically become available between one and three years after the data is collected. This is a limitation, because the "staleness" of certain data may not depict current trends. For example, the U.S. Census Bureau's American Community Survey is a valuable source of demographic information, however data for a particular year is not published until late the following year. This means 2022 data on community characteristics, such as languages spoken at home, did not become available until late fall 2023. To account for these limitations, new data were collected, including focus groups and web-based surveys. Another limitation of existing data is that, depending on the source, it may have limited demographic information, such as gender, age, race, and ethnicity.

Given the size of Duplin County in both population and geography, this study was limited in its ability to fully capture health disparities and health needs across racial and ethnic groups. Resource limitations

meant that county leaders relied on convenience sampling to engage with the community via the web-based survey. This method of survey sampling may fail to capture a truly representative cross-section of the community, resulting in overrepresentation of some demographic groups and underrepresentation of others. This can lead to findings that don't accurately reflect the health needs and perspectives of the entire community, particularly those from underrepresented or marginalized groups. Efforts were made to include diverse community members in survey efforts, and overall, the composition of survey respondents in terms of race and ethnicity had similarities to that of the county's composition. Roughly 61% of all respondents were White compared to 50% of the Duplin County population reported as being White. Another 24% of respondents were Black or African American, similar to the county population reported as being 23%. Additionally, 20% of respondents identified as Hispanic, which is only slightly less than the reported county population level of 24%. Another 5.7% of respondents identified with another race, while 1.6% identified with two or more races.

In addition, there are existing gaps in information for some population groups. Many available datasets are not able to isolate historically underserved populations, including the uninsured, low-income persons, and/or certain minority groups. Despite the lack of available data, attempts were made to include underserved sub-segments of the greater population through the new data gathered throughout the CHNA process. For example, the Health ENC Steering Committee chose to focus on Spanish-speaking members of the community by providing a Spanish language version of the web-based community survey. Paper surveys were also distributed in an effort to reach as much of the community as possible. To increase future survey responses, local leaders should consider working directly with partner organizations in the community who can connect directly with populations who are hard to access through traditional outreach methods, including people with disabilities, the uninsured and people who are disengaged.

In the future, assessments should make efforts to include other underserved communities whose needs are not specifically discussed here because of data and input limitations during this CHNA cycle. Of note, residents in the disabled, blind, deaf, and hard-of-hearing communities can be a focus of future new data collection methods. Using a primarily web-based survey collection method might have also impacted response rates of community members with no internet access or low technological literacy. Additionally, more input from both patients and providers of substance use disorder (SUD) services would also be helpful in future assessments.

Finally, parts of this assessment have relied on input from community members and key community health leaders through web-based surveys and focus groups. Since it would be unrealistic to gather input from every single member of the community, the community members that participated have offered their best expertise and understanding on behalf of the entire community. As such, the CHNA Leadership team has assumed that participating community members accurately and completely represented their fellow residents.

CHAPTER 2 | COUNTY PROFILE

Geography

Duplin County is located in the Inner Coastal Plain region of North Carolina, characterized by the presence of low-lying areas, winding rivers, and rolling hills. It covers a total of 820 square miles, including 815 square miles of land and 5 square miles of water. Duplin is comprised of 10 municipalities: Kenansville, Warsaw, Beulaville, Wallace, Rose Hill, Magnolia, Faison, Calypso, Teachey, and Greenevers. All of Duplin County's population resides in rural areas.

Population

Population figures discussed throughout this chapter were obtained from Esri, a leading GIS provider that utilizes U.S. Census data projected forward using proprietary methodologies.

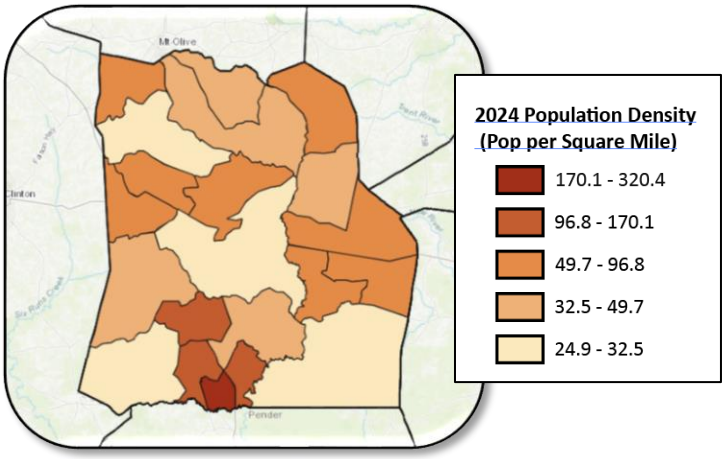
With a population of just under 47,000 residents, Duplin County makes up less than 0.5% of the population of the state of North Carolina.

Table 1: Total Population, 2023[7]

	Duplin County	North Carolina	United States
Population	46,923	10,765,678	337,470,185

Duplin County has a population density of 58.1 persons per square mile – lower than the population density for North Carolina (214.7 persons per square mile). Wallace is the most densely populated area in the county.

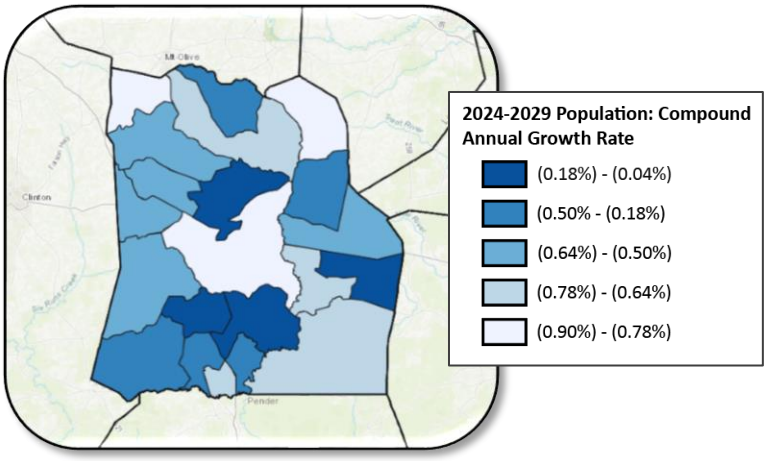
Figure 8: Duplin County Map: Population Density[7]



[7] Source: Esri. Throughout this report, maps and demographic estimates (unless otherwise noted) were developed using ArcGIS® software by Esri. ArcGIS® and ArcMap™ are the intellectual property of Esri and are used herein under license. Copyright © Esri. All rights reserved. For more information about Esri® software, please visit www.esri.com.

In total, the population of Duplin County is projected to decline 0.47% annually between 2024 and 2029. Areas in the northern and central parts of the county are experiencing greater declines.

Figure 9: Duplin County Map: Population Growth[7]



Age and Sex Distribution

Data on age and sex helps health providers understand who lives in the community and informs planning for needed health services. The age distribution of Duplin County differs slightly from national averages. Duplin has a higher percentage of residents below age 15 (19.4%) compared to North Carolina (17.9%) and the United States (18.1%). The percentage of residents between 15 and 44 (36.5%) is lower than state (39.3%) and national (39.5%) figures. Duplin County has a slightly lower percentage of residents aged 45 to 64 (24.8%) compared to the state (25.1%), but it is slightly higher than the national average (24.6%). The proportion of residents 65 and older (19.3%) is higher than both state (17.7%) and national (17.8%) averages. This suggests a relatively younger population in terms of children, but a higher proportion of seniors, which may have implications for both pediatric and geriatric healthcare needs in the county.

Table 2: Age Distribution, 2023[7]

	Duplin County	North Carolina	United States
Percentage below 15	19.4%	17.9%	18.1%
Percentage between 15 and 44	36.5%	39.3%	39.5%
Percentage between 45 and 64	24.8%	25.1%	24.6%
Percentage 65 and older	19.3%	17.7%	17.8%

The sex distribution in Duplin County shows a slight imbalance, with females making up 50.6% and males 49.4% of the population. This distribution is similar to the state average for North Carolina (51.0% female, 49.0% male) and close to the national average (50.4% female, 49.6% male).

Table 3: Sex Distribution, 2023[7]

	Duplin County		North Carolina		United States	
	Count	Pct. of Total	Count	Pct. of Total	Count	Pct. of Total
Female	23,758	50.6%	5,489,419	51.0%	170,118,720	50.4%
Male	23,165	49.4%	5,276,259	49.0%	167,351,465	49.6%

Race and Ethnicity

Data on race and ethnicity help us understand the need for healthcare services as well as cultural factors that can impact how care is delivered. Non-Hispanic White residents make up the largest group in Duplin at 52.4%, which is lower than both North Carolina (61.2%) and the U.S. (60.6%). Non-Hispanic Black residents comprise 23.7% of the population, higher than the state (20.4%) and national (12.5%) averages. The county has a notably higher percentage of individuals identifying as Some Other Race Alone (15.7%) compared to state (6.3%) and national (8.7%) figures. The Asian (0.4%), American Indian Alaskan Native (AIAN) (0.4%), and Native Hawaiian Pacific Islander (NHPI) (0.0%) populations are lower than state and national averages. The percentage of residents identifying as multiracial (6.8%) is similar to the state average (7.2%) but lower than the national average (10.6%). This data indicates significant racial diversity in Duplin County, with a unique composition compared to broader state and national demographics.

Table 4: Racial Distribution, 2023[7]

	Duplin County		North Carolina		United States	
	Count	Pct. of Total	Count	Pct. of Total	Count	Pct. of Total
Black (Non-Hispanic)	11,120	23.7%	2,199,488	20.4%	42,132,758	12.5%
White (Non-Hispanic)	24,581	52.4%	6,590,161	61.2%	204,562,590	60.6%
Asian	182	0.4%	379,374	3.5%	21,088,177	6.2%
AIAN	491	1.0%	133,820	1.2%	3,831,126	1.1%
NHPI	14	0.0%	9,214	0.1%	712,229	0.2%
Some Other Race Alone	7,356	15.7%	677, 338	6.3%	29,432,586	8.7%
Two or More Races	3,179	6.8%	776,283	7.2%	35,710,719	10.6%

By ethnicity, nearly one quarter of Duplin County's population is Hispanic. This surpasses both state and national averages, at more than double the state figure of 11.4%.

Table 5: Ethnic Distribution, 2023[7]

	Duplin County		North Carolina		United States	
	Count	Pct. of Total	Count	Pct. of Total	Count	Pct. of Total
Non-Hispanic	35,918	76.5%	9,465,874	88.6%	271,934,049	80.6%
Hispanic	11,005	23.5%	1,299,804	11.4%	65,536,136	19.4%

The proportion of foreign-born individuals residing in Duplin County is 14%, higher than the state and comparable to the national figure.

Table 6: Foreign Born Population, 2022[8]

	Duplin County	North Carolina	United States
Foreign Born	14%	9%	13.9%

The diversity of Duplin County is reflected in the languages that residents speak at home. According to the most recent American Community Survey (ACS), nearly one quarter of Duplin County residents speak a language other than English at home, compared to around 13% of North Carolina and 22% U.S. residents. After English, Spanish is the second most common language spoken at home by 21% of Duplin residents.

Table 7: Language Spoken at Home, 2022[8]

	Duplin County	North Carolina	United States
English Only	77%	87.3%	78%
Spanish	21.1%	7.9%	13.3%
Indo-European Languages	1.6%	2.1%	3.8%
Asian and Pacific Islander Languages	0.2%	1.9%	3.6%
Other Languages	0.1%	0.8%	1.2%

Disability Status[9]

Data on disabilities helps us understand how to create fair and equal opportunities for everyone in the county. In addition, individuals with disabilities may require targeted services and outreach by health and other service providers. In Duplin County, 17% of residents have a disability, higher than both state and

[8] Source: U.S. Census Bureau. "Selected Social Characteristics in the United States." *American Community Survey, ACS 5-Year and 1-Year Estimates Data Profiles, Table DP02,* 2022, https://data.census.gov. Accessed on April 1, 2024.

[9] Disability status is classified in the ACS according to yes/no responses to questions about six types of disability concepts. For children under 5 years old, hearing and vision difficulty are used to determine disability status. For children between the ages of 5 and 14, disability status is determined from hearing, vision, cognitive, ambulatory, and self-care difficulties. For people aged 15 years and older, they are considered to have a disability if they have difficulty with any one of the six difficulty types.

national figures. This higher prevalence of disability in the county suggests a greater need for accessible healthcare services and support programs compared to North Carolina overall.

Table 8: Disability Status, 2022[8]

	Duplin County	North Carolina	United States
Population with a Disability	17%	13.3%	12.9%

Veteran Status

Military veterans often need special services and support, so it is important to collect data about them to be better able to meet their specific needs. Veterans make up 8% of Duplin County's populations, comparable to North Carolina and slightly higher than the U.S.

Table 9: Veteran Status, 2022[8]

	Duplin County	North Carolina	United States
Veterans	8%	7.8%	6.2%

Economic Indicators

In addition to demographic data, socioeconomic factors in the community such as income, poverty, and food scarcity play a significant role in identifying health-related needs. The median household income in Duplin County is $49,735 – lower than both state and national statistics.

Table 10: Median Household Income, 2023[7]

	Duplin County	North Carolina	United States
Median Household Income	$49,735	$64,316	$72,603

In 2023, approximately 13% of Duplin County households were below the federal poverty level (FPL). Poverty has a significant impact on health. Across the lifespan, people who live in impoverished communities have a higher risk of poor health outcomes, including mental illness, chronic diseases, higher mortality and lower life expectancy. Poverty is a concern across the lifespan; children who live in poverty are at risk for developmental delays, toxic stress and poor nutrition, and are likely to live in poverty as adults as well. Unmet social needs, including having low or no income, can also limit people's ability to access healthcare when they need it, or to provide for basic necessities needed to live healthy lives, such as safe housing or healthy food.

Table 11: Percent of Households Below the Federal Poverty Level, 2023[7]

	Duplin County	North Carolina	United States
Percent Below FPL	13.2%	10.1%	9.5%

Approximately one in four Duplin County households received Food Stamps/SNAP (Supplemental Nutrition Assistance Program) in 2022. This is notably higher than averages at the state and national levels, suggesting a greater degree of food insecurity among county households.

Table 12: Households Receiving Food Stamps/SNAP, 2022[10,11]

	Duplin County	North Carolina	United States
Number of Households Receiving Food Stamps/SNAP	4,314	575,860	16,072,733
Total Number of Households	18,697	4,299,266	129,870,928
Percentage of Households receiving Food Stamps/SNAP	23.1%	13.4%	12.4%

Duplin County has lower rates of educational attainment beyond high school compared to state and national figures. Duplin County has a significantly lower percentage of residents with some college education (3.4%) compared to both the state (21.1%) and national (14.6%) averages. The county also lags in the percentage of residents with a bachelor's degree (10.2%) compared to North Carolina (20.4%) and the United States (23.4%). The proportion of residents with graduate or professional degrees (4.4%) is considerably lower than state (11.6%) and national (14.2%) averages. Notably, Duplin County has higher percentages of residents with less than a 9th grade education (9.2%), some high school but no diploma (12.2%) and a high school diploma (27.4%) compared to state and national figures. This data indicates that students in Duplin County may face potential barriers in accessing or completing higher education.

[10] Source (for County): North Carolina Department of Health and Human Services. FNS Cases and Participants (March 2024). https://www.ncdhhs.gov/divisions/social-services/program-statistics-and-reviews/fns-caseload-statistics-reports. Note: county household estimate is from Esri (2023).

[11] Source (for County): North Carolina Department of Health and Human Services. FNS Cases and Participants (March 2024). https://www.ncdhhs.gov/divisions/social-services/program-statistics-and-reviews/fns-caseload-statistics-reports. Note: county household estimate is from Esri (2023).

Table 13: Educational Attainment, 2020[12,13]

	Duplin County	North Carolina	United States
Less than 9th Grade	9.2%	6.0%	3.5%
Some High School/No Diploma	12.2%	5.5%	5.3%
High School Diploma	27.4%	21.2%	28.5%
GED/Alternative Credential	4.1%	4.3%	*[14]
Some College/No Diploma	3.4%	21.1%	14.6%
Associate's Degree	9.2%	9.9%	10.5%
Bachelor's Degree	10.2%	20.4%	23.4%
Graduate/ Professional Degree	4.4%	11.6%	14.2%

The overall unemployment rate in Duplin County (5.4%) is slightly higher than the state average (5.1%) and significantly higher than the national average (3.9%). Similar to state and national trends, the age group with the highest unemployment rate is young people between the ages of 16 and 24, at 15.4%. This is higher than both North Carolina (12.4%) and United States (11.0%) figures for the same age group. The unemployment rate for ages 25 to 54 in Duplin County (5.9%) is also higher than state (4.7%) and national (3.4%) figures. However, the county shows lower unemployment rates for older age groups, with ages 55 to 64 at 1.9% (compared to 3.3% state and 2.7% national) and 65 or more at 0.1% (compared to 3.0% state and 2.9% national).

Table 14: Unemployment, 2022[15,16]

	Duplin County	North Carolina	United States
Percentage unemployed ages 16 to 24	15.4%	12.4%	11.0%
Percentage unemployed ages 25 to 54	5.9%	4.7%	3.4%
Percentage unemployed ages 55 to 64	1.9%	3.3%	2.7%
Percentage unemployed ages 65 or more	0.1%	3.0%	2.9%
Total unemployment	5.4%	5.1%	3.9%

[12] Source (for County and North Carolina): U.S. Census Bureau. "Educational Attainment for the Population 25 Years and Over." *American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B15003,* 2020, https://data.census.gov/table/ACSDT5Y2020.B15003?q=b15003&g=040XX00US37,37$0500000&moe=false. Accessed on April 1, 2024.

[13] Source (for United States): U.S. Census Bureau. "Educational Attainment in the United States: 2022." Table 1, All Races. https://www.census.gov/data/tables/2022/demo/educational-attainment/cps-detailed-tables.html.

[14] U.S. totals combine GED with High School Diploma

[15] Source (for County and North Carolina): U.S. Census Bureau. "Employment Status." *American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2301,* 2022, https://data.census.gov/table/ACSST5Y2022.S2301?q=S2301&g=040XX00US37,37$0500000&moe=false. Accessed on April 1, 2024.

[16] Source (for United States): Federal Reserve Bank of Saint Louis. Federal Reserve Economic Data - FRED (March 2024). https://fred.stlouisfed.org/

Duplin County's overall uninsured rate of 14.8% is slightly lower than the state average (15.0%) but higher than the national average (12.0%). The county shows significant variations across age groups. The uninsured rate for ages 18 and below (12.3%) is more than double the state (5.2%) and national (5.4%) figures, indicating a concerning gap in coverage for children and adolescents. For ages 19 to 34, Duplin County's rate (27.5%) is substantially higher than both state (15.5%) and national (13.6%) averages, suggesting young adults face challenges in accessing health insurance. The county's uninsured rate for ages 35 to 64 (18.7%) is higher than both the state's 12.5% and the national 9.9%. This data indicates that while Duplin County performs similarly to the state overall in terms of insurance coverage, there are significant challenges across all age groups, with particularly concerning rates for children and young adults.

Table 15: Health Insurance Status, 2022[17]

	Duplin County	North Carolina	United States
Percentage uninsured ages 18 or below	12.3%	5.2%	5.4%
Percentage uninsured ages 19 to 34	27.5%	15.5%	13.6%
Percentage uninsured ages 35 to 64	18.7%	12.5%	9.9%
Total % Uninsured	14.8%	15.0%	12.0%

Social Determinants of Health

In addition to the considerations noted above, there are many other factors that can positively or negatively influence a person's health. The CHNA leadership team recognizes this and believes that, to portray a complete picture of the county's health status, it first must address the factors that impact community health. The Centers for Disease Control and Prevention (CDC) defines social determinants of health (SDoH) as the conditions in the environments where people are born, live, learn, work, play, worship and age that affect a wide range of health, functioning and quality of life outcomes and risks. According to the CDC's "Social Determinants of Health" from its *Healthy People 2030* public health priorities initiative, factors contributing to an individual's health status can include the following: healthcare access and quality, neighborhood and built environment, social and community context, economic stability, and education access and quality.

Figure 10: Social Determinants of Health[5]

[17] Source: U.S. Census Bureau. "Selected Characteristics of Health Insurance Coverage in the United States." *American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2701,* 2022, https://data.census.gov/table/ACSST5Y2022.S2701?q=s2701&g=010XX00US_040XX00US37,37$0500000&moe=false. Accessed on April 1, 2024.

As seen in **Figure 10**, many of the factors that contribute to health are hard to control or societal in nature. As such, health and healthcare organizations need to consider many underlying factors that may impact an individual's health and not simply their current health conditions.

It is widely acknowledged that people with lower income, social status and levels of education find it harder to access healthcare services compared to people in the community with more resources. This lack of access is a factor that contributes to poor health status. Further, people in communities with fewer resources may also experience high levels of stress, which also contributes to worse health outcomes, particularly related to mental or behavioral health.

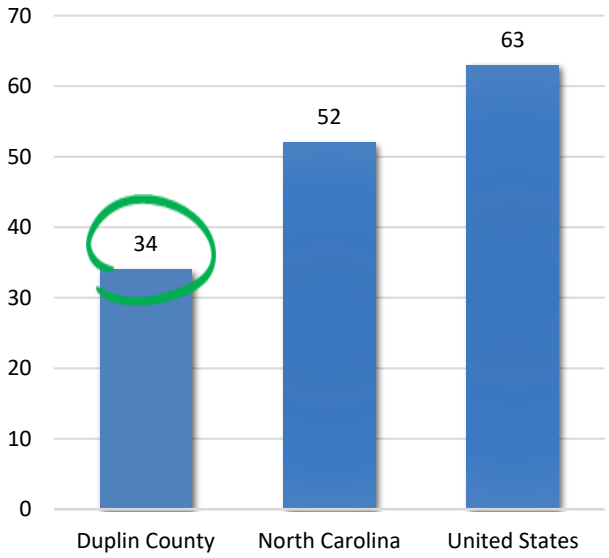
An analysis of the racial and geographic disparities that emerged in the information obtained and analyzed during this process is detailed below. The CHNA leadership team also collected new data via focus groups and surveys to ensure that residents and key community health leaders could provide input regarding the needs of their specific communities. This information will be presented in detail later in this report.

Disparities

Recognizing the diversity of Duplin County, as discussed above, the CHNA Stakeholders evaluated factors that may contribute to health disparities in its community. These included racial equity; racial segregation; financial barriers; nutrition; social, behavioral, and economic factors that influence health; and English language proficiency.

Residential segregation is measured by the index of dissimilarity, a demographic measure ranging from 0 to 100 that represents how evenly two demographic groups are distributed across a county's census tracts. Lower scores represent a higher level of integration. Duplin has a lower level of residential segregation compared to North Carolina and the U.S, as seen in **Figure 11**.

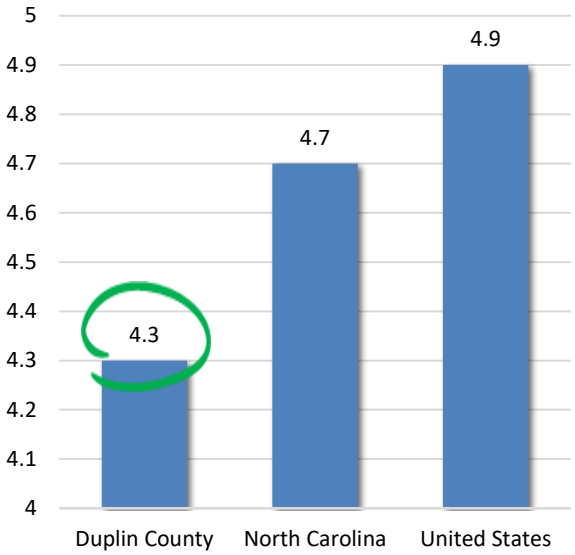
Figure 11: Residential Segregation[4]



Income inequality is measured as the ratio of household income at the 80th percentile to household income at the 20th percentile. Communities with greater income inequality may have worse outcomes on

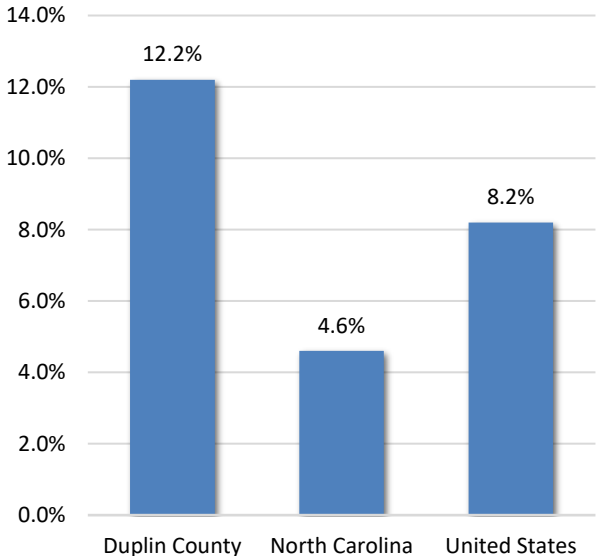
a variety of metrics, including mortality, poor health, sense of community, and social support. As seen in **Figure 12**, Duplin has a lower income inequality ratio in comparison to state and national rates.

Figure 12: Income Inequality Ratio[4]



People with limited English proficiency (LEP) may face challenges accessing care and resources that fluent English speakers do not. Language barriers may make it hard to access transportation, medical, and social services as well as limit opportunities for education and employment. Importantly, LEP community members may not understand critical public health and safety notifications, such as safety-focused communications during the COVID-19 pandemic. There are more people who are not fluent in English in Duplin in comparison to state and national percentages, as seen in **Figure 13**.

Figure 13: Percent of Population with Limited English Proficiency[8]

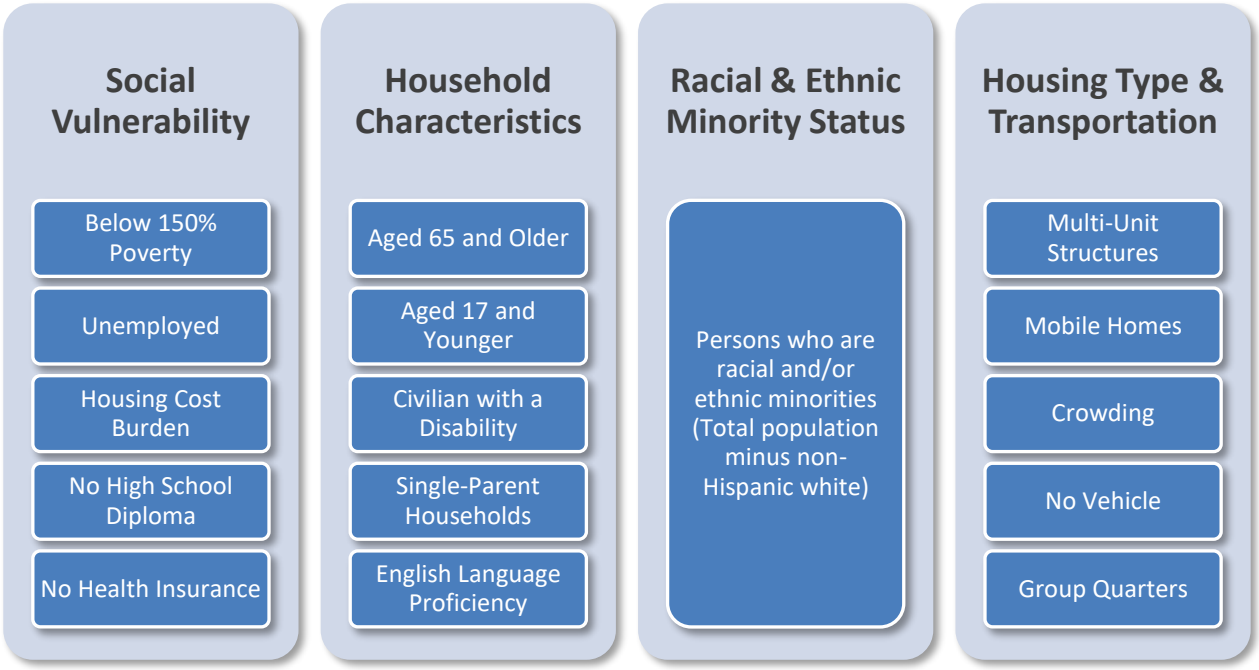


Social Vulnerability Index

One resource that can help show variation and disparities between geographic areas is the Social Vulnerability Index (SVI), which was developed by the CDC and the Agency for Toxic Substances and Disease Registry (ATSDR). Social vulnerability refers to negative effects communities may experience due to external stresses that impact human health, like natural or human-caused disasters, or disease outbreaks. Socially vulnerable populations are at especially high risk during public health emergencies.

The SVI uses 16 U.S. Census variables to help local officials identify communities that may need support before, during, or after a public health emergency.[18] Communities with a higher SVI score are generally at a higher risk for poor health outcomes. Instead of relying on public health data alone, the SVI accounts for underlying economic and structural conditions that affect overall health, including SDoH. SVI scores are calculated at the census tract level and based on U.S. Census variables across four related themes: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type/transportation. **Figure 14** outlines the variables used to calculate SVI scores.

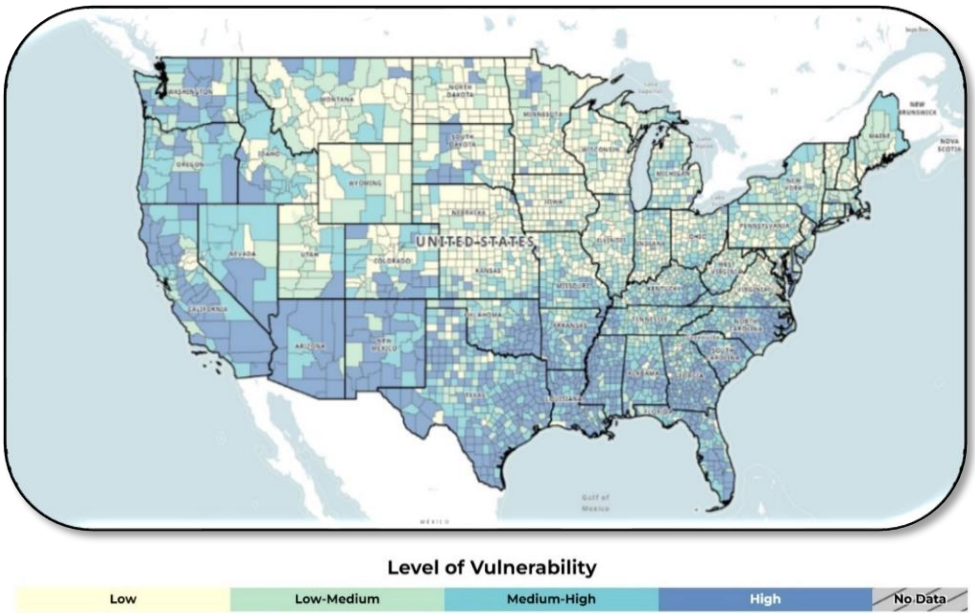
Figure 14: SVI Variables



The United States SVI by county is shown in **Figure 15** below. As shown, a lot of variation exists across the country, and even within individual states.

[18] Source: Centers for Disease Control and Prevention (2024). Social Vulnerability Index. https://www.atsdr.cdc.gov/place-health/php/svi/index.html.

Figure 15: United States SVI by County, 2022



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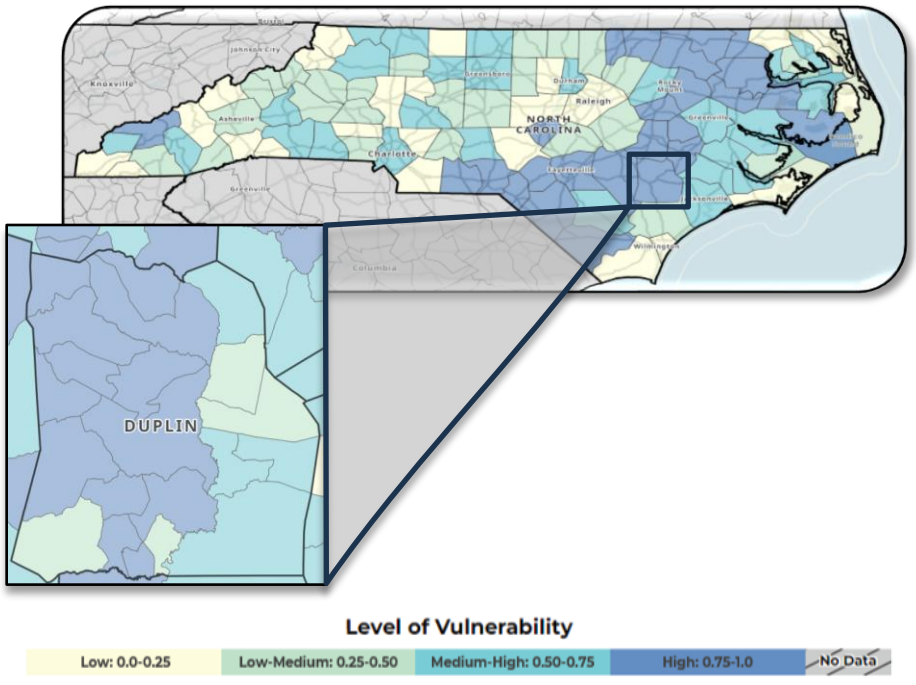
The 2022 SVI scores for Duplin County are shown in **Figure 16** below. Possible scores range from 0 (lowest vulnerability) to 1 (highest vulnerability), and these scores show a relative comparison with other counties and census tracts in North Carolina. The vulnerability of Duplin County overall is higher than average compared to the state. Levels of vulnerability are variable across the county with the average being 0.86.

Figure 16: Duplin County SVI by Census Tract, 2020



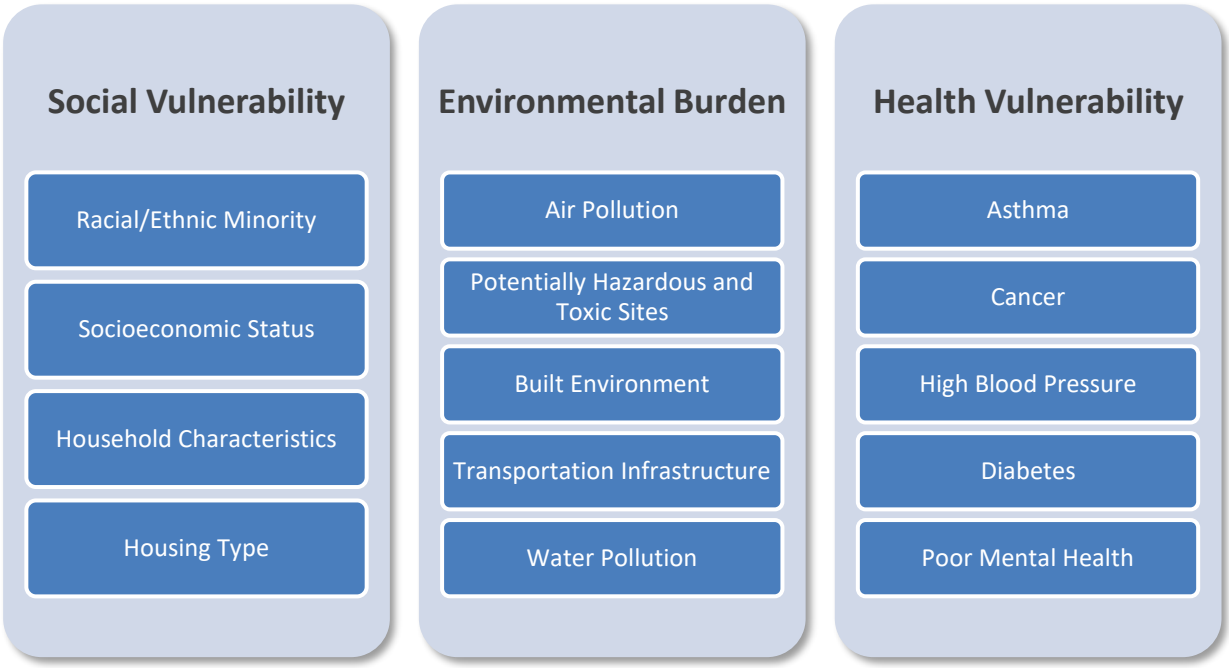
Environmental Justice Index

Environmental justice means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment. It aims to protect everyone from disproportionate health and environmental risks, address cumulative impacts and systemic barriers, and provide equitable access to a healthy and sustainable environment for all activities and practices.[19]

The CDC/ATSDR EJI is a database that ranks the impact of environmental injustice on health. It uses data from the U.S. Census Bureau, the U.S. Environmental Protection Agency, the U.S. Mine Safety and Health Administration, and the U.S. Centers for Disease Control and Prevention. The Index scores environmental burden and injustice at the census tract level in the U.S. based on multiple social, environmental, and health factors.

Over time, communities with a higher EJI score are generally shown to experience more severe impacts from environmental burden than communities in other census tracts. **Figure 79** outlines the variables used to calculate EJI scores.

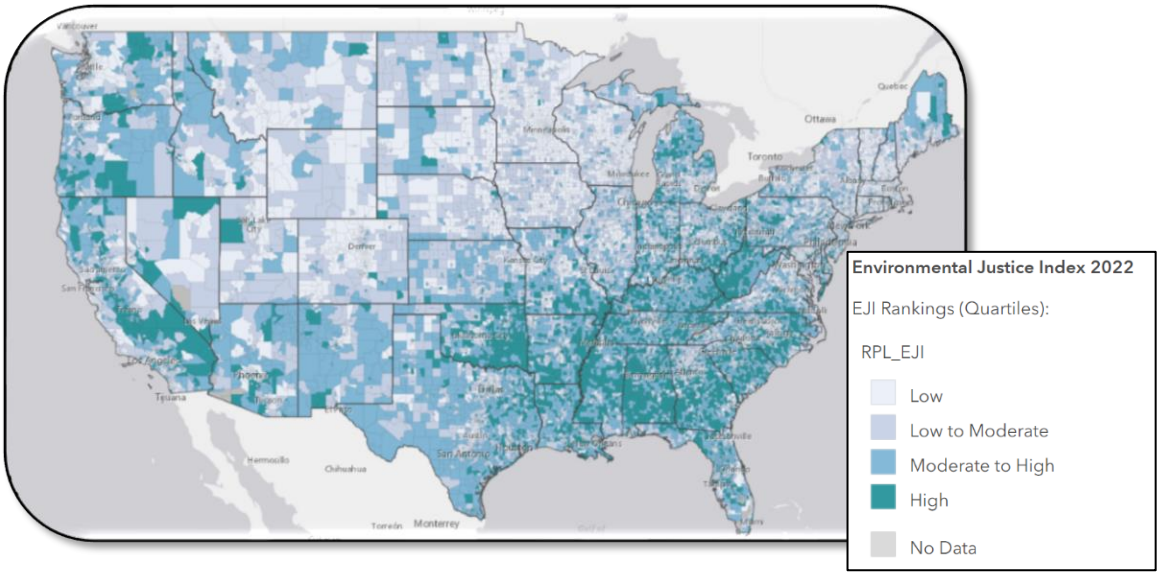
Figure 17: EJI Variables



The United States EJI by county is shown in **Figure 18** below. As shown, a lot of variation exists across the country, and even within individual states.

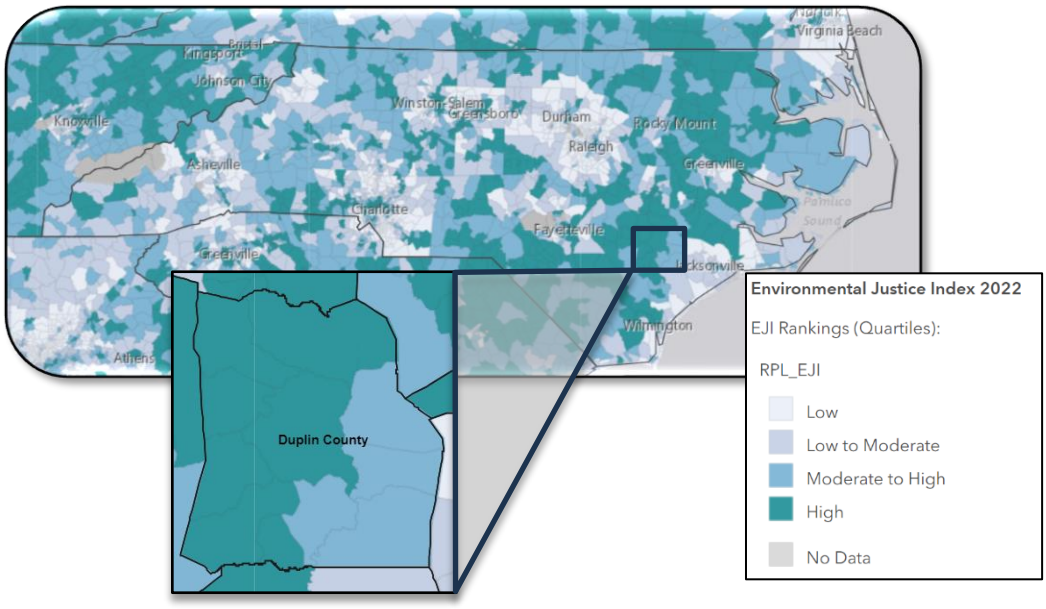
[19] Source: Centers for Disease Control and Prevention (2024). Environmental Justice Index. https://www.atsdr.cdc.gov/place-health/php/eji/index.html#cdc_generic_section_3-eji-tools-and-resources

Figure 18: United States EJI by Census Tract, 2022



The 2022 EJI scores for Duplin County are shown in **Figure 19** below. EJI scores use percentile ranking which represents the proportion of census tracts that experience environmental burden relative to other census tracts in North Carolina. The index ranges from 0-1 with higher scores indicating more environmental burden compared to other census tracts. Levels of environmental burden are somewhat variable across the county with the average being 0.78.

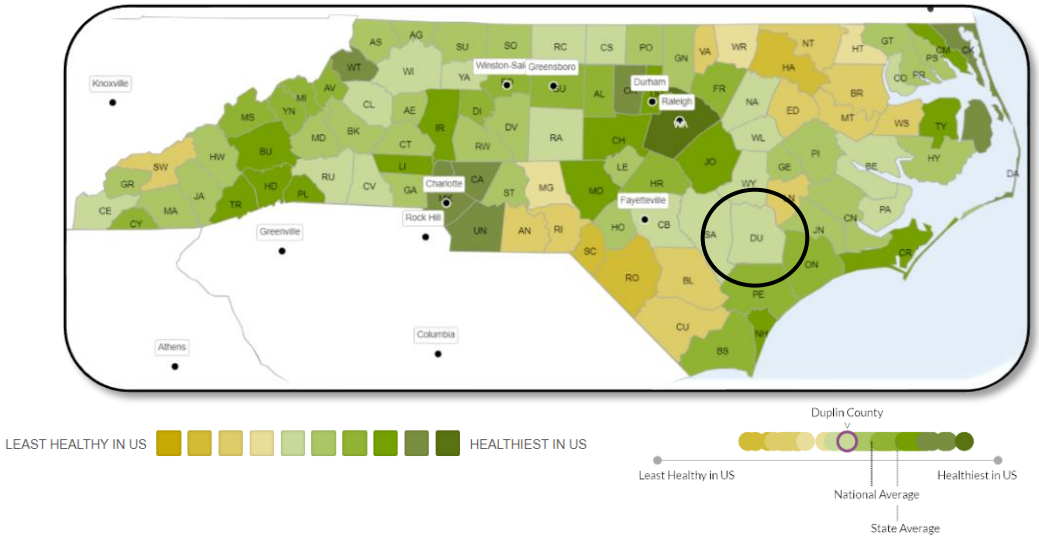
Figure 19: Duplin County EJI by Census Tract, 2022



Health Outcome and Health Factor Rankings

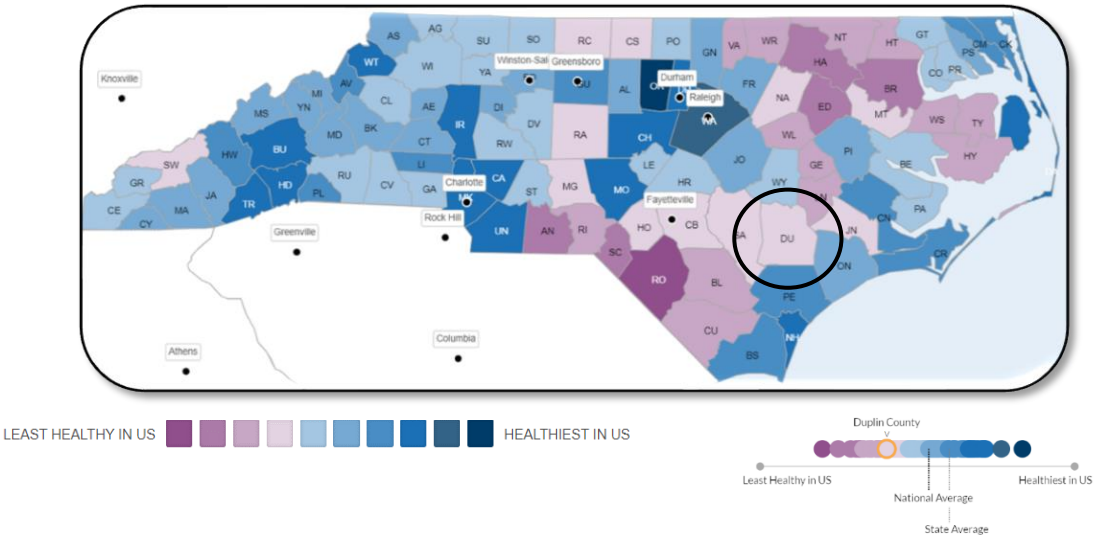
CHNA Stakeholders also reviewed and analyzed data from the Robert Wood Johnson Foundation and the University of Wisconsin County Health Rankings for the year 2024. The Health Outcomes measure looks at how long people in a community live and how physically and mentally healthy they are. These categories are discussed further in **Appendices 2** and **3**. Duplin falls behind the average for the country and the state, which means people there may be less healthy on average.

Figure 20: State Health Outcomes Rating Map[4]



The Health Factors measure looks at variables that affect people's health including health behaviors, clinical care, social & economic factors, and the physical environment they live in. More details about these indicators can be found in **Appendices 2** and **3**. Similarly to the Health Outcome measure, Duplin falls behind the average for the country and the state.

Figure 21: State Health Factors Rating Map[4]



CHAPTER 3 | PRIORITY NEED AREAS

This chapter describes each of the three priority areas in more detail and discusses the data that supports each priority. The information in this section includes context and national perspective, secondary data findings, and primary data findings (including the community member survey and focus groups). As previously described in **Chapter 1: Methodology**, secondary data was primarily sourced using the North Carolina Data Portal. For additional descriptive information on data sources and methodology, please see **Appendix 2**.

The Duplin County CHNA team conducted its prioritization meeting on September 4th, 2024, in the Transportation Department Conference Room. The meeting brought together community stakeholders representing a diverse range of organizations, including healthcare providers, public health, education, social services, faith communities, and community-based organizations. The team presented secondary and primary data findings from the CHNA to the Duplin Coalition for Health and other invited stakeholders, highlighting county demographics, diversity, and social and economic factors within a population health framework.

Following the data presentation, participants generated a list of potential focus areas. Using a multi-voting technique, each participant received five votes in the first round, which they could distribute among the potential areas as they chose. The six areas receiving the most votes advanced to a second round, where each participant received three votes to select from among these finalists. Through this process, the group identified the final three priorities.

As mentioned previously, these priority needs areas are not listed in any hierarchical order of importance and all will be addressed by the Duplin County leaders in health improvement plans guided by this CHNA. As noted in **Chapter 1**, CHNA Stakeholders considered the following factors when determining the priority needs reported in this assessment:

- Size and scope of the health need;
- Severity and intensity of the health need;
- Estimated feasability and effectiveness of possible interventions;
- Health disparities associated with the need; and
- Importance the community places on addressing the need.

PRIORITY NEED: ACCESS TO CARE

Context and National Perspective

Access to care means patients are able to get high quality, affordable healthcare in a timely fashion to achieve the best possible health outcomes. It includes several components, including coverage (i.e. insurance), a physical location where care is provided, the ability to receive timely care, and enough providers in the workforce. The CHNA Stakeholders identified access to care as a high priority need for residents of Duplin County

From a national perspective, according to Healthy People 2030, approximately one in ten people in the U.S. do not have health insurance, which means they are less likely to have a primary care provider or to be able to afford the services or medications they need.[20] Access is a challenge even for those who are insured.[21]

The availability and distribution of health providers in the U.S. contributes to healthcare access challenges. According to the Association of American Medical Colleges (AAMC), there is estimated to be a shortage of 13,500 to 86,000 physicians in the U.S. by 2036, which will impact both primary and specialty care.[22] Access issues are anticipated to increase in coming years. Growing shortages of both nurses and doctors are being driven by several factors, including population growth, the aging U.S. population requiring higher levels of care, provider burnout (physical, mental and emotional exhaustion) made worse by the COVID-19 pandemic, and a lack of clinical training programs and faculty – particularly for nurses.[23] The aging of the current physician workforce is also driving anticipated personnel shortages. In North Carolina, 30.6% of actively practicing physicians were over the age of 60 in 2020.[24] Access is also impacted by the number of actively practicing physicians overall. In 2020, there were just 9,211 primary care physicians in North Carolina, with 27,650 physicians actively practicing overall.[25]

The ability to access healthcare is not evenly distributed across groups in the population. Groups who may have trouble accessing care include the chronically ill and disabled (particularly those with mental health or substance use disorders), low-income or homeless individuals, people located in certain geographical areas (rural areas; tribal communities), members of the LGBTQIA+ community, and certain age groups – particularly the very young or the very old.[26] In addition, individuals with limited English proficiency (LEP)

[20] Source: U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion (2023). *Healthy People 2030: Health Care Access and Quality*. Retrieved September 9th, 2024 from https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-access-and-quality.

[21] Source: Phillips, K.A., Marshall, D.A., Adler, L., Figueroa, J., Haeder, S.F., Hamad, R., Hernandez, I., Moucheraud, C., Nikpay, S. (2023). Ten health policy challenges for the next ten years. *Health Affairs Scholar*. Retrieved from: https://academic.oup.com/healthaffairsscholar/article/1/1/qxad010/7203673.

[22] Source: Association of American Medical Colleges (AAMC) (2024). *The complexities of physician supply and demand: Projections from 2021 to 2036*. Retrieved from: https://www.aamc.org/media/75236/download?attachment .

[23] Source: Association of American Medical Colleges (AAMC) (2024). *State of US Nursing Report 2024*. Retrieved, from https://www.incrediblehealth.com/wp-content/uploads/2024/03/2024-Incredible-Health-State-of-US-Nursing-Report.pdf .

[24] Source: AAMC (2021). *North Carolina physician workforce profile*. Retrieved September 9, 2024, from: https://www.aamc.org/media/58286/download.

[25] Source: AAMC (2021). *North Carolina physician workforce profile*. Retrieved September 9, 2024, from: https://www.aamc.org/media/58286/download

[26] Source: Joszt, L. (2018). 5 Vulnerable Populations in Healthcare. *American Journal of Managed Care*. Retrieved September 9, 2024 from https://www.ajmc.com/view/5-vulnerable-populations-in-healthcare.

face barriers to accessing care, experience lower quality care and have worse outcomes for health concerns. LEP is known to worsen health disparities and can make challenges related to other SDoH (access to housing, employment, etc.) worse.[27] Both primary and secondary data resources analyzed for this report highlight the need for greater access to health services within Duplin County.

Secondary Data Findings

Access to care emerged as a significant concern through the CHNA process, with data indicating substantial provider shortages, transportation barriers, and access challenges across Duplin County. Relative to the state of North Carolina and the U.S., Duplin County demonstrated high need on multiple access metrics, including the rates of providers per 100,000 population, as displayed in the table below.

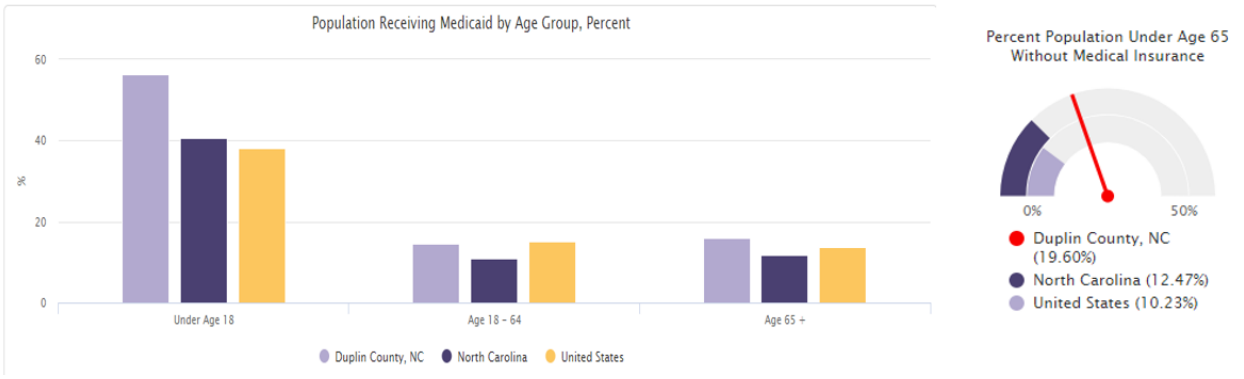
Table 16: Access to Care Indicators

Indicator	Duplin County	North Carolina	United States
Dental Providers (Rate per 100,000 Population)	10.3	31.5	39.1
Primary Care Providers (Rate per 100,000 Population)	55.4	101.1	112.4
Percentage of Population Living in an Area Affected by a Dental Care HPSA	65%	34%	18%
Percent of Insured Population Receiving Medicaid	30%	20%	22%
Rate of Federally Qualified Health Centers (Rate per 100,000 Population)	26.7	4.0	3.5

A significant portion (65%) of Duplin County's population lives in an area that has been federally designated as a Dental Care Health Professional Shortage Area (HPSA), nearly double the state average of 34%. This confirms a substantial shortage of dental health professionals exists in the community. The rate of dental providers per 100,000 population (10.3) is particularly concerning, at roughly one-third of the state average (31.5). Additionally, a higher percentage of the insured population in Duplin County receives Medicaid (30%) compared to the state (20%) or nation (22%). This trend is consistent across all age groups but particularly pronounced for those under age 18. The county performs well on one key access metric - the rate of Federally Qualified Health Centers (FQHCs) at 26.7 per 100,000 population is significantly higher than both state (4.0) and national (3.5) averages.

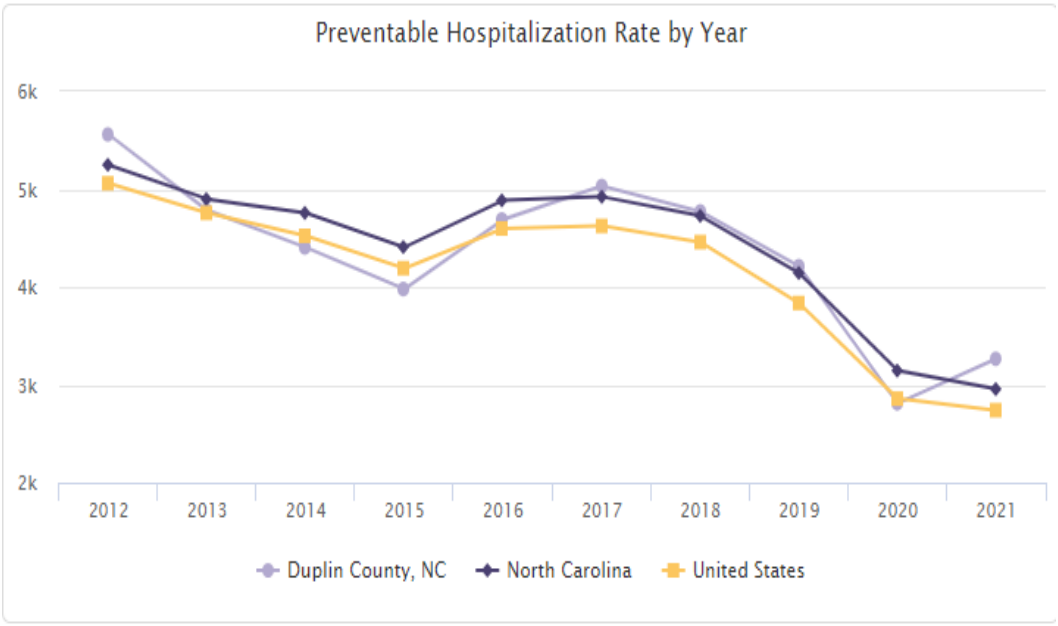
[27] Source: Espinoza, J. and Derrington, S. (2021). How Should Clinicians Respond to Language Barriers That Exacerbate Health Inequity? *AMA Journal of Ethics*. Retrieved from: https://journalofethics.ama-assn.org/article/how-should-clinicians-respond-language-barriers-exacerbate-health-inequity/2021-02.

Figure 22: Population Receiving Medicaid by Age Group and Under Age 65 Uninsured



Another access-related indicator of concern was the number of preventable hospital stays for ambulatory care-sensitive conditions per 100,000 Medicare enrollees. The rate in Duplin County (3,248) remains higher than state (2,957) and national (2,752) averages.

Figure 23: Preventable Hospital Stays



Even more concerning are the health disparities that exist for preventable hospital stays. The rate among Hispanic or Latino Medicare beneficiaries (4,306) was significantly higher compared to White Medicare beneficiaries (2,573) and Black or African American Medicare beneficiaries (2,460). These elevated rates of preventable hospitalizations suggest that diverse groups in the community may experience difficulty accessing high-quality outpatient or primary care.

Figure 24: Preventable Hospital Stays by Race/Ethnicity

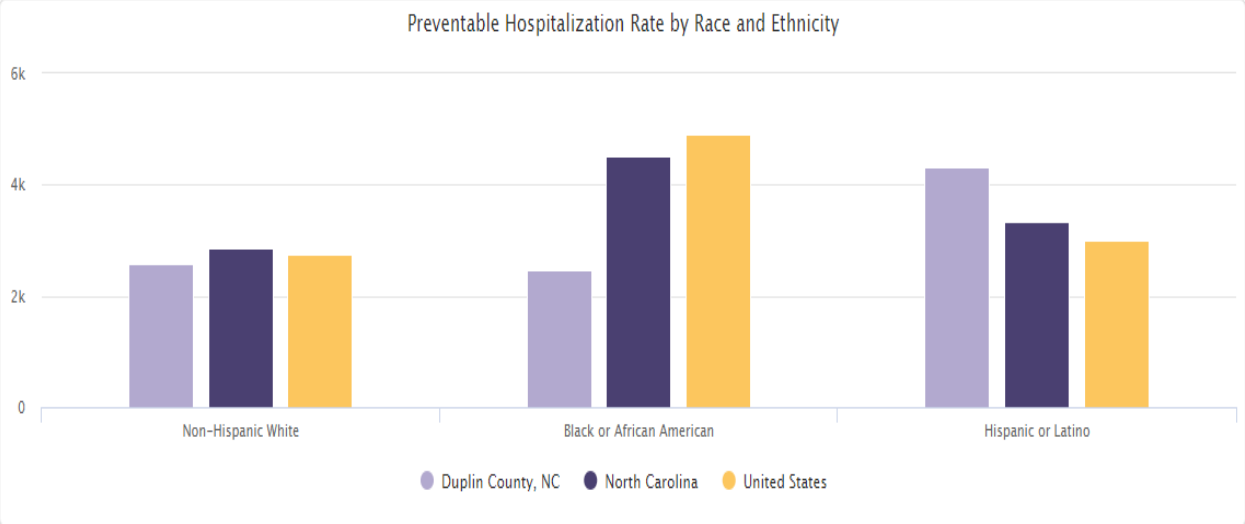


Table 17: Preventable Hospital Stays by Race/Ethnicity

Preventable Hospital Stays (per 100,000 Medicare Beneficiaries)	Duplin County Rate
Preventable Hospital Stays	3,248
Hispanic or Latino Medicare Beneficiaries	4,306
Black or African American Medicare Beneficiaries	2,460
White Medicare Beneficiaries	2,573

Access to care may not be equitable across all county populations, particularly those with socioeconomic or transportation-related challenges. A lack of access to reliable transportation or transit is a key barrier that can prevent someone from being able to see their provider and can influence their ability to thrive in other areas of their life as well (such as getting to school or work). Additionally, Duplin County has a slightly lower percentage of households with no motor vehicle (5.0%) compared to the state average (5.4%).

Table 18: Transportation Indicators

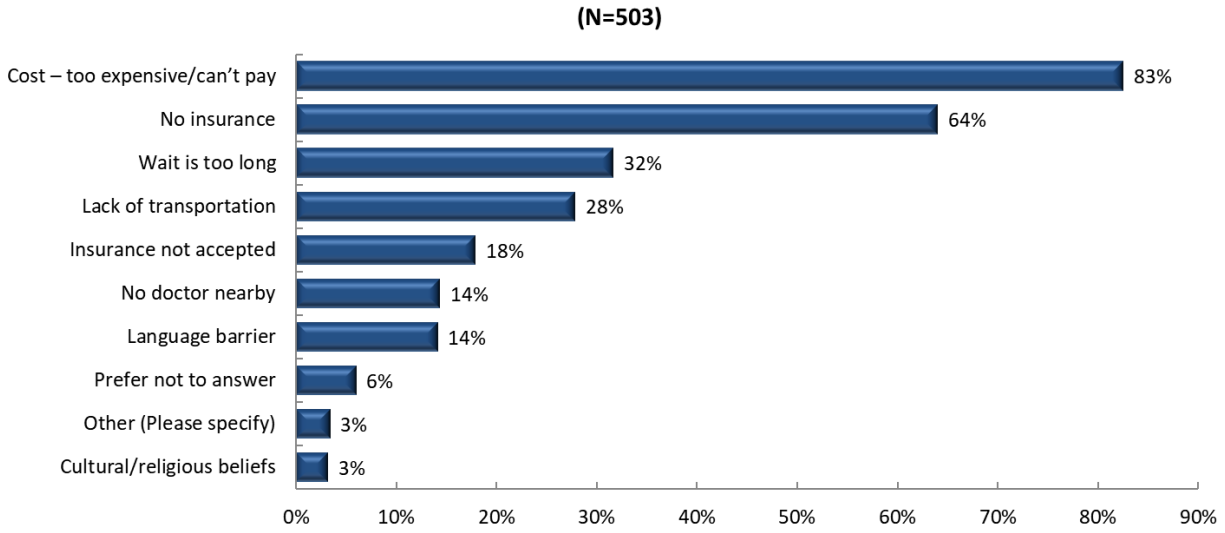
Indicator	Duplin County	North Carolina	United States
Households with No Motor Vehicle, Percent	5.0%	5.4%	8.3%
Percent Population Using Public Transit for Commute to Work	0.0%	0.8%	3.8%

For additional detail on secondary data findings, see **Appendix 3**.

Primary Data Findings – Community Member Web Survey

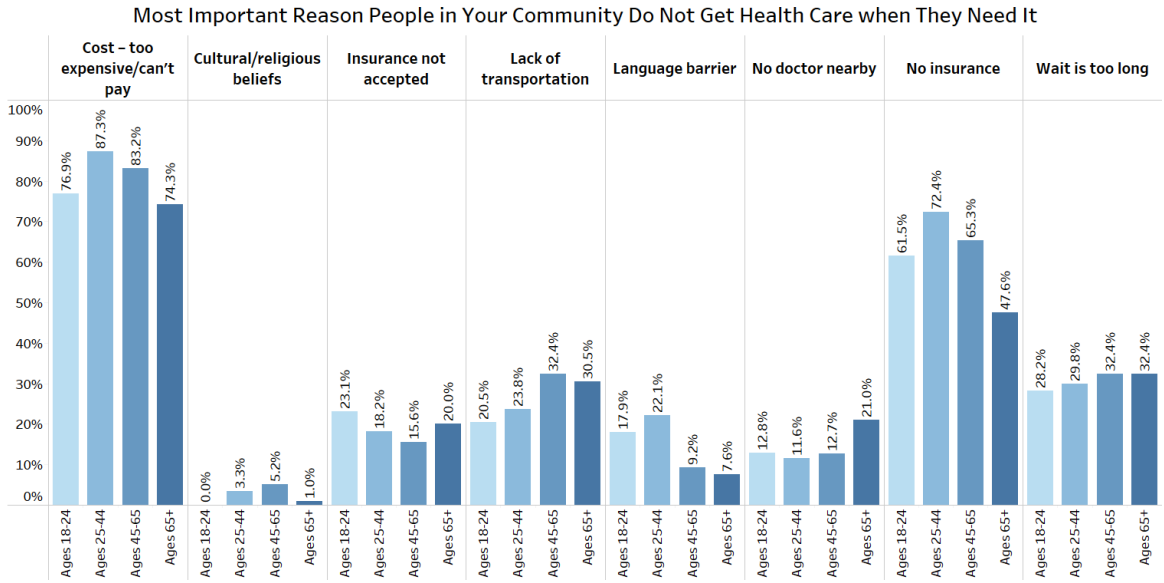
Nearly 500 Duplin County residents responded to the web-based survey. Respondents identified several access to healthcare needs in Duplin County. In the survey, community members were asked to identify the top barriers to receiving healthcare. Cost (83%), no insurance (64%), and long wait times (32%) were the top three identified reasons why people in the community are not getting care when they need it. Another third of responses identified lack of transportation and nearly one-fifth of responses indicated a insurance not being accepted as the top barriers to care.

Figure 25: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three.



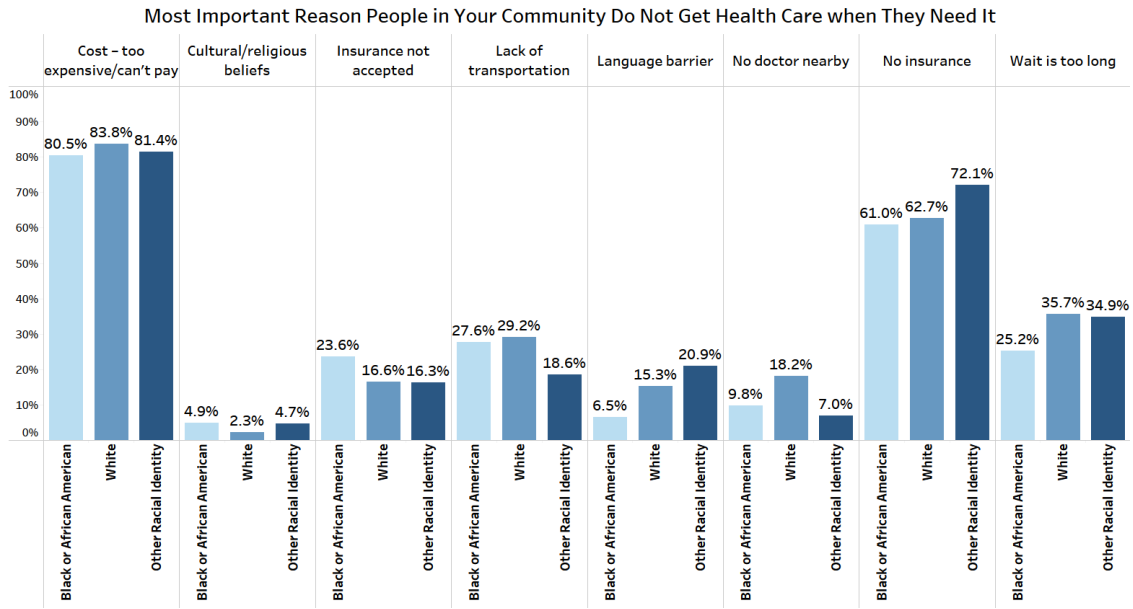
When these data were examined by age group, the age group that most frequently identified cost (87%) and lack of insurance (72%) as top barriers was those ages 25 to 44. Lack of transportation was identified most frequently as a barrier to care by older respondents compared to all other age groups. Conversely, responses indicating long wait times were similar across all age groups.

Figure 26: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by age)



Responses also differed by race. Nearly 72% of respondents identifying with the "other racial identity"[28] category noted insurance not being accepted as a top barrier to healthcare compared to 61% of respondents identifying as Black/African American and 63% of respondents identifying as White.

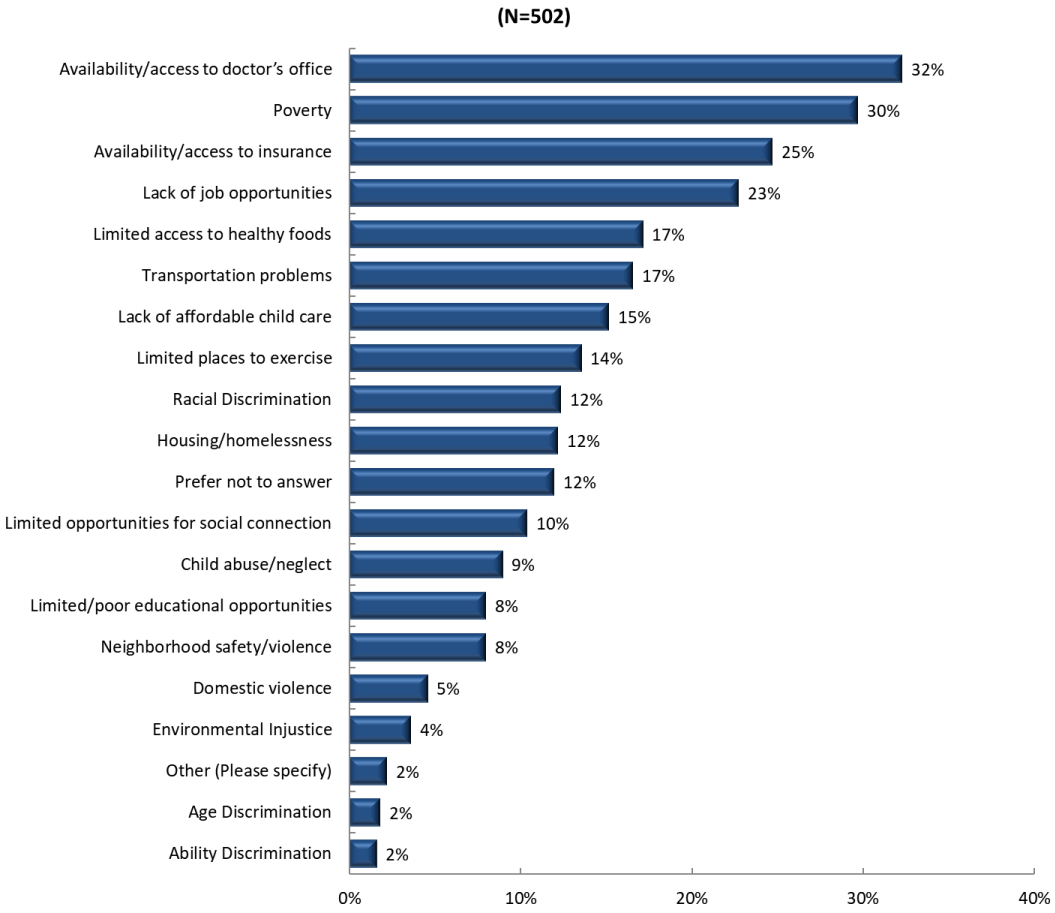
Figure 27: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by race)



[28] Includes those who identified as American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, and/or those who selected more than one race or "other."

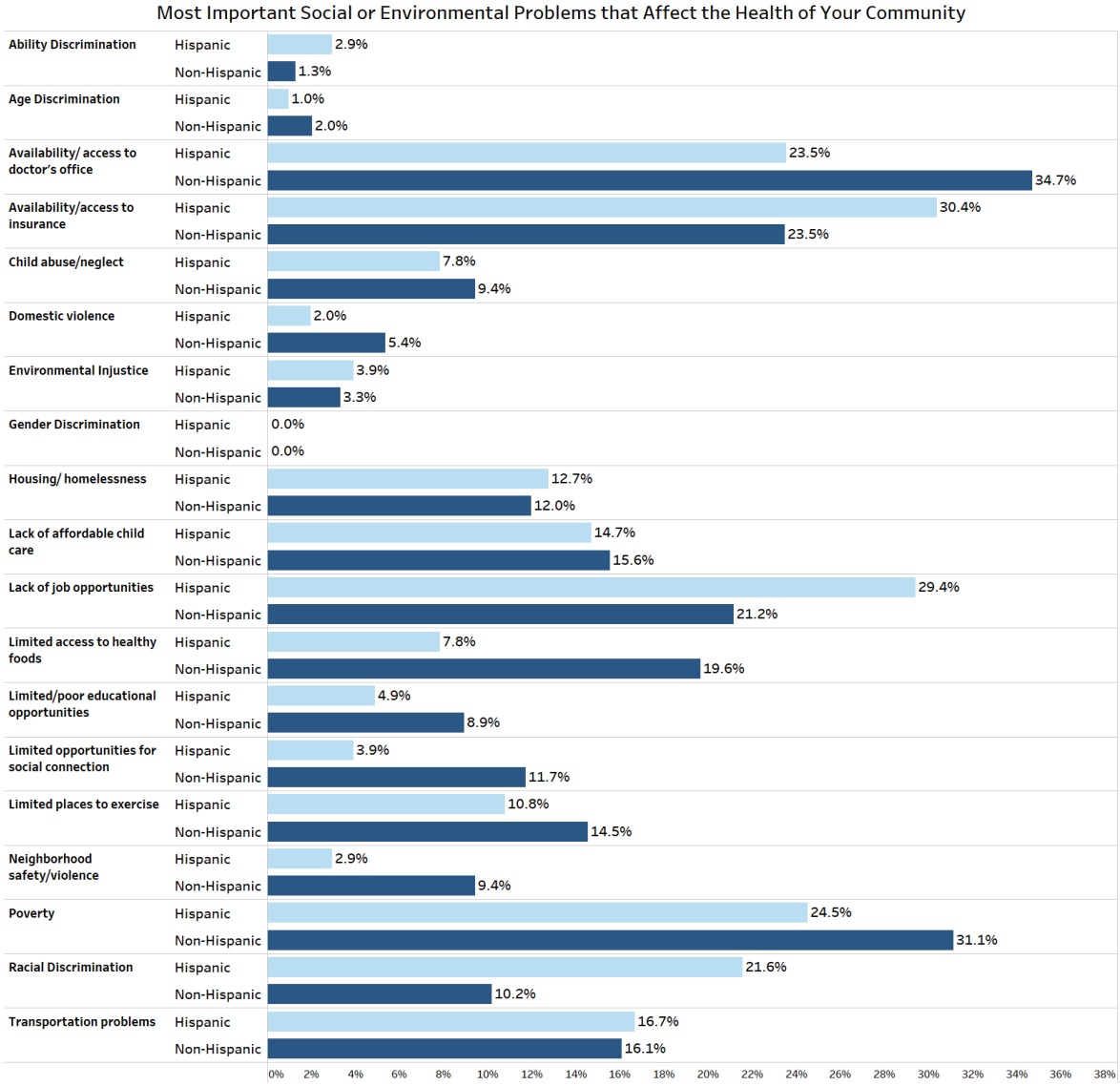
Community members were also asked to identify the most important social or environmental problems that affect the health of the community. As displayed in the figure below, the most frequent problem identified was the availability or access to doctor's offices (32%), again highlighting access to care challenges within the community. Availability or access to insurance (25%) was identified as the third most frequent social or environmental problem that affects the health of the community.

Figure 28: What are the three most important social or environmental problems that affect the health of your community? Please select up to three.



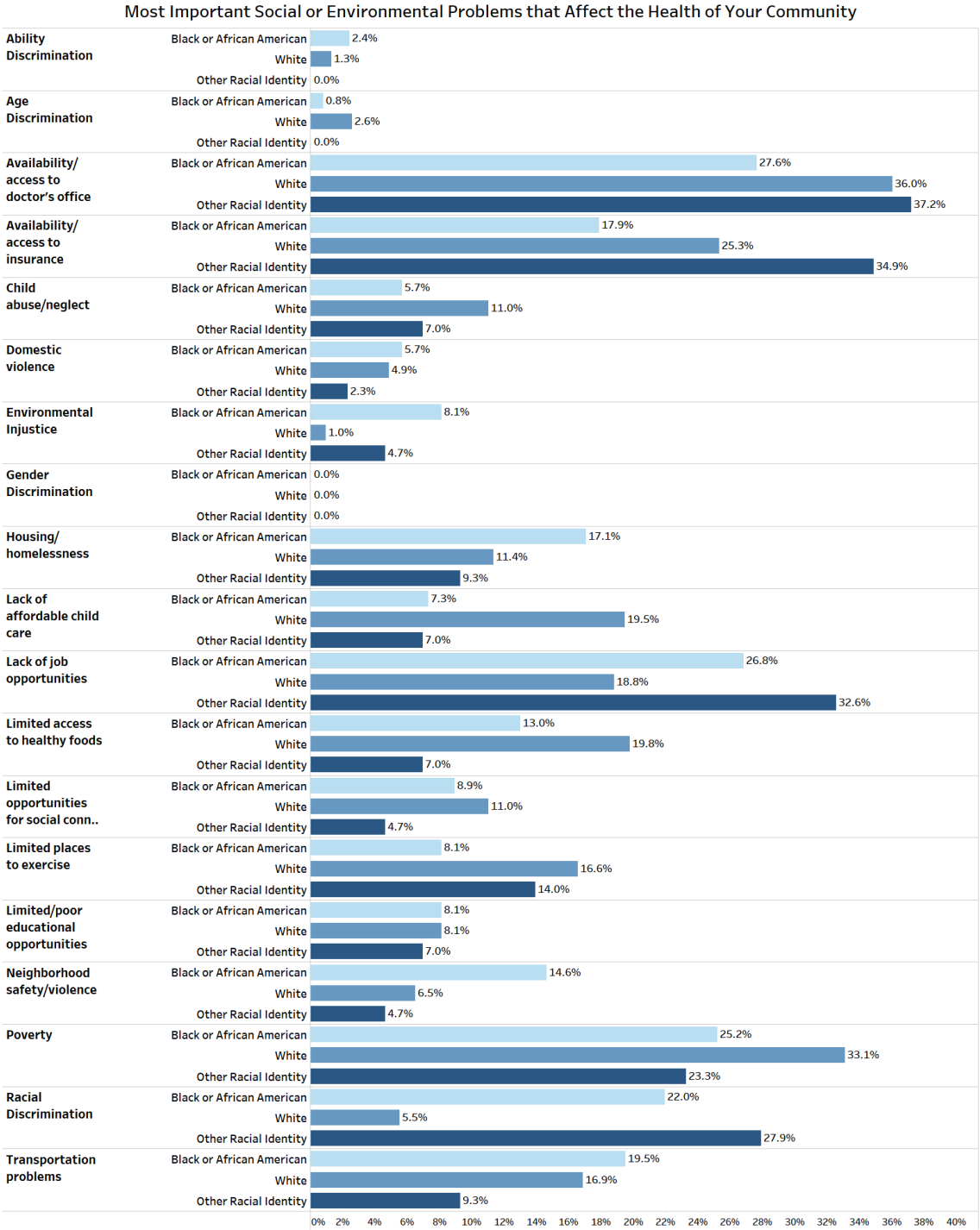
Notably, responses differed by ethnicity. More non-Hispanic/Latino respondents identified availability and access to doctor's offices as a top social and environmental problem (35% vs. 24%) than non-Hispanic/Latino respondents. By contrast, Hispanic/Latino respondents were more likely than non-Hispanic/Latino respondents to identify availability/access to insurance as an important social and environmental problem (30% compared to 24%).

Figure 29: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by ethnicity)



Responses also varied by race. Those identifying with other racial identities were more likely to cite availability of doctor's offices and availability or access to insurance than those identifying as White or Black/African American (Other racial identity: 37%, 35%; Black or African American: 28%, 18%; White: 36%, 25%).

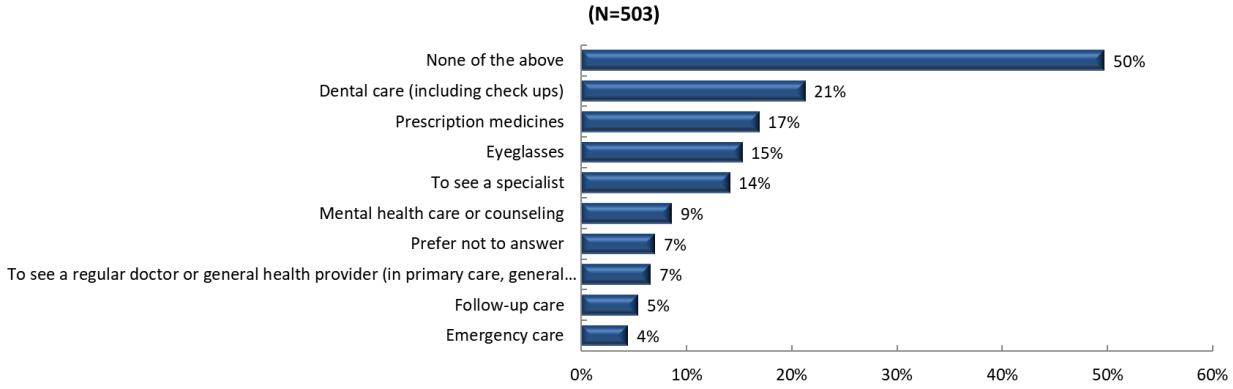
Figure 30: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by race)



Duplin County community member respondents were also asked if there was a time during the past 12 months that they needed specific medical care or health-related items and were unable to receive it due

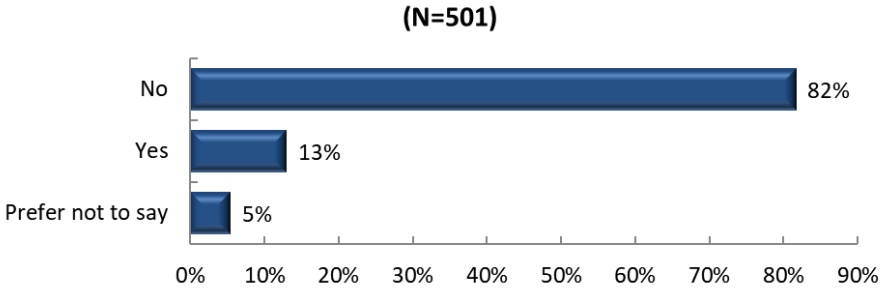
to the cost. As displayed in the figure below, one-fifth of respondents indicated affordability barriers prevented them from accessing dental care. The second highest response identified access to prescription medicines (17%) was impacted due to high costs, followed by eyeglasses (15%).

Figure 31: During the past 12 months, was there any time when you needed any of the following, but didn't get it because you couldn't afford it?



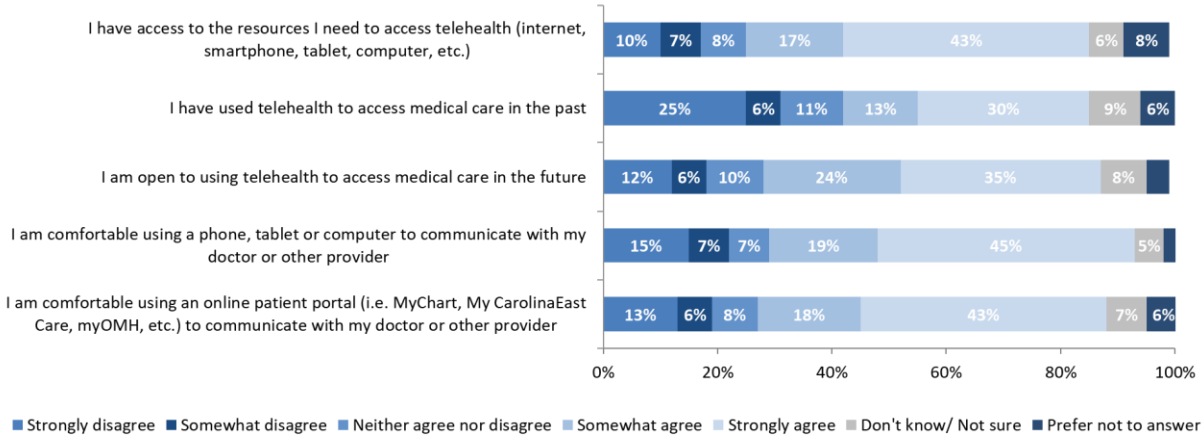
Respondents were also asked if they have put off or neglected going to the doctor due to distance or transportation, to which 13% of respondents answered yes, further emphasizing that transportation can be a barrier for at least a portion of the community.

Figure 32: Do you put off or neglect going to the doctor because of distance or transportation?



Respondents were also asked to agree or disagree with statements related to telehealth, including statements about having access to the necessary resources to use telehealth, past experience using telehealth, and comfort level in using technology or patient portals to communicate with health professionals. Only 10% of respondents strongly agreed to having access to the necessary resources, with slightly higher percentages of respondents strongly agreeing to being comfortable using an online patient portal and strongly agreeing to being open to using telehealth to access medical care in the future.

Figure 33: How much do you agree or disagree with the following statements about telehealth? Telehealth means connecting virtually with a medical provider using a smartphone, tablet or computer.



For additional detail on survey findings, see **Appendix 5**.

Primary Data Findings – Focus Groups

Access to care concerns emerged as a significant issue during focus groups conducted in Duplin County. Participants discussed multiple barriers to accessing healthcare, including long wait times, limited appointment availability, and challenges with insurance coverage. The costs of medication and co-pays were specifically noted as barriers to care. Focus group participants highlighted that many residents rely heavily on emergency departments due to the lack of available primary care appointments. Fear and skepticism around seeking medical care were also noted as barriers that keep some community members from accessing services. The Spanish-language focus group particularly emphasized language barriers as a significant challenge that prevents the Hispanic/Latino community from accessing care.

Health equity emerged as a major concern across focus groups. Participants noted the need for providers that better reflect the diversity of the community. They also discussed how limited health literacy impacts many residents' ability to navigate the healthcare system effectively. Transportation challenges were consistently identified as a barrier to accessing care, with elderly residents being particularly impacted. To address these issues, participants suggested creating a centralized database or website to help community members access health information and resources. The Spanish-language focus group specifically recommended that sliding scale fee structures at clinics should account for rising household expenses when determining costs. They also suggested increasing community outreach events in locations like churches, laundromats, grocery stores, and parks to better reach community members where they are.

For a more detailed description of focus group findings, see **Appendix 5**.

PRIORITY NEED: CHRONIC DISEASE PREVENTION

Context and National Perspective

As society has changed and people live longer, chronic health conditions have become more common than communicable diseases like typhoid and cholera. As defined by the World Health Organization (WHO), chronic diseases are those with a long duration, that are influenced by a combination of genetic, environmental, psychological, or behavioral factors.[29] Chronic health conditions are extremely common in the United States, with 6 in 10 Americans living with at least one chronic disease, such as diabetes, obesity, cancer, hypertension, or heart disease.[30]

Chronic diseases are the leading cause of death and disability in the United States.[29] According to the WHO, chronic health conditions kill 41 million people globally each year and are responsible for 7 in 10 deaths in the U.S. annually.[29] The number of individuals living with a chronic health condition is expected to increase as the U.S. population continues to age. The population over the age of 50 is expected to increase by 61% to 221.1 million people by 2050.[31] Among those 221 million, nearly two-thirds (142.7 million people) are expected to have at least one chronic health condition, with approximately 15 million people living with multiple chronic health conditions.[31]

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells that can result in death if not treated. While the risk of dying from cancer has declined significantly over the past 30 years, it remains the second most common cause of death in the U.S. Incidence of new cancer cases has continued to rise, with 2 million new cases expected to be identified in 2024.[32] This trend is largely affected by the aging and growth of the population and by a rise in diagnoses of 6 of the 10 most common cancers—breast, prostate, endometrial, pancreatic, kidney, and melanoma. Some research has attributed this rise to the impact of the obesity epidemic. [32] Cigarette smoking is another significant risk factor for cancer, and is responsible for about 20% of all cancers and 30% of cancer deaths in the U.S. each year.[33]

The CDC recommends four ways to prevent chronic conditions and maintain good physical health. Recommended healthy behaviors include stopping or refraining from smoking, eating low-fat whole food diets, exercising moderately for at least 150 minutes a week, and limiting or refraining from consuming alcohol.[34] Annual physicals with a primary care provider are also necessary to help prevent or treat chronic health conditions. Yearly screenings can allow providers to identify any warning signs for developing

[29] Source: World Health Organization (WHO) (2023). *Noncommunicable diseases*. Retrieved September 10th, 2024, from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases.
[30] Source: CDC (2024). *National Center for Chronic Disease Prevention and Health Promotion*. Retrieved September 10th, 2024, from: https://www.cdc.gov/chronic-disease/about/index.html .
[31] Source: Ansah, J.P. & Chiu, T.C., (2022). Projecting the chronic disease burden among the adult population in the United States using a multi-state population model. *Frontiers in Public Health*. Retrieved September 10th, 2024, from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9881650/.
[32] Source: American Cancer Society (ACS) (2024). *ACS Fast & Figures 2024*. Retrieved September 10th, 2024, from https://www.cancer.org/research/acs-research-news/facts-and-figures-2024.html.
[33] ACS (2020). *Health Risks of Smoking Tobacco.* Retrieved September 10th , 2024 from https://www.cancer.org/cancer/risk-prevention/tobacco/health-risks-of-tobacco/health-risks-of-smoking-tobacco.html
[34] Source: CDC (2024). *Preventing chronic diseases: What you can do now.* Retrieved September 10th, 2024 from https://www.cdc.gov/chronic-disease/prevention/index.html

conditions and enable patients to correct or develop healthy behaviors to avoid developing a physical health condition. A CDC study noted that one-third of visits to health centers in 2020 were for preventive care.[35] For those living with chronic conditions, the CDC recommends some general steps people can take to manage their diseases. These include taking medications as prescribed by a provider, self-monitoring symptoms as needed (such as conducting home blood sugar checks), and regularly seeing a provider for check-ups.

As the population in North Carolina and the individual counties continues to collectively age, the prevalence of chronic disease grows. In fact, eight out of the top 10 deaths in North Carolina are related to a chronic health condition[36], accounting for at least two-thirds (50,000) of all annual deaths.[37] Additionally, the population of North Carolina is largely rural, which hinders access to clinical care for these conditions. Finding ways to utilize existing resources for helping community members learn about and manage their chronic health conditions is key for improving health outcomes in these areas.

Secondary Data Findings

Chronic health conditions emerged as a critical concern through the CHNA process, with data showing higher prevalence rates of several conditions and contributing lifestyle factors compared to state averages. Duplin County performed worse on multiple chronic disease indicators compared to state and national values. The county has a higher percentage of adults who report overall poor health (20.6%) compared to the state average (14.4%). A particular concern is the elevated rates of various chronic conditions, as displayed in the table below.

Table 19: Chronic Disease-Related Indicators

Indicator	Duplin County	North Carolina	United States
Adults (Age 18+) with Asthma	10.5%	9.8%	9.7%
Adults (Age 20+) with Diagnosed Diabetes	9.2%	9.0%	8.9%
Adults (Age 18+) Ever Diagnosed with Coronary Heart Disease	6.6%	5.5%	5.2%
Adults (Age 18+) with Hypertension	35.4%	32.1%	29.6%
Adults (Age 18+) with High Cholesterol	33.6%	31.4%	31.0%
Adults (Age 18+) with Kidney Disease	3.4%	2.9%	2.7%
Adults (Age 18+) Ever Having a Stroke	3.8%	3.1%	2.8%

[35] Source: CDC (2022). *Characteristics of visits to health centers: United States, 2020*. Retrieved September 10th, 2024, from https://www.cdc.gov/nchs/products/databriefs/db438.htm.

[36] Source: CDC (2022). *North Carolina.* Retrieved October 3, 2024, from https://www.cdc.gov/nchs/pressroom/states/northcarolina/nc.htm

[37] Source: NCDHHS. (2023). *Chronic disease and injury.* Retrieved October 3, 2024, from https://www.dph.ncdhhs.gov/programs/chronic-disease-and-injury#:~:text=Chronic%20diseases%20and%20injuries%20are,of%20death%20in%20North%20Carolina.

Adults with BMI > 30.0 (Obese)	32.7%	29.7%	30.1%
Adults (Age 18+) with Poor Dental Health	17.5%	12.0%	13.9%
Percent Reporting Poor or Fair Health	20.6%	14.4%	-

Over a third of Duplin County adults are diagnosed with hypertension (35.4% compared to 32.1% state average) or high cholesterol (33.6% compared to 31.4% state average). The county also has higher rates of coronary heart disease (6.6% versus 5.5% state average) and stroke (3.8% versus 3.1% state average). The obesity rate among adults is also concerning at 32.7%, compared to the state average of 29.7%.

While the county's cancer incidence rate (409.6 per 100,000 population) is lower than both state (464.4) and national (442.3) averages, other chronic disease indicators suggest significant ongoing challenges with prevention and management of chronic conditions in the community. Hospitalization rates reflect the burden of chronic disease in the community. The rate of cardiovascular disease hospitalizations (16.6 per 1,000 population) is notably higher than both state (11.7) and national (10.4) averages. Similarly, ischemic stroke hospitalizations occur at a rate of 10.4 per 1,000 population, compared to 9.5 statewide and 8.0 nationally.

Table 20: Cancer Incidence and Cardiovascular Disease and Stroke Hospitalizations

Indicator	Duplin County	North Carolina	United States
Cancer Incidence (Rate per 100,000 Population)	409.6	464.4	442.3
Emergency Room Visits (Rate per 1,000 Population)	747	563	535
Cardiovascular Disease Hospitalizations (Rate per 1,000 Medicare Beneficiaries)	16.6	11.7	10.4
Ischemic Stroke Hospitalizations (Rate per 1,000 Medicare Beneficiaries)	10.4	9.5	8.0

Duplin County also underperforms relative to the state in health behaviors that can impact chronic disease development. The percentage of physically inactive adults (30.2%) is significantly higher than the state average (21.6%). This may be influenced by limited access to exercise opportunities, with only 25% of the population having access to exercise opportunities compared to 73% statewide and 84% nationally. The built environment contributes to these challenges, with Duplin County having fewer recreational facilities (6.2 per 100,000 population) compared to state (13.1) and national (14.7) averages. The county also has a lower walkability index score (5) compared to the state (7) and nation (10). Food insecurity was also a concern for Duplin County residents; however, the county performed better on food environment measures, including a lower rate of fast-food restaurants per population compared to the state value and a higher rate of grocery stores per population.

Table 21: Health Behavior Indicators

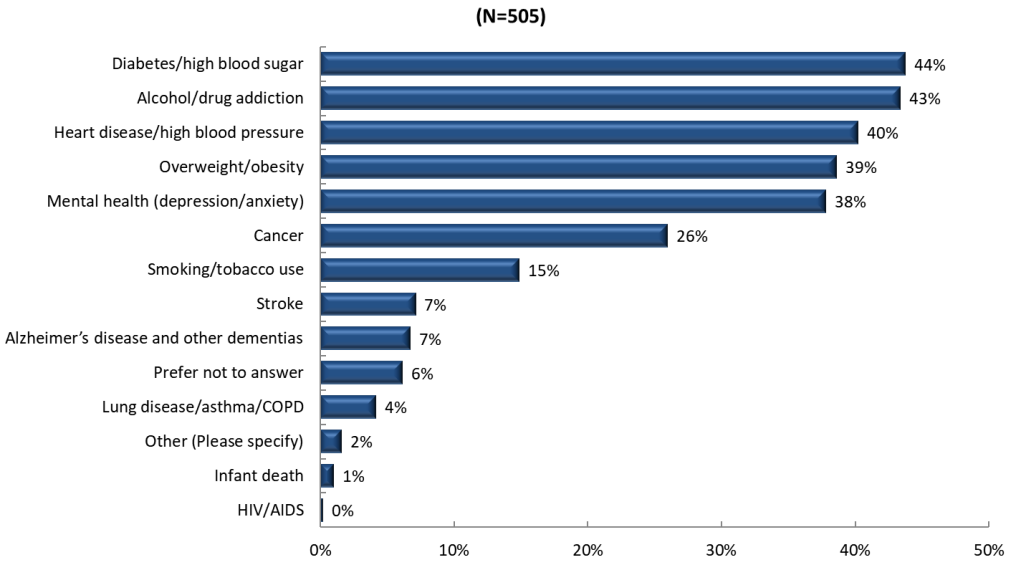
Indicator	Duplin County	North Carolina	United States
% Adults Reporting Currently Smoking	20.3%	15.0	-
% Physically Inactive	30.2	21.6	-
Recreation and Fitness Facility Establishments, (Rate per 100,000 Population)	6.2	13.1	14.7
Walkability Index Score	5	7	10
Percentage of Population with Access to Exercise Opportunities	25%	73%	84%
Food Insecurity Rate	13.0%	11%	10%
Child Food Insecurity Rate	19.8%	15%	13%
Percent Low Income Population with Low Food Access	12.6%	21%	19%
Food Environment - Fast Food Restaurants Establishments (Rate per 100,000 Population)	71.9	77.4	96.2
Food Environment - Grocery Stores Establishments (Rate per 100,000 Population)	24.6	18.7	23.4

For additional detail on secondary data findings, see **Appendix 3**.

Primary Data Findings – Community Member Web Survey

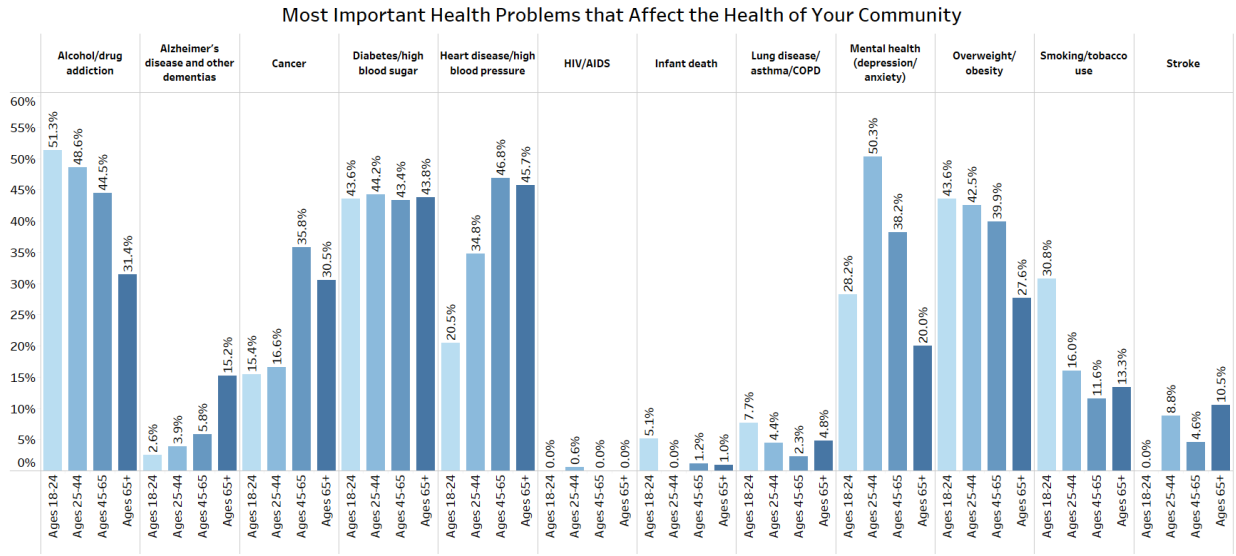
Duplin County residents identified several chronic health conditions of concern in the community in the web survey. In fact, five out of the top 10 most frequently identified community health needs were chronic health conditions, with the top being diabetes/high blood sugar (44% of respondents), followed by heart disease/high blood pressure (40%), the third most frequently identified community health need. Nearly 40% of respondents also identified overweight/obesity as an important community health problem.

Figure 34: What are the three most important health problems that affect the health of your community? Please select up to three



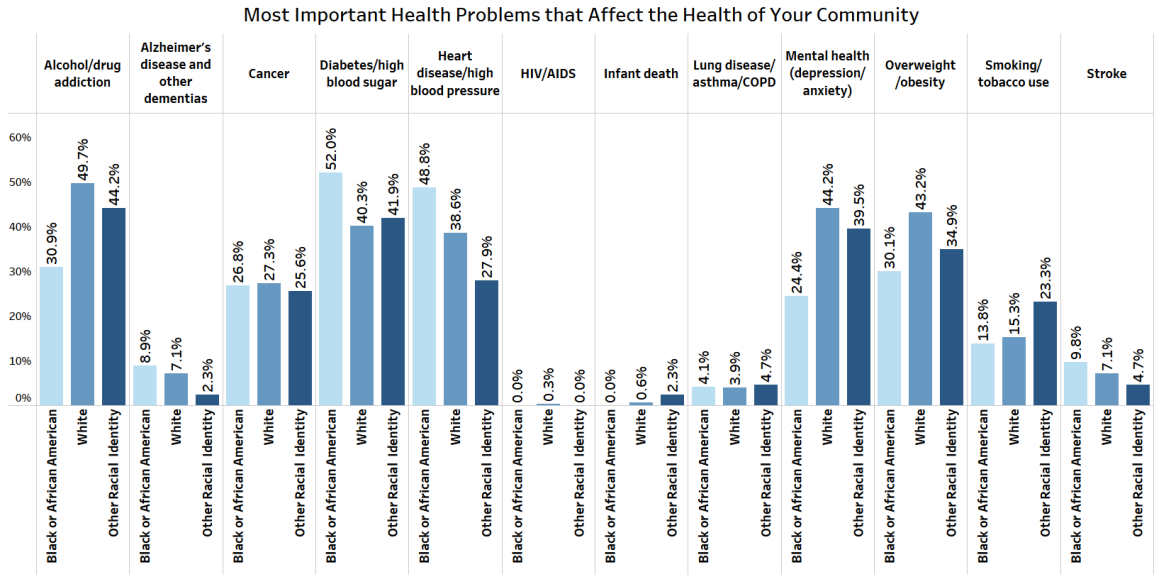
When these results were examined by various demographics of the respondents, responses varied. Older adults viewed heart disease as a more significant problem than younger respondents, as seen in **Figure 35** below; however, all groups were almost equally likely to identify diabetes as a concern in the community.

Figure 35: What are the three most important health problems that affect the health of your community? Please select up to three. (by age)



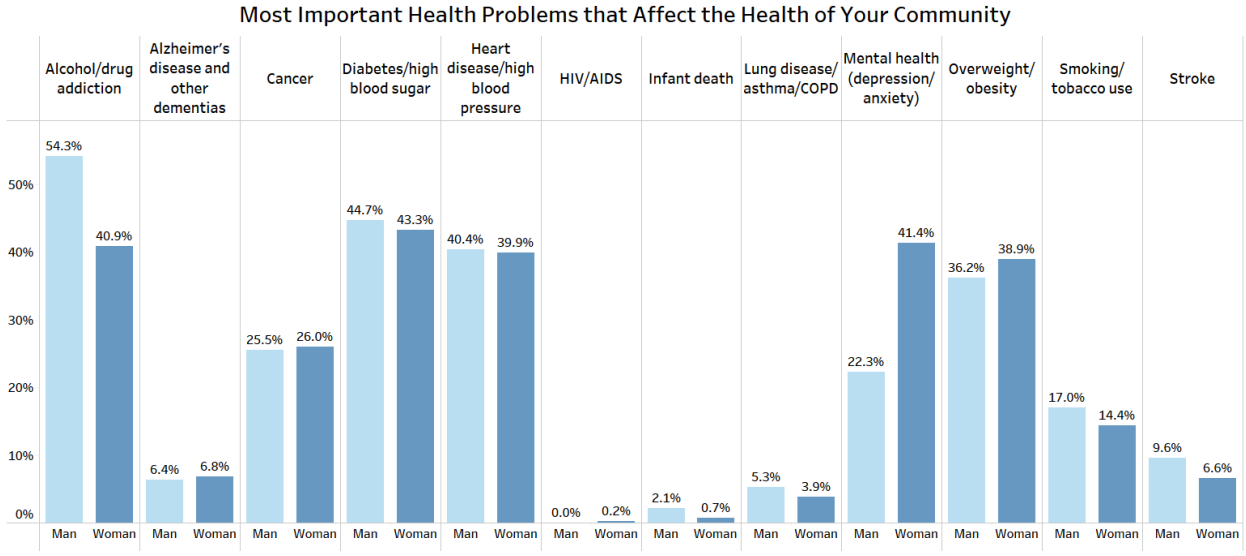
Respondents identifying Black or African American identified diabetes/high blood sugar and heart disease/high blood pressure more frequently than respondents identifying as White or as other racial identities.

Figure 36: What are the three most important health problems that affect the health of your community? Please select up to three. (by race)



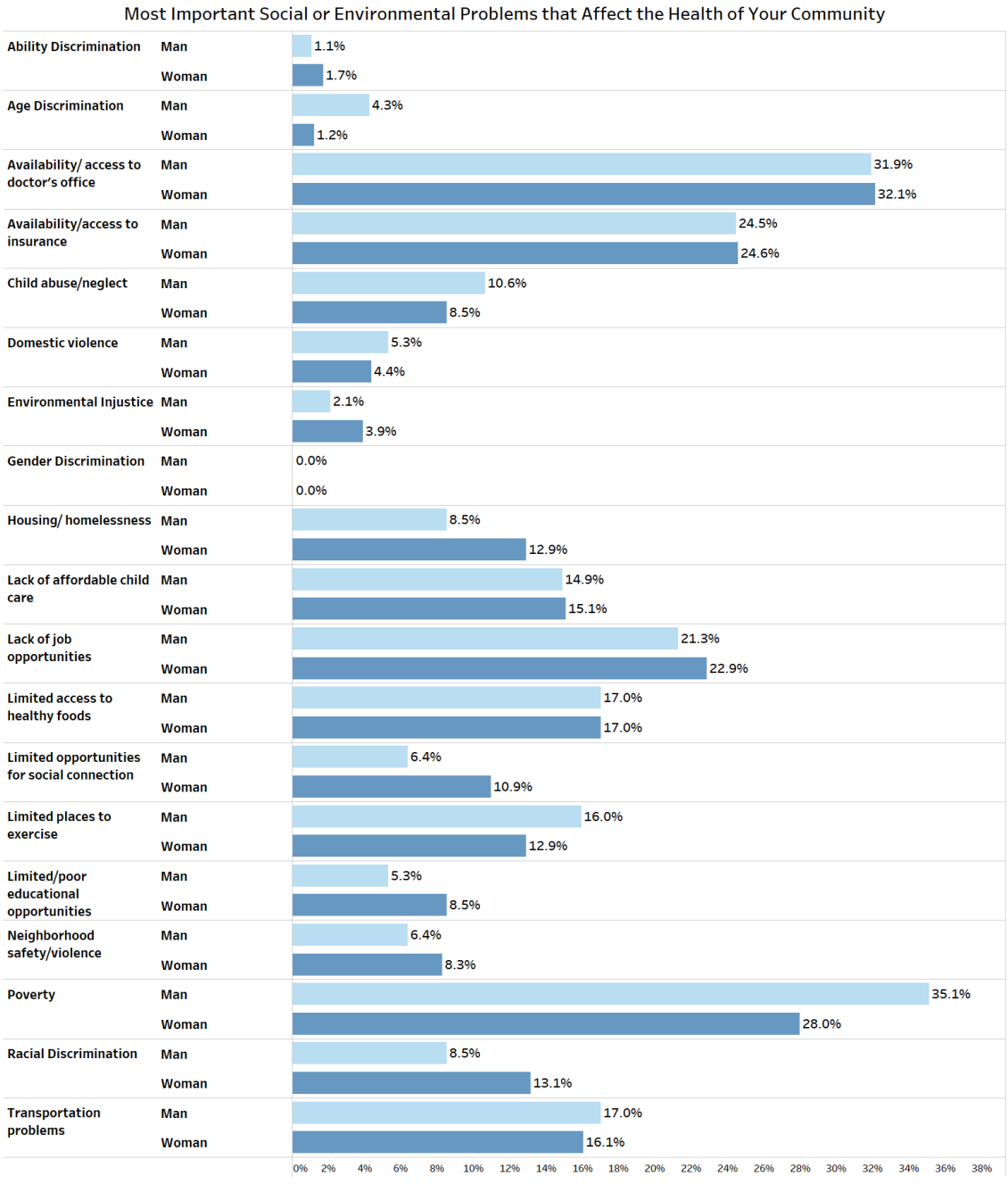
Men were just slightly more likely to identify these as important community health problems than women. Considering these differences in targeted efforts to address specific community health indicators may be important.

Figure 37: What are the three most important health problems that affect the health of your community? Please select up to three. (by gender)



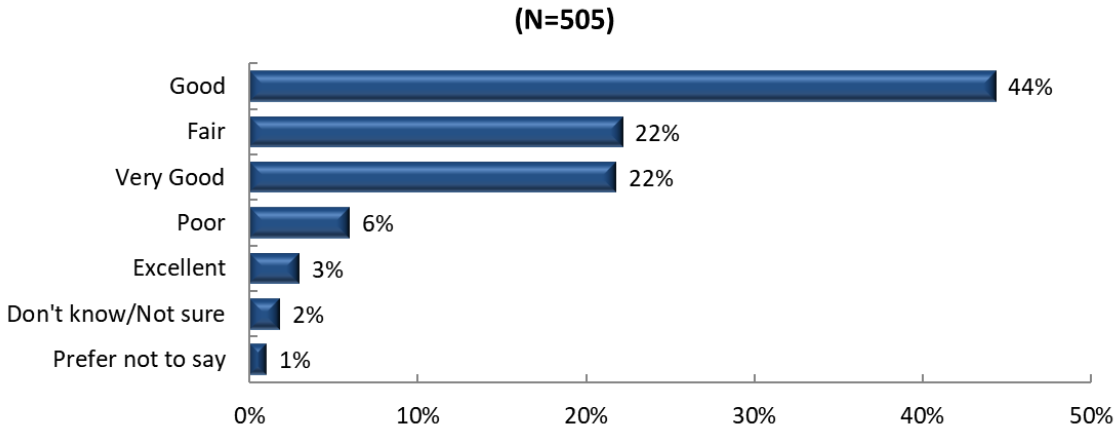
In terms of community perspectives on health behaviors and food security, 17% of Duplin County respondents viewed limited access to healthy foods as an important social or environmental problem in the community and 14% the limited places to exercise. Men were more likely to view limited places to exercise as a top concern (16% compared to 13% for women), but both genders were equally likely to note limited access to healthy foods (17%).

Figure 38: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by gender)



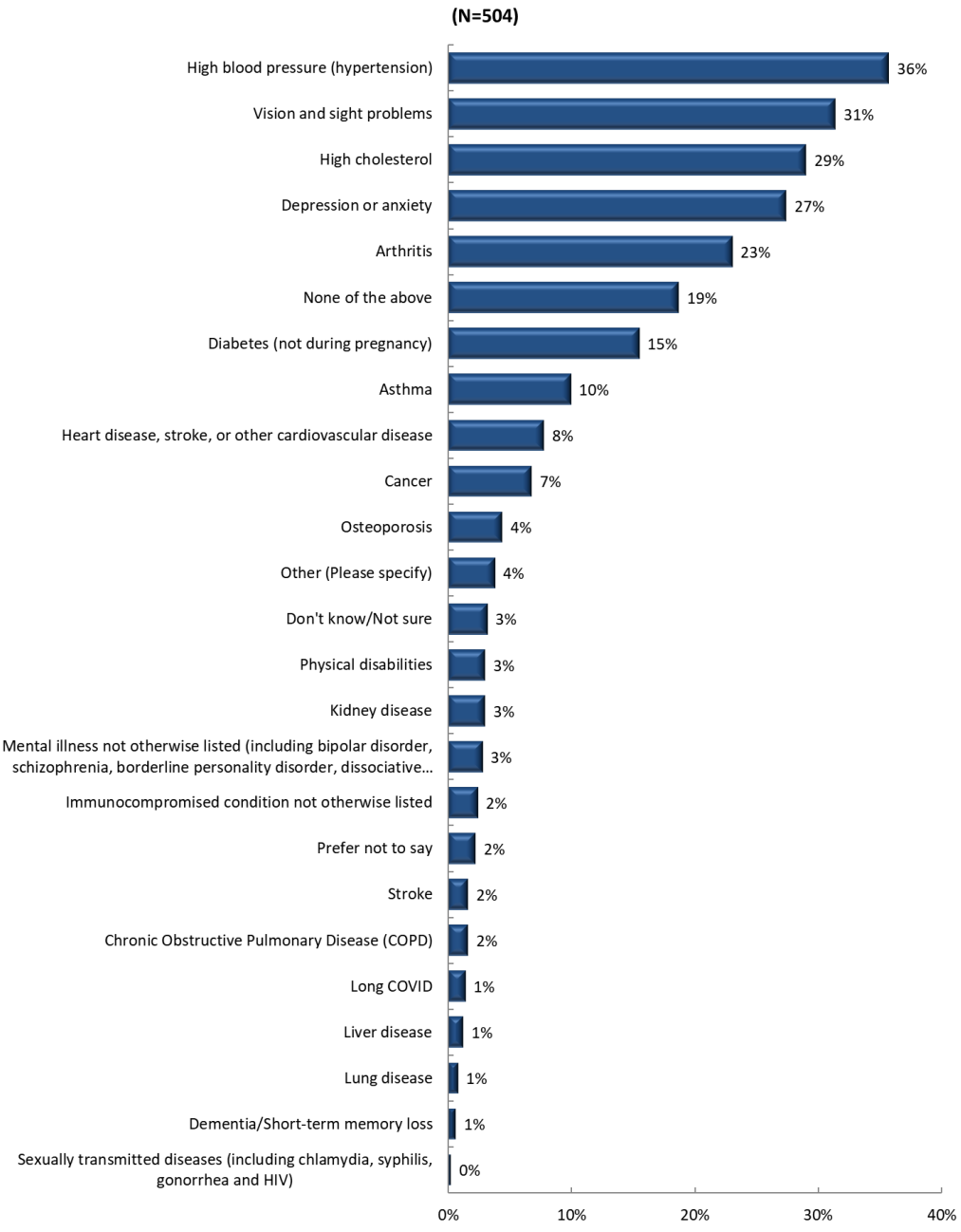
Duplin County respondents were also asked questions regarding their physical health. Nearly one-quarter of respondents described their overall physical health as “fair” or “poor.”

Figure 39: Considering your physical health overall, would you describe your health as…



Additionally, one-third of respondents indicated having been informed of high blood pressure by a health professional, while another one-third reported having been informed of high cholesterol.

Figure 40: Have you ever been told by a doctor, nurse, or other health professional that you have any of the following health conditions? Select all that apply



For additional detail on survey findings, see **Appendix 5**.

Primary Data Findings – Focus Groups

Participants identified diabetes, heart disease, and high blood pressure as among the most serious health problems facing the community. The Spanish-language focus group specifically highlighted diabetes, hypertension, high cholesterol, and migraines as prevalent health concerns in their community.

Food access and nutrition emerged as key contributors to chronic disease. Participants discussed how Southern-style cooking and family norms around food influence health outcomes. The general cost and availability of healthy food were cited as barriers to maintaining good health. Focus group participants emphasized that education, particularly about nutrition and healthy food choices, is crucial for addressing these chronic health conditions.

The relationship between chronic conditions and socioeconomic factors was a recurring theme. The Spanish-language focus group particularly emphasized how the rising cost of living causes stress that contributes to chronic health conditions. They noted that poverty and low socioeconomic status in the community significantly impact residents' ability to manage their health conditions effectively. Focus group participants also discussed how limited health literacy affects community members' ability to understand and manage their chronic conditions.

To address these challenges, participants suggested implementing more targeted health education for younger people and encouraging young locals to return to the area after medical training. They also recommended strengthening existing community collaborations to better support those managing chronic conditions.

For a more detailed description of focus group findings, see **Appendix 5**.

PRIORITY NEED: MENTAL HEALTH/SUBSTANCE USE

Context and National Perspective

The definition of behavioral health often describes conditions related to both mental health and substance use.[38] Mental health is defined as an emotional, psychological, and social state of well-being. Mental health impacts every stage of life and affects how one is able to handle their relationships, daily stressors, and health behaviors.[39] After evaluating data from a variety of sources including surveys and focus groups conducted throughout the assessment process, the Steering Committee identified behavioral mental health, including substance use, to be an area of urgent need within Duplin County.

Mental illnesses are common in the United States: in 2021, an estimated 57.8 million U.S. adults – nearly one in five – were living with a mental illness.[40] There is risk for developing a mental illness across the lifespan, with over one in five children and adults in the U.S. reported to have a mental illness, and nearly one in twenty-five adults currently coping with a serious mental illness (SMI) such as major depression, schizophrenia or bipolar disorder. [41]

Mental illness can occur due to multiple different factors, such as genetics, drug and/or alcohol usage, isolation, adverse childhood experiences, and chronic health conditions. Additionally, mental illness can act like other chronic health conditions, in that it can worsen or improve depending on the environment. Mental health services have evolved in the past five years, especially during the COVID-19 pandemic. However, accessing mental health care services can be challenging. According to the National Institute of Mental Health, less than half (47.2%) of adults with a common mental illness received any mental health services in 2021. Those who had an SMI were more likely (65.4%) to have received mental health services that same year.[42] While access to telehealth mental health services has increased, those living in rural areas may still find it difficult to access care. This is a particular concern among those who are low-income or experiencing homelessness, two groups at high risk for developing an acute or chronic mental health condition. As of 2023, over seven million people in the U.S. who reported having a mental illness lived in a rural area.[43]

Mental illness is a prevalent concern in North Carolina, with nearly 1.5 million adults reported to have a mental health condition in 2023. Additionally, that same year, 1 in 7 individuals who were identified as homeless also were living with an SMI. Access to mental health care in North Carolina is changing, however it is still unavailable to many. Specifically, over 452,000 individuals did not seek care in 2023, with 44.8% citing cost as the main reason. Additionally, those in live in North Carolina are seven times more likely to

[38] Source: American Medical Association (2022). *What is behavioral health?* Retrieved September 13th, 2023, from https://www.ama-assn.org/delivering-care/public-health/what-behavioral-health.
[39]Source: CDC. (2024). About mental health. Retrieved October 1, 2024, from: https://www.cdc.gov/mentalhealth/learn/index.htm
[40] Source: National Institute of Mental Health (2023). *Mental Illness*. Retrieved September 13th, 2023, from https://www.nimh.nih.gov/health/statistics/mental-illness.
[41] Source: CDC. (2024). Mental health. Retrieved October 1, 2024, from https://www.cdc.gov/mentalhealth/learn/index.htm
[42] Source: National Institute of Mental Health. (2023). Mental Illness. Retrieved October 1, 2024, from https://www.nimh.nih.gov/health/statistics/mental-illness
[43] RHI Hub. (2023). Rural mental health. Retrieved October 1, 2024 from: https://www.ruralhealthinfo.org/topics/mental-health

be pushed out of network of their behavioral health providers, than a primary care provider, furthering cost as a cause for stopping treatment. [44]

Substance use disorders (SUDs) are one of the fastest rising categories of behavioral health disorders. According to the American Psychiatric Association, SUDs are a complex condition in which there is uncontrolled use of a substance (such as alcohol or drugs), despite harmful consequences.[45] SUDs often occur in conjunction with other mental illness. In 2023, 16 million (46.9%) young adults aged 18-25 reported having either a SUD or Acute Mental Illness (AMI) in the past year. In that same year, 17.1% (48.5 million) of all U.S. adults were reported as having an SUD.[46] These trends have been increasing in recent years. According to the National Center for Drug Abuse Statistics, in 2018 (3.7%) of all adults aged 18 and older (9.2 million) had both an AMI and at least one SUD.[47] By 2021, this had increased to 13.5% of U.S. adults, with the highest incidence among Multiracial adults.

There are multiple common forms of SUD, such as alcohol use, cocaine use, cannabis use, opioid use, and methamphetamine use disorders. An individual living with one SUD can also be coping with another at the same time, such as co-occurring use of alcohol and cannabis.[48] Treatment SUDs generally cannot follow a cookie-cutter approach, as each person receiving treatment will have different withdrawal and coping needs. Treatment is typically provided through various therapies, inpatient admissions, and forms of medication-assisted treatment such as methadone. Opioid overdoses are one of the most common types of deaths related to SUDs, and can be preventable and treatable if caught in time. Multiple efforts have been coordinated within the past two years to incorporate the storage of overdose reversing medications such as Naloxone in public facilities such as federal facilities, and over the counter, as was approved in 2023 by the FDA. This is critical, as in 2022, the number of opioid overdoses nationwide surpassed 81,051 – a 63% increase in overdoses since 2019.[49]

Substance use disorders have also had an impact in North Carolina. Over 36,000 overdose deaths occurred in the state between 2000 and 2022 – an average of more than 1,600 deaths each year.[50] Multiple programs have been developed in North Carolina to combat substance use disorder, notably surrounding opioid usage, which has led to an increase in access and usage of Medication Assisted Treatment (MAT) and methadone clinics within the state. Additionally, North Carolina launched the Opioid and Substance use action plan, which involved the development of multiple interventions, dashboards, and educational

[44] Source: NAMI (2023). *Mental Health in North Carolina.* Retrieved October 10, 2024, from https://www.nami.org/wp-content/uploads/2023/07/NorthCarolinaStateFactSheet.pdf

[45] Source: American Psychiatric Association (2024). *Addiction and Substance Use Disorders*. Retrieved January 16, 2024, from https://www.psychiatry.org/patients-families/addiction-substance-use-disorders.

[46] Source: SAMHSA (2024). *Highlights from the 2023 National Survey on Drug Use and Health*. Retrieved October 10th, 2024 from https://www.samhsa.gov/data/sites/default/files/reports/rpt42731/2022-nsduh-main-highlights.pdf.

[47] Source: National Center for Drug Abuse Statistics (2023). *Drug Abuse Statistics*. Retrieved January 8th, 2024, from https://drugabusestatistics.org/.

[48] Source: Cleveland Clinic. (2024). Substance Use Disorder (SUD). Retrieved October 1, 2024, from https://my.clevelandclinic.org/health/diseases/16652-drug-addiction-substance-use-disorder-sud

[49] Source: KFF. (2023). Saunders, H., Rudowitz, R. (2023). Will the availability of Over-The-Counter Narcan increase access? Retrieved October 1, 2024 from https://www.kff.org/policy-watch/will-availability-of-over-the-counter-narcan-increase-access/

[50] Source: NCDHHS. (2022). *Overdose epidemic.* Retrieved October 3, 2024 from: https://www.ncdhhs.gov/about/department-initiatives/overdose-epidemic#:~:text=Combating%20North%20Carolina's%20Opioid%20Crisis,is%20devastating%20families%20and%20communities.

materials to help support counties and organizations with reducing not only overdose deaths, but the incidence of SUDs as well.

The pandemic impacted the public's mental health and well-being in many ways. Community members continue to grapple with the pandemic-related effects of isolation and loneliness, financial instability, long-term health impacts and grief. The pandemic worsened disparities, potentially increasing people's vulnerability to developing substance use disorders. In addition, both drug overdose and suicide deaths have sharply increased over the past several years – often disproportionately impacting younger people and communities of color.[51]

Access to services that address mental health and substance use is an ongoing challenge across the U.S. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), in 2021, less than half (47.2%) of U.S. adults who reported having a mental illness utilized any type of mental health services, including inpatient, outpatient or telehealth services or prescription drug therapies. Demand for mental health services, particularly anxiety and depression treatment, remains high across the nation, while the prevalence of stress- and trauma-related disorders, along with substance use disorders, continues to grow. The American Psychological Association reports that the percentage of psychologists in the U.S. seeing more patients than they did before the pandemic increased from 15% in 2020 to 38% in 2021 to 43% in 2022. Further, 60% of psychologists reported having no openings for new patients and 38% maintained a waitlist for their services.

Secondary Data Findings

Secondary data collected through the CHNA process identified several behavioral health challenges for residents of Duplin County. While Duplin County has a lower crude mortality rate for deaths of despair (47.1 per 100,000 population) compared to state (58.7) and national (55.9) averages, residents report a higher average number of poor mental health days per month (4.9) than the state average (4.6). The suicide rate (12.1 per 100,000 population) is also lower than both state (14.0) and national (14.5) averages. Notably, the rate of mental health providers (34.9 per 100,000 population) is significantly lower than both state (155.7) and national (178.7) averages, suggesting substantial barriers to accessing mental healthcare.

Table 22: Mental Health Indicators

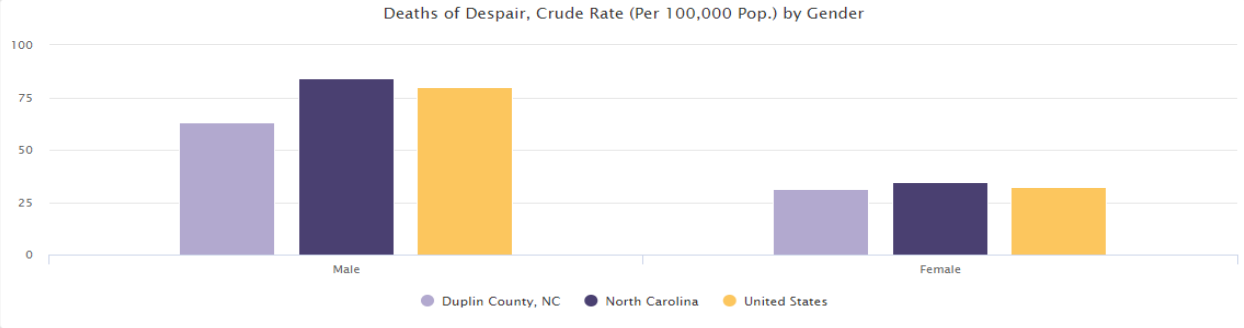
Indicator	Duplin County	North Carolina	United States
Deaths of Despair (Crude Rate per 100,000 Population)	47.1	58.7	55.9
Suicide (Crude Rate per 100,000 Population)	12.1	14.0	14.5

[51] Source: Panchal, N., Saunders H., Rudowitz, R. and Cox, C. (2023). The Implications of COVID-19 for Mental Health and Substance Use. *Kaiser Family Foundation*. Retrieved from https://www.kff.org/mental-health/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use.

Average Number of Poor Mental Health Days (per Month)	4.9	4.6	4.9
Mental Health Providers, (Rate per 100,000 Population)	34.9	155.7	178.7

There was also a gender disparity for deaths of despair, in which the mortality rate was significantly higher among men compared to women. The figure below highlights this gender disparity.

Figure 41: Crude Rate of Deaths of Despair by Gender



In terms of substance use disorder indicators, Duplin County presents a mixed picture. The percentage of adults reporting excessive drinking (15%) is lower than state and national averages (both 18%). However, the rate of alcohol-involved crash deaths (9.9 per 100,000 population) is significantly higher than both state (2.9) and national (2.3) averages, suggesting severe consequences from alcohol misuse in the community. Furthermore, the rate of substance abuse providers (14.4 per 100,000 population) is notably lower than state (25.0) and national (27.9) averages, and the rate of buprenorphine providers (6.8 per 100,000 population) is also less than half the state average of 15.2.

Table 23: Substance Use Indicators

Indicator	Duplin County	North Carolina	United States
Percentage of Adults Reporting Excessive Drinking	15%	18%	18%
Opioid Use Disorder Emergency Department Utilization (Rate per 100,000 Beneficiaries)	33	43	41
Alcohol-Involved Crash Deaths, Annual (Rate per 100,000 Population)	9.9	2.9	2.3
Opioid Overdose Death Rate (Crude Rate per 100,000 Population)	15.3	25.1	N/A
Substance Abuse Providers (Rate per 100,000 Population)	14.4	25.0	27.9
Buprenorphine Providers (Rate per 100,000 Population)	6.8	15.2	15.5

The county's rate of opioid use disorder emergency department utilization (33 per 100,000 beneficiaries) is lower than state (43) and national (41) averages. The opioid overdose death rate in Duplin County (15.3 per 100,000 population) is notably lower than the state rate (25.1). However, these statistics should be considered alongside the limited availability of treatment providers noted above.

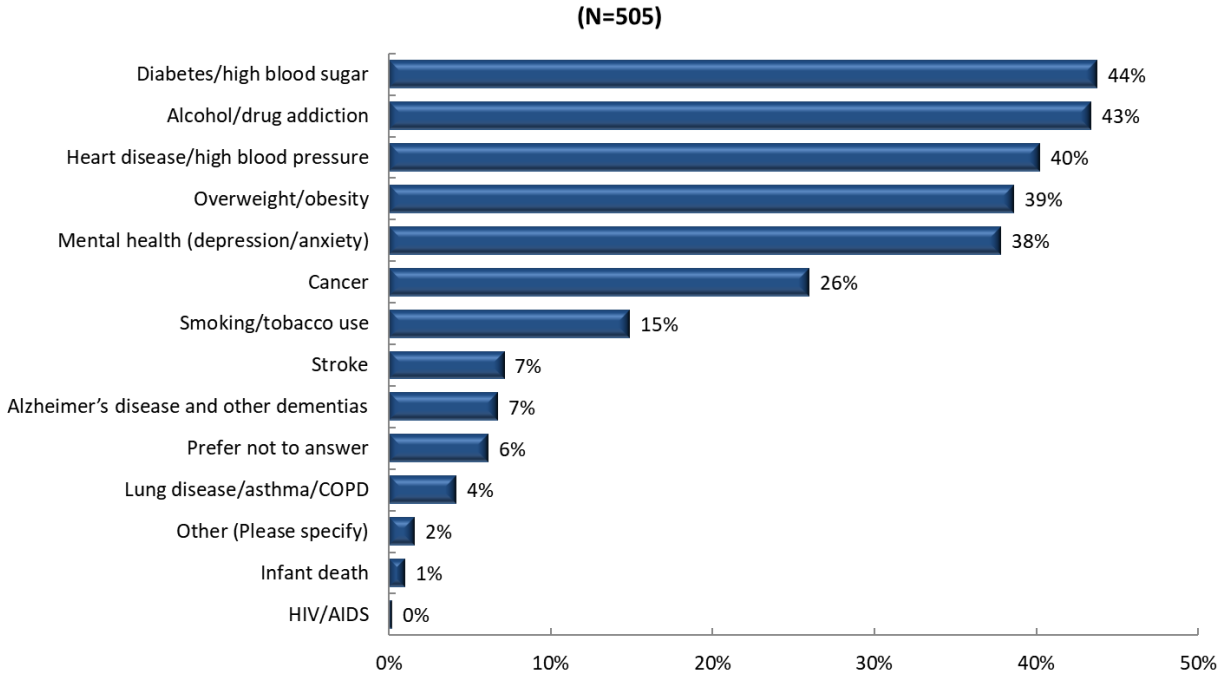
These data suggest that, while some substance use indicators show better performance than state averages, significant challenges exist in accessing behavioral healthcare services in the community. The combination of limited provider availability and higher-than-average poor mental health days indicates potential unmet mental health needs in the population.

For additional detail on secondary data findings, see **Appendix 3**.

Primary Data Findings – Community Member Web Survey

Duplin County residents highlighted different aspects of mental health and substance use as areas of community concern on the web-based survey. When asked to identify the most important community health needs, 43% of these respondents identified alcohol/drug addiction and 38% of respondents identified mental health (depression/anxiety). These were the second and fifth most frequent of all community health needs identified, respectively.

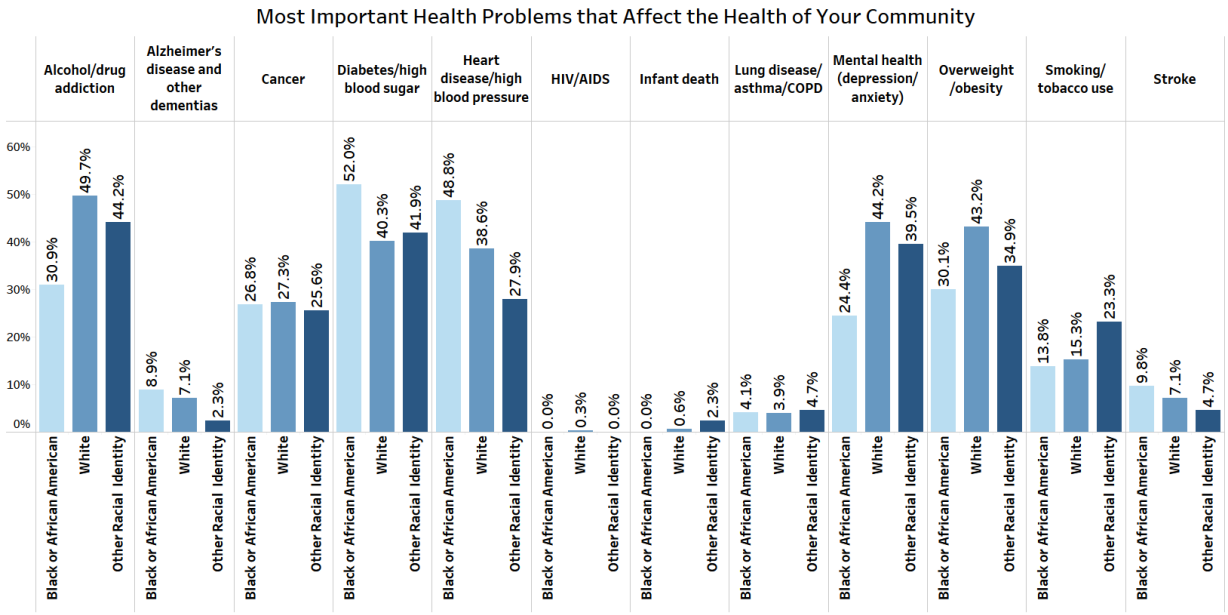
Figure 42: What are the three most important health problems that affect the health of your community? Please select up to three.



However, when these data were examined by the race of community member respondents, differences emerged. Those who identified as White (58%) selected alcohol/drug addiction as an important community health need more frequently than those who identified as Black or African American (35%)

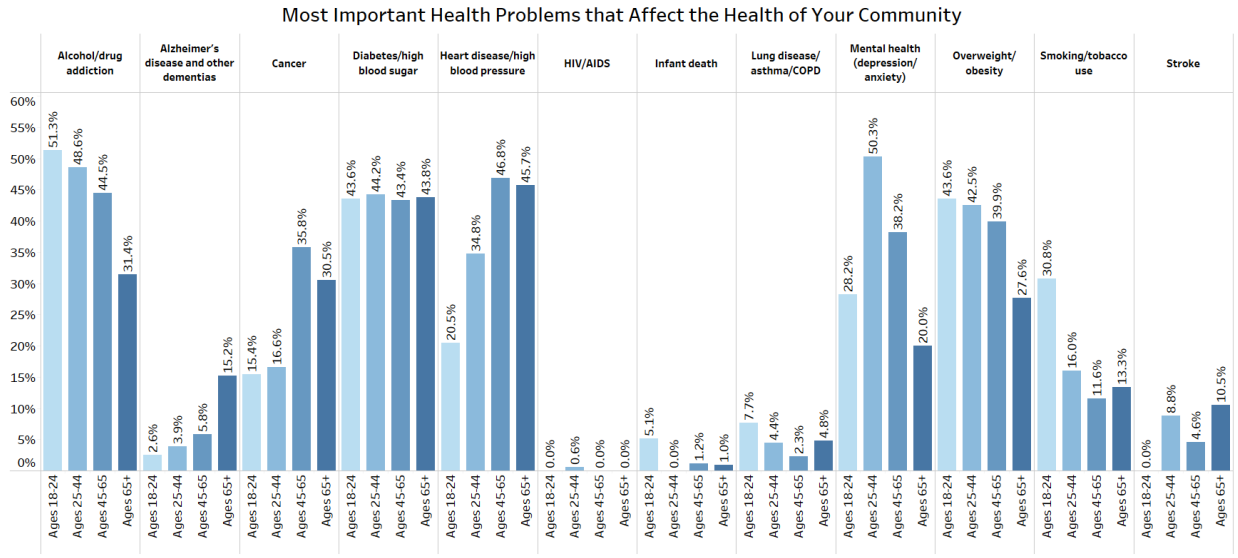
and all other races (36%), as displayed in the figure below. Similarly, a higher percentage of respondents identifying as White selected mental health as a top community health need (44%), while a lower percentage of those identifying as Black or African Americans and other races selected this as a top need (Black/African American: 24%; Other racial identity: 40%).

Figure 43: What are the three most important health problems that affect the health of your community? Please select up to three. (by race)



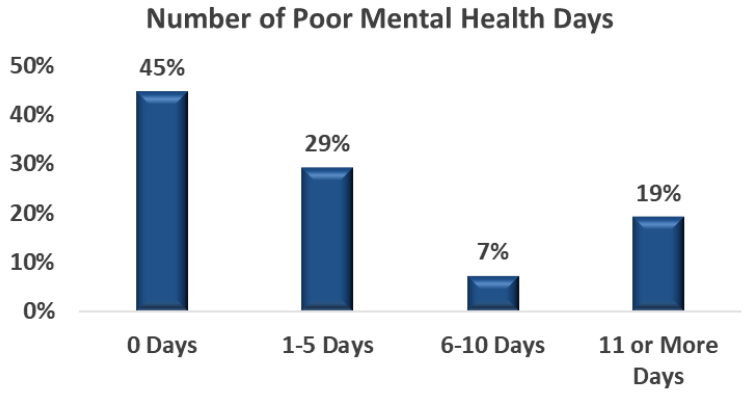
Similarly, there were differences in responses across age groups. Younger people identified alcohol/drug addiction and mental health as more significant than older respondents. These perceived differences by demographic characteristics may be important in planning efforts to address behavioral health in the community.

Figure 44: What are the three most important health problems that affect the health of your community? Please select up to three. (by age)



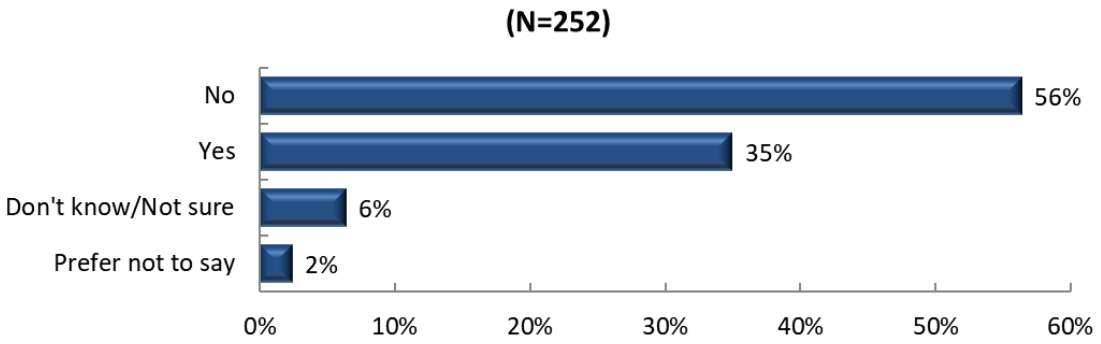
When respondents were asked about their own mental health, more than half of respondents indicated they had one or more poor mental health days in the past 30 days, with an average of 5 poor mental health days among these respondents.

Figure 45: Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?



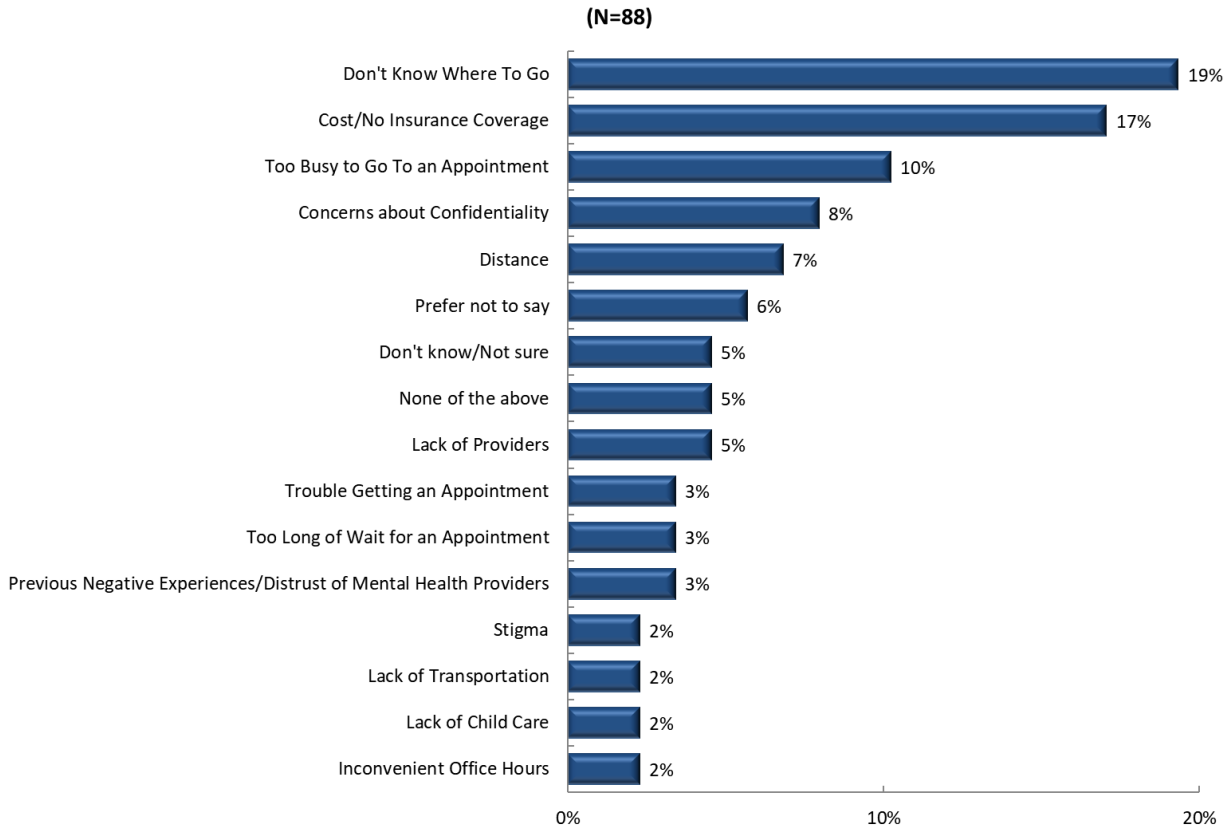
Community member respondents who indicated they experienced at least one poor mental health day a month were asked if there was a time in the past 12 months when they needed mental healthcare or counseling but did not get it at that time. Nearly 35% of these respondents answered yes.

Figure 46: Was there a time in the past 12 months when you needed mental healthcare or counseling, but did not get it at that time?



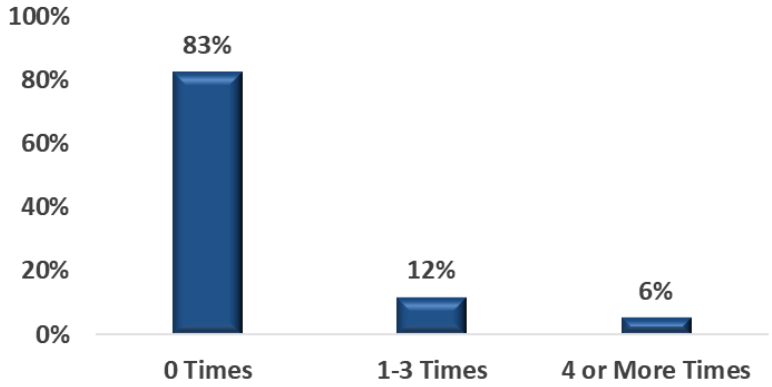
The top responses for why this group did not receive care included not knowing where to go (19%), cost/no insurance (17%), and being too busy to go to an appointment (10%), suggesting accessibility and resource awareness issues exist in the community impacting access to needed mental healthcare.

Figure 47: What was the main reason you did not get mental health care or counseling?



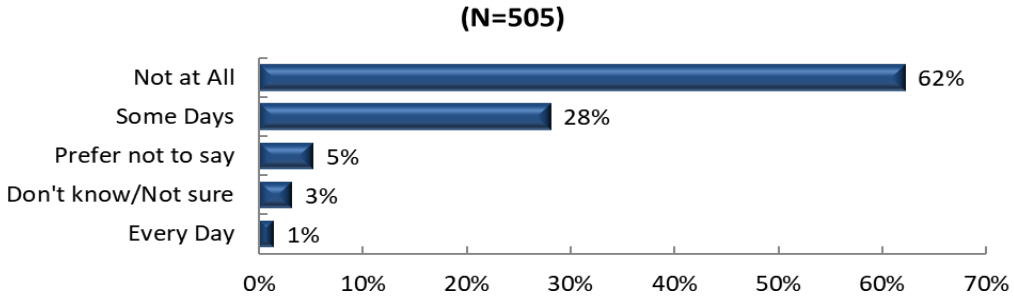
When respondents were asked about their own substance use, one-fifth of respondents reported drinking enough to meet the definition of "binge drinking" at least once in the past 30 days, with an average of one occasion of binge drinking in the past month among all respondents.

Figure 48: Considering all types of alcoholic beverages, how many times during the past 30 days did you have 4 (females)/ 5 (males) or more drinks on an occasion?



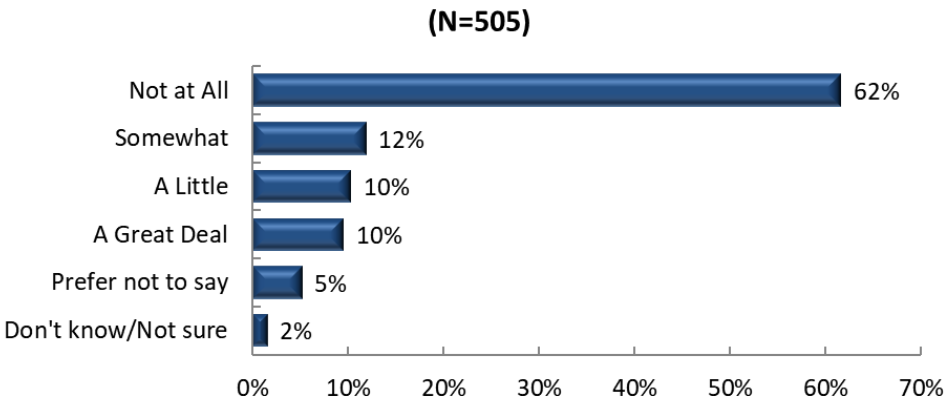
Nearly two-thirds of respondents reported no consumption of any alcohol, with 28% of those indicating that they do consume alcohol reporting a frequency of "some days".

Figure 49: How often do you consume any kind of alcohol product, including beer, wine or hard liquor?



Over 90% of community member respondents reported no personal or household misuse of prescription drugs. When asked the degree to which personal or someone else's substance abuse negatively impacted their life, the second highest response after "not at all" (62%) was "somewhat" (12%), followed by "a little" and "a great deal" (10% each).

Figure 50: To what degree has your life been negatively affected by your own or someone else's substance abuse issues, including alcohol, prescription, and other drugs?



For additional detail on survey findings, see **Appendix 5**.

Primary Data Findings – Focus Groups

Similar to the secondary data findings described above, mental health and substance use emerged as significant concerns during focus group discussions. Participants described high levels of stress in the community that contribute to mental health issues. They noted a critical lack of behavioral health providers in the area, making it difficult for residents to access needed mental health care. The Spanish-language focus group particularly emphasized how economic stressors impact mental health in their community. They described how the rising cost of living creates significant stress and anxiety, especially among those already struggling financially. This group noted that these financial pressures particularly affect those in their community working in agriculture and other lower-wage positions.

A lack of awareness about existing mental health resources was consistently identified across focus groups. Participants noted that, while some mental health resources do exist in the community, many residents don't know how to access them or may face barriers such as language or transportation in utilizing these services. The Spanish-language focus group specifically highlighted how language barriers can make it especially challenging for Hispanic/Latino residents to access mental health support.

To address these challenges, participants suggested creating a centralized online resource center to help community members learn about and access available mental health services. They also emphasized the need for more community education about mental health and substance use resources, with the Spanish-language focus group specifically recommending that this information be provided in multiple languages and distributed through trusted community locations such as churches and other gathering places.

For a more detailed description of focus group findings, see **Appendix 5**.

CHAPTER 4 | HEALTH RESOURCE INVENTORY

NCLHDA requirements for local health departments and IRS requirements for nonprofit hospitals require the CHNA report to include a description of the resources available in a county to address the significant health needs identified in the assessment. This section includes information about local organizations in Duplin County that provide resources to address general community health needs, as well as the county's 2025 priority need areas: Access to Care, Chronic Disease Prevention, and Mental Health/Substance Use.

Category	Organization Name
County Resource Directories	• NC 211, NCCARE360 • Duplin County Government • Duplin County Health Department • Duplin County Public Safety/Emergency Services • Duplin County Sheriff
Healthcare Facilities	**Hospitals & Clinics** • ECU Health Duplin Hospital • ECU Health Physicians • Goshen Medical FQHC • Duplin Medical Association • Med First Primary and Urgent Care **Behavioral Health** • Changing Paths of NC II • New Dimension Group • Wilmington Treatment Center • Focused Addiction Recovery
Hospice & Home-based Health Services	• 3HC • CenterWell Home Health • ECU Health Home Health and Hospice • Gentiva (Hospice) • Pruitt (Hospice) • Wellcare Home Health
Other Healthcare Services	• Tar Heel Human Services (Behavioral Health) • Trillium NC/Eastpointe Human Services (Behavioral Health)
Community Services	• American Red Cross • AMEXCAN • Blue Cross Blue Shield • Charity Rebuild Center

- Community Connection
- District Attorney/Juvenile Crime Prevention
- Duplin County Cooperative Extension
- Duplin County Library
- Duplin County Senior Services
- Duplin County Social Services
- Duplin County Veterans Services
- Duplin Partnership for Children
- East Carolina Human Services Agency Inc.
- Four County Electric
- Housing Authority
- Mediation Center of Eastern Carolina – Duplin County Teen Court
- Mt. Calvary Center for Leadership Development
- NC FIELD Inc.
- NC MedAssist
- Rural Empowerment – REACH
- Safe Haven of Pender Inc.
- ShackleFree Community Outreach Agency
- Telamon
- The Cornerstone CDC
- Vocational Rehab
- Warsaw Mayor and KEMBA Center
- Work First Employment Program

Education

- Duplin County Schools
- James Sprunt Community College

Transportation

- Duplin County Transportation

Faith-Based

- Abba Family Worship & Deliverance Center
- Duplin Christian Outreach Ministries (DCOM)
- Equipping the Saints Worship and Training Center (Unsheltered Access)
- Faith Independent Baptist Church
- Spiritual Destiny
- Wallace Presbyterian Church

Fitness & Nutrition

- Faison Pickle Shed Community Garden
- Elite Fitness – Wallace & Beulaville
- Feast Down East

	• Food Bank CENC • Special Needs Baseball of Duplin County • Wallace Parks and Recreation
Major Employers	• Bay Valley/Treehouse Foods • House of Raeford • Smithfield • DC Schools • Hospital • County Government
Priority Need: Access to Healthcare	• Duplin County Health Department • ECU Health Duplin Hospital • Goshen Medical FQHC • Duplin Medical Association • In partnership with Duplin Coalition for Health: Duplin County Schools, Duplin County Transportation, Duplin County Library, Duplin County Senior Services, Duplin Partnership for Children, NC BCBS, NCField, and Duplin Christian Outreach Ministries
Priority Need: Chronic Disease Prevention	• Duplin County Health Department • ECU Health Duplin Hospital • Goshen Medical FQHC • Duplin Medical Association • In partnership with Duplin Coalition for Health: NC Cooperative Extension, FoodBank ENC, Duplin County DSS, ShackleFree Inc., American Red Cross
Priority Need: Mental Health/Substance Use	• Duplin County Health Department • ECU Health Duplin Hospital • In partnership with Duplin Coalition for Health: Duplin Opioid Settlement Team, Trillium, James Sprunt Community College, Duplin County 4-H, Duplin County Schools, Mediation Center of Eastern Carolina, Vocational Rehabilitation, and Cornerstone CDC, and Duplin Veterans

CHAPTER 5 | NEXT STEPS

The findings from the Community Health Needs Assessment (CHNA) are instrumental in developing effective strategies to address the identified priority needs. The final steps in the CHNA process involve creating community-based health improvement strategies and making both the CHNA and Implementation Strategies publicly available.

Hospital leaders at ECU Health Duplin will utilize the CHNA insights to formulate implementation strategies. They will collaborate with community partners to ensure that the priority needs are addressed efficiently and effectively. These strategies will include measurable objectives to track progress.

The final CHNA report and Implementation Strategies are available on our public website at https://www.ecuhealth.org/about-us/community/health-needs-assessment/. For further questions or more information, please contact Eve Stroud, Coordinator, Community Health Improvement at ECU Health Duplin Hospital, at eve.stroud@ecuhealth.org.

APPENDIX 1 | STATE OF THE COUNTY HEALTH REPORT

Results-Based Accountability Framework

To meet North Carolina accreditation requirements, LHDs are required to track progress on their implementation plans by publishing an annual State of the County Health Report (SOTCH). The SOTCH is guided by the Clear Impact Results-Based Accountability (RBA) Framework™ and demonstrates that the LHD is tracking priority issues identified in the community health (needs) assessment process, identifying emerging issues, and implementing any relevant new initiatives to address community concerns.[52]

RBA provides a disciplined way of thinking about – and acting upon – complex social issues, with the goal of improving the lives of all members of the community. The framework is organized to recognize two distinct types of accountability: population and performance. Population accountability refers to the well-being of entire populations, and RBA recognizes that it is challenging, if not impossible, to hold individual organizations accountable for solving systemic problems. Conversely, performance accountability recognizes that individual organizations are accountable for the outcomes and impact of their programs, policies and practices as they relate to their client populations.

In the CHIP process, RBA asks three key questions: how much did we do, how well did we do it, and is anyone better off? To more effectively answer these questions, and develop measurable strategies to address community health concerns, North Carolina LHDs use a software called Clear Impact Scorecard to develop their SOTCH and track progress against their goals. Clear Impact Scorecard is performance management and reporting software used by non-profit and government agencies to efficiently and effectively explain the impact of their work. ECU Health Hospitals also adopted the RBA framework, leveraging the Clear Impact Scorecard to document and track their improvements efforts. The scorecard mirrors RBA and links results with indicators and programs with performance measures. Duplin County's most recent SOTCH can be found here:
https://embed.clearimpact.com/Scorecard/Embed/76674

[52] Clear Impact (2022). *Results-Based Accountability™: A Framework to Help Communities Get From Talk to Action.* Retrieved from: https://clearimpact.com/wp-content/uploads/2022/02/Clear-Impact-Results-Based-Accountability-Brochure-2022.pdf. Note: Clear Impact has exclusive and worldwide rights to use Results-Based Accountability™ (RBA), including all of proprietary and intellectual property rights represented by RBA. RBA intellectual property is free for use (with attribution) by government and nonprofit or voluntary sector organizations, as well as small consulting firms representing the interests of these organizations.

APPENDIX 2 | SECONDARY DATA METHODOLOGY AND SOURCES

Many individual secondary data measures were analyzed as part of the CHNA process. These data provide detailed insight into the health status and health-related behavior of residents in the county. These secondary data are based on statistics of actual occurrences, such as the incidence of certain diseases, as well as statistics related to SDOH.

Methodology

All individual secondary data measures were grouped into six categories and 20 corresponding focus areas based on "common themes." In order to draw conclusions about the secondary data for Duplin County, its performance on each data measure was compared to targets/benchmarks. If Duplin County's performance was more than five percent worse than the comparative benchmark, it was concluded that improvements could be needed to better the health of the community. Conversely, if an area performed more than five percent better than the benchmark, it was concluded that while a need is still present, the significance of that need relative to others is likely less acute. The most recently available data were compared to these targets/benchmarks in the following order (as applicable):

- For all available data sources, state and national averages were compared.

The following methodology was used to assign a priority level to each individual secondary data measure:

- If the data were more than 5 percent worse = High need
- If the data were within or equal to 5 percent (better or worse) = Medium need
- If the data were more than 5 percent better = Low need

These measures are noted with an asterisk.

Additionally, data measures were also viewed with regard to performance over time and whether the measure has improved or worsened compared to the prior CHNA timeframe.

Data Sources

The following tables are organized by each of the twenty focus areas and contain information related to the secondary data measures analyzed including a description of each measure, the data source, and most recent data time periods.

Table 24: Access to Care

Measure	Description	Data Source	Most Recent Data Year(s)
Primary Care Providers (per 100,000 population)	Number of providers with a CMS National Provider Identifier (NPI) that specialize in primary care. Primary health providers include practicing physicians specializing in general practice medicine, family medicine, internal medicine, and pediatrics.	Centers for Medicare and Medicaid Services (CMS) – National Plan and Provider Enumeration System (NPPES). Data accessed via the North Carolina Data Portal, June 2024.	2024
Mental Health Providers (per 100,000 population)	Number of providers with a CMS National Provider Identifier (NPI) that specialize in mental health. Mental health providers include licensed clinical social workers and other credentialed professionals specializing in psychiatry, psychology, counseling, or child, adolescent, or adult mental health.	CMS –NPPES. Data accessed via the North Carolina Data Portal, June 2024.	2024
Addiction/Substance Abuse Providers (per 100,000 population)	Number of providers who specialize in addiction or substance abuse treatment, rehabilitation, addiction medicine, or providing methadone. The providers include Doctors of Medicine (MDs), Doctors of Osteopathic Medicine (DOs), and other credentialed professionals with a Center for Medicare and Medicaid Services and a valid National Provider Identifier (NPI).	CMS –NPPES. Data accessed via the North Carolina Data Portal, June 2024.	2024
Buprenorphine Providers (per 100,000 population)	Number of providers authorized to treat opioid dependency with buprenorphine. Buprenorphine is the first medication to treat opioid dependency that is permitted to be prescribed or dispensed in physician offices, significantly increasing treatment access. Qualified physicians are required to acquire and maintain certifications to legally dispense or prescribe opioid dependency medications.	US Department of Health and Human Services (DHHS), Substance Abuse and Mental Health Services Administration. Data accessed via the North Carolina Data Portal, June 2024.	2023

Measure	Description	Data Source	Most Recent Data Year(s)
Dental Health Providers (per 100,000)	Number of oral health providers with a CMS National Provider Identifier (NPI). Providers included are those who list "dentist", "general practice dentist", or "pediatric dentistry" as their primary practice classification, regardless of sub-specialty.	CMS – NPPES. Data accessed via the North Carolina Data Portal, June 2024.	2024
Health Professional Shortage Areas - Dental Care	Percentage of the population that is living in a geographic area designated as a "Health Professional Shortage Area" (HSPA), defined as having a shortage of dental health professionals. This indicator is relevant because a shortage of health professionals contributes to access and health status issues.	U.S. Census Bureau, American Community Survey (ACS). Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Federally Qualified Health Centers (FQHCs)	Number of Federally Qualified Health Centers (FQHCs) in the community. This indicator is relevant because FQHCs are community assets that provide health care to vulnerable populations; they receive extra funding from the federal government to promote access to ambulatory care in areas designated as medically underserved.	U.S. DHHS, CMS, Provider of Services File. Data accessed via the North Carolina Data Portal, June 2024.	2023
Population Receiving Medicaid	Percentage of the population with insurance enrolled in Medicaid (or other means-tested public health insurance). This indicator is relevant because it assesses vulnerable populations which are more likely to have multiple health access, health status, and social support needs; when combined with poverty data, providers can use this measure to identify gaps in eligibility and enrollment.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Uninsured Population (SAHIE)	Percentage of adults under age 65 without health insurance coverage. This indicator is relevant because lack of health insurance is a primary barrier to healthcare access including regular primary care, specialty care, and other health services that contribute to poor health status. The lack of health insurance is considered a *key driver* of health status.	U.S. Census Bureau, Small Area Health Insurance Estimates (SAHIE). Data accessed via the North Carolina Data Portal, June 2024.	2022

Table 25: Built Environment

Measure	Description	Data Source	Most Recent Data Year(s)
Broadband Access (Access to DL Speeds >= 25MBPS and UL Speeds >= 3 MBPS)	Percentage of population with access to high-speed internet. Data are based on the reported service area of providers offering download speeds of 25 MBPS or more and upload speeds of 3 MBPS or more. These data represent both wireline and fixed/terrestrial wireless internet providers. Cellular internet providers are not included.	Federal Communications Commission (FCC) FABRIC Data. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2023
Broadband Access (Access to DL Speeds >= 100MBPS and UL Speeds >= 20 MBPS)	Percentage of population with access to high-speed internet. Data are based on the reported service area of providers offering download speeds of 100 MBPS or more and upload speeds of 20 MBPS or more. These data represent both wireline and fixed/terrestrial wireless internet providers. Cellular internet providers are not included.	FCC FABRIC Data. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2023
Households with No Computer	Percentage of households who don't own or use any types of computers, including desktop or laptop, smartphone, tablet, or other portable wireless computer, and some other type of computer, based on the 2018-2022 American Community Survey estimates.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Households with No or Slow Internet	Percentage of households who either use dial-up as their only way of internet connection or have internet access but don't pay for the service, or have no internet access in their home, based on the 2018-2022 American Community Survey estimates.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Liquor Stores	Number of liquor stores per 100,000 population provides a measure of environmental influences on dietary behaviors and the accessibility of healthy foods. Note this data excludes establishments preparing and serving alcohol for consumption on premises (including bars and restaurants) or which sell alcohol as a secondary retail product (including gas stations and grocery stores).	U.S. Census Bureau, County Business Patterns. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2022

Measure	Description	Data Source	Most Recent Data Year(s)
Adverse Childhood Experiences (ACEs)	Percentage of children in North Carolina (total) with two or more ACEs. ACEs are potentially traumatic events that occur in childhood (0-17 years), including experiencing violence, abuse, or neglect; witnessing violence in the home or community; and having a family member attempt or die by suicide. Also included are aspects of the child's environment that can undermine their sense of safety, stability, and bonding, such as substance abuse problems, mental health problems, instability due to parental separation, and instability due to household members being in jail or prison. Other traumatic experiences that impact health and well-being may include not having enough food to eat, experiencing homelessness or unstable housing, or experiencing discrimination. ACEs can have lasting effects on health and well-being in childhood and life opportunities well into adulthood, for example, education and job potential. These experiences can increase the risks of injury, sexually transmitted infections, teen pregnancy, suicide, and a range of chronic diseases including cancer, diabetes, and heart disease.	Clear Impact Healthy North Carolina (HNC) 2030 Scorecard, 2021-2024. Data accessed June 2024.	2022

Table 26: Diet and Exercise

Measure	Description	Data Source	Most Recent Data Year(s)
Physical inactivity (percent of adults that report no leisure time physical activity)	Percentage of adults ages 20 and over reporting no leisure-time physical activity in the past month. Examples of physical activities include running, calisthenics, golf, gardening, or walking for exercise. The method for calculating Physical Inactivity changed. Data for Physical Inactivity are provided by the CDC Interactive Diabetes Atlas which	Behavioral Risk Factor Surveillance System. Data accessed via Robert Wood Johnson Foundation & University of Wisconsin Population Health Institute County Health Rankings & Roadmaps, June 2024.	2021

Measure	Description	Data Source	Most Recent Data Year(s)
	combines 3 years of survey data to provide county-level estimates. In 2011, BRFSS changed their methodology to include cell phone and landline participants. Previously only landlines were used to collect data. Physical Inactivity is created using statistical modeling.		
Community Design - Walkability Index Score	The National Walkability Index (2021) is a nationwide index score developed by the Environmental Protection Agency (EPA) that ranks block groups according to their relative walkability using selected variables on density, diversity of land uses, and proximity to transit from the Smart Location Database. The block groups are assigned their final National Walkability Index scores on a scale of 1 to 20 where the higher a score, the more walkable the community is.	EPA – Smart Location Database. Data accessed via the North Carolina Data Portal, June 2024.	2021
Access to Exercise Opportunities	Percentage of individuals in the county who live reasonably close to a location for physical activity. Locations for physical activity are defined as parks or recreational facilities. The numerator is the 2020 total population living in census blocks with adequate access to at least one location for physical activity (adequate access is defined as census blocks where the border is a half-mile or less from a park, 1 mile or less from a recreational facility in an urban area, or 3 miles or less from a recreational facility in a rural area) and the denominator is the 2020 resident county population. This indicator is used in the 2024 County Health Rankings.	ArcGIS Business Analyst and Living Atlas of the World, YMCA & U.S. Census Tigerline Files. Data accessed via the North Carolina Data Portal, June 2024.	2023
Recreation and Fitness Facility Access (per 100,000 population)	Number of establishments primarily engaged in operating fitness and recreational sports facilities featuring exercise and other active physical fitness conditioning or recreational sports activities, such as swimming, skating, or racquet sports. Access to recreation and fitness facilities	U.S. Census Bureau, County Business Patterns. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2022

Measure	Description	Data Source	Most Recent Data Year(s)
	encourages physical activity and other healthy behaviors.		
Sugar-Sweetened Beverage (SSB) Consumption Among Adults	Percentage of total adults reporting consumption of one or more SSBs per day.	Clear Impact. HNC2030 Scorecard, 2021-2024. Data accessed June 2024.	2022

Table 27: Education

Measure	Description	Data Source	Most Recent Data Year(s)
Population with Limited English Proficiency	Percentage of the population aged 5 and older who speak a language other than English at home and speak English less than "very well". This indicator is relevant because an inability to speak English well creates barriers to healthcare access, provider communications, and health literacy/education.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
High School Graduation Rate	Percentage of high school students who graduate within four years. The adjusted cohort graduation rate (ACGR) is a graduation metric that follows a "cohort" of first-time 9th graders in a particular school year, and adjusts this number by adding any students who transfer into the cohort after 9th grade and subtracting any students who transfer out, emigrate to another county, or pass away.	U.S. Department of Education, EDFacts. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2020-2021
No High School Diploma	Percentage of the population aged 25 and older without a high school diploma (or equivalency) or higher. This indicator is relevant because educational attainment is linked to positive health outcomes.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Student Math Proficiency (4th Grade)	Percentage of 4th grade students testing below the "proficient" level on the Math portion of state-specific standardized tests.	U.S. Department of Education, EDFacts. Additional data analysis by CARES. Data accessed via the North Carolina Data Portal, June 2024.	2020-2021
Student Reading Proficiency (4th Grade)	Percentage of 4th grade students testing below the "proficient" level on the English Language Arts portion of state-specific standardized tests.	US Department of Education, EDFacts. Additional data analysis by CARES. Data accessed	2020-2021

Measure	Description	Data Source	Most Recent Data Year(s)
		via the North Carolina Data Portal, June 2024.	
School Funding Adequacy	The average gap in dollars between actual and required spending per pupil among public school districts. Required spending is an estimate of dollars needed to achieve U.S. average test scores in each district.	School Finance Indicators Database. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2021
School Funding Adequacy – Spending per Pupil	Actual spending per pupil among public school districts.	School Finance Indicators Database. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2021

Table 28: Employment

Measure	Description	Data Source	Most Recent Data Year(s)
Unemployment Rate (percent of population age 16+ but unemployed)	Percentage of the civilian non-institutionalized population age 16 and older (non-seasonally adjusted) that is unemployed but seeking work. This indicator is relevant because unemployment creates financial instability and barriers to access including insurance coverage, health services, healthy food, and other necessities that contribute to poor health status.	U.S. Department of Labor, Bureau of Labor Statistics. Data accessed via the North Carolina Data Portal, June 2024.	2024
Average Annual Unemployment Rate, 2013-2023	Average yearly percentage across the given time period of the civilian non-institutionalized population age 16 and older (non-seasonally adjusted) that is unemployed but seeking work. This indicator is relevant because unemployment creates financial instability and barriers to access including insurance coverage, health services, healthy food, and other necessities that contribute to poor health status.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2024

Table 29: Environmental Quality

Measure	Description	Data Source	Most Recent Data Year(s)
Climate and Health – Flood Vulnerability	Estimated number of housing units within the special flood hazard area (SFHA) per county. The SFHAs have	Federal Emergency Management Agency (FEMA), National Flood	2011

Measure	Description	Data Source	Most Recent Data Year(s)
	1% annual chance of coastal or riverine flooding.	Hazard Layer. Data accessed via the North Carolina Data Portal, June 2024.	
Air and Water Quality – Drinking Water Safety	Number of drinking water violations recorded in a two-year period. Health-based violations include incidents where either the amount of contaminant exceeded the maximum contaminant level (MCL) safety standard, or where water was not treated properly. In cases where a water system serves multiple counties and has a violation, each county served by the system is given a violation.	EPA. Data accessed via the North Carolina Data Portal, June 2024.	2023

Table 30: Family, Community, and Social Support

Measure	Description	Data Source	Most Recent Data Year(s)
Childcare Cost Burden	Childcare costs for a median-income household with two children as a percentage of household income. Data are included as part of the 2024 County Health Rankings.	The Living Wage Calculator, Small Area Income and Poverty Estimates. Data accessed via the North Carolina Data Portal, June 2024.	2023
Young People Not in School and Not Working	Percentage of youth ages 16-19 who are not currently enrolled in school and who are not employed.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022

Table 31: Food Security

Measure	Description	Data Source	Most Recent Data Year(s)
Food Insecurity Rate	Estimated percentage of the population that experienced food insecurity at some point during the report year. Food insecurity is the household-level economic and social condition of limited or uncertain access to adequate food.	Feeding America. Data accessed via the North Carolina Data Portal, June 2024.	2021
Food Insecure Children	Estimated percentage of the population under age 18 that experienced food insecurity at some point during the report year. Food insecurity is the household-level economic and social condition of	Feeding America. Data accessed via the North Carolina Data Portal, June 2024.	2021

Measure	Description	Data Source	Most Recent Data Year(s)
	limited or uncertain access to adequate food.		
Low-Income and Low Food Access	Percentage of the low-income population with low food access. Low food access is defined as living more than 1 mile (urban) or 10 miles (rural) from the nearest supermarket, supercenter, or large grocery store. Data are from the April 2021 Food Access Research Atlas dataset. This indicator is relevant because it highlights populations and geographies facing food insecurity.	U.S. Department of Agriculture (USDA), Economic Research Service, USDA – Food Access Research Atlas. 2019. Data accessed via the North Carolina Data Portal, June 2024.	2019
Limited access to healthy foods	Percentage of population who are low-income and do not live close to a grocery store.	USDA Food Environment Atlas. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2019
Food Environment - Fast Food Restaurants (per 100,000 population)	Number of fast food restaurants per 100,000 population. The prevalence of fast food restaurants provides a measure of both access to healthy food and environmental influences on dietary behaviors. Fast food restaurants are defined as limited-service establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating.	US Census Bureau, County Business Patterns. Additional data analysis by CARES. 2022. Data accessed via the North Carolina Data Portal, June 2024.	2022
Food Environment - Grocery Stores (per 100,000 population)	Number of grocery establishments per 100,000 population. Grocery stores are defined as supermarkets and smaller grocery stores primarily engaged in retailing a general line of food, such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry. Delicatessen-type establishments are also included. Convenience stores and large general merchandise stores that also retail food, such as supercenters and warehouse club stores, are excluded. Healthy dietary behaviors are supported by access to healthy	US Census Bureau, County Business Patterns. Additional data analysis by CARES. 2022. Data accessed via the North Carolina Data Portal, June 2024.	2022

Measure	Description	Data Source	Most Recent Data Year(s)
	foods, and grocery stores are a major provider of these foods.		

Table 32: Housing and Homelessness

Measure	Description	Data Source	Most Recent Data Year(s)
Renter Costs – Average Gross Rent	Average gross rent is the contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid by the renter (or paid for the renter by someone else). Gross rent provides information on the monthly housing cost expenses for renters. When the data is used in conjunction with income data, the information offers an excellent measure of housing affordability and excessive shelter costs. The data also serve to aid in the development of housing programs to meet the needs of people at different economic levels, and to provide assistance to agencies in determining policies on fair rent.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Housing Cost Burden, Severe (50%)	Percentage of the households where housing costs are 50% or more total household income. This indicator provides information on the cost of monthly housing expenses for owners and renters. The information offers a measure of housing affordability and excessive shelter costs. The data also serve to aid in the development of housing programs to meet the needs of people at different economic levels.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Housing & Urban Development (HUD)-Assisted Housing Units (per 10,000 households)	Number of HUD-funded assisted housing units available to eligible renters as well as the unit rate (per 10,000 total households).	U.S. Department of HUD. Data accessed via the North Carolina Data Portal, June 2024.	2017-2021
Substandard Housing, Severe	Percentage of owner- and renter-occupied housing units having at least one of the following conditions: 1) lacking complete plumbing facilities, 2) lacking complete kitchen	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2011-2015

Measure	Description	Data Source	Most Recent Data Year(s)
	facilities, 3) with 1.51 or more occupants per room, 4) selected monthly owner costs as a percentage of household income greater than 50%, and 5) gross rent as a percentage of household income greater than 50%. Selected conditions provide information in assessing the quality of the housing inventory and its occupants. This data is used to easily identify homes where the quality of living and housing can be considered substandard.		
Homeless Children and Youth	Number of homeless children and youth enrolled in the public school system during the school year 2019-2020. According to the data source definitions, homelessness is defined as lacking a fixed, regular, and adequate nighttime residence. Those who are homeless may be sharing the housing of other persons, living in motels, hotels, or camping grounds, in emergency transitional shelters, or unsheltered. Data are aggregated to the report-area level based on school-district summaries where three or more homeless children are counted.	US Department of Education, EDFacts. Additional data analysis by CARES. 2019-2020. Data accessed via the North Carolina Data Portal, June 2024.	2019-2020

Table 33: Income

Measure	Description	Data Source	Most Recent Data Year(s)
Median Family Income	Median family income based on the latest 5-year American Community Survey estimates. A family household is any housing unit in which the householder is living with one or more individuals related to him or her by birth, marriage, or adoption. Family income includes the incomes of all family members ages 15 and older.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Gender Pay Gap	Ratio of women's median earnings to men's median earnings for all full-time, year-round workers, presented as "cents on the dollar." Data are	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022

Measure	Description	Data Source	Most Recent Data Year(s)
	acquired from the 2018-2022 ACS and are used in the 2024 County Health Rankings.		
Population Below 100% Federal Poverty Level (FPL)	Percentage of population living in households with income below the FPL. This indicator is relevant because poverty creates barriers to access including health services, healthy food, and other necessities that contribute to poor health status.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2022
Population Below 200% FPL	Percentage of population living in households with income below 200% of the FPL. This indicator is relevant because poverty creates barriers to access including health services, healthy food, and other necessities that contribute to poor health status.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Children Below 200% FPL	Percentage of children living in households with income below 200% of the FPL. This indicator is relevant because poverty creates barriers to access including health services, healthy food, and other necessities that contribute to poor health status.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Population Receiving SNAP (SAIPE)	Average percentage of the population receiving SNAP benefits during the month of June during the most recent report year. The Supplemental Nutrition Assistance Program, or SNAP, is a federal program that provides nutrition benefits to low-income individuals and families that are used at stores to purchase food.	U.S. Census Bureau, Small Area Income and Poverty Estimates. Data accessed via the North Carolina Data Portal, June 2024.	2021
Children Eligible for Free/Reduced Price Lunch	Percentage of public school students eligible for the free or reduced price lunch program in the latest report year. Free or reduced price lunches are served to qualifying students in families with income between 185 percent (free lunch) and or 130 percent (reduced price) of the US federal poverty threshold as part of the federal National School Lunch Program (NSLP).	National Center for Education Statistics (NCES) – Common Core of Data. Data accessed via the North Carolina Data Portal, June 2024.	2022-2023

Table 34: Length of Life

Measure	Description	Data Source	Most Recent Data Year(s)
Premature Death (years of potential life lost before age 75 per 100,000 population age-adjusted)	Number of events (i.e., deaths, births, etc.) in a given time period (three-year period) divided by the average number of people at risk during that period. Years of potential life lost measures mortality by giving more weight to deaths at earlier ages than deaths at later ages. Premature deaths are deaths before age 75. All of the years of potential life lost in a county during a three-year period are summed and divided by the total population of the county during that same time period-this value is then multiplied by 100,000 to calculate the years of potential life lost under age 75 per 100,000 people. These are age-adjusted.	National Center for Health Statistics – Natality and Mortality Files; Census Population Estimates Program. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2019-2021
Premature Age-Adjusted Mortality	Number of deaths among residents under age 75 per 100,000 population (age-adjusted).	National Center for Health Statistics – Natality and Mortality Files; Census Population Estimates Program. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2019-2021
Life expectancy	Average life expectancy at birth (age-adjusted to 2000 standard). Data were from the National Center for Health Statistics - Mortality Files (2019-2021) and are used for the 2024 County Health Rankings.	National Center for Health Statistics – Natality and Mortality Files; Census Population Estimates Program. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2019-2021

Table 35: Maternal and Infant Health

Measure	Description	Data Source	Most Recent Data Year(s)
Births with no or late prenatal care	Percentage of women who did not obtain prenatal care until the 7th month (or later) of pregnancy or who didn't have any prenatal care, as of all who gave birth during the three-year period from 2017 to 2019. This	CDC – National Vital Statistics System (NVSS). CDC WONDER. CDC, Wide-Ranging Online Data for Epidemiologic Research. Data accessed	2017-2019

Measure	Description	Data Source	Most Recent Data Year(s)
	indicator is relevant because engaging in prenatal care decreases the likelihood of maternal and infant health risks. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.	via the North Carolina Data Portal, June 2024.	
Low birthweight (percent of live births with birthweight < 2500 grams)	Percentage of live births where the infant weighed less than 2,500 grams (approximately 5 lbs., 8 oz.). The numerator is the number of low birthweight infants born over a 7-year time span, while the denominator is the total number of births in a county during the same time.	National Center for Health Statistics – Natality Files. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2016-2022
Infant Mortality	Number of all infant deaths (within 1 year) per 1,000 live births. Data were from the National Center for Health Statistics - Mortality Files (2015-2021) and are used for the 2024 County Health Rankings.	National Center for Health Statistics – Natality and Mortality Files. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2015-2021

Table 36: Mental Health

Measure	Description	Data Source	Most Recent Data Year(s)
Poor Mental Health Days	Average number of self-reported mentally unhealthy days in past 30 days among adults (age-adjusted to the 2000 standard). Data are included as part of the 2024 County Health Rankings.	CDC, Behavioral Risk Factor Surveillance System (BRFSS). Data accessed via the North Carolina Data Portal, June 2024.	2021
Deaths of Despair (Suicide and Drug/Alcohol Poisoning) (per 100,000 population)	Average rate of death due to intentional self-harm (suicide), alcohol-related disease, and drug overdose, also known as "deaths of despair", per 100,000 population. Figures are reported as crude rates. Rates are re-summarized for report areas from county level data, only where data is available. This indicator is relevant because death of despair is an indicator of poor mental health.	CDC – NVSS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Suicide (per 100,000 population)	Five-year average rate of death due to intentional self-harm (suicide) per	CDC – NVSS. Data accessed via the North	2018-2022

Measure	Description	Data Source	Most Recent Data Year(s)
	100,000 population from 2018 to 2022. Figures are reported as crude rates. Rates are re-summarized for report areas from county level data, only where data is available. This indicator is relevant because suicide is an indicator of poor mental health.	Carolina Data Portal, June 2024.	

Table 37: Physical Health

Measure	Description	Data Source	Most Recent Data Year(s)
Poor or fair health (percent of adults reporting fair or poor health age-adjusted)	Percentage of adults in a county who consider themselves to be in poor or fair health. This measure is based on responses to the BRFSS question: "In general, would you say that your health is excellent, very good, good, fair, or poor?" The value reported in the County Health Rankings is the percentage of respondents who rated their health "fair" or "poor." Poor or Fair Health is age-adjusted. Poor or Fair Health estimates are created using statistical modeling.	Behavioral Risk Factor Surveillance System. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2021
Asthma Prevalence (Adult)	Percentage of adults ages 18 and older who answer "yes" to both of the following questions: "Have you ever been told by a doctor, nurse, or other health professional that you have asthma?" and the question "Do you still have asthma?"	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2022
Heart Disease (Adult)	Percentage of adults ages 18 and older who report ever having been told by a doctor, nurse, or other health professional that they had angina or coronary heart disease.	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2022
High Blood Pressure (Adult)	Percentage of adults ages 18 and older who report ever having been told by a doctor, nurse, or other health professional that they have high blood pressure (HTN). Women who were told high blood pressure only during pregnancy and those who were told they had borderline hypertension were not included.	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2021
High Cholesterol (Adult)	Percentage of adults ages 18 and older who report having been told by a doctor, nurse, or other health	CDC, BRFSS. Data accessed via the North	2021

Measure	Description	Data Source	Most Recent Data Year(s)
	professional that they had high cholesterol.	Carolina Data Portal, June 2024.	
Diabetes Prevalence (Adult)	Percentage of adults ages 20 and older who have ever been told by a doctor that they have diabetes. This indicator is relevant because diabetes is a prevalent problem in the U.S.; it may indicate an unhealthy lifestyle and puts individuals at risk for further health issues.	CDC, National Center for Chronic Disease Prevention and Health Promotion. Data accessed via the North Carolina Data Portal, June 2024.	2021
Kidney Disease (Adult)	Percentage of adults ages 18 and older who report ever having been told by a doctor, nurse, or other health professional that they have kidney disease.	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2021
Stroke (Adult)	Percentage of adults ages 18 and older who report ever having been told by a doctor, nurse, or other health professional that they have had a stroke.	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2022
Obesity	Percentage of adults ages 20 and older self-report having a Body Mass Index (BMI) greater than 30.0 (obese). Respondents were considered obese if their BMI was 30 or greater. BMI (weight [kg]/height [m]2) was derived from self-report of height and weight. Excess weight may indicate an unhealthy lifestyle and puts individuals at risk for further health issues.	CDC, National Center for Chronic Disease Prevention and Health Promotion. Data accessed via the North Carolina Data Portal, June 2024.	2021
Poor Dental Health – Teeth Loss	Percentage of adults ages 18 and older who report having lost all of their natural teeth because of tooth decay or gum disease.	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2022
Cancer Incidence – All Sites (per 100,000 population)	Age-adjusted incidence rate (cases per 100,000 population per year) of cancer (all sites) adjusted to 2000 U.S. standard population age groups (Under age 1, 1-4, 5-9, ..., 80-84, 85 and older).	State Cancer Profiles. Data accessed via the North Carolina Data Portal, June 2024.	2016-2020
Emergency Room (ER) Visits (per 100,000 Medicare beneficiaries)	Rate of ER visits among Medicare beneficiaries age 65 and older (per 100,000 beneficiaries). This indicator is relevant because ER visits are "high intensity" services that can burden on both health care systems and patients. High rates of ER visits "may indicate poor care management,	CMS – Geographic Variation Public Use File. Data accessed via the North Carolina Data Portal, June 2024.	2022

Measure	Description	Data Source	Most Recent Data Year(s)
	inadequate access to care or poor patient choices, resulting in ER visits that could be prevented".		
Hospitalizations – Heart Disease (per 1,000 Medicare beneficiaries)	Hospitalization rate for coronary heart disease among Medicare beneficiaries ages 65 and older for hospital stays occurring between 2018 and 2020.	CDC – Atlas of Heart Disease and Stroke. Data accessed via the North Carolina Data Portal, June 2024.	2018-2020
Hospitalizations – Stroke (per 1,000 Medicare beneficiaries)	Hospitalization rate for Ischemic stroke among Medicare beneficiaries ages 65 and older for hospital stays occurring between 2018 and 2020.	CDC – Atlas of Heart Disease and Stroke. Data accessed via the North Carolina Data Portal, June 2024.	2018-2020

Table 38: Quality of Care

Measure	Description	Data Source	Most Recent Data Year(s)
Seasonal Influenza Vaccine	Percentage of adults ages 18 and older who reported receiving an influenza vaccination in the past 12 months. These data are derived from responses to the 2019 BRFSS.	CDC – FluVaxView. Data accessed via the North Carolina Data Portal, June 2024.	2019
Hospitalizations – Preventable Conditions (per 100,000 Medicare beneficiaries)	Preventable hospitalization rate among Medicare beneficiaries for the latest reporting period. Preventable hospitalizations include hospital admissions for one or more of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, heart failure, bacterial pneumonia, or urinary tract infection. Rate is presented per 100,000 beneficiaries.	CMS, Mapping Medicare Disparities Tool. Data accessed via the North Carolina Data Portal, June 2024.	2021
Readmissions – All Cause (Medicare Population)	Rate of 30-day hospital readmissions among Medicare beneficiaries ages 65 and older. Hospital readmissions are unplanned visits to an acute care hospital within 30 days after discharge from a hospitalization. Patients may have unplanned readmissions for any reason, however readmissions within 30 days	CMS – Geographic Variation Public Use File. Data accessed via the North Carolina Data Portal, June 2024.	2022

Measure	Description	Data Source	Most Recent Data Year(s)
	are often related to the care received in the hospital, whereas readmissions over a longer time period have more to do with other complicating illnesses, patients' own behavior, or care provided to patients after hospital discharge.		

Table 39: Safety

Measure	Description	Data Source	Most Recent Data Year(s)
Incarceration Rate	Percentage of individuals born in each census tract who were incarcerated at the time of the 2010 Census as estimated by Opportunity Atlas data.	Opportunity Insights. Data accessed via the North Carolina Data Portal, June 2024.	2018
Juvenile Arrest Rate (per 1,000 juveniles)	Rate of delinquency cases per 1,000 juveniles. Data are acquired from the 2021 Easy Access to State and County Juvenile Court Case Counts (EZACO) and are used in the 2024 County Health Rankings.	Office of Juvenile Justice and Delinquency Department, Easy Access to State and County Juvenile Court Case Counts (EZACO). Data accessed via the North Carolina Data Portal, June 2024.	2021
Violent Crime (per 100,000 people)	Annual rate of reported violent crimes per 100,000 people during the three-year period of 2015-2017. Violent crime includes homicide, rape, robbery, and aggravated assault.	Federal Bureau of Investigation (FBI), FBI Uniform Crime Reports. Additional analysis by the National Archive of Criminal Justice Data. Data accessed via the North Carolina Data Portal, June 2024.	2015-2017
Mortality – Firearm (per 100,000 population)	Five-year average rate of death due to firearm wounds per 100,000 population, which includes gunshot wounds from powder-charged handguns, shotguns, and rifles. Figures are reported as crude rates for the time period of 2018 to 2022. This indicator is relevant because firearm deaths are preventable, and are a cause of premature death.	CDC – National Vital Statistics System. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Mortality – Poisoning (per 100,000 population)	Five-year average rate of death due to poisoning (including drug overdose) per 100,000 population. Figures are reported as crude rates	CDC – National Vital Statistics System. Data accessed via the North	2018-2022

Measure	Description	Data Source	Most Recent Data Year(s)
	for the time period of 2018 to 2022. Rates are re-summarized for report areas from county level data, only where data is available. This indicator is relevant because poisoning deaths, especially from drug overdose, are a national public health emergency.	Carolina Data Portal, June 2024.	

Table 40: Sexual Health

Measure	Description	Data Source	Most Recent Data Year(s)
Sexually transmitted infections (chlamydia rate per 100,000 population)	Number of newly diagnosed chlamydia cases per 100,000 population	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2021
HIV Incidence (rate per 100,000 population)	Incidence rate of HIV infection or infection classified as state 3 (AIDS) per 100,000 population. Incidence refers to the number of confirmed diagnoses during a given time period, in this case is January 1st and December 31st of the latest reporting year.	CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Data accessed via the North Carolina Data Portal, June 2024.	2022
Teen Births (per 1,000 female population age 15-19)	Seven-year average number of births per 1,000 female population age 15-19. Data were from the National Center for Health Statistics - Natality files (2016-2022) and are used for the 2024 County Health Rankings.	CDC – National Vital Statistics System. Data accessed via the North Carolina Data Portal, June 2024.	2016-2022

Table 41: Substance Use Disorders

Measure	Description	Data Source	Most Recent Data Year(s)
Excessive Drinking – Heavy Alcohol Consumption	Percentage of adults that self-report excessive drinking in the last 30 days. Data for this indicator were based on survey responses to the 2021 Behavioral Risk Factor Surveillance System (BRFSS) annual survey and are used for the 2024 County Health Rankings. Excessive drinking is defined as the percentage of the population who report at least one binge drinking	CDC, BRFSS. Data accessed via the North Carolina Data Portal, June 2024.	2021

Measure	Description	Data Source	Most Recent Data Year(s)
	episode involving five or more drinks for men and four or more for women over the past 30 days, or heavy drinking involving more than two drinks per day for men and more than one per day for women, over the same time period. Alcohol use is a behavioral health issue that is also a risk factor for a number of negative health outcomes, including: physical injuries related to motor vehicle accidents, stroke, chronic diseases such as heart disease and cancer, and mental health conditions such as depression and suicide. There are a number of evidence-based interventions that may reduce excessive/binge drinking; examples include raising taxes on alcoholic beverages, restricting access to alcohol by limiting days and hours of retail sales, and screening and counseling for alcohol abuse.		
Mortality - Motor Vehicle Crash – Alcohol-Involved (annual rate per 100,000 population)	Crude rate of persons killed in motor vehicle crashes involving alcohol as an annual rate per 100,000 population. Fatality counts are based on the location of the crash and not the decedent's residence. Motor vehicle crash deaths are preventable and are a leading cause of death among young persons.	U.S. Department of Transportation, National Highway Traffic Safety Administration, Fatality Analysis Reporting System. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Opioid Use Disorder (per 100,000 Medicare beneficiaries)	Rate of emergency department utilization for opioid use and opioid use disorder among the Medicare population. Figures are reported as age-adjusted to year 2000 standard. Rates are re-summarized for report areas from county level data, only where data is available. This indicator is relevant because mental health and substance use is an indicator of poor health.	CMS, Mapping Medicare Disparities Tool. Data accessed via the North Carolina Data Portal, June 2024.	2021
Mortality – Opioid Overdose (per 100,000 population)	Five-year average rate of death due to opioid drug overdose per 100,000 population. Figures are reported as crude rates for the time period of 2018 to 2022. Rates are re-summarized for report areas from	CDC – NVSS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022

Measure	Description	Data Source	Most Recent Data Year(s)
	county level data, only where data is available. This indicator is relevant because opioid drug overdose is the leading cause of injury deaths in the United States, and they have increased dramatically in recent years.		

Table 42: Tobacco Use

Measure	Description	Data Source	Most Recent Data Year(s)
Adult smoking	Percentage of the adult population that currently smokes every day or most days and has smoked at least 100 cigarettes in their lifetime. Adult Smoking estimates are created using statistical modeling.	Behavioral Risk Factor Surveillance System. Data accessed via RWJF & UWPHI County Health Rankings & Roadmaps, June 2024.	2021

Table 43: Transportation Options and Transit

Measure	Description	Data Source	Most Recent Data Year(s)
Households with No Motor Vehicle	Percentage of households with no motor vehicle based on the latest 5-year American Community Survey estimates.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022
Commuter Travel Patterns - Public Transportation	Percentage of population using public transportation as their primary means of commuting to work. Public transportation includes buses or trolley buses, streetcars or trolley cars, subway or elevated rails, and ferryboats.	U.S. Census Bureau, ACS. Data accessed via the North Carolina Data Portal, June 2024.	2018-2022

APPENDIX 3 | SECONDARY DATA COMPARISONS

Description of Focus Area Comparisons

When viewing the secondary data summary tables, please note that the following color shadings have been included to identify how Duplin County compares to North Carolina and the national benchmark. If both statewide North Carolina and national data was available, North Carolina data was preferentially used as the target/benchmark value.

Secondary Data Summary Table Color Comparisons

Color Shading	Priority Level	Duplin County Description
	Low	Represents measures in which Duplin County scores are **more than five percent better** than the most applicable target/benchmark and for which a low priority level was assigned.
	Medium	Represents measures in which Duplin County scores are comparable to the most applicable target/benchmark scoring **within or equal to five percent**, and for which a medium priority level was assigned.
	High	Represents measures in which Duplin County scores are **more than five percent worse** than the most applicable target/benchmark and for which a high priority level was assigned.

Note: Please see the methodology section of this report for more information on assigning need levels to the secondary data.

Please note that to categorize each metric in this manner and identify the priority level, the Duplin County value was compared to the benchmark by calculating the percentage difference between the values, relative to the benchmark value:

(Duplin Co Value – Benchmark Value)/(Benchmark) x 100 = % Difference Used to Identify Priority Level

For example, for the % Limited Access to Healthy Foods metric, the following calculation was completed:

(6.3-7.5)/(7.5) x 100% = -16.0% = Displayed as **Low Priority Level**, Shaded in Green

This metric indicates that the percentage of the population with limited access to healthy foods in Duplin County is 16.0 percent better (or, in this case, lower) than the percentage of the population with limited access to healthy foods in the state of North Carolina.

Detailed Focus Area Benchmarks

Table 44: Access to Care

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Primary Care Providers Ratio	112.4	101.1	55.4	2024	High
Mental Health Providers Ratio	178.7	155.7	34.9	2024	High
Addiction/Substance Abuse Providers Ratio	27.9	25.0	14.4	2024	High
Buprenorphine Providers Ratio	15.5	15.2	6.8	2023	High
Dental Health Providers Ratio	39.1	31.5	10.3	2024	High
% Living in Health Professional Shortage Areas (HPSAs) – Dental Care	17.8%	34.0%	65.3%	2018-2022	High
Federally Qualified Health Centers (FQHCs)	3.5	4.1	26.7	2023	Low
% Receiving Medicaid	22.3%	20.2%	29.8%	2018-2022	High
% Uninsured	10.2%	12.5%	19.6%	2022	High

Table 45: Built Environment

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Broadband Access (Access to DL Speeds >= 25MBPS and UL Speeds >= 3 MBPS)	93.8%	93.6%	87.2%	2023	High
Broadband Access (Access to DL Speeds >= 100MBPS and UL Speeds >= 20 MBPS)	91.2%	90.4%	69.7%	2023	High
Households with No Computer	6.1%	6.9%	12.8%	2018-2022	High
Households with No or Slow Internet	11.7%	13.0%	24.1%	2018-2022	High

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Liquor Stores	13.3	6.2	8.2	2022	High
Adverse Childhood Experiences (ACEs)	N/A	N/A	Suppressed	2022	N/A

Table 46: Diet and Exercise

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Physically Inactive	N/A	21.6%	30.2%	2021	High
Walkability Index Score	10	7	5	2021	High
% with Access to Exercise Opportunities	84.1%	73.0%	25.0%	2023	High
Recreation and Fitness Facility Access	14.8	13.1	6.2	2022	High
Sugar-Sweetened Beverage (SSB) Consumption	N/A	N/A	Suppressed	2022	N/A

Table 47: Education

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Limited English Proficiency	8.2%	4.6%	12.2%	2018-2022	High
High School Graduation Rate	81.1%	87.6%	86.0%	2020-2021	Medium
% with No High School Diploma	10.9%	10.6%	19.7%	2018-2022	High
Student Math Proficiency	63.9%	65.8%	87.2%	2020-2021	High
Student Reading Proficiency	60.1%	59.5%	72.8%	2020-2021	High
School Funding Adequacy	N/A	-$4,742	-$8,877	2021	High
School Funding Adequacy – Spending per pupil	N/A	$10,655	$9,896	2021	High

Table 48: Employment

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Unemployment Rate	3.9%	3.7%	2.9%	2024	Low
Average Annual Unemployment Rate, 2013-2023	3.6%	3.5%	3.3%	2024	Low

Table 49: Environmental Quality

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Flood Vulnerability	6.5%	4.9%	3.0%	2011	Low
Drinking Water Safety	16,107	194	0	2023	Low

Table 50: Family, Community and Social Support

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Children Cost Burden	28.8%	27.0%	29.0%	2023	High
% Young People Not in School or Working	6.9%	7.5%	12.5%	2018-2022	High

Table 51: Food Security

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Food Insecure	10.3%	11.4%	13.0%	2021	High
% Food Insecure Children	13.3%	15.3%	19.8%	2021	High
% Low-Income and with Low Food Access	19.4%	21.3%	12.6%	2019	Low
% Limited Access to Healthy Foods	N/A	7.5%	6.3%	2019	Low
Fast Food Restaurants	96.2	77.4	71.9	2022	Low
Grocery Stores	23.4	18.7	24.6	2022	Low

Table 52: Housing and Homelessness

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Renter Costs – Average Gross Rent	$1,366	$1,090	$680	2018-2022	Low
% Severe Housing Cost Burden	14.1%	12.2%	10.8%	2018-2022	Low
Assisted Housing Units	413.9	319.2	204.8	2017-2021	Low
% Severe Substandard Housing	18.5%	16.1%	17.2%	2011-2015	High
% Homeless Children	2.8%	1.9%	1.7%	2019-2020	Low

Table 53: Income

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Median Family Income	$92,646	$82,890	$63,982	2018-2022	High
Gender Pay Gap	81.0%	83.0%	82.0%	2018-2022	Medium
% Living Below 100% FPL	12.5%	13.3%	18.5%	2022	High
% Living Below 200% FPL	28.8%	31.6%	44.2%	2018-2022	High
% Children Living Below 200% FPL	37.2%	41.1%	61.4%	2018-2022	High
% Receiving SNAP	12.4%	15.7%	19.2%	2021	High
Children Eligible for Free/Reduced Price Lunch	51.7%	50.8%	99.2%	2022-2023	High

Table 54: Length of Life

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Years of Potential Life Lost Rate	N/A	8,853	11,571	2019-2021	High
Premature Age-Adjusted Mortality	N/A	420	521	2019-2021	High
Life Expectancy	77.6	76.6	74.9	2019-2021	Medium

Table 55: Maternal and Infant Health

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Births with Late or No Prenatal Care	6.1%	6.9%	Suppressed	2019	N/A
Low Birthweight	N/A	9.4%	9.2%	2016-2022	Medium
Infant Mortality Rate	5.7	7.0	9.0	2015-2021	High

Table 56: Mental Health

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Poor Mental Health Days	4.9	4.6	4.9	2021	High
Deaths of Despair Rate	55.9	58.7	47.1	2018-2022	Low
Suicide Death Rate	14.5	14.0	12.1	2018-2022	Low

Table 57: Physical Health

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Poor or Fair Health	N/A	14.4%	20.6%	2021	High
% Adults with Asthma	9.7%	9.8%	10.5%	2022	High
% Adults with Heart Disease	5.2%	5.5%	6.6%	2022	High
% Adults with High Blood Pressure	29.6%	32.1%	35.4%	2021	High
% Adults with High Cholesterol	31.0%	31.4%	33.6%	2021	High
Diabetes Prevalence	8.9%	9.0%	9.2%	2021	Medium
% Adults with Kidney Disease	2.7%	2.9%	3.4%	2021	High
% Stroke	2.8%	3.1%	3.8%	2022	High
Obesity	30.1%	29.7%	32.7%	2021	High
% Teeth Loss	13.9%	12.0%	17.5%	2022	High
Cancer Incidence Rate	442.3	464.4	409.6	2016-2020	Low
Emergency Room Visits	535	563	747	2022	High

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Heart Disease Hospitalization Rate	10.4	11.7	16.6	2018-2020	High
Stroke Hospitalization Rate	8.0	9.5	10.4	2018-2020	High

Table 58: Quality of Care

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Children/adults vaccinated annually against seasonal influenza	44.5%	45.6%	42.1%	2021	High
Preventable Hospital Rate	2,752	2,957	3,248	2021	High
Readmissions Rate	18.1%	17.6%	18.4%	2022	Medium

Table 59: Safety

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Incarceration Rate	1.3%	1.5%	1.5%	2018	Medium
Juvenile Arrest Rate	13.8	16.0	8.0	2021	Low
Violent Crime	416.0	365.7	222.8	2015-2017	Low
Firearm Death Rate	13.4	15.5	15.3	2018-2022	Medium
Poisoning Death Rate	28.5	31.5	24.8	2018-2022	Low

Table 60: Sexual Health

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
Chlamydia Rate	495.0	603.3	674.0	2021	High
HIV Incidence Rate	12.7	15.5	22.3	2022	High
Teen Births	16.6	18.2	N/A	2016-2022	N/A

Table 61: Substance Use Disorders

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Excessive Drinking	18.1%	18.2%	15.3%	2021	Low
% Driving Deaths with Alcohol	2.3	2.9	9.9	2018-2022	High
Opioid Use Disorder Rate	41.0	43.0	33.0	2021	Low
Opioid Drug Overdose Deaths	N/A	25.1	15.3	2018-2022	Low

Table 62: Tobacco Use

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Smokers	14.5%	15.0%	20.3%	2021	High

Table 63: Transportation Options and Transit

Measure	National Benchmark	North Carolina Benchmark	Duplin County Data	Most Recent Data Year	Duplin County Need
% Households with No Motor Vehicle	8.3%	5.4%	5.2%	2018-2022	Medium
% Public Transit	3.8%	0.8%	0.0%	2018-2022	High

APPENDIX 4 I SECONDARY DATA METHODOLOGY AND SOURCES

Primary data were collected through focus groups, which were conducted in-person, and a web-based Community Member survey.

Methodologies

The methodologies varied based on the type of primary data being analyzed. The following section describes the various methodologies used to analyze the primary data, along with key findings.

Focus Groups

The following three focus groups were conducted in person between May 6th, 2024, and May 31st, 2024. These groups included representation from community members, with over 23 participants providing responses.

- Beulaville Baptist Church
- New Christian Chapel Missionary Baptist Church
- Iglesia de Dios Pentecostal

Input was gathered on the following topics:

- Community health concerns
- Social and environmental concerns that may impact health
- Access to care
- Other topics of concern for Duplin County

The majority 73.9% identified as female, and the group was predominantly white 65.2% and non-Hispanic/Latino 66.7%. Participants represented a wide range of age groups, with nearly half of the group between the ages of 50 and 64.

The focus group discussion guide questions are below:

FACILITATOR INTRODUCTION:

"Thank you for being a part of today's focus group! My name is [NAME] and I'm here on behalf of [ORGANIZATION]. We are conducting a community health needs assessment to find out more about some of the health and social issues facing residents in [COUNTY NAME]. The results of this focus group will be used to help health leaders throughout [COUNTY NAME] develop programs and services to address some of the issues we'll be talking about today. We may record today's discussion to assist with notetaking, but we will not be using any identifying information, like participant names, in our results. We would also like to ask you to fill out this demographic form, so we can understand a little bit more about who is participating in this focus group."

PARTICIPANT INTRODUCTIONS

1. Please tell us your first name, how long you've lived in [COUNTY NAME] and something you like about living here.

HEALTH AND WELLNESS

2. What are some of the issues that keep residents in [COUNTY NAME] from living healthy lives?
3. What are the most serious health problems facing people who live in [COUNTY NAME]?
    a. Are there particular groups of people (i.e. race, ethnicity, age, LGBTQ+, etc.) who are more affected by these problems than others?
    b. Are there particular areas in the county that are more affected by these problems than others?
4. Thinking about the health problems you described, what do you think could be done to address these issues?

SOCIAL DETERMINANTS OF HEALTH

5. What are some of the environmental and/or social conditions that affect quality of life for people living in [COUNTY NAME]?
    a. Examples of social and environmental issues that negatively impact health: availability or access to health insurance, domestic violence, housing problems, homelessness, lack of job opportunities, lack of affordable childcare, limited access to healthy food, neighborhood safety/ street violence, poverty, racial/ethnic discrimination, limited/poor educational opportunities.
6. Thinking about the social and environmental issues you described, how do you think these issues could be addressed?

ACCESS TO CARE

7. What are some reasons people in [COUNTY NAME] do not get health care when they need it? How can these issues be addressed?
8. What do you think about the health-related services that are available in your community, including medical care, dental care and behavioral health care?
    a. Are there enough locations providing these types of care for people who need it?
    b. Can you find medical, dental or behavioral health care within a reasonable timeframe when you need it?

c. Are your experiences with providers (doctors, dentists, nurses, therapists, emergency personnel, etc.) more positive or negative, and why?

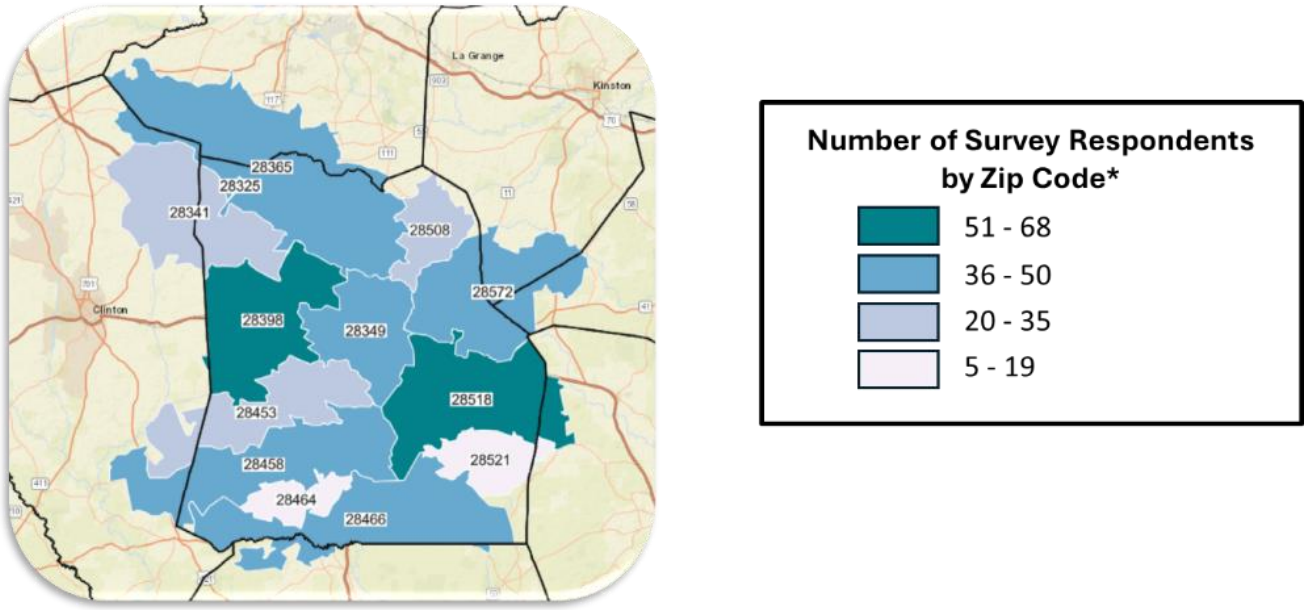
SUGGESTIONS

9. What are some of the strengths or community assets in [COUNTY NAME] that can help residents live healthier lives?
10. What do you think local health leaders should do to improve health and quality of life in [COUNTY NAME]? What do you want local health leaders to know?
11. What actions can local residents take to help improve the health of the community?

Community Member Web Survey

A total of 506 surveys were completed by individuals living, working or receiving healthcare in the Duplin County community. The survey was available in both English and Spanish, and approximately 10% were completed in Spanish. Consistent with one of the survey process goals, survey community member respondents were representative of a broad geographic area encompassing areas throughout the county. The map below provides additional information on survey respondents' ZIP code of residence.

Figure 51: Respondent Zip Code of Residence[53]



[53] Zip codes with fewer than five respondents were not displayed for privacy reasons.

In general, survey questions focused on:

- Community health problems and concerns
- Community social/environmental problems and concerns
- Duplin County-specific topics
    - Access to care
    - Mental health
    - Physical health
    - Substance use disorders
    - Transportation and transit

The key findings from the Community Survey are detailed below:

- Diabetes/high blood sugar, alcohol/drug addiction, and heart disease/high blood pressure were identified as the top 3 health problems affecting the community. About one third of respondents also identified weight/obesity and mental health (e.g., depression and anxiety) as important health problems.
- Cost, not having insurance, and long wait times were the top three barriers to receiving health care identified by the community.
- Availability and access to doctor's offices, poverty, and insurance were identified as the top three most important social or environmental problems that affect the health of the community. Lack of job opportunities, limited access to healthy food, and transportation were also identified by almost one in four respondents.

Information describing the respondents to the Community Member Survey are displayed below:

Figure 52: Respondents by Age Group

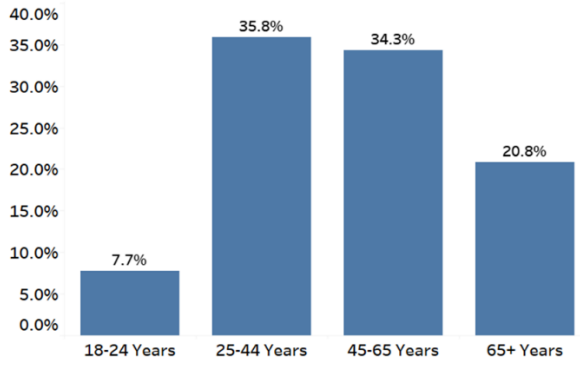


Figure 53: Respondents by Gender

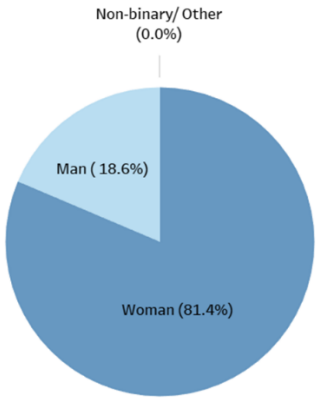


Figure 54: Respondents by Race

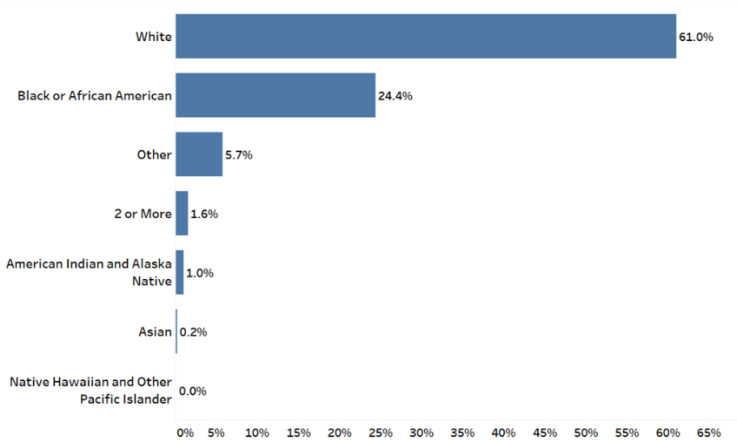
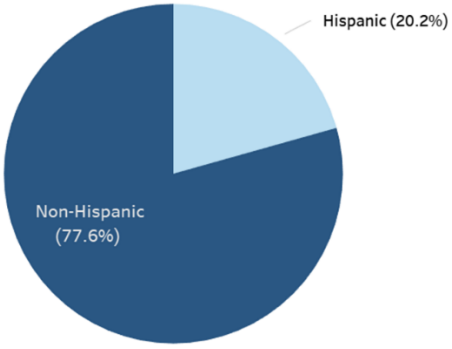


Figure 55: Respondents by Ethnicity



The questions administered via the Community Member Survey instrument are below. The survey instrument was also available in Spanish, and a copy of the Spanish language survey instrument is available on request.

Dear Community Member,

We invite you to participate in your county's Community Health Needs Survey.

Your responses to this optional survey are anonymous and will inform how hospitals and agencies work to improve health in your county. This is not a research survey. It will take less than 10 minutes to complete.

Instructions: You must be 18 years or older to complete this survey. Please answer all questions and return the survey as indicated.

For questions about this survey, contact Ascendient Healthcare Advisors: emilymccallum@ascendient.com

Thank you for your time and participation!

Topic: Demographics

1. What is the zip code where you currently live? _____

2. What is your age group?

   □ 18-24
   □ 25-44
   □ 45-65
   □ 65+
   □ Don't know/ Not sure
   □ Prefer not to say

3. Which of the following best describes your gender? *Select all that apply:*

   □ Man
   □ Woman
   □ Non-binary, genderqueer, or gender nonconforming
   □ Additional gender category: _____
   □ Prefer not to say

4. How would you describe your race? *Select all that apply:*

   □ American Indian and Alaska Native
   □ Asian
   □ Black or African American
   □ Native Hawaiian and Other Pacific Islander
   □ White
   □ Other race: _____
   □ Don't know/Not sure
   □ Prefer not to say

5. Are you of Hispanic or Latino origin, or is your family originally from a Spanish speaking country?[54]

   □ Yes
   □ No
   □ Don't know/Not sure
   □ Prefer not to say

[54] The U.S. Census Bureau defines "Hispanic or Latino" as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race."

6. What is the highest grade or year of school you completed?

□ Less than 9th grade
□ 9-12th grade, no diploma
□ High school graduate (or GED/equivalent)
□ Some college (no degree)
□ Associate's degree or vocational training
□ Bachelor's degree
□ Graduate or professional degree
□ Don't know/Not sure
□ Prefer not to say

7. Which language is most often spoken in your home? *Select one:*

□ English
□ Spanish
□ Other, please specify: _____
□ Don't know/Not sure
□ Prefer not to say

8. For employment, are you currently...*Select all that apply:*

□ Employed full-time (40+ hours per week)
□ Employed part-time (under 40 hours per week)
□ Retired
□ Student
□ Armed forces/military
□ Self-employed
□ Homemaker
□ Temporarily unable to work due to illness or injury
□ Unemployed for less than one year
□ Unemployed for more than one year
□ Permanently unable to work
□ Prefer not to answer

9. Which category best describes your yearly household income before taxes?[55]

□ Less than $15,000
□ $15,000 - $24,999
□ $25,000 - $34,999
□ $35,000 - $49,999
□ $50,000 - $74,999
□ $75,000 - $99,999
□ $100,000 - $149,999
□ $150,000 - $199,999
□ $200,000 or more
□ Prefer not to say

[55] Respondents were asked to include all income received from employment, social security, support from family, welfare, Aid to Families with Dependent Children (AFDC), bank interest, retirement accounts, rental property, investments, etc.

Topic: Community Health Opinion Questions

10. What are the **three** most important health problems that affect the health of your community? *Please select up to three:*

□ Alcohol/drug addiction
□ Alzheimer's disease and other dementias
□ Mental health (depression/anxiety)
□ Cancer
□ Diabetes/high blood sugar
□ Heart disease/high blood pressure
□ HIV/AIDS
□ Infant death
□ Lung disease/asthma/COPD
□ Stroke
□ Smoking/tobacco use
□ Overweight/obesity
□ Other (please specify): _____
□ Prefer not to answer

11. What are the **three** most important social or environmental problems that affect the health of your community? *Please select up to three:*

□ Availability/access to doctor's office
□ Availability/access to insurance
□ Child abuse/neglect
□ Age Discrimination
□ Ability Discrimination
□ Gender Discrimination
□ Racial Discrimination
□ Domestic violence
□ Housing/homelessness
□ Lack of affordable childcare
□ Lack of job opportunities
□ Limited access to healthy foods
□ Limited places to exercise
□ Neighborhood safety/violence
□ Limited opportunities for social connection
□ Poverty
□ Limited/poor educational opportunities
□ Transportation problems
□ Environmental injustice
□ Other (please specify): _____
□ Prefer not to answer

12. What are the **three** most important reasons people in your community do not get health care? *Please select up to three:*

□ Cost – too expensive/can't pay
□ Wait is too long
□ No health insurance
□ No doctor nearby
□ Lack of transportation
□ Insurance not accepted
□ Language barriers
□ Cultural/religious beliefs
□ Other (please specify): _____
□ Prefer not to answer

Topic: Access to Care

13. DURING THE PAST 12 MONTHS, were you told by a health care provider or doctor's office that they did not accept your health care coverage?

□ Yes
□ No
□ Don't know
□ Prefer not to answer

14. Where do you USUALLY go when you are sick or need advice about your health? *Select all that apply:*

□ Doctor's office, clinic or health center
□ Urgent care or minute clinic
□ Hospital emergency room
□ Some other place [please specify]: _____
□ Don't go to one place most often
□ Don't know
□ Prefer not to answer

15. There are many reasons people delay getting medical care. Have you delayed getting care for any of the following reasons in the PAST 12 MONTHS? *Select all that apply:*

□ Didn't have transportation
□ You live in a rural area where distance to the health care provider is too far
□ You were nervous about seeing a health care provider
□ Couldn't get time off work
□ Couldn't get childcare
□ You provide care to an adult and could not leave him/her
□ Couldn't afford the copay
□ Your deductible was too high/could not afford the deductible
□ You had to pay out of pocket for some or all of the visit/procedure
□ I did not delay care for any reason
□ Other *(please specify)*: _____
□ Prefer not to answer

16. DURING THE PAST 12 MONTHS, was there any time when you needed any of the following, but didn't get it because you couldn't afford it? *Select all that apply:*

□ Prescription medicines
□ Mental health care or counseling
□ Emergency care
□ Dental care (including checkups)
□ Eyeglasses
□ To see a regular doctor or general health provider (in primary care, general practice, internal medicine, family medicine)
□ To see a specialist
□ Follow-up care
□ None of the above
□ Prefer not to answer

17. If you get sick or have an accident, how worried are you that you will be able to pay your medical bills?

□ Very worried
□ Somewhat worried
□ Not at all worried
□ Don't know
□ Prefer not to answer

18. How much do you agree or disagree with the following statements about telehealth? Telehealth means connecting virtually with a medical provider using a smartphone, tablet or computer. 1 = Strongly disagree; 2 = somewhat disagree; 3 = neither agree nor disagree; 4 = somewhat agree; 5 = strongly agree

	1	2	3	4	5	Don't know	Prefer not to say
a. I have access to the resources I need to access telehealth (internet, smartphone, tablet, computer, etc.)	□	□	□	□	□	□	□
b. I have used telehealth to access care from my doctor or other provider in the past	□	□	□	□	□	□	□
c. I am open to using telehealth to access medical care in the future	□	□	□	□	□	□	□
d. I am comfortable using a phone, tablet or computer to communicate with my doctor or other provider	□	□	□	□	□	□	□
e. I am comfortable using an online patient portal (i.e. MyChart, My CarolinaEast Care, myOMH, etc.) to communicate with my doctor or other provider	□	□	□	□	□	□	□

Topic: Mental Health

19. Now thinking about your MENTAL health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health NOT good?

□ Number of days: _____

20. Was there a time in the past 12 months when you needed mental health care or counseling, but did not get it at that time?

□ Yes
□ No
□ Don't know
□ Prefer not to say

21. If you answered 'Yes' to the previous question, what was the MAIN reason you did not get mental health care or counseling?

□ Cost/No insurance coverage
□ Distance
□ Don't know where to go
□ Concerns about confidentiality
□ Inconvenient office hours
□ Lack of childcare
□ Lack of providers
□ Lack of transportation
□ Previous negative experiences/Distrust of mental health providers
□ Stigma
□ Too busy to go to an appointment
□ Too long of wait for an appointment
□ Trouble getting an appointment
□ Other *(please specify)*: _____
□ None of the above
□ Don't know/Not sure
□ Prefer not to say

22. Are you currently taking medication or receiving treatment, therapy, or counseling from a health professional for any type of MENTAL or EMOTIONAL HEALTH NEED?

□ Yes
□ No
□ Prefer not to say

Topic: Physical Health

23. Considering your physical health overall, would you describe your health as…

□ Excellent
□ Very Good
□ Good
□ Fair
□ Poor
□ Don't know/Not sure
□ Prefer not to say

24. Within the past year (anytime less than one year ago), have you:

	Yes	No	Don't Know	Prefer not to say
a. Had a routine/annual physical or check-up?	□	□	□	□
b. Been to the dentist/dental hygienist?	□	□	□	□

25. Have you ever been told by a doctor, nurse, or other health professional that you have any of the following health conditions? *Select all that apply:*

□ Arthritis
□ Asthma
□ Cancer
□ Chronic Obstructive Pulmonary Disease (COPD)
□ Dementia/Short-term memory loss
□ Depression or anxiety
□ Diabetes (not during pregnancy)
□ Heart disease, stroke, or other cardiovascular disease
□ High blood pressure (hypertension)
□ High cholesterol
□ Immunocompromised condition not otherwise listed
□ Kidney disease
□ Liver disease
□ Long COVID
□ Lung disease
□ Osteoporosis
□ Physical disabilities
□ Mental illness not otherwise listed (including bipolar disorder, schizophrenia, borderline personality disorder, dissociative identity disorder)
□ Sexually transmitted diseases (including chlamydia, syphilis, gonorrhea and HIV)
□ Stroke
□ Vision and sight problems
□ Other *(please specify)*:
□ None of the above
□ Don't know/Not sure
□ Prefer not to say

26. What do you need to be able to manage your current health conditions (for example, heart conditions, high blood pressure, stroke, diabetes, asthma, cancer, COPD, congestive heart failure, arthritis, HIV, depression, anxiety, other mental health condition, etc.) to stay healthy? *Please select all that apply:*

□ I don't have a current health condition to manage
□ Health insurance to cover the care I need
□ Assistance finding a doctor
□ Assistance making and keeping appointments with my doctor(s)
□ Assistance understanding all the directions from my doctor(s)
□ Information to understand how to take my medication(s)
□ Assistance paying for my prescription(s)/medication(s) or medical equipment
□ Health care in my home
□ Coordination of my overall care among multiple health care providers
□ Access to healthy foods
□ Access to places to exercise safely
□ Transportation assistance
□ Financial assistance for co-pays, deductibles
□ Home modification assistance (for example, installing a wheelchair ramp or a handicapped-accessible shower)
□ Other *(please specify)*: _____
□ None
□ Don't know
□ Prefer not to say

Topic: Substance Use Disorders

27. Considering all types of alcoholic beverages, how many times during the past 30 days did you have 4 (females)/ 5 (males) or more drinks on an occasion?

□ Number of drinks: _____

28. How often do you consume any kind of alcohol product, including beer, wine or hard liquor?

□ Every Day
□ Some Days
□ Not at all
□ Don't know/not sure
□ Prefer not to say

29. In the past year, have you or a member of your household intentionally misused any form of prescription drugs (e.g. used without a prescription, used more than prescribed, used more often than prescribed, or used for any reason other than a doctor's instructions)?

□ Yes
□ No
□ Don't know/not sure
□ Prefer not to say

30. To what degree has your life been negatively affected by YOUR OWN or SOMEONE ELSE's substance abuse issues, including alcohol, prescription, and other drugs? Would you say:
□ A Great Deal
□ Somewhat
□ A Little
□ Not at All
□ Don't know/Not sure
□ Prefer not to say

Topic: Transportation and Transit

31. In a typical week, what kinds of transportation do you use the most? *Select all that apply:*

□ Car
□ Bus
□ Walk
□ Taxi, Uber, or Lyft
□ Ride with someone
□ Bike
□ Motorcycle
□ Paying for rides from family or friends
□ Other, please specify: _____
□ Prefer not to say

32. In the past 12 months has lack of transportation kept you from medical appointments, meetings, work, or getting things for daily living? *Select all that apply:*

□ Yes, it has kept me from medical appointments or getting medications
□ Yes, it has kept me from non-medical meetings, appointments, work, or getting things that I need
□ No
□ Prefer not to say

33. Do you put off or neglect going to the doctor because of distance or transportation?

□ Yes
□ No
□ Don’t know/not sure
□ Prefer not to say

APPENDIX 5 | DETAILED PRIMARY DATA FINDINGS

Focus Groups

Key findings from the focus groups are summarized below.

Focus Group General Findings

Three focus groups were conducted in Duplin County, involving 23 community members. The participants were predominantly female (73.9%), white (65.2%), and non-Hispanic/Latino (66.7%). Nearly half of the participants were between 50 and 64 years old.

All focus groups identified several common health concerns and barriers to care. First, they identified food access and security, noting the influence of Southern-style cooking, family norms around food, and the cost and availability of healthy food. The second common theme described healthcare access and quality healthcare as barriers, including long wait times, appointment availability issues, fear and skepticism around medical care, reliance on emergency departments, insurance challenges, and high costs of care and medications. Health equity was also a major concern, particularly regarding services for special needs youth, provider diversity, and language barriers for the Hispanic/Latino community. Additionally, health literacy, mental health issues, and transportation challenges, especially for the elderly, were identified as significant barriers to health and wellness in the community.

Focus Group 1 Unique Insights: Beulaville Baptist Church

Participants in this focus group highlighted employment and income as significant barriers to healthy living in Duplin County. They noted a lack of job opportunities and services within the county, forcing residents to seek work or resources elsewhere. Lower-income populations were identified as having a particularly high level of overall need.

To address these concerns, participants suggested creating a comprehensive database, website, or communication campaign to improve access to health information and resources. They also recommended strengthening existing collaborations and referred to Charity Mission Center as a valuable resource and example to follow.

Focus Group 2 Unique Insights: New Christian Chapel Missionary Baptist Church

This group identified housing and homelessness as important issues impacting health in Duplin County. They noted the substandard quality of available affordable housing, potential eligibility barriers due to mental health concerns, and a lack of resources for homeless residents. Physical health issues, particularly chronic conditions like heart disease, diabetes, and high cholesterol, were also highlighted as major concerns.

Participants suggested implementing more targeted health education for younger people and encouraging young locals to return to the area after medical training. They also recommended creating a centralized online resource center for the public to improve access to health information and services.

Focus Group 3 Unique Insights: Iglesia de Dios Pentacostal

The Spanish-language focus group at Iglesia de Dios Pentacostal emphasized employment and income as significant barriers to health. They noted that the rising cost of living is causing stress, which contributes to chronic health conditions. Poverty and low socioeconomic status in the community were identified as major challenges. Physical health issues such as diabetes, hypertension, high cholesterol, and migraines were also highlighted as prevalent concerns.

To address these issues, participants suggested that clinics offering sliding scale fee structures should consider rising household expenses when determining fees. They also recommended increasing community outreach events and health education efforts in various locations such as churches, laundromats, grocery stores, and parks to better reach community members where they are.

Community Member Web Survey

Charts detailing key findings from the Community Member Survey are displayed below:

Topic: Additional Demographic Information

Figure 56: What is the highest grade or year of school you completed?

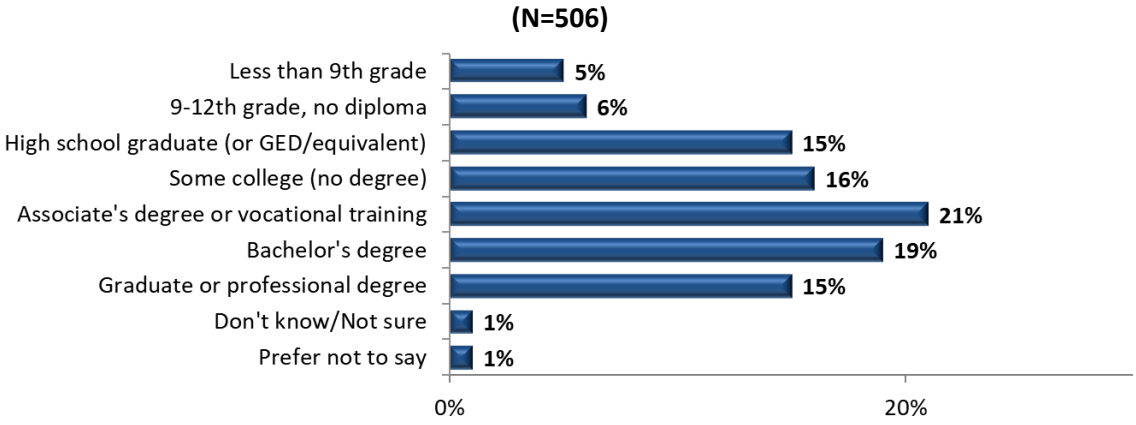
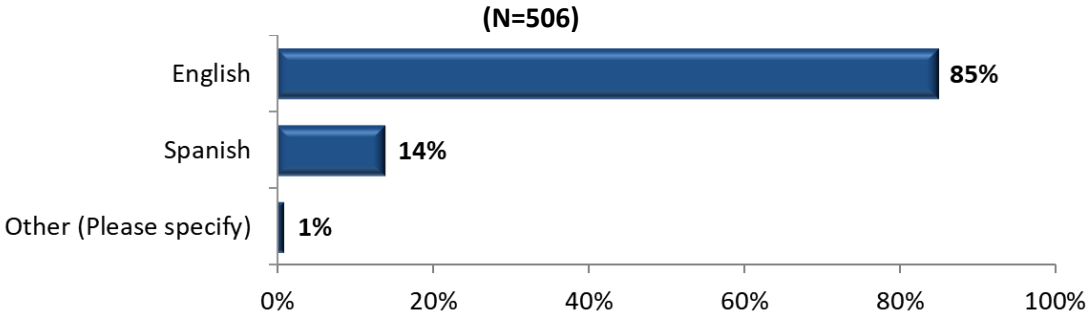


Figure 57: Which language is most often spoken in your home? (Choose one)



Other (please specify):

- "English & Spanish" (2 respondents)
- "Spanglish"

Figure 58: For employment, are you currently... (Select all that apply.)

(N=505)

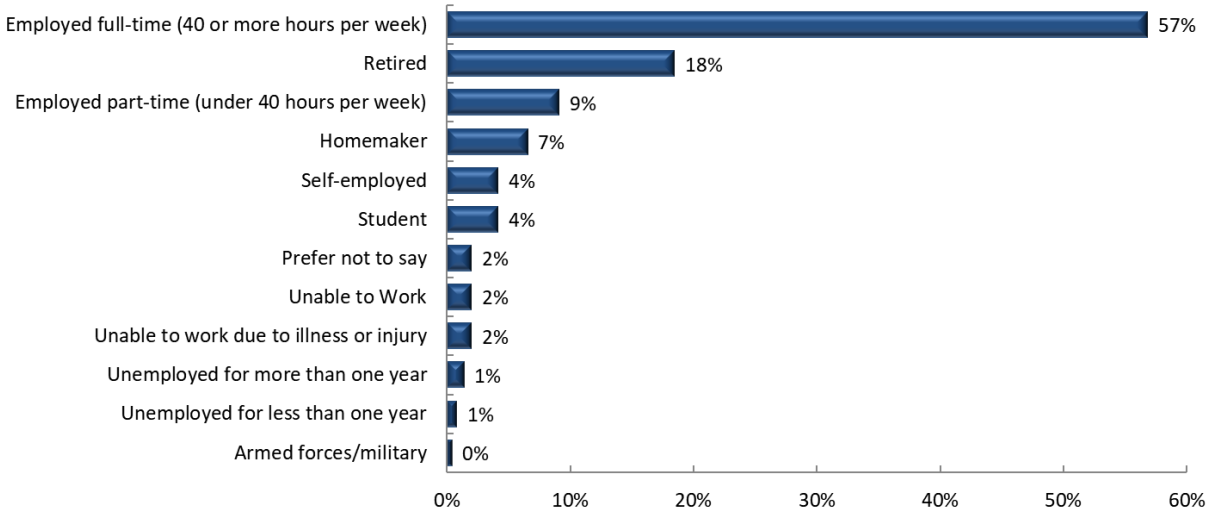
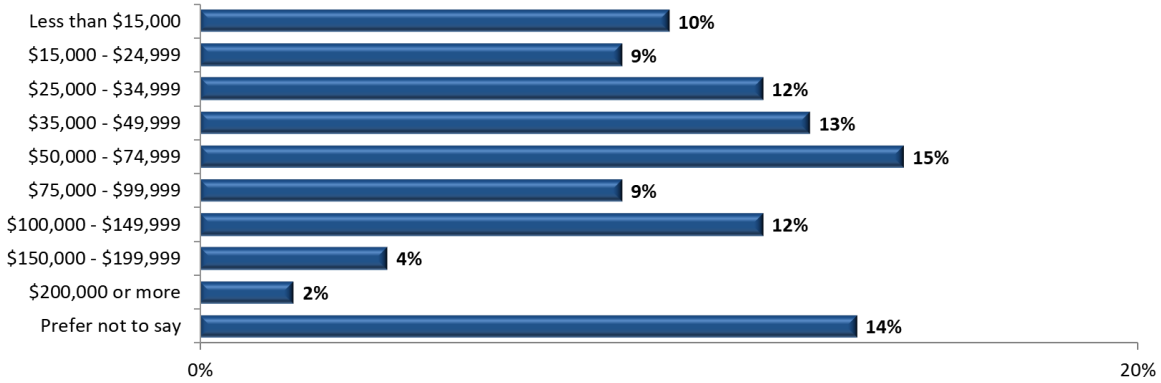


Figure 59: Which category best describes your yearly household income before taxes?[56]

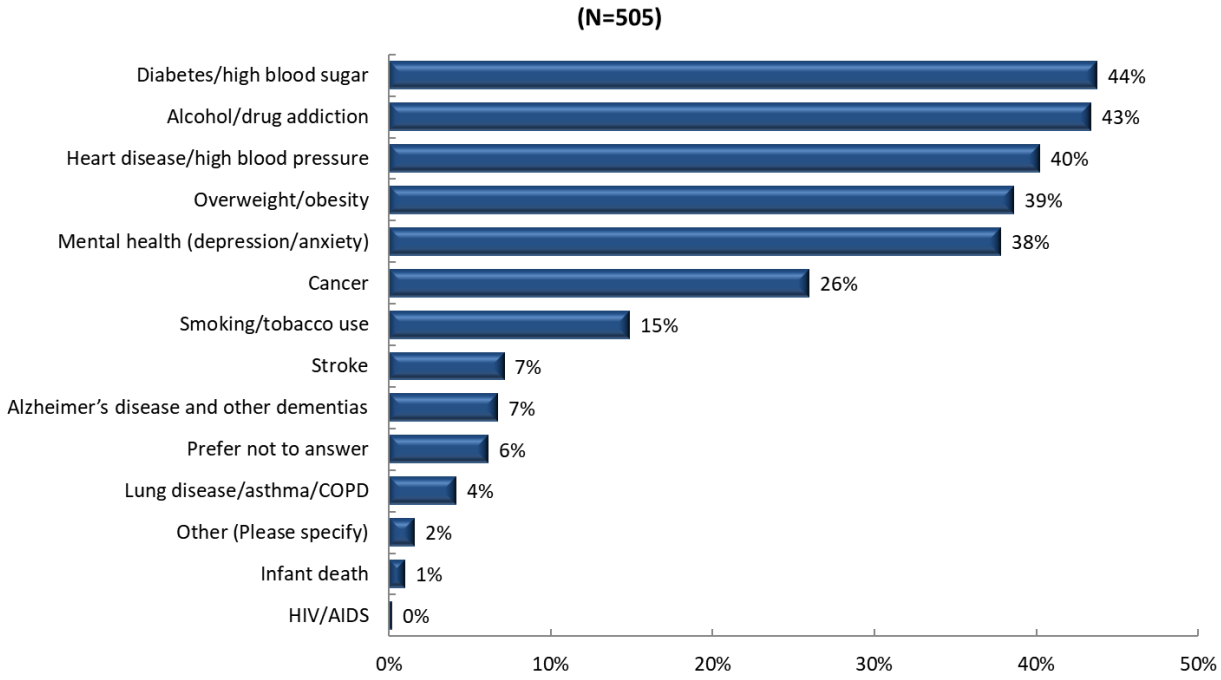
(N=500)



[56] Respondents were asked to include all income received from employment, social security, support from children or other family, welfare, Aid to Families with Dependent Children (AFDC), bank interest, retirement accounts, rental property, investments, etc.

Topic: Health Conditions, Barriers to Care, and Social Determinants of Health

Figure 60: What are the three most important health problems that affect the health of your community? Please select up to three.



Other (please specify):

- "Access to care. Not enough providers."
- "arthritis"
- "bone + heel spurs, knee replacement"
- "Epilepsy"
- "High blood pressure" (2 respondents)

Figure 61: What are the three most important health problems that affect the health of your community? Please select up to three. (by age)

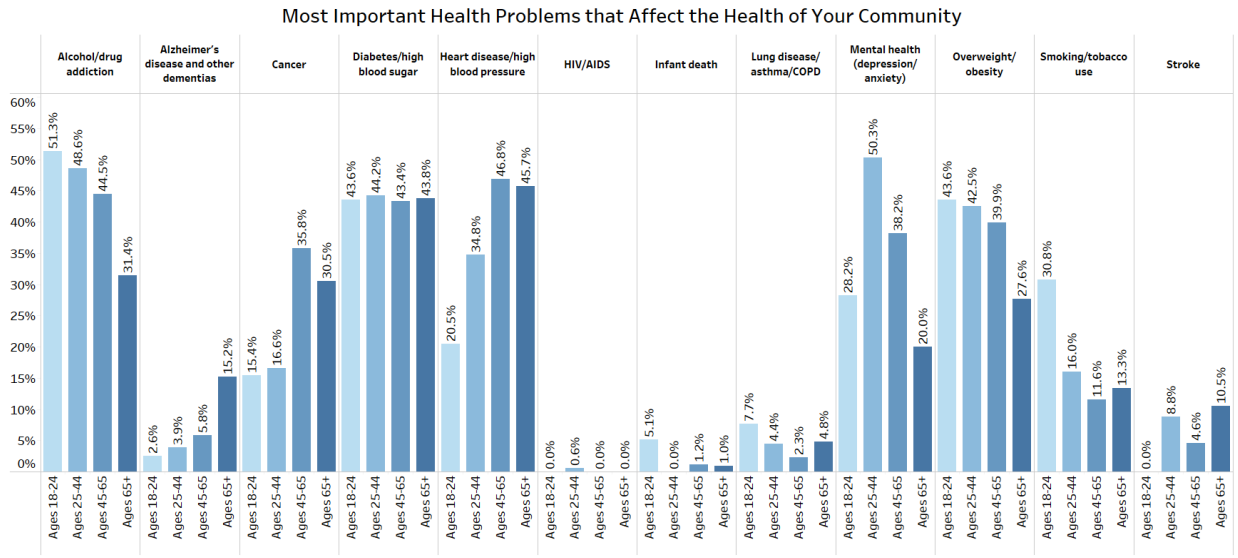


Figure 62: What are the three most important health problems that affect the health of your community? Please select up to three. (by gender)

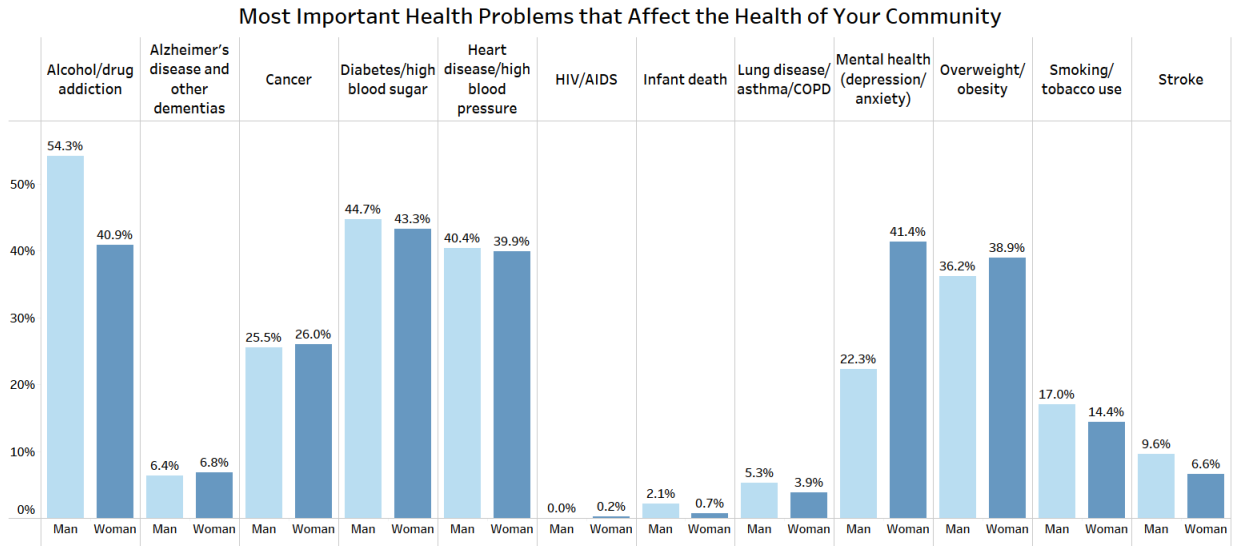


Figure 63: What are the three most important health problems that affect the health of your community? Please select up to three. (by race)

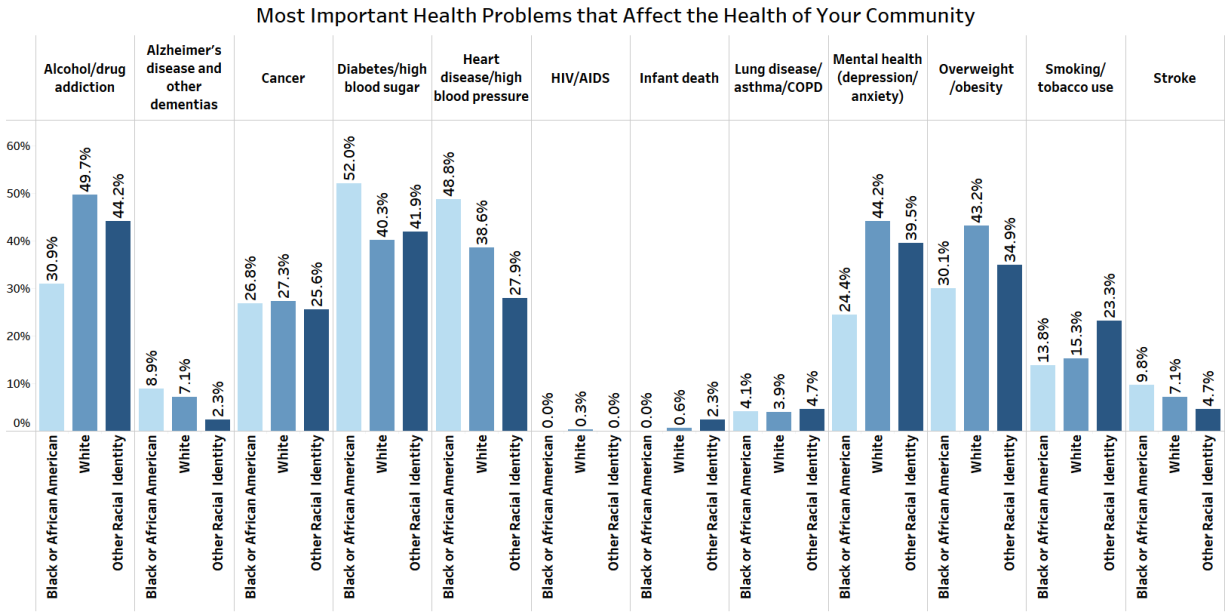


Figure 64: What are the three most important health problems that affect the health of your community? Please select up to three. (by ethnicity)

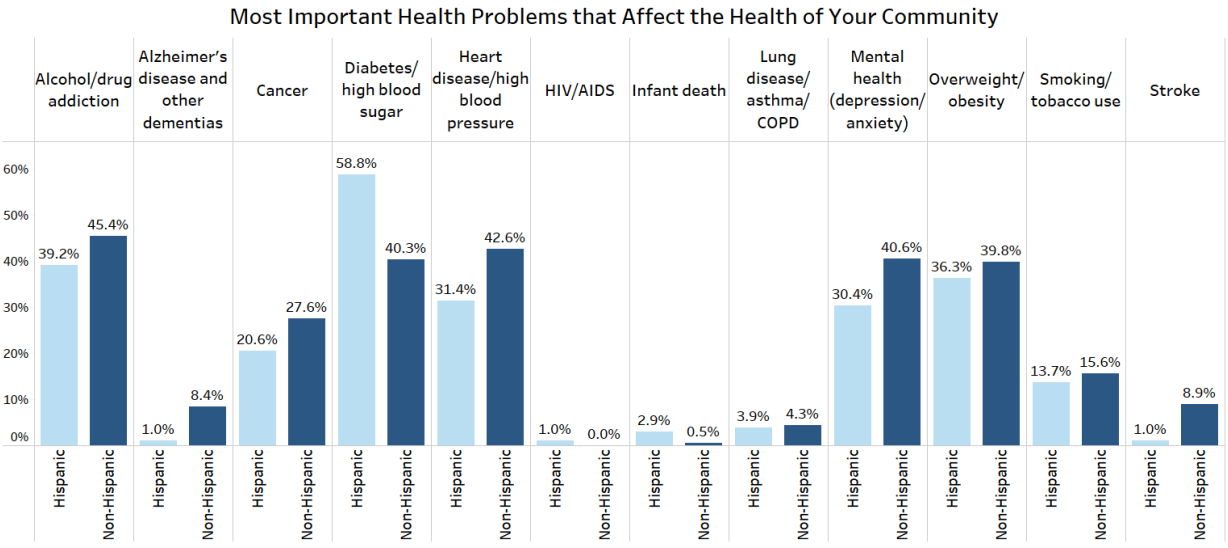
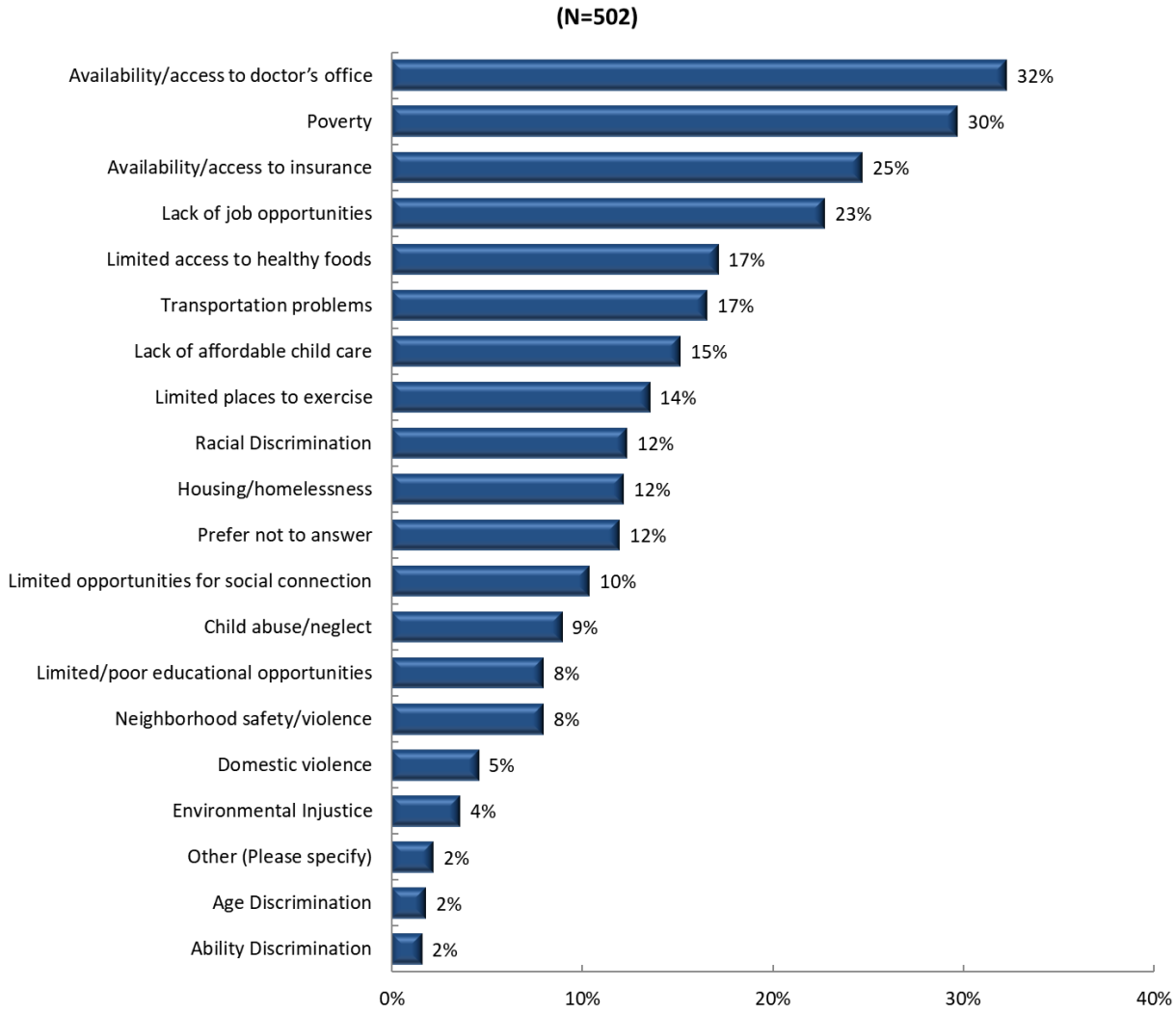


Figure 65: What are the three most important social or environmental problems that affect the health of your community? Please select up to three.



Other (please specify):

- "Access to provider care, either NP or physician. NC law does not allow NPs to practice autonomously."
- "Cost of health foods"
- "Drug abuse"
- "Have none"
- "Lack of available internet resources that are affordable"
- "Lack of time because some of us have to work"
- "Only one doctor's office in town that is open 5 days a week and there's never an appointment available for acute issues"
- "Single parent families/ no family structure"

Figure 66: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by age)

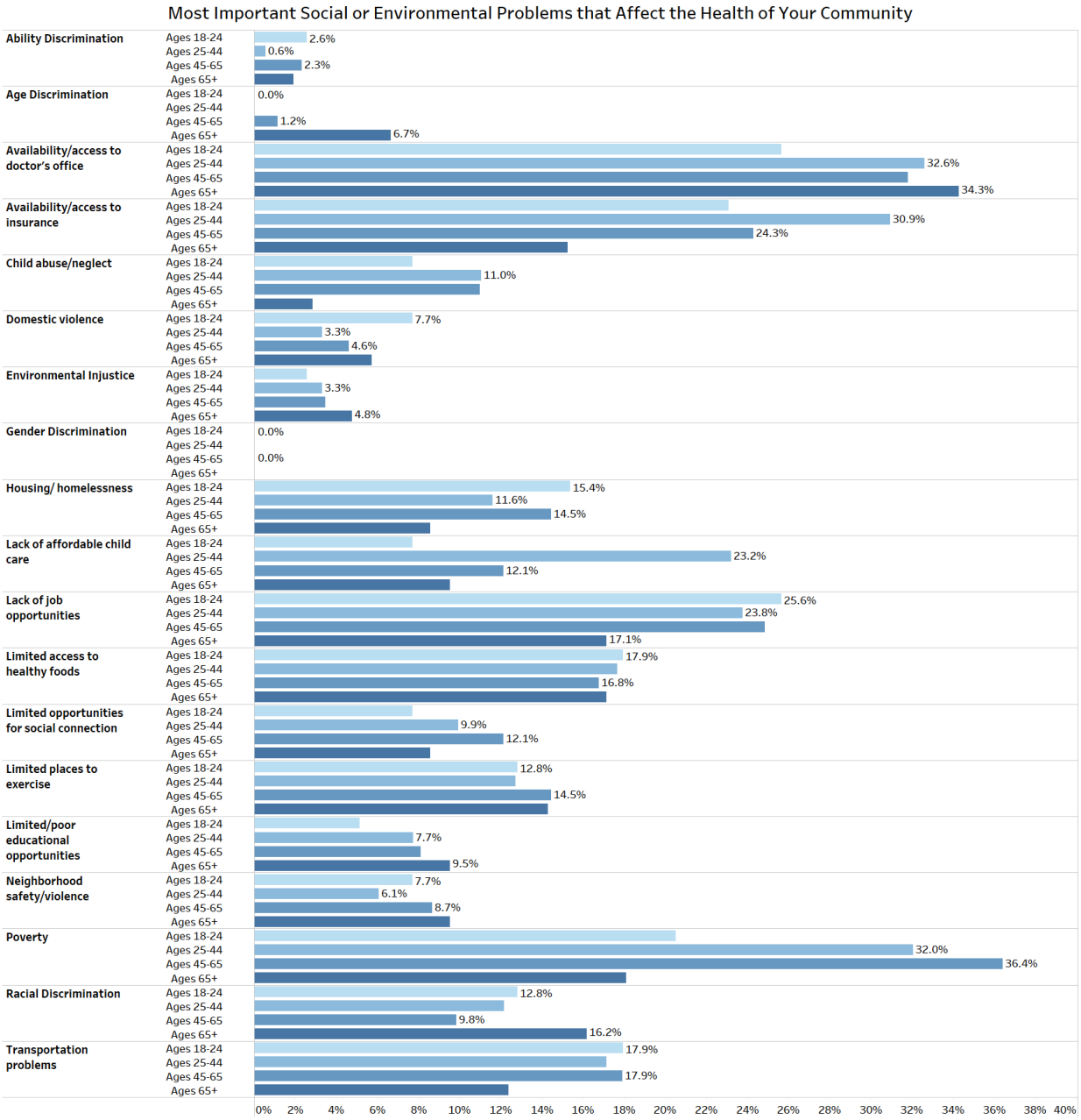


Figure 67: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by gender)

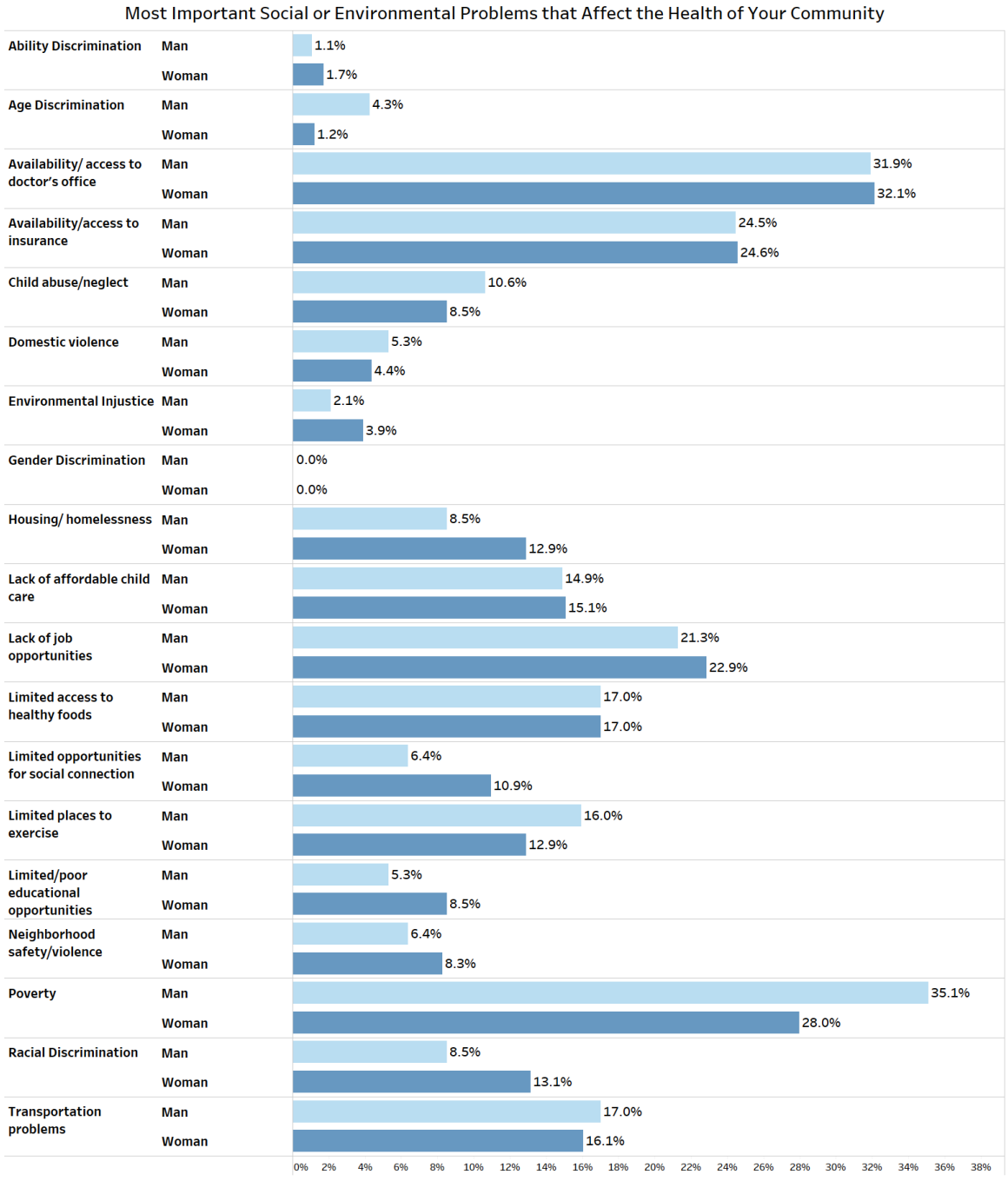


Figure 68: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by race)

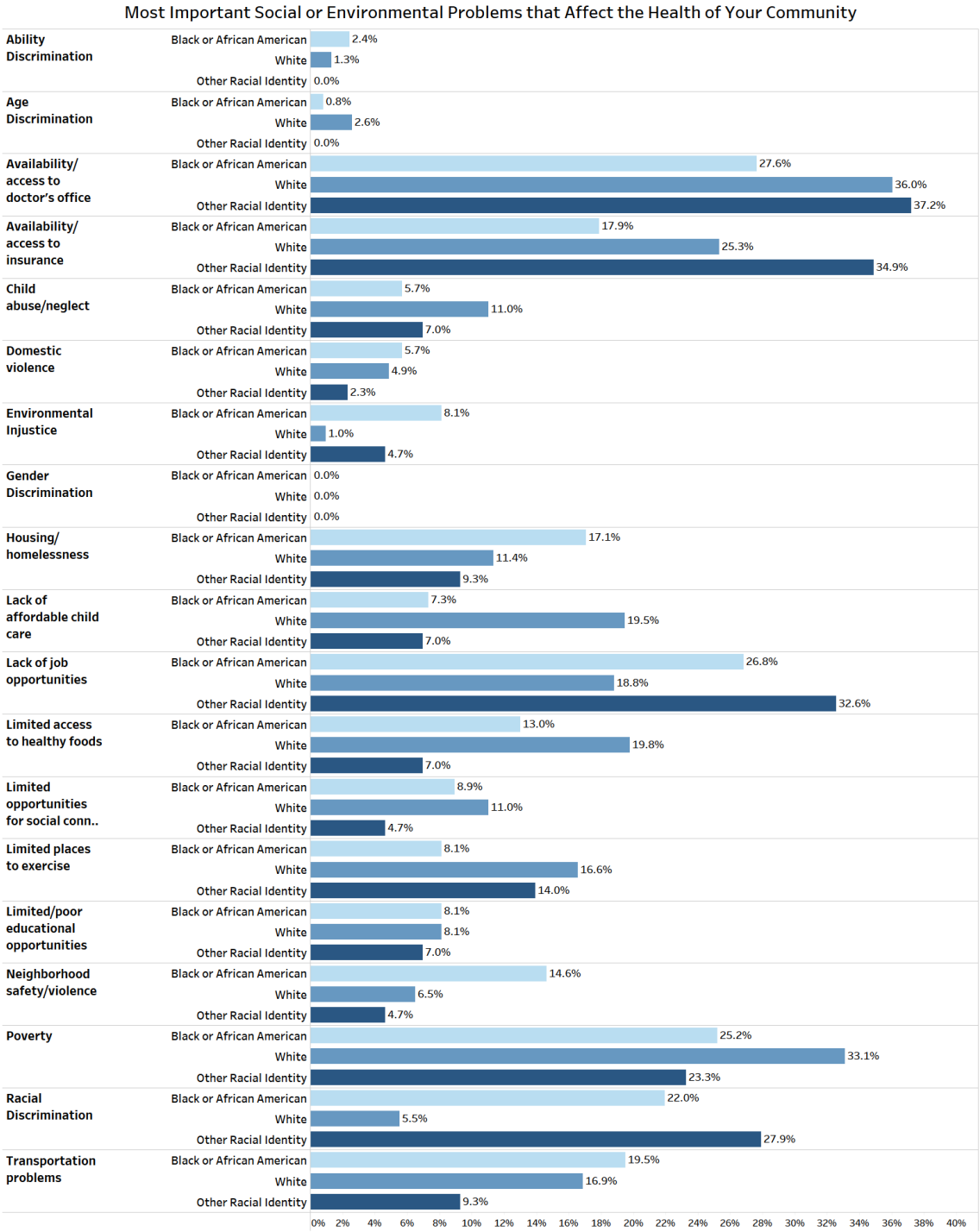


Figure 69: What are the three most important social or environmental problems that affect the health of your community? Please select up to three. (by ethnicity)

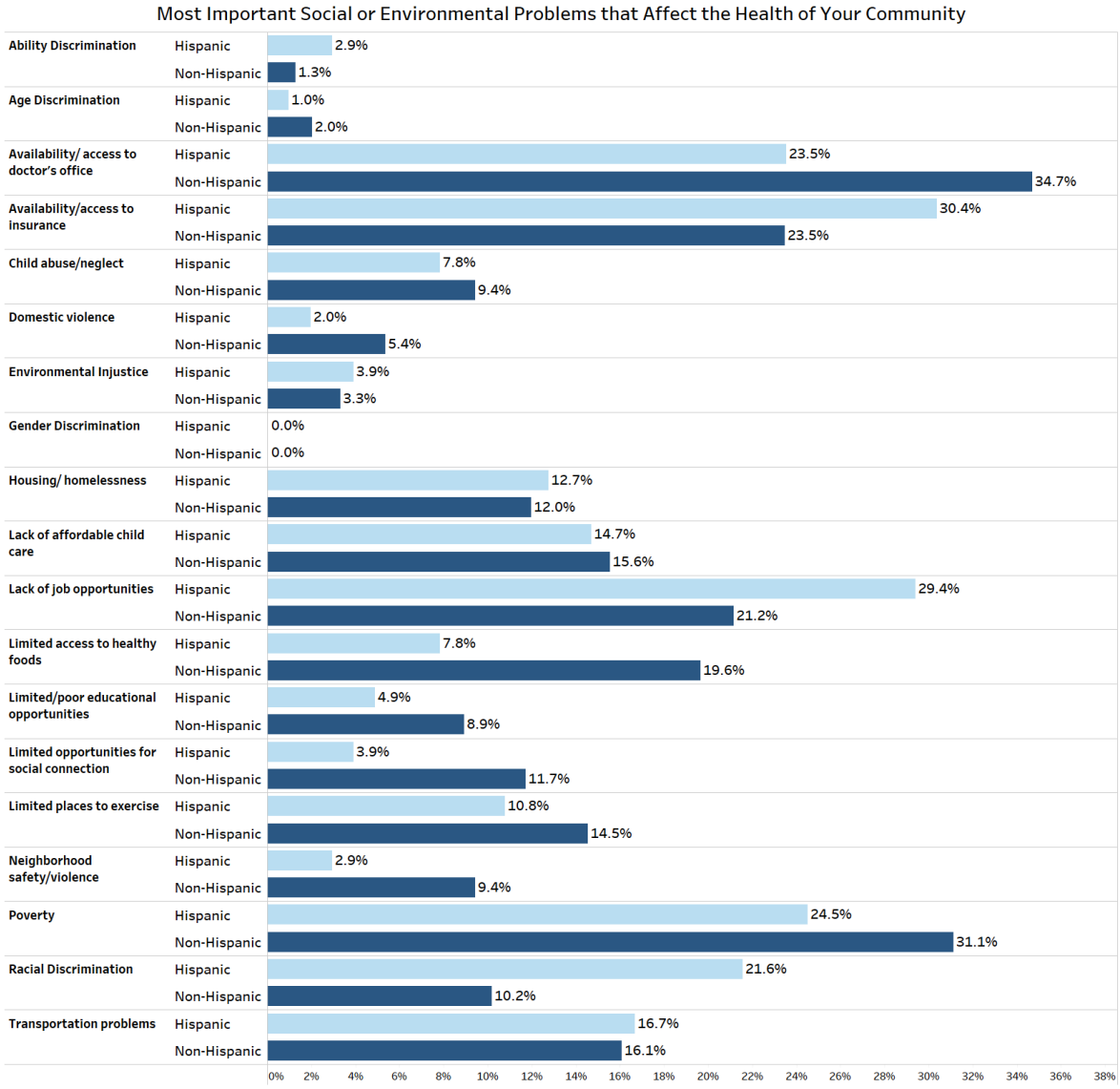
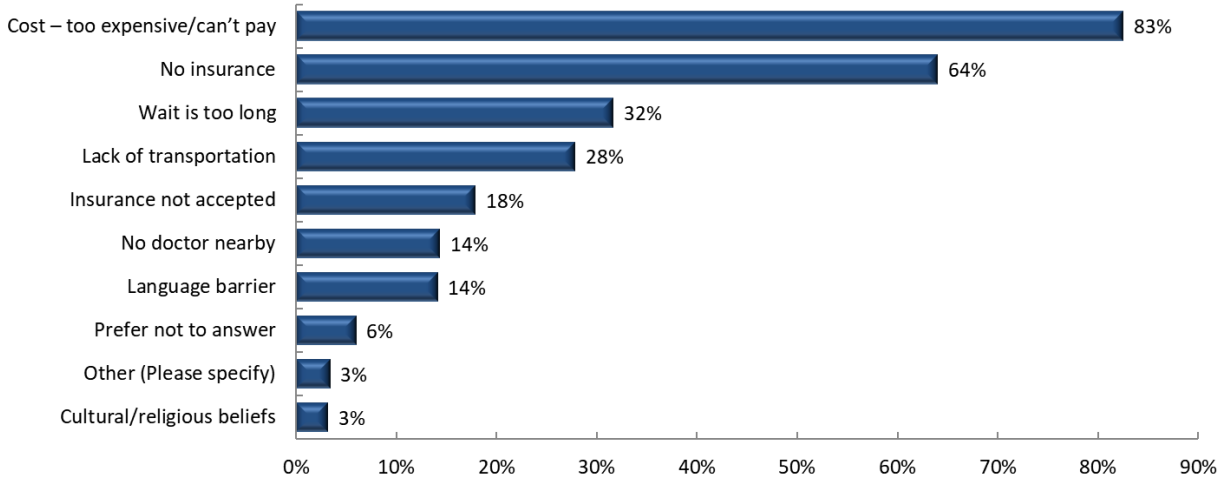


Figure 70: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three.

(N=503)



Other (please specify):

- "Afraid"
- "After the corruption of the Covid vaccine and boosters and the money made by you for participating and encouraging, Health departments are no longer trusted. Doctors are no longer trusted. Nurses are no longer trusted. that you just recently did an on-call for anyone a five years or older to get a booster , Is nothing less than criminal"
- "Co pays and costs"
- "have insurance but they will not pay for testing or procedures that may be needed"
- "Lack of adequate/available healthcare"
- "Lack of education on healthcare"
- "Lack of understanding regarding need of insurance and issues obtaining."
- "No 24 hour Urgent Care Facilities"
- "No available appointments at the local doctor's office"
- "No provider nearby, either a nurse practitioner or a physician."
- "They don't believe they're sick, they believe the doctor cannot do anything to help, they believe the doctor is just around to make money and give out drugs"
- "Use emergency room instead, lack of urgent cares"
- "Yhe doctors juat want to put a bandaid on the health issue not try to fix"

Figure 71: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by age)

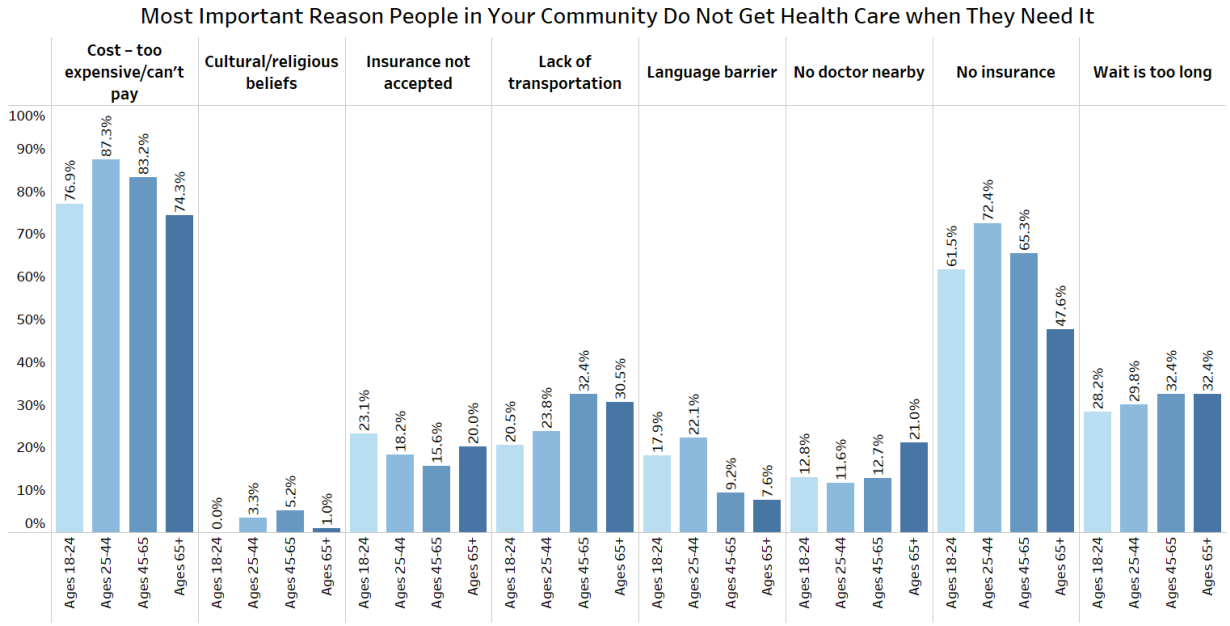


Figure 72: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by gender)

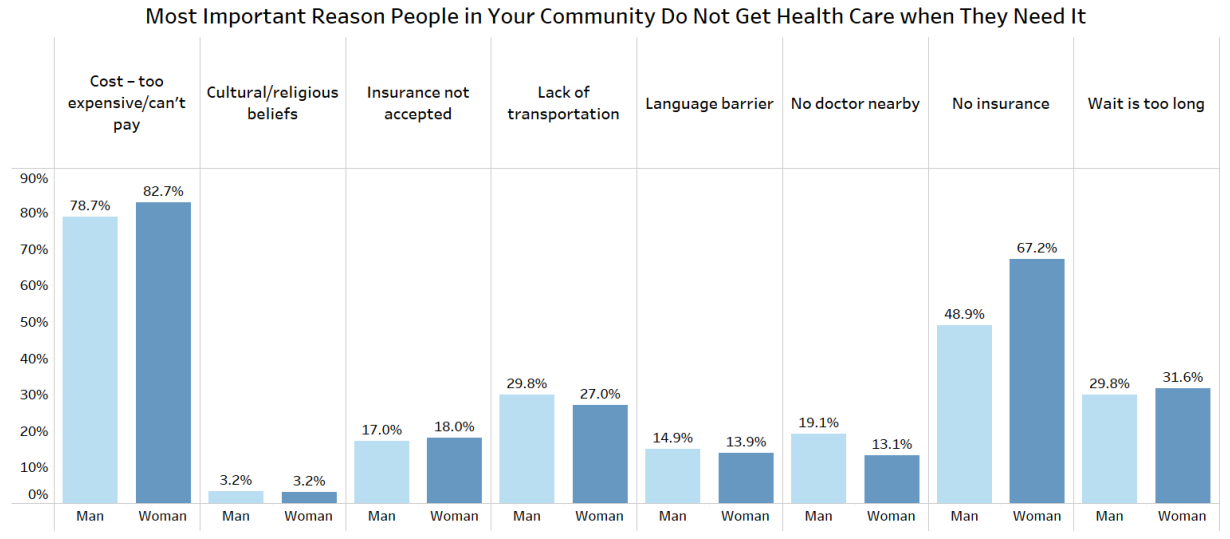


Figure 73: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by race)

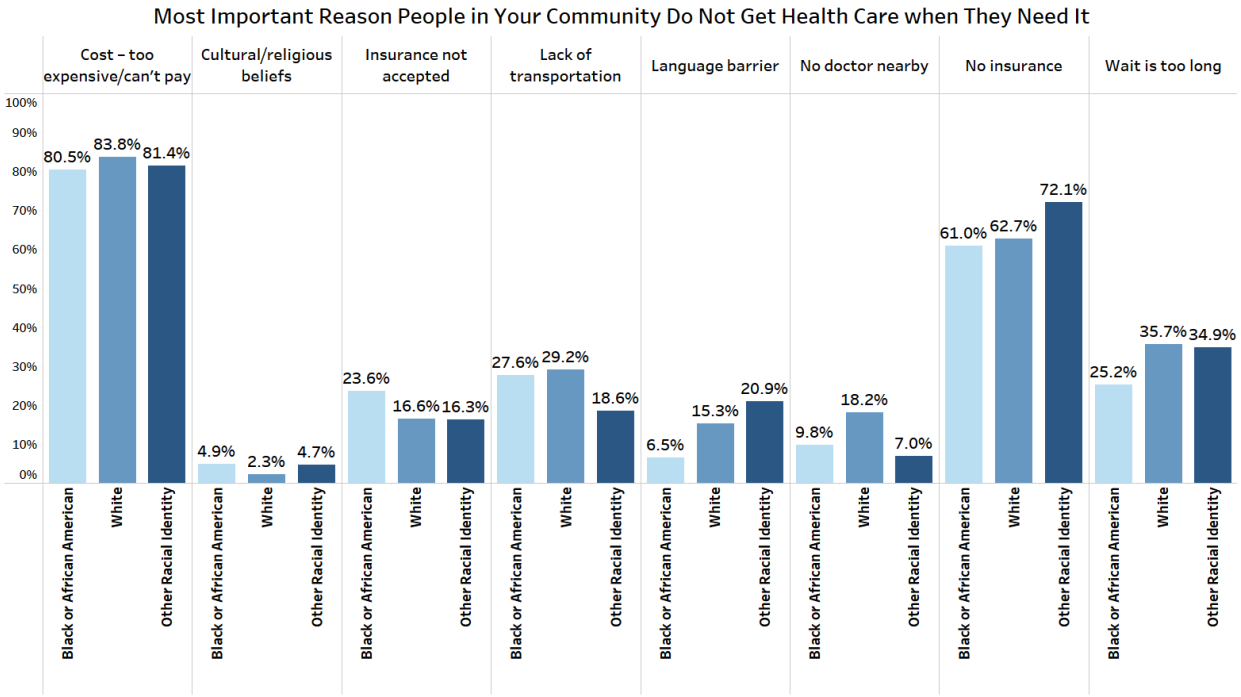
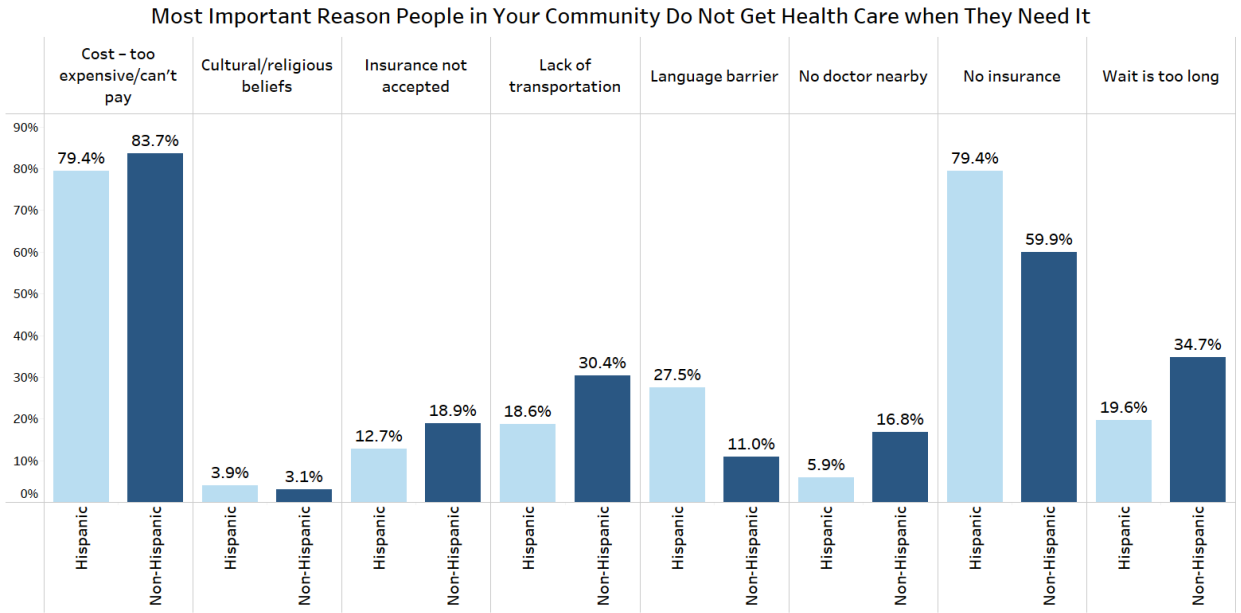


Figure 74: What are the three most important reasons people in your community do not get health care when they need it? Please select up to three. (by ethnicity)



Topic: Access to Care

Figure 75: DURING THE PAST 12 MONTHS, were you told by a health care provider or doctor's office that they did not accept your health care coverage?

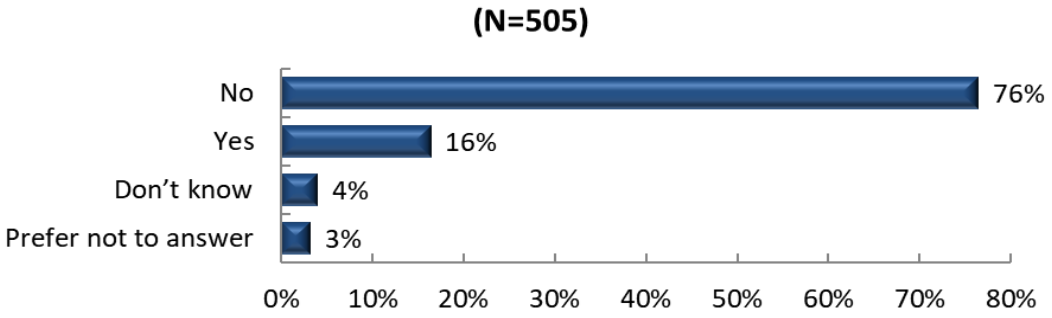
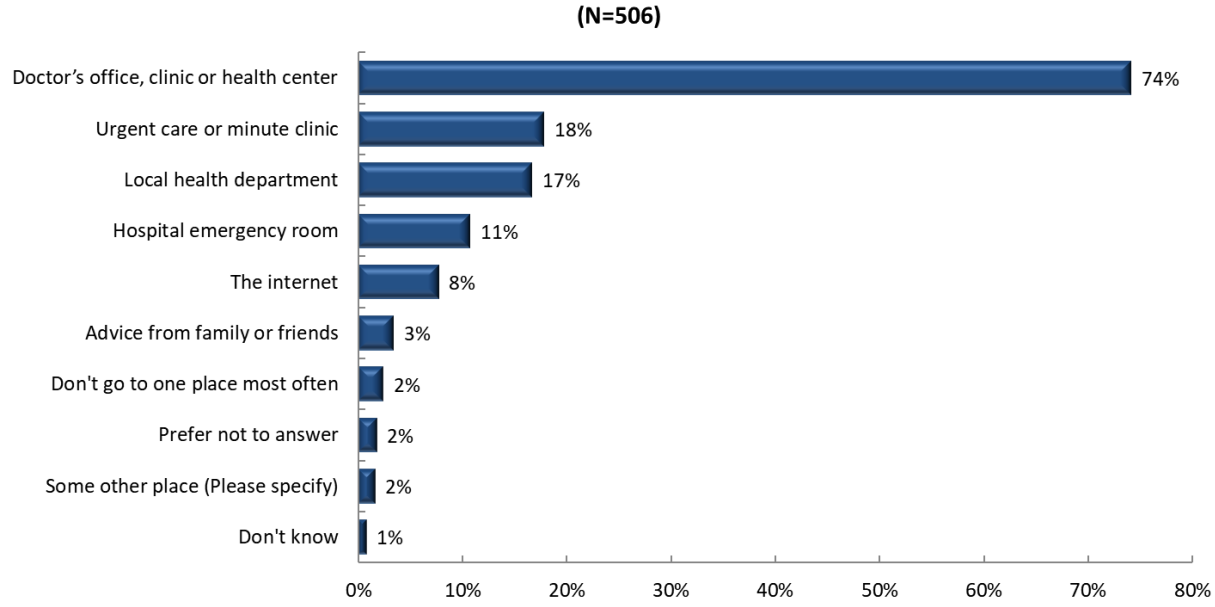


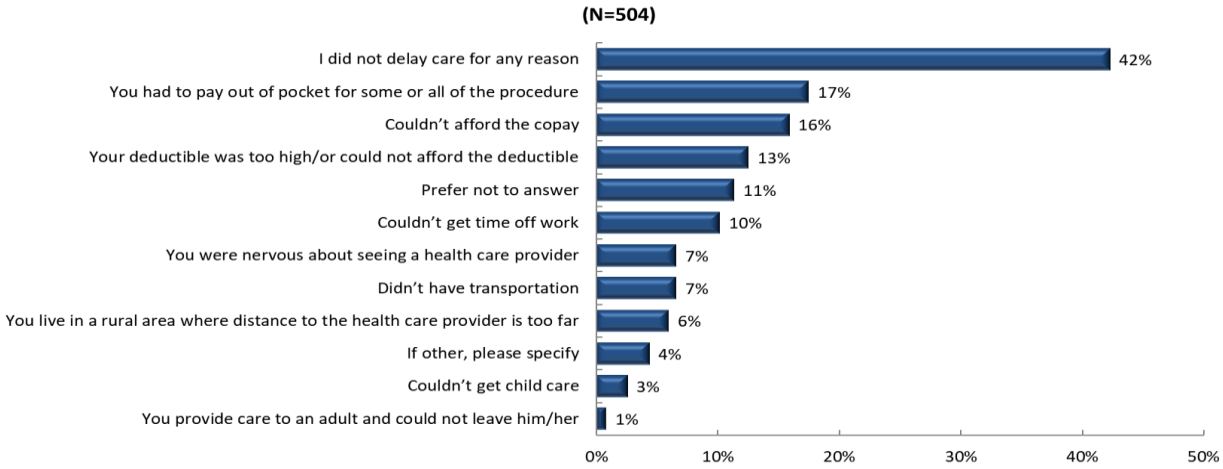
Figure 76: Where do you USUALLY go when you are sick or need advice about your health?



Other (please specify):

- "Doctors office in Jacksonville NC"
- "Doctors office, but an hour away"
- "Hospital"
- "My NP at a physician's office."
- "Teladoc"
- "Telephone doctor"
- "Virtual appointment such as Rely MD"

Figure 77: There are many reasons people delay getting medical care. Have you delayed getting care for any of the following reasons in the PAST 12 MONTHS?



Other (please specify):

- "Appointment availability too far out"
- "Having to switch providers, again"
- "I do not trust ECU Health"
- "I work 12 hours at night so I overslept and missed my appointment!"
- "Insurance does not cover hearing aids."
- "Just didn't want another medical bill"
- "Lack of time"
- "Long wait time for appointments"
- "No"
- "No health insurance"
- "No insurance and no trust in doctors anymore"
- "No insurance approval given"
- "Not finding an MD in my area I liked, I have a PCP in New Hanover County"
- "Not needed any medical care"
- "Office to busy"
- "Substitute teachers are difficult to find."
- "The doctors' office did not have an mediate opening nor for the filling day."
- "Waiting list to long"
- "Western medicine is risky, not root cause based and doctors are ill informed."

Figure 78: DURING THE PAST 12 MONTHS, was there any time when you needed any of the following, but didn't get it because you couldn't afford it?

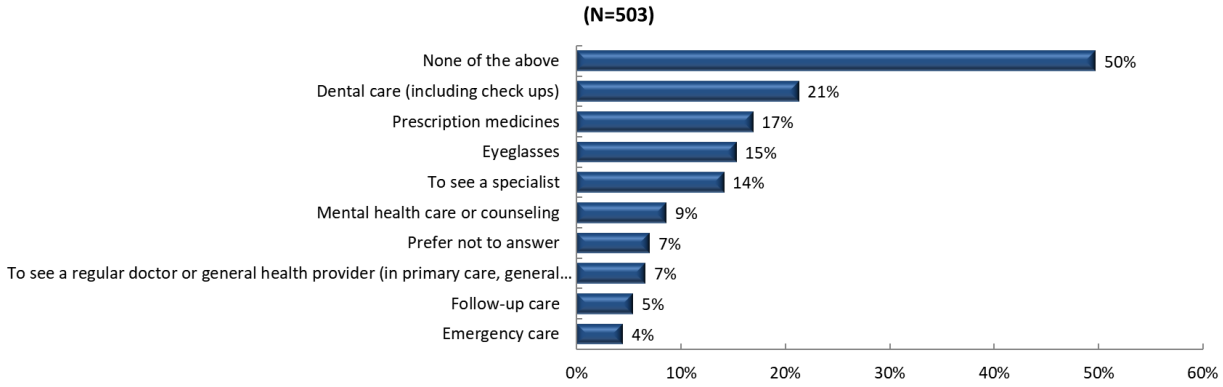


Figure 79: If you get sick or have an accident, how worried are you that you will be able to pay your medical bills?

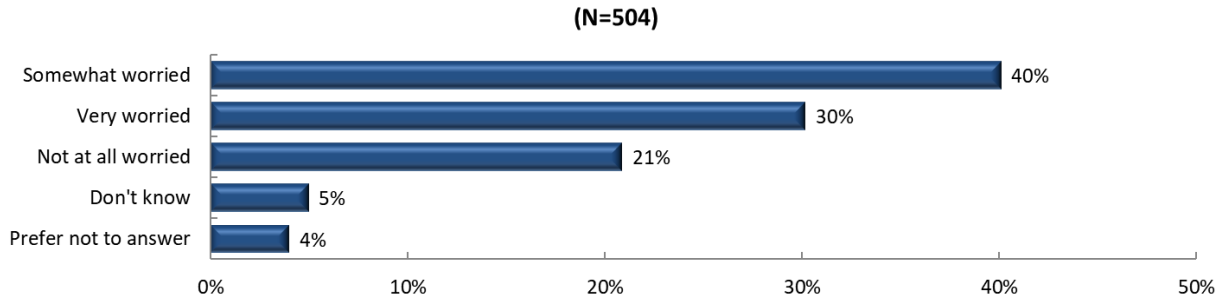
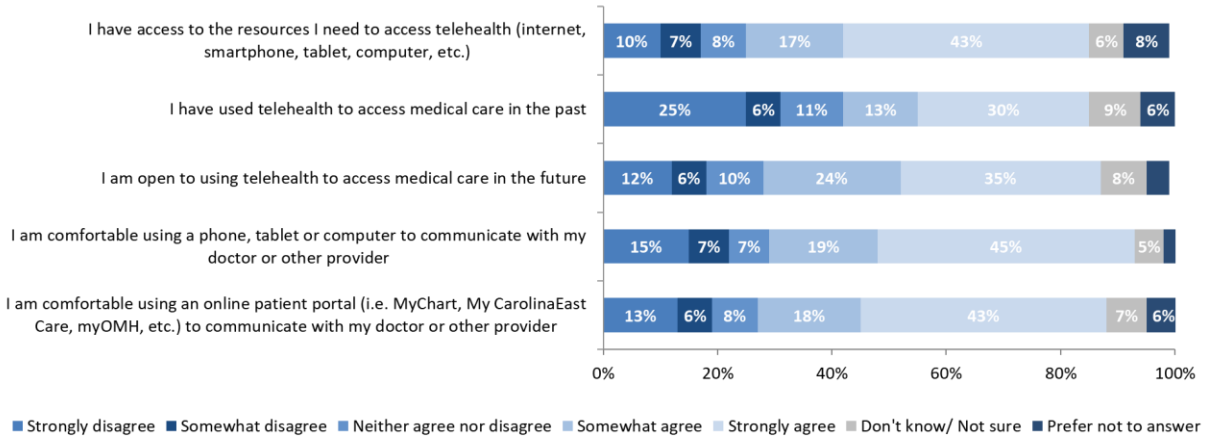


Figure 80: How much do you agree or disagree with the following statements about telehealth? Telehealth means connecting virtually with a medical provider using a smartphone, tablet or computer. (N=501)

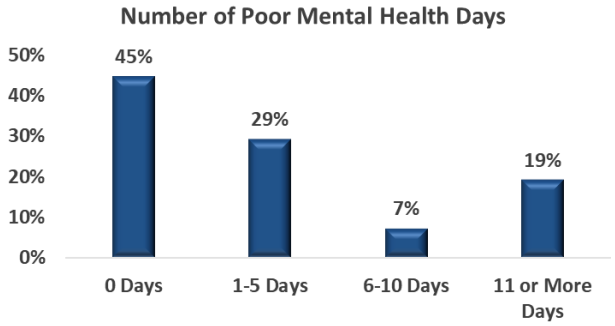
Scale from 1 to 5 with 1 being “strongly disagree” and 5 being “strongly agree” (Average Score=3.68)



Topic: Mental Health

Figure 81: Now thinking about your MENTAL health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health NOT good?

(N=466)



Measure	Value
Mean (Standard Deviation)	5 (8)
Median	2
Mode	0
Minimum-Maximum	0-30

Figure 82: Was there a time in the past 12 months when you needed mental health care or counseling, but did not get it at that time?

Note: only participants who indicated one or more poor mental health day in previous question were asked current question

(N=252)

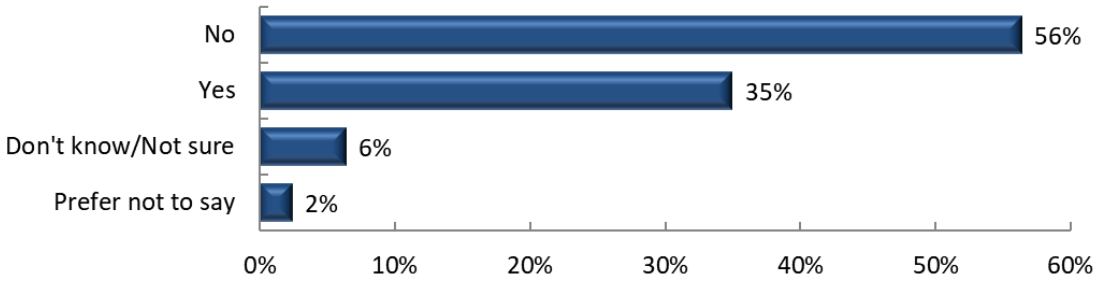


Figure 83: What was the MAIN reason you did not get mental health care or counseling?

Note: only participants who responded "yes" to previous question were asked current question

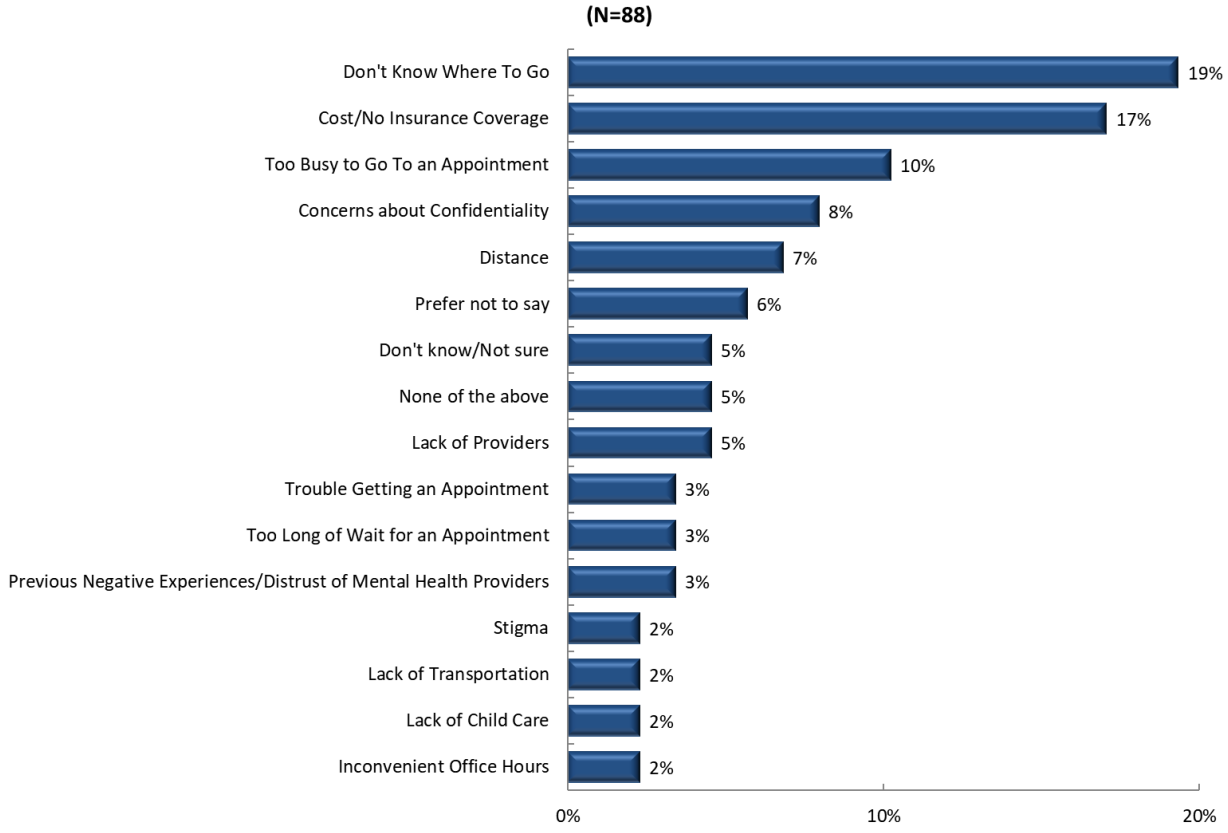
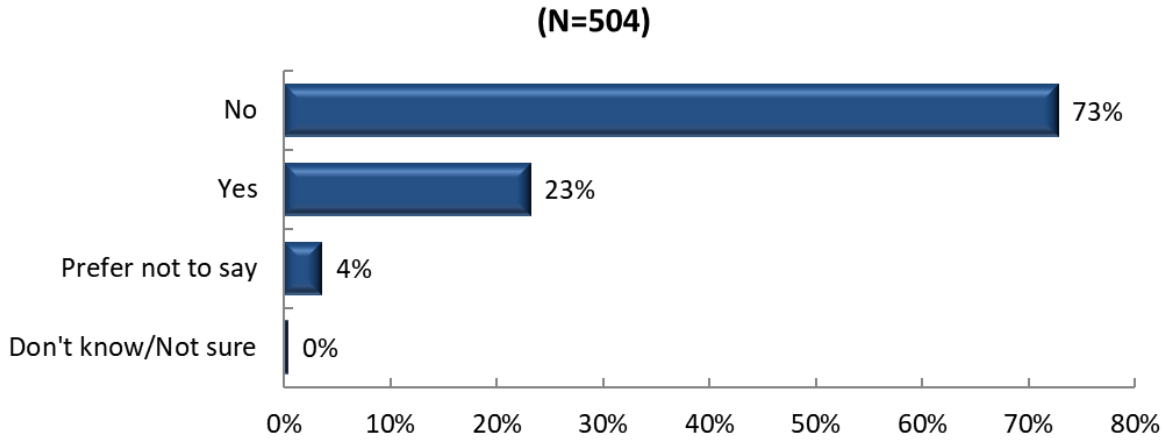


Figure 84: Are you currently taking medication or receiving treatment, therapy, or counseling from a health professional for any type of MENTAL or EMOTIONAL HEALTH NEED?



Topic: Physical Health

Figure 85: Considering your physical health overall, would you describe your health as… (N=505)

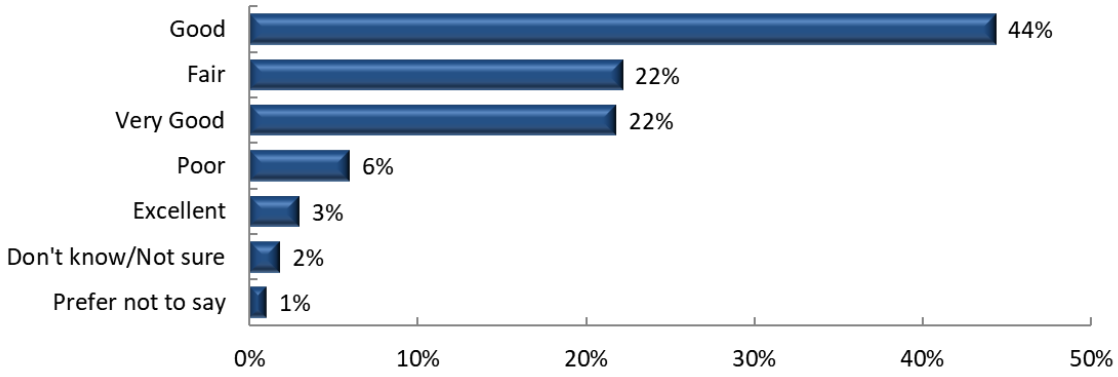


Figure 86: Within the past year (anytime less than one year ago), have you:

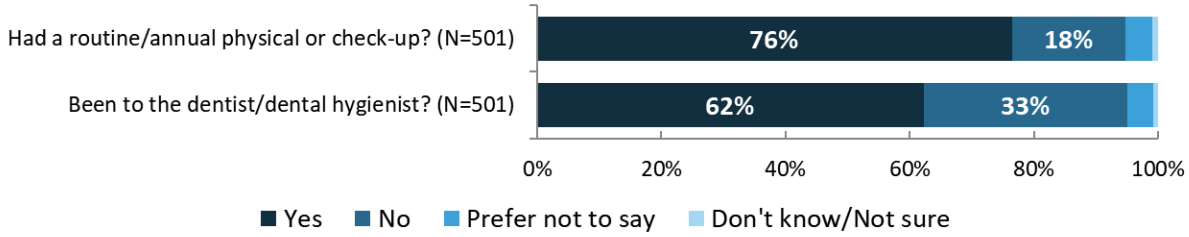
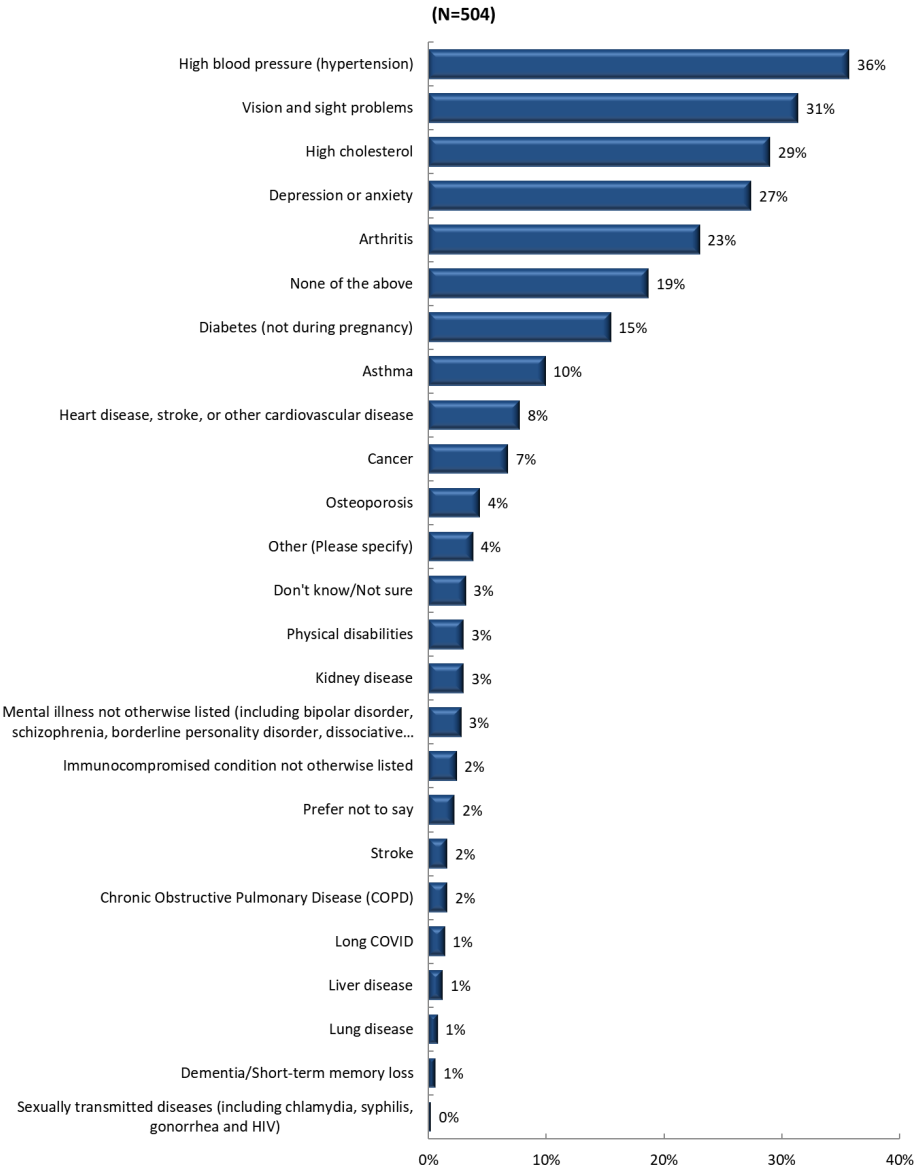


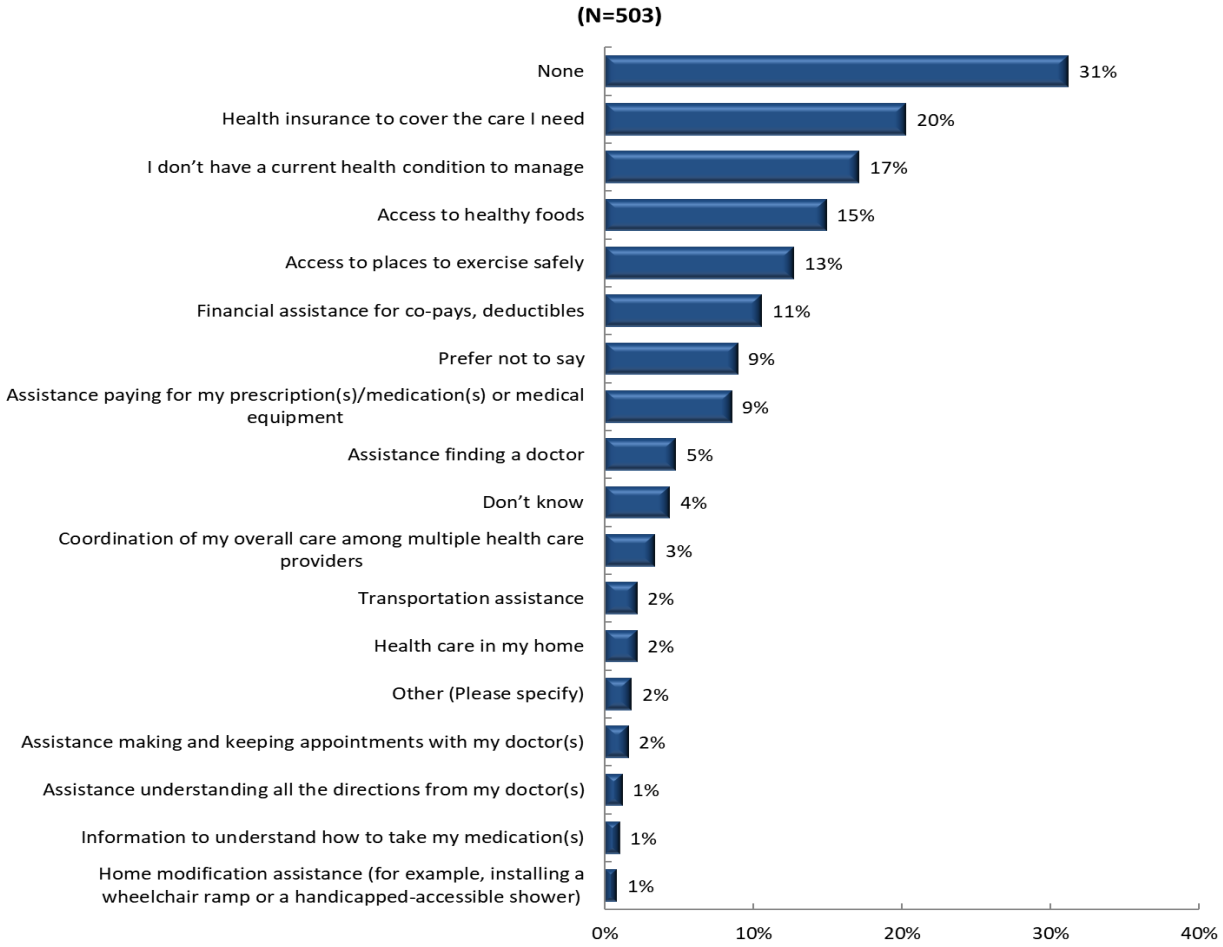
Figure 87: Have you ever been told by a doctor, nurse, or other health professional that you have any of the following health conditions? Select all that apply



Other (please specify):

- ADHD and Hearing loss"
- "Anemia"
- "Degenerative disc disease."
- "GERD"
- "Graves Disease/Irregular heartbeat"
- "Hashimotos"
- "Hearing loss"
- "Heart palpitations"
- "hypothyroidism"
- "PCOS"
- "Pre Diabetic" (2 respondents)
- "Silent reflux"
- "Thyroid disease"
- "Trigeminal neuralgia"
- "Well I've had and passed kidney stone"

Figure 88: What do you need to be able to manage your current health conditions (for example, heart conditions, high blood pressure, stroke, diabetes, asthma, cancer, COPD, congestive heart failure, arthritis, HIV, depression, anxiety, other mental health condition, etc.) to stay healthy? (Select all that apply.)



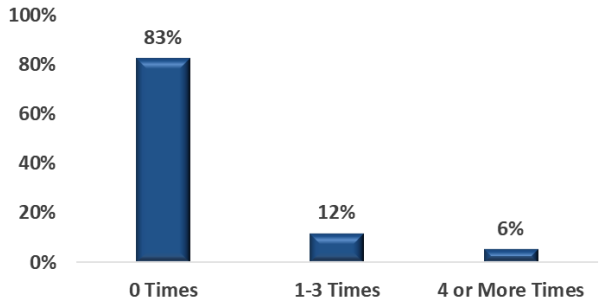
Other (please specify):

- "Childcare during appointments"
- "Closer Doctors that are good at their jobs and free mental health care like therapy"
- "For all Americans to get a job so those of us that do work don't have to such so many negative consequences paying for the ones sitting on their rump and for you- our government to stop trying to find another way to give a handout so more folks can be dependent on you and again those of us that do and will work to have to keep paying for it!"
- "I would like to see a nurse practitioner in his/her own practice without being tethered by a physician, and that's not available in NC. NPs are great at what they do. Much easier to talk to than physicians."
- "Insurance to cover functional medicine and non-western practitioners."
- "Insurance to cover hearing aids."
- "internet access to get to patient portals"
- "No longer trust doctors"

Topic: Substance Use Disorders

Figure 89: Considering all types of alcoholic beverages, how many times during the past 30 days did you have 4 (females)/ 5 (males) or more drinks on an occasion?

(N=472)



Measure	Value
Mean (Standard Deviation)	1 (4)
Median	0
Mode	0
Minimum-Maximum	0-30

Figure 90: How often do you consume any kind of alcohol product, including beer, wine or hard liquor?

(N=505)

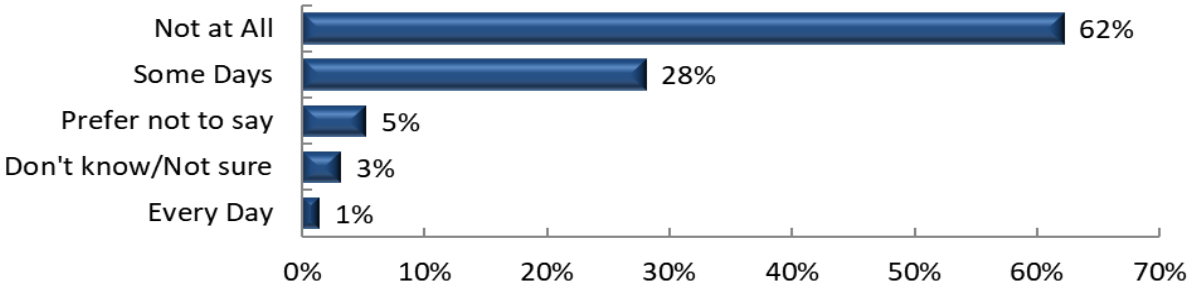


Figure 91: In the past year, have you or a member of your household misused any form of prescription drugs (e.g. used without a prescription, used more than prescribed, used more often than prescribed, or used for any reason other than a doctor's instructions)?

(N=503)

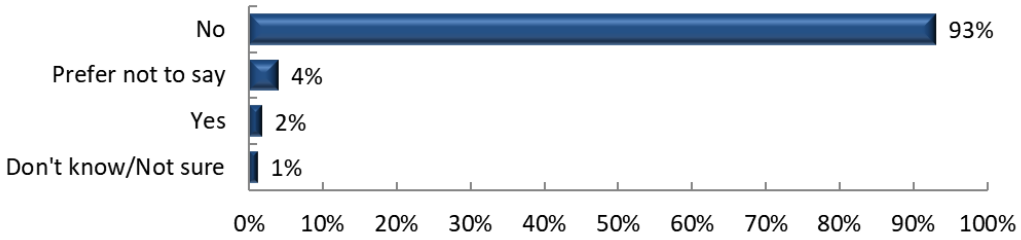
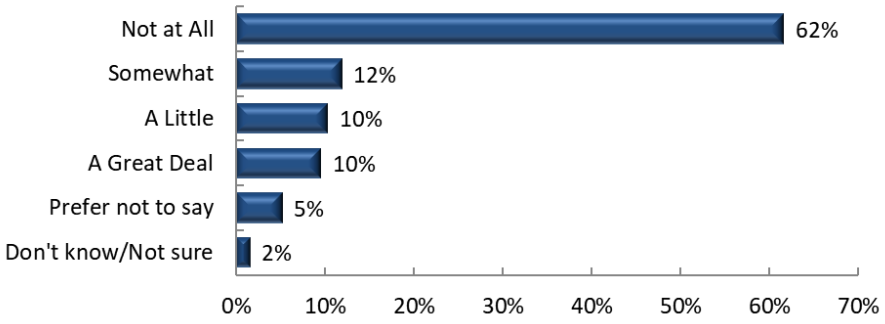


Figure 92: To what degree has your life been negatively affected by YOUR OWN or SOMEONE ELSE's substance abuse issues, including alcohol, prescription, and other drugs?

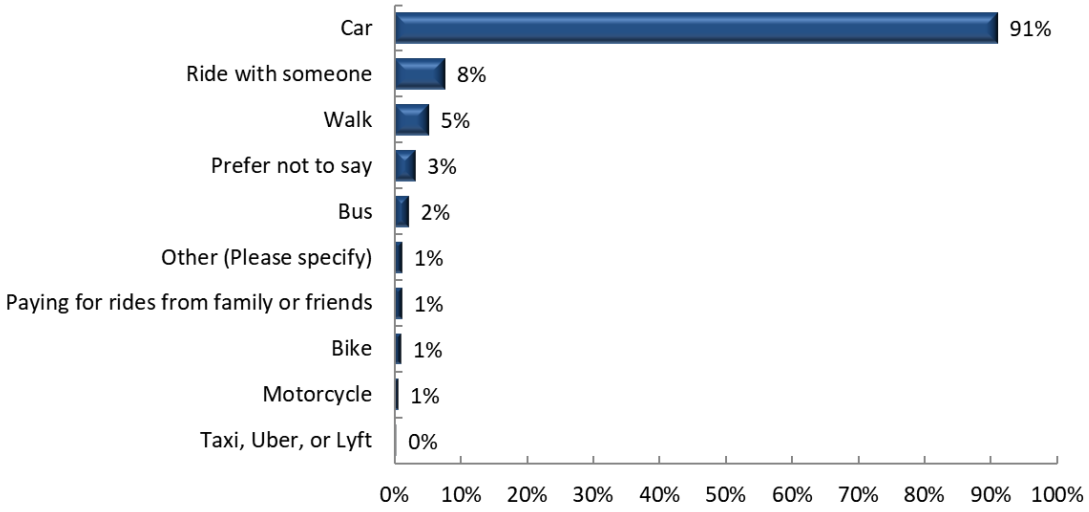
(N=505)



Topic: Transportation and Transit

Figure 93: In a typical week, what kinds of transportation do you use the most? (Select all that apply.)

(N=503)



Other (please specify):

- "County transportation"
- "Ride with family"
- "SUV"
- "Transportation van"
- "Truck"
- "Van"

Figure 94: In the past 12 months has lack of transportation kept you from medical appointments, meetings, work, or getting things for daily living? Select all that apply:

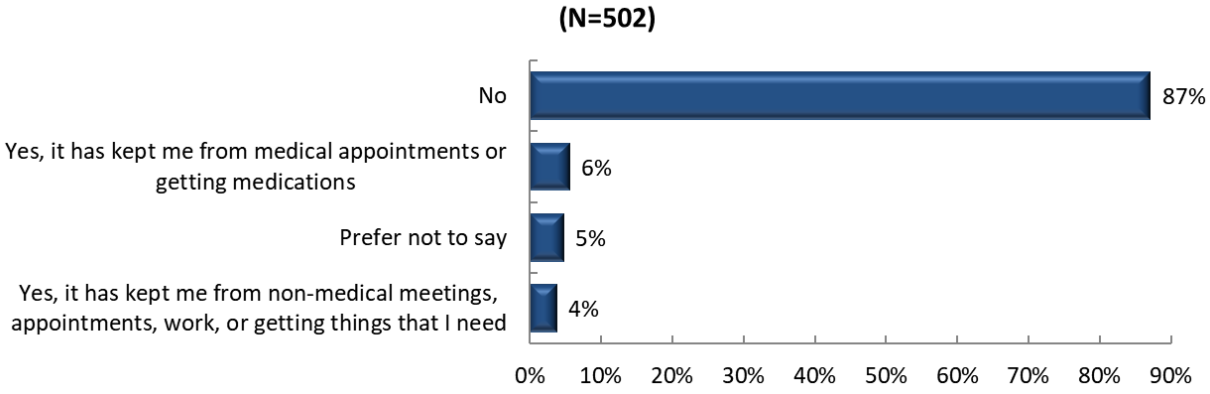
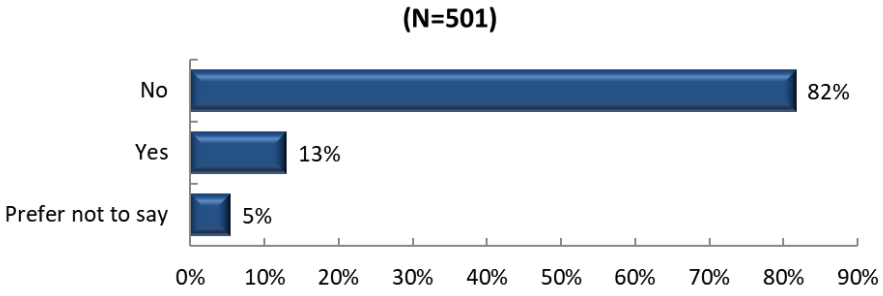


Figure 95: Do you put off or neglect going to the doctor because of distance or transportation?



APPENDIX 6 | SUMMARY OF DATA FINDINGS ACROSS SOURCES

Primary and Secondary data findings are summarized in full by the table below.[57]

Priority Area	Secondary Data	Community Survey	Focus Group 1	Focus Group 2	Focus Group 3
Behavioral Health: Mental Health			✓	✓	✓
Behavioral Health: Substance Use		✓			
Built Environment	✓				
Community Safety					
Diet & Exercise	✓				
Education					
Employment & Income	✓	✓	✓		✓
Environmental Quality					
Family, Community & Social Support	✓				
Food Access & Security			✓	✓	✓
Healthcare: Access & Quality	✓	✓	✓	✓	✓
Health Equity & Literacy			✓	✓	✓
Housing & Homelessness				✓	
Length of Life	✓				
Maternal & Infant Health					
Physical Health (Chronic Diseases, Cancer, Obesity)	✓	✓		✓	✓
Sexual Health	✓				
Tobacco Use	✓				
Transportation & Transit	✓		✓	✓	✓

[57] Survey results captured here reflect major findings from the Community Health Opinion Survey questions. Red boxes indicate categories identified as high need consistently across data sources.

APPENDIX 7 | LEADING CAUSES OF DEATH AND HOSPITAL DATA

Leading Causes of Death (Crude death rate per 100,000.)

Note: Deaths based on fewer than 10 events and death rates based on fewer than 20 events are suppressed due to statistical unreliability.

Top Causes of Death in Duplin County 2020			Top Causes of Death in Duplin County 2021			Top Causes of Death in Duplin County 2022		
Rank	Cause	Rate	Rank	Cause	Rate	Rank	Cause	Rate
1	Diseases of the Heart	234.7	1	Diseases of the Heart	331.9	1	Diseases of the Heart	267.4
2	Malignant Neoplasms	207.5	2	Malignant Neoplasms	228.8	2	Malignant Neoplasms	212.3
3	COVID-19	125.9	3	COVID-19	224.7	3	Accidents	93.9
4	Accidents	76.5	4	Accidents	109.2	4	Cerebrovascular Diseases	73.5
5	Cerebrovascular Diseases	71.4	5	Cerebrovascular Diseases	78.3	5	Chronic Lower Respiratory Diseases	71.4
6	Chronic Lower Respiratory Diseases	54.4	6	Chronic Lower Respiratory Diseases	74.2	6	COVID-19	71.4
7	Nephritis, Nephrotic Syndrome, and Nephrosis	47.6	7	Diabetes Mellitus	51.5	7	Diabetes Mellitus	-
8	Alzheimer Disease	45.9	8	Nephritis, Nephrotic Syndrome, and Nephrosis	-	8	Alzheimer Disease	-
9	Diabetes Mellitus	-	9	Alzheimer Diseases	-	9	Septicemia	-
10	Septicemia	-	10	-	-	10	Chronic Liver Diseases and Cirrhosis	-

Source: CDC Wonder
https://wonder.cdc.gov/ucd-icd10-expanded.html

Leading Causes of Causes of Emergency Department Visits

Note: Data reflects emergency department visits from ECU Health hospitals only and may not represent visits to other healthcare facilities in the region.

Top 5 Diagnoses for ED Visits for Duplin County Residents FY 2022			Top 5 Diagnoses for ED Visits for Duplin County Residents FY 2023			Top 5 Diagnoses for ED Visits for Duplin County Residents FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	COVID-19	1,280	1	Abdominal and Pelvic Pain	1,000	1	Abdominal and Pelvic Pain	1,095
2	Abdominal and Pelvic Pain	924	2	Pain in Throat and Chest	860	2	Pain in Throat and Chest	886
3	Pain in Throat and Chest	789	3	Acute Upper Respiratory Infection	631	3	Acute Upper Respiratory Infection	641
4	Acute Upper Respiratory Infection	668	4	PLBC	584	4	Influenza	483
5	Back Pain	474	5	Influenza	488	5	Acute Pharyngitis	452

Top 5 Diagnoses for ED Visits for ECU Health Duplin Hospital FY 2022			Top 5 Diagnoses for ED Visits for ECU Health Duplin Hospital FY 2023			Top 5 Diagnoses for ED Visits for ECU Health Duplin Hospital FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	COVID-19	1,638	1	Abdominal and Pelvic Pain	1,363	1	Abdominal and Pelvic Pain	1,443
2	Abdominal and Pelvic Pain	1,239	2	Pain in Throat and Chest	1,116	2	Pain in Throat and Chest	1,143
3	Pain in Throat and Chest	1,035	3	Acute Upper Respiratory Infection	834	3	Acute Upper Respiratory Infection	802
4	Acute Upper Respiratory Infection	842	4	*Patient Left Before Receiving Care	752	4	Influenza	623
5	Back Pain	624	5	Influenza	623	5	Back Pain	592

Leading Causes of Avoidable Emergency Department Visits

Note: Data reflects emergency department visits from ECU Health hospitals only and may not represent visits to other healthcare facilities in the region.

Top 5 Diagnoses for Avoidable ED Visits for Duplin County Residents FY 2022			Top 5 Diagnoses for Avoidable ED Visits for Duplin County Residents FY 2023			Top 5 Diagnoses for Avoidable ED Visits for Duplin County Residents FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Acute Upper Respiratory Infection	668	1	Acute Upper Respiratory Infection	631	1	Acute Upper Respiratory Infection	641
2	Nausea and Vomiting	378	2	Patient Left Before Receiving Care	540	2	Influenza	463
3	Other Joint Disorders	365	3	Influenza	464	3	Acute Pharyngitis	452
4	Disorders of Urinary System	269	4	Acute Pharyngitis	448	4	Nausea and Vomiting	435
5	Soft Tissue Disorders	233	5	Nausea and Vomiting	372	5	Other Joint Disorders	415

Top 5 Diagnoses for Avoidable ED Visits for ECU Health Duplin Hospital FY 2022			Top 5 Diagnoses for Avoidable ED Visits for ECU Health Duplin Hospital FY 2023			Top 5 Diagnoses for Avoidable ED Visits for ECU Health Duplin Hospital FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Acute Upper Respiratory Infection	842	1	Acute Upper Respiratory Infection	833	1	Acute Upper Respiratory Infection	802
2	Other Joint Disorders	462	2	Patient Left Before Receiving Care	696	2	Influenza	600
3	Nausea and Vomiting	459	3	Influenza	593	3	Nausea and Vomiting	563
4	Disorders of Urinary System	330	4	Acute Pharyngitis	560	4	Acute Pharyngitis	560
5	Soft Tissue Disorders	306	5	Nausea and Vomiting	483	5	Other Joint Disorders	528

Leading Causes of Emergency Department Visits Leading to Admission

Note: Data reflects emergency department visits from ECU Health hospitals only and may not represent visits to other healthcare facilities in the region.

Top 5 Diagnoses for ED Visits Resulting in Admission for Duplin County Residents FY 2022			Top 5 Diagnoses for ED Visits Resulting in Admission for Duplin County Residents FY 2023			Top 5 Diagnoses for ED Visits Resulting in Admission for Duplin County Residents FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Sepsis	280	1	Sepsis	334	1	Sepsis	349
2	COVID-19	126	2	Hypertensive Heart and Chronic Kidney Disease	98	2	Hypertensive Heart and Chronic Kidney Disease	103
3	Ischemic Stroke	103	3	Ischemic Stroke	95	3	Chronic Obstructive Pulmonary Disease	81
4	Hypertensive Heart Disease	102	4	Hypertensive Heart Disease	83	4	Hypertensive Heart Disease	79
5	Hypertensive Heart and Chronic Kidney Disease	96	5	Acute Kidney Failure	53	5	Ischemic Stroke	79

Top 5 Diagnoses for ED Visits Resulting in Admission for ECU Health Duplin Hospital FY 2022			Top 5 Diagnoses for ED Visits Resulting in Admission for ECU Health Duplin Hospital FY 2023			Top 5 Diagnoses for ED Visits Resulting in Admission for ECU Health Duplin Hospital FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Sepsis	88	1	Sepsis	98	1	Sepsis	178
2	COVID-19	67	2	Cellulitis and Acute Lymphangitis	44	2	Fracture of Femur	59
3	Fracture of Femur	43	3	Fracture of Femur	41	3	Chronic Obstructive Pulmonary Disease	58
4	Pneumonia	34	4	Chronic Obstructive Pulmonary Disease	38	4	Hypertensive Heart and Chronic Kidney Disease	40
5	Paralytic Ileus and Intestinal Obstruction w/o Hernia	27	5	Pneumonia	34	5	Cellulitis and Acute Lymphangitis	40

Leading Causes of Admission

Note: Data reflects emergency department visits from ECU Health hospitals only and may not represent visits to other healthcare facilities in the region.

Top 5 Diagnoses for Admission for Duplin County Residents FY 2022			Top 5 Diagnoses for Admission for Duplin County Residents FY 2023			Top 5 Diagnoses for Admission for Duplin County Residents FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Liveborn Infant	348	1	Sepsis	386	1	Sepsis	387
2	Sepsis	310	2	Liveborn Infant	382	2	Liveborn Infant	350
3	COVID-19	123	3	Hypertensive Heart and Chronic Kidney Disease	106	3	Hypertensive Heart and Chronic Kidney Disease	117
4	Ischemic Stroke	117	4	Ischemic Stroke	105	4	Ischemic Stroke	92
5	Hypertensive Heart and Chronic Kidney Disease	110	5	Hypertensive Heart Disease	87	5	Hypertensive Heart Disease	85

Top 5 Diagnoses for Admission for ECU Health Duplin Hospital FY 2022			Top 5 Diagnoses for Admission for ECU Health Duplin Hospital FY 2023			Top 5 Diagnoses for Admission for ECU Health Duplin Hospital FY 2024		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	Liveborn Infant	412	1	Liveborn Infant	419	1	Liveborn Infant	422
2	Sepsis	337	2	Sepsis	384	2	Sepsis	420
3	COVID-19	137	3	Hypertensive Heart and Chronic Kidney Disease	108	3	Hypertensive Heart and Chronic Kidney Disease	111
4	Hypertensive Heart Disease	118	4	Ischemic Stroke	98	4	Hypertensive Heart Disease	93
5	Hypertensive Heart and Chronic Kidney Disease	108	5	Hypertensive Heart Disease	96	5	Pregnancy, Childbirth, or Puerperium Complication	86

Top 5 Leading Causes of Injury Death, Hospitalization, and Emergency Department Visits

Leading Causes of Injury Death 2017-2021 Duplin County			Leading Causes of Injury Hospitalization 2017-2021 Duplin County			Leading Causes of Injury ED Visits 2017-2021 Duplin County		
Rank	Cause	#	Rank	Cause	#	Rank	Cause	#
1	MVT – Unintentional	94	1	Fall – Unintentional	700	1	No Mechanism or Intent Recorded	8,732
2	Poisoning – Unintentional	53	2	MVT – Unintentional	264	2	Fall – Unintentional	7,765
3	Fall – Unintentional	44	3	Poisoning – Unintentional	103	3	Unspecified – Unintentional	3,830
4	Firearm – Self-inflicted	18	4	Fire/Burn – Unintentional	52	4	MVT - Unintentional	3,801
5	Firearm - Assault	14	5	Unspecified - Unintentional	48	5	Struck By/Against - Unintentional	2,035

Source: N.C. Injury & Violence Prevention Branch
https://injuryfreenc.dph.ncdhhs.gov/DataSurveillance/pdf/Top5TablesByCounty2017-2021_Final.pdf