Baltimore County Department of Health

2014-2015 Community Health Needs Assessment

Healthy people living, working and playing in Baltimore County

ACKNOWLEDGEMENTS

This Community Health Needs Assessment (CHNA) represents the culmination of work completed by multiple individuals and groups during the past year beginning July 2014. The Baltimore County Department of Health (BCDH) would specifically like to thank members of the Community Assessment Team who provided their time and knowledge throughout the entirety of this process. The CHNA was made possible with the support of Gregory Wm. Branch, M.D., MBA, CPE, FACP, Director of Baltimore County Health and Human Services and team members:

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MISSION

To promote health and prevent disease through education, advocacy, linkage to resources and treatment to improve the quality of life for Baltimore County residents

VISION

Healthy people living, working and playing in Baltimore County

LEADERSHIP

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INTRODUCTION

Overview and Background

Since its creation in 1924, the Baltimore County Department of Health (BCDH) has been committed to improving the health of all Baltimore County residents. Over those nearly 100 years the efforts of BCDH have led to countless improvements to the health and wellbeing of individuals, families, and the county as a whole. Today, with a county population exceeding 800,000 persons, BCDH and its approximately 600 staff members are dedicated to the mission of promoting health and preventing disease through education, advocacy, linkage to resources and treatment to improve the quality of life for Baltimore County residents.

As further illustration of its commitment to the community, the BCDH completed a year-long process to understand and document the greatest health needs currently faced by its residents. This Community Health Needs Assessment (CHNA) examines the overall health needs of the Baltimore County population. While the BCDH has historically assessed the health needs of the community and responded accordingly, this CHNA is a more formal approach in the BCDH's efforts to proactively identify and respond to the needs of the population. As outlined throughout this document, a significant amount of data and information have been reviewed and incorporated in this planning process, and the BCDH has been careful to ensure that a variety of sources were leveraged to arrive at a truly comprehensive report. It is also important to note that, although unique to Baltimore County, the sources and methodologies used to develop this report comply with the current standards and measures of the Public Health Accreditation Board (PHAB).

Given the size of Baltimore County, both in geography and population, significant variations in demographics and health needs exist within various sub-populations and sub-geographies within the county. At the same time, consistent themes are also present across the county as a whole, which serve as the foundation for determining priority health needs at the county level. This document will outline priority health needs for the county, as well as discuss how the severity of those needs might vary within certain segments of the population.

As discussed within the report, many health needs are the result of underlying societal and socioeconomic factors. Numerous studies have been conducted which tie factors such as income, education, and the physical environment to the health status of individuals and communities. This CHNA acknowledges that linkage and focuses on identifying and documenting the greatest health needs as they present themselves today. As strategic and health improvement plans are developed to address these needs, it is clear that the health department's goal is to work collaboratively with other community

organizations to address more systemic factors that have the potential for long-term improvements to the population's health.

Study Objectives

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

- Identify the health needs of underserved residents in Baltimore County
- Understand the challenges these populations 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 these populations maintain and/or improve their health
- Prioritize the needs of the community and clarify/focus on the highest priorities

Summary Findings: Priority Health Needs

To achieve the study objectives both primary and secondary data were collected and reviewed. Primary data included qualitative information from web-based and telephone surveys as well as focus groups with the target population, including both community members and health service providers. Secondary data included public data on demographics, health and healthcare resources, behavioral health surveys, county rankings, and disease trends. The data collection process began in July 2014 and the prioritization process continued through 2015.

Through the prioritization process discussed in this document, the BCDH identified the following four priority health need areas from a list of over 100 potential need areas:

Priority Health Needs

- Implications of Health Disparities on Population Sub-Groups
- Impact of Behavioral Health (Mental Health and Substance Use)
- Management of Diabetes, Hypertension and Cardiovascular Health
- Health Effects of Obesity

Summary Findings: Geographic Variation

Given the size of Baltimore County, both in population and geography, the BCDH analyzed each of the seven Councilmanic districts. A map outlining each of the districts is shown to the right, but more detailed boundary definitions can be found here.

Overall, Baltimore County demonstrates positive findings. The maternal and child health findings are particularly strong. Students enter kindergarten ready to learn, and the high school graduation rate is at 86%. Birth rates among teens in the county are much lower than the state average, and measures of early prenatal care score higher. The child maltreatment rate is low, and lead screening rates for children are higher than the state average. In the adult population, the mortality rate from heart disease is lower than the state average, and people are able to afford physician visits in general.

Within the seven Councilmanic districts, many of the rates contribute to these positive findings. The significant variables within each district are summarized below.

- District 1 has good rates for indicators such as falls and good access to health care. The rate of sudden unexpected infant deaths rank higher than the county as a whole. The rate of drug-induced deaths is also higher.

- District 2 has good rates for indicators related to the health of children and access to health care. The fall-related death rate is higher than the county as a whole.

- District 3 is the largest in terms of geography and has good rates for access to health care, infant mortality, and birth weights. However, the rate for sudden unexpected infant deaths is higher than the county as a whole. Rates associated with fall-related deaths and drug-induced deaths are also higher.

- District 4 has good rates measures associated with incidence of adult chronic diseases. It has a higher rate of babies with a low birth weight as well as sudden unexpected infant deaths. The HIV incidence rate is higher than the county as a whole.

- District 5 has good access to care and positive indicators related to infectious diseases. The rate of babies with a low birth weight is higher in this district. The suicide rate is also higher in this district, as are fall-related deaths.

- District 6 is the largest in in population and has better rates for obesity and smoking than the county as a whole. Suicide rates and drug-induced death ratesare higher in this district than the county average.

- District 7 also has better rates than the county as a whole for obesity and smoking, as well as some infection rates. Rates for infant mortality, sudden unexpected infant deaths and teen births are higher than in the county as a whole. The suicide rate and fall-related death rates are also higher.

- Baltimore County hospital CHNA reports that correspond to each of the districts were analyzed and both cardiovascular health and primary/preventive healthcare were identified as priority needs within 5 of the 7 districts.

Summary Findings: Comparison of Key Data Points to Benchmarks

Throughout the process of developing its 2014-2015 Community Health Needs Assessment, the BCDH relied on a broad range of data to assess the health needs in Baltimore County. The tables on the following pages provide an overview of the Maryland State Health Improvement Process (SHIP) measures which have been grouped by SHIP vision areas. These tables illustrate the many positive areas where the BCDH has collaborated with partners for many years. Hospitals, universities, pharmacies, and other community partners have joined with the BCDH and its other county divisions on multiple initiatives that have resulted in many improvements in health. A few of these are:

- Increased green spaces;
- A focus on transportation and safety;
- Childhood obesity education;
- Fall prevention programs;
- Substance abuse and mental health treatment; and,
- Services for seniors.

The Department of Aging, the School system, Police and Fire, Planning, the library system, and many other divisions collaborate often on joint projects to identify and implement ways to improve the health of the citizens. The tables compare the Baltimore County data for each measure to both the Maryland SHIP target and the national benchmark, as available.

When reading the summary tables please note the icons that have been included to identify how Baltimore County compares to the benchmarks.

 Represents measures in which Baltimore County scores are better than the benchmark.

 Represents measures in which Baltimore County scores are worse than the benchmark.

N/A Represents measures for which there was no applicable benchmark.

Healthy Beginnings			
Measure	**Baltimore County**	**Vs. Maryland Target**	**Vs. National Benchmark**
Infant Mortality Rate per 1,000 live births	5.3	6.6	6.0
Babies with low birth weight % of live births	9.0%	8.5%	7.8%
Sudden unexpected infant death rate Deaths per 1,000 live births	0.67	0.89	0.84
Teen birth rate Rate per 1,000 15-19 year old female population	17.2	29.6	N/A
Early prenatal care % of pregnant women	66.3%	62.6%	77.9%
Students entering kindergarten ready to learn % of children	86.0%	85.0%	N/A
High school graduation rate % of students	86.3%	86.1%	82.4%
Children receiving blood lead screening % of children enrolled in Medicaid	70.9%	69.5%	N/A

Healthy Living			
Measure	**Baltimore County**	**Vs. Maryland Target**	**Vs. National Benchmark**
Adults at healthy weight % of adults	33.3%	 35.7%	 33.9%
Adults who currently smoke % of adults	18.4%	 14.4%	 12.0%
Physical activity % of population	43.3%	 49.8%	 47.9%
Children and adolescents who are obese % of adolescents 12-19 years old	12.0%	 11.3%	 16.1%
Adolescents who use tobacco products % of adolescents	18.1%	 22.3%	 21.0%
Chlamydia infection rate Rate per 100,000 population	361.4	 431.0	N/A
HIV incidence rate Rate per 100,000 population	22.9	 30.4	N/A
Life expectancy	79.2	 82.5	N/A
Alcohol-related driving fatalities Rate per total millions of vehicle miles traveled	0.16	 0.27	 0.38

Healthy Communities			
Measure	**Baltimore County**	**Vs. Maryland Target**	**Vs. National Benchmark**
Suicide rate Rate per 100,000 population	10.6	9.1	10.2
Fall-related death rate Rate per 100,000 population	13.9	6.9	7.0
Child maltreatment rate Rate per 1,000 population	4.4	4.8	8.5
Affordable housing % of housing units sold	61.5%	42.2%	N/A
Children with elevated blood lead levels % of children tested	0.21%	0.18%	N/A
Salmonella infection rate Rate per 100,000 population	14.6	12.7	11.4
ED[1] visit rate due to domestic violence Rate per 100,000 population	50.3	59.2	N/A
Pedestrian injury rate on public roads Rate per 100,000 population	44.5	29.7	20.3
Average. # of days the Air Quality Index exceeds 100	1.0	8.8	N/A

[1] Emergency Department

Access to Care			
Measure	**Baltimore County**	**Vs. Maryland Target**	**Vs. National Benchmark**
Wellness checkups for adolescents % of adolescents enrolled in Medicaid	53.1%	 54.3%	N/A
Children receiving dental care % of children enrolled in Medicaid	61.9%	 55.4%	N/A
Persons unable to afford physician visits % of population	10.7%	 11.4%	N/A
Persons with health insurance % of population under 65 years old	89.2%	 93.6%	 100.0%
Persons with a usual primary care provider % of population	80.8%	 83.9%	N/A
Uninsured ED visits % of ED visits	15.4%	 14.7%	N/A

Quality Preventive Care			
Measure	**Baltimore County**	**Vs. Maryland Target**	**Vs. National Benchmark**
Mortality rate from cancer Rate per 100,000 population (age-adjusted)	173.9	169.2	160.6
Drug-induced death rate Rate per 100,000 population (age-adjusted)	17.2	12.4	11.3
Mortality rate from heart disease Rate per 100,000 population (age-adjusted)	158.5	173.4	152.7
ED visit rate due to diabetes Rate per 100,000 population	184.7	174.7	N/A
ED visit rate due to hypertension Rate per 100,000 population	236.0	205.4	N/A
ED visit rate due to mental health conditions Rate per 100,000 population	2,952.4	2,652.6	N/A
Hospitalization rate due to Alzheimer's or other dementias Rate per 100,000 population	287.7	274.6	N/A
ED visit rate due to asthma Rate per 100,000 population	67.4	52.4	N/A
ED visit rate due to addiction-related conditions Rate per 100,000 population	1,290.4	1,092.3	N/A
Children and adults who are vaccinated annually against seasonal influenza % of population	49.7%	65.6%	70.0%
ED Visits for dental care Rate per 100,000 population	830.1	792.8	N/A

Report Structure

This report includes detailed information in a variety of areas and on a number of topics. Each of these priority health need areas are discussed in detail in the County Priority Health Need Areas chapter below. Additionally, please refer to the Significant Areas of Need Disparity chapter for priorities at the district-level and within various sub-population groups. The report chapters outlined below contain the methodology and a detailed description of the factors contributing to the identified priority health need areas.

I. **Methodology** – The methodology chapter provides a brief summary of how information was collected and assimilated into the development of this CHNA, as well as study limitations.

II. **Health Need Prioritization Process -** This chapter provides an overall summary of the prioritization process used in the development of this CHNA.

III. **County Priority Health Need Areas** – This chapter provides a description of each of the identified priority health need areas for the county overall including the secondary data finding summaries and conclusions from the various surveys and focus groups that support these prioritizations.

IV. **Significant Areas of Need Disparity** – This chapter provides a description of each of the identified priority health need areas for the individual Councilmanic districts as well as the disparities among various population sub-groups.

V. **Conclusions –** This chapter provides a brief summary of the county-level priority health needs discussed in detail throughout this document.

Detailed information contributing to the BCDH's prioritization process can be found in the appendices, which include:

1) **Demographic Data** – Information regarding the population characteristics (such as age, gender, and race) of Baltimore County are presented here.

2) **Socioeconomic Data** –Data findings regarding income, poverty, unemployment, and the Community Need Index rankings for Baltimore County are presented here.

3) **Health Data/Measures** – Data findings for Baltimore County regarding County Health Rankings and measures identified by the Maryland State Health Improvement Process (SHIP) are presented here.

4) **Detailed Qualitative Findings –** Conclusions from the community, key leader, and telephone surveys and the focus groups are presented in this appendix.

5) **Summary of Quantitative and Qualitative Findings –** Summarized data findings by need area as well as barriers to accessing care by data source are presented here.

CHAPTER 1 | METHODOLOGY

Study Design

A multi-faceted approach was utilized to assess the community health needs and concerns of Baltimore County. Multiple sources of publicly available data along with diverse community input were incorporated in the study to paint a complete picture of Baltimore County's health needs. While the BCDH viewed the quantitative and qualitative data equally, there were instances where one provided more compelling evidence of community health needs than the other. In these instances, the health needs identified were discussed based on the applicable data gathered. Multiple methodologies, including ongoing community and stakeholder engagement, analysis of data, and content analysis of community feedback were utilized to identify key areas of need. Specifically the following data types were employed:

Primary Data

Community engagement and feedback was obtained through community web-based and telephone surveys, key leader web-based surveys, and community focus groups, as well as significant input and direction from the Community Assessment Team. Leveraging those sources the BCDH was able to incorporate input from over 1,000 Baltimore County residents.

Secondary Data

Key sources for quantitative health related data on Baltimore County included multiple public data sources on demographics, county rankings, social/behavioral health trends, and disease trends as well as analysis of priority health needs mentioned in various Community Health Needs Assessments (CHNAs) from hospitals serving Baltimore County.

Study Limitations

This study utilized a broad range of data to assess the needs in Baltimore County; however, gaps in information for the seven Councilmanic districts exist given that most of the publicly available health related information is provided at the county or the zip code level. Additionally, discrete zip code level definitions for each of the Councilmanic

districts are not readily available[2]. To estimate health need for the individual districts, census tracts and zip codes were assigned to Councilmanic districts based on geographic proximity and the most detailed available health information was leveraged to determine health needs for the individual districts.

Additionally, local hospitals' CHNAs were utilized to obtain estimates of need distributions for the individual Councilmanic districts. The service areas depicted in each of the hospitals' CHNAs were analyzed and the corresponding Councilmanic district was assigned based on the zip code assignments mentioned above.

Limitations in the BCDH's ability to gather data and input from the Hispanic/Latino and homebound populations within the county have impacted the extent to which these populations and their related health needs are discussed throughout this assessment.

[2] For maps depicting the territorial boundaries of each councilmanic district, please refer to the following link:
http://www.baltimorecountymd.gov/Agencies/infotech/GIS/staticviewablemaps.html
To determine the councilmanic district in which you reside, please use the following link:
http://egov2.baltimorecountymd.gov/votingweb/Address.aspx?pageid=2

CHAPTER 2 | HEALTH NEED PRIORITIZATION PROCESS

Process Overview

Although a large number of potential health needs have been analyzed throughout the development of this CHNA, it is simply not feasible or appropriate for the BCDH to apply significant resources to each and every area of need. To determine which health needs should be priorities, the BCDH reviewed outcomes and findings from this assessment and utilized an objective approach to estimate which areas of need are of greatest concern.

As mentioned previously, multiple methodologies were utilized to identify key areas of health need. Each of these methodologies has been incorporated to not only measure and estimate the level of current health needs for Baltimore County residents, but to also highlight key factors and conditions that are expected to have the greatest impact on those needs going forward. As review, these methodologies included the following:

Approaches Used

- Ongoing community and stakeholder engagement
- Quantitative data analysis
- Analysis of other Baltimore County health providers' CHNAs
- Community web-based and telephone surveys
- Key leader web-based surveys
- Community focus groups

Leveraging the analyses and findings from those approaches, the BCDH has condensed a list of approximately 100 potential health needs down to the few select areas it believes to be the current priorities. Each potential need was analyzed against the others and prioritized based on a variety of different considerations, such as:

Components of Prioritization Process

- Input received from multiple discussions with the Community Assessment Team;
- Input received from focus groups and surveys conducted with community health leaders and community members;
- Variance of need metric(s) from state and national benchmarks;
- Impact of demographics and socioeconomic characteristics on need levels; and,
- Ability of the BCDH to positively impact need.

Underlying Influential Factors

There are many contributing factors that can either positively or negatively influence an individual's health. The BCDH recognizes this fact and believes that in order to portray a complete picture of the health-related status of the county it first must address the factors contributing to the health of the community. According to the Centers for Disease Control and Prevention, factors contributing to an individual's health status can include the following:

Five Determinants of Health
1. Biological – sex, age, and genetics 2. Behavioral – alcohol use, drug abuse, smoking, and nutrition 3. Social – discrimination, income, and gender 4. Physical environment – where a person lives and crowding conditions 5. Availability of health services – access to quality healthcare and whether or not a person has health insurance

As evidenced by the examples provided above, many of the factors that contribute to one's health are either not controllable or are societal in nature. As such, healthcare providers need to have the ability to assess an individual's health as being shaped by many underlying factors and not simply as current health conditions.

It is widely acknowledged that those with lower income, lower social status and lower levels of education have more difficulty obtaining healthcare services than their counterparts in the community. The inability to access healthcare services contributes to diminished health status. Further, members of impoverished communities also function under high levels of day-to-day stress which contributes to poorer health outcomes, particularly as it relates to mental and behavioral health.

One area of particular importance that was repeatedly mentioned and discussed throughout the process of gathering qualitative data was the limited financial resources available to residents of Baltimore County. Community members, key organizational leaders, and focus group participants all voiced that the lack of health insurance or other financial resources is the primary reason behind one's decision to forego seeking medical

KEY COMMUNITY FEEDBACK: FOCUS GROUP PARTICIPANTS FREQUENTLY MENTIONED THE NEED FOR MORE PROVIDERS IN BALTIMORE COUNTY TO OFFER CARE ON A SLIDING SCALE DUE TO THE LIMITED FINANCIAL RESOURCES OF MANY RESIDENTS.

attention. Lack of health insurance significantly influences one's ability to have access to healthcare services particularly if there are not many providers who offer services on a sliding fee scale. The need for more providers to provide care based on a sliding scale was frequently mentioned by various focus group participants as an area for potential improvement. In fact, some participants mentioned that in order to receive care based on a sliding scale they currently have to travel into Baltimore City or even out of state since they believe these areas have more resources available than the county. However, due to transportation issues, as discussed in more detail below, this may not be a feasible alternative.

Further, the availability of financial resources as a driver of whether or not an individual would seek medical attention was also discussed. Many stated that medical attention was delayed due to the difficult decision of choosing between the necessities of day-to-day life, including electricity and food, and medical care and medications. In many focus groups, the consensus was that when faced with these choices, members of the community would choose not to seek medical attention or fill their prescriptions in favor of spending their limited financial resources on other necessities deemed more immediate and critical.

Additionally, the high cost of prescription medications was discussed. Without health insurance coverage, many residents are unable to afford their prescription medications. Even for those with health insurance coverage that extends to cover the cost of medications, there is still difficulty associated with finding a conveniently located pharmacy that will accept certain forms of insurance. As a result, many may simply go without their medication which further exacerbates the acuity of their health condition.

KEY COMMUNITY FEEDBACK: TRANSPORTATION WAS MENTIONED NUMEROUS TIMES AS A SIGNIFICANT BARRIER TO CARE…WITH FOCUS GROUP PARTICIPANTS HAVING EXPERIENCED TRAVEL TIMES UPWARDS OF TWO HOURS WHEN USING PUBLIC TRANSPORTATION.

In conjunction with a lack of financial resources, transportation was mentioned as a primary barrier to obtaining care as well. A large portion of the county's population relies on public transportation to get them to medical appointments. However, due to the nature of public transportation and the frequency of stops, this can prolong the time necessary to plan ahead for an appointment. For instance, numerous participants mentioned travel times upwards of two hours if relying on public transportation to get them to a physician's office. For this reason, some residents, particularly those of low-income, forego seeking care until the condition reaches a high level of acuity. When this occurs, the resident then relies on ambulances to get them to an emergency room, a more costly alternative than the urgent care or physician office settings that they could have utilized if not for barriers to access.

Essentially, key factors influencing health in this community, as stated by members of the community themselves are the lack of health insurance and financial resources. When coupled with the lack of adequate healthcare resources, particularly for the low-income population, the barriers to care can be significant for many in Baltimore County. As discussed throughout this assessment, disparities in health exist among various sub-populations within Baltimore County, whether it is based on geography, race, age, or other distinctive factors. The ability to understand health disparities and health needs within the broader context of its determinants is crucial if changes are to be made.

Underlying Influential Factors

- Income
- Social status
- Education
- Availability of financial resources
- Health insurance status
- Medication costs
- Transportation

CHAPTER 3 | COUNTY PRIORITY HEALTH NEED AREAS

This portion of the assessment includes a discussion of the identified priority health needs for Baltimore County. Through the methodologies and prioritization process described throughout this document, the BCDH has identified four priority areas, which are discussed in detail below. All supporting data can be found in the appendices of this document.

Priority Need: Implications of Health Disparities on Population Sub-groups

Given the size of Baltimore County it can be expected that the presence and significance of health needs will not be uniform for all residents. As research was conducted for this CHNA, a number of health disparities were identified, discussed and researched. While there are numerous different health disparities present in Baltimore County, the implications of those disparities on residents vary in significance. So important is the need to understand these inequalities that Chapter 4 of this document has been developed to discuss in detail many of the key health disparities that are present within Baltimore County. However, the purpose of this portion of the report is to highlight the particularly unique and significant disparities, which relate to the following:

Significant Health Disparities
• Uninsured and Underinsured: Limited access to primary and preventive care • Newly Insured: Complexity of health system navigation • Hispanic/Latino Persons: Significance of barriers to access • Geographic Location: Variance of low birth weight and mortality rates

Uninsured and Underinsured: Limited access to primary and preventive care

Access to primary and preventive care is clearly a need for Baltimore County as a whole, but that need is particularly significant for uninsured and underinsured residents. Based on the analyses of area hospital CHNAs, local hospitals identified a need for improvement in areas corresponding to Districts 1, 2, 4, 5, 6 and 7 for measures related to this priority. In particular, the need for improved access to primary and preventive services for members of the Medicaid or low-income populations was highlighted. While some resources are available for the most vulnerable populations, many physicians and

providers are no longer accepting new Medicaid patients and given the costs associated with an urgent care visit, many will forego care or instead rely on area emergency departments as their primary care provider.

For the population as a whole, access to primary and preventive healthcare was identified as the fourth top health need for the county based on the results of the community web-based survey and the second top health need based on the results of the key leader web-based survey with 36 percent and 51 percent of responses, respectively.

Further, the cumulative focus group findings ranked this as an area of perceived need in Baltimore County. Dental care, particularly for low-income populations, was considered a subcomponent of primary and preventive care that was repeatedly mentioned and ranked within the top five health needs of the community.

As shown in Appendix 3, the ratio of Baltimore County's population to the number of primary care physicians, including non-federal physicians under the age of 75 specializing in general practice medicine, family medicine, internal medicine, and pediatrics, is better than the Maryland average. The county ranks fifth in the state regarding this measure. However, given the overwhelming qualitative responses related to aspects of primary and preventive healthcare, particularly for low-income persons, there is clearly a disconnect between the number of providers and adequate access for all patients.

STORY BEHIND THE NUMBERS: ALTHOUGH BALTIMORE COUNTY'S PRIMARY CARE PHYSICIAN SUPPLY RANKS WELL RELATIVE TO THE STATE, ACCESS IS NOT UNIFORMLY DISTRIBUTED AND REMAINS A CONCERN FOR LOW-INCOME PERSONS.

The rise in the number of urgent care clinics within the county is evident, and the concept of receiving care at an urgent care clinic is well received by many within the community. However, barriers to access due to costs are still associated with this method of care delivery, along with limited continuity of care that can result from a patient only accessing healthcare services via periodic urgent care visits. Standard $50 co-pays are not feasible for many within the community, primarily low-income, uninsured, underinsured and homeless individuals. Further, the need for extended hour or weekend providers was also noted. While the provision of care for low-acuity illnesses and conditions is more appropriately handled in an urgent care clinic than an emergency room, the ideal point of delivery is still a primary care provider to ensure enhanced continuity of care.

Frustrations with primary care providers within the community exist regarding lengthy waiting times related to the scheduling of the appointment and waiting room

experiences. Additional frustrations regarding the brevity of appointments and the lack of a positive interpersonal experience with providers during visits were also noted.

Newly Insured: Complexity of health system navigation

Through the focus groups, strong opinions were expressed related to the sheer complexity of the health system and the confusion associated with trying to navigate that system to get needed care. While these issues have been present for many years, there is a general consensus that these concerns and challenges have seemed to compound in recent years.

Clearly challenges such as these are not limited to just the newly insured; however, given the increased availability of health insurance during recent years, this issue has become increasingly significant in Baltimore County and remains a barrier to improving the health of the population. Based on the opinions of those surveyed, expanded insurance access is not yet translating directly to expanded access to needed health services. This is particularly important to understand and monitor as the BCDH and other area health providers work to address health needs through service development and expansion. The presence of a new or expanded community health resource does not guarantee improved access. Efforts to connect and communicate the availability of that resource to those in greatest need must also continue to be a priority.

KEY COMMUNITY FEEDBACK: MANY OF THOSE SURVEYED FELT THAT THAT COMPLEXITY OF THE HEALTH SYSTEM HAS INCREASED IN RECENT YEARS, AND EXPANDED INSURANCE ACCESS HAS NOT YET TRANSLATED TO IMPROVED ACCESS TO HEALTH SERVICES.

Specifically, difficulties associated with being aware of available resources, knowing how to schedule an appointment, which provider should be the first point of contact, and the payments associated with services are areas in which those who previously did not have insurance particularly struggle. Moreover, many providers and pharmacies do not accept certain types of insurance, which only further complicates accessing care. As a result of these barriers to access, many individuals will delay obtaining needed care, which often results in additional and/or more significant health issues.

Hispanic/Latino Persons: Significance of barriers to access

As noted previously, the BCDH struggled to obtain input from Hispanic/Latino residents of Baltimore County. The BCDH made multiple attempts to conduct focus groups with Spanish-speaking residents. Despite the proposed alleviation of the language barrier through use of an interpreter, the BCDH was unsuccessful in gathering members of this community together for focus groups. Due to this difficulty, key

informant interviews with those with knowledge of the health needs of this community were conducted rather than focus groups to ensure that the health needs specific to this population were represented in this CHNA. The BCDH used these interviews to also better understand why community representation was difficult to obtain. According to interviewees, the primary barrier to conducting a focus group was likely due to language related barriers and the lack of interpretation services within the county. These were also mentioned as the main reasons that Hispanic/Latino individuals would delay going to the doctor. However, even with the proposed offering of translation services as a component of the focus groups, the BCDH was still unsuccessful in its attempts to garner input from the Spanish-speaking population of the county.

The need for additional interpreters and culturally-appropriate training related to the provision of health related services are dominant factors contributing to access for these members of the population. Due to difficulty in finding providers who offer interpretation services, members of this population cohort prefer to travel further, sometimes even outside of the county or back to their home countries, to receive care from a provider who they know has bilingual staff.

KEY COMMUNITY FEEDBACK: ADDITIONAL BILINGUAL PROVIDERS AND TRANSLATION SERVICES WERE NOTED AS A NEED TO ASSIST WITH OVERCOMING SIGNIFICANT BARRIERS TO ACCESS.

The need for additional bilingual providers and staff members is evident even at the reception desk. Many community members face initial challenges when calling to schedule an appointment or to ask a health-related question due to either the receptionists' inability to speak Spanish or the lack of options regarding language preferences in the automated phone tree greeting message. This initial contact with a provider makes the patient feel unwelcome and discouraged. A Spanish-speaking individual inquiring about health services should not have their language perceived as a barrier to accessing healthcare services.

Another significant need within this population cohort is the need for increased navigation services to aid them in understanding the complex healthcare system. As previously discussed, there is overall confusion of how to schedule appointments and what payments are required, particularly among the newly insured. When coupled with the language barriers described above, the ability to access healthcare services is severely hindered.

Regarding health conditions, the main areas of need are related to mental and behavioral health services and the management of chronic diseases. However, while the county overall showed a need for additional resources for mental and behavioral health services

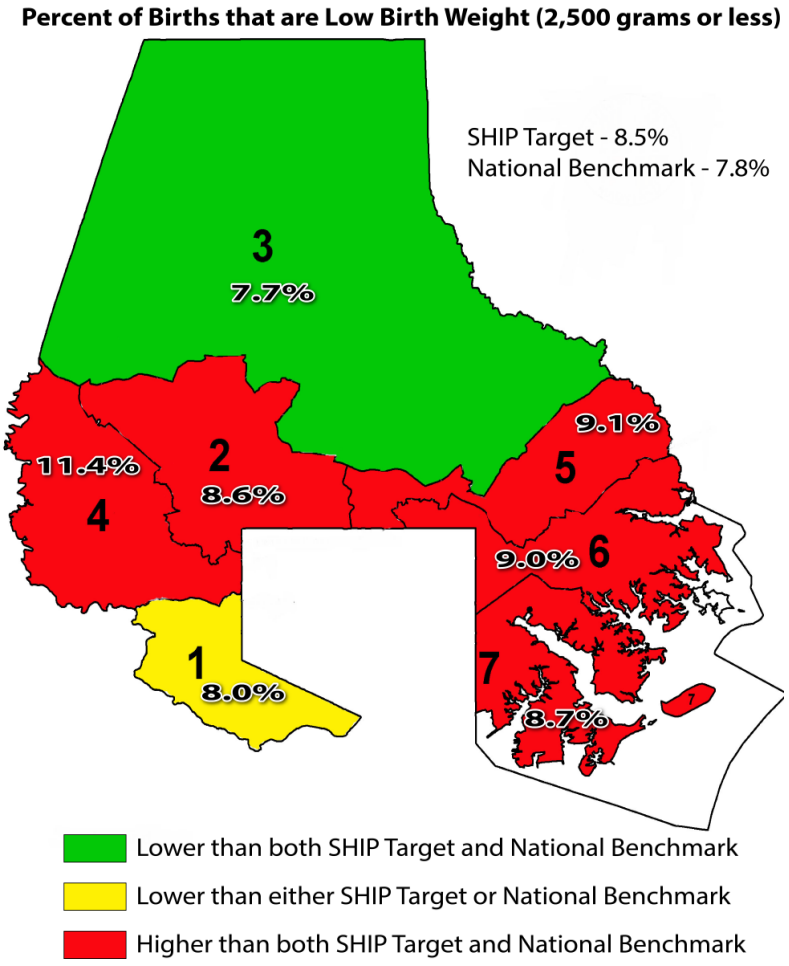
the ability to deliver such services in a culturally sensitive and appropriate manner is of the utmost importance. In many instances, individuals may have moved to the area without their immediate family, and living without this familial support can lead to an increased likelihood of depression. Feelings of loneliness and isolation are only further exacerbated when language barriers are present.

Geographic Location: Variance of low birth weight and mortality rates

There are significant variations in mortality and incidence rates for numerous conditions existing within the seven Councilmanic districts. The discussion on the following pages details these variations for measures pertaining to: low birth weight, infant mortality, fall-related deaths, drug-induced deaths, and suicides.

Low Birth Weight

To determine the percentage of babies born with low birth weight, the BCDH examined available zip code level data from 2012. As shown below, the low birth weight percentages ranged from 7.7 percent to 11.4 percent depending on geography.

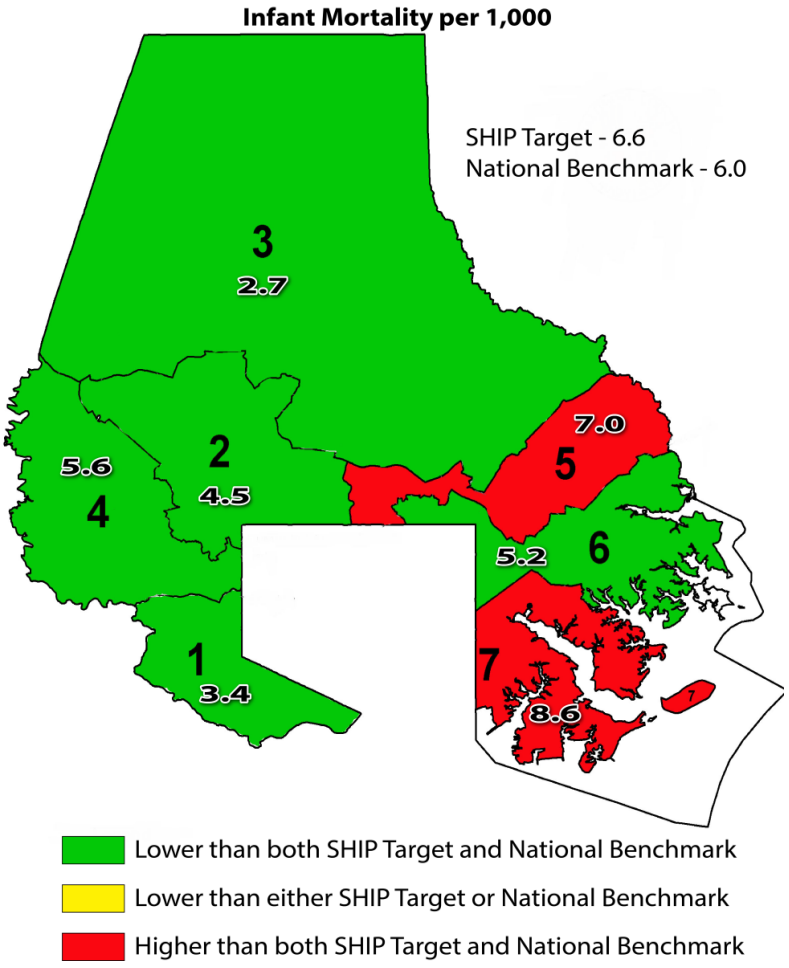


Source: MD Department of Health and Mental Hygiene Vital Statistics Administration, Claritas, Ascendient estimates.

The likelihood of a baby having a low birth weight is highest for babies born in District 4, an area where prenatal health and education services have previously been identified by other healthcare providers as an area of health need. Further, only two of the seven districts have a rate less than the SHIP target of 8.5 percent, and only one is less than the national benchmark of 7.8 percent.

Infant Mortality

To determine the rate of infant mortality, the BCDH examined available zip code level data from 2012. As shown below, the rate of infant mortality ranged from 2.7 to 8.6 per 1,000 depending on geography.

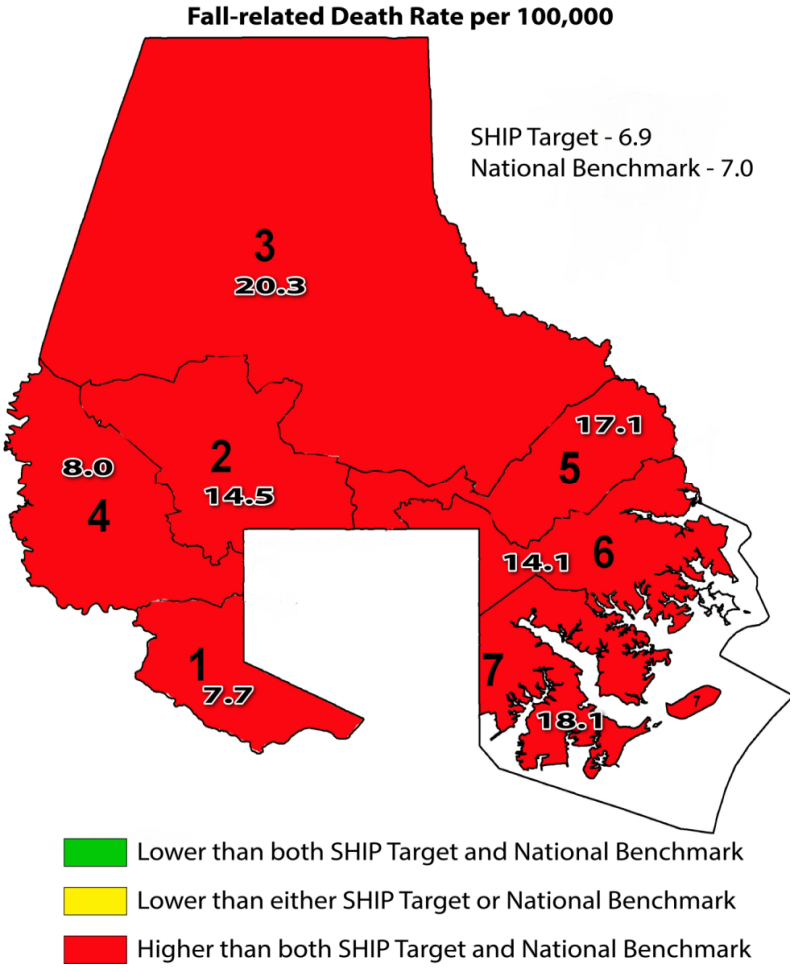


Source: MD Department of Health and Mental Hygiene Vital Statistics Administration, Claritas, Ascendient estimates.

Infant mortality is most prevalent in District 7. Further, two of the seven districts have a rate of infant mortality that is higher than the SHIP target of 6.6 per 1,000 and the national benchmark of 6.0 per 1,000.

Fall-related Deaths

To determine the rate of fall-related deaths, the BCDH examined available zip code level data from 2012. As shown below, the rate of fall-related deaths ranged from 7.7 to 20.3 per 100,000 depending on geography.

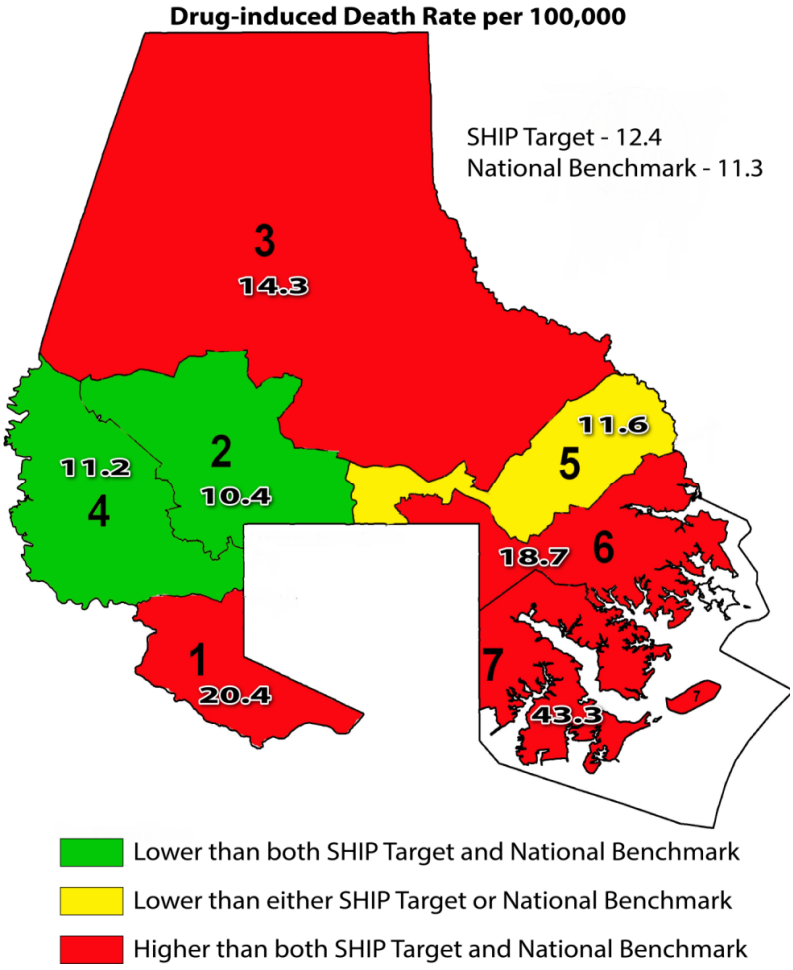


Source: MD Department of Health and Mental Hygiene Vital Statistics Administration, Claritas, Ascendient estimates.

Fall-related deaths are most prevalent in District 3. However, all seven districts have a rate higher than the SHIP target of 6.9 per 100,000 and the national benchmark of 7.0 per 100,000.

Drug-induced Death Rate

To determine the rate of drug-induced deaths, the BCDH examined available zip code level data from 2012. As shown below, the rate of drug-induced deaths ranged from 10.4 to 43.3 per 100,000 depending on geography.

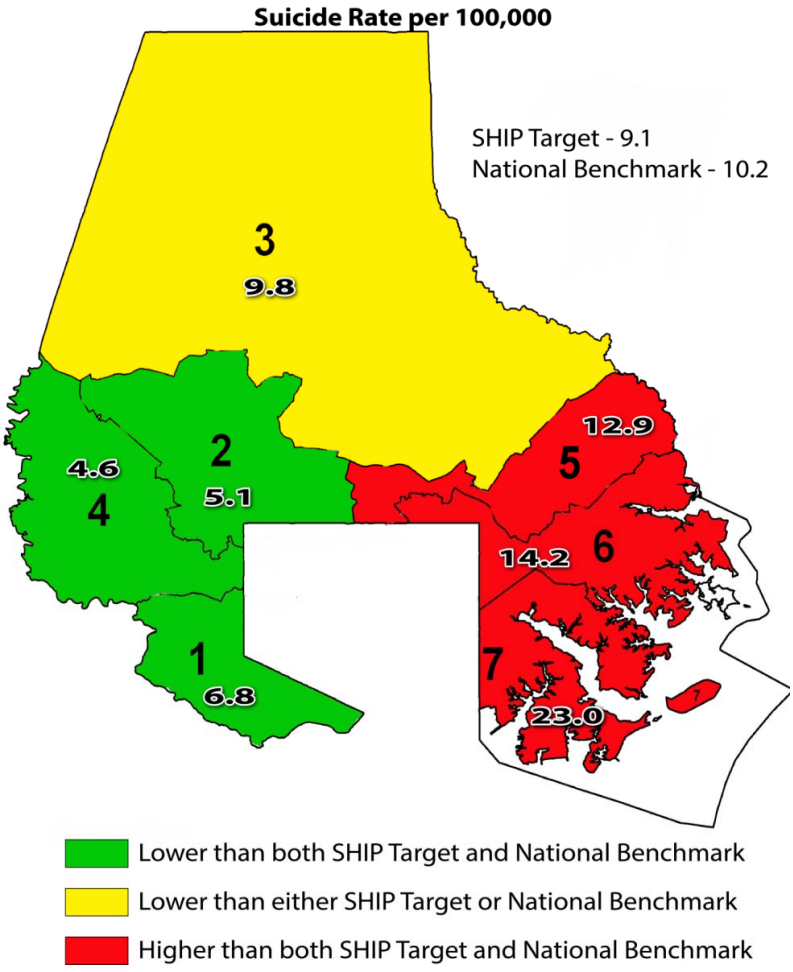


Source: MD Department of Health and Mental Hygiene Vital Statistics Administration, Claritas, Ascendient estimates.

Drug-induced deaths are most prevalent in District 7. Further, only three of the seven districts have a rate less than the SHIP target and only two are also less than the national benchmark.

Suicide Rate

To determine the rate of suicides, the BCDH examined available zip code level data from 2012. As shown below, the rate of suicides ranged from 4.6 to 23.0 per 100,000.



Source: MD Department of Health and Mental Hygiene Vital Statistics Administration, Claritas, Ascendient estimates.

Suicides are most prevalent in District 7. Further, only three of the seven districts have a rate less than the SHIP target and the national benchmark. Efforts to reduce the prevalence of suicides would be most beneficial in District 7 but are a dominant need across the county.

Summary

Clearly, health disparities and poor outcomes exist across many different sub-groups and geographies in Baltimore County. While each of these disparities and outcomes is unique, they must continue to be understood and addressed in order to continue to improve the overall health of county residents in the years ahead.

Priority Need: Impact of Mental and Behavioral Health/Drug Use on Health

The impact of mental and behavioral health/drug use was identified as a need that existed in five of the Councilmanic districts and as a need for Baltimore County as a whole. The rationale for identifying the health implications related to mental and behavioral health/drug use as a priority health need in Baltimore County include:

- Drug-induced death rate – Drug-induced death rate exceeds the Maryland SHIP target and the Healthy People 2020 benchmark.

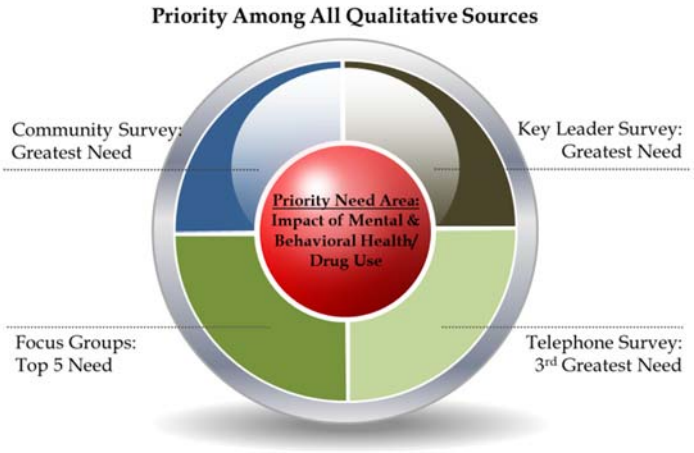
- Suicide rate – Suicide rate exceeds the Maryland SHIP target and the Health People 2020 benchmark.

- Emergency Department (ED) visit rate due to addiction related conditions – ED visit rate exceeds the Maryland SHIP target.

- Emergency Department visit rate due to mental health conditions – ED visit rate exceeds the Maryland SHIP target.

- Previous mentions in CHNAs – Behavioral health and mental health treatment services were listed as a priority need area in at least two local hospitals' CHNAs.

- Qualitative findings – Behavioral health and mental health were identified as the top health need for the county based on the results of the community web-based survey and the key leader web-based survey. Additionally, mental and behavioral health was the third most frequently chosen response based on the results of the community telephone survey. The cumulative focus group findings also ranked this as a top five health need for the area.



- In addition, as shown in Appendix 3, the ratio of Baltimore County's population to the number of mental health providers, including psychiatrists, psychologists, licensed social workers, counselors, and advanced practice nurses specializing in mental healthcare is better than the Maryland average. The county also ranks fifth in the state regarding this measure. However, given that there is a general

acknowledgement that resources are insufficient state-wide, coupled with overwhelming qualitative responses related to mental and behavioral health, this is clearly a priority need area in Baltimore County.

Each of these factors is discussed in more detail below.

Drug-induced Death Rate

According to data analyzed by the SHIP, Baltimore County experienced a rate of drug-induced deaths equaling 17.2 per 100,000 in the most recently available data (2010-2012 aggregate). This rate is greater than the overall Maryland target of 12.4 per 100,000 set by the SHIP as well as the Healthy People 2020 benchmark of 11.3 per 100,000 as shown in Appendix 3 of this assessment. The rate of drug-induced deaths in Baltimore County has remained relatively stagnant over recent years. The BCDH recognized that efforts to reduce the prevalence of drug-induced deaths should be a primary focus in Baltimore County.

As discussed throughout this document, health disparities are present across Baltimore County. In this instance, drug-induced death rates range from 11.2 to 44.5 per 100,000 depending on geographic location. For information regarding the variation of drug-induced death rates among the districts, please refer to Chapter 3.

Suicide Rate

According to data analyzed by the SHIP, Baltimore County experienced a rate of suicide equaling 10.6 per 100,000 in the most recently available data (2010-2012 aggregate). This rate is greater than the overall Maryland target of 9.1 per 100,000 set by the SHIP as well as the Healthy People 2020 benchmark of 10.2 per 100,000. The rate of suicides in Baltimore County has experienced negligible changes in recent years.

As discussed throughout this document, health disparities are present across Baltimore County. In this instance, suicide rates range from 4.9 to 23.7 per 100,000 depending on geographic location. For information regarding the variation of suicide rates among the districts, please refer to Chapter 3.

Emergency Department Visit Rate due to Addiction-related Conditions

In 2013, Baltimore County experienced a rate of ED visits for addiction-related conditions of 1,290.4 per 100,000. This rate is greater than the overall Maryland target of 1,092.3 per 100,000 set by the SHIP. The rate of ED visits for addiction-related conditions has increased over recent years in Baltimore County.

Due to data limitations, the data pertaining to ED visit rates due to addiction-related conditions were only available at the county level.

Emergency Department Visit Rate due to Mental Health Conditions

Baltimore County experienced a rate of ED visits for mental health conditions equaling 2,952.4 per 100,000. This rate is greater than the overall Maryland target of 2,652.6 per 100,000 set by the SHIP. The rate of ED visits for mental health conditions has declined over recent years in Baltimore County, signifying that some improvement is being made.

Due to data limitations, the data pertaining to ED visit rates due to mental health conditions were only available at the county level.

Local CHNAs

In addition to the quantitative data sources mentioned above, the BCDH also leveraged data available in local hospitals' CHNAs to determine the need for improvement related to mental and behavioral conditions and drug use at the district level. Based on the analyses of these CHNAs, local hospitals identified a need for improvement in areas corresponding to Districts 5, 6, and 7 for measures related to this priority.

Qualitative Findings

Behavioral health and mental health were identified as the top health need for the county based on the results from the community web-based survey and the key leader web-based survey with 64 percent and 84 percent of responses, respectively.

Additionally, mental and behavioral health was the third most frequently chosen response based on the results of the community telephone survey with 48 percent of responses ranking this as the top area of perceived need.

Further, the cumulative focus group findings ranked this as a top five health need for the area. Focus group participants also mentioned the increased prevalence of mental and behavioral health conditions within the past five years. As a disease and a community issue that does not discriminate based on age, gender, race, or any other factor, mental and behavioral health needs are a dominant problem faced by the community as a whole.

Summary

Clearly, mental and behavioral health is a health issue that is prevalent throughout Baltimore County as evidenced by quantitative and qualitative data gathered throughout the community health needs assessment process. Additionally, the susceptibility of residents to have a dual diagnosis of mental and behavioral health requires additional resources to be devoted to help alleviate this issue. Most notably, the current resources available to address mental and behavioral issues are not perceived as being adequate to accommodate the number of residents requiring services. There was a general consensus among the many focus groups that this is a health condition that has dramatically increased over recent years, with many relating this back to prevalent social issues such as increased stress, the breakdown of familial units, and lack of available help. Moreover, it is important to note that many residents are aware that they need help related to their mental and behavioral health and are actively trying to seek help. However, adequate resources for low-income and homeless individuals are particularly lacking relative to the level of need. There is much discontent with the short inpatient stays associated with mental and behavioral conditions as many argue that the current system does not provide the on-going support and follow-up care for management of the conditions to become a reality. Further, the lack of outpatient facilities dedicated to the provision of mental and behavioral health further complicates the issue of accessing care. The inability of the current healthcare system to adequately provide sufficient resources and follow-up care for mental and behavioral health patients results in many individuals being repeat patients in a cycle of attempts to manage their conditions.

Priority Need: Management of Cardiovascular Health/Diabetes/Hypertension

The management of cardiovascular health/diabetes/hypertension was identified as a need that existed across all seven Councilmanic districts and therefore was also identified as a need for Baltimore County as a whole. This was the only factor for which a need was identified regardless of geographic location. The rationale for identifying the management of cardiovascular health/diabetes/hypertension as a priority health need in Baltimore County include:

- Leading Cause of Death – Diseases of the heart are the leading causes of death in both Baltimore County and Maryland.

- Emergency Department visit rate due to hypertension – ED visit rate exceeds the Maryland SHIP target.

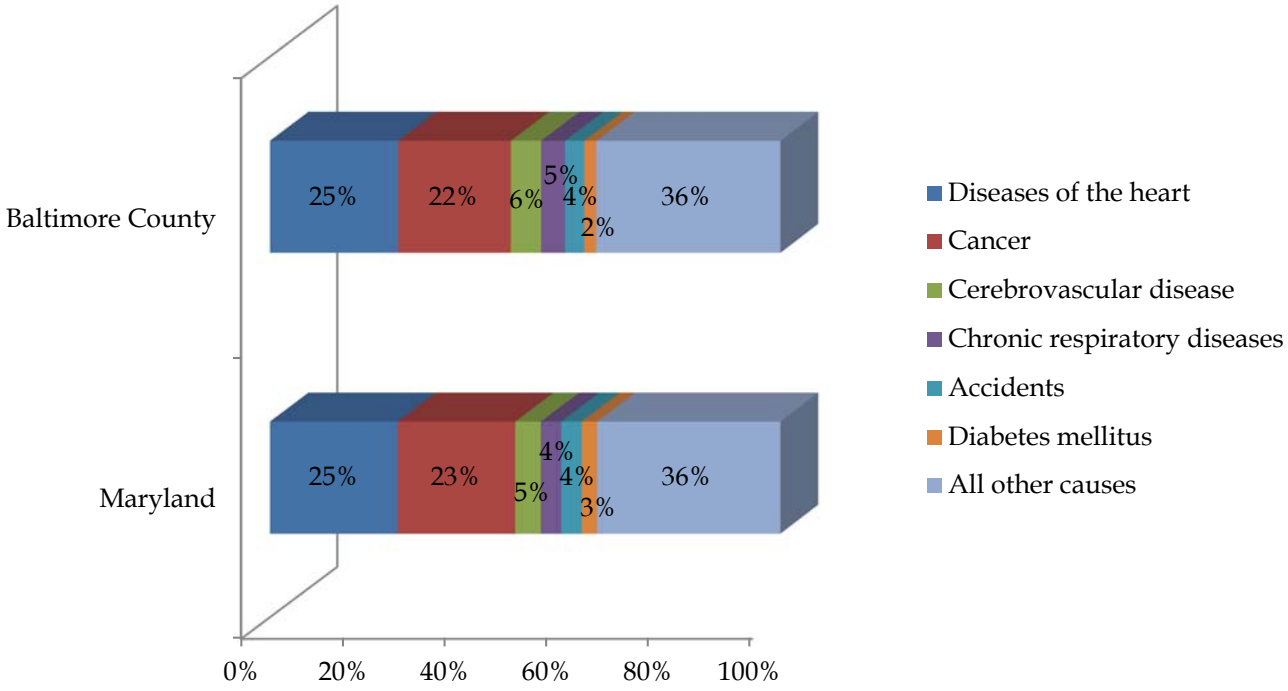
- Previous mentions in CHNAs – Cardiovascular health was listed as a priority need area in at least two local hospitals' CHNAs.

- Qualitative Findings – Cardiovascular health/diabetes/hypertension was identified as the third top health need for the county based on the results of the community web-based survey and the fourth top health need based on the results of the key leader web-based survey. Additionally, it was the second most frequently chosen response based on the results of the community telephone survey. The focus group participants also mentioned this as an area of perceived need for the county.

Each of these factors is discussed in more detail below.

<u>Leading Cause of Death</u>

Uncontrolled hypertension can lead to heart disease and stroke which are leading causes of death in both Baltimore County and Maryland. The chart on the following page demonstrates the leading causes of death for Baltimore County and Maryland, respectively.



Source: Maryland Department of Health and Mental Hygiene, 2013 Vital Statistics Reports.

ED Visit Rate due to Hypertension

According to data analyzed by the SHIP, Baltimore County experienced a rate of ED visits due to hypertension equaling 236.0 per 100,000 in the most recent available year of data (2013). This rate is greater than the overall Maryland target of 205.4 per 100,000 set by the SHIP as shown in Appendix 3 of this report. The rate of ED visits due to hypertension has increased over recent years.

Due to data limitations, the data pertaining to ED visit rates due to hypertension were only available at the county level.

Local CHNAs

The BCDH leveraged data available in local hospitals' CHNAs to determine the need for improvement related to cardiovascular health/diabetes/hypertension at the district level. Based on the analyses of these CHNAs, local hospitals identified a need for improvement in each of the seven districts for measures related to this priority, including cardiovascular health, health-related education sessions for stroke, diabetes, high blood pressure, etc., and obesity/diabetes.

Qualitative Findings

Cardiovascular health/diabetes/hypertension were identified as the third top health need for the county based on the results of the community web-based survey and the fourth top health need based on the results of the key leader web-based survey with 37 percent and 32 percent of responses, respectively.

Additionally, it was the second most frequently chosen response based on the results of the community telephone survey with 52 percent of responses ranking this as the top area of perceived need.

Further, the cumulative focus group findings mentioned this as an area of perceived need in Baltimore County. Although it was not ranked as a top five health need based on the input gathered during the focus group sessions, it is still an area where improvement can be achieved.

Summary

The management of cardiovascular health/diabetes/hypertension was identified as a priority health need for the county due to both quantitative and qualitative data as summarized above. While the prevalence and acuity of these conditions does not seem to be getting worse over recent years, there is still room for improvement. Educational sessions, particularly for those who are at increased risk of these conditions, were identified as a much needed resource by focus group members. Hypertension can be managed through coordination with a primary care provider who may recommend lifestyle changes, such as dietary changes, regular exercise, and smoking cessation, or treatment through prescribed medications.

Priority Need: Health Effects of Obesity

The health effects of obesity were identified as a health need for Baltimore County as a whole. The rationale its inclusion as a priority health need in Baltimore County include:

- Previous mentions in CHNAs – Obesity-related diseases were listed as a priority need area in at least two local hospitals' CHNAs.

- Qualitative Findings – Obesity-related diseases were identified as the second top health need for the county based on the results of the community web-based survey and the third top health need based on the results of the key leader web-based survey. Additionally, it was the fourth most frequently chosen response based on the results of the community telephone survey. Some focus group participants also mentioned this as an area of perceived need for the county.

Each of these factors is discussed in more detail below.

Local CHNAs

In order to identify the need for improvement related to obesity indicators at the district level, the BCDH leveraged data available in local hospitals' CHNAs. Based on the analyses of these CHNAs, local hospitals identified a need for improvement in geographic areas corresponding to Districts 1 and 2 for measures related to this priority.

Qualitative Findings

The health effects of obesity were identified as the second top health need for the county based on the results of the community web-based survey and the third top health need based on the results of the key leader web-based survey with 46 percent and 44 percent of responses, respectively.

Additionally, it was the fourth most frequently chosen response based on the results of the community telephone survey with 47 percent of responses ranking this as the top area of perceived need.

Further, the cumulative focus group findings ranked this as an area of perceived need in Baltimore County. Although it was not ranked as a top five health need based on the input gathered during the focus group sessions, it is still an area where improvement can be achieved. Many focus group participants noted the need for increased access to healthy foods. Further, educational programs to relay how to most effectively grocery shop for and prepare healthy food can aid in changing behaviors and diets.

Summary

Given that obesity is a risk factor for many other health conditions, it is important to increase access to healthy foods, promote nutritional education sessions, and promote physical activity. The behavioral habits that contribute to obesity can be learned throughout all stages of life; however, promoting healthy eating and exercise habits at a young age can help to prevent childhood obesity and the lessons and habits learned can continue throughout an individual's entire life. Programs to help reduce the incorrect assumption that healthy foods are always more expensive than the cheaper, but less nutritional, alternatives are also necessary to improve the public's knowledge.

CHAPTER 4 | SIGNIFICANT AREAS OF NEED DISPARITY

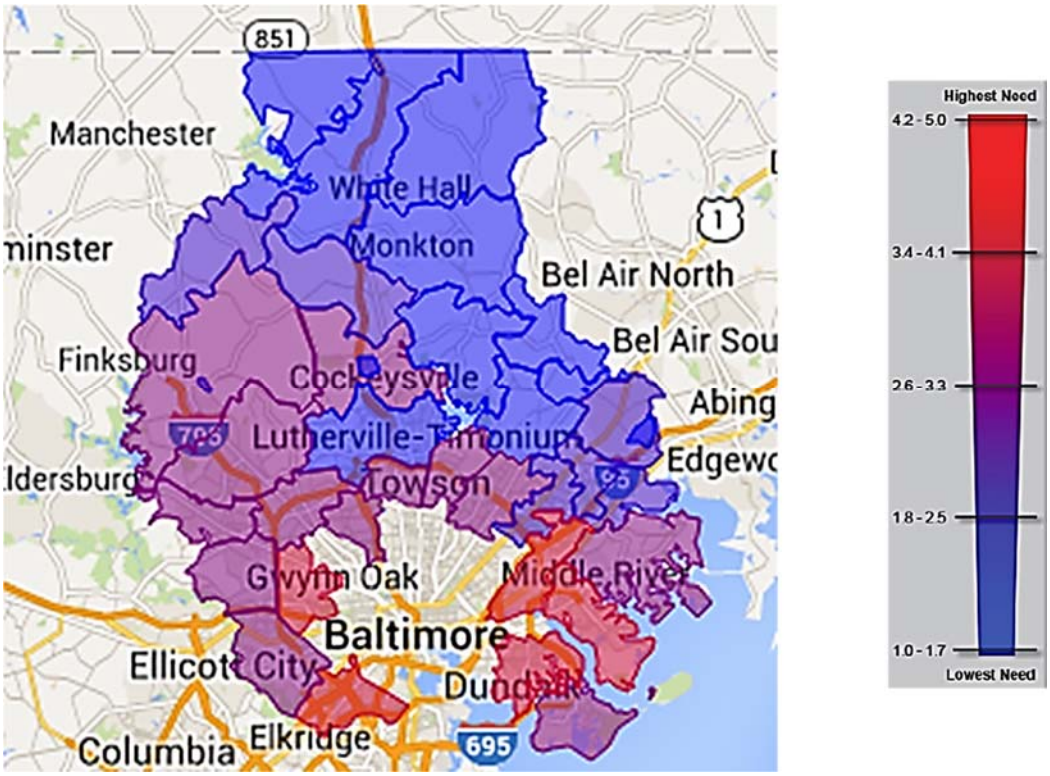
This final portion of the assessment includes a discussion of the disparities that exist due to geographic location as well as sub-groups of the county population based on race, age, and other demographic and socioeconomic factors.

As discussed throughout this document, health needs can vary based on numerous factors. One such cause of variation is geographic location. Given the size of Baltimore County, both in population and geography, the BCDH analyzed the Councilmanic districts individually to determine localized health needs. Summaries by district can be found on the following pages.

One resource utilized to determine localized health needs was the Community Need Index[3] (CNI) developed by Dignity Health and Truven Health Analytics. The CNI identifies the severity of health disparity at the zip code level and demonstrates the link between community need, access to care, and healthcare utilization. Rather than relying solely on public health data, the CNI accounts for the underlying economic and structural barriers that affect overall health. The CNI identifies five prominent barriers that make it possible to quantify healthcare access in communities across the nation. These barriers include those related to income, culture/language, education, insurance, and housing.

Using data related to these barriers, a score is assigned to each barrier condition (with one representing less community need and five representing more community need). The scores are then aggregated and averaged for a final CNI score (each barrier receives equal weight in the average). A score of 1.0 indicates a zip code with the lowest socio-economic barriers, while a score of 5.0 represents a zip code with the most socio-economic barriers. Although Baltimore County received an overall CNI score of 2.84, there is significant variability within the county as almost half of the county's zip codes fall into the mid to mid-high CNI score range indicating the presence of socioeconomic barriers to health and healthcare for the population in those areas. As shown on the map below, areas of greatest need are located in the southern portion of the county.

[3] Please refer to Appendix 2 of this document for additional information regarding the Community Need Index (CNI).



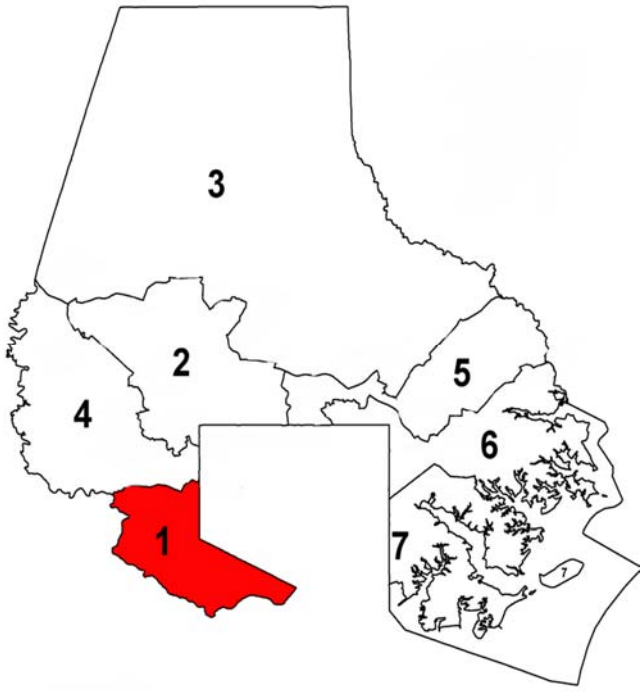
Further, when the entire population is stratified and analyzed based on demographic and socioeconomic factors there is the potential to discover discrepancies in the level of access to healthcare providers, reasons why healthcare services may not be sought by certain individuals, and variances in the perception of priority health needs. Such differences between population sub-groups are discussed in further detail below.

District-level Disparities

This portion of the assessment includes a discussion of the identified priority health needs for each of the Councilmanic districts. Of the 43 SHIP measures analyzed, ten were available at the zip code level. As such, these data were subsequently adjusted by district. The BCDH also leveraged the CHNAs produced by local hospitals to determine needs by district. Additionally, CNI scores by zip code were used to determine a CNI score representative of the individual districts. Summaries by district can be found below.

District 1

District 1 represents approximately 14 percent of Baltimore County's total population. This district is the most ethnically diverse when compared to its counterparts as its 2014 population is over six percent Hispanic or Latino. Please see the map below representing District 1.



Geographies included in District 1 were the subject of local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 1:

Hospital CHNA Priorities: District 1
• Cardiovascular health • Cancer • Obesity/Diabetes • Prenatal Health and education • Health-related education sessions • Primary and preventive healthcare particularly for the Medicaid and low-income populations

Based on its analysis of secondary data, the BCDH also identified two measures identified by the SHIP as areas necessitating improvement for District 1. These include reducing sudden unexpected infant deaths and reducing drug-induced deaths. The

following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 1				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 1**
Sudden unexpected infant deaths per 1,000	0.84	0.89	0.67	1.10
Drug-induced deaths per 100,000	11.3	12.4	17.2	20.4

Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

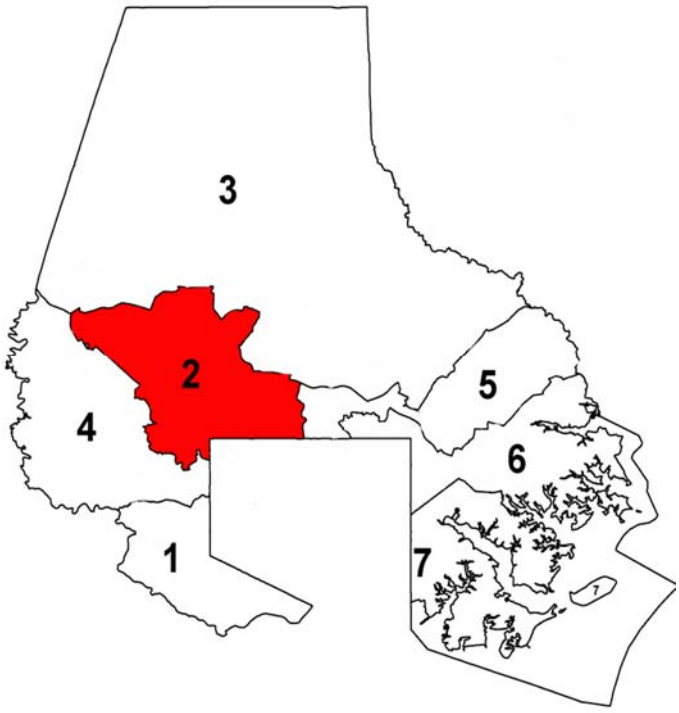
As demonstrated above, District 1 has more sudden unexpected infant deaths per 1,000 than the Healthy People 2020 benchmark, the Maryland SHIP target, and the county as a whole. Additionally, the rate of drug-induced deaths in District 1 is nearly double that of the national benchmark.

Further, when compared to its counterparts, District 1 ranks fifth among the districts for sudden unexpected infant deaths and sixth among the districts for drug-induced deaths. While the need to reduce drug-induced deaths exists for Baltimore County overall, efforts focused in District 1 would be a beneficial use of time and resources.

Additionally, District 1 received a Community Need Index (CNI) score of 3.3, one of the top CNI scores among the districts, demonstrating that barriers to healthcare access based on its socio-economy are not as evident in District 1 as in some of its counterparts.

District 2

District 2 represents approximately 13 percent of Baltimore County's total population. This district is the most comparable to Baltimore County as a whole with regards to its demographic composition. Please see the map below representing District 2.



Geographies included in District 2 were the subject of local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 2:

Hospital CHNA Priorities: District 2
• Cardiovascular health • Obesity/Diabetes • Primary and preventive healthcare particularly for the Medicaid and low-income populations

Based on its analysis of secondary data, the BCDH identified one measure from the SHIP as an area necessitating improvement for District 2. The following table summarizes Baltimore County's rate of fall-related deaths and its relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 2				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 2**
Fall-related deaths per 100,000	7.0	6.9	13.9	14.5

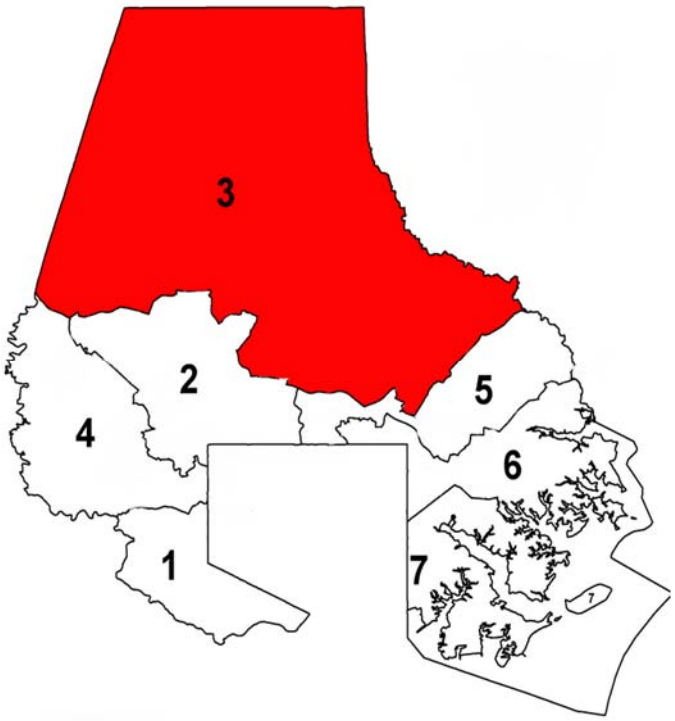
Note: Please see Appendix 3 for details regarding the measure shown above including the data periods of the most recently available data.

As demonstrated above, District 2 has room for improvement regarding its rate of fall-related deaths as its rate is more than double the national benchmark and the Maryland target. District 2 ranks fourth among the districts for fall-related deaths.

District 2 received a CNI score of 2.5, ranking the district in the middle of the ranking scale regarding socioeconomic barriers to care. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District 3

District 3 represents approximately 13 percent of Baltimore County's total population. This district is one of the least racially diverse districts and also has the lowest poverty rate. Further, as shown on the map below, District 3 is the largest in terms of geography.



Geographies included in District 3 were included as service areas in local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 3:

Hospital CHNA Priorities: District 3
• Cardiovascular health • Cancer

The BCDH also identified three measures identified by the SHIP as areas necessitating improvement for District 3. These include reducing sudden infant deaths, reducing fall-related deaths, and reducing drug-induced deaths. The following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 3				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 3**
Sudden unexpected infant deaths per 1,000	0.84	0.89	0.67	1.09
Fall-related deaths per 100,000	7.0	6.9	13.9	20.3
Drug-induced deaths per 100,000	11.3	12.4	17.2	14.3

Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

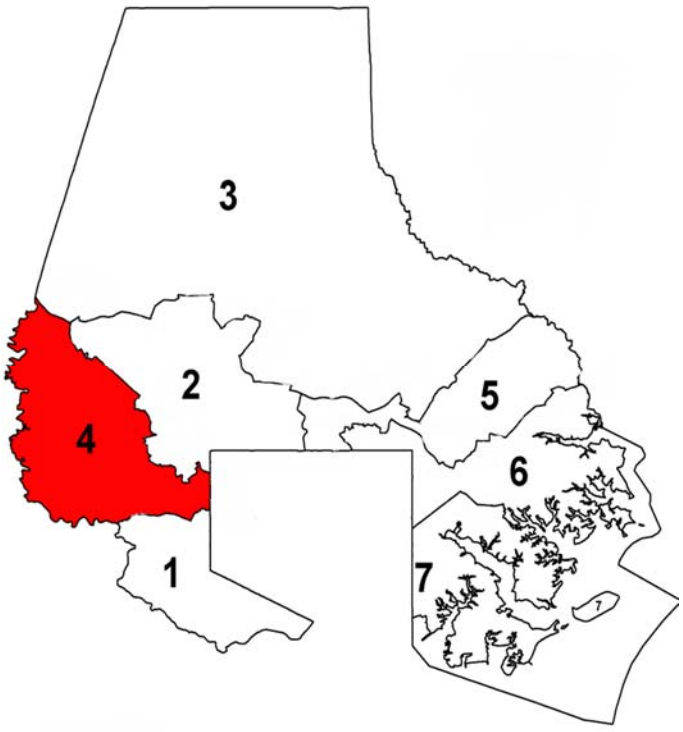
As demonstrated above, District 3 has more sudden unexpected infant deaths per 1,000 than the Healthy People 2020 benchmark, the Maryland SHIP target, and the county as a whole. Additionally, the rate of fall-related deaths in District 3 is nearly triple that of the national benchmark and the Maryland SHIP target. The rate of drug-induced deaths is less than the county as whole but is still higher than the national benchmark and Maryland SHIP target.

Further, when compared to its counterparts, District 3 ranks fourth for sudden unexpected infant deaths, seventh for fall-related deaths, and fourth for drug-induced deaths. As demonstrated above, District 3 has room for improvement in all of the aforementioned areas.

District 3 received a CNI score of 1.6, ranking the district in the low-end of the ranking scale regarding socioeconomic barriers to care. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District 4

District 4 represents approximately 15 percent of Baltimore County's total population. This district is the only district to have African Americans as its largest racial class. Additionally, District 4 is the second fastest growing district in Baltimore County. Please see the map below representing District 4.



Geographies included in District 4 were included as service areas in local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 4:

Hospital CHNA Priorities: District 4
• HIV/Aids • Prenatal health and education • Health-related education sessions • Primary and preventive healthcare particularly for the Medicaid and low-income populations

The BCDH also identified four measures noted by the SHIP as areas necessitating improvement for District 4. These include reducing the percentage of babies with low birth weight, reducing the rate of sudden infant deaths, reducing the rate of HIV incidence, and reducing the percentage of children with elevated blood lead levels.

The following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 4				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 4**
Babies with low birth weight	7.8%	8.5%	9.0%	11.4%
Sudden infant deaths per 1,000	0.84	0.89	0.67	1.59
HIV incidence rate per 100,000	N/A	30.4	22.9	32.7
Children with elevated blood lead levels	N/A	0.18%	0.21%	0.24%

Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

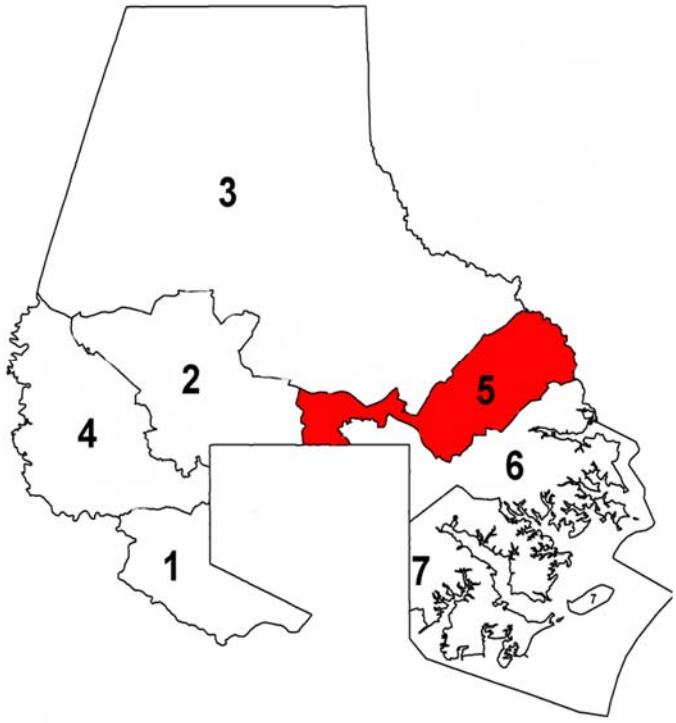
As demonstrated above, District 4 has a higher percentage of babies born with low birth rates than the national benchmark, the Maryland target, and the county overall. Sudden unexpected infant deaths occur at a rate significantly higher than the benchmark and target.

Further, when compared to its counterparts, District 4 ranks seventh for babies with low birth weight, sudden unexpected infant deaths, and HIV incidence. District 4 is also ranked sixth for children with elevated blood lead levels. Given its low rankings among the districts for the measures mentioned above, District 4 has room for improvement in all of the aforementioned areas.

District 4 received a CNI score of 3.0, ranking the district in the middle of the ranking scale regarding socioeconomic barriers to care. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District 5

District 5 represents approximately 14 percent of Baltimore County's total population. This district is the fastest growing district in Baltimore County. Additionally, District 5 is the least ethnically diverse. Please see the map below representing District 5.



Geographies included in District 5 were included as service areas in local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 5:

Hospital CHNA Priorities: District 5
• Cardiovascular health • Cancer • Prenatal care and education • Behavioral health and mental health treatment services

The BCDH also identified three measures identified by the SHIP as areas necessitating improvement for District 5. These include reducing the percentage of babies with low birth weight, reducing the rate of suicides, and reducing fall-related deaths. The following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 5				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 5**
Babies with low birth weight	7.8%	8.5%	9.0%	9.1%
Suicides per 100,000	10.2	9.1	10.6	12.9
Fall-related deaths per 100,000	7.0	6.9	13.9	17.1

Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

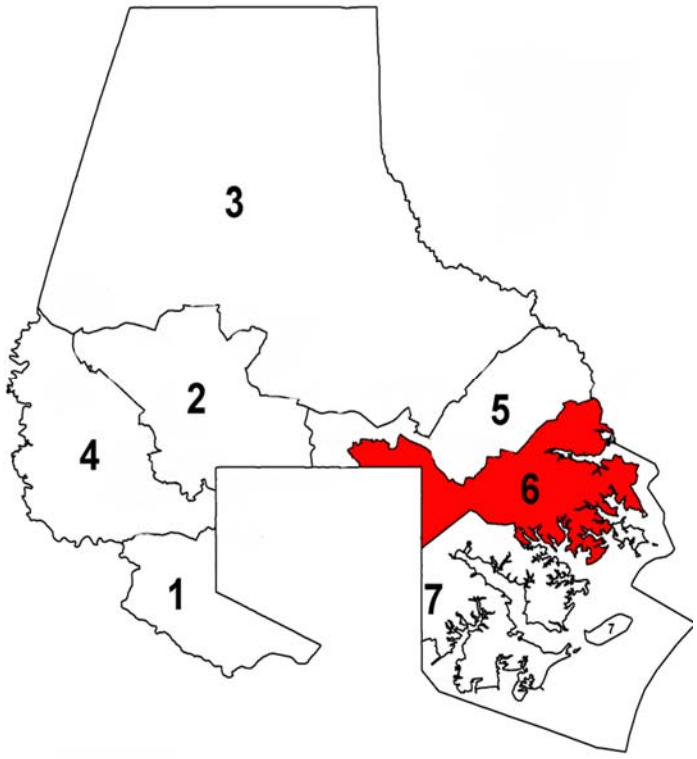
As demonstrated above, the most significant area of improvement for District 5 is the reduction of fall-related deaths per 100,000. The District experiences a rate of fall-related deaths that are more than double the national benchmark and Maryland target.

When compared to its counterparts, District 5 is ranked sixth for babies with low birth weight, fifth for the rate of suicides, and fifth for fall-related deaths. Given its low rankings for the measures mentioned above, District 5 has room for improvement in all of the aforementioned areas.

District 5 received a CNI score of 2.1, ranking the district in the low-end of the ranking scale regarding socioeconomic barriers to care. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District 6

District 6 represents approximately 15 percent of Baltimore County's total population. This district is the largest with regards to population size. Please see the map below representing District 6.



Geographies included in District 6 were included as service areas in local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 6:

Hospital CHNA Priorities: District 6
• Cardiovascular health • Cancer • Prenatal care and education • Primary and preventive healthcare particularly for the Medicaid and low-income populations • Behavioral health and mental health treatment services

The BCDH also identified four measures identified by the SHIP as areas necessitating improvement for District 6. These include reducing the percentage of babies with low birth weight, reducing the rate of suicides, reducing fall-related deaths, and reducing

drug-induced deaths. The following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 6				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 6**
Babies with low birth weight	7.8%	8.5%	9.0%	9.0%
Suicides per 100,000	10.2	9.1	10.6	14.2
Fall-related deaths per 100,000	7.0	6.9	13.9	14.1
Drug-induced deaths per 100,000	11.3	12.4	17.2	18.7

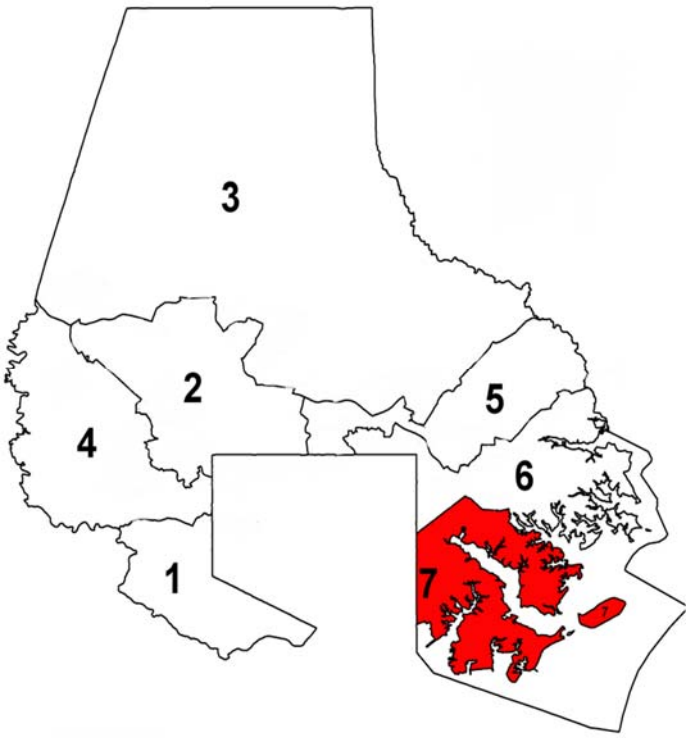
Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

As demonstrated above, District 6 has room for improvement in all of the aforementioned areas. Further, when compared to its counterparts, District 6 is ranked fifth for babies with low birth weight, sixth for the rate of suicides, third for fall-related deaths, and fifth for drug-induced deaths.

District 6 received a CNI score of 2.8, ranking the district in the middle of the ranking scale regarding socioeconomic barriers to care. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District 7

District 7 represents approximately 14 percent of Baltimore County's total population. This district is the slowest growing district in Baltimore County. Additionally, residents of District 7 have the highest rate of poverty when compared to other district residents. Please see the map below representing District 7.



Geographies included in District 7 were included as service areas in local hospitals' CHNAs. The following priorities were included in two or more CHNAs for District 7:

Hospital CHNA Priorities: District 7
• Cardiovascular health • Cancer • Prenatal care and education • Primary and preventive healthcare particularly for the Medicaid and low-income populations • Behavioral health and mental health treatment services

The BCDH also identified seven measures identified by the SHIP as areas necessitating improvement for District 7. These include reducing infant mortality, reducing the rate of sudden unexpected infant deaths, reducing the rate of teen births,

reducing suicides, reducing fall-related deaths, improving childhood blood lead levels, and reducing drug-induced deaths. The following table summarizes these measures and their relationship to national and state benchmarks and targets.

SHIP Measure Improvement Areas: District 7				
Measure	**National Benchmark**	**Maryland Target**	**Baltimore County**	**District 7**
Infant mortality	6.0	6.6	5.3	8.6
Sudden unexpected infant deaths per 1,000	0.84	0.89	0.67	1.36
Teen births	N/A	29.6	17.2	31.3
Suicides per 100,000	10.2	9.1	10.6	23.0
Fall-related deaths per 100,000	7.0	6.9	13.9	18.1
Children with elevated blood lead levels	N/A	0.18%	0.21%	0.41%
Drug-induced deaths per 100,000	11.3	12.4	17.2	43.3

Note: Please see Appendix 3 for details regarding the measures shown above including the data periods of the most recently available data.

When compared to its counterparts, District 7 ranks seventh for infant mortality, sixth for sudden unexpected infant deaths, seventh for teen births, seventh for suicides, sixth for fall-related deaths, seventh for children with elevated blood lead levels, and seventh for drug-induced deaths.

District 7 received a CNI score of 3.3, tying District 1 as the highest score among all districts. Please refer to Appendix 2 of this document for additional information regarding the CNI.

District Summary

Of the seven Councilmanic districts, Districts 4, 6, and 7 are geographic areas with the greatest needs within the county. Each of these districts had at least four SHIP measures for which performance was worse than the Maryland target as well as four areas of need mentioned in previous CHNAs.

Notably, based on the priorities discussed in previous CHNAs, these three districts share the need for increased prenatal care and education and additional primary and preventive healthcare providers, particularly for Medicaid populations. Further the noted priorities for Districts 6 and 7 are even more similar. Both districts demonstrate the need for the following based on previous CHNAs:

Hospital CHNA Priorities: Districts 6 and 7
• Cardiovascular health • Cancer • Prenatal care and education • Primary and preventive healthcare particularly for the Medicaid and low-income populations • Behavioral health and mental health treatment services

Additionally, Districts 6 and 7 demonstrate the need for improvement regarding many common SHIP measures, including suicides, fall-related deaths, and drug-induced deaths.

Population Sub-group Disparities

Racial Disparities

Racial disparities regarding health exist in many communities. The qualitative data gathered throughout the CHNA process demonstrates the same disparities in Baltimore County, particularly regarding health insurance and the perceived priority needs of the community. Due to the racial composition of the respondents of the web-based and telephone surveys, the following discussion centers on the comparison of results between white and African American respondents.

The results gathered through the web-based community surveys show that white respondents were more likely to have had health insurance for five years or longer compared to their African American counterparts. Although the majority of African American respondents noted that they had health insurance for five years or longer, it is a lower majority than for white respondents. Similarly, although the majority of African American respondents have private or commercial insurance, that majority was not as overwhelming for this group as it was for whites.

Further, regarding the prioritization of perceived health needs in the community, there were slight differences in perceived needs and the prioritization of those needs among the two groups.

Web-based Community Survey Results: Health Needs		
Health Need	**White**	**African American**
#1 Need	Mental & behavioral health	Mental & behavioral health
#2 Need	Obesity	Cardiovascular health/diabetes/ hypertension
#3 Need	Primary & preventive healthcare	Cancer
#4 Need	Cardiovascular health/diabetes/ hypertension	Obesity

The results of the phone surveys also support the conclusions above regarding the length of time respondents of each group had health insurance. However, the phone survey results yielded slightly different conclusions regarding the type of health insurance held by whites and African Americans. Private and commercial insurances

and Medicaid were selected equally between cohorts at 70 percent and nearly six percent of responses, respectively, for each of the racial subgroups.

The perceived health needs based on the telephone survey results were once again similar between the two groups, albeit not the same top four as the web-based community surveys, but once again prioritized differently. The table below demonstrates the ranking of the health needs for each racial group.

Telephone Community Survey Results: Health Needs		
Health Need	**White**	**African American**
#1 Need	Cancer	Obesity
#2 Need	Cardiovascular health/diabetes/hypertension	Cardiovascular health/diabetes/hypertension
#3 Need	Mental & behavioral health	Cancer
#4 Need	Obesity	Mental & behavioral health

As discussed above, disparities among racial sub-groups of the greater Baltimore County population do exist and as such implementation processes to alleviate health disparities should be targeted based on the specific population composition.

Ethnic Disparities

As discussed previously, the BCDH had difficulty obtaining qualitative input from the Hispanic/Latino population. One avenue which did yield some insight into the health needs and related health information for this community was the community surveys. However, there were a low number of responses from Hispanic/Latino community, so the results described below may not accurately represent this sub-group of the county population. The following discussion centers on the comparison of results between Hispanic/Latino and non-Hispanic/Latino respondents.

The results gathered through the web-based community surveys show that non-Hispanic/Latino respondents were more likely to have had health insurance for five years or longer compared to their Hispanic/Latino counterparts. Although the majority of non-Hispanic/Latino respondents noted that they had health insurance for five years or longer, it is a lower majority than for non-Hispanic/Latino respondents.

Further, Hispanic/Latino respondents were three times less likely to have private or commercial insurance and eighteen times more likely to not have insurance at all when compared to their counterparts.

Regarding the prioritization of perceived health needs in the community, both cohorts selected the same list of the top four needs. However, as shown in the table below the prioritization of these needs differed somewhat among the two groups.

Web-based Community Survey Results: Health Needs		
Health Need	**Hispanic/Latino**	**Non-Hispanic/Latino**
#1 Need	Obesity	Mental & behavioral health
#2 Need	Mental & behavioral health	Obesity
#3 Need	Cardiovascular health/diabetes/hypertension	Cardiovascular health/diabetes/hypertension
#4 Need	Primary & preventive healthcare	Primary & preventive healthcare

As discussed above, disparities among ethnic sub-groups of the greater Baltimore County population do exist and as such implementation processes to alleviate health disparities should be targeted based on the specific population composition.

Age Disparities

Focus groups included organizations who work specifically with children as well as organizations who work with senior citizens. Interestingly, two of the top health needs mentioned by these groups were shared – dental care and mental and behavioral health. However, the factors contributing to the needs differ among the age cohorts.

Some key areas of need identified for children in the community related to asthma, allergies, and general nutrition. Nutrition in particular remains a significant concern as access to healthy foods, nutritional education, and the financial resources to support healthy choices are limited in many areas.

Key areas of need identified for infants in the community related to safe sleeping environments, particularly for low-income and homeless populations, and low birth weight. Unsafe sleeping environments contribute to the rate of sudden unexpected infant deaths which are higher than the state benchmark in some areas of the county. Low birth weight in particular remains a concern as data for Baltimore County is worse than both the Maryland and national benchmarks. Further, babies born with a low birth weight are at increased risk for serious health consequences including disabilities and death.

LOW BIRTH WEIGHT REMAINS A CONCERN FOR BALTIMORE COUNTY AS IT RANKS HIGHER THAN BOTH MARYLAND AND NATIONAL BENCHMARKS.

Although schools provide some dental care to students, it is very limited. Dental issues in children are often overlooked since it is not perceived as an immediate issue that needs to be addressed. Although some resources exist for discounted dental care services for children, the inconvenience of parents having to take off work for such appointments typically outweighs the perceived benefits of receiving care. As such, preventive care is often not utilized and treatment is put off until it is much too late. Suggestions related to the opportunity for a mobile dental program in high need communities were mentioned as potential methods for improvement in this area.

Senior citizens noted that dental and vision care are not adequately covered by Medicare or their supplemental insurances. Rather, the insurance coverage is centered on treating acute medical issues while ignoring the need for preventive care.

Likewise, for adults ages 18 to 24, dental access was also mentioned as a priority area of need. Many of the dental access programs exclude this age cohort. Coupled with the lack of sliding scale dental providers, many adults in Baltimore County go without dental care. Further, due to the undersupply of oral surgeons in the county, persons requiring care are often being sent into Baltimore City.

The issues regarding mental health for each of these cohorts is similar in that receiving care is heavily dependent on the amount of familial and social support they have. Lack of familial and social support is correlated to mental health issues as this absence increases stress and decreases healthy communication. Obviously, children are not going to receive care for mental and behavioral health issues without the involvement of a parent or guardian. In fact, treatment for many medical issues for children is reliant on the parent or guardian's involvement in scheduling and arriving at appointments, filling medications, and ensuring that follow-up care is sought. In

similar fashion, the elderly may also rely on others for transportation to and from appointments and the pharmacy.

Further, the types of mental and behavioral health issues affecting the various age cohorts differ as well. Focus group participants noted a rising number of eating disorder cases among children and adolescents in recent years. These disorders are affecting both boys and girls and the stigma associated with receiving care for eating disorders is a major barrier to overcome. Additionally, for children and adolescents there is also stigma regarding diagnoses along racial and gender lines. For example, it was noted that some parents are more resistant to classifying African American boys as having mental health issues due to the overwhelming assumption that once they are classified as having mental health issues they will struggle to overcome that stigma as they continue to grow.

KEY COMMUNITY FEEDBACK: FOCUS GROUP MEMBERS NOTED THAT EATING DISORDER CASES AMONG CHILDREN AND ADOLESCENTS HAS INCREASED NOTICEABLY IN RECENT YEARS.

For the 18 to 64 cohort, many of the mental and behavioral health issues center on the rising stress of everyday life, which contributes to feelings of hopelessness, depression, and substance abuse.

The mental health of the senior population is heavily influenced by the level of social interaction and social support present in their lives. Lack of such support, the loss of a spouse, or the loss of a close friend is correlated with depression and hopeless thoughts and feelings. Further, the diagnosis of Alzheimer's or other dementias was also noted as a concern among members of this cohort.

An additional area of significant need related to the senior population is fall prevention. The county experiences rates of fall-related deaths that are greater than both the Maryland and national benchmarks. The decline in mobility that is associated with aging contributes to the increased chance that seniors will experience a fall. One key method of addressing falls is through fall prevention education classes and outreach, but as some noted the resources to provide these services are becoming more and more limited.

KEY COMMUNITY FEEDBACK: FALL-RELATED DEATHS AMONG THE SENIOR POPULATION WERE ALSO IDENTIFIED AS A NEED AREA, WITH A NUMBER OF FOCUS GROUP PARTICIPANTS MENTIONING THAT THE RESOURCES NECESSARY FOR PREVENTION HAVE BECOME MORE LIMITED IN RECENT YEARS.

While the needs facing each of these cohorts have unique attributes, similarities exist as well. Limitations to easy access to services and the rise of mental health disorders are shared priorities of need for each of these cohorts.

Disabled Population Disparities

A focus group was conducted with members of the Baltimore County Commission on Disabilities to assist with better understanding the perspectives and needs of the disabled population in Baltimore County. A separate survey was also distributed to document the needs of this population sub-group. Overall the priority health needs expressed by this group mirror those of the county as a whole, including mental and behavioral health, primary and preventive care, and obesity.

The key disparity for the disabled population appears to be most centralized on the increased significance of the barriers to accessing health services that this population must face day after day. Specifically, transportation was cited as a substantial barrier that must be overcome for many disabled persons in Baltimore County. Although transportation can be an issue in everyday living, this issue becomes particularly concerning when one needs to access health-related services. Frustrations related to timeliness of transportation options given scheduled health appointments and/or a complete lack of relevant options were expressed as key concerns given the limited number of outreach centers.

KEY COMMUNITY FEEDBACK: REPRESENTATIVES FOR THE DISABLED POPULATION OF BALTIMORE COUNTY EXPRESSED THAT THEY ARE FACED WITH MANY SIMILAR BARRIERS AS THOSE EXPERIENCED BY OTHERS, INCLUDING TRANSPORTATION, COMMUNICATION, AND SYSTEM COMPLEXITY; HOWEVER, THE SIGNIFICANCE OF THOSE BARRIERS AND THE CORRESPONDING IMPACT ON HEALTH IS MAGNIFIED SUBSTANTIALLY FOR THIS POPULATION.

Also, for residents with disabilities that relate to their own personal mobility there is clearly a concern related to the availability of health equipment and resources to support their needs. Inaccessible radiology equipment was just one illustration provided that highlights this concern. Although the appropriate types of equipment might be present in Baltimore County those resources are limited and access to those limited resources can be further compounded by the transportation issues highlighted above.

In addition, deaf and hard of hearing residents are particularly vulnerable given the significance of the barriers they must overcome to receive care. Simply trying to

communicate to schedule an appointment with a provider becomes a significant hurdle.

Last, but perhaps most significantly, strong opinions were expressed related to the sheer complexity of the system and the confusion associated with trying to navigate that system to get needed care. Words like "exhaustion" were used to describe how many felt when trying to obtain the services they needed, with some stating that they will often just give up due to the frustrations they face.

Homeless Population Disparities

The increasing number of homeless people within Baltimore County was mentioned on numerous occasions throughout the focus groups as a rising societal problem that also has health and healthcare implications for those who are themselves homeless.

Particularly, staff members who work with the homeless population as well as residents of a homeless shelter in Baltimore County believe that the health of the homeless population has experienced a decline over the past five years with regards to the acuity of the population. While these groups did think that the access to care was improving, there was concern that the county does not yet provide as many services and resources to the population as the groups would like. Due to the lack of conveniently located resources, many members of the homeless population either forgo receiving care or are often seen in emergency care settings.

Particularly, access to mental healthcare providers is extremely difficult to obtain. This difficulty to access care has worsened since the mental and behavioral health status – both diagnosed and undiagnosed - of many within this population is deteriorating. Access limitations are due to a lack of providers and are further exacerbated due to difficulties associated with accessing care for Medicare and Medicaid populations.

KEY COMMUNITY FEEDBACK: LACK OF ADEQUATE ACCESS TO MENTAL AND BEHAVIORAL HEALTH SERVICES FOR THE HOMELESS POPULATION WAS MENTIONED AS A SIGNIFICANT CONCERN, PARTICULARLY IN LIGHT OF INCREASING NEEDS IN RECENT YEARS.

Another area of need for the homeless community is related to medications. Both over-the-counter and prescription medications are unaffordable for this population. In instances where medications must be stored at a specific temperature to remain effective, members of the homeless community are unable to adequately store these medications. As a result, they are forced to either use inappropriately stored medication or to not take the medication at all.

When compared to the general population of Baltimore County, the homeless respondents have far less education. Through the survey distributed to members of the homeless population, the majority documented that their highest level of completed education was either graduating high school or some college experience. Of the respondents to the homeless population survey, under half stated that they had health insurance for the past one to five years while the overwhelming majority of the general community documented having health insurance coverage for five years or longer. Almost all of the homeless community who responded to the survey stated that they do currently have health insurance (nearly 91 percent). Of those who were homeless with health insurance, nearly 70 percent had either Medicare or Medicaid. Given the access limitations associated with Medicare and Medicaid populations, particularly as it relates to primary care, the large percentage of the homeless with these forms of insurance certainly contributes to the individual's inability or difficulty receiving care. In fact, based on survey results the homeless are nearly ten times as likely to seek medical care at an emergency department when compared to their counterparts.

Further, regarding the prioritization of perceived health needs in the community, the homeless population noted needs that differed from those mentioned by members of the general population, such as dental care and cancer. The table below shows the top four areas of perceived needs by these sub-groups.

Web-based Community Survey Results: Health Needs		
Health Need	**General Community**	**Homeless Community**
#1 Need	Mental & behavioral health	Mental & behavioral health
#2 Need	Obesity	Dental care
#3 Need	Primary & preventive healthcare	Cancer
#4 Need	Cardiovascular health/diabetes/hypertension	Cardiovascular health/diabetes/hypertension

As discussed above, disparities among the general population and the homeless population of Baltimore County do exist.

CHAPTER 5 | NEXT STEPS

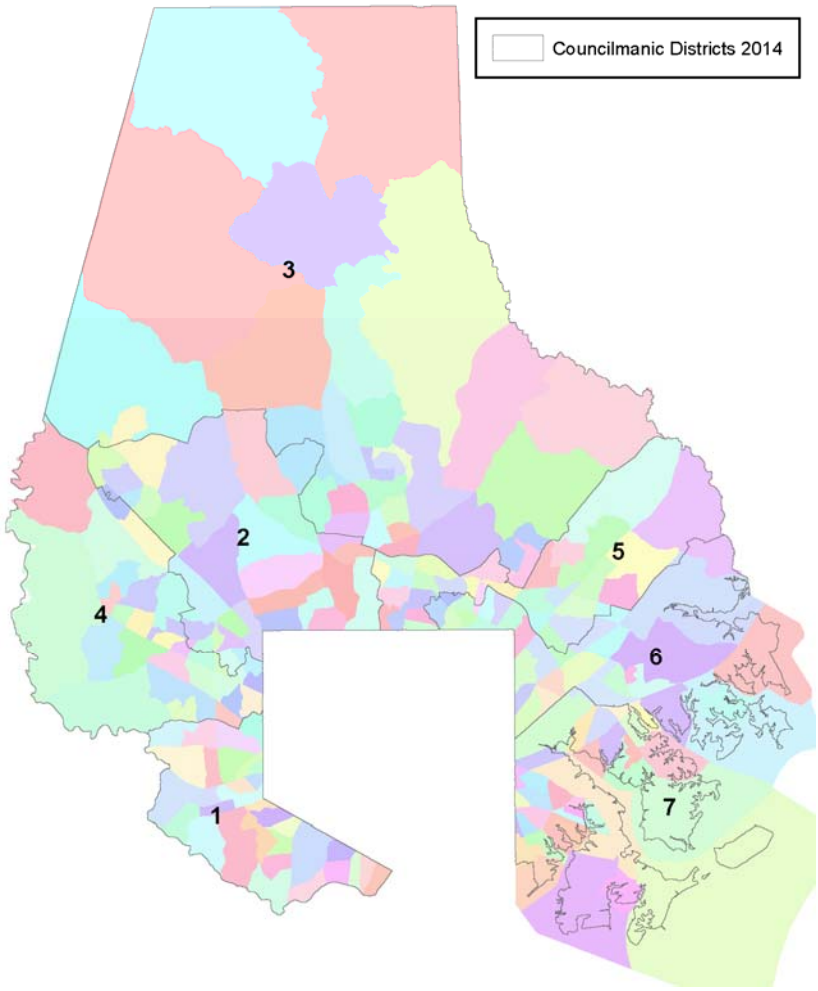
The BCDH is currently utilizing the MAPP (Mobilizing for Action through Planning and Partnerships) process for community health improvement, and will be incorporating these findings into that ongoing planning initiative. Further, Baltimore County's Local Health Improvement Coalition (LHIC), a diverse group of partners representing many community and health department stakeholders, has already begun implementing strategies intended to address many of the needs identified throughout this document.

Although the needs and challenges within this assessment are significant, the BCDH is confident in its ability to leverage this information to continue to improve the health of residents throughout Baltimore County. With an emphasis on community partnerships, intentional planning, and focused execution, much can and will be achieved during the coming years.

APPENDICES

APPENDIX 1 | DEMOGRAPHIC DATA

Baltimore County occupies 612 square miles-plus an additional 28 square miles of water-in the geographic center of Maryland. With a population in excess of 800,000 persons, the county is the largest jurisdiction in the Baltimore-Town Metropolitan Area. As mentioned previously, given the size of Baltimore County, both in geography and population, the seven Councilmanic districts were analyzed to determine need within sub-geographies in the county. Please see the map below for geographical representation by district.



Baltimore County is a growing community that experiences variances in demographics among its Councilmanic districts which contribute to different health needs for the individual sub-geographies. As outlined below, Baltimore County has experienced a steady increase in overall population in the past couple of years and that growth is projected to continue in the future. As discussed throughout this assessment, health is dependent on multiple factors, including, but not limited to individual characteristics and the environment and community in which one lives. Such information can guide efforts

to identify gaps in the existing system and to improve the health and healthcare available to communities. By examining the population of Baltimore County and its districts, BCDH can identify local needs that may be obscured when data is aggregated on a state or national level.

Detailed information regarding the demographics of Baltimore County can be found below.

Total Population

According to data from Claritas, Baltimore County is projected to grow 0.6 percent annually from 2010 to 2019 with the addition of almost 48,000 people. The table below shows the total population of Baltimore County, as well as the populations by district, for 2010, 2014, and 2019.

Total Population								
Year	**District 1**	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**	**Total**
2010	114,275	108,045	109,094	120,880	110,263	125,558	116,914	**805,029**
2014	116,273	111,415	110,831	125,289	115,019	127,715	118,374	**824,916**
2019	119,440	115,947	113,653	130,997	120,706	131,161	120,997	**852,901**
2010 - 2019 CAGR*	0.5%	0.8%	0.5%	0.9%	1.0%	0.5%	0.4%	**0.6%**

Source: Claritas, Ascendient estimates.
*Compound Annual Growth Rate.

Age

The tables below show the population by age (and gender) for 2010, 2014, and 2019 in Baltimore County. During the coming years the population aged 65 and over is expected to grow significantly faster than any other age cohort.

2010 Population by Age					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 1					
Male	10,349	23,863	14,377	6,054	54,643
Female	10,150	24,417	15,703	9,362	59,632
Total	20,499	48,280	30,080	15,416	114,275
District 2					
Male	9,960	18,422	14,172	7,808	50,362
Female	9,625	20,073	16,818	11,167	57,683
Total	19,585	38,495	30,990	18,975	108,045
District 3					
Male	9,803	18,373	16,716	7,782	52,674
Female	9,387	18,857	18,100	10,076	56,420
Total	19,190	37,230	34,816	17,858	109,094

2010 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 4					
Male	11,825	23,411	14,264	5,613	55,113
Female	11,585	27,223	18,616	8,343	65,767
Total	23,410	50,634	32,880	13,956	120,880
District 5					
Male	8,739	22,703	13,245	6,837	51,524
Female	8,409	24,672	14,755	10,903	58,739
Total	17,148	47,375	28,000	17,740	110,263
District 6					
Male	11,854	25,521	15,534	6,815	59,724
Female	11,244	27,360	17,600	9,630	65,834
Total	23,098	52,881	33,134	16,445	125,558

2010 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 7					
Male	11,181	22,320	15,812	7,056	56,369
Female	10,648	23,250	16,617	10,030	60,545
Total	21,829	45,570	32,429	17,086	116,914
Baltimore County Total					
Male	73,711	154,613	104,120	47,965	380,409
Female	71,048	165,852	118,209	69,511	424,620
Total	144,759	320,465	222,329	117,476	805,029
Maryland					
Male	565,849	1,164,151	762,236	299,526	2,791,762
Female	544,536	1,193,402	835,736	408,116	2,981,790
Total	1,110,385	2,357,553	1,597,972	707,642	5,773,552

Source: Claritas, Ascendient estimates.

2014 Population by Age					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 1					
Male	10,523	23,842	14,670	6,720	55,755
Female	10,287	24,253	16,083	9,895	60,518
Total	20,810	48,095	30,753	16,615	116,273
District 2					
Male	9,912	19,028	14,195	8,873	52,008
Female	9,610	20,288	17,067	12,442	59,407
Total	19,522	39,316	31,262	21,315	111,415
District 3					
Male	9,392	18,677	16,772	8,696	53,537
Female	8,976	18,843	18,426	11,049	57,294
Total	18,368	37,520	35,198	19,745	110,831

2014 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 4					
Male	12,085	23,928	14,863	6,500	57,376
Female	11,805	27,188	19,348	9,572	67,913
Total	23,890	51,116	34,211	16,072	125,289
District 5					
Male	8,976	23,271	13,628	7,905	53,780
Female	8,627	25,073	15,271	12,268	61,239
Total	17,603	48,344	28,899	20,173	115,019
District 6					
Male	12,081	25,549	15,831	7,474	60,935
Female	11,552	27,022	17,946	10,260	66,780
Total	23,633	52,571	33,777	17,734	127,715

2014 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 7					
Male	11,406	22,193	16,020	7,613	57,232
Female	10,871	23,136	16,713	10,422	61,142
Total	22,277	45,329	32,733	18,035	118,374
Baltimore County Total					
Male	74,375	156,488	105,979	53,781	390,623
Female	71,728	165,803	120,854	75,908	434,293
Total	146,103	322,291	226,833	129,689	824,916
Maryland					
Male	566,580	1,177,302	791,125	348,153	2,883,160
Female	544,387	1,189,953	871,210	463,133	3,068,683
Total	1,110,967	2,367,255	1,662,335	811,286	5,951,843

Source: Claritas, Ascendient estimates.

2019 Population by Age					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 1					
Male	10,826	24,080	14,485	8,037	57,428
Female	10,466	24,132	16,069	11,345	62,012
Total	21,292	48,212	30,554	19,382	119,440
District 2					
Male	9,873	19,980	13,811	10,560	54,224
Female	9,579	20,641	16,897	14,606	61,723
Total	19,452	40,621	30,708	25,166	115,947
District 3					
Male	8,978	19,533	16,022	10,412	54,945
Female	8,526	19,284	17,884	13,014	58,708
Total	17,504	38,817	33,906	23,426	113,653

2019 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 4					
Male	12,481	24,568	15,238	8,022	60,309
Female	12,071	27,088	19,726	11,803	70,688
Total	24,552	51,656	34,964	19,825	130,997
District 5					
Male	9,238	23,852	13,860	9,544	56,494
Female	8,888	25,449	15,396	14,479	64,212
Total	18,126	49,301	29,256	24,023	120,706
District 6					
Male	12,426	25,583	15,953	8,826	62,788
Female	11,981	26,528	17,966	11,898	68,373
Total	24,407	52,111	33,919	20,724	131,161

2019 Population by Age (cont.)					
	<15	**15-44**	**45-64**	**≥65**	**Total**
District 7					
Male	11,754	22,568	15,447	8,902	58,671
Female	11,174	23,191	16,338	11,623	62,326
Total	22,928	45,759	31,785	20,525	120,997
Baltimore County Total					
Male	75,576	160,164	104,816	64,303	404,859
Female	72,685	166,313	120,276	88,768	448,042
Total	148,261	326,477	225,092	153,071	852,901
Maryland					
Male	568,580	1,202,052	800,583	428,821	3,000,036
Female	545,169	1,191,425	887,795	559,697	3,184,086
Total	1,113,749	2,393,477	1,688,378	988,518	6,184,122

Source: Claritas, Ascendient estimates.

Gender

Males

According to Claritas, the distribution of males in Baltimore County is lower than the statewide distribution of males for the same time periods, as demonstrated in the tables below. Additionally, the distribution of males in the districts varies with District 3 having

the largest percentage of males in 2019 and District 4 having the lowest percentage of males in 2019.

Males			
	Males as % of 2010 Population	**Males as % of 2014 Population**	**Males as % of 2019 Population**
District 1	47.8%	48.0%	48.1%
District 2	46.6%	46.7%	46.8%
District 3	48.3%	48.3%	48.3%
District 4	45.6%	45.8%	46.0%
District 5	46.7%	46.8%	46.8%
District 6	47.6%	47.7%	47.9%
District 7	48.2%	48.3%	48.5%
Baltimore County	47.3%	47.4%	47.5%
Maryland	48.4%	48.4%	48.5%

Source: Claritas.

Moreover, the compound annual growth rate of the male population in Baltimore County indicates that it is growing at a slower rate than the statewide male population for the same time period, as demonstrated in the table below. Additionally, the compound annual growth rate of the male population in Districts 4 and 5 indicates that these areas are growing at rates faster than both the Baltimore County and Maryland statewide male populations.

Male Population				
	2010	2014	2019	CAGR** (2010-2019)
District 1	54,643	55,755	57,428	0.6%
District 2	50,362	52,008	54,224	0.8%
District 3	52,674	53,537	54,945	0.5%
District 4	55,113	57,376	60,309	1.0%
District 5	51,524	53,780	56,494	1.0%
District 6	59,724	60,935	62,788	0.6%
District 7	56,369	57,232	58,671	0.4%
Baltimore County	380,409	390,623	404,859	0.7%
Maryland	2,791,762	2,883,160	3,000,036	0.8%

Source: Claritas.
**Compound annual growth rate

Females

According to Claritas, the distribution of females in Baltimore County is higher than the statewide distribution of females for the same time periods as demonstrated in the tables below. Additionally, the distribution of females in the districts varies with District 4 having the largest percentage of females in 2019 and District 7 having the lowest percentage of females in 2019.

Females			
	Females as % of 2010 Population	**Females as % of 2014 Population**	**Females as % of 2019 Population**
District 1	52.2%	52.0%	51.9%
District 2	53.4%	53.3%	53.2%
District 3	51.7%	51.7%	51.7%
District 4	54.4%	54.2%	54.0%
District 5	53.3%	53.2%	53.2%
District 6	52.4%	52.3%	52.1%
District 7	51.8%	51.7%	51.5%
Baltimore County	52.7%	52.6%	52.5%
Maryland	51.6%	51.6%	51.5%

Source: Claritas.

Moreover, the compound annual growth rate of the female population in Baltimore County is growing at a slightly slower rate than the statewide female population for the same time period, as demonstrated in the table below.

Female Population				
	2010	2014	2019	CAGR** (2010-2019)
District 1	59,632	60,518	62,012	0.4%
District 2	57,683	59,407	61,723	0.8%
District 3	56,420	57,294	58,708	0.4%
District 4	65,767	67,913	70,688	0.8%
District 5	58,739	61,239	64,212	1.0%
District 6	65,834	66,780	68,373	0.4%
District 7	60,545	61,142	62,326	0.3%
Baltimore County	424,620	434,293	448,042	0.6%
Maryland	2,981,790	3,068,683	3,184,086	0.7%

Source: Claritas.
**Compound annual growth rate.

Race and Ethnicity

Race

According to Claritas, the majority of Baltimore County residents originate from one race. Also, as demonstrated in the table below, the race distribution in Baltimore County is less diverse than that of the state as a whole.

Race				
	% of 2014 Population		% of 2019 Population	
	Baltimore County	Maryland	Baltimore County	Maryland
One Race				
White	62.6%	57.1%	59.8%	55.7%
Black or African American	27.1%	29.5%	28.6%	29.6%
American Indian or Alaska Native	0.3%	0.4%	0.3%	0.4%
Asian	5.4%	5.9%	5.9%	6.4%
Native Hawaiian/Other Pacific Islander	0.1%	0.1%	0.1%	0.1%
Other	1.9%	4.0%	2.2%	4.4%
Two or More Races	2.7%	3.1%	3.0%	3.4%

Source: Claritas.

Further, the seven districts vary vastly with regards to racial composition as documented in the tables below.

% of 2014 Population							
	District 1	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
One Race							
White	55.7%	69.2%	82.8%	19.5%	75.6%	63.8%	75.8%
Black or African American	30.7%	20.6%	6.9%	71.8%	12.8%	26.6%	16.2%
Asian	0.3%	0.2%	0.2%	0.3%	0.2%	0.4%	0.7%
Native Hawaiian/Other Pacific Islander	7.6%	5.6%	6.6%	3.8%	8.0%	4.4%	1.9%
American Indian or Alaska Native	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Other	2.6%	2.0%	1.4%	1.9%	1.0%	1.9%	2.2%
Two or More Races	3.0%	2.4%	2.0%	2.7%	2.4%	2.9%	3.2%

Source: Claritas.

% of 2019 Population							
	District 1	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
One Race							
White	53.0%	66.4%	81.0%	17.7%	72.0%	60.2%	73.3%
Black or African American	31.8%	22.3%	7.9%	72.5%	14.7%	28.7%	17.3%
Asian	0.3%	0.2%	0.2%	0.3%	0.2%	0.4%	0.7%
Native Hawaiian/Other Pacific Islander	8.3%	6.1%	6.9%	4.3%	9.1%	5.0%	2.1%
American Indian or Alaska Native	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Other	3.1%	2.3%	1.6%	2.2%	1.2%	2.4%	2.7%
Two or More Races	3.4%	2.7%	2.3%	3.0%	2.7%	3.3%	3.8%

Source: Claritas.

As shown above, District 4 is the only district in the county for which African Americans are the largest racial group. The remaining districts are all predominantly white.

Ethnicity

As illustrated in the table below, based on documented population counts Baltimore County is less ethnically diverse than Maryland. Variation among the districts exists regarding ethnic composition, as District 1 has the greatest proportion of Hispanics/Latinos when compared to the other districts, while District 5 is the least ethnically diverse.

Hispanic/Latino as % of Population		
	2014	**2019**
District 1	6.1%	7.4%
District 2	5.3%	6.3%
District 3	4.1%	5.0%
District 4	4.7%	5.6%
District 5	3.8%	4.5%
District 6	5.4%	6.7%
District 7	5.7%	7.1%
Baltimore County	5.0%	6.1%
Maryland	9.1%	10.4%

Source: Claritas.

Despite being less ethnically diverse than the state as a whole, the Hispanic/Latino population in Baltimore County is projected to grow at a faster rate than that of the state as demonstrated in the table below.

Hispanic/Latino Population			
	2014	**2019**	**CAGR**
District 1	7,085	8,891	4.6%
District 2	5,874	7,254	4.3%
District 3	4,513	5,632	4.5%
District 4	5,827	7,379	4.8%
District 5	4,330	5,449	4.7%
District 6	6,918	8,806	4.9%
District 7	6,748	8,560	4.9%
Baltimore County	41,295	51,971	4.7%
Maryland	543,746	644,798	3.5%

Source: Claritas.

APPENDIX 2 | SOCIOECONOMIC DATA

In addition to demographic data, this assessment reviews socioeconomic factors which play a significant role in identifying healthcare needs. The following appendix examines the details of some of the key factors including income, poverty, unemployment, and the Community Need Index developed by Dignity Health and Truven.

Income Level

The median household income in 2014 for Baltimore County is approximately 11.5 percent below the Maryland average but is over 21 percent higher than the United States average. Additionally, the compound annual growth rate in median household income for Baltimore County from 2000-2014 has been higher than the United States but lower than Maryland overall. District 3 is the wealthiest in terms of median household income while District 7 has the lowest median household income.

Median Household Income					
	2000	2014	2019	CAGR (2000-2014)	CAGR (2014-2019)
District 1	$48,708	$64,061	$71,560	2.0%	2.2%
District 2	$63,216	$73,903	$83,611	1.1%	2.5%
District 3	$64,361	$81,506	$92,287	1.7%	2.5%
District 4	$52,902	$68,619	$76,402	1.9%	2.2%
District 5	$54,015	$67,500	$73,365	1.6%	1.7%
District 6	$45,635	$59,967	$65,822	2.0%	1.9%
District 7	$38,808	$49,919	$55,133	1.8%	2.0%
Baltimore County	$50,956	$65,574	$72,371	1.8%	2.0%
Maryland	$53,754	$73,169	$82,057	2.2%	2.3%
United States	$42,728	$51,579	$53,666	1.4%	0.8%

Source: Claritas.

Poverty

Baltimore County experiences a lower percentage of its population living below the Federal Poverty Level when compared to Maryland and the United States.

Poverty	
	2012 % of Population in Poverty
District 1	10.0%
District 2	6.9%
District 3	4.8%
District 4	8.6%
District 5	6.2%
District 6	9.7%
District 7	12.9%
Baltimore County	8.5%
Maryland	9.4%
United States	14.9%

Source: American Community Survey 5-Year Estimate, 2008-2012.

Unemployment

Unemployment in Baltimore County is higher than Maryland overall. The unemployment rate has dropped for both Baltimore County and Maryland from 2009 to 2013.

Labor Force and Unemployment						
	Civilian Labor Force			Unemployment Rate		
	2009	2013	Change	2009	2013	Change
Baltimore County	433,431	453,280	19,849	7.8%	6.9%	-0.9%
Maryland	3,037,079	3,127,676	90,597	7.4%	6.6%	-0.8%

Source: Maryland Department of Labor, Licensing and Regulation, Division of Workforce Development and Adult Learning

Community Need Index

Developed by Dignity Health and Truven, the Community Need Index (CNI) identifies the severity of health disparity for every zip code in the United States and demonstrates the link between community need, access to care, and healthcare utilization.

Rather than relying solely on public health data, the CNI accounts for the underlying economic and structural barriers that affect overall health. Using a combination of research, literature, and experiential evidence, Dignity Health identified five prominent barriers that make it possible to quantify healthcare access in communities across the nation. These barriers include those related to income, culture/language, education, insurance, and housing.

To determine the severity of barriers to healthcare access in a given community, the CNI gathers data about that community's socio-economy. For example, what percentage of the population is elderly and living in poverty; what percentage of the population is underinsured; what percentage of the population is unemployed, etc. Using this data a score is assigned to each barrier condition (with one representing less community need and five representing more community need). The scores are then aggregated and averaged for a final CNI score (each barrier receives equal weight in the average). A score of 1.0 indicates a zip code with the lowest socio-economic barriers, while a score of 5.0 represents a zip code with the most socio-economic barriers.

A comparison of CNI scores to hospital utilization shows a strong correlation between high need and high hospital use. Communities with a higher CNI score are generally shown to utilize care at a higher rate, for example, hospital admission rates of 5.0 CNI communities are 60 percent higher than communities with a 1.0 CNI score.

As reflected in the table below, Baltimore County does have a handful of zip codes that fall into the mid-high need range; however, over half of the zip codes in the table below fall into the low to mid-low ranges.

Baltimore County Community Need Index (CNI) By Zip Code

Zip Code	Description	Population	Community Need Index	Community Need Level
21013	Baltimore City	4,355	1.4	Low
21030	Cockeysville	24,484	3.0	Mid
21031	Cockeysville	2	1.0	Low
21051	Baltimore County	336	1.4	Low
21053	Baltimore County	3,321	1.4	Low
21057	Baltimore County	4,184	1.6	Low
21071	Baltimore County	319	1.6	Low
21082	Pleasant Hills	1,078	1.2	Low
21087	Kingsville	5,508	1.8	Mid-low
21093	Mays Chapel	39,002	1.6	Low

Baltimore County Community Need Index (CNI) By Zip Code (cont.)				
Zip Code	**Description**	**Population**	**Community Need Index**	**Community Need Level**
21111	Baltimore County	5,067	1.4	Low
21117	Baltimore County	55,400	2.6	Mid
21120	Baltimore County	7,132	1.2	Low
21128	Baltimore County	14,748	1.8	Mid-low
21131	Baltimore County	7,209	1.4	Low
21133	Randallstown	28,888	2.8	Mid
21136	Reisterstown	35,104	2.8	Mid
21152	Baltimore County	6,005	1.8	Mid-low
21155	Baltimore County	2,734	1.8	Mid-low
21156	Baltimore County	293	1.6	Low
21161	Harford County	5,507	1.4	Low
21162	Baltimore County	4,212	2.2	Mid-low
21204	Towson	23,995	2.8	Mid
21207	Lochearn	48,149	3.8	Mid-high

Baltimore County Community Need Index (CNI) By Zip Code (cont.)				
Zip Code	**Description**	**Population**	**Community Need Index**	**Community Need Level**
21208	Pikesville	36,254	2.6	Mid
21209	Baltimore	26,465	2.8	Mid
21219	Baltimore County	9,780	2.6	Mid
21220	Baltimore County	39,895	3.2	Mid
21221	Essex	42,819	3.6	Mid-high
21222	Dundalk	56,683	3.6	Mid-high
21227	Lansdowne-Baltimore Highlands	34,000	3.8	Mid-high
21228	Catonsville	49,227	2.6	Mid
21234	Carney	70,907	2.8	Mid
21236	Perry Hall	39,062	2.4	Mid-low
21237	Rossville	30,371	3.4	Mid-high
21244	Milford Mill	35,741	3.2	Mid
21286	Hampton	20,148	2.8	Mid

Source: Dignity Health (www.dignityhealth.org/cni)

Overall, some socioeconomic barriers to health and healthcare exist in Baltimore County as evidenced by the factors shown above. The median household income for Baltimore County residents is below the Maryland average but above the United States average. However, there is a lower percentage of its population living at or below the poverty level in the county compared to the state. Almost half of the county's zip codes fall into the

mid to mid-high CNI score range indicating the presence of socioeconomic barriers to health and healthcare for the population in those areas. Geographic variability exists for the socioeconomic factors in Baltimore County. For instance, with regards to its socioeconomic factors, District 7 is the poorest of the seven Councilmanic districts, which may contribute to more difficulty in accessing healthcare services.

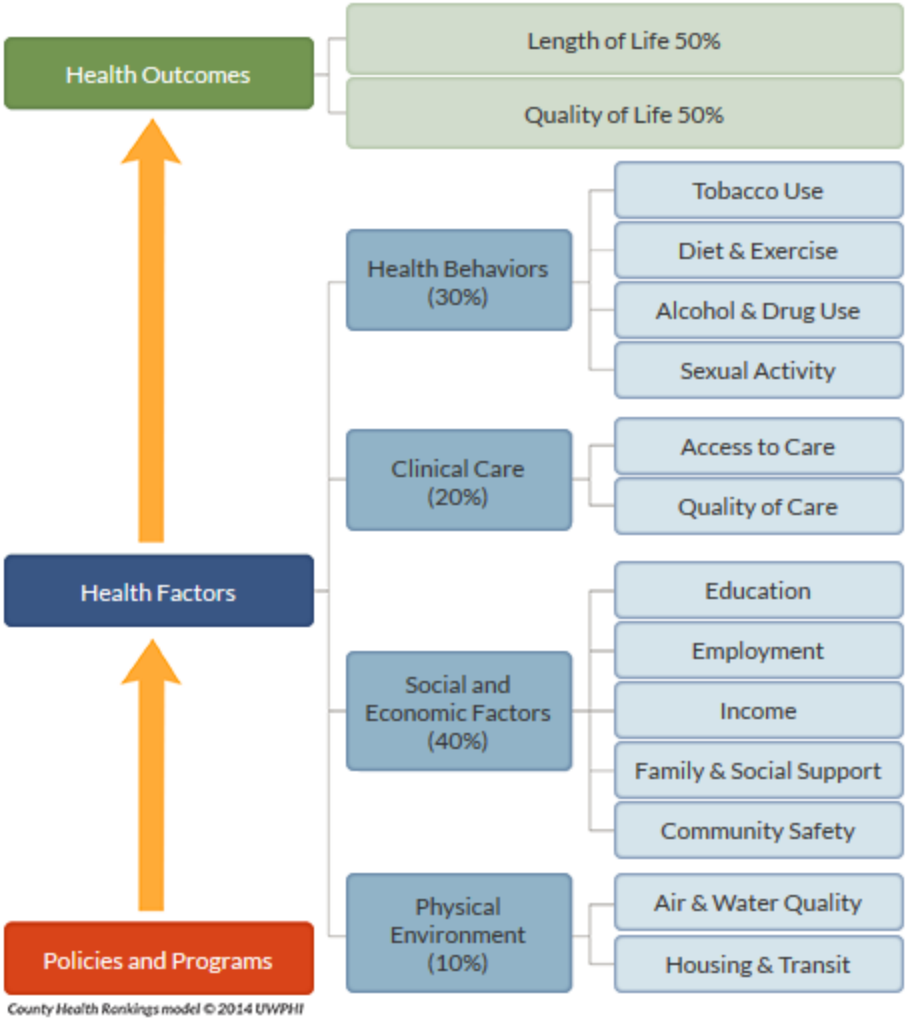
APPENDIX 3 | HEALTH DATA/MEASURES

This appendix looks at a broad range of Baltimore County specific data that provide detailed insight into the health status and health-related behavior of residents in the county. This publicly reported data is based on statistics of actual occurrences, such as the incidence of certain diseases, as well statistics based on interviews of individuals about their personal health condition and health concerns from the Behavioral Risk Factor Surveillance System (BRFSS).

Health Status – County Health Rankings

The overall health rankings for Baltimore County in 2014 were neutral relative to the rest of the state as Baltimore County ranked 14th out of 24 counties for health outcomes and 12th out of 24 counties for health factors, however those overall rankings mask low/negative rankings for social and economic factors, particularly measures related to high school graduation rates, inadequate social support, children living in single-parent households, and violent crime, for which Baltimore County falls into the lowest quartile when compared to other Maryland counties.

Please note that each measure listed below has been assigned a weight based on the relative importance of the measure within each factor and considerations of data reliability and availability. These weights are then used to calculate the summary scores and rankings for both health outcomes and health factors, which were provided in the paragraph above. The lowest score (best health) gets a rank of #1 and the highest score (worst health) gets a rank of #24 in Maryland. The following chart summarizes the weighting by focus area. For more detailed information regarding the weighting of each measure, please refer to the tables below.


Health Outcomes
Length of Life 50%
Quality of Life 50%
Health Factors
Health Behaviors (30%)
Tobacco Use
Diet & Exercise
Alcohol & Drug Use
Sexual Activity
Clinical Care (20%)
Access to Care
Quality of Care
Social and Economic Factors (40%)
Education
Employment
Income
Family & Social Support
Community Safety
Physical Environment (10%)
Air & Water Quality
Housing & Transit
Policies and Programs
County Health Rankings model © 2014 UWPHI

Health Outcomes						
Focus Area	**Measure**	**Weight**	**National Benchmark**	**Maryland**	**Baltimore County**	**Baltimore Rank**
Mortality	Premature Death (years of potential life lost before age 75 per 100,000 population age-adjusted)	50%	5,317	6,865	6,968	**14**
Morbidity	Poor or fair health (percent of adults reporting fair or poor health age-adjusted)	10%	10.0%	13.0%	14.0%	**16**
Morbidity	Poor physical health days (avg number of unhealthy days in past 30 days, age-adjusted)	10%	2.5	3.0	3.3	**13**
Morbidity	Poor mental health days (avg number in past 30 days age-adjusted)	10%	2.4	3.2	3.5	**15**
Morbidity	Low birthweight (percent of live births with birthweight < 2500 grams)	20%	6.0%	9.1%	8.9%	**16**

Source: www.countyhealthrankings.org

Health Factors – Health Behaviors						
Focus Area	**Measure**	**Weight**	**National Benchmark**	**Maryland**	**Baltimore County**	**Baltimore Rank**
Tobacco Use	Adult smoking (percent of adults that report smoking >= 100 cigarettes and currently smoking)	10%	14%	15%	17%	**8**
Diet and Exercise	Adult obesity (percent of adults that report a BMI >= 30)	5%	25%	28%	28%	**7**
Diet and Exercise	Physical inactivity (percent of adults that report no leisure time physical activity)	2%	21%	24%	28%	**17**
Diet and Exercise	Food environment index (index of factors that contribute to a healthy food environment)	2%	8.7	8.5	8.5	**16**
Diet and Exercise	Access to exercise opportunities (percent of the population with adequate access to locations for physical activity)	1%	85%	91%	96%	**4**
Alcohol Use	Excessive drinking (percent of adults who report heavy or binge drinking)	2.5%	10%	15%	16%	**11**
Alcohol Use	Alcohol-impaired driving deaths (proportion of driving deaths with alcohol impairment)	2.5%	14%	33%	32%	**11**
Sexual Activity	Sexually transmitted infections (chlamydia rate per 100,000)	2.5%	123	467	393	**16**
Sexual Activity	Teen birth rate (per 1,000 females ages 15-19)	2.5%	20	31	26	**8**

Source: www.countyhealthrankings.org

Health Factors – Clinical Care						
Focus Area	**Measure**	**Weight**	**National Benchmark**	**Maryland**	**Baltimore County**	**Baltimore Rank**
Access to Care	Uninsured (percent of population < 65 without health insurance)	5%	11%	12%	11%	**11**
Access to Care	Primary Care (ratio of population to primary care physicians)	3%	1,051:1	1,134:1	1,025:1	**5**
Access to Care	Dentists (ratio of population to dentists)	1%	1,392:1	1,438:1	1,422:1	**6**
Access to Care	Mental health providers (ratio of population to mental health providers)	1%	521:1	666:1	559:1	**5**
Quality of Care	Preventable hospital stays (rate for ambulatory sensitive conditions per 1,000 Medicare enrollees)	5%	46	60	64	**9**
Quality of Care	Diabetic screening (percent of diabetic Medicare enrollees that receive HbA1c screening)	2.5%	90%	84%	84%	**16**
Quality of Care	Mammography screening (percent of female Medicare enrollees)	2.5%	71%	65%	67%	**10**

Source: www.countyhealthrankings.org

Health Factors – Social and Economic Environment						
Focus Area	**Measure**	**Weight**	**National Benchmark**	**Maryland**	**Baltimore County**	**Baltimore Rank**
Education	High school graduation (percent of ninth grade cohort that graduates in four years)	5%	N/A	83%	82%	**18**
Education	Some college (percent of adults aged 25-44 years with some post-secondary education)	5%	70%	67%	70%	**6**
Employment	Unemployment rate (percent of population age 16+ unemployed)	10%	4.4%	6.8%	7.3%	**12**
Income	Children in poverty (percent of children under age 18 in poverty)	10%	13%	14%	13%	**11**
Family and social support	Inadequate social support (percent of adults without social/emotional support)	2.5%	14%	20%	20%	**18**
Family and social support	Percent of children that live in single-parent household	2.5%	20%	34%	34%	**18**
Community safety	Violent crime rate per 100,000 population	2.5%	64	543	547	**19**
Community safety	Injury mortality per 100,000 population	2.5%	49	56	60	**14**

Source: www.countyhealthrankings.org

Health Factors – Physical Environment						
Focus Area	**Measure**	**Weight**	**National Benchmark**	**Maryland**	**Baltimore County**	**Baltimore Rank**
Air and Water Quality	Air pollution (avg daily measure of fine particulate matter in micrograms per cubic meter)	2.5%	9.5	12.5	12.6	**15**
Air and Water Quality	Drinking water violations (percentage of population potentially exposed to water exceeding a violation limit during the past year)	2.5%	0%	0%	0%	**9**
Housing and Transit	Severe housing problems (percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities)	2%	9%	16%	15%	**15**
Housing and Transit	Driving alone to work (percent of the workforce that drives alone to work)	2%	71%	73%	79%	**9**
Housing and Transit	Long commute/driving alone (among workers who commute in their car alone, the percentage that commute more than 30 minutes)	1%	15%	47%	43%	**12**

Source: www.countyhealthrankings.org

Maryland State Health Improvement Process (SHIP)

The BCDH relied on the Maryland State Health Improvement Process (SHIP) as a main source of population health metrics and indicators. The goal of the State Health Improvement Process (SHIP) is to provide a framework for accountability, local action, and public engagement in order to advance the health of Maryland residents. The SHIP measures for improvement are aligned with the Healthy People (HP) 2020 objectives established by the Department of Health and Human Services. The SHIP includes 43 measures in five vision areas that represent what it means for Maryland and its counties to be healthy. The SHIP recognizes measures in the following five vision areas: Healthy Beginnings, Healthy Living, Healthy Communities, Access to Health Care, and Quality Preventive Care. Analysis of each of the measures included in these vision areas is shown in the sections below. Please note that zip code level data were not available for all SHIP measures. For measures where zip code level data were available, the data were subsequently adjusted by district. Additionally, please note that the data years included in the summary tables for each vision area below are applicable to the discussions of each measure throughout the entirety of the document.

Healthy Beginnings

The following table describes the measures included within the Healthy Beginnings vision area as well as the source and time period of the data gathered by the SHIP.

Healthy Beginnings				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Infant Mortality	Number of deaths for children less than one year old per 1,000 live births	MD Department of Health and Mental Hygiene (DHMH), Vital Statistics Administration (VSA)	2012	2012
Babies with low birth weight	Percentage of live births that are a low birth weight (2500 grams or less)	MD DHMH, VSA	2012	2012
Sudden unexpected infant death rate	Number of infant deaths attributable to Sudden Infant Death Syndrome (SIDS), Accidental Suffocation and Strangulation in Bed (ASSB), and deaths of unknown cause per 1,000 live births	MD DHMH, VSA	2008-2012	2012
Teen birth rate	Number of births to mothers 15-19 years of age per 1,000 population of females aged 15-19 years of age	MD DHMH, VSA	2012	2012
Early prenatal care	Percentage of pregnant women who receive prenatal care beginning in the first trimester	MD DHMH, VSA	2012	2012
Students entering kindergarten ready to learn	Percentage of children who consistently demonstrate skills, behaviors, and abilities, which are needed to meet kindergarten expectations successfully through 30 indicators across seven domains in the first quarter of kindergarten.	MD State Department of Education	2013-2014	N/A
High school graduation rate	Percentage of students who graduate high school in four years	MD State Department of Education	2012-2013	N/A
Children receiving blood lead screening	Percentage of children (aged 12-35 months) enrolled in Medicaid (90+ days) who had received a blood lead screening	MD Medicaid Service Utilization	2012	N/A

Data pertaining to each of the aforementioned measures can be found in the table below. The national benchmark refers to the Healthy People 2020 goals while both the 2014 and 2017 Maryland targets for the state set by the SHIP are included.

Healthy Beginnings				
Measure	**National Benchmark**	**2014 Maryland Target**	**2017 Maryland Target**	**Baltimore County**
Infant Mortality	6.0	6.6	6.3	5.3
Babies with low birth weight	7.8%	8.5%	8.0%	9.0%
Sudden unexpected infant death rate	0.84	0.89	0.86	0.67
Teen birth rate	N/A	29.6	17.8	17.2
Early prenatal care	77.9%	62.6%	66.9%	66.3%
Students entering kindergarten ready to learn	N/A	85.0%	85.5%	86.0%
High school graduation rate	82.4%	86.1%	95.0%	86.3%
Children receiving blood lead screening	N/A	69.5%	69.5%	70.9%

Further analyses were conducted regarding the variation of these measures among the districts. The following table summarizes the measures for which more detailed data were available.

Healthy Beginnings							
Measure	**District 1**	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
Infant Mortality	3.4	4.5	2.7	5.6	7.0	5.2	8.6
Babies with low birth weight	8.0%	8.6%	7.7%	11.4%	9.1%	9.0%	8.7%
Sudden unexpected infant death rate	1.10	0.58	1.09	1.59	0.00	0.03	1.36
Teen birth rate	17.1	10.9	5.7	20.0	5.9	20.3	31.3
Early prenatal care	62.3%	66.7%	68.9%	61.4%	71.3%	68.7%	66.8%

Healthy Living

The following table describes the measures included within the Healthy Living vision area as well as the source and time period of the data gathered by the SHIP.

Healthy Living				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Adults at healthy weight	Percentage of adults with BMI less than 25 kg/m2	MD DHMH Behavioral Risk Factor Surveillance System (BRFSS)	2013	N/A
Adults who currently smoke	Percentage of persons who reported currently smoking cigarettes some days or every day	MD DHMH BRFSS	2013	N/A
Physical activity	Percent of persons who reported at least 150 minutes of moderate physical activity or at least 75 minutes of vigorous physical activity per week.	MD DHMH BRFSS	2013	N/A
Children and adolescents who are obese	Number of adolescents ages 12 to 19 attending public school who have a Body Mass Index (BMI) (determined through self-reported height and weight) equal to or above the 95th percentile for age and gender	MD Youth Tobacco Survey	2013	N/A
Adolescents who use tobacco products	Percentage of adolescents who reported using any kind of tobacco product in the last 30 days	MD Youth Tobacco Survey	2013	N/A
Chlamydia infection rate	Number of reported Chlamydia infections per 100,000 population	MD DHMH Infectious Disease and Environmental Health Administration	2013	N/A
HIV incidence rate	Number of adult/adolescent cases (age 13+) diagnosed with HIV per 100,000 population	MD DHMH Infectious Disease Bureau, Center for HIV Surveillance and Epidemiology	2012	2012
Life expectancy	Life expectancy from birth in years	MD DHMH, VSA	2010-2012	N/A

Healthy Living (continued)				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Alcohol-related driving fatalities	Number of deaths in which the blood alcohol level of the driver was greater than 0.08 per total millions of vehicle miles traveled	MD State Highway Administration	2012	N/A

Data pertaining to each of the aforementioned measures can be found in the table below. The national benchmark refers to the Healthy People 2020 goals while both the 2014 and 2017 Maryland targets for the state set by the SHIP are included.

Healthy Living				
Measure	**National Benchmark**	**2014 Maryland Target**	**2017 Maryland Target**	**Baltimore County**
Adults at healthy weight	33.9%	35.7%	36.6%	33.3%
Adults who currently smoke	12.0%	14.4%	15.5%	18.4%
Physical activity	47.9%	49.8%	50.4%	43.3%
Children and adolescents who are obese	16.1%	11.3%	10.7%	12.0%
Adolescents who use tobacco products	21.0%	22.3%	15.2%	18.1%
Chlamydia infection rate	N/A	431.0	431.0	361.4
HIV incidence rate	N/A	30.4	26.7	22.9
Life expectancy	N/A	82.5	79.8	79.2
Alcohol-related driving fatalities	0.38	0.27	N/A	0.16

Further analysis was conducted regarding the variation in HIV incidence among the districts. This was the only Healthy Living measure for which data were available at the zip code level.

Healthy Living							
Measure	**District 1**	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
HIV incidence rate	21.0	16.9	8.7	32.7	13.9	14.2	20.3

Healthy Communities

The following table describes the measures included within the Healthy Communities vision area as well as the source and time period of the data gathered by the SHIP.

Healthy Communities				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Suicide rate	Number of deaths due to suicide (ICD-10 codes X60-X84, Y870 and U030) per 100,000 population	MD DHMH, VSA	2010-2012	2012
Fall-related death rate	Number of deaths with an ICD-10 code of W00-W19 per 100,000 population	MD DHMH, VSA	2010-2012	2012
Child maltreatment rate	Number of total indicated findings for physical and sexual abuse, mental injury-abuse, neglect, and mental injury-neglect among children per 1,000 population	MD Department of Human Resources	2011	N/A
Affordable housing	Percent of housing units sold that are affordable on the median teacher's salary	MD Department of Planning	2013	N/A
Children with elevated blood lead levels	Percentage of children (0-72 months old) who were tested and had elevated blood lead levels (>10 µg/dL)	MD Department of the Environment	2012	2010-2012
Salmonella infection rate	Number of salmonella infections per 100,000 population	MD DHMH Infectious Disease and Environmental Health Administration	2012	N/A
ED visit rate due to domestic violence	Number of emergency department visits related to domestic violence/abuse per 100,000 population	MD Health Services Cost Review Commission (HSCRC)	2013	N/A
Pedestrian injury rate on public roads	Number of pedestrian injuries on public roads per 100,000 population	MD State Highway Administration	2010-2012	N/A
Average. # of days the Air Quality Index exceeds 100	Number of days that the Air Quality Index exceeds 100	United States Environmental Protection Agency	2013	N/A

Data pertaining to each of the aforementioned measures can be found in the table below. The national benchmark refers to the Healthy People 2020 goals while both the 2014 and 2017 Maryland targets for the state set by the SHIP are included.

Healthy Communities				
Measure	**National Benchmark**	**2014 Maryland Target**	**2017 Maryland Target**	**Baltimore County**
Suicide rate	10.2	9.1	9.0	10.6
Fall-related death rate	7.0	6.9	7.7	13.9
Child maltreatment rate	8.5	4.8	8.3	4.4
Affordable housing	N/A	42.2%	54.4%	61.5%
Children with elevated blood lead levels	N/A	0.18%	0.28%	0.21%
Salmonella infection rate	11.4	12.7	N/A	14.6
ED visit rate due to domestic violence	N/A	59.2	N/A	50.3
Pedestrian injury rate on public roads	20.3	29.7	35.6%	44.5
Average. # of days the Air Quality Index exceeds 100	N/A	8.8	N/A	1.0

Further analyses were conducted regarding the variation of these measures among the districts. The following table summarizes the measures for which more detailed data were available.

Healthy Communities							
Measure	**District 1**	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
Suicide rate	6.8	5.1	9.8	4.6	12.9	14.2	23.0
Fall-related death rate	7.7	14.5	20.3	8.0	17.1	14.1	18.1
Children with elevated blood lead levels	0.22%	0.21%	0.00%	0.24%	0.17%	0.03%	0.41%

Access to Care

The following table describes the measures included within the Access to Care vision area as well as the source and time period of the data gathered by the SHIP.

Access to Care				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Wellness checkups for adolescents	Percentage of adolescents (ages 13-20 years old) enrolled in Medicaid (320+ days) who received a wellness visit during the past year	MD Medicaid Service Utilization	2012	N/A
Children receiving dental care	Percentage of children (aged 0-20 years) enrolled in Medicaid (320+ days) who had a dental visit during the past year	MD Medicaid Service Utilization	2012	N/A
Persons unable to afford physician visits	Percentage of people who reported a time when they were unable to afford to see a doctor in the past year	MD DHMH BRFSS	2012	N/A
Persons with health insurance	Percentage of population under age 65 who have health insurance	Small Area Health Insurance Estimates	2012	N/A
Persons with a usual primary care provider	Percentage of people who reported that they had a personal doctor or healthcare provider	MD DHMH BRFSS	2013	N/A
Uninsured ED visits	Percentage of emergency department visits when the primary payor is self-pay or no charge	MD HSCRC	2013	N/A

Data pertaining to each of the aforementioned measures can be found in the table below. The national benchmark refers to the Healthy People 2020 goals while both the 2014 and 2017 Maryland targets for the state set by the SHIP are included.

Access to Care				
Measure	**National Benchmark**	**2014 Maryland Target**	**2017 Maryland Target**	**Baltimore County**
Wellness checkups for adolescents	N/A	54.3%	57.4%	53.1%
Children receiving dental care	N/A	55.4%	64.6%	61.9%
Persons unable to afford physician visits	N/A	11.4%	N/A	10.7%
Persons with health insurance	100.0%	93.6%	N/A	89.2%
Persons with a usual primary care provider	N/A	N/A	83.9%	80.8%
Uninsured ED visits	N/A	N/A	14.7%	15.4%

None of the Access to Care vision area measures were available at the zip code level.

Quality Preventive Care

The following table describes the measures included within the Quality Preventive Care vision area as well as the source and time period of the data gathered by the SHIP.

Quality Preventive Care				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Mortality rate from cancer	Number of deaths with an ICD-10 code of C00-C97 per 100,000 (age-adjusted)	MD DHMH VSA	2010-2012	N/A
Drug-induced death rate	Number of deaths with an ICD-10 code of D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-18.9, F19.0-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, K85.3, L10.5, L27.0-L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.1-R78.5, X40-X44, X60-X64, X85, Y10-14 per 100,000 (age-adjusted)	MD DHMH VSA	2010-2012	2012
Mortality rate from heart disease	Number of deaths with an ICD-10 code of I00-I09,I11,I13,I20-I51 per 100,000 (age-adjusted)	MD DHMH VSA	2010-2012	N/A
ED visit rate due to diabetes	Number of emergency department visits for which the primary diagnosis was coded as 250.xx per 100,000 population	MD HSCRC	2013	N/A
ED visit rate due to hypertension	Number of emergency department visits for which the primary diagnosis was coded as 401.xx per 100,000 population	MD HSCRC	2013	N/A

Quality Preventive Care (cont.)				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
ED visit rate due to mental health conditions	Number of emergency department visits for which any diagnosis code was mental health disorders by the Agency for Healthcare Research and Quality (AHRQ), 2007 HCUP Fact Book No. 10. AHRQ Publication No. 07-0008. These diagnoses included adjustment disorders, anxiety disorders, attention deficit disorders, disruptive behavior disorders, mood disorders, personality disorders, schizophrenia and other psychotic disorders, suicide and intentional self-inflicted injury and miscellaneous mental disorders per 100,000 population	MD HSCRC	2013	N/A
Hospitalization rate due to Alzheimer's or other dementias	Number of hospital admissions for which any diagnosis code was 331.0, 331.1, 331.11, 331.19, 331.2, 331.7, 331.82, 290.0, 290.1, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.3, 290.40, 290.41, 290.42, 290.43, 291.2, 294.0, 294.1, 294.10 and 294.11 per 100,000 population	MD HSCRC	2013	N/A
ED visit rate due to asthma	Number of emergency department visits for which the primary diagnosis was coded as 493.xx per 100,000 population	MD HSCRC	2013	N/A
ED visit rate due to addiction-related conditions	Number of emergency department visits for which any diagnosis code was substance-related disorders by the Agency for Healthcare Research and Quality (AHRQ), 2007 HCUP Fact Book No. 10. AHRQ Publication No. 07-0008. These diagnoses included alcohol-related disorders and drug related disorders per 100,000 population	MD HSCRC	2013	N/A

Quality Preventive Care (cont.)				
Measure	**Description**	**Data Source(s)**	**Most Recent Data for County**	**Most Recent Data for Districts**
Children and adults who are vaccinated annually against seasonal influenza	Percentage of children and adults who reported they have had either a seasonal a flu shot or a flu vaccine sprayed during the past year	MD DHMH BRFSS	2013	N/A
ED visits for dental care	Number of emergency department visits for which the primary diagnosis was coded as 521.0x-521.9x, 522.0x-522.9x, 523.xx, and 525.0x-525.9x per 100,000 population	MD HSCRC	2013	N/A

Data pertaining to each of the aforementioned measures can be found in the table below. The national benchmark refers to the Healthy People 2020 goals while both the 2014 and 2017 Maryland targets for the state set by the SHIP are included.

Quality Preventive Care				
Measure	**National Benchmark**	**2014 Maryland Target**	**2017 Maryland Target**	**Baltimore County**
Mortality rate from cancer	160.6	169.2	147.4	173.9
Drug-induced death rate	11.3	12.4	12.6	17.2
Mortality rate from heart disease	152.7	173.4	166.3	158.5
ED visit rate due to diabetes	N/A	174.7	186.3	184.7
ED visit rate due to hypertension	N/A	205.4	234.0	236.0
ED visit rate due to mental health conditions	N/A	2,652.6	3,152.6	2,952.4
Hospitalization rate due to Alzheimer's or other dementias	N/A	274.6	199.4	287.7
ED visit rate due to asthma	N/A	52.4	62.5	67.4
ED visit rate due to addiction-related conditions	N/A	1,092.3	1,400.9	1,290.4
Children and adults who are vaccinated annually against seasonal influenza	70.0%	65.6%	49.1%	49.7%
ED Visits for dental care	N/A	N/A	792.8	830.1

Further analysis was conducted regarding the variation in drug-induced death rates among the districts. This was the only Quality Preventive Care measure for which data were available at the zip code level.

Quality Preventive Care							
Measure	**District 1**	**District 2**	**District 3**	**District 4**	**District 5**	**District 6**	**District 7**
Drug-induced death rate	20.4	10.4	14.3	11.2	11.6	18.7	43.3

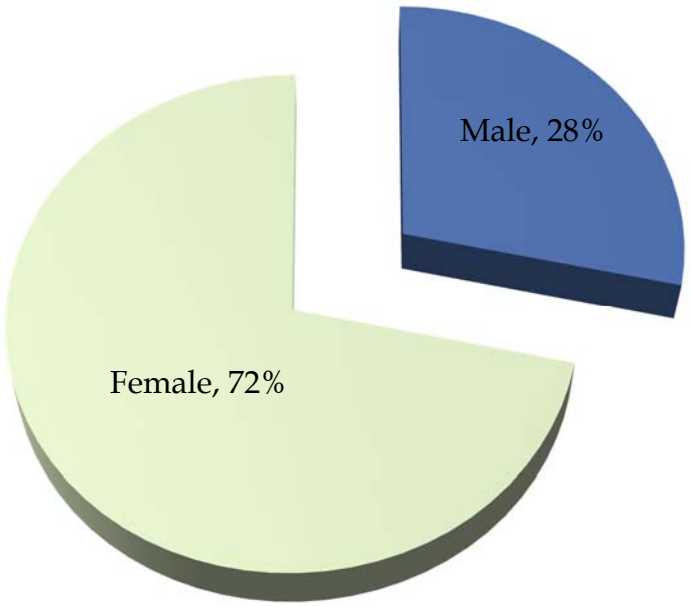
APPENDIX 4 | DETAILED QUALITATIVE FINDINGS

Community Survey Questionnaire and Findings

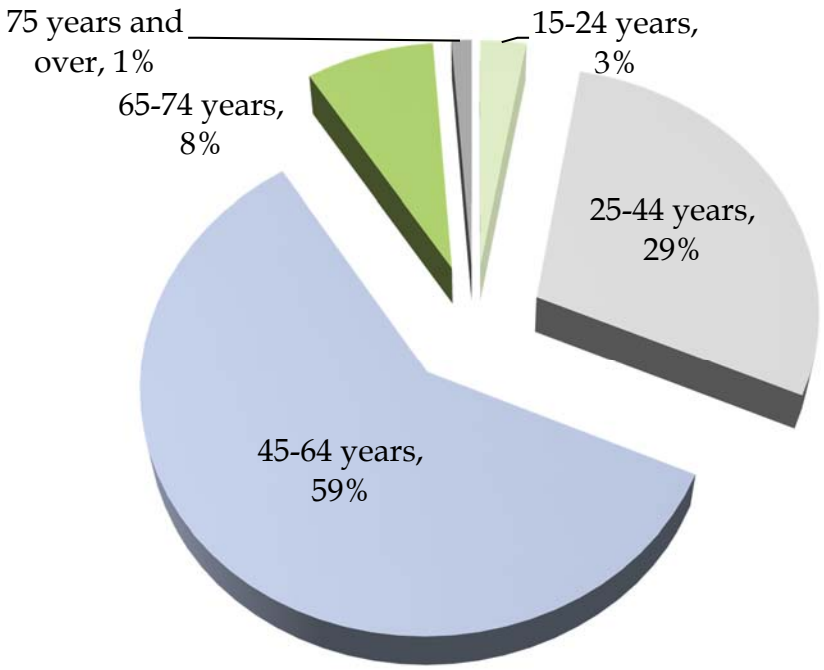
The BCDH developed a web-based community survey which was made available to the public via its website. Spanish and English versions were made available to the public. Additionally, a version of the survey specifically gathering responses from members of the homeless population was available. For the purpose of this report, the following tables summarize the responses gathered from all three versions of this survey. The survey gathered 820 responses from residents of 54 different zip codes in the county which ensured representation from each of the seven Councilmanic districts.

The survey was comprised of 21 questions which focused on gathering feedback on three key areas: demographics, the health status of the community, and the influences on health decisions. Please see below for the questions and results of the web-based community survey.

Q1. What is your gender?



Q2. What is your age?



Q3. What is your zip code of residence?

Zip Code of Residence	
Zip Code	**% of Respondents**
21234	7.9%
21237	7.3%
21222	6.4%
21220	5.5%
21228	5.0%
21221	4.8%

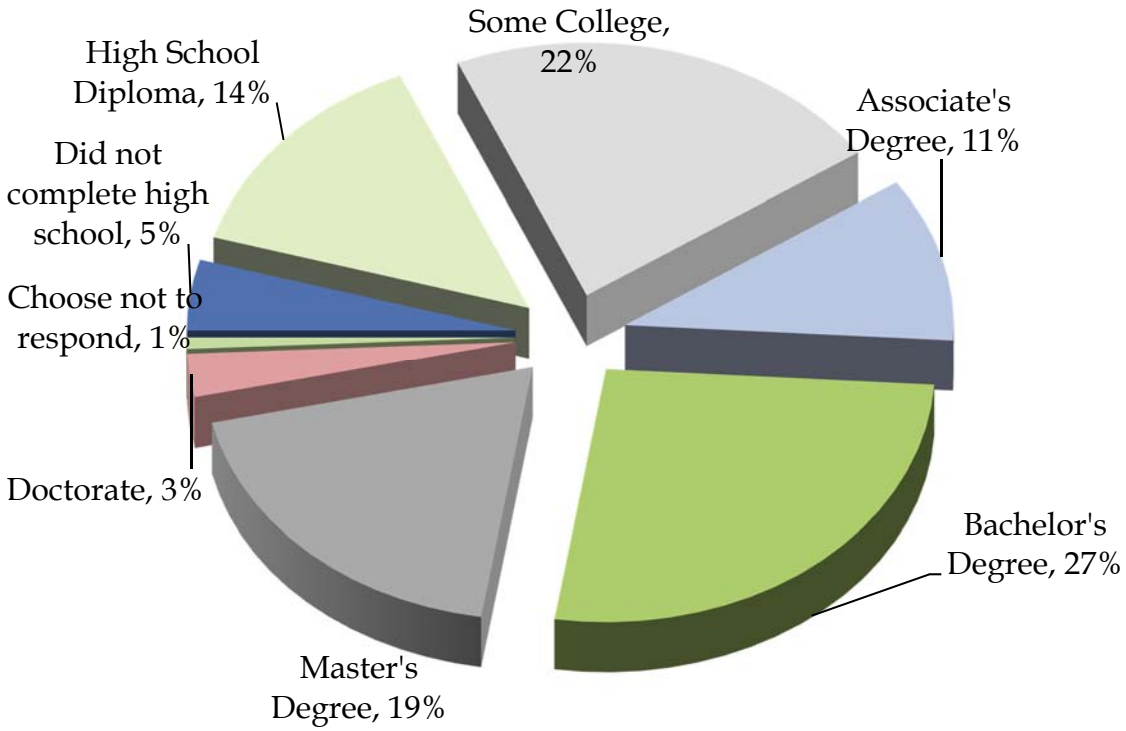
Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21236	4.4%
21093	4.2%
21030	4.0%
21286	3.9%
21244	3.4%
21136	3.3%
21204	2.8%
21206	2.7%
21208	2.6%
21117	2.3%
21133	2.2%
21209	2.2%
21128	2.1%
21212	2.1%
21131	2.0%

Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21227	1.8%
21207	1.6%
21120	1.3%
21224	1.3%
21215	1.2%
21087	1.1%
21161	1.1%
21239	1.1%
21057	0.9%
21074	0.9%
21085	0.6%
21162	0.6%
21219	0.6%
21013	0.5%
21152	0.5%

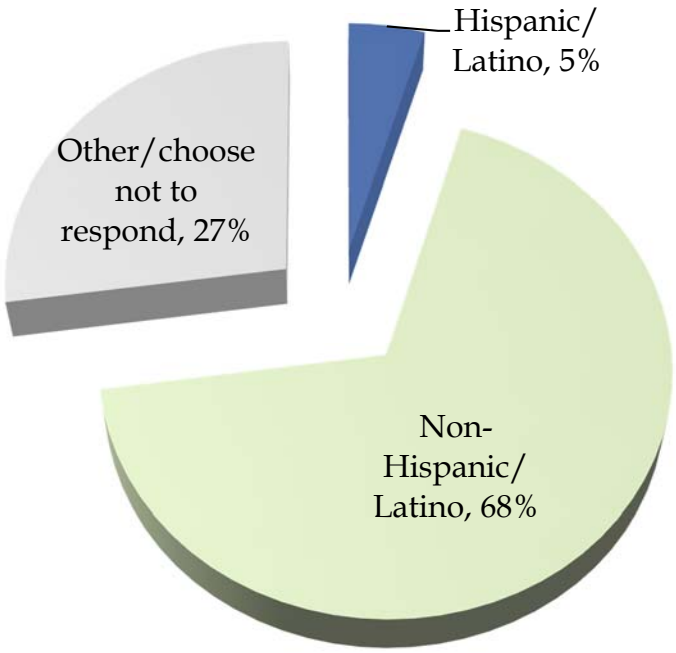
Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21229	0.5%
21043	0.4%
21102	0.4%
21053	0.2%
21071	0.2%
21111	0.2%
21155	0.2%
21210	0.2%
21235	0.2%
21020	0.1%
21022	0.1%
21027	0.1%
21052	0.1%
21082	0.1%
21092	0.1%

Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21156	0.1%
21163	0.1%
21252	0.1%
Total	**100.0%**

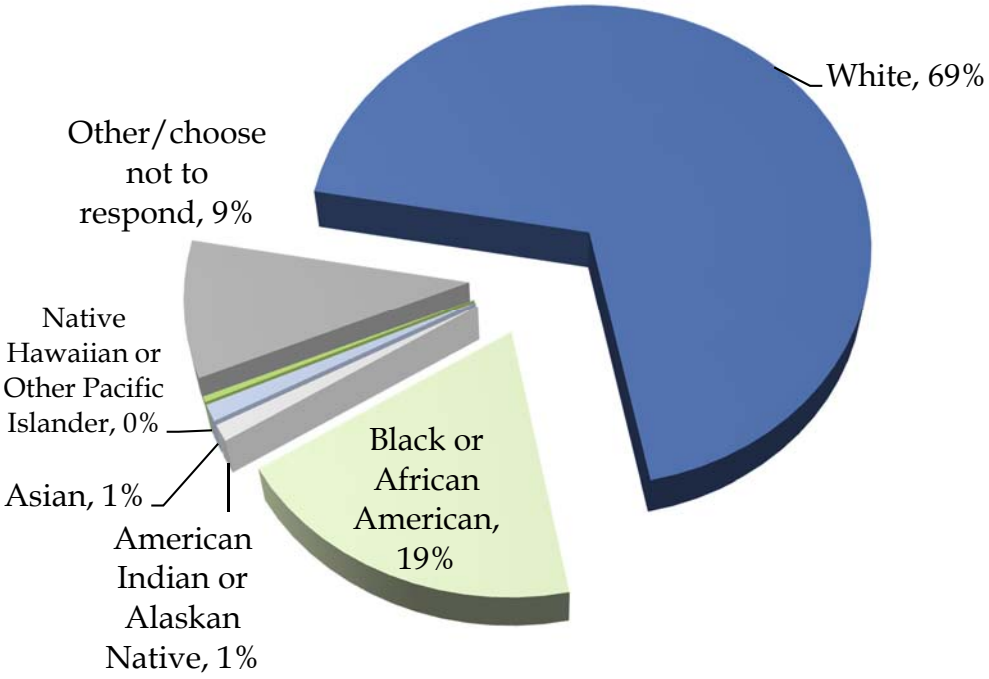
Q4. What is the highest level of education you have completed?



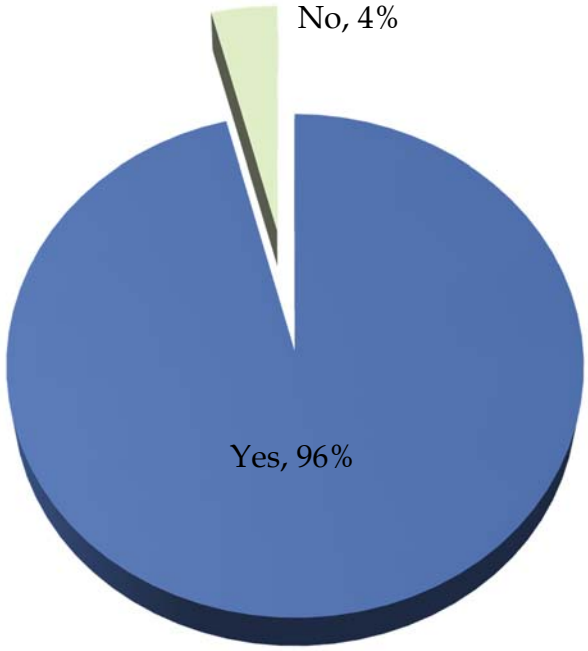
Q5. What is your ethnicity?



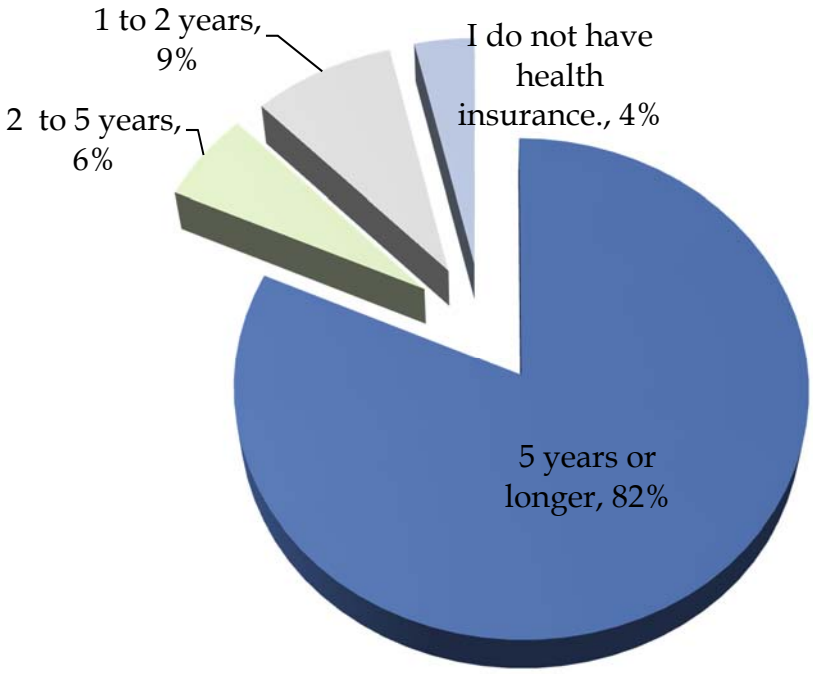
Q6. What is your race?



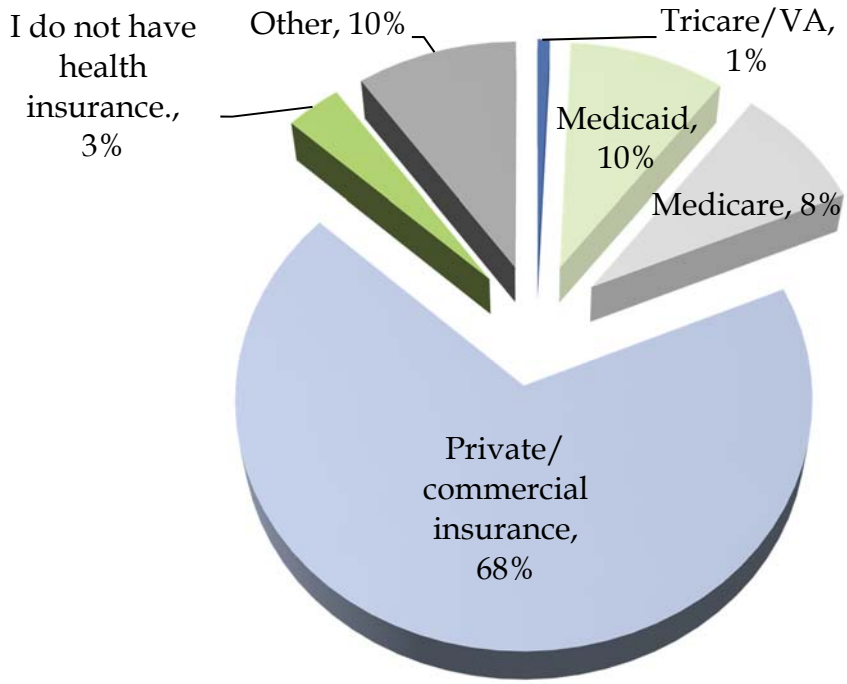
Q7. Do you currently have health insurance?



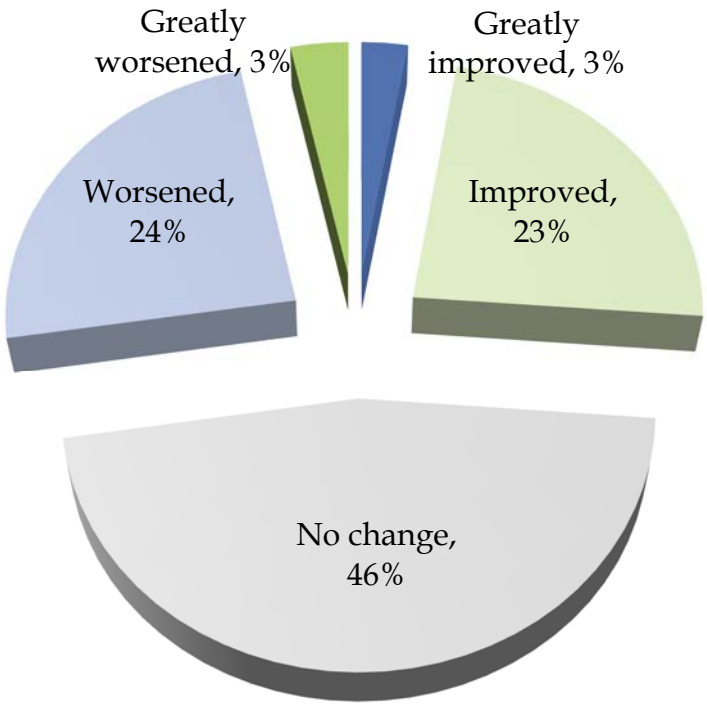
Q8. How long have you had health insurance?



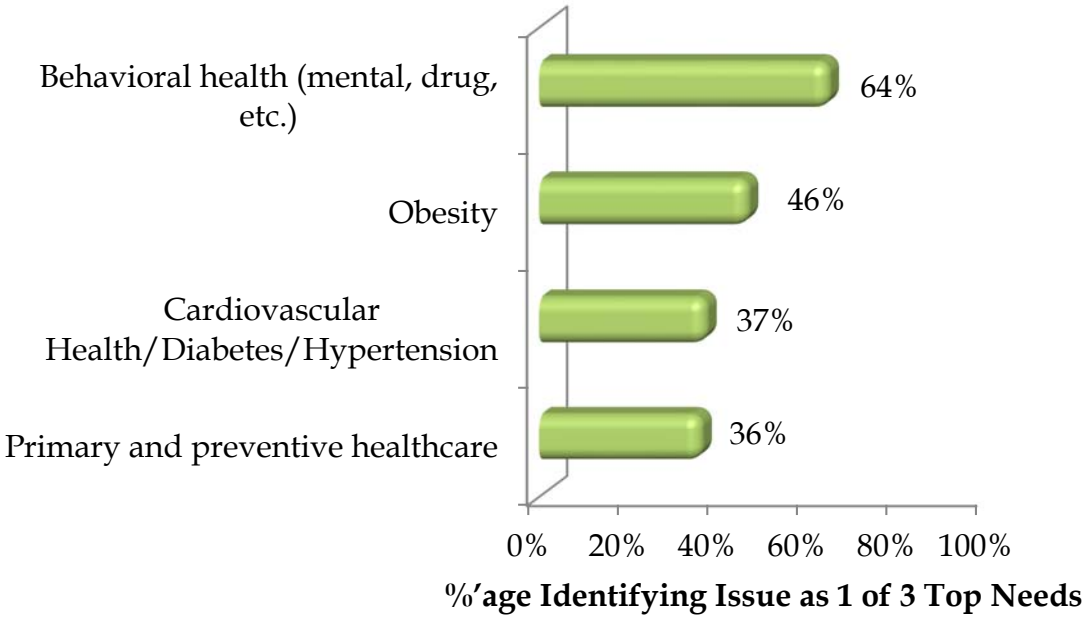
Q9. What type of health insurance do you have?



Q10. How do you believe the health of your community has changed over the past five years?



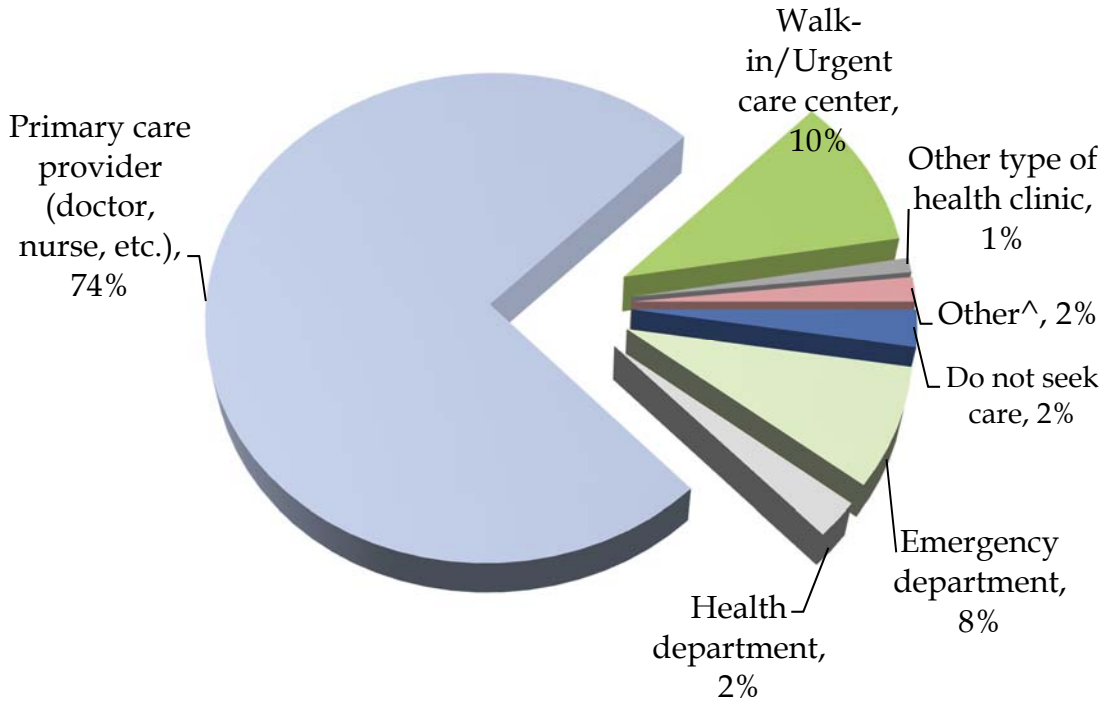
Q11. From the list provided, what do you believe to be the top three community health needs of Baltimore County?



Q12. Do you believe the health needs are similar across the county? If no, in which geographic area(s) do you believe need is greatest?

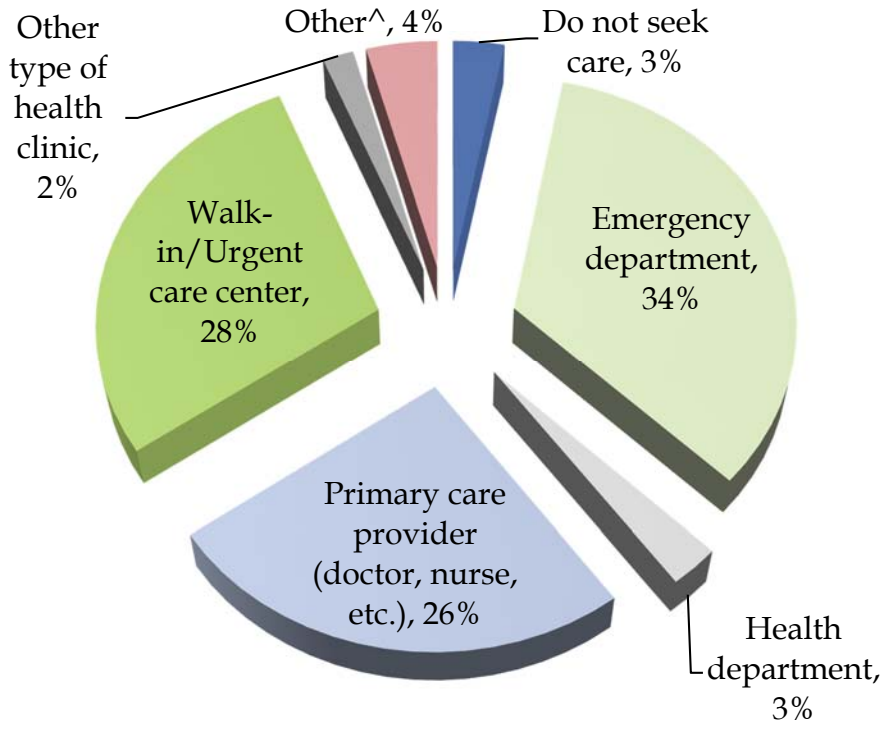
- Southern parts of the county/Areas surrounding Baltimore City
    - Woodlawn, Riverdale, Essex, Lansdowne, Arbutus/Catonsville, and Dundalk
- Lower income/socioeconomic-related clusters
- Suburban/working class areas
- Areas with high elderly and disabled populations
- All of county has a great need for improvement

Q13. From the list provided, where do you most often seek medical attention?



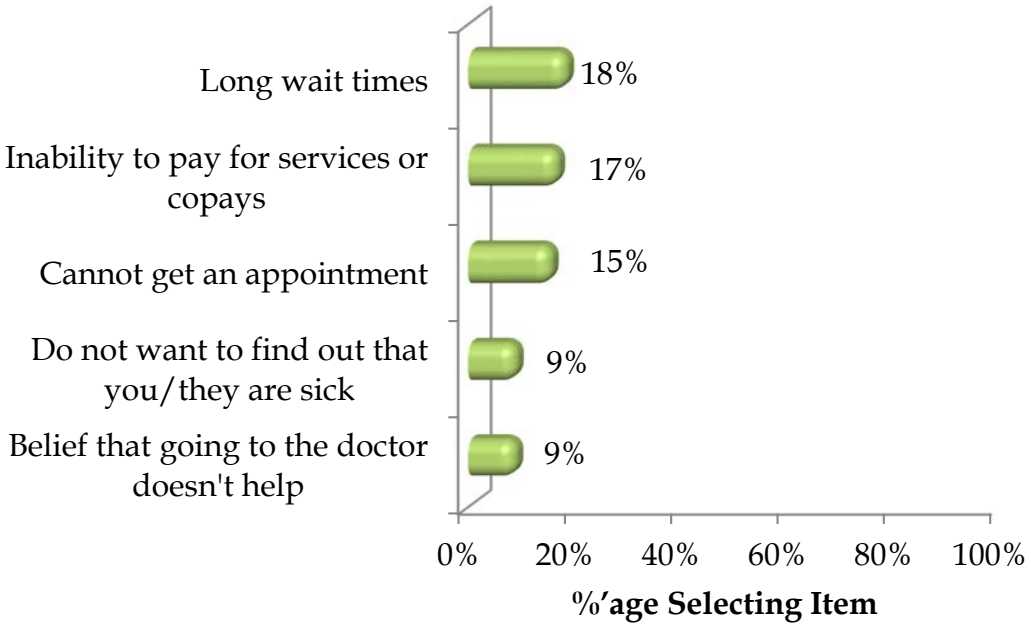
^Other responses include: specialists.

Q14. From the list provided, where do you feel others in your community most often seek medical attention?

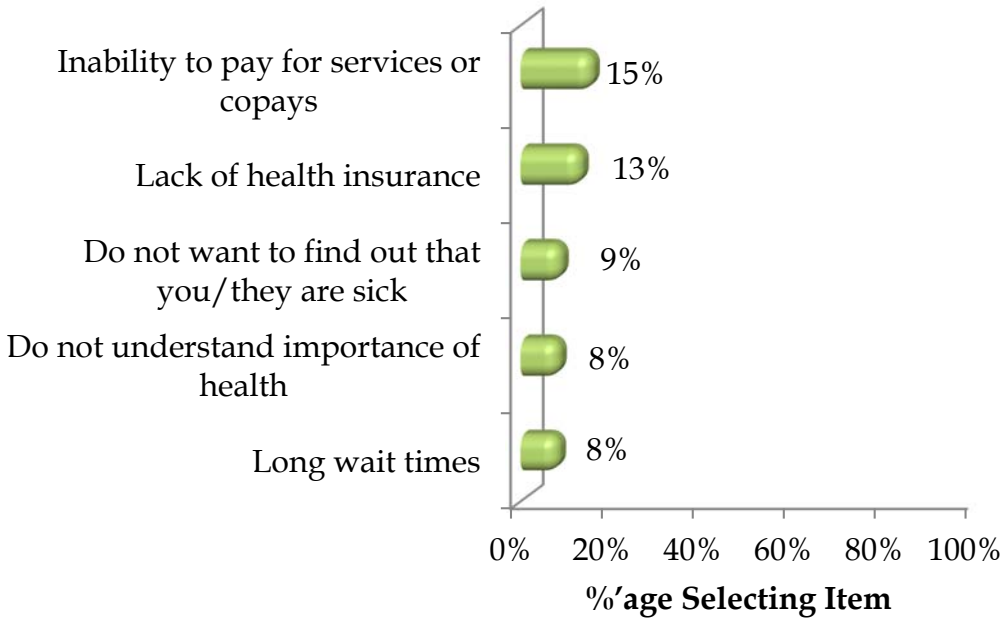


^Other responses include: do not know and depends on insurance/income status.

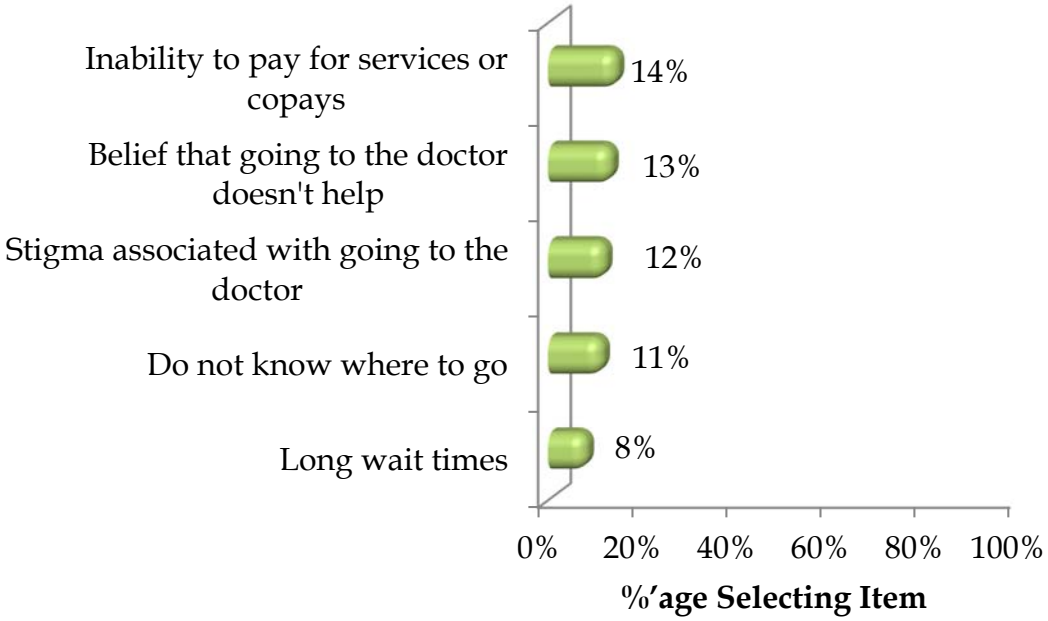
Q15. From the list provided, what do you believe has the greatest impact on why you might put off going to the doctor for issues related to your physical health? Please select all that apply.



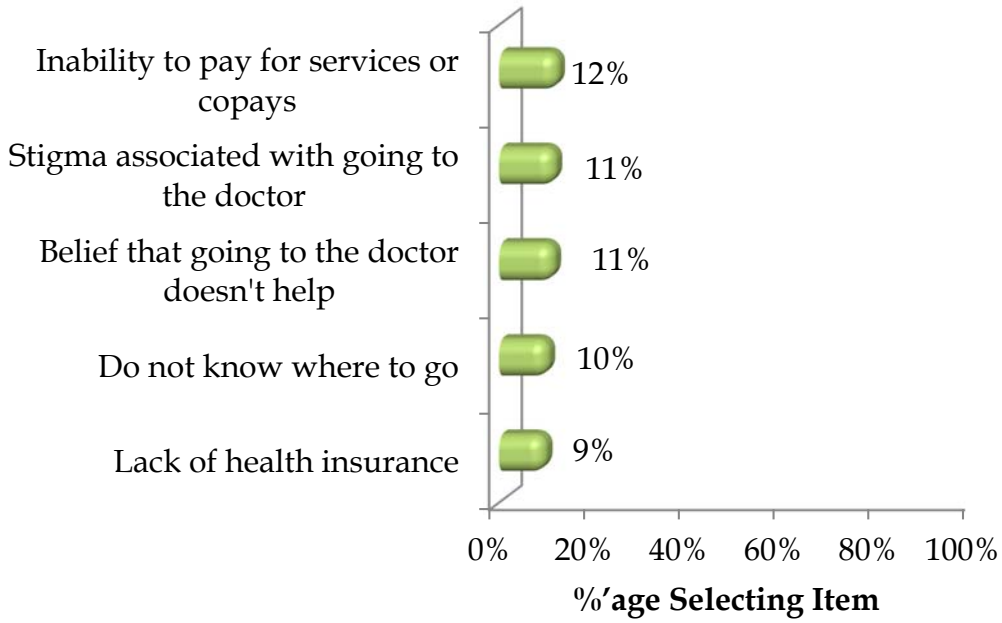
Q16. From the list provided, what do you believe has the greatest impact on why your neighbors might put off going to the doctor for issues related to their physical health? Please select all that apply.



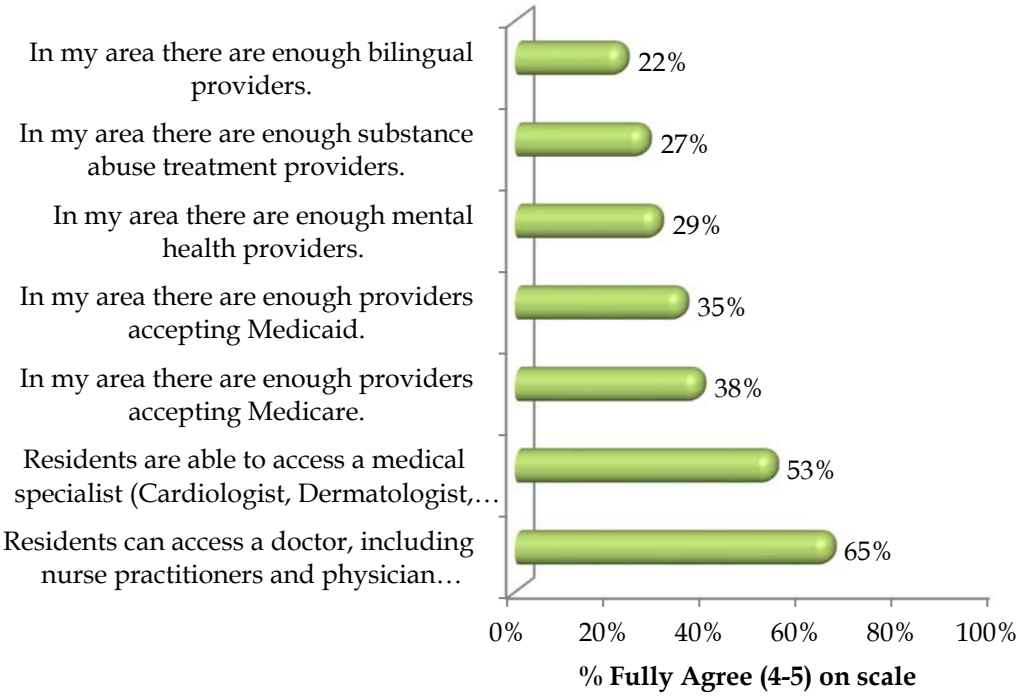
Q17. From the list provided, what do you believe has the greatest impact on why you might put off going to the doctor for issues related to your mental health? Please select all that apply.



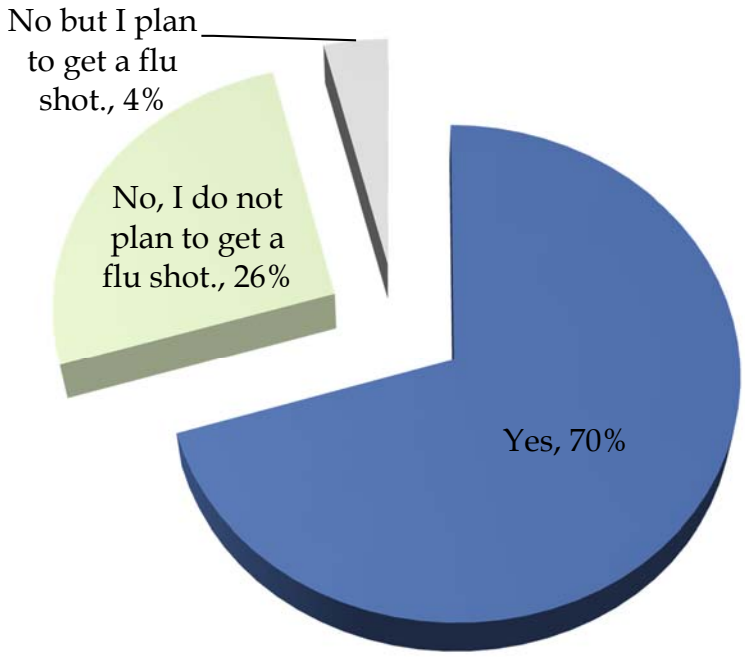
Q18. From the list provided, what do you believe has the greatest impact on why your neighbors might put off going to the doctor for issues related to their mental health? Please select all that apply.



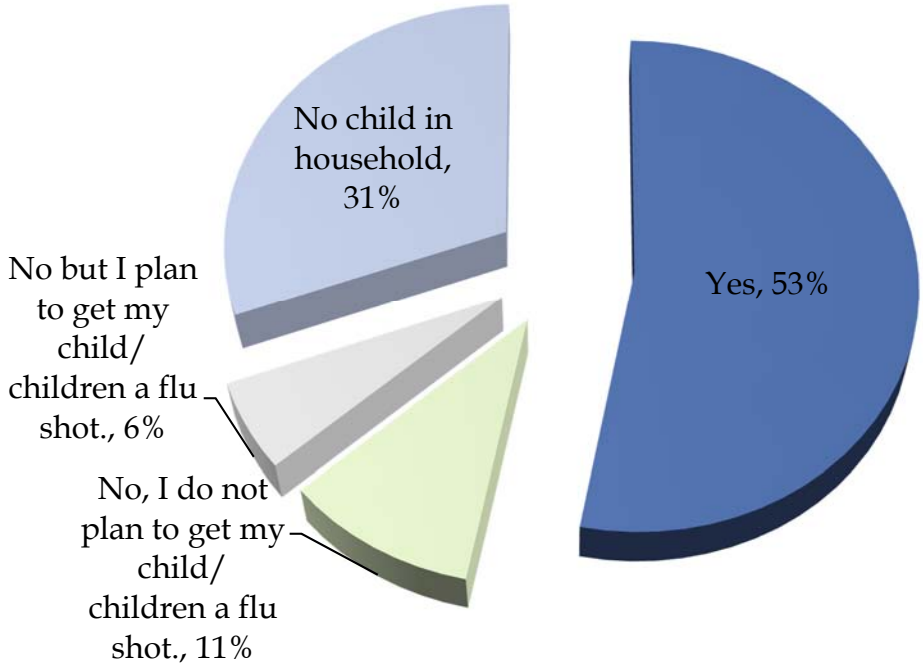
Q19. On a scale of 1 to 5 (with 5 being strongly agree), please rate each of the following statements for the community in which you reside.



Q20. Did you get your flu shot?



Q21. Did your child/children get his/her/their flu shots?



Key Leaders Survey Questionnaire and Findings

Additionally, the BCDH developed a web-based key leader survey which was sent to various organizations within the county, such as key leaders in public health, medical care/services, faith-based organizations, child and youth agencies, and non-profit organizations. The survey gathered 107 responses.

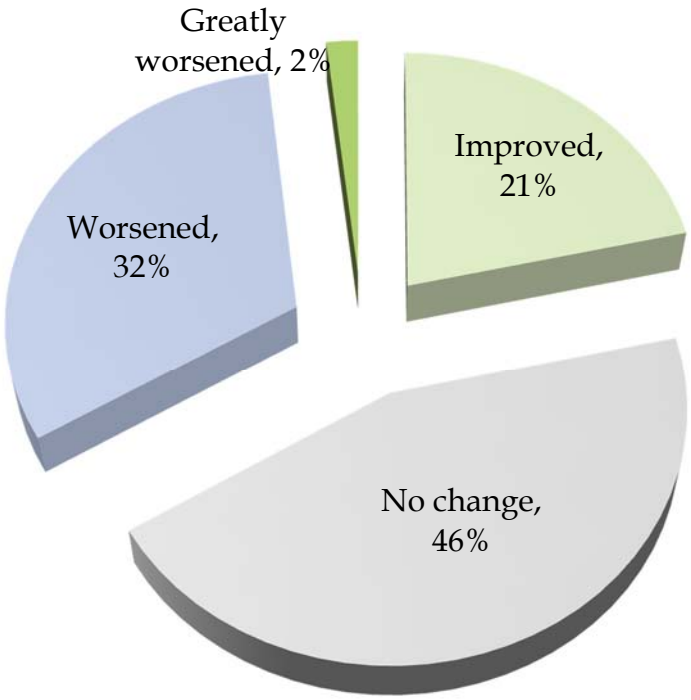
The survey was comprised of eight questions which focused on gathering feedback on two key areas: the health status of the community and the health literacy/decision-making of the community. Please see below for the questions and results of the web-based key leader survey.

Q1. What is the zip code of your organization/facility?

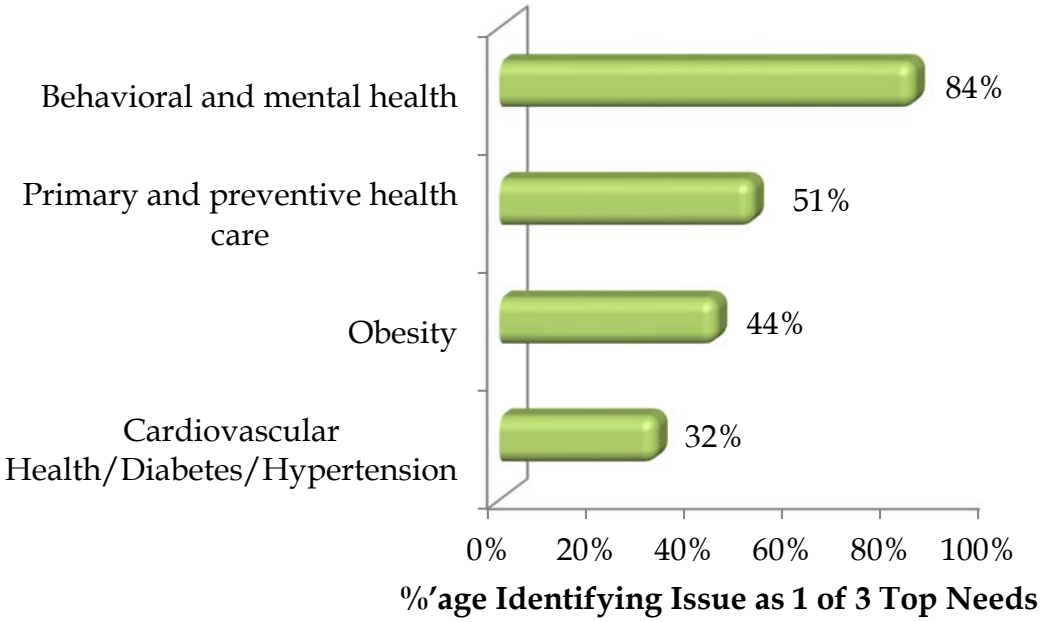
Zip Code of Organization/Facility	
Zip Code	**% of Respondents**
21212	21.5%
21204	12.2%
21133	6.5%
21237	6.5%
21221	5.6%
21222	5.6%
21228	5.6%
21286	5.6%
21030	3.7%
21224	3.7%
21208	2.8%
21234	2.8%
21236	2.8%
21093	1.9%
21207	1.9%

Zip Code of Organization/Facility (cont.)	
Zip Code	**% of Respondents**
21209	1.9%
21227	1.9%
21031	0.9%
21087	0.9%
21117	0.9%
21136	0.9%
21210	0.9%
21215	0.9%
21220	0.9%
21250	0.9%
Total	**100.0%**

Q2. How do you believe the health of your community has changed over the past five years?



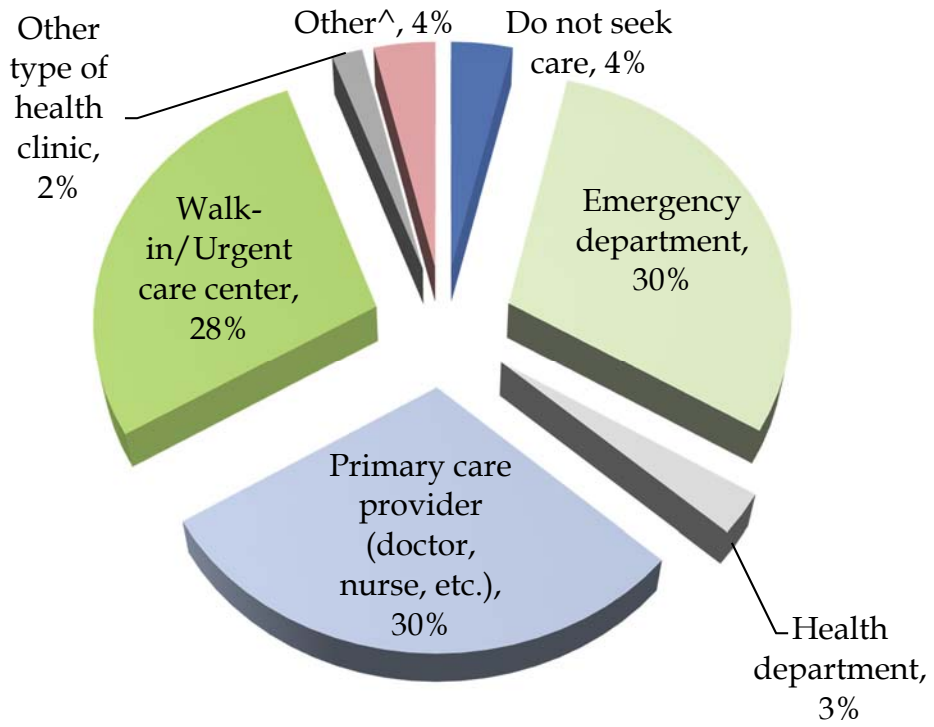
Q3. From the list provided, please rank the top three community health needs of Baltimore County?



Q4. Do you believe the health needs are similar across the county? If no, in which geographic area(s) do you believe need is greatest?

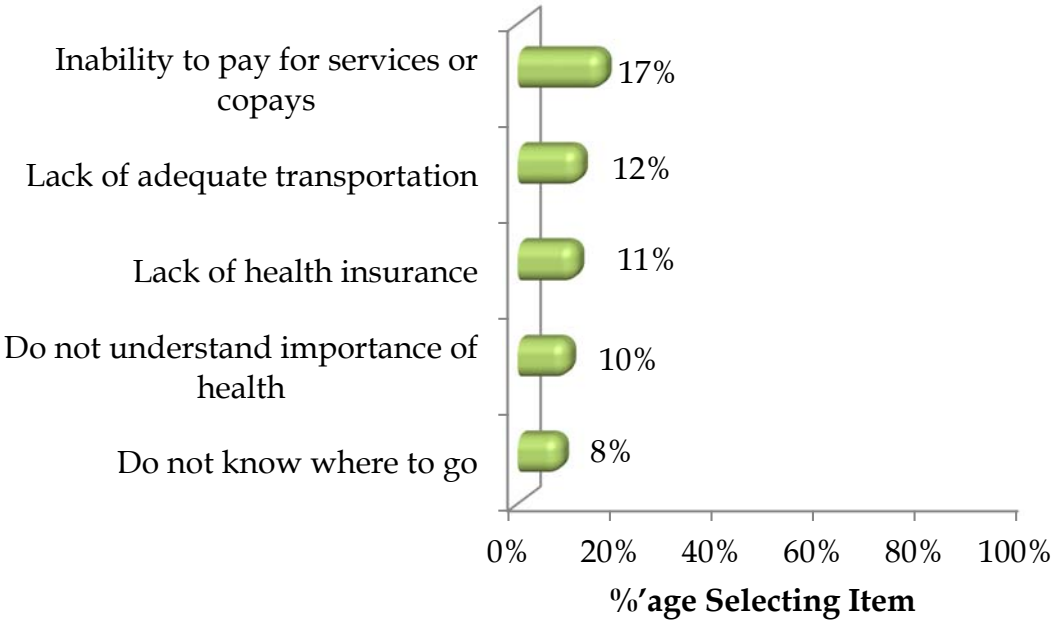
- Essex, Middle River, Rosedale, Woodlawn, Randallstown, Lansdowne, and Dundalk
- Eastern/southeastern part of county
- Low-income population areas
- Eastern and western parts of county

Q5. From the list provided, where do you feel most members of your community most often seek medical attention?

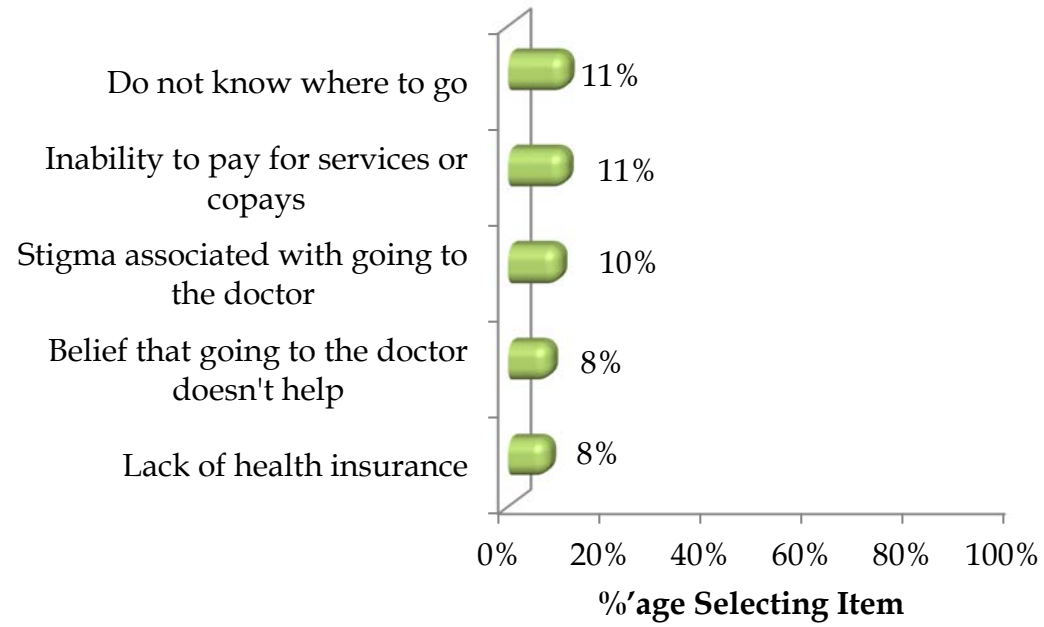


^Other responses include: do not know and depends on insurance/income status.

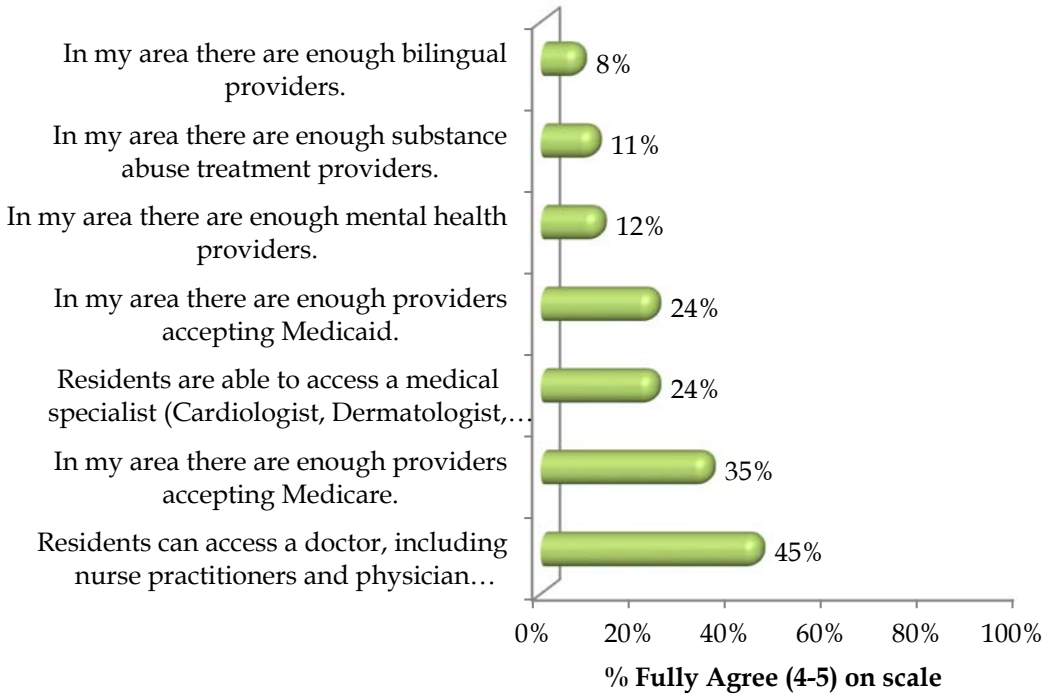
Q6. From the list provided, what do you believe has the greatest impact on why members of your community might not access healthcare services for issues related to your/their physical health? Please select all that apply.



Q7. From the list provided, what do you believe has the greatest impact on why members of your community might not access healthcare services for issues related to your/their mental health? Please select all that apply.



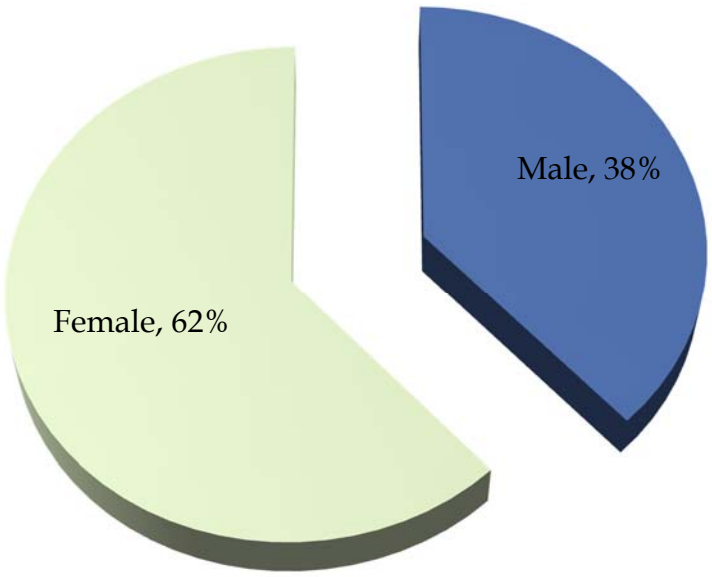
Q8. On a scale of 1 to 5 (with 5 being strongly agree), please rate each of the following statements for the community in which you reside.



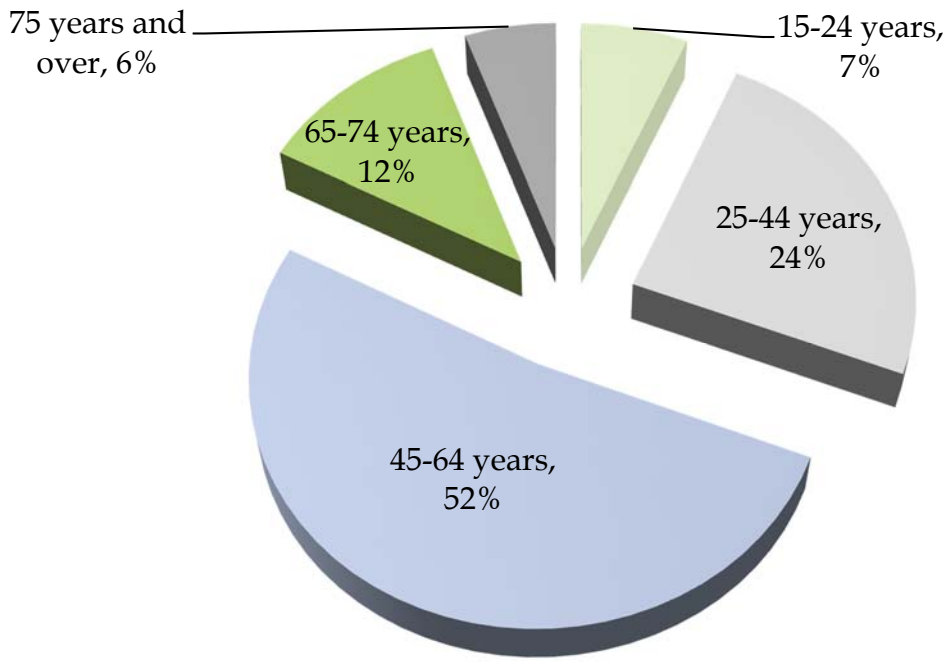
Telephone Survey Questionnaire and Findings

A total of 307 telephone surveys were conducted. The telephone survey questionnaire was very similar to the web-based community survey. Please note that special efforts were taken to ensure representation from homebound individuals through these telephone surveys, particularly homebound individuals without internet access. The BCDH began with specific list of ten homebound individuals to include in its telephone surveys. Of those ten, 90 percent completed the survey and are included in the results below.

Q1. What is your gender?



Q2. What is your age?



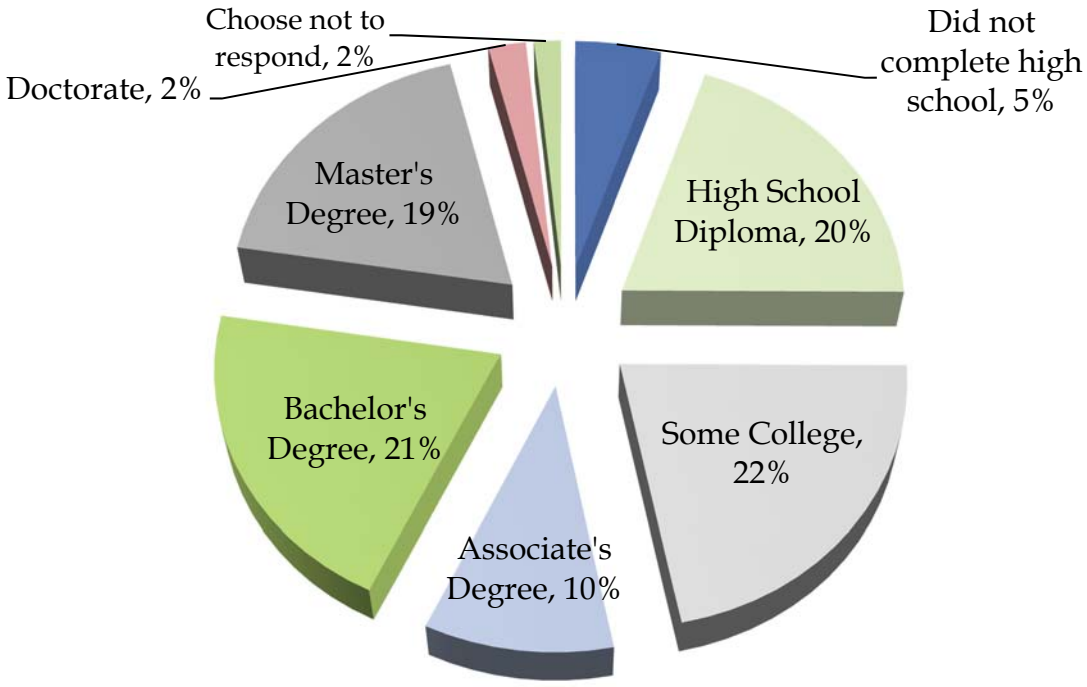
Q3. What is your zip code of residence?

Zip Code of Residence	
Zip Code	**% of Respondents**
21234	12.5%
21136	8.2%
21208	7.5%
21207	7.2%
21222	6.2%
21133	5.9%
21239	5.6%
21244	5.6%
21117	5.2%
21221	4.6%
21093	4.3%
21204	3.9%
21220	3.9%
21128	3.0%
21057	2.0%

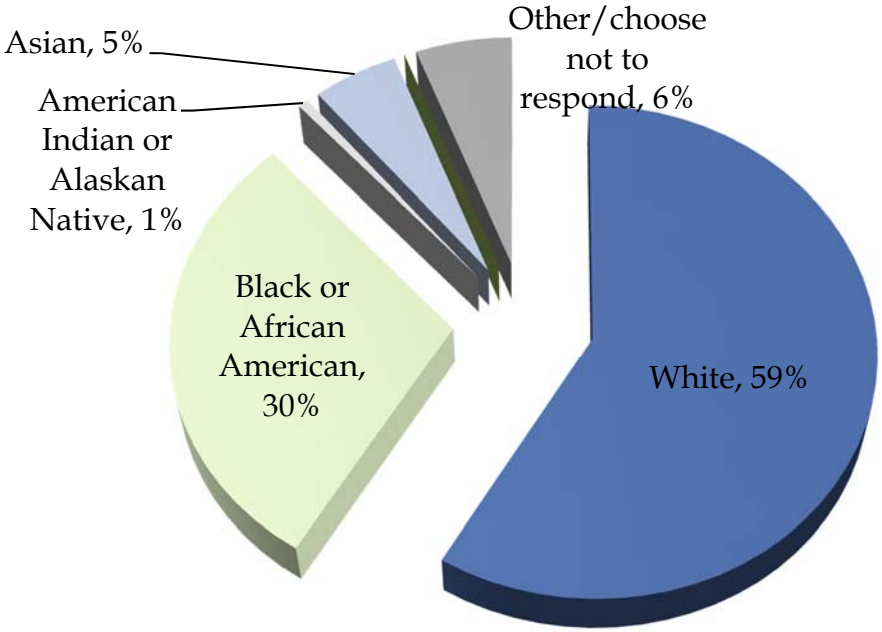
Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21228	2.0%
21237	1.6%
21120	1.0%
21131	1.0%
21219	1.0%
21215	1.0%
21043	0.7%
21229	0.7%
21030	0.3%
21071	0.3%
21087	0.3%
21111	0.3%
21156	0.3%
21161	0.3%
21209	0.3%

Zip Code of Residence (cont.)	
Zip Code	**% of Respondents**
21227	0.3%
21250	0.3%
21286	0.3%
21020	0.3%
21074	0.3%
21085	0.3%
21094	0.3%
21210	0.3%
21212	0.3%
21235	0.3%
Total	**100.0%**

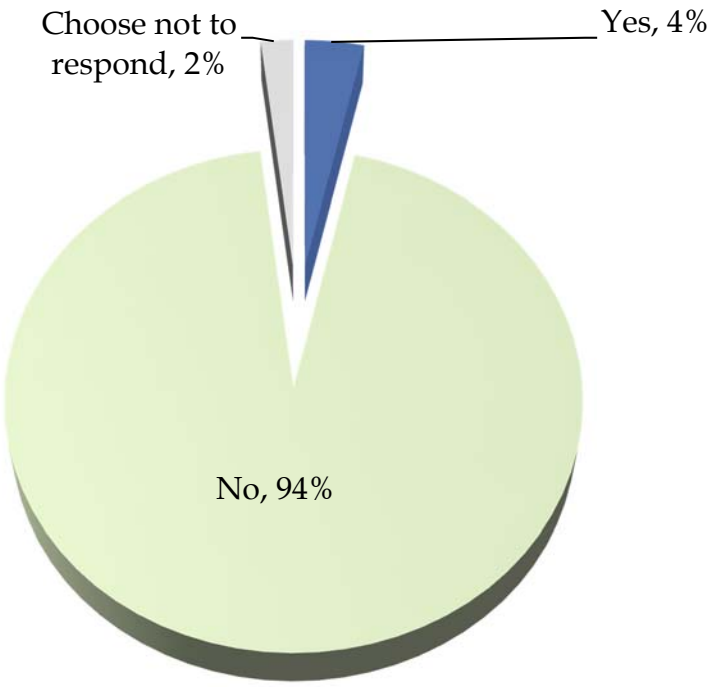
Q4. What is the highest level of education you have completed?



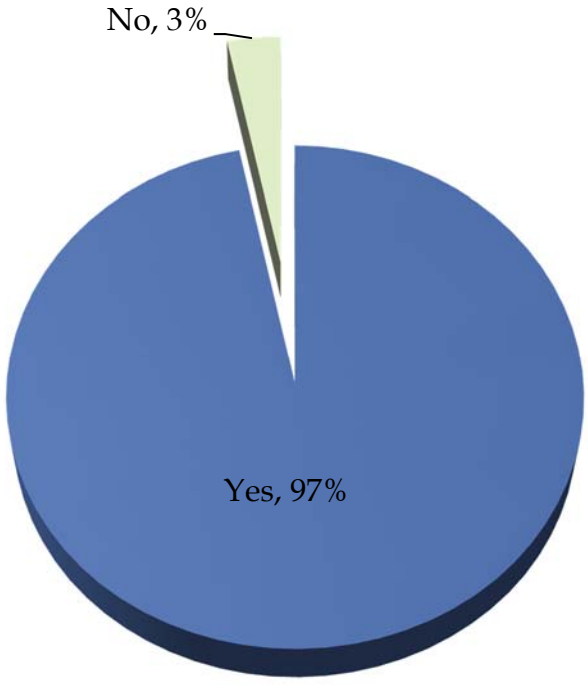
Q5. What is your race?



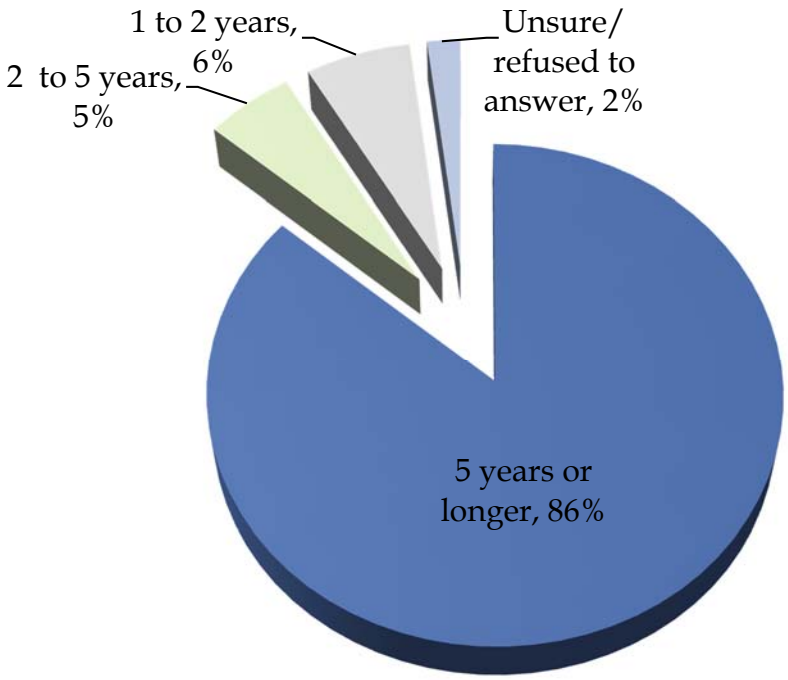
Q6. Do you consider yourself to be from Hispanic/Latino decent?



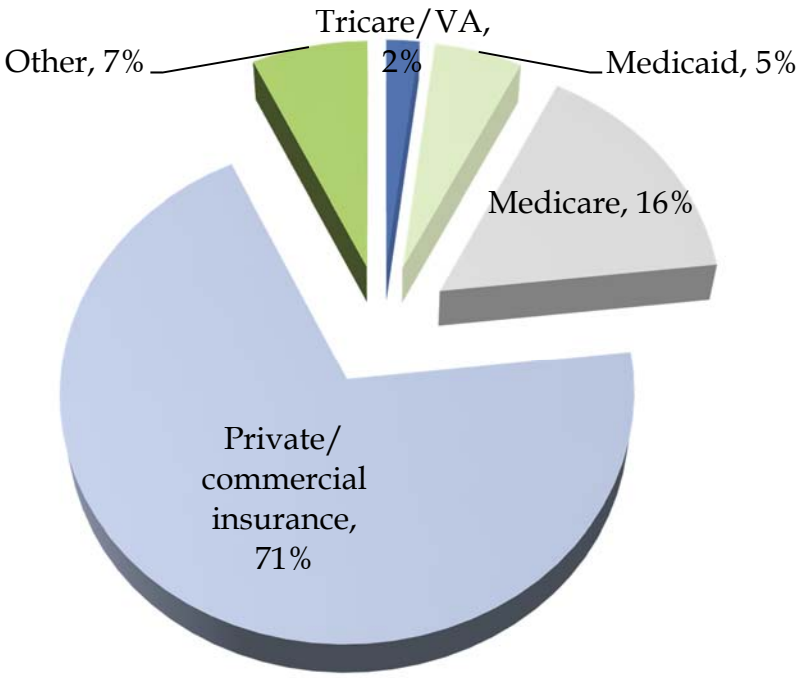
Q7. Do you currently have health insurance?



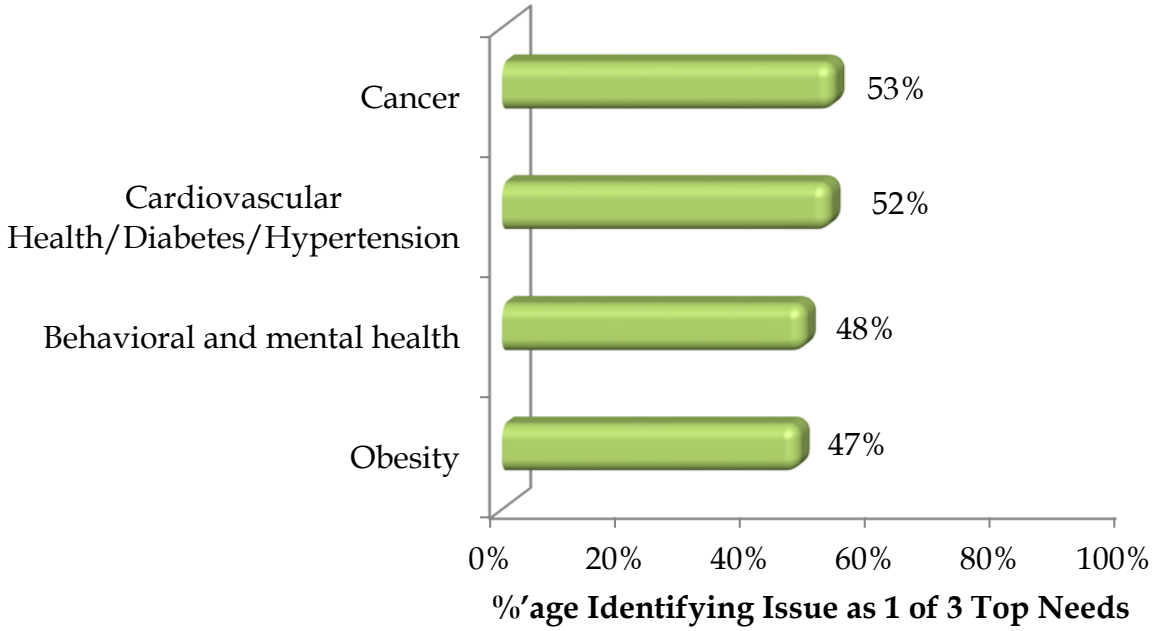
Q8. How long have you had health insurance?



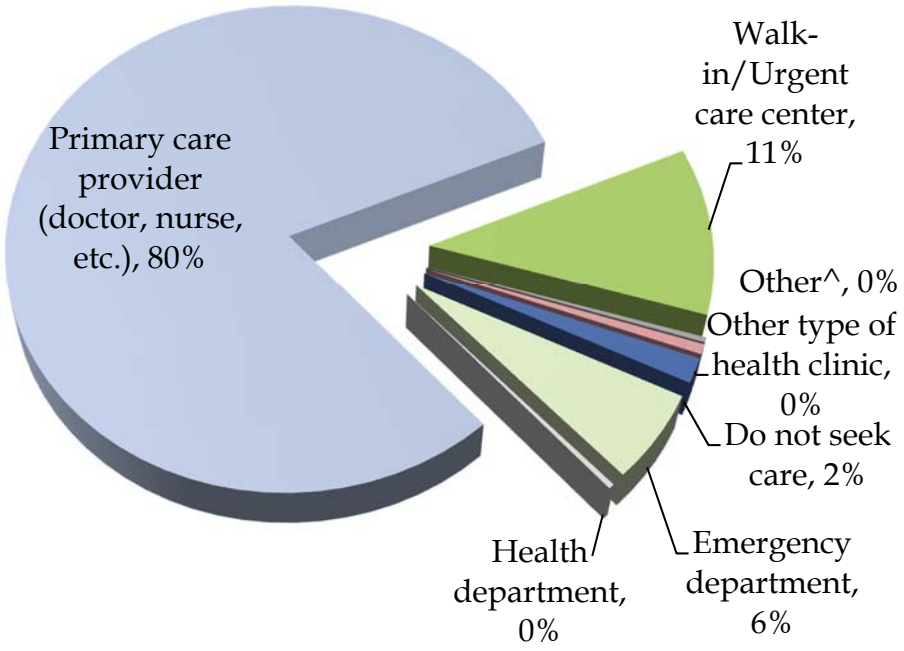
Q9. What type of health insurance do you have?



Q10. From the list provided, what do you believe to be the top three community health needs of Baltimore County?

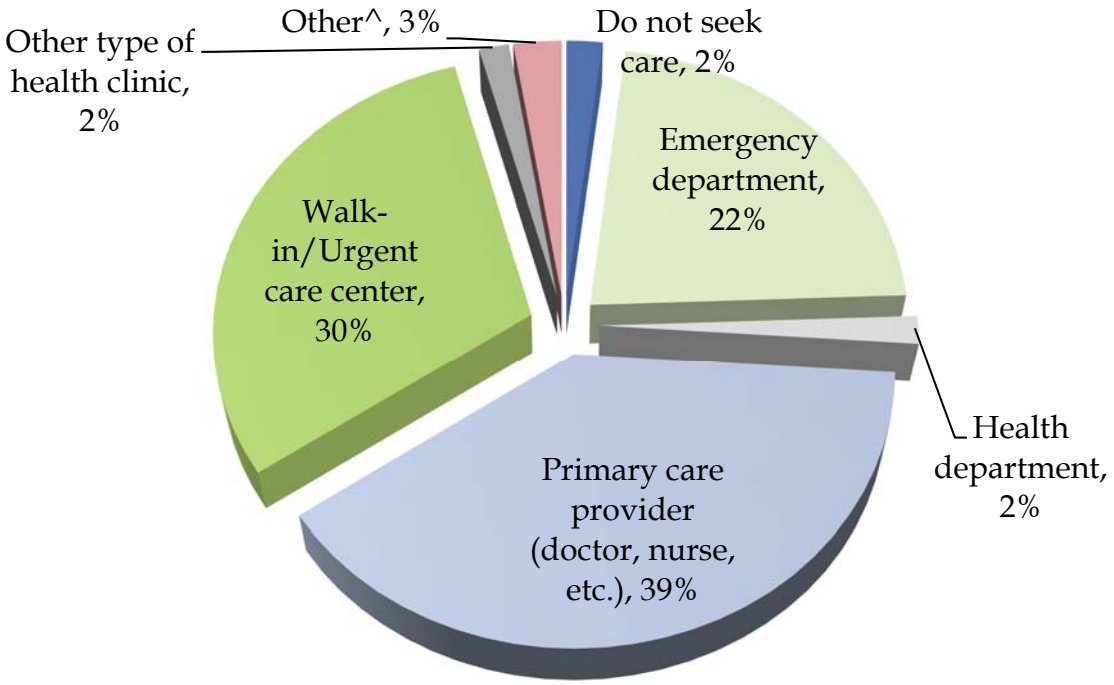


Q11. From the list provided, where do you feel you most often seek medical attention?



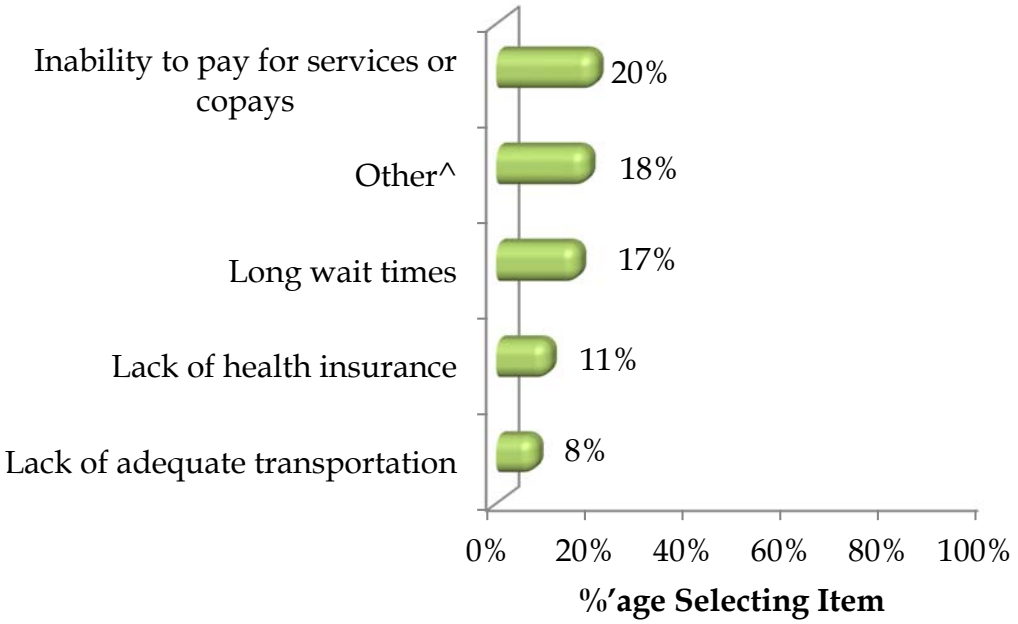
^Other responses include: it depends on the situation

Q12. From the list provided, where do you feel others in your community most often seek medical attention?



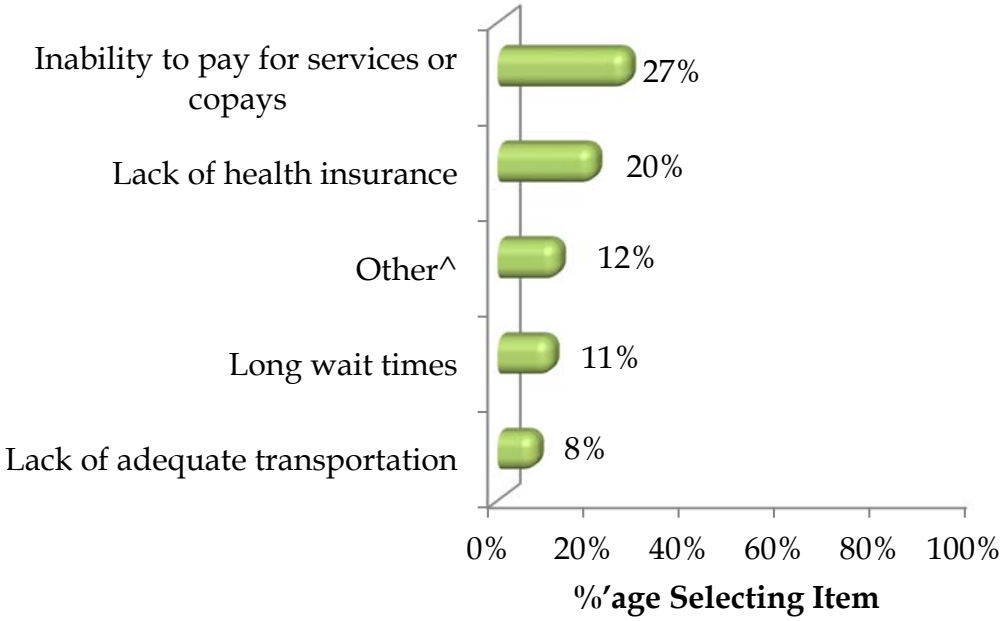
^Other responses include: unsure.

Q13. From the list provided, what do you believe has the greatest impact on why you might put off going to the doctor for issues related to your physical health? Please select all that apply.



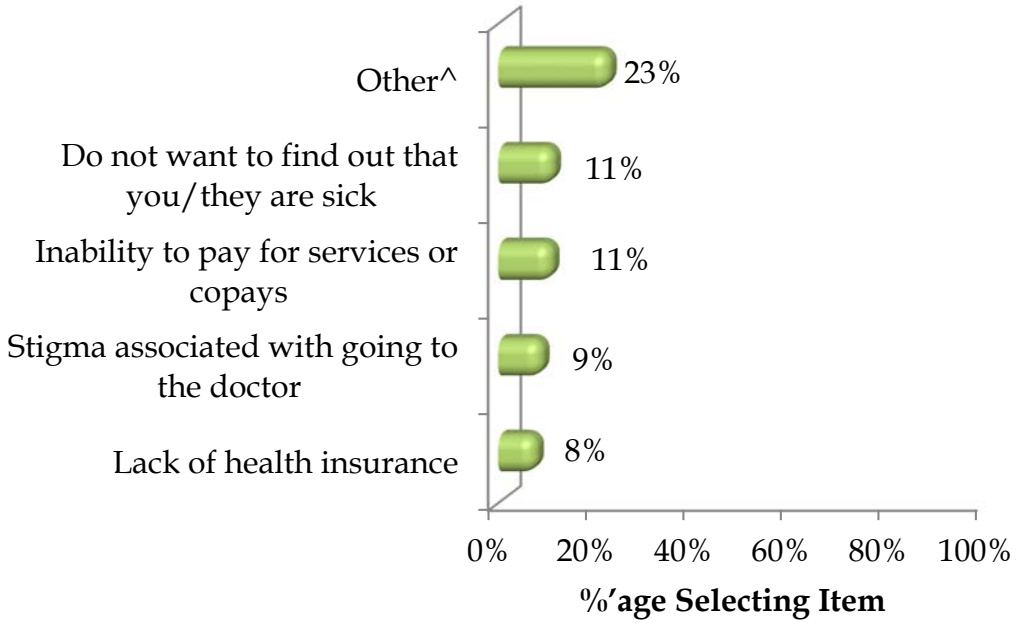
^Other responses include: there are no barriers, I always go when I need a doctor, depends on current schedule, too busy, and the inability to take off work.

Q14. From the list provided, what do you believe has the greatest impact on why your neighbors might put off going to the doctor for issues related to their physical health? Please select all that apply.



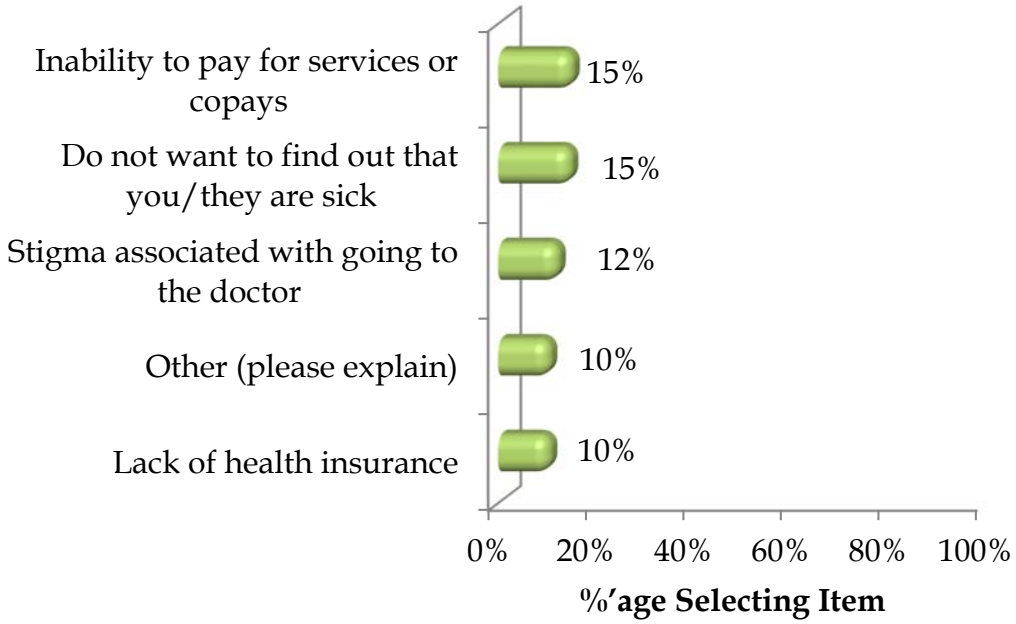
^Other responses include: unsure of neighbors reasons, my neighbors always go as needed, child care issues, reasons related to income, and busy schedules.

Q15. From the list provided, what do you believe has the greatest impact on why you might put off going to the doctor for issues related to your mental health? Please select all that apply.



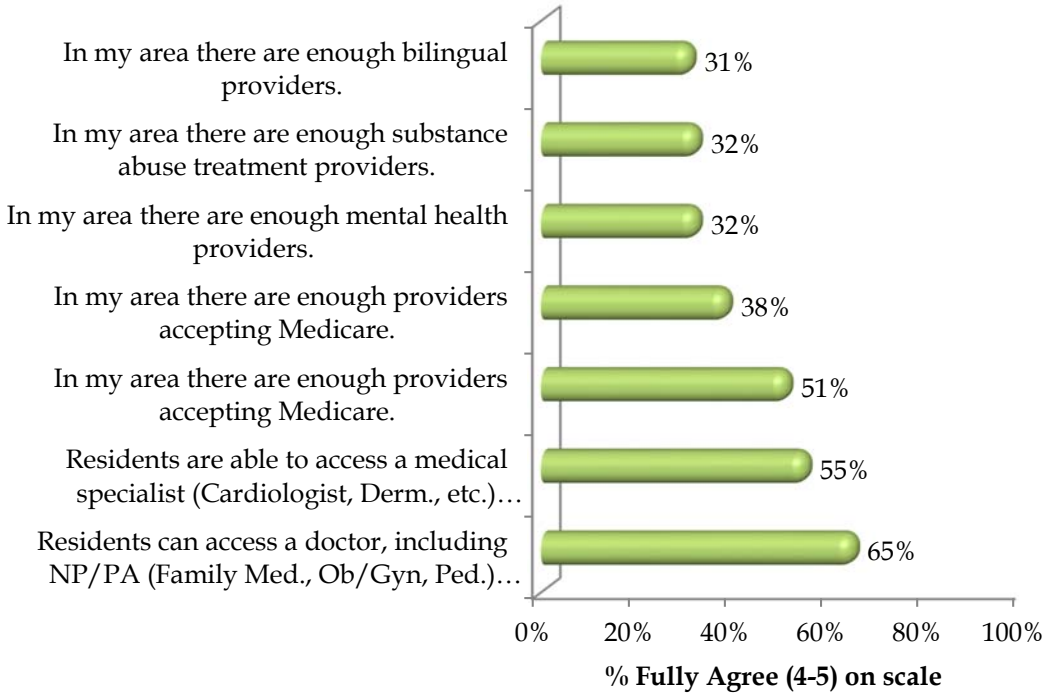
^Other responses include: there are no barriers, I always go when I need a doctor, I do not need mental health services, depends on current schedule, too busy, if I am unaware that I need help, and if I do not want anyone to know.

Q16. From the list provided, what do you believe has the greatest impact on why your neighbors might put off going to the doctor for issues related to their mental health? Please select all that apply.

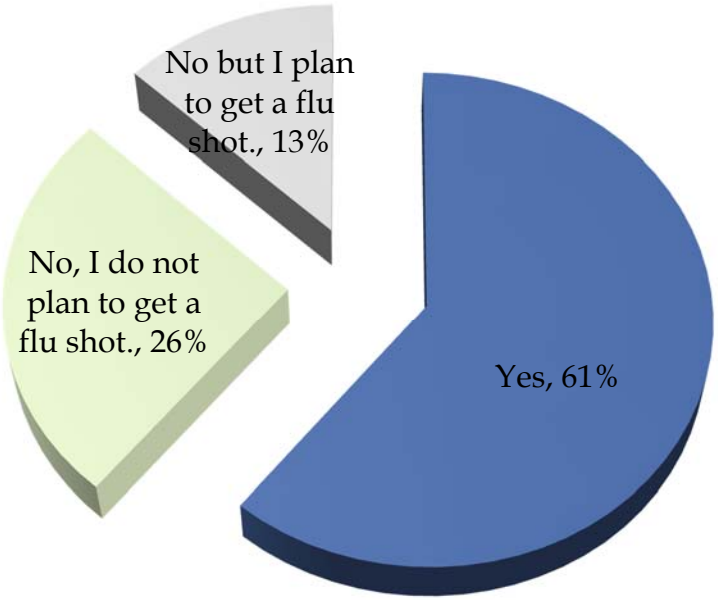


^Other responses include: unsure of neighbors reasons, my neighbors always go as needed, reasons related to income, my neighbors don't need mental health services, not covered by health insurance, and busy schedules.

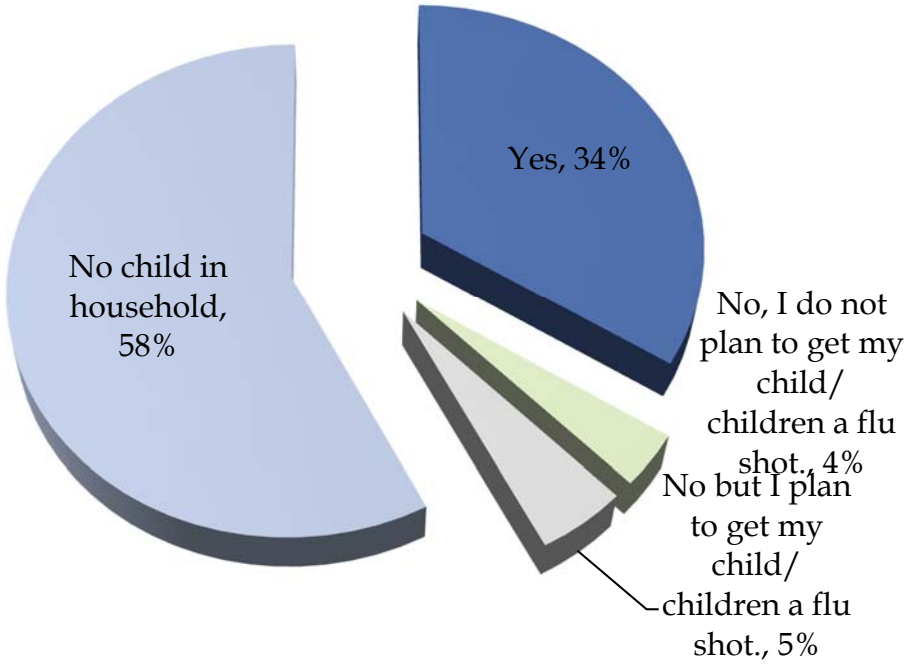
Q17. On a scale of 1 to 5 (with 5 being strongly agree), please rate each of the following statements for the community in which you reside.



Q18. Did you get your flu shot?



Q19. Did your child/children get his/her/their flu shots?



Focus Group Questionnaire and Findings

As mentioned previously, many members of the Baltimore County community participated in focus groups to provide input into the CHNA, including persons representing the community's interests and those with knowledge of public health and healthcare issues. These groups are listed below.

- Baltimore County Commission on Disabilities
- Baltimore County Department of Aging Administrative Staff
- Community Members of the Pikesville Senior Center
- Community Members of the Essex Senior Center
- MedStar Franklin Square Medical Center Staff
- Baltimore County Public Schools Nursing Staff
- Baltimore County Department of Planning, Staff working with Homeless Population
- Baltimore County Department of Planning, Homeless Population of Eastside Shelter
- Creative Kids Community Center – Essex
- Young Parent Support Center Staff
- Young Parent Support Center Parents
- Set the Captives Free Outreach Center
- One Voice Dundalk
- YMCA of Central Maryland Staff
- Baltimore County Department of Health Partnership Staff
- Judy Center
- Department of Social Services

The following questions were asked at each of the aforementioned focus groups:

- How do you believe the health of the population in this community has changed over the past five years?

- What are the most pressing health concerns for the population in this community?

- Where do you most often seek medical attention?

- What do you believe has the greatest impact on why families in this community might put off going to the doctor?

- What are the other unique health needs and/or challenges faced by children and families that you feel should be accounted for in the Department of Health's needs assessment?

The feedback from the focus groups was diverse, but several key themes emerged, including:

- There was an inability to reach a consensus regarding the directional change in the health of the communities. If participants held the belief that the health of their community had worsened, this belief was primarily attributed to increased levels of acuity among many diseases and health conditions and worsened socioeconomic status. If participants believed that the health of their community had improved over the past five years, they attributed this belief to increased access to care (i.e. walk-in clinics, urgent care clinics) and health insurance.

- Nearly all of the focus groups reported the following as the most pressing health concerns in their communities: behavioral health, mental health, obesity, primary care and prevention, and dental access.

    - Mental and behavioral health was mentioned as an area where needs have increased over recent years with regards to both diagnosed and undiagnosed issues. Currently, there are not enough resources to adequately address this issue due to a lack of providers, the structure of the health system in treating mental and behavioral health conditions, and the lack of access for those without insurance.

    - Access to dental care is a significant problem that often goes overlooked, but dental care often has a higher level of uninsured patients compared to other medical care, creating a financial barrier to access. Dental care was mentioned as a prevailing problem across all ages.

- Medical attention in the various communities of Baltimore County is primarily sought at either an urgent care clinic or an emergency department, depending on the severity of the illness or condition as well as the individual's socioeconomic status and ability to pay for services.

    - Sliding scale providers are nearly non-existent which contributes to difficulty in obtaining care due to lack of affordable alternatives.

- Whether or not a person has health insurance or other financial resources is the biggest determining factor for where a person seeks medical attention.

Additionally, the top reason most people stated that they or others in their community put off seeking care was due to concern over financial resources.

    - Further, the lack of adequate transportation within the county was noted as a barrier to accessing care. Residents are unable to quickly get to healthcare facilities using public transportation. The huge time commitment required to utilize public

transportation options means that residents must take more time off work to attend a medical appointment while at the same time paying for both transportation costs and for the appointment itself. In many cases, this is not feasible.

- Fear of the medical provider discovering a serious health issue is also a major contributing factor as to why one may avoid seeking care. The mindset that knowing that they or their loved one needs further treatment and facing the difficult decision of choosing between spending limited resources for these medical issues or daily necessities forces many to choose not to seek care at all. Lastly, there is still distrust of medical professionals due to previous personal bad experiences, cultural differences, and social stigma.

APPENDIX 5 | SUMMARY OF QUANTITATIVE AND QUALITIVE FINDINGS

The following tables summarize the top health needs identified via various methodologies described throughout the report.

Summary					
Need Area	**Quantitative Sources**	**Community Survey**	**Leader Survey**	**Phone Survey**	**Focus Groups**
Behavioral health	X	Tie - #1	Tie - #1	Tie - #3	Top 5
Mental health	X	Tie - #1	Tie - #1	Tie - #3	Top 5
Obesity	X	#3	#4	#5	Top 5
Cardiovascular health/ Diabetes/ Hypertension	X	#4	#5	#2	X
Cancer				#1	X
Primary care and prevention:	X	#5	#3		Top 5
- Low income and uninsured	X	X	X		X
- Inappropriate emergency dept. utilization	X	X	X		X
- Multi-lingual access		X	X		X
- Dental access					Top 5
Fall-related deaths	X				X
Low birth weight/Prenatal and infant care					X
Asthma					X

Please note that qualitative methodologies were utilized in order to receive input regarding the reasons an individual may put off seeking medical attention and the barriers to accessing healthcare services. A summary of those results is provided below.

Summary				
Reasons/Barriers to Care	**Community Survey**	**Leader Survey**	**Phone Survey**	**Focus Groups**
Financial concerns/Lack of insurance	X	X	X	X
Education (general health issues & system navigation)	X	X		X
Transportation		X		X
Stigma associated with going to doctor		X (mental health issues)	X (mental health issues)	X (mental health issues)
Long wait times	X		X	X
Cannot get an appointment	X			
Do not want to find out they're sick	X			X
Belief that going to the doctor doesn't help	X	X (mental health issues)		