

**UNDERSTANDING THE SOCIAL DETERMINANTS OF HEALTH
IN UNDERSERVED COMMUNITIES:
A COMMUNITY NEEDS ANALYSIS**

by

Alexa Meinhardt

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Honors Bachelors of Arts in Biological Sciences with Distinction.

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Approved: _____

Allison Karpyn, Ph.D.
Professor in charge of thesis on behalf of the Advisory Committee

Approved: _____

Carlton Cooper, Ph.D.
Committee member from the Department of Biological Sciences

Approved: _____

Barbara H. Settles, Ph.D.
Committee member from the Board of Senior Thesis Readers

Approved: _____

Michael Arnold, Ph.D.
Director, University Honors Program

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ABSTRACT

There is growing recognition of the critical importance of the impact of social determinants of health – conditions that impact health status and outcomes – on individual and community health outcomes. Yet, despite efforts to address these issues, Delawareans living in underserved communities continue to experience poor health outcomes. The *Healthy Neighborhoods* project, a partnership between Westside Family Healthcare and the Delaware Center for Health Innovation, provides a formal approach for organizations to collaborate in order to develop and implement strategies that improve community health. The current project serves as a community needs assessment for the Wilmington/Claymont neighborhood, to identify the strengths and resources available for the residents. The target population is residents of zip codes 19801, 19802, 19804, 19805, and 19703. Guided by the PRECEDE-PROCEED model, this community needs assessment addresses the social determinants of health by making zip-code level comparisons and considering community perspectives. It will help communities highlight their community health targets as well as determine the behavioral and environmental barriers that are hindering meeting these targets.

Four distinct approaches were undertaken for this assessment. First, a Resource Library was developed that identified all available community health promotion activities, which were divided into several themes. Second and third, corner store and walkability assessments were also conducted in the city of Wilmington. Finally, a Community Profile Assessment was implemented to

understand how health promotion programs are utilized and determine the unmet need from the community perspective. Some methodological components were included based on the Delaware Center for Health Innovation's framework, while I also expanded the measures to create a more comprehensive and multi-faceted approach. The Resource Library and Community Profile assessment both revealed that zip codes 19801 and 19805 have the worst health outcomes due to other factors such as income and insurance, even though they are highly programmed. Corner stores in Wilmington carry little produce, and many do not accept government-supported food assistance programs. The walkability assessment indicated that, overall, areas in Wilmington are walkable but still face certain physical barriers.

However, this study is not without limitations. A small convenience sample was used, which may limit the generalizability of the findings. Additionally, while multiple methods to understand community programs were employed, the sheer number of programs limited my ability to fully vet each. Lastly, the *Healthy Neighborhoods* project is still in its pilot phase, and thus is somewhat limited. Regardless, the project provides a foundation for the future of the *Healthy Neighborhoods* project and informs similar community health efforts, which can also be used to make comparisons. Ultimately, understanding the social determinants of health and social milieu from a unique community-based perspective will aid in developing health promotion programs that will successfully meet the goals of this initiative.

Chapter 1

INTRODUCTION

Background

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948, p. 100). Health is typically associated with one’s medical conditions or disease states; however, to achieve health one needs to think about how health truly encompasses nearly every aspect of our everyday lives. Everything from where we live, to the foods we eat, to the jobs we hold, to the support systems around us, influences health. These multiple levels of impact mutually influence each other and create conditions that affect one’s overall health outcomes. The field of public health focuses on widespread preventive efforts to ensure a baseline standard of health and access to health resources for all. One of its chief goals is to provide the *most* health for the *most* people. Public health efforts can be implemented in a variety of ways, from research to government programs to community health initiatives, and are used to both inform practice and inspire change where needed.

Tom Frieden, former Director of the Centers for Disease Control and Prevention, developed a health impact pyramid framework, as he believed that other health impact models have focused too much on healthcare and not enough on health-related infrastructure and public health (2010, p. 590). Frieden argues that interventions that target the greatest number of people tend to not only be the most effective but also the most controversial (2010, p. 591). The people we surround

ourselves with have such a heavy influence on us that even though individual-level interventions can be useful, it is most effective to target a large group of people (Frieden, 2010, p. 591). The image below displays each of the five levels of impact in the model, arranged from most impactful at the bottom to least impactful at the top. While efforts at the top of the pyramid are more individually focused, research points to the impact of one's surroundings, indicating that widespread interventions can create the most change with the least amount of effort. These interventions, however, often require political action and involve a number of factors and players, so actually implementing them may pose some initial obstacles or barriers.

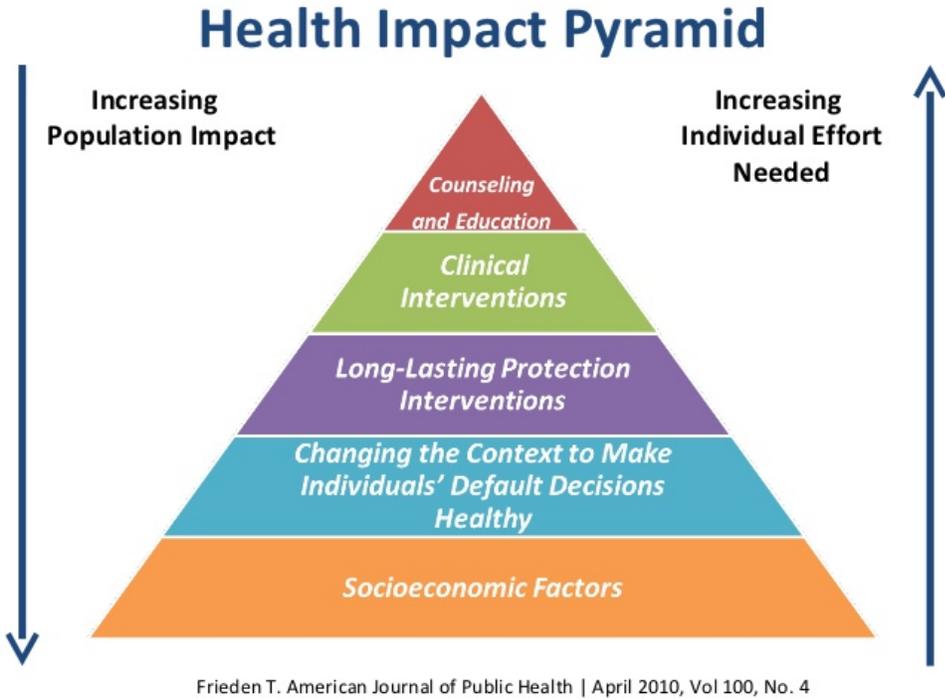


Figure 1 Health Impact Pyramid.

Additional research points to the impact of broad systems on individuals. In *An Ecological Perspective on Health Promotion Programs*, McLeroy and colleagues speculate that if there are no changes made in the environment, it will be difficult to implement change in an individual's life (1988, p. 352). There is a common misconception that an individual is solely responsible for making behavioral changes; the environment plays a large role in health behavior-related outcomes (McLeroy et al., 1988, p. 356). Furthermore, it is wise to consider the source of the influence when aiming to alter individual behaviors (McLeroy et al., 1988, p. 359). Ecological models encompass a broader perspective; by using them, we can better understand how multiple levels of influence can impact an individual. Lastly, they posit that we need to provide the disadvantaged and underserved with better and more political and community ties (1988, p. 364-365). Poverty, violence, and unsafe living conditions – all prevalent in underserved communities – are major limiting factors in positive health outcomes. With this in mind, this project casts a wide net to study pressing health-related issues in communities in northern Delaware in an attempt to understand where health disparities exist and to provide a framework for prioritizing future resources.

Given what we know about the influence of broad systems, it is also important to study systems individually. We know there are several components to a healthy lifestyle, such as exercise and sleep. Food plays a major role in determining one's health outcomes. However, access to healthy, nutritious foods is largely based on geography and socioeconomic status (Karpyn, Young, & Weiss, 2012). Corner stores are often staples of communities. The Wilmington/Claymont neighborhood is abundant with corner stores. Yet, corner stores are not always equivalent substitutes

for larger grocery stores. In 2015 and 2016, the Robert Wood Johnson Foundation created Healthy Eating Research and convened a panel to address stocking levels for smaller stores (Laska & Pelletier, 2016). A recent unpublished study by Karpyn and colleagues study aimed to look at implementation of the *Healthy Small Store Minimum Stocking Recommendations* and compare stock amongst stores in different regions of the US. They found that there is disconnect between what owners believe meets the guidelines and what products truly meet the guidelines. Furthermore, stores do carry some level of healthy options, and interviews with store managers revealed that they are willing to shift stock to be more compliant with guidelines. The US government provides nutrition assistance in the form of SNAP, Supplementary Nutrition Assistance Program, and WIC, Women Infants and Children. Recently, the USDA issued new SNAP guidelines: in stores there must be 4 product categories, with 7 varieties in each, and 3 products per variety, though these are fairly loose and ambiguous definitions. For example, a mushroom pizza is deemed as a vegetable if mushrooms are listed as the first ingredient. So, the authors suggest a switch from staple foods to truly healthy foods. Findings such as these highlight the importance of understanding the interplay between community resources and health outcomes, which will go a long way to address issues underlying the social determinants of health in underserved communities.

Walkability is a highly important, and often understudied, component of neighborhood health. Recently, there has been a shift in neighborhood health studies to encompass an understanding of the effects of the built environment (Diez Roux & Mair, 2010, p. 129). Walkability is related to an increase in depressive symptoms in the elderly (Diez Roux & Mair, 2010, p. 130-131). There is also a correlation between

socioeconomic status and safety of the surrounding areas, as the Robert Wood Johnson Foundation (2015) found that “[p]oorer families and individuals are more likely to live in inadequate housing in unsafe neighborhoods, often with limited access to healthy foods, employment options, and quality schools” (p. 5). Based on these findings, a large undertaking of this project was to study the built environment.

The environment affects individuals who reside in the same place differently, and often disproportionately (Macintyre & Ellaway, 2003, p. 36). Thus, it is imperative to evaluate neighborhood-level interventions, as suggested by Diez Roux (2002, p. 59) while also considering that “individual differences may interact with contexts” (Subramanian, Jones, & Duncan, 2003, p. 69). Subramanian and colleagues (2003) also maintain that even though we know that variations in the environment exist, the problem lies in locating their source (p. 67). Looking at overlapping contexts that influence individuals – such as school, work, and home – may also be a step in the right direction; this sort of multilevel analysis is common in public health research (Subramanian, Jones, & Duncan, 2003, p. 69). At the same time, however, many social or economic studies often ignore the health benefits of a policy, intervention, or related effort (Dow, Schoeni, Adler, & Stewart, 2010, p. 245). Dow et al. (2010) also believe that interventions executed early in life might have a better return for individuals, for results often take time to take place (p. 246). Yet, policy interventions may affect different groups disproportionately, such that those who are well off initially end up even better, while disadvantaged individuals still do not have equal opportunities and resources (Dow et al., 2010, p. 248). One conclusion arises from the breadth of previous social science research: further research is needed in the field of public health, specifically research targeted at creating safe and healthy

environments. Additionally, we must understand what motivates individuals to engage in certain behaviors and to utilize resources.

Within the past few years, the state of Delaware has made immense strides in developing programs to support healthy communities. The Delaware Center for Health Innovation (DCHI) spearheaded the *Healthy Neighborhoods (HN)* project to attempt to understand the social determinants of health, which will ultimately allow for the transformation of the healthcare system in the state of Delaware (Delaware Center for Health Innovation, 2015). This project is based on of the beginning phases of the *HN* project and focuses primarily on the Wilmington/Claymont region.

Statement of Purpose

“Although Delaware has strong public health, community, and health care programs and a track record of success on specific initiatives, Delaware spends 25% more per capita on health care than the U.S. average and outcomes remain average or below in many areas” (Delaware Center for Health Innovation, 2014, p. 2). This disconnect between health initiatives and health outcomes is alarming and must be readdressed in all levels in order to ensure that such efforts are cost effective and enforce tangible changes. A more comprehensive approach with methodological components geared towards understanding different aspects of the social determinants of health is necessary to inform specific community needs.

Through this project, I seek to answer the question, “How can a community needs assessment focused on the social determinants of health inform community health efforts?” Health is a complex network of intertwined social, political, medical, and environmental factors, among others. I intend to study this network with the hopes of understanding the role of each on an individual’s health outcomes. I will

focus on making sure I also take into account community members' perspectives. There is a strong correlation between where one lives and one's health; for example, living in a disadvantaged neighborhood may lead one to poor health (Diez Roux & Mair, 2010, p. 127). Neighborhoods themselves have unique characteristics that contribute to individuals' health (Adler & Stewart, 2010b, p. 15). However, the definition of a neighborhood can be tricky to concretely express (Diez Roux & Mair, 2010, p. 133). For the purposes of this project, the neighborhood of study is five zip codes from the Wilmington/Claymont region in northern Delaware – 19801, 19802, 19804, 19805, and 19703, based on an a priori decision from the *Healthy Neighborhoods* project stakeholders on how to break down neighborhoods. The focus population was residents of these five zip codes. Below is a map of the entire state of Delaware below the isolated image. To provide further context, there is a figure showing the geographical borders of each of the zip codes. There are five arrows, pointing to each of the zip codes.

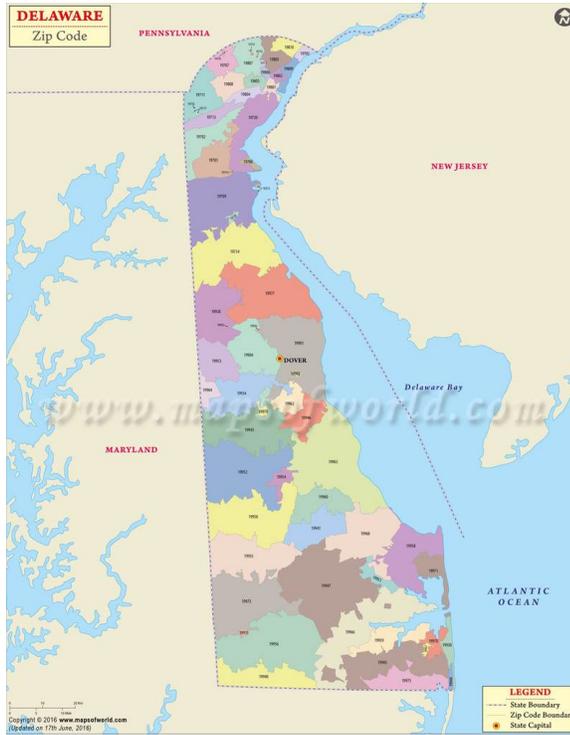


Figure 2 Map of the state of Delaware, broken down by zip code.

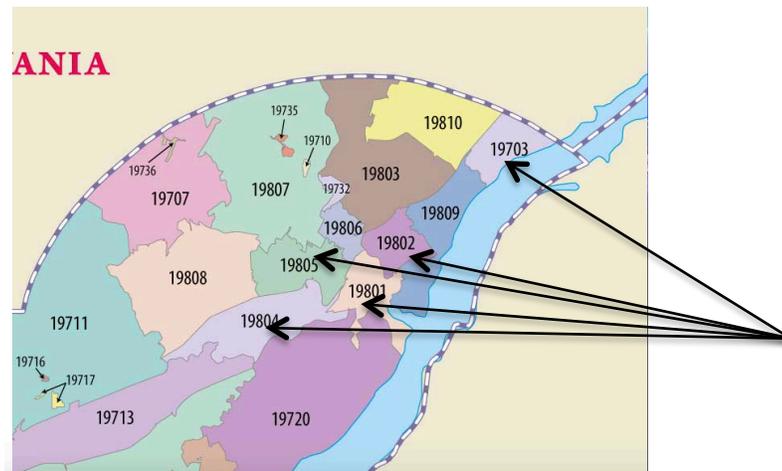


Figure 3 Geographical borders of the five target zip codes.

Under the *HN* project, Delaware has been broken up into ten neighborhoods (discussed below); the second target neighborhood is Wilmington/Claymont (Centers for Medicare & Medicaid Services, 2016, p. 4). I utilized passive and active methods of data collection to create community profiles for these zip codes to perform zip code-level analyses and compare Delaware's communities to state and national averages. In addition, I gathered responses from community members to understand community programming and events, and to analyze disparities between need and availability. Initial research for this project was made possible by the University of Delaware's Service Learning Scholars program, which pairs students with community partners. The community partner for this project is Westside Family Healthcare, a federally qualified health center that provides health services to underrepresented communities on a sliding scale fee. Westside is highly involved with the *HN* project, including working on data collection and management, engaging with community partners, and serving as a community stakeholder. Consequently, I was engaged in *HN* in many capacities. I adapted the initial *HN* project design to create a more comprehensive and detailed scope of the Wilmington/Claymont community. Research was conducted from Summer 2016 to the present, and data was gathered over the summer and fall months.

Chapter 2

LITERATURE REVIEW

Healthy Neighborhoods Project (HN)

There is a strong correlation between social determinants of health and community health outcomes. Despite efforts to address the social determinants of health, Delawareans living in underserved communities continue to experience poor health outcomes. Social determinants of health are the conditions in which we work, live, and play that affect health status and outcomes. The *HN* project seeks to improve the health of Delawareans to ensure that all residents live in a Healthy Neighborhood within the next few years, first focusing on individuals in high-need areas (Delaware Center for Health Innovation, 2015, p. 4). The four key priorities of *HN* are: (1) Healthy Lifestyles, (2) Maternal and Child Health, (3) Mental Health and Addiction, and (4) Chronic Disease Prevention and Management (Delaware Center for Health Innovation, 2015, p. 3). For each neighborhood, there is a council of stakeholders who oversee progress and direct future initiatives and funding based on the priorities in each community. The Health Care Commission supports the State Innovation Model (SIM) grant; the project was made possible through the Center for Medicare and Medicaid Innovation-State Innovation Model (CMMI-SIM) grant (State of Delaware, n.d.b).

Efforts to improve the overall health of communities, specifically with the intent of managing costs and making healthcare more accessible, have been implemented nationwide, including in Delaware. Delaware has received five Health

Care Innovation Awards, which target a variety of health issues including asthma, diabetes, and heart disease (Centers for Medicare & Medicaid Services, 2017a). According to the online resource, “The awarded organizations will implement projects in communities across the nation that aim to deliver better health, improved care and lower costs to people enrolled in Medicare, Medicaid and the Children’s Health Insurance Program (CHIP), particularly those with the highest health care needs” (Centers for Medicare & Medicaid Services, 2017a). Additionally, the State Innovation Models Initiative has awarded funds for Model Design, Model Pre-Test, and Model Test awards in two rounds (Centers for Medicare & Medicaid Services, 2017b). In the Model Design Awards Round One, Delaware received up to \$2,485,118 to focus on transforming the HC delivery system, changing payments, enhancing data collection, and integrating different systems, services, and initiatives (Centers for Medicare & Medicaid Services, 2017c). In the Model Test Awards Round Two, Delaware will receive up to \$35 million over the next four years; this money can be used to “support ten community-based population health programs (Health Communities)” (Centers for Medicare & Medicaid Services, 2017d). Thus, *HN* stems from federal funds that trickled down to the state level, in an effort to focus on community-level health and improving health on the population level. It is part of a broader nationwide effort to enact change in the healthcare system to assist with payment and delivery.

According to the Healthy Neighborhoods Rollout Approach, “Healthy Neighborhoods represents a central component of Delaware's State Health Care Innovation Plan that focuses on moving to a healthier, more person-centered and

affordable health care system” (Delaware Center for Health Innovation, 2016a, p. 2).

The operating model contains five components:

“First, the program brings organizations together – across sectors and areas of focus – to work together in new ways. Second, the structure of each Healthy Neighborhood ensures that healthcare providers and systems integrate with community organizations to both identify problems, and create and execute solutions. Third, the program dedicates full-time staff to convene stakeholders, facilitate the identification of community health needs and prioritization of initiatives, and ensure consistent implementation of collaborative programs. Fourth, Delaware's Healthy Neighborhoods program provides communities with shared access to resources and new opportunities for partnership to support their work. Fifth, the program supports organized efforts for Healthy Neighborhoods to seek and maintain funding, including through technical support for grant application and management” (“Healthy Neighborhoods Operating Model,” 2015, p. 2-3).

Delaware has been broken down into 10 “healthy neighborhoods,” each with a population of roughly 50,000 – 100,000 (Delaware Center for Health Innovation, 2015, p. 5). The neighborhoods are: Wilmington/Claymont, Brandywine/Hockessin, Newark/Bear/Glasgow, Christiana/Pike Creek, New Castle/Red Lion, Middletown/Odessa/Townsend, Smyrna/Dover, Kent/Sussex, West/Central Sussex, and Eastern Sussex (Delaware Center for Health Innovation, 2015, p. 6). The *HN* project will be implemented in three waves (Delaware Center for Health Innovation, 2016a, p. 4). First, three healthy neighborhoods will be targeted; next, an additional three to five neighborhoods; and finally, the remaining healthy neighborhoods (Delaware Center for Health Innovation, 2016a, p. 4). Within each phase, there are three sub-phases: first, local Council formation; next, Community planning; and lastly,

program implementation (Delaware Center for Health Innovation, 2016, p. 7). This structure creates a standard procedure for rolling out each healthy neighborhood.

My project specifically focuses on the Wilmington/Claymont neighborhood. Wilmington/Claymont was selected for several reasons. First, the Wilmington/Claymont Resource Library (discussed below) was one of the first to be completed. Second, the Wilmington/Claymont community is in close proximity to the University of Delaware, making it easy to travel to and from the area if need be. Third, the city of Wilmington serves as a microcosm for relevant public health-related issues facing large cities, such as violence, drug use, and education.

Health in Delaware

Christiana Care Community Health Needs Assessment: Final Summary Report

According to the Internal Revenue Code, “All non-profit hospitals across the country must comply with Section 501(r) requirements in order to maintain federal tax-exempt status” (Christiana Care Health System, 2016, p. 4). As a result, “Christiana Care Health System conducted this community health needs assessment (CHNA) to better understand and meet the needs of residents in its service area” (Christiana Care Health System, 2016, p. 4). Based out of Wilmington, Delaware, Christiana Care has two hospitals that primarily serve the New Castle County area (Christiana Care Health System, 2016, p. 5-6). Within this area lies the City of Wilmington (encompassing zip codes 19801, 19802, 19805, and 19806), which is predominantly Black/Hispanic (Christiana Care Health System, 2016, p. 7). Compared to New Castle County, Wilmington has higher rates of poverty – 26% vs. 11% of the population, respectively (Christiana Care Health System, 2016, p. 11).

Furthermore, zip codes 19801, 19802, and 19805 have higher rates of children living in poverty (Christiana Care Health System, 2016, p. 11). These three zip codes are main focuses for the scope of this project, and this data is yet another indicator pointing to the necessity for health-based research in northern Delaware.

Speaking to one of the primary goals of this project –creating community profiles– this Community Health Needs Assessment made frequent comparisons amongst New Castle County, Wilmington, other areas, and the state of Delaware. To illustrate, 12% of adults in Wilmington reported having no health insurance, versus 8% of adults in New Castle County (Christiana Care Health System, 2016, p. 15). Similarly, 14.2% of adults in Wilmington did not seek access to care due to cost, while only 11.4% adults did not in New Castle County (Christiana Care Health System, 2016, p. 15-16). The assessment also contained interviews “to gain perspective into the community health needs of the New Castle County service area” (Christiana Care Health System, 2016, p. 38). The finding suggest that “[t]he following health issues are considered to be of greatest concern based on the interviews with key informants [in alphabetical order]”: cost, cultural competency and diversity among providers, mental health, opiate/heroin addiction, other priority health issues (like HIV/AIDS and health disparities), social determinants of health, and teen pregnancy and infant mortality (Christiana Care Health System, 2016, p. 38-39). There are many parallels between this particular research project and the assessment, namely drawing comparisons and relying on interviews to gather critical data, which indicate the significance of such methods of data collection to understand issues most pressing to specific communities. The results of the assessment reinforce the intent behind this project, and suggest areas where higher levels of need lie.

Saint Francis Healthcare Community Health Needs Assessment

Similar to Christiana's Community Health Needs Assessment, Saint Francis Healthcare created an evaluation "to study the needs of the Wilmington area in healthcare, and to develop a plan for Saint Francis Healthcare to address those needs which are not being met, or which are only partially met in our community" (Saint Francis Healthcare, 2013, p. 1). Like Christiana Care, Saint Francis primarily serves New Castle County; specifically within Wilmington, its target population resides in zip codes 19801, 19802, 19804, 19805, and 19806 (Saint Francis Healthcare, 2013, p. 1). Again, the aforementioned population aligns with the focus population of this project.

Delaware is participating in the Healthy People 2020 initiative, which creates tangible goals to help improve community health (Saint Francis Healthcare, 2013, p. 3). In nearly all comparisons made against the state of Delaware and the goal for various health indicators, Delaware has to improve to reach the goal (Saint Francis Healthcare, 2013, p. 4-5). Furthermore, a community needs score for the service area was computed based on five perceived barriers: (1) income; (2) cultural; (3) education; (4) insurance; and (5) housing (Saint Francis Healthcare, 2013, p. 6). Each of the barriers has specific indicators (6). The service area score 4.8 on a 5.0 scale, indicating a very high level of need (Saint Francis Healthcare, 2013, p. 6).

Understanding community need is one of the primary goals of this project.

Furthermore, Saint Francis has worked to develop programs to meet community needs (10). One of these programs is Tiny Steps, which "provides pre-pregnancy, pre-natal, and maternal care to women and their children, especially those who are unable to

afford care” (Saint Francis Healthcare, 2013, p. 11). This program aligns with one of HN’s priority areas: maternal and child health. The institution has a history of providing to its target community by offering health-related programs and assistance when need arises (Saint Francis Healthcare, 2013, p. 9, 13). As such, it can be used as a starting point for implementing future community health efforts based on apparent community need. Utilizing publically available resources, such as these Community Health Needs Assessments, is important to this project because it allows me to make comparisons and draw conclusions using different data sources.

Where We Live Matters for Our Health: Neighborhoods and Health

Keeping in line with efforts to address community health, the Robert Wood Johnson Foundation has enacted a Commission to Build a Healthier America. In *Where We Live Matters for Our Health*, the foundation explores the crucial dynamic between neighborhoods and health. There are three key types of environments, physical (built), social (relationships), and services (resources), which all influence health; there is often overlap amongst the three (Robert Wood Johnson Foundation, 2008, p. 2). In particular, social support is imperative, as positive social support allows individuals to work together to better themselves and the areas in which they live (Robert Wood Johnson Foundation, 2008, p. 3). In fact, the link between residence and health is so strong that the foundation cites that “[l]iving in a poor neighborhood can be bad for your health, even if you are not poor” (Robert Wood Johnson Foundation, 2008, p. 4). Furthermore, this relationship manifests itself both directly and indirectly. For example, access to appropriate and affordable health care services greatly impacts health in a direct manner, while education and employment

have a more indirect effect (Robert Wood Johnson Foundation, 2008, p. 4). When health disparities exist, they create a gradient that often transcends socioeconomic and ethnic boundaries (Robert Wood Johnson Foundation, 2008, p. 4). There is a bidirectional influence between neighborhoods and health, which makes it tricky to disentangle and fully understand the factors that play into health (Robert Wood Johnson Foundation, 2008, p. 4). Sharp differences in health are observed across different ethnic groups – to illustrate, there is extreme aggregation of African Americans living in poverty – yet, figuring out which precise factor (such as genetics, personality, location, etc.) has the greatest impact is a difficult task (Robert Wood Johnson Foundation, 2008, p. 6).

Program Evaluation Framework for the *Healthy Neighborhoods Project*

PRECEDE-PROCEED Model

Health promotion and disease prevention programs are the backbone of public health. The evaluation of health programs is essential in order to support agency priorities, inform stakeholders, and improve program effectiveness. A large component of this project is program evaluation. Specific to this project, the intent of the program evaluation is to understand community resources in order to locate health-related disparities. I adopted the PRECEDE-PROCEED model to frame my evaluation under the context of *HN*. Lawrence W. Green developed this model in the mid 1990s. Green and Kreuter (1999) developed the name, which is an acronym for **P**redisposing **R**einforcing **E**nabling **C**onstructs in **E**ducational/ecological **D**iagnosis and **E**valuation (PRECEDE) and **P**olicy **R**egulatory **O**rganizational **C**onstructs in **E**ducational and **E**nvironmental **D**evelopment (PROCEED) (as cited in Erkel, 2002, p.

48). To date, the majority of the work of *HN* has focused on the PRECEDE portion of the model. There are three areas of focus within the PRECEDE phase: a social assessment (phase 1), an epidemiological assessment (phase 2), and an educational and ecological assessment (phase 3) (McKenzie, Neiger, & Thackeray, 2013, p. 53-55). The PRECEDE phase is imperative to the future of the project, for it lays the foundation for understanding health demographics and the health profile of the various Healthy Neighborhoods. It aligns with responsibilities 1 and 2 of the *Healthy Neighborhoods* Operating Model: “identify current needs, resources, and gaps in the Community” and “prioritize the thematic area(s) of focus for the Community” (Delaware Center for Health Innovation, 2015, p. 7). Phases 1 and 3, in particular, are specific targets of the current project.

Phase 1, the social assessment, was initiated primarily through the surveys administered in Wilmington. Through this primary data collection, it became clear and easy to identify community members’ perceptions on programs and events; this information can be used to influence future decisions made by members of the *HN* committees. In Phase 3, the educational and ecological assessment, there are three types of factors that influence behavior: predisposing factors, such as knowledge, attitudes, beliefs, values, and perceptions; enabling factors, which include access to care, availability of resources, and transportation; and reinforcing factors, which are feedback and rewards that can be delivered by people such as friends, family, and peers (McKenzie, Neiger, & Thackeray, 2013, p. 54-55). Understanding how these factors influence an individual’s health-related behaviors will go a long way to developing appropriate responses in each Healthy Neighborhood. The PROCEED phase of the model will come into play as future waves of Healthy Neighborhoods are

launched. First, it is imperative to conduct an initial program evaluation and framework assessment to determine the underlying structures in the communities of interest.

PRECEDE-PROCEED Framework

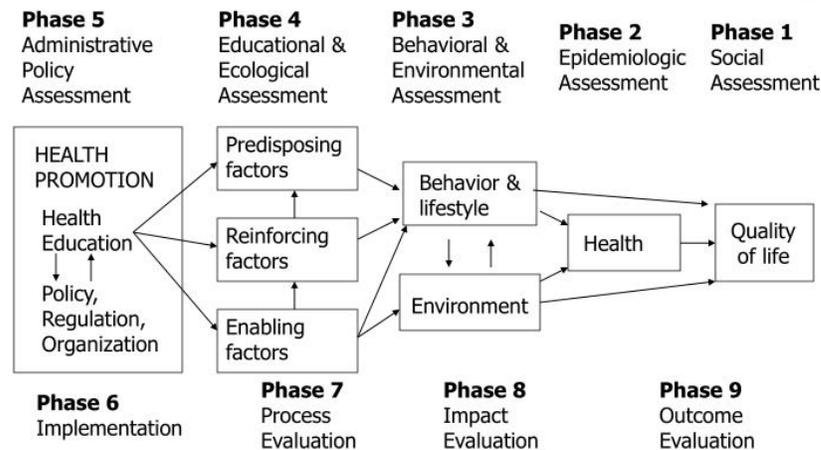


Figure 4 PRECEDE-PROCEED model.

Theoretical Frameworks Applied to Health Behavior Strategies

Social Ecological Theory

The social ecological theory is grounded in the notion that the health issues we face are too complex to be fully understood at the individual level, and can best be mitigated by taking a multi-faceted and multi-level approach (Stokols, 1996, p. 282-283). Stokols's (1996) iterates supposed for this model, saying "... more recent conceptualizations have stressed the importance of linking behavioral strategies of health promotions with efforts to strengthen environmental supports within the

broader community that are conducive to personal and collective well-being” (p. 282). The theory is similar to Tom Frieden’s impact pyramid, which also approaches health at numerous levels and recognizes the influence of environmental factors on health. The 1979 *Surgeon General’s Report* helped shift the perspective of what it means to be healthy to an all-encompassing definition, paving the way for ecological-based models to emerge (Stokols, 1996, p. 283). With this in mind, the importance of the social ecological theory is highlighted. It considers the relevant social, cultural, and environmental factors, and recognizes and incorporates the interplay of biological and social factors (Stokols, 1996, p. 285). The model is ideal in that it implements both active and passive interventions as well as both problem and intervention theories; on the downside, it necessitates an abundance of time, money, and resources (Stokols, 1996, p. 287). Stokols (1996) cites six guidelines for the theory to be implemented into practice:

“Examine links between multiple facets of well-being and diverse conditions of the physical and social environment... Examine the joint influence of behavioral, depositional, developmental, demographic factors on people’s exposure and responses to environmental hazards and demands... Identify source of person-environment and group-environment misfit, and develop interventions that enhance the fit between people and their surroundings... Identify behavioral and organizational ‘leverage points’ for health promotion; consider both personal and other-directed health behavior as targets for change within community interventions... Account for the moderating and mediating influences of physical and social conditions on health; design community interventions that span multiple settings and have enduring positive effects on well-being... Integrate biomedical, behavioral, regulatory, and environmental interventions for health promotion; use multiple methods to evaluate the health and cost-effectiveness of community programs” (p. 288).

The model remains at the forefront of the guiding principles for this project because it recognizes the ever-changing dynamic between various factors and takes

into account the vulnerability of certain populations (Stokols, 1996, p. 289). It is critical to the success of this project to consider both environmental and personal factors that contribute to health. Furthermore, because it delivers achievable goals and guidelines, it can feasibly be implemented into practice with the right intervention. Especially in areas such as Wilmington and Claymont, in which health disparities are already so abundant, pinpointing external factors may be one of the most successful methods to initiate health-related change.

Health Belief Model

In juxtaposition to the social ecological theory, the health belief model posits that health-related behaviors are rooted in individuals' choices. McKenzie et al. state that in the context of this model, the way in which we act is largely influenced by our evaluation of the result, including a cost-benefit analysis (2013, p.173). There are three groups of factors involved in making health-related decisions:

- “1. The existence of sufficient motivation (or health concern) to make health issues salient or relevant.
2. The belief that one is susceptible (vulnerable) to a serious health problem or to the sequelae of that illness or condition
3. The belief that following a particular health recommendation would be beneficial in reducing the perceived threat, and at a subjectively acceptable cost. Cost refers to the perceived barriers that must be overcome in order to follow the health recommendation...” (McKenzie et al., 2013, p. 173-174).

Modifying factors include demographics and social variables, including social class and the role of peers (McKenzie et al., 2013, p. 174). Ultimately, whether or not an individual engages in the appropriate behavior depends on the perceived susceptibility of an impending health threat, the perceived severity, and the perceived benefits

should engaging in the behavior mitigate undesirable health outcomes (McKenzie et al., 2013, p. 175). It is dubbed “the likelihood of taking recommended preventative health action” (McKenzie et al., 2013, p. 175). So, it can be inferred that merely making healthy resources available to communities may not suffice; individuals must desire to engage in appropriate healthful behavior. This idea took root in some of the measures and tools used for this project, namely the Community Profile Assessment, which is outlined later.

Chapter 3

METHODS AND TOOLS

There are four interrelated methodological components of the current study: (1) a Resource Library, (2) corner store assessments, (3) a walkability assessment, and (4) Community Profile Assessments. Figure 5 illustrates the four components as they relate to *HN*. As highlighted above, the PRECEDE-PROCEED model guided the development of the *Healthy Neighborhoods* project and this specific project. The methods relate to the PRECEDE phases of the model due to their exploratory nature, and will help to inform both the researcher and community stakeholders involved with *HN*. The intent of each of the four methods and tools was to gather a baseline demographic background on the Wilmington/Claymont community through a multi-faceted approach. The methods and tools do not seek to initiate change; rather, they inform us on where community needs lie, as part of the assessment (social, epidemiologic, and behavioral & environmental) phases of the PRECEDE-PROCEED model. The specifics of each of the methods are discussed below.

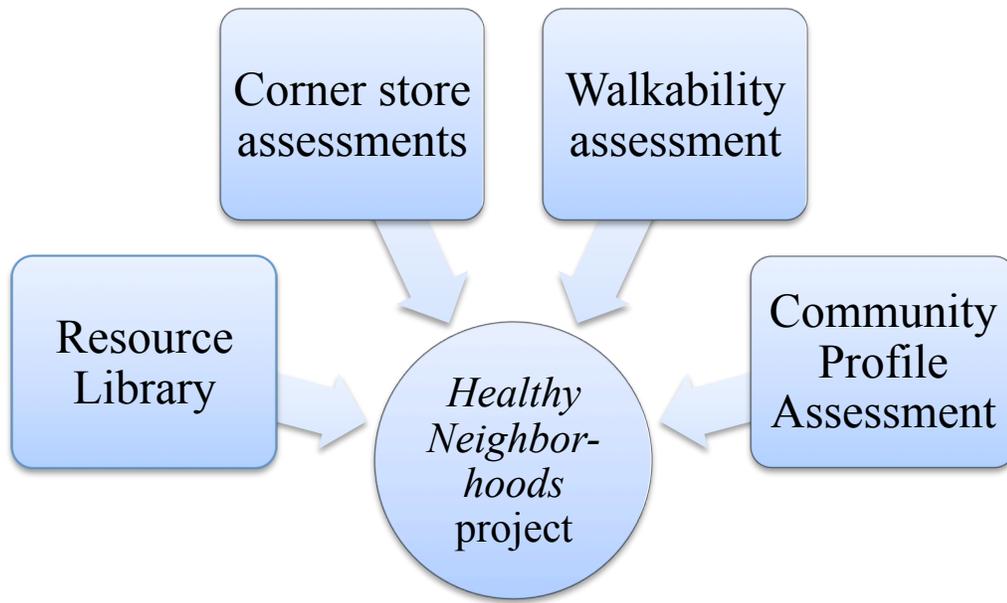


Figure 5 Overview of methodological components of the project.

Resource Library

Per request of DCHI, the Resource Library for the Wilmington/Claymont neighborhood was completed during Summer 2016. The Resource Library is a valuable resource for *HN* in its entirety, as well as this specific project. The Wilmington/Claymont neighborhood is in fairly close proximity to the University of Delaware, making it an ideal starting point for this study. The Resource Library contains a demographic profile of each of the zip codes within the neighborhood; for Wilmington/Claymont, the zip codes are 19801, 19802, 19804, 19805, and 19703. The demographic profile includes a map of the boundaries of the zip code (referenced previously in this paper), a breakdown of community programs available, and data relating to population size and age, income, employment, and industries. Additionally, there is a health profile highlighting a number of key health indicators,

and how the community compares to the state and national averages. Each indicator falls under one of nine overarching themes: maternal and child health, chronic disease prevention and management, mental health and addiction, healthy lifestyles, economic stability, education, social and community, health and health care, and neighborhood and environment. Data were collected from sources including the Census, DE Focus, and Behavioral Risk Factor Surveillance System.

Lastly, the Resource Library provides a comprehensive list of programs available in the area. Each program is identified by its name, organization, location, and relevant theme. There are 12 themes total: maternal child health, chronic disease prevention and management, mental health and addiction, healthy lifestyle, food access, housing availability, economic stability/financial independence, safety/violence prevention, education/literacy, supportive infrastructure resources/programs, all (indicating that the program targets many or all aforementioned themes), and unknown (indicating that the theme of the program is not clear enough to be classified under an aforementioned theme). The first four themes listed correspond to DCHI's four primary focus areas for the community, and were determined a priori. The remaining themes were identified after programs were found to not effectively nest in the four primary areas. While there was not a strict definition for each program category, programs were vetted by a community expert at Westside Family Healthcare in order to ensure accuracy in labeling them. The community programs were found using a variety of search methods, mainly using background knowledge on types of programs available in the area and on state programs. Google was the primary search engine and access to information, especially through utilizing state websites. After programs were initially identified, the community expert helped

determine where additional programs were missing in order to create a more comprehensive search. The demographic profiles for each of the five zip codes were critical to the zip-code level analysis of community health indicators that this project sought to understand. Most of the data shown in the Results and Analysis is primary data obtained from large data sets, such as the American Community Survey.

Corner Store Assessments

Using a tool developed by MBA students at UD, 13 corner stores in the city of Wilmington were assessed. The specific tool was chosen on the basis that it had been utilized by previous researchers at the university, and was used during Summer 2016 by a student engaging in similar community health-based research. Before embarking on the assessments, a pre-determined list of 14 corner stores in 19801 and 19805 was compiled. Each store was evaluated based on the interior and exterior appearance, presence of certain features such as alcohol and tobacco ads, availability of fresh produce, and whether government-supported nutrition assistance was accepted, consistent with similar tools such as the Neighborhoods Environment Measures Survey (NEMS). Three Service Learning Scholars from the university worked together and each completed approximately one-third of the assessment; the results were later combined to obtain a complete overview of each corner store. One of the 14 stores was closed; so only 13 stores could be assessed. There was no decline to participate from any of the owners. Through Microsoft Excel, a descriptive analysis was conducted on the data set. I found the mean and standard deviation of the number of fresh produce varieties, number of aisles, and number of refrigeration/freezer units. I also performed a cross-tabulation for whether or not fresh produce was available and whether or not SNAP (EBT) was accepted at the scores, in order to better understand

trends related to produce availability. Lastly, I focused on the assessment questions pertaining to the exterior of corner stores. For these questions there were three answer choices – “Yes”, “Somewhat”, and “No”; I found the percent of responses for each one.

Walkability Assessment

In July 2016, a walkability assessment was conducted, using Centers for Disease Control guidelines for walkability audit. Another Service Learning Scholar, a male student, and I traversed a pre-selected area in the city of Wilmington; the audit was restricted to daylight hours due to safety concerns. The area was selected by looking at a street-level map of Wilmington, based on a number of reasons. First, I wanted to conduct a walkability assessment that encompassed a decent geographical area, without taking too long to assess. Additionally, it was important to complete the assessment in a commonly traveled area in the Wilmington region, as to find results that have the most relevance to community members.

In total, the audit took approximately two hours and was conducted during a weekday afternoon in the summer. We individually scored each of the four segments outlined; each criteria was assigned a score of 1-5, 1 being the “worst” and 5 being the “best,” then was marked as high, medium, or low importance and weighted accordingly, based on the guidelines. There were nine factors included in the audit: (A) Pedestrian Facilities, (B) Pedestrian Conflicts, (C) Crosswalks, (D) Maintenance, (E) Path Size, (F) Buffer, (G) Universal Accessibility, (H) Aesthetics, (I) Shade. Factors (A)-(C) were marked as high importance and each score was given a weight of 3. Factors (D)-(H) were marked as medium importance and each score was given a weight of 2. Factor (I) was marked as low importance and each score was given a

weight of 1. The scores were then combined averaged to obtain the values displayed below (in Results & Analysis). Data were analyzed using Microsoft Excel. For each of the criteria along every segment, there were two scores available, one from myself and one from another researcher. These scores were averaged, then compiled and weighted, to obtain the raw and weighted scores displayed in the Results section. Final cores were obtained by summing each of the scores for the individual criteria.

Community Profile Assessment (CPA)

The largest undertaking of this project was to develop a survey to administer to community members that highlights community needs. It was crucial to gain insight on a community level, for the intent of the project was to appropriately identify where community needs lie. With this in mind, this Community Profile Assessment (CPA) was developed by myself and my research partner to collect data that will inform us on community members' perspectives. The survey contains 10 questions. Questions one through five relate to demographics. Questions six through eight ask participants to identify the types of programs and events available in the participants' neighborhood, the types of programs and events participants see need for in their neighborhood, and the types of programs and events participants use or have used, respectively.

Participants were instructed to indicate which of the 11 themes – similar to those identified above in the “Resource Library” section – if any, corresponded to programs available, that they see need for, and that they have used. The themes are as follows (parentheses indicate what the program is referred to as in the tables in the Results section): (1) Programs to support Mothers and Babies (MCH); (2) Mental Health (MH); (3) Drug and Alcohol Addiction (DrugAlc); (4) Chronic Disease Prevention and Management (CD); (5) Healthy Living and Physical Activity (HL); (6) Food

Availability (Food); (7) Housing (Housing); (8) Money/Finances (Money); (9) Safety (Safety); (10) Education (Educ); and (11) Other (Other). To note, the themes identified for programs present in the Resource Library are not identical to those in the survey questions, due to stakeholder priorities and the timing of these different components. For example, the theme “supportive infrastructure” is included in the Resource Library, but was not part of the list of themes on the CPA. Lastly, questions nine and ten focus on program and event attendance. The CPA process and survey were submitted to UD’s Institutional Review Board in July, and qualified for exempt status. Due to a large Spanish-speaking population in some areas in the city of Wilmington, a Westside employee directly translated the survey into Spanish in order to include these community members. Even so, only a few of the respondents took a Spanish survey.

Over five days in July, August, and September 2016, approximately 100 adults in the Wilmington/Claymont community were approached and asked to complete the Community Profile Assessment. Another student researcher and I visited various neighborhoods in each community in an effort to diversify the subject pool; however, we were restricted to gathering data during daylight hours on weekdays due to safety and feasibility constraints. We frequented popular destinations such as corner stores and parks in order to maximize efficiency by gathering as much data as possible. The time of day was kept relatively consistent; we spent a couple of hours in the late morning and early afternoon in the neighborhoods for each day they visited Wilmington/Claymont. Individuals who decline to participate typically cited time constraints or a lack of interest in the project, or simply did not acknowledge the researchers. Due to this, many community members who were surveyed were likely

unemployed or worked odd hours, as they were available during normal business hours. It should also be noted that one data collection period was unique in that we attended a community event during the early evening on a Friday in July. Each survey took approximately 5-10 minutes for individuals to complete. Aside from a few participants who requested that the researchers ask them the questions orally, all individuals answered the questions independently.

Data was subsequently analyzed using the statistical program SPSS, available from the University of Delaware, and Microsoft Excel. I performed a descriptive analysis, mainly breaking down the data by zip code and by program theme. Most of the results are reported as either raw scores or in a percentage of the whole.

Chapter 4

RESULTS AND ANALYSIS

The primary purpose of the analysis was to investigate community disparities to understand the social determinants of health. Of specific interest were zip code-level comparisons. Understanding how communities nearby each other have different health profiles will go a long way to isolating the specific social determinants that impact health outcomes in these neighborhoods. I also wanted to expose gaps in community programming from community members' perspectives, to show opportunities to fill needs for specific types of programs and events. Results are presented in four sections, based on each of the methods and tools described in the previous chapter.

Resource Library

Efforts to compile the Wilmington/Claymont Resource Library resulted in consolidated profiles comparing the five zip codes to each other, in an attempt to demonstrate the discrepancies in resources that exist between nearby geographical locations. Table 1 below highlights key indicators that play a role in community and individual-level health. The same five indicators were identified in each of the zip codes: population size, median household income, percent of individuals below poverty level, percent of individuals unemployed, and percent of individuals without health insurance. The five zip codes are ordered based on increasing median household income. Zip codes 19801 and 19802 are consistently worse-off with

respect to income and unemployment, 19805 is similar to Wilmington/Claymont, and 19804 and 19703 have better income and lower unemployment rates. Demographics for Delaware and the US were included as a base reference, but the main intent is to draw comparisons from differences amongst the zip codes of the study population.

Table 1 Select Delaware zip codes and population demographics, from the Resource Library.

	<i>Population</i>	<i>Median Household Income</i>	<i>% Below Poverty Level</i>	<i>% Unemployed</i>	<i>% Uninsured</i>
19801	15,895	27,888	35.5	9.9	9.8
19802	25,367	39,806	23.7	8.4	8.0
19805	41,071	42,578	21.7	7.7	15.8
19703	15,143	52,577	11.8	6.8	9.0
19804	17,980	53,654	11.8	6.5	8.0
Wilmington/Claymont	115,456	42,980	21.2	7.9	6.7
DE	917,060	60,231	12.0	8.5	12
US	314,107,084	52,482	15.6	9.2	20

Figure 5 is a stacked line comparison of median household income, in 1,000s, and number of programs available, per zip code. The income is arranged in order of lowest to highest, and the two lines are overlapping each other, showing how program availability varies with income. 19801 has the lowest income and the highest number of programs, whereas 19804 has the highest income and the lowest number of programs. Clearly, program availability is not correlated with income; this raises further questions as to the types of programs available in each of the areas.

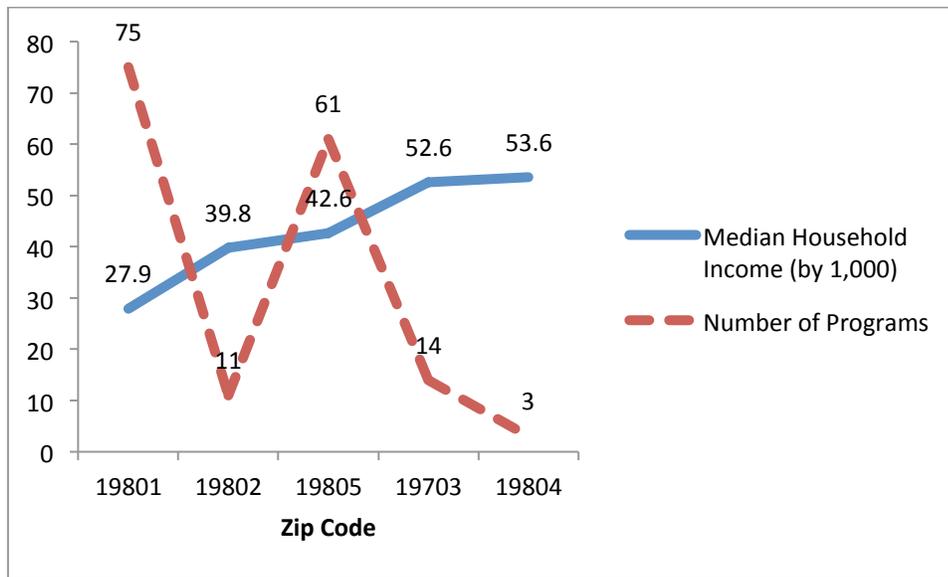


Figure 6 Median household income (in 1,000s) and number of programs for the five zip codes, from the Resource Library.

Corner Store Assessments

Of the 14 corner stores initially identified, 13 corner stores were evaluated on August 1st and 2nd, 2016. One store was closed. I wanted to identify what produce options were available. The average number of fresh produce varieties was 4.31, ranging from 3 to 20. As evidenced in Table 3 below, there is a correlation between the presence of fresh produce and whether or not stores accepted SNAP, the Supplemental Nutrition Assistance Program, which provides financial assistance to purchase healthy foods. Of the stores that accept SNAP (n=7), the majority also has fresh produce available; likewise, of the stores that do not accept SNAP (n=5), most have no fresh produce available. Wilmington is challenged by limited grocery access, making it difficult for those without transportation or time to devote to traveling to other grocery stores to access a proper food vendor.

Table 2 Produce options and layouts of corner stores.

	Mean	Standard Deviation
<i>Fresh Produce Varieties</i>	4.31	6.55
<i>Aisles</i>	2.31	0.63
<i>Refrigeration/Freezer Units</i>	11.15	2.88

Table 3 Cross-tabulation for the availability of fresh produce and whether SNAP (EBT) is accepted.

		<i>Fresh Produce Varieties Available</i>	
		<i>Yes (%)</i>	<i>No</i>
SNAP (EBT) Accepted	Yes	5 (71.4)	2 (28.6)
	No	1 (20.0)	4 (80.0)
	Missing	1 (100.0)	0 (0.0)

Not only is there a lack of properly stocked grocery stores, but corner stores often do not have desirable exteriors, as well. Part of the corner store evaluation focused on exterior conditions. As referenced in Table 2, two of the criteria, “Storefront is free of trash/debris” and “Storefront is well-maintained, free of unsafe conditions,” scored highly. The third criteria, “Interior is visible from the outside,” did not score highly. Arguably, the attractiveness and maintenance of a storefront are important from both marketing and consumer perspectives. It can be inferred that community members are more likely to enter a building that is attractive from the outside, as this would suggest that the inside is also satisfactory.

Table 4 Evaluation of the exteriors of corner stores (n=13).

	<i>Storefront is free of trash/debris (%)</i>	<i>Storefront is well-maintained, free of unsafe conditions</i>	<i>Interior is visible from the outside</i>
Yes	84.6	53.8	15.4
Somewhat	15.4	38.5	38.5
No	0	7.7	46.2

A large portion of the evaluation was based on the presence (or absence) of various products. Overall, 100% of stores sold tobacco products, while none of the stores featured advertisements for healthy options, such as fruits and vegetables. About 60% of stores had cigarette ads, further emphasizing the focus of unhealthy products in corner stores and convenience markets. Lastly, the Women Infants and Children (WIC) food assistance program was not accepted at any of the stores, meaning that women who need to provide for their families could not access any of products at the stores using government assistance.

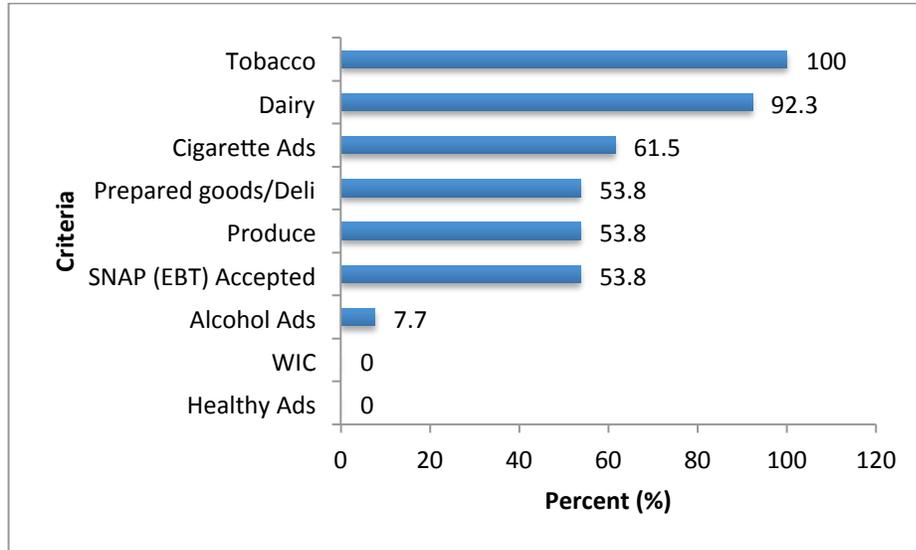


Figure 7 Evaluation of corner store advertisements and inventories.

Walkability Assessment

The figure below contains a map of the four segments included in the walkability assessment, conducted during mid-summer 2016. According to CDC Guidelines, scores of 0-39 were labeled as high-risk and colored in red, scores of 40-69 were labeled as medium-risk and colored as yellow, and scores above 70 were labeled as low-risk and colored in green. Two of the segments scored at a medium risk (1 and 4), and two of the segments scored at a low risk (2 and 3). None of the segments posed a high risk.

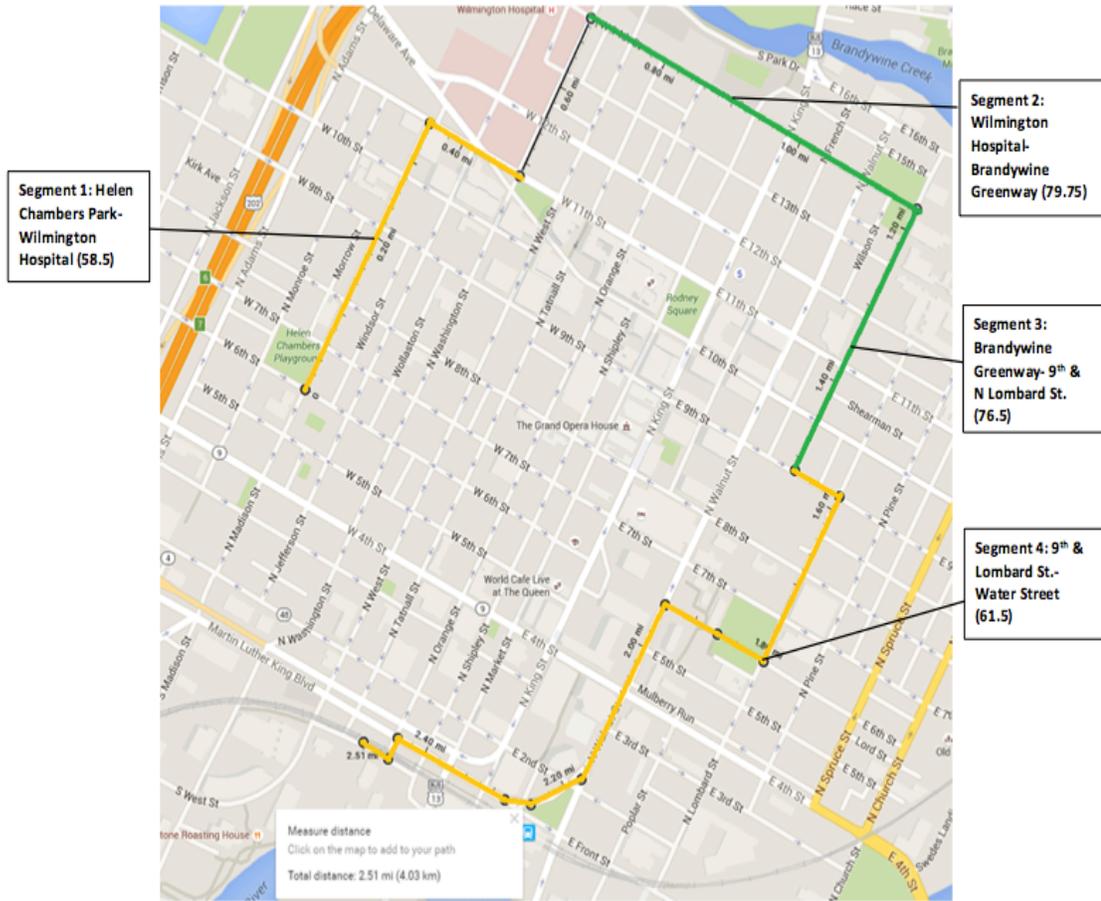


Figure 8 Segments scored in the walkability assessment.

For segment 1, 5 criteria received a score of ≤ 2.5 . For segments 2 and 3, none of the criteria received a score of ≤ 2.5 . For segment 4, 4 of the criteria received a score of ≤ 2.5 . The trends displayed in Table 5 mimic the overall pattern of risk, as illustrated in Figure 7. Naturally, segments that received higher scores posed a lower risk than did segments with lower scores. Looking specifically at individual criteria that scored ≤ 2.5 in segments 1 and 4, (F) Buffer, (H) Aesthetics, and (I) Shade were all marked as such in both of the segments. Thus, there appears to be a trend in which specific aspects of walkability stand to be improved.

Table 5 Averaged scores for each of the nine criteria evaluated along each of the four segments of the audit.

		<i>Segment 1</i>	<i>Segment 2</i>	<i>Segment 3</i>	<i>Segment 4</i>
Criteria	A (Raw)	9 (3)	12.75 (4.25)	12 (4)	12 (4)
	B	12 (4)	10.5 (3.5)	15 (5)	6.75 (2.25)
	C	9 (3)	11.25 (3.75)	12 (4)	8.5 (4.25)
	D	5 (2.5)	10 (5)	6 (3)	5.5 (2.75)
	E	8 (4)	10 (5)	9 (4.5)	9 (4.5)
	F	3 (1.5)	7 (3.5)	6 (3)	3 (1.5)
	G	5 (2.5)	7 (3.5)	6.5 (3.25)	6 (3)
	H	5 (2.5)	9 (4.5)	6 (3)	4 (2)
	I	2.5 (2.5)	4.25 (4.25)	4 (4)	2.5 (2.5)
	Total	58.5	79.75	76.5	61.5

Criteria were given a score of 1-5, 1 being the worst and 5 being the best with respect to the specific category.

Community Profile Assessment (CPA)

The CPA is useful for gathering firsthand information about community members' perspectives on a variety of topics, from demographics to program usage to program attendance. The following section outlines a number of results from the assessment.

Figure 8 below displays the percentage of individuals who reported poor or fair health status, broken down by zip code. Zip codes 19801 and 19805 report the highest values, while all other zip codes are lower. Referencing some of the indicators from the Resource Library, 19801 once again falls short in comparison to other zip codes, indicating a higher level of need in this particular area.

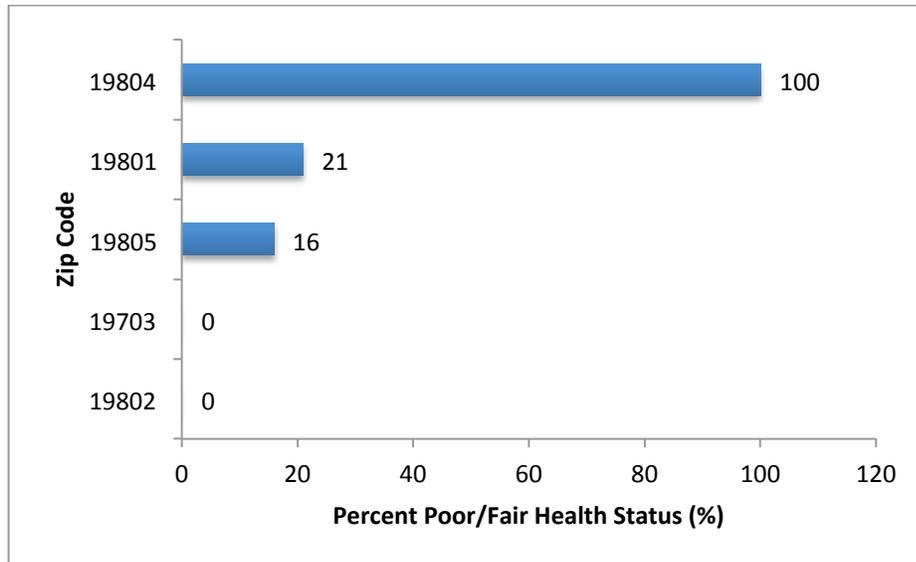


Figure 9 Individuals in each zip code reporting poor or fair health status.

The following tables focus primarily on community programs and events. Based on questions 6-8 in the survey, community members were asked their perspectives on program availability, need, and usage, respectively. A chief aim of *HN* is to build healthy neighborhoods, and as such understanding the types of programs available in communities, as well as whether or not they are accessed by community members, is a high priority. Thus, these questions and the data gathered from them serve to both inform and direct future *HN* efforts.

First, residents were asked about the availability of programs and events. The two themes with the highest level of availability are drug and alcohol addiction (n=38) and food (n=32). The two themes with the lowest level of availability are chronic disease prevention and management (n=7) and other (n=4); individuals were asked to specify what they meant by “other,” but there were very few responses and the category is ambiguously defined, so for the purposes of this evaluation, chronic

disease prevention and management programs and events are considered to have the lowest availability.

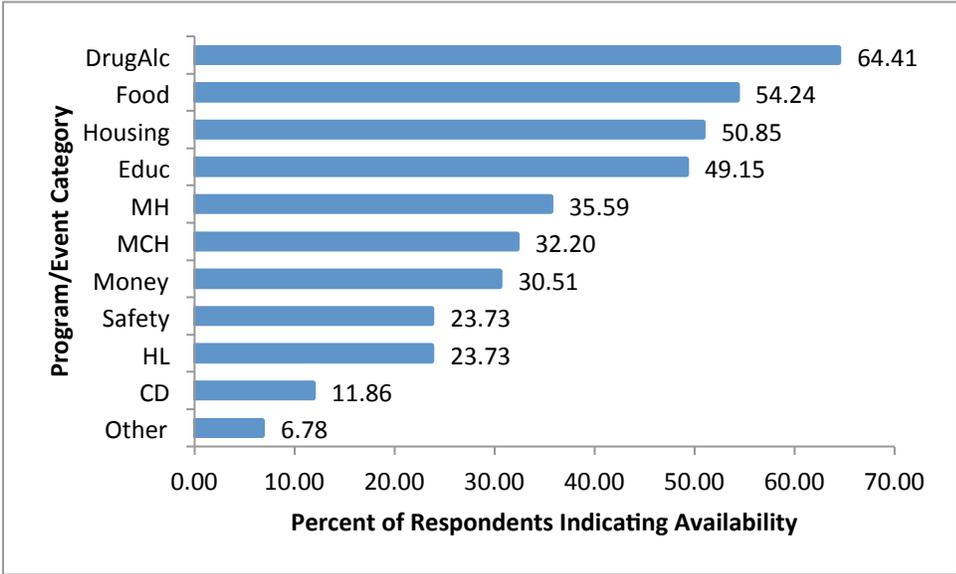


Figure 10 Reported community program and event availability (n=59).

Next, residents were asked about need as it pertains to programs and events, based on the same themes as described above. As opposed to availability, the data for need shows a much more consistent pattern: for 7 out of the 11 themes, more than half of the individuals (n>29) reported need. Chronic disease prevention and management has the lowest level of need (n=24), aside from “other”; however, people cited it as the least-available program. Thus, a key question arises: are people under-utilizing these resources, or are they not made available enough to community members? Where exactly do health disparities lie?

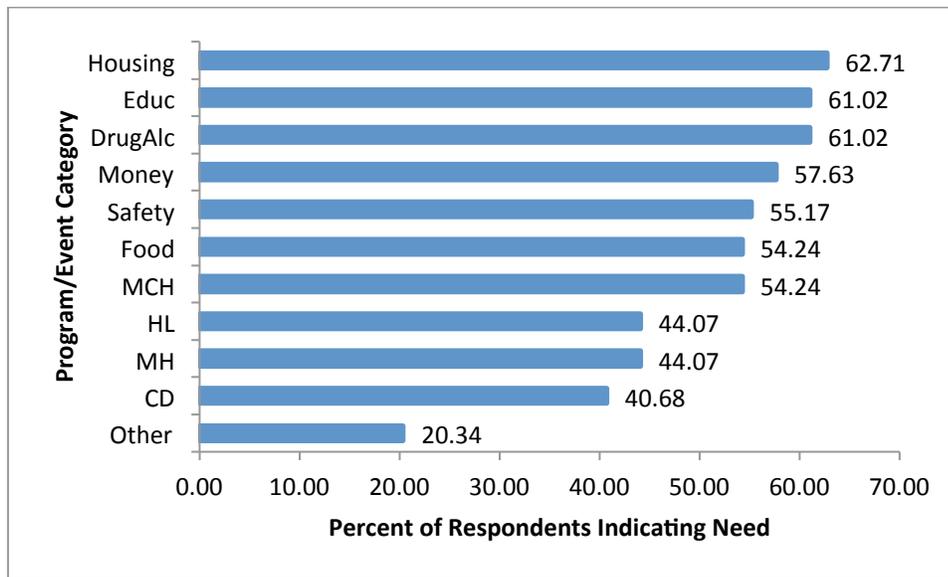


Figure 11 Reported community program and event need (n=59, with the exception of safety, to which one individual did not respond [n=58]).

Lastly, community members were asked about program usage. For every single theme, less than one-half of the individuals reported actually using a specific program or event. The most under-utilized programs are chronic disease prevention and management (n=9) and healthy living and physical activity (n=8). Once again, chronic disease prevention and management stands out amongst other types of programs and events. It is the second least-used type of program, and the least available (ref. table above) type of program out of the other 10 types. However, less than half of the community members surveyed reported that they actually use it. Investigating these disparities is a core goal of this project, to determine whether the level of need matches the level of availability and the level of usage in order to best direct future efforts, initiatives, and funding.

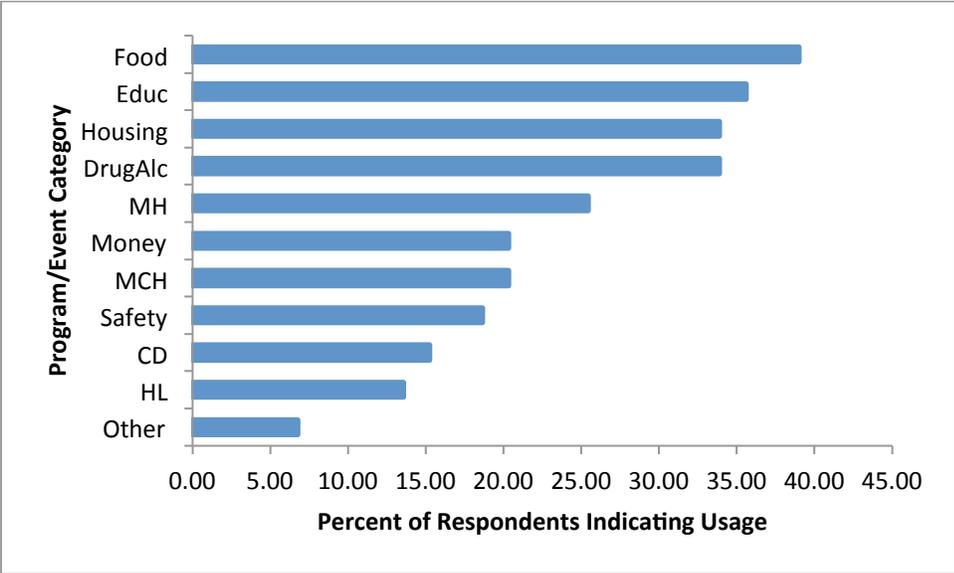


Figure 12 Reported community program and event usage (n=59).

Figure 12 represents apparent program/event availability, need, and usage in one, consolidated image. For nearly all of the 11 themes, need is greatest; usage is lowest; and availability falls in the middle. The number of community members who actually utilize programs and attend events is far lower than the cited need or availability of such resources.

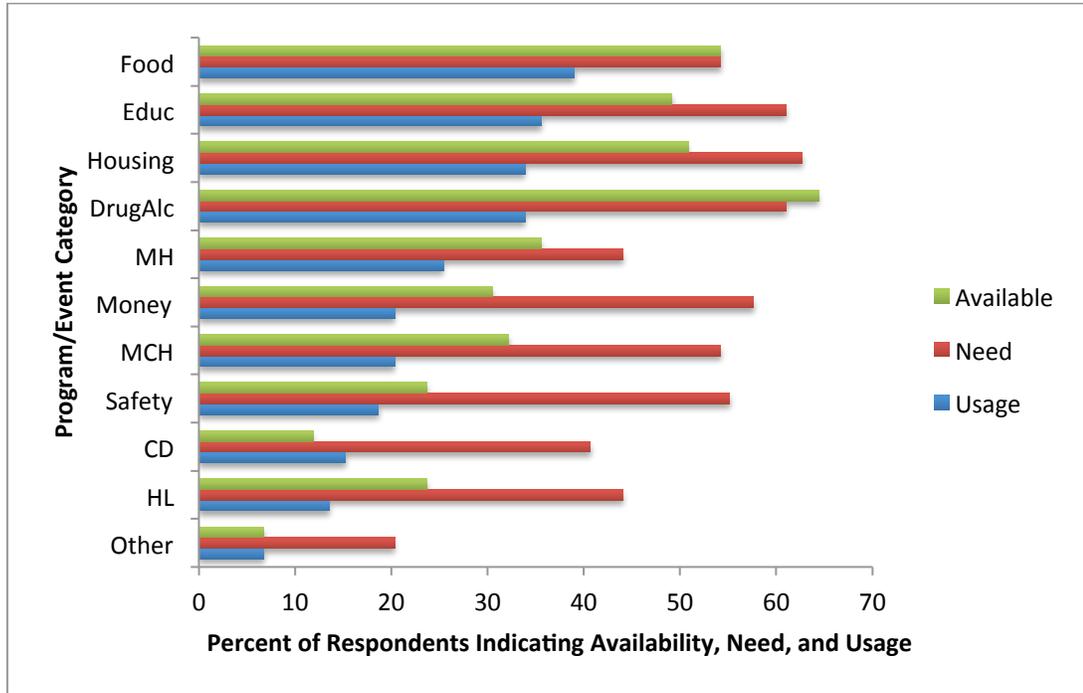


Figure 13 Aggregation of reported community program and event availability, need, and usage (n=59).

Finally, Figure 13 visually breaks down perceptions surrounding program availability, need, and usage based on zip code. For the purposes of this study and analysis, zip codes 19804 and 19703 were lumped under “Other” along with zip codes other than the five target zip codes, due to a low number of responses for these two zip codes. 19801 and 19805 present interesting results. Availability, need, and usage for both of these zip codes are higher than that of the other zip codes/areas. Yet, there appears to be the greatest disparities amongst availability, need, and usage in these zip codes; the other areas have more even levels of each. For all zip codes, variance amongst availability, need, and usage is observed.

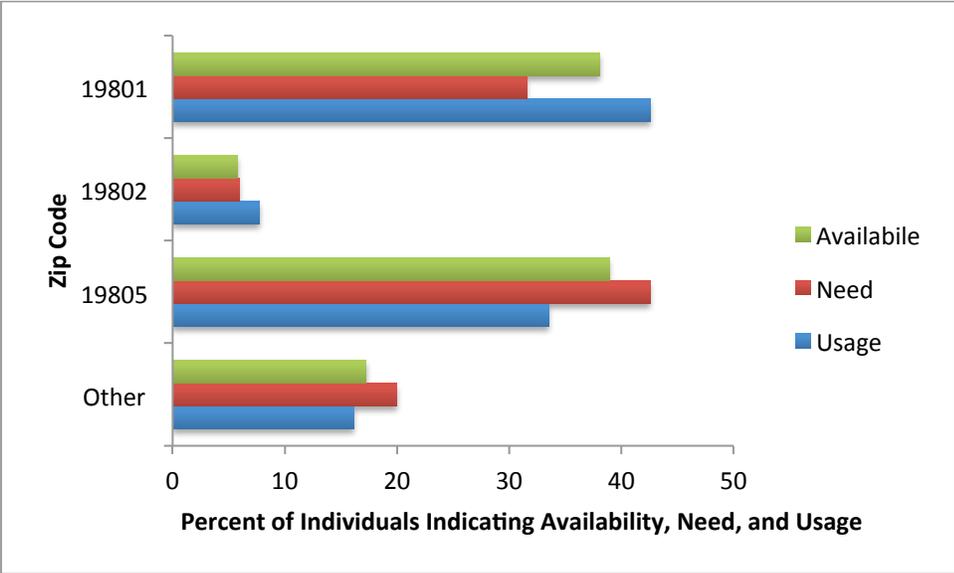


Figure 14 Aggregation of reported community program and event availability, need, and usage, broken down by zip code.

In terms of travel, more than 50% of individuals (67.8%) said that they traveled outside their neighborhood to attend a program or event; perhaps residents of seemingly under-programmed zip codes (19802, 19804, etc.) travel to 19801 and/or 19805 to access these resources, however this sort of knowledge requires future data collection.

Lastly, community members were asked about the frequency of their program and event attendance, selecting one answer from the following: “Never,” “Once a year,” “Once a month,” “Once a week,” “More than once a week,” and “Daily.” Fewer than 20% of individuals said that they attend programs or events once a week or more frequently. Thus, the vast majority of individuals attend programs less often than once a week, with approximately 20% not attending programs at all. So, even if

there is an adequate amount of programs, gaps between availability and attendance still exist, which indicates that resources are not being used to their full potential.

One of the demographic questions on the CPA focuses on chronic disease. Residents were asked to report whether they had ever been diagnosed with any of six chronic diseases (asthma, cancer, hypertension, diabetes, heart disease, and epilepsy), with an option to check yes for “other.” The data were aggregated to display the total number of conditions an individual had been told they have, broken down by zip code. The majority of individuals (n=38) reported having no chronic disease as listed on the CPA, and only a small portion (n=2) reported having three chronic diseases; no individuals reported having greater than three conditions.

Table 6 Total number of selections made by individuals suffering from asthma, cancer, hypertension, diabetes, heart disease, epilepsy, and other, by zip code.

<i>Zip Code</i>	Number of Conditions			
	0	1	2	3
<i>19801</i>	11	3	4	1
<i>19802</i>	3	1	0	0
<i>19804</i>	1	0	0	0
<i>19805</i>	16	6	2	1
<i>19703</i>	0	1	0	0
<i>Other</i>	1	1	1	0
<i>TOTAL</i>	38	12	7	2

Overall, this needs assessment was highly informative. Using a variety of measures and tools, I dove deeply into the Wilmington/Claymont neighborhood and investigated factors that influence the social determinants of health and, in turn, influence health outcomes.

Chapter 5

DISCUSSION AND CONCLUSIONS

Discussion

Although the aforementioned data analysis is not exhaustive, distinct patterns emerge from the data in terms of community members' perceptions, discrepancies between zip codes in the study area, correlations between health indicators, and more. The preliminary findings from my research can be used to inform local communities and encourage them to have conversations about safe and healthy living practices. Some of the results support previous research on the social determinants of health, neighborhoods and health and related topics of study; other results suggest specifically where communities have health needs and can provide a framework for intervention on a local level.

To preface this data analysis, I want to consider the broad societal and cultural context in which my project takes place. We live in an ever-changing political environment, especially now. Given the tension and hostility that runs high amongst those with different backgrounds and opinions, it is possible that certain metrics have been underreported. With the recent influx of immigrants, certain individuals may be less inclined to report data or answer questions truthfully. The scope and accuracy of the responses I received for my project are discussed below. First, I would like to start with an examination of what I found from each of my methods and tools.

Resource Library

The zip code-level comparison can be used to draw parallels between demographics & other indicators and the overall health of a community. 19801 and 19802 have the lowest median household incomes and highest unemployment rates, and are located in the heart of Wilmington. Furthermore, based on Table 1, income, living below the poverty level, unemployment, and lack of insurance are all generally correlated with one another. Kawachi and Berkman (2003) write that there is a higher risk of death in poverty-stricken areas, even after controlling for other variables (p. 3), and that access to proper resources in these sorts of communities is limited (p. 9). In the context of this project, the disadvantages in income and unemployment that residents of 19801 and 19802 face may lead to poor health outcomes. Furthermore, Adler and Stewart (2010b) argue that health disparities are more exacerbated in middle age (p. 9). Income and unemployment are typically associated with working-age individuals, so the health disparities present in underserved communities will likely target this specific population.

Corner Store Assessments

The results from each individual corner store yield the same general conclusion: there is a great deal of advertisement for unhealthy products, such as alcohol and tobacco, and little advertisement for healthy and nutritious foods. Advertisements aside, only about half of the stores evaluated have fresh produce available for purchase. Individuals cannot make health behavior changes if the proper resources are not available to them. Furthermore, there is a lack of partnership with government-supported nutrition programs, such as WIC and SNAP, which provide a great deal of support to disadvantaged families. Perhaps the previously operating

supermarkets provided what corner stores lack, although this seems unlikely, as corner stores are central to individual neighborhoods and are thus highly utilized as both a source of food and as a communal resource.

Walkability Assessment

To the credit of the city of Wilmington, there is not immense room for improvement in terms of walkability. Only 2 of the 4 segments were labeled as medium risk, and the others were labeled as low risk; considering the multitude of environmental and health barriers in this area, having no low risk areas in the segments evaluated is a victory for the community. Still, it appears as though the same criteria repeatedly receive low marks, which paves the path for specific efforts to improve walkability. The built environment remains of critical importance to communities due to its relation to other aspects of healthy living, such as access to healthy resources, physical activity, and more.

Community Profile Assessment (CPA)

One of the unique benefits of implementing methods of primary data collection is the ability to compare the results of one assessment to those of another. The results from the CPA can be compared to the results from both the Resource Library and Christiana Care's *CHNA*.

Compared to data gathered from community members through the CPA, the data about community programming from the Resource Library follows the same patterns. Zip codes 19802, 19804, and 19703 have fewer programs available (11, 3, and 14, respectively) than do zip codes 19801 and 19805 (75 and 61, respectively). Interestingly, 19801 seems to have a high level of health-related need, but also appears

to be highly programmed. The explanation to this finding requires further research, as in the CPA, participants were only asked about the availability, usage, and need of programs – there was no space for a qualitative response on the breadth of the services available or any related response that may clarify the discrepancy.

Compared to the findings from the Christiana Care *Community Health Needs Assessment*, residents of the zip codes more frequently in the CPA. From the *CHNA*, 13% of New Castle residents and 15% of Delawareans are in poor or fair health. There are discrepancies to be considered when making comparisons across data sources, including sample size, the nature of the question, and more. While we may not be able to draw direct comparisons, we can at least begin to better understand how the results from similar assessments compare to each other. Integrating data from different sources is a valuable way to

Are community resources simply not used to their full potential, or is there truly a lack of programming? The answer to this question is beyond the scope of this project, but it provides excellent insight into community members’ perspective nonetheless. It appears as though health is a priority in these communities, as improving health outcomes has been a central focus statewide and nationwide. Thus, understanding successes and setbacks in other community health projects is a valuable source of information and direction for this project.

Putting Delaware Into Context: Nationwide Community Health Efforts

The topic of health dominates many conversations in today’s climate. From understanding it, to improving it, to managing its related costs, and more, health inevitably permeates society. Arguably, most of our conversations are centered on increasing health and access to health for everyone. We live in a culture of health, in

which we are constantly bombarded with new, and sometimes contradictory, information. At the base of it all, however, many citizens are still underserved when it comes to health. Needs assessments, such as the one outlined above and those discussed below, are critical for guiding future health efforts.

California Endowment's "Health Happens in Neighborhoods" is a campaign to address health on a neighborhood-level ("The California Endowment: Neighborhoods," 2016). The campaign recognizes that "people living in unhealthy neighborhoods live sicker and die younger" ("The California Endowment: Neighborhoods," 2016). The act targets four key areas: (1) livable places; (2) neighborhood safety; (3) water and healthy foods; and (4) building a state of resilience ("The California Endowment: Neighborhoods," 2016). A trend clearly emerges here: a focus on community factors, which aligns with the goals of the ecological perspectives model.

Next, the Consortium to Lower Obesity in Chicago Children (CLOCC) aims to "confront the childhood obesity epidemic by promoting healthy and active lifestyles for children throughout the Chicago metropolitan area" ("Consortium to Lower Obesity in Chicago Children," 2017). Founded in 2002, it has since expanded to include a number of communities and organizations, work in partnership with schools, and implement policy initiatives ("Consortium to Lower Obesity in Chicago Children," 2017). The initiative has eight focus areas: (1) Food & Beverage; (2) Physical Activity; (3) Early Childhood; (4) Health Education; (5) Research & Evaluation; (6) Schools; (7) Policy & Advocacy; and (8) Business Sector ("Consortium to Lower Obesity in Chicago Children," 2017).

Some of these eight focus areas correlate directly with the aims of this project, specifically as it pertains to various community assessments. For example, the Food & Beverage focus area has worked to implement healthy corner stores, farmers markets, and mobile carts to aid underserved communities and help resident with access to nutritious foods. In terms of Physical Activity and the Built Environment, the initiative recognizes the importance of the built environment for children to be able to engage in physical activity (“Consortium to Lower Obesity in Chicago Children,” 2017). There is a strong association between an inability to walk, ride bikes, etc. and childhood obesity rates, which is why it is imperative for children to be safe in outdoor areas (“Consortium to Lower Obesity in Chicago Children,” 2017). The consortium states: “To enable activity, sidewalks must be available and well maintained, street crossings properly marked and controlled, and parks outfitted with safe play equipment and free of illegal activity. Families must also feel confident that children can walk to school or play outside without fear of crime, violence or dangerous vehicle traffic” (“Consortium to Lower Obesity in Chicago Children,” 2017). Lastly, under the Research & Evaluation sector, the initiative focuses on engaging in an approach that tackles multiple sectors and levels of communities, is highly evidence-based, and relies on a number of experts (“Consortium to Lower Obesity in Chicago Children,” 2017).

“Evaluation of existing strategies” (“Consortium to Lower Obesity in Chicago Children,” 2017) is a primary focus of Research & Evaluation; this is also a key focus of *HN*, in an attempt to better understand the existing framework for creating healthy communities. One of the intents of this project is to evaluate resources available to community members. Understanding similar efforts, such as CLOCC, will go a long

way to provide a starting point for this evaluation. The Do Right! Health Campaign is based out of the Cincinnati area and combats family obesity (“Health Gap,” 2017). Since 2008, it has served more than 20,000 participants (“Health Gap,” 2017). There are seven key programs under the campaign: (1) Health Leadership Institute & Challenge; (2) Kids After School Prevention Program; (3) Master Nutrition Volunteer Certification; (4) Healthy Corner Store Market; (5) Produce Markets; (6) Mt. Auburn Block-by-Block; and (7) Community Engagement Academy (“Health Gap,” 2017). The Health Leadership Institute & Challenge was able to produce tangible results – the vast majority of participants incorporated healthy lifestyle changes into their daily lives as a result of the program (“Health Gap,” 2017). As part of the Master Nutrition Volunteer Certification, there is a “teach back requirement” so those who were helped by the program can offer help to others (“Health Gap,” 2017). Additionally, some of the goals of the Healthy Corner Store Market were to increase the amount of healthy foods available, increase sale of healthy foods, and “decrease alcohol and tobacco advertisement” (“Health Gap,” 2017). All of these were amongst the criteria evaluated in corner store evaluations in Wilmington and Claymont, discussed below. Lastly, through Mt. Auburn Block-by-Block, researchers looked at activity levels in the communities (“Health Gap,” 2017). Again, walkability helps to support the health of neighborhoods and their residents.

The core tenets of health campaigns across the country align with the goals of the *HN* initiative. Thus, it is evident that there are critical components to successful community health initiatives, specifically corner stores, the built environment, and community engagement. The strong correlations between *HN* and the several aforementioned campaigns and projects speak to the potential success of *HN*.

Conclusions

Overall, 19801 has a very high level of need and is closely followed by 19805. This conclusion is largely supported by the geography of these specific zip codes, as they are in close proximity to each other and are intersected by I-95, a major roadway spanning several states that also serves to facilitate drug trade. Yet, despite the need in those areas, they appear to have a fair amount of community programs and events. Conflicting results such as this raise additional questions and provide the framework for future research, as will be discussed below.

There is a fair amount of ambiguity in the results, depending upon how and by whom they are interpreted, but generally the data point to the – somewhat already obvious – conclusion that health outcomes stand to be improved in the Wilmington/Claymont region. The intent of *HN* was to inform stakeholders on community health needs, in an effort to guide the future of the project. The Resource Library was the only method employed that was requested by DCHI. My research took DCHI's framework further to encompass a broader variety of methods and tools that allowed me to gain deeper insight as to exactly what community health profiles look like, as well as the types of health discrepancies exist in the community. In this sense, there is somewhat of a balance between *HN* as it pertains to the greater scope of the project and the specific research questions I sought to answer. I had to prioritize my own research goals with the framework that was already set in place by *HN*, all the while keeping in mind that the overall intent of my project was truly to inform future *Healthy Neighborhoods* endeavors.

I learned that utilizing a multitude of different measurements and assessments is ideal for gaining a comprehensive understanding of the issue at large. Ultimately, it appears that the most need in Wilmington/Claymont region lies in 19801 and stems from the availability of healthy foods, closing gaps in community programming and events, and in promoting overall health status. Targeting these specific issues with specific interventions will go a long way to improving health for Delawareans.

Chapter 6

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Limitations

Since the Wilmington/Claymont Resource Library was the first to be fully fleshed out, it is still missing some critical data, namely for specific health indicators. Furthermore, the quality and/or depth of community programs was not taken into account for a variety of reasons, including time and feasibility constraints, so there is no indication as to whether a specific program actually serves/benefits the community. Although programs were checked by a reliable source at Westside, there was no verification from a community member or someone who actually utilizes such programs. There could be a disconnect between experts – or those who work to understand community health – and community members – individuals who physically use community resources. Lastly, there is some inconsistency with the numerical data in the Resource Library. Sometimes, data was only available for New Castle County when for Wilmington was desired, and vice-versa. This creates difficulty in making comparisons on a state and national level, because the geographic region against which the indicators are compared varies from indicator to indicator. Future efforts will be directed towards enhancing the accuracy and comprehensiveness of the library in order to ensure that it can be used to its full potential.

Most of limitations of this project stem from small sample sizes and methods. To illustrate, 13 corner stores were assessed, 1 walkability assessment was completed, and 59 surveys were answered in only a handful of sites in the target geographic

region. Ideally, there would have been a greater number of each of these tools and analyses; however, the main reason for the restricted sample size was safety. Inter-rated reliability was not assessed, and it is probable that the researchers made unconscious errors in data collection and recording. Data had to be gathered during daylight hours and in a relatively safe area; thus, it is possible that a large portion of the population and geographic area were missed. Specifically, residents who represent the greatest level of need were likely either unwilling to participate or did not occupy the precise geographical areas that the researchers focused on. I visited the same few sites repeatedly, instead of covering a range of parks, intersections, and other commonly traversed areas, which is the likely explanation for the severe inequality in the number of responses from each zip code. The data was gathered from a convenience sample, which has inherent biases. Also, the data from these various tools and analyses were compiled into the Wilmington/Claymont Resource Library, which, as previously mentioned, acts somewhat as the model for future Resource Libraries. A final limitation stems from the essence of this project: it is social science research. The methods of social science projects are not necessarily replicable, which is essential for establishing the legitimacy of a project.

Additionally, there are potential inaccuracies in the responses from the community members surveyed in the CPA. Some items were left unanswered, and I have reason to believe that some of the participants did not fully read or understand the questions before responding to them. If participants were rushing to get through the assessment or were distracted, they may not have responded to the best of their abilities. Going back to the issue of sample size, gathering additional responses from

a greater number of participants would help to ensure the validity and reliability of this data set.

Finally, there are limitations from the perspective of *HN* in its entirety. The *State Innovation Model Progress Report* from the Centers for Medicare & Medicaid Services (2016) cites two crucial risk factors. First, there is an inability to align on the focus area – this has been assigned a priority level of three with low impact (p. 9). Second, there is a lack of measurable success for the pilot Neighborhood(s) – this has been assigned a priority level of 1 with medium impact (Centers for Medicare & Medicaid Services, 2016, p. 8). The goal is to ensure adequate staff available to support the pilot(s), so the Delaware Center for Health Innovation will hire more staff and launch more neighborhoods in an attempt to work out the kinks in the system (Centers for Medicare & Medicaid Services, 2016, p. 9). There is also a delay in the American Community Survey data that was accessed for and included in the Resource Library. Consequently, the numbers that are reflected in these findings are likely at least a few years old. Ideally, *HN* will incorporate data from only the most accurate and up-to-date sources, but sometimes obtaining such data proves troublesome. Recent *HN* data committee meetings have addressed the issue of data acquisition and management, and hopefully collaborations with various statewide stakeholders can improve the efficiency and timeliness of data usage.

Recommendations for Future Research

The Wilmington/Claymont Resource Library is, to date, the most complete of all the Resource Libraries for the 10 Healthy Neighborhoods, largely because it was the second target neighborhood. Within the next few years, as future Healthy Neighborhoods are initiated, there will be similar Resource Libraries with

demographic profiles, health indicators, programs, and more. A large part of this research project lies in making comparisons to data from similar community health endeavors as well to data from state and national sources. As *HN* progresses, it will be possible to use the findings from both the Wilmington/Claymont Resource Library and future Resource Libraries in order to make within-state comparisons. Such comparisons will allow researchers and stakeholders to identify similarities and discrepancies between community needs throughout the state, in order to appropriately provide health resources and the like.

As with any research, a larger, more diverse sample size tends to be better. With this in mind, future research efforts could also employ the same methods and tools and the same population as described in this paper. Attempting to replicate what was done in this project will simultaneously enhance the accuracy of the results, as well as provide further insight into the nature of the health-related community issues.

Finally, additional collaboration, research, and investigation are key for the future of this project. For instance, maintaining and understanding the breadth and number of programs as identified in the Resource Library has proven difficult. Data from the Resource Library is somewhat contradictory to findings from the CPA. It might be useful to integrate these two tools to create a more comprehensive overview. Perhaps in future surveys, community members could be asked to critique the programming information from the Resource Library for accuracy in addition to being asked about their own perspectives, as has already been done. Collaboration amongst key community players is imperative for sound research. The *HN* framework provides outlets for leaders to communicate ideas, share insights, and use data to direct future efforts, through the stakeholder committees. Amy Paulson (2011) writes, “A policy,

systems and environmental (PSE) change approach to healthy communities includes changes such as: improving the built environment to promote walkability, policies to improve nutrition and physical activity, and legislation to ban smoking” (p. 2). She investigated the role of leadership in enacting PSE change. It is important for leaders to be truly engaged in the projects they oversee, not to just have a tangential role in the progress made (2011, p. 27). There is a “leadership involvement pathway”: engage the leader → identify partnership actions that may require leader involvement → specify what roles they will play to support the partnership in accomplishing actions (2011, p. 28). Having a network of leaders will not only strengthen the immediate project or task, but will also allow for additional communication between sites conducting similar research or initiatives. So, in some respects, the future of this project and of other similar projects lies not in what to do, but rather how to do it. With a strong foundation built on data, the next step is to utilize community leaders with substantial influence to inspire change.

The *Healthy Neighborhoods* project mimics what so many other community health projects nationwide have sought to understand: what, essentially, makes communities healthy, where specific gaps in health lie, and how to address such discrepancies. The appropriate questions are neither simple nor easy to ask, and the answers are oftentimes ambiguous or unclear. *HN* does, however, to the best of its abilities, provide a strong framework for the state of Delaware to explore its most pressing health issues. Over the next several years as the project continues to its completion, there will be novel opportunities for other scholars to engage in this research. The insights gained from this project will hopefully influence community action through both data and community anecdotal support. With increasing

knowledge on what specific factors influence the social determinants of health, community health efforts are one step closer to better serving underserved communities. As more data is gathered on how to eradicate health inequities, it is my hope that this paper can serve as a sounding board upon which to ask future questions and direct future efforts.

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Appendix A

CORNER STORE ASSESSMENT

Exterior

- Storefront is free of trash/debris
- Storefront is well-maintained, free of unsafe conditions
- Interior is visible from the outside

Non-Food

- Cigarette ads present
- Alcohol ads present
- Healthy ads present (WIC, fresh produce, health info)
- Does store accept SNAP?
- Does store accept WIC?

Inventory

- Number of aisles
- Approximate square footage
- Refrigeration units (#)
- Store layout comments:

Within a four block radius of the stores are there: (If yes how many?)

- Other corner stores
- Other food retailer (If yes, type)
- Parks
- Schools
- Public transportation
- Other community places (specify type):

Key:

Exterior: 1-3; 1 = worst, 2 = medium, 3 = best

Non-Food, Inventory: 1 = yes; 2 = no

Appendix B

WALKABILITY ASSESSMENT



Walkability Audit Tool

This tool will help you assess the walkability of your workplace. Directions and the tool follow.

Directions:

1. Obtain (or create, if necessary) a map of the campus or area around your place of work that you wish to audit, including likely pedestrian destinations, such as parking lots, nearby restaurants, shops, parks, etc.
2. Decide, either by observation or inference, the most useful or likely pedestrian route between each location of interest on your map, eventually assembling a network of walking segments (link to glossary) that make up your most common walking routes. Label these segments 'A', 'B', 'C' or 1,2,3 to identify one from the other. See Sample Audit Report Map (link) for an example.
3. Take the attached audit tool to the location under study. Take as many copies as you have identified segments on your map—for example, if you have 10 segments on your map, take 10 copies. You will use a copy of the audit tool to assess each segment individually. The tool assesses factors related to safety, aesthetics, and recreational potential, (link to glossary) with safety being the most important.
4. Begin with your first segment, and use the attached audit to rank each feature, using the description provided on the audit. There are no right or wrong answers, just pick the number that most accurately represents your understanding of the segment. Also answer the questions at the bottom of the audit tool, noting potential dangers and improvements.
5. Repeat step 4 for each segment of your map. Some segments may be very different from each other, and some may be very similar.
6. Once you have completed the audit form for all the segments on your map, use the formula in the box halfway through the audit form to create a numerical score for each segment. This score makes safety considerations the most important, followed by things like accessibility and aesthetics (medium importance) and finally shade (least important), and should range from 0-100. Calculate scores for all segments of your map.
7. Now you can input the scores from each segment on your map, and generate a report. If you like, you can follow the format of our sample report. (link) We designated segments with scores of 0-39 points as high-risk and unattractive (red), scores of 40-69 as medium-risk and average or non-descript looking (yellow) and 70 and above as low-risk and pleasant. The questions you answered at the bottom of the audit tool can help you prioritize your needs and wants for improving the walking routes

Email us if you have questions or comments about using the Worksite Walkability Tool.



U.S Department of Health and Human Services
Centers for Disease Control and Prevention



Location: _____ Date: _____

A. Pedestrian Facilities (High): presence of a suitable walking surface, such as a sidewalk or path.

- 1 No permanent facilities; pedestrians walk in roadway or on dirt path
- 2
- 3 Continuous sidewalk on both sides of road, or completely away from roads
- 4
- 5 Sidewalk on one side of road; minor discontinuities that present no real obstacle to passage

B. Pedestrian Conflicts (High): potential for conflict with motor vehicle traffic due to driveway and loading dock crossings, speed and volume of traffic, large intersections, low pedestrian visibility.

- 1 High conflict potential
- 2
- 3
- 4
- 5 Low conflict potential

C. Crosswalks (High): presence and visibility of crosswalks on roads intersecting the segment. Traffic signals meet pedestrian needs with separate 'walk' lights that provide sufficient crossing time.

- 1 Crosswalks not present despite major intersections
- 2
- 3
- 4
- 5 No intersections, or crosswalks clearly marked

D. Maintenance (Medium): cracking, buckling, overgrown vegetation, standing water, etc. on or near walking path. Does not include temporary deficiencies likely to soon be resolved (e.g. tall grass).

- 1 Major or frequent problems
- 2
- 3
- 4
- 5 No problems

E. Path Size (Medium): measure of useful path width, accounting for barriers to passage along pathway.

- 1 No permanent facilities
- 2 < 3 feet wide, significant barriers
- 3
- 4
- 5 > 5 feet wide, barrier free

F. Buffer (Medium): space separating path from adjacent roadway.

- 1 No buffer from roadway
- 2
- 3
- 4 > 4 feet from roadway
- 5 Not adjacent to roadway

G. Universal Accessibility (Medium): ease of access for the mobility impaired. Look for ramps and handrails accompanying steps, curb cuts, etc.

- 1 Completely impassible for wheelchairs, or no permanent facilities
- 2 Difficult or dangerous for wheelchairs (e.g. no curb cuts)
- 3
- 4 Wheelchair accessible route available but inconvenient
- 5 Designed to facilitate wheelchair access

H. Aesthetics (Medium): includes proximity of construction zones, fences, buildings, noise pollution, quality of landscaping, and pedestrian-oriented features, such as benches and water fountains.

- 1 Uninviting
- 2
- 3
- 4
- 5 Pleasant

I. Shade (Low): amount of shade, accounting for different times of day.

- 1 No shade
- 2
- 3
- 4
- 5 Full shade

Sum of High importance (A-C): _____ x **3** = _____

Sum of Medium importance (D-H): _____ x **2** = _____

Sum of Low importance (I): _____ x **1** = _____

Total Score: _____ / 100

Observations

- 1. What is the most dangerous location along this segment?

- 2. What is the most unpleasant element of this segment?

- 3. What improvements would make this segment more appropriate for pedestrian use?

- 4. Would it be possible to design a more direct route to connect the ends of this segment?

- 5. Are the conditions of this segment appropriate and attractive for exercise or recreational use?

Appendix C

COMMUNITY PROFILE ASSESSMENT (CPA)

We are interested in understanding what programs and events are available to people living in Wilmington and Claymont. Please consider the programs and events in your community and your experiences with them.

For the following questions, please circle the appropriate response.

What zip code do you live in?

19801 19802 19804
19805 19703 Other

What is your gender?

Male Female
Other _____ Prefer not to answer

What is your age range?

18-24 25-29 30-34
35-39 40-44 45-49
50-54 55-64 65+

Would you say in general that your health is...

Poor Fair Good
Very Good Excellent Unsure

Have you ever been told you have the following conditions? Select all that apply.

Asthma Cancer Hypertension
Diabetes Heart Disease Epilepsy
Other _____

For the following questions, select all that apply based on the themes below each question.

What types of programs and events are available in your neighborhood?

Programs to support Mothers and Babies
 Mental Health
 Drug and Alcohol Addiction
 Chronic Disease Prevention and Management (ex: asthma, cancer, diabetes)
 Healthy Living and Physical Activity
 Food Availability
 Housing
 Money/Finances
 Safety
 Education
 Other (please specify) _____

What types of programs and events do you see need for in your neighborhood?

Programs to support Mothers and Babies
 Mental Health
 Drug and Alcohol Addiction
 Chronic Disease Prevention and Management (ex: asthma, cancer, diabetes)
 Healthy Living and Physical Activity
 Food Availability
 Housing
 Money/Finances
 Safety
 Education
 Other (please specify) _____

What types of programs and events have you used or do you use?

Programs to support Mothers and Babies
 Mental Health
 Drug and Alcohol Addiction
 Chronic Disease Prevention and Management (ex: asthma, cancer, diabetes)
 Healthy Living and Physical Activity
 Food Availability
 Housing
 Money/Finances
 Safety
 Education
 Other (please specify) _____

Have you ever had to travel outside your neighborhood to attend a program or event?

Yes No

How often do you attend programs or events?

Never Once a year Once a month
Once a week More than once a week Daily