THE INFLUENCE OF URBAN RESTRUCTURING ON THE SOCIAL DETERMINANTS OF HEALTH IN A HISPANIC IMMIGRANT POPULATION IN CHARLOTTE, NORTH CAROLINA.

by

Brisa Urquieta de Hernandez

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Approved by:

_____
Dr. Heather Smith

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Dr. Michael Dulin

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Dr. Owen Furuseth

_____
Dr. Maren Coffman

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ABSTRACT

BRISA URQUIETA DE HERNANDEZ. The influence of urban restructuring on the social determinants of health in a Hispanic immigrant population in Charlotte, North Carolina. (Under the direction of DR. HEATHER SMITH)

The environment where a person lives impacts their health more than clinical care provided. (RWJF, 2013) This research posits that the determinants of health (DOH) are best understood as a combination of social, structural, spatial and temporal aspects, not just "social". Literature to date acknowledges these dimensions, although researchers have yet to fully explore. Utilizing a mixed-method approach, this research examines various DOH and their interactions spatially, structurally and temporally at the neighborhood level and how changes to those determinants are impacted by restructuring forces adversely affecting a Hispanic immigrant population. Specifically, this research aims to answer the following questions (1) How are the DOH impacted by the social, spatial, structural and temporal elements individually and in concert; (2) How has urban restructuring been a factor in the DOH for the Hispanic immigrant population in Southwest (SW) Charlotte; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of DOH inform action to address the social and health needs of Hispanic immigrants living in Charlotte, NC. The South Boulevard corridor in the SW area of the city is the ideal case study location as it is simultaneously experiencing several forms of urban restructuring and an on-going influx of Hispanic immigrants. Ultimately, urban restructuring is an overlooked DOH in its own right - especially as it impacts vulnerable communities such as Hispanic immigrants as well as the importance of viewing the DOH in a nuanced manner acknowledging the influence and interactions of the various aspects.

DEDICATION

I dedicate this dissertation to my family- my husband, Richard; my daughters, Ilianna, Abigail and Joanna; my parents Alberto and Beatrice Urquieta; and my in-laws, Calvin and Keala Elston. Without your love, support, encouragement and incredible amount of patience, I would not have been able to accomplish this. I love you- Philippians 4:13

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ACS	American Community Survey
DOH	Determinants of Health
SBC	South Boulevard Corridor
SDOH	Social Determinants of Health

CHAPTER 1: INTRODUCTION

Understanding the connection between immigration and public health has emerged as a salient policy issue over the last few years, but examining this connection through a determinant of health lens is largely unstudied. This notable gap in the patterns of morbidity and mortality for immigrants is situated in structural inequalities, normalized by social, political, economic and spatial conditions, rooted in various local and global institutions, structures and policies (Viruell-Fuentes et al., 2012).

Over the course of the last half century, demographics of the United States have fundamentally changed due to the global immigration process. Currently, there are at least 44.4 million foreign-born residents in this country. At 13.5 percent that is the highest share of non-native residents in the US since 1910. More importantly, immigrants are no longer just settling in large metropolitan cities, rather they are spread across all the states in urban, suburban and rural communities. Considering the amount and settlement patterns of immigrant populations, along with gaps in community-based research, it is critical to increase attention on what the determinants of health mean in this population. (Radford & Noa-Bustamante, 2019) It is also critical to acknowledge the significant variations among those that are foreign-born that need to be factored into any research framework, such as legal status. Data from the Pew Research Center (Radford & Noe-Bustamante, 2019) estimates that about a quarter of the immigrants in the US (approximately 10 million) are undocumented. Legal status alone is a determinant of health, therefore lawful immigrants and naturalized citizens are likely to have different health outcomes than those that are undocumented, thus adding additional layer of nuance for this population. (Martinez et al., 2015) Additionally, race and ethnicity, gender, age, language ability as well as economic status are also determinants that add difference in health for this population.

The focus of this research is the foreign-born Hispanic[1] population. As a subset of immigrants, they experience a disproportionate lack of access to health and social services and are least likely to access preventative services in comparison to the native-born population. (Callahan et al., 2006). Furthermore, Hispanic comprise the largest group of unauthorized immigrants in the United States. (Radford & Noe-Bustamante, 2019) A 2009 review by Vega et al examined how some demographic and class structures of the Hispanic population, specifically nativity, age, income and education were related to patterns of varying health status. A key finding of this study was that over time, i.e. international time intervals, Hispanic experienced higher mortality and declining health status. Specifically, Hispanics are impacted by changes in health behaviors within the population that contribute to poorer health outcomes. Consequently, understanding these modifications are critical to guiding future research, health programs and policies. (Vega et al., 2009) Moreover, repeated exposure to social stressors has an impact on health status, which, in turn, becomes a disease pathway. Social stressors for immigrants, whose migrant journeys, settlement and adjustment experiences are often fraught with uncertainty and/or threats, are in many cases much greater than for the general population. (Marmot, 2006; Vega et al., 2009) And, we know that these stressors are even more acute for the unauthorized or for those with precarious or uncertain immigrant status. Set in the context of the expected growth of Hispanic Americans to 30 percent of the nation's population by 2050, effective health care practice, planning, and research requires a fuller understanding of the complex dynamics of health determinants in this larger and vulnerable population.

[1] For the purposes of this study, I use the term Hispanic over Latino/Latina/Latinx so that it aligns with the quantitative description of the ethnicity. The only instances where Latino/Latina/Latinx will be kept are in direct quotes by community members and/or informants; in order to acknowledge their voice.

While the cost of healthcare in the United States continues to increase and per capita spending on health outpaces all other nations in the world, this country ranks as one of the worst in health outcomes and status. (Schroeder, 2007) Clearly being healthy does not depend entirely on how much a nation spends. In the last 20 years the role and impact of social determinants on health status and outcomes has gained greater awareness and discussion at multiple scales. The social determinants of health (SDOH) are defined as "the structural determinants and conditions in which people are born, grow, live, work and age", these include but are not limited to socioeconomic status, education, the physical environment and social support networks as well as access to health care. (Artiga & Hinton, 2019) The impact of social determinants of health care outcomes is powerful. Indeed, one report by the Robert Wood Johnson Foundation (McGovern L et al., 2014) found that only 20 percent of a person's health is impacted by what happens in a clinical setting, suggesting that the remaining 80 percent are related to the social determinants. At the international and national scale, organizations from the World Health Organization to the Institute of Medicine have created coalitions or task forces to explicitly address social determinants, their impact and how to ameliorate those that lead to poorer health. At the local scale, research teams are increasingly interested in identifying which social determinants play the most powerful roles in explaining differential health experiences and outcomes across cities and communities. For example, in Charlotte, NC a trans-disciplinary research group implemented a study to engage this Hispanic immigrant population in understanding the various determinants of health impacting current health outcomes. (Dulin et al., 2011) This research utilized a community based participatory research approach and engaged community members and service providers to identify the determinants of health and implement interventions to address them. (Coffman et al., 2017; Dulin et al., 2010; Schuch et al., 2014)

Research to date has made great strides identifying some of the most impactful SDOH, less effort has been given examining the spatial or temporal aspects of these factors. Indeed, most social determinants research tends to assume that space and time are fixed. This research project challenges that assumption. Specifically, it examines both the character and dynamics of the places where individual determinants come together; how determinants intersect; and how they change over time. And, consequently, this research framework is predicated on the foundation that the environments or places in which people or communities are impacted by the SDOH are dynamic; and that changes to their character, as well as to the structures and processes driving that change, need to be considered as health determinants themselves.

Being able to fully understand the impact of SDOH requires moving beyond static assessments that simply identify the individual or collective role of a suite of factors at a given point in time and place. A critical starting point is to break down what we mean by social determinants of health. It is common practice for scholars working in this area to use the term "social" as a catch all, masking the structural, spatial and temporal influences and interaction of determinants. Decoupling determinants in terms of their social, structural, spatial and temporal aspects will help move us beyond just identifying the level of impact to a better understanding of how and why those determinants have the impact they do. Moreover, it will be key to having a better sense of how determinants are working together (or not) to impact health over both space and time.

This research explores the spatial, social, structural and temporal aspects of the determinants of health of the Hispanic immigrant community in Charlotte, NC. Specifically, this research aims to answer the following three questions (1) How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert; (2)

How has urban restructuring been a factor in the determinants of health for the Hispanic immigrant population in the South Boulevard corridor; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Hispanic immigrant community living in Charlotte, NC. The South Boulevard corridor (SBC) in the southwest area of the city serves as the ideal case study location for this exploration. The SBC is a district simultaneously experiencing several forms of urban restructuring and experiencing a large influx of Hispanic immigrants. Employing a mixed methods and community-based research design, this project seeks to examine the determinants of health in a more nuanced manner that acknowledges social, spatial, structural influences and interactions. Further, it posits that urban restructuring is an overlooked health determinant in its own right - especially as it impacts vulnerable communities such as Hispanic immigrants.

Making the case for social, spatial, structural and temporal determinants of health

Social Aspects

The social determinants of health are the conditions in which people are born, grow, live, work, and age. (World Health Organization [WHO], 2011). As the U.S. population continues to grow and diversify it is important to keep in mind the way that social determinants differentially impact distinct groups of people. It is clear from the literature, for example, that those with poorer health outcomes tend to be ethno-racial minorities – Blacks, Hispanics- and immigrants. (Betancourt, 2006; Boone & Molter, 2010) While poor health outcomes in minorities are linked to multiple diseases including but not limited to cardiovascular disease, diabetes, asthma, cancer, and HIV/AIDS. Not surprisingly, research findings also find that these diseases/conditions are impacted by social determinants of health, such as lower levels of education, inadequate and

unsafe housing. (Boone & Molter, 2010; Egede, 2006; Mays et al., 2007; Thomas, 2014; Williams et al., 2016) Such determinants are key for the structural inequalities that frame and guide how a society stratifies - or is stratified. (Thomas, 2014) There is a clear correlation, for example, between those that are of lower socioeconomic position and worse health outcomes. (WHO, 2008) Michael Marmot, a leading international researcher on the SDOH and contributor on the commission, has pointed out "if systematic differences in health for different groups of people are avoidable by reasonable action, their existence is, quite simply, unfair. We call this imbalance health inequity. Social injustice is killing people on a grand scale, and the reduction of health inequities, between and within countries, is an ethical imperative." (WHO, 2008, p1661)

Health care disparities exist not only in the places where people live, work and play, but also in the shortage of minority health care professionals that are available to care for people. (Thomas, 2014) A lack of a culturally competent workforce increases health disparities and widens the gap of quality care received by disadvantaged populations, therefore creating an inequity in care. This issue is felt particularly acutely by immigrant groups who face additional impediments, including language barriers, acculturation and legal status. (Berk & Schur, 2001; Berk, et al. 2000; Documét & Sharma, 2004). The cumulative effect of individual and group differences between immigrants and natives also disrupts integration. Integration is a process that occurs in acceptance of immigrants as both individuals and as a group. (Pennix, 2003) The lack of integration, or difficult integration experiences, can lead to immigrant populations having greater health disparities. (Castenada, et al., 2015) The more integrated a population is with the general community the higher the likelihood of increased access to health and social services as well as culturally competent interactions. Understanding the various health disparity trends and impacts for ethno-racial and/or immigrant populations is critical in order to address and develop

interventions and possible solutions. Informed and proactive interventions can reduce the intergenerational deterioration in immigrant health outcomes.

Structural Aspect

The availability and governance of healthcare delivery in the United States is shaped by laws, regulations and policies implemented by federal, state, and local governments. While the private business sector is an active participant in American healthcare delivery, it is compliant to government controls and structures. This structural framework shapes how social and spatial related healthcare systems operate. These actions and actors can be restrictive or encouraging ranging in scale from global capitalism to national health care systems, corporate insurance policies to the rules and restrictions of individual service providers.

Within the hierarchy of structural power, the federal decision frames and funding sources are dominant. An ideal example of federal scale policy impacting determinants of health is the Affordable Care Act (ACA), which has provided opportunities to improve some issues that health systems and providers can impact. (Grossman, 2010) The ACA has not only helped to address access to and affordability of health care but also the way in which healthcare is delivered, both in and outside of the hospital and clinic settings. Internal changes include payment structure for providers from fee-for-service to value-based care. Another innovation in the ACA was laying a foundation for the creation of Accountable Care Organizations (ACO), groups of providers that include doctors, hospitals and other types of providers that come together to give high quality care that is coordinated for Medicare patients. The goal of having coordinated care, which includes social services, is that it would ensure patients get the right care at the right time as well as a broader range of their wellness needs met. This type of coordinated

care has the potential of saving health care dollars. (Matulis & Lloyd, 2018) The current progress and results of these structural changes are yet to be fully evaluated, but what has become evident is that health care will no longer be "business as usual" – a part of which now focuses on what is occurring outside of the walls of the clinical space. (Plescia & Dulin, 2017)

This broader view of community health has emerged as a way that health systems are rated in the areas they serve, and as such, is an important structural aspect. From this perspective a system's involvement in prevention and focus on primary care are viewed as assets. It also provides encouragement and opportunities to increase workforce diversity and requirement for not-for-profit hospitals to conduct community health needs assessments. In the context of Charlotte, North Carolina, Atrium Health (formerly Carolinas HealthCare System) is an example of a health system that has been intentional in embracing a community health perspective and the role played by SDOH in the diverse communities they serve. (Cheng et al., 2018) Reaching beyond traditional healthcare structures, Atrium is forming partnerships to not only address the social needs of the underserved residents of the counties in which they operate, but also address their spatial needs. (Cole, 2017) Through the development of different care delivery models that meet the patient and community member *where* they are - in other words, in their neighborhoods Atrium recognizes the interplay that exists between the social, structural and spatial aspects of health determinants.

Although the ACA has brought on some positive changes and selected health systems are transitioning to more community and neighborhood based approaches, there still has not been a transformational chance in the structural barriers in healthcare access for low wealth and disadvantaged populations. Perhaps the biggest determinant of health for Hispanic immigrants, both documented and undocumented, is immigration reform. Clearly, structural obstacles, at all

scales, limit healthcare access; but fear of immigration enforcement limits labor force participation and use of available health and social service options in immigrant communities. The detrimental effects of immigrant punishment are most glaring in mixed status households where medical and social service benefits are entitled to US-born family members but not accessed by undocumented family members due to fear of being reported.

Access to data is another structural impediment that becomes even more critical when trying to understand health determinants and outcomes for immigrants. Not only are these data likely not complete for this population, but the absence of immigration reform makes collecting this information in a medical setting pose a number of challenges. These include exposing the patient and/or other family to discrimination, stigmatization by nonimmigrant clinicians or possible exposure to law enforcement if staff is not aware of hospital policies and violates patient confidentiality. (Kim et al., 2019) In the social climate that immigrants live in, there is a general fear to share personal and family information that could pose danger or risk. This is further complicated by the current administration's push for public charge and what can be done to restrict future access to legal status. (Perreira & Pedroza, 2019) Informed public policy, however, requires, the priority of the healthcare system should be to create systems and policies that reduce stigma and discrimination for all patients and ameliorate barriers to data collection. (Kim et al., 2019)

Spatial Aspect

The spatial aspect of determinants of health is centered on the characteristics, conditions and dynamics specific to the spaces and places where people live out their daily lives. For many, one's zip code is more important than one's genetic code in determining health status. (Lakhani

et al., 2019) And yet, while an increasing amount of SDOH research acknowledges that where people spend their lives significantly affects health, relatively little study has been undertaken to understand specifically how and why space plays a powerful role in determining health. Research to date has largely focused on space as context and simply explores how the characteristics of that context impact health (Cummins et al., 2007). What is needed is a recognition that space contains, reflects and constitutes the social and structural aspects of health and itself acts a determinant. A salient example of how the role of space is acknowledged but not fully understood or explored in SDOH research comes from The World Health Organization which formed a Commission of Social Determinants of Health. In its 2008 report on how to address the SDOH the recommendations focused on four actions; (1) improve the conditions of daily life; (2) tackle the inequitable distribution of power, money and resources, those structural drivers of the conditions in daily life; (3) measure the problem, evaluate action, expand the knowledge base, and (4) develop workforce that is trained in the SDOH and raise public awareness. (WHO, 2008). While the sum of the recommendations construct an overarching framework for addressing SDOH they only indirectly encompass the spatial through reference to the "improving the conditions of daily life". This is reflective of the common assumption in SDOH literature that identifying and improving conditions is sufficient to deal with place-based impacts on health outcomes.

This research takes as a starting point that space is not just a container but also a reflection and a creator of the social and structural aspects determining individual and community health. It further recognizes that space is dynamic and changes over time. Both the character and dynamics of the places where individual determinants come together, and how those determinants and their interactions are changing over time, may have more of a role to play

in health than has previously been given credit. The environments or places in which people or communities are impacted by the SDOH are not fixed and changes to their character, as well as to the structures and processes driving that change, need to be considered as health determinants themselves.

Temporal Aspect

It is critical not to ignore the temporal aspects of health determinants, as they neither occur in a vacuum nor remain static. Just as determinants are playing out differently across space, they also do so across time. As with the geographical aspect, the fact that determinants change over time is implied in the literature but rarely specifically explored. More attention is needed to how and why determinants change over time. And how these changes shape and have been shaped by structural and spatial factors. Viewed through a systemic lens, as the social, structural and spatial aspects of health determinants come together they are shaping and reshaping one another over time. In turn, the processes of urban restructure capture this complex dynamic and a core argument of this dissertation is to make the case that restructuring should be considered a determinant itself and one that critically impacts the Hispanic immigrant population in both a positive and negative fashion.

SUMMARY

The focus of this dissertation is an examination of the character and dynamics of a place and how the SDOH come together, interact with each other and over time play a role in the health of Hispanic immigrants and their community. The place, the South Boulevard Corridor, is dynamic and experiencing shifting restructuring that is influencing how the determinants of health affect immigrant lives and their non-immigrant neighbors. While the determinants of

health influence the broader community, for this research, the focus is on Hispanic immigrants. Their stories and experiences relating to the determinants of health are situated in various aspects of legal, economic, and social disadvantage. In this context, healthcare outcomes and implications for long-term wellbeing are critically informed by better understanding the impact and dynamics of the determinants of health.

Over the past 45 years, Charlotte, North Carolina has experienced unprecedented urban growth and restructuring. (Furuseth et al., 2015). Arguably, the SBC has undergone the most significant economic, social and demographic change in the city. The SBC is a primary destination for Latino immigrants moving to Charlotte during a period when Charlotte was labeled as a "New Immigration Gateway" and a "Hispanic Hypergrowth Destination." (Suro & Singer, 2002) Consequently, this area serves as the excellent setting in which to examine how the spatial, temporal and social aspects of the determinants of health are working in concert and individually to impact the health of Charlotte's Hispanic immigrant community.

Prior to selecting the study area, conversations with community members and key stakeholders regarding the intersection of the lived immigrant experience and the structural, spatial and temporal aspects of the determinants of health, offered strong evidence that the determinants of health were currently impacting the lives of Hispanic immigrants differently from other SBC residents. However, the perception of the magnitude of the impacts differed when talking to community members versus key stakeholders. For example, when discussing the criticality of policy changes on Hispanic immigrants, community members spoke about the devastating impact of denying access to drivers licenses to Hispanic immigrants (policy changed 2006), whereas key stakeholders pointed to city health codes preventing the licensing of food trucks (policy changed 2008). These preliminary research activities highlighted the importance

of using a qualitative approach to understanding the lived experience of community members. The language and cultural background of the investigator and her long history of community-based clinical experience with Charlotte's immigrants and service providers facilitated the adoption of rigorous qualitative methodological methods..

A preliminary review of quantitative public data for the study was subjected to a mixed methods screening process in order to build the most rigorous research model. Initially, all potential social determinants data were reviewed and prioritized by conversations with SBC community members and community informants. They were charged to identify and rank the determinants that were most impactful to the Hispanic residents living in the SBC. The model included demographic measures, eg. gender, race, ethnicity, nativity; employment; educational attainment; housing; and insurance access. The conversation results ranked changes in the total population, Hispanic population, and Hispanic/foreign born population as the most critical factors affecting Latinos in the SBC

Following the qualitative conversations, a quantitative analysis of publicly available data was implemented to assess change over time in the determinant variables at the neighborhood scale. The eleven census tracts in the South Boulevard Corridor were used to represent neighborhoods. Two multiple regression models were developed to inform a clearer understanding of the temporal dynamics in the SBC. Model 1 showed that areas with lower education levels during the first time point saw more early growth in the Hispanic population. Model 2, focused primarily on the second time period, found that areas with lower education levels and higher levels of insurance coverage during the first time period were correlated with high rates of growth in the Hispanic/Foreign-born population during the second time period. Also, it was evident that areas with more males during the first time point displayed a greater

decrease in the Hispanic/Foreign-born population by the second time point. These initial findings support the association between changes in the indicators of restructuring and need to fine tune the research design to include additional SDOH measures.

Additionally, it is important to place temporal changes in SDOH and observe any patterns of spatial clustering as different variables are added to the model. Lastly, the Local Indicators of Spatial Association, did not show changes to the traditional clustering of indicators, but it did highlight spatial clustering that was different for foreign-born Hispanic immigrants.

The final operational research design is useful for understanding the character and dynamics of the places where individual determinants come together and how those determinants and their interactions change over time. Most critically, this model highlights the impacts on the health of community members, in particular the health of Hispanic immigrants.

CHAPTER 2: LITERATURE REVIEW

Determinants of Health

The social determinants of health (SDOH) have several definitions (Marmot & Wilkinson, 2006, WHO, 2010; WHO, 2011) but one of the most generally accepted is that they are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include both economic and social policies and structures, development agendas, social norms, and political systems. (WHO, 2011) Operationally, the SDOH are shaped by "money, power, and resources that people have." (Center for Disease Control [CDC], 2020) so that negative SDOH are informed by lack of access to stable housing, transportation, healthy foods, social support, education and other social needs. Understanding the social, structural, spatial and temporal aspect of these conditions of the SDOH and how they act individually and in concert to impact individual and community health in the context of a restructuring urban community is the focus of this research.

In what follows, I will lay out the various aspects of the determinants of health out and how they are described in the literature by specifically exploring the structural, spatial and social aspect of the determinants of health, including the public health perspective of how "place matters". Then transitioning to a review of the temporal aspect of the determinants of health and restructuring as a determinant of health. This chapter ends with the implications of the determinants of health for health care systems.

Determinants of Health - What and why?

Many research studies have considered individual SDOH such as age, sex, education, social support, isolation, neighborhood condition, income, social capital, civic involvement and

their correlative impact on health. (Andersen et al., 2008; Ansari et al., 2003; Bambra et al., 2010; Daniels et al., 1999; Gary-Webb et al., 2011; Hill et al., 2013; Liburd, et al., 2005; Victorino & Gauthier, 2009; Wallston, et al., 1983.) However, it wasn't until the British "Whitehall Study" where the case for a causal relationship between factors outside of traditional health were considered as impacting an individual's health outcomes. In this study initiated in 1967, Dr. Michael Marmot showed a clear inverse association between social class and mortality from several diseases, in particular coronary heart disease. For study purposes, social class was determined by level of employment, i.e. manager versus factory floor worker. The Whitehall II, a follow up study (Marmot et al., 1991) looked at a cohort of civil servants to more extensively assess both their self-perceived health status and completed health screenings. Even with 20 years separating the two studies, there were no changes in the morbidity of those in lower social classes. Researchers found a continued association between the level of employment and the reported number of heart and lung disabilities. In addition to the recorded health conditions, those in lower level jobs, i.e. factory floor workers, also perceived their health status to be worse than those in higher level jobs, i.e manager. Health risk behaviors were also revealed to differ across job levels. The 1986 publication by Marmot and McDowall, for example, described the fact that analysis from the Whitehall study showed that the mortality from coronary heart disease was higher in manual vs. non-manual occupations. (Marmot & McDowall, 1986) Beyond the occupational differences the researchers also discovered that there was a geographical difference in the mortality rates, with death rates in Scotland, Wales and North England vs. the South of England. Perhaps the most compelling finding was that while there was increasing mortality in the study populations, the national rate of coronary heart disease mortality was decreasing in the United Kingdom. Notably, in addition to recommending the encouragement of healthy

behaviors, Marmot et al., (1986) acknowledged that more attention needed to be paid to the social environment, specific types of jobs and income inequality. A follow up analysis by Carr-Hill et al., (1987) looked at the data collected 25 years later and found that social class itself as a point of analysis was not sufficient to fully understand the social drivers of the health outcomes. Other indicators, such as gender, are key to consider and examine separately. The early Marmot studies were foundational. They established the importance of looking at health determinants data with a more nuanced approach and challenging conventional notions of what mattered most to community health.

In 1999 Marmot published "The Solid Fact: The Social Determinants of Health". His work was supported by the World Health Organization (WHO), which had taken notice of Marmot's research findings and wanted to help disseminate them in an accessible summary. The WHO was particularly eager for policy makers to become familiar with the seminal findings. For impacting SDOH would require systemic action to address and change policy. Marmot and his team distilled their work to 10 main ideas. These were; (1) the "Social Gradient" how people's social and economic circumstance affect health throughout life; (2) the idea that stress harms health; (3) the effects of early development have last a life, therefore ensuring that people have a good start in life, including the importance of the support to those around them; (4) being excluded not only creates misery but it has the potential to cost lives; (5) having a stressful job increases the likelihood of disease; (6) having security in one's job increases not only job satisfaction, but also health and wellbeing; (7) having good social relations and supportive networks improve health in all places; (8) being addicted to alcohol, drugs and tobacco and the suffering that comes from them is, in part, influenced by the wider social setting; (9) having access to healthy food is a political issues; and (10) having healthy alternatives to transportation,

such as reducing driving and encouraging walking, cycling and having good public transportation as a backup. (Marmot, 1999) The authors' 10 point framework was created to explicitly point to the intersection between what they called "material disadvantage" that is, living in poverty, and health conditions and outcomes. They further stressed that being poor was not the only thing that was harmful, but that there was a social perspective of what it meant to be poor, unemployed, socially excluded, which also mattered and had in some cases had a larger impact on overall health. Ultimately, The Solid Fact was a clarion call to action to truly to integrate "health in all policies", a phrase now made more popular by the Robert Wood Johnson Foundation, so that there is an intentional and purposeful addressing of the root causes of poor health (Marmot & Wilkinson, 2005).

Prior to the report by the WHO Commission on Social Determinants of Health (2008), an introductory paper published in Preventing Chronic Disease, a journal from the U.S. Center for Disease Control, appears to have launched the discussion of SDOH in the US.. In this paper, Metzler (2007) argues for the importance of using the SDOH as a framework to address health inequalities. She also advocates for engaging stakeholders from across disciplines and empowering the community itself. Subsequently, Metzler's framework was introduced broadly by the CDC Healthy People 2010 agenda. This agenda made the powerful statement that recognized "that communities, States, and national organizations will need to take a multidisciplinary approach to achieving health equity — an approach that involves improving health, education, housing, labor, justice, transportation, agriculture, and the environment, as well as data collection itself." (Department of Health and Human Services [DHHS], 2000). A fuller understanding of how the concept of SDOH was initially approached in the US helps to

inform how it has evolved into a critical element in the changing healthcare system provided in the US, particularly with respect to the Affordable Care Act.

With the passage of the Affordable Care Act (ACA) in March 2010, the determinants of health emerged as a priority consideration in the reshaping American healthcare. The ACA was implemented with three goals in mind: (1) making affordable health insurance available to more people; (2) expanding the Medicaid program to cover all adults with income below 138 percent of the federal poverty level; and (3) support innovative medical care delivery methods designed to lower health care costs. ("Affordable Care Act (ACA) - HealthCare.gov Glossary | HealthCare.gov," n.d.) The ACA has elevated the conversation around the social determinants of health and their role implementing the ACA. In fact, there are ten specific places in the law, Title IV- *Prevention of Chronic Diseases and Improving Public Health* that promote the theme of prevention initiatives and funding towards the non-medical drivers of health (i.e. SDOH). Many believe that the ACA was a way to bring public health to the forefront at a variety of scales, from individuals, worksites to neighborhoods making it crucial to address the upstream factors impacting health. (Koh & Sebelius, 2010)

By the end of the first decade of the century, the principles of the social determinants of health were really starting to take off and a number of initiatives and calls to action were occurring. Just as the ACA was enacted, the Center for Disease Control's (CDC) Healthy People initiative was highlighting the importance of addressing the SDOH. Healthy People, which has been in place for four decades, established "science-based, national goals and objectives with 10-year targets designed to guide national health promotion and disease prevention efforts to improve the health of all people in the US". ("Healthy People - Healthy People Homepage," n.d.). In the most recent iteration, Healthy People 2020, a comprehensive perspective of defining

and integrating the SDOH into the disease prevention agenda for the nation was articulated. It laid out an overarching goal of "creating social and physical environments that promote good health for all" which considers factors such as education, poverty and aspects of social structure that both influence health and limit health equity. As Koh et al. state this approach of engaging SDOH more intentionally in the conversation about the country's health establishes an expectation for "shared societal responsibility for change by the public, policy makers and the private sector". (Koh, et al., 2011; Leong & Roberts, 2013) Taken together, the implementation of the ACA and release of Healthy People 2020 reflect the salience that the SDOH has earned among clinicians, researchers, and policy experts in the United States. Underlying both initiatives is the need to create social and physical environments that promote health, quality of life, healthy development, healthy behaviors and most importantly health equity. Moreover, the critical role that data play to assess overall health and forecast policy shifts undergirds the SDOH.

One example of the ACA's impact that is especially relevant to this research is the National Health Promotion and Prevention Council and its increased attention on the physical environment. Although the US Department of Health and Human Services and the Environmental Protection Agency have also shared this focus, the Council, established as part of the ACA, has the authority to look at it more broadly through transportation systems, agricultural policies, community design and development. Therefore, advocating for the idea of "health in all policies" and in all places. (Fielding, et al., 2012.)

A 2015 policy brief by Adepoju et al reviewed the impact of ACA improvements to reducing health care disparities, with specific attention to differential access to health insurance, medical homes, accountable care organization (ACO), preventative medicine and cultural competency.

(Adepoju, et al., 2015) This analysis found that one significant impediment to increasing healthcare access was the decision of state governments not to expand Medicaid. On the other hand, there has been expansion of the ideas of medical homes and ACO's. However, the results of these efforts have not been well evaluated and additional efforts to better understand the broader social needs of the patients was needed. (Adepoju et al., 2015) Additionally, the researchers reported continued underutilization of preventive health services, partly due to the lack of information. Therefore the authors recommended using community health workers or peer counselors to engage people around these services.. Furthermore, it was clear that additional cultural competence standards needed to be implemented in order to address the requisite skills of the health care workforce in the context of an increasingly diverse population. Expansion of access also means that providers need to continue to advocate for additional resources to continue patient-centered care across various aspects of need. (Adepoju et al., 2015) Thus, while the ACA explicitly highlights the importance of health literacy, education, cultural competent providers, changes in workforce, and access to insurance as social determinants of health, the actualization of these healthcare guidelines is still waiting.

Despite the shortcomings, the ACA has led to a process of healthcare reform that includes various aspects of healthcare delivery and payment, both of which impact the ability to ameliorate the social determinants of health. For example, early in the implementation of the ACA regional health system collaborative came together to address the Triple Aim[2]. These collaborative were called *health outcomes trusts* and they were tasked with building on existing multi-stakeholder initiatives locally and regionally to define geographic focus, support projects

[2] The term "Triple Aim" refers to the simultaneous pursuit of improving the patient experience of care, improving the health of populations, and reducing the per capita cost of health care. ("The IHI Triple Aim | IHI - Institute for Healthcare Improvement," n.d.)

to address health care reform and population health and provide sustainable funding for initiatives at a regional level. (Magnan et al., 2008) Additionally, the legislation requires non-profit hospitals to complete a community health needs assessment, and the *trusts* were a way to collaborate and expand the measures of assessment to include quality of care, cost, and socioeconomic measures. Thus, the ACA served as a tool to elevate equity as part of health care reform to a value-based system. (Magnan et al., 2008) Additional provisions of the ACA provisions include improved demographic data collection, clinical and community-based prevention efforts.

The ACA created a new Community Transformation Grants program administered by the CDC. This initiative expanded health care access for underserved populations and stronger workforce training, payment reform in Medicare and Medicaid reimbursement as well as performance incentive plans all ways to ameliorate the impact of SDOH. Specifically, the new payment models established a move away from fee-for-service rates to models that emphasize value (i.e. quality-driven, coordinated, population-based care). (Tanenbaum, 2017)

Dr. Philip Alberti and colleagues from the Association of American Medical Colleges have posited that the ACA can play a critical role in reducing inequality in American Health. But, more broadly, the "road to health equity has to engage every sector of society to fully address social determinants of health and minimize their impact on disparities" and that healthcare systems are key to improving health equity. (Alberti, et al., 2013) Academic health centers were not the only ones to embrace a new approach to addressing disparities and health equity, public health in general initiated their own transformation. As the conversation has continued since the rollout of the ACA, there have been focused approaches to specific populations such as children. Several states have started to explore ways that Medicaid for

instance can address the SDOH of children. This would require early and long-term interventions and investments that promote early childhood development in preparation for school, achieving academically and having an impact on their life course. (Brooks & Whitener, 2018) Ultimately, the ACA has provided an avenue by which the broader system of health care in the US begins to explore the impact of what is happening outside its clinical wall and acknowledges the importance of their involvement in multi-sector partnerships to support a healthy and thriving community.

A summative assessment of recent scholarly literature reveals a sparseness of research articles addressing the interconnected issues addressed in this study. To reiterate, they are urban restructuring, and, even more fundamentally, the fact that the determinants of health need to acknowledge the social, structural, spatial and temporal aspects. On the first count, there are a limited set of studies that address restructuring at a global system level. (Donkin, et al., 2018) Specifically, many of these articles focused upon the training of the workforce (Thornton & Persaud, 2018; Patel et al., 2018) and definitions of equity (Whitehead et al., 2019). But, given the widespread discourse surrounding restructuring at all scales, the connection to the SDOH was surprisingly thin.

On the second front, most of the recent foci of SDOH literature has targeted how health systems and providers implement ways to assess the determinants of health in their patient population, implement interventions to address SDOH and engagement strategies inside clinical walls. Of approximately 150 articles addressing SDOH published between 2018-2019, approximately 65% were focused on implementation of screening workflows in clinical settings. They looked at things such as clinician experience (Tong et al., 2018; Runyan, 2018; Schickedanz et al., 2019; Shrestha, 2018); implementation of screening protocols in care settings

(Onie et al., 2018; Solomon & Kanter, 2018; Reeves et al., 2019; DeSalvo, 2019; Alderwick & Gottlieb, 2019; Schoenthaler & Fiscella, 2019; de la Vega et al., 2019; Herrera et al., 2019; Daniel-Robinson & Moore, 2019; Scanlon et al., 2018; Floyd, 2018; Bibbins-Domingo, 2019; Nau et al., 2019; Shingles, 2018; O'Brien, 2019; Careyva et al., 2018; Cohen-Silver et al., 2018; Sundar, 2018; McInerney et al., 2018; Fraze et al., 2019; Henrikson et al., 2019; Whitehead et al., 2019; Murphy et al., 2018; Blair et al., 2019; Enos, 2019; Semple-Hess et al., 2019) ; care coordination across various members of the care teams (Moore, 2019; Garg et al., 2019; Friedman, 2019; Soto Mas et al., 2019; Pruitt et al., 2019; Rouse et al., 2019); integration in payment models (Garg et al., 2019; Pruitt et al., 2018; Huffstetler et al., 2019; Nayak et al., 2019; Sorenson et al., 2018; Jacobi, 2019); needs for specific populations such as children or elderly (Uwemedimo & May 2018; Beck et al., 2018; Sonik et al., 2018; Sorbero et al., 2018; Hessler et al., 2019; Nijhawan et al., 2019; Alcaraz et al., 2019); health-related workforce training and development (Patel et al., 2018; Rich, 2019; Hawkins, 2018; Dunklee & Gameau, 2018; Begun et al., 2018); specific health and/or social needs that are being addressed (Tong et al., 2019; Martin et al., 2019; Deferio et al., 2019; Genn, 2019; Cullen et al., 2019; Bowen et al., 2019); specific interventions to address the social needs of populations (Couglin et al., 2019; Marmot 2018; Coughlin et al., 2019; Gourevitch et al., 2019; Banegas et al., 2019; Hall 2019; Gottleib et al., 2018; Schickedanz et al., 2019; Pereira et al., 2019; Rosen Valverde, 2019; Sander et al., 2018; McDonald, 2019; Meads & Lees 2018; Beck et al., 2019; Cherian et al., 2018; Ruth, 2019; Zellmer, 2018; Morgan et al., 2018; Lynch et al., 2019; Malecha et al., 2018); assessing the impact on health outcomes of addressing the social needs (Rubino, 2018) and lastly empirical research studies (Fichtenberg, 2019; Alper, 2019; Heisler, 2019; Poleshuck et al., 2019). The narrow scope of current work illustrates the acute need to have accurate and up to date individual

and community level data in order to better address the social needs within the context of a clinical encounter.

Clearly, the outpouring of recent policy initiatives and growing body of literature informed by clinical activities speaks to the criticality of understanding the social, structural, spatial and temporal determinants of health and their impact on health. Undeniably, the Obama administration's ACA and the supporting ancillary policies and programs have been powerful in encouraging a better understanding of these determinants and spreading inquiries outside clinic walls into the community. The emphasis now is how to collect this information from patients in the most appropriate way in order to speak to the impact of interventions being implemented. Therefore the current focus of the determinants of health which has only weakly addressed the spatial and largely ignored the structural, needs to be realigned in order to be more effective.

Determinants of Health- Structural Aspect

Addressing the "conditions" in which people live, work and play, means that there must be a clear understanding of the structural aspect of a community. The structural aspect of SDOH refers to the way that power and wealth are deployed in the organization and distribution of community services. The structural determinants, such as housing, educational opportunities, parks and recreation, and transportation critically shape health outcomes. Despite its importance, the literature addressing the structural aspects of SDOH is limited (Whitehead et al., 2019; Williams et al., 2016). Indeed, the bulk of research in the field uses the term social as a catch all obscuring influences that are more aligned to structural, spatial or temporal factors. Consequently, the theme of this work tends to treat environments or places in which people or communities are impacted by the SDOH as unimportant. Clearly, a more accurate lens would

consider and test changes in place, as well as to the structures and processes driving adjustment could be health determinants.

Embedded within the structural aspect of SDOH is the framework of equality and social justice. Inequalities in structural allocations are barriers to human health. The World Health Organization utilizing an SDOH lens has urged the recognition of social justice as a matter of life and death and commissioned a report with recommendations for a framework to achieve health equity. It recommended improving conditions of life by tackling ways in which external forces impact drivers of the conditions, ensuring evaluation of action taken and workforce development. (WHO 2010) The 2011 WHO Rio Political Declaration on SDOH went further declaring a global political commitment to reduce health inequalities; and advocate for policymaker engagement and intentional health system involvement in reducing inequities. These recommendations illustrate that at the global scale SDOH needs are still unmet.

In 2011 Braveman et al., published a paper as an introduction to an edition of the *American Journal of Preventive Medicine* that focused on the social determinants of health and alluded to how the SDOH are influenced by structural forces. In their text, the authors acknowledged that access to medical care and related information broadly shapes health. (Braveman et al., 2011) Structural forces impact what access means for different people, therefore it is more like the structural determinants of health. For example, others have assessed the root causes of social and economic disparities, and issued a call to action to assess these root causes from a much broader lens, such as life course framework. (Ben-Shlomo & Kuh, 2002; Halfon & Hochstein, 2002) Fundamental to understanding the root causes of the determinants of health is the need for data and critical information to inform analyses. Consequently, data becomes another structural force, a way by which to define need in a place, within a group or

individuals. It also offers the opportunity to measure the impact of interventions temporally. In particular, data needs to be collected at the individual and community level to observe the potential for changes over time.

Enhancements in data collection have empowered researchers to better examine the association between health outcomes and social factors, including assessing structural elements, pathways, and biological mechanisms. (Braveman et al., 2011). There is growing evidence that key structural factors, specifically disadvantages in educational attainment and income are associated with poor health outcomes across the life course. (Mackenbach & Howden-Chapman 2003; Galobardes et al., 2006; Adler & Stewart 2010; Braveman et al., 2010) Clearly, research priorities and action to answer key questions must include better measurement of the social factors, particularly what are the critical health effects over the life course and intergenerational; the will to change policies in order to make system impacts; and translating new knowledge into action. (Braveman et al., 2011) It is crucial to consider that these structural factors are not only impacting the most disadvantage, but that there is a "gradient in health" that can provide a lens by which to understand the nuanced impact of SDOH. This gradient refers to a stepwise pattern that recognizes health outcomes are not a dichotomy: two extremes of health status. Rather than those between the extremes, e.g. middle income, are also worse off than those that are most affluent or educated. (Braverman, 2010b) An example of this continuum can be seen in the original study of the adverse childhood experiences (ACEs) (Felleti et al., 1998). ACES are experiences in childhood, such as poverty and hunger that are associated with poor health outcomes. (Bradley & Corwyn, 2002; Hertzman, 1999; Felitti et al., 1998) The patient sample for this particular study, was middle class, predominantly white, with access to healthcare in San Diego. One would assume they would be healthier, yet because of ACE all had poorer health

outcomes. So even if as an adult a person is in an advantaged position, they may be disadvantaged owing to childhood experience. There is a nuance to how the social determinants of health impacts health across a gradient.

Despite the rapid expansion of data and information, there are still existing gaps in knowledge that challenge the understanding of and actions to address the SDOH. Clearly, the relationships between social factors and health are very complex and dynamic. As this dissertation argues, the impact of the social factors on health play out over temporal dimensions. Whether the impacts are evidenced in short histories or long term relationships, intermediate outcomes may be evidenced. Consequently, it is hard to tease out the distinct effect that structural factors such as income, education and occupation have on health outcomes for adults. (Braveman, 2011)

Determinants of Health- Spatial Aspect

While simple, the popular saying "A person's zip code is more impactful on a person's health than their genetic code." carries powerful meaning. (Lakhani et al., 2019) Indeed, over the past 10 years, a growing body of public health evidence has sustained this precept and it has made its way in other disciplines as well. The idea of "place" is implied in the definition of the SDOH, and there has traditionally been an awareness in the public health literature that geographic disparities exist and have an impact on health. But, the traditional lens positions are static and passive in its impact on health.

For black and Hispanic youth who live in "disadvantaged" neighborhoods with schools that are under resourced and produce lower educational attainment it is assumed that poor health outcomes will result (Rouse & Barrow, 2006) Over the past 30 years, a relatively few health

science research papers have attributed the notion of "place" being key to health (Diehr et al., 1993; Humphrey & Carr-Hill 1991; Kreiger, 1992) Social scientists, notably sociologist and social geographers, have for some time recognized the importance of the neighborhood environment as conditions that shape lives and opportunities for individuals that live there. (Massey et al., 1991; Harvey, 1975) In fact the idea that "your zip code is a greater predictor of your health status than genetic code" has been an idea that has received growing traction in public health discussions during the past few years. ("Life Expectancy by ZIP Code: Where You Live Affects How Long You Live - RWJF," n.d.) Gephart (1997) emphasized the need to measure the neighborhood effects of various social factors and how the spatial concentrations of poverty had serious implications for policy, health promotion and the reduction of health disparities. Although there have been large scale spatial quantitative studies looking to summarize the effects of various social factors on health, there is value in geocoding data to well-defined neighborhoods. (Macintyre et al., 1993; Forsyth et al., 1994; Ellaway et al., 1997; Ellaway & Macintyre, 1996) In particular, Macintyre and her team (1993) offer a powerful argument for analyzing socio-economic, cultural, and physical attributes of a place in order to address public health. Using Macintyre's paradigm, this dissertation argues that deconstructing community restructuring opens a valuable window into the nuances and mechanisms of a place and how all of the social factors are connected within that space.

Admittedly, there are several challenges when it comes to the definition of the neighborhoods and geographic place. However, it is still important to proceed with a neighborhood model. The fact that people change neighborhoods and neighborhoods themselves change overtime is reason enough to engage in place-based work to investigate these factors and effect on health. Epidemiologist Ana Diez Roux is a strong advocate for the neighborhood

framework. In a 2001 paper, she championed the importance of not only the interacting effects of neighborhood environment but also how they interact at different points during an individual's life course. Diez Roux's work chronicles the effects of the duration of exposure to the neighborhood conditions and how the characteristics of the neighborhood itself change overtime. In a subsequent commentary Diez Roux (2002) provides a description of the many analytic issues that exist with looking at health from a place-based perspective. In particular, she highlights whether the definition of a neighborhood has been informed by individuals or governmental administrative policies, how the size of the neighborhood shows varying health outcomes and lastly that the causal process impacts social groups in different contexts. (Diez Roux, 2002) It is critical to understand that the neighborhood differences that exist are not necessarily naturally determined, but rather have resulted from both social and economic processes that influence policies. (Diez Roux, 2002) This is a different approach for the medical community to consider as it has been primarily focused on clinical interventions rather than engaging in understanding the links with what happens outside of their walls.

Another critical research thread has been offered by Professor Sally Macintyre and her colleagues. Their seminal work provided some context of how the effects of place on health have been conceptualized, operationalized and measured. In a 2002 paper, Macintyre et al., argue that "place effects" are this unspecified "black box" that is left after controlling for other individual and place characteristics. Therefore, Macintyre et al. proposed a framework that would be based on the understanding of human needs as the basis by which to think about how place influences health, including the context that individuals are facing. They suggest that a framework that defines a healthy neighborhood should include physical features that are shared by all the residents in the area, such as availability of a healthy home, work and play

environment, services both public and private available to assist individuals in their daily life. Diez Roux (2003) followed on the Mcintyre framework focusing upon the importance of assessment by levels- individual vs. neighborhood and other levels in order to link back to the social, economic, and policy context of states, regions and other scales.

In related fashion, other researchers have noted that the effect of neighborhood scale cannot be assessed without the consideration of existing racial and ethnic disparities that are in effect. (Morenoff & Lynch, 2004) One approach to address this is through the use of a conceptual framework that looks at the importance of stressful neighborhood conditions and the effect on health in addition to the availability of resources. (House, 2002; Lin & Ensel, 1989) In contrast with the "normal" idyll, neighborhood conditions in disadvantaged areas expose residents living there to poor housing, pollutants, crime, violence, overcrowding, in comparison to other more affluent areas that have access to health care, recreation, healthy food and other resources that promote healthy living. (Morenoff & Lynch, 2004). In turn, these deficiencies lead to SDOH stressors that are caused as restructuring is occurring in a community. Usually viewed by outsiders and community leaders as a positive change, restructuring processes can exacerbate unhealthy conditions for residents. (Wilder et al., 2017) Diez Roux collaborated with others (2007) to propose the importance of thinking about a relational approach when it comes to place and health. In other words, suggesting that people and place have a reciprocal relationship and that research has to acknowledge this in order to be able to develop and implement effective policy interventions that are sensitive to the local context. (Cummins et al., 2007)

In the last 50 years neighborhood restructuring of a place has manifested itself as gentrification. (Smith, 1982; Hackworth & Smith, 2002) This new wave of "urban renewal" has occurred in communities across the US. Gentrification in the US is far-reaching, from the largest

metropolitan areas to small cities and towns. Regardless of the place, ethnic and racial group, poor and marginalized communities are displaced and their places are taken by affluent classes. (Sutton & Kemp, 2011). The places where the renewal is taking place are often considered a frontier on which fortunes can be made with the influx of more financially stable populations. This urban space becomes often more entailed in the politics of the local area than economic. (Smith, 1986) Although the health impact of gentrification is not precisely documented, its potential implications have become part of the conversation. Gentrification is most often contextualized as urban restructuring happening in a residential space. But gentrification is more accurately replacing all community functions and activity spaces. These include, but are not limited to jobs, services, cultural resources, all lost and appropriated by newcomers. The appropriation of space and place creates another determinant of health with varying degrees of impact on an individual or population.

In her paper, "Social Determinants- What, How, Why and Now", Marilyn Metzler (2007) presents the process of the development of the Center for Disease Control (CDC) "Healthy People 2010" initiative. She reports that in 2007, the CDC began to advocate for more intentional recognition around the social aspects of community impact health. Indeed, "Healthy People 2010 recognizes that communities, States, and national organizations will need to take a multidisciplinary approach to achieving health equity — an approach that involves improving health, education, housing, labor, justice, transportation, agriculture, and the environment, as well as data collection itself". Prior to the publication of the CDC paper Healthy People 2010, Andrew Dannenberg and colleagues worked with a number of other experts and the CDC to establish a research agenda in order to better understand the health impacts of gentrification. A workshop was hosted in 2002 by the CDC, including experts in physical activity, injury

prevention, air pollution, water quality, urban planning, transportation, architecture, epidemiology, land use, mental health, social capital, housing, and social marketing. The participants were tasked with generating research questions that would advance the knowledge of the relationship between public health, community design and land use. (Dannenberg et al., 2003). Thirty-seven questions were developed, that "… were grouped into themes including research methods, physical activity and transportation choices, schools and children, unintentional and intentional injuries, impact on persons with disabilities, air and water quality, mental health, social capital, environmental justice, and cross-cutting issues." (Dannenberg et al., 2003, p1500) Additionally, the participants identified critical structural issues affecting the research agenda and developed a strategy tackling these impediments. First, efficacy dictated that the research process had to be transdisciplinary; second, the funding stream would need to be varied, federal, private and professional associations should all participate with financial support. And, third, it was vital to operate and expand interdisciplinary conferences to build networks and share ideas. (Dannenberg et al., 2003)

Place matters

In his seminal paper on the role of neighborhoods in the overall health, Boardman (2004) reported that place matters, specifically the conditions and stability of a neighborhood have the potential of acting as mediating and/or moderating mechanisms on stress and physical health of community members. In this work, Boardman examined neighborhoods in the Detroit area. He found that high levels of neighborhood stability acts as a buffer to the stress levels of individuals. He concluded that, "social stressors are known risk factors for a number of adverse health outcomes and the findings presented are important because they point to the important role that social resources—in this case stable residential context— may play as buffers to the otherwise

negative impacts associated with acute and chronic social stressors." (Boardman 2004, p2480) Subsequently, other urban researchers have followed with research to better understand and define what "stable" neighborhoods are and the health risk of being gentrified. Work by Metzler, for example, has found a conundrum: advocacy for improving health by bringing grocery stores to food deserts or adding walking trails for physical activity in a disadvantaged neighborhood may become a catalyst for gentrification and displace the low-income residents living there. (Metzler, 2007)

In the continued conversations on the impact of the social determinants on health, the CDC implemented a refined stance on the effects of gentrification and suggested strategies to address them. This initiative articulated that populations that are most likely to be impacted by the social determinants of health including the poor, women, children, elderly and members of racial/ethnic minorities, and are also at higher risk for negative consequence of gentrification. (CDC, 2009) The SDOH neighborhood effects include a residential exposure to hazardous substances such as lead paint, affordable healthy housing, healthy food choices, transportation choices, quality schools, walking paths, social networks. Because of the instability that comes with gentrification there is also a potential for increase in stress levels, injuries, violence/crime, poor mental health and social and environmental injustices. (Kennedy & Leonard, 2001) In order to address these challenges the CDC offered five steps for community action to minimize the potential effects of gentrification. These included (1) creating affordable housing for all incomes; (2) approve policies to ensure continued affordability of housing units and the ability of residents to remain in their homes; (3) increase individuals' assets to reduce dependence on subsidized housing; (4) ensure that new housing-related investments benefit current residents; (5) intentional community involvement. Local decision-making processes are encouraged to use

these strategies as the baseline for planning potential changes in their gentrifying neighborhoods. While not perfect, the CDC framework continued the idea that the process of gentrification is extremely complex and requires broadly based actions on a variety of different issues.

Since the CDC workshop there have been a number of studies that have examined the connection between gentrification and community health and the workshop policy recommendations. What follows are several key research efforts. One overarching conclusion is the sparseness of literature examining causal relationships..

The linkage between housing policy and gentrification has received wide interest. In particular, the HOPE VI initiative begun in 1992, ending in 2010, began as a progressive innovation in public housing was seen by critics as a tool for gentrification. In a 2011 study Keene and his colleagues not only concluded that there have been few improvements in living and economic conditions for relocated residents of the HOPE VI program, but that it was also a likely source of stress and illness among the residents. A non-profit group in California has partnered with their local health department to specifically understand the impact of neighborhood displacement of residents during the process of gentrification. The research findings were that gentrification affected housing quality, health and continues to mitigate inequalities. (Phillips et al., 2014). Lastly, research by Whittle and his colleagues using qualitative methods explored the lived experience of a group of people with HIV in the San Francisco Bay Area. In their interviews, among the issues cited by residents was food insecurity, unaffordable housing due to gentrification. (Whittle et al., 2015)

Recent work by geographers and other urban focused researchers has used the relational concept when it comes to space and place and provides informed understanding of key issues. Cummins et al., (2007), posited three ways in which the relational perspective can be valuable.

First, the context and composition of a place are not mutually exclusive but rather reinforcing and reciprocal when it comes to people and place. Second, acknowledgment that context and place vary in time and space. Not only is it important to chart an individual's changes during life course over time, but also the changes in the place itself (i.e. restructuring). Finally, incorporate the concept of scale in how context is analyzed and its relevance to health. As a way to make a connection in her work and collaboration with a number of the authors mentioned, Diez Roux provided "next steps" for understanding health from its multilevel determinants. She strongly advocates for looking at the context other than just the neighborhood; improving the measurement of group level constructs; applying techniques that are more appropriate from observational data; analyzing data from 'natural experiments'; examining the dependencies, including spatial, between groups and the reciprocal relationship between individuals and the context in which they live; and lastly, developing multilevel statistical models and complex systems in order to quantitatively describe what is happening. (Diez Roux, 2008)

While the fields of community planning and public health have traditionally been linked, until recently there was not significant recognition of the need to work collaboratively and foster synergies that serve common goals. Led by the sustainable planning paradigm, forward thinking planners and community activists have focused upon designing cities and urban spaces with health in mind. In turn, planners have built strong connections with the community health activists. (Sloane, 2006) Beginning at the end of the 20th century, new alliances were formed around initiatives to address congestion in urban areas and the health issues that came with it. Subsequently, the impact of sprawl and the rapid epidemic of obesity further strengthened the affinity between planners and public health professionals. (Sloane, 2006) Although Sloane's analysis does not consider urban restructuring, suburban growth cannot be ignored in particular

because of the impact on the decentralization of services and resources. Operationally, the negative externalities of suburban sprawl have created conditions that hollowed out urban neighborhoods and set the stage for neoliberal policies that fostered urban restructuring. (Clement, 2013)

Urban planning and public health in the early 21st century United States have increasingly joined forces to address the powerful force of urban restructuring. One example is the World Health Organization (WHO) “Urban Settings Knowledge Network”. Managed by the WHO Centre for Health Development, it is focused on broad policy interventions related to "healthy urbanization". In other words, what interventions can be deployed to correct the existing negative impacts of restructuring? A critical intervention was slum upgrading, with a focus on upstream determinants of healthy urbanization including: stimulation of job creation; land tenure and land use policy; transportation; sustainable urban development; social protection; settlement policies and strategies; community empowerment; vulnerability reduction; and better security among others. (WHO) Underlying an effective strategy to remediate slums, rapidly becoming the dominant urban model for most of the planet, is an effective plan for the physical aspects of the urban space with a public health foundation is crucial to shape sustainable cities. (Shanahan, 2015)

As Cummins et al., (2007) have emphasized, it is important to design research that is multidimensional and combines the many ways of characterizing and understanding what place is. This includes considering the degree of restructuring that may be occurring. The ways in which neighborhoods play a role in community health are well documented in the literature. These include, but are not limited to, design characteristics, access to healthy foods, safe places to exercise, quality of neighborhood services (i.e. schools, transportation, medical and

employment). (Giles-Corti & Donanlin, 2002; Fernandez, 2004; Lee et al., 2005; Chuang et al., 2007; Gordan-Larsen et al., 2006; Morland et al., 2006; Sallis & Glanz, 2006; Braverman, 2011) There is however, a lack of understanding and/or acknowledgement of how the neighborhood changes over time, or restructuring, of the "place" impacts health. Previous research has primarily focused upon the social and spatial characteristics of a place as static and failed to consider the structural domain. This research project recognizes that the changes over time are also a determinant in and of itself, therefore tying closely to structure.

One potential powerful change is direct investment in a neighborhood by health care systems. While health care institutions have traditionally been restrained in their commitment outside the realm of health care services, starting in 2017 the American Hospital Association (AHA) presented a number of case studies for why health systems need to be engaged in the conversations of affordable housing. The new AHA model advocates for hospitals stepping into a role of anchor institution or a placed-based economic engine that contributes more than just health services to the surrounding community. Translating into a proactive agency, the hospital would pursue innovative approaches that address systemic barriers to healthy and thriving communities. (*Making the Case for Hospitals to Invest in Housing Accelerating Investments for Healthy Communities*, 2019) This new community centered model extends into other aspects of engagement. But, despite the new enthusiasm, there remains a research gap about how SDOH engagement by health systems has had a long-lasting impact on an individual's health or a community's ability to thrive.

Determinants of health- Social Aspect

In a widely read 1996 article, Professor Carolyn Stephens challenged government and international agencies to do more to address the growing inequity in their cities in order to

improve health and decrease poverty. Building her case, she argues that the "physical symptoms of poverty (and their health implications) are more common than analyses of the structural symptoms which produce and perpetuate poverty." (Stephens, 1996 p9) Stephens approaches the question with a focus on both inequality and equity over solely urban poverty in order to have an opportunity to discuss the issues occurring beyond just poverty. These issues of poverty are broad and encompass other concepts like social exclusion/cohesion and vulnerability that also have implications on health outcomes. (Galabuzi & Teelucksingh, 2010)

As previously described, safety is a description of neighborhoods that has major implications on health status, Stephens reiterates that urban violence is not as much about the criminal aspects as it is the alienation (i.e. social exclusion) as a result of polarization of different groups. Specifically for immigrant populations, the fact that they are immigrants and what comes with an "outsider" identity that can be considered a SDOH. (Asad & Clair, 2018; Castañeda et al., 2015)

Determinants of Health- Temporal Aspect

As the body of evidence based research continues to grow, it has become clearer that a root cause of SDOH can be attributed to changes of a space over time, or restructuring. Often restructuring occurs during times after a crisis. For example in the case of the US, much of the restructuring that occurred in both urban and suburban landscapes happened post-world war. Too often policies were put in place that explicitly benefited some populations at the expense of others, thus widening the inequality gap. This was manifested at different geographic scales and was often long term. For example, individual neighborhoods are disadvantaged by policy actions, while peer neighborhoods enjoy public benefits. And, in the former case, these areas become areas where people that live there have had poor health outcomes. It is important when

considering the changes over time that there is also a lag in the data available to look at impact at a population health level. (Reeve et al., 2007) Increasingly, research is being done to develop predictive modeling based on data received real-time in the health care settings in order to prepare for what needs patients are going to need. (Duncan, 2011) Although these models may have some utility in healthcare delivery, their predictive values may not take into account the changes over time happening in real life outside of the clinical walls in the neighborhoods that patients are coming from.

Restructuring

Restructuring is a broad force of change that transforms societies over time at multiple scales - locally, regionally and globally. (Smith 1982) Most scholars agree that contemporary restructuring is rooted in the rise of globalization in the late 20th century. (Clark, 1987; Soja et al., 1983) Growing interdependence in the world's economies leads to a "… a series of structural changes … significantly modifying the social and economic geography of (a) region." (Soja et al., 1983, p195) Restructuring in the urban space, translates into change that occurs in the space from individual perspectives such as economic, structural or social and how they are spatially expressed. (Bradbury, 1985). In some cases, it can be a combination of any two or all three domains. This change can happen quickly or occur slowly and tend to be spurred by events or decisions. Regardless of the components the change and its impact happen over time. Traditionally as these changes have taken place there has been little to no regard to the health impact of the individuals residing or engaging with the space. But with the increased awareness and acknowledgment of the social determinants of health that are occurring in restructuring spaces, it is obvious there is a need to better understand how restructuring impacts health.

In considering restructuring from this perspective it is essential to understand that there is not a given theory that fits this approach, rather it is an opportunity to consider it through the lens of theories of causality. Simply stated, one thing happens that then causes one or other situations to result. Restructuring processes affecting capital and labor situated within economic and political crisis play out at the local, regional and national scales. Within the local context the impact on individuals and communities is varied and impactful.

In their 1983 articles Soja et al., used Los Angeles (LA) as an example of the process of urban restructuring. The city went through a rapid transformation in the dominant types of economic activity, moving from industrial to financial activity, This economic shift impacted the social landscape. Beginning in the 1960s, the process produced major disruptions in labor processes, particularly what the workforce looked like, where industry was located and class participation. Economic declines in former key sectors caused extensive job losses and closures of factories further increasing poverty and unemployment. Class linked job losses increased ethnic and racial segregation, urban violence and homelessness, not uncommon in other large metros across the US. (Soja et al., 1983) It can then be argued that for individuals living through restructuring poor health outcomes was predictable. These are the root causes of many of the longstanding issues of health disparity and inequity that current generations are having to deal with. Soja et al., attributed the restructuring process in the US to a "series of manifest tendencies reflecting contemporary attempts at intensification and intensification in the organization of capital and labor relations." (Soja et al., 1983, p205)

Using an alternative viewpoint, William Clark's 1987 paper provided a demographic perspective of urban restructuring. Central to his argument is that elements of shifting demographic processes are just as vital as the economic and structural aspects of restructuring.

Clark posits that it is important to consider the intersection of economic and demographic shifts in order to understand the nuances of the spatial patterns that arise from restructuring. This context provides the opportunity for richer spatial analysis, although it is critical to recognize that these changes are still influenced by policy interventions. Beyond the spatial division of labor a demographic perspective of restructuring presents the idea that there are other attributes that relate to the process at varying scales. These include, but not limited to, how labor moves from one area to another, changes in fertility, changing household dynamics, local mobility and the management of populations. (Clark, 1987) According to Clark, these components are central to understanding the causality of demographic shifts that are influenced by restructuring at various scales.

Using an economic perspective of restructuring, Saskia Sassen (1990) has made the case that urbanization trends in major cities are dominated by service activities, and that they were already having an impact on a range of social conditions. (Sassen, 1990) Although not directly mentioned, it can be implied that that health is one of the social conditions impacted. Because the new service industries are disproportionately located in urban settings, the restructuring was already having a greater impact on minorities who were increasingly concentrated in inner city spaces. Sassen argued that using an economic perspective enables urban sociologists to consider other variables that impact the social conditions, including but not limited to poverty. (Sassen, 1990) The shift in labor demand, particularly from manufacturing to services not only changes what the economic base of cities is, but also impacts earnings and employment, directly affecting poverty. Over time, urban restructuring, driven by economic factors has led to the increasing concentration of disadvantaged and poor people of color in less desirable spaces, exacerbating lower job opportunities, lower quality of life, and under-resourced services . The spatial

distribution of this restructuring creates a clear geographic redistribution of jobs and housing. (Sassen, 1990) This restructuring and the impact of the economic changes have continued through the end of the century. Indeed, in 1999, Wyly made the case that US cities are still "restless". With change continuing, producing the widening of income inequality; the various demographic shifts; and new class formations. Owing to the restructuring in the urban spaces, suburban spaces have been shaped by social and institutional processes to reflect in the struggle of workers adjusting to new built environments. Wyly's research perspective draws from feminist urban theories. Consequently, he positions restructuring as aligned with the idea of the "public household" , such that the boundary between markets and family life are blurred in the suburban built environment. (Wyly, 1999) The resulting suburban built environments are spaces of social instability and reconfigured segregation.

Role of restructuring as a determinant of health

Most often, restructuring is spatially represented through gentrification, renewal, suburbanization and revitalization. (Smith, 1982; Soja, 1983; Zuk et al., 2018; Tzaninis & Boterman, 2018) These products of restructuring are often happening at the same time in a single city but occurring at different scales or in various locations across the community. Whatever the circumstances, restructuring operates in urban space through destruction, construction and reconstruction processes. While there is acknowledgement that the geographical setting or context has a significant impact on health inequities (Curtis & Reese Jones, 1998), the specific role that spatial setting and change processes have on health determinants remains a gap in the literature.

At the local level restructuring brings about changes not only to a neighborhood's physical spaces but also to its demographics and socioeconomic status. The established dynamics

of economy, services, class, race and culture may be disrupted leading to transformed patterns of spatial and social distance, unequal resources and access. Restructuring does not impact all groups equally. Research data have documented that restructuring creates "winners and losers", some populations are harmed, while others are beneficiaries. (Boardman, 2004) Often for those who are poor, minorities and/or immigrants the outcomes of restructuring translate into poor health outcomes (CDC, 2009; Metzler, 2007) Viewed from a neighborhood perspective, the physical and social status of a place has the potential of acting as mediating and/or moderating mechanisms on stress and physical health of residents. (Boardman, 2004). In his study looking at neighborhoods in the Detroit area, Boardman found that neighborhood stability acts as a buffer to stress levels of individuals. (Boardman, 2004) He reported that, "social stressors are known risk factors for a number of adverse health outcomes and the findings presented (here) are important because they point to the important role that social resources—in this case stable residential context— may play as buffers to the otherwise negative impacts associated with acute and chronic social stressors." (Boardman, 2004, p2480) Using these findings, Boardman suggested that research should be positioned to assist in the further understanding and definition of "stable" neighborhoods and the risks that come with gentrification as a manifestation of restructuring.

Immigrant settlement in new spaces is also an essential dimension of urban restructuring. Immigrants are both agents of restructuring and victims of it. (Suro & Singer, 2002) As agents they are settling in areas that have been left behind by native born residents. Immigrants establish businesses, construct places by recreating the urban landscape of their home country and attract co-ethnics to their businesses or services and/or move into the neighborhood. (Smith & Furuseth, 2006) However, immigrant related processes of restructuring may also intersect with

gentrification. Under these conditions, the immigrants are forced out of the place by speculative processes fueled by higher socioeconomic status newcomers, capital and power. (Hamnett, 1994; N. Smith, 1996) Although this type of urban capitalism has traditionally been focused in the central business district or urban core, gentrification and displacement of disadvantaged people, including immigrants, spread to the suburbs. (Suro & Singer, 2002) This is particularly true for those cities considered "new immigrant gateways", where older suburban neighborhoods were heavily settled by immigrants and refugees in the late 20th century and incipient new immigrant neighborhoods were growing. (Singer, 2004) The Charlotte experience exemplifies these new settlement patterns and their collision between different forms of restructuring. Earlier Charlotte-centered research has documented the impact on the health of Latino immigrants and others that live in the suburban fringes of the center city. (Coffman et al., 2017; Dulin et al., 2010, 2012; Ludden et al., 2018; Schuch et al., 2014; Smith & Furuseth, 2006) Other work by Coffman et al (2017), for example, has provided detailed neighborhood scale health deprivation in Charlotte's Eastside and South West neighborhoods, with one third of Latino immigrants at risk for clinical depression and the majority lacking access to primary care.

There are several methods to measure restructuring, including rates of population change, transportation infrastructure, rates and types of employment, educational attainment, housing (tenure, price, and condition), rates of poverty and crime. (Clark, 1987; Hamnett, 1994; Kitchen, 2001; Radzimski, 2015; Sassen-Koob, 1986; Soja et al., 1983) How these metrics operate and change over time and are affected by social and economic conditions are variable. (Graves & Smith, 2010a) For example, two of the indicators, transportation and housing, offer the opportunity to better understand restructuring as it relates to land values, space, housing and economic policies. (Yan, et al., 2012) Both metrics have also been classified as indicators of

determinants of health in the public health literature, along with insurance status, family structure, and access to food by the Public Health Alliance of Southern California in their 2016 "California Health Disadvantage Index – Public Health Alliance of Southern California (Krieger et al., 2002; Krieger & Higgins, 2002) A more general application of the intersection of indicators is laid out by Williams (2017) in her dissertation, which identified comprehensive plans, finance policies and zoning policies as shaping whether a developer will build in a particular project. (Williams, 2017) Clearly, the policy impacts of planning are significant to restructuring outcomes owing to the implication to impact health outcomes for those living in these new developments.

Determinants of health- Applying it to Health Care Systems

The tide began to turn in 2017 as healthcare systems began to acknowledge that most of what they do within the clinical walls has little impact on the health of the populations that they serve. (American Hospital Association [AHA], 2017) Health care researchers have been making this point for the last 20 years, supported by several extensive literature reviews. These review papers have focused on how health systems are integrating the assessment and addressing of social determinants of health. (Anderman, 2016, Gottlieb et al., 2017, Solomon, 2018, LeForge et al., 2018, Krist et al., 2019; Gottlieb et al., 2019) A review of mainstream media via LinkedIn searches also found that the majority of the articles being shared among healthcare professional circles, focused on SDOH looked at from the lenses of use of data and technology (Gold et al., 2018; Leyton, 2018; Hawkins, 2018; Siwicki, 2018; Health Catalyst 2019, 2019), care coordination and management (Moore, 2019; Bean, 2018; Seervai, 2019; Brown, 2019), payment models (Garg et al., 2019; Mongeon et al., 2017) and housing interventions (Japsen, 2018; Meltzer, 2018). A smaller subset of articles addressed the environment (WHO, 2019;

CNN, 2018), policy (Sternberg, 2018; Japsen, 2019) and the spatial aspect of the determinants of health (Shafique, 2018).

This concept of health systems addressing SDOH is new enough that there is a focus on *what* (what is being done to collect the data), *how* (how is the need going to be addressed) and *cost* (what is the cost to invest in the SDOH and what is the return on that investment). Unfortunately, given the myriad of business pressures, policy and bureaucratic dynamics, and rapid technical advances that healthcare systems must control, health leaders are not able to stay current with current research findings and operationalize into enhancements in practice. It is critical, therefore, to understand the lens by which health systems are exploring the determinants of health and what aspects they are considering, and how they relate to social, temporal, and/or structural attributes.

There are several opportunities to add to the body of knowledge around the social determinants of health, in particular when considering the spatial, structural and temporal aspects along with the social and the intersection and complexity of how they play out in the place where communities experience their daily life.

CHAPTER 3: RESEARCH DESIGN AND METHODS

Research Objective and Questions

Utilizing a grounded theory approach, this research explores the determinants of health of the Hispanic immigrant population in the context of a restructuring neighborhood in southwest Charlotte, NC. Although this study focuses on a specific population in a specific place, restructuring happening in any given space can have health related impacts on all who reside there. This study adds to the body of knowledge about health determinants by arguing that urban restructuring - particularly its spatial and temporal aspects - is an overlooked determinant of health and one that disproportionately impacts vulnerable populations such as immigrants. While grounded theory is a common approach among geographers, it is less well known in the field of health care (Foley & Timonen 2015) . Grounded theory allows researchers to generate theory and explanation from the systematic collection and analyzing of data. (Glaser et al., 1968; Noble & Mitchell, 2016) In the healthcare field where there are a number of advances, specializations, and changes in payer, clinician and patient expectations, the landscape of influence is becoming more and more complex. As such, approaches of creating new knowledge that move beyond traditional scientific methods and allow for flexibility of inquiry and the emergence of theory from complex evidence are warranted. Unlike other methods, a grounded theory approach is both inductive and deductive, allowing for a fresh and more nuanced perspective to established processes and knowledge. (Stern, 1980)

In this research, a grounded theory approach allows for uncovering the various restructuring forces that interact over time and space to impact health. Additionally, a mixed methods approach allows data generated by the Hispanic immigrants living and/or working in

areas undergoing processes of restructuring, such as gentrification and revitalization, to play a pivotal role in the analysis and development of new knowledge. Through its exploration of how a changing place has the potential to impact health related factors for a specific population, this research adds the complexity of temporal and spatial perspectives currently lacking in traditional "social determinants of health research". This study also informs the Latino immigrant literature as it relates to settlement patterns in the 21st century, adjustment and integration of immigrants into new communities and lastly, place making by Latino immigrants in the context of restructuring and continuously changing residential environments.

To accomplish these aims, the following research questions are addressed:

1. How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert?
2. How has urban restructuring been a factor in the determinants of health for the Hispanic immigrant population in the South Boulevard Corridor in Charlotte, NC?
3. How does the acknowledgement of the spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Hispanic immigrant population living/growing/working/playing along the South Blvd Corridor in Charlotte, NC?

Research Design and Rationale

A mixed method approach has been implemented with an emphasis on qualitative methods. This methodology has provided an opportunity to understand the different ways that space, time, and health are interacting as determinants for the Hispanic immigrant population along the South Blvd. Corridor. At its core, mixed methods research is the collecting, analyzing, and combining of both quantitative and qualitative data in a single study or a series of studies.

(Creswell et al., 2007) This approach is very useful when answering questions that are broad and complex, with varying aspects. (Creswell et al., 2007)

Aligning with the scientific approach traditionally implemented in the health sciences, the quantitative approach is reflective of the positivist perspective and the belief that reality can be measured and observed objectively, in a deductive manner. There are strengths to this approach in that it's meant to minimize the impact of confounding variables and, with large enough samples, has the potential to generate findings that are generalizable. It remains a dominant approach in health sciences research. (Tariq & Woodman, 2013) Unfortunately, this deductive approach is less suited to explaining the why and how of complex social or cultural phenomena. (Tariq & Woodman, 2013)

Qualitative research methodologies, on the other hand, provide insight and nuance of how people relate to places and the resources that are available to them. It also allows for complex exploration of the contextual impact of the spaces and time in which people experience their daily lives. Methods in this type of research may include but are not limited to resident reports, systematic observation and objective measures of the place being investigated, as well as the spatial accessibility of resources. (Cummins et al., 2007) Qualitative research is also an interpretive framework that is informed by subjective- personal viewpoints, context and meaning. (Tariq & Woodman, 2013) In some cases, it also acknowledges the positionality of the researcher and encourages reflection of how that has shaped and produced the data. As such, qualitative investigation is more inductive; the questions are open-ended, and the analysis can allow for the hypothesis itself to emerge from the data. (Tariq & Woodman, 2013) Especially relevant to this study, use of a qualitative approach such as focus groups further allows researchers to uncover the underlying structures and causal mechanisms of the multi sector

processes involved in immigrant populations accessing and experiencing health and social services. (Curry et al., 2009) Ultimately, qualitative research allows for the development of various concepts and theories that lead to understanding social changes in a "natural" way with an emphasis on the experiences and views of the participants. (Mays & Pope, 1995)

A mixed methodology allows the strength and weaknesses of both quantitative and qualitative approaches to counterbalance each other and provides a powerful opportunity to address complex and multifaceted issues in health services and utilization. (Nicca et al., 2012; Raven et al, 2011) In fact, the most effective mixed approaches allow for complementarity where data from one method informs or elaborates the development and/or results of the other. (Greene et al., 1989; Pope & Mays, 1995) The process of analyzing the data from both approaches provides the opportunity to identify incongruence in order to generate new insight and expand beyond initial questions. Findings from all methods can be corroborated through a process of triangulation. (Caracelli & Greene, 1993; Pope & Mays, 1995) Triangulation is a process that combines analysis from multiple methods and/or data sources in order to develop a broader understanding of the phenomena being studied. (Patton, 1999) An approach such as this is valuable in that it allows for the validation of the information from different sources as part of a rigorous qualitative research strategy. (Triangulation, 2014)

A mixed approach that prioritizes qualitative data gathering and analysis is especially appropriate for this research which focuses on an underrepresented and marginalized population, such as Latino immigrants. Utilizing an approach that is sensitive to their experiences and needs paves the way for researchers to have a more in depth understanding of the, what and why of immigrant everyday life. (Winchester, 1999)

In what follows, I outline the specific mixed methods and analytical approaches used to conduct this research on the intersection and impact of urban restructuring and social determinants on the Latino immigrant population living along the South Blvd. Corridor in Charlotte, North Carolina.

Literature Review

A review of the literature was implemented utilizing a systematic approach of both academic and grey literature. A systematic review allows for a formalized process to identify relevant publications, appraise their quality and summarize the evidence. (Khan et al., 2003) Academic literature published since 2010 was reviewed to document how the notion of "restructuring" was taken into inconsideration when describing SDOH. A systematic grey literature review was also implemented to obtain a sense of the interpretation of academic literature as it pertains to the social determinants of health in mainstream health publications. Grey literature is defined as, "that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers." (Rothstein, 2009) This review of gray literature goes beyond the academic literature review in that it provides insight into the mainstream understanding of the determinants of health. For various reasons, this type of literature becomes the "go-to" when policymakers in different sectors are making decisions about systems. It is also a way for them to share results of their programming that may or may not include a formalized evaluation.

Conducting this systematic review to include both scientific and mainstream sources allows for a broader understanding of how the determinants of health are being described and informing various levels of action. In conducting the reviews, searches were implemented based on known and study relevant key words and phrases, such as "determinants of health", "social

determinants of health", "social need and health care", "restructuring", "urban renewal", "revitalization", and "gentrification". A search was conducted via Google Scholar for literature published in the past year (2018-2019). Google Scholar is a database that contains roughly 389 million documents including but not limited to articles, citations and patents. (Gusenbauer, 2019)

This time period was chosen as the American Hospital Association released their series on Social Determinants of Health in Healthcare settings in 2017. A spreadsheet was developed to document the name of article, authors, author affiliation, discipline of study, journal name, abstract, objective, methods, results, discussion specific to place. Lastly, a search on the social media platform 'LinkedIn' was conducted to identify gray literature such as blogs, magazines or other news sources discussing the "determinants of health". LinkedIn is a professional networking site that also provides opportunities for collaboration, sharing of information from different industries, "publication" of opinion articles by members of the site and empirical research. (Unkelos-Shpigel et al., 2015.) Similarly to the academic review, a spreadsheet was developed to organize articles and posts from January 2018- September 2019. Although this spreadsheet does not include all articles posted during that time period, it provides a broad representation of information being printed in mainstream media sources. A discourse analysis of how the discussion has transitioned to focusing on what it has during the 2018 and into the fall of 2019. In the broadest sense, a discourse analysis is the "study of social life, understood through the analysis of language." (Shaw & Bailey, 2009, p413) In other words it provides a way to understand the meaning of certain narratives or discourses happening in society. (Traynor, 2004) For purposes of this study, the discourse under investigation is that of healthcare leaders and practitioners and the way that they are discussing and engaging around information that is made available about the social determinants of health.

Results of the literature review can be found in Chapter 2.

Qualitative Methodology

A qualitative approach allows for the nuanced understanding of how various indicators both independently and in concert impact a person's everyday life. As part of this methodology various forms of qualitative data collection methodology were implemented - interviews and focus groups with community members as well as key informant interviews.

Twenty key informant interviews were drawn from a convenience sample of stakeholders across the City of Charlotte, many of who have collaborated with the researcher of this study in various projects over the last 12 years. All informants have past and on-going experience engaging with the Hispanic immigrant population in South Blvd. Corridor. Key informant representation spanned the areas of health care, social service, education and healthcare. These interviews were implemented first from both an analytical (informing broader discourse) and practical (they were more feasible to schedule and complete) perspective. Having an understanding through the lens of health and social service providers is important, the work they do allows them to engage and have interactions with community members in a way that provides insight into the various perceived structures impacting daily life, such as access to transportation or availability of affordable housing. For providers who engage with the Hispanic immigrant population directly, they can also speak to the difference of working with those that are native born versus foreign born. In addition, they can provide health-related insight into the restructuring that has occurred in the Charlotte area and how it has impacted the community in general and the Hispanic immigrant population in particular.

Interviews were conducted with representatives from a range of organizations serving Hispanic immigrants along the SBC including a local chapter of the YMCA: an organization focused on education and tutoring elementary school students: an organization that develops leadership skills in teens a church providing a space for addressing English as a second language classes, and a Hispanic community leader. It was also important to include the perspective from the school system, so interviews were conducted with two principals from local elementary schools that are designated schools for children living along the South Boulevard Corridor. School systems are often microcosms of what is happening in the broader community. For that particular geographic area, it was historically the first to see an influx of Hispanic students to its schools also. (McDaniel & Smith, 2017) To better understand the health perspective of the changes to the area, interviews were conducted with a healthcare executive from Atrium Health, a hospital president of the only healthcare provider in the area, and a clinic manager for a small independent primary care clinic. To gain insight from a political and policy perspective, interviews with several representatives from the City of Charlotte[3] were also conducted. In total, 20 community informant interviews were conducted between the period of April 2019 and October 2019.

A structured interview format was implemented to provide for systematic and standardized analysis allowing for deeper understanding, exploration of meaning and perception of responses and/or the testing of a priori hypotheses and generation of new hypotheses. (DiCicco-Bloom & Crabtree, 2006) In all cases interviewees were encouraged to share nuanced descriptions of various phenomena allowing for deeper more complex interpretation by the

[3] In the Charlotte-Mecklenburg area, the City of Charlotte has responsibility for zoning and code enforcement as it relates to the development of neighborhoods and areas in Charlotte. That is why they were engaged in these conversations as opposed to Mecklenburg County officials.

investigator. (Warren & Karner, 2005) Such an approach allows for contribution to bodies of knowledge and development of conceptual and theoretical frameworks based on individual life experiences. (DiCicco-Bloom & Crabtree, 2006). Specific to this study, the questions posed allowed for insight into understanding both the complexity of restructuring as it applied to the Charlotte-Mecklenburg area and how it intersects with the determinants of health. Interviewees were asked to identify determinants of health based on their interpretation of various social, structural, spatial, and temporal aspects of restructuring. (See Appendix 1 for community informant interview guide and other data collection instruments.)

Key informant interviews were scheduled with stakeholders at times and locations of convenience for them and lasted no more than one hour. Key informants were asked to complete a demographic survey, in order to broadly describe the group of interviewees. In addition to the key informant interviews, one-on-one interviews and focus groups were conducted with Hispanic immigrants who live along the South Blvd Corridor. These respondents provided a "lived experience" perspective that again allowed for detailed exploration of the impact of how the corridor has changed over time and the impact that has had on factors that can be considered determinants of health. Very simply, focus groups are a way to gather information from a group of people about their perceptions, opinions, beliefs and attitudes towards a product, service, concept, etc. (Kitzinger, 1995). Use of focus groups in this study allowed for the uncovering of underlying structures and causal mechanisms of the multi sector processes involved in immigrant populations accessing health and social services. (Curry et al., 2009). Focus groups have been presented as one of the 'backbone' qualitative methodologies, gaining more and more popularity in many different fields. (Skop, 2006) For example, they have been embraced by human and social geographers as a key method to engage and better understand the nuances of social and

spatial change. In fact, there has been a push for geographers to broaden their focus and consider subjective meanings that individuals formulate, rather than what is available in existing data sources like the census. Focus groups not only allow participants to define their own identities but they can also provide insight into the social processes that are occurring in these spaces and generate new questions; they have the potential for unique discussion, more so than in-depth interviews or questionnaires. (Skop, 2006) Focus groups further allow the researcher to gain a different perspective from the observed interaction when participants respond to one another and ask each other questions. It is imperative to keep in mind that there could be different group dynamics at play as well, depending on the topic. The participants are the expert in the given area of discussion and can also inform the researcher on potential policies that need to be changed or other projects that should be undertaken.

Initial recruitment of Latino community members familiar with the South Blvd. Corridor (SBC) area took place via flyers and engagement with various community organizations who made referrals. Unfortunately, this process failed to be effective and was altered to accommodate engaging community members in different ways. A total of 30 residents participated in either a focus group or one-on-one interview. Two focus groups (total of 22 participants) were scheduled with Hispanic community members that reside in the South Blvd. Corridor. Focus group participants were all students in an ESL program hosted at a church located on the SBC. These two groups were conveniently recruited as they were already meeting for class. Lunch was provided. It is important to acknowledge that these groups are somewhat different from the general community in that they are tied in to resources available in the community. Although traditionally all attempts would be made to ensure that the group was both representative of the broader Hispanic immigrant community in Mecklenburg County and more

importantly of others living along the SBC, this particular sample of residents was purely a convenience sample. Demographics collected, gender, age, time of arrival, country of origin are representative of what is occurring currently in the area, but does not necessarily align with available data. In addition, 8 community members who either currently lived in the area or had recently lived in the area were selected for 1:1 interviews. These community members were identified with the assistance of key informants interviewed earlier - specifically the community-based groups Hispanos Unidos and the Harris YMCA-Parents as Teachers program supported recruitment for these interviews.

The conversations with the residents addressed a number of issues regarding Latino settlement in the specific geographic area including, but not limited to, health and social service needs, utilization patterns, currently available resources, and impressions of restructuring in the area. This information provided needed background to understand the community dynamics and interactions with the space over time. Additionally, the two focus groups provided an opportunity to explore additional themes and information that organically emerged because of the interactions between the participants, one key and advantageous component of focus groups. (Skop, 2006) An insider approach was purposefully implemented to assure that the participants of the focus group felt comfortable and could freely speak about their background, health and social service experience without feeling threatened by the presence of any health or social service providers. The insider approach is one that refers to when researchers conduct research with populations of which they are also members (Kanuha, 2000), therefore the researcher shares some form of identity, language, and experiential base with those participating in the research. (Asselin, 2003) I was the focus group facilitator and while I do not live in the specific geographic area that was being discussed, I am the daughter of immigrants from Mexico and fluent in

Spanish. Additionally, I have worked in the SBC frequently as parts of research and outreach teams associated with the university where I study and the health system where I work. These focus groups were audio recorded, translated and transcribed verbatim in preparation for analysis. Observational notes about the group dynamics were also collected throughout the process.

During the focus groups and one-on-one Hispanic resident interviews, questions were also asked about the location of various community assets. This approach is adapted from a framework called Participatory Asset Mapping, which combines the concepts of participatory mapping and asset mapping. This participatory process creates, from the community point of view, a display of the assets, places and experiences that define the community ("Community Science, Connecting Knowledge with Social Change," n.d.) During the conversation participants shared locations of certain assets across the city and their experiences in engaging with them. This process provided an opportunity to network and exchange knowledge and information with each other, an unintended benefit of the process. This strategy was particularly informative in providing insight into how the environments or places in which people or communities are impacted by the SDOH are not fixed. Changes to their character, as well as to the structures and processes driving that change, need to be considered as health determinants themselves.

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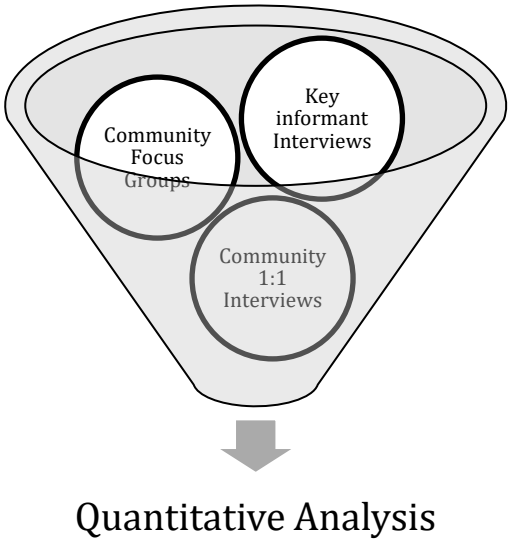
Figure 1. Data collection sequence



Interviews with key informants were completed first, both because it was most feasible and because it provided an opportunity to understand the various determinants from the providers' perspective and experience at two different scales- broader city-wide and then organizational. This approach set the stage for confirmation of certain learning from the residents living in the area and prioritization of the quantitative indicators to be added to the statistical models. (Figure 1)

Qualitative Data Analysis Methodology

Although widely accepted and used in various forms of qualitative research, the process of thematic analysis has not been formalized as have other types of qualitative analysis (i.e. grounded theory, ethnography). Yet, it has been argued that it should be considered its own method because it is foundational providing many of the primary skills that translate to other qualitative analytical approaches (Braun & Clarke 2006; King, 2004; Thorne, 2000) In this study, a manual thematic analysis (Braun & Clarke 2006) was implemented for the focus group

and interview transcripts in order to identify themes, patterns of cultural and social meaning to get to commonalities, overarching patterns and theoretical constructs. The decision to implement a manual process of analysis came from both the researcher's experience with qualitative software and the fact that the data collected was manageable manually. Additionally, there are aspects of NVIVO and other qualitative software that are limiting when trying to incorporate qualitative data that is reflective of the lived experience. There is literature that is critical of the utilization of qualitative software because of issues with reliability and validity, the cost associated with purchasing of software and time investment in order to fully utilize all of the capabilities of the software. (Dollah et al., 2017; Welsh, 2002; Basit, 2003)

A thematic analysis process can be rigorous (Mays & Pope 1995; Nowell et al., 2017) and at the same time allow for theoretical freedom providing flexibility and opportunity to be modified depending on the needs of the study, thus producing nuanced results from the data. (Braun & Clarke 2006; King, 2004) Developing a level of trustworthiness is therefore key to thematic analysis and this can be accomplished via the implementation of various processes including but not limited to a criteria of credibility, transferability, dependability and conformability, indicators that can be aligned with other types of methodological techniques. (Lincoln, 2007; Greene, 2000)

For this particular study, multiple phases of analysis as suggested by Braune & Clark (2006) were implemented, these included (1) familiarizing myself with the data; (2) generating initial codes; (3) searching for themes; (4) reviewing themes; (5) defining and naming themes; (6) producing report (results). These phases are detailed below.

Familiarizing myself with the data: In addition to conducting all interviews and focus groups for the study, through the process of transcribing and translating the Spanish language

audio recordings, I was able to re-familiarize myself with the data. And, while English language interviews were transcribed initially with the Temi application, (Temi.com, 2010), I listened to all of the audio again as I confirmed that the transcription was correct. Both were opportunities to revisit the interviews and ensure accuracy of transcription and opportunity for critical reflection prior to the formalized analysis.

Generating initial codes: An initial coding matrix was developed based on a priori themes culled from the research questions. These specifically related to established themes of restructuring and social determinants of health informed by the literature review. These themes focused on Latino immigrants, health and social service utilization patterns, available resources and current health and social concerns for the population at the heart of the study. Codes were entered into an excel spreadsheet to be used for data management purposes.

Searching for themes: Once all data was initially coded to align with the a priori themes. new themes not considered as part of the original questions, organic themes were identified. This process was accomplished by going back and forth between the transcribed data and raw data to ensure that various nuances and experiences shared in the conversations therefore provided meaning to the themes. (Aronson, 1995; Ryan, 2009)

Reviewing themes: After both a priori and organic themes were identified and cataloged, a process of identifying patterns was implemented and to determine whether or not themes that had been identified were reflected in their meanings across the data set. The process was also another opportunity to review the transcribed data and compare with the initial and new themes identified. (Lincoln & Guba, 1985) Through this process it became evident that some themes were overlapping and therefore collapsed into one or that other themes had insufficient data to support.

Defining and naming themes: This phase allowed for finalization of the themes by identifying names for each. It is recommended that these names provide the reader a clear and immediate sense of what the theme is about. (Braun & Clarke 2006) Ultimately this phase is an opportunity for the story of the data to be told in relation to the research question. (Braun & Clarke 2006) In this particular study, since the research questions centered on exploring the intersection of the SDOH and changes over time and place, the themes were very much aligned with representations of that. See Table 1 for the theme names.

Table 1. Theme names as part of thematic analysis.

Social Determinants of Health	Transportation
	Housing
	Food
	Income
	Education
	Safety
	Family Structure
Spatial Determinants of Health	Restructuring-Urban Renewal
	Built Environment
	Relational Environment

Social Determinants of Health	Transportation
	Housing
	Food
	Income
	Education
	Safety
	Family Structure
Temporal Determinants of Health	Over time
Structural Determinants of Health	Power & Wealth Distribution
Health	Increase in Chronic Disease
Social Services	Increase in need

Producing the report: This final phase concluded the organization of data and identification and naming of themes and initiated the write up of the final analysis. (Braun & Clarke 2006) The credibility and trustworthiness of the study relies on how the data supports the key themes that emerged and how they relate to the established research questions and support the argument being made by this research. (Braun & Clarke 2006; Nowell et al., 2017)

Along with the analytic process implemented on the transcription, a similar approach was implemented with the journal entries as a way to add a layer of validation to what was shared during the community informant conversations. All journal entries were coded for themes and then reviewed across all of the participants so that parallels and divergences could be identified.

All assets shared throughout the data collection process (focus groups, interviews, or journal entries) were inputted into a Google Map (Google, n.d.) to provide a visual representation of the assets in respect to the South Blvd Corridor. Maps were not developed real-time with respondents during focus groups or interviews. Utilization of maps is a common practice to track everything from disease to neighborhood characteristics in public health. (Frerichs, 2017) Rather than using a different mapping software, Google Maps was an intentional choice in order to share applicable processes that extend beyond academia. As previously mentioned, this approach was implemented as a way to provide insight into how the environments or places in which people or communities are impacted by the SDOH are not fixed and changes to their character, as well as to the structures and processes driving that change, need to be considered as health determinants themselves. The maps became a visual representation of what both community members and informants described throughout the conversations and valuable data points in and of themselves.

Lastly, as the researcher, I implemented a continual process of reflecting on all results in order to inform the nuance necessary to better understand the determinants of health and the intersection between the social, spatial, structural and temporal elements, as well as them individually.

This analytic approach allowed for the exploration of how both the character and dynamics of the South Blvd Corridor, where individual determinants come together and how those determinants and their interactions are changing over time, have more of a role to play in health than has previously been given credit. In this case of this research the lived experience has been foundational to inform how the determinants of health are more than just social and include spatial, structural and temporal elements that are working together both individually and in concert. Additionally, although quantitative data is available to speak to urban restructuring, exploring the impact of this qualitatively first provided a framework by which to prioritize the indicators to be explored, because they were confirmed to be most impactful by both community members and informants. Lastly, this approach also supports the fact that the structural, spatial and temporal aspects of the determinants of health are consistently intersecting and therefore in order to tease out ways to address the health and social needs of an immigrant population living in an area undergoing restructuring, it is necessary to look at the data from different angles. As will be described in the next section, the quantitative data further explores the changes overtime and spatially. This process allows for residents and key informants to share their experience with the changes to the character of the area as well as to the structures and processes driving that change.

Quantitative Data Methodology

As previously stated a quantitative approach was necessary to implement an objective assessment of restructuring along the South Blvd. Corridor and to be able to support how data itself is a structure that needs to be considered when assessing the SDOH overtime in specific places and for specific populations. The overall approach was to use publicly-available census data from the American Community Survey (ACS) (*US Census Bureau*, accessed February

2019) to support three types of analysis (1) descriptive analysis of the prioritized restructuring factors among Mecklenburg County census tracts (2) regression analysis to evaluate associations between restructuring factors and changes in the proportion of Hispanic or Latino populations by census tract; and (3) spatial analysis to evaluate the clustering of restructuring factors found to be significantly associated with changes in the proportion of Hispanic or Latino populations by census tract. Further supporting a mixed method approach that speaks to the intersectionality of the spatial, structural and temporal aspects of the determinants of health and their impact on a Hispanic immigrant population.

Dataset

Data for the quantitative analysis was downloaded from the American Community Survey (ACS), a population survey produced annually by the U.S. Census Bureau. Census-tract level estimates of the factors described in Table 2 were used for the total of Mecklenburg County population as well as the Hispanic population. Two cross-sectional datasets were used, 5- year estimate datasets for years 2008-2012 and 2013-2017. The 5-year estimates were used because census tract-level estimates are not available for 1-year datasets, also 5-year estimates are more reliable because of a larger sample size and precision compared to 1-year estimates. The analytic sample included 233 total census tracts for Mecklenburg County and 10 census tracts identified as the South Blvd. Corridor (31.02, 31.03, 31.06, 31.08, 31.09, 32.01, 38.07, 58.24, 58.27, 58.29) The 2008-2012 ACS 5-year estimates used legal boundaries as of January 1, 2012. The 2013-2017 ACS 5-year estimates use legal boundaries as of January 1, 2017. No changes in census-tract boundaries between the 2000 and 2010 census years were accounted for in this analysis. (US Census, 2017)

Variables

Indicators that were discussed with Latino community members and key stakeholders are listed in Table 2. These indicators have been described in the literature as indicators of restructuring, determinants of health, and immigrant integration, all of which intersect in various ways structurally, spatially and temporally.

Restructuring factors include the following; population change, transportation infrastructure, rates and types of employment, educational attainment, housing (tenure, price, condition), rates of poverty and crime. (Clark, 1987; Hamnett, 1994; Kitchen, 2001; Radzimski, 2015; Sassen-Koob, 1986; Soja et al., 1983) These factors have also been described as social determinants of health in addition to factors such as insurance status, family structure and access to food. ("California Health Disadvantage Index – Public Health Alliance of Southern California," 2016; Krieger et al., 2002; Krieger & Higgins, 2002) In one form or another these factors intersect as restructuring factors and determinants of health, having an impact on various health outcomes, such as mortality, morbidity, life expectancy, and health status just to name a few. (Artiga & Hinton 2019) In fact, all of the indicators in Table 2 have been defined in the literature as social determinants of health. (Asad, 2018; Wallace et al., 2019, Castenada et al., 2015) Immigrant integration factors span socio-economic, cultural, legal and political and attitudes of receiving society. (Entzinger & Biezeveld 2003) For purposes of this project an initial emphasis was put into the socio-economic and legal factors that include, gender, age, citizenship status, language. Based on the literature, oftentimes restructuring is seen as changes in population, but for those areas with increased immigrant settlement there will be multiple types of changes, such as fully redeveloped single family houses instead of warehouses. (Sandoval, 2007)

Oftentimes quantitative data is imposed on a community to react to, in this case, it was imperative that the community spoke first to which factors were most important to them without bias of the data being presented. Therefore, although an initial list of variables were presented (Table 2) that had been identified in the literature, the final quantitative analysis was actually informed through the qualitative process. A full list of the ACS metrics and associated code used to identify factors is available in Appendix 2.

Table 2. Restructuring Factors and American Community Survey Metric

Restructuring Factors	**ACS Metric**	**Factors relation to restructuring**
Total Population	Total Population	Demographics variables such as these describe restructuring in a broader sense as they are describing the degree by which the population changes overtime and in which categories. Depending on the type of restructuring occurring in an area, the total numbers in this category will either increase or decrease. In the context of the change occurring along the SBC, one would expect the total population to increase and an increase in women and children; because of the influx of both more immigrants and younger professionals.
Gender	Total Male	
	Total Female	
Age	Median Age	
Ethnicity	Total not Hispanic	

Restructuring Factors	ACS Metric	Factors relation to restructuring
	Total Hispanic	Ethnicity and citizenship status presented in this context are indicators of restructuring because it speaks to both migration and immigration to a specific area by a specific group of people. The SBC has been a recognized immigrant gateway for the city, therefore it would be expected that there would continue to be an increase of Hispanic immigrants.
Citizenship Status	Total foreign-born and not a US Citizen	
Transportation	Total with car, truck, or van as means of transportation to work (among workers 16 years and older)	Because access to transportation is multifaceted and intersects with a number of different aspects of the lived experience, this factor speaks to both restructuring and degree of change overtime. The light rail was first built along the SBC (potential driver for gentrification), therefore providing access to center city assets for those that it is applicable for, therefore it would be expected that those with a personal vehicle would decrease due to utilization of the light rail as main form of transportation to and from employment.

Restructuring Factors	ACS Metric	Factors relation to restructuring
Employed	Total population (civilian, employed 16 years and older)	A change in employment rate overtime is impacted by many factors that are occurring in the community, a change in this rate speaks to restructuring and changing economies for an area. It would be expected because of an influx into the area of young professionals for this to continue to increase overtime, but it is important to consider those that are employed, but undocumented, therefore they are likely not represented in this data.
	Total population (civilian, non-institutionalized, 18 years and older)	
Educational Attainment	Total population (25 years and older; GED/HS Diploma, Bachelor's Degree or higher)	Educational attainment is an indicator of restructuring in that an increase describes how a place can connect to resources differently. Additionally, an increase of those with college degrees and above indicate a different type of population and changes to the area.
Language: No/Limited English	Total Population *5 years and older)	Language is a factor that aligns with foreign-born and non-citizen, describing the changes in migration and immigration both of which are factors in restructuring. Additionally, if the data continues to show an increase of those with

Restructuring Factors	ACS Metric	Factors relation to restructuring
		'No/Limited English' then it would be expected that decision makers would respond with availability of different kinds of resources.
Housing Type	Total population (in occupied housing units)	Traditional indicator of restructuring to an area, regardless if an increase or decrease. Along the SBC there has been a steady increase in the cost of rent and availability of single family houses for purchase. These are being purchased by younger professionals for the most part.
Housing Price	Median Gross Rent as a percentage of household income (renter-occupied housing units paying cash rent)	
Income	Median family Income in the past 12 months (inflation-adjusted dollars)	Aligns with other factors of restructuring, such as housing and employment
Health Insurance Status*	Total population in labor force (18 to 64 years-old)	Aligns with employment, as the rates of employment increase those with insurance should also increase.
Family Structure	Total family households	Descriptive indicator which has been shown in the literature to speak to community stability.

Note: Total population represents the denominator for each metric by indicator. Metrics were calculated by Census Tract.

Descriptive Analysis

In conducting the descriptive analysis 10 census tracts identified as the South Blvd. Corridor (31.02, 31.03, 31.06, 31.08, 31.09, 32.01, 38.07, 58.24, 58.27, 58.29) and the proportional representation of individuals associated with select restructuring factors were calculated among South Blvd Corridor census tracts and other Mecklenburg County (hereafter larger Mecklenburg County) census tracts. Denominators were calculated by summing the total number of individuals within South Blvd census tracts and the total number of individuals in larger Mecklenburg County census tracts. The numerators were calculated for each restructuring factor as the total number individuals representing the factor (i.e. total number of males) among South Blvd census tracts and larger Mecklenburg County census tracts. This process was implemented for both datasets (ACS 2008-2012, ACS 2013-2017) and for both populations separately (Total population and Hispanic or Latino). Therefore, results from this analysis provided an opportunity for a comparison of the percent of all residents represented by a restructuring factor living along the South Blvd Corridor with the percent of all residents living in larger Mecklenburg County. The time frame of the data sets takes into consideration both the influx of Hispanic immigrants to the area and various forms of documented restructuring (i.e. light rail) that occurred during that time. Select factors were visualized in descriptive maps. (Figures 2-5, in Chapter 4) Among those individual census tracts along the South Blvd Corridor, changes in the percent of Hispanic or Latino populations (Hispanic or Latino; Hispanic or Latino and Foreign-born) were calculated for each of the 10 census tracts. (See Table 3 in Chapter 4) It is important to note that the descriptive analysis looks at how these indicators have changed over time for the major ethno-groups included in the “Latino” category and those that are native born Latino. Including the subtlety for those that are native born and those that are not is crucial in

order to identify the nuances in the demographics of the Latino population, because roughly 85% of the Latino population in Mecklenburg are foreign-born.

Regression Analysis

The association between restructuring factors and changes in the proportion of the Hispanic populations (Hispanic; Hispanic and Foreign-born) among the Total Population was evaluated utilizing a linear regression model, as appropriate for continuous data and applied in prior similar studies (Smith & Furuseth, 2004) This process was implemented in order to explore the associations of factors that were shared as priority indicators during the conversations with community members and key stakeholders. For Model 1, the outcome variable was calculated as the absolute difference in the percent of Hispanic population by census tract. For Model 2, the outcome variable was calculated as the absolute difference in the % of Hispanic and foreign-born population by census tract. The independent variables for both models were the ACS 2008-2012 values for: Median Age, % HS education, Median HH Income, % Unemployment, Renter, Cost, % Insured. Both models included a binary factor that indicated inclusion in the South Blvd. Corridor (yes vs. no) to adjust for confounding by holding that factor constant. The percent of each model explained by the predictors (i.e. R squared) was calculated. Coefficients significant at the 5% level were selected for inclusion in the spatial analysis. The linear regression provided an opportunity to assess the relationship between restructuring variables and how those related to nativity status. From the literature review and conversations with community members and informants, it was anticipated that the inclusion of nativity status would be a stronger predictor of restructuring along the South Blvd. Corridor because it adds a layer of specificity to the demographic shifts beyond the more homogenous label of "Hispanic".

Spatial Analysis

Lastly, a Local Indicators of Spatial Association (LISA) was implemented to evaluate the clustering of some restructuring factors that were found to be significantly associated with changes in the proportion of Hispanic populations by census tract. This analysis measures spatial autocorrelation, in other words how well objects correlate with other objects across a geographical area. If there is positive autocorrelation that means that there are more similar objects closer together. On the other hand, negative autocorrelation is when there are dissimilar objects that are close to each other. For purposes of this study, it was useful to understand how clustering was spatially represented for those variables that were significantly associated with changes in the Hispanic population. Therefore, significance of the Moran's statistic was tested and clusters were labeled based on the direction of relationships (high-high, high-low, low- high, high-high). Thus allowing for a spatial visualization of influence of restructuring in specified cluster areas. (Anselin, 1995)

All analysis was performed using RStudio version 1.1.456 (R Core team, 2019). Map visualizations were created using the RStudio package mapview (mapview 2.9.4). LISA analysis was conducted using the RStudio package sedep (R Core team 2019).

Mixed-method Analysis Approach

In this mixed-method approach the qualitative data was collected and analyzed separate from the descriptive quantitative data, then it was brought together in order to compare, contrast and inform the second phase of the quantitative analysis which was the linear regression. This process of comparing, contrasting and informing results (O'Cathain et al., 2010) allows for integrity of the data collected by ensuring various points of reflection and validation. In addition

it also enhances the understanding and nuance that later informs the findings. (O'Cathain et al., 2010). An integrative strategy approach was also implemented, that allowed for data sets to be transformed into another, for example qualitative data turned into quantitative data and therefore allowing for different ways to interpret and reflect on it. (Caracelli & Greene, 1993) Therefore, implementing this mixed methods design allows for as close to a "real time" discussion of how any restructuring that is occurring is in fact a health determinant that should be acknowledged. Although previous research has kept the various aspects of the data separate or has not been considered, this project is moving beyond just "identifying" to engaging with an individual's lived experience towards informing meaningful action.

This mixed method approach allows for the triangulation of both the data and results in order to avoid potential biases that may occur from utilization of just one single methodology. (Graham 2005; Fielding 2012) Implementing a process of triangulation can also inform the completeness of the data. (Heale & Forbes 2013) By having a mixed method approach and then triangulating the information it introduces the potential for three kinds of outcomes, as Heale and Forbes (2013) described; this includes the possibility of convergence leading to the same conclusion; results that are different, but complementary and lastly results that are contradictory. The final outcomes of these result in converging, increasing and combining both quantitative and qualitative methods to answer a specific research question may result in one of the following three outcomes: (1) the results may converge and lead to the same conclusions; (2) the results may relate to different objects or phenomena but may be complementary to each other and used to supplement the individual results and (3) the results may be divergent or contradictory. Converging results lead to increased validity through verification; complementary results

highlight different aspects of the results and divergent findings can lead to new and better explanations for what is being explored. (Heale & Forbes, 2013)

Because this research argues that the determinants of health are consistently intersecting in different ways overtime, it is most effective to implement a mixed method framework and implement a process of triangulation. This framework provides an opportunity to rigorously explore and understand the role that the various determinants play in health, in particular for an immigrant population. The environments and places in which Hispanic immigrants are impacted by the SDOH are not fixed. Therefore, integrating the lived experience of those immigrants via qualitative methodology and having them inform which key variables are explored quantitatively, highlights the changes to the intersection of the various aspects of the determinants of health. The findings are then key to informing change and addressing the health and social needs of, in the case of this research, Hispanic immigrants living along the South Boulevard corridor in Charlotte, NC.

CHAPTER 4. STUDY AREA

New Gateways, Charlotte and focus on Latino Immigrants

Over the last 40 years, Charlotte has transitioned into a globalizing city that continues to be very "southern". Its economic structure has gone from reliance on manufacturing and textiles to the second largest financial center in the country. During that time Charlotte also transitioned into a major emerging immigrant gateway, this term was developed by Audrey Singer (2015) to identify metropolitan areas in the US that for most of the 20th century had small immigrant populations but then, starting in about 1990, saw their foreign born population grow at a rate much faster than the national average. Examples of these unique metropolitan centers included cities like Atlanta, Orlando, Austin, Salt Lake City, and Denver; as well as Charlotte. Specifically for Charlotte and surrounding areas, a record-setting rate of urban growth and economic property was experienced during the last quarter of the 20th century. (Hanchett, 2020; Carlino & Saiz 2011) Unfortunately, aspects of its Southern history and social/class structure remain, such as segregation and inequality. In fact, a 2014 Harvard study found that Charlotte ranked 50th out of 50 in economic mobility among the largest American cities. Stated simply, a child born poor in Charlotte has only a small chance of moving out of poverty, emphasizing the inequity present in the city and recognition that place indeed matters. (Chetty et al., 2014) Within this research process, a critical question is - how does urban restructuring at the intra-urban level contribute to Latino immigrant inequity through impact on health and health related factors?

One of the most significant processes in urban social geography at the end of the 20th century was the development of new immigration geographies, specifically the host nations for immigrants shifted. New immigrant settlement patterns were redirected to nontraditional

gateway cities and regions. At the neighborhood level, new immigrants were building communities that were very different than those in traditional gateway cities. Therefore, the spatial arrangement of immigrant homes and lives in these new gateways, like Charlotte, were foundationally different from traditional immigrant communities. This resulted in immigrant communities in Denver, Atlanta and Charlotte, being nothing like the immigrant communities in New York, Chicago or San Francisco.

And just like anybody living in an urban space during this time, new immigrants have also been impacted by the various processes and conditions occurring overtime in the urban environment. Indeed in some urban neighborhoods processes of immigrant settlement intersect with other powerful forces of restructuring. In the context of Charlotte, this research takes the opportunity to explore the new immigrant Latino settlement in the South Boulevard Corridor (SBC). The SBC represents a typical older suburban geography that has undergone significant urban restructuring along a number of fronts as well as attracting large Latino immigrant populations during the past 20 years. Since the 1999 announcement that it would be the location of a new light rail public transit line, the corridor has been a primary nexus of infrastructure upgrading, revitalization, and gentrification in Charlotte. (Yan, 2012; Zhong & Li 2016; Nilsson & Delmelle 2018) Of interest to this study is how rapid urban change in the SBC has had the potential to impact the health of Latino immigrants and how restructuring as a force of social, structural, spatial and temporal change should therefore be considered a determinant of health.

Charlotte as an emerging gateway

For many years Charlotte-Mecklenburg was very representative of classic Southern urban life. Charlotte's population and economic growth was modest compared to other areas and it was primarily driven by national and regional economic fluctuations. Following World War II,

population growth accelerated and like other 'Sunbelt' cities, Charlotte transitioned from urban to more suburban geography. By the 1960's city boundaries were pushed away from the city center due to the sprawling low density residential and commercial land development, therefore rings of suburban urbanization were in place. This created devaluing and underutilization of suburban development of older residential and commercial landscapes. Demographically, Charlotte was traditional in the sense that it was primarily black and white, most new residents were either born or moving from other Southern states. In the 1960's a number of policies were put in place by Federal courts that perpetuated overt racial discrimination in housing, employment and public services. Class prejudice shaped neighborhood desirability labeling and stigmatization. (Hanchett, 2020)

As long-standing spatial patterns of immigration were starting to shift in the late 1980's in the United States, Charlotte was at the center of that shift. In 2006 Roberto Suro, a leading immigration policy scholar, presented the keynote address at a UNC Charlotte symposium on Latino immigration, he postulated that when the history of Latino Immigration in the 21st century is written, Charlotte would be recognized as a key starting point for the new gateway experience. (Suro & Singer, 2002)

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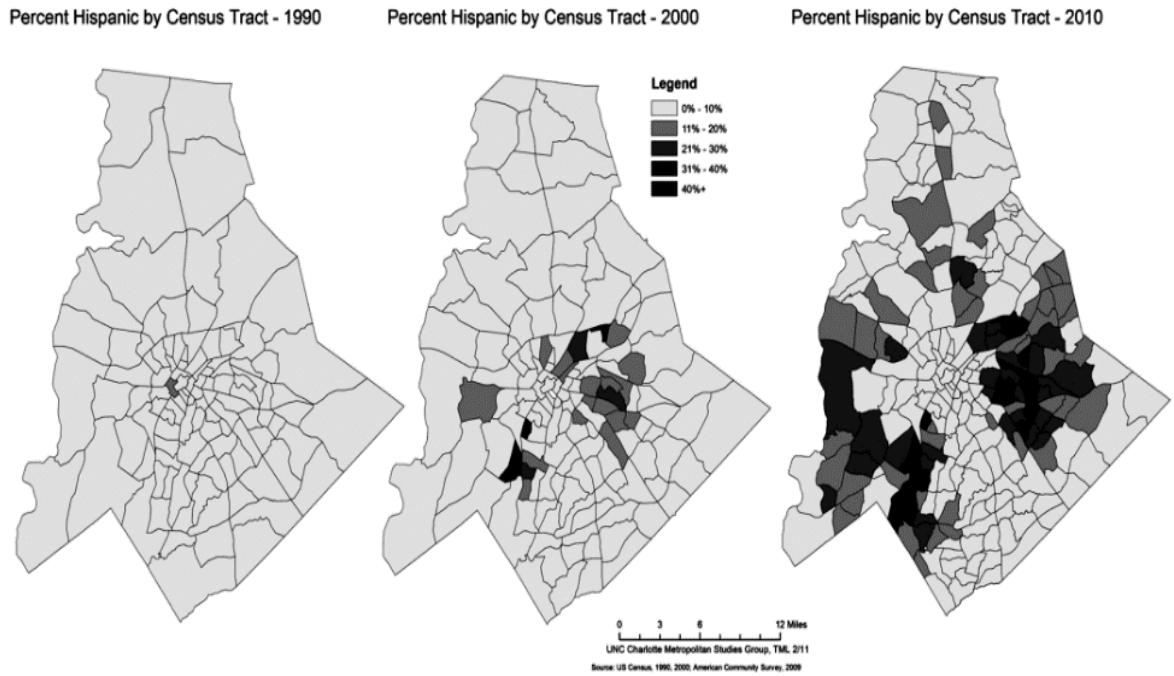
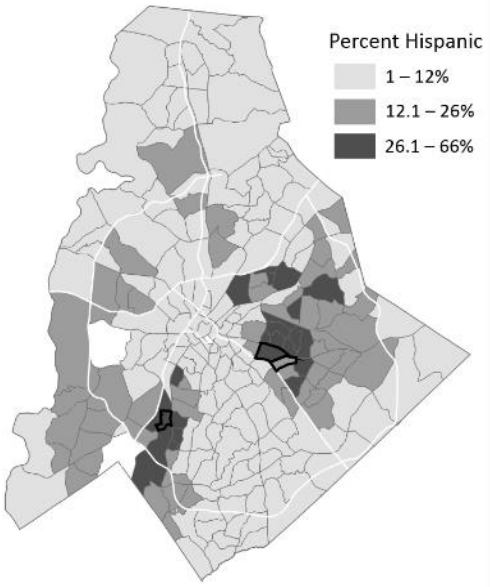
Figure 2. Mecklenburg County Hispanic Settlement Maps 1990-2010, 2015;
(Source: Coffman et al 2017)



Percent Hispanic by Census Tract-2015



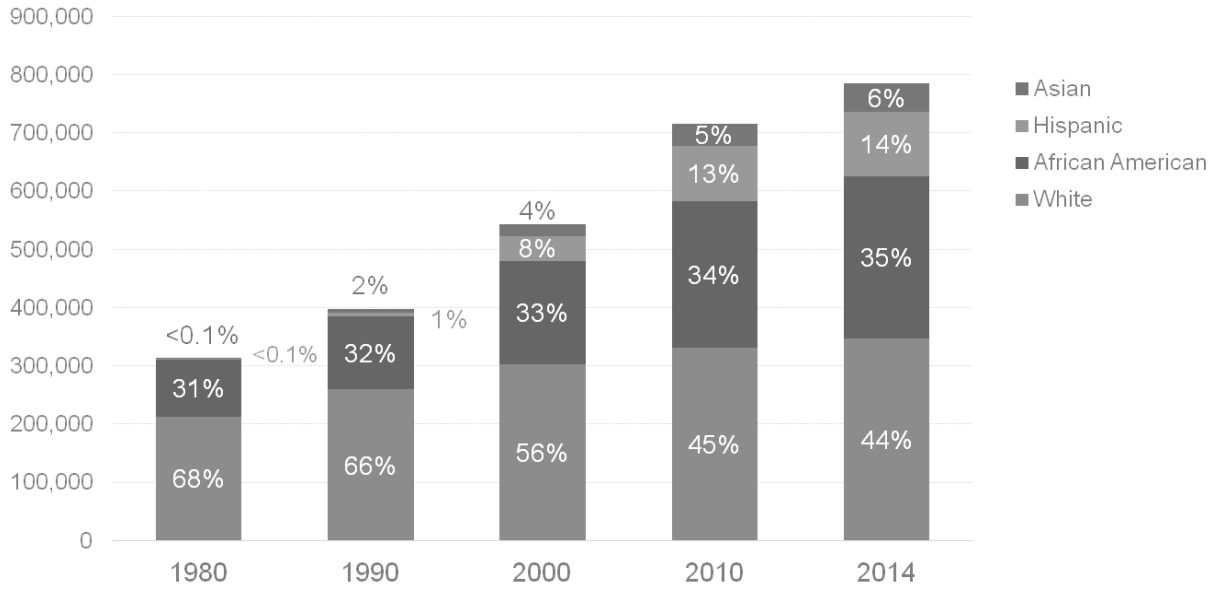
Professor Suro's prediction was grounded in how fast and how much Latino immigration was occurring in the city. Figure 2 illustrates this assessment, based on the decennial census data it presents the percentages of Hispanic-foreign born residents per census tracts in Mecklenburg County, between 1990 and 2010. A study by Coffman at al. (2017) also provided settlement patterns for 2015 data (based on ACS five years' estimates) that visualize more continual changes over time. One significant caveat to the data that is presented, is that it is very likely an undercount of the target population. Much has been documented in the literature in terms of the accuracy of this data in particular for those that are undocumented and there is thought to be a significant undercount of the foreign-born populations. (Furuseth et al., 2015)

A review of the data shows a number of things as it pertains to the Latino immigrant landscape. First, the initial wave of Latino immigrants to Charlotte in 1990 were predominately living in small low income inner-city neighborhoods. This changed by 2000 as the population had rapidly grown and was now settling out of the inner city, instead calling the older suburbs their new destination. In particular two clusters had formed, the East side of Charlotte (along Independence Blvd) and South west of the central business district (along South Blvd.). This settlement pattern, unlike the "melting pot" that had previously happened in traditional gateway cities, was more of a "salad bowl" where each group living in the new landscapes were creating their own defined spaces. (Hanchett, 2010) By 2015, it was clear that a new wave of suburbanization of this particular population was taking hold of areas that had been traditionally black and/or white.

Similar to other new immigrant gateway cities, Charlotte was also experiencing the same high level immigration during the same time period. Figure 3 depicts the various scales of change over time, starting with the 1980s, where it was still very much a black-white dichotomy.

As the next decade started there was a clear shift to the transformation that Charlotte was going to be undergoing, starting with the Latino newcomers. By 2000, an influx of Asian population joined the Latinos and contributed to Charlotte-Mecklenburg's transformation to being a majority-minority county, officially classified in 2010. The growth of the population has continued since 2014, with both immigration and in-migration. (Cline, 2019)

Figure 3. Charlotte, NC Population by Race and Ethnicity, 1980-2014 (Source: Smith et al 2016)



Charlotte is nationally recognized as one of the most significant new immigrant destinations and current demographic data and recent population trends for the city and county indicate a continuation of the 'Latinization' of Charlotte that led to this recognition. (Mohl 2003) In fact, the Brookings Institution's characterization of Charlotte as a pre-emerging gateway in 2004, transitioned about 10 years later, with a new characterization of being a major-emerging gateway in 2015 and being listed as one of America's 'Twenty-Five Century' American gateway cities shaped by the trends in suburban settlement and trends. (Singer 2004; Singer 2015; Singer et al 2008)

Change is to be expected over the life course of American cities, but a major question in particular for the Charlotte area, both regionally and in the urban space, was why did it become an immigrant destination in the late 20th Century? What were the factors that led to the rise of not only Charlotte as one of these new gateways, but similar cities like Denver, Austin, Las Vegas and Phoenix? A comparative analysis of the 'second tier' urban centers that form the core of the cities with substantial Hispanic immigration reveals a number of common economic and settlement characteristics. First, these cities were experiencing unprecedented and robust economic growth during this time period, including job growth. (Massey & Capoferro, 2008) The growth in the job market also marked a transition in blue collar labor, as many of these cities were shifting from manufacturing economies to new services which more often than not preferred location in the suburban areas for their commercial and office space. (Graves & Smith, 2010; Nickerson & Dochuk 2011) Politically, unlike other traditional immigrant gateways, early on these cities were in fact very welcoming and inclusionary and did not have the negative exclusionary tone that was part of the mainstream narrative occurring in places like California. (Lassiter, 2013; Shrider, 2018; Guffey et al., 2015; Johnson-Webb & Johnson, 1996) As previously mentioned, there was an increase of suburban sprawl not only because of the job opportunities, but also because of the increase in available housing. In particular, because housing was not only more available but also for a reasonable price, this broke the traditional model of immigrants moving into the cities that had more jobs and an increased likelihood of people they knew. This shift caused immigrants to settle directly into the suburbs. (Smith & Furuseth, 2006; Hanchett, 2020) Similarly for the Charlotte area, the shift followed two trends which included outward suburbanization and central city revitalization. (Graves & Smith, 2010) Many actually point to the building of the 60-story Bank of America building as a major catalyst

for this growth. (Smith et al., 2016) It certainly seems that Charlotte's rise as an international banking and finance center, has been instrumental to its continued economic and population growth as well as its shifting identity.

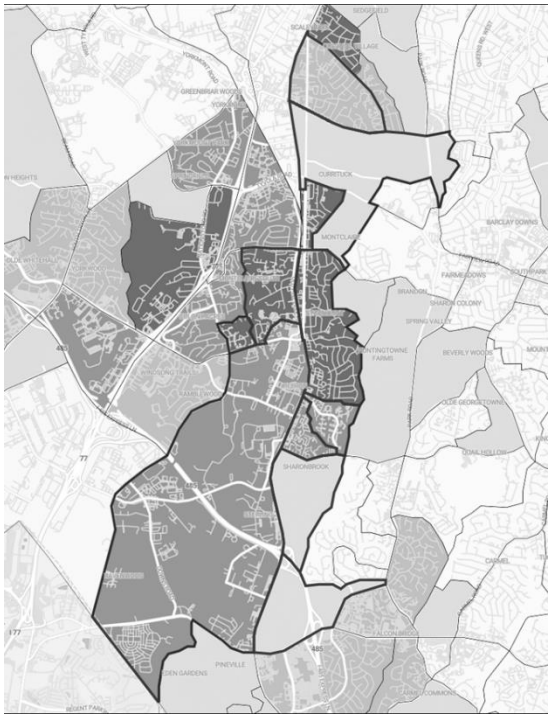
Study Area: Southwest Charlotte and the South Blvd. Corridor, North Carolina

As shown earlier, beginning in 2000, Latino newcomers in Charlotte were clustering in two areas of the city, East and the Southwest, specifically along the South Blvd Corridor. The settlement was multiethnic and interspersed as it combined new arrivals and earlier Latino immigrants. (Smith & Furuseth, 2004) Unlike traditional frameworks, these areas in Charlotte were in line with the new gateway framework, immigrants were not isolated to specific areas, rather the notion of a salad bowl was fostered. The "salad bowl" metaphor, coined by historian Carl Degler, broadens the discussion of the cultural change from the usual term of melting pot. (Hanchett, 2013) It was not so much a creation of one new cultural group, but several that were having to learn to live together in one area. The urban landscape of East and Southwest Charlotte is categorized as a mid-century suburban mosaic of ranch houses, garden apartment complexes, and small strip shopping centers, built primarily during the 1950's to 1970's (Hanchett, 2013).

In identifying a study area for this project, the South Boulevard Corridor (SBC) in Southwest Charlotte was the space that exemplified the various aspects of the research questions and framework. This area is one of the major integral economic and residential cores for the Latino immigrant community. At various points in time, there have been community-wide and social cultural institutions located along the corridor or in close proximity to the SBC. This corridor has changed with the successive immigrant waves that have settled and reshaped the area over the past 25 years, making it a dynamic urban landscape. Indeed, for this study it is important to understand that the impact of these waves of Latino immigration have been

mitigated by various forms of restructuring, such as revitalization and gentrification clearly linked to the building of the light rail running parallel to the main thoroughfare. (Yan, 2012) Therefore, this area serves as the ideal setting to explore how the spatial, temporal and social aspects of the determinants of health are working in concert and individually to impact the health of Charlotte's Latino immigrant community - and how parallel forces of urban restructuring play a role in that impact.

Figure 4a. South Boulevard Census Tracts



South Boulevard is an arterial road in Charlotte that was originally built to provide access from cotton mills in the Dilworth neighborhood, along the industrial area next to the Southern Railroads like to the Southwest edge of Charlotte at the time. Working class whites initially lived in the neighborhoods along the road. (Hanchett, 2013) The corridor underwent a transition so that by the end of the 20th century it was home to the second-largest number of Latino immigrants in the city and widely viewed as a "Mexican" part of Charlotte. (Smith & Furuseth, 2006) The SBC encompasses approximately 11 census tracts, see Figure 4a and 4b.

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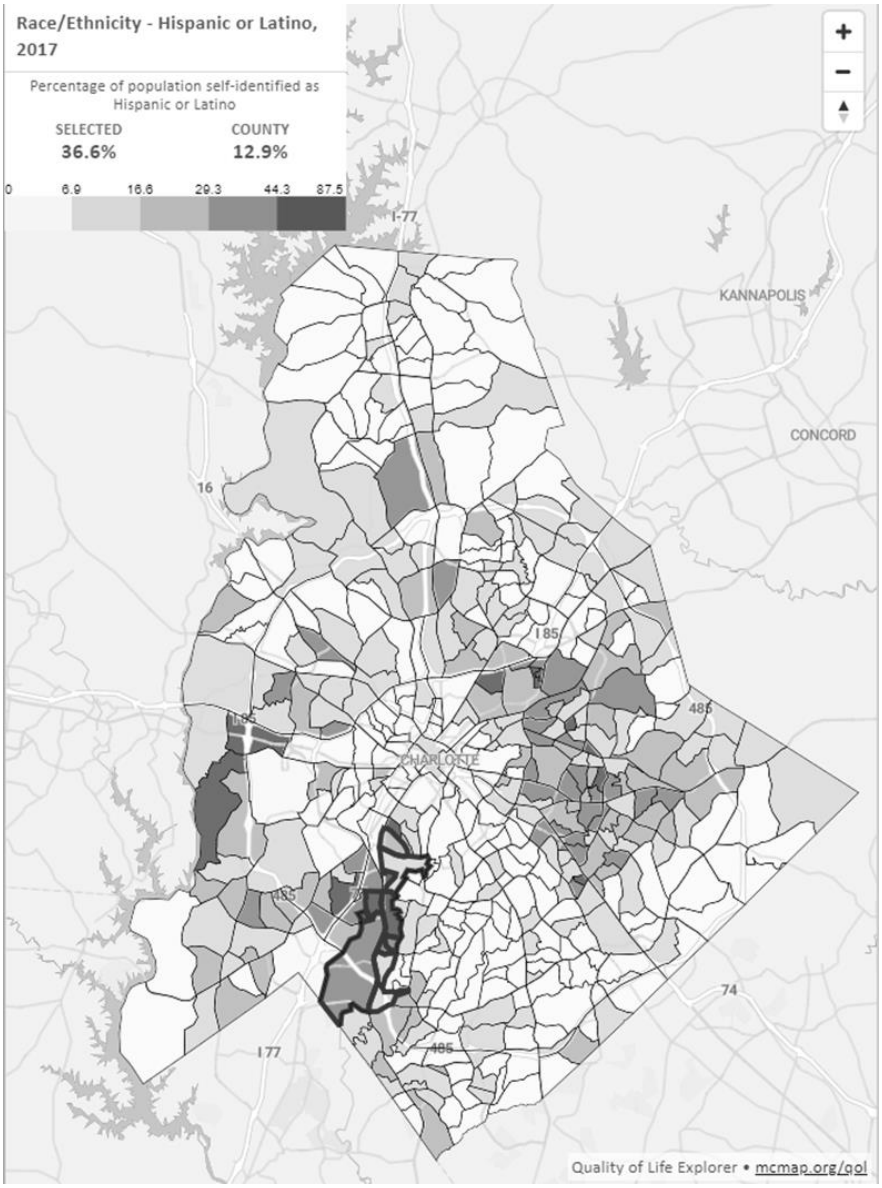
Figure 4b. Mecklenburg County, South Boulevard Corridor highlighted



The 2010 Census estimates that there are 7,986 Hispanics in the SBC. This represents 7.13% of Mecklenburg County's total reported Hispanic population. Note that data currently being presented is of Hispanic population in general and not specific to the foreign born or those that are undocumented. This data has been updated and presented in the results section of this

paper. The individual census tracts themselves have seen an increasing trend in Latino population. See Table 3 and Figures 5 &6

Table 3. Changes in Hispanic or Latino Population Proportions of South Blvd Corridor Census Tracts (n = 10)

	Hispanic		Hispanic and Foreign Born	
Census Tract	2008-2012 (%)	Trend 2008-2012 to 2013-2017 (%)	2008-2012 (%)	Trend 2008-2012 to 2013-2017 (%)
31.02	21.9	3.7	12.7	2.1
31.03	13.0	-3.9	7.6	-2.8
31.06	31.2	11.9	22.0	2.1
31.08	36.0	2.2	21.9	-2.0
31.09	38.1	0.2	24.8	2.0
32.01	50.2	-12.7	37.1	-17.1
38.07	40.5	-2.0	32.5	-11.3
38.08	60.5	7.1	42.7	4.6
58.24	45.1	-10.0	28.8	-4.5
58.27	7.8	7.1	1.9	6.2
58.29	26.1	-7.9	10.8	1.7

Figure 5. Change in Percent (%) Hispanic by Census Tract

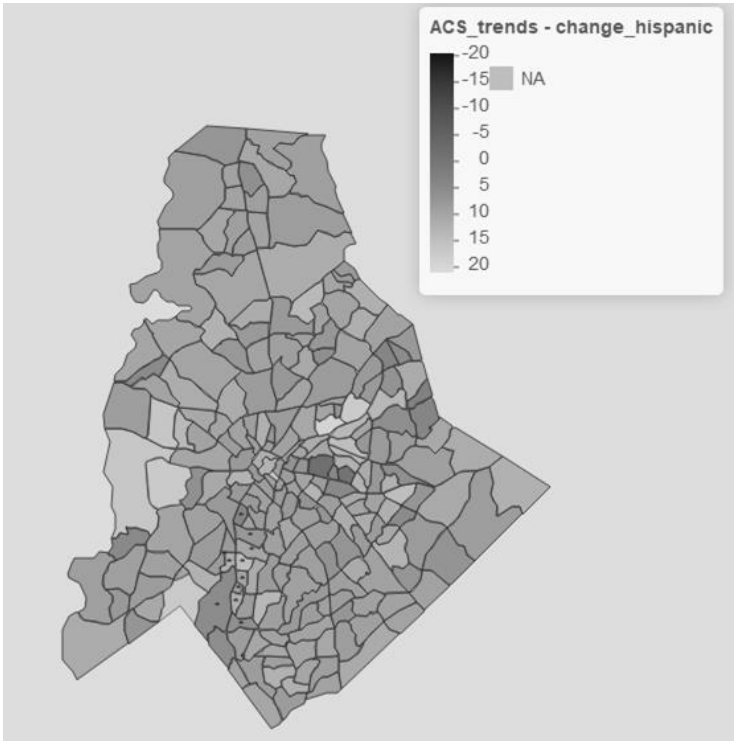
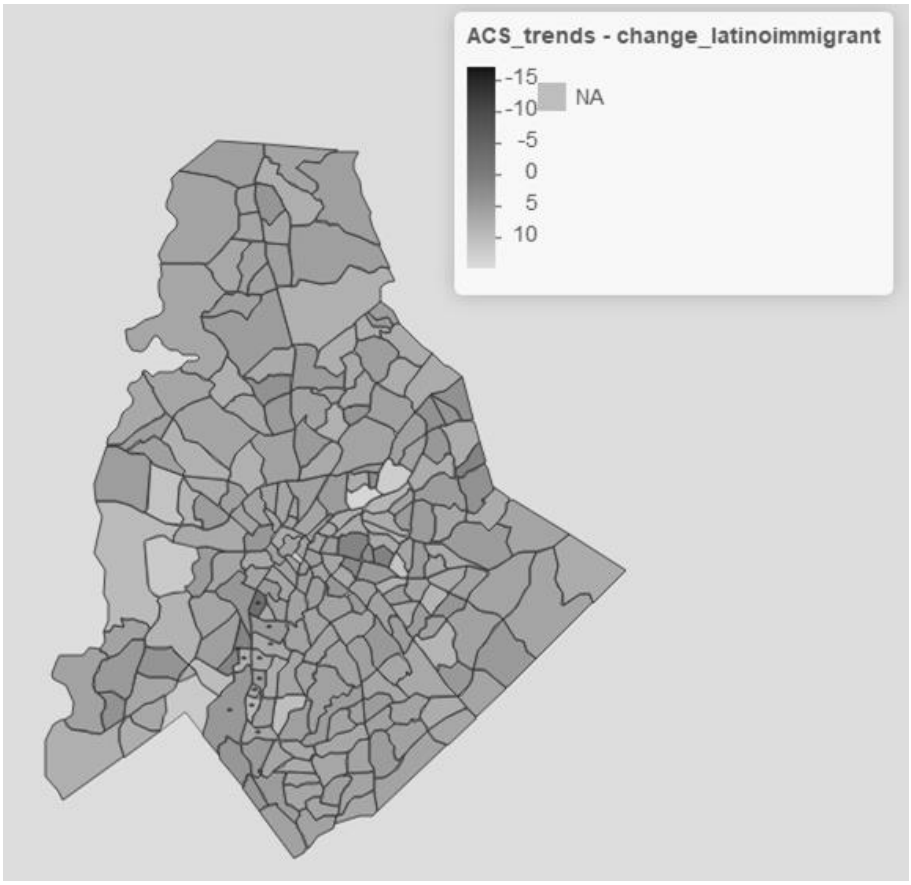


Figure 6. Change in Percent (%) Hispanic Immigrant by Census Tract

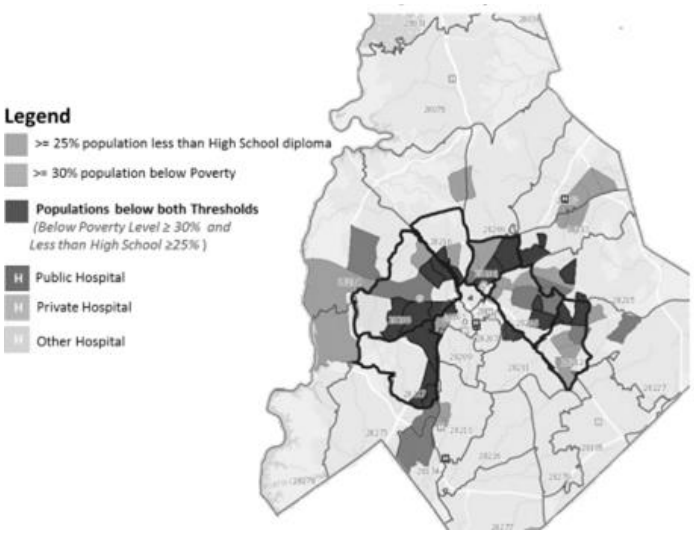


In their 2004 paper, Smith and Furuseth described a number of characteristics for suburban Latino immigrant settlement models. These attributes are common with other new gateway destinations. These include a mature suburban district with a variety of housing opportunities at varying price levels; a fair amount of racial and ethnic redistribution taking place; location that is accessible to suburban employment districts; proximity to the central business district is not necessarily critical, highly reachable public transit in the form of bus and light rail, and relatively walkable. (Smith & Furuseth, 2004)

When assessing various determinants of health and access to healthcare services are measured, the SBC is recognized as part of a high-risk geography. Community mapping of

public health data indicates the corridor is part of a "crescent" shaped geography of six zip codes that wrap around the center city from west to east. (Figure 5[4]) These areas have been designated Public Health Priority Areas by the Mecklenburg County Public Health Department. Residents that live within these zip codes tend to have higher rates of chronic disease mortality than the county average. They also suffer from lower educational attainment and increased levels of poverty. (MCPHD State of the County Report 2015)

Figure 7. Mecklenburg County Public Health Priority Areas. (Date Source: ACS, 2010-2014)



Zip Code 28217, which encompasses the 11 census tracts in the SBC, is included as one of the Public Health Priority Areas, but has not received the attention and intervention efforts directed at Zip Codes in West and East Charlotte. In particular, Zip Code 28217 has limited primary care services and/or social services relative to other Public Health Priority Areas. (Simmons, 2017) All of Mecklenburg County's Public Health Priority Areas have experienced some measure of urban restructuring. However, in the South Boulevard Corridor, the clear juxtaposition of uneven levels of health and social amenities, the sustained pressures of revitalization and gentrification pushing south from center city, and continued Latino immigrant growth, make it an ideal location to explore how varying forms of restructuring are a determinant

[4] Areas that are outlined are the priority zip codes, shaded areas are the areas with disparities based on education level or poverty or those with both combined indicators below the threshold.

of health. Real time community needs linked to the determinants of health continue and remain troubling in the Hispanic immigrant community.

The findings of this project will support answering the following three questions (1) How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert; (2) How has urban restructuring been a factor in the determinants of health for the Latino immigrant population in the South Boulevard Corridor; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Hispanic immigrant community living in Charlotte, NC. In answering these questions it will become apparent that both the character and dynamics of the places where individual determinants come together as well as how those determinants and their interactions are changing over time has more of a role to play in health than has previously been given credit. This is particularly significant for the immigrant populations as it is clear there is a gap in the knowledge of how to incorporate the understanding of the determinants of health and to change policy and systems to support them.

CHAPTER 5. RESULTS

In this chapter I present how conversations with community members and key stakeholders inform the ways in which the determinants of health are understood and experienced particularly for a Hispanic immigrant population living in a geographic area actively undergoing restructuring. As it is relevant to the conversations, quantitative data is interwoven throughout. This results chapter is organized focusing on the three questions posed by this research : (1) How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert; (2) How has urban restructuring been a factor in the determinants of health for the Latino immigrant population in the South Boulevard Corridor; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Latino immigrant community living in Charlotte, NC? These three questions are key to understanding the intersection of the various aspects of the determinants of health and the corresponding restructuring factors. A clear theme throughout the conversations with participants was that although the determinants of health are important to recognize individually, there is consistent intersection and overlap in how they are both understood and experienced. As such, it is important to look at them both individually and in combination to get a better sense of the impact. Similarly when considering how the restructuring factors have had impact as determinants of health, it is necessary to understand that quantitative data can only capture and describe so much. To ensure a fuller or accurate understanding of what is really happening on the ground it is critical to include both the lived experience from community members and perception of the impact from service providers as well. Lastly, acknowledgement of these various aspects of the determinants of health and restructuring factors is important in order to

implement solutions that are not just feasible and effective, but also have a sustaining impact on the health of the community members. This includes accepting that the way community members experience their space, and the restructuring that occurs in that space, happen over a period of time and that the fact and experience of that change is also a determinant of health. Although this study assesses these dynamics from an immigrant lens, the findings and arguments can also apply to a broader and native born population, thus contributing to understanding that there is intersection of the various aspects of the determinants of health across different groups. For example, African American pregnant women as a specific group, the determinants of health are impacted by gender, race, culture and clinical bias, not to mention the spatial determinants they interact with outside of the clinical walls. All of these factors intersect and impact the maternal morbidity and mortality rates for this group of women, differently than they do their white counterparts. It is crucial to acknowledge the various intersections across the aspects of the health determinants.

Participant Demographics

Community Resident Demographics

Community members (n=30), residents of the South Boulevard corridor (SBC) were recruited to participate in a focus group or a one-on-one interview, utilizing the same interview guide for both methods. Thirty community members in total were engaged. Most participants were immigrants from Mexico and Honduras, followed by Venezuela. Over half of the participants have been in the US/Charlotte area more than 10 years, with nine of them being in Charlotte over 15 years. (See Figures 8 and 9) 28 women participated and only 2 men. All participants were over the age of 18, no specifics on age were collected in an attempt to limit the amount of personal information being asked of the participants.

Figure 8. Country of origin for community participants

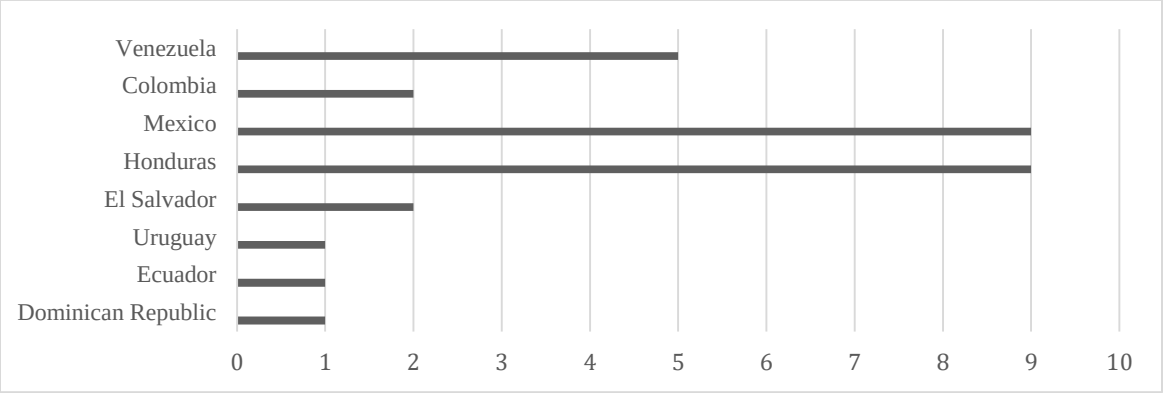
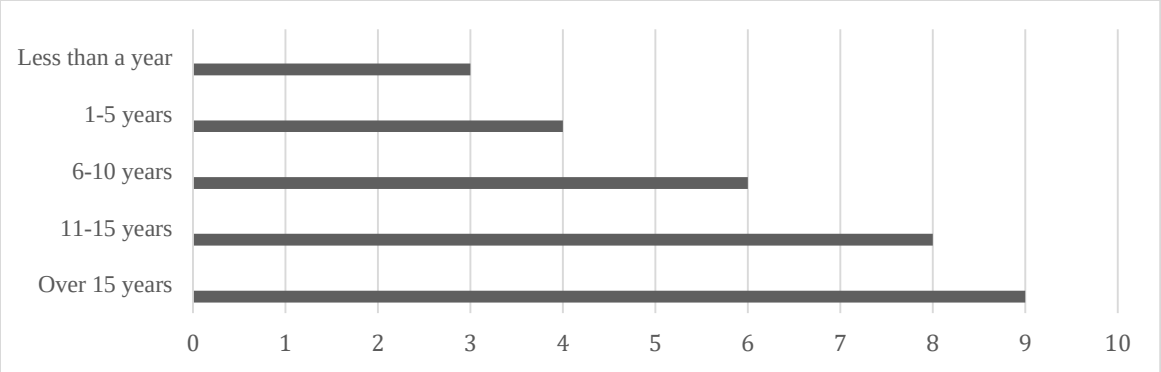


Figure 9. Time in Charlotte, NC for community participants



Key Informants Demographics

Key informants (n=20) are representative of various sectors in the community that engage with the Hispanic immigrant community members living along the SBC and across the city. Sectors represented were healthcare, education, social service, faith, local government, community advocates. (See Figure 10) The majority of interviewees have also lived in the Charlotte area for over 15 years and in both their professional and personal capacities have witnessed and/or experienced much of the change occurring across the city, including along the SBC.

Figure 10. Key Informants' role in the community

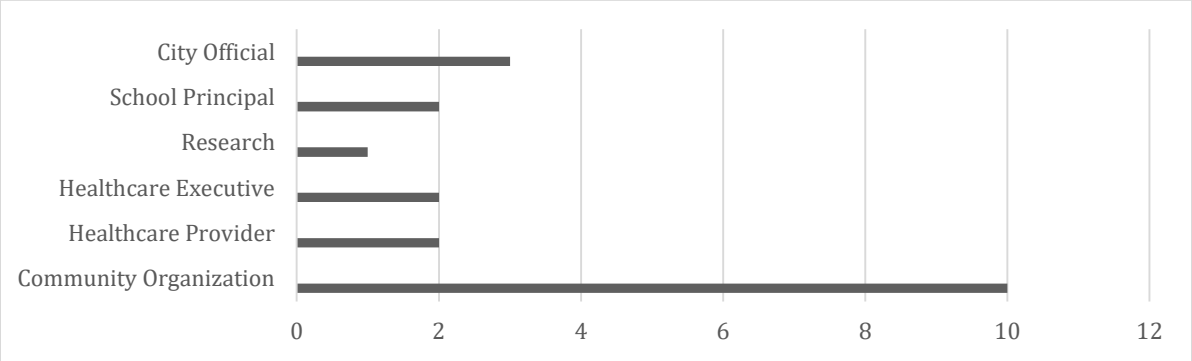
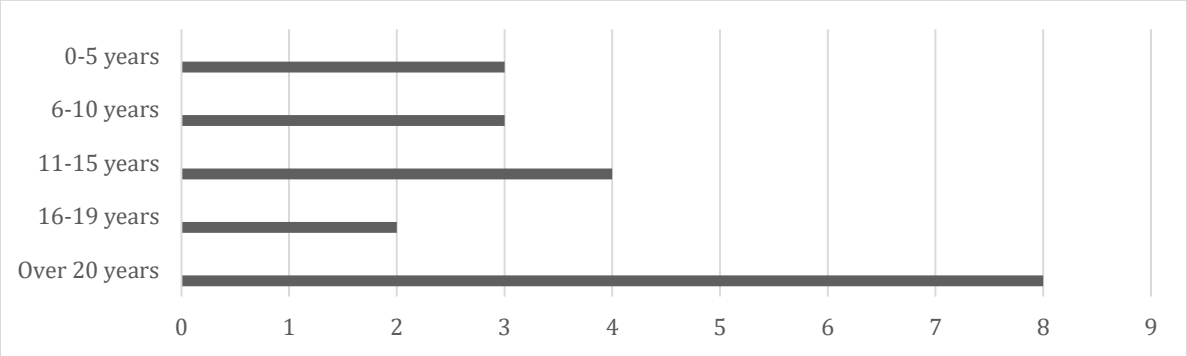


Figure 11. Key Informants' Time in Charlotte, NC



These key demographics are key to acknowledging the participants positionality and influence on their lived experience and perception of the restructuring occurring in the area and subsequent impact on the determinants of health.

Question 1: How are the determinants of health experienced and/or perceived to be impacted by the social, spatial, structural and temporal elements in combination and separately?

As is evident from the literature, the determinants of health do not occur in a vacuum. They are neither isolated from each other nor disconnected from the context or events happening

around them. Within the context of the community spaces where they live and work, respondents in this study reveal that the determinants of health are also very much impacted by various social, structural, spatial and temporal forces oftentimes occurring simultaneously. The SDOH literature primarily gives more weight to quantitative data, but this research prioritizes the 'lived experience' of Hispanic immigrants living along the SBC and the key informants that engage with them, as a valid form of evidence of both the experienced and perceived impact of the determinants of health. Through the lens of the 'lived experience' the determinants of health for the Hispanic immigrant community living along the South Blvd. Corridor, this chapter reveals that the not only are various determinants of health continuously intersecting and often reinforcing one another so too are there social, structural, spatial and temporal aspects.

As has been shared in the review of the literature there are a number of determinants of health. In this research respondents mentioned transportation, housing, employment and education the most. Lack of transportation, adequate/affordable housing, employment and education have all been linked to poorer health outcomes in the general population (Singh et al., 2017) and for immigrants as well (Casteneda, 2015). In order to simplify the presentation of these results, I will describe them by determinant of health and how the various aspects (i.e. social, spatial, structure and temporal) are impacting in combination and provide quotes and context to support from both the lens of the residents and key informants. Additionally, I have bolded sections of the quotes to emphasize the components of the quote that illustrate the main point being made, but leaving them within the context of the broader quote thus acknowledging the value of the respondents whole voice as evidence and context.

Transportation

Lack of access to transportation impacts health outcomes negatively because it leads to poor management of chronic illness, missed appointments, delayed care and/or medication use. (Syed et al., 2013) Hispanic immigrants living along the SBC, alluded to this in that they discussed transportation as a necessity in order to access various resources that are not located near them or along the SBC. Such resources included but were not limited to clinics, safe parks, and WIC.

Their experience of not having resources near them created many barriers for research participants. Residents have to travel long distances to get what they need, in many cases this includes health services. They also acknowledged that their ability to have private transportation is also dependent on their ability to attain a driver's license, which is dependent on laws that are in place. The State of North Carolina stopped issuing licenses to those that did not have proof of citizenship status in 2007. Since then several municipalities have attempted to provide access to some form of government issued identification at the minimum, but those efforts have not been successful.

> "**Driver licenses are not a luxury,** everything **is far**, people **need to be able to drive**"- Female, Mexico, 16 years in Charlotte

Additionally, the continued changes in the area, such as increased amount of construction and influx of people has created more traffic and Charlotte doesn't seem to be prepared for it. A key informant, actually noted that the infrastructure of Charlotte was planned in a way that has not been conducive to the growth patterns that are currently being experienced as well as to the location of services and resources needed for this group of community members. For those without means to freely move, transportation infrastructure can make it very stressful.

> "Charlotte is bigger, when I first came here there were not many Hispanic people, not many Spanish stores and **transportation, only the train**. There are a lot of people from different states and it has changed a lot. **A lot of traffic**."- Female, Mexico, 18 years in Charlotte

> "Public Transit, um, a bus runs up and down South Boulevard. That's a great thing. Right? Apartments are a great thing. Even the **apartments are not arranged for good walkability** because ... parking lots that you often have to drive to get to the bus pickup point, you gotta be out of there. So, when the **light rail is conceived, it is on one hand a transportation mechanism. It's also a redevelopment mechanism**. And the city sometimes in the late 20th century **put together a nodes and spokes plan where they say we're going to have some high density areas that are going to be spoke-like, which was new to Charlotte.** There'll be nodes, places like South Park, places like, Eastland Mall, Central Avenue, we are actually sitting in one on East Boulevard. That's going to happen and if we really want strong spokes, like rail would be a good thing. **But they run it down South Boulevard first because South Boulevard really needs redevelopment in their eyes.**" *Male, historian, 38 years in Charlotte*

The quote shared by the local historian illustrates the multiple layers of restructuring and their potential impact on health. Nevertheless, residents of the SBC seem to come together to support each other when it comes to transportation, giving each other rides to where they need to go. Within this determinant it is clear that there is intersection between each aspect - social, spatial, structural and temporal.

> " … to the transportation, you know, like that's why we couldn't have programs at night. **We want them to come to the concert and we know a lot of them that don't have modes of transportation** yet. Now that we're in the beginning now **they catch rides with everybody**. You see all the pickup trucks and [inaudible], full of chicos. So the **whole neighborhood is inside them.** ... But **transportation still [is an issue]**." - *Female, Educator, 5 years in Charlotte*

Housing

The public health literature is clear that housing - unstable, inadequate and unaffordable, is a key determinant of health. (Shaw, 2004) When the respondents discussed housing they focused primarily on how expensive it has become overtime. In addition they acknowledged that

there is a lot of new construction occurring, but that it clearly is meant for a specific sector of the population, that are wealthier and more financially stable. In other words, they spoke about the impacts of restructuring. In the quote below, for example, we see recognition that along with continued increases in the immigrant population, the SBC has also seen growth in a more diverse population and enhanced livability primarily for those that are able to afford. Over the years, the Hispanic immigrant population has had to make do with what is available in their price range.

> "Living 16 years, continue to have a lot of immigrants. When I first got here, South Blvd. didn't really exist, was a small road but there weren't that many houses. **It has become very livable for different people**, in the day it is safe." - Female, Columbia, 16 years in Charlotte

Additionally, the community members recognize that the increase in construction is not meant as an opportunity for housing for them, but it does mean an increase in access to employment. Hispanic immigrants continue to be mostly employed in this sector.

> In that they are **fixing the area, prettier buildings from uptown**, it was really old before. They are adding things that are **more modern and more new, but that is also causing everything to go up in prices around the area and the people [Hispanic immigrants] that are living in the area aren't making more**. - Female, Mexico, 16 years in Charlotte

> There is a **lot of construction**. You can see a sign for a new complex and you go ask if there are any left and **they may have only one and it's very expensive**. - Female, Colombia, 15 years in Charlotte

> "When I got to the Nation Ford area, that was the first place I lived there was not a lot of construction of homes, **now there are a lot of apartments, I think that's good. Because that means there is more work for Hispanics that usually work in construction**, for men but also a lot of women in working in construction, it's good that there is work."- Female, Mexico, 10 years in Charlotte

Community members spoke about how being able to purchase their own home is still the best option in order not to have to pay higher rents year after year for something that isn't theirs. But,

unfortunately, it is not as easy for this population because there is a general lack of accessibility to homeownership, which as the respondents have acknowledged is further impacted by structural constraints such as inability to secure a loan in addition to the prohibitive cost.

> "It used to be that they rented more, but now because the rents are getting higher both in apartments and houses. I think before it was more expensive to rent a house, than an apartment. Now it's not, it's pretty much the same, so it's about the same to rent a house. **But even more now instead of paying rent, so they start opting to buy more houses**… Well I remember that it's the same if you have a stable job. Because they are always checking credit, but **for those of us that don't have stable work, I think it is a little more complicated because you have to prove that you have credit or something that will back you up to get a loan.** That part has always been like that. But for those that have a stable job, do their taxes, receive a W2, every year they can prove that they have so many years working, and the more time they have working in the company it is better. **It will be beneficial and they can get a loan [to purchase a home**]." - Female, Mexico, 20 years in Charlotte

There are also many older single-family homes that are becoming available and these are attractive to specific groups of people such as young professions that are ready to start gentrifying the neighborhood. Unlike the Hispanic residents, this group is able to obtain the loans needed to purchase homes with greater ease.

> "Depends on where we start the corridor. Right. Okay. So I mean, you think about South End feeds into this whole area, it is dramatically shifted, right? **You can say it gentrified**, but I think, what you really see is a reuse of property. So property is significantly changed in that area. **It was more industrial, commercial, industrial property, and has become a hotbed of activity due to the light rail.** So, that sector has **become much more white and, I think that gentrification is moving down the line**. ... Housing prices are going up significantly. Whatever happens at the top of the street ends up impacting the back end of the street. A **lot of subdivisions end up going through renovations, placing people out**. Okay. And so you also see a c**oncentration of poverty, immigrant communities as well.**" - *Male, city employee, 15 years in Charlotte*

In the domain of housing the intersection of space, time and structure is very clear, constant change, such as lack of repairs and maintenance to existing housing, increased cost, and the

building of new units, over the years has impacted accessibility to affordable housing for this population and in this area.

Employment

In general, unemployment and job loss are associated with poorer health outcomes. (Ross & Mirowsky, 1995) From respondents' experience, the conversation around employment focused on how it is influenced by policy and therefore the type of employment available for this population. In particular, respondents brought up the impact that implementation of the E-verify[5] process had on those that are undocumented. Previously many were employed by larger established companies or had more options of the type of employment, but with the E-verify process, many lost their jobs and had to work for smaller companies, take on different types of employment or become self-employed.

> "Before my husband used to work for a plumbing company and then **when they started doing the e-verify and they got rid of people he was one of them, he started doing jobs on his own.** And what he has said is that initially when all that happened he was the only one really doing things on the side of the people that he knew. Now the **majority of people that he knows, friends that he had for a long time, are also doing things on their own,** there is a lot more competition for them. If he used to help somebody with a small job, they are also now doing the same thing. There is a lot of this happening in the community." - Female, Mexico, 20 years in Charlotte
>
> "Work has changed and **many employers are using e-verify**, so it's hard to work in other types of work," -Female, Mexico, 16 years in Charlotte

It is well documented in the literature that the type of employment available for this population is oftentimes manual labor and not near their home and requires them to travel long distances and

[5] E-Verify is a web-based system that allows enrolled employers to confirm the eligibility of their employees to work in the United States. E-Verify employers verify the identity and employment eligibility of newly hired employees by electronically matching information provided by employees on the Form I-9, Employment Eligibility Verification, against records available to the Social Security Administration (SSA) and the Department of Homeland Security (DHS). It is a voluntary program, but those employers with federal contracts or subcontracts are required to enroll in the program. (https://www.e-verify.gov/)

have access to transportation. (Chatman & Klein, 2009) Having to be away from their home has other implications on their family stability.

> "Well, in my experience, the **predominant employment of first generation Hispanics ... whether they're documented or not, is more the blue collar**. Frankly, they provide the most opportunity. There's the most demand and they pay the best because, because of the demand [inaudible] like I know that the individual, b**ecause blue collar workers work with his hands, construction makes $58 an hour. Why? Nobody else wants those jobs**. But if you look at more of the retail [inaudible] that's probably more challenging, you know, making this much money. We tend to get discriminated on because of lack of documentation. Yeah. They'll probably hire you somehow. I'm not sure how that whole dynamic works"- *Male, Pastor, 10 years on Charlotte*

> "I see people that have to **go to cities that are within 45 to 50 minutes away to work**. And when we have emergencies here with the children, they're like, somebody gave me a ride and I'm 45 minutes away and the kid is throwing up. So that is a big challenge for them. And then there are parents that pay a relative to take care of her child **while they're out [working], Sunday through Friday in another city**." - *Female, Educator, 5 years in Charlotte*

It is evident from the quotes by these two key informants that employment has various implications in the lives of Hispanic immigrants that they engage with, specifically, that this population is concentrated in specific industries and their lack of choice of employment due to structural issues such as documentation status and discrimination. In addition, the fact that they often have to work long distances from home adds stressors to their home life by making them unavailable for their children or others that may need assistance during the workday. They are not afforded the same flexibility as others may be, leaving work early or missing it could mean being let go.

Education

Lastly, it has been documented in the SDOH literature that educational attainment improves health, such that those that are well educated have stable employment and are in more control of the decisions that they make to have a healthy lifestyle (Ross & Wu 1995) But for an

immigrant population, as it was confirmed by respondents, the idea of educational attainment takes on a different meaning and is a clear determinant of health. From the perception of both residents and key informants the definition of education has to be expanded beyond the traditional context. Education for the community members focused on both learning the English and increasing their digital literacy in order to be able to navigate technology. Increasing their ability to use technology, allows them to learn about resources, navigate the new information and then access the services as needed.

> "What I have heard from the classes, here it is **very important to know English.** I think that this year there is **more need to help them master the language and drive technology** because that is what will allow them to work. And that is **going to help with their quality of life.** I would say when thinking about the needs, for women, I think help with the children so that it can free them up to get information and grow more so they can then access the labor market. In that it is **very important to know the language and navigate technology.**" -Female, Venezuela, 4 months in Charlotte

> "There are a lot of people that come without a lot of education, they don't know how to use a computer, maybe a telephone, but people don't know how to access the webpage. And for those that can access the page all of the information is in English. **One thing, they can't use technology, they don't understand the language so then it's even harder to make the move to a new place**." - Female, Mexico, 18 years in Charlotte

Both of the respondents in these quotes attest to the critical need to learn both the language and how to use technology to get to the information. This is particularly important because there is more reliance on sharing information digitally. As noted by one of the respondents above, that clearly puts certain immigrants that are coming to the US with less education at a disadvantage and creating a greater amount of stress in navigating the new place.

Key informants tended to have a more structural perspective, focusing for example on how the education system is influenced by polices that are disregarding the undocumented immigrant experience. Two examples provided were ICE's impact on immigrant families and

how undocumented children are not counted as part of the student population. As the quotes below illustrate, key informants shared ICE's disregard for the implications that an arrest of an individual has on just the family, but as shared below the school system as well. Administrators have unknowingly sent children to homes where they were left unattended, due to the parent's involvement with ICE. Additionally, key informants shared that for students that students that are undocumented, although they are enrolled, they are not counted when it comes to federal funding and resource allocations because they cannot provide a social security number for them. This leaves the schools with high enrollment of undocumented children underfunded and resourced.

> "I tell you one thing that I've been fighting for the last three years to change. When they do their arrest, if **they [ICE] don't allow the parents to call the school, because many parents that don't have a network here, if they don't allow to call the school, I'm sending a child to an empty room, an empty house.** But nobody, you know, so to me this, if ICE's needs to allow a phone call to the school and that should not count towards the phone call for the one phone call, you get prior rights because we, we had that situation happen twice." - *Female, Educator, 5 years in Charlotte*

> "So like the way that we **measure poverty now a student has to qualify for government services**. So if you're a **school that has a high undocumented population, contrary to what the stereotype is, there is zero public service that an undocumented student can qualify for.** And if the only way we're counting poverty is a student qualifying for government service, you've missed that. We are institutionalizing racism and prejudice. And then a second part of that is even within their volunteer process, we have this in my Hispanic parent focus advisory group , they're telling me, [name of principal], we, **we want to come and volunteer and be a part of our children's lives, but we have to have a social security number to have certain levels of status**. Now we at least let people in the building and they can have basic entry, but to engage fully as a part of our society and community. Now there are institutional barriers to that." - *Female, Educator, 20 years in Charlotte*

Not only is the definition of education broader with this particular population, but the perceived impacts to the overall process are different from the perspective of different people. Providing a different level of specificity that a quantitative indicator of 'educational attainment' cannot get

to.

Transportation, housing, employment and education were identified by respondents as having an impact on health and overall well-being was not surprising given their prominence in the social determinants literature. The conversations above points to how the experiences with these determinants intersect in many ways to impact their health. Particularly from their perspective as Hispanic immigrants. The approach of looking at these and other determinants of health in combination aligns with the framework that has been implemented for years and is certainly of tremendous value. With that said, this research makes the case that this approach can obscure the complexity of these determinants and the forces that shape and change them over time and space. The following section explores how the perception and experience of this study's respondents reveals the value of recognizing and examining the determinants of health in terms of their social, structural, spatial and temporal aspects and influences

The Social, Structural, Spatial and Temporal Aspects of Health Determinants

The perception of how the determinants of health are impacted separately by social, spatial and structural forces varies between residents and key informants. Their positionality, whether lived or experienced, provides a different lens by which to explore these aspects and provides additional context. The social aspect often refers to changing demographics or socioeconomic status, on the other hand the structural aspects refer to the distribution of power and policy. Although as previously described there is intersection of the aspects, there is value and importance in separating them. In fact it is also important to acknowledge the separate viewpoints of respondents in order to tease out the true impact of the various aspects on health. Community members speak to the impact from their own lived experience and perceptions of what it means for others living in the area. Key informants on the other hand are speaking to the

perceived importance of these aspects on the life of the residents of the corridor that they engage with. These are key differences that are important in the process of gaining a more comprehensive understanding of the determinants of health.

As previously mentioned it is often difficult to separate the various aspects- social, structural, spatial or temporal, of what is happening as an area is undergoing restructuring and how it is experienced by those who live there. Community members consistently shared how changing demographics were one of a few restructuring factors that were supporting the changes in the area. Their perception was that it is not only a continued influx of the Hispanic immigrants to the area but also a new group of people- young professionals. Unlike the Hispanic immigrant population, this group is able to afford the newer amenities in the area and leverage public transportation that is closer to their home and takes them to their place of employment. The quote that is presented embodies the perceptions of many of the community members living along the SBC as it pertains to the demographic shift.

> "I think **all this new and modern is affordable for the young people that are finishing up university and starting to work** or people coming from other places working uptown, like millennials. They are the **kinds of people that are looking to be close to their work.** I know a young man who would rather live in uptown than Mathews with his parents because he works there. He says it's cheaper [considering all the travel cost]. **He can do it because he is single and doesn't have a family and is just starting and so he has more money to spend.**" - Female, Mexico, 17 years in Charlotte

On the other hand for key informants the social aspects that they perceived to be of greater importance for this population was focused on acquiring confidence in speaking English in order to navigate the system and the focus on how this community builds networks to support each other. Specifically, learning the language is not enough if the person does not feel confident in utilizing it in their everyday life in addressing other determinants of health. Two of the focus

groups occurred with community members that were part of an English as a Second Language class, one of the group was encouraged to participate in the conversation in English. Building networks to support each other is reflective of the Hispanic culture and of how immigrant enclaves are formed. (Viruell-Fuentes et al., 2013) Again, exploring the viewpoints of the respondents separately is important in teasing out the experienced and perceived differences in the aspects and the impact of these on the population.

> "... I mean the **English language is a key. It's a key to open a million other doors of things that a lot of these immigrant and refugee families need.** So it's not just, 'Oh, I can communicate now with new friends. It's [more] I can feel confident going to a parent teacher interview with my child. [or] I can call the hotel because I left my headphones. … 'I can navigate the transportation system. I can go to the doctor and not have to wait hours for a translator to come.' And also the **language is kind of the first step to the acculturation process because it's really hard to understand the culture if you don't know what people are saying or what to say**." - *Female, Teacher, 27 years in Charlotte*

> "And since I've been here, you know, for the past four years, I don't know if any congregants or students, well I don't know if anybody that I know of that takes advantage of bus lines or the light rail, they don't come on Sundays through light rail [inaudible] they don't, they don't [inaudible] you know, **part of the Hispanic culture is that, you know, I think they heavily support each other and either they drive without documentation or they're carpooling**. I've yet to see or meet anyone that takes advantage of the light rail or the, now I don't know if it's because of, you know, I would assume this is all assumption, perhaps that legit lack of education perhaps. Is it really safe? Is it a concern for ICE? [inaudible] I'm not sure, but I don't know of any that take advantage…. **I've seen a lot of carpools**. Yeah. That's very, very common that they don't have transportation. Yeah. And again, within the church body, t**hey're very supportive of each other. It doesn't matter what the need is**... " - *Male, Pastor, 10 years in Charlotte*

Traditionally the social determinants of health are focused on the more generalized indicators of access to certain resources or services, but based on the conversations with the respondents, the definition of 'social' has to be broadened to how they are experiencing the demographic shifts in the community, learning the language to navigate their new surroundings and relying on their culture to support them. Looking at it independent of other factors provides the opportunity for

greater understanding in both the definition of the social indicators and how it impacts this population differently than others.

When community members discussed the spatial aspect of the area, they primarily focused on the built environment and what resources, amenities, or places were located in close proximity to them as can be seen in Figure 12. According to the respondents, it is clear that it is an area that has some of the basic needs, such as grocery stores and other retail establishments, what it lacks are healthcare and social service providers. Additionally, there continues to be a lack of recreation opportunities, such as parks that would support physical activity. The parks that do exist are not well maintained and deemed unsafe by the community members. Many spoke about going outside of the area to access other parks that are taken care of.

Figure 12. Spatial aspects of the South Boulevard Corridor as described by community members.

> "Yeah **Freedom Park is nice, but I think the ones in this area used to be nice but not so much anymore**. They haven't really taken care of it, although it looks like they are fixing it up, but it never changes. **Freedom [Park] has always been nice.**" Female, Mexico, 21 years in Charlotte

They also talked about how they perceived access to certain types of transportation for specific groups of people, such as young professionals, able to make choices of where they live in

relation to their employment. Lastly, they spoke to the experience of knowing of people starting to move out to the fringes of Charlotte, likely not wanting to be too far away from networks they have created, but being forced to move because of the cost of housing. These conversations are reflective of how changes across the city are also being described, certain groups are able to access the new opportunities, while others are being displaced by them. This raises the question of how restructuring is being targeted to support particular populations.

> "I think the **people that use it [light rail] more are the people that work in the center**, I think it's **mostly Indian and White, they work there [Uptown] are are living in this area more.**"- Female, Mexico, 20 years in Charlotte

> "Yes, a **lot of people from Charlotte are moving to the edges**. Maybe not exactly Monroe, but definitely the edges, like Pineville, Concord. **I know it's more affordable than Charlotte**." Male, Mexico, 4 months in Charlotte (prior to that lived in Monroe, NC for 20 years, has always worked in Charlotte)

The key informants had a slightly different focus and described the spatial aspect from their perspective of the continued changes occurring across the city as a whole and specifically how the SBC's changes are attracting a new group of people while at the same time continuing as an immigrant destination.

> "... new construction is booming. I mean, you can see that, **you can tell how the city's doing economically by looking at the [number of] cranes in a city.** So if you look at the city and you see multiple cranes of town, you're like, okay, two things, like, things going pretty well because we're building. Yeah. So that's a **great indicator of the financial health of the city**." - *Male, Pastor, 10 years in Charlotte*

> "... it's quiet, **but it is happening, so younger mostly white home buyers, whether they are single or married who can't afford anything in Dilworth or Sedgefield which is top of the market. Now Montclaire and those places are attractive, its [still] urban living, bigger yards, you are going to get good value**, that is happening quicker than what is happening in apartments. Even for down south, once you pass Montclaire and all of those places, it is not a whole lot of single family, until you get right behind the school. In between there it is mostly industrial and commercial." - *Male, City employee, 34 years in Charlotte*

> "What's **interesting about the South Blvd Corridor and all the corridors adjacent to the southwest, is that it has become the landing place seemingly for our Central American immigrants.** Okay. We do see a significant amount end up on the east side. But population share wise, it is **my understanding that we've seen a more significant, I can't justify this with any data, but I know I see maps in mind. We've seen a significant amount of Honduran, El Salvador, and Guatemala [that] end up in that South Blvd Corridor and Nation's Ford corridor.** Okay. But they do still end up on the east side as well."- *Male, city employee, 12 years in Charlotte*

Spatially, the determinants of health are usually focused on zip code as the geographic area and resource availability, but the respondents spoke about their interaction with the space around them differently. Community members focused on the built environment, particularly lack of amenities such as safe parks and resources, but they also spoke about the displacement of people they knew to the 'fringes' of the city. Many had come to the area because they knew somebody and so stayed within the area, but having to access resources and amenities outside of the immediate area and now knowing people that are moving is expanding their reach across the broader community. Key informants on the other hand, interestingly went from their localized focus on the corridor to talk about the continued changes across the city and county, particularly how Charlotte continues to be an immigrant gateway. The differences in how people are interacting with their space and how they define it is important to consider and why it is imperative to tease out the spatial aspect from the other determinants of health.

The structural aspect of the determinants of health for community members were described from their direct experiences with policies that impact their ability to work and function in the community as others do (i.e drive or start a business) or feel safe. Only one key informant described his understanding of how a tax ID policy can be used by undocumented immigrants to start a business. Although this is a possibility and many do this, being able to start a business just by using a tax ID does not address other aspects of employment that have

implications on health, such as insurance coverage. These quotes also illustrate the multi-scaler nature of the structural aspects. Decisions made at the federal level have impact at the regional and local level and often times act as barriers to positive health outcomes even when effort and progress are made locally. If policies do not align across scales then unintended complications can arise and the power of even the most well intentioned policy rendered null.

> "It was like 2006 when the [drivers license] law changed for many immigrants that don't have legal status. **That was the reason why I came from California to here, because they were giving them there and then they changed and it was very different there from here.** They [California law enforcement] would take the cars away when we didn't have a license and they would charge to get the car out. **And so we saw that here they were giving the license and there was also opportunity for work and so that is why we decided to move. We didn't have a car, but because that was our motivation, we walked to the DMV, even if we didn't have a car, that was our goal and we went to get a driver's license. We were so happy, we didn't have a car but we had a license.** And then with the time we were able to get a car." - Female, Mexico, 19 years in Charlotte
>
> "**Negative [impact] has been 287G that has affected the community** a lot, especially the Hispanic people. **It almost feels like they are being persecuted each day that they go out to the street. That has been very negative for the community.** 287G affects the community, **lots of fear, uncertainty of what will happen because of the elections**." - Female, El Salvador 14 years in Charlotte
>
> "So what tends to happen is companies can contract. **So if I don't have documentation to get employed because I don't have a social security number, what I can do is I can just start up a small business, get a tax ID, which is free from the government, has nothing to do [with status].** Whatever it is I can create a business entity. So cleaning services are very huge. I have several congregants who are under folks who come to church here who are undocumented, but yet they're able to, you know, create a business and that business gets contracts. You have mechanics that can do a very similar thing. You have of course, construction areas from carpentry to masonry to electricians. That can all do business being contracted, plumbers, similar things. **As long as somebody has their license, their primary license, anybody can work under them as their laborer, even though they [themselves are] not licensed."** - *Male, Pastor, 10 years in Charlotte*

Although the structural aspects of the determinants of health can take many forms, it was evident that for the community members it was very much focused on implications of policies aimed specifically at them. These policies make their everyday life difficult, particularly not being able

to have a driver's license and the fear that 287G created among them. These two policies have unique impacts on immigrants and therefore it is critical that a deeper dive happens in order to fully understand the various implications that policies have for this group. As noted already, it is imperative to acknowledge that the structural aspects of health determinants, such as policy, have impact at different scales and those impacts can reinforce one another in ways that both exacerbate or alleviate positive outcomes. Decision-makers must understand that their decisions have multi-scalar impact and may not align with efforts and policy put into place elsewhere.

Lastly, community members shared their experience with the temporal aspect, by associating it with the general change that has occurred in the area, in particular around safety and housing. Often times when thinking about immigrants, the perception of many is that they are 'new' to the area and have not experienced change over the years, but in the case of most of the community members that I had conversations with they have lived here more than 10 years, that is enough time, and in particular in Charlotte, to see an incredible amount of change. All of the change occurring at the same time is hard to tease out, but that is why this research advocates for that step of separating the aspects to better understand, particularly because there is increased value in seeing the determinants of health through a more complex lens that goes beyond the social aspect.

> "When I **[first] came here I felt safe, but right now no… it has gotten worse**"- Female, Honduras, 15 years in Charlotte

> "... or maybe **more like 2005, although there are still new ones [apartments] coming up, all along South Blvd**. especially going toward the center [city]. **That area has changed completely**. There are more people and it's getting nicer. **Before it used to be more poor, now it's fancier as you get towards the center [city**]."- Female, Mexico, 20 years in Charlotte

The quotes from these two respondents illustrate the point that temporal aspect of the determinants of health although critical to understand on its own, it also shows the intersection with other aspects, such as structural and safety.

As for key informants the temporal aspect was primarily associated with the growth in the Hispanic immigrant community over time and how the countries they are coming from have also shifted. Considering the positionality of key informants, for example the fact that they do not live along the South Blvd Corridor, speaks to their perception of what are the most impactful changes over time through the lives of the Hispanic immigrants that they engage with. The key informants also emphasize the fact that this population is not a monolithic group, rather it varies by country of origin, education level and economic status. Again, an opportunity to explore the various aspects of the determinants of health that go beyond social.

> "The **community has grown a lot**, when I moved here, and I actually moved to the area of Central and Eastway, it was where the concentration of the Hispanic immigrant community, around Eastland Mall and that whole area. But, **after 2006-2008 the community has really had a boom, and Charlotte has become one of the destinations for the immigrant community in particular for the Latino immigrants, it almost seems like the community is all over the place.** In other words, in all of the city you can find groups of immigrants, [although] it continues to be the area of **Eastway and of South Blvd like the major concentration, especially of people that are laborers, but here in this area that is North, near the University we have a population that is growing**. For example in the area of hidden valley, 62% of the students in that school are Hispanic, which means that the population has grown a lot. **We are finding groups of Latinos in the areas of the south, because there has also been a diversification of the population too. At the beginning we had more people that were from Mexico and Central America, but now we have a large population from South America, we have a lot of people from Ecuador, Columbia, Venezuela and the characteristic of immigration of those from South America is that they are mostly professionals.** They are professionals that are coming not only because they are looking for work, but because really the political situation and the situation in their home countries has become complicated and as professionals and **people that have some economic resources they decide to come to the US and start to get established and develop in a different way**." - *Female, Community Activist, 17 years in Charlotte*
>
> "And here's another marker. I think that I just realized in 2014 I remember we did English as a Second Language (ESL) and we did it in our prominent campus that is in

> South Park. And again, t**here were more rural, Hispanics, [coming] from their home countries. Honduras, Mexico, and now the population of ESL has evolved where again, there are a lot more educated, [coming from these] home countries.** I mean, I got ex-attorneys, doctors, dentists, that are now coming to Charlotte and of course their documentation is in question, but they were professionals where they were from, they were very educated. I don't know what the catalyst was. I wouldn't be able to say… Obviously in Venezuela there's a lot of persecution going on that led. ... Yeah. It definitely was very interesting." - *Male, Pastor, 10 years in Charlotte*

Similarly to the structural aspect, the temporal is another area that is experienced uniquely by immigrant populations and should be considered independently of the other aspects. This is because the label of immigrant does not mean "new" or that they have not experienced and/or been impacted by changes occurring over time in the location they have settled in. Understanding the temporal influence as its own determinant of health is critical in supporting this population.

It is clear that more often than not the determinants of health are consistently shaped and reshaped by social, structural, spatial and temporal forces. For Hispanic immigrants living along the South Blvd. Corridor their determinants of health are impacted socially by who and how they navigate what they know about the 'system'. Spatially they have to be nimble to adapt to their changing environments, whether it is where they live or work. Structurally, because many of them are undocumented there are policies in place that impact their everyday life that wouldn't have that same impact for somebody native born. Additionally, decisions are made that don't often take their lived experience into consideration, such as engaging them in providing feedback. Lastly, temporally, although some have been in this country for many years, their situation has not changed, yet everything around them has over that time. It is important to consider the way these various aspects impact the determinants of health in order to develop effective and sustainable interventions.

In answering the first question of this research, it is critical to look at the determinants of health and the various aspects of them in combination. Not only is it a natural approach to take when conducting research and engaging in a qualitative approach and having conversations about them, but it allows the real time exploration of the intersections and impacts. More often than not, although the focus was on one aspect, such as social, inevitably respondents shared other issues intersecting with that aspect that were more aligned with structural or spatial aspects of the determinants of health. For example, when discussing with key informants the importance for community members not only to learn English but also be confident, that is certainly approaching it from a social perspective, but for community members it was a structural aspect of their integration into the community, because it would mean that it would increase access to information and resources. On the other hand there certainly is value in pulling them apart as respondents alluded to, first because each type or respondent, whether it was a community member or a key informant was providing perspective from their own lived experience or their perception of the experience of community members. This difference is key and does need to be explored independently. Access to transportation as a structural determinant of health also has social implications that are different for those that are experiencing a lack of access (structural) versus those key informants that are engaged with the population and see the social aspects of carpooling. This research sets the stage for further research that can take a deeper dive into the separate aspects, intersections and influences that the determinants of health have across different populations.

Question 2: How has urban restructuring been a factor in the determinants of health for the Hispanic immigrant population in the South Boulevard Corridor?

Restructuring in the urban space is defined as the change that occurs from various influences and processes such as economic, structural or social and how they are spatially expressed. (Bradbury, 1985) Restructuring isn't only about how a place is physically changing due to these forces, but also how the community living in it experiences and is impacted by the complex and intersecting changes. This study makes the case that among those experiences and impacts are variations in health outcomes. The experience of living or serving a community in a place that is undergoing various forms of restructuring provides a different context of how the determinants of health, can impact a group of people, in this case the Hispanic immigrant population living along the South Boulevard corridors (SBC) are impacting their lives. Overall, by looking at the documented and experienced determinants of health it becomes clearer that there is an impact on the health of the Hispanic immigrant population along the SBC. These community members experience the restructuring in different ways from other population groups and that is not always represented or captured in the publicly available data. Utilization of the mixed method approach to answer the question of how urban restructuring is a factor in the determinants of health, is crucial in taking a deeper dive into both the restructuring occurring in the area and understanding how it relates to the determinants of health. Additionally, it is imperative to acknowledge that multiple processes of restructuring are happening simultaneously and overlapping along the SBC. It is not just the obvious light rail construction occurring in this area, it is also the (likely light rail precipitated) housing changes in terms of new construction, the revitalization of existing properties, and the rising rents and housing prices. And, this is all happening in concert with changes in the commercial landscape which have over the years been adjusting to meet the needs of an evolving demographic which is itself a force of restructuring. In the case of the Hispanic immigrant population, their arrival sees them engaged in their own

place making and processes of acculturation during this period that adds to and complicates their experience and perceptions of restructuring in other sectors. These different forms of restructuring have power individually and in intersection in ways that impact health above and beyond determinants that the literature had already identified as key to impacting health outcomes. This section will look at both the quantitative description of the restructuring and also how Hispanic immigrants and key informants have both experienced or perceive the change to impact health.

The initial proposal of this work included a broad list of indicators that were considered determinants of health (See Table 2). After qualitative data collection, reflection and analysis, indicators were refined to align with learnings from community members and key informants to support three types of analysis (1) descriptive analysis of the proportions of restructuring factors among Mecklenburg County census tracts (2) regression analysis to evaluate associations between restructuring factors and changes in the proportion of Hispanic populations by census tract; and (3) a spatial analysis to evaluate the clustering of restructuring factors found to be significantly associated with changes in the proportion of Hispanic populations by census tract. This approach allows for the study area to be evaluated within the context of the broader county.

Descriptive Analysis

Final restructuring indicators included in the descriptive analysis were those that were prioritized by the community members and key informants as most impactful to the community living along the SBC. These indicators were focused on the demographic shift (gender, race, ethnicity, nativity), employment, educational attainment, housing and insurance access. All of these indicators are also described in the literature as social determinants of health. (Kaiser Family Foundation 2018)

Table 4. American Community Survey Indicators by South Blvd Status, Total Population

	Total Population			
	ACS 2008 - 2012		ACS 2013 - 2017	
	South Blvd Corridor No. (%)	Larger Mecklenburg No. (%)	South Blvd Corridor No. (%)	Larger Mecklenburg No. (%)
Total population	39,704 (4.3)	887,169 (95.7)	44,024 (4.3)	990,266 (95.7)
Total Male	19,931(50.2)	428,235 (48.3)	21,391 (48.6)	475,731 (48.0)
Total Female	19,773 (49.8)	458,934 (51.7)	22,633 (51.4)	514,535 (52.0)
Total Non-Hispanic White	25,796 (65.0)	789,142 (89.0)	28,382 (64.5)	872,959 (88.2)
Total Hispanic	13,908 (35.0)	98,027 (11.0)	15,642 (35.5)	117,307 (11.8)
Total Foreign Born & Hispanic	9,289 (23.4)	52,082 (5.9)	9,708 (22.1)	57,287 (5.8)
Total Foreign Born & Not-Citizen	9,801 (24.7)	78,260 (8.8)	10,355 (23.5)	89,053 (9.0)
Total Transportation (16+ worker)	17,754 (86.3)	382,972 (87.8)	20,909 (86.8)	437,046 (87.0)
Self Employed (16+)	398 (1.9)	18,780 (4.2)	534 (2.1)	20,342 (4.0)
Unemployed (18+)	2,815 (9.6)	46,863 (7.1)	2,158 (7.5)	89,800 (14.2)
High School (25+)	6,437 (25.4)	112,791 (19.5)	5,962 (20.8)	117,283 (17.8)
Bachelor's Degree or Higher (25+)	6,397 (25.2)	237,086 (41.0)	9,714 (33.9)	293,483 (44.5)
Foreign Born & Spanish (5+)	7,172 (19.9)	35,233 (4.3)	7,515 (18.8)	38,525 (4.2)
Housing- Owner	12,383 (31.3)	562,924 (64.5)	14,601 (33.3)	586,733 (60.2)
Housing- Renter	27,221 (68.7)	309,181 (35.45)	29,295 (66.7)	388,583 (39.8)
Insurance- (18 to 64-year-old)	14,172 (60.3)	372,157 (76.3)	16,666 (66.2)	431,223 (83.3)

Note: % calculated as (No. / total population) * 100 for column (South Blvd Corridor vs. Larger Mecklenburg) separately
South Blvd Corridor = census tracts: 31.02, 31.03, 31.06, 31.08, 31.09, 32.01, 38.07, 58.24, 58.27, 58.29
Larger Mecklenburg = all other census tracts in Mecklenburg county

Table 5. American Community Survey Indicators by South Blvd Status, Hispanic

	Hispanic			
	ACS 2008 - 2012		ACS 2013 - 2017	
	South Blvd Corridor No. (%)	Larger Mecklenburg No. (%)	South Blvd Corridor No. (%)	Larger Mecklenburg No. (%)
Total population	13,908 (12.4)	98,027 (87.6)	15,642 (11.8)	117,307 (88.2)
Total Male	7,827 (56.3)	51,209 (52.2)	8,610 (55.0)	59,324 (50.6)
Total Female	6,081 (43.7)	46,818 (47.8)	7,032 (45.0)	57,983 (49.4)
Total Foreign Born & Not-Citizen	8,492 (61.1)	43,577 (44.5)	8,998 (57.5)	43,262 (36.9)
Total Transportation (16+ worker)	3,416 (50.2)	26,989 (61.2)	3,950 (52.4)	35,211 (66.7)
Self Employed (16+)				
Unemployed (18+)				
High School (25+)	1,944 (26.7)	12,099 (23.1)	2,022 (24.8)	15,385 (24.6)
Bachelor's Degree or Higher (25+)	415 (5.7)	9,040 (17.3)	858 (10.5)	11,786 (18.8)
Foreign Born & Spanish (5+)	7,135 (60.1)	34,786 (40.3)	7,491 (55.7)	38,466 (36.9)
Housing- Owner	483 (12.7)	11,959 (44.8)	463 (11.5)	12,885 (41.6)
Housing- Renter	3,325 (87.3)	14,706 (55.2)	3,554 (88.5)	18,080 (58.4)
Insurance- (18 to 64-year-old)	2,982 (33.5)	24,338 (40.2)	3,223 (33.7)	34,698 (50.3)

Note: % calculated as (No. / total population) * 100 for column (South Blvd Corridor vs. Larger Mecklenburg) separately
South Blvd Corridor = census tracts: 31.02, 31.03, 31.06, 31.08, 31.09, 32.01, 38.07, 58.24, 58.27, 58.29
Larger Mecklenburg = all other census tracts in Mecklenburg county

Table 4 shows the percentage of the Total Population in each geographic grouping (South Blvd Corridor vs. Larger Mecklenburg county) meeting the demographic and social determinants of health indicator criteria.

Table 5 shows the percentage of Hispanic Population in each geographic grouping (SBC vs. Larger Mecklenburg county) meeting the demographic and social determinants of health indicator criteria.

Demographic Changes

Elvin Wyly (1999) put it best when he said that, "American cities are portrayed as "galactic" and "restless" manifestations of global and national industrial restructuring, widening income inequality, demographic shifts, and the cultural sensibilities of new class formations." (Wyly 1999, p309) The descriptive analysis and then the grounding in the qualitative data, depicts this idea of a restless city, where demographic shifts are only one manifestation of it. According to results from Table 1, the total population count increased between time periods for both SBC (39,704 to 44,024) and larger Mecklenburg County (887,169 to 990,266) groupings while the proportions remained stable (4.3% and 95.7%) indicating stability in the overall distribution of residents. However, when we looked at the same proportional changes between time points within the Hispanic sub-population (Table 5), the SBC experienced a slight decrease in the proportion of Hispanic residents (12.4% to 11.8%) while larger Mecklenburg experienced a slight increase (87.6% to 88.2%) between time periods, despite overall total population counts increasing in both groupings. This difference speaks to the importance of isolating sub-groups and utilizing sensitive metrics so that trends don't get lost in the broader demographics for populations at large.

The proportion of Hispanic and Foreign-born residents in the SBC decreased slightly between time periods (Table 4; 23.4% to 22.1%) and remained relatively constant in larger Mecklenburg (5.9% to 5.8%). However, when examining the non-citizen segment of this group (i.e. Foreign-born, Hispanic, and non-citizen) the proportions in the SBC (Table 2; 61.1% to 57.5%) and larger Mecklenburg (44.5% to 36.9%) also decreased. In addition, the proportion of Foreign-born, Hispanic, and Spanish-speaking residents also decreased between time periods in both the SBC (60.1% to 55.7%) and larger Mecklenburg (40.3% to 36.9%) groupings. There was an increase in the total Hispanic population across Mecklenburg County, which does not account for the various periods of influx of the population, either immigrating in or migrating out. This is reflected in the conversations with key informants who spoke to the discrepancies of the data versus the lived experience in the area. Changes in the demographics of an area are often seen physically before they are accounted for in the data. Also, migration and immigration into an area often happens in increasing and decreasing waves overtime and is impacted by what is happening in other parts of the country or world, these demographic changes are not often reflected in the data.

> ".. it's hard to say 1990, you know, we can look at the census data then we can see kind of the anecdotal evidence in terms of when, I would say in a qualitative sense, having lived in the northeast and east change really curve when you saw the presence of Brown skin people just in everyday life. So when you went to the parks and people playing soccer or families were in there having picnics and parties, or you would see people standing at the bus stops or you'd see people shopping or you would see the growing presence of tiendas and restaurants and that sort of thing. **So in my mind, I kind of separate, I can look at the census data and say, Oh, 1990 there was this huge spike in population. But to try and tease out of that, it was actually before then, I would say so maybe the mid-eighties yeah. And again, it was a, it was a physical presence of, of people who did not look, like people who were here before.**" - *Male, demographer, 42 years in Charlotte*

> "More families with kids, school aged kids, there are a lot. Another thing that has been seen, is in the types of people that are coming. **5 years ago were predominantly Mexican and Honduran. There was an increase 2 years ago of Puerto Rican families**

> **after hurricane Maria. And now we are seeing a very large group of people coming from Venezuela. So we see these large waves of immigration coming from places depending on the situation that is going on in their home county**." - *Male, Community Organization, 15 years in Charlotte*

These differences in the demographics that are reported in the data and that are experienced by the community are ways that disparities and inequities in health and social services are created. If the changes in demographics of an area are not reflected in the data and decisions are being made by both policy makers and health providers based on inaccurate data certain sectors of the populations will not be adequately served.

The following are interpretations of the key determinants of health that have been identified as priority determinants of health in both the literature and participants in the qualitative data collection. Additionally, they are considered indicators of restructuring in many cases.

Transportation

When examining changes in transportation between time periods, results showed that the proportions in the total population remained relatively stable with a small gap between the SBC (Table 1; 86.3% to 86.8%) and larger Mecklenburg (87.8% to 87.0%). However, among the Hispanic population a large gap was observed between groupings that changed by multiple percentage points over time. In the 2008-2012 time period, 50.2% of Hispanic residents living in the SBC had a vehicle, compared to 61.2% of Hispanic residents in larger Mecklenburg county (Table 5). A similar gap was observed during the 2013- 2017 time period where 52.4% of Hispanic residents living in the SBC had a vehicle compared to 66.7% in larger Mecklenburg (Table 2). Between time periods a 2.2 percentage point increase was observed among Hispanic residents living in the SBC compared to a 5.5 percentage point increase among Hispanic

residents living in larger Mecklenburg (Table 5). These descriptive statistics align with the conversations with community members and key informants, Hispanic immigrants in the area do not have their own private transportation and rely on other modes of transportation. These are not accounted for in the ACS data, therefore understanding of the living experience and how the community members interact with the transportation options available to them is important. It is also helpful to acknowledge that transportation can also be an indicator of restructuring in a geographic location.

It is well documented in the literature that the lack of access to any form of transportation (public or personal) has a negative impact not just on health, but also general quality of life. (Wallace et al., 2005) In the case of Hispanic immigrants, specifically those that are undocumented, policies have also been put in place that make it difficult for them to get around the city in a legal and safe way. Locally, although restructuring along the SBC has resulted in the addition of some forms of public transportation, such as the light rail and bus, over the last 10 years, this is still not a mode of transportation that many of Hispanic immigrants living along the corridor are using for a number of reasons. First, the services that these residents need access to are not located along the light rail line, so they would still have to travel, in many cases walk, far distances from the stop to get to them. Second, the public bus system in Charlotte is not a convenient, nor efficient mode of transportation for residents of this area, or residents of the city in general. The hub and spoke model creates an inefficient process where a service that may be 20 minutes away one-way turns into 2 hours. Lastly, respondents shared that many Hispanic immigrants that they knew in the community are not knowledgeable of how to use any form of public transportation, since that was not something they used in their home country. This type of system creates many barriers to access and higher levels of stress for community members that

are reliant on it. It also makes it difficult to access health related services in a timely manner therefore worsening chronic health conditions and preventing acute care. It has been noted that the light rail is a convenient form of transportation for the young professionals moving into the area that work Uptown, thus continuing the disparity in access and utilization of transportation. Service providers also acknowledge that although a number of programs have been implemented in local vicinity to the community members, many of their participants still have to walk and weather has an effect on their participation. These are things that would not be an issue if these community members had their own transportation.

> "The few Hispanics she knew, heard about it [educational program in uptown], but it wasn't something they were interested in, because transportation or whatever the reason. **She came from Mexico City so she would use public transportation, so she was comfortable in how to use it here, but those that are born here may not know how to use it so they don't know how to move around in public transportation**." -Female, Mexico, 20 years in Charlotte

> " The necessity makes you do everything, it's not because you want to, but because you need to. **You don't have a license but you have to take your kids to the doctors' appointments or their activities**. Like in the summer you can't have a kid inside for 3 months, you have to take them out, you have to drive. **People can't pay an Uber all day to do activities. I think it is more of the necessity**." - Female, Mexico, 18 years in Charlotte

> "...but they aren't taking into consideration the infrastructure that is needed like lines of communication or roads. **They focus on the light rail, but it's a small strip that is parallel to an already existing avenue. The transportation system is horrible, I remember trying to use the bus and I waited for like 4 hours one time.** I know people that have come from other places, like NYC, and they complain that you have to drive because the **transportation system doesn't exist, and there are no alternatives**. It does cause some people to come and not stay." - Female, Venezuela, 15 years in Charlotte

> "That is the same for me too. I have family living here and wanted to be close to them. They say that this was a good place **because it was in the center, close to the interstate, the bus route, the downtown.**" - Female, Venezuela, 4 months in Charlotte

> "I know that they **had to walk to class because they don't have cars and I'm like, if they lived in any other city, the bus would just pick them up**. That creates problems when it rains. Like when it rains, our attendance is always lower, when it's colder our attendance is lower. **Just because of people who can't like the public transportation system in Charlotte is just not really gre**at." - *Female, teacher, 27 years in Charlotte*

Overwhelmingly it was evident from conversations with participants that there were also multiple points of intersection between some of the determinants of health when discussing transportation. For example, housing and employment availability were often discussed, whether it was that resources are not available near their home and they need to travel outside of the area to access or similarly with employment, where transportation is necessary because employment is not located close enough to walk. This becomes another form by which gentrification manifests itself in the location where Hispanic immigrants are settling, therefore having impacts on other areas as well. In the case of transportation, although it is an indicator of restructuring, the data is only reflective of the community members and key informant experiences with having private transportation, it does not account for other modes of transportation available and rates of utilization by the Hispanic immigrant population living along the South Blvd. This can make it difficult to quantitatively assess the impact on health, but qualitatively we have learned how transportation does in fact have an impact on health status.

Employment

Employment was a key topic of conversation with both community members and key informants. In looking at the data, other indicators (unemployment and self-employment) were not available for the Hispanic population separately, and therefore were only evaluated for the Total Population. Between time periods, the proportion of residents who were unemployed decreased in the SBC (9.6% to 7.5%) and increased in Larger Mecklenburg (7.1% to 14.2%). Self-employment increased slightly in the SBC (1.9% to 2.1%) and decreased in Larger Mecklenburg (4.2% to 4.0%).

Unfortunately because the data is not available by ethnicity, much less nativity status it is difficult to see how much of the shifts in employment for this specific population have

contributed to the restructuring occurring in the area. Additionally, opportunities for employment for the Hispanic immigrant community are usually limited to certain sectors that are usually in providing essential services because of their legal status, such as construction, hospitality and cleaning services. Because many are not able to work due to the E-verify process, they have created their own underground economy including employment opportunities, leaving them without access to health insurance or workers compensation, should they get injured on the job. Oftentimes this creates additional stressors in their life, such as childcare, employment location and pay. These stressors are building up overtime and more often than not manifest physically with headaches, abdominal pain and other conditions.

> "I would say all jobs in a lot of areas, the people that **I know there are a group of people that are more likely to work in factories or restaurants and others that go more along with construction or landscaping. There are a lot of options, but I think that in construction is where I have seen more Hispanic.** I think construction started more like 10 years ago, I think initially people worked in restaurants or retail, because before you didn't need to have a Social Security number or an identification that you were legal. **More recently with e-verify people that used to work in those jobs started to transition to the outside jobs because it was the only thing available.** Majority of the people I know, when I got here I started working outside in construction, but the 60-70% of the people that I know, before they worked outside, always worked indoors." - Male, Mexico, 4 months in Charlotte

> "I also think w**hat can have an impact is that you could get work and they wouldn't check your social status so it was easier to get work and it wasn't as much stress.** Now I think that the **majority of us are sick from the stress because things are complicated since we don't have a social, we don't have driver's license. All that makes us sick so we are full of stress and then you have a lot of illness. Before it was much easier, I had 2-3 jobs without a social and now no, many places say they will check you.** Even though in some cases you happen to know the person that manages, you may have a chance, but it still is not easy." - Female, Mexico, 21 years in Charlotte

> "I see **people that have to go to cities that are within 45 to 50 minutes away to work. And when we have emergencies here with the children, they're like, somebody gave me a ride and I'm 45 minutes away and the kid is throwing up. So that is a big challenge for them. And then there are parents that pay a relative to take care of her child while they're out ma, you know, Sunday through Friday in another city.** And that, that was just one parent to pick two families and eventually they had to give it up because nobody wanted to take ownership for this child. … You have those, you know those, **I called my Belk shoppers because they have a little money, then yuppies I call**

> **them my Target shoppers and the ones that are renting are my Walmart shoppers.** So then my, vision of this was that this place would be a community center where the, Belk, Target and Walmart shoppers are all together."- *Female, Educator, 5 years in Charlotte*

Although the data reflects a decrease of unemployment for the general population in the area, it does not speak to what is actually happening to the Hispanic immigrant population. This can only be described qualitatively by understanding the lived experiences of the community members. Because the area is undergoing large amounts of physical restructuring, there are many construction job opportunities, but the new housing and buildings being constructed are not ones that this population will necessarily live or work in.

Education

Traditionally when describing levels of education it is often done in terms of educational attainment, such as high school or college degree. This is difficult to do when describing it for a Hispanic immigrant population because the educational system in their country of origin does not necessarily align with the US. Additionally, their definition of education is more reflective of general knowledge of navigating the new place.

The data describes that overall, the proportion of residents with higher education increased between time points for both the Total and Hispanic Populations. However, residents of the SBC had a disproportionately higher influx of higher educated people. Among the Total Population, SBC residents with a bachelor's degree or higher increased by 8.7 percentage points between time periods, compared to 3.5 percentage points for Larger Mecklenburg County (Table 4). Similarly, among the Hispanic Population, a 4.8 percentage point increase between time periods was observed for residents of the SBC compared to a 1.5 percentage point increase

among larger Mecklenburg residents (Table 5). The influx of higher educated people to the area was reflected in the conversations with community members and key informants.

Education is both a determinant of health and in the case of Hispanic immigrants living in an area an indicator of restructuring. Traditionally, an influx of people with higher educational attainment would mean that there could be increased opportunities for gentrification, because the educated population could afford housing that immigrants are not able to. In this case though, residents spoke to education in a much broader sense and includes everything from children accessing educational opportunities, adults learning the language and overall knowledge to navigate the system, digital literacy. It also elucidates how the school system itself is a microcosm of what is happening in the broader community in respects to the demographic shifts. Both community members and informants expressed all these various aspects of education in the conversations, which broadens our understanding of the impact of restructuring on education beyond just educational attainment as it is presented in the data that is available for just the general Hispanic population.

The following quotes represent the different aspects of education that community members and referenced for the Hispanic immigrants living along the corridor. Navigating the new system or culture is a point of stress for this population, in particular as it continues to change over time, especially for those that are more recently arrived and don't have a social network that can support them.

> "I know Latinos that don't know that because we don't have family, you feel isolated, **we need to navigate in a culture where we have had to learn, others aren't able to learn as quickly or others can't and that results in stress, anxiety, and depression**." - Female, Mexico, 18 years in Charlotte

Traditionally the first step in education about a new place for an immigrant has been to learn the language and where to get work, it is also just as important to be digitally literate. In the case of this project, community members described knowing how to use a computer as essential to how to get information for themselves and their families. Having a handle of both the language and how to use computers increases the confidence of an individual to expand beyond their immediate social and geographic circle.

> "Also **programs to prepare people for work, or like this program to learn English.** Also there is **a lot of need for computers, so much technology is being used.** In my case, I would like to learn how to use the computer, because there are a lot of things on there now. I went to get a laptop, the ones they give you for $50 for the kids at CMS and if I hadn't known how to turn it on they may not have given it to us. **But I need more help, like how to send an email, how do I use websites, I would like to learn more**." Female, 19 years in Charlotte

> "And that's a process like to be, you know, 35 years old and have lived in this country for **15 years and starting to take English now, which unfortunately is the case with a lot of our students**. I mean they're experiencing the country in a different way. **They're able to do things with confidence. Being able to do things with confidence that allows them to live a functioning life here that is outside of a small group of people and location**. Um, so no one in the South Boulevard area would say, I don't go learn English. ... Do you want to learn English? They would say yes, but the problem is a desire." - Female, teacher, 27 years in Charlotte

Lastly, it is important to recognize that as different areas of the city are restructuring in different ways, the school system is a microcosm of the demographic shifts occurring in the area. That has certainly been the case for the South Blvd. Corridor, where the elementary schools in the area were the first to manifest challenges and opportunities created by the influx of the Hispanic immigrant population to the area. (McDaniel et al., 2017)

> "I think when they see a lot of Hispanic or black, they start moving away. The same thing happened at the school. **Like at one point there was a little bit of everything and then all of a sudden all of the white kids were gone and now there are very few. Now there are more Hispanic and black then white.** Before it would be you could count the blacks because it was more white and American. - Female, Mexico, 20 years in Charlotte

> "... this year in particular. **We have seen an explosion of families coming in.** Okay. We started the year at 429 and between the end of November and February we grew to 504. It

> was like something, I don't know what happened if they were empty somewhere or I don't know where they came from, **majority from Honduras.** They come by word of mouth and they know here they have a bilingual principal but will, you know front staff there, they're going to take care of you and you know, they have these monthly parent meetings and so that the word is out there and which is very flattering. But we are one on top of each other." - Female, Educator, 5 years in Charlotte

It is clear, educational attainment is not enough to describe the restructuring of an area, instead it is complex and more encompassing than that. It is crucial that as areas are restructuring that the various definitions and experiences of community members are taken into consideration around the concept of education. This is particularly important with the continued demographic shifts that include migration and immigration. That do not look to end any time soon.

Housing

Trends in home ownership showed inconsistent benefit between Populations and geographic groupings. The percentage of homeownership increased between time periods for SBC residents in the Total population (Table 4; 31.3% to 33.3%) and decreased among larger Mecklenburg residents (Table 4; 64.5% to 60.2%). However, among the Hispanic Population, a decrease in homeownership was observed among SBC residents (Table 5; 12.7% to 11.5%) and larger Mecklenburg residents (Table 5; 44.8% to 41.6%). When it comes to housing availability, the conversation with community members more often than not went to the lack of affordable housing options that the Hispanic immigrant is experiencing, especially for those that are undocumented. Apartments have traditionally been an affordable alternative and continue to be the first choice of housing for Hispanic immigrants, but there are some that have also started to rent or even buy single family homes. Additionally, due to the lack of affordable housing, many are being forced to move to the outskirts of the Charlotte area, which as has been documented, adds additional barriers to healthy living because of access to resources and need for

transportation. Renting, whether apartment or home, becomes a determinant of health when it accounts for more than 30% of a person's income. Paying that much for housing influences the types of foods and medication that can be purchased.

> "I think that **when they first get there they come to the apartments because they are a little bit cheaper, the houses the bigger they are the more expensive. So I do think when they first arrive they are getting settled, they start in an apartment and when they can, they move to another area**." - Female, Honduras, 6 years in Charlotte
>
> " **Cost of living has increased a lot**, the cost alone of apartments; when I first got here I paid $400 for a two bedroom apartment, bathroom, dining room; now for the same apartment it's $1400 a month. I arrived in 2003." - **Female, Mexico, 17 years in Charlotte**

Key informants on the other hand discussed it from both a broader community perspective. Key informants confirmed the displacement of community members and the high cost of living and issue that is seen across the community. They recognized that all of these factors are connected and can have an impact on the individual health because of the amount of money they are spending on housing. They also recognized that when apartment management and policies are continuously changing it creates barriers for community members not just around housing but also access to other resources. These types of changes create an environment where organizations have a hard time implementing programming that is close to or where the community members live. It reveals the lack of feasibility to implement programming to support an immigrant population in a way that would alleviate the most barriers.

> "As far as housing? [inaudible] yeah, well I'll take one family in particular, [name of contact] and her family. I've known them since we started. She was a key volunteer with this and over the last two **years they moved out of an apartment community and into their own home. Now I do believe they're South of 51 [Pineville-Matthews Rd], so that, you know, that's still our service area, but that's a little bit further out.** So I think the more affordable housing continues to be in that direction. I've also seen some communities off of Carmel Rd, which is surprising to me, but I think, there've been some more affordable houses there. … But I would definitely say that it's probably more, towards 51 and South Boulevard than let's say Fairview and Carmel direction. I really

don't have the statistics on that, **but I do think that there has been more interest from our families, of moving out of apartment complexes and finding their own homes**." *Female, Community Organization, 15 years in Charlotte*

"I'm seeing more and more of a **Latino population ending up in apartments,** [I don't] know of definitive data sets. I know this is more anecdotal, but, just across the board for the city [inaudible]. I think it's because **51% of our community as a whole rents.** So renting is a pretty big deal here in Charlotte in general. Just in general. I'm sure that **if you looked at just the Latino population, you see an even larger percentage of that population renting**. **I don't know that Latinos are accessing the option of purchasing homes in that corridor**..." *Male, city employee, 12 years in Charlotte*

"I think it s**tarts with the apartment complexes where they have traditionally found places that are affordable and there's been a lot of management company changes within those apartments.** So, the one that we started with, with Sun Valley initially, and then you probably remember that one. I mean that was one of the largest communities for immigrants in South Boulevard. And at any point in time we could have a hundred children. And **soon as the management changed, the dynamic changed completely. They were starting to increase the rent. They were starting to make it harder to get your maintenance request done, which meant a lot of those families were either, out of [options] having to move because they couldn't afford it or were just frankly, um, fed up with bad service and, we saw the people leave**... It's every apartment complex, both sides of the city, everywhere. Being in some of the Sun Valley **has been sold three times since, really since we were involved there. So it just depends on if you've got a manager that sees the value proposition, it's very easy to make programs like that work. But that dynamic is very fragile because often the next manager comes in and they don't see the value** and then all bets are off." - *Male, Community Organization, 12 years in Charlotte*

"And that is what **many landlords are doing, apartment owners, are not providing the services to the people that already live there so that people will move. Or they are just moving people out so that they can renovate the apartments and they can then relist them with higher rent**. And so not only are there displacement because all of the people are having to sell and move, but also people that live in the apartments." - *Female, Community Activist, 17 years in Charlotte*

The quotes presented and conversations with participants point to the complicated nature of how urban restructuring intersects with the Hispanic population. On one hand, through their labor they are centrally involved in the renovation of single-family housing and the construction of new apartment complexes and condominium units. They are also residents in this community and are impacted by the changing landscape of housing availability and cost in the area. Not only are the renovated and newly constructed properties increasingly unaffordable to all but the

upwardly mobile and affluent, their existence influences changes in the area's retail and services landscape that make it less affordable, welcoming and convenient for immigrants and lower income Hispanics who already live there. A lot of the discussion alluded to it all happening at the same time and same place, making these overlapping restructurings particularly impactful for immigrants in complicated ways. They live in a part of the city that is upgrading and where neighborhoods are changing in ways that might benefit them (light rail, greater density of services and retail, more pedestrian infrastructure, etc.), and they are directly involved in the construction of those improvements but they cannot afford to access them. Succinctly put, they are not able to take advantage of the spatial landscape that they are also constructing.

Insurance Coverage

Although insurance coverage was not discussed in detail with the community members and key informants it is a consequence of having legal status, which means legal employment and access to the benefits that come along with it. As has been shared with regards to employment, the community members and key informants spoke about Hispanic immigrants having to take jobs that did not use E-verify or be self-employed which completely limits the access to health insurance. Limited access to health insurance is a key determinant of health, resulting in poor health outcomes because of lack of access to services to treat both acute and chronic conditions. It has been documented that for undocumented immigrants the impact is even greater resulting in more visits to the emergency room and higher healthcare costs. (Goldman et al., 2005; Nandi et al., 2008; Marshall et al., 2005; Prentice et al., 2005) The data showed similar to housing that the proportion of individuals with insurance coverage in the Total Population increased among both geographic groupings (Table 4). However, among the Hispanic population living in the SBC the proportion was relatively stagnant between time periods (33.5% to 33.7%)

compared to Larger Mecklenburg (40.2% to 50.3%) (Table 5). This could be reflective of the continued influx of undocumented Hispanic immigrants that are not eligible for the Affordable Care Act.

Additional determinants of health were brought up during conversations that the ACS does not provide data for, but from the perspective of the community members and informants have been impacted by the restructuring occurring both in the area and around the broader Charlotte area. These included, safety, political environment, and location of resources, advocacy and changing demographics.

Safety

The notion of safety came up in conversations with community members from the perspective of settling in this particular area (SBC) because they had family that already lived there and it was described as safe. This is significant as it helps further our understanding of why Hispanic immigrants move to certain areas and continue to live there despite the restructuring occurring that often makes life more difficult. Previous research has shown that living in a neighborhood with other immigrants is not necessarily beneficial and is often associated with supporting different health behaviors. (Osybpuk & Acevedo-Garcia, 2010) But in this case although there is a varying sense of safety, immigrant newcomers are still settling in the area to take advantage of their known social networks. On the other hand, a community informant mentioned safety concerns in terms of how Immigration & Custom Enforcement (ICE) engaged with the community and safety of children.

> "When I moved to California, **I moved to this area because I had family living here and they said it was quiet**." - Female, Mexico, 18 years in Charlotte
>
> "Because I knew that it [Charlotte, NC] was an area that was calmer, not like what is New York or Miami. Lots of Hispanics, don't have space where they can live or raise our

> children in a safe place. In Mexico I studied nursing, but there are no jobs. **For us we came because we lived before there was too much violence,** somebody dead every week; everybody was threatened, so all you had was to leave. **For me, my husband had previously lived here for 10 years and he loved Charlotte, because it is calm, even though there are a lot of Hispanics** even though sometimes it is embarrassing to see how some of us behave, but despite that its calm. - Female, Mexico, 15 years in Charlotte

On the other hand, a community informant mentioned safety concerns in terms of how Immigration & Custom Enforcement engaged with the community and safety of children.

> "I tell you one thing that I've been fighting for the last three years to change. **When ICE does their arrest or whatever, if they don't allow the parents to call the school, because [there are] many parents that don't have a network here, if they don't allow [them] to call the school, I'm sending a child to an empty room, an empty house.** You know, so to me, ICE needs to allow phone call to the school and that should not count towards the phone call... we had that situation happen twice" - Female, Educator, 5 years in Charlotte

> " … like the families that don't send their kids for a couple of days or a week or two or the families that normally might walk over to pick kids up at the end of the day [call to] say, can you put them on the bus instead so that we don't have to leave the house. ... **One of our students was checking his phone like every other second. We were like, you have to put your phone away unless something important. He's like, well, every hour I want to text my mom just to make sure that she's okay.**" - Male, Community Organization, 10 years in Charlotte

During the period of data collection there had been situations of ICE raids around the Charlotte-Mecklenburg region and there was a level of fear that was expressed by both community members and key informants. These discussions often led to discussing the current political climate and the impact on the community.

Politics

Politically both community members and informants spoke to the fact that who the political party is in power has an impact on how Hispanic immigrants are treated and the services available.

> "**Socially people are not happy, like the political environment depending on who is in charge in the government you can notice differences in how people treat you.** Doctors treat you worse, the schools aren't as supportive, they are more rude, and humanity changes. **Impact socially, politically, humanitarian, impacts resources. You can also see an increase in road rage too, very aggressive people in the area. Charlotte used to be great for family, but people aren't as nice as they used to be, not as calm as it used to be.**" - Female, Venezuela, 15 years in Charlotte

Key informants provided examples in how they have perceived mistreatment of the Hispanic immigrant community that they work with and how policies aren't always the reason, rather people are just not treating others well. These macroaggressions towards people of color and in particular immigrants have an impact on other aspects of the person's quality of life. In this example, the community member does not have a car because it's in the shop, but they can't access other means of transportation due to not having a driver's license and as previously discussed the stress that comes with that.

> "what comes to mind and what I've seen more of recently is the g**eneral sense of discrimination against people of color.** For example, one of the families that we've had in our program for four or five years now had a motor vehicle accident and it was originally assessed that it was, no one's at fault, but everyone's at fault. And she was adamant that she did not cause the accident. ... But her vehicle has been in the shop for the last six weeks and every week they keep promising it'll be done. But every week is another week without a vehicle. So you said to yourself, well, how come you didn't get a rental car? Yeah, well, she doesn't have a driver's license. **So I think that the situation is not so much a regulatory thing or a federal thing or say anything. It's just that general sense of why do you treat some people so poorly? Whereas if it was me, at least they would hear me.**" - Male, Community Organization, 12 years in Charlotte

Service location

A point of a lot of discussion was about where services were located in respect to where community members live. For many years the South Blvd Corridor has been a health and social service desert. The only service located in the area, a Women, Infant and Children (WIC) office was recently relocated to a new Community Resource Center off of Freedom Drive. It wasn't clear to the participants, why if there is a need, services weren't being relocated to the area. Not

having health and social services near or access to transportation to get to them increases stress level and inability to get timely care that is needed. Having an understanding beyond the data of the demographic shifts of a neighborhood provides an opportunity to make more equitable decisions of where resources need to be located.

> "No there **used to be one (WIC) at Woodlawn, they took it out, I think they moved it like Wilkinson or Freedom Drive, but that is far.** People lose the services [benefits] because they can't go all the way there [new locations]. The WIC office that was in the area moved to the new center, **now people aren't able to keep up with benefits because it's too far."** - Female, Mexico, 14 years in Charlotte
>
> "Because t**here are a lot of Latinos in the area and most of us have kids, we need WIC and social services and to go to those kinds of places there is nothing nearby there**. We would have to go far way over on Randolph, they moved WIC to Freedom Drive. **Many of the women don't have cars so it is very hard they weren't any other of those services like from the government. I think they should bring more of those services for the kids closer to the area** because there are a lot of Latinos with kids. Many of them don't have transportation." -Female, Ecuador, 4 years in Charlotte
>
> "I think in my mind there's **always been a general lack of services in that area for people, especially immigrants and refugees.** So if language is the barrier and you need to go to the DMV, there's a DMV there. But **what about a health clinic? What about places where you can work close by**?" - Male, Community Organization, 12 years in Charlotte
>
> "... what is the challenge for most people when they think of immigrants, [they think] the Eastside. But the **numbers show that along the southern corridor, we have a significant population and we just don't have as much access to resources. We do on other sides of town.**" - Male, city employee, 10 years in Charlotte

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Table 3. Changes in Hispanic or Latino Population Proportions of South Blvd Corridor Census Tracts (n = 10)

	Hispanic or Latino		Hispanic or Latino and Foreign Born	
Census Tract	2008-2012 (%)	Trend 2008-2012 to 2013-2017 (%)	2008-2012 (%)	Trend 2008-2012 to 2013-2017 (%)
31.02	21.9	3.7	12.7	2.1
31.03	13.0	-3.9	7.6	-2.8
31.06	31.2	11.9	22.0	2.1
31.08	36.0	2.2	21.9	-2.0
31.09	38.1	0.2	24.8	2.0
32.01	50.2	-12.7	37.1	-17.1
38.07	40.5	-2.0	32.5	-11.3
38.08	60.5	7.1	42.7	4.6
58.24	45.1	-10.0	28.8	-4.5
58.27	7.8	7.1	1.9	6.2
58.29	26.1	-7.9	10.8	1.7

Table 3 (previously shared) is a deeper dive into the SBC to evaluate changes in the proportions of the Hispanic/Latino residents, and the foreign-born subset of the Hispanic/Latino residents among the 10 individual census tracts. It was important to make sure that we recognize that settlement patterns are now inclusive of both those that are foreign born Hispanic and native-born Hispanic (i.e. first generation). Similarly, to an analysis conducted by Smith and Furuseth (2004) this table evaluated the changes in the settlement patterns, defined as the absolute difference in proportion of Hispanic between two time points, with added sensitivity through inclusion of the foreign-born subset of the Hispanic population. Results showed inconsistent relationships between the two demographic groupings. Specifically, the largest growth in the Hispanic population occurred in census tract 31.06 (+ 11.9 percentage point), which makes sense anecdotally, key informants mentioned the area around Starmount Elementary seeing a growth of families living in the surrounding single-family houses. On the other hand, the largest growth of Hispanic & foreign born was in the census tract 58.27 (+ 6.2

percentage point), which speaks to the continued settlement in apartment complexes for the Hispanic immigrant population in Charlotte. (Smith & Furuseth, 2004, 2006; Hanchett, 2013) The census tract with the largest decline in Hispanic (-12.7 percentage point) and Hispanic/foreign born (-17.1 percentage point) was 32.01, per key informant interviews this was an area where young professionals have been moving more recently. Lastly census tract 58.29 has the largest inverse relationship, with a negative net change among the Hispanic population overall (-7.9 percentage points), and a positive net change among the Hispanic/foreign-born subset (+ 1.7 percentage points). These relationships support the value of understanding the unique experience of the foreign-born population independently from the larger Hispanic population.

The next phase of the quantitative analysis examined relationships between the 2008-2012 time point factors in each census tract, and the net change Hispanic and Hispanic/Foreign-born proportions for each census tract using linear regression.

Regression

In order to understand the association between restructuring factors and changes in the proportion of the Hispanic populations (Hispanic or Latino; Hispanic or Latino and Foreign-born) among the Total Population a linear regression analysis was implemented. This methodology applied in a prior study assessing settlement patterns for Hispanic immigrants along with housing patterns and used as guidance. (Smith & Furuseth, 2004) In addition, this framework provides an opportunity to illustrate the importance of including data specific to ethnicity and nativity in order to have a better sense of the various ways that the indicators are associated or not for a population that is heterogeneous, such as the Hispanic population. It is important to note that although gender and health insurance were not specifically identified by

the qualitative data as important, the fact that mostly women were interviewed for the community members and that health insurance is defined in the literature as a key determinant of health was a strong enough reason to include them in the models.

Table 6. Association between Baseline Indicators and 10% Change in Population (n = 233 census tracts)

	β	p-value
Model 1: Hispanic or Latino (DV) (R^2 = 6.5%)		
South Blvd. Corridor	-1.44	0.9382
% Male	-0.65	0.4578
Median Age	1.54	0.0843
% HS education	**1.71**	**0.0129***
Median HH Income	0.000059	0.7162
% Unemployed	-0.043	0.9727
Renter	0.027	0.9143
Cost	0.060	0.9043
% Insured	0.79	0.1092
Model 2: Hispanic or Latino Immigrant (DV) (R^2 = 11.9%)		
South Blvd. Corridor	-9.43	0.42670
% Male	**-1.37**	**0.01564***
Median Age	0.90	0.11139
% HS education	**1.06**	**0.01539***
Median HH Income	-0.000025	0.80700
% Unemployed	-0.52	0.51954
Renter	0.21	0.18289
Cost	0.22	0.49486
% Insured	**1.02**	**0.00123†**

*Significant at $p < 0.05$
†Significant at $p \leq 0.01$

DV = Dependent variable

In Table 6 the Beta (β), or estimate, is the magnitude of the association between the independent variable (i.e. restructuring factor) and the dependent variable (i.e. net difference in % of population between time points), adjusted for other factors in the model. In this analysis, the dependent variable was multiplied by 10, to allow for an easier interpretation of the estimates

as associated with a 10% change in the population proportions between time points. Model 1 evaluated associations' changes in the proportion of Hispanic residents between time points. Results for Model 1 showed that census tracts with higher proportions of the population having high school as their highest level of education at the first time point was significantly associated with an increase in the percentage of Hispanic residents, (β =1.71; $p<.05$). In other words, areas with lower education levels during the first time point saw more growth in the Hispanic/Latino population by the second time point. No other significant relationships were observed. This certainly is confirmed by the conversations with both community members and key informants that there continues to be an influx of Hispanic community members. Although as has been described previously, education for this population is not always traditional entry into the educational system, but may encompass other areas.

Model 2 evaluated associations with the changes in the proportion of Hispanic/Latino/Foreign-born residents between time points. Results showed 3 significant associations. First, similar to Model 1 census tracts with higher proportions of the population having high school as their highest level of education at the first time point were significantly associated with an increase in the percentage of Hispanic/Foreign-born residents, (β = 1.06; $p<.05$). In addition, census tracts with higher proportions of males at the first time point were significantly associated with a decrease in the percentage of Hispanic/Foreign-born residents (β = -1.37; $p<.05$) while census tracts with higher proportions of insured residents were significantly associated with an increase in the percentage of Hispanic/Foreign-born residents (β = 1.02; $p<.01$). In other words, areas with lower education levels and higher levels of insurance coverage during the first time point saw more growth in the Hispanic/Foreign-born population by the second time point, and areas with more males during the first time point saw more of decline

in the Hispanic/Foreign-born population by the second time point. This is important because as we are looking at the association between changes in indicators of restructuring (i.e. demographic shifts, access to resources) implementing modeling that adds additional specificity to a factor (i.e. foreign born, not just Hispanic in general) we are able to see more differences in associations. Similarly, it is important as a place is changing overtime to also be able to observe if patterns of spatial clustering differ when different variables are added.

Waldo Tobler's first law of geography states that "Everything is related to everything else, but near things are more related than distant things." (Tobler 1970) This phenomenon is particularly interesting as we look at how spatial clustering is changing or different for Hispanic community members and specifically those that are foreign born. It has been posited that the immigrant settlement pattern in the Charlotte area is different than those of traditional gateways, we assess how that continues to be the case and the association certain indicators. This is important because as restructuring is occurring in an area, including ongoing changes in settlement patterns for Hispanic immigrants, the determinants of health are going to be changing overtime. Policy and decision makers need to take into account the restructuring as decisions are being made in things such as affordable housing, walkable neighborhoods and access to brick and mortar resources (i.e. clinics). How community members interact with their space is never static, especially in a city like Charlotte where certain populations, Hispanic immigrants included, have grown accustomed to having to navigate the city differently.

A Local Indicators of Spatial Association (LISA) was conducted to evaluate the clustering of spatial association of restructuring factors found to be significantly associated with changes in the proportion of Hispanic or Latino populations by census tract. These factors included; gender, high school diploma (as highest level of educational attainment) and insurance

status. This type of spatial analysis is helpful in order to visualize, clustering of certain indicators, assess the influence of individual clusters on the overall area and to identify if any outliers may exist. (Anselin 1995) Specifically, the LISA analysis in this case was used to visualize the clustering of the dependent variables (Hispanic and Hispanic, Foreign-born) and its associated outcomes as were implemented in the previous regression analysis.

Figure 13. Change in % Hispanic

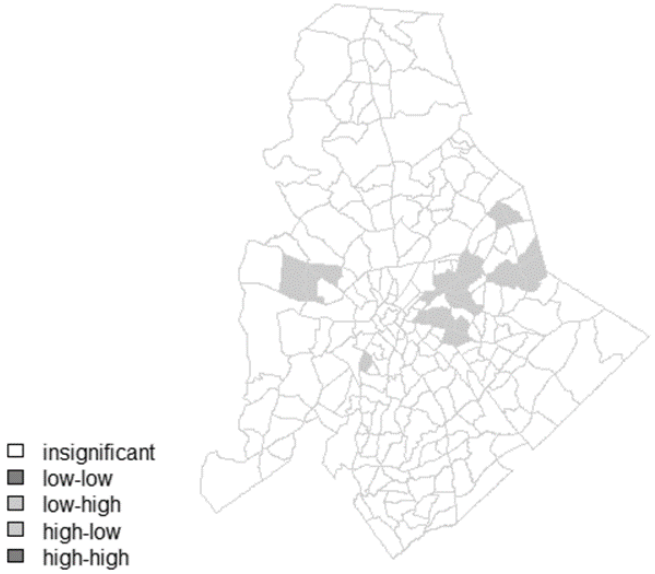

Figure 14. Change in % Hispanic Immigrant

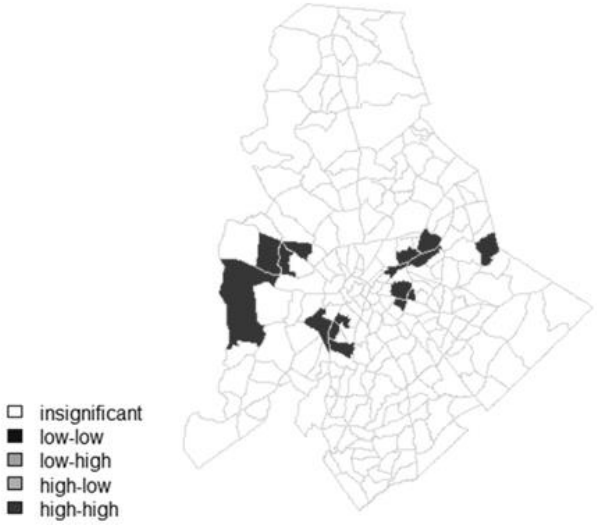

Figure 12 shows at baseline the clustering of Hispanics across Mecklenburg, low-high clustering indicating that these particular areas are surrounded by higher settlement pattern clusters. On the other hand Figure 13 shows high-high clustering patterns for Hispanic/Foreign-Born, which is a more sensitive distinction and indicates that those clusters are surrounded by other high settlement Hispanic/Foreign-born clusters. Adding the indicator of foreign-born status therefore highlights other clusters that would not be evident with just looking at the general Hispanic population. Both of these clustering patterns align with the current understanding of the Hispanic settlement pattern. But new clusters are revealed, in particular for Hispanic/Foreign-

born in the far East and West areas of the county. This certainly aligns with what community members mentioned about Hispanic immigrants moving to the outskirts of the county.

"We did have an opportunity to get a house. We had been saving money for a few years, when we had it we looked for a house. **We did have a hard time because the houses [along SBC] were expensive, so we found a more affordable house on Freedom Drive.** My kids are still in school in this area and I am not planning to move them. But the house is where we could afford." - Female, Mexican, 16 years in Charlotte

Figure 14-16 represents clustering of the indicators that were added into the regression model. These indicators are clustered as it relates to the baseline percentage change in the general Hispanic population.

Figure 15. % Male; 2008-2012

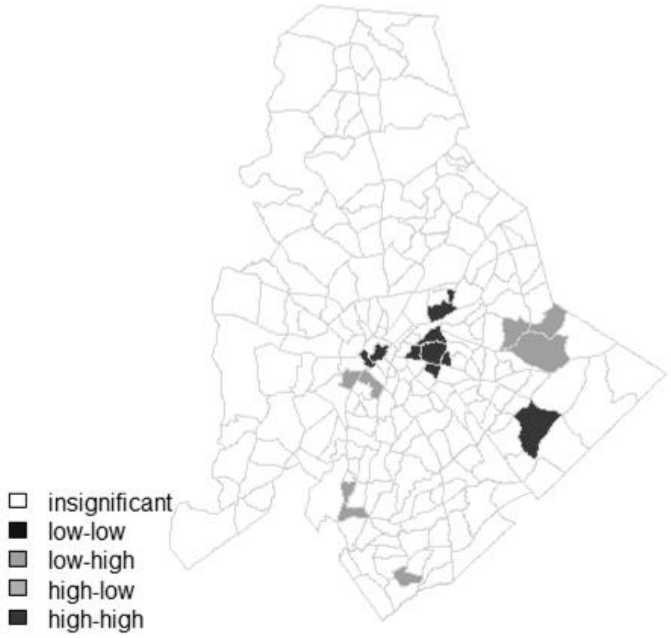

Figure 14 shows clustering of percent Males having much less clusters than the other indicators. This was certainly reflected in the qualitative data collection for this study, only two males were engaged. The SBC does not show up as an area of clustering of Hispanic males.

Figure 16. % Insured; 2008-2012

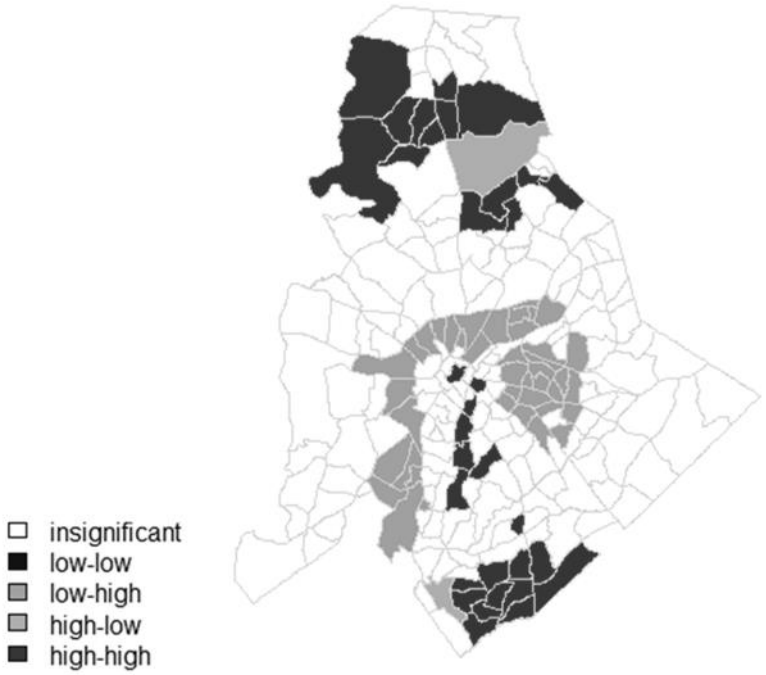

Figure 15 shows the clustering of percent insured, and like the general population indicates much more high-high clustering in areas that are not traditional immigrant settlements. The clustering of those that are uninsured (low-low) is reflective of existing county level data that shows that same pattern of uninsured. (MCPH State of the County 2019) Additionally, it is well documented that Hispanic immigrants are more likely to be uninsured, therefore having a greater likelihood of poor health outcomes. (Monnat 2017)

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Figure 17. % High School as highest education level; 2008-2012 ACS

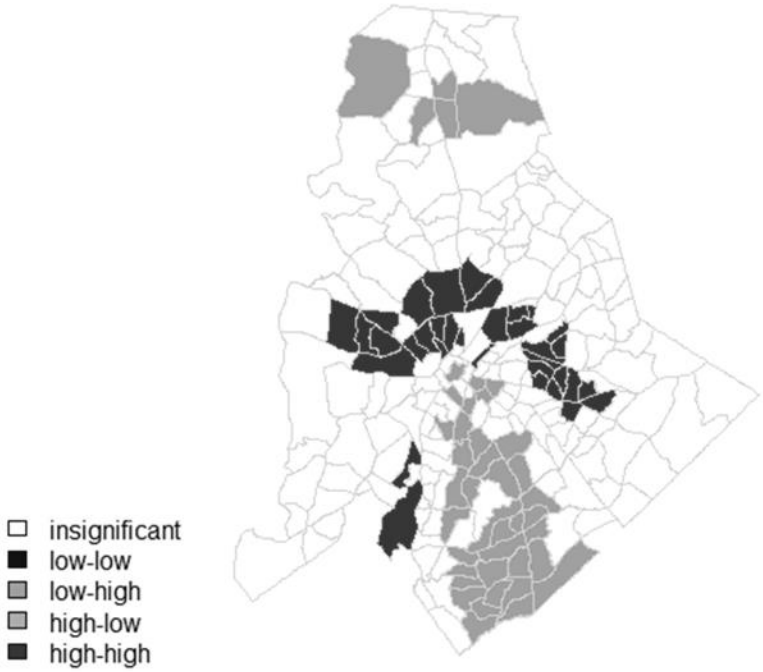

Figure 16 shows clustering of percentage of high school as highest level of educational attainment, as expected the high-high areas are concentrated in traditional immigrant settlement areas, whereas the low-high areas are concentrated in the areas that have much higher educational attainment (i.e. bachelor's degree or higher educational attainment). The pattern of clustering is also reflective of educational attainment for the general population. (The Quality of Life Explorer- http://mcmap.org/qol) Educational attainment is a well-documented determinant of health. (Boone & Molter, 2010; Egede, 2006; Mays et al., 2007; Williams et al., 2016) Clustering of those with the highest level attainment being high school can be indicative of poorly resourced neighborhood schools and/or the inability to have the resources to access higher education.

Although the clustering patterns presented do not vary much from what have been traditional clustering of these indicators, it is important to recognize that additional demographic

information, such as nativity status, can highlight varying patterns. In particular, how restructuring impacts access to certain aspects of the community over time.

There was evidence of restructuring both from the conversations with community members and informants and the ACS data. There was concordance between the community and the data around how much demographically the population had changed along the corridor. In particular, when it came to those with high school as their highest level of education. Taking into consideration the community members' life experience is an important way by which to prioritize indicators. This is a process that doesn't often occur, but is the first step in acknowledging the various aspects of the determinants of health in order to develop interventions or programming to ameliorate their impact.

Question 3: How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Latino immigrant community living in Charlotte, NC?

In general the call to action in acknowledging the various aspects of the determinants of health and the impact they have on individuals and populations is to develop interventions that are evidence based and sustainable. A number of interventions have been developed to address the determinants of health, but the local context of the structural, spatial and temporal aspects of the determinants is not often considered. This final section of the results will describe the way that community members and informants acknowledged each aspect of the determinants of health and how spatial clustering of the population informs how and where interventions could be implemented. It is important to acknowledge the complexity and intersection of the various aspects because knowing the concentration of single indicators as they overlap with a particular population is only ever telling a partial story. Taking into account where and how the multiple

determinants are impacting health, and considering that ways in which those determinants reflect social, structural, spatial and temporal forces, is the only way to be fully prepared with ways to best implement actions to fix or assist the community members residing in the geographic area.

Structural

This was the area of most discussion for community members and informants. One of the primary structural aspects that impacts the determinants of health are barriers because of language. Community members spoke about it as having interpreters available as part of the services they were being provided. Key informants spoke about it from the perspective of having bilingual programming available to support the whole family and acknowledging that there would be mixed levels of English proficiency in a family. Overall it wasn't about Hispanic immigrants simply assimilating and leaving their home language behind, but also recognizing that it was an asset for both the community members and service providers to be prepared in both English and Spanish. This is important because having bilingual services, particularly when it comes to access healthcare supports better health outcomes.

> "The school system is good but the only thing that **we need would need to have more people that speak Spanish, like interpreters, because I can tell that there are mothers that have a hard time going to the school and asking for something. Or they do go to the school, but they have difficulty asking questions because there aren't any interpreters.** I do think that the school system has gotten better in some areas and there are others they haven't, but they can't be perfect. But they have been better overall in doing the best they can." - Female, El Salvador, 16 years in Charlotte
>
> "**Many of those kids were coming from homes that were not speaking English as a first language.** And many of those kids were continually falling behind in the school year as well as in the summertime. So **we knew that we wanted to partner with them both on the literacy front, but also how we could support the entire family**... . We knew that we wanted to do something kind of bigger, better, more, than just the literacy program for us in the summertime." *Female, Community Organization, 15 years in Charlotte*
>
> "... **unbelievable about how their trajectory will change for their life if they go into an environment that nurtures their home language**, their tone, their native tongue,

> excuse me. But then this, the **middle class community also knows that this is a tremendous asset to be bilingual**. And then as from an international baccalaureate reference point, there's a **whole segment of our community that wants an internationally minded curriculum** and values what international baccalaureate education offers" -*Female, Educator, 20 years in Charlotte*

Additionally participants spoke about other structural factors such as general civic engagement, community leadership, and lastly understanding the different aspects of the US government that can have an impact on determinants of health. In some respect it is understandable that the Hispanic immigrant community is not civically engaged, especially if they are not able to vote because of their legal status. In addition, many are carrying their lived experience of what it means to be civically engaged in their country and that has in many cases been traumatizing. Participants agreed that education around the basics of what it means to be engaged is important and galvanizing around issues that are important for the whole community can be successful.

> "So there are **community leaders that are trying to help the Latino population to make a difference if they come together to determine who wins or loses**. The numbers are enough to make a difference. There is a need to educate the Latinos and they understand they are an oppressed minority, when t**hey don't understand that power they actually have.** And so **because if you don't come together then you don't see a real impact for the community for a long term**." -Female, Venezuela, 15 years in Charlotte

> ".... a city council person who does not represent that district came up to speak to them, to recruit those businesses to come on his side of town. And in the midst of that discussion, one of the things that arose was, **our district rep in this area has never come to talk to us.** That district rep happens to be running for a higher seat next cycle. There's three candidates that are known right now. You should get those three candidates in the room and ask them and have all of your business people ask them questions. **So I think there's, there's potential and people don't recognize the power they truly have.**" - *Male, City employee, 13 years in Charlotte*

It has been documented that in order for health to be a shared community value there needs to be a shift within the health culture that integrates into the broader mindset, expectations, sense of community and civic engagement. (Chandra et al., 2016) Supporting this as part of the

integration process for Hispanic immigrants is critical to their ability to inform change. On the other hand, community organizations also have a place in informing policy and supporting civic engagement themselves, but even they don't understand the connection that their work has to policy and supporting the community being civically engaged.

> "Not a lot of people. **They don't understand that connection that is why a lot of the organizations that are working with the community are saying they don't want to get themselves into politics, because they don't see that the work that they are doing implies policy.** That is part of the work that I am doing, e**ducate people and let them see that even serving food in the pantry to providing health services, it all has a political aspect, in that if we don't align one thing with the other, we are never going to change the needle and the same will continue.** Because it will be the vision of the poor- that we are imposing from the top, and it will not be seen as a poor thing, but that it is an obligation of the government because it is something that is really needed to have integration to have a community to be welcoming. It is a question of equity, not just equality, but equity and so all of the work that I am doing, is that I am working with the **leaders and that they can see that connection that voting goes along with provide health services, with providing mammograms, providing access to after school programs, with everything, because if we don't exercise our right to vote and we don't choose representatives that really understand the needs of the community, nothing changes**" - *Female, Community Activist, 17 years in Charlotte*

Service providers have recognized over time that they cannot do 'for', rather it should be done 'with' the community. They have also acknowledged their own positionality as not living through the same experience and therefore not knowing what is needed for those that live in the area. Engaging community members in developing programming acknowledges their lived experiences and highlights the various needs of the community over time. This has also allowed service providers to have the pulse of the community when it comes to health and social needs.

> "We'll do that with the **families that have come and asked because we don't want to just be the organization that just does what we think they need.** We've got a parent advisory group and with everything that we're doing, the children's homework and reading where it be summer camps, which speaker to bring in, we're always asking them. So what would you like to learn? How do you think this would best effect all of you? **And healthcare is a big piece.**" - *Male, Community Organization, 12 years in Charlotte*

There was discussion with key informants about lack of leadership opportunities for the Hispanic community, one key informant in particular made the case that there has been little movement in local government to hire local Hispanic leaders, instead they are bringing people in from out of state. This is not supportive of the community because they don't understand the local context of the Hispanic community. It has already been described that the Charlotte area does not follow the traditional immigrant settlement pattern, bringing somebody from a state with a traditional immigration history may not understand the nuance of the immigrant community locally and the partner collaborations.

> "There has been a change in the sense that we have more diversity and that they have more fairs and t**hey say they want more diversity. But the diversity they want at the worker level. The diversity they want is at the lower level or the levels of the position that are community outreach for the Latino community, there are positions there. But from there you don't go up.** If you look at corporate America here, less than 4% are Latinos, and I would say that less than 1% at an executive level. If you go to the government, anything that is the city or the county and the school board, there are only two people, one in an executive position that is Federico Rios and one that is middle management at the school system that is Rosanna Saladin, then in the county we don't have anybody. They say that one of the assistants of the county manager that they say is Latino, **but it is somebody they brought from Texas, that doesn't have any connection to the Latino community [here], that I don't think is interested in connecting with the Latino community.** But when it's brought up to the county manager, she always says that one of her assistant managers is Latino. And that is the other situation that is happening, **that there are a few people, but they bring them from out of state. One of the things that most frustrates me is the number of people that they are bringing so many people from the outside when we have a large number of people that have the capacity and know the community, know the needs of the community, they are bringing people from the outside.** And why? We don't know. And the answer is always, the people here don't apply. And I don't think it is that people that live here don't apply." *Female, Community activist, 17 years in Charlotte*

With having leaders in place that have worked in the area and engaged with community members over the years it is evident what some of the barriers to not just being civically engaged are, but also understanding how the government works locally. There are expectations from

community members that certain government leaders should be changing policies in certain ways, but they don't understand that each level of government oversees different types of policies. As noted in the quote below, an effort was put in place by the newly formed City of Charlotte, Office of Equity, Mobility and Immigrant Integration, to not only assess the needs of the community but also educate about implementation of policies and the level of power that they have to make recommendations to their elected officials.

> "So we did these sessions. We did first **let's educate on the different forms of government. Let's share the information around, how things fall in the different purviews.** Then what we did was we **shifted to a participatory policy making process where we basically said, okay, each one of your tables take one of the challenges that's listed here and write a policy for it**. **Because what we as a community have as a translation issue, not translation English to Spanish. We have a translation issue when it comes to our council members going from complaint to policy, so let's eliminate that barrier. Let's go straight to policy. These individuals have the power to write a policy and recommend it to anyone.** One of the things that blew my mind coming into the city was people just randomly call their council member and all of a sudden the issue that they presented over the phone or via email becomes an issue that they fight for. **People don't realize they have that power**." *Male, City Employee, 12 years*

Lastly, from a structural perspective, key informants brought up additional issues related to addressing factors that have an impact on Hispanic immigrants. Such as their inclusion in broader community conversations around need and the representation of the demographic shifts in the community so that decisions could be made. Specifically, even though the influx of the Hispanic population has been felt for over 30 years at this point, there are still policies in place that create barriers to the community accessing services, such as language. Although this was illustrated by a participant as an issue within city government it is still evident across the health and social sector. Additionally, it was evident to key informants that the influx of Hispanic immigrants was not being considered when discussing needs in the community, in fact there was a focus on other issues that although impact this population are not just specific to them.

> "So from the perspective of my current role, I've been tasked to **review what policies we have that standards barriers [inaudible] a city of our size does not have a city wide language access point.** Okay. If you were to call 311 and need interpretation, especially in Spanish, yeah, they may have a staff person that speaks Spanish or at the very least they can connect you to an interpreter, through their language line service. So they would be able to address your needs. Now if, let's say they had to move your call over to animal control cause the issue was based with animal control may not have a Spanish language staff person as a bilingual staff person or be trained up in how to use language line." *Male, City employee, 12 years in Charlotte*

> "Yeah, I will say that **I don't feel like any of the stakeholder meetings I've been on focus on how are we going to make life better, easier for undocumented population**. I wish there was, I think a **lot of the focus has been on income inequality, which gets put in there but more the focus is on people who have been here, African American population, other lower income groups**." *Male, Physician, 5 years in Charlotte*

In respect to data, the conversation with community informants was that it was useful to understand the Hispanic community and changing demographics but that there is often a disconnect between what is happening physically and visually versus what the available data is speaking to. In other words, what is happening 'real time' is often not in the data and so there are gaps in supporting this population. This was certainly reflected in the descriptive statistics shared earlier where there were gaps in the data and therefore not truly representative of the population. For institutions that rely on data to guide decision making, the lived experience or anecdotal data is not always enough, even though in most cases it is the most accurate.

> "It's hard to say 1990, you know, we can look at the census data then we can see the anecdotal evidence in terms of when, I would say in a qualitative sense, having lived in the northeast and east [parts of Charlotte] **change really curve when you saw the presence of Brown skin people just in everyday life** . **So when you went to the parks and people playing soccer or families were in there having picnics and parties, or you would see people standing at the bus stops or you'd see people shopping or you would see the growing presence of tiendes and restaurants and that sort of thing.** So in my mind, I kind of separate, I can **look at the census data and say, oh, 1990 there was this huge spike in population. But to try and tease out of that, it was actually before then, I would say so maybe the mid-eighties.** Again, i**t was a physical presence of people who did not look like people who were here before**…" M*ale, Demographer, 47 years in Charlotte*

> So, we know that we were in the wedge and not the crescent of Charlotte. So I think **some assumptions were that we really are a largely, white, affluent, YMCA and that the neighborhoods around us would stay that way.** I think w**e didn't know how rapidly it was changing and who was really moving into neighborhoods adjacent to us**. I think we felt, as a community, a YMCA community, very disconnected from what seemed to be a very specific, intact, almost, palpable as you cross over certain roads and that the South Boulevard corridor, which is what we call it. **But as we began to partner with Forest Hill, they were experiencing the same things. So, they understood that they were also in that same demographic of serving a largely white community, but not the neighbors who were next door,** literally in Huntingtowne Farms for them. So I think as **we continued to explore, we were convincing ourselves by the data that we had neighbors that either didn't feel included, didn't know that this was their YMCA.** I also had to create those conversations and how to create things relevant to them as well." - *Female, Community Organization, 12 years in Charlotte*

Finally, partnerships were pointed out as being an important action to address the structural components of the determinants of health. Because of the nature of multiple organizations coming together with their resources (monetary or infrastructural) it is a very structural response. It was evident in the conversations that supporting the community in general, but this one in particular, has the potential of being more successful when done collaboratively as it provides a greater potential for collective impact. The SBC over the years has actually developed an informal coalition, organizations that have come together to support that specific geographic area in response to the fact that there are not established health and social services in the vicinity. There is a formal framework of collective impact, but how effective this framework is within Hispanic immigrant serving organizations is limited in the research. This would be particularly important to assess from a geographic perspective.

> "I would say that is more of a philosophical way of leading two key leaders. **At the YMCA about the needs to serve along the South Blvd which created an opportunity to partner with Forest Hills Church.** The church are neighbors to this area and they realized a lot of the same things, in particular that they have large membership, they have a reach outside of the area, but the area of service was not being served as it should have been. They started asking why this was happening and that is where they discovered that there were a number of barriers, including cultural, language barriers, barriers to the

Hispanic community, over 20,000 in that area, they realized that their current approach was not going to work like others because of the barriers they have." -*Male, Community organization, 15 years in Charlotte*

"**We need to be able to figure out a model where the big H in these communities is not the sole answer**. I mean I think our success as formerly Carolinas Healthcare System was built a lot around us being able to keep open hospitals and I think that if you look at the history of hospitals you look at the outcomes you would know this better the fact that we fund a hospital doesn't necessarily drive health and I think the premise of that needs to be questioned because and I think we have an appetite for it at atrium ... It's how we're using that money and **how we're actually sharing best practice with other people who have addressed food and security and other people who have addressed nutrition in schools**. Other people who have addressed education you know. So there's a lot of really good best practices that have been funded out there and **I think that can be health care's role too. We're just not the savior if we keep our hospital open we're actually a great partner if we understand your determinants of health and are able to overlay best practices of what some of that's going to include health care resources** ..." - *Female, Healthcare administrator, 23 years in Charlotte*

"So **one of the things we did is we partnered**, when I first got the Huntingtowne farms, **we had a handful of community organizations and by the time we left there were 40** and one of those organizations was LAWA- Latin Americans Working for Achievement, they hosted parents. We did a contract with them above and beyond what they did and they would work with our parent community to be able to like educate them and create a safe space for how you navigate this complexity of the school system. Of course the Harris Y was fundamental in that as well with the parents as teachers. And then of course expanding over half of the students were able to access a summer learning experience by the end of our tenure there. S**o it was really cool to have these community agencies recharge. That became fundamental, like this network of community engagement and support to rally around a school community.** It was awesome." - *Female, Educator, 20 years in Charlotte*

In some respects the structural aspects of the determinants of health also influence the spatial as has been previously been discussed. The next section will describe the spatial aspects of the determinants of health and how community members and informants advocate for change.

Spatial

From a spatial perspective, community members focused primarily on the location of services and the modes of transportation they have to utilize which differs from the assumption that because a light rail is located in the area they have access to transportation. Over and over

community members and informants highlighted the fact that unlike other areas across Charlotte-Mecklenburg health and social resources were not located close to them, in fact there has been a recent push to relocate resources that were previously in the area elsewhere. This has left the community members feeling disconnected from the broader resources community in some respect, but nevertheless they find ways to get around, such as Uber.

> "**Not correct [SBC has great public transportation access], because not all of the services are close to the light rail.** The light rail has a cost, for a single rider versus somebody that has kids. **If you tell me that we have access to the train and the bus, then the train isn't going to take you to the social services or the clinics that are helping the community**. When you take the bus it's a 2 hour trip that by car only takes 15 minutes. **I can't say that it's beneficial that we have [public] transportation**." Female, Mexico, 18 years in Charlotte
>
> " ... because of the light rail, it has helped a lot, **more bus access, another big innovation is Uber. People feel safe in Uber, because people know people that are driving,** safer than taxis, it is also cheaper than taxis. I **don't drive, so when I have appointments I usually take an Uber; usually take the kids to the dentist, pediatrician.**" - Female, Colombia, 16 years in Charlotte

During the conversations with community informants, a general discussion around city planning came up and the importance of considering different aspects of the determinants of health. In addition, how organizations can create 'spaces' for people to come together and feel safe and integrated into the general community.

Specifically when discussing the concept of 'city planning', conversations were not about how planning should take place abstractly in a 'new city' rather, it was about the importance of integrating an understanding of the changing demographics to support the ongoing planning in a manner that responded to the growth and changing character of the city. This includes structural changes such as access to transportation, walkability, affordable housing, access to health and social services/resources.

> "Well, I think you need to remember **a lot of what we're talking about is based around infrastructure or it's based around the pattern of growth. And so these are decisions that cannot be undone.** They can't be undone. You know, **we can't snap our fingers and have a street network that fosters walkability or we can't snap our fingers in, tear down a privately owned 12 story apartment or single family subdivision.** So you've got to **think as proactively as you can about what sort of template you're essentially creating for the social determinants of health going forward and plan progress over in terms** of trying to make a very short trip, right?" - *Male, Demographer, 42 years in Charlotte*

Even opportunities to use existing infrastructure came up in a different way, knowing that there is some existing infrastructure. The key is to think differently and collaboratively - and perhaps pre-emptively- with developers to integrate "health in all policies". (Ramirez-Rubio et al., 2019)

> "... **need to rethink the parking deck at 485 maybe someday that can have something on top, like a housing development**. With the talk of affordable housing, how do you rethink parking decks, is that a good place to put something else not just parking. I **think moving forward how to make better use of vacant land and parking decks**, **how do we get more affordable housing attached to properties that are owned by the public, how do we partner with home builders nonprofit to actually build affordable units into that parking deck.** So that is something that we are going to be looking at, we will be kicking that up in the summer, all the different opportunities for joint development that we didn't do last time. Letting the market dictate, we didn't do anything but build where we needed to, even with the public art we will just do what we have to along the blue line, we will think it out better. Start doing the planning work, we have to figure out how to get the properties early, who has money that can accept as donations." *Male, City employee, 34 years in Charlotte*

In thinking about the spatial aspects of the determinants of health, community informants advocated for the creation of spaces that are safe for community members, in particular for this population and the idea of the in addition because Mecklenburg County sits at the broader with South Carolina and brings up the issues of the broadening of the suburban edge. Participants spoke to the fear experienced by both Hispanic immigrants and those that are native born. This fear has various types of impact on health, both physically and mentally and is potentially exacerbated when the space around the community members is restructuring. Creating safe space

means both the action of coming together and building of networks to support community members through the restructuring happening for everybody involved.

> "... create opportunity with, if **we take an advantage to build bridges that weren't there. And my experience on both sides, from both sides, White Americans, Hispanic Americans, and African Americans, they would love to figure out how to do life with the Hispanic community**. The Hispanic already wants to figure out how to do life. They just don't know how, and they don't know where to begin. **I think as we respond to the South Boulevard Corridor, we need to be very intentional in creating spaces and opportunities for people to do life with each other in a non-threatening way.** I think as we respond to the entire Crescent, that needs to be our largest objective. **It's not money, it's not programs. It's just being willing to do life with each other. That scares people because you have to get your hands dirty, be vulnerable, you have to be vulnerable**." - *Male, Pastor, 12 years in Charlotte*
>
> "**as we just held space, we realized that folks weren't coming together in the community in safe spaces. So while they were coming to class, we could tell too that the extra sharing resources and information and rides and job opportunities, opportunities for medical support or help and just being with each other.** Just being a part of each other's lives. Some women talked about not being out of the house at all, [inaudible] not seeing anybody else other than their family for days, sometimes weeks. And the, **just the ability to talk to other people both in their native tongue, and creating some opportunities to learn more about where they are living and how to navigate different systems that they weren't familiar with, whether it's medical or school or work related.** Um, so that was a really, um, for me just, uh, just an aha moment where, where folks were coming together, um, in class and that may be their only moment or moments outside the house where they were really talking to other people and finding connection points." -*Female, Community Organization, 12 years in Charlotte*

Additionally, from the spatial perspective it is not only the creation of safe space to build and support a community, but also understanding that the physical boundaries and definitions of space change in particular when the restructuring is occurring on the border of two states. Although service providers may have a defined geographic coverage, those definitions don't always matter and community members will seek the resources (i.e. employment, health care, education) regardless of which state it is located in, the border becomes very fluid.

> "**The growth of the upstate of South Carolina and continuing… growth in that border. the border does not matter .** Yeah. So 45 to 47% of our patients on any given

> day are coming from South Carolina. So what's interesting ... **when it comes to engaging in the community in South Charlotte, it's cul-de-sac by cul-de-sac; church by church. It's very fragmented from an identity stamp other than it's the "Well-to-do" area**? That collects the same kind of people and increasingly businesses and jobs in Ballantyne. " *Male, Hospital administrator, 13 years in Charlotte*

During the conversations with participants, they often spoke about specific resources and where they are located that they considered assets. As has been described not many exist along the corridor and so planning for travel has to take place. The interesting thing is that regardless, community members find a way to access the resources or services even if they are not located directly along the corridor.

Assets shared by community members included a number of things such as food, parks, and health and social service organizations. When discussing food they mentioned having enough access to fresh food and participants mentioned Compare Foods, WOW Supermarket, Aldi and Walmart as locations they would frequent. Food insecurity did not seem to be an issue for these community members, and if there was an issue obtaining food, they shared how they would support each other or know of organizations that could support them.

> But I like to go to **Aldi to get the fruit, then I need soap and so I go to Walmart, which is close, to get the soap and then I have to deposit a check.** My son will say, mom you said one thing not three, but they are all close and then I don't want to go back out. **I take advantage of what is close together.** -Female, Mexican 20 years in Charlotte

When asked where locations were where they could engage socially in the immediate area, the one park that was mentioned, Archdale Park, which was often referred to as a "bad" and "unsafe" park. On the other hand a park that was frequently mentioned by the majority of the participants as 'safe or nice' was Park Road Park, close but not along the corridor and difficult to access via public transportation. A few of them also said Freedom Park was "the best park to go to". This park was definitely farther away from the corridor, but is in proximity to a health

clinic that many take their children too made it familiar to them. Accessing a variety of resources that are in different parts of the city allows the community members to become familiar with other areas and be more likely to utilize them. Additionally, they are able to share the information they learn with others and support the integration of other immigrants to the area.

> "Yeah **Freedom park is nice, but I think the ones in this area used to be nice but not so much anymore**. They haven't really taken care of it, although it **looks like they are fixing it up, but it never changes. Freedom has always been nice**.
> "It has also changed a lot, like **the entrance next to the clinic they have added a lot more things."**
> "I think **Freedom is the one where more people go, from any area and all different kinds of people-** whites, blacks, Hispanics, Indian." - Females, Mexican 20 and 21 years in Charlotte

Many participants mentioned that there were not many activities that occurred along the SBC most frequently; they would have to go to the South Park area, referring to an annual Hispanic festival hosted there. Having access to social activities that they can enjoy with others like them is important to having social connections. Previous work has linked not having others to be social with to lead to depression because of homesickness, which after a prolonged period of time can manifest itself physically with headaches or back pain. (Almeida et al., 2011)

> "Really **if there are going to be events, it's never in this area. [They are] usually parks that are far, like the Fanta Festival,** I don't remember the name of the park, but it is never around here. I think the closest festival that is done in the area is for Colombia that is along South Park near the mall. Those are the festivals they do once a year. But so people get together more like that, it's the parks." Female, Mexico, 21 years in Charlotte

Community members identified specific places where they could access social services such as churches, in particular Forest Hills, which is a bilingual campus on the South Blvd Corridor. Many mentioned how at one point there was a WIC office nearby that had been recently moved to Freedom Drive and no longer convenient to the many mothers and children in

the area. The Harris YMCA was also identified as a location where they could participate in activities. Important to the community members when participating in activities or accessing resources was access to childcare. Having childcare accessible increased the likelihood of participation.

> Many of the women don't have cars so it is very hard. **There weren't any other of those services like that [WIC] from the government.** I think they should bring more of those services for the kids closer to the area because there are a lot of Latino with kids. Many of them don't have transportation.- Female, Ecuador, 4 years in Charlotte

> Social programs for kids like the YMCA are very good. **All the programs that provide childcare too, because lots of women leave work because they have to take care of the kids because they don't have a babysitter**. - Female, Venezuela, 4 months in Charlotte

Lastly, participants of the focus groups were able to engage in conversations with each other about the health related resources that they were knowledgeable about. During focus groups like this oftentimes participants share information with each other that not everybody knew. Respondents shared that the only health care services accessible to them are at Atrium Health -Pineville, otherwise only one participant mentioned the South Blvd location of Centro Medico Latino, most mentioned going to their location on Randolph Rd. and they knew of the third location (Monroe, NC) but nobody had gone. Other clinics frequented by participants include- Bethesda Health Center (now Camino), Charlotte Community Health Clinic (University area location) and Care Ring. Only one participant reported using the light rail to go to Camino Community Center (there is a light rail stop less than a block away from the clinic).

> "There is one that is behind CVS on Nation Ford it's called (inaudible) Cares, that clinic is good. You do have to pay for service, there is no bills, but compared to what they charge in emergency, I would rather pay $250"

> "If there is an emergency then you have to go to the emergency [room]…"

> "But you have to remember that the visit alone is $250 and that doesn't include the blood test."
>
> "There was another clinic near the Compare Foods, but that one was closed."
>
> "Centro Medico Latino that is located on South Blvd; it is the most accessible the visit is only $80, then they charge for blood tests."
>
> - Focus group conversation with members of English as a Second Language Class, in the US between 10-16 years

Understanding the assets and where they are located is one aspect of spatial understanding in how the community members interact with the space around them. More often than not community members have to leave the SBC to access resources and/or services, and for those that do not have access to transportation it becomes very difficult. It is important to acknowledge the settlement patterns and clustering of immigrant populations (both documented and experienced) in particular when implementing interventions and/or deciding on locations of services. As has been described, there is a lack of services located along this corridor, yet it has consistently been one of the fastest growing areas of the city. Not having resources available in the area creates a likelihood for delayed access to healthcare among other outcomes.

Temporal

Ultimately, acknowledging the structural and spatial aspects of the determinants of health cannot be done separate from the recognition that change over time is continuous. The concept of the temporal is often forgotten because organizations, policy makers are used to dealing in the data and information that is presented and don't often have the context that the past and the future also need to be considered. It was clear in the conversations with community members and key informants that in some respect the experience of the Hispanic immigrant community along the South Blvd has not been considered when key decisions are made about resource allocation.

The perception is that the issues faced by the Hispanic immigrant community along the SBC hasn't changed over time, (i.e. lack of access to health and social services) but that there are now new issues that have come over time that are determinants of health. There are clues in changes overtime that may be missed by just looking at quantitative data that is why acknowledging the temporal aspect of these determinants of health in the lived experience of community members along the SBC is important.

Interestingly, community members spoke about time in three ways- the accumulation of stress over time leading to physical health issues; how engagement in programs over time provides an opportunity to gain more information and share with others; and the importance of investing time in personal growth. Not only is this quote supporting the accumulation of stress over time, but also the connection of mental health to physical health and the negative impact that it can have on this population in particular.

> "All that makes us sick, **we are so full of stress and then you have a lot of illnesses**. **For this particular community over the years the buildup of stress is causing physical manifestations with chronic disease and they are unable to treat them.**" Female, Mexico, 20 years in Charlotte

It is important to note that the majority of the community members were participants in various programming, so they spoke of the impact that type of involvement had on them over time. Additionally that as they gained knowledge it was also important to share it with others. It was interesting to see the level of information knowledge be more impacted by the time involved in a program or services as opposed to time in the country. The perception that because a person has been in an area for an extended period of time therefore has understanding of the resources is not true and greatly impacted by what is available near them to engage in.

> "I think sometimes it's because of lack of information. Lots of people don't have it. **Before I was in a program with Ana, I didn't have a lot of information. When I started the program they gave you information about everything and so it helped me a lot. So when people have the information they share it**, but then people don't always go because they are ashamed that they don't speak English." -Female, Honduras, 6 years in Charlotte

Additionally, the engagement of community members in programming and the positive changes they were experiencing activated them to encourage others to invest in their personal growth. This was not only seen as beneficial for the individual but also as a way to connect with others and become more integrated in the community.

> "Because one day you are going to need services and so within that circle **growing your own skills and that of others you can help each other. If you invest your skills in your own community that community will continue to grow and then connect with others,** African American or white. Must also have a different mentality that you can overcome". - Female, Mexico, 18 years in Charlotte.

For community informants the temporal aspect meant acknowledging that time was often more valuable than money in particular when wanting to engage partners in supporting programming and also as demographics shift overtime they have to be ready to adapt to those changes. Their programming or services cannot be static because the community at large and the Hispanic immigrant community is not.

> "**Time is incidentally more valuable than money**. And I noticed especially because I'm working for two nonprofits that want to donate financially to the program, **that's a lot less harder to find than people that are willing to commit time and relationship, with being uncomfortable in what is their norm**. It's easier to just say, well, let me pay for this." - *Female, English Teacher, 27 years in Charlotte*

> "We also have a strong value for collaboration. **I think over time we've become more sensitive to the role of providing connectivity between entities, which is a kind of collaboration, but it's broader than that**. Collaboration has tended to be one to one versus a whole. So if you combine catalytic, collaboration and broader connectivity in the spirit of sustainability as well as diversity of contributions. I think that's just where we sort of are [in the SBC]. **So I would say the catalytic part of starting new work in a community like South Boulevard, has been highly intentional for many years, not just in one place.** I think the desire to always collaborate has been more evolving. And

> then I'd say the connectivity part, even as most recently as you know, READ Charlotte Transformation." - Male, Pastor, 17 years in Charlotte
>
> "How do we **help the teachers be able to teach in a way that can really meet the needs of all kids, especially with the changing demographic** from one demographic to another demographic because the **staff didn't necessarily change, but their professional development, all of that needed to be adjusted**." - Female, Educator, 20 years in Charlotte

Communities, in both the social and spatial aspect have never been static, yet the temporal aspect of the determinants of health and the restructuring that is occurring in a place is rarely considered.

The presentation of the results in this way certainly highlights the argument that both the character and dynamics of the places where individual determinants come together and how those determinants and their interactions are changing over time may have more of a role to play in health than is given credit. Specifically, as it pertains to the Hispanic immigrant population in the SBC whose expressed determinants of health (i.e. access to affordable housing and transportation) were very much influenced by structural (i.e. policies), spatial (i.e. location of resources), and temporal (i.e. accumulation of stress over time and changing demographics) aspects of the restructuring occurring in the area. The environments or places in which people or communities are impacted by the SDOH are not fixed and changes to their character, as well as to the structures and processes driving that change, need to be considered as health determinants themselves. More importantly, that interpretation of the changes need to be considerate of the lived experience of the community, relying on data is not enough.

Summary of results

What follows is an overarching summary of the results of this mixed method study, including demographic information of the respondents. The number of the community members

engaged, although limited was representative of the anecdotal description of the Hispanic immigrants living in the area. Majority of those interviewed had not only been in the country for at least 10 years, but they had also arrived directly to Charlotte and settled in that area. Women are traditionally most likely to participate in research and that was certainly the case for this study. (Baker et al., 2005) It is important to note that although the East side of Charlotte-Mecklenburg is often referred to as the 'immigrant gateway', that is not necessarily the case. Therefore it is important to use this information to inform service providers to pay more attention to both demographic data and clustering along with lived experience so that resources and services are placed in the appropriate areas. None of the service providers lived in the area, but many had at least 5 year experience in working with community members that lived in the area. A few of them were embedded in the geographic area, which provided an opportunity for them to see how the area has changed overtime and speak to it from both their own perspective and that of their clients. Engaging both the lived experiences, whether personal or professional, is important in understanding how restructuring occurring in a geographic area is impacting the determinants of health for a specific population.

In responding to the first question of *"How are the determinants of health experienced and/or perceived to be impacted by the social, spatial, structural and temporal elements in combination and separately?"* it was evident that the lived experience of both the community members and key stakeholders is just as valuable if not more so than the limited data that is available to describe a specific geographic area. Prioritizing available data (whether publicly available or specific to an organization) only provides a snapshot of how the community members living in that area are experiencing the space and the restructuring that it is undergoing. Additionally, it is important to acknowledge how one determinant of health influences another

and how difficult it is to tease out how one specifically impacts more than another. There were some determinants that were experienced to have more impact than others, but it was mostly because of the domino effect of that particular department to other factors in the person's life. A prime example of intersecting determinants of health that have an impact on health is access to driver's licenses, which is a structural determinant. Not having access to a driver's license impacts the ability to drive (social determinant) and access health and social services (social determinants) which then has an impact on the health status because the undocumented immigrant is not accessing timely care. The longer the person goes without a driver's license (temporal determinants) the more likely they are to have compounding stress and anxiety which will manifest physically too. Lastly, the changes happening in the area (spatial determinants) are not always beneficial for this specific group, such as the light rail, as it does not necessarily provide access to the resources they need. Thus not having a driver's license has a combined impact on health along with other determinants. Although it is clear that more often than not there is a combined impact of the determinants of health, there is value in taking a deeper dive into how these determinants of health are impacted separately by the social, spatial, structural and temporal forces and also from the different perspectives, community member of the geographic area as opposed key informant. The two types of respondents spoke about their perception of the impact of the various determinants of health differently. For example community members spoke about demographic changes in the area as their being compounded by not having access to health and social services and having to travel outside of the area with limited access to transportation, whereas key informants only perceived limited access to health services as an issue and did not consider social services such as WIC. Although it is a natural approach to look at the determinants of health from a combined lens since that is often how they

are mostly experienced and perceived, there is benefit to trying to pull them apart in particular when assessing different perspectives.

Restructuring isn't only about how a place is physically changing due to multiple imposing forces such as economic, structural or social, but also how the community living in it is experiencing the changes, which can often manifest in poor health outcomes. *"How has urban restructuring been a factor in the determinants of health for the Hispanic immigrant population in the South Blvd Corridor?"* supports the importance of taking one aspect of the determinants of health, specific to the "where people live, work, play and pray" and understand how the changes over time in that space impact health, specifically for groups like immigrants. More obvious in area may be the physical structuring that is happening to a place, an increasing lack of affordable housing or addition of public transportation, but as community members and key informants pointed out there are other forms of restructuring that are less obvious and have an impact on health of the people that live there. There are a number of established indicators that speak to the level of restructuring happening in an area. For purposes of this project, the established indicators were taken into consideration, but so was the lived experience of the community members and key informants that participated in the qualitative interviews and was used to prioritize the indicators included in the quantitative analysis.

Both the qualitative and quantitative data confirmed that there have been demographic shifts in the area compared to the broader Mecklenburg County, but the direction in which the shifts happened or for what indicators was different depending on both who was asked and the data that is available. It is important to recognize that these differences exist and that they need to be considered the impact of SDOH is assessed. For example, access to transportation is an important determinant of health and can also speak to various forms of restructuring in the

community. Data available was specific to whether a person living in the area owns their own vehicle, but for Hispanic immigrants in the area, access to transportation takes various forms that is not described in the data. Additionally, not having access to their own vehicle has an impact on timely access of health services which is dependent on having a driver's license which is also dependent on documentation status. Therefore the qualitative data, or lived experience, also serves as evidence of the restructuring happening and the impact on health. When taking a closer look at the shifts over time in the proportion of the Hispanic population compared to Hispanic-Foreign Born populations in the specific census tract there were differences when added the specificity of nativity, which is an important experience that needs to be included in the conversation when understanding the more localized impact of restructuring on this particular population. The regression analysis had two models that were testing an association between the prioritized restructuring factors (independent factor) and either Hispanic (dependent variable, Model 1) or Hispanic/Foreign-born (dependent variable, Model 2) Model 1 showed that census tracts with lower education levels during the first time point saw more growth in the Hispanic population by the second time point. This is reflective of the experience of community members that broadly speak to the increase of the Hispanic population along the South Blvd. Corridor. Model 2, on the other hand included foreign-born status as part of the dependent variable and it did highlight additional significant associations between ethnicity and nativity status and three restructuring factors- gender, level of education, and percent insured in the South Blvd. Corridor census tracts. Specifically, census tracts with lower education levels and higher levels of insurance coverage during the first time point saw more growth in the Hispanic/Foreign-born population by the second time point, and areas with more males during the first time point saw more of decline in the Hispanic/Foreign-born population by the second time point. Adding the

specificity of nativity made a difference in seeing significant association with additional restructuring factors that were not present in Model 1.

The final question, *"How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Latino immigrant community living in Charlotte, NC?*", is the opportunity to establish a call to action with the new approach of acknowledging the various aspects of the determinants of health. It is important to acknowledge the complexity and intersection of the various aspects because knowing the demographic information and the concentration of the indicators and population is not enough. Taking into account where and how the determinants are impacting health is the only way to be prepared with ways to best implement actions to address the issues community members residing in the geographic area of "higher social need" face. Respondents were clear that there are specific factors that need to be addressed in order to support this particular population. From a structural perspective factors such as language, civic engagement and community leadership were key to supporting the community members in not only becoming more integrated in the community and ways that services providers and other advocates could support them. Interestingly, key informants acknowledged that their own organizations had to be aware of their positionality and that because they did not have the same life experience they should not just "do for" the community members, rather partner and "do with". Community leadership is an important structural factor that is a determinant of health, because currently there is not a lot of direct representation from the community as part of broader conversations as it pertains to community level discussions. There are a number of advocates, but recognized Hispanic leaders do not exist that can speak to the lived experience of the Hispanic immigrant community that lives along the South Blvd. Corridor. Another important point to

consider is availability of accurate data emerged as a structural factor that is important to better understanding the community. Not only is the data available lagging, but because documentation status and what comes with that, those that are undocumented immigrants are not often included. Additionally, the data that is available is not always segmented in a way that takes into consideration nativity status, a leading factor in poor health outcomes, especially for those that are undocumented. Another, point that arose from these conversations was the awareness that structural determinants are occurring at multiple scales and therefore intersecting and impacting one other. For example, the state level impacts ability to have access to a driver's license, which then impacts ability to own a vehicle and which eases access to resources such as healthcare. If policy at the local level supports the expansion and maintenance of public transit then going without a car might not be an overwhelming barrier. But, in a city where public transit is not supported, then not have access to a car is highly problematic. And, the lack of access to health services is likely translated into poorer health outcomes. The ways in which these different scaled forces intersect is of course spatially contingent – it differs across space. At the neighborhood level, we see in the SBC that even when policy supports light rail transit that initiates other processes of restructuring that render access to that resource unattainable through rising property values and housing costs. Recognition of this multi-scaler impact, of how the different federal, state, municipal local and individual scales intersect and interact is key to implementing sustainable action that aligns to address the need. Lastly, key informants were adamant about the importance of community organizations coming together and working in a way to have a collective impact in the specific geographic area.

The spatial perspective is especially important to acknowledge, not only because there was a very specific geographic focus for this project, but also because community members

spoke a lot about the location of services and the modes of transportation they have to utilize to be able to access. There is an assumption that because a light rail is located in the area there is general access to transportation therefore access to resources. Over and over community members and informants highlighted the fact that unlike other areas across Charlotte-Mecklenburg health and social resources were not located close to them, in fact there has been a recent push to relocate resources that were previously in the area elsewhere. As one can imagine this has left the community members feeling disconnected from the rest of the community. Key informants also addressed that it is too late to try to redesign the city, but rather there is an opportunity to see how existing infrastructure can be used differently to support this population and the growth that the city in general is experiencing. Key informants also discussed the importance of creating "safe spaces" to be available for community members and building networks to share information and resources. Lastly, respondents all agreed that the physical boundaries and definition of space are not clear, in particular because being so close to the border with South Carolina creates a lot of flow back and forth. Additionally community members mentioned often that they lived along the South Blvd Corridor but oftentimes had to work somewhere else in the county or even another state. Community members knew that they would have to travel outside of the immediate area to access resources, such as health care, and it is an accepted fact.

The clustering and settlement patterns for immigrant communities has been studied for years and had very specific patterns. Charlotte is not one of those areas with traditional immigrant settlement and that has made it difficult for resources to be made available in those areas that had not been set up for such. A Local Indicators of Spatial Analysis (LISA) was conducted to evaluate the clustering of the restructuring factors that were significant in the

regression analysis. The clustering patterns presented were not very different from what has already been documented, but nevertheless it is important to recognize the addition of demographic information such as nativity status having a shift in some of the clustering.

The final aspect of the determinants of health, the temporal, which is often forgotten because organizations and policymakers are used to dealing in the data and information that is presented at that point in time and don't often have the context that the data is lagging, not encompassing of all community members and accounting for real time changes happening. This was evident from the conversations with respondents that brought to light that even though there has been a continuous influx of Hispanic immigrants to the area, their needs are not often considered when decisions are being made of where resources need to be located. Although this appeared to be the case, community members shared their perception of the temporal aspect by talking about accumulation of stress over time that leads to physical health issues, how engaging with programs overtime provides them the opportunity to gain more information and share it with others and lastly that it is important to invest time in personal growth. Key informants shared that time was often more valuable than money in particular when wanting to engage partners in supporting programming and also in experiencing the demographics shift overtime they have to be ready to adapt. Those key informants that worked directly with community members along this corridor know that the programs and services they provide cannot be static because the general community and the Hispanic immigrant community is not.

By exploring these three questions it is evident that both the character and dynamics of the places where individual determinants come together and how these determinants and their intersection are changing over time has more of a role to play in health than has previously been given credit. The environments or places in which people or communities are impacted by the

SDOH are not fixed and changes to their character, as well as to the structures and processes driving that change overtime, need to be considered as health determinants themselves.

CHAPTER 6. DISCUSSION

The impetus for this research was to examine the manifestations of various determinants of health and their intersection through spatial, structural and temporal lenses at the neighborhood level. Within this framework, this study also explored how changes to those determinants were affected by restructuring forces in a manner that adversely or positively affected the Hispanic immigrant population living along the South Boulevard Corridor (SBC) in Charlotte NC. Given the study goals, the researcher deployed a mixed methods strategy.

The following discussion of research findings is ordered to address each of the study's three research questions: (1) How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert; (2) How has urban restructuring been a factor in the determinants of health for the Hispanic immigrant population in the South Boulevard Corridor; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health and broader needs of the Latino immigrant community living in Charlotte, NC. In order to situate the findings of this research, this chapter also presents a discussion of major findings as they relate to the current literature on the determinants of health, urban restructuring, and immigration status. This chapter concludes with a discussion of the limitations of the study and suggested pathways for future research.

Through this approach, to understand how the SDOH influence environments or places that, in turn, shape the health outcomes of people we recognize that little to none of those determinants are fixed. Rather, changes in place and community, as well as the structures and processes driving that change are themselves determinants of health. Specifically, in this study

the Hispanic immigrant population living along the SBC whose expressed determinants of health included access to affordable housing and transportation, were heavily impacted by structural (i.e. policies), spatial (i.e. location of resources), and temporal (i.e. timing of policies and addition of light rail) aspects of the restructuring occurring in the area. Consequently, policies and actions that seemed to have no connection to community health outcomes were drivers of changes that translated into powerful negative SDOH on immigrants. The application of mixed methods played a role in uncovering these data and interpreting the changes in the community. Indeed, without qualitative data, health providers would rely on quantitative data that is lagging and incomplete. And, not useful for the development of effective interventions to address health and/or social needs.

Interpretation of Findings

How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert?

As detailed in Chapter 2, the literature review highlighted that most existing research in the area of the SDOH focused upon broadly defined social metrics and did very little to explicitly address spatial, temporal and structural aspects. For example, the short shift of temporal considerations is acknowledged in terms of data lagging behind the pace of community and health change, thus making it difficult to fully understand experiences in real time. Even with 5-year estimates available, significant changes in a community or neighborhood can occur in the inter-period that are not accounted for. The neglected attention to temporal considerations is especially critical for understanding the determinants of health on the Hispanic population that continues to grow. For example, Hispanic heterogeneity in Charlotte is increasing over time and

yet this group is frequently treated as homogeneous - in both research and interventions. Variation by country of origin, nativity status, citizenship status or time of arrival are often not addressed, rendering research findings partial at best or inaccurate at worst.

In 2018, 10 years after the implementation of the ACA, there has been a growing literature focused on structural changes that might address SDOH impacts and outcomes. For example, what are the impacts of implementation of SDOH screening in clinical settings? Nonetheless, there is still limited information about evidence based interventions for addressing social need, in particular when considering nativity and/or documentation status or any of the other aspects of the determinants of health. What is lacking in this body of work is recognition of the impact of temporal variation on the determinants of health and how spatial and structural aspects may also be playing a role as drivers. In fact, when the temporal aspect is discussed in the literature, it is often in relation to the life course of an individual. (WHO 2010; Pearce, 2018) Clearly, the idea of the life course impact as a determinant of health is important, however it fails to engage in the full complexity that other aspects- social, spatial and structural are having at the same time. Additionally, the temporal literature has also explored the activity occurring during a specific time and how it relates to place and health (Kirchner & Shiffman, 2016; Mennis & Yoo, 2018; Perchoux, 2019); yet also fails to address the changes over time of the place where this activity is taking place.

Although the intent of this research question was to frame a clearer understanding of the aspects of the determinants of health both individually and collectively, the responses from both the community residents and informants provided insight into why it is difficult to peel apart the intersection and interplay between elements. This conundrum illustrates why researchers and health providers cannot just speak to the social aspect of the determinant of health. Rather, they

need to focus on a more complex and realistic framework. Ultimately, in order to fully be able to understand the impact of the determinants of health, we do need to understand the different components. And, while it is appropriate at times to take a deep dive into a determinant of health and explore one individual aspect, not considering the intersection with other elements is a missed opportunity. It is equally important to remember that place and community are represented in individuals' lived experiences as made up of a complex web of elements.

Over the course of this project, conversations with respondents about their determinants of health and the effects of social, spatial, structural and temporal aspects brought into sharp focus the complexity and intersectionality of elements. In particular, respondents shared powerful stories of how demographic shifts occurring in the South Boulevard corridor (SBC), the location of resources in the community, the displacement of people due to lack of affordable housing, and the impact of state and local policies on their daily lives created rapidly shifting and challenging changes in their community that led to increase stress levels, manifesting in poor health status. For example, when discussing the lack of personal transportation there was an inevitable segue to report the challenge of undocumented status, which under North Carolina law denied access to drivers' licenses. Until 2007, the state had allowed international documents to be used for obtaining motor vehicle licenses. For low wage, blue collar workers, access to transportation and driver license policies are critical for economic survival.

The determinants of health and the impacts described by respondents share common themes reported in the literature, especially relating to the social aspect of the determinants of health. For example, lack of transportation is a barrier to healthcare access (Ensor & Cooper, 2004; Syed, 2013; Mackett & Thoreau, 2015) and the lack of affordable housing (Krieger & Higgins, 2002; Lubell, 2007; Mueller & Tighe, 2007; Gibson et al., 2011) have both been linked

to poor health outcomes. Both are widely documented determinants of health. But, the general evidence for these two determinants has failed to acknowledge the differential health impact for immigrants owing to discriminatory policies put in place to deny them access to both transportation and affordable housing. Instead, non-health related literature has explored how policies have been implemented around documentation status in order to restrict access to a driver's license and create economic barriers to homeownership opportunity. (Cáceres & Jameson, 2015; Mendoza & Polkey, 2019; Enriquez et al., 2019)

More generally, there is a large literature that has examined immigrant settlement patterns and the connection to transportation and housing. But, not in the context of social aspects such as immigration status, the spatial impacts of restructuring occurring in a geographic space, the structural aspect of policy changes; and temporal changes over time. Specifically, this work has not effectively addressed the interplay and the impact on health among Hispanic immigrants.

Individually the study respondents described the social aspect of the determinants of health as focused upon demographic shifts, including the increased number of Hispanic immigrants and the more recent influx of young professionals to the SBC. The population shifts were linked to a myriad of restructuring elements occurring simultaneously- transportation, shifting housing, etc. The continued growth of Hispanic immigrants has remained steady over the years. But respondents shared that more recently, political events at the international scale spurred a new Latino influx from Venezuela and Central America, many coming to be close to co-ethnics and earlier arrivals. This strategy makes sense as it provides the newly arrived immigrants with the opportunity to leverage the experience and social networks of the long-time immigrants in order to become better integrated into the community. That aspect of settlement

aligns with the immigrant literature in that new immigrants settle in enclaves of other immigrants. (Portes & Manning, 1986)

Conversely, the respondents also shared that the influx of young professionals was linked to a different set of determinants. The SBC is close to Center City, where many white collar professionals' work. The City's large investment in public transit made access easy. Furthermore, older suburban subdivisions in the SBC offered larger homes at an affordable price point. Because these are older neighborhoods, the access to suburban living close enough to the urban core is attractive for the young professional class. Taken together, spatial and structural conditions were ripe for the initiation of gentrification. Although in this particular area, oftentimes the light rail or other forms of public transportation have been seen as the drivers of this change, the respondents hardly mentioned the light rail. When they did include it in the discussion, it was referenced in terms of it being a convenient form of transportation for others, i.e. young professionals with jobs in Center City, not something that was meant to help them.

Although the goal of this question was to examine SDOH individually and then in combination, inevitably the conversation broadened. While considering other aspects individually, such as the spatial determinant, the conversation with the respondents initially focused on how the community members interact with the space around them. In particular what resources and services are available and where they are located relative to where they live. Because the settlement pattern of the immigrant community in Charlotte is different than other cities with a "traditional" immigration history (Hanchett, 2013; Smith & Furuseth, 2006), it would make sense that there would be a lack of access to resources in the vicinity of their homes. But, because Charlotte is a "new city", the bulk of public services and infrastructure providing health care and social services were sited in "car-centric" locations, along primary through roads

and accessible to the interstate highways. (Wolch, 1981; Pinch, 1997) Like many other North American metropolitan centers, Charlotte's public transportation is set up as a spoke and wheel configuration. Buses serve routes starting in the suburbs moving riders to a downtown transit hub. Trips to public service centers require return trips outside the urban core. The impact is that using public transportation to get to these services is difficult.

Many of the respondents associated with the City of Charlotte, referenced the orientation of the 20th century Charlotte planners. Their city plans and zoning did not take into consideration the way the city would grow and how demographic change would reshape the city. These flaws reflect not only the siloed nature of urban planning and health, but informs other areas as well. Although it is difficult to retrofit the physical form of existing cities or replace planning regimens, new research findings provide an opportunity to think differently about how current spaces should be treated. Indeed, there is a theme in the literature to engage in more of this work. But the findings of this study would advocate for concerted attention on the effects of demographic change, in particular, as it relates to immigration and migration.

Reflective of what has been discussed earlier by the research, structural policies are in place that impact the ability for Hispanic immigrants to have access to not only driver's license and public transportation, but also employment. The respondents shared how the implementation of the E-Verify process made it even more difficult to have stable employment. Irrespective of the policy constraints, many Hispanic immigrants have made a path to provide some level of income. Unfortunately, many self-created employment options do not provide access to health insurance, a strong predictor of health outcomes.

When Hispanic respondents were asked specifically about the temporal aspect, they were quick to pinpoint the timing of specific crises, e.g. drivers licenses being taken away or implementation of E-verify. In contrast, when talking about the continuous changes over time, for some immigrants living in the SBC for 25 years, it was best described in terms of incremental increase in housing cost overtime. This stark differentiation speaks to how continuous change over time in the Hispanic immigrant's life plays a role in the determinants of health. Even if it is limited to one element, such as access to affordable housing, it is experienced in different ways and is hard to quantitatively measure that impact because of the interconnectedness to the other SDOH variables.

Throughout the conversations with respondents it was very difficult to separate and tease out single, interdependent elements of SDOH. It is clear that lived experiences are complex and complicate efforts to build a framework that examines and assesses individual elements. This barrier prevents us from having a full understanding of the determinants of health and take sustainable and effective actions to impact health positively. This research begins to address that weakness and recommends additional research to uncover connections and effects, for the general populations and subset of populations.

How has urban restructuring been a factor in the determinants of health for the Latino immigrant population in the South Boulevard Corridor?

Urban restructuring is an example of a change over time that transforms a place in a manner that also impacts the determinants of health in multiple ways. Scholars have traditionally focused on describing urban restructuring using a socio-spatial lens, commonly using an economic perspective (Soja, 1983; Sassen, 1990); demographic shifts (Clark, 1987); and

suburbanization (Wyly, 1999). Although there has been some recognition of the role that geography plays in health inequities there has been very little recognition of the health impacts on the individual residing or engaging within restructuring space.

Throughout the respondent conversations it was clear that restructuring in several forms is a determinant of health for the Hispanic immigrant population living along the SBC. For the Hispanic respondents, the most apparent manifestation of restructuring was the increasingly limited access to affordable housing. Clearly, increasing housing costs are not unique to this area, occurring across the city and county. However, the initial immigrant settlement of SBC occurred before restructuring commenced. (Howarth, 2019) Fifteen years ago, housing costs in SBC were low, and the area was described as an ideal choice for Hispanic immigrants (Smith & Furuseth, 2004; Hanchett, 2010). More recently, gentrification in the SBC and other inner ring suburban neighborhoods has led to higher than average housing costs in desirable areas. A number of Hispanic residents had already experienced incremental increases in rent over the years. They acknowledged that although the current cost of rent in that area was high for them it did not stop newcomers from moving to SBC and even purchasing homes. The descriptive analysis of housing data supports these observations. Homeownership along the SBC increased, but not for Hispanics living along the SBC or in the general Charlotte housing market. While homeownership has been popularly viewed as an indicator of upward mobility, it is something that is increasingly less accessible and/or makes a difference in financial stability for a smaller percentage of Americans. (Shapiro et al., 2009; Turner & Luea, 2009; Acolin et al., 2019) In the context of the SBC, a disproportionate rise in homeownership is a marker of urban restructuring and the impacts of gentrification or demographic changes in the corridor that has brought stress to the Hispanic population.

Just as rising housing costs are a sign of restructuring, so is the addition of a new "sexy" public transportation mode which has stimulated the changing demographics and aspects of gentrification. (Delmelle et al., 2020) In the South Blvd Corridor, one powerful sign of urban restructuring was the development of the Blue Line light rail line. The impact of the light rail service displays a sharp difference between Hispanic and non-Hispanic study participants. Many non-Hispanic respondents believed that SBC has excellent public transit service because of the light rail. That is not the same narrative described by the Hispanic respondents and those that work directly with them. In fact, they felt that the light rail did not provide any added access to transportation. In particular, because the light rail line was not close to any of the resources that Hispanic community members needed to access. This disconnect is important because where public resources are located and proximity to public transportation is too often missing as SDOH in the literature. (Molesworth, 2006; Sanchez, 2008) In this case, having a light rail does not provide any additional accessibility to health care and public services. Consequently, community members have to take other forms of public transportation, i.e. buses, to obtain services. In practical terms, this means a 30 min trip one way for a person with a car, or a two hour trip one way by bus. Publicly available data assessed in this study indicated that access to personal transportation in the SBC is less available compared to the Mecklenburg County average. Investments in expensive public transportation options, like light rail, is a form of restructuring that positively impacts certain groups but not disadvantaged populations, like Hispanic immigrants.

Shifting focus to examine changes to the local economy as a form of restructuring, it is important to understand the type of employment in the SBC, and more importantly the types of jobs available to Hispanic immigrants. Research participants focused more on this perspective

than how employment opportunities had changed over time. Many of their jobs are in the essential services industry, these include, but are not limited to construction, cleaning services and lawn maintenance. Sassen (1990) spoke to the impact of economic restructuring on the American city. In particular, how the occupational and industrial base of American cities was shifting to more service oriented jobs, with spillover effects on various social conditions and impacts on minorities. Drilling down to the SBC, the data showed evidence of economic restructuring with a decrease in unemployment and an increase in self-employment. Hispanic respondents spoke to the increase in self-employment as a response by the undocumented to E-verify requirements. The entrepreneurial model as a survival strategy to overcome discrimination is a well-documented part of the immigrant experience. (Borjas, 1986, Sanders & Nee, 1996, Portes & Zhou, 1996) Many of the respondents shared their experiences and those of others having to transition to self-employment but with high cost of losing their access to health insurance. They acknowledged that there had been a direct impact on their health because accessing care is now cost prohibitive and there are not enough free/low cost clinics to support the demand. Previous research has confirmed that the lack of health insurance is a key determinant of health, in particular for undocumented immigrants. (DeNavas et al., 2013; Goldman et al., 2005) Unfortunately, employment data available by the ACS is not provided by ethnicity, so it is unclear what the rates are for those that identify as Hispanic and/or Foreign-Born. Not having these data creates challenges not just describing the population, but also creating strategies to help support them. The analyses of economic activity in the SBC helps elucidate impacts of a variety of determinants of health, such as access to insurance and the intersectionality with other SDOH.

Beyond consideration of how indicators of restructuring impact a place, it is also important to understand how a person is able to interact with and navigate the place. While an area, like SBC, may experience an increase in educational attainment, there can also be different ways in which educational change impacts community members. Educational attainment is a well-documented determinant of health. Evidence shows that people that are better educated have lower death rates from both chronic and acute health conditions and longer life expectancy, even when demographic and employment factors have been adjusted. (McGill, 2016; Shankar et al., 2013; Telfair & Shelton, 2012). In discussions with Hispanic respondents, education was largely viewed from the perspective of adult immigrants learning English and how to use technology. The American Association of Applied Linguistics posits that immigrants, refugees, and asylees experience differences in health outcomes that have been traced back to linguistic segregation. (Szaflarski & Bauldry, 2019) Indeed, language barriers are themselves documented determinants of health (Chang & Fortier, 1998; Yeo, 2004). But in the Charlotte area, anecdotal evidence suggests that it is difficult for health and social service providers to hire bilingual, much less bicultural staff to meet the needs of the immigrant population. Audrey Singer (2016) and others have documented Charlotte's status as a new immigrant gateway, with steadily growing numbers of immigrants. Despite decades-long demographic change, local health care systems have displayed a limited emphasis on recruiting and retaining bilingual staff. One of the respondents mentioned this pattern of benign neglect as long-standing and questioned why there was not a focus on preparing local young people that are bilingual and bicultural for these types of positions, rather than spending lots of money to recruit from outside of the state. Viewed from a community perspective, the respondent's concern addresses critical areas that are often left out of broader conversations: the upward mobility for Hispanic and bilingual residents.

Charlotte and Mecklenburg County rank last among metropolitan areas in intergenerational economic mobility (Chetty et al., 2014). Hispanic residents are deeply impacted, yet their specific experience is often missed.

Looking at educational attainment from the traditional restructuring lens, ACS data showed that educational attainment increased (bachelor's degree) for both the general and Hispanic population in Mecklenburg County during the two time periods covered by this research. The SBC had a much larger increase as a whole, compared to the greater Charlotte area. This trend is an indicator of restructuring and likely influence of gentrification, with young, white professionals moving into the SBC. Although the data did not directly speak to the Dream Act[6], it was a policy enacted during the time period and may partially support the fact that the rate of Hispanics with a Bachelor's degree or higher nearly doubled for between the two time periods. This was yet another example of the intersection between structural and temporal aspects of SDOH, in this instance education, and the importance of deeply understanding the population.

Digital literacy has also been identified in recent literature as a determinant of health impacting access to care and services. (Eshet, 2004) Indeed, a growing body of work has found that those individuals who are digital literate have better health outcomes because of their ability to self-manage chronic disease and adopt healthier behaviors. (Azzopardi-Muscat & Sorensen, 2019; Sorensen et al., 2012; Berg et al., 2018). Not surprisingly, higher educational attainment is correlated with stronger digital literacy. Although there had been initial research finding Hispanic immigrants experienced limited digital literacy (Ono & Savodny, 2008), a 2016 report

[6] Development, Relief, and Education for Alien Minors (DREAM) Act, was introduced on May 11, 2011

by the Pew Research Center reported that the digital gap was declining (Brown et al., 2016). Study respondents spoke of the importance of digital support for Hispanic immigrants, in particular to those who were more recently arrived. The concern was based on the preponderance of critical information that is posted online. Moving forward, there are opportunities to think about ways to go beyond simply providing digital literacy and building digital skill sets that could help economic mobility. Taking consideration of the lived experience of residents with the various forms of SDOH determinants is critical to assessing the impact of restructuring beyond traditional indicators.

The lived experience of respondents introduced additional determinants of health affected by restructuring of the SBC. We tend to think of one form of restructuring at a time. However, from the perspective of this study's respondents who are talking about their lived experiences, multiple indicators are happening simultaneously, and are often difficult to separate and acknowledge. Respondents cited changes in the location of resources and demographic changes. Locational decision making by county officials has, for example, impacted the access to health-related services. Respondents mentioned multiple times that at one point there was a convenient WIC office, but it had been moved to a different part of the county making it difficult for community members with no transportation to access the resources.

By way of background, Mecklenburg County has launched a strategic plan to centralize service delivery and provide greater access for all county residents. (Mecklenburg County, 2018) The location of the first Community Resource Center on the Westside of Charlotte, an area of high rates of poverty and urban decline, reflects policy objectives. Nonetheless, SBC respondents pointed it out, that oftentimes it appears that the needs of other community groups take precedence over their needs.

Respondents shared that there are basic needs located in the area, such as grocery stores, but that for the most part community members have to travel long distances to access health and social services. (Dulin et al., 2013; Ludden et al., 2018) The community concerns about spatial barriers to service provision are not widely studied. Only one research paper was discovered. In a paper by authors Gelatt, Adams and Monson (2014), they acknowledged that the changes happening within the Hispanic immigrant community, including increased growth, geographic dispersion and diversity play out differently across urban and rural spaces across the US. Additionally, they acknowledged that that current literature focuses predominantly on barriers and strategies to service delivery that are homogenous, therefore ignoring the heterogeneity of both the population and geographic areas in which Hispanic immigrants settle. (Gelatt et al., 2014) Similar to findings of this research, the authors argued that owing to changes in spatial distribution and population, strategies that may have been effective in the past need to be revisited and revised to accommodate new conditions and restructuring processes. (Gelatt et al., 2014)

Lastly, restructuring occurring along the corridor is associated with critical demographic shifts. During the discussions around the impact of restructuring elements, the consensus among respondents was that the demographic shift over the last 20 years has been the most impactful both as a cause and as a consequence of restructuring. The SBC has been a primary immigrant gateway in the Charlotte-Mecklenburg area, along with the Eastside of Charlotte. Accordingly, Hispanic serving and operated resources and services have been concentrated in the area. It is acknowledged that immigrant settlement in new spaces is a defined dimension of urban restructuring with immigrants as both agents and victims of restructuring forces. (Suro & Singer, 2002) Immigrants reconstruct places by introducing new aspects to urban landscapes sometimes

even recreating the landscapes of their home countries. They establish new businesses and services that attract co-ethnics and others as customers and/or entice new residents to move into the neighborhood themselves. (Smith & Furuseth, 2004) Immigrants are also among those impacted negatively increased investment interest in an area as property values and rents skyrocket beyond their reach and lead to displacement. And, in the case of the SBC, immigrants are among those who benefit from, and are potentially harmed by, infrastructure improvements such as light rail development and its associated upgrading pressure.

An additional point to note is that the available statistical data do not completely reflect the continuous influx of Hispanics, immigrants and others in the area that has occurred over the past 30 years. In fact, the data for SBC present a conflicting picture. For example, the census data show a sustained increase in the Hispanic population in Charlotte-Mecklenburg, accompanied by a declining Hispanic- Foreign Born population in the SBC. This further emphasizes the importance of recognizing the complexity of the role played by Hispanics in restructuring – to what extent are Hispanic immigrants more likely to be victims of restructuring that the native born or naturalized Hispanics?

The discrepancy between the census data and the lived experience of the respondents reflects a commonly reported phenomenon, the census undercount of marginalized communities. This is labeled the 'surveillance gap'. (Gilman & Green, 2018) Among undocumented populations there is even less likelihood to complete government issued surveys. (Warren & Passel, 1987; Passel, 2006) The impact of undercounting and incomplete data exacerbates the disadvantage of poor and economic disadvantaged populations. It fosters a false narrative that they don't exist. Therefore, there is no need to place services or resources in the area. The insidious absence of data becomes a determinant of health and warrants further research.

Although an undercount of the Hispanics is handicapping population estimates, the linear regression analyses which examined the relationship between indicators and nativity status are still useful to help better understand population shifts. The first model found that census tracts with higher proportions of high school graduation as the highest level of educational attainment were associated with increasing Hispanic population growth. These results point to Hispanic children earning their high school diplomas, regardless of documentation status. The second model focused on the foreign-born Hispanic population; a surprising finding was that those census tracts with a higher proportion of medically insured residents also had a higher percentage of Hispanic/Foreign-born. This is contradictory to the literature that speaks to immigrants having limited access to insurance (De La Torre et al., 1996; Ku & Matanai, 2001; Perez-Escamilla et al., 2010). The absence of employment data with ethnicity, as well as insurance linked to employment, made it difficult to delve into underlying data characteristics. It is also important to note that the literature does not actively take into consideration spatial and temporal aspects of access to health insurance.

Going forward, the acquisition of data around nativity status as well as heterogeneity of the Hispanic population would provide the opportunity for more realistic representation of the impact of demographic shifts on restructuring activities in the SBC. Visualization of the restructuring could be very informative. The Local Indicator Spatial Analysis is a tool that could support this type of visualization of the data. (Beveridge, 2018)

It is clear that urban restructuring played a painful role in a myriad of ways impacting the lives of Hispanic immigrants in the SBC. The consequences of health determinants are significant such as lack of access to employment, health insurance, transportation and affordable housing. These determinants along with the changes occurring in the area are compounding and

add stress to this population already suffering from higher rates of undiagnosed and/or uncontrolled chronic conditions, including mental health. Additionally, there's a disconnect between the lived experience of SBC community members and what statistical data portray about them and their lives. Although this area shows an increase in homeownership or employment generally, that is not the case for Hispanic immigrants, particularly those that are undocumented. Absent alternative information, the statistical picture of restructuring presents a skewed representation of the place and community. It appears as an area of growth and opportunity, but not at the same scale for all people, only those that are documented, highly educated and well paid. Not to mention that these various levels of restructuring are occurring at multiple scales and having very complicated impacts on this population. Specifically, it creates a dynamic where they are not able to take advantage of the changing neighborhoods or spatial landscape that they are taking part in building. They build the new housing options, but they are not able to afford living in them. Consequently, in order to inform action, it is important to advocate for additional work to be done to better document the differences that exist and develop strategies to support the different experiences. Only understanding the various types of experiences across a community can we overcome the narrative equal opportunity and achieve true equity.

How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Latino immigrant community living in Charlotte, NC?

Since the 2011 Rio Political Declaration on Social Determinants of Health, nations around the world have been encouraged to actuate the determinants of health in order to address health outcomes for their populations. The Rio Declaration also encouraged the implementation

of plans at smaller scales, regional and local. While the Declaration documents laid out and highlighted the structural aspects of the determinants of health, they lacked awareness of the spatial and temporal aspects. (WHO, 2011)The results of this study argue that it is important to take the structural, spatial and temporal aspects of the determinants of health into consideration as a way to inform action. Conversations with community members and informants suggested that there are a number of strategies for considering these critical aspects to either inform or initiate actions. Discussions with community members identified three key focus areas including (1) addressing language barriers, (2) supporting civic engagement and Hispanic leadership efforts, and (3) developing partnerships. Tactics to operationalize these themes targeted the provision of bilingual services and engagement of others in the community to become civically active.

As previously reported, language barriers are one of the most impactful determinants of health for the Hispanic population. Thus, addressing it is key to ameliorating poor health outcomes. Prior literature offers convincing evidence that the health care sector needs to be investing in the development of broader population based approaches that include cultural awareness, communication and technology to support patients who have limited English proficiency. (Partida, 2007; Andrulis & Brach, 2007) One opportunity for health care to engage in ways to address these barriers is to educate clinicians around how language barriers are contributing to disparities. At the same time, it is important to avoid implementing interventions that inadvertently increase health disparities. (Diamond & Jacobs, 2010) In terms of social care provision and addressing language barriers, the literature in the US is limited. However, international scholarship in this area is extensive. In particular, multiple studies have discussed the use of interpreters to support clinical services. (Pugh & Williams, 2006; Guery, 2014;

Westlake & Jones, 2018) Over the course of this research, multiple community members and informants spoke to the importance of providing interpreters, with the caveat that interpreters needed to learn the language in ways to address language barriers.

A second structural determinant of health that the respondents mentioned focused upon was building wider civic engagement opportunities for Hispanic immigrants. Conversations with community members identified a number of opportunities to engage others in the Hispanic community. Reflecting upon the growth in numbers, respondents commented on the power of coming together. A major impediment to community building remains the continuing limited political involvement in politics and neighborhood organizations. The good news is that recent programming opportunities to educate and support Hispanic immigrants to become more engaged are significantly engaged.

Data around civic engagement in Hispanic immigrant populations is limited and predominantly focuses on young adults. Recent literature found that Hispanic immigrant young adults were motivated to become civil activists primarily by social responsibility and the social injustices. (Suarez-Orozco et al., 2015; Stepick & Stepick, 2002; Sherrod et al., 2010)

Research examining civic engagement in new immigrant gateways, like Charlotte, is even more limited. Fortunately, work by Schuch and colleagues (2019) has provided Charlotte-based research that explored low Hispanic levels of community engagement and its impact as a health determinant. One of the important findings of this study was a recognition the civic engagement in new or emerging immigrant gateways does not follow the model of older traditional Hispanic communities.

The determinant of multi-scalar structural impacts is a finding that organically arose from this work. Policy developed and implemented at one scale can intersect with policy developed at another in unexpected and powerful ways. This can have lasting impact on health access and outcomes. In the case of Hispanic immigrants in the SBC these impacts are seen through increase use of the emergency room for primary care type health needs such as headaches, gastrointestinal issues and colds. (Ortega et al., 2007; Mahmoud & Hou, 2012) Not having access to employment that offers health insurance leaves them without access to primary and preventive care, being left with no choice but having to use the emergency room. It is difficult to find anything in the determinant of health literature about the multi-scaler impacts, although it can be addressed in work conducted through a spatial perspective. Understanding the value of a multi-scalar perspective is crucial to sustained and aligned action to address health and social needs of community members.

Finally, the community informants emphasized the importance of developing partnerships with community groups and ally organizations to support immigrant needs and aspirations. The group respondents were representatives of organizations providing services to the population along the SBC. These included a local YMCA, church, and youth organizations. These were allies that have historically collaborated and benefited from intentional partnerships to address the needs of the South Boulevard Corridor. Part of their advocacy efforts has been to lobby for a 'designation' of the area as a unique place. This would foster governmental and public recognition leading to potential place-based funding and cachet.

A review of scholarly research discovered a modest interest around the process and strategies used to build alliances between Hispanic immigrants and existing groups. Most of these data are derived from grey literature. That is to say, published outside of traditional

academic publication channels in empirical reports, government documents, or evaluations by applied and community-based scholars. (YMCA, 2013; Hispanic Federation, 2019; Colorin Colorado, 2019)

The majority of the published literature looks at partnerships from the perspective of schools and explores strategies to engage Hispanic immigrant parents in supporting their children. (Dotson-Blake, 2010; Dotson-Blake et al., 2009; Rusch et al., 2015; Corbie-Smith et al., 2010). This literature is reflective of the idea of 'collective impact'. This term refers to groups of agencies/organizations from different sectors coming together around a common strategy to solve a specific problem. (Kania & Kramer, 2011) This approach has been gaining momentum in recent years, in particular as a framework to make community change. (Christens & Inzeo, 2015; Brown et al., 2019) While community informants did not use the idiom collective impact, it has practical utility describing a framework to address the intersecting structural, spatial and temporal determinants of health and strategies for improving health outcomes.

Over the course of discussions focused upon the spatial aspect of the determinants of health community members directed attention to the geographic locations of services. Time and time again they mentioned how services were not located in the SBC and required time and transportation to be able to access them. This spatial mismatch between service location and client residence is exacerbated by recent settlement of immigrants. Health and social service organizations need to be aware of the mismatch and deploy services to locations that better serve. (de Leon et al., 2009) The spatial mismatch for service delivery aligned with community concerns regarding land use planning. Community informants shared the reality that changing demographics in the SBC meant gentrification was pushing them out of their places in the area. But, they offered that creating spaces where they could be safe and build relationships would

help sustain their community. Unlike the concept of place-making which in the literature tends to focus on economic and policy changes (McCann, 2002; Glaeser & Gottlieb, 2008) their ideas were more reflective of the development of a social support network with ally organizations helping to facilitate in key locations along the corridor. Community informants referred to the English as a second language class as opportunities for creation of these spaces. While there is only modest literature around this concept, the few studies that are available are focused on specific health related etiology. Largely, they do not address the goal of building social networks. (Yoshioka et al., 2003; Martinez-Schallmoser, 2003; Vega et al., 1991; Aranda et al., 2001) One paper did look at the concept of 'familism' as a driver to build social support. However, it did not address the spatial or temporal aspect of when or how the support is provided. (Almeida et al., 2009)

Land use planning focuses on physical changes in neighborhoods and across communities. Social changes are auxiliary concerns. Rapid and significant changes in population characteristics produce unconceived impacts to land use and urban infrastructure. Community informants were challenged by Charlotte's inflexible and sometimes stifling land use planning policies. But Charlotte is not unique. A broad set of research on emerging immigrant gateways has found that they were not prepared with appropriate infrastructure to receive a massive influx of immigrants. Examples of this include a seminal paper by Price and Singer (2008) that examined how large-scale immigration to suburban communities around Washington, D.C. was not explained by traditional assimilation theories. They reported that in some cases local governments were very accommodating to the new diversity while in others there were obvious efforts to deflect immigrants. Community reception is an important factor to consider and likely a determinant of health. In fact, the literature does support its link to mental

health (Alarcon et al., 2016; Smokowski, 2007) which, in turn, has an impact on physical health. From a broader perspective, community receptivity and integration affects the immigrant's ability to navigate the various systems in place that are meant to support health and social aspects of the community life. Since the concept of integration and receptivity were an organic finding, they were not explored with all respondents. But, going forward this is a recommended next step of research.

A final aspect of the determinants of health that should be considered in addressing health and social needs for Hispanic immigrants is the temporal. This aspect was described by community members as the accumulation of stress over time and how it leads to poor physical health. It is widely recognized that the prolonged accumulation of stress affects the physical and mental well-being of Hispanic immigrants. (Sternthal, 2011, Kaestner, 2009; Vega & Miranda, 1985) Boen and Hummer (2019) posit that although the idea of the Hispanic Paradox exists and is seen as a protective factor for Hispanic immigrants, long-term chronic stress, or as they described it 'harder life', results in lives with more socio-economic hardship and higher health risk than whites. Given the myriad of extraordinary challenges facing Hispanic immigrants settling emerging immigrant gateways, research around chronic stress is essential.

One strategy for managing chronic stress cited by community respondents and informants was investing time in personal growth and community activities.. For community members taking care of themselves physically and emotionally and finding new ways to integrate into their new community was greatly valued. Unfortunately, at the present time there is no literature to support this finding. The critical need to address this research gap is linked to larger issues of SDOH. Supporting Hispanic immigrants to identify and develop personal goals, while acknowledging the various aspects of the determinants of health, will help improve overall

quality of life and help improve their lives. To community informants investments of time by community partners were even more valuable than funding, because time meant building relationships and trust. Unfortunately, there was little to no research available to inform these suppositions.

SYNOPSIS

The aim of this research has been to answer three questions, 1) How are the determinants of health impacted by the social, spatial, structural and temporal elements individually and in concert; (2) How has urban restructuring been a factor in the determinants of health for the Latino immigrant population in the South Boulevard Corridor; and (3) How does the acknowledgement of the structural, spatial and temporal aspects of determinants of health inform action to address the social and health needs of the Latino immigrant community living in Charlotte, NC. Key findings to inform these questions include, but are not limited to, four principal research results.

First, although every attempt was made to discuss the impact of the various elements on the determinants of health, independently and in concert with the respondents, that was very challenging. Over the course of the research it was clear that individual factors comprising the determinants of health are nearly impossible to set apart. In interviews with respondents, they were constantly intersecting. This was very different from their treatment in the literature, where there was little acknowledgement of the intersection and complexity of the various aspects and impacts on the determinants of health, especially for a Hispanic immigrant population. It is imperative to consider the development or expansion of the framework to go beyond just the "social" and to really consider the determinants of health as not only multi-faceted but also

multi-scalar. The removal of the word "social" is likely to broaden the definition and support the exploration of how all of these aspects are intersecting, yet also have an independent impact.

Second, the restructuring element takes several forms when considering the determinants of health for Hispanic immigrants living along the SBC. This was most evident when considering the different ways community members were interacting with the space around them. Underlying a disjointed reality, the "official" data used by policy makers to guide their decision-makers lacks granular and temporal details that shape the SBC world of Hispanic immigrants. This disconnect exacerbates the negative health determinants on community members.

Third, it is important to acknowledge that this is all occurring within a new immigrant gateway and that for the Hispanic immigrant community, a new and disadvantaged population, the SDOH are powerful factors shaping lives. These factors are changing and intersecting at the same time and same place where immigrants are in the process of their own place making efforts. Effective and sustained initiatives to address the determinants of health require community-based participation. Community members and allies provided extensive and thorough information and ideas. Strongly endorsed recommendations included developing collaborative partnerships and providing language services, as well as expanded opportunities for civic engagement and community receptivity for newcomers.

Fourth, the research posited from the outset that place has a much greater effect on the determinants of health than previously reported in the literature. Applying a spatial lens to the South Boulevard Corridor, the research results showed that spaces where people are impacted by

the determinants of health are not static. Indeed, changes in character, structures, and processes even in short time intervals are health determinants.

Limitations

While the study design for this research was developed to produce the strongest interpretation and validation of the data, all projects have limitations. The most significant challenge facing the researcher was the way that the determinants of health are measured and availability of data. Quantitative data are not only lagging but also limited for some indicators below the general population level. In addition, individual level data from a health care perspective around the SDOH are just now starting to be collected. But, they may be affected by HIPAA and therefore only have limited availability two name a couple of barriers. (Davidson & McGinn, 2019)

During the course of this study several unexpected obstacles occurred. Most critically, respondents called out the fact that the election of President Donald Trump created a new ethos of anti-immigrant sentiment, especially Hispanic immigrant sentiment in this nation. Respondents shared that Trump's rhetoric has been turned into policies and actions that arrest, deport, and harass immigrants, both documented and undocumented. Fear and mistrust of outsiders is pervasive in the immigrant community. Ongoing ICE raids in the SBC created an environment of fear for community members and unlike past years they were not as willing to talk with a researcher. Although all of the study recruitment occurred via a trusted service provider, it was very difficult to speak to individuals. Additionally, because this research was undertaken with no budget, there were no incentives available to offer to community members for compensation of their time and travel. Lunch was provided to those that were already

meeting as a group for an ESL class, but the number of those participants was limited. A final research limitation was gender imbalance among the community participants. Despite multiple attempts to recruit males, only two men from the target community population joined the study. This gender imbalance may be a result of Hispanic men working during the day and long hours.

Overall, from a data perspective, many researchers share a common concern. The inhered difficulty of accurately capturing the Latino immigrant voice, especially those that are undocumented. (Warren & Passel, 1987; Heer & Passel, 1987; Woodrow, 1990) In general, the census data at the population level is lagging. This makes it difficult to accurately inform the changes occurring on the ground and support needed changes to policy, systems and programs over time. These structural limitations are not solely impediments to this project, but nevertheless it is important to acknowledge and continue to explore ways to alleviate them in moving forward in the research process.

CHAPTER 7. CONCLUSION

This research informs the body of knowledge specific to the determinants of health by demonstrating that both the character and dynamics of where individual determinants come together and how those determinants and their interactions are changing over time may have more of a role to play in health than has previously been given credit. Currently, although various aspects of the determinants of health are examined, seldom are the relationships between each explored or how the restructuring of an urban space is an influencer. This project is a comparative analysis of the various aspects of the determinants of health and the exploration of restructuring as a defining force that influences them. In addition, it has taken into consideration that the determinants of health, including restructuring impact diverse groups of people differently. This is not only the case for those that are poor or minorities, but specifically for immigrants. The South Boulevard corridor (SBC) served as an ideal location for this exploration as it has been an area that has experienced both restructuring and an influx of Hispanic immigrants at the same time. By utilizing a mixed-method approach and engaging both community members and stakeholders, this research provided the opportunity to explore the various determinants of health and their interaction spatially at the neighborhood level for the Hispanic immigrant population living in the area. Very little if any focused geographic approach has been implemented. Methodologically, this project also contributes by presenting the results from the context of the "lived experience" of community residents as separate to the perceived experience of the key informants who either served in or knew about the area, but did not experience any of the changes first hand as community members. Positionality of the participants in a qualitative process is important, and in this case disaggregating the perspective of the key informants allowed for voice of the community members to be prioritized and for the

contributions of the two groups to be compared. This approach allowed the structural focus of the key informants to surface in the analysis.

It is clear that more often than not the determinants of health are consistently intersecting with various aspects of what is happening in a certain area from a special, spatial, structural and temporal perspective. For Hispanic immigrants living along the SBC their determinants of health are impacted socially by who and how they navigate what they know about the 'system'. Spatially they have to be nimble to adapt to their changing environments, whether it is where they live or work. Structurally, because many of them are undocumented there are policies in place that impact their everyday life that wouldn't for somebody that is native born. Additionally, decisions are made that don't often take their lived experience into consideration. Lastly, temporally, although some have been in this country for many years, their situation has not changed, yet everything around them has over that time. It is important to consider the way these various aspects impact the determinants of health in order to develop effective and sustainable interventions.

As a call to action, I would continue to challenge stakeholders from all sectors (i.e. policymakers, city planners, healthcare, community-based organizations) to better understand the determinants of health and how they intersect in their specific field and can serve as a key outcome of their work/policies. Particularly, I would like to acknowledge that environmental determinants of health were not brought up by respondents during my conversations but likely increasingly important and worthy of additional study especially in the context of global warming, natural disasters and environmental justice. I would advocate for academics to be more open to engaging with social service practitioners actually applying the work so that the dissemination of the literature is not only more applicable but also "real-time". Data collection

needs to be sensitive to the re-traumatization of these types of questions and the fact that an identity of "need" is being imposed on a population and they may or may not identify with it. Therefore, more intentional engagement of the communities impacted by these determinants to better understand the cultural and social implications of the determinants. Additionally, as data is being collected it is critical to acknowledge the positionality of where it comes from, whether it be quantitative or qualitative and if qualitative whether it is perceived or experienced. Certainly, qualitatively there is a critical distinction between understanding the determinants of health as described from the perspective of an outsider giving their perception of an impact, versus the lived experience of those that are actually experiencing those impacts within a given space and time. Quantitatively, it is not enough to map the various indicators and describe geographic clustering, there is a story behind the patterns that are arising and that is important to understanding how the various determinants of health are intersecting and independently impacting a specific group of people, space, or time period. Lastly, future research must include the implications of restructuring happening at various scales. The impact that a factory closing has in the rural Midwest can have lasting health related effects on a population, similarly, the addition of a light rail transportation system in a suburban area may only a positive impact for certain populations that are employed, continuing to leave larger sectors of the population with true access to health and social resources. It is impossible to continue to address these determinants in silos and without considering the intersection of social, structural, spatial and temporal aspects.

My positionality in this research is important to acknowledge, I am a non-traditional researcher and a community health leader. As I was implementing this research I was also engaged in community based research with the Hispanic immigrant community and supporting

the development of a community health division of which one of its strategic priorities was addressing the determinates of health. As an insider, I can speak to the importance of this work as it informs the growing trend of healthcare systems acknowledging what is happening outside of the clinical walls and integrating determinants of health screening in clinical settings. Although care coordination and management has occurred within acute care spaces for many years, more and more attention is being put into how it can support the outpatient space, in particular with implementation of interventions focused on housing and transportation which also requires better understanding of the community members and resources available. Addressing the determinants of health work is now informing healthcare reform and various aspects of payment models, supporting the transition from fee for service to value based care.

The current COVID-19 global pandemic is an example of exactly why this is important, outbreaks are concentrated within specific populations and geographic areas that have an overlap of various determinants of health. This process has illustrated that the key to preparedness is both better data and proactively monitoring and engaging vulnerable populations so that health systems are better able to immediately mobilize and support those communities. Acknowledging the intersection of all of these aspects earlier could have prevented the high positivity rate that occurred along the South Boulevard corridor during the peak of the outbreak summer 2020.

Future Research

Future research should focus on the development of evidence based on a county wide assessment of special needs that incorporate both qualitative and quantitative methodologies that take into consideration the social, structural, spatial and temporal aspects of the determinants of health for different groups. Secondly, health systems should invest in efforts to appropriately

integrate health related and social data to support improved health outcomes, in particular with a population such as Hispanic immigrants. Lastly, policy briefs should be implemented in order to support system level planning and engagement of multisector partners to address the determinants of health at both the population and neighborhood level.

REFERENCES

Acolin, A., Lin, D., & Wachter, S. M. (2019). Endowments and minority homeownership. *Cityscape*, *21*(1), 5-62.

Adepoju, O. E., Preston, M. A., & Gonzales, G. (2015). Health care disparities in the post–Affordable Care Act era. *American Journal of Public Health*, *105*(S5), S665-S667.

Adler, N. E., & Stewart, J. (2010). Health disparities across the lifespan: meaning, methods, and mechanisms. *Annals of the New York Academy of Sciences*, *1186*(1), 5-23.

Alarcón, R. D., Parekh, A., Wainberg, M. L., Duarte, C. S., Araya, R., & Oquendo, M. A. (2016). Hispanic immigrants in the USA: social and mental health perspectives. *The Lancet Psychiatry*, *3*(9), 860-870.

Alberti, P. M., Bonham, A. C., & Kirch, D. G. (2013). Making equity a value in value-based health care. *Academic Medicine*, *88*(11), 1619-1623.

Alcaraz, K. I., Wiedt, T. L., Daniels, E. C., Yabroff, K. R., Guerra, C. E., & Wender, R. C. (2020). Understanding and addressing social determinants to advance cancer health equity in the United States: A blueprint for practice, research, and policy. *CA: A Cancer Journal for Clinicians*, *70*(1), 31-46.

Alderwick, H., & Gottlieb, L. M. (2019). Meanings and misunderstandings: a social determinants of health lexicon for health care systems. *The Milbank Quarterly*, *97*(2), 407.

Almeida, J., Molnar, B. E., Kawachi, I., & Subramanian, S. V. (2009). Ethnicity and nativity status as determinants of perceived social support: Testing the concept of familism. *Social science & medicine*, *68*(10), 1852-1858.

Almeida, J., Subramanian, S. V., Kawachi, I., & Molnar, B. E. (2011). Is blood thicker than water? Social support, depression and the modifying role of ethnicity/nativity status. *Journal of Epidemiology & Community Health*, *65*(1), 51-56.

Alper, J., Martinez, R. M., & National Academies of Sciences, Engineering, and Medicine. (2019, August). Interventions Addressing Multiple Social Needs. In *Investing in Interventions That Address Non-Medical, Health-Related Social Needs: Proceedings of a Workshop*. National Academies Press (US).

Andermann, A. (2016). Taking action on the social determinants of health in clinical practice: a framework for health professionals. *Cmaj*, *188*(17-18), E474-E483.

Andrulis, D. P., & Brach, C. (2007). Integrating literacy, culture, and language to improve health care quality for diverse populations. *American journal of health behavior*, *31*(1), S122-S133.

Andersen, A. F., Carson, C., Watt, H. C., Lawlor, D. A., Avlund, K., & Ebrahim, S. (2008). Life-course socio-economic position, area deprivation and Type 2 diabetes: findings from the British Women's Heart and Health Study. *Diabetic medicine*, *25*(12), 1462-1468.

Ansari, Z., Carson, N. J., Ackland, M. J., Vaughan, L., & Serraglio, A. (2003). A public health

model of the social determinants of health. *Sozial-und Präventivmedizin/Social and Preventive Medicine*, *48*(4), 242-251.

Anselin, L. (1995). Local indicators of spatial association—LISA. *Geographical analysis*, *27*(2), 93-115.

Aranda, M. P., Castaneda, I., Lee, P. J., & Sobel, E. (2001). Stress, social support, and coping as predictors of depressive symptoms: Gender differences among Mexican Americans. *Social Work Research*, *25*(1), 37-48.

Artiga, S., & Hinton, E. (2019). Beyond health care: the role of social determinants in promoting health and health equity. *Health*, *20*(10), 1-13.

Aronson, J. (2005). A Pragmatic View of Thematic Analysis the Qualitative Report. *Spring 1994 1994; 2 (1)*.

Asad, A. L., & Clair, M. (2018). Racialized legal status as a social determinant of health. *Social Science & Medicine*, *199*, 19-28.

Asselin, M. E. (2003). Insider research: Issues to consider when doing qualitative research in your own setting. *Journal for Nurses in Professional Development*, *19*(2), 99-103.

Azzopardi-Muscat, N., & Sørensen, K. (2019). Towards an equitable digital public health era: promoting equity through a health literacy perspective. *European journal of public health*, *29*(Supplement_3), 13-17.

Baker, L., Lavender, T., & Tincello, D. (2005). Factors that influence women's decisions about

whether to participate in research: an exploratory study. *Birth*, *32*(1), 60-66.

Bambra, C., Gibson, M., Sowden, A., Wright, K., Whitehead, M., & Petticrew, M. (2010). Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews. *Journal of Epidemiology & Community Health*, *64*(4), 284-291.

Banegas, M. P., Dickerson, J. F., Friedman, N. L., Mosen, D., Ender, A. X., Chang, T. R., ... & Hornbrook, M. C. (2019). Evaluation of a novel financial navigator pilot to address patient concerns about medical care costs. *The Permanente Journal*, *23*.

Basit, T. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational research*, *45*(2), 143-154.

Bean, M. (2018, December 13) *How Atrium Health sustains a 4% reduction in readmissions annually*. Beckers Hospital Review. https://www.beckershospitalreview.com/quality/how-atrium-health-sustains-a-4-reduction-in-readmissions-annually.html

Beck, A. F., Cohen, A. J., Colvin, J. D., Fichtenberg, C. M., Fleegler, E. W., Garg, A., ... & Kahn, R. S. (2018). Perspectives from the Society for Pediatric Research: interventions targeting social needs in pediatric clinical care. *Pediatric research*, *84*(1), 10-21.

Begun, J. W., Butler, P. W., & Stefl, M. E. (2018). Competencies to What End? Affirming the Purpose of Healthcare Management. *Journal of Health Administration Education*, *35*(2), 133-155.

Beck, A. F., Anderson, K. L., Rich, K., Taylor, S. C., Iyer, S. B., Kotagal, U. R., & Kahn, R. S.

(2019). Cooling the hot spots where child hospitalization rates are high: a neighborhood approach to population health. *Health Affairs*, *38*(9), 1433-1441.

Ben-Shlomo, Y., & Kuh, D. (2002). A life course approach to chronic disease epidemiology: conceptual models, empirical challenges and interdisciplinary perspectives.

Berg, K., Davis, W., Sheon, A., Newman, J., Daprano, J., Adebambo, I., ... & Perzynski, A. (2018). STRATEGIES FOR ADDRESSING DIGITAL LITERACY AND INTERNET ACCESS AS SOCIAL DETERMINANTS OF HEALTH. *Innovation in Aging*, *2*(suppl_1), 679-679.

Berk, M. L., Schur, C. L., Chavez, L. R., & Frankel, M. (2000). Health Care Use Among Undocumented Latino Immigrants: Is free health care the main reason why Latinos come to the United States? A unique look at the facts. *Health Affairs*, *19*(4), 51-64.

Berk, M. L., & Schur, C. L. (2001). The effect of fear on access to care among undocumented Latino immigrants. *Journal of immigrant health*, *3*(3), 151-156.

Betancourt, J. R. (2006). Eliminating racial and ethnic disparities in health care: what is the role of academic medicine?. *Academic Medicine*, *81*(9), 788-792.

Beveridge, A. A. (2018). A preliminary examination using GIS and spatial analysis techniques with national data sources1. *The Routledge Companion to Spatial History*.

Bibbins-Domingo, K. (2019). Integrating social care into the delivery of health care. *Jama*, *322*(18), 1763-1764.

Blair, M., Sampaio, M. M. A., Rigby, M., & Alexander, D. (2019). Models of Primary Care and Appraisal Frameworks. In *Issues and Opportunities in Primary Health Care for Children in Europe*. Emerald Publishing Limited.

Boardman, J. D. (2004). Stress and physical health: the role of neighborhoods as mediating and moderating mechanisms. *Social science & medicine*, *58*(12), 2473-2483.

Boen, C. E., & Hummer, R. A. (2019). Longer—but Harder—Lives?: The Hispanic Health Paradox and the Social Determinants of Racial, Ethnic, and Immigrant–Native Health Disparities from Midlife through Late Life. *Journal of Health and Social Behavior*, *60*(4), 434-452.

Boone, M., & Molter, J. (2010). The Role of Academic Health Centers in Addressing the Social Determinants of Health. *Atlanta, GA: The Blue Ridge Academic Health Group (Emory University)*.

Borjas, G. J. (1986). *The self-employment experience of immigrants* (No. w1942). National Bureau of Economic Research.

Bowen, P. G., Lee, L. T., McCaskill, G. M., Bryant, P. H., Hess, M. A., & Ivey, J. B. (2018). Understanding health policy to improve primary care management of obesity. *The Nurse Practitioner*, *43*(4), 46.

Bradbury, J. (1985). Housing policy and home ownership in mining towns: Quebec, Canada. *International Journal of Urban and Regional Research*, *9*(1), 1-14.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual review of psychology*, *53*(1), 371-399.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Braveman, P. A., Cubbin, C., Egerter, S., Williams, D. R., & Pamuk, E. (2010). Socioeconomic disparities in health in the United States: what the patterns tell us. *American journal of public health*, *100*(S1), S186-S196.

Braveman, P. (2011). Accumulating knowledge on the social determinants of health and infectious disease. *Public health reports*, *126*(3_suppl), 28-30.

Braveman, P. A., Egerter, S. A., & Mockenhaupt, R. E. (2011). Broadening the focus: the need to address the social determinants of health. *American journal of preventive medicine*, *40*(1), S4-S18.

Brooks, T., & Whitener, K. (2018). Leveraging Medicaid to address social determinants and improve child and population health. *Washington: Georgetown University Center for Children and Families, February*.

Brown, M. E., Rizzuto, T., & Singh, P. (2019). Strategic compatibility, collaboration and collective impact for community change. *Leadership & Organization Development Journal*.

Cáceres, M., & Jameson, K. P. (2015). The effects on insurance costs of restricting

undocumented immigrants' access to driver licenses. *Southern Economic Journal*, *81*(4), 907-927.

Callahan, S. T., Hickson, G. B., & Cooper, W. O. (2006). Health care access of Hispanic young adults in the United States. *Journal of Adolescent Health*, *39*(5), 627-633.

Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs. *Educational evaluation and policy analysis*, *15*(2), 195-207.

Careyva, B. A., Hamadani, R., Friel, T., & Coyne, C. A. (2018). A social needs assessment tool for an urban Latino population. *Journal of community health*, *43*(1), 137-145.

Carlino, G. A., & Saiz, A. (2008). Beautiful city: Leisure amenities and urban growth.

Carr-Hill, R., Marmot, M. G., & Mcdowall, M. E. (1987). Mortality and social class. *The Lancet*, *330*(8554), 338.

Castañeda, H., Holmes, S. M., Madrigal, D. S., Young, M. E. D., Beyeler, N., & Quesada, J. (2015). Immigration as a social determinant of health. *Annual review of public health*, *36*, 375-392.

Chandra, A., Miller, C. E., Acosta, J. D., Weilant, S., Trujillo, M., & Plough, A. (2016). Drivers of health as a shared value: mindset, expectations, sense of community, and civic engagement. *Health Affairs*, *35*(11), 1959-1963.

Chang, P. H., & Fortier, J. P. (1998). Language barriers to health care: an overview. *Journal of Health Care for the Poor and Underserved*, *9*(5), S5-S20.

Chatman, D. G., & Klein, N. (2009). Immigrants and travel demand in the United States: Implications for transportation policy and future research. *Public Works Management & Policy*, *13*(4), 312-327.

Cheng, I., Urquieta de Hernandez, B., & Cole, A. (2017, April). *Be the Bridge* [Poster Presentation]. Association for Community Health Improvement National Conference, Atlanta, Ga

Cherian, S., Shull, S. M., Maiorini, A., Gao, W., Pradhan, S., Keleti, D., ... & Gelzer, A. D. (2018). A Tale of two DTM Programs: Drug Therapy Management Reduces Acute Hospitalization and Expenditures in Medicaid Beneficiaries in Michigan and Washington DC. *Value in Health*, *21*, S98-S99.

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, *129*(4), 1553-1623.

Christens, B. D., & Inzeo, P. T. (2015). Widening the view: Situating collective impact among frameworks for community-led change. *Community Development*, *46*(4), 420-435.

Chuang, Y. C., Li, Y. S., Wu, Y. H., & Chao, H. J. (2007). A multilevel analysis of neighborhood and individual effects on individual smoking and drinking in Taiwan. *BMC Public Health*, *7*(1), 151.

Clark, W. A. (1987). The Roepke lecture in economic geography urban restructuring from a demographic perspective. *Economic geography*, *63*(2), 103-125.

Clement, D. (2013). *The spatial injustice of crisis-driven neoliberal urban restructuring in Detroit* (Doctoral dissertation, University of Miami).

CNN. (2018). *How climate change will affect your health.* https://www.cnn.com/2018/10/12/health/climate-change-health-effects/index.html

Coffman, M. J., de Hernandez, B. U., Smith, H. A., McWilliams, A., Taylor, Y. J., Tapp, H., ... & Dulin, M. (2017). Using CBPR to decrease health disparities in a suburban Latino neighborhood. *Hispanic Health Care International*, *15*(3), 121-129.

Cohen-Silver, J., Adams, S., Agrawal, R., Birken, C., Cohen, E., Dougherty, G., ... & Pai, N. (2018). Development of the Pediatric Social Risk Instrument Using a Structured Panel Approach. *Clinical pediatrics*, *57*(12), 1414-1422.

Cole, A. J. (2017). Collaboration is critical: working together to optimize health in our communities. *North Carolina Medical Journal*, *78*(4), 255-257.

Colorin Colorado. (n.d.). *Community Partnerships: Supporting Immigrant Families*. https://www.colorincolorado.org/ell-basics/serving-and-supporting-immigrant-students/supporting-immigrant-students-ideas-educators-3

Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: health equity through action on the social determinants of health: final report of the commission on social determinants of health*. World Health Organization.

Community Science, Connecting Knowledge with Social Change. n.d.

http://www.communityscience.com/

Corbie-Smith, G., Yaggy, S. D., Lyn, M., Green, M., Ornelas, I. J., Simmons, T., ... & Blumenthal, C. (2010). Development of an interinstitutional collaboration to support community-partnered research addressing the health of emerging Latino populations. *Academic Medicine*, *85*(4), 728-735.

Coughlin, S. S., Mann, P., Vernon, M., Young, L., Ayyala, D., Sams, R., & Hatzigeorgiou, C. (2019). A logic framework for evaluating social determinants of health interventions in primary care. *Journal of hospital management and health policy*, *3*.

Coughlin, S. S., Hobbs, J., Cromer, P., George, V., & Hatzigeorgiou, C. (2019). Putting Action into Population Health Science: Primary Care Interventions to Address Social Determinants of Health. *Journal of environment and health sciences*, *5*(2), 59.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

Cullen, D., Woodford, A., & Fein, J. (2019). Food for thought: a randomized trial of food insecurity screening in the emergency department. *Academic pediatrics*, *19*(6), 646-651.

Cummins, S., Curtis, S., Diez-Roux, A. V., & Macintyre, S. (2007). Understanding and representing 'place' in health research: a relational approach. *Social science & medicine*, *65*(9), 1825-1838.

Curry, L. A., Nembhard, I. M., & Bradley, E. H. (2009). Qualitative and mixed methods provide

unique contributions to outcomes research. *Circulation*, *119*(10), 1442-1452.

Curtis, S., & Rees Jones, I. (1998). Is there a place for geography in the analysis of health inequality?. *Sociology of health & illness*, *20*(5), 645-672.

Daniel-Robinson, L., & Moore, J. E. (2019). Innovation and Opportunities to Address Social Determinants of Health in Medicaid Managed Care.

Daniels, N., Kennedy, B. P., & Kawachi, I. (1999). Why justice is good for our health: the social determinants of health inequalities. *Daedalus*, *128*(4), 215-251.

Dannenberg, A. L., Jackson, R. J., Frumkin, H., Schieber, R. A., Pratt, M., Kochtitzky, C., & Tilson, H. H. (2003). The impact of community design and land-use choices on public health: a scientific research agenda. *American journal of public health*, *93*(9), 1500-1508.

Davidson, K. W., & McGinn, T. (2019). Screening for social determinants of health: the known and unknown. *Jama*, *322*(11), 1037-1038.

Deferio, J. J., Breitinger, S., Khullar, D., Sheth, A., & Pathak, J. (2019). Social determinants of health in mental health care and research: a case for greater inclusion. *Journal of the American Medical Informatics Association*, *26*(8-9), 895-899.

Delmelle, E. C., Zhou, Y., & Thill, J. C. (2014). Densification without growth management? Evidence from local land development and housing trends in Charlotte, North Carolina, USA. *Sustainability*, *6*(6), 3975-3990.

De Leon, E., DeVita, C., Boris, E. T., & Maronick, M. (2009). Community-based organizations

and immigrant integration in the Washington, DC, metropolitan area. *DC, Metropolitan Area (November 1, 2009)*.

DeNavas-Walt, C., Proctor, B. D., & Smith, J. C. (2013). Income, Poverty, and Health Insurance Coverage in the United States: 2012. Current Population Reports P60-245. *US Census Bureau*.

Department of Health, Human Services, Washington, DC., Healthy People 2010 (Group), & United States Government Printing Office. (2000). *Healthy people 2010: Understanding and improving health*. US Department of Health and Human Services.

De la Torre, A., Friis, R., Hunter, H. R., & Garcia, L. (1996). The health insurance status of US Latino women: A profile from the 1982-1984 HHANES. *American Journal of Public Health*, *86*(4), 533-537.

de la Vega, P. B., Losi, S., Martinez, L. S., Bovell-Ammon, A., Garg, A., James, T., ... & Mishuris, R. G. (2019). Implementing an EHR-based screening and referral system to address social determinants of health in primary care. *Medical Care*, *57*, S133-S139.

DeSalvo, K. IT'S THE ZIP CODE, ST* P# D. *"I HAVE REGRETS": 23 YEARS OF DICKEY AMENDMENT*, 3.

Diamond, L. C., & Jacobs, E. A. (2010). Let's not contribute to disparities: the best methods for teaching clinicians how to overcome language barriers to health care. *Journal of General Internal Medicine*, *25*(2), 189-193.

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical*

education, *40*(4), 314-321.

Diehr, P., Koepsell, T., Cheadle, A., Psaty, B. M., Wagner, E., & Curry, S. (1993). Do communities differ in health behaviors?. *Journal of Clinical Epidemiology*, *46*(10), 1141-1149.

Diez Roux, A. V. (2002). Invited commentary: places, people, and health. *American Journal of Epidemiology*, *155*(6), 516-519.

Documét, P. I., & Sharma, R. K. (2004). Latinos' health care access: financial and cultural barriers. *Journal of immigrant health*, *6*(1), 5-13.

Dollah, S., Abduh, A., & Rosmaladewi, M. (2017, September). Benefits and drawbacks of NVivo QSR application. In *2nd International Conference on Education, Science, and Technology (ICEST 2017)*. Atlantis Press.

Donkin, A., Goldblatt, P., Allen, J., Nathanson, V., & Marmot, M. (2018). Global action on the social determinants of health. *BMJ global health*, *3*(Suppl 1).

Dotson-Blake, K. P., Foster, V. A., & Gressard, C. F. (2009). Ending the silence of the Mexican immigrant voice in public education: Creating culturally inclusive family-school-community partnerships. *Professional School Counseling*, *12*(3), 2156759X0901200305.

Dotson-Blake, K. P. (2010). Learning from each other: A portrait of family-school-community partnerships in the United States and Mexico. *Professional School Counseling*, *14*(1), 2156759X1001400110.

Dulin, M. F., Ludden, T. M., Tapp, H., Smith, H. A., de Hernandez, B. U., Blackwell, J., & Furuseth, O. J. (2010). Geographic information systems (GIS) demonstrating primary care needs for a transitioning Hispanic community. *The Journal of the American Board of Family Medicine*, *23*(1), 109-120.

Dulin, M. F., Tapp, H., Smith, H. A., De Hernandez, B. U., & Furuseth, O. J. (2011). A community based participatory approach to improving health in a Hispanic population. *Implementation Science*, *6*(1), 1-11.

Dulin, M. F., Tapp, H., Smith, H. A., de Hernandez, B. U., Coffman, M. J., Ludden, T., ... & Furuseth, O. J. (2012). A trans-disciplinary approach to the evaluation of social determinants of health in a hispanic population. *BMC Public Health*, *12*(1), 769.

Duncan, I. G. (2011). *Healthcare risk adjustment and predictive modeling*. Actex Publications.

Dunklee, B., & Garneau, D. (2018). Community Health Workers in Rhode Island: A Study of a Growing Public Health Workforce. *Rhode Island Medical Journal*, *101*(6), 40-43.

Egede, L. E. (2006). Race, ethnicity, culture, and disparities in health care. *Journal of general internal medicine*, *21*(6), 667.

Ellaway, A., & Macintyre, S. (1996). Does where you live predict health related behaviours?: a case study in Glasgow. *Health bulletin*, *54*(6), 443-446.

Ellaway, A., Anderson, A., & Macintyre, S. (1997). Does area of residence affect body size and shape?. *International journal of obesity*, *21*(4), 304-308.

Enos, G. (2019). New center in Delaware health system prioritizes patients' social needs. *Mental Health Weekly*, *29*(30), 1-7.

Enriquez, L. E., Vazquez Vera, D., & Ramakrishnan, S. K. (2019). Driver's licenses for all? Racialized illegality and the implementation of progressive immigration policy in California. *Law & Policy*, *41*(1), 34-58.

Ensor, T., & Cooper, S. (2004). Overcoming barriers to health service access: influencing the demand side. *Health policy and planning*, *19*(2), 69-79.

Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of educational multimedia and hypermedia*, *13*(1), 93-106.

Entzinger, H., & Biezeveld, R. (2003). Benchmarking in immigrant integration.

Felitti, V. J., Anda, R. F., Nordenberg, D., & Williamson, D. F. (1998). Adverse childhood experiences and health outcomes in adults: The Ace study. *Journal of Family and Consumer Sciences*, *90*(3), 31.

Fichtenberg, C. M., Alley, D. E., & Mistry, K. B. (2019). Improving social needs intervention research: key questions for advancing the field. *American journal of preventive medicine*, *57*(6), S47-S54.

Fielding, J. E., Teutsch, S., & Koh, H. (2012). Health reform and healthy people initiative. *American Journal of Public Health*, *102*(1), 30-33.

Floyd, E. (2018). *Implementing a Social Determinants of Health Screening Tool at a Community*

Health Clinic (Doctoral dissertation, University of Kansas).

Foley, G., & Timonen, V. (2015). Using grounded theory method to capture and analyze health care experiences. *Health services research*, *50*(4), 1195-1210.

Forsyth, A., Macintyre, S., & Anderson, A. (1994). Diets for disease? Intraurban variation in reported food consumption in Glasgow. *Appetite*, *22*(3), 259-274.

Fraze, T. K., Brewster, A. L., Lewis, V. A., Beidler, L. B., Murray, G. F., & Colla, C. H. (2019). Prevalence of screening for food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence by US physician practices and hospitals. *JAMA network open*, *2*(9), e1911514-e1911514.

Frerichs, R. R. (2017). Disease Maps, History, and More.

Furuseth, O., Smith, H., & Mcdaniel, P. (2015). Belonging in Charlotte: Multiscalar differences in local immigration politics and policies. *Geographical Review*, *105*(1), 1-19.

Galabuzi, G. E., & Teelucksingh, C. (2010). *Social cohesion, social exclusion, social capital*. Mississauga, ON: Region of Peel, Human Services.

Goldman, D. P., Smith, J. P., & Sood, N. (2005). Legal status and health insurance among immigrants. *Health Affairs*, *24*(6), 1640-1653.

Galobardes, B., Shaw, M., Lawlor, D. A., Lynch, J. W., & Smith, G. D. (2006). Indicators of socioeconomic position (part 1). *Journal of Epidemiology & Community Health*, *60*(1), 7-12.

Garg, A., Homer, C. J., & Dworkin, P. H. (2019). Addressing social determinants of health: challenges and opportunities in a value-based model. *Pediatrics*, *143*(4).

Gephart, M. A. (1997). Neighborhoods and communities as contexts for development. *Neighborhood poverty*, *1*, 1-43.

Garg, A., Cull, W., Olson, L., Boyd, A. F., Federico, S. G., Dreyer, B., & Racine, A. D. (2019). Screening and referral for low-income families' social determinants of health by US pediatricians. *Academic pediatrics*, *19*(8), 875-883.

Garg, A., Homer, C. J., & Dworkin, P. H. (2019). Addressing social determinants of health: challenges and opportunities in a value-based model. *Pediatrics*, *143*(4).

Gary-Webb, T. L., Baptiste-Roberts, K., Pham, L., Wesche-Thobaben, J., Patricio, J., Pi-Sunyer, F. X., ... & Look AHEAD Research Group. (2011). Neighborhood socioeconomic status, depression, and health status in the Look AHEAD (Action for Health in Diabetes) study. *BMC public health*, *11*(1), 349.

Gelatt, J., Adams, G., & Monson, W. Immigration and the Changing Landscape for Local Service Delivery.

Genn, H. (2019). When Law is Good for Your Health: Mitigating the social determinants of health through access to justice. *Current Legal Problems*, *72*(1), 159-202.

Gibson, M., Petticrew, M., Bambra, C., Sowden, A. J., Wright, K. E., & Whitehead, M. (2011).

Housing and health inequalities: a synthesis of systematic reviews of interventions aimed at different pathways linking housing and health. *Health & place*, *17*(1), 175-184.

Giles-Corti, B., & Donovan, R. J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social science & medicine*, *54*(12), 1793-1812.

Gilman, M., & Green, R. (2018). The surveillance gap: The harms of extreme privacy and data marginalization. *NYU Rev. L. & Soc. Change*, *42*, 253.

Glaeser, E. L., & Gottlieb, J. D. (2008). *The economics of place-making policies* (No. w14373). National Bureau of Economic Research.

Glaser, B. G., Strauss, A. L., & Strutzel, E. (1968). The discovery of grounded theory; strategies for qualitative research. *Nursing research*, *17*(4), 364.

Gold, R., Bunce, A., Cowburn, S., Dambrun, K., Dearing, M., Middendorf, M., ... & Davis, J. (2018). Adoption of social determinants of health EHR tools by community health centers. *The Annals of Family Medicine*, *16*(5), 399-407.

Goldman, D. P., Smith, J. P., & Sood, N. (2005). Legal status and health insurance among immigrants. *Health Affairs*, *24*(6), 1640-1653.

Gordon-Larsen, P., Nelson, M. C., Page, P., & Popkin, B. M. (2006). Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics*, *117*(2), 417-424.

Gottlieb, L. M., Wing, H., & Adler, N. E. (2017). A systematic review of interventions on patients' social and economic needs. *American Journal of Preventive Medicine*, *53*(5), 719-729.

Gottlieb, L., Hessler, D., Long, D., Laves, E., Burns, A., Amaya, A., ... & Adler, N. (2018). Are acute care settings amenable to addressing patient social needs: a sub-group analysis. *The American journal of emergency medicine*, *36*(11), 2108-2109.

Gottlieb, L., Fichtenberg, C., Alderwick, H., & Adler, N. (2019). Social determinants of health: What's a healthcare system to do?. *Journal of Healthcare Management*, *64*(4), 243-257.

Gourevitch, M. N., Curtis, L. H., Durkin, M. S., Fagerlin, A., Gelijns, A. C., Platt, R., ... & Tierney, W. M. (2019). The emergence of population health in US academic medicine: a qualitative assessment. *JAMA network open*, *2*(4), e192200-e192200.

Guery, F. (2014). *Learning to be a public service interpreter: Boundaries, ethics and emotion in a marginal profession* (Doctoral dissertation, Manchester Metropolitan University).

Guffey, J. E., Kelso, C., & Corona, R. ASSESSING THE CONFLICTING AND CONVOLUTED ISSUE OF UNDOCUMENTED IMMIGRANTS IN THE US: PAST TO PRESENT.

Graham, R. W. (2005). Illustrating triangulation in mixed-methods nursing research. *Nurse researcher*, *12*(4).

Graves, W., & Smith, H. A. (Eds.). (2010). *Charlotte, NC: The global evolution of a new South*

city. University of Georgia Press.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, *11*(3), 255-274.

Grossman, E. G. (2010). Office of the Legislative Counsel. *Patient Protection and Affordable Care Act*.

Gusenbauer, M. (2019). Google Scholar to overshadow them all? Comparing the sizes of 12 academic search engines and bibliographic databases. *Scientometrics*, *118*(1), 177-214.

Hackworth, J., & Smith, N. (2001). The changing state of gentrification. *Tijdschrift voor economische en sociale geografie*, *92*(4), 464-477.

Hall, T. L., Knierim, K. E., Nease, D. E., Staton, E. W., Nkouaga, C., Dickinson, L. M., ... & Dickinson, W. P. (2019). Primary Care Practices' Implementation of Patient-Team Partnership: Findings from EvidenceNOW Southwest. *The Journal of the American Board of Family Medicine*, *32*(4), 490-504.

Halfon, N., & Hochstein, M. (2002). Life course health development: an integrated framework for developing health, policy, and research. *The Milbank Quarterly*, *80*(3), 433-479.

Hamnett, C. (1994). Social polarisation in global cities: theory and evidence. *Urban studies*, *31*(3), 401-424.

Hanchett, T. (2010). Salad-bowl suburbs: a history of Charlotte’s east side and South Boulevard

immigrant corridors. *Charlotte, NC: The global evolution of a new south city*, 247-262.

Hanchett, T. W. (2020). *Sorting out the new south city: race, class, and urban development in Charlotte, 1875–1975*. UNC Press Books.

Harvey, D. (1975). The geography of capitalist accumulation: a reconstruction of the Marxian theory. *Antipode*, *7*(2), 9-21.

Hawkins, D. (2018). *Educating the Current and Future Nursing Workforce on Principles of Health Equity: A Standardized Social Determinants of Health Screening Tool and Education Module* (Doctoral dissertation, Xavier University).

Hawkins, T. (2018, September 5). *How does technology influence public and community health?* Robert Wood Johnson Foundation. https://www.rwjf.org/en/blog/2018/09/how-does-technology-influence-community-health.html

Heer, D. M., & Passel, J. S. (1987). Comparison of two methods for estimating the number of undocumented Mexican adults in Los Angeles County. *International Migration Review*, *21*(4), 1446-1473.

Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-based nursing*, *16*(4), 98-98.

Heisler, M., Lapidos, A., Henderson, J., Guzman, R. M., Wolfe, J., Meyer, P., ... & Khaldun, J.

(2019). Study protocol for a Community Health Worker (CHW)-led comprehensive neighborhood-focused program for medicaid enrollees in detroit. *Contemporary clinical trials communications*, *16*, 100456.

Henrikson, N. B., Blasi, P. R., Dorsey, C. N., Mettert, K. D., Nguyen, M. B., Walsh-Bailey, C., ... & Lewis, C. C. (2019). Psychometric and pragmatic properties of social risk screening tools: a systematic review. *American journal of preventive medicine*, *57*(6), S13-S24.

Herrera, C. N., Brochier, A., Pellicer, M., Garg, A., & Drainoni, M. L. (2019). Implementing social determinants of health screening at community health centers: clinician and staff perspectives. *Journal of primary care & community health*, *10*, 2150132719887260.

Hertzman, C. (1999). The biological embedding of early experience and its effects on health in adulthood. *Annals of the New York Academy of Sciences*, *896*(1), 85-95.

Hessler, D., Bowyer, V., Gold, R., Shields-Zeeman, L., Cottrell, E., & Gottlieb, L. M. (2019). Bringing social context into diabetes care: intervening on social risks versus providing contextualized care. *Current diabetes reports*, *19*(6), 30.

Hill, J., Nielsen, M., & Fox, M. H. (2013). Understanding the social factors that contribute to diabetes: a means to informing health care and social policies for the chronically ill. *The Permanente Journal*, *17*(2), 67.

Hispanic Federation. (n.d.). *Immigration*. https://hispanicfederation.org/programs/immigration/

House, J. S. (2002). Understanding social factors and inequalities in health: 20th century progress and 21st century prospects. *Journal of health and social behavior*, 125-142.

Howarth, T. J. (2019). *Competing Rationalities: Capital, Power, Gentrification and Affordable Housing in Charlotte, North Carolina* (Doctoral dissertation, The University of North Carolina at Charlotte).

Huffstetler, A. N., & Phillips Jr, R. L. (2019). Payment structures that support social care integration with clinical care: social deprivation indices and novel payment models. *American Journal of Preventive Medicine*, *57*(6), S82-S88.

Humphreys, K., & Carr-Hill, R. (1991). Area variations in health outcomes: artefact or ecology. *International journal of Epidemiology*, *20*(1), 251-258.

Jacobi, J. V. (2019). The Tools at Hand: Medicaid Payment Reform for People with Complex Medical Needs. *Annals Health L.*, *28*, 135.

Japsen, B. (2018, December 27). *Public Housing Authorities Seek Closer Ties To Health Insurers*. Forbes. https://www.forbes.com/sites/brucejapsen/2018/12/27/public-housing-authorities-seek-closer-ties-to-health-insurers/?sh=3c9e9c558774

Japsen, B. (2018, August 14). *To keep you healthy, health insurers may soon pay your rent*. Forbes. https://www.forbes.com/sites/brucejapsen/2018/08/14/to-keep-you-healthy-health-insurers-may-soon-pay-your-rent/?sh=433ec2ec67ce

Johnson-Webb, K. D., & Johnson, J. H. (1996). NORTH CAROLINA COMMUNITIES IN TRANSITION. *The North Carolina Geographer*, *5*, 21-40.

Kaestner, R., Pearson, J. A., Keene, D., & Geronimus, A. T. (2009). Stress, allostatic load, and

health of Mexican immigrants. *Social science quarterly*, *90*(5), 1089-1111.

Kania, J., & Kramer, M. (2011). *Collective impact* (pp. 36-41). FSG.

Kanuha, V. K. (2000). "Being" native versus "going native": Conducting social work research as an insider. *Social work*, *45*(5), 439-447.

Kim, G., Molina, U. S., & Saadi, A. (2019). Should immigration status information be included in a patient's health record?. *AMA Journal of Ethics*, *21*(1), 8-16.

Kirchner, T. R., & Shiffman, S. (2016). Spatio-temporal determinants of mental health and well-being: advances in geographically-explicit ecological momentary assessment (GEMA). *Social psychiatry and psychiatric epidemiology*, *51*(9), 1211-1223.

Kitchen, P. (2001). An approach for measuring urban deprivation change: the example of East Montréal and the Montréal Urban Community, 1986–96. *Environment and Planning A*, *33*(11), 1901-1921.

Kitzinger, J. (1995). Qualitative research: introducing focus groups. *Bmj*, *311*(7000), 299-302.

Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *Journal of the royal society of medicine*, *96*(3), 118-121.

King, N. (2004). 21——Using Templates in the Thematic Analysis ofText——. *Essential guide to qualitative methods in organizational research*, 256.

Koh, H. K., & Sebelius, K. G. (2010). Promoting prevention through the affordable care act. *New England Journal of Medicine*, *363*(14), 1296-1299.

Koh, H. K., Piotrowski, J. J., Kumanyika, S., & Fielding, J. E. (2011). Healthy people: a 2020 vision for the social determinants approach. *Health Education & Behavior*, *38*(6), 551-557.

Krieger, N. (1992). Overcoming the absence of socioeconomic data in medical records: validation and application of a census-based methodology. *American journal of public health*, *82*(5), 703-710.

Krieger, J., & Higgins, D. L. (2002). Housing and health: time again for public health action. *American journal of public health*, *92*(5), 758-768.

Krieger, N., Chen, J. T., Waterman, P. D., Soobader, M. J., Subramanian, S. V., & Carson, R. (2002). Geocoding and monitoring of US socioeconomic inequalities in mortality and cancer incidence: does the choice of area-based measure and geographic level matter? the Public Health Disparities Geocoding Project. *American journal of epidemiology*, *156*(5), 471-482.

Krist, A. H., Davidson, K. W., & Ngo-Metzger, Q. (2019). What evidence do we need before recommending routine screening for social determinants of health?. *American family physician*, *99*(10), 602-605.

Ku, L., & Matani, S. (2001). Left out: immigrants' access to health care and insurance. *Health Affairs*, *20*(1), 247-256.

Lakhani, C. M., Tierney, B. T., Manrai, A. K., Yang, J., Visscher, P. M., & Patel, C. J. (2019).

Repurposing large health insurance claims data to estimate genetic and environmental contributions in 560 phenotypes. *Nature genetics*, *51*(2), 327-334.

LaForge, K., Gold, R., Cottrell, E., Bunce, A. E., Proser, M., Hollombe, C., ... & Clark, K. D. (2018). How 6 organizations developed tools and processes for social determinants of health screening in primary care: an overview. *The Journal of ambulatory care management*, *41*(1), 2.

Lassiter, M. D. (2013). *The silent majority: Suburban politics in the sunbelt south* (Vol. 94). Princeton University Press.

Lee, R. E., Booth, K. M., Reese-Smith, J. Y., Regan, G., & Howard, H. H. (2005). The Physical Activity Resource Assessment (PARA) instrument: evaluating features, amenities and incivilities of physical activity resources in urban neighborhoods. *International Journal of Behavioral Nutrition and Physical Activity*, *2*(1), 13.

Leong, D., ROBERTS, E., & GOVERNOR, L. (2013). Social Determinants of Health and the Affordable Care Act. *Rhode Island Medical Journal*, *96*(7).

Leyton, B. (2019, September 18). *Why IT is crucial for tracking social determinants of health*. Health Data Management. https://www.healthdatamanagement.com/opinion/why-it-is-crucial-for-tracking-social-determinants-of-health

Liburd, L. C., Jack Jr, L., Williams, S., & Tucker, P. (2005). Intervening on the social determinants of cardiovascular disease and diabetes. *American journal of preventive medicine*, *29*(5), 18-24.

Lin, N., & Ensel, W. M. (1989). Life stress and health: Stressors and resources. *American Sociological Review*, 382-399.

Lincoln, Y. S. (2007). Naturalistic inquiry. *The Blackwell encyclopedia of sociology*.

Lubell, J., Crain, R., & Cohen, R. (2007). Framing the issues—the positive impacts of affordable housing on health. *Center for Housing Policy*, *34*.

Ludden, T. M., Taylor, Y. J., Simmons, L. K., Smith, H. A., de Hernandez, B. U., Tapp, H., ... & Dulin, M. F. (2018). Using community-based participatory research to develop geospatial models toward improving community health for disadvantaged hispanic populations in Charlotte, NC. *The journal of primary prevention*, *39*(2), 171-190.

Lynch, S., Pines, J., Mutter, R., Teich, J. L., & Hendry, P. (2019). Characterizing behavioral health-related emergency department utilization among children with Medicaid: Comparing high and low frequency utilizers. *Social work in health care*, *58*(8), 807-824.

Macintyre, S., Maciver, S., & Sooman, A. (1993). Area, class and health: should we be focusing on places or people?. *Journal of social policy*, *22*(2), 213-234.

Macintyre, S., Ellaway, A., & Cummins, S. (2002). Place effects on health: how can we conceptualise, operationalise and measure them?. *Social science & medicine*, *55*(1), 125-139.

Mackenbach, J. P., & Howden-Chapman, P. (2003). New perspectives on socioeconomic inequalities in health. *Perspectives in biology and medicine*, *46*(3), 428-444.

Mackett, R. L., & Thoreau, R. (2015). Transport, social exclusion and health. *Journal of Transport & Health*, *2*(4), 610-617.

Magnan, S., Fisher, E., Kindig, D., Isham, G., Wood, D., Eustis, M., ... & Leitz, S. (2012). Achieving accountability for health and health care. *Minn Med*, *95*(11), 37-39.

Mahmoud, I., & Hou, X. Y. (2012). Immigrants and the utilization of hospital emergency departments. *World journal of emergency medicine*, *3*(4), 245.

Marmot, M. G., & McDowall, M. E. (1986). Mortality decline and widening social inequalities. *The Lancet*, *328*(8501), 274-276.

Marmot, M. G., Stansfeld, S., Patel, C., North, F., Head, J., White, I., ... & Smith, G. D. (1991). Health inequalities among British civil servants: the Whitehall II study. *The Lancet*, *337*(8754), 1387-1393.

Marmot, M. (1999). The solid facts: the social determinants of health. *Health Promotion Journal of Australia: Official Journal of Australian Association of Health Promotion Professionals*, *9*(2), 133.

Marmot, M. G. (2006). Status syndrome: a challenge to medicine. *Jama*, *295*(11), 1304-1307.

Marmot, M., & Wilkinson, R. (Eds.). (2005). *Social determinants of health*. OUP Oxford.

Marshall, K. J., Urrutia-Rojas, X., Mas, F. S., & Coggin, C. (2005). Health status and access to health care of documented and undocumented immigrant Latino women. *Health care for women international*, *26*(10), 916-936.

Martin, P., Liaw, W., Bazemore, A., Jetty, A., Petterson, S., & Kushel, M. (2019). Adults with housing insecurity have worse access to primary and preventive care. *The Journal of the American Board of Family Medicine*, *32*(4), 521-530.

Martinez, O., Wu, E., Sandfort, T., Dodge, B., Carballo-Dieguez, A., Pinto, R., & Chavez-Baray, S. (2015). Evaluating the impact of immigration policies on health status among undocumented immigrants: a systematic review. *Journal of immigrant and minority health*, *17*(3), 947-970.

Martinez-Schallmoser, L., Telleen, S., & Macmullen, N. J. (2003). The effect of social support and acculturation on postpartum depression in Mexican American women. *Journal of Transcultural Nursing*, *14*(4), 329-338.

Massey, D. S., Gross, A. B., & Eggers, M. L. (1991). Segregation, the concentration of poverty, and the life chances of individuals. *Social Science Research*, *20*(4), 397-420.

Massey, D. S., & Capoferro, C. (2008). The geographic diversification of American immigration. *New faces in new places: The changing geography of American immigration*, 25-50.

Matulis, R., & Lloyd, J. (2018). The history, evolution, and future of Medicaid accountable care organizations. *Center for Health Care Strategies website. https://www. chcs. org/resource/history-evolution-future-medicaid-accountable-care-organizations/. Published February*.

Mays, V. M., Cochran, S. D., & Barnes, N. W. (2007). Race, race-based discrimination, and

health outcomes among African Americans. *Annu. Rev. Psychol.*, *58*, 201-225.

Mays, N., & Pope, C. (1995). Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *British Medical Journal*, *311*(6996), 42-45.

McCann, E. J. (2002). The cultural politics of local economic development: meaning-making, place-making, and the urban policy process. *Geoforum*, *33*(3), 385-398.

Meads, G., & Lees, A. (2018). Developing Community Health and Cohesion Through Diversity: An Evidence Synthesis for Faith-Based Agencies. *Public Health: Emerging and Re-emerging Issues*, 91.

Melzer, R. (2018, October 22). *Medicaid managed care plans are making a foray into housing—but they can do more.* Fierce Healthcare. https://www.fiercehealthcare.com/payer/medicaid-managed-care-plans-are-making-a-foray-into-housing-but-they-can-do-more

Mendoza, G., & Polkey, C. (2016, November). States offering driver's licenses to immigrants. In *National Conference of State Legislatures, November* (Vol. 30, p. 2016).

Mennis, J., & Yoo, E. H. E. (2018). Geographic information science and the analysis of place and health. *Transactions in GIS*, *22*(3), 842-854.

McDaniel, P. N., & Smith, H. A. (2017). Receptivity's construction in public schools: A

component of immigrant integration in an emerging gateway. *Journal of International Migration and Integration*, *18*(4), 1061-1081.

McDonald, Z. (2019). Exploring the Feasibility of the Expansion of Social Prescribing in the United States: A Policy Analysis.

McGill, N. (2016). Education attainment linked to health throughout lifespan: exploring social determinants of health.

McGovern, L., Miller, G., & Hughes-Cromwick, P. (2014). The relative contribution of multiple determinants to health. *Heal Aff Heal Policy Br*, *21*.

McInerney, M., Blank, S., Connaughton, J., Keleti, D., Michael, K. E., & Gelzer, A. D. (2018). Screening for and Addressing Social Determinants of Health in Managed Care. *Value in Health*, *21*, S98.

Metzler, M. (2007). Social determinants of health: what, how, why, and now. *Preventing chronic disease*, *4*(4).

Mohl, R. A. (2003). Globalization, latinization, and the nuevo new south. *Journal of American Ethnic History*, 31-66.

Molesworth, K., Midwife, A. A. N., Anti-retroviral, A. R. V., Virus, H. H. I., Short-Course, D. D. O. T., & ICDDR, B. (2006). Mobility and health: the impact of transport provision on direct and proximate determinants of access to health services. In *International Forum*

for Rural Transport and Development, available at< http://ifrtd. gn. apc. org/new/proj/mob_health. php.

Moore, K. (2019). Social Determinants of Health: Addressing Barriers Through Screening, Referrals, and Care Coordination. *North Carolina medical journal*, *80*(5), 306-311.

Mongeon, M., Levi, J., & Heinrich, J. (2017). Elements of accountable communities for health: A review of the literature. *NAM Perspectives*.

Monnat, S. M. (2017). The new destination disadvantage: disparities in Hispanic health insurance coverage rates in metropolitan and nonmetropolitan new and established destinations. *Rural sociology*, *82*(1), 3-43.

Morenoff, J. D., & Lynch, J. W. (2004). What makes a place healthy. *Neighborhood influences on racial/ethnic disparities in health over the life course*, 21-22.

Morgan, A. U., D'Alonzo, B. A., Dupuis, R., Whiteman, E. D., Kallem, S., McClintock, A., ... & Cannuscio, C. C. (2018). Public library staff as community health partners: training program design and evaluation. *Health Promotion Practice*, *19*(3), 361-368.

Morland, K., Roux, A. V. D., & Wing, S. (2006). Supermarkets, other food stores, and obesity: the atherosclerosis risk in communities study. *American journal of preventive medicine*, *30*(4), 333-339.

Mueller, E. J., & Tighe, J. R. (2007). Making the case for affordable housing: Connecting

housing with health and education outcomes. *Journal of Planning Literature, 21*(4), 371-385.

Murphy, K. A., Ellison-Barnes, A., Johnson, E. N., & Cooper, L. A. (2018). The clinical examination and socially at-risk populations: the examination matters for health disparities. *Medical Clinics, 102*(3), 521-532.

Nau, C., Adams, J. L., Roblin, D., Schmittdiel, J., Schroeder, E., & Steiner, J. F. (2019). Considerations for Identifying Social Needs in Health Care Systems: A Commentary on the Role of Predictive Models in Supporting a Comprehensive Social Needs Strategy. *Medical care, 57*(9), 661-666.

Nandi, A., Galea, S., Lopez, G., Nandi, V., Strongarone, S., & Ompad, D. C. (2008). Access to and use of health services among undocumented Mexican immigrants in a US urban area. *American journal of public health, 98*(11), 2011-2020.

Nayak, B., Bhattacharyya, S. S., & Krishnamoorthy, B. (2019). Democratizing health insurance services; accelerating social inclusion through technology policy of health insurance firms. *Business Strategy & Development, 2*(3), 242-252.

Nicca, D., Fierz, K., Happ, M. B., Moody, K., & Spirig, R. (2012). Symptom management in HIV/AIDS: A mixed methods approach to describe collaboration and concordance between persons living with HIV and their close support persons. *Journal of mixed methods research, 6*(3), 217-235.

Nickerson, M., & Dochuk, D. (Eds.). (2011). *Sunbelt Rising: The Politics of Space, Place, and*

Region. University of Pennsylvania Press.

Nijhawan, A. E., Metsch, L. R., Zhang, S., Feaster, D. J., Gooden, L., Jain, M. K., ... & Armstrong, W. S. (2019). Clinical and socio-behavioral prediction model of 30-day hospital readmissions among people with HIV and substance use disorder: beyond electronic health record data. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *80*(3), 330-341.

Nilsson, I., & Delmelle, E. (2018). Transit investments and neighborhood change: On the likelihood of change. *Journal of Transport Geography*, *66*, 167-179.

Noble, H., & Mitchell, G. (2016). What is grounded theory?. *Evidence-based nursing*, *19*(2), 34-35.

Noe-Bustamante, L. (2019). Immigrants in America: Key Charts and Facts. Pew Research Center.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, *16*(1), 1609406917733847.

O'Brien, K. H. (2019). Social determinants of health: the how, who, and where screenings are occurring; a systematic review. *Social work in health care*, *58*(8), 719-745.

O'Cathain, A., Murphy, E., & Nicholl, J. (2010). Three techniques for integrating data in mixed methods studies. *Bmj*, *341*.

Onie, R. D., Lavizzo-Mourey, R., Lee, T. H., Marks, J. S., & Perla, R. J. (2018). Integrating social needs into health care: a twenty-year case study of adaptation and diffusion. *Health Affairs*, *37*(2), 240-247.

Ono, H., & Zavodny, M. (2008). Immigrants, English ability and the digital divide. *Social forces*, *86*(4), 1455-1479.

Ortega, A. N., Fang, H., Perez, V. H., Rizzo, J. A., Carter-Pokras, O., Wallace, S. P., & Gelberg, L. (2007). Health care access, use of services, and experiences among undocumented Mexicans and other Latinos. *Archives of internal medicine*, *167*(21), 2354-2360.

Osypuk, T. L., & Acevedo-Garcia, D. (2010). Beyond individual neighborhoods: a geography of opportunity perspective for understanding racial/ethnic health disparities. *Health & place*, *16*(6), 1113-1123

Partida, Y. (2007). Addressing language barriers: building response capacity for a changing nation. *Journal of General Internal Medicine*, *22*(2), 347-349.

Passel, J. S. (2006). The size and characteristics of the unauthorized migrant population in the US. *Pew Hispanic Center*, *7*.

Patel, M., Bathory, E., Scholnick, J., White-Davis, T., Choi, J., & Braganza, S. (2018). Resident documentation of social determinants of health: effects of a teaching tool in the outpatient setting. *Clinical pediatrics*, *57*(4), 451-456.

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health*

services research, *34*(5 Pt 2), 1189.

Pearce, J. R. (2018). Complexity and uncertainty in geography of health research: incorporating life-course perspectives. *Annals of the American Association of Geographers*, *108*(6), 1491-1498.

Penninx, M. J. A. (2003). Integration. The role of communities, institutions, and the state. *The Migration Information Source (on-line)*.

Perchoux, C., Chaix, B., & Kestens, Y. (2019). Activity spaces in place and health research: Novel exposure measures, data collection tools, and designs. *Health & place*, *58*, 102130.

Pérez-Escamilla, R., Garcia, J., & Song, D. (2010). Health care access among Hispanic immigrants:¿ Alguien está escuchando?[Is anybody listening?]. *NAPA bulletin*, *34*(1), 47-67.

Perreira, K. M., & Pedroza, J. M. (2019). Policies of exclusion: implications for the health of immigrants and their children. *Annual review of public health*, *40*, 147-166.

Pereira, M. C. A., Rebehy, P. C. P. W., Faleiros, F., & Galvao, M. C. B. (2019). Social Innovation to Achieve Global Health. In *Handbook of Research on Entrepreneurship and Marketing for Global Reach in the Digital Economy* (pp. 522-537). IGI Global.

Phillips, D., Clark, R., Lee, T., & Desautels, A. (2010). Rebuilding neighborhoods, restoring health: A report on the impact of foreclosure on public health. Oakland, CA: Causa Justa:: Just Cause, Alameda County Public Health Department.

Pinch, S. (1997). *Worlds of welfare: understanding the changing geographies of social welfare provision*. Psychology Press.

Plescia, M., & Dulin, M. (2017). Accountable care communities. *North Carolina Medical Journal*, *78*(4), 238-241.

Poleshuck, E., Wittink, M., Crean, H. F., Juskiewicz, I., Bell, E., Harrington, A., & Cerulli, C. (2020). A Comparative Effectiveness Trial of Two Patient-Centered Interventions for Women with Unmet Social Needs: Personalized Support for Progress and Enhanced Screening and Referral. *Journal of Women's Health*, *29*(2), 242-252.

Population Health Analytics Enables Rapid Identification of Super-Utilizer. (2019), Health Catalyst. https://www.healthcatalyst.com/wp-content/uploads/2019/06/HSHS_Patient-Stratification_case-study.pdf

Portes, A., & Manning, R. D. (1986). *The immigrant enclave: Theory and empirical examples* (pp. 47-68). na.

Portes, A., & Zhou, M. (1996). Self-employment and the earnings of immigrants. *American Sociological Review*, 219-230.

Prentice, J. C., Pebley, A. R., & Sastry, N. (2005). Immigration status and health insurance coverage: Who gains? Who loses?. *American Journal of Public Health*, *95*(1), 109-116

Price, M., & Singer, A. (2008). Edge gateways: Suburbs, immigrants and the politics of

reception in Metropolitan Washington. *Twenty-first century immigrant gateways*, 137-168.

Protection, P., & Act, A. C. (2010). Patient protection and affordable care act. *Public law*, *111*(48), 759-762.

Pruitt, Z., Emechebe, N., Quast, T., Taylor, P., & Bryant, K. (2018). Expenditure reductions associated with a social service referral program. *Population Health Management*, *21*(6), 469-476.

Pugh, R., & Williams, D. (2006). Language policy and provision in social service organizations. *British Journal of Social Work*, *36*(7), 1227-1244.

Radzimski, A. (2015). Can Policies Learn? The Case of Urban Restructuring in Eastern Germany. *The Case of Urban Restructuring in Eastern Germany (September 18, 2015)*.

Ramirez-Rubio, O., Daher, C., Fanjul, G., Gascon, M., Mueller, N., Pajín, L., ... & Nieuwenhuijsen, M. J. (2019). Urban health: an example of a "health in all policies" approach in the context of SDGs implementation. *Globalization and Health*, *15*(1), 1-21.

Raven, M. C., Doran, K. M., Kostrowski, S., Gillespie, C. C., & Elbel, B. D. (2011). An intervention to improve care and reduce costs for high-risk patients with frequent hospital admissions: a pilot study. *BMC health services research*, *11*(1), 270.

Reeve, B. B., Burke, L. B., Chiang, Y. P., Clauser, S. B., Colpe, L. J., Elias, J. W., ... & Moy, C.

S. (2007). Enhancing measurement in health outcomes research supported by Agencies within the US Department of Health and Human Services. *Quality of life Research, 16*(1), 175-186.

Rich, M. (2019). Teaching Social Determinants of Health. In *Health Disparities* (pp. 221-236). Springer, Cham.

Rosen Valverde, J. N., Backstrand, J., Hills, L., & Tanuos, H. (2019). Medical-legal partnership i mpact on parents' perceived stress: A pilot study. *Behavioral Medicine, 45*(1), 70-77.

Ross, C. E., & Mirowsky, J. (1995). Does employment affect health?. *Journal of Health and social Behavior*, 230-243.

Ross, C. E., & Wu, C. L. (1995). The links between education and health. *American sociological review*, 719-745.

Rothstein, H. R., & Hopewell, S. (2009). Grey literature.

Rouse, C. E., & Barrow, L. (2006). US Elementary and secondary schools: equalizing opportunity or replicating the status quo?. *The future of children*, 99-123.

Rouse, W. B., Pepe, K. M., & Johns, M. M. (2019). Population Health as a Network of Services: Integration of Health, Education, and Social Services. In *Handbook of Service Science, Volume II* (pp. 589-618). Springer, Cham.

Rubino, B. How Addressing Social Determinants of Health in Primary Care Improves Health Outcomes.

Runyan, C. N. (2018). Assessing social determinants of health in primary care: Liability or opportunity?. *Families, Systems, & Health*, *36*(4), 550.

Rusch, D., Frazier, S. L., & Atkins, M. (2015). Building capacity within community-based organizations: New directions for mental health promotion for Latino immigrant families in urban poverty. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(1), 1-5.

Ruth, B., Wachman, M. K., & Marshall, J. (2019). Public health social work. *Handbook of Health Social Work*, 93-118.

Ryan, M. E. (2009). Making visible the coding process: Using qualitative data software in a post-structural study. *Issues in educational research*, *19*(2), 142-161.

Sallis, J. F., & Glanz, K. (2006). The role of built environments in physical activity, eating, and obesity in childhood. *The future of children*, 89-108.

Sanchez, T. W. (2008). Poverty, policy, and public transportation. *Transportation Research Part A: Policy and Practice*, *42*(5), 833-841.

Sander, L. D., Albert, M., Okeke, N., Kravet, S., Rediger, K., Conway, S. J., & McGuire, M. J. (2018). Building a Medicaid ambulatory complex care program within an urban medical home. *Population Health Management*, *21*(6), 446-453.

Sanders, J. M., & Nee, V. (1996). Immigrant self-employment: The family as social capital and the value of human capital. *American sociological review*, 231-249.

Sandoval, G. (2007). Looking Beyond the Blighted Surface: The Gaze of Redevelopment and the Immigrants' Milieu.

Sassen, S. (1990). Economic restructuring and the American city. *Annual Review of Sociology*, *16*(1), 465-490.

Sassen-Koob, S. (1986). New York City: economic restructuring and immigration. *Development and change*, *17*(1), 85-119.

Scanlon, D. P., Wolf, L. J., Shaw, B. W., Vanderbrink, J. M., & Farley, D. C. (2018). 'We can't afford not to do it': One health system's early journey into addressing social determinants of health. *Management in Healthcare*, *3*(4), 349-361.

Schickedanz, A., Hamity, C., Rogers, A., Sharp, A. L., & Jackson, A. (2019). Clinician experiences and attitudes regarding screening for social determinants of health in a large integrated health system. *Medical care*, *57*(Suppl 6 2), S197.

Schoenthaler, A., Hassan, I., & Fiscella, K. (2019). The time is now: Fostering relationship-centered discussions about patients' social determinants of health. *Patient education and counseling*, *102*(4), 810-814.

Schroeder, S. A. (2007). We can do better—improving the health of the American people. *New England Journal of Medicine*, *357*(12), 1221-1228.

Schuch, J. C., de Hernandez, B. U., Williams, L., Smith, H. A., Sorensen, J., Furuseth, O. J., &

Dulin, M. F. (2014). Por nuestros ojos: Understanding social determinants of health through the eyes of youth. *Progress in community health partnerships: research, education, and action*, *8*(2), 197.

Semple-Hess, J. E., Pham, P. K., Cohen, S. A., & Liberman, D. B. (2019). Community resource needs assessment among families presenting to a pediatric emergency department. *Academic pediatrics*, *19*(4), 378-385.

Seervai, S. (2019, February 22). *How Health and Social Care Organizations Work Together*. The Commonwealth Fund. https://www.commonwealthfund.org/publications/podcast/2019/feb/how-health-and-social-care-organizations-work-together

Shafique, T. (2018, December 6) *How to redesign cities to fight loneliness*. Fast Company. https://www.fastcompany.com/90276423/how-to-redesign-cities-to-fight-loneliness

Shanahan, D. F., Fuller, R. A., Bush, R., Lin, B. B., & Gaston, K. J. (2015). The health benefits of urban nature: how much do we need?. *BioScience*, *65*(5), 476-485.

Shankar, A., Hamer, M., McMunn, A., & Steptoe, A. (2013). Social isolation and loneliness: relationships with cognitive function during 4 years of follow-up in the English Longitudinal Study of Ageing. *Psychosomatic medicine*, *75*(2), 161-170.

Shapiro, T. M., Oliver, M. L., & Meschede, T. (2009). The asset security and opportunity index. *Research and Policy Brief. Waltham: Brandeis University, Institute on Assets and Social Policy*.

E Shaw, S., & Bailey, J. (2009). Discourse analysis: what is it and why is it relevant to family practice?. *Family practice*, *26*(5), 413-419.

Sherrod, L. R., Torney-Purta, J., & Flanagan, C. A. (2010). *Handbook of research on civic engagement in youth*. John Wiley & Sons.

Shingles, R. R. (2018). Beyond the List of Traits: Addressing and Assessing Cultural Needs of Patients in Health Care Settings. *Kinesiology Review*, *7*(2), 173-179.

Shrestha, D. (2018). The Role of General Practitioners During Economic Crises. *Value in Health*, *21*, S98.

Shrider, E. A. (2018). Welcoming Cities, Welcoming Policies: Immigration Policymaking and Immigrant Renewal Strategies in the Rust Belt. *S. Cal. Interdisc. LJ*, *28*, 661.

Skop, E. (2006). The methodological potential of focus groups in population geography. *Population, space and place*, *12*(2), 113-124.

Simmons, L. (2017). Democratizing Data with the Charlotte-Mecklenburg Quality of Life Explorer.

Singer, A. (2004). *The rise of new immigrant gateways* (p. 1). Washington, DC: Center on Urban and Metropolitan Policy, The Brookings Institution.

Singer, A. (2015). Metropolitan immigrant gateways revisited, 2014. *Washington, DC: The Brookings Institution*.

Singer, A., Hardwick, S., & Brettell, C. Twenty-First Century Gateways: Immigrants in Suburban America. Migration Information Source, 2008.

Siwicki. B. (2018, June 25) *Next-gen population health: mhealth, social determinants, prescriptive analytics*. Health IT News. https://www.healthcareitnews.com/news/next-gen-population-health-mhealth-social-determinants-prescriptive-analytics

Sloane, D. C. (2006). Longer view: From congestion to sprawl: Planning and health in historical context. *Journal of the American Planning Association*, *72*(1), 10-18.

Smith, H. A., Schuch, J. C., & de Hernandez, B. U. (2016). Participatory research with Latinos in a new immigrant gateway. *Race, ethnicity, and place in a changing America*, 125-140.

Smith, N. (1982). Gentrification and uneven development. *Economic geography*, *58*(2), 139-155.

Smith, N. (1986). Gentrification, the frontier, and the restructuring of urban space. *Gentrification of the City*, *15*, 17.

Smith, H. A., & Furuseth, O. J. (2006). Making real the mythical Latino community in Charlotte, North Carolina. *Latinos in the New South: Transformations of place*, 191-216.

Smokowski, P. R., Chapman, M. V., & Bacallao, M. L. (2007). Acculturation risk and protective factors and mental health symptoms in immigrant Latino adolescents. *Journal of Human Behavior in the Social Environment*, *16*(3), 33-55.

Social Determinants of Health: Today's Data Imperative. (2019). Health Catalyst.

https://www.healthcatalyst.com/insights/social-determinants-health-todays-data-imperative

Soja, E., Morales, R., & Wolff, G. (1983). Urban restructuring: an analysis of social and spatial change in Los Angeles. *Economic Geography*, *59*(2), 195-230.

Solomon, L. S., & Kanter, M. H. (2018). Health care steps up to social determinants of health: current context. *The Permanente Journal*, *22*.

Sonik, R. A., Teasdale, S., Parish, S. L., Champigny, M., & Sprinz, P. G. (2018). Unmet legal and social advocacy needs of children with sickle cell disease: Implications for health care payer costs. *Children and Youth Services Review*, *84*, 76-81.

Sørensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H. (2012). Health literacy and public health: a systematic review and integration of definitions and models. *BMC public health*, *12*(1), 80.

Sorenson, C., Schauer, L., & McClellan, M. (2018). Challenges to Reducing Low-Value Care: Lessons Learned and Future Directions. *Value in Health*, *21*, S98.

Sorbero, M. E., Kranz, A. M., Bouskill, K. E., Ross, R., Palimaru, A. I., & Meyer, A. (2018). Addressing Social Determinants of Health Needs of Dually Enrolled Beneficiaries in Medicare Advantage Plans: Findings from Interviews and Case Studies.

Soto Mas, F., Iriart, C., Pedroncelli, R., Binder, D. S., Qualls, C. R., & Price, B. (2019). Impact

of Health Care and Socioeconomic Needs on Health Care Utilization and Disease Management: The University of New Mexico Hospital Care One Program. *Population Health Management, 22*(2), 113-119.

Stephens, C. (1996). Healthy cities or unhealthy islands? The health and social implications of urban inequality. *Environment and Urbanization, 8*(2), 9-30.

Stepick, A., & Stepick, C. D. (2002). Becoming American, constructing ethnicity: Immigrant youth and civic engagement. *Applied developmental science, 6*(4), 246-257.

Stern, P. N. (1980). Grounded theory methodology: Its uses and processes. *Image, 12*(1), 20-23.

Sternberg, S. (2018, December 18). *Investment: A Prescription for Unhealthy Communities | Healthiest Communities*. US News. https://www.usnews.com/news/healthiest-communities/articles/2018-12-18/investment-a-prescription-for-unhealthy-communities

Sternthal, M. J., Slopen, N., & Williams, D. R. (2011). RACIAL DISPARITIES IN HEALTH: How Much Does Stress Really Matter? 1. *Du Bois review: social science research on race, 8*(1), 95.

Suárez-Orozco, C., Hernández, M. G., & Casanova, S. (2015). "It's sort of my calling": The civic engagement and social responsibility of Latino immigrant-origin young adults. *Research in Human Development, 12*(1-2), 84-99.

Sundar, K. R. (2018). Universal screening for social needs in a primary care clinic: a quality improvement approach using the your current life situation survey. *The Permanente Journal, 22*.

Suro, R., & Singer, A. (2002). *Latino growth in metropolitan America: Changing patterns, new locations*. Brookings Institution, Center on Urban and Metropolitan Policy in collaboration with the Pew Hispanic Center.

Sutton, S., & Kemp, S. (Eds.). (2011). *The paradox of urban space: Inequality and transformation in marginalized communities*. Springer.

Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Traveling towards disease: transportation barriers to health care access. *Journal of community health*, *38*(5), 976-993.

Szaflarski, M., & Bauldry, S. (2019). The effects of perceived discrimination on immigrant and refugee physical and mental health. *Advances in medical sociology*, *19*, 173.

Tanenbaum, S. J. (2017). Can payment reform be social reform? The lure and liabilities of the "Triple Aim". *Journal of health politics, policy and law*, *42*(1), 53-71.

Tariq, S., & Woodman, J. (2013). Using mixed methods in health research. *JRSM short reports*, *4*(6), 2042533313479197.

Telfair, J., & Shelton, T. L. (2012). Educational attainment as a social determinant of health. *NC Med J*, *73*(5), 358-365.

Thomas, B. (2014). Health and health care disparities: the effect of social and environmental factors on individual and population health. *International journal of environmental research and public health*, *11*(7), 7492-7507.

Thorne, S. (2000). Data analysis in qualitative research. *Evidence-based nursing*, *3*(3), 68-70.

Thornton, M., & Persaud, S. (2018). Preparing today's nurses: Social determinants of health and nursing education. *The Online Journal of Issues in Nursing*, *23*(3).

Tobler, W. R. (1970). A computer movie simulating urban growth in the Detroit region. *Economic geography*, *46*(sup1), 234-240.

Tong, S. T., Liaw, W. R., Kashiri, P. L., Pecsok, J., Rozman, J., Bazemore, A. W., & Krist, A. H. (2018). Clinician experiences with screening for social needs in primary care. *The Journal of the American Board of Family Medicine*, *31*(3), 351-363.

Tong, S., Mullen, R. A., Hochheimer, C. J., Sabo, R. T., Liaw, W. R., Nease, D. E., ... & Frey, J. J. (2019). Geographic characteristics of loneliness in primary care. *The Annals of Family Medicine*, *17*(2), 158-160.

Traynor, M. (2006). Discourse analysis: theoretical and historical overview and review of papers in the Journal of Advanced Nursing 1996–2004. *Journal of advanced nursing*, *54*(1), 62-72.

Triangulation, D. S. (2014, September). The use of triangulation in qualitative research. In *Oncology nursing forum* (Vol. 41, No. 5, p. 545).

Turner, T. M., & Luea, H. (2009). Homeownership, wealth accumulation and income status. *Journal of Housing Economics*, *18*(2), 104-114.

Tzaninis, Y., & Boterman, W. (2018). Beyond the urban–suburban dichotomy: Shifting mobilities and the transformation of suburbia. *City*, *22*(1), 43-62.

Unkelos-Shpigel, N., Sherman, S., & Hadar, I. (2015, May). Finding the missing link to industry: LinkedIn professional groups as facilitators of empirical research. In *2015 IEEE/ACM 3rd International Workshop on Conducting Empirical Studies in Industry* (pp. 43-46). IEEE.

Uwemedimo, O. T., & May, H. (2018). Disparities in utilization of social determinants of health referrals among children in immigrant families. *Frontiers in pediatrics*, *6*, 207.

Victorino, C. C., & Gauthier, A. H. (2009). The social determinants of child health: variations across health outcomes–a population-based cross-sectional analysis. *BMC pediatrics*, *9*(1), 53.

Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: structural racism, intersectionality theory, and immigrant health. *Social science & medicine*, *75*(12), 2099-2106.

Vega, W. A., & Miranda, M. R. (1985). Stress & Hispanic Mental Health: Relating Research to Service Delivery.

Vega, W., Kolody, B., Valle, R., & Weir, J. (1991). Social networks, social support, and their relationship to depression among immigrant Mexican women. *Human organization*, *50*(2), 154-162.

Vega, W. A., Rodriguez, M. A., & Gruskin, E. (2009). Health disparities in the Latino population. *Epidemiologic reviews*, *31*(1), 99-112.

Wallace, S. P., Young, M. E. D. T., Rodríguez, M. A., & Brindis, C. D. (2019). A social determinants framework identifying state-level immigrant policies and their influence on health. *SSM-population health*, *7*, 100316.

Wallston, B. S., Alagna, S. W., DeVellis, B. M., & DeVellis, R. F. (1983). Social support and physical health. *Health psychology*, *2*(4), 367.

Warren, C. A., & Karner, T. X. (2005). *Discovering qualitative methods: Field research, interviews, and analysis*. Roxbury.

Warren, R., & Passel, J. S. (1987). A count of the uncountable: estimates of undocumented aliens counted in the 1980 United States Census. *Demography*, 375-393.

Welsh, E. (2002, May). Dealing with data: Using NVivo in the qualitative data analysis process. In *Forum qualitative sozialforschung/Forum: qualitative social research* (Vol. 3, No. 2).

Westlake, D., & Jones, R. K. (2018). Breaking down language barriers: a practice-near study of social work using interpreters. *British Journal of Social Work*, *48*(5), 1388-1408.

Whitehead, J., L. Pearson, A., Lawrenson, R., & Atatoa-Carr, P. (2019). How can the spatial equity of health services be defined and measured? A systematic review of spatial equity definitions and methods. *Journal of health services research & policy*, *24*(4), 270-278.

Whittle, H. J., Palar, K., Hufstedler, L. L., Seligman, H. K., Frongillo, E. A., & Weiser, S. D.

(2015). Food insecurity, chronic illness, and gentrification in the San Francisco Bay Area: an example of structural violence in United States public policy. *Social Science & Medicine*, *143*, 154-161.

Wilder, V., Mirto, A. L., Makoba, E., & Arniella, G. (2017). The health impact of gentrification. *J Gen Emerg Med*, *4*, 1981-1991.

Williams, D. R., Priest, N., & Anderson, N. B. (2016). Understanding associations among race, socioeconomic status, and health: Patterns and prospects. *Health Psychology*, *35*(4), 407.

Winchester, H. P. (1999). Interviews and Questionnaires as Mixed Methods in Population Geography: TheCase of Lone Fathers in Newcastle, Australia. *The professional geographer*, *51*(1), 60-67.

Wolch, J. R. (1981). The location of service-dependent households in urban areas. *Economic Geography*, *57*(1), 52-67.

World Health Organization. (2011, October 19-21). World Conference on Social Determinants of Health [Conference proceedings]. Rio de Janeiro, Brazil

World Health Organization. (2010). A conceptual framework for action on the social determinants of health.

World Health Organization. (2019) *Air pollution and child health: prescribing clean air.* http://www.who.int/ceh/publications/air-pollution-child-health/en/

Williams, D. R., Priest, N., & Anderson, N. B. (2016). Understanding associations among race,

socioeconomic status, and health: Patterns and prospects. *Health Psychology*, *35*(4), 407.

Woodrow, K. A. (1990). Using census and survey data to measure undocumented immigration and emigration for the United States. *Statistical journal of the United Nations economic commission for Europe*, *7*(4), 241-251.

Wyly, E. K. (1999). Continuity and change in the restless urban landscape. *Economic geography*, *75*(4), 309-338.

Yan, S., Delmelle, E., & Duncan, M. (2012). The impact of a new light rail system on single-family property values in Charlotte, North Carolina. *Journal of Transport and Land Use*, *5*(2), 60-67.

Yeo, S. (2004). Language barriers and access to care. *Annual Review of Nursing Research.*, *23*, 59-76.

YMCA. (2013). *Helping people connect and thrive strengthening inclusion engaging Hispanic/Latinos in your YMCA*. https://amaymca.org/wp-content/uploads/2019/11/Strengthening-Inclusion-Engaging-Hispanic-Latino-Communities-in-Your-Y.pdf

Yoshioka, M. R., Gilbert, L., El-Bassel, N., & Baig-Amin, M. (2003). Social support and disclosure of abuse: Comparing South Asian, African American, and Hispanic battered women. *Journal of family violence*, *18*(3), 171-180.

Zellmer, L. (2018). A closer look at the pamphlet approach. *MINNESOTA MEDICINE*.

Zhong, H., & Li, W. (2016). Rail transit investment and property values: An old tale retold. *Transport Policy, 51*, 33-48.

Zuk, M., Bierbaum, A. H., Chapple, K., Gorska, K., & Loukaitou-Sideris, A. (2018). Gentrification, displacement, and the role of public investment. *Journal of Planning Literature*, *33*(1), 31-44.

APPENDIX A: DATA COLLECTION INSTRUMENTS

Focus Group Guide	
Questions/Probes	***Parent Node***
What countries are you from? How long have you been in the US? Charlotte?	Settlement period
Since you have been in charlotte, have you always lived in this area? Why or why not?	Changing settlement
How has this area changed since you have lived here? **Demographics**? Has there been more immigrants? Are there more children than adults? Have you seen changes in numbers of people that are White or Black? **Transportation**? Was the light rail here when you moved to this area? How has that changed how you get around? How do you use it? How do other people you know use it? Do people still use the bus system? Are people driving their own cars? **Housing**? Have you lived in the same place the whole time you have lived here? How many times have you moved? Did you move from other parts of the city? If so, why? Are you renting, or do you own? How long have you been doing that? For those that own their home, when did you buy? What was that process like? For those of you that rent, has the rental cost stayed the same or increased over the years? If increased, by how much? **Industry**? What kind of businesses are in the area? Have some major businesses closed since you lived here? Have some major businesses opened since you lived here? Who works at these businesses? Are there manufacturing companies in the area? If yes, what kind? Who works at these companies? **Policy**? Have new local laws been put in effect since you lived in this area? If so, what were they? Have new state laws been put in effect since you lived here? If so, what are they? Have any new national laws been put in effect since you lived here? If so, what are they? Are there new policies in effect at organizations that limit your access to resources? Are there new policies in effect at organizations that increase your access to resources? Are people able to vote? If so, are they voting?	Urban restructuring

Socially? Do you find that people are out and engaging with others? In the neighborhood? In the city? Do parents go to school events? Do people go to church? What are the schools/churches people attend? Do you have parks nearby? If so, do people go there to be active and/or socialize?	
When did you notice the changes happening? Were there time periods of more change? What year(s) where they? Ask these questions for each of the areas- demographics, housing, transportation, industry, policy, social	Temporal Change
Do you plan to leave the area within the next 6-12 months? Why or why not?	Future change in settlement
Health Services	
What are the biggest health concerns for: You? Children? Other community members? Has this changed over time?	Health concerns
What health services are available in the area? Where do you access healthcare services? What are the barriers to access services? Has this changed over time?	Availability of health services
How often to you utilize health services? What reasons do you utilize health services? How far do you travel to access services? Has this need services changed over time? How has the use of services changed over time?	Utilization of health services
Social Services	
What are the biggest social concerns for: You? Children? Other community members? Has this changed over time?	Social concerns

Key Informant Guide- Providers
Questions/Probes
All providers
What is the mission/vision of your organizations?
What countries are your clients from? How long have they been in the US? Charlotte?
Since you have been in Charlotte, have you always worked in this area? Why or why not?
How has this area changed since you have served this area? **Demographics**? Has there been more immigrants? Are there more children than adults? Have you seen changes in numbers of people that are White or Black? **Transportation**? Was the light rail here when you started serving this area? How has that changed how your clients get around? How do they use it? How do other people you know use it? Do people still use the bus system? Are people driving their own cars? **Housing**? Have you served the same place the whole time you have worked here? Have you served other parts of the city? Are most of the people that you serve renting or own their own home? How long have they been doing that? For those that own their home, when did they buy? What was that process like? For those that rent, has the rental cost stayed the same or increased over the years? If increased, by how much? **Industry**? What kind of businesses are in the area? Have some major businesses closed since you lived here? Have some major businesses opened since you lived here? Who works at these businesses? Are there manufacturing companies in the area? If yes, what kind? Who works at these companies? **Policy**? Have new local laws been put in effect since you lived in this area? If so, what were they? Have new state laws been put in effect since you lived here? If so, what are they? Have any new national laws been put in effect since you lived here? If so, what are they? Are there new policies in effect at organizations that limit your access to resources? Are there new policies in effect at organizations that increase your access to resources? Are people able to vote? If so, are they voting? **Socially**? Do you find that people are out and engaging with others? In the neighborhood? In the city? Do parents go to school events? Do people go to church? What are the schools/churches people attend? Do you have parks nearby? If so, do people go there to be active and/or socialize?
Do you plan to continue serving this area?

Health Service Providers
How do you define the 'social' determinants of health? Can you rank these in order from least impactful to most- social and economic, physical environment, health behaviors and clinical care? Here are a list of some, can you arrange them based on the following categories- social, temporal and spatial?
What are the biggest health concerns for this community: Adults? Children? Have these changed over time?
What health services are available in the area? Where do the clients you work with access healthcare services? What are the barriers to access services? Have these changed over time?
How often do your clients utilize health services? What reasons do they utilize health services? How far do they travel to access services? Has this changed over time?
Social Services
What are the biggest social concerns for this community: Adults? Children? Have these changed over time?
What social services or programs are available in this area? Where do your clients access social services? What are the barriers to them accessing services? Have these changed over time?
How often do they utilize social services? What reasons do they utilize health services? How far do they travel to access services? Have these changed over time?

Key Informant Interview Guide- Non Provider
What is your connection to this area of Charlotte?
How long have you lived in Charlotte?
Can you describe what SW Charlotte was like when you first arrived to Charlotte? Earliest recollection of the area?
How has this area changed since then? **Demographics**? Has there been more immigrants? Are there more children than adults? Have you seen changes in numbers of people that are White or Black? How have income levels changed for this area over time? **Transportation**? How has transportation changed? Were you here during the discussions around the light rail? What was the general sense of it? Have people changed their travel patterns since it has been in use? Who generally uses it? Are people still using the bus system, despite the light rail being in place? Are people still driving their own cars? **Housing**? How has homeownership changed in this area? What caused the change? Who are the folks that are renting- homes vs. apartments? Are they the same? What is the process of renting like for an immigrant? Has that changed? What about the process for owning a home? Has that changed? For those that rent, has the rental cost stayed the same or increased over the years? If increased, by how much? **Industry**? What kind of businesses are in the area? Have some major businesses closed since you lived here? Have some major businesses opened since you lived here? Who works at these businesses? Are there manufacturing companies in the area? If yes, what kind? Who works at these companies? **Policy**? Have new local laws been put in effect that specifically impact SW Charlotte? If so, what were they? Have new state laws been put in effect since you lived here? If so, what are they? Have any new national laws been put in effect since you lived here? If so, what are they? Are there new policies in effect at organizations that limit access to resources to groups of people? Are there new policies in effect at organizations that increase access to resources to groups of people? Are people able to vote? If so, are they voting? **Socially**? Do you find that people are out and engaging with others? In the neighborhood? In the city? Do parents go to school events? Do people go to church? What are the schools/churches people attend? Do you have parks nearby? If so, do people go there to be active and/or socialize?

How have this change impacted or have the potential to impact the immigrant Latino community currently living in the area? What the change impact other groups differently? How so?
How do you define the ‘social’ determinants of health?

APPENDIX 2: FULL LIST OF AMERICAN COMMUNITY SURVEY METRICS

Indicator	Metric	ACS Code: All	ACS Code: Hispanic or Latino
Total population	Total Population	B01001_001	B01001I_001
Gender	Total Male	B01001_002	B01001I_002
	Total Female	B01001_026	B01001I_017
Age	Median Age	B01002_001	B01002I_001
Ethnicity	Total not Hispanic or Latino	B01001_001-B01001I_001	NA
	Total Hispanic or Latino	B01001I_001	NA
Latino Immigrant	Foreign Born and Hispanic or Latino	B06004I_005	NA
Citizenship Status	Total Foreign Born and not a US Citizen	B05001_006	B05003I_007 + B05003I_012 + B05003I_018 + B05003I_023
Transportation	Total Car, truck, or van as means of transportation to work (workers 16 years and older)	B08006_002	B08105I_002
	Total Population (workers 16 years and older)	B08006_001	B08105I_001
Employed	Total Self-employed in own incorporated business workers (civilian, employed, 16 years and older)	C24070_029	NA
	Total Population (civilian, employed, 16 years and older)	C24070_001	NA
	Total Unemployed (civilian non-institutionalized population 18 and older)	B27011_014	NA
	Total Population (civilian, non-institutionalized, 18 years and older)	B27011_001	NA
Educational Attainment	Regular high school diploma + GED or alternative credential (25 years and older)	B15003_017+ B15003_018	C15002I_004 + C15002I_009
	Bachelor's Degree or higher (25 years and older)	B15003_022 + B15003_023 + B15003_024 + B15003_025	C15002I_006 + C15002I_011

	Total Population (25 years and older)	B15003_001	C15002I_001
Language: No/limited English	Foreign Born, speaks Spanish, speaks English less than "very well" (5 years and older)	B06007_037	B16005I_011
	Total Population (5 years and older)	B06007_001	B16005I_001
Housing- type	Total population in renter-occupied housing units	B25008_003	B25003I_003
	Total population in owner-occupied housing units	B25008_002	B25003I_002
	Total Population (in occupied housing units)	B25008_001	B25003I_001
Housing- price	Median Gross Rent as a percentage of household income (renter-occupied housing units paying cash rent)	B25071_001	NA
Income	Median family Income in the past 12 months (inflation-adjusted dollars)	B19113_001	B19113I_001
Health Insurance Status*	Total population in labor force with health insurance (18 to 64 years-old)	B27011_005 + B27011_016	C27001I_006
	Total population in labor force (18 to 64 years-old)	B27011_002	C27001I_005
Family Structure	Total Family households	B11001_002	B11001I_002