

Georgia State University

ScholarWorks @ Georgia State University

Gerontology Theses

Gerontology Institute

8-12-2016

Location of Healthcare Resources and Perceptions of Access among Rural Dwelling Older Georgians

Eugenie Stephenson

Follow this and additional works at: https://scholarworks.gsu.edu/gerontology_theses

Recommended Citation

Stephenson, Eugenie, "Location of Healthcare Resources and Perceptions of Access among Rural Dwelling Older Georgians." Thesis, Georgia State University, 2016.
doi: <https://doi.org/10.57709/8870148>

This Thesis is brought to you for free and open access by the Gerontology Institute at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Gerontology Theses by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.

LOCATION OF HEALTH CARE RESOURCES AND PERCEPTIONS OF ACCESS AMONG RURAL DWELLING OLDER GEORGIANS

By

EUGENIE STEPHENSON

Under the Direction of Jennifer Craft Morgan PhD

Framed by Anderson's Behavioral Model of Health Services and institutional racism, this study examines the relationship between age and perceptions of access to health care resources within local communities. Multi-variate models will be used to assess perceived access to quality health care among older adults in rural Georgia examining the relative impact of age, race, income, barriers accessing local doctors/providers, issues related to distance/transportation on residents' perceptions and the role of community support. State-level analysis detailing rural residents' perceptions of access-to-care is expansive but lacks inclusion of individuals' perception of access as they progress to old age. Findings indicate that age, race and income are important predictors of perceived transportation barriers to health care access and perceived access to local doctors/providers. Policy recommendations include expanding community/private/government partnerships, encouraging public communication of access concerns, and state-level commitment to support the development of health care resources in underserved rural communities.

INDEX WORDS: Rural, Distance to care, Transportation, Older adults, Healthcare, Institutional racism

LOCATION OF HEALTH CARE RESOURCES AND PERCEPTIONS OF ACCESS AMONG
RURAL DWELLING OLDER GEORGIANS

By

EUGENIE STEPHENSON

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

In the College of Arts and Sciences

Georgia State University

2016

Copyright by
Eugenie Patryce Stephenson

LOCATION OF HEALTH CARE RESOURCES AND PERCEPTIONS OF ACCESS AMONG
RURAL DWELLING OLDER GEORGIANS

by

EUGENIE STEPHENSON

Committee Chair: Jennifer Craft Morgan

Committee: Elisabeth O. Burgess

Chivon Mingo

Electronic Version Approved:

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

August 2016

DEDICATION

Thank you Meghan for staying patient, encouraging for and not getting bored as I worked on my project. Also thank you for encouraging me to start exercising again – it saved my sanity and helped me get through the many ups and downs of this process. Our working out together gave me a needed boost in the middle of this process and was a needed reprieve lol. Thank you Patrick for being an amazing son and providing lots of fun time that was needed by us both. I'm now excited that I have your high school graduation to look forward to next year!!

ACKNOWLEDGEMENTS

This has been a long process and I want to start out by thanking my entire committee, for sacrificing large parts of your summer break to take part in this project. Dr. Mingo and Dr. Burgess I appreciate your support with any questions I approached either of you with during this process. As always your insights were very much appreciated.

I'd like to especially thank my committee-chair Dr. Jen for participating in my project in all aspects, providing great feedback and for being understanding about parts of the process that were just rough for me. You were very encouraging when I had problems initially getting over the hurdle of starting to write my proposal, lacking judgement and accepting of the situation – encouraging me to, “Just let me see a few pages of anything that you want to write and I'll provide you feedback.”

This helped me get over my fear of writing my thesis and I won't forget it. It helped me focus on the process of moving toward my goal instead of having a big, polished, fancy thesis right away. You allowed me to bug you on vacation, during work travel, while you were at home with your family and on the road. Your ability to be available was VERY MUCH APPRECIATED and I want to sincerely thank you.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
1 INTRODUCTION	1
2 LITERATURE REVIEW	12
2.1 Scope of articles	12
2.2 Summary of the literature	12
<i>2.2.1 Perceptions of access to care and provider type.....</i>	<i>14</i>
<i>2.2.2 Impact of distance and location of health resources on utilization</i>	<i>16</i>
2.3 Results of review – limitations and gaps in the literature	17
2.4 Next steps and research	17
2.5 Research Objectives	18
<i>2.5.1 Research Objective 1.....</i>	<i>18</i>
<i>2.5.2 Research Objective 2.....</i>	<i>18</i>
<i>2.5.3 Research Objective 3.....</i>	<i>18</i>
3 METHODOLOGY	18
3.1 Theoretical framework guiding research.....	18
<i>3.1.1 Proposed conceptual model</i>	<i>21</i>
<i>3.1.2 Description of Variables</i>	<i>28</i>

4	FINDINGS	28
4.1	Spatial analysis	28
4.1.1	<i>Facility service capacity in counties with older populations</i>	28
4.1.2	<i>Overall population density of all Georgia Counties</i>	29
4.1.3	<i>Older Georgians and where they live</i>	31
4.2	Descriptive and Inferential Analysis	32
4.2.1	<i>Complete table of variables</i>	32
4.2.2	<i>Perceived importance of accessing health care access variables</i>	33
4.2.3	<i>Environmental variables</i>	33
4.2.1	<i>Predisposing and enabling variables</i>	35
4.3	Regression model	37
4.3.1	<i>Variables used in regression analysis</i>	37
5	DISCUSSION AND CONCLUSION	41
5.1	Discussion	41
5.1.1	<i>Review of descriptive analysis</i>	41
5.1.2	<i>Review of the regression analysis</i>	45
5.1.3	<i>Review of spatial analysis</i>	47
5.1.4	<i>Overview of the findings</i>	48
5.2	Limitations of my study	51
5.3	Conclusion and Implications on Future Research	51

5.4	Policy Recommendations	52
5.4.1	<i>Policy Alternative 1</i>	52
5.4.2	<i>Policy Alternative 2</i>	53
5.4.3	<i>Policy Alternative 3</i>	54
	REFERENCES	55

LIST OF TABLES

Table 1. Complete table of variables used in the descriptive analysis.....	32
Table 2. <i>Frequencies of Perceived Importance of Access to H.C. Variables</i>	33
Table 3. Frequencies of MACRO-level	34
Table 4. Frequencies of MEZZO-level	34
Table 5. Frequencies of MICRO-level.....	35
Table 6. Complete Table of Variables Used in the Analyses	36
Table 7. Results of binary regression models I and II	39

LIST OF FIGURES

Figure 1. An Emerging Model - Phase four of the Andersen Behavioral Model - Source: Andersen 1995. Copyright 1995 by Journal of Health and Social Behavior	19
Figure 2. Jones' Levels of Racism Framework - Source: Jones (2000), American Journal of Public Health, 90, (8), 1212-1215	20
Figure 3. Conceptual model - Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University	23
Figure 4. GA H.C. Facility - Service Capacity Map. Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University	29
Figure 5. Number of Residents - Per Square Mile – Georgia Map. Source: Eugenie Stephenson- Thesis project. Copyright 2016. Georgia State University	30
Figure 6. Percentage of GA Residents Age 60 and Older - Per County Map. Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University	31

1 INTRODUCTION

Access to care in the United States remains a priority issue even as the U.S. experiences increased opportunities for health care coverage resulting from passage of the Patient Protection and Affordable Care Act (U.S. Department of Health and Human Services - Assistant Secretary for Public Affairs, 2013). Specifically, Individuals residing in rural communities continue to experience reduced health care access due to a lack of local providers, fewer transportation alternatives, and the closure of local hospitals (Rural Health Information Hub, 2015). Hospital closures are occurring due to a variety of factors including patient bypass, which is the act of residents passing their local hospital to use services at a hospital located further away (Lui et al., 2007), and a lack of specialist providers within their communities. According to current gerontological literature, disparities in access difference is not only problematic for older adults, but also has an impact on caregivers and family members (Monahan, 2013). Increased distance to resources limits family members' ability to assist older residents with reaching quality care impacts both the ability of older adults to reach care and limits family members' ability to assist older residents with reaching needed care due to distance and transportation limitations. Older residents' ability to age in place is further impeded by barriers related to geographic location, social barriers and community views on providing funding to support programs and initiatives that support local health care access (Andersen et al., 2002), limiting older residents ability to maintain personal health while residing in their own community (Bacsu et al., 2012).

To improve access, telehealth has become an option for some rural communities. Using telehealth has been successful in addressing most acute care health needs, however, it requires that individuals needing specialist care travel extended distances to access care ultimately

reducing utilization when barriers exist related to distance or transportation (The Office for the Advancement of Telehealth, 2015; Chan et al., 2006). Rural elders, particularly individuals with few socio-economic resources, are more likely to be disproportionately impacted by the closure of critical access hospitals (Liu et al., 2007; Rural Health Information Hub, 2015). Therefore mentioned barriers in addition to functional decline associated with and exacerbated by low socio-economic resources creates complex issues for older individuals as they navigate resource and geographical barriers with accessing health care resources within rural communities. Impeding factors related to state level legislation and local community ideas on resource provision and funding often create substantial barriers, directly opposing recent ACA funding to promote innovative programs in areas to redress issues of discrimination through inequitable service provision (Kunz & Atsas, 2013).

1.1 Georgia Context

In Georgia, the ability to access care has been hindered by the closure of local critical access hospitals (Georgia Department of Community Health, Rural Hospital Stabilization Committee, 2016). Since 2011, the counties of Calhoun, Charlton, Early, Stewart and Wheeler have experienced the closure of these vital health care facilities. Critical access hospitals (CAHs) are in place to specifically meet the needs of residents located in the country's most rural communities by providing hospital access to residents when the next closest hospital is 35 miles or more away (Georgia Hospital Association, 2011). Older Georgian and their family members benefit from access to local health care resources when making transportation arrangements to medical appointments when they are in need of emergency care.

While this issue has been largely absent from recent state and federal legislative efforts, two recent legislative initiatives have touched on the issue of transportation and access to health

care for older adults. The failure to pass legislative measure GA Senate Bill 242, the Family Care Act, has maintained restrictions on family members' ability to extend time away from work to assist in transporting or caring for a parent or grandparent. Limiting access to local resources exacerbates these limitations (Georgia Senators Williams of the 27th and Unterman of the 45th, 2015). One measure intended to assist with the viability of rural hospitals is cost based reimbursement. This is the use of increased reimbursement rates are to compensate potentially low CAH revenues (Nedelea & Fannin, 2013). Despite such efforts by the federal government, CAHs have experienced closings in Georgia due, at least in part, to financial instability impacting access to health care services primarily intended to sustain residents in rural communities.

Rural health care networks are another safety net mechanism. The inclusion of CAHs within a rural health care network provides health care providers with the ability to make referrals when full treatment is unable to be administered within the CAH setting (Lui et al. 2007). While this system works to ensure that local residents eventually receive proper care, specialty care is often received at a distant location. The absence of CAHs places further limitations on local care, with individuals in rural communities often unable to access adequate ambulatory, acute and specialized care where they live. Recent hospital closures have diminished the ability to access both ambulatory and acute care, further reducing rural residents' capacity to maintain their health near home. While the benefits of CAHs have been acknowledged, with residents recognizing their hospital as 'good' in a comparison of rural and CAHs, (Baernholdt et al., 2014) many rural residents still find it necessary to bypass their local CAH for another rural or distant urban hospital for specialized treatment.

Criteria used by the Centers for Medicare and Medicaid Services (CMS) makes a distinction in how geographic location impacts rural dwelling individuals by ensuring that Critical Access Hospitals are primarily located in areas that are not within the Metropolitan Statistical Area (MSA) according to U.S. Census standards (Rural Health Research Center, 2016). Additional criteria on how CAHs are distributed include determinations based on rural location with barriers related to terrain and road type (Rural Health Information Hub, 2014). These criteria increase the ability of an individual residing in an area identified as rural to access care. To meet this need, CAHs have increased flexibility in providing ambulatory, preventive and acute care within rural communities.

Older adults make up an increasingly larger segment of rural populations. Population aging has expanded the need for specialized health care services in rural communities as older adults live longer with multiple chronic conditions (Soni & Hill, 2007). States encountering issues related to transportation, distance or the lack of specialty providers are faced with identifying strategies to mitigate the role that increasing demands of service place on rural communities (Carper & Machlin, 2007). The impact of SES and the role of race on limited access to resources is especially evident among residents in rural locations (Doescher et al., 2001). Limitations remain despite the presence of family caregivers who often face similar challenges. Minority residents, who tend to retain a large number of specialty health services in clinic and hospital settings, experience specific negative impacts as continuous access to local health care resources is further impeded. (Doescher et al., 2001). Increased barriers resulting from physical decline can impact driving ability placing additional limits on geographic mobility and increasing existing disparities, with older minorities placed at greater vulnerability.

1.1.1 Standards of Practice

The mission of the Georgia Department of Community Health (GDCH, 2011) includes providing access to quality health care in local communities and promoting behaviors that improve health outcomes. This mission creates an imperative that rural residents have the ability to access health services resources which provide quality and specialized care in or near the communities where they live (Graves, 2009). Accessing health resources where individuals live is a standard that increases the likelihood of rural older adults having access to health care while removing persistent barriers related to distance and transportation. As hospital closures are experienced, geographic location impacts how rural individuals are able to access care within their own communities (Georgia Hospital Association, 2011). Issues continue to exist among older individuals who desire to age in place. Limited access to preventive care, often resulting from distance to resources, negates many aspects of the Affordable Care Act which provides expanded coverage for preventive services with low cost share for rural residents (U.S. Department of Health and Human Services - Assistant Secretary for Public Affairs, 2013). Currently Georgia participates in rural health networks which include critical access hospitals, rural clinics, telemedicine, and physician referrals to hospitals located in neighboring counties capable of providing necessary health care for rural Georgians.

1.1.2 Rural vs. urban areas

Presently in Georgia, individuals living in rural communities are more likely to be impacted with chronic conditions than those living in more urbanized counties (Georgia Health Policy Center, 2015). This is often the result of the inability by many residents to access needed preventive care services locally (Goodman et al., 2013). Simultaneously, there exists a shortage of health care providers in many of Georgia's rural areas. Many of these same communities have experienced hospital closings that have deprived an even greater number of individuals from

access to local preventive and ambulatory services. Rural Georgians experience higher rates of death resulting from heart disease, stroke, and cancer when compared to urban counties while simultaneously experiencing shortages in primary care and specialist providers (Health care Georgia Foundation, 2015).

Disparities in health exist across all network types when comparing rural and urban settings and describe a persistent worse state of health in rural communities than urban (Weeks et al., 2004). In rural Chattahoochee County it was noted that over 67 percent of premature deaths could have been avoided if local residents had similar opportunities for health care as those found in healthier, more populated counties (County Health Rankings and Roadmaps, 2016). Disparities such as this are often persistent and largely result from the allocation of resources driven by state and local policies (Andersen et al., 2002). Currently of the 159 Georgia counties 108 are identified as rural counties meaning that the county contains 35,000 or fewer residents (State Office of Rural Health, 2014). Of these rural counties, 67 currently participate in 19 rural health networks with residents in remaining counties left to travel outside of their county of residence to access needed care (Rural Health Information Hub, 2015). Remaining rural counties are left with the responsibility of maintaining resident health with limited funding placing a large burden on local residents and their social support networks to overcome barriers related to distance and transportation to access needed health care (Monahan, 2013).

1.1.3 Minorities and institutional racism

Institutional racism is a pervasive and systemic problem impacting rural minority elders. Minority racial and ethnic groups make up 45 percent of the total population in Georgia and Black individuals comprise 31 percent of all state residents (Kaiser Family Foundation, 2016). The historical context of being Black in Georgia often means that individuals have deeply,

negative, personal experiences in engaging with health care services as a Georgia resident over the life course. Institutional racism reflects disparities related to inherited disadvantage, differential access to services and goods and is further increased by inaction on the part of government or other authoritative bodies when action is needed (Jones, 2000). Accessing health services in Georgia for older Black individuals has often been associated with experiencing institutional barriers, poor or ineffective treatment, neglect, abuse, indifference, and lack of respect for minority patients in the form of discrimination when attempting to negotiate health systems during times of institutional segregation and in its aftermath (Jones, 2000; Rose, 2009).

Institutional racism and acts of discrimination inextricably unite environmental factors of the health care system and social factors related to race, strongly influencing how minority elders seek care (Andersen et al., 2002). This may also influence the micro-level when visits may involve negative interactions stemming from provider prejudices or racist beliefs (Hall et al., 2015; Tajeu et al., 2015). In rural Georgia with historical residential and health care segregation common, disparities are likely to be more prevalent. Due to long-standing disparities, distrust of providers may alter how Black elders negotiate health systems. Prolonging time between visits or avoiding medical treatments entirely may negatively contribute to the health of Black elders in Georgia. The inability to access local health care access will create an additional barrier among rural minority residents in maintaining access to services.

1.1.4 Importance of access issues

Limited access to health care resources may encourage missed opportunities for health care access and utilization, decreasing instances of interaction aimed at health monitoring and treatment efforts for many older Georgians. The decline in the proportion of younger residents' further limits transportation options as limited social support can lead to decreases in motivation

to seek treatment and maintain health (Gerst-Emerson, K., & Jayawardhana, J., 2015). The impact of limited transportation has been detailed to create up to a 50 percent rate of missed scheduled health care appointments even when hospitals are available, but access is limited simply due to transportation (Syed et al., 2013). Residential segregation continues to impact residents in rural communities with differences maintained through the social and economic resource differentials between Black and White communities. Black individuals who are considered poor tend to live among other Black individuals in locations with high concentrations of poverty with limited resources (Williams & Collins, 2001) decreasing the opportunities for accessing personal transportation despite the presence of younger individuals in the community. The compounding issue of CAH closings removes a lifeline in the community making the maintenance of seemingly routine care increasingly difficult for rural elders.

1.1.5 Current Policies and Program Initiatives

The need for policy makers to address issues of transportation and access to health care is critical. The Georgia Rural Hospital Association, the State Office of Rural Health and the Georgia Hospital Association have collaborated to establish intervention strategies to address the gaps created by rural hospital closings (Georgia Department of Community Health, Rural Hospital Stabilization Committee, 2016). This collaboration has resulted in the implementation of the Hub and Spoke Model, a pilot program currently in limited use in the Georgia counties of Appling, Crisp, Emanuel and Union (Georgia Department of Community Health, Rural Hospital Stabilization Committee, 2016). The Hub and Spoke Model involves the use of Telehealth, mobile health and routing and transporting of patients to specialized care when such services are deemed necessary. This is a pilot program treats health issues more comprehensively than

traditional ambulances, providing more advanced services in a mobile setting with the ability to transport when needed.

The main goals of mobile integrated Telehealth, as it is used in Georgia, is meant to ensure a reduction in overutilization of emergency departments in local hospitals by providing needed ambulatory care (Georgia Department of Community Health, Rural Hospital Stabilization Committee, 2016). Negative outcomes resulting from an inability to reach needed specialized care consistently can be better addressed through further evaluation of access to preventive and specialist health care services. Previous evaluation of telemedicine in Georgia reveals that patients in rural areas may not find value in accessing their specialist physician needs using telemedicine resulting in decreased access and utilization (Stachura, 2001).

While the Hub and Spoke Model provides a stop gap to recent closures, it does not fully address the impact of increased distance in reaching specialist services. Although the use of the Hub and Spoke Model may temporarily address access issues, it is a limited program with funding available for pilot implementation only (“Rural Hospital Stabilization Committee | Georgia Department of Community Health,” n.d.). Increased funding through the ACA supports the development of community health clinics and resources intended to meet the needs of underserved, rural, minority and poor individuals, simultaneously, local hospitals and clinics continue to close (Kunz & Atsas, 2013). The issue persists that permanent access to health care resources within rural communities is vital to provide necessary acute, ambulatory and specialized care to rural residents. Local government and local communities often lack support for many Federal funded mechanisms intended to provide support for enhanced preventive care and health education intended to enhance health care access and utilization for underserved individuals (Andersen et al., 2002; Kunz & Atsas, 2013; Smedley, 2012) As a result, the ability

to treat a variety of individuals in a range of areas will be imperative if access to quality care is to remain a priority for all Georgians.

1.1.6 Health care access in neighboring states

In states neighboring Georgia, health care access also remains an issue. Alabama residents have rates of heart disease and diabetes higher than the national average (Alabama Public Health, 2016). Current measures at increasing access are similar to those being used in Georgia which includes use of the Small Hospital Improvement Program plan (SHIP). A major component of this program is to assist hospitals to remain profitable through assistance grants (Alabama Public Health, 2016). Specifically the SHIP plan works to keep smaller hospitals open in an attempt to provide better hospital access in rural communities. While these efforts increase access, they do not guarantee access to more specialized services often needed by rural elders. Tennessee has similar issues with chronic conditions with 69 percent of residents defined as obese and 33 percent of residents having issues with high blood pressure (Harris, 2012). Rural counties in Tennessee have specifically noted issues among residents' accessing specialist providers due to both distance and location (Harris, 2012). Current state policy in Tennessee mirrors that of Alabama and Georgia with use of the SHIP plan and limited use of telemedicine to bridge current gaps in access.

1.2 Purpose of the study

Accessing health care in rural communities remains a key issue for older residents. Understanding the role that location of resources has on older Georgians' perception of access to health care resources is vital to develop strategies to increase access. Recent critical access hospital closings in Georgia create an acute need of further assessment in the area of geographic access to health care resources in Georgia. While quality of non-emergency, non-specialty

services are perceived as good by rural residents, patient bypass remains high, resulting from hospital closings, lack of specialist providers and distance to care (Baernholdt et al., 2014).

Extensive barriers exist related to geography, distance and transportation.

Institutional racism further impacts how older Black residents navigate the health system. Increased disparities in provider access, discrimination from providers when access to providers does exist and decisions to locate resources outside of communities comprised of primarily poor, Black residents increases disparate conditions among rural minority elders (Smedley, 2012). Evaluation of health care access assists in addressing compounding issues related to poor health outcomes and acceleration of chronic conditions resulting from access issues among Georgia's rural-dwelling older adults.

This study, framed by both institutional racism and Anderson's Behavioral Model of Health Services, examines perceptions of access to health care resources within the local communities of rural adults. The relative impact of age, race, income, and attitudes about community responsibility accessing on both perceived transportation barriers related and perceived access to quality health care will be assessed using multivariate logistic regression models. The overall goal of this study is to better inform state policymakers of resource gaps and perceived needs of older rural Georgians while extending our theoretical tools for examining these issues.

This thesis informs the reader by providing background information on the current state of policy and rural health services in Georgia (Chapter 1). A literature review further informs, while placing my study in the context of existing gaps in the literature resulting in my specific research objectives (Chapter 2). A summary of my methodology, including theoretical and conceptual framing and my study design are detailed in Chapter 3. An overview of the

descriptive and inferential findings is covered in Chapter 4 describing both the survey data and geospatial analysis. This is followed in Chapter 5 by a full description of the findings from the two logistic regression analyses and culminates with the conclusions and implications for policy drawn from my study (Chapter 6).

2 LITERATURE REVIEW

2.1 Scope of articles

The following literature review focuses on access to care as it relates to seeking quality health care, rural health care policy, health care utilization, location of services, factors related to distance, time and the type of services offered that may affect older adults' perceptions of access to quality health care within their local communities. Articles related to access to insurance, the economics of health care or specifics on rural health care disparities were excluded from this literature review.

2.2 Summary of the literature

Rural elders are more likely than other groups to use rural hospitals. Major issues impacting access include availability of specialty care, transportation issues, and issues of perception of the quality of care that is available in rural areas.

Geography has a great deal to do with access to health care for rural older adults. Access to specialists has a strong impact on older individuals' perceptions of access to care (Mobley and Basu 2010; Remington et al. 2015). While transportation is an issue for many older adults, transportation is uniquely challenging for older rural adults because of long distances and lack of providers within communities. Low income, rural-dwelling older residents are likely to have family members with similar income status, making it difficult to provide transportation when

the need arises for the most vulnerable older adults (Park et al., 2010). Further, non-driving, older individuals are likely to depend on younger, employed family members to provide transportation, often limiting their availability to medical appointments after their workday ends (Syed et al., 2013). Rising operating costs and overutilization of emergency departments by older residents using emergency transport as a primary transportation method has further extended issues related to the financial viability of local hospitals (Greenwald et al., 2014). Finally, the lack of public and private transportation options is especially evident within rural communities (Escarce & Kapur, 2009; Syed et al., 2013).

Perceptions of poor quality care and lack of specialty providers in local communities affects residents' perceptions of access to services and their health care seeking behaviors. Influencing this further is the impact of resource ranking of local health care resources (e.g., smaller rural hospitals and CAHs) by rural residents leading to bypass of local resources when residents assess resources as being superior in neighboring communities (Liu et al, 2007; Mobley and Basu, 2010; Remington et al., 2015). Older adults are further limited in accessing basic preventive services for ambulatory conditions including diabetes and heart disease due to barriers of distance and transportation causing delays in access and utilization (Arcury et al. 2005; Buzza et al., 2011; Syed et al., 2013). Distance to providers further contributes to delaying use of services until after conditions have become severe, impacting daily function and requiring more expensive supports and medical treatment (Chan et al., 2006; Gessert et al. 2015).

Health insurance access does not necessarily ensure the ability to access health care resources (Arcury et al., 2005; Basu and Mobley, 2010; Zhang et al., 2003). While older adults have access to Medicare coverage, the health status of older adults in rural communities is negatively impacted by existing spatial relationships between rural residents and health care

resources (Arcury et al., 2005; Buzza et al. 2011; Chan et al, 2006; Graves, 2009; Mobley 2006). Increased distances limits timely use of services. Serious delays in access are especially evident when older adults lack a driver's license and/or access to a vehicle (Mobley and Basu 2010; Remington et al. 2015). Minorities in rural areas with lower socio-economic resources continue to experience increased barriers related to racial residential segregation and greater distance to providers – resulting from both rural location and hesitation by providers to locate resources in rural areas that are likely to be areas of concentrated poverty (Williams & Collins, 2001).

2.2.1 Perceptions of access to care and provider type

Rural elders often delayed care for persistent symptoms and were more likely to delay visiting health providers until symptoms severely limited their ability to function daily without assistance. Chan et al (2006) also find that rural patients utilize care less due to increased time and distance to access care, resulting in significantly higher proportions of ambulatory care sensitive conditions (ACSC) in rural communities. These conditions are preventable conditions including complications from diabetes or high blood pressure that can be managed with effective preventive care in an outpatient or clinic setting (Nayar et al., 2012). Escarce and Kapur, 2009 found that individuals with Medicare are less likely to use rural hospitals, but go on to note that older rural individuals are more likely to use rural hospitals than younger individuals. This may mean that issues of poor access could increase as the population ages.

Sustained barriers in accessing health care are more likely to result in more severe symptoms requiring extended inpatient treatment and necessitates more extensive care once health care services are finally accessed (Chan et al., 2006; Gessert et al., 2015; Naylor et al., 2015). Naylor et al. 2015 recommended that an all-encompassing public health model be used to address diverse needs among older adults in a more streamlined manner. Further, rural residents

age 65 years of age and older were considered to have the best access to care when measuring 'usual source of care' and 'usual place of care' (Zhang P, Tao G, & Anderson LA, 2003). As such, future research should work toward better determining how diverse groups of older rural residents define good access to health care within their local communities and usual sources of care and how these local definitions differ among rural older adult residents.

With particular attention given to how emergency departments are used, Greenwald et al. (2014) evaluated trends in short term hospital stays by geriatric patients initiating in the emergency department. Their analyses indicated that 42 percent of all hospitalizations occurring between 1990 and 2010 initiating in the emergency department were by older adults age 65 and older. These results support previous findings in other studies, noting delays in accessing care among rural elders and decline resulting from untreated ACSCs leading to utilization of care after symptoms have become persistent and require emergency measures and advanced care (Chan et al. 2006; Gessert et al. 2015). After adjusting for health, personal characteristics and distance, researchers note that a significant association existed between accessing care and transportation characteristics with individuals in possession of a license having twice the number of regular and chronic care visits when compared to individuals without a license (cite?). Findings promote the need for further research of transportation's impact on access and the role of vehicle ownership among different groups of rural residents to determine next steps.

(Liu et al., 2007) examined the prevalence of rural residents choosing to bypass local critical access hospitals and what factors were most likely to impact that choice. Overall 60.1 percent of respondents bypassed the local critical access hospital with the most common reason given for bypass being lack of needed services at their local CAH. In this study, over half of bypassers noted a lack of specialty services as their reason for bypass. These findings are

consistent with results noted in later studies that bypass of the local CAH is due to poor reputation and perceived quality of care as noted by individuals age 65 and older (Escarce and Kapur 2009; Liu et al. 2008). In contrast, Mobley and Basu (2010) noted an increase in patient retention locally when specialty services are provided where patients live. Next steps should better determine how rural residents determine quality when comparing resources in neighboring communities. What role does race have in determining quality of care within rural communities? Analysis should include whether the presence of specialty providers influences their views of local resources or how they rank local resources prompting them to seek better care further away.

2.2.2 Impact of distance and location of health resources on utilization

Chan et al. (2006) conducted their study with the purpose of analyzing patients in rural counties and specifically how Medicare beneficiaries in different states access ambulatory care. Results indicate that rural residents have increased travel time and distance to receive care with less utilization. Findings are consistent with later studies that note lower utilization among rural elders (Li et al. 2009; Gessert et al. 2015). Results extend earlier research conducted by Zhang et al. (2003) which noted high levels of insurance access while gaps remain in access to primary and specialist services by rural elders. Several studies conclude that retention of older patients in local health markets exists when local hospitals provide specialist care, are deemed to have overall quality care and are located close to where rural elders live (Mobley and Basu 2010; Graves 2009; Remington et al. 2015). Additional research should work toward determining how these relationships are impacted by demographic variables such as race or age. This could inform the effective targeted intervention strategies and policy solutions to address gaps in perceived access.

2.3 Results of review – limitations and gaps in the literature

Current literature provides some insight into existing access problems for rural adults but does so with little attention paid to how access problems are conditioned on age, race and transportation access. While distance, geographic location, resource ranking, lack of specialist providers and existing gaps in insurance and access are mentioned, little is provided on assessing key determinants of access for specific groups of older adults. Also, vehicle ownership and access to reliable transportation is noted as a benefit in accessing health services and in maintaining health among individuals, but research has not fully described the role it plays in perceived health access. Better integration of social and caregiving variables in the literature is needed in assessing access issues within rural communities; due to potentially increased roles of family and social supports to provide care and transportation assistance when location acts as a barrier to accessing additional resources. Demographic variables are a key factor, providing necessary context for which intervention or policy strategies are most effective in improving perceived health care access among older adults in Georgia.

2.4 Next steps and research

My research seeks to extend the current literature analyzing survey data collected from rural dwelling older adults residing in Georgia counties. This study, framed by both institutional racism and Anderson's Behavioral Model of Health Services, examines rural adult's perceptions of access to health care resources. Further, I assess the relative impact of age, race, income, barriers accessing local doctors/providers on both perceived transportation barriers related and perceived access to quality health care using multivariate logistic regression models.

Existing views of perceived access is imperative if resource planning and social policy is intended to fully address the needs of a growing population of older adults in Georgia. My specific research objectives are as follows:

2.5 Research Objectives

2.5.1 Research Objective 1

Describe rural adults' perceived access to health care resources and identify any differences in these perceptions by age, race, education and income, community attitudes on ensuring access to health care and views on supporting efforts through funding to ensure access to quality health care.

2.5.2 Research Objective 2

Describe and map the geospatial location of health care resources including primary and specialty services, demographic and socio-economic resources across rural counties in Georgia.

2.5.3 Research Objective 3

Assess the relative impact of age, race, income, taxpayer responsibility, role of city/county government, government/community responsibility for access to quality care locally, socio-economic resources and availability of health care resources on transportation barriers and perceived access to health care.

3 METHODOLOGY

3.1 Theoretical framework guiding research

Andersen's Behavioral Model of Health Services (Andersen, 1995) will guide this analysis with emphasis placed on attributes related to location. This model places emphasis on

environmental and social factors that enable or impede the ability to effectively access and utilize health resources (See Figure 1). In addition, geographical distance from health resources creates multiple burdens especially for lower SES and minority rural residents. Health care resources are often located in distant locations when compared to that of lower SES White individuals adding to the existing distance barriers to resources experienced by many rural residents due to concentrations of poverty being more likely among minority residents with decisions made to locate health care resources in more viable communities (Andersen et al., 2002; Smedley, 2012; Williams & Collins, 2001). Further, systematic institutional racism has historically limited provider availability for many rural residents particularly predominately Black communities (Jones, 2000).

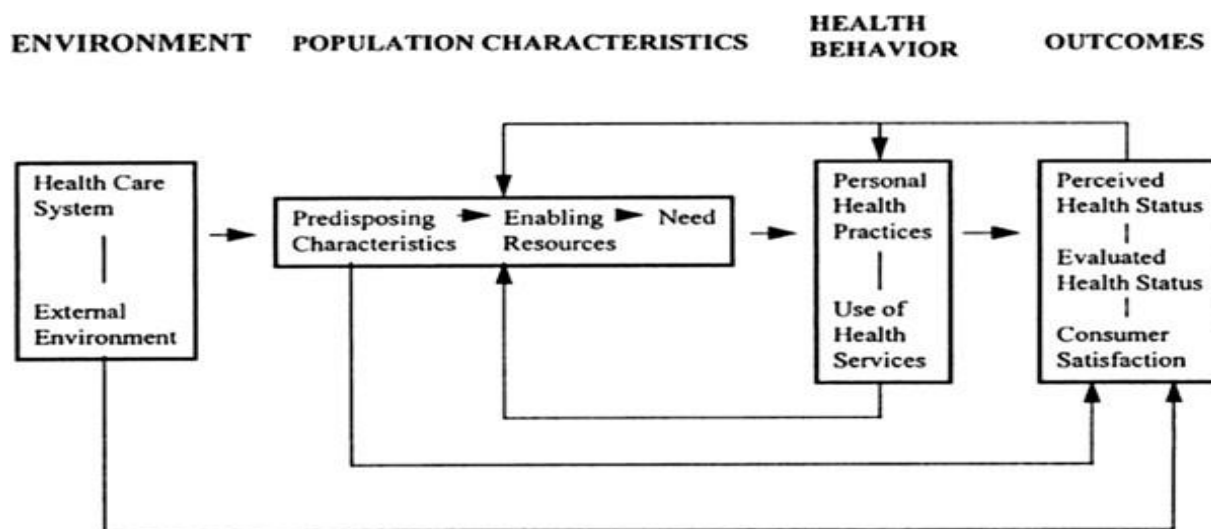


Figure 1. An Emerging Model - Phase four of the Andersen Behavioral Model - Source: Andersen 1995. Copyright 1995 by Journal of Health and Social Behavior

Institutionalized racism (Macro)	Personally mediated racism (Mezzo and Micro)	Internalized Racism Mediated (Micro)
<ul style="list-style-type: none"> ➤ Initial historical insult ➤ Structural barriers ➤ Inaction in face of need ➤ Societal norms ➤ Biological determination ➤ Unearned privilege 	<ul style="list-style-type: none"> ➤ Intentional ➤ Unintentional ➤ Acts of commission ➤ Acts of omission ➤ Maintains structural barriers ➤ Condoned by societal norms 	<ul style="list-style-type: none"> ➤ Reflects systems of privilege ➤ Reflections societal values ➤ Erodes individual sense of value ➤ Undermines collective action

Figure 2. Jones' Levels of Racism Framework - Source: Jones (2000), American Journal of Public Health, 90, (8), 1212-1215

A conceptual model based on phase four of the 'emerging model' of Andersen's Behavioral Model is used in this study (Andersen, 1995) in addition to the macro level, structural barrier component of Jones's 'Level's of racism' theoretical framework (Jones, 2000) . The model focuses on predisposing characteristics, environmental factors, structural barriers and enabling or impeding influences on health services use (Andersen, 1995; Jones, 2000). SES characteristics are analyzed for how they act as enablers in individuals' engagement with health systems. Institutional racism within health systems provides a need for analyzing both race and geography within Andersen's emerging model to assess possible differences among Black elders in rural communities when compared to other rural residents (Smedley & Myers, 2014).

The role of geography on the distance to health care and on health services use and outcomes has been identified for further study in recent literature. Specifically, support to develop a theoretical framework integrating geographic information systems (GIS) with Andersen's emerging model to assess geography as an impediment or enabler to health services

use (Graves, 2009; Honda K, 2004). Additional work utilizes the emerging model to detail SES characteristics in micro-level exchanges between patients and physicians that influence how individuals engage with health systems and overall utilization of health care (Honda K, 2004). In this study, aspects of the emerging model will guide analysis of SES and geographic variables to determine how they may act as barriers to access and to assess how these variables may theoretically influence perceptions of access.

Descriptive analysis including variables on age, race, income, barriers accessing local doctors/providers, barriers of vehicle/distance, taxpayer responsibility funding local hospitals, role of city/county government ensuring access to health care and primary responsibility in ensuring access to quality care (see Research Objective 1).

3.1.1 Proposed conceptual model

The following conceptual model assumes that environmental, predisposing and enabling characteristics from Andersen's Emerging Model are strong influencers on barriers and significant in influencing need when individuals seek care. These aspects are merged with the macro, mezzo/micro and micro levels of Jones' framework specifically merging the macro level with environmental/structure, meso/micro level with environmental/personally mediated, and micro with predisposing and enabling characteristics. Macro-level variables to be assessed include distribution of health care resources, taxpayer responsibility and the role of the government in ensuing access, meso/micro-level influencers contain personal views of community and personal assessment of local health care and community resources. Taxpayer, community and government variables are used to further assess how each acts as an influencer on how resources are perceived and experienced need for individuals accessing doctors and

health care services. Micro-level influencers of age, race and income being key characteristics in determining how health care resources are perceived and accessed.

Specific pathways include examining the significance between the environmental, predisposing and enabling characteristics influence on individuals' experiences and perceived barriers and resulting need. Assessment include stated views of the role of government in enhancing health care access, how community support is viewed by individuals experiencing barriers to health care, differences in how different age groups view resource access within the community and whether associations between barriers and age have significant differences. Primary goals are to observe the relationship between macro level variables of environment/structure including community support/taxpayer responsibility and how individuals experience access to health care when examining responses related to barriers according to predisposing and enabling characteristics including race, age, and income to determine their influence on how barriers are experienced.

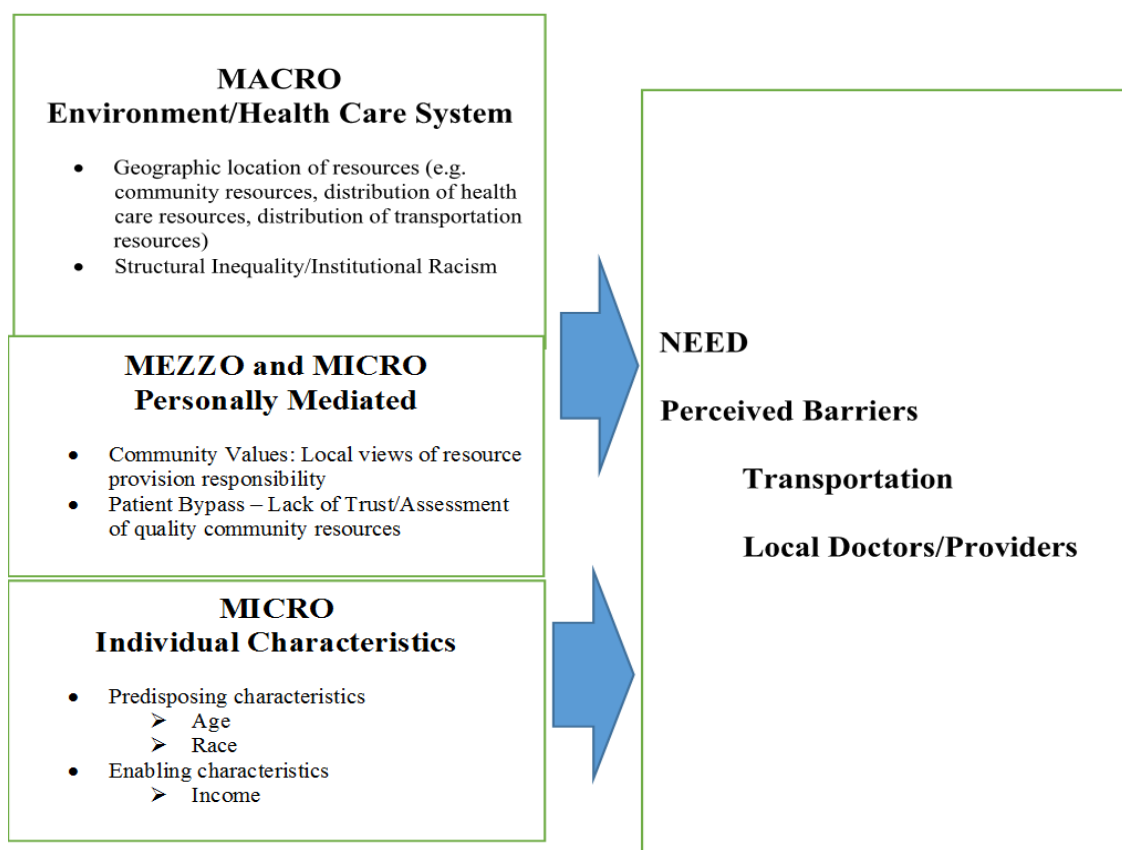


Figure 3. Conceptual model - Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University

Goals of this exploration include determining the prevalence and variability of independent variables throughout the state and assessing which areas (rural, urban, exurban) are likelier to have fewer resources. Once this descriptive analysis is performed, a multivariate model will be developed to assess the relative impact of the independent variables on perceived access to health care (See Research Objective 2).

3.1.1.1 Health care Georgia Foundation Rural Health Issues Poll 2

The Rural Health Issues Poll 2 survey was conducted among rural Georgia registered voters during February 2015 via landline telephone calls with phone calls made during evening hours. The survey used a blended sample, mixed mode sampling method and is weighted for

race, gender, age and political affiliation using 2014 general election voter statistics provided by the Georgia Secretary of State. Rural Health Issues Poll 2 was conducted from February 11th – 13th 2015 and is composed of 491 respondents. The survey has a confidence interval of 95 percent. HCGF Poll 2 includes variables that assess local attitudes toward health care access, perceptions and demographic characteristics that enable it to provide more complete analyses in addressing the proposed research questions used in this project. Health care Georgia Foundation (HCGF) poll 2 uses the United States Department of Agriculture (USDA) Economic Research Service (ERS) definition of rural which includes areas located outside of the boundaries of metro areas (Cromartie and Parker, 2015). This includes both micropolitan areas comprised of non-metro labor market clusters of 10,000-49,999 people and all remaining counties that are non-core counties defined as not part of a core based metro or micro area (Cromartie and Parker, 2015). While HCGF data is not collected on a county level it does include opinions of Georgians residing in rural counties according to USDA ERS definitions. Strengths of using this data include the ability to assess the perceptions of a local rural population; as rural populations are diverse based on location differences, use of HCGF survey data allows for more precise analyses within rural adult respondents.

3.1.1.2 2010 Decennial Census and 2010 Economic Census

Spatial analyses will be conducted using county level census data sourced from the U.S. Census American Fact Finder and include the 2012 Economic Census and 2010 Decennial Census. Use of this data will help to establish how location of health care resources, access to transportation and age impact how older rural Georgians perceive access to health care resources. Shape files for the State of Georgia, providing county level boundaries, will be accessed using U.S. Census resource Tiger Line. NAICS information sourced from the 2012 Economic Census

Data with the 2010 Census will be used to provide specific data related to age, population and all health care facilities within each county.

Analysis will be conducted using ‘selection by variable’ attributes to determine which counties have populations with 20 percent or more individuals age 65 or older. Ratio of health care facilities to residents in each county will be determined while population density will be assessed on a county level. Again, this will provide information on the type and number of facilities available in counties that are determined to have higher percentages of older adults as a segment of the population. All spatial analyses will be conducted on a county level using ARC.GIS 10.3.

3.1.1.3 Research Objective 1

‘Describe rural adults’ perceived importance of access to health care resources and identify any differences in these perceptions by age, race, income, ‘views of taxpayer responsibility in supporting local hospitals’, ‘views on the role of city/county government providing health care services’ and ‘views on primary responsibility in ensuring local access to quality care’.

‘Age’, ‘race’, ‘income’, ‘views of taxpayer responsibility in supporting local hospitals’, ‘views on the role of city/county government providing health care services’ and ‘views on primary responsibility in ensuring local access to quality care’ variables are the independent variables with ‘experienced barriers of transportation/distance in accessing health care services’ as the dependent variable. The dependent variable ‘experienced barriers of transportation/distance in accessing health care services’ is a one item ordinal measure with 0 = ‘no difficulty in getting health care services’, 1 = ‘transportation/distance is a barrier in getting health care services’. Race variables will be selected for all individuals identifying as ‘White’ or ‘Black’ with remaining cases omitted from the analyses. This will result in 15 fewer cases.

Each dependent variable will be recoded as dichotomous with ‘yes’ = ‘1’ and ‘0’ = ‘no’.

‘Income’ will be coded as a continuous variable with any missing values coded as median income.

Responses will be analyzed with hypotheses that significant relationships exist between the variables ‘age’, ‘income’ and ‘race’ with the dependent variable. Similarly, significant associations are hypothesized to exist between the variables ‘views on taxpayer responsibility in supporting local hospitals’, ‘views on the role of city/county government providing health care services’ and ‘primary responsibility in ensuring local access to quality care’ and experiencing barriers related to distance transportation with individuals who respond ‘yes’ to experiencing transportation/distance barriers being more likely to have views that support taxpayer support of local hospitals, support local government’s involvement in ensuring access to health care and support for ensuring access to local quality care Chi square analyses will be used to conduct this analysis with independent t-test used depending on the level of measurement of the independent variables. An alpha .05 will be used to determine significance in the association between variables.

3.1.1.4 Research Objective 2

‘Describe and map the geospatial location of health care resources including primary and specialty services, demographic and socio-economic resources across rural counties in Georgia’.

‘Age of individuals’, ‘race of individuals in each county’, ‘total population’ variables are used to determine the demographic characteristics of each county with ‘number of health care facilities’, ‘providers’ within each county used to determine the county-level presence of resources across rural counties in Georgia. Spatial analysis will be conducted using ‘selection by

variable' attributes to determine county-level demographic characteristics and resource allocation across rural counties in Georgia.

3.1.1.5 Research Objective 3

'Assess the relative impact of 'age', 'race', 'income', community demographic and socio-economic resources and availability of health care resources on perceived access to health care.'

Binary logistic regression will be used to conduct this analysis. The purpose of using this analysis is to determine the impact of each variable in both models on the likelihood to experience barriers related to transportation/distance and barriers in accessing local doctors/providers. Factors that strongly influence experiencing barriers related to accessing local doctors or transportation/distance can be determined and recommendations provided to address these influences. The logistic regression models were estimated using maximum likelihood estimation (IBM SPSS Statistics v.22, 2016). Because significant amounts of missing data were limited to the income variable, we used listwise deletion of missing data and simple mean imputation for income. Models were run with and without mean imputation to be sure there were no substantive differences between models. Two models will be estimated to determine the relative impact of each independent variable on perceived access/transportation as a barrier. Independent variables used in the analysis will include 'Age', 'race', 'income' in addition to 'views of taxpayer responsibility in supporting local hospitals', 'views on the role of city/county government providing health care services' and 'views on primary responsibility in ensuring local access to quality care.' All variables will be coded as dichotomous with '0 = no' and '1 = yes'.

3.1.2 Description of Variables

Variables in this analysis will include ‘age’ which is dummy coded as three different groups: Age = 45-64 and Age =18 – 44 with over 65 as the reference category. ‘Race’ is coded as ‘1 = White’ and ‘0 = Black’, ‘income is used as a continuous variable from lowest to highest salary coded as 1-6 with 1 indicating the lowest salary with the mean imputed for missing cases. ‘Barriers to accessing local doctors/providers’ and ‘barriers of transportation/distance in accessing health care services’ are each coded ‘0= no barriers’ and ‘1 = barriers exist’. While there is no one measure for vehicle ownership the variable, ‘barriers of transportation/distance in accessing health care services’ will be used to assess vehicle ownership/access to a vehicle in the descriptive and regression analysis. In the spatial analysis, ‘Total population’ and ‘age of individuals in each county’ are composed of county-level data sourced from the 2010 U.S. Decennial Census. ‘Health care providers and services’ data is sourced from the 2012 Economic Census. Remaining variables are sourced from the Health care Georgia Foundation Rural Health Issues Polls 2.

4 FINDINGS

4.1 Spatial analysis

4.1.1 Facility service capacity in counties with older populations

Figure 4 includes a map encompassing the population density and a determination of the ratio of health care facilities to residents in each Georgia County. Analysis indicates that older Georgians age 60 and older make up higher percentages of the population in counties that are usually referred to as rural counties. Further assessment indicates the potentially high demand for services within these particular counties.

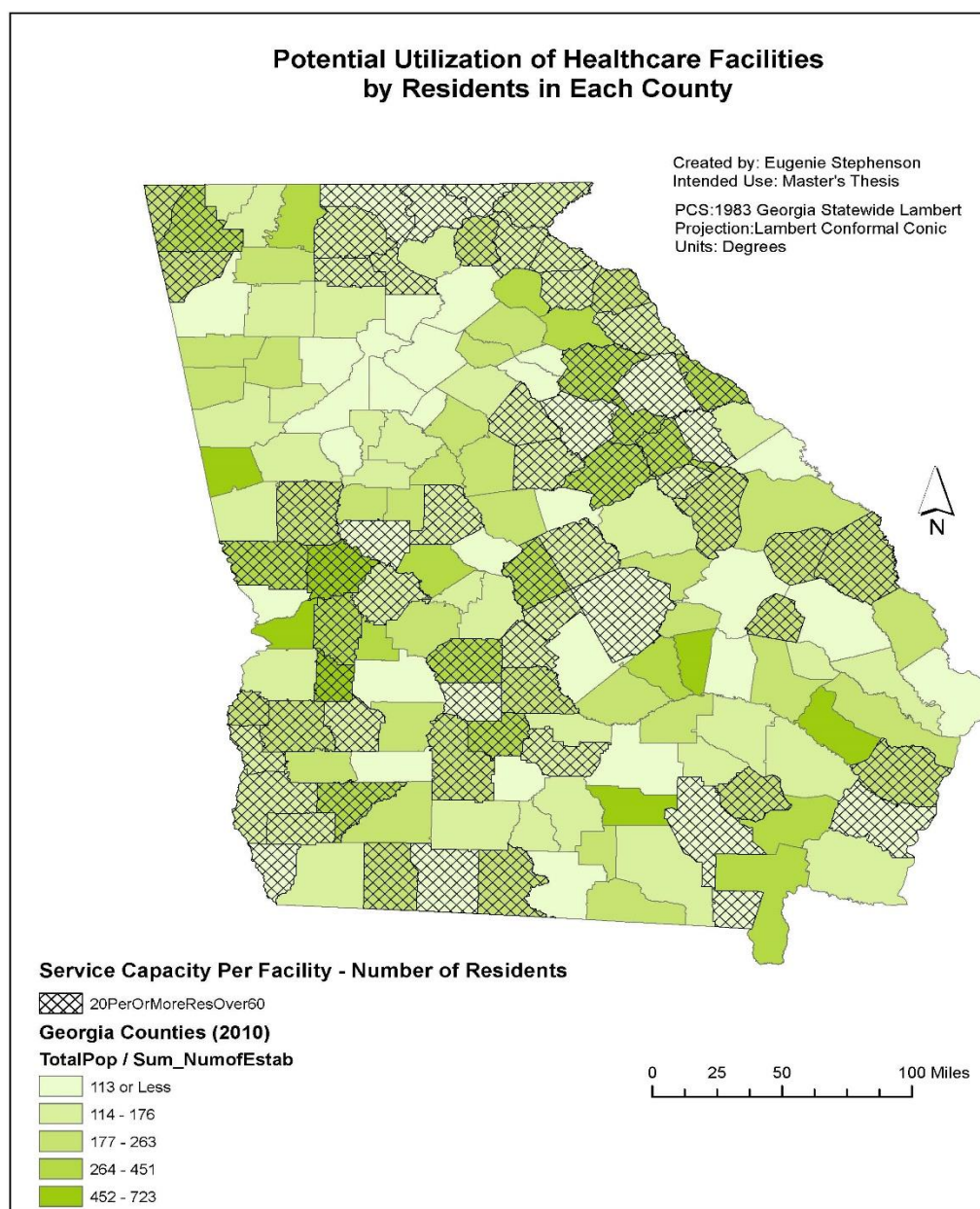


Figure 4. GA H.C. Facility - Service Capacity Map. Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University

4.1.2 Overall population density of all Georgia Counties

Figure 5 includes a map identifying the overall population density of all Georgia counties. This map is representative of the relative pooled density within the area around the Atlanta/Marietta/Sandy Springs MSA. While overall state population is located in this area the

rural location of many older Georgians lies far outside this region and within the lighter shaded areas indicated on this map. Many of the counties in this map with higher population density do not include high percentages of older adults, meaning that older Georgians located outside this general area are at risk of not being included in planning efforts that tend to target the more densely populated areas of Georgia.

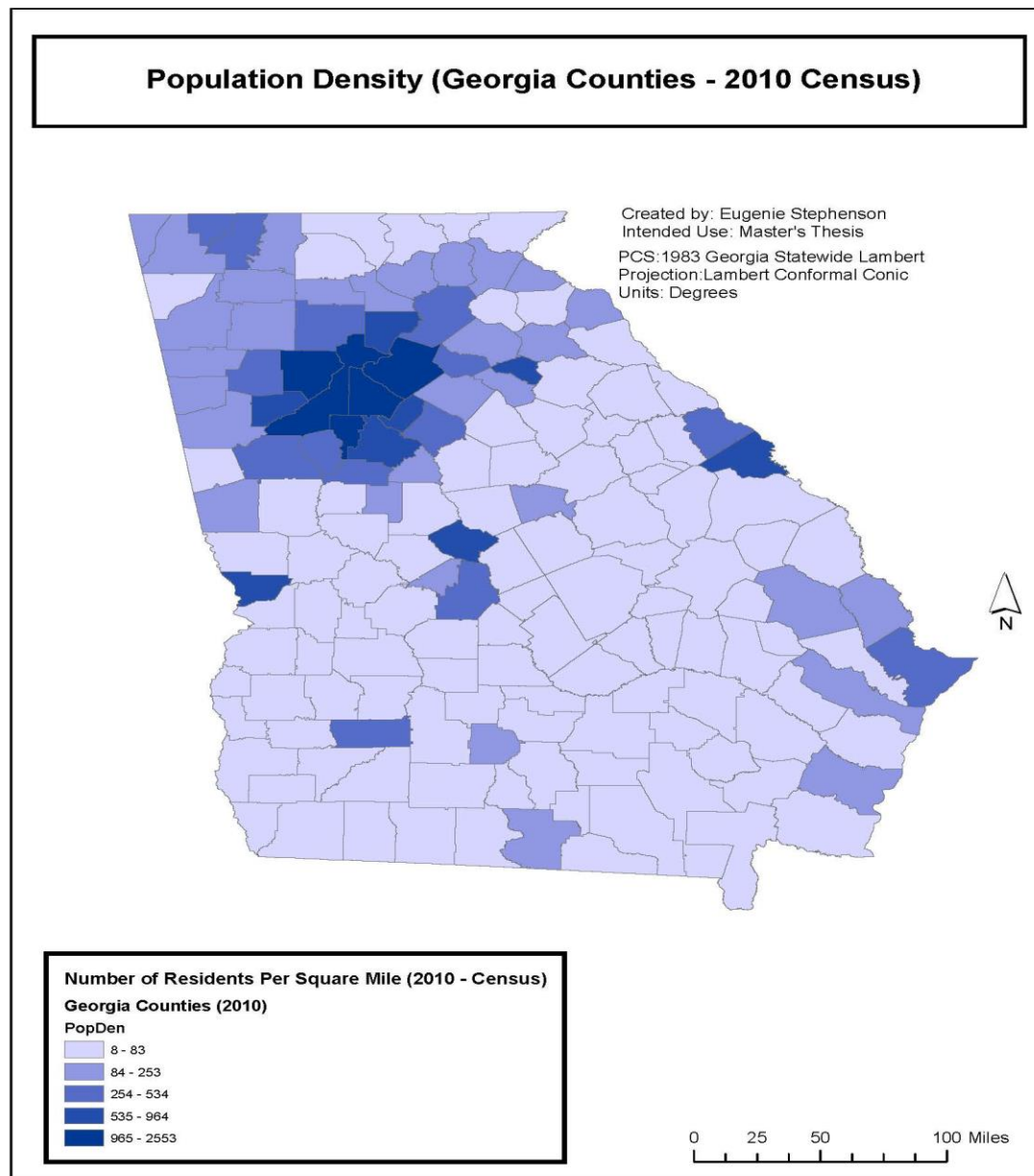


Figure 5. Number of Residents - Per Square Mile – Georgia Map. Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University

4.1.3 Older Georgians and where they live

Figure 6 includes a map identifying where older Georgians reside throughout the state and the make-up of their counties of residence. While similar to map one, this map focuses on locating all older Georgians and not just older Georgian's residing in counties with higher concentrations of older residents.

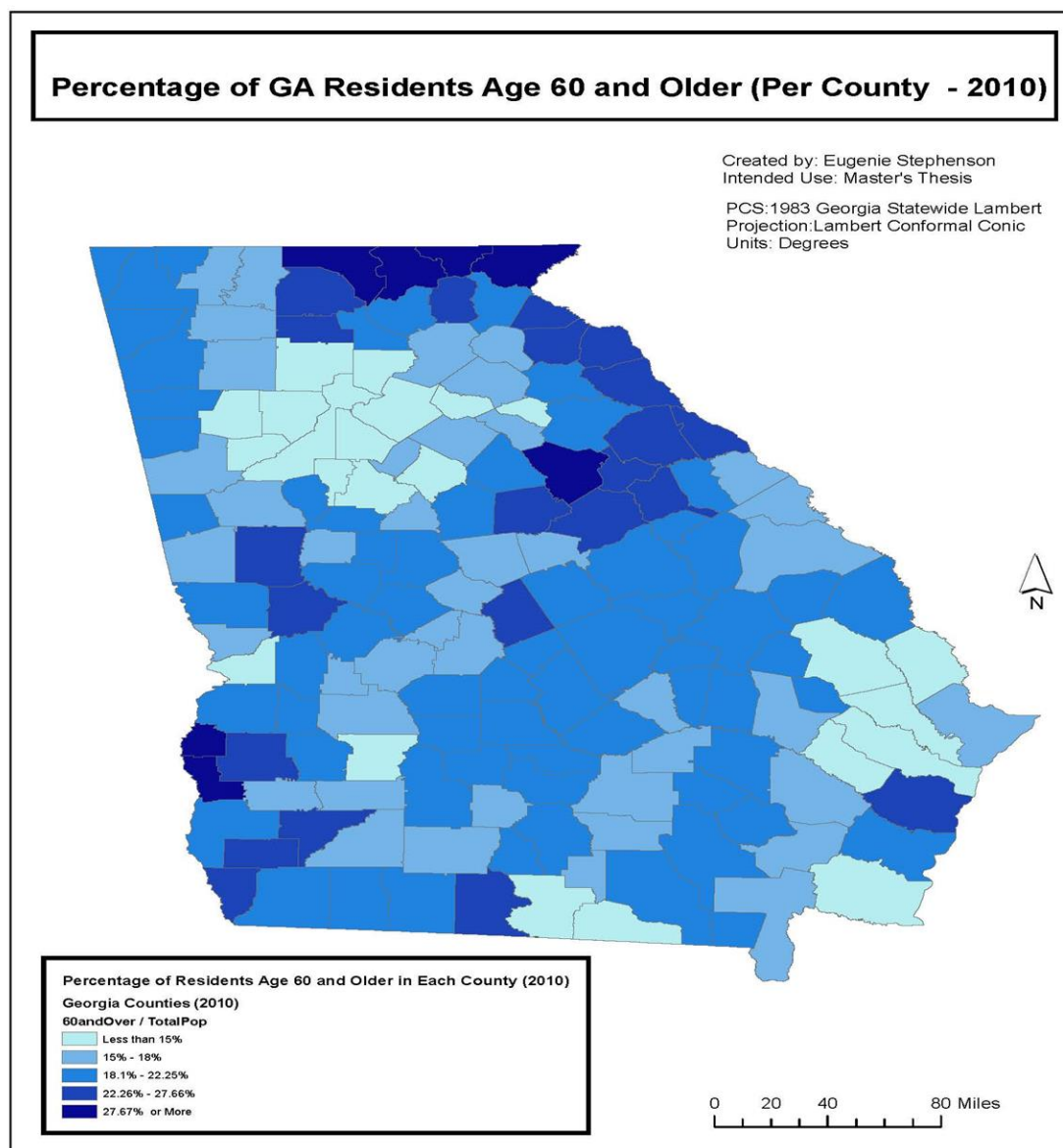


Figure 6. Percentage of GA Residents Age 60 and Older - Per County Map. Source: Eugenie Stephenson - Thesis project. Copyright 2016. Georgia State University

4.2 Descriptive and Inferential Analysis

An overview of the descriptive findings is provided covering both the survey data and geospatial analysis. Chi-square and regression analysis are used to conduct descriptive and inferential analysis of the data with binary regression used to develop models intended to determine the impact of variables on experienced barriers. Geospatial analysis is used to provide a visual analysis of older Georgians and the resources available within specific communities.

4.2.1 Complete table of variables

Table 1 includes details on all Health care Georgia Foundation Poll 2 variables used in this study to provide analyses

Table 1. Complete table of variables used in the descriptive analysis

Dependent Variables

Thinking about your own personal experience, have you faced any of the following barriers in accessing health care services: '1 = 'yes' 2 = 'no'

Barrier - accessing local doctor/provider

Barrier - vehicle/distance

Environmental factors

Do you think taxpayers should be responsible for covering the costs of hospitals and essential services in local communities?

'1 = 'yes' 2 = 'no'

What do you believe is the most important role of your city or county government in providing health care services in rural areas of the state?

'1 = 'yes' 2 = 'no'

Funding

Oversight

Policy

Direct Services

Which of the following is primarily responsible for ensuring local access to quality care?

'1 = 'yes' 2 = 'no'

Local Government

State Government

Federal Government

Private Sector

Community

Population characteristics – predisposing characteristics

Age – 1 = ‘18-44’, 2 = ‘45-64’, 3 = ‘65 and over’

18 - 44

45 - 64

65 and over

Race – Black = 0, White = 1

Black

White

Population characteristics – enablers

Income – Annual (1= lowest to 6= highest) ‘Median income’ = \$56,860

0 – 15k

16-30k

31-50k

51-75k

76-120k

Over 120k

4.2.2 Perceived importance of accessing health care access variables

Table 2 lists frequencies for variables related to the perceived importance of accessing health care (See below). The table includes the frequency of each ‘yes’ response and the valid percent for each variable. Each variable is dichotomous with only ‘yes’ responses listed in this table. Of all individuals surveyed, 70 percent identified supply barriers in accessing a local doctor or other health care provider. Among the same sample only 16.9 percent identified barriers with access to a vehicle and distance to accessing health care services in or near their community.

Table 2. Frequencies of Perceived Importance of Access to H.C. Variables

Dependent Variables (N = 476)	Percent (Yes)
Barriers – Lack of doctors/providers	30
Barriers – Distance/transportation	16.9

Note. Table includes ‘yes’ responses of individuals identified as Black or White, age 18 years and older from all income levels residing in rural Georgia counties. All variables are recoded as 1 = ‘yes’ 0 = ‘no’ for each question in this table.

4.2.3 Environmental variables

Tables 3 and 4 include details of rural Georgian’s responses on environmental variables including the responsibility of taxpayers in ensuring responsibility to health care services, the role of government and which level of government has a responsibility to ensure access to health

care services. Of individuals surveyed there were low levels of support for all environmental variables with the lowest level of support related to views that the Federal government should have a primary responsibility in ensuring local access to quality care with only 11.2 percent of individuals providing a ‘yes’ response. Highest levels of support were provided in response to the role of city/county government in ensuring access to care at 27.8 percent, belief that the private sector has a primary responsibility in ensuring access to quality care at 28.2 percent and views that the role of city/county government is to ensure access to quality care through policy at 35.8 percent.

Table 3. Frequencies of MACRO-level

Environmental/structural variables (N = 476)	Percent (Yes)
Role city/county government provide Healthcare in rural areas	
Funding	27.8
Oversight	22.1
Policy	35.8
Direct Services	14.3

Note. Table includes analysis of ‘yes’ responses of individuals identified as Black or White, age 18 years and older from all income levels residing in rural Georgia counties. All variables are recoded as 1 = ‘yes’ 0 = ‘no’ for each question in this table.

Table 4. Frequencies of MEZZO-level

Environment/community variable (N = 476)	Percent (Yes)
Taxpayer responsibility- Hospital costs rural areas	18.8
Responsible - ensuring local access to Q.C.	
Local Government	20.2
State government	20.7
Federal government	11.2
Private Sector	28.2
Community	19.7

Note. Table includes analysis of ‘yes’ responses of individuals identified as Black or White, age 18 years and older from all income levels residing in rural Georgia counties. All variables are recoded as 1 = ‘yes’ 0 = ‘no’ for each question in this table.

4.2.1 Predisposing and enabling variables

Rural Georgian's responses to predisposing and enabling variables including the age, race and income of each individual are summarized (Table 5). The majority of respondents are age 45-64 comprising 42 percent of all respondents. This is followed by individuals age 65 and older at 38 percent and individuals age 18-44 at 19.9 percent. Racial background of respondents are 78.3 percent for individuals identifying as 'White' and 21.7 percent for respondents identifying as 'Black' Most respondents indicate income of 31-50k per year, with 29.8 percent of respondents indicating this choice. This is followed by individuals with income between 16-30k at 19.7 percent and 0-15k per year at 16.9 percent. Missing values are imputed at the median income level.

Table 5. Frequencies of MICRO-level

Predisposing and enabling characteristic variables (N = 476)	Percent (Yes)
Age 18-44	19.9
Age 45-64	42.0
65 and older	38.0
Race – White	78.3
Race – Black	21.7
What is your household income per year?	
0 – 15K	16.9
16-30K	19.7
31-50K	29.8
Median	1.6
51-75K	12.5
76-120K	15
76-120K	4.5

Note. Independent variables are grouped to determine association by both group and individual characteristic on the dependent variable. All variables are recoded as 1 = 'yes' 0 = 'no' for each question in this table.

Table 6 examines the significance of the relationship between perceived access to a local provider and environmental variables are analyzed using chi square tests to determine whether a

significant relationship exists between variables. Results indicate significant associations between the dependent variable and many environmental variables, significant at $\alpha \leq .05$ (See Table 6). Of particular note, the survey question indicating that respondent feels it is the local government's responsibility to ensure access to quality care is associated with individuals perceiving barriers on the supply side. Likewise views associations exist between barriers to accessing a local provider and 'yes' responses that the 'Private Sector' is responsible for ensuring access to quality care. Further, the variable 'Federal Government' is primarily responsible for ensuring access to quality care' was associated with the perception that there were supply barriers.

Table 6. Complete Table of Variables Used in the Analyses

	Local Provider Access (N = 476)			Transportation/Distance to H.C (N = 476)		
	Barrier	No Barrier	χ^2 /T-test	Barrier	No Barrier	χ^2 /T-test
Environmental Variables						
Taxpayer Responsibility- Hospital Costs % Yes	9.1	77	$\chi^2(1) = 12.75^*$	25	17.4	$\chi^2(1) = 2.51$
Role of City/County Gov. to Provide H.C. Services % Yes						
Funding	47.9	18.8	$\chi^2(1) = 41.42^*$	30	27.3	$\chi^2(1) = .24$
Oversight	13.4	26	$\chi^2(1) = 9.11^*$	8.8	24.7	$\chi^2(1) = 9.8^*$
Policy	31.7	37.5	$\chi^2(1) = 1.45$	47.5	33.3	$\chi^2(1) = 5.77^*$
Service Provision	6.3	17.9	$\chi^2(1) = 10.65^*$	13.8	14.4	$\chi^2(1) = .03$
Responsibility to Ensure Access to Quality Care % Yes						
Local Gov.	31.7	15.3	$\chi^2(1) = 16.35^*$	31.3	17.8	$\chi^2(1) = 7.43^*$
State Gov.	17.6	22.1	$\chi^2(1) = 1.21$	38.8	17	$\chi^2(1) = 19.08^*$
Federal Gov.	14.1	9.8	$\chi^2(1) = 1.83$	14.8	10.6	$\chi^2(1) = 1.21$

Private Sector	19	32.2	$\chi^2(1) = 8.50^*$	0.0	34	$\chi^2(1) = 37.91^*$
Community	17.6	20.6	$\chi^2(1) = .54$	15	20.6	1.33
Predisposing Variables						
Age %						
18-44	20.3	20.4	$\chi^2(1) = .001$	16.3	21.2	$\chi^2(1) = 1.01$
45-64	45.8	39	$\chi^2(1) = 1.87$	35	42.2	$\chi^2(1) = 1.42$
65 and over	33.6	40.4	$\chi^2(1) = 1.99$	47.5	36.4	$\chi^2(1) = 3.5$
Race %						
White	79.7	77.5	$\chi^2(1) = .28$	51.2	83.8	$\chi^2(1) = 41.7^*$
Black	20.3	22.5	$\chi^2(1) = .28$	48.8	16.2	$\chi^2(1) = 41.7^*$
Enabling Variables						
Income (Mean)	48595	60402	(<i>t</i>)3.33**	29222	62464	(<i>t</i>)8.089**

Note. Independent variables are grouped to determine association by both group and individual characteristic on the dependent variable

* $p < .05$

4.3 Regression model

4.3.1 Variables used in regression analysis

Results of both binary logistic regression models designed to determine the impact environmental, population characteristic pre-disposing factors and enabling factors on individuals' experiences with barriers in accessing local doctors and the experience of barriers related to transportation/distance in accessing health care services (Table 13). Model I includes the dependent variable 'barriers of transportation/distance' while model II uses the dependent variable 'barriers accessing local doctors/providers' while also including 'barriers of transportation/distance' as an independent variable.

Each model includes odds ratio ($\text{Exp } \beta$) and the standard error (SE) with significance level of each variable determined using p-values. Cox & Snell and Nagelkerke R^2 values are

used in both models as well as Pearson's χ^2 value, statistical significance, degrees of freedom and the -2 Log Likelihood, in estimating the Goodness of Fit for each model.

Model I estimates the relative impact on 'barriers of transportation/distance' by each environmental, predisposing and enabling variable. Individuals stating that the role of state government is to ensure access are nine times as likely to experience transportation/distance barriers. Individuals responding 'yes' to the role of 'Federal Government' is to ensure quality care access, are over 25 times as likely to experience barriers related to distance/transportation as individuals who responded 'no' to this question.

Examining the role of 'Income' as an enabling variable reveals a significant relationship between individuals who respond yes to 'experiencing barriers related to transportation/distance in accessing services and increasing income.

Model I has both statistical significance ($p < .000$), Pearson's X^2 value of 187.027, and accounted for 33 to 55 percent of distance/transportation variance according to the Cox and Snell and Nagelkerke R Square values.

Model II analyzes the relative impact of independent variables on 'barriers accessing local doctors and providers.' Model II includes use of 'barriers of transportation/distance' as an independent variable. Reporting barriers related to transportation/distance is significantly related to experiencing barriers accessing local doctors/providers. Those reporting transportation barriers are six times as likely to report access problems to local doctors/providers ($\text{Exp}\beta = 6.04$).

Analyzing predisposing characteristics reveals that age is not significantly related to perceived access issues for local providers. Individuals who identify as 'White' are almost 8 times as likely to experience barriers related to accessing local doctors when compared to Black rural residents ($\text{Exp}\beta = 7.52$). Examining the role of 'Income' as an enabling variable reveals a

significant relationship between individuals who ‘experience barriers accessing local doctors’ and increasing income. To assess the fit of model, it has both statistical significance ($p < .000$), Pearson’s X2value of 138.497 and accounted for 26 to 37 percent of barriers accessing local doctors’ variance according to the Cox and Snell and Nagelkerke R Square values.

Table 7. Results of binary regression models I and II

Variables (N = 476)	Model I Barrier - transportatio n/distance Odds ratio Standard error p-value	Model II Barrier - Local doctors/ providers Odds ratio Standard error p-value
		5.949
Barrier – Transportation/Distance (Yes)		.363
<i>Environmental</i>		1.783*
Taxpayer responsibility- Hospital costs rural areas (Yes)	1.335 .458 .289	.321 .370 -1.137*
Role city/county government provide H.C. in rural areas	6.228	17.186
Funding	.621 1.829*	.524 2.844*
Oversight	2.022 .917 .704	3.079 .542 1.125*
Policy	20.682 .765 3.029*	2.560 .501 .940
Direct Services		
Responsible - ensuring local access to Q.C.		
Local government	.466 .522 -.764	2.076 .405 .731

State government	2.555	.433
	.577	.434
	.938	-.837
Federal government	4.610	.569
	.640	.494
	1.528*	-.564
Private Sector	.000	.406
	2648.18	.379
	-19.736	-.903*
Community		
<i>Population characteristics – predisposing characteristics</i>		
Age		
18-44	.343	.1155
	.243	.131
	-1.070*	.144
45-64	.256	1.279
	.267	.160
	-1.364*	.246
65 and over		
Race		
White	.145	7.411
	.464	.437
	-1.932*	2.003*
Black (Reference)		
<i>Population characteristics – enabling characteristics</i>		
Income	1.00	1.00
	.000	.000*
	.000*	.000*
<i>Goodness of Fit</i>		
Pearson's χ^2 Value	187.027	138.497
df	12	13
Sig.	.000	.000
-2 Log Likelihood	239.489	430.974
Cox & Snell R Square	.333	.259

Nagelkerke R Square	.552	.366
---------------------	------	------

Note. 'Lack of transportation or distance to care' included as an independent variable in Model II

* $p < .05$

5 DISCUSSION AND CONCLUSION

5.1 Discussion

This study, framed by both institutional racism and Anderson's Behavioral Model of Health Services, examined perceptions of access to health care resources within the local communities of rural adults. The relative impact of age, race, income, views of taxpayer responsibility in supporting local hospitals, 'views on the role of city/county government providing health care services', 'views on the role of city/county government providing health care services', 'views on primary responsibility in ensuring local access to quality care', barriers accessing local doctors/providers on both perceived transportation barriers related and perceived access to quality health care was assessed using multivariate logistic regression models. The overall goal of this study is to better inform state policymakers of resource gaps and perceived needs of older rural Georgians while extending our theoretical tools for examining these issues. In the following section, I will discuss descriptive and multivariate results in turn.

5.1.1 *Review of descriptive analysis*

Research objective one was to conduct a descriptive analysis using SES differences to describe perceptions of access to health care resources. It was hypothesized that significant relationships exist between the variables 'age', 'income' and 'race' with the dependent variable 'local access to a doctor/provider' and each dependent variable 'barriers due to distance/transportation' and 'barriers accessing local doctors/providers. Similarly, significant associations were hypothesized to exist between the variables 'views on taxpayer responsibility in

supporting local hospitals’, ‘views on the role of city/county government providing health care services’ and ‘primary responsibility in ensuring local access to quality care’ and each dependent variable.

Results of the descriptive analysis reveal that among environmental variables that Local government as having a role in ensuring access to quality care and ‘yes’ responses that significantly associated with experiencing barriers. It was also determined that using ‘income’ as an enabling component that ‘income’ has a significant relationship with barriers accessing health care with each dependent variable. As mentioned previously, differences between groups exist in this analysis with race having a significant association with experiencing barriers of transportation/distance. This finding is supported by previous research noting the impact of race on transportation resources (Part et al., 2010; Syed et al., 2013), Williams & Collins,

5.1.1.1 Environmental Variables

Among environmental variables, significant associations were detailed between individuals who experience barriers locating local doctors/providers and ‘yes’ responses that taxpayers should have a responsibility in supporting costs of local hospitals in rural communities. Significant associations are also noted that the city/county government has a role in ensuring access to services through ‘funding’ and a similar significant associations between the dependent variable and views that the local government has a responsibility in ensuring access to quality care in rural communities both variables among individuals experiencing barriers accessing local doctors. While there exists a significant association between experiencing barriers and the views on city/county government for ensuring access to services, additional analysis is needed to determine the direction of the relationship to better assess how this relationship may determine intervention efforts in addressing access issues.

Among environment variables, significant associations exist between individuals experiencing distance/transportation barriers and views that ‘State Government’ has a role in ensuring access to quality care. Further, there exists a significant relationship between experiencing distance/transportation barriers and ‘yes’ responses regarding city/county responsibility of providing health care services in rural areas related to the role of ‘oversight’ ($p = .035$). Previous findings support that local government has a large impact on residents being able to access needed health care/provider services (Andersen, 2002). Results indicate that rural residents who experience limited transportation/distance barriers may view city/county government as not meeting their current needs of resource provision of health care access. Similarly residents may view limited economic development in their communities by the private sector as an unmet need influenced by both city/county government and the private sector. Results of this analysis addresses specific aspects of how limited development in communities may be directly related to race with limited provider access a direct result of more systemic issues related to resource planning and local development (Smedley, 2008; Williams & Collins, 2001).

5.1.1.2 Predisposing – barriers accessing local doctors/providers

Barriers accessing local providers - Among predisposing characteristic variables and experiencing barriers accessing local providers, while not significantly different from perceptions of older individuals regarding local doctors/providers, these findings may influence future planning or policy efforts. This is particularly evident if missed care by current middle age residents results in missing doctor’s visits while young resulting in possible higher level of care needs during older age, increase the need for health care resources locally (Naylor et al., 2015; Syed et al. 2013). Again, this addresses the goals of this study with differences in age noted to have an impact on how local resources are viewed. The role of race is significant in this analysis

with differences noted that White individuals were more likely to identify accessing local doctors as barrier. These findings may signal a lack of specific provider types sought by White individuals that may have a limited presence within local communities. (Basu & Mobley, 2010; Escarce & Kapur 2009; Liu et al., 2007)

Barriers of distance/transportation accessing health services – Examining the association between predisposing characteristic variables reveals that a substantially larger percentage of black residents identify distance/transportation as an issue at 37.9 percent than do White individuals with only 11 percent of White individuals noting transportation s (Basu & Mobley, 2010; Escarce & Kapur 2009; Liu et al. 2007).

5.1.1.3 Enabling – barriers accessing local doctors/providers

Barriers accessing local providers - The enabling characteristic ‘Income’ was noted to have a significant effect on barriers accessing local doctors. Income has a significant relationship with experiencing barriers accessing local doctors with mean income for individuals \$11807.02 dollars lower than that of individuals who do not experience barriers accessing local doctors (Andersen et al., 2002; Williams & Collins, 2001). Barriers of distance/transportation accessing services - Among residents experiencing transportation/distance accessing health care a significant difference is noted in mean income with mean income noted as being \$33242 dollars lower for individuals who experience this barrier. Racial differences were noted between groups with 37.9 percent of Black residents experiencing this barrier compared to only 11 percent of White residents (Syed et al., 2013; Williams & Collins, 2001; Doescher et al., 2001).

5.1.1.4 Summary of descriptive analysis findings

While the direction of the relationship is different from that conceptualized in the model II, significant associations exist between predisposing and enabling characteristics to a degree that

strongly supports this model in explaining influencers on experiencing barriers and perceived need in accessing health services.

5.1.2 Review of the regression analysis

Research objective three included assessing the relative impact of age, race, income, views of community and government responsibility in ensuring health care access and socio-economic resource availability. Two models were developed with model I analyzing the likelihood of experiencing barriers related to ‘transportation/distance’ and each environmental, predisposing and enabling variable.

Model II analyzed the impact of environmental, predisposing, and enabling variable on perceived access to local providers. Model II also included ‘barriers of transportation/distance’ as an independent variable. In developing this objective, it was hypothesized that variables used in these categories will have a significant impact on experiencing barriers related to the dependent variables in each model.

Results of the regression analysis indicate that transportation/distance barriers are more strongly impacted by the environmental, predisposing and enabling variables used in the model with age and race being particularly significant in how distance is perceived as a barrier with associations existing between all predisposing characteristic race and age variables in addition to the impact of the enabling variable ‘income’ (Andersen et al., 2012; Williams & Collins, 2001). A significant finding which supports the meso/micro level of the conceptual model is the impact of community and government views on ensuring responsibility to health care access revealed in model II.

5.1.2.1 Environmental

Individuals experiencing barriers to transportation were six times as likely to provide ‘yes’ responses that they experience barriers related to accessing local providers as well. Individuals that espoused the view that city/county government has a role in providing funding toward access were more than seven times as likely to report access issues to local providers. These results support the notion that individuals experiencing barriers to local providers view their local government as not doing enough toward ensuring access to health care services (Bacsu et al. 2012; Syed et al., 2013).

5.1.2.2 Predisposing characteristics

Interestingly, there was no relationship between age and perceived access to providers when other variables were controlled. Given the large impact of transportation barriers on perceived access and the impact of age on transportation barriers in Model I, it seems that age was accounted for in transportation vulnerabilities. This is good news in that if transportation barriers are addressed, we may be able to equal the playing field for perceived access across age categories. Because of data constraints, however, we were not able to isolate impacts of the oldest old and access. Race was significant in this model. Individuals who identify as ‘White’ were almost 8 times as likely to experience barriers related to accessing local doctors compared to Black residents.

5.1.2.3 Enabling characteristics

The impact of income on perceived access to both local doctors/providers and transportation barriers is notable. As conceptualized in the model, income is designated as an enabler which would lead to lower need and experienced barriers. As placed in the model ‘income’ works among environmental and predisposing variables to increase access to services despite predisposing characteristics or environmental factors supporting the conceptual model.

5.1.3 Review of spatial analysis

Research objective two included conducting a geospatial analysis of provider location of primary and specialist services, demographic and socio-economic resources across rural counties in Georgia. In developing this objective, it was hypothesized that resources will be meet the needs of rural populations on the county level. Spatial analysis was conducted using ‘select by variable attribute’ to determine county-level demographic characteristics and resource allocation across rural Georgia counties. Results of the analysis determined that older Georgians make up large a large segment of the population in counties identified as rural. It was further determined that health care facility availability may not effectively meet the needs of future old and current old individuals residing within these counties (Graves, 2009).

5.1.3.1 Facility service capacity in counties with older populations

Analysis indicates that older Georgians age 60 and older make up higher percentages of the population in counties that are usually referred to as rural counties. Further study indicates the potentially high demand for services within these particular counties. Key findings indicate that this is most representative in counties with higher percentages of older Georgians. This finding is particularly relevant to the issue of local providers within rural communities and issues relating to transportation and distance referenced in the literature. Older Georgians may or may not have family that can assist in reaching health services located outside their community making this finding key in developing strategies that ensure use of health care where older Georgians live.

5.1.3.2 Overall population density of all Georgia Counties

While overall state population is located in this area the rural location of many older Georgians lies far outside this region and within the lighter shaded areas indicated on this map. Many counties in this map with higher population density, do not include high percentages of older

adults, meaning that older Georgians located outside this general area are at risk of not being included in planning efforts that tend to target the more densely populated areas of Georgia. This is a structural issue which further impedes on current ability to reach health care resources.

5.1.3.3 Older Georgians and where they live

Figure 6 includes a map identifying where older Georgians reside throughout the state and the make-up of their counties of residence. While similar to map one this map focuses on sharing locating of all older Georgians and not just older Georgian's residing in counties with higher concentrations of older residents. This is key to determining how resources can be planned to anticipate future needs, current patterns of low availability can be mitigated through better planning of resources within all communities and not just those deemed deserving due to higher population or income levels in a given community.

5.1.3.4 Summary of geospatial findings

Analysis reveals that health care facilities located in rural communities have a service requirement that exceeds service capacity. This is particularly evident in viewing Map 1 which provides details on the location of health care facilities throughout the state in relation to population. While many of the facilities experiencing these demands are located in low population density counties (See Map 2) the demand placed on already limited resources is immense. These demands can lead to deter many providers from locating to rural areas and only seeking out more ideal, higher SES areas if they decide to do so.

5.1.4 Overview of the findings

Findings of this study suggest that race, by itself, has a significant role in accessing services among White and Black rural residents in this study. Findings further indicate that provider supply is perceived as inadequate among a significant number of respondents. Significant associations

were noted between experiencing barriers accessing local doctors and views that taxpayers help support local hospitals. Findings are consistent with previous research conducted by Basu and Mobley (2010) noting resident views that it is important for residents to view their local community as have necessary hospital resources. It is further supported by Andersen et al. (2002) that health resources be located where individuals live. Transportation barriers among Black residents is identified in accessing services while White residents noted barriers with accessing doctors most often. Findings support previous research noting decreased opportunities for accessing personal transportation due to social networks with limited resources (Williams & Collins, 2001). The association of income on experiencing barriers to both accessing local doctors and issues with transportation were both significant with large disparities identified in income between individuals experiencing transportation/distance barriers and individuals not experiencing a barrier. This is further supported by Williams and Collins (2001) who note that low-income black residents are more likely to live in communities where individuals in their community are overwhelmingly low-income, decreasing access to resources more readily available in higher income communities.

Comparing the results of the study with the conceptual framing used to guide this analysis indicates local policies and community views of resource allocation and community support being significantly associated with individuals expressing need and experiencing barriers. Differences occur along racial lines with greater need identified among Black respondents with transportation to resources, further indicating that health care resources are likely to be located further from Black individuals. Findings support previous research noting resource location and race as barriers to reaching needed care (Smedley, 2012; Williams & Collins, 2001). This finding strongly supports the role of environmental factors included in the conceptual model. Framing the study using this

conceptual model, the role of structural racism can be identified when determining how health care resources are located in communities, with indications that greater placement of resources is made in non-minority, higher SES communities (Jones, 2000; Smedley, 2012; Smith & Collins, 2001). While this seems to contradict findings that Black individuals have greater access to providers, further analysis may indicate that differences exist among Black and White residents due to quality factors. This supports previous research that residents travel to care outside their local community when local resources are assessed as being lower quality or lack of specialty services (Escarce & Kapur, 2009; Lui et al. 2008). This can be interpreted to mean that while White residents are in closer geographic proximity to resources that resources are identified as not meeting their needs due to quality.

As an enabling variable income also strongly supports the conceptual model with individuals noting 'no barriers' having income that had a mean difference of \$33242 when compared to individuals who noted barriers. Again this may be related to racial differences due to institutional racism and prejudice that lead to lower earnings by Black residents but race /income interactions were not tested (Jones, 2000). As previously noted Black residents experienced more barriers related to transportation/distance at 37.9 percent compared with 11 percent of White residents. Negative experiences using the local health system is likely to account for some of this difference with the research previously noting the impact of racist beliefs and prejudice interactions on how Black residents decide to use health resources and negotiate health systems (Doescher, 2001; Hall et al., 2015; Jones, 2000; Smedley, 2012; Tajeu et al. 2015). Support of the structural components of the conceptual model are possibly identified with significant associations between individuals that experience transportation barriers and views on the responsibility of both local city/county and State Government to ensure access to health care.

Additional analysis should explore whether positive or negative relationships exist which would require estimating separate models or testing interactions with race and responsibility. It is possible that Black residents may feel more strongly that state government is not ensuring needed access to health care resources. However, due to sample size constraints, these interactions were not tested.

5.2 Limitations of my study

One limitation of my study was unforeseen technical barriers in compiling data to develop meaningful spatial analysis component for this study. While enriching to the visual aspect of the project as an analysis component the impact of distance and geography as a barrier is made consistently through the interpretation of findings using the distance/transportation variable in this project.

Another limitation was the cross-sectional nature of my data and the incomplete nature of attitudinal surveys. I was constrained by the variables available in this secondary dataset and therefore was not able to tease out all aspects of predisposing and enabling characteristics or the impact of locally available resources on individual perceptions of access. Further, I was not able to show the impact of geographical variation in terms of age and race on my dependent variables. As it was cross-sectional, I am also not able to assess whether there is a causal impact of the independent variables on my selected dependent variables.

5.3 Conclusion and Implications on Future Research

Environment factors related to resource location and government/community support in ensuring access are relevant to documenting and understanding transportation and supply barriers to accessing quality health care services. In this analysis, significant associations exist between predisposing and enabling characteristics to a degree that strongly supports the conceptual model used to guide this analysis. The conceptualized model explains influencers on experiencing

barriers and perceived need in accessing health services. As conceptualized in the model, income is designated as an enabler which the model supports does lead to lower need when more income is noted. As placed in the model ‘income’ works among environmental and predisposing variables to increase access to services despite predisposing characteristics or environmental characteristics supporting the conceptual model.

Awareness of the role that environmental, predisposing characteristics and enabling factors have on how challenges in accessing health care services are experienced is imperative to effectively address existing and future barriers. Future research should focus on exploring how these factors impact access in different locations to determine the generalizability of these findings. Further research is needed to understand the role of geographic dispersion of resources on perceived access and the intersecting role of race, age and income. Better specification of these relationships on access will assist in developing effective intervention and program strategies to address unique barriers experienced within different rural communities.

5.4 Policy Recommendations

5.4.1 Policy Alternative 1

Expanding efforts to reduce transportation and distance related barriers and provider availability for older individuals currently and in the future. Policy and planning efforts should focus on ensuring that older rural populations have access to not only health care but preventive health services. State level policy should encourage transportation options that support healthy progress of Georgians both in and nearing old age. Alternatives should include developing strategies that support long term implementation and expansion of the Hub and Spoke model beyond its current pilot status. While some reservations exist for this program due to its limited pilot implementation, if comprehensively integrated into Georgia’s rural health network it has a

strong ability to address substantial gaps in transportation and distance to services. Funding mechanisms within the Affordable Care Act specifically provide support for health care and preventive care initiatives that target vulnerable populations including rural and older populations. Expansion of the Hub and Spoke model or tailoring the use of telemedicine to better meet the needs of a diverse group of rural elders would further address current barriers related to seeking care.

State level leadership has a key role in ensuring that such programs are accepted within local communities throughout the state. Stakeholder buy-in at the legislative level is vital as Georgia is a state with a large population focused on local government, it is necessary to gain localized support at the state level of the importance of transportation issues and provider availability to truly impact and influence local community residents and local governments that such programs are important to Georgia and members of their more local communities.

5.4.2 Policy Alternative 2

Public health efforts should recognize the multiple vulnerabilities of age, race and income for today's seniors. Efforts should encourage support financial commitments through taxes that will support increasing supply of doctors/providers to local communities. While there were no significant differences in whether respondents perceived lack of doctor/providers supply in the community by age, there was a relatively large group of rural adults (30%) that perceived access issues due to supply. Whites were more likely to perceive access issues due to supply. This may mean that Whites are more sensitive to differences in supply and Blacks are used to relative deprivation of resources and less likely perceive limited supply as an issue. It could also be the case that safety net health care organizations are more available in predominately Black communities. In this case, the poor and higher income residents have access to care where as

working class have worse access to care. This issue requires more research to tease out factors at the intersection of community, race and income. Blacks were significantly more likely to perceive transportation/distance barriers than whites and these barriers were significantly related to perceived barriers of local supply of doctors/providers. This finding suggest that institutional racism may work through residential segregation and community resources for transportation available to rural Blacks.

5.4.3 Policy Alternative 3

Barriers related to resource location can be overcome by encouraging local communities to more fully integrate community health and population aging into their economic development plans and strategies. Targeting business that will meet the future needs of aging communities is an effort that must be undertaken by both civic and business interests as both segments provide community leadership that influences resources, where they are located and the overall benefits provided to rural residents where they live. Establishing greater involvement between business, government and residents of the community provides opportunities to share concerns and tailor planning efforts that effectively meet the needs of residents while providing desired financial benefits to local businesses through profits and local governments in the form of better tax revenues as local resources retain older residents while attracting new community members.

REFERENCES

- Alabama Public Health. (2016). Rural Health - Home. Retrieved March 3, 2016, from <http://www.adph.org/ruralhealth/Default.asp?id=886>
- Andersen, R. M. (1995). Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior*, 36(1), 1–10.
<http://doi.org/10.2307/2137284>
- Andersen et al. (2002). Access to Medical Care for Low-Income Persons: How Do Communities Make a Difference? *Medical Care Research & Review*, 59(4), 384.
- Bacsu et al. (2012). Healthy Aging in Place: Supporting Rural Seniors' Health Needs. *Online Journal of Rural Nursing and Health Care*, 12(2), 77–87.
<http://doi.org/10.14574/ojrnhc.v12i2.52>
- Baernholdt et al. (2014). A Comparison of Quality of Care in Critical Access Hospitals and Other Rural Hospitals. *Online Journal of Rural Nursing & Health Care*, 14(2), 3–31 29p.
<http://doi.org/10.14574/ojrnhc.v14i2.328>
- Carper, & Machlin. (2007). STATISTICAL BRIEF #274: Variations in Perceived Need and Access to Specialist Care among Adults in the U.S. Civilian Noninstitutionalized Population, 2007. Retrieved March 26, 2016, from http://meps.ahrq.gov/mepsweb/data_files/publications/st274/stat274.shtml
- Chan et al. (2006). Geographic access to health care for rural Medicare beneficiaries. *The Journal of Rural Health: Official Journal of the American Rural Health Association And The National Rural Health Care Association*, 22(2), 140–146.
- County Health Rankings and Roadmaps. (2016). Georgia State Health Gaps Report. Retrieved July 9, 2016, from <http://www.countyhealthrankings.org/health-gaps/georgia>

- Doescher et al. (2001). Racial/ethnic inequities in continuity and site of care: location, location, location. *Health Services Research, 36*(6 Pt 2), 78–89.
- Escarce, & Kapur. (2009). Do patients bypass rural hospitals? Determinants of inpatient hospital choice in rural California. *Journal of Health Care for the Poor & Underserved, 20*(3), 625–644 20p. <http://doi.org/10.1353/hpu.0.0178>
- Georgia Department of Community Health, Rural Hospital Stabilization Committee. (2016, January 7). Rural Hospital Stabilization Committee | Georgia Department of Community Health. Retrieved March 27, 2016, from <https://dch.georgia.gov/rural-hospital-stabilization-committee>
- Georgia Hospital Association. (2011). Critical Access Hospitals. Retrieved March 27, 2016, from <https://quality.gha.org/Home/CriticalAccessHospitals.aspx>
- Georgia Senators Williams of the 27th and Unterman of the 45th. (2015, 2016 Legislative Session). SB 242 2015-2016 Regular Session [Legislative - Government]. Retrieved June 8, 2016, from <http://www.legis.ga.gov/Legislation/en-US/display/20152016/SB/242>
- Gessert et al. (2015). Rural definition of health: a systematic literature review. *BMC Public Health, 15*, 378–378. <http://doi.org/10.1186/s12889-015-1658-9>
- Goodman et al. (2013). Defining and Measuring Chronic Conditions: Imperatives for Research, Policy, Program, and Practice. *Preventing Chronic Disease, 10*.
<http://doi.org/10.5888/pcd10.120239>
- Graves. (2009). A model for assessment of potential geographical accessibility: a case for GIS. *Online Journal of Rural Nursing & Health Care, 9*(1), 46–55 10p.

- Hall et al. (2015). Implicit Racial/Ethnic Bias among Health Care Professionals and Its Influence on Health Care Outcomes: A Systematic Review. *American Journal of Public Health, 105*(12), e60–e76. <http://doi.org/10.2105/AJPH.2015.302903>
- Honda K. (2004). Factors underlying variation in receipt of physician advice on diet and exercise: applications of the behavioral model of health care utilization. *American Journal of Health Promotion, 18*(5), 370–377 8p.
- Jones, C. P. (2000). Levels of racism: a theoretic framework and a gardener's tale. *American Journal of Public Health, 90*(8), 1212–1215.
- Kaiser Family Foundation. (2016). Population Distribution by Race/Ethnicity. Retrieved from <http://kff.org/other/state-indicator/distribution-by-raceethnicity/>
- Kunz, K., & Atsas, S. (2013). Ensuring equitable access to public health care: Two steps forward, one step back. *The Social Science Journal, 50*(4), 449–460.
<http://doi.org/10.1016/j.soscij.2013.07.013>
- Liu et al. (2007). Patient bypass behavior and critical access hospitals: implications for patient retention. *The Journal of Rural Health: Official Journal of The American Rural Health Association And The National Rural Health Care Association, 23*(1), 17–24.
- Monahan. (2013). Family Caregivers for Seniors in Rural Areas. *Journal of Family Social Work, 16*(1), 116–128.
- Nayar et al. (2012). Preventable Hospitalizations: Does Rurality or Non-Physician Clinician Supply Matter? *Journal of Community Health, 37*(2), 487–494 8p.
<http://doi.org/10.1007/s10900-011-9468-1>

Naylor et al. (2015). An Assessment of State-Led Reform of Long-Term Services and Supports.

Journal of Health Politics, Policy & Law, 40(3), 531–574 44p.

<http://doi.org/10.1215/03616878-2888460>

Nedelea, I. C., & Fannin, J. M. (2013). Impact of conversion to Critical Access Hospital status on hospital efficiency. *Socio-Economic Planning Sciences*, 47, 258–269.

Park et al. (2010). Transportation Difficulty of Black and White Rural Older Adults. *Journal of Applied Gerontology*, 29(1), 70–88. <http://doi.org/10.1177/0733464809335597>

Rose, A. C. (2009). *Psychology and Selfhood in the Segregated South*. Chapel Hill: The University of North Carolina Press. Retrieved from

<http://ezproxy.gsu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=282903&site=eds-live>

Rural Health Information Hub. (2014, December 8). Medicare and Rural Health Introduction - Rural Health Information Hub. Retrieved March 27, 2016, from

<https://www.ruralhealthinfo.org/topics/medicare#types>

Rural Health Information Hub. (2015, June 9). Rural Health Information Hub. Retrieved March 27, 2016, from <https://www.ruralhealthinfo.org/topics/social-determinants-of-health#minorities>

Rural Health Research Center. (2016, March). UW RHRC Rural Urban Commuting Area Codes - RUCA. Retrieved March 27, 2016, from <http://depts.washington.edu/uwruca/index.php>

Rural Hospital Stabilization Committee | Georgia Department of Community Health. (n.d.).

Retrieved March 27, 2016, from <https://dch.georgia.gov/rural-hospital-stabilization-committee>

- Smedley, B. D. (2012). The Lived Experience of Race and Its Health Consequences. *American Journal of Public Health, 102*(5), 933–935 3p. <http://doi.org/10.2105/AJPH.2011.300643>
- Smedley, B. D., & Myers, H. F. (2014). Conceptual and Methodological Challenges for Health Disparities Research and Their Policy Implications. *Journal of Social Issues, 70*(2), 382–391.
- Soni, & Hill. (2007, February). STATISTICAL BRIEF #162: Getting Health Care from Specialists among Adults with Chronic Conditions, U.S. Civilian Noninstitutionalized Population, 2004. Retrieved March 27, 2016, from http://meps.ahrq.gov/mepsweb/data_files/publications/st162/stat162.shtml
- Stachura, M. E. (2001). The Georgia state-wide telemedicine network: some lessons learned. *Journal of Telemedicine and Telecare, 7 Suppl 2*, 62–62.
- Syed et al. (2013). Traveling Towards Disease: Transportation Barriers to Health Care Access. *Journal of Community Health, 38*(5), 976–993 18p. <http://doi.org/10.1007/s10900-013-9681-1>
- Tajeu, G. S., Cherrington, A. L., Andreae, L., Prince, C., Holt, C. L., & Halanych, J. H. (2015). “We’ll get to You When We Get to You”: Exploring Potential Contributions of Health Care Staff Behaviors to Patient Perceptions of Discrimination and Satisfaction. *American Journal of Public Health, 105*(10), 2076–2082. <http://doi.org/10.2105/AJPH.2015.302721>
- U.S. Department of Health and Human Services - Assistant Secretary for Public Affairs. (2013, September 30). The ACA - What it Means for Rural America | HHS.gov. Retrieved March 26, 2016, from <http://www.hhs.gov/health-care/facts-and-features/factsheets/what-aca-means-for-rural-america/index.html#>)

Weeks, W. B., Kazis, L. E., Shen, Y., Cong, Z., Ren, X. S., Miller, D., ... Perlin, J. B. (2004).

Differences in Health-Related Quality of Life in Rural and Urban Veterans. *American Journal of Public Health, 94*(10), 1762–1767.

Williams, D. R., & Collins, C. (2001). Racial residential segregation: A fundamental cause of racial disparities in health. *Public Health Reports, 116*(5), 404–416.

[http://doi.org/10.1016/S0033-3549\(04\)50068-7](http://doi.org/10.1016/S0033-3549(04)50068-7)

Zhang P, Tao G, & Anderson LA. (2003). Differences in access to health care services among adults in rural America by rural classification categories and age. *Australian Journal of Rural Health, 11*(2), 64–72 9p.