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Investigating Potential Risk Factors for Nursing Home Admission Associated with Individuals Enrolled in Georgia's Community Care Services Program (Medicaid waiver program for the elderly)

By
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BA Economics, Philosophy, University of Iowa

A Thesis Submitted to the Graduate Faculty
Of Georgia State University in Partial Fulfillment
Of the
Requirements for the Degree

MASTER OF PUBLIC HEALTH

ATLANTA, GEORGIA

30303

Investigating Potential Risk Factors for Nursing Home Admission Associated with Individuals Enrolled in Georgia's Community Care Services Program (Medicaid waiver program for the elderly)

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ACKNOWLEDGEMENTS

This research would not have been possible without the support and help of many individuals.

I would like to thank Professor Russ Toal, Professor Derek Shendell, and Professor Frank Whittington for being on my thesis committee and for the help, support, and encouragement through this thesis project as well as my academic career.

I would like to thank the staff of the Atlanta Regional Commission – Aging Division. Without their help and support this project would not have been completed. Special thanks go to Cathie Berger, Karen Bear, and Sheila Melton.

I would like to thank my family and friends who have supported and encouraged me throughout my life. In particular, I would like to thank Kari Bachmeier. Your help has been instrumental in the completion of this project, thank you!

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ABSTRACT:

Matthew Louis Johnson

Investigating Potential Risk Factors for Nursing Home Admission Associated with Individuals Enrolled in Georgia's Community Care Services Program (Medicaid waiver program for the elderly)

Under the direction of Professor Russ Toal.

This retrospective study examined records of 230 low-income elderly and disabled individuals enrolled in the Georgia Community Care Services Program (CCSP) which provides home health services in the client's home rather than a nursing facility (NF). This study sought to determine if any common characteristics exist in program enrollees who enter a NF within one year of enrollment. Common factors found could be used to identify those who are at the highest risk for entering an NF. This knowledge could lead to reduced costs for the State of Georgia and better service for CCSP enrollees.

Findings associated with NF entry include: age, Medicaid status, and monthly income.

Further study is recommended to determine which common factors could be developed into a screening tool used to identify individuals at highest risk for NF entry. Specific care plans could then be developed to avoid or delay NF admission for CCSP enrollees.

Key words:
Aging, Georgia Medicaid, Georgia Community Care Services Program (CCSP), nursing facility, predictors of nursing facility entry, screening tool

INTRODUCTION:

People aged 65 and older are a growing percentage of the population in the U.S. and in Georgia. Census estimates based on 2005 data show the current percentage of Georgians 65 and older is approximately 10%, and that number is expected to increase to approximately 16% by the year 2030 (US Census Bureau 2005). Issues that arise from this population, such as affordable housing and affordable healthcare, will continue to cause problems in society. One program that attempts to address the problems of aging for some Georgians is the Community Care Services Program (CCSP).

Politicians and the healthcare system are in constant search of cost-efficient long-term care options for older adults for several reasons. The cost of providing care in an institutional setting, such as a nursing home, is extremely high regardless of whether an individual, private insurance company, or government payor (Medicaid and/or Medicare) pays for the service. As the elderly population continues to increase and live to greater ages, which will likely increase the number of individuals who have chronic diseases and physical or mental limitations that require extensive levels of care, more alternatives to institutional care will be needed.

One such alternative, supported by many patients and many in the healthcare field, which demonstrates cost savings, is home healthcare. Individuals remain in their place of residence and receive the needed healthcare or support services within their home. Most services provided to recipients are by home healthcare workers who visit the recipient's residence as needed. The cost of providing these services at home is much less than in a nursing facility (NF), and many of these services are covered under private insurance, Medicare, and Medicaid. Patients prefer this setting for many reasons

including the ability to maintain a degree of independence and avoidance of NF admission.

In addition, the ability to identify individuals who are at highest risk of entering a NF can lead to the development of specific treatment plans or strategies which could lead to increased independence and delayed or avoidance of NF admission. This in turn, could potentially lead to cost savings for individuals, society, and third party payers (private insurance, Medicare, or Medicaid). These cost savings could be used to address other important public health issues.

Individuals who remain in their residence typically report better health and incur fewer costs than individuals receiving care in NFs. Common factors identified with high-risk individuals enrolled in the CCSP can possibly determine who is more likely to enter an NF. Based on this knowledge, screening tools could be revised to identify individuals most at risk for NF entry. In addition, specific care plans for identified high-risk individuals enrolled in the CCSP could lead to increased independence and delayed or avoidance of NF admission.

PURPOSE OF STUDY:

This study seeks to determine if any common characteristics exist in individuals enrolled in the CCSP *and* who enter a NF within one year of enrollment. If common factors are found to exist they can be used to identify those individuals who are at the highest risk for entering an NF. This information could lead to revision of screening tools and to the possible development of specialized care plans for these individuals, which may enable them to avoid or delay NF admission. This knowledge could lead to reduced costs for the State of Georgia and better service provided for individuals in the CCSP.

The background for this study will review why it is important and useful for individuals to receive care in their own homes rather than entering an NF. Next, the study will review the background and history of the CCSP and previous findings on risk factors associated with entering a NF. Following this, the methods of data collection will be provided, followed by a presentation of the findings. Finally, recommendations and conclusions will be given based on the findings.

NOTE:

Individuals under age 65 who are disabled who meet the CCSP enrollment criteria are eligible to enroll in the CCSP. Due to the special circumstances of the disabled population and because disabled individuals under age 65 enrolled in the CCSP are not substantial in number, this study will focus only on the population 65 and older.

BACKGROUND AND LITERATURE REVIEW:

As mentioned in the introduction, the benefits of healthcare provision in place of residence are experienced by both individuals receiving care and society. Reasons for this include: individual satisfaction, better general health and reported health outcomes, and reduced healthcare costs.

Previous studies show that individuals report higher self-esteem and higher satisfaction when receiving care at their place of residence versus receiving care in a NF (Brock and O'Sullivan 1985; WHO Study Group 2000; Di Gioacchino, Ronzoni et al. 2004; Leff, Burton et al. 2006). Studies attributed various reasons for higher patient satisfaction including: maintaining independence, staying near family or friends, or continued familiarity of surroundings.

In addition, previous studies indicated that those who receive healthcare at home experience better general health outcomes and self report better health when compared to individuals in NFs. (Evans, Yurkow et al. 1995; Intrator and Berg 1998; WHO Study Group 2000; Di Gioacchino, Ronzoni et al. 2004; Leff, Burton et al. 2006; Markle-Reid, Weir et al. 2006). These studies reported that better health outcomes and better self-reported health resulted from an unknown combination of factors, which may vary from patient to patient.

Finally, previous studies found that providing home-based healthcare services for individuals, who otherwise would receive NF care, produced financial savings (Beaulieu 1991; Harrow, Tennstedt et al. 1995; Weissert, Lesnick et al. 1997; WHO Study Group 2000). Individuals who receive at-home care do not receive 24-hour care as they would in a NF. In addition, many recipients of at-home care also receive informal support from

their families or friends that help reduce expenses. These reasons help account for potential cost savings. In addition, individuals receiving at-home care report better health and would thus require less care services than individuals in NFs.

It is evident from existing research that at-home health and supportive services offer many benefits for home healthcare service recipients through higher satisfaction, increased health, and reduced costs. This, in turn, could benefit society economically as well through a decreased number of individuals seeking care that is publicly funded. As mentioned previously, the CCSP provides healthcare and supportive services to selected individuals in a residence based setting and serves as an important public health service and has demonstrated fiscal savings as an alternative to NF placement.

BACKGROUND INFORMATION:

The CCSP of Georgia enrolls elderly adult individuals and other disabled individuals who are eligible for Georgia Medicaid. Medicaid provides healthcare services to those who meet certain need and financial criteria. Physicians and/or various healthcare providers, who are authorized to provide Medicaid services, receive payments from the State of Georgia for services they provide to Medicaid-eligible individuals. (DCH 1 2007; DCH 2 2007)

Elderly individuals 65 years of age and older must meet the following criteria in order to be eligible to receive Medicaid services in Georgia (see Table 1). Specifically, in order to be eligible for the CCSP, individuals 65 years or older must meet the financial criteria as described under Community Care Beneficiaries in Table 1. (DCH 1 2007; DCH 2 2007)

Table 1: Georgia Medicaid Beneficiary Criteria for Aged Individuals:

Qualified Medicare Beneficiaries: Aged and/or disabled individuals who receive Medicare Part A (hospital insurance) and have an income of less than 100% of the federal poverty level and also have limited resources. Medicaid will pay the Medicare premiums coinsurance and deductibles only. Income Limits: Individual - $10,044 a year Couple - $13,440 a year Resource Limits: Individual - $4,000 Couple - $6,000
Nursing Home Beneficiaries: Aged and/or disabled individuals who live in nursing homes and have low income and limited assets. Income Limit: Individual - $22,428 a year Resource Limit: Individual - $2,000
Medically Needy Beneficiaries: Aged and/or disabled individuals whose income exceeds the established income limit may be eligible under the Medically Needy program. The Medically Needy program allows a person to use incurred/unpaid medical bills to "spend down" the difference between their income and the income limit to become eligible. Income Limits: Individual - $3,804 a year Couple - $4,500 a year Resource Limits: Individual - $2,000 Couple - $4,000
Supplemental Security Income Beneficiaries: Aged and/or disabled individuals who receive supplemental security income are eligible. Income Limit: Individual - $7,476 a year Couple - $11,208 a year Resource Limits: Individual - $2,000 Couple - $3,000
Community Care Beneficiaries: Aged and/or disabled individuals who need regular nursing care and personal services but can stay at home with special community care services. Income Limit: Individual - $22,428 a year Resource Limit: Individual - $2,000

Information from: DCH 1 2007; DCH 2 2007

Supplemental Security Income (SSI) helps determine Medicaid eligibility as well as the CCSP financial eligibility. SSI is an income assistance program that is administered by the U.S. Social Security Administration (US SSA). Individuals who are

65 years or older, who have limited income and other limited financial resources, and who meet additional criteria are eligible to receive SSI. Qualified individuals must apply through the SSA to receive SSI. Enrolled SSI individuals receive monthly payments which can be used for individuals' financial needs. (Social Security Administration 2007)

Social Security Income (SSA) is a primary source of income for many elderly individuals in the CCSP. SSA is a federal retirement benefit program. Benefits are distributed monthly based on the highest 35 years of covered career earnings of the individual (based on the amount of income and amount of time an individual has worked in their life). Individuals are eligible to receive reduced benefits at 62 years of age and full benefits at 65 years of age or older. In addition, spouses are eligible to receive half the SSA benefits if divorced and if a widow or widower they are eligible to receive the full benefits of their spouse. SSA income is used to determine Medicaid eligibility and the CCSP financial eligibility. (Social Security Administration 2007)

Medicare is a federal insurance program for individuals 65 years of age and older (as well as individuals under 65 with certain disabilities and anyone with End-Stage Renal Disease). An individual's enrollment in Medicare is taken into account when determining Medicaid eligibility as well as the CCSP criteria. Individuals become automatically eligible for Medicare when they turn 65, and they must go through a formalized process in order to receive Medicare. There are four different parts to Medicare: hospital insurance (Part A), medical insurance plan (Part B), medical advantage plan (Part C), and the prescription drug plan (Part D). (US DHHS 1 2007; US DHHS 2 2007)

Medicare Part A, hospital insurance, covers inpatient care in hospitals, hospice (end of life) care, some home healthcare services, and does not cover long term care services. Part A is funded through deductions from payroll taxes taken during individuals' working careers and individuals pay no additional fees to receive Part A benefits. (US DHHS 1 2007; US DHHS 2 2007)

Medicare Part B is an additional medical insurance that enrolled individuals receive that covers services that Part A does not cover including: doctor visits, outpatient (office visit) care, some physical therapy, and certain other medical services and supplies. Individuals must pay a monthly premium charge in order to receive Part B services. (US DHHS 1 2007; US DHHS 2 2007)

Medicare Part C is an adaptation of Part B that is administered through private insurance companies such as health maintenance organizations or preferred provider organizations. These plans differ in various geographic areas and can offer more covered services than Part B and also can have lower out of pocket costs than Part B would by itself. (US DHHS 1 2007; US DHHS 2 2007)

Medicare Part D is a prescription drug plan that is administered through private providers that individuals must enroll into. Part D plans cover prescription drugs for individuals and individuals must pay both co-pays and deductibles. (US DHHS 1 2007; US DHHS 2 2007)

HISTORY OF THE CCSP:

The CCSP of Georgia enrolls elderly adults who are eligible for Medicaid based on a series of screenings (evaluations) which measure: physical characteristics, mental characteristics, financial characteristics, and unmet need for individual care. Individuals

or caregivers seek out the CCSP and contact their local Area Agency on Aging (AAA), who determines initial eligibility. Individuals enrolled in the CCSP are considered to be at high risk for entering a nursing facility (NF). The CCSP is an inexpensive alternative to a NF and providing care for Medicaid-eligible seniors in Georgia.

Many individuals prefer to remain in their home and community rather than entering a NF. However, many would be unable to do so unless they received services from the CCSP. Individuals enrolled in the CCSP receive healthcare (such as medication monitoring, wound dressing, and other special health services) and support services (such as assistance cooking, bathing, and managing money) in their residence instead of entering a NF. The services recipients receive match each individual's specific needs. These services are funded from allocations from the state Medicaid program and through participant contributions.

The CCSP provided services to eligible elderly individuals for over 20 years. The program traces its origins to 1976 when the Georgia Department of Human Resources (DHR) wrote a federal research and demonstration waiver to the Health Care Financing Administration (HCFA). HCFA is a federal agency that was responsible for Medicare and Medicaid and has since been renamed and evolved into the Centers for Medicare and Medicaid Services. The demonstration waiver established the Georgia Alternative Health Services (AHS) Program which provided limited health and social services in the residence of Medicaid-eligible persons who met the criteria to be placed in a NF. The project served 19 counties in the Atlanta and Athens areas of Georgia. The AHS program was transferred to the Georgia Department of Medical Assistance (DMA) in 1977.

(Georgia DHR 2005; Georgia DAS 2005; ARC 2006; DAS Division of Aging Services and Resources 2006; Johnson 2006; Miller 2006)

The Federal Omnibus Reconciliation Act of 1981 contained provisions allowing for waivers for community-based services to be used and funded under Medicaid. Through the knowledge and experience gained from the AHS program the state of Georgia phased out the AHS program as the Georgia Community Care and Services for the Elderly Act (GCCSEA) was phased in, supplementing the AHS program. (Georgia DHR 2005; DAS 2005; ARC 2006; DAS 2006; Johnson 2006; Miller 2006)

In 1982, the Georgia Assembly enacted GCCSEA which mandated four services to be provided to recipients enrolled in the CCSP including mandatory: assessment, case management, homemaker, and home health services. The GCCSEA established the CCSP and made DHR responsible for overall administration. DHR and DMA worked together to develop waiver requests to submit to Medicaid that met the needs of the GCCSEA. (State of Georgia 1982; Georgia DHR 2005; Georgia Division of Aging Services 2005; ARC 2006; DAS 2006; Johnson 2006; Miller 2006)

Beginning in 1983, Georgia started implementation of a three-year plan for the GCCSEA. The plan designated each AAA, within the State of Georgia, as the lead agency to provide planning and services for its own geographic area. The AAA also was responsible for case management. AAAs are part of the federal aging network, serve specific geographic areas in the state, and aim to meet the specific needs of elderly individuals within that area. The Georgia Division of Public Health was responsible for providing assessments of the entire population being served and all services provided by

health districts for the State of Georgia. (Georgia DHR 2005; Georgia Division of Aging Services 2005; ARC 2006; DAS 2006; Johnson 2006; Miller 2006)

In 1984, DMA reapplied through HCFA and was approved for the Medicaid waiver through Section 1915(c) of the Social Security Act. With this approval, HCFA included case management as a paid administrative activity and added three additional services that could be compensated: respite care, homemaker, and emergency response systems. By 1985, the CCSP was available statewide administered through the AAAs in Georgia. (Georgia DHR 2005; DAS 2005; ARC 2006; DAS 2006; Johnson 2006; Miller 2006)

CCSP AT PRESENT:

The goal of the CCSP is to provide elderly individuals, their families, and caregivers a resource and alternative to NF care. The CCSP provides healthcare and supportive services and allows individuals the option to remain in their homes and communities rather than enter a NF. (Georgia DHR 2005; DAS 2005)

An individual living in Georgia who wants to participate in CCSP must go through a series of steps to become enrolled. The first step is for the individual or their representative to contact their local AAA (whichever serves the county in which they live) and participate in a telephone screening. If the individual is deemed eligible for the CCSP, they are either placed on a waiting list or are referred to a care coordinator and scheduled for an in-home health and function assessment conducted by a registered nurse. After the in-home assessment the individual is either enrolled or not enrolled in the CCSP. If enrolled, the care coordinator, along with the registered nurse, the individual, caregivers, and the individual’s physician determine which services the individual needs.

The services determined are based on the individuals: physical status, mental status, functional status, and unmet need. The recipient then maintains regular contact with the care coordinator to make sure that the services are meeting their needs. The screening process will be explained in further detail later in this section. (Georgia DHR 2005; Georgia Division of Aging Services 2005; ARC 2006; DAS 2006)

To be eligible to receive services from the CCSP, individuals must meet the following criteria as listed by the Department of Aging Services:

- Functional impairment caused by physical limitations (can include Alzheimer's disease and dementia)
- Unmet need for care
- Approval of care plan by individual/individual's physician
- Services needed fall within the average annual cost of Medicaid reimbursed care provided in a NF
- Approval of an intermediate level of care certification for NF placement
- Medicaid eligible or potentially eligible after admission to CCSP
- Individual makes the choice to receive community-based services rather than institutional services
- Health and safety needs can be met by CCSP
- Participation in no other Medicaid waiver program
- Medicare home health services do not meet the individual's needs
- The need for services is beyond home-delivered meals
- The individual's home environment is free of illegal behavior

(Note: an individual is not required to be homebound in order to receive CCSP services.)

The CCSP, through funds allocated from the Georgia Medicaid program, provides community and home-based services for eligible consumers who meet the same medical, functional, and financial criteria as for placement in a NF under Medicaid. A physician certifies that the needs of the individual can be met through services provided by the CCSP and available community resources. The average duration of participation in the CCSP is nearly four years (Georgia DHR 2005). (See Table 2)

In addition to providing assessment and screening, the CCSP provides the following services: adult healthcare, alternative living arrangements, emergency response

systems, home delivered meals, home delivered services (such as cleaning or cooking), personal support services (such as assistance bathing), skilled nursing services, and out-of-home respite care. Personal support services is the most frequently used service (79%) by individuals enrolled in the CCSP (Georgia DHR 2005).

The services in the CCSP are provided through various agencies that contract with the AAAs. These agencies contract either through individual AAAs or with the DHR. Contracts are awarded to agencies based on the services provided and the cost to provide services to recipients.

The Division of Aging Services (DAS), which resides within DHR, provides the overall administration of the CCSP. The twelve AAAs within Georgia are contracted through DAS to provide local program management and coordination of services. Working with DHR, the Department of Community Health (DCH) - Division of Medicaid provides the fiscal authority for the CCSP waiver program. DAS through DHR has an inter-agency agreement with DCH and DMA (see Table 2). (Georgia DHR 2005; DAS 2005; ARC 2006; DAS 2006)

Table 2: CCSP Program Structure and Administration:

The Division of Aging Services (DAS) within Department of Human Resources (DHR)	Responsible for development, coordination, and administration of the CCSP.
The Division of Medical Assistance (DMA) within the Department of Community Health (DCH)	Responsible for reimbursement to service providers and monitoring appropriateness of services.
The Division of Family and Children Services (DFCS)	Responsible for determination of individual's Medicaid eligibility and cost share for services.
The Division of Mental Health, Developmental Disabilities, and Addictive Diseases (MHDDAD)	Responsible for provision of individual's psychological and psychiatric evaluations and services.
Area Agencies on Aging (AAAs)	Contracted through DHR-DAS to serve as regional mangers of the CCSP. Responsible for provision of resources to consumers and families and management of service budget allocations.
Care Coordinators	Contracted through AAAs. Responsible for provision of assessment of individuals for eligibility in the CCSP; provide individualized plan of care; link consumers to service resources; and monitor quality of care.
Providers	Contracted through AAAs to provide services. Responsible for delivery of individual's personalized care services.

Staff at the Georgia Division of Family and Children Services determine the individual's financial eligibility for Medicaid (see Table 2). While portions of the services provided are paid through funds from the Medicaid waiver, 59% of the CCSP clients in 2005 paid a portion of the costs for services received (Georgia DHR 2005). An individual must meet strict guidelines in order to be deemed financially eligible for CCSP. These guidelines provided by DAS include:

- Individuals who receive supplemental security income (SSI) are limited to a maximum of $603/month per individual and $904/month for a couple
- Individuals may not have a gross income exceeding $1,809/month
- Depending on monthly income, an individual may pay a cost share for the services received. The cost share would be determined on SSI monthly income and other monthly income.

- An individual is limited to have up to $2,000 in resources, or if a couple is enrolled in CCSP they may have up to $3,000 in combined resources (this does not include an individual's primary residence and an individual may have up to $5,000 designated towards a burial). If an individual has a spouse who is neither in a NF nor in CCSP, their combined resources may not exceed $101,450.

In 2005, the CCSP program served 15,830 individuals. However, a large number of consumers eligible for the CCSP still do not receive services for several reasons. The individuals may not have a high level of unmet needs or may receive a great deal of care already. Or there may not be enough funds available to pay for all individuals who need services. Individuals such as these are placed on a waiting list and are reevaluated approximately every four months. Individuals may stay on the waiting list indefinitely. (Georgia DHR 2005; DAS 2005)

In 2005, approximately 81% of all individuals enrolled in the CCSP were over 60 years of age. The overall percentage of individuals enrolled in the CCSP who were female was 75%. The overall percentage of individuals enrolled in the CCSP who were minorities (non-white) was 44%. (Georgia DHR 2005)

Each individual served by the CCSP who did not enter a NF saved approximately $17,000, which accounts for a statewide savings of $264 million (Georgia DHR 2005). The cost of supporting an individual in the CCSP was 26% of what the Medicaid cost would have been had the individual resided in a NF. As previously stated, the average duration of participation in the CCSP is nearly four years. (Georgia DHR 2005)

OTHER CARE PROGRAMS IN GEORGIA:

In addition to the CCSP, other elderly care service programs have been developed to address the issue of providing healthcare and support services to eligible elderly individuals. One such program is the Georgia Home and Community Based Services Program which provides various individual and group services that allow non-Medicaid-eligible citizens to remain in their residences. Individuals contact their local AAA and it is determined, based on unmet need, physical, mental, and financial criteria, what care an individual can receive and the costs associated with the care. (Georgia DHR 2007)

Another program administered by the Division of Medical Assistance within the State of Georgia Department of Community Health is the Service Options Using Resources in a Community Environment (SOURCE). This program helps provide needed medical and support services to elderly individuals within their residence in order to delay or eliminate individuals' entry into a NF. The operation of the SOURCE program is very similar to that of CCSP. First, individuals are screened to determine their level of need of care, then a case manager works to develop a care plan with the individual's doctor. Case managers continue to stay in contact with individuals on a monthly basis to make sure the care plan is working, which results in an individualized care plan for each person with the hopes of maintaining health and functional status while keeping the person within their place of residence. (Georgia DCH 2007)

The SOURCE Program, the Georgia Home and Community Based Services Program, and the CCSP are administered by the State of Georgia with the goals of increasing individual independence and delaying or avoiding NF admission. Georgia enacted these initiatives based on several reasons including a desire to decrease costs associated with NF placement (costs incurred by the Medicaid program), demand for

services from citizens, initiatives developed by other states across the county, and expectations from the federal government to decrease the number of individuals entering NFs.

ATLANTA AREA AGENCY ON AGING:

The Atlanta Area Agency on Aging (Atlanta AAA) resides within the Atlanta Regional Commission in Atlanta and is contracted through the State of Georgia Division of Aging Resources (DAS). The Atlanta AAA provides many services to the metropolitan Atlanta area, which includes the following counties: Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, and Rockdale. (Atlanta AAA Website 2006; Atlanta AAA Publication 2006; Bear 2006)

The Atlanta AAA provides many services and administration oversight to metropolitan Atlanta seniors and families including: development of a region-specific plan for metro-Atlanta aimed to meet the specific needs of the elderly; provision of information and referral services; management of case management; management of transportation providers; management of home-delivered meals; administration of senior centers; and management of legal services. (Atlanta AAA Website 2006; ARC 2006; Bear 2006)

Enrollees in the CCSP from the metro-Atlanta area must first be deemed eligible for the program by initially participating in a telephone screening process conducted by screening technicians at the Atlanta AAA. Individuals, families, referrers (such as hospitals or care facilities) or caretakers call into the Atlanta AAA to complete the screening. All information collected during the initial telephone screening comes from the individual providing the information over the phone. The Atlanta AAA rarely calls

anyone else for additional information (for example, primary diagnosis is not typically received from the individual's physician during the phone screening but later on in the CCSP application process).

The screening process consists of a series of questions which assess the individual's current: health status, mental status, current care being received and social support, unmet need for care, living arrangements, and financial status. This screening process is conducted by universally trained screening technicians. The technicians follow a series of scripted questions and enter the individual's answers and information into a standardized electronic database. This information is then used to assess the individual's need for the CCSP.

After the screening process is conducted the individual receives an assessment score called their Determination of Need Score or DON. This score is then used to rank individuals based on their impairment and need and those with the highest scores receive the highest priority for the CCSP. Further discussion of the DON score will be provided later. The screening process is based on an assessment tool that was previously validated to determine eligibility and need for community-based long term care services for individuals (Paveza, Cohen et al. 1990). (See Table 3)

Once individuals are determined to be eligible for the CCSP, a series of additional steps are taken until the individual is enrolled in the CCSP (see background information). Once the individual is enrolled in the CCSP, the individual's current status (such as being alive, death, and entry into a NF) remains updated in the same electronic database that is used for the initial screening process. The information collected in the electronic database for each individual remains in the database regardless of a patient's death or entry into a

NF. The electronic database remains housed in the Atlanta AAA and can only be accessed by authorized technicians and management.

As previously discussed, a major component involved in the telephone screening for the CCSP consists of determining individuals' DON score. This score is the major factor used in determining a patient's level of impairment and need for assistance and care and in determining the priority of individuals for the next steps in the CCSP enrollment process. Determining patients' DON involves assessing their level of impairment (LI) and unmet need (UN) for various activities of daily living (ADL). ADLs are normal activities and functions that an individual must do in daily living. ADLs include: eating, bathing, grooming, transferring (from bed or chair to standing or moving), dressing, continence, managing money, using the telephone, preparing meals, laundry, housework, leaving the house, routine health (monitor medicine, take temperature, etc.), special health concerns (change colostomy, tube feedings, physical therapy, etc.), and living alone. The ADLs measure physical impairment or cognitive impairment or both. For instance, the ADL eating requires both a certain amount of cognitive ability and physical ability. (MDS-HCMDS-HC 1997; Bear 2006) (See Table 3)

To determine the LI for each ADL, individuals are asked specific questions that determine the degree of impairment and give a LI numeric score during the screening process for each of the mentioned ADLs. For each ADL, the questions evaluate the level of physical or mental impairment for the individual. There are four impairment scores an individual could receive for each LI of ADL including: 0 – Performs all of the activity, 1 – Performs most of the activity, 2 – Does not perform most of the activity, 3 – Does not

perform the activity. The scores for each LI of ADL are then totaled to give a total score for LI of ADL. (MDS-HC 1997; Bear 2006) (See Table 3)

The determination of UN for ADL is very similar to determining the LI of ADL. Individuals are again asked specific questions for each ADL, but this time the questions relate to the level of assistance the individual currently receives or needs to complete the ADL. The answers to the questions are based on what the individual can do themselves as well as informal support the individual receives from others to complete the ADLs. There are four unmet need level scores that an individual receives for each ADL which include: 0 – Need is met, 1 – Need is mostly met, 2 – Need is mostly not met, 3 – Need is not met. The scores for each UN for ADL are then totaled to give a total score for UN for ADL. (MDS-HC 1997; Bear 2006) (See Table 3)

Table 3: Questions Used for Determining Level of Impairment and Unmet Need:

Eating	0	Can you feed yourself without assistance?
	1	Do you need some assistance, i.e. cut food, butter bread, reminding that it is time to eat?
	2	Does someone have to cut up your food and sit with you to encourage you to finish your meal?
	3	Does someone have to feed you?
Bathing	0	Can you bathe/shower yourself without physical assistance?
	1	Do you need help getting into the tub or washing? Does it take you a long time?
	2	Does someone have to do most of the bathing for you? Are you frequently fatigued when you bathe yourself?
	3	Does someone else have to bathe you?
Grooming	0	Can you wash your hair/shave and brush your teeth yourself?
	1	Do you need a little assistance with shampooing/shaving and brushing your teeth? Does someone need to remind you to do these?
	2	Does someone need to give you a lot of assistance with shampooing/shaving and brushing your teeth? Does someone have to stay with you and encourage you to finish the task?
	3	Do you depend on someone for a shampoo/shave?
Dressing	0	Can you dress and undress yourself without assistance?
	1	Do you need a little assistance or occasional assistance? Does it take a long time to get dressed? Do you need some reminding to get dressed?
	2	Do you need a lot of assistance or frequent assistance? Are you frequently fatigued or does it take a very long time to get dressed? Do you rarely get dressed without being reminded?
	3	Do you depend on someone else to dress/undress you?
Transferring	0	Are you able to get out of bed by yourself?
	1	Does someone have to provide a little assistance in getting out of bed?
	2	Do you require a lot of help in getting out of bed?
	3	Do you rely totally on someone else to get you out of bed?
Continence	0	Can you get to the bathroom on time without assistance?
	1	Do you occasionally have accidents or need some assistance in using the bathroom?
	2	Do you have frequent accidents or need a lot of assistance?
	3	Do you have no control over your bowel/bladder or depend totally on someone else to get you to the bathroom?
Managing money	0	Do you pay your own bills and handle your own money?
	1	Does someone occasionally help you pay your bills or assist with financial decisions?
	2	Does someone handle most of your finances?
	3	Is someone else responsible for managing your finances and paying your bills?
Telephoning	0	Can you use your telephone by yourself?
	1	Do you need some assistance?
	2	Do you need someone to dial and/or pick up the phone for you?
	3	Are you not able to use your phone at all?
Preparing meals	0	Do you plan and cook/prepare your own meals?
	1	Does it take you a really long time or do you need some assistance with preparing your meals? Do you experience fatigue while preparing your meals?
	2	Does someone need to provide a lot of assistance or help you with many steps of the process?
	3	Does someone do all your cooking for you?
Laundry	0	Do you do all your own laundry?
	1	Do you need any assistance at all with your laundry?
	2	Do you need a lot of assistance or can only do some of the steps?
	3	Is all your laundry done by someone else?
Housework/Cleaning	0	Are you able to do all your own housework/cleaning?
	1	Do you need any assistance at all with your housework/cleaning? Do you need to be reminded or do you need some physical assistance in cleaning your house?
	2	Do you need a lot of assistance with your housework/cleaning?
	3	Do you depend totally on someone else for your housework/cleaning?
Life outside home	0	Can you make arrangements for a bus or cab and leave home unassisted?
	1	Do you need any assistance in going places? Do you frequently get fatigued when leaving home alone?
	2	Do you need a lot of assistance in going places or do you experience frequent fatigue or take an unusually long time in going someplace?
	3	Are you totally dependent on someone else to leave your home?

Routine health (monitor medicine, take temperature etc)	0	Can you take care of all your everyday health needs? Can you follow routine directions of doctor/nurse?
	1	Do you need any assistance with your routine health needs?
	2	Do you need a lot of assistance with your routine health needs?
	3	Are you dependent on someone else to take care of your routine health needs?
Special health (change colostomy, tube feedings, physical therapy)	0	Can you take care of your special health needs?
	1	Do you need any assistance with your special health needs?
	2	Do you need a lot of assistance with your special health needs?
	3	Are you totally dependent upon someone else to take care of your special health needs?
Living alone	0	Could you safely live alone? Would you recognize an emergency and be able to respond appropriately?
	1	Can you be left alone safely for extended periods of time? Would it take you a long time to respond to an emergency?
	2	Can you be left alone safely for only short periods?
	3	Does someone need to be with you all the time?

Questions to Determine Unmet Need for Care for all Areas:	
0	Are your needs currently being met?
1	Are your needs being met most of the time?
2	Are your needs not being met most of the time?
3	Are your needs seldom/never being met?

The two total scores for LI and UN are then added together to give a total DON score based on levels of impairment and unmet need for activities of daily living. This score along with financial and other information collected is used to give a total assessment of the individual applying to the CCSP. (MDS-HC 1997; Bear 2006)

The questions used in determining the LI of ADLs, UN for ADLs, and DON score were adapted from the Minimum Data Set – Home Care (MDS-HC). This is a universally recognized standard for determining LI and UN. The MDS-HC has been validated in numerous studies as a tool in determining individuals' physical and cognitive impairment and for determining placement in community and home based care programs. (Landi, Onder et al. 2001; Zhang, Walker et al. 2006) A study by Fries in 2004 validated a Michigan telephone screening program that uses the MDS-HC as a primary assessment tool in determining patients functional ability (Fries, Shugarman et al. 2002; Fries, James et al. 2004).

A recent 2000 study by Del Rio found that the MDS was valid and accurate in assessing individual's primary diagnosis but was found to have a poor predictive ability

in predicting hospitalizations of individuals (Del Rio, Goldman et al. 2006). This indicates that while the MDS-HC is accurate in assessing patients' current physical and mental impairments and level of need, the MDS-HC may not be useful in predicting future outcomes in patients.

PREVIOUSLY IDENTIFIED RISK FACTORS FOR NF ENTRY:

There have been many studies in the US and abroad which have documented predictors associated with placement into a NF. These studies have all consistently found similar findings that indicate common demographic factors, health factors, and caregiver support factors are independently associated with entry into a NF. (Branch and Jette 1982; Brock and O'Sullivan 1985; Morris, Sherwood et al. 1988; Weissert and Cready 1989; Greene and Ondrich 1990; Jette, Branch et al. 1992; Wolinsky, Callahan et al. 1992; Freedman, Berkman et al. 1994; Black, Rabins et al. 1999; Gabrel 2000; Kersting 2001; Wang, Mitchell et al. 2001; Bharucha, Pandav et al. 2004; Friedman, Steinwachs et al. 2005; Ohio Area Agency on Aging 10B INC 2005)

Several common demographic factors have been determined to be associated with NF placement. Many studies have shown that being Caucasian is a predictor in NF placement (Weissert and Cready 1989; Wolinsky, Callahan et al. 1992; Gabrel 2000; Friedman, Steinwachs et al. 2005). A large number of studies have shown a strong association with increasing age and increased risk of NF placement (Branch and Jette 1982; Brock and O'Sullivan 1985; Morris, Sherwood et al. 1988; Weissert and Cready 1989; Greene and Ondrich 1990; Jette, Branch et al. 1992; Wolinsky, Callahan et al. 1992; Kersting 2001; Wang, Mitchell et al. 2001; Bharucha, Pandav et al. 2004; Friedman, Steinwachs et al. 2005; Ohio Area Agency on Aging 10B INC 2005). Some

research has indicated that being female also shows a greater association with NF placement (Weissert and Cready 1989; Jette, Branch et al. 1992; Gabrel 2000). In addition, being a widow or lacking of a spouse also has indicated NF placement (Weissert and Cready 1989; Freedman, Berkman et al. 1994; Gabrel 2000; Ohio Area Agency on Aging 10B INC 2005). A study conducted by Kersting found that, specifically for black Americans, living below the poverty line was predictive of nursing home placement (Kersting 2001).

Consistent findings indicate an association with an individual's health status and increased likelihood of NF placement. Many studies have found that poor mobility is a risk factor (Branch and Jette 1982; Weissert and Cready 1989; Greene and Ondrich 1990; Jette, Branch et al. 1992; Wang, Mitchell et al. 2001). Studies also have shown that cognitive impairment indicates an increased risk for NF entry (Branch and Jette 1982; Greene and Ondrich 1990; Freedman, Berkman et al. 1994; Black, Rabins et al. 1999; Bharucha, Pandav et al. 2004). A study conducted by Bharucha and associates found that individuals taking a higher number of prescription medications are more likely to be placed in a NF (Bharucha, Pandav et al. 2004). Studies also have indicated that individuals with impaired functional status (the ability to care for oneself and perform maintenance and physical activities) and those with an increased need for support in ADLs also are at increased risk for NF placement (Branch and Jette 1982; Morris, Sherwood et al. 1988; Greene and Ondrich 1990; Jette, Branch et al. 1992; Wolinsky, Callahan et al. 1992; Freedman, Berkman et al. 1994; Black, Rabins et al. 1999; Kersting 2001; Friedman, Steinwachs et al. 2005). ADLs include the performance of tasks such as bathing, dressing, toileting, and feeding.

Previous research also has found associations with caregiver support and living arrangements to be associated with NF placement. Studies from Kersting and Freedman et al. have found that lack of care and/or support from relatives and family is associated with increased risk for NF placement (Jette, Branch et al. 1992; Freedman, Berkman et al. 1994). Other studies have shown that a lack of social support in general indicates an increased association of risk of NF placement (Brock and O'Sullivan 1985; Wolinsky, Callahan et al. 1992; Bharucha, Pandav et al. 2004). Studies also have shown that individuals' living arrangements such as living alone or previous time living in a NF is associated with increased risk for NF entry (Branch and Jette 1982; Greene and Ondrich 1990; Wolinsky, Callahan et al. 1992; Ohio Area Agency on Aging 10B INC 2005).

METHODS:

Discussion of methods includes: data collection, variables studied, definitions, discussion of study subjects, descriptive analysis of study subjects, discussion of valid and missing data, and statistical analysis of variables.

DATA COLLECTION METHODS:

All data used in this study come from a database that is housed within the Atlanta AAA. This database stores all screening information collected on each individual that is screened by the Atlanta AAA. Data used in this study were abstracted by an Atlanta AAA data technician, based on the following two criteria:

1. Individuals who were screened or re-screened by the Atlanta AAA and were subsequently enrolled in the CCSP between January 1, 2003 and December 31, 2004 and were de-enrolled within one year of entry to the CCSP due to NF entry (N=115). Any individual who enrolled in the CCSP between January 1, 2004 and December 31, 2004 were followed until December 31, 2005 in order to determine if those individuals de-enrolled to a NF within one year of initial enrollment.
2. A random sample of individuals who were screened or re-screened by the Atlanta AAA and were subsequently enrolled in the CCSP between January 1, 2003 and December 31, 2004 and were not de-enrolled due to NF entry within one year of their entry into the CCSP (N=115).

The data collected at initial screening for individuals who met the above criteria were extracted, de-identified of patient information, and placed into four Microsoft

Access 2000 databases. No individuals were excluded who met the above criteria. From these databases data was abstracted and used for this study.

DATA VARIABLES AND DEFINITIONS:

This research studied the de-identified aggregate information collected on individuals at the initial telephone screening conducted by the Atlanta AAA. The variables studied can be seen in Tables 4 – 10.

Some data variables were given in text form from which a numerical assignment was given. The assignments were given in an alphabetical hierarchy from one (1) to six (6) depending on each individual variable. Non-responses were given the value of "."

Table 4: General Information from Atlanta AAA:

General Information:			
Reason for Referral to CCSP:		Intake Function:	
	Post-hospital care		Re-screen
	Home placement screening		Screen
	Eligible for home care	Couple (Couple Applying Together):	
	Day care		Yes
	Other		No

In Table 4, "General information from the Atlanta AAA," the variable "Reason for referral" refers to why the individual was being screened by the Atlanta AAA and what specific type of care the individual wanted to apply for. The variable "Intake function" refers to whether the screening being conducted was the first time (Screen) the individual had been screened or if it was their second or later (Re-screen) screening by the Atlanta AAA. As mentioned previously some individuals stay on a waiting list for the CCSP. Reasons for an individual being on the waiting list and being re-screened could include lack of funding from the CCSP for individuals to enroll or an individual not

initially meeting the enrollment criteria for the CCSP. The variable “Couple” refers to whether the individual being screened was part of a couple that was applying to the CCSP together.

Table 5: Demographic Data from Atlanta AAA:

Demographic Data:			
Gender:		Race:	
	Female		Asian/Pacific Islander
	Male		Black/African American
			Hispanic
			White
Age in years at entry into CCSP		Number of people living in household	
Marital Status:		Housing:	
	Divorced		Private home/apartment no home care services
	Married		Private home/apartment with home care services
	Never Married		Board care/assisted living/ group home
	Separated		Nursing home
	Widowed		Other
County of residence:		Living Arrangement:	
	Cherokee		Alone
	Clarke		Group setting with non-relatives
	Clayton		Long-term care facility
	Cobb		With child
	DeKalb		With others
	Douglas		With spouse and others
	Fayette		With spouse only
	Fulton		Homeless
	Gwinnett		
	Hall		
	Henry		
	Jackson		
	Rockdale		

In Table 5 the variable “Gender” refers to the applicant’s gender. The variable “Age in years at entry into the CCSP” refers to how old the individual was when they were screened over the telephone to determine eligibility for the CCSP. The variable

"Race" refers to the applicants' race. The variable "County of residence" refers to the county that the individual resided in at time of screening. The variable "Number of people living in household" refers to the total number of individuals living in the individual's residence at time of screening. The variable "Housing" refers to the type of housing the individual resides in as well as if the individual receives any form of healthcare support at the time of screening. Note that under housing the place of residence can include "Nursing Home" which indicates that individuals were in some sort of nursing home setting at the time of screening and then once enrolled in the CCSP the individual left to go to some other residence to receive CCSP services. The variable "Living arrangement" refers to the individual's type of housing and who the individual is living with at the time of screening.

Table 6: Income Data from Atlanta AAA:

Income Data:			
Income Source:		Other Income Sources:	
	Pension Social Security Income (SSA) Supplemental Security Income (SSI) Other		Other Pension SSA SSI
Income amount (monthly in dollars):		Approximate other amount (holdings, cash, etc in dollars):	
Transfer money (for income estimations):		Will the individual cost share:	
	Yes No		Yes No
Estimated cost share individual will pay			
Medicaid Status:			
	Medical Assistance Only (MAO) – qualified previous for Medical Assistance Income Only Potential Medical Assistance Only (PMAO) – potentially qualified for MAO Supplemental Security Income – receiving Medicaid cash benefits Social Security Income – receiving Social Security Income only		

In Table 6, the variables “Income source” and “Other income source” refer to the individual’s primary and other income sources which include pension, SSA, SSI, and other sources. The variable “Income amount” refers to the amount of income an individual receives monthly. The variable “Approximate other amount” refers to any other amount of cash, holdings, or savings an individual may have. The variable “Transfer money” is used to determine if the individual being screened transferred any sum of money or assets in the past and the answer is then used to determine financial eligibility in the CCSP program. The variable “Will the individual cost-share” refers to whether the applicant will cost-share or help pay some of the costs associated with CCSP services received. The variable “Medicaid status” refers to if the individual receives or is eligible to receive any type of Medicaid funds. Under the category “Medicaid status, Medical Assistance Only (MAO)” refers to individuals who are financially eligible to receive financial assistance from Medicaid funds to use towards medical costs only. “Potential Medical Assistance Only (PMAO)” refers to individuals who are potentially eligible for MAO. The variable “Estimated cost share individual will pay” is based on the financial information taken during the telephone screening and provides an estimate on how much the individual will pay for their cost-share if they enter the CCSP.

Table 7: Health Data from Atlanta AAA:

Health Data:		
General reported health:		Chronic problem
	Fair Good Poor	Yes No
Acute diagnosis:		
	Yes No	
Primary diagnosis		
	Alzheimer's disease Arthritis Cancer Congestive heart failure Coronary artery disease Dementia other than Alzheimer's Diabetes - Type I Diabetes - Type II Emphysema/COPD/asthma Head trauma Heart disease Hip fracture Hypertension Multiple sclerosis Neurological disease Osteoporosis Other fractures (e.g., wrist, vertebral) Paralysis	Parkinson's Disease Renal/Kidney disease Stroke Legal blindness (both eyes) Rheumatoid arthritis Cerebral palsy Mental retardation Overweight Macular degeneration Lung cancer Asthma Chronic renal failure Epilepsy Osteoarthritis Quadriplegia Schizophrenic disorders Seizure

In Table 7, the variable "General reported health" refers to the applicant's health as reported by the individual providing the information over the phone. The variable "Chronic problem" refers to whether the individual has a chronic health condition. The variable "Acute diagnosis" refers to any acute conditions at the time of screening. The variable "Primary diagnosis" refers to the applicant's primary health problem which is

self-reported by the individual giving information to the Atlanta AAA screening technician.

Table 8: Caregiver Data from Atlanta AAA:

Caregiver Data:			
Does individual have legal guardian:		Caregiver lives in residence:	
	Yes No		Yes No
Caregiver relationship to individual:		Caregiver availability:	
	Child or child-in-law Friend/neighbor Other relative Spouse Other		1-2 times per week All the time Day only Night only Specific time/day
Caregiver health status:		Caregiver emotionally overwhelmed:	
	Fair Good Poor		No Somewhat Yes
Caregiver willingness to help:			
	Willing indefinitely Willing for short time Willing occasionally No caregiver		

In Table 8, all variables refer to the caregiver of any applicant who has a caregiver. “Does individual have a legal guardian” refers to whether the individual has a legal guardian. The variable “Caregiver lives in residence” refers to whether a caregiver lives in the residence of the individual being screened. The variable “Caregiver relationship to individual” refers to the relationship or association between the caregiver and applicant. The variable “Caregiver availability” refers to when the caregiver is available to the individual. The variable “Caregiver health status” refers to the reported state of health of the caregiver. The variable “Caregiver emotionally overwhelmed” refers

the reported emotional state of the caregiver and if they are overwhelmed providing informal support to the individual. The variable “Caregiver willingness to help” refers to how long the caregiver is willing to continue providing support to the individual.

Table 9: Determination of Need Data from Atlanta AAA:

Determination of Need (DON): **0=Performs all of activity,** **1=Performs most of activity,** **2= Cannot perform most of activity,** **3=Cannot perform activity**						
DON: Individual Level of Impairment (LI)			DON: Individual Level of Unmet Need for Care (UN)			
	Eating	0, 1, 2, 3		Eating	0, 1, 2, 3	
	Bathing	0, 1, 2, 3		Bathing	0, 1, 2, 3	
	Grooming	0, 1, 2, 3		Grooming	0, 1, 2, 3	
	Dressing	0, 1, 2, 3		Dressing	0, 1, 2, 3	
	Transferring	0, 1, 2, 3		Transferring	0, 1, 2, 3	
	Continence	0, 1, 2, 3		Continence	0, 1, 2, 3	
	Managing money	0, 1, 2, 3		Managing money	0, 1, 2, 3	
	Telephoning	0, 1, 2, 3		Telephoning	0, 1, 2, 3	
	Preparing meals	0, 1, 2, 3		Preparing meals	0, 1, 2, 3	
	Laundry	0, 1, 2, 3		Laundry	0, 1, 2, 3	
	Housework	0, 1, 2, 3		Housework	0, 1, 2, 3	
	Outside work	0, 1, 2, 3		Outside work	0, 1, 2, 3	
	Routine health	0, 1, 2, 3		Routine health	0, 1, 2, 3	
	Special health	0, 1, 2, 3		Special health	0, 1, 2, 3	
	Living alone	0, 1, 2, 3		Living alone	0, 1, 2, 3	
Total DON: totals for LI, UN, and total DON score (LI + UN total scores):						
	Total LI score					
	Total UN score					
	Total DON score					

In Table 9, all variables are related to questions and answers that determine each individuals level of impairment (LI), level of unmet need (UN), and total determination of need (DON). The questions and answers determine total scores for LI, UN, and DON. A thorough discussion of this process has been discussed previously. Please refer to

Table 3 for further explanation of each variable and examples of questions asked to determine the scores.

Table 10: Unused Variable Fields from Atlanta AAA:

Fields that Contained No Data or Unused in Study:	
Was an appeal of the decision requested?	
	Yes
	No
If so, was the appeal explained to individual?	
	Yes
	No
Region individual resides in:	
Caregiver physically overwhelmed:	
Self Reported Height	
Self Reported Weight	
De-identified patient identifier:	
Number of days in CCSP (for NF entry group, less than one year):	

The Table 10, "Unused Variable Fields from Atlanta AAA," contains variables that either contained no data or were not useful in analysis or discussion for this study.

STUDY SUBJECTS:

Individuals who were screened or re-screened and were subsequently enrolled by the Atlanta AAA between January 1, 2003 and December 31, 2004 equaled 1,257. From this group a total of 233 individuals passed away during the two-year time period, resulting in a remaining total of 1,024 individuals. From the remaining 1,024 individuals, a sample of 115 individuals was drawn determined by entry into a NF within one year of initial entry into the CCSP (NF group). Another random sample of 115 individuals was drawn for a control group which consisted of individuals who did not leave the CCSP for NF entry within one year of initial enrollment (non-NF group).

The control group (non-NF group) of individuals (n=115) from the same time frame (January 1, 2003 and December 31, 2004) were randomly selected based on the criteria of non-entry into a NF for at least one year after initial CCSP enrollment. The data from the non-NF group was used to set baseline data in order to compare data from the NF group who entered a NF within one year of entry into the CCSP after initial screening by the Atlanta AAA.

DESCRIPTIVE DATA ANALYSIS:

Descriptive statistics, including ranges, counts, and frequencies, were computed for all variables used in the study. The study uses the computer software programs Microsoft Excel and the Statistical Package for the Social Sciences Version 14.0 (SPSS) to conduct descriptive statistical analyses of the data.

VALID AND MISSING DATA:

Table 11, shows all data variables with the total number and percentage of valid entries and the total number and percentage of missing entries for both the NF group and non-NF group.

Both the NF group and non-NF group are missing values in the same variables being studied. The variables with the most missing data include: “Other income resources,” “Transferred money,” “Will cost share,” “Couple applying,” “Has legal guardian,” “Physician reported chronic condition,” “Acute diagnosis,” and “General reported health.” Since both groups studied are missing similar numbers of values in the same categories, one can assume that the missing data are due to errors in the way the screening data were collected initially by the screening technicians at the Atlanta AAA.

Table 11: All Variables – Total Valid/Missing (percentages determined by n=115 for each group):

	NF entry in one year				Non-NF entry in one year			
	Valid		Missing		Valid		Missing	
VARIABLE:	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Reason for referral	113	98.3%	2	1.7%	113	98.3%	2	1.7%
Intake function	115	100.0%	0	0.0%	112	97.4%	3	2.6%
Medicaid status	115	100.0%	0	0.0%	115	100.0%	0	0.0%
Income source	113	98.3%	2	1.7%	109	94.8%	6	5.2%
Other income resources	21	18.3%	94	81.7%	24	20.9%	91	79.1%
Income amount	115	100.0%	0	0.0%	113	98.3%	2	1.7%
Approx other income amount	112	97.4%	3	2.6%	112	97.4%	3	2.6%
Transferred money	34	29.6%	81	70.4%	42	36.5%	73	63.5%
Will cost share	56	48.7%	59	51.3%	47	40.9%	68	59.1%
Estimated cost share	101	87.8%	14	12.2%	90	78.3%	25	21.7%
County of residence	115	100.0%	0	0.0%	115	100.0%	0	0.0%
Marital status	113	98.3%	2	1.7%	111	96.5%	4	3.5%
Couple applying	73	63.5%	42	36.5%	85	73.9%	30	26.1%
Gender	115	100.0%	0	0.0%	113	98.3%	2	1.7%
Age at time of last screening	114	99.1%	1	0.9%	115	100.0%	0	0.0%
Living arrangement	115	100.0%	0	0.0%	115	100.0%	0	0.0%
Housing type	115	100.0%	0	0.0%	113	98.3%	2	1.7%
Race	105	91.3%	10	8.7%	106	92.2%	9	7.8%
Number in household	108	93.9%	7	6.1%	110	95.7%	5	4.3%
Has legal guardian	6	5.2%	109	94.8%	19	16.5%	96	83.5%
Caregiver health status	96	83.5%	19	16.5%	90	78.3%	25	21.7%
Caregiver relationship to individual	102	88.7%	13	11.3%	101	87.8%	14	12.2%
Caregiver lives in residence	81	70.4%	34	29.6%	80	69.6%	35	30.4%
Caregiver emotionally overwhelmed	97	84.3%	18	15.7%	89	77.4%	26	22.6%
Caregiver availability	100	87.0%	15	13.0%	94	81.7%	21	18.3%
Informal support willing to help	105	91.3%	10	8.7%	100	87.0%	15	13.0%
Physician reported chronic condition	57	49.6%	58	50.4%	59	51.3%	56	48.7%
Primary diagnosis	111	96.5%	4	3.5%	115	100.0%	0	0.0%
Acute diagnosis	11	9.6%	104	90.4%	16	13.9%	99	86.1%
Reported general health	58	50.4%	57	49.6%	57	49.6%	58	50.4%
Level of impairment eating	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment bathing	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment grooming	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment dressing	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment transferring	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment continence	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment managing money	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment telephoning	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment preparing meals	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment laundry	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment housework	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment outside work	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment routine health	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Level of impairment special health	113	98.3%	2	1.7%	114	99.1%	1	0.9%
Level of impairment living alone	113	98.3%	2	1.7%	114	99.1%	1	0.9%
Unmet need eating	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need bathing	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need grooming	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need dressing	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need transferring	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need continence	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need managing money	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need telephoning	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need preparing meals	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need laundry	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need housework	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need outside work	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need routine health	114	99.1%	1	0.9%	112	97.4%	3	2.6%
Unmet need special health	114	99.1%	1	0.9%	114	99.1%	1	0.9%
Unmet need living alone	114	99.1%	1	0.9%	114	99.1%	1	0.9%

GENERAL SCREENING CHARATERISTICS OF STUDIED SUBJECTS:

Table 12, “Descriptive General Information,” contains descriptive data that refers to general screening information including: intake function, reason for referral, and if a couple was applying together.

Approximately 80% of individuals in the NF group had only one screening before enrollment, while 20% had at least two screenings before enrollment. Approximately 69% of individuals in the non-NF group had only one screening before enrollment versus approximately 29% who had at least two screenings before enrollment.

For both the NF group and the non-NF group the reason for referral to the CCSP was for home placement screening or to receive home health services.

Both the NF group and the non-NF group had a large percentage of missing values in the “couple applying” variable. Of the valid data, both groups of individuals had a majority of non-couples applying for the CCSP services.

Table 12: Descriptive General Information (percentages determined by n=115 for each group):

GENERAL INFORMATION:					
		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
Intake function					
	Screen	92	80.0%	79	68.7%
	Re-screen	21	18.3%	33	28.7%
Reason for referral					
	Post hospital care	1	0.9%	0	0.0%
	Other	0	0.0%	4	3.5%
	Home placement screening	13	11.3%	17	14.8%
	Eligible for home care	89	77.4%	87	75.7%
	Day care	10	8.7%	5	4.3%
Couple applying together					
	Yes	26	22.6%	22	19.1%
	No	47	40.9%	63	54.8%

DEMOGRAPHIC AND FINANCIAL CHARACTERISTICS OF STUDIED SUBJECTS:

For both the NF group and non-NF group approximately 73% of individuals in each group were female. (See Table 13)

Both groups shared similar racial demographics as well. Both groups were approximately 50% African American, 39% Caucasian, 2% Hispanic, and 1% Asian.

The non-NF group had a larger percentage (36%) of individuals younger than 65 years of age than did the NF group (15%). The NF group had a larger percentage of individuals 76 or older (47%) versus the non-NF group (37%).

Both groups had similar marital status demographics with the greatest discrepancy being in the “Never Married” category with 6% in the NF group versus 12% in the non-NF group.

Both groups had a large spread of counties of residence with the majority of counties being near the metropolitan Atlanta area. The counties with the highest number of individuals from both groups were: Fulton (21% NF group and 23% non-NF group), DeKalb (20% NF group and 23% non-NF group), Cobb (16% NF group and 10% non-

NF group), Clayton (10% NF group and 17% non-NF group), and Gwinnett (11% NF group and 8% non-NF group).

Both the NF group and non-NF group had similar living arrangements. The highest percentage of individuals in each group lived with a child (37% NF group and 30% non-NF group). Approximately the same percent of individuals in each group lived alone (12% NF group and 15% non-NF group). However, the NF group had a larger percentage of individuals residing in a group setting (16%) versus the non-NF group (10%). The non-NF group had a larger percent of individuals living “With Others” (23%) versus the NF group (8%).

Both groups had similar housing types. A majority in both groups lived in private residences with no healthcare services provided (64% NF group and 61% non-NF group). The NF group had a larger percent of individuals who resided in a NF facility at the time of screening (10%) versus the non-NF group (0%). It should be noted that individuals who resided in a NF facility at the time of initial screening did receive CCSP services and then at a later time were de-enrolled due to NF entry. Based on information received from the Atlanta AAA these individuals left the NF after enrollment in the CCSP and went to another residence to receive the CCSP services and were subsequently de-enrolled due to NF entry.

Both the NF group and the non-NF group had two or more individuals other than the applicant for CCSP living in their household (63% NF group and 69% non-NF group).

For both groups the income source for the majority of individuals was Social Security income (88% NF group and 71% non-NF group). The non-NF group had a

greater percentage of individuals receiving supplemental security income (21%) versus the NF group (10%).

The approximate monthly income amount was similar for both groups with the greatest discrepancy being greater than $1,001 category (22% NF group and 12% non-NF group).

Since the CCSP program is a program individuals must qualify for financially under Georgia Medicaid guidelines, it was no surprise individuals in each group qualified for some type of Medicaid assistance (approximately 28% of individuals in the non-NF group already receive Supplemental Security Income versus 11% in the NF group.) The majority of the individuals for both groups are eligible for Medical Assistance Only (64% NF group and 61% non-NF group).

The greatest percentage of individuals in each group has an estimated cost share of $0.00 at the time of screening (31% NF group and 30% non-NF group). The NF group has approximately 48% of individuals who will pay $100.00 or more versus 33% of individuals in the non-NF group.

Since the variables “Other income sources,” “Transferred money,” and “Will cost share” did not have a majority of valid responses for either group these variables will not be discussed. (See Table 11)

Table 13: Descriptive Demographic and Financial Data (percentages determined by n=115 for each group):

		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
Gender					
	Female	84	73.0%	85	73.9%
	Male	31	27.0%	28	24.3%
Race					
	Asian	1	0.9%	2	1.7%
	African American	58	50.4%	57	49.6%
	Caucasian	44	38.3%	45	39.1%
	Hispanic	2	1.7%	2	1.7%
Age at last screening					
	Less than 65	17	14.8%	41	35.7%
	66-75	43	37.4%	20	17.4%
	76-85	29	25.2%	33	28.7%
	86 +	25	21.7%	21	18.3%
Marital status					
	Divorced	13	11.3%	16	13.9%
	Married	31	27.0%	24	20.9%
	Never married	7	6.1%	14	12.2%
	Separated	6	5.2%	6	5.2%
	Widowed	56	48.7%	51	44.3%
County residence					
	Cherokee	4	3.5%	5	4.3%
	Clarke	0	0.0%	1	0.9%
	Clayton	12	10.4%	19	16.5%
	Cobb	18	15.7%	11	9.6%
	DeKalb	23	20.0%	27	23.5%
	Douglas	4	3.5%	1	0.9%
	Fayette	0	0.0%	5	4.3%
	Fulton	24	20.9%	26	22.6%
	Gwinnett	13	11.3%	9	7.8%
	Hall	0	0.0%	1	0.9%
	Henry	8	7.0%	6	5.2%
	Jackson	0	0.0%	1	0.9%
	Rockdale	9	7.8%	3	2.6%
Living arrangement					
	Alone	14	12.2%	17	14.8%
	Group setting (non-relatives)	19	16.5%	12	10.4%
	Long term care facility	1	0.9%	0	0.0%
	With child	43	37.4%	35	30.4%
	With others	9	7.8%	26	22.6%
	With spouse + others	4	3.5%	4	3.5%
	With spouse only	25	21.7%	20	17.4%
	Homeless	0	0.0%	1	0.9%
Housing type					
	Private residence (no healthcare)	74	64.3%	70	60.9%
	Private residence (with healthcare)	23	20.0%	31	27.0%
	Assisted living	6	5.2%	10	8.7%
	Nursing home	12	10.4%	0	0.0%
	Other	0	0.0%	2	1.7%
Number in household					
	Individual only	17	14.8%	11	9.6%
	Plus one	18	15.7%	20	17.4%
	Plus two	38	33.0%	42	36.5%
	Plus three or more	35	30.4%	37	32.2%
Income source					
	Pension	1	0.9%	0	0.0%
	Social Security Income	101	87.8%	82	71.3%
	Supplemental Security Income	11	9.6%	24	20.9%
	Other	0	0.0%	3	2.6%
Approx. monthly income amount					
	$0-$500	11	9.6%	16	13.9%

		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
	$501-$1000	79	68.7%	83	72.2%
	$1001 - greater	25	21.7%	14	12.2%
Other income sources					
	Pension	14	12.2%	9	7.8%
	SSA	5	4.3%	4	3.5%
	SSI	1	0.9%	9	7.8%
	Other	1	0.9%	2	1.7%
Approx. other income amount					
	$0	93	80.9%	102	88.7%
	$1 - $5000	10	8.7%	5	4.3%
	$5001 - $90,000	9	7.8%	5	4.3%
Transferred money					
	Yes	9	7.8%	8	7.0%
	No	25	21.7%	34	29.6%
Medicaid status					
	Medical Assistance Only (MAO)	74	64.3%	70	60.9%
	Partial MAO	28	24.3%	13	11.3%
	SSI	13	11.3%	32	27.8%
Will cost share					
	Yes	56	48.7%	46	40.0%
	No	0	0.0%	1	0.9%
Approx. cost share					
	$0	36	31.3%	35	30.4%
	$1 - $100	11	9.6%	17	14.8%
	$101 - $300	24	20.9%	15	13.0%
	$301 - $900	19	16.5%	10	8.7%
	All costs except $95	11	9.6%	13	11.3%

DEMOGRAPHIC CHARACTERISTICS OF COMBINED STUDIED SUBJECTS (NF AND NON-NF GROUPS)

Table 14 provides descriptive statistics on a selected group of variables and categories. These statistics are presented in another descriptive format in order to provide a richer context of understanding of these variables. These statistics were obtained by taking the number of cases in each variable category within the NF or non-NF group and dividing that number by the total number of cases in each variable category. (See Table 14)

When looking at the variable “Gender” one can see that of the total males in both groups, 53% entered a NF. (See Table 14)

When looking at the variable “Age at Time of Last Screening” one can see that a larger percent of individuals less than 65 did not enter a NF. However, of those individuals 66-75 and of those 86 years and older, a larger percent of individuals entered a NF. (See Table 14)

A greater percent of the total number of individuals who were divorced and those who never married did not enter a NF and a greater percent of the total number of individuals who were married and widowed did enter a NF. (See Table 14)

Finally 100% of individuals living in a NF at the time of screening entered a NF within one year of initial entry into the CCSP. It should also be noted that from the total number of individuals who received healthcare in a private residence as well as those who were in assisted living, a greater percentage of individuals did not enter a NF. (See Table 14)

Table 14: Descriptive Demographic Data of Combined Studied Subjects (percentages from each group out of total for each variable and category):

Demographic and Financial Data Totals and Percents for Combined Groups:					
VARIABLE - SUBCATEGORY	**Total for both groups:**	**NF Entry**		**Non-NF Entry**	
		Total	Percent	Total	Percent
Gender					
Female	169	84	50%	85	50%
Male	59	31	53%	28	47%
Race					
Asian	3	1	33%	2	67%
African American	115	58	50%	57	50%
Caucasian	89	44	49%	45	51%
Hispanic	4	2	50%	2	50%
Age at Time of Last Screening					
Less than 65	58	17	29%	41	71%
66-75	63	43	68%	20	32%
76-85	62	29	47%	33	53%
86+	46	25	54%	21	46%
Marital Status					
Divorced	29	13	45%	16	55%
Married	55	31	56%	24	44%
Never Married	21	7	33%	14	67%
Separated	12	6	50%	6	50%
Widowed	107	56	52%	51	48%
Housing Type at Time of Screening					
Private Residence (no healthcare)	144	74	51%	70	49%
Private Residence (with healthcare)	54	23	43%	31	57%
Assisted Living	16	6	38%	10	63%
Nursing Home	12	12	100%	0	0%
Other	2	0	0%	2	100%

HEALTH CHARACTERISTICS OF STUDIED SUBJECTS:

Both for the NF group and the non-NF group the largest percentage of individuals had “fair” or “good” reported as their state of general health (41% NF group and 37% non-NF group). (See Table 15)

There was a wide range of primary diagnoses given for individuals in both groups. The top three diagnoses for both groups were Alzheimer’s disease (27% NF group and 15% non-NF group), stroke (19% NF group and 14% non-NF group), and dementia other than Alzheimer’s disease (10% NF group and 12% non-NF group). As noted before, all information, including primary diagnosis, is self-reported information provided by the individual during the telephone screening.

Since the variables “Physician Reported Chronic Condition” and “Physician Reported Acute Condition” did not have a majority of valid responses for either group, these variables will not be discussed. (See Table 11)

Table 15: Descriptive Health Data (percentages determined by n=115 for each group):

		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
Reported general health					
	Poor	11	9.6%	14	12.2%
	Fair	45	39.1%	38	33.0%
	Good	2	1.7%	5	4.3%
Physician reported chronic condition					
	Yes	57	49.6%	58	50.4%
	No	0	0.0%	1	0.9%
Physician reported acute condition					
	Yes	4	3.5%	4	3.5%
	No	7	6.1%	12	10.4%
Primary Diagnosis:					
	Alzheimer's Disease	31	27.0%	17	14.8%
	Arthritis	1	0.9%	4	3.5%
	Cancer	2	1.7%	1	0.9%
	Congestive heart failure	5	4.3%	6	5.2%
	Coronary artery disease	0	0.0%	2	1.7%
	Dementia other than Alzheimer's	11	9.6%	14	12.2%
	Diabetes/IDDM	8	7.0%	2	1.7%
	Diabetes/NIDDM	1	0.9%	5	4.3%
	Emphysema/COPD/asthma	0	0.0%	4	3.5%
	Head trauma	0	0.0%	1	0.9%
	Heart disease	3	2.6%	3	2.6%
	Hip fracture	1	0.9%	0	0.0%
	Hypertension	2	1.7%	2	1.7%
	Multiple sclerosis	0	0.0%	3	2.6%
	Neurological disease	0	0.0%	2	1.7%
	Osteoporosis	1	0.9%	0	0.0%
	Other fractures (e.g., wrist, vertebral)	1	0.9%	0	0.0%
	Paralysis	1	0.9%	2	1.7%
	Parkinson's Disease	6	5.2%	3	2.6%
	Renal/Kidney disease	7	6.1%	5	4.3%
	Stroke	22	19.1%	16	13.9%
	Legal blindness (both eyes)	0	0.0%	1	0.9%
	Rheumatoid arthritis	1	0.9%	3	2.6%
	Cerebral palsy	0	0.0%	4	3.5%
	Mental retardation	0	0.0%	1	0.9%
	Overweight	0	0.0%	1	0.9%
	Macular degeneration	2	1.7%	0	0.0%
	Lung cancer	1	0.9%	0	0.0%
	Asthma	0	0.0%	1	0.9%
	Chronic renal failure	0	0.0%	1	0.9%
	Epilepsy	0	0.0%	1	0.9%
	Osteoarthritis	1	0.9%	0	0.0%
	Quadriplegia	0	0.0%	2	1.7%
	Schizophrenic disorders	1	0.9%	0	0.0%
	Seizure	2	1.7%	1	0.9%

CAREGIVER CHARATERISTICS OF STUDIED SUBJECTS:

The majority of caregivers for both groups were a child, child-in-law, spouse, or other relative (85% NF group and 84% non-NF group). From these, the largest percentage of caregivers for individuals was a child or child-in-law (55% NF group and 45% non-NF group) followed by a spouse (23% NF group and 18% non-NF group). (See Table 16)

The majority of individuals in both groups had a caregiver who lived in their residence (64% NF group and 59% non-NF group).

There was a broad range of caregiver availability times to provide care to the individuals in both groups with the largest percentage falling into the category “All the time” (39% NF group and 31% non-NF group). The next category with the largest percentage was “night only” with 23% of caregivers in the NF group and 24% of the caregivers in the non-NF group falling into that category. The remaining majority of caregivers fell into the category “Specific schedule” (19% NF group and 21% non-NF group) which indicated the caregivers could provide care only on a specific schedule for each individual.

It is reported in the “Caregiver willingness to help” category that the majority of caregivers were willing to provide care and support indefinitely to individuals in both groups (83% NF group and 81% non-NF group). In addition, 5% of individuals in the NF group had no caregiver versus 3% in the non-NF group.

The majority of caregivers reported their health status as fair or good in both groups (78% NF group and 74% non-NF group). The majority of caregivers reported they were somewhat or completely emotionally overwhelmed for both groups (74% NF group and 73% non-NF group).

The variable “Has legal guardian” did not have a majority of valid responses for either group and so there will be no discussion of this variable. (See Table 11)

Table 16: Descriptive Caregiver Data (percentages determined by n=115 for each group):

CAREGIVER DATA:					
		NF entry in one year		**Non-NF entry in one year**	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
Has legal guardian:					
	Yes	2	1.7%	1	0.9%
	No	4	3.5%	18	15.7%
Caregiver relationship to individual:					
	Child/Child-in-law	63	54.8%	52	45.2%
	Friend/Neighbor	3	2.6%	0	0.0%
	Other relative	8	7.0%	24	20.9%
	Spouse	27	23.5%	21	18.3%
	Other	1	0.9%	4	3.5%
Caregiver lives in residence:					
	Yes	74	64.3%	68	59.1%
	No	7	6.1%	12	10.4%
Caregiver availability:					
	1 -2 times a week	5	4.3%	4	3.5%
	All the time	45	39.1%	36	31.3%
	Day only	2	1.7%	2	1.7%
	Night only	26	22.6%	28	24.3%
	Specific schedule	22	19.1%	24	20.9%
Caregiver health status					
	Poor	7	6.1%	4	3.5%
	Fair	18	15.7%	27	23.5%
	Good	71	61.7%	59	51.3%
Caregiver emotionally overwhelmed:					
	Yes	51	44.3%	39	33.9%
	Somewhat	34	29.6%	45	39.1%
	No	12	10.4%	5	4.3%
Caregiver willingness to help:					
	Willing indefinitely	95	82.6%	93	80.9%
	Willing for short time only	3	2.6%	1	0.9%
	Willing occasionally	1	0.9%	2	1.7%
	No caregiver	6	5.2%	4	3.5%

LEVEL OF IMPAIRMENT (LI) CHARACTERISTICS OF STUDIED SUBJECTS:

For all categories of level of impairment, the subcategories “O = Performs all activity” and “1 = Performs most of the activity” were combined, and the subcategories “2 = Cannot perform most of the activity” and “3 = Cannot perform the activity” were

combined for ease of discussion and because these combined variables show conceptually the same information. (See Table 17)

For most of the categories the NF and the non-NF groups had similar percentages of individuals who fall in the subcategories performs all or most of the activity and cannot perform all or most of the activity. There are two subcategories where there is a large difference in the two groups. The first of which is “LI Grooming” in which individuals who can perform all or most (26.1% NF group and 34.8% non-NF group) versus individuals who cannot perform all or most (73.0% NF group and 64.3% non-NF group). The second subcategory is “LI Telephoning” in which individuals who can perform all or most (31.3% NF group and 41.7% non-NF group) versus individuals who cannot perform all or most (67.8% NF group and 58.3% non-NF group).

Table 17: Descriptive Determination of Need – Level of Impairment Data (percentages determined by n=115 for each group):

		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
LI Eating:					
	0/1. Performs all or most activity	81	70.4%	86	74.8%
	2/3. Cannot perform most or all activity	33	28.7%	28	24.3%
LI Bathing:					
	0/1. Performs all or most activity	9	7.8%	15	13.0%
	2/3. Cannot perform most or all activity	105	91.3%	99	86.1%
LI Grooming:					
	0/1. Performs all or most activity	30	26.1%	40	34.8%
	2/3. Cannot perform most or all activity	84	73.0%	74	64.3%
LI Dressing:					
	0/1. Performs all or most activity	31	27.0%	34	29.6%
	2/3. Cannot perform most or all activity	83	72.2%	80	69.6%
LI Transferring:					
	0/1. Performs all or most activity	48	41.7%	48	41.7%
	2/3. Cannot perform most or all activity	66	57.4%	66	57.4%
LI Continence:					
	0/1. Performs all or most activity	39	33.9%	41	35.7%
	2/3. Cannot perform most or all activity	75	65.2%	73	63.5%
LI Managing money:					
	0/1. Performs all or most activity	14	12.1%	19	16.5%
	2/3. Cannot perform most or all activity	100	87.0%	95	82.6%
LI Telephoning:					
	0/1. Performs all or most activity	36	31.3%	47	40.9%
	2/3. Cannot perform most or all activity	78	67.8%	67	58.3%
LI Preparing meals:					
	0/1. Performs all or most activity	1	0.9%	1	0.9%
	2/3. Cannot perform most or all activity	113	98.3%	113	98.3%
LI Laundry:					
	0/1. Performs all or most activity	0	0.0%	2	1.7%
	2/3. Cannot perform most or all activity	114	99.1%	112	97.4%
LI Housework:					
	0/1. Performs all or most activity	1	0.9%	0	0.0%
	2/3. Cannot perform most or all activity	113	98.3%	114	99.1%
LI Outside work:					
	0/1. Performs all or most activity	4	3.5%	4	3.5%
	2/3. Cannot perform most or all activity	110	95.7%	110	95.7%
LI Routine health:					
	0/1. Performs all or most activity	24	20.9%	28	24.3%
	2/3. Cannot perform most or all activity	90	78.3%	86	74.8%
LI Special health:					
	0/1. Performs all or most activity	97	84.3%	98	85.2%
	2/3. Cannot perform most or all activity	16	13.9%	16	13.9%
LI Living alone:					
	0/1. Performs all or most activity	8	7.0%	7	6.1%
	2/3. Cannot perform most or all activity	105	91.3%	107	93.0%

UNMET NEED (UN) CHARATERISTICS OF STUDIED SUBJECTS:

For all categories for unmet need, the subcategories "O = Need is met" and "1 = Need is mostly met" were combined, and the subcategories "2 = Need is mostly not met" and "3 = Need is not met" were combined for ease of discussion and because these combined variables show conceptually the same information. (See Table 18)

For most of the categories the NF and the non-NF groups had similar percentages of individuals in the subcategories of need is met or mostly met and need is not mostly met or not met subcategories. Six subcategories showed large differences between the NF group and the non-NF group including: "UN Grooming," "UN Continence," "UN Preparing meals," "UN Outside work," "UN Routine health," "UN Laundry," and "UN Living alone."

In the subcategory "UN Grooming" approximately 35% of individuals in the NF group had a need that was all or mostly met versus 47% of individuals in the non-NF group. In the subcategory "UN Continence" in approximately 48% of individuals in the NF group need was met or mostly met versus in 54% of individuals in the non-NF group. In the subcategory "UN Preparing Meals" 29% of individuals in the NF group had a need met or mostly met versus 36% of individuals in the non-NF group. In the subcategory "UN Laundry" 71% of individuals in the NF group need was mostly not or not met versus 57% in the non-NF group. Finally, in the subcategory "UN Living Alone" in 25% of individuals in the NF group need was met or mostly met versus in 33% of individuals in the non-NF group. Therefore for these five variables the NF group had higher levels of unmet need than the non-NF group. (See Table 18)

In the subcategory "UN Outside Work" 79% of individuals in the NF group need had a met or mostly met versus 70% of individuals in the non-NF group. In the

subcategory “UN Routine Health” 86% of individuals in the NF group had a need met or mostly met versus 76% of individuals in the non-NF group. Thus, for these two variables the NF group has lower levels of unmet need than the non-NF group. (See Table 18)

Table 18: Descriptive Determination of Need – Unmet Need (UN) Data (percentages determined by n=115 for each group):

		NF entry in one year		Non-NF entry in one year	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
UN Eating:					
	0/1: Need is met or mostly met	84	73.0%	88	76.5%
	2/3: Need is mostly not or not met	30	26.1%	26	22.6%
UN Bathing:					
	0/1: Need is met or mostly met	20	17.4%	24	20.9%
	2/3: Need is mostly not or not met	94	81.7%	90	78.3%
UN Grooming:					
	0/1: Need is met or mostly met	40	34.8%	54	47.0%
	2/3: Need is mostly not or not met	74	64.3%	60	52.2%
UN Dressing:					
	0/1: Need is met or mostly met	49	42.6%	55	47.8%
	2/3: Need is mostly not or not met	65	56.5%	59	51.3%
UN Transferring:					
	0/1: Need is met or mostly met	51	44.3%	54	47.0%
	2/3: Need is mostly not or not met	63	54.8%	60	52.2%
UN Continence:					
	0/1: Need is met or mostly met	55	47.8%	62	53.9%
	2/3: Need is mostly not or not met	59	51.3%	52	45.2%
UN Managing money:					
	0/1: Need is met or mostly met	113	98.3%	113	98.3%
	2/3: Need is mostly not or not met	1	0.9%	1	0.9%
UN Telephoning:					
	0/1: Need is met or mostly met	68	59.1%	70	60.9%
	2/3: Need is mostly not or not met	46	40.0%	44	38.3%
UN Preparing meals:					
	0/1: Need is met or mostly met	33	28.7%	41	35.7%
	2/3: Need is mostly not or not met	81	70.4%	73	63.5%
UN Laundry:					
	0/1: Need is met or mostly met	32	27.8%	48	41.7%
	2/3: Need is mostly not or not met	82	71.3%	66	57.4%
UN Housework:					
	0/1: Need is met or mostly met	36	31.3%	41	35.7%
	2/3: Need is mostly not or not met	78	67.8%	73	63.5%
UN Outside work:					
	0/1: Need is met or mostly met	91	79.1%	80	69.6%
	2/3: Need is mostly not or not met	23	20.0%	34	29.6%
UN Routine health:					
	0/1: Need is met or mostly met	99	86.1%	87	75.7%
	2/3: Need is mostly not or not met	15	13.0%	25	21.7%
UN Special health:					
	0/1: Need is met or mostly met	109	94.8%	110	95.7%
	2/3: Need is mostly not or not met	4	3.5%	4	3.5%
UN Living alone:					
	0/1: Need is met or mostly met	29	25.2%	38	33.0%
	2/3: Need is mostly not or not met	84	73.0%	76	66.1%

TOTAL DETERMINATION OF NEED CHARACTERISTICS OF STUDIED SUBJECTS:

The table "Descriptive Total Determination of Need Scores – LI, UN, and Total DON" provides ranges of total scores for LI, UN, and DON for both the NF group and the non-NF group. The LI range in scores from 25 or less to 36 or more. The UN ranges in scores from 15 or less to 25 or more. The DON ranges from 40 or less to 60 or more. Across these three categories the lower the score the lesser the level of impairment and the lesser the level of need for DON categories. Those with higher scores indicate a higher level of impairment and higher unmet need for all DON categories. (See Table 19)

In the subcategory "Total level of impairment score" the majority of individuals in the non-NF group 94% fall in the 25 or less range but the NF group did not (20%). For the NF group, the majority of individual total LI scores were greater than 26 (80%) and of those approximately 19% were greater than 36, for non-NF group, none were above 36.

In the subcategory "Total unmet need score" the majority of individuals in the non-NF group (79%) fall in the 25 or more score subcategory versus only 10% of the NF group. In the NF group 69% of individuals were in the 20 or less score range versus only 7% of individuals in the non-NF group.

In the subcategory "Total determination of need score" the majority of individuals in both the NF group (55%) and non-NF group (63%) scored 50 or less. However, in the NF group 44% of individuals had a score of 51 or greater with 7% with a score of 60 or more, versus 37% of individuals in the non-NF group with a score of 51 or more including 10% with a score of 60 or greater. This indicates that the NF group showed

percentage of individuals with both a higher level of impairment and higher amount of unmet need.

Table 19: Descriptive Total Determination of Need Scores – LI, UN, and Total DON (percentages determined by n=115 for each group):

TOTAL DETERMINATION OF NEED SCORES - LI, UN, and TOTAL DON:					
		NF entry in one year		**Non-NF entry in one year**	
VARIABLE - SUBCATEGORY		Total	Percent	Total	Percent
Total level of impairment score:					
	25 or less	23	20.0%	108	93.9%
	26 – 30	36	31.3%	3	2.6%
	31 – 35	33	28.7%	3	2.6%
	36 or more	22	19.1%	0	0.0%
Total unmet need score:					
	15 or less	27	23.5%	0	0.0%
	16 - 20	52	45.2%	8	7.0%
	21 - 25	23	20.0%	15	13.0%
	25 or more	12	10.4%	91	79.1%
Total determination of need score:					
	40 or less	20	17.4%	27	23.5%
	41 - 50	43	37.4%	45	39.1%
	51 - 60	43	37.4%	31	27.0%
	60 or more	8	7.0%	11	9.6%

STATISTICAL ANALYSIS:

This study used the statistical software tool Statistical Package for the Social Sciences (SPSS) Version 14.0. Two types of statistical analysis were used including: Pearsons' Chi Square analysis and Multiple Analysis of Variance (MANOVA) with Wilks' Lambda.

Pearsons' Chi Square Analysis is typically conducted on two categorical variables to determine if they are related or not. This test often is performed with a 2x2 table in which both variables are binomial (though this is not always the case). Pearsons' Chi Square Test hypothesizes there is no association between the variables being tested (the test assumes the two variables are unrelated). The hypothesis of the Chi Square Test is rejected if a probability is shown of less than .05 (which indicates that there is a less than

5% chance that the association is due to chance). If the hypothesis of the Chi Square Test is rejected then it is commonly interpreted to mean the two variables being tested show an association and one can make inferences of the relationship of two variables. (Iverson and Norpoth 1987; Afifi and Clark 1990)

MANOVA is a test used when there are multiple independent variables that cannot be combined, for example, continuous variables such as age, income, or ranges of scores. The test attempts to identify if there is any association between the independent and dependent variables. Wilks' Lambda is used with MANOVA when there are more than two groups formed by dependent variables; in this study, NF entry forms two groups: NF entry group and non-NF entry group. Wilks' Lambda is a measure of the difference between the means (averages) of the independent variables for the two dependent groups. The smaller the Wilks' Lambda (.05 or less to be significant) the greater the difference between the means of the variables. (Iverson and Norpoth 1987; Afifi and Clark 1990)

STATISTICAL ANALYSIS:

The dependent variable was "entry into a NF facility within one year of entry into the CCSP" and was included in the analysis to determine what, if any, of the independent variables being tested show association with NF entry. The data included as independent variables in the analysis were selected based on the number of valid values of data (lack of missing values, see Table 11) as well as indicators for NF entry as determined by the literature review conducted. The study was unable to analyze many variables and categories due to small sample size. The variables included in the analysis are: "age," "gender," "race," "marital status," "Medicaid status," "income status," "income amount,"

“primary diagnosis,” “total LI score,” “total UN score,” “total DON score,” “living arrangement,” “caregiver lives in house,” “housing type,” and “number in household.”

The variables “age,” “gender,” and “race” are all demographic variables which help establish control for the analysis, and all three have been previously associated with increased likelihood of NF entry.

The variables “marital status,” “living arrangement,” “Caregiver lives in home,” “housing type,” and “number in household” were all chosen to be in the analysis as indicators of informal support. Use or lack of informal support has been previously identified from the literature review as being associated with NF entry.

The variables “Medicaid status,” “income status,” and “income amount” were all included to indicate economic status of individuals. These variables were included to determine if any economic indicators could be identified as potential indicators for NF entry.

The variables “primary diagnosis,” “total LI score,” “total UN score,” and “total DON score” were all chosen to be included as health and impairment (physical and mental) indicators. The literature review indicated that certain physical and mental impairments were associated with increased likelihood of NF entry.

Table 20 displays variables that were adapted to conduct the statistical analysis. The adaptation was conducted based on suggestions from a statistical consultant for both ease of analysis and interpretation of results. The following variables were adapted: “Medicaid status,” “income status,” “living arrangement,” “housing type,” and “primary diagnosis.”

In the variable “Medicaid Status” the categories “MAO” and “ PMAO” were recoded as one category: MAO and PMAO since both categories indicate Medical Assistance Only and not SSI.

In the variable “Income Status” the categories “Pension” and “Other” were recoded as missing since both categories represented less than 3% of the total valid responses. The categories “SSA” and “SSI” remained the same. (See Table 20)

In the variable “Living Arrangement” the categories “Alone” and “Homeless” were coded as the variable “Alone” since the category “Homeless” could not be assessed by itself and these two categories relate to one another conceptually. All other categories in this category the applicant lived with others and these variables were recoded as “Living with other”.

In the variable “Housing type” the sub-variable “Private residence (no healthcare)” was kept the same, while all other categories were recoded to represent the fact that some sort of formal healthcare or personal support was received. (See Table 20)

In the variable “Primary diagnosis” only diagnoses with a response rate 10% or greater were kept in the analysis to study. All other diagnoses for applicants were coded as missing values because of limitations in analysis due to small sample size.

Table 20: Variables Adapted for Statistical Analysis:

Variable	Original	Changed To:
Medicaid status		
	MAO	MAO and PMAO
	PMAO	MAO and PMAO
	SSI	SSI
Income status		
	Pension	Missing
	SSA	SSA
	SSI	SSI
	Other	Missing
Living arrangement		
	Alone	Alone
	Group setting (non-relatives)	Living with other
	Long term care facility	Living with other
	With child	Living with other
	With others	Living with other
	With spouse + others	Living with other
	With spouse only	Living with other
	Homeless	Alone
Housing Type		
	Private residence (no support)	Private residence (no healthcare)
	Private residence (with support)	Support received
	Assisted living	Support received
	Nursing home	Support received
	Other	Support received
Primary diagnosis		
	Only diagnoses greater than 10% in both groups were kept:	
	Alzheimer's Disease	
	Stroke	
	Dementia	
	Remaining diagnoses were coded as missing variables	

Pearsons' Chi Square test was performed separately on the dependent variable "NF entry" with each of following independent variables: "gender," "race," "marital status," "Medicaid status," "income status," "primary diagnosis," "living arrangement," "Caregiver lives in household," and "housing type."

Table 21: Chi-Square – Medicaid Status:

CHI-SQUARE MEDICAID STATUS PROBABILITY			
	Value	df	Probability
Pearsons Chi Square	9.974	1	0.002

CHI-SQUARE CROSSTABULATION TABLE					
			MAO or PMAO	SSI Income	Total
NF Entry	No- Non entry to NF	Actual Count	83	32	115
		Expected count	92.5	22.5	115
		Difference between actual and expected	-9.5	9.5	
	Yes - Entry to NF	Actual Count	102	13	115
		Expected count	92.5	22.5	115
		Difference between actual and expected	9.5	-9.5	
	Total for Both Groups	Total Count	185	45	230

The only independent variable found to show any significance and relationship with “NF entry” was “Medicaid status.” See Table 21. The test showed a probability significance of .002, indicating that it is highly improbable the two variables “Medicaid status” and “NF entry” were unrelated. In Table 21 one can see the actual count, the expected count, and the difference between the two for the variables “MAO or PMAO” and “SSI Income” for both groups. These numbers represent the actual number of people in each group who fall in those variables and the expected number by the Chi-Square test of individuals to fall in those variables for each group. The test indicated a larger number of individuals who did not enter a NF received SSI than was expected by the Chi Square

test and, likewise, a smaller number received SSI than was expected for those who did enter a NF.

The variable “Housing Type” did not show any significance between the NF and non-NF group. However, it should be noted that this variable was unable to be broken down into its categories. Approximately 10% of individuals in the NF group had the sub-variable of “Nursing Home” as place of residence at time of screening versus 0% of individuals in the non-NF group. This will be discussed further in the next chapter.

MANOVA with Wilks’ Lambda was performed on the dependent variable “NF entry” with the following independent variables: “income amount,” “age at time of last screening,” “number in household,” “total LI score”, “total UN score” and “total DON score.”

Table 22: MANOVA Table - Income Amount and Age at Time of Last Screening

MANOVA - Wilks Lambda - Income Amount and Age at Time of Last Screening						
Effect		Value	F	Hypoth. df	Error df	Significance
NF Entry	Wilks' Lambda	0.268	115.118	4	221	0
MANOVA - Significant Means Comparison						
Dependent Variable	**Independent Variables**	Mean Square	df	F	Significance	
NF Entry	Age at Time of Last Screening	565621.43	1	7.57	0.006	
	Income Amount	2543.82	1	8.92	0.003	
MANOVA - Means of Variables						
NF Entry		Income Amount	Age at Time of Last Screening			
No - Non Entry to NF	Mean	685.52	68.42			
Yes - Entry to NF	Mean	784.82	75.23			

The following independent variables were found to have a significant association with “NF entry”: “income amount” and “age at time of last screening.” The Wilks’ Lambda significance level (Table 22) was .000, which indicated at least one of the

independent variables tested was significantly associated with the dependent variable of interest.

In Table 22, the independent variables “income amount” and “age at time of last screening” showed a significance level of .006 or less, which indicated a probability that the means of each independent variable (income and age) were significantly different for the non-NF group and the NF group.

In Table 22, the mean of each variable can be compared with the two independent variables groups. The mean age of the non-NF group is approximately 68 years versus approximately 75 years for the NF group. This indicated the non-NF group had a significantly lower average age (approximately 7 years younger) than the NF group. For the variable “income amount,” the mean for the non-NF group is approximately $685 per month versus approximately $784 per month for the NF group. This indicated that the non-NF group had a lower average monthly income amount (approximately $100 less) than the NF group.

The next chapter will discuss the findings above with additional commentary and recommendations.

DISCUSSION/RESULTS:

This study attempted to ascertain if any common characteristics exist in individuals enrolled in the CCSP *and* who enter a NF within one year of enrollment. Identification of common characteristics or risk factors for NF entry could lead to revision of the screening process for the CCSP as well as the possible development of specialized care plans for individuals at risk for NF entry. This in turn could lead to cost savings for the State of Georgia and better service for individuals enrolled in the CCSP.

Further discussion and commentary on these variables, inferences derived from descriptive statistics, recommendations based on the findings, and study limitations will be discussed in this chapter.

RESULTS FROM STATISTICAL ANALYSIS:

The following three variables were found to show significant association with entry into a NF: “Medicaid status,” “income amount,” and “age at time of last screening.”

Results from the statistical analysis showed that there was a significant difference between the NF group and non-NF group with the variable “Medicaid Status.” It is clear that more individuals in the non-NF group received SSI benefits than did those in the NF group. However, why this is the case is not clear. Due to lack of information about how this variable may relate to other factors, this study was unable to ascertain if this variable can be associated with NF entry.

Through statistical analysis it was determined that the variable “Income Amount” was significantly different between the non-NF group and the NF group. The non-NF group on average receives approximately $100.00 less in monthly income than the NF group. The variable “monthly income” combines both the CCSP enrollee’s income and

that of their partner or spouse which could help explain the difference in incomes. The non-NF group has a smaller percentage of individuals applying as a couple (19%) versus the NF group (23%) and has a larger percentage of individuals that are divorced, never married, separated, or widowed (75%) versus the NF group (71%). These demographic differences may indicate that the NF group has a larger number of households with two incomes which would help explain the differences in average income between the non-NF group and the NF group. Since all individuals enrolled in the CCSP have a relatively low income it may be the case that $100.00 difference in monthly income is significant for individuals with low incomes and this factor may be associated with NF entry.

The variable "age at time of last screening" indicated a difference between the non-NF group and NF group of approximately seven (7) years of age with the NF group having an older mean age. This difference between the two groups may indicate that age is a risk factor for NF entry. Previous research indicates that risk for NF entry increases with an individual's age (see Chapter Two: Background and Literature Review). The findings on the variable "age at time of last screening" support previous findings on age as a risk factor for NF entry.

INFERENCES DERIVED FROM DESCRIPTIVE STATISTICS:

While only the three independent variables discussed above were found to be statistically associated with NF entry, it is worth mentioning two noticeable differences between the NF group and non-NF group based on the descriptive statistics even though these differences in variables have not been shown to be statistically significant in this study. The two demographic variables worth mentioning are "living arrangements" and "housing type". Both of these variables need further research, and they might help

explain why the NF group entered a NF within one year of entry into CCSP and the non-NF group did not.

It already has been discussed that the NF group had a larger percentage (18%) of individuals residing in a group setting (such as an assisted living facility) versus individuals in the non-NF group (10%). Related to this is the fact that individuals in the NF group also had a larger percentage of individuals (10%) who had a housing type of NF at the time of initial screening for the CCSP versus the non-NF group (0%). As mentioned previously, this study did not conduct an in-depth statistical analysis with all housing types for the two groups because the sample size did not allow for such statistical specificity.

RECOMMENDATIONS:

This study should be conducted with a larger sample size with a larger time frame in order to help validate the current findings and further investigate other variables and categories. A sample spanning no less than five years should be used for further analysis of the variables. A larger sample size would enable further analysis of variables and some variables could be broken down into categories, such as total LI score, total UN score, housing type, and others, which then could be analyzed independently. Since the variables “Medicaid status” and “income amount” have been identified as showing significant association with entry and non-entry to a NF, further study should be conducted to determine how these factors may be related to the risk of NF entry. A study that matches these variables with each applicant would allow in-depth analysis of all variables related to NF entry. Furthermore, the variable “Housing Type” and sub-variable

"Nursing Home" at time of screening have been identified as a potential risk factor for future NF entry. It is recommended that this be further studied with a larger sample.

The variable "age at time of screening" was identified in this study as a potential risk factor for NF entry; the variable also has been identified as a risk factor for NF entry in prior studies. It is recommended that the CCSP telephone screening tool be adapted to reflect a greater emphasis on patient's age. One example of such an adaptation of the screening tool would be to add additional points to a patient's total DON score to reflect older age. With early identification of individuals who may be at higher risk of NF entry, the CCSP could develop special care plans that meet the specific needs of these at-risk individuals, thereby enabling them to stay in the community for a longer period of time.

This study's statistical analysis found no association between NF entry and "Total DON Score," "Total LI Score," and "Total UN Score." This suggests that the determination of need screening system currently used by the Atlanta AAA to assess the physical and mental characteristics of applicants and levels of unmet need at the time of screening may not be useful in predicting future health outcomes. This is consistent with a previous study conducted by Del Rio et al. (2006) which found the MDS-HC, from which the screening tool was adapted, was accurate in assessing an individual's current physical and mental health status but had a poor predictive ability for future hospitalizations. This suggests that while the screening tool and the scores resulting from it may be useful in assessing current state of health, the tool may not be useful for predicting future health outcomes. Additional study is recommended to allow for the breakdown and statistical analysis of the categories of variables "Total UN" and "Total LI" to better determine if the screening tool is useful in predicting future outcomes.

It also is recommended that any additional study include an examination of why the individual left the CCSP for NF entry. Identification of why the individual left the CCSP and entered a NF would be useful information that may help identify risk factors associated with NF entry. It also would be helpful to know how long CCSP enrollees stayed in a NF. In theory, CCSP enrollees should have an average shorter length of stay since the receipt of CCSP services should have delayed NF admission.

In this study many variables were missing data for both the NF group and non-NF group. Variables missing data included: "couple applying," "other income resources," "will cost share," "has legal guardian," "physician reported chronic condition," "physician reported acute condition," "reported patient general health," "patient height," and "patient weight." Since these variables did not have enough valid responses to conduct an analysis, it is unknown whether these variables might predict NF entry or non-entry. Use of standardized answers for all questions related to variables used during the telephone screening is one method to ensure more complete and reliable response collection.

It is recommended that the telephone screening process for the CCSP be thoroughly reviewed to ensure that all data that is needed for screening purposes and evaluation purposes is collected properly. If data is not being collected properly or if there are missing data elements that are not being collected then the screening process should be changed. For example, all variables and sub-categories should be examined in order to determine if there is a need for creation or elimination of specific sub-categories. An example from this study is the variable "Living Arrangement" which has the sub-categories: "Alone," "Group Setting," "Long Term Care Facility," "With Child," "With

Others," "With Spouse and Others," "With Spouse Only," and "Homeless." Determining if all of these sub-categories are needed or if more sub-categories are needed would be useful for assessment of efficiency in screening and as a source of information for further research. Taking action to ensure consistency in data collection could create a higher quality data set for evaluation purposes.

The findings of this study suggest that the telephone screening tool used by the Atlanta AAA needs to be thoroughly examined and validated by an outside entity to ensure that it successfully identifies applicants in greatest need for CCSP enrollment. The database used for this study was not designed for use in program evaluation but rather as a real-time screening tool for individuals applying for the CCSP. Research indicates that the current screening tool identifies individuals at risk for NF entry; however, the tool does not appear to have the capability to distinguish individuals who are at the greatest risk. This is a major flaw in the tool, which should be able to identify not only at risk individuals but those who are at the *highest* risk for NF entry. Review of previously identified risk factors for NF entry, identification of how other states conduct screening of applicants for similar programs, and broad internal studies are recommended to ensure that the telephone screening tool successfully identifies applicants in greatest need of CCSP enrollment. The Atlanta AAA or an outside entity also should consider alternative methods of evaluation for the CCSP program other than the use of initial telephone screening data. Due to the many limitations encountered during this study it is apparent that proper evaluation and study of the CCSP and patients enrolled in the CCSP cannot be adequately conducted using the screening data currently available. If there are

other data sources which may more accurately provide assessment of the CCSP screening process, these should be examined.

From discussions with representatives of the Atlanta AAA there appears to be a lack of internal assessments or studies of the CCSP program itself, and few studies of applicants and enrollees of the CCSP. Evaluation of both the CCSP itself and applicants/enrollees is needed to ensure that the program is operating in the way the CCSP statute intended. These evaluations could provide quantitative information which would be useful for numerous purposes. For example, information could be gathered regarding what type of care may work best or worst for individuals in the CCSP. These evaluations also could assure that those enrolled in the CCSP who are receiving services are indeed at the greatest risk for NF entry. Information that could be determined through internal investigations or studies could provide the program with valuable information that could result in better service provision and cost savings for both the state and CCSP enrollees.

STUDY LIMITATIONS:

The sample size of this study was relatively small (N=230) and because of this extrapolation of findings was difficult. A larger sample (N=1,000 or greater) is recommended for further research.

The time period for this study was relatively short, spanning only two years worth of enrollee data. As a result, the findings from this study may not be reflective of all enrollees in the CCSP. It is recommended that further study be conducted spanning no less than five years. This would allow for more detailed extrapolation of findings.

Another limitation of the study was the inability to break down and conduct statistical analysis on all data variables and categories. This is a serious limitation and is evident in the discussion of “Place of Residence” and the sub-variable “Nursing Home.”

The database used for this study was not designed for use in program evaluation but rather as a real-time screening tool for individuals applying for the CCSP. The data used was not originally intended for evaluation purposes or NF entry prediction and thus may not be the best source of data for identification of risk factors associated with NF entry.

As previously noted, there was missing data for many variables. Missing data caused some variables to be eliminated from inclusion in this study. In addition, variables with missing responses may not be an accurate reflection of the study population. Incomplete data is a recognized study weakness.

It also has been noted that all data used for telephone screening is self-reported by the individual or a representative. No health professionals or other professionals were consulted when the data was collected. The data may or may not be reflective of the individual’s physical or mental health or social support.

Another reason that the study was not as specific as preferred was because no analysis or research was conducted on CCSP enrollees who left the CCSP and entered a NF. It is unknown how long the individual stayed in the NF or their primary reason cited for entering. This information could be collected and be used for further examination of the risk factors associated with NF entry.

CONCLUSION:

This study sought to determine if any common characteristics existed among individuals enrolled in the CCSP *and* who enter a NF within one year of enrollment. Through research and statistical analysis, it was determined that the following common factors potentially identify those individuals who are at the highest risk for entering an NF: “age at time of screening,” “Medicaid status,” and “income amount.”

This information should lead to a revision of screening tools and possible development of specialized care plans for these high risk individuals, which may enable individuals to avoid or delay NF admission. There is a need for further evaluation of the CCSP to identify and clarify risk factors associated with NF entry. Evaluation of the CCSP, identification of risk factors associated with NF entry, and development of specialized care plans could then reduce costs for the State of Georgia and improve service provision for individuals enrolled in the CCSP.

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