

**The University of Kansas
School of Social Welfare
Office of Aging and Long-Term Care**

**Longitudinal Study of Customers
Diverted through the CARE Program:
Technical Report**

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I. Overview and Background

The “The Longitudinal Study of Customers Diverted through the **CARE Program**¹” Project developed as a result of several organizations’ interest in knowing more about the preferences and service utilization of older adult consumers of long term care (LTC) services. The three organizations’ link to the topic stems from their involvement with the provision of LTC services. The Kansas Department on Aging (KDOA) administers LTC services for all older adults. The Kansas Department of Social and Rehabilitation Services (SRS) is the single-state Medicaid Agency that funds the Medicaid-Home and Community Based Services/Frail Elderly (HCBS/FE) Waiver Program. The Office of Aging and Long-term Care (OALTC) at the University of Kansas School of Social Welfare conducts policy-practice research.

The organizations were specifically interested in learning if Medicaid-HCBS/FE services contributed more to **community tenure** than other services. The Medicaid-HCBS/FE Waiver Program requires customers to be nursing facility (NF) eligible in order to receive services through the Waiver Program, yet it has always been difficult to know which older adults would actually enter an NF. A reasonable assumption is that when a person had a **CARE Assessment** (Refer to Appendix A for CARE Assessment form) they were ready to enter an NF. Furthermore, if they were diverted, an additional assumption was that services played a part in **diversion**.

As KDOA, SRS, and OALTC staff developed a methodology to study these questions and test these assumptions, the decision was made to use the CARE Assessment database as the starting point for the analyses. In Kansas, all older adults seeking admission to a Medicaid-certified NF must have a CARE Assessment prior to an NF admission. The Client Assessment, Referral, and Evaluation (CARE) Program is administered by KDOA. This project was also undertaken in order to provide information about the actual length of NF diversion and the actual services received from a sample of customers meeting the KDOA definition of diversion. KDOA wanted more information beyond the **CARE Program 30-Day Follow-Up** (Refer to Appendix C for 30 Day CARE Follow-Up form) to aid them in analysis and planning of programs and services focused on these two questions:

1. How long do older adults who are diverted after a CARE Assessment remain in the community?
2. How effective are SPFS, especially Medicaid-HCBS/FE, in assisting older adults to remain in the community and avoid an NF admission?

When the project was initiated in 1999, a work group made up of KDOA, SRS, and OALTC staff was assembled to plan and oversee the implementation and completion of this project. Copies of the previous two years’ reports are available at: <http://www.oaltec.ku.edu/>.

The work group determined the purpose of the study was to address research questions related to: diversion from NF, risk factors of NF admission, community tenure, customer’s decision-

¹ A glossary of terms has been included in at the end of the Final Report and in Appendix O. When a word or phrase is in bold, the corresponding definition will be found in the glossary.

making process at the time of the CARE Assessment, customer's perception of service-related quality of life, and use of informal support. The project methodology, designed by OALTC staff, incorporated these expected outcomes. The work group met regularly to discuss and review the research design before moving to the next steps. The work group continued to have an on-going role throughout the project, providing consultation and feedback when needed.

Since the project involved agency staff at local and state levels, the work group recommended contacting key groups to inform them about the project. Brief meetings were held with the CARE Oversight Council, the CARE Coordinators, the Case Management Supervisors, and the Kansas Association of Area Agencies on Aging.

Small sub-groups were formed to address specific needs and issues. The subgroups were the Data Subgroup and the Interview Subgroup. The Data Subgroup included Information Services staff and Program Evaluation staff from KDOA, a CARE Coordinator from an Area Agency on Aging (AAA), and staff from the OALTC. The Data Subgroup identified the Client Assessment and Referral System (CARS) database as the primary source for data, established the list of data elements to be selected from CARS and identified other sources of data for the analysis and report (Refer to Appendix B for a complete list and description).

The Interview Subgroup included CARE Program staff, an AAA Case Management Supervisor, a CARE Coordinator, and staff from the OALTC. The Interview Subgroup identified questions for the interviews, and discussed appropriate questions and wording that would be sensitive to older adults' concerns about participating in the research project and the interview process. In addition, the Interview Subgroup developed a strategy and form to gather updated information about the customers and the services being received, and to obtain case managers' input regarding the decision to interview the customer or interview the primary caregiver (Refer to Appendix E).

The Diversion Study Final Report has been divided into two documents. The document entitled "Summary of Key Policy Findings" summarizes and discusses the overall findings and is referred to as the Final Report. This Technical Report was written to provide greater detail concerning the methods, analyses, and findings. It includes a review of relevant literature, research questions and objectives, research design and methodologies for conducting all the analyses, and a complete summary of results from each analysis. There is also an Appendix that contains documents and materials referenced in both the Final Report and Technical Report.

In FY 2001, two amendments were added to the original project. The need and benefit of the amendments came about because there were questions that emerged during the data collection and analysis in FY1999 and FY2000. Amendment 1, *An Expanded Analysis of Diverted Customers: August 2000*, initiated a survey of customers or primary caregivers to identify the sources, frequency, and amounts of informal support received by diverted customers. This document can be found in Appendix M. The Informal Support Survey is in Appendix H. In addition, the amendment involved an analysis of data collected by AAA staff when completing the **CARE 30-Day Follow-Up**. The supplemental questions (Appendix G) focused on identifying specific services and funding sources of those services being received by diverted

customers. The questionnaire also inquired about customers' application and eligibility for Medicaid-HCBS/FE and SGF and/or OAA in-home services.

Amendment 2, *Community Based Service Utilization Prior to Nursing Facility Admission*, which can be found in Appendix N, involved analysis of service data for diverted customers prior to the CARE Assessment. Those who received services prior to the CARE Assessment were described as "early diversions" by AAA staff, however the extent of early diversion was unknown. Amendment 2 analyzed the percent of early diversion and the role services played in keeping older adults in the community prior to the CARE Assessment.

II. Conceptual Model and Review of Research and Literature

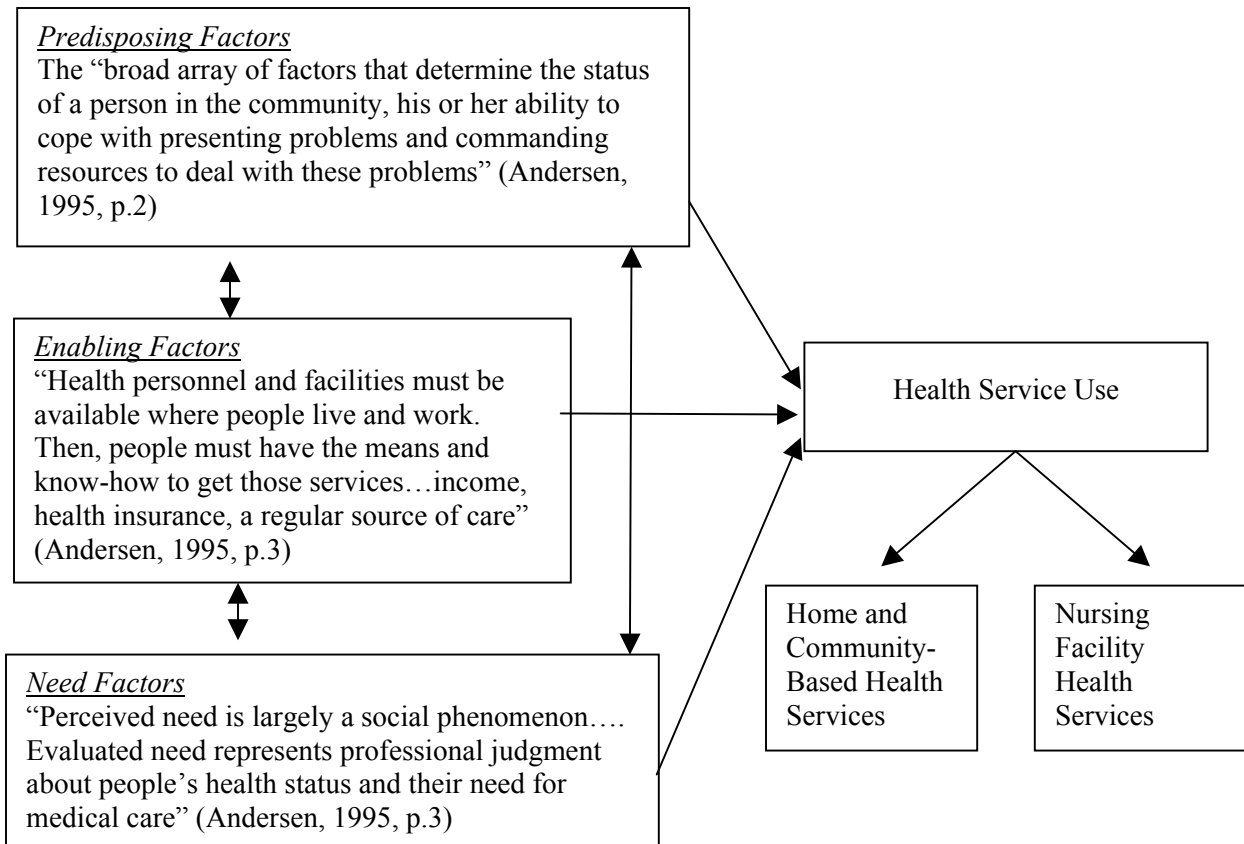
This section begins with the discussion of a conceptual model that guided this study. The review also summarizes relevant literature about older adults' need for and use of long-term care services as well as a survey on other states' measurement of community tenure. This information has been organized to respond to the pertinent questions of identifying risk factors for older adults who are likely to be admitted to an NF and opportunities for capacity building with older adults who can remain in the community. In addition, information regarding decision-making processes used by older adults when considering an NF admission, and the impact of **community-based services** on older adults' quality of life are summarized.

A) The Andersen Social-Behavioral Model of Health Care Use

A theoretical framework organized staff thinking and exploration of the research questions that formed the research objectives. **The Andersen Social-Behavioral Model of Health Care Use**, depicted in Figure 1, is widely utilized to understand patterns of health services use for older adults. Introduced in the 1970's, it serves to categorize personal and environmental factors that in concert lend to the use of healthcare resources by older adults (Andersen, 1995; Andersen & Newman, 1973). This model is appropriate for use in this study as it organizes factors leading to service use, thus matching the study's structure of examining factors predicting NF admission and mobilization of community supports.

Andersen's model is comprised of three categories of factors influencing service use: **predisposing, enabling and need factors**. These factors are hypothesized to ultimately predict service use. Andersen (1995) posits, "people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care" (p.1).

Figure 1 Andersen Social-Behavioral Model of Health Care Use



To further understand Andersen’s model (1995), it is important to define each of the categories contributing to service use. Those characteristics denoting older adults’ predisposition to use health services, (*predisposing factors*) include things such as demographic status, social structure, and the older adults’ beliefs about health. Demographics include immutable characteristics such as age and gender. Andersen (1995) describes these as “biological imperatives suggesting the likelihood that people will need health services” (p. 2). In light of the impact these characteristics have on service use, it is important to consider societal conditions. Andersen (1995) does so, with his inclusion of social structure factors such as ethnicity, level of education, occupation and income. Andersen (1995) proposes an expansion to his earlier work with the addition of psychological characteristics to the list of predisposing factors. Health beliefs and attitudes are very important when considering the likelihood that an older adult would be predisposed to health service use based on values and perceptions of both need and the service provision system (Andersen, 1995).

Enabling factors are those personal, family, and community characteristics that must exist in order for older adults to make use of services. Andersen (1995) writes that not only must the services be available to older adults, but that the older adult must be able to make use of the services. In the context of care for older adults, the availability of home care, community services, NF care and physician care all enable older adults to utilize health services. In so much

as services are available and appropriate, older adults' needs for transportation affects their ability to use those health resources. Andersen (1995) points to older adults' perception of their own health as another enabling factor. Recognition of service need enables service utilization to occur. Social relationships comprise the final type of enabling factor (Andersen, 1995). These relationships not only provide necessary concrete resources such as medication assistance or transportation, but they may also impact the range of services considered for the older adult.

Need factors and older adults' need for care, are separated into two groups. Perceived needs often drive service use. Older adults' perceptions of their health and their ability to function in addition to their self-assessment of health problems contribute to their choices about seeking care. Likewise, their perceptions of self can be modified and may influence their decisions about types of care and about their capacity for resilience. Evaluated need, conversely, describes measurable, observable needs reflecting a health services provider's assessment (Andersen, 1995). Evaluated need factors include measured and observed symptoms, professional assessments and clinical test results. Andersen (1995) acknowledges criticism that this set of factors is over emphasized yet counters this with the reminder that while biology does not exist in a vacuum, it is the basis for determining much of health services use.

B) Risk Factors for Admission to Nursing Facility

It is helpful to extend the Andersen (1995) model to understanding the use of NF services, (Andersen & Newman, 1973). Those characteristics that predispose older adults to an NF placement are important hallmarks for understanding service use. While it is well known that the vast majority of NF residents are women, gender is not seen as a risk factor for an NF admission (Montgomery & Kosloski, 1999). In viewing only the demographics of NF admissions, not NF residents, women are not at risk for NF admission at any greater rate than are men.

In a number of studies age has been determined to be one predisposing factor (Black, Rabins, & German, 1999; Cohen, Tell, & Wallack, 1986; Gaugler, Edwards, Femia, Zarit, Stephens, Townsend, & Greene, 2000; Greene & Ondrich, 1990; Liu, Coughlin & McBride, 1991; Montgomery & Kosloski, 1994, Weissert & Cready, 1989). Jette, Branch, Sleeper, Feldman and Sullivan, (1992) found that not only was age a predisposing factor, but that it remained a statistically significant predictor of institutionalization, despite income, and was grouped with restricted mobility and fear of one's neighborhood. Jette et al. (1992) discuss the interaction of the predisposing factor of age with that of income. In their study, they found that younger elders who were poor were at risk for an NF placement. They posit that one explanation for this is that public funding is readily available for institutionalized care. Interestingly, Jette et al. (1992) note that elders with more financial resources who experienced increased need and were at an older age were also predisposed to institutionalization. Montgomery & Kosloski, 1994 also discuss the positive relationship between income and NF placement as well as the positive relationship between eligibility for Medicaid and NF admission. Furthermore, living alone, which could indicate low social support, was identified by Greene and Ondrich (1990) as a major risk factor for NF placement. Building on this idea, Kersting (2001) found that people living with a child or spouse had approximately one-third less chance of NF utilization than a person living alone.

One set of enabling factors is comprised by the support systems of older adults. When overburdened, supports cannot sustain the care of older adults in need ultimately leading to an

NF admission. Kane et al (1999) found that experienced caregivers were more likely to perceive difficulties in their caregiving role than non-experienced caregivers. These difficulties included restrictions on their time and activities, managing the older person's behaviors, and overall stress of the situation. Tsuji, Whalen, and Finucane (1995) found that caregiver problems, such as living separately from the older adult, having time conflicts due to employment, and caregiver stress, predicted NF placement at a statistically significant level. Interestingly, Gaugler et al (2000), found that longer-term caregivers do not tend to institutionalize their relatives as early as do caregivers who more recently assumed care responsibilities. This paradoxical finding is perhaps indicative of strong commitment to remain in the caregiving role, and possibly provides a context within which to examine the benefits of increased caregiver support.

The availability of health service resources influences service use. This is confirmed in the literature which points to NF bed availability as an enabling factor (Coughlin, McBride & Liu, 1990; Greene & Ondrich, 1990; Miller & Weissert, 2000; Penrod, 2001; Weissert & Cready, 1989). In addition to the availability of the NF, prior use of NF care also serves as a predisposing factor (Coughlin et al., 1990; Jette et al., 1992; Lieu et al., 1991; Tsuji, Whalen, & Finucane, 1995). Jette et al. (1992) found that persons with prior institutionalization were five times more likely to be admitted to an NF than were older adults who had never been admitted.

When using the Andersen Model (Andersen, 1995; Andersen & Newman, 1973) to examine *needs* that lead to an NF placement it is important to consider the level of illness or probability of its occurrence perceived by the person, family or evaluated by a health care provider (Black, Rabins, & German, 1999). Older adults who perceive their health status as poor, in light of the tendency for people to self-rate their health as better than do their physicians, are at high risk for institutionalization based on that self-report.

In examining the literature regarding older adults and their need for care, researchers resoundingly state that functional decline signals a need for increased amounts of care (Hansen, Mahoney & Palta, 1999; McAuley & Travis, 2000; Stuck, Minder, Peter-Wuest, Gillmann, Egli, Kesselring, Leu & Beck, 2000). Functional decline, both physical and cognitive, is the single most cited reason for an NF placement (Coughlin et al., 1990; Greene & Ondrich, 1990; Hansen, Mahoney & Palta, 1999; Liu et al., 1991; McCauley, & Travis, 2000; Osterweil, Martin, & Syndulko, 1995; Stuck et al., 2000). In addition to functional decline, increased need for care to manage ADLs and IADLs are documented need factors (Black et al., 1999; Jette et al., 1992; Liu et al., 1991; Osterweil et al., 1995).

C) Community Tenure

A review of the research literature was conducted to identify studies that measure community tenure (i.e. continuous length of stay in the community), however the search did not yield any studies measuring or examining factors that contribute to community tenure as an outcome. Instead, most studies focus on older adults who enter nursing facilities. What can be understood from these studies is that social services ease caregiver burden and slow the functional decline of older adults, contributing to maintenance of community tenure (Dean, Kolody & Wood, 1990; Mareck & Rantz, 2000; Mustard, Finlayson, Derksen & Barthelot, 1999; and Stuck et al., 2000). Therefore, *The Longitudinal Study of Customers Diverted through the CARE Program* is

groundbreaking, because it is prospectively tracking diverted customers for at least 18 months and provides information on community tenure.

Understanding and establishing a methodology to measure community tenure requires criteria for defining the term and how to measure community tenure. Without research studies for background, it was necessary to conduct a survey in year one of the project to learn about other states' efforts to define and track community tenure. Calls to state aging program representatives were made to identify states that were tracking community tenure. Selection criteria focused on states that resemble Kansas demographically and geographically (i.e., rural, Midwestern, with high concentrations of older adults). Several were ruled out as too sparsely populated (e.g., North Dakota, South Dakota, Wyoming, Montana), too large (e.g., California, Texas, New York), or too culturally different from Kansas (e.g., Alaska, Hawaii). (Refer to complete questionnaire and a summary of state responses in Appendix L).

Nine state aging program representatives were interviewed and it was found that only Missouri and Connecticut routinely tracked community tenure. Both have done so from the beginning of their Medicaid-HCBS/FE Waivers (1992 for Missouri and 1987 for Connecticut). They also were the only states able to define community tenure: in Missouri, "anyone who hasn't chosen NF" and, in Connecticut "to begin services and remain on the program without long-term placement." Minnesota and Wisconsin indicated that they have the records to compile this information if required, but that they do not have a current system in place. Iowa tracks average length of time in the program, and Michigan tracks length of community tenure by fiscal year but does not aggregate data from year to year.

Both Missouri and Connecticut track community tenure by individual but report only aggregate results. Tracking begins on the date the first services are received and spans subsequent fiscal years. Breaks in service are handled in various ways, depending upon the length of the break. Tracking ends when the client dies, is admitted for a long-term NF stay (greater than 90 days in Connecticut), moves out of the state, chooses to discontinue services, or the state share of cost of community-based services (CBS) becomes greater than the cost of NF admission. Community tenure numbers are generated automatically by the prior authorization for services system and linked to their MMIS. Although Missouri is able to gather basic information about customer status, they are limited in their ability to meaningfully describe client functional status.

More specifically, Connecticut has two funding sources for their home care program. One is a 1915C Waiver with 7,500 clients and the other is a state-funded program with 2,500 clients. The clients in the 1915C Waiver must meet an NF level of care as one eligibility criterion. The state-funded program is for older adults who appear to be at risk of NF placement within the next three to six months, but do not meet the NF level of care currently. Many older adults applying for services in Connecticut have not applied for an NF admission before receiving either the 1915C Waiver or state funded program. Connecticut calculates the average time on in-home services subsequent to the referral for in-home services. That average time is 35 months. The community tenure information for Missouri is the average length of time in which Missouri Care Options clients have received Medicaid and state funded community-based services. The average time is 337 days in Missouri. Neither Connecticut nor Missouri calculate

diversion/community tenure only for older adults who have actually applied for NF admission as Kansas had done.

D) Services Targeting Risk Factors to Increase Community Tenure

Older adults prefer to remain in their own homes (Degenholtz, Kane, Kane & Finch, 1999; McAuley & Travis, 2000). The cost of long-term care is ever increasing. Prevention and home-care can be two possible solutions to the growing expense. When the need for crisis care and disease care services are reduced by early interventions and low cost, incremental supports are increased, the total cost of long-term care goes down (Marek & Rantz, 2000; Stuck et al., 2000). The Andersen Model (section II.A.) will be used to organize dynamics contributing to use of health services by older adults, thereby providing a context within which to examine services that target risk factors and increase community tenure.

Characteristics that denote older adults' predisposition to use health services are categorized as predisposing factors. Specifically, there are *predisposing* factors such as age, gender, urban/rural living status, ethnicity, living alone, health beliefs, number of nearby children, marital status, and level of education. Penrod (2001) found that older adults from rural counties were slightly older at admission to an NF, and a greater proportion lived alone prior to an NF admission than their urban counterparts.

Similarly, in examining *enabling factors*, community tenure is possible if service providers cultivate existing supports and ease caregiver burdens. Dean, Kolody and Wood (1990) examined social support for older adults who experienced an increase in care needs over time. They found that social support networks remained relatively stable over time, despite increased burden. Well-placed external support for the caregivers could extend the viability of the existing network allowing the older adult to remain in her/his home. Penrod (2001) found that older adults in rural counties were less disabled at NF admission than their urban counterparts. The reason for this disparity between rural and urban residents, according to Penrod, is the enabling factor of a greater number of available beds in nursing facilities in rural areas.

Looking at *need factors* with a community tenure lens begins with the expansion of understanding, assessment, and reference to perceived health status in relationship to health service use. Idler, Hudson and Levanthal (1999) point to the predictive capabilities of health perception. They say that perceived health status is a better predictor of mortality than objective health measures (Idler, Hudson, & Levanthal, 1999). Borawski, Kinney and Kahana (1996) go so far as to assert that older adults with optimistic views of their own health status live longer than those with more critical impressions of their own health statuses.

Finally, need factors, precipitated by functional decline, can be reexamined as well. Typically, decreased functioning necessitates an NF placement. However, in keeping with the conceptualization of community tenure, intervention must begin early; thus preventing and slowing decline (Mustard, Finlayson, Derksen & Barthelot, 1999). Health promotion is one such intervention that could increase community tenure by growing older adults capacity for wellness (Meeks & Johnson, 1988).

This re-visioning of aging while maintaining community tenure involves a holistic approach of seeing the person, family/supports and environment. The foundation for community tenure is in the philosophical orientation. Community tenure is supported by the beliefs that disability and care arrangements are dynamic and at times transitory. Furthermore, the consumers must be supported and encouraged to determine the timing and intensity of services they will receive. Best practices for community tenure include ongoing assessments, care coordination and provider collaboration, augmentation of existing support resources and the close monitoring of outcomes. This must occur in a living environment that supports independence. Ideally this would include characteristics such as accessibility planning, safety, available resources such as shopping and available transportation (Jenkins, 2000; Marek & Rantz, 2000)

E) Decision-making and Service-Related Quality of Life

The ways in which older adults participate in the decision-making process and choose to enter a nursing home or to remain in the community is relatively unexplored. Reinardy (1992) reported that older adults in the community participated in the decision more than those in acute care hospitals, and those with few years of education perceived that they had not made the decision in contrast to those with a high school or college education. Another study reported that family members and physicians have a large impact during the decision-making process (Reinardy & Kane, 1999). A study by Coulton, Dunkle, Chow, Haug, & Vielhaber (1988) identified six dimensions of the hospital patients' perceptions of decision-making at the time of discharge: certainty about outcomes, family support for decision-making, restriction of choice, feeling of being rushed, control over the choice, and hyper-vigilance. The participants in these three studies were all in institutional settings when they confronted the decision. It is yet unknown how older adults make the decision in home settings when faced with a major life transition that involves a possibility of nursing home placement.

An investigation of the decision-making process for older adults in the community reveals new findings that describe the relationship between independent living, the utilization of CBS, the service-related quality of life, and family involvement in care. The qualitative inquiry in this research project attempts to explore more information in these areas.

The use of the term "quality of life" has become prevalent in the field of social service research over the last 15 years and has been conceptualized and measured in many different ways for a number of populations. Quality of life is a multifaceted concept that requires some explanation when used to formulate social and health service policy and research to study service-related quality of life.

There are varying definitions of quality of life. The literature in this area encompasses a wide variety of opinions and tools of measurement. According to Carr, Thompson & Kirwan (1996), socio-medical literature has equated quality of life with self-esteem, well being, happiness, health, the value and meaning of life, functional status, and adjustment. In assessing quality of life, scientists have conceptualized components of measurement very differently. A few of these categories are listed below:

- Physical, social, emotional;
- Life satisfaction, self-esteem, general health/functional status, socioeconomic status;
- Emotional functioning, social role functioning, participation in activities of daily living, recreational pastimes;
- Physical and material well-being, relations with other people, social, community and civic activities, personal development and fulfillment, recreation;
- Death, discomfort, disability, drug toxicity, dollar cost; and
- Mobility, self-care, usual activities, pain/discomfort, anxiety/depression.

Adapted from Carr, Thompson, & Kirwan (1996)

For older adults, a consideration of health and physical functional status is a salient factor since they often suffer from chronic disease and ongoing disability (Guyatt, Eagle, Sackett, Willan, Griffith, McIlroy, Patterson & Turpie, 1993; Pearlman & Uhlman, 1998). However, no single conceptual or operational method suits all circumstances for quality of life evaluation. Fletcher, Dickinson & Philp (1992) suggested selecting the elements of quality of life based on a clear rationale according to the purpose of inquiry. For the older adults who require some assistance in meeting their own needs, Faulk (1988) conceptualized quality of life based on Maslow's hierarchy of needs model and argued that material resource needs that ensure safety and security needs (e.g., environmental condition, privacy, financial security) and physiological needs (e.g., nutrition, health, help with activities of daily living) comprise the essential elements on which individual's quality of life can be built. In most cases, public assistance provided for older adults primarily targets these areas of basic needs. Thus, CBS services contribute to the quality of life of older adults by supporting their fundamental physical functioning and allowing them to stay in the community. People generally prefer to live in their own homes rather than in nursing homes, and moreover, quality of life is likely to improve when older adults live at home irrespective of service use (AARP, 1996).

Although a number of studies related to quality of life of older adults have been generated since the 1980's, very few studies have approached the subject from the viewpoint of service-related quality of life. KDOA (1998) reported that Senior Care Act services provided for frail older adults who resided in the community had an important impact on the customers' quality of life and maintenance of independent community living. The customers reported that the services result in benefits such as the security of living in their own home, and the meaningful human interactions through contacts with the workers contribute to their emotional well being. The majority of the customers also perceived that maintaining community residence was not possible without the services. Also, many older adults want to involve their family members in their care at home (Degenholtz, Kane & Kivnick, 1997), and even when formal services are utilized, the family remains extensively involved (Hooyman, Gonyea, & Montgomery, 1985). In a study of the quality of home and community-based services, Beaulieu (1991) found that "the well-being and quality of life is enhanced as patients' and caregivers' preferences are heeded" (p.91).

Previous work has suggested that community-based services contribute to the quality of life of older recipients, and the role of the family remains crucial during service provision. There is a need to further examine in what ways community-based services complement the roles of the informal support system and substitute for the functions that are not provided for the older adults.

III. Research Methodology

The purpose of the study was to answer research questions related to: diversion from NF, risk factors of NF admission, community tenure, customers' decision-making process at time of the CARE Assessment, their perception of service-related quality of life and informal support.

A) Research Design

This three-year project was designed as a longitudinal study of long-term care customers in the state of Kansas. Throughout this project OALTC staff analyzed a cohort of older adults who had a CARE Assessment in May 1999, March, April, or August 2000. Quantitative data analyses compared diverted and non-diverted customers to identify similarities and differences between the two groups. Quantitative data were gathered from multiple sources (Refer to Appendix B), including CARE Assessments for these analyses. Then the diverted customers were tracked for 18 months from the point of their CARE Assessment. Three types of diverted customer outcomes were studied: 1) length of community tenure, 2) use and cost of services, and 3) changes in residential status. Extensive sets of additional factors were examined using quantitative analysis methods to assess their possible role in determining each of the three outcomes. Qualitative data on diverted customers' decision-making when considering an NF, their perception of service-related quality of life and informal support, and service availability, were collected from interviews with diverted CARE customers (or their primary caregiver if they were unable to participate in an interview).

The research design provided a basis to identify data sources, selection of the study population, measurement of variables, and data analyses. The overall methodology of the project was organized around the major questions for the analyses in this project.

B) Research Objectives

Research Objective 1 – “To identify and compare the characteristics of customers diverted from NF placement and not diverted from NF.” Specific questions were: What factors distinguish diverted from not diverted customers? Which are the most important distinguishing characteristics? In what ways are the two groups similar?

Research Objective 2 – “To measure the community tenure and service utilization of diverted customers during 18 months of follow-up.” Specific questions were: How long do diverted customers remain in the community? What are the patterns of service utilization of diverted customers? Which services do they use and how frequently?

Research Objective 3 – “To study how effectively CBS can reduce NF placement and under what conditions.” Specific questions that the quantitative analyses addressed were: What are the major factors related to community tenure? What characteristics of customers place them at risk of early NF placement? What characteristics distinguish short-term from long-term community dwelling customers (i.e., the oldest v. younger customers, Medicaid v. other customers, and other comparisons of specific customer sub-groups)? Specific questions the qualitative analyses addressed were: What factors and events led older adults to seek NF admission? What was the

decision making process used by older adults when considering an NF admission? What perceptions do customers have of CBS and how have they affected their service-related quality of life? What role does informal support play in community tenure?

In the second year of the project, several questions emerged as the three research questions were analyzed. These additional questions were examined: What are the funding sources of CBS diverted customers received? What are the reasons diverted customers didn't apply for Medicaid-HCBS/FE or state funded CBS, particularly those customers who entered NFs with Medicaid as a payor source? What are the sources, amounts, frequency of the informal support received by diverted customers? What is the prevalence of early diversion and what **state publicly funded services** (SPFS), including Medicaid-HCBS/FE and SGF services did non-diverted customers received prior to an NF admission?

C) Data Sources

Using the research design as a guide, the work group identified sources of data for the project. The work group identified the key sources of data available from KDOA that would provide the most efficient and effective means to conduct the analyses. An objective in the project was to use existing data as much as possible. The AAA/KDOA databases are rich sources of data and a description of each data source is provided in Appendix B.

D) Sample Selection

OALTC staff worked closely with the work group in designating the sample selection process. The sample came from CARE Assessment customer data. The work group wanted to include months reflecting seasonal variations in older adults consideration of NF placement and months with higher numbers of CARE Assessments. Despite the desire to reflect seasonal variations, the work group had to address a practical issue regarding the sample selection.

The implementation of the Kansas Aging Management Information System (KAMIS) was planned for Spring 2000. KAMIS is the information system at KDOA that replaced the Client Assessment and Referral System (CARS). For this reason, March, April, and July 2000 waves were chosen for the study in order to make data extraction easier, which meant not utilizing winter months. Then, in April of 2000, KDOA piloted KAMIS in three PSA's (05, 09, & 11) and fully implemented the system for the other eight PSA's in July 2000. For this reason, the work groups then recommended using August 2000 CARE Assessment data instead of July 2000.

The first wave of data for this study consisted of all individuals who received CARE Assessments in May 1999, and the subsequent three waves were March, April, and August 2000. The database used for the analyses comparing the diverted to the non-diverted customers yielded a sample of 2,882 customers² who had a CARE Assessment, of which 600 were diverted and 2,282 were non-diverted. The diverted customers (N = 600) were tracked for 18 months.

² All CARE Customers (n=50) who had a Level II Assessment or if the Level II information was missing were eliminated from the sample.

Interviews (Refer to Appendix F for CARE interview guide) took place three to six months after diversion (8-9 months from the May 1999 wave). Diverted customers in this sample were interviewed face-to-face regarding their decision-making process and service-related quality of life (Interview consent form can be found in Appendix K). After attrition due to death or subsequent NF placement, and eliminating those whose condition precluded an interview, 69 customer interviews were conducted. In Fall 2001, OALTC staff conducted an additional survey and interviewed 31 diverted customers regarding the amount, type, and frequency of informal support they received.

E) Selection and Measurement of Variables

The literature review in section II.A. illustrated how the Andersen Social-Behavioral Model of Health Care Use (Andersen, 1995) is utilized when studying health care utilization by older adults. This model was applied to the population in this project and provided guidelines in the selection of variables to be included in this study. The characteristics gathered from the CARE Assessment, which served as study variables, can be understood and operationalized according to the predisposing, enabling and need factors specified in the Andersen Model in Figure 2.

The Andersen Model also identified other factors that were not included in the CARE Assessment database. It is important to note these factors because of their importance in understanding what may influence the health care use of older adults. Those factors are specified in Figure 2.

Figure 2
Andersen Social-Behavioral Model of Health Care Use
Factors Applied to the CARE Assessment Variables

Factors Measured by the CARE Assessment		
<u>Predisposing</u>	<u>Enabling</u>	<u>Need</u>
Age	Caregiver available	ADLs (6)
Gender	Pay Status	IADLs (7)
Urban/rural	Medicaid	Problems/Risks (7)
Lives alone	Medicare	Memory/cognition
Ethnicity	Self pay	Continence
	Location of Care Assessment	Legal representative
	Supply & availability of services	Self
		Children
		Durable Power of Attorney
Factors NOT Measured by the CARE Assessment		
<u>Predisposing</u>	<u>Enabling</u>	<u>Need</u>
Marital status	Income	Disease status
Education	Health insurance benefits	Self-rated health
Health beliefs	Health care provider characteristics	
Number of nearby children	Caregiver attitudes toward diversion	
	Number of NF admissions	

Note: “Factors Measured” include those variables meeting the Andersen Model criteria and available in this study. “Factors NOT Measured” include examples of variables meeting the Andersen Model criteria but not included in the data available in this study.

As noted in the literature review, previous research had demonstrated that demographic variables, support systems, financial and legal factors, ADLs, IADLs, and problems and risks play a part in risk of and diversion from NF admission. These variables were examined as part of our analyses.

For purposes of clarity and organization, the selected variables (including factors from the Andersen Model) were categorized as quantitative and qualitative.

1.) Quantitative Variables

A number of quantitative variables were included in this project. They were used in the analyses of differences and similarities of diverted customers, and the analysis of community tenure. They are summarized below by general area.

- Demographic data such as age, gender, urban/rural, and whether the older adult lived alone;

- Data regarding potential service payor sources for support services (i.e. Medicaid-HCBS/FE, OAA, SGF, self-pay) and responsibility for financial and legal decisions;
- Variables related to the functional and cognitive status of the older adult (i.e. ADLs, IADLs, continence, mental status);
- Risk factors such as wandering behavior, support availability, or a history of abuse, neglect or exploitation (a/n/e);
- Data regarding where the CARE Assessment was conducted and resident PSA;
- Diversion status data from the 30-day CARE Follow-Up (i.e. diverted or non-diverted) and SPFS utilization;
- Community tenure variables such as length of time in community and services received (including funding source and length of service), death status (and date) and nursing facility admission (and date); and
- Supplemental variables were collected at the CARE 30-Day Follow-Up for the August 2000 wave. They included funding source(s) of services (Medicare, Medicaid, State General Funded services, Older Americans Act services, private funding, and **informal services**) and information about application for these services.
- Data regarding services received prior to the CARE Assessment and NF admission data were collected for diverted customers to conduct the analysis of early diversion. These were supplemental analyses conducted in year three of the project.

2.) *Qualitative Variables*

The qualitative component of this project focused on three areas of interest related to diverted customers' community tenure and their use of services: (1) the process and factors involved in decision-making at the time of the CARE Assessment when an NF placement was being considered; (2) how customers perceived the benefit of CBS on their quality of life; and (3) the role of informal support systems in contributing to customers' community tenure and quality of life. Through in-home interviews with diverted older adults or their primary caregivers, qualitative information was collected regarding these topics.

A supplemental analysis of types, frequency, and sources of informal support was conducted in the third year of the project. The data for the analysis were collected in a telephone survey of diverted customers who agreed to participate in the survey.

Qualitative methodology is especially appropriate in order to gain an in-depth understanding of a situation or a set of circumstances, including the perceptions and interpretations of individuals studied. Qualitative research strategies "guide" respondents into topic areas and let them make the comments they think are important. Thus, the respondents' ideas and words shape the themes and categories of the data instead of fitting into specific predetermined question and response categories.

Since the project involved interviewing older adults or their primary caregivers regarding their perceptions of the services they received, the project required approval from the Human Subjects Committee-Lawrence (HSC-L).³

³ The National Research Act of 1974/1983 dictates that, in order for institutions to be eligible for behavioral or biomedical research grants from federal sources (e.g., The Department of Health and Human Services and its

Once the research design was established, the Institutional Review Board application was completed and submitted to HSC-L. HSC-L approval was obtained in July 1999 (Refer to Appendix J) to conduct the CARE interviews. Approval was also received in the Fall 2001 to conduct the Informal Support Survey conducted.

F) Data Analysis

The following section provides an overview of the data analyses utilized. Throughout this project, multiple methods of data analysis as specified by the research design, questions, and types of data, were employed.

1.) Quantitative Analysis

Research Objective 1: OALTC staff identified and compared diverted and non-diverted customers on an extensive array of characteristics. The Final Report summarizes these analyses and the Technical Report provides more detailed findings from these analyses.

The study population was divided into two groups based on each customer's status at 30 days after the CARE Assessment: diverted or non-diverted.

The following characteristics, gathered from the CARE Assessment, were analyzed:

- demographic data;
- functional assessment;
- current or recent risks and problems;
- whether the customer lives alone;
- caregiver support;
- legal representation; and
- potential payor sources.

For each group, univariate analyses were conducted to create a descriptive profile measuring variables from CARE Assessments. The two groups were compared in terms of these profiles. Bivariate analysis, such as Chi-square tests and *t*-tests were conducted to examine whether differences observed were statistically significant (not likely to have occurred purely by chance). Multivariate analysis was conducted to identify risk factors for NF admission.

The similarities and differences between the diverted and non-diverted older adults collected in May 1999, March, April and August 2000 were analyzed using bivariate and multivariate methods. Characteristics of the two groups were compared by cross-tabulating categorical variables and by observing differences in means for continuous variables. Multivariate analysis (Discriminant Analysis) was then used to distinguish diverted from non-diverted. A

various research institutes), an Institutional Review Board (IRB) must be established and maintained to review research involving human subjects. The charge of this IRB is to protect the rights of those subjects participating in such research at the institution. The IRB for the University of Kansas is the Human Subjects Committee, Lawrence Campus.

conservative significance level of $p < .01$ was used to minimize chance error to adjust for the number analyses computed.

Research Objective 2: The community tenure of diverted customers was measured using two statistical methods. First, a definition and measurement of community tenure had to be established. In conducting the review of the literature, little information was found on community tenure. Therefore, OALTC staff telephoned state aging program representatives to identify states that may be tracking community tenure. State Aging and Medicaid agencies were interviewed regarding policies and procedures for tracking the residential status of frail older adults diverted from an NF admission.

The survey inquired whether or not states tracked and measured “community tenure.” For the purposes of this study, OALTC staff was interested in the length of time an older adult remains in the community with SPFS after applying for and being diverted from an NF placement. Most of the states were able to answer these questions based on their Medicaid-HCBS program.

Based on the state survey and workgroup feedback, these are the decision rules regarding determination of community tenure and **permanent NF admission**.

- 1.) When calculating the number of days in the community, start the count with the day of the CARE Assessment.
- 2.) An older adult’s community tenure ends when admitted to an NF for a period of 100 out of 120 days (do not have to be consecutive days) regardless of subsequent discharge to the community. At this point they will be considered a permanent NF resident and their community tenure has ended.
- 3.) Community tenure ends at the time an older adult has had four or more NF admissions. At this point they will be considered a permanent NF resident.
- 4.) If a person has four or more NF admissions and discharges OR is in an NF 100 days out of 120, the date to use for the end in community tenure is the admission date that begins the 100-day (out of 120 days) stay.
- 5.) If the person dies in the NF, but their stay is less than 100 days before their death, they will not be considered a permanent NF admission.

The community tenure outcomes measured in the analyses were: in the community; in an NF; died in an NF (after a stay of 100 or more days); and died in the community. Tables were constructed to display the number and percent of individuals in the original group still diverted for each 3-month period of follow-up, and the percent receiving each type of SPFS for each month of follow-up. First, community tenure was simply measured at 3-month intervals over an 18-month time period (Table 1 and Chart 2 in the Final Report). In addition, **service customers** were identified at the same 3-month intervals (Table 3 and Chart 3 in the Final Report). Diverted customers received Medicaid-HCBS, TCM, SGF and/or OAA, or services other than SPFS. The findings from these analyses are contained in the Final Report.

The Cox Proportional Hazards Model, a multivariate analysis was used to measure community tenure in relation to service utilization and other factors. This allowed determination of the major factors that explain length of community tenure. Community tenure was measured in

days. Every person had a value for this variable, ranging from 1 to 547 days depending on when they died, were admitted to an NF or were still alive and residing in the community at the end of the 18-month tracking period.

Service utilization was measured using these criteria:

- length of service utilization in months of use (range = 0-18)
- number of SPFS, (e.g., one vs. multiple types of services)
- types of SPFS
- cost of SPFS per person

Research Objective 3: Using the same data as the Hazards model, a logistic regression was conducted to analyze the length of diversion. This analysis identified the odds of “interim community tenure” (less than 270 days after the CARE Assessment) versus “established community tenure” (270 days or more after the CARE Assessment) based on use of SPFS, as well as the odds that functional disability played a role in community tenure. In addition, determining other conditions that increase the chances of postponing an NF placement, such as support availability, were analyzed. The findings from this analysis are contained in the Final Report.

2.) Qualitative Analysis

Qualitative data regarding the decision-making process and service related quality of life were also useful in addressing the research questions. The constant comparative method was used to analyze the qualitative data. Responses provided by diverted customers were coded and sorted through constant comparison between and within cases according to themes that were developed inductively from review of responses. Micro software, ATLAS-it, was used to store, analyze and retrieve the data. Interview responses from the interview guide documents were analyzed in terms of their thematic content. Notes recorded on the interview guide were examined to identify prominent themes among the respondents’ experiences regarding the factors that played key roles in their decision-making process. Respondents’ answers were compared and contrasted on each question and patterns and meanings were identified. Through this process, it was possible to examine how various conditions affected customers’ experiences in decision-making and the meanings they assigned to these experiences.

IV. Summary of Findings Based on the Research Questions

This component of the project compared older adults who were admitted to nursing facilities to older adults who were diverted as of the 30th day after the CARE Assessment. The purpose was to identify similarities and significant differences between the diverted and non-diverted groups of customers. Diverted and non-diverted customers were compared on demographics, levels of functioning, problems and risks, potential payor status and legal representation.

A) Findings from Analysis of Diverted and Non-diverted Customers

As indicated in section III. B., research objective one involved the identification and comparison of customers diverted from an NF placement and not diverted from an NF. Specific questions were: What factors distinguish diverted from not diverted customers? Which are the most important distinguishing characteristics? In what ways are the two groups similar?

An overview of the findings from all the analyses is presented in the Final Report. More details regarding analyses and the findings are included in this Technical Report. All findings are discussed in relation to other research findings cited in the literature review.

In addition, the literature review in II. A. illustrated how the Andersen Social-Behavioral Model of Health Care Use (Andersen, 1995) is useful when studying health care utilization by older adults. This model was also applied to the population in this project. The characteristics gathered from the CARE Assessment can then be understood and operationalized according to the *predisposing*, *enabling* and *need factors* specified in the Andersen Model in Figure 2 on page 17.

The Andersen Model also identified other factors that are not measured by the CARE Assessment. It is important to note these factors because of their importance in understanding what may influence the health care use of older adults. Those factors are also specified in Figure 2 on page 17.

As noted in the literature review, previous research had demonstrated that demographic variables, support systems, financial and legal factors, ADLs, IADLs, and problems and risks play a part in risk of and diversion from an NF admission. These variables were examined as part of these analyses. Among the diverted and non-diverted groups, Table 1 displays the distribution of age, gender, urban/rural, and whether the person lived alone.

Table 1
Distribution of Diverted and Non-Diverted Customers on Four Predisposing Factors:
Age, Gender, Urban/Rural and Lives Alone (N=2,882)

Predisposing Factors	Diverted (N=600)		Non-diverted (N=2,282)	
	Number	(%)	Number	(%)
Age (years) ^a				
Under 65	9	1.5%	41	1.8%
65 to 74	85	14.2%	271	11.9%
75 to 84	216	36.0%	879	38.6%
85 & older	290	48.3%	1,089	47.8%
Gender ^a				
Male	190	31.7%	766	33.6%
Female	410	68.3%	1,512	66.4%
Urban/Rural Classification ^a				
Urban Counties:				
Central county with 1,000,000 in population or more	76	12.8%	314	14.1%
Fringe county with 1,000,000 in population or more	5	0.8%	51	2.3%
County with 250,000 to 1,000,000 in population	103	17.3%	480	21.6%
County with fewer than 250,000 in population	55	9.2%	156	7.0%
Rural Counties:				
<i>Adjacent to a urban area</i>				
With urban population of 20,000 or more	55	9.2%	181	8.1%
With urban population of 2,500-19,999	44	7.4%	161	7.2%
Completely rural or less than 2,500 urban population	10	1.7%	13	0.6%
<i>NOT adjacent to an urban area</i>				
With urban population of 20,000 or more	64	10.7%	199	9.0%
With urban population of 2,500-19,999	115	19.3%	426	19.2%
Completely rural or less than 2,500 urban population	69	11.6%	241	10.8%
Lives alone ^a				
Yes	299	49.8%	975	42.7%
No	300	50.0%	1,303	57.1%

^a These do not total the “N” because of missing values.

Table 1 shows that age was similarly distributed for both groups. Approximately 85% of all customers, diverted and non-diverted, were age 75 and older. Diverted and non-diverted customers were similarly distributed in terms of age with those age 85 and older making up the largest segment. Diverted and non-diverted customers were similarly distributed in terms of gender; two-thirds of both groups were female. The diverted and non-diverted customers were also similarly distributed over the ten urban/rural levels of the county classification system. The two county designations with the largest percent of the sample were customers from urban

counties of 250,000 to 1,000,000 (17.3% of the diverted and 21.6% of the non-diverted) and rural counties of 2,500 to 19,999 (19%) followed by urban areas of 1,000,000 or larger (12.8% to 14.1%). Among diverted customers, approximately half lived alone and half with others. A larger proportion of diverted customers lived alone compared to non-diverted customers (49.8% and 42.7% respectively).

Table 2 displays the distribution of diverted and non-diverted customers on support availability, location of CARE Assessment, three potential payment sources for support services, and three financial and legal characteristics.

Table 2
Distribution of Diverted and Non-Diverted Customers on Enabling Factors:
Support Availability, Location of CARE Assessment, and Financial & Legal Status
(N=2,882)

Enabling Factors	Diverted (N=600)		Non-diverted (N=2,282)	
	Number	Percent	Number	Percent
Support Availability ^a				
Full time	201	33.7%	803	35.2%
Part time- routine	139	23.3%	480	21.1%
Part time- intermittent	150	25.1%	516	22.6%
Not available	107	17.9%	481	21.1%
Location of CARE Assessment ^a				
Home	155	28.5%	503	23.7%
Nursing Facility	66	12.1%	300	14.1%
Hospital	323	59.4%	1,320	62.2%
Financial & legal variables				
<i>Potential pay status</i>				
Self-pay				
Yes	394	65.7%	1,381	60.5%
No	206	34.3%	901	39.5%
Medicaid				
Yes	106	17.7%	530	23.2%
No	494	82.3%	1,752	76.8%
Medicare				
Yes	532	88.7%	1,986	87.0%
No	68	11.3%	296	13.0%
<i>Legal & financial representative</i>				
Self				
Yes	309	51.5%	895	39.2%
No	291	48.5%	1,387	60.8%
Son/daughter/other relative				
Yes	317	52.8%	1,395	61.1%
No	283	47.2%	887	38.9%
Durable Power of Attorney				
Yes	169	28.2%	737	32.3%
No	431	71.8%	1,545	67.7%

^a These do not total the "N" due to missing values.

Table 2 reports that one-third of diverted and non-diverted customers had full-time support available. Support availability was similarly distributed for both diverted and non-diverted customers. Location of the CARE Assessment was also similarly distributed between the diverted and non-diverted customers. A larger proportion of CARE Assessments, approximately

60% for both groups, was conducted while the customer was in the hospital. Three potential sources of payment for support services were examined, showing approximately two-thirds (65.7% for diverted and 60.5% for non-diverted) of both groups with self-pay as the potential source of payment. Also, less than 25% indicated Medicaid as a potential payor source, and over 85% indicated Medicare. It is noteworthy that a slightly higher proportion of non-diverted customers indicated Medicaid as a potential payment source (23.2% compared to 17.7%).

Diverted customers were more likely to have been responsible for their own legal and financial affairs than non-diverted customers. Non-diverted customers were more likely to have a son or daughter responsible for legal and financial affairs. This suggests that managing one's own legal and financial affairs is indicative of individuals who function more independently and are able to remain in their own home.

Tables 3 through 6 compare the frequency distribution of the diverted and non-diverted groups on characteristics of activities of daily living (ADL), instrumental activities of daily living (IADL), bladder incontinence, memory/recall capacity, and problems and risks. Table 3 reports the comparison of six specific ADLs for diverted and non-diverted customers.

Table 3
Distribution of Diverted and Non-Diverted
Customers on Need Factors: ADLs (N=2,882)

Diverted (N=600)				
ADL	Independent	Supervision Needed	Physical Assistance Needed	Unable to Perform
Bathing	7.2%	11.7%	72.0%	9.2%
Dressing	17.3%	17.0%	58.8%	6.8%
Toileting	24.8%	18.0%	50.5%	6.7%
Transfer	23.2%	21.7%	47.8%	7.3%
Walking, mobility	17.3%	25.3%	51.0%	6.3%
Eating	58.7%	24.7%	14.8%	1.8%

Non-Diverted (N=2,282)				
ADL	Independent	Supervision Needed	Physical Assistance Needed	Unable to Perform
Bathing	3.1%	11.3%	69.8%	15.8%
Dressing	9.6%	15.7%	61.5%	13.2%
Toileting	17.8%	14.8%	56.7%	10.7%
Transfer	16.6%	18.1%	55.1%	10.2%
Walking, mobility	13.5%	21.0%	51.6%	13.8%
Eating	44.1%	31.4%	20.5%	4.0%

Table 3 shows that overall, diverted customers were more independent in ADL function compared to non-diverted customers. This is illustrated also by the fact that more non-diverted customers were unable to perform ADLs.

Table 4 reports the comparison of seven specific IADLs for diverted and non-diverted customers.

Table 4
Distribution of Diverted and Non-Diverted
Customers on Need Factors: IADLs (N=2,882)

Diverted (N=600)				
IADL	Independent	Supervision Needed	Physical Assistance Needed	Unable to Perform
Meal preparation	3.7%	3.2%	31.2%	62.0%
Shopping	1.8%	2.8%	30.7%	64.7%
Money management	18.5%	11.5%	27.9%	42.1%
Transportation	4.0%	9.7%	54.3%	32.0%
Telephone	50.4%	20.5%	16.9%	12.2%
Laundry/housekeeping	2.7%	2.3%	26.3%	68.7%
Medication management	13.2%	16.0%	37.8%	33.0%

Non-Diverted (N=2,282)				
IADL	Independent	Supervision Needed	Physical Assistance Needed	Unable to Perform
Meal preparation	1.6%	3.0%	24.2%	71.2%
Shopping	1.0%	2.5%	23.5%	73.1%
Money management	9.0%	10.6%	28.9%	51.5%
Transportation	1.6%	8.1%	55.2%	35.0%
Telephone	32.9%	21.8%	27.1%	18.1%
Laundry/housekeeping	1.3%	1.7%	22.2%	74.9%
Medication management	4.6%	13.6%	38.0%	43.9%

Table 4 shows that overall, diverted customers were more independent in IADL function compared to non-diverted customers. This is illustrated also by the fact that more non-diverted customers were unable to perform IADLs. It is noteworthy to point out that both diverted and non-diverted customers were more impaired in their ability to do shopping and laundry/housekeeping, and meal preparation than other IADLs.

Table 5 displays the comparison of diverted and non-diverted customers on memory/recall and bladder incontinence. The memory/recall variable measures the number of problems that exist in this area. The categories are short-term memory, long term memory, memory/recall and decision-making. A score of "0" means no problems exist in a category; a score of 1 means a problem exists. Then the scores are totaled to determine the level of the memory/recall problem.

Table 5
Distribution of Diverted and Non-Diverted Customers on Need Factors:
Memory/Recall and Continence (N=2,882)

Functional Problem	Diverted (N=600)		Non-diverted (N=2,282)	
	Number	Percent	Number	Percent
Memory/Recall Problems Frequency ^a				
0	209	34.8%	463	20.3%
1	79	13.2%	312	13.7%
2	79	13.2%	315	13.8%
3	90	15.0%	409	18.0%
4	143	23.8%	779	34.2%
Continence (bladder) ^a				
Continent	245	40.9%	713	31.3%
Usually Continent	123	20.5%	417	18.3%
Occasionally Incontinent	109	18.2%	454	19.9%
Frequently Incontinent	62	10.4%	335	14.7%
Incontinent	60	10.0%	362	15.9%

^aThese do not total the “N” due to missing values.

Table 5 shows that diverted customers are more likely to have no problems in memory/recall and non-diverted customers are more likely to have problems in all memory/recall areas. Diverted customers were less likely to have problems with incontinence compared to non-diverted customers.

Table 6 displays the distribution of problems and risk variable impairments among the diverted and non-diverted customers.

Table 6
Distribution of Diverted and
Non-Diverted Groups on Need Factors:
Problems and Risk Variables (N=2,882)

Problem/Risk Present	Diverted (N=600)		Non-diverted (N=2,282)	
	Number	Percent	Number	Percent
Problems/risks				
Falls, unsteadiness ^a	532	88.7%	2,026	88.8%
Impaired vision ^a	282	47.0%	1,087	47.7%
Impaired hearing ^a	230	38.3%	822	36.0%
Wandering ^a	80	13.3%	368	16.1%
Socially inappropriate ^a	74	12.3%	299	13.1%
Self-neglect ^a	96	16.0%	431	18.9%
Abuse, Neglect, Exploitation ^a	51	8.5%	148	6.5%

^aThese do not total the “N” due to missing values.

Table 6 shows that the presence of problems and risks are similarly distributed among the diverted and non-diverted customers. The proportion of problems experienced by both groups varies by problem. For example, abuse, neglect, or exploitation is a relatively low frequency problem compared to wandering. The highest frequency problem is falls and unsteadiness, followed by impaired vision and hearing. These three types of problems are more physical in nature, whereas wandering, social inappropriateness and self-neglect may stem from cognitive or mental deficits.

The bivariate results in Tables 1-6 provide a description of the diverted and non-diverted customers in relation to predisposing, enabling, and need factor data gathered by the CARE Assessment. Next, the mean **Long-Term Care Threshold Score** for diverted customers is compared to the mean score of non-diverted customers and analyzed for significant differences (LTC Threshold Guide is used to compute LTC score. Refer to Appendix D).

Comparisons in Table 7 of the diverted and non-diverted groups in terms of the LTC score and subscale scores showed small, but statistically significant differences. The mean LTC score of the non-diverted group was found to be higher by an average of 8.20 points. The *p* value of .01 for interpretation was used in the report. For example, a *p* value less than .01 indicates that there is less than 1 chance in 100 that these findings are due to random variation. The consistent pattern of group differences across subscale scores indicates that the difference between the diverted and non-diverted groups on the LTC score was not due to a single subscale component.

Table 7
Mean Differences in Long-Term Care Threshold Scores (N=2,882)

	Mean Score Diverted (N=600)	Mean Score Non-diverted (N=2,282)	Significance Level
LTC Threshold Score	65.80	74.00	.000
ADLs	19.46	22.35	.000
IADLs	34.40	38.06	.000
Risk factors	11.98	13.65	.000

Discriminant Analysis Explaining Diversion Status

This section details the results of multivariate statistical analyses that specify the differences between non-diverted customers compared to diverted customers who had a CARE Assessment in May 1999, and March, April and August 2000. The objective was to examine a set of predictor variables (e.g., age, gender, whether the customer lived alone, urban/rural, assessment location, payor status, ADL and IADL scores, and the problems and risks scores) to see how well they distinguished diverted from non-diverted customers. The Andersen Social-Behavioral Model of Health Care Use was utilized to provide conceptual grounding for these analyses. Within the Andersen framework, enabling factors are thought to be the most mutable, and therefore, the most amenable to policy intervention.

Interpretation of the Discriminant Analysis Model

The results of the *ANOVA* in Table 8 were used to determine the overall importance of the predisposing, enabling and need factors for the discriminant analysis model presented in Table 9. Both the significance level and the size of the *F* statistic were observed to determine the relative importance of each independent variable. Among predisposing variables, urban/rural and whether the customer lived alone at the time of the assessment were shown to be important (e.g. they are statistically significant at $p<.01$) and their entry into the model produced a substantial *F* statistic. Medicaid as a potential payment source for support services is the single enabling variable that is statistically significant at $p<.01$ and produced a large change in *F*. Among the need factors, medication management, telephone use, memory/recall, dressing, eating, and money management were statistically significant and contributed to a sizable increase in the *F* statistic.

Sample. The sample used for the multiple regression and discriminant analysis was derived from CARE Assessments completed in May 1999 (n=793), and March (n=647), April (n=714) and August 2000 (n=728). These data files were merged to create a composite sample (N=2882) of diverted (N=600) and non-diverted (N= 2282) customers assessed across four waves. Ten (10) customers were assessed in May 1999, or March 2000, and then reassessed in April or August of 2000. These cases were retained in the analyses.

Analyses. Factor analysis was conducted in order to reduce the 18 ADL, IADL, and risk variables to a smaller set of predictor variables. Individual ADLs (bathing, dressing, toileting, transfer, walking, eating), IADLs (meal preparation, shopping, money management, transportation, telephone, laundry/housekeeping, medication management) and items that comprise the problems and risks component of the LTC score (falls/unsteadiness, abuse/neglect/exploitation, support availability, memory/recall and bladder incontinence) were included in the factor analysis. Only items that contributed to the factors extracted were entered into the discriminant analysis (Refer to Table 8).

Two hundred eighty-eight cases had a missing value on one or more independent variables, leaving 2594 valid cases for the analysis. A one-way *ANOVA* was conducted to examine differences between and within group means. Those results are presented in Table 8.

Table 8
Tests of Equality of
Group Means (N=2,594)

Independent Variables	<i>F</i>	Sig.
<i>Predisposing Factors</i>		
Age	.807	.369
Gender	.266	.606
Urban/rural	6.814	.009
Client lives alone	6.598	.010
<i>Enabling Factors</i>		
Supportive caregiver available	.252	.616
Payor source, self	2.770	.096
Payor source, Medicaid	8.458	.004
Assessed at nursing facility vs. home	1.281	.258
Assessed at hospital vs. home	1.519	.218
<i>Need Factors</i>		
Legal/financial representative, self	23.737	.000
Bathing	28.711	.000
Dressing	43.675	.000
Toileting	21.651	.000
Transfer	16.538	.000
Walking	21.605	.000
Meal preparation	20.950	.000
Shopping	14.467	.000
Laundry/housekeeping	12.420	.000
Medication management	55.127	.000
Memory/recall	49.405	.000
Telephone use	52.930	.000
Money management	38.263	.000
Eating	43.356	.000
Bladder incontinence	18.898	.000

These do not total the "N of 2282" because of missing values.

Next, hierarchical discriminant analysis was used to explore the pattern of differences among the predictors as a group in order to determine how well they differentiated diverted from non-diverted customers. The dependent variable (DV) was diversion status. The Andersen Model guided selection of predictor variables and the order of their entry into the analysis (Andersen, 1968). Predisposing (age, gender, urban/rural, and whether the client lived alone), enabling (assessment location, Medicaid potential payment source for support services, and self control over legal and financial affairs) and need factors (individual ADLs, IADLs and items that comprise the problems and risks component of the LTC score) were entered into the discriminant analysis in three stages, corresponding to the order set forth by the model. Problems and risk

scores were computed using the formula used by AAA/KDOA (Refer to Appendix D). Independent variables competed for entry into the model within blocks.

Wilks' Lambda was used to test the hypothesis that the means of all the variables across groups are equal. Those results are presented in Table 9. Highly significant differences between group centroids were observed at each step of the analysis. With the entire model, nearly two-thirds of the customers in the study could be correctly classified as either diverted or non-diverted.

Table 9
Discriminant Analysis:
Andersen Social-Behavioral Model
(N=2,594)

		Significance of Wilks' Lambda	Within Group Correlation	Percent Correctly Classified
Step 1		.006		55.5%
Predisposing Factors	Urban/rural		.682	
	Client lives alone		.671	
	Age		-.235	
	Gender		-.135	
Step 2		.007		52.1%
Enabling Factors	Payor source, Medicaid		.729	
	Assessed at hospital vs. home		.309	
	Assessed at NF vs. home		.284	
	Payor source, self		-.417	
	Support availability		.126	
Step 3		.000		62.1%
Need Factors	Medication management		.682	
	Telephone use		.668	
	Memory/recall		.645	
	Dressing		.607	
	Eating		.604	
	Money management		.568	
	Bathing		.492	
	Legal/financial, self control		-.447	
	Toileting		.427	
	Walking		.427	
	Meal preparation		.420	
	Bladder incontinence		.399	
	Transfer		.373	
	Shopping		.349	
Laundry/housekeeping		.323		

These do not total the "N of 2282" because of missing values.

Table 9 shows the contribution of each variable to the model. Urban/rural residence and whether the customer lived alone at the time of the assessment were the only two predisposing variables

that were highly correlated with the discriminant function. Medicaid as a potential payment source for support services was the only enabling variable that was highly correlated. Medication management, telephone use, memory/recall, dressing, eating, and money management were the factors that were highly correlated with the discriminant function. These results suggest that location of residence (urban), whether the customer lived with someone at the time of the CARE Assessment, whether he/she anticipated Medicaid as a potential payment source, and a combination of a specific set of need factors (e.g., medication management, telephone use, memory/recall, dressing, eating, and money management) are the major important risk factors that distinguish diverted and non-diverted groups and, thus, the factors that were most strongly linked to NF admission. The results of the cross-tabulations were later confirmed in the Discriminant Analysis. For example, non-diverted customers are more likely than diverted customers to live in large communities (38.0% vs. 30.9%), less likely to live alone (42.7% vs. 49.8%) (Table 1), more likely than their diverted counterparts to indicate Medicaid as a potential payment source (23.2% vs. 17.7%) (Tables 1 & 2), and more likely to indicate impaired functioning while diverted customers were more likely to report independent functioning (Tables 3, 4 & 5).

Prior Service Use of Non-Diverted Customers (Early Diversion)

As noted earlier in the research methodology, additional questions emerged throughout the project and as a result additional analyses were conducted in FY 2002. One of the questions came from Care Coordinators and Directors of the AAAs who suggested that a considerable number of non-diverted customers received SPFS prior to their NF placement. When the CARE Assessment data were analyzed for the comparison of diverted and non-diverted customers in FY 1999, it was found that 80% percent of the persons who had a CARE Assessment were non-diverted when the CARE 30-Day Follow-Up was completed. Out of the diverted customers, only 39.2% were receiving SPFS. It had been assumed a higher percent of non-diverted customers were receiving SPFS. It is possible that for a significant number of these non-diverted customers, Medicaid-HCBS/FE, and SGF and/or OAA services were provided prior to an NF placement (referred to as ‘early diversion’) and may have played a key role in helping these persons to maintain community tenure before being admitted to the NF.

Additional analyses of non-diverted customers were undertaken in FY 2002. A valid NF admission date was confirmed using MDS data for Kansas nursing facilities for 2,056 of the 2,282 non-diverted individuals in the May 1999, and March, April and August 2000 waves. Medicaid was listed as an NF payment source for 489 of these 2,056 persons⁴. Seventy-four of the 489 persons (15.1%) were considered short-term NF admissions (e.g., they were discharged from the NF in 120 days⁵ or less), and 415 of the 489 individuals (84.9%) were long term or permanent NF resident admissions.

⁴ These 489 persons for whom Medicaid was listed as a payment source during the first 120 days of NF admission would have likely qualified for SPFS (Medicaid-HCBS/FE and SGF and/or OAA) and are referred to as potentially SPFS eligible in this analysis.

⁵ 120 days were queried instead of 100 days (the Medicare limit for rehabilitation per occurrence) to allow for brief interruptions in service delivery (e.g., short hospital stays).

The analysis of non-diverted customers confirmed early diversion does occur and those results are presented below.

- **The early diversion rate among the 2,056 persons for whom an NF admission was confirmed was calculated at 25% (n=514).** These individuals used Medicaid-HCBS/FE (n=165; 8%) and SGF and/or OAA (n=349; 17%) services.
- **Of the 415 potentially eligible service customers who were permanent Medicaid NF residents, 42.9% (n=178) were service customers in the six months prior to their permanent NF admission.**
- **The use of Medicaid-HCBS/FE and SGF and/or OAA before an NF admission appears to have an impact on length of stay.** For example, among short-term residents, 64.9% (n=48) used State Publicly Funded Services compared to 42.9% (n=178) of permanent Medicaid NF residents. This suggests that prior knowledge and involvement with State Publicly Funded Services facilitates coordination of discharge and re-entry in the community.

These analyses documented that ‘early diversion’ is frequent among non-diverted individuals, and appears to play an important role in helping these individuals maintain community residence prior to an NF placement. A number of less impaired non-diverted permanent Medicaid NF residents did not receive services before their NF admission. Targeting services to individuals with lower impairment levels may potentially delay their NF admission. Additionally, Medicaid NF residents who used services prior to NF admissions were more likely to have shorter stays and re-enter the community than Medicaid residents with no prior use of SPFS. This analysis documents that cost savings could have accrued to the state had services been provided to these customers to delay permanent Medicaid NF placement. The complete Amendment 2 analysis can be found in Appendix M.

B) Community Tenure

As indicated in section III. B., research objective two involved the quantitative measurement of community tenure and service utilization of diverted customers during 18 months of follow-up. Specific questions were: How long do diverted customers remain in the community? The findings for these questions are reported in the Final Report (Table 1 and 3, and Chart 2 and 3). The quantitative findings of these last two questions are reported and discussed in Tables 10 and 11 of the Technical Report. What are the patterns of service utilization of diverted customers? Which services do they use and how frequently?

Additionally, research objective three focused on the quantitative analysis of community tenure to address the level of effectiveness of CBS in reducing NF placement and under what conditions this occurs. Specific questions were: What are the major factors related to community tenure? What customer characteristics place them at risk for early NF placement? What characteristics distinguish short-term from long-term community dwelling customers (i.e., the oldest v. younger customers, Medicaid v. other customers, and other comparisons of specific customer sub-groups)? The quantitative findings of this objective are discussed in Final Report. Research objective three also focused on the qualitative analysis of the role decision-making and diverted customers' perceptions of service-related quality of life play in community tenure. The qualitative component of the study addressed the following questions: What was the decision making process used by diverted customers when considering NF admission? What perceptions do customers have of CBS and how have they affected their service-related quality of life? Section IV.C. contains the qualitative portion of research objective three and the corresponding narratives.

The findings from the analyses of community tenure related to research objectives 2 and 3 are provided in the Final Report. However, more detailed cost analysis findings are provided in several tables that are included here. In addition, a summary of the qualitative findings on decision-making, service related quality of life, and informal support are included in this section.

Cost Analysis

State publicly funded service data for 599 diverted customers during the 18 months following the CARE Assessment were analyzed to profile service use and evaluate the costs of these services. There were 139 diverted customers who received State General Fund and Older Americans Act services during the 18 months of follow-up. Table 10 reports the average use of each of these services in total units, total months received, and total cost of service. The ranges are also provided. In the lower section of the table, one time service or equipment charges are also displayed.

Table 10
Average State General Fund and Older Americans Act Services
Used by Diverted Customers Over 18 Months Following the CARE
Assessment By Units of Use, Months Received, and Cost per Customer
(N = 139)

Service Charges*	n	Average Total Units** (Range)	Average Total Months Received Services (Range)	Average Total Cost of Service (Range)
<i>Services</i>				
Home Delivered Meals	79	84.5 (1.0-232.0)	4.4 (1.0-11.0)	\$320.48 (3.31-940.00)
Assessment	52	10.4 (1.0-21.5)	1.0 (1.0-1.0)	\$206.52 (1.00-528.00)
Case Management	36	15.9 (1.0-72.0)	3.8 (1.0-13.0)	\$170.31 (10.00-720.00)
Homemaker	25	54.9 (.75-154.0)	5.9 (1.0-11.0)	\$795.71(10.54-3312.00)
Attendant Care	21	37.4 (1.0-133.3)	5.1 (1.0-11.0)	\$563.30 (19.50-1998.75)
Congregate Meals	18	65.6 (1.0-159.0)	5.0 (1.0-9.0)	\$269.89 (3.41-699.36)
Incontinence Supplies	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$41.00 (41.00-41.00)
Counseling Follow-up	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$18.69 (18.69-18.69)
Nutrition Education	1	1.0(1.0-1.0)	1.0 (1.0-1.0)	\$.95 (.95-.95)
Screening	1	3.0 (3.0-3.0)	3.0 (3.0-3.0)	\$19.80 (19.80-19.80)
<i>Equipment Charges</i>				
Bathroom Supplies	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$93.74 (93.74-93.74)
Personal Care Services	1	39.0 (39. 0-39.0)	3.0 (3.0-3.0)	\$468.00 (468.00-468.00)
Mobility Aids	1	1.0 (1.0-1.0))	2.0 (2.0-2.0)	\$200.00 (200.00-200.00)
Custom Care	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$300.00 (300.00-300.00)
Telephoning	1	4.0 (4.0-4.0)	2.0 (20-2.00)	\$22.08 (22.08-22.08)
Visiting	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$31.63 (31.63-31.63)

* Assessment services (e.g., ASMT, AASMT and IAASMT), case management services (e.g., CMGT, CMGTS and CMGTJ), and congregated meals (e.g., CMEL and CMELH) are presented as composite indicators of their service type. The taxonomy table defining each variable is available from KDOA.

** Most units represent one-hour increments except, for example, ASMT and meals. One unit of ASMT is equivalent to fifteen minutes.

Table 10 illustrates that home delivered meals were used by the greatest number of customers (n=79), followed by assessment (n=52), and case management (n=36). When examining total units of service, it is important to keep in mind the total units reflect the type of services, not the importance of the service. For example, home delivered and congregated meals have the highest totals. This makes sense because these services are usually a daily service. The next highest service units were for homemaker (n=55) followed by attendant care (n=37). Case management services reflect an on-going professional involvement with service customers whereas assessment reflects a one-time assessment for services.

On average, service customers received attendant care, homemaker, congregated meals, and home delivered meals for approximately five months. The reader is directed to the Final Report for an extensive analysis of the cost benefits of these services.

Table 11 reports the average use of Medicaid-HCBS/FE and TCM services used by diverted customers in average total units, average total months received, and average total cost of service. The ranges are also provided. In the lower section of the table, one time service or equipment charges are also displayed.

Table 11
Average Medicaid-HCBS/FE and TCM Services Used by Diverted
Customers Over 18 Months Following the CARE Assessment
By Units of Use, Months Received, and Cost per Customer
(N=89)

Service Charges	n	Average Total Units** (Range)	Average Total Months Received Service (Range)	Average Total Cost of Service (Range)
Targeted Case Management	89	92.7 (3.5-465.5)	8.7 (1.0-18.0)	\$370.95 (14.00-18.62)
Health Care Attendant II	73	615.4 (18.0-2422.2)	10.1 (1.0-18.0)	\$3400.07 (95.40-13452.86)
Personal Emergency	40	10.31 (1.0-18.0)	10.3 (1.0-18.0)	\$98.33 (8.00-180.00)
Wellness Monitoring	29	2.8 (1.0-9.0)	2.8 (1.0-9.0)	\$41.21 (14.00-131.88)
Health Care Attendant I	21	128.4 (1.0-1037.1)	6.6190 (1.0-18.0)	\$647.94 (4.80-5276.76)
Personal Emergency Service	10	1.0 (1.0-1.0)	1.0 (1.0-1.00)	\$20.06 (20.00-21.20)
Sleep Cycle Support	4	129.6 (45.0-215.0)	5.3 (3.0-8.0)	\$1070.06 (366.72-1823.20)
Assistive Technology	2	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$169.99 (19.98-320.00)
Nursing Evaluation Visit	1	1.0 (1.0-1.0)	1.0 (1.0-1.0)	\$14.84 (14.84-14.84)

* Case management (e.g., CMGT, CMGTS and CMGTJ) are presented as composite indicators of their service type.

**Not all services are delivered in one-hour increments.

Table 11 illustrates targeted case management (n=89) was used by the greatest number of service customers, followed by health care attendant II (n=73). In terms of the greatest number of units received, HCA II and I had the greatest intensity with the total units received averaging 615.4 units and 128.4 units. The total cost for each service reflects the same service use pattern. The reader is directed to the Final Report for an extensive analysis of the cost benefits of these services. The 60% federal match received by the state to defray the cost of these services has been included in the data in this table.

C) Decision-Making and Service-Related Quality of Life

This qualitative component of the study generated findings that added depth and helped explain the findings from the quantitative analysis. Qualitative sampling is not meant to be representative of the entire sample. The size of sample is determined based on “saturation”. In qualitative studies when interviewers begin to hear respondents repeat similar issues or themes, the researcher knows they have “saturated” the sample. Qualitative methodology is especially appropriate in order to gain an in-depth understanding of a situation or a set of circumstances, including the perceptions and interpretation individuals have of their situations. Thus, the respondents’ ideas and words shape the themes and categories of the data.

Qualitative data on self-reported perceptions of older adults’ service related quality of life and decision-making at the point of considering an NF admission were collected from face-to-face interviews with older adults (or their primary caregiver if the customer could not be interviewed)

who were diverted and receiving SPFS. This interview population included all older adults who met the criteria for an interview and who consented to an interview. The interviews focused on three overall themes:

- the decision-making process diverted customers used when considering an NF admission;
- the diverted customers' perception of their service-related quality of life based on the SPFS they received; and
- the sources, types, and frequency of informal support received by these diverted customers.

The qualitative interviews explored these topics:

- Reasons for receiving a CARE Assessment;
- Level of preparation among older adults for a health and/care crisis;
- Different paths that required multiple relocations after the CARE Assessment;
- Factors that affected the decision to stay in the community;
- Perceptions of customers regarding SPFS that helped them to stay in the community;
- Customers' views on how SPFS improved their quality of life; and
- The complementary nature of SPFS and informal supports for diversion and promotion of community tenure.

The diverted customers who participated in the qualitative interviews had successfully maintained community tenure for 3 months or longer, and the majority maintained community tenure for more than 15 months by the end of this project.

There were 69 diverted customers interviewed regarding service related quality of life and informal support. This group was made up of 46 customers and 23 caregivers. In addition, a sub-set of 52 of these diverted customers were asked in detail about their decision-making process and factors that led them to consider an NF admission. This sub-set of interviewees included 34 customers and 18 caregivers.

1) Decision-Making Process

The experiences of 52 diverted customers were examined in-depth to identify the decision-making process and factors surrounding the situation that precipitated the CARE Assessment. The CARE Assessments took place at home, in a hospital, or assisted living (AL) facility. The request for a CARE Assessment mainly resulted from declining health and/or mental status, a change in the caregiver's capacity to provide care, or a combination of both. Only three customers out of the 52 diverted customers used the CARE Assessment as a part of pre-planning for future care. The vast majority of the customers were not prepared to face a health crisis or increased need for care and the subsequent decision-making process was often complicated. In general, older adults lacked any planning despite their aging process that was often characterized by failing health.

Decisions based on discussions of appropriate care arrangements and settings forced many of them to move more than once. Figure 3 below displays the different sequence of steps the diverted customers went through to maintain community residence from the point that they received a CARE Assessment to the residence at the time of the interview.

Figure 3
Different Relocation Processes to Diversion

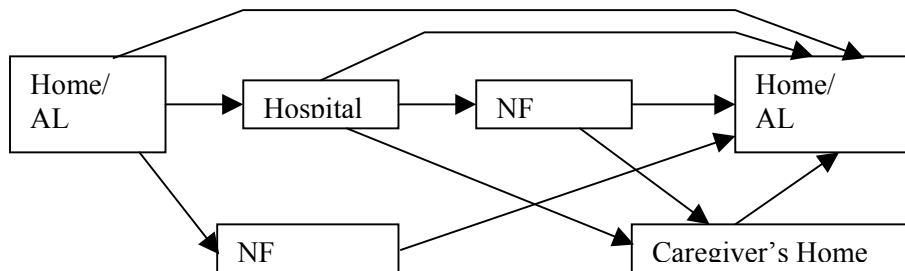


Figure 3 illustrates that community tenure is a dynamic and sometimes transitory process that moves in many directions. Moving through these sequences of steps, the majority of diverted customers made decisions incrementally. The decisions and ultimately the sequence of steps followed were based on the total assessment of customers' health and functional status, the family caregivers' capacity to provide care, and the availability of CBS. In addition, the existence of funds (Medicare, Medicaid or private funds) to cover the cost of hospitalization, nursing home stay, and/or Assisted Living (AL) or residential care influenced the process and steps.

Community tenure was maintained because older adults' and professionals' beliefs about disability and subsequent care arrangements were viewed in a dynamic, responsive way, as opposed to the traditional linear continuum of care. Figure 3 and the concept of community tenure provide a framework and the opportunity to re-vision direct practice and policy in long-term care. Evaluating the care needs of older adults requires involving and supporting older adults when determining the timing and intensity of services to maintain their community tenure. Best practices for community tenure include the ongoing assessment and care coordination of services for older adults and their support systems. Support systems include family and formal service providers working collaboratively to augment existing supports. Long-term care practice and policy require close monitoring to achieve desired outcomes.

These sequences of steps can also be categorized into three major paths or outcomes:

- No relocation (Path A): The CARE Assessment was conducted at home and the customer was able to stay at home without any relocation;
- Temporary relocation through institutions (Path B): Relocation processes that involve hospitalization and/or NF placement before returning home;
- An AL facility as the final choice (Path C): Some customers received the CARE Assessment at AL facilities and remained at the same place. Some moved into AL facilities from home.

In general, Path B and C seemed to require more complex decision-making processes because more issues had to be considered and these situations involved more health care and social service professionals. In Path B, the majority of the customers had experienced a medical emergency that involved an injury or exacerbation of an existing chronic illness. In these cases, customers would undergo a period of rehabilitation and recovery. A critical component of the decision-making was the degree of recovery to regain physical functioning such as walking and dressing. In Path C, the staff at the AL facility often took part in the decision-making process as customers attempted to stay or apply for AL facilities. It needs to be noted that some customers who were on Path C experienced hospitalization and NF placement. These paths reflect a change in the use of NF care for rehabilitative care and have implications for social policy regarding the delivery of acute care and community-based services (Kane, Reinardy, Penrod, & Huck, 1999).

Although there are different reasons that customers and family members requested a CARE Assessment, 58% (30) of the customers who were interviewed did so in order to be admitted to an NF for rehabilitation. These customers received a CARE Assessment in the hospital or at home within three days after being discharged from the hospital. Some stayed in the hospital for rehabilitation when they had a choice to do so. Six percent (3) of the diverted customers used the CARE Assessment for advance care planning, and 35% (18) of the customers considered a permanent NF placement due to the declining functioning in ADLs and IADLs and/or cognitive ability or caregiver health problems. Family members were frequently involved with the customers' decision making and assisted the older adults with maneuvering through this transition period to find the most appropriate care setting. The availability of socio-economic resources (e.g., private funds, insurance, in-home services, informal support network) combined with older adults' functional ability frequently affected the relocation process. Four salient factors that contributed to diversion are highlighted below.

➤ **Obtaining information on services and benefits**

Some diverted customers mentioned that the most critical moment of their decision-making process was when they obtained helpful information from others. For example, a caregiver who opted to elect for self-directed care learned about the service when he was talking to his sister in Oklahoma. Another customer learned from friends that there was an NF that had a good reputation in her community. She chose to go to an NF or physical therapy instead of going to her daughter's house. A daughter who was considering placing her mother in an NF learned about AL facilities from an AAA case manager and soon found a suitable AL facility for her mother.

➤ **Availability of care through institutions and agencies**

As will be discussed in the next section (service related quality of life), the availability of CBS was clearly one of the critical elements for older adults to return home. For example, obtaining Medicaid-HCBS/FE services was crucial for some AL residents as the service provided some extra care. In addition, diverted customers' decisions were also affected by Medicare regulations that determine the length of stay in the hospital and NF. When a hospital-based skilled care unit

was available, some customers chose to stay in the hospital instead of moving to an NF for rehabilitation.

➤ **Availability of financial resources and informal support system**

Several diverted customers also mentioned that they arranged for an NF stay for rehabilitation out of their own private funds. Even with CBS, many frail older adults had to find a way to bridge the gap between the limitations of their abilities to carry out ADLs/IADLs and the assistance through in-home services. Some used their own financial resources to pay for services privately, such as homemaking and respite care, in order to augment care. Many relied on their family members to provide support (informal support systems are discussed in detail in the next section). Their help was especially crucial during the initial period after being discharged from a hospital or an NF.

➤ **Ability to advocate for accessing resources**

Some customers autonomously advocated for themselves to obtain necessary services such as physical therapy and CBS using good negotiation skills. When older adults did not have the capacity to self-advocate, family members stepped in to communicate with key health and social service providers to arrange services. These advocacy skills were especially critical in situations when returning to or staying in the community did not seem to be very likely. Many of the customers who were returning home from the hospital or an NF required a high level of care during a transition period and then they were able to decrease assistance later. Many customers recovered from an acute health problem, such as a broken hip, a stroke, or an exacerbated chronic condition, through active mobilization and coordination of resources using self-advocacy, assistance of family members, and/or case managers.

Diverted customers indicated the decision-making process was complex, and multiple opinions could influence decision-making. In the hospital, the decision also had to be made under pressure to discharge. Some case managers were involved early in the decision-making process and assisted older adults and family members who were needing more information and guidance regarding options before facing the decision to apply for an NF admission. Some interviewed customers indicated that they did not know CBS were available, so they applied for NF admission. Fortunately, knowledge gained through the CARE Assessment process made it possible for them to plan to return home. Had they known about CBS and been able to access them quickly, their NF admission might have been avoided.

2) Service Related Quality of Life

The diverted customers indicated that SPFS played an important role in their health and well being, and CBS were not available through other sources. Customers reported they would experience a real hardship if funding were not available for SPFS.

Out of 69 diverted customers who participated in the qualitative interviews, forty-eight (70%) customers received more than one service. Table 12 illustrates the services received by the study

population, along with an alternate solution for how each service would be provided if SPFS programs were not available. Some diverted customers gave more than one answer.

Table 12
Types of Services Received and
Options if Services Were Not Available (N=69)
 (Customers can have more than one service)

Diverted customers were asked: How would this task get done if you did not receive the service?

Type of Service	Don't Know	Wouldn't Get Done	Self	Family	Friend/ Neighbor	Hire the Service	Meal site/ Eat Out	Doctor EMT	Building Manager
Attendant Care (n=47)	12.8%	42.6%	8.5%	29.8%	4.3%	2.1%			
Homemaker (n=27)	7.1%	32.1%	7.1%	35.7%		14.3%			
Respite (n=2)	50%			50%					
Home Delivered Meals (n=23)	8.3%	8.3%	45.8%	25%	4.2%		4.2%		
Case Management (n=24)	29.2%	54.2%		8.3%	4.2%	4.2%			
Wellness Monitoring (n=13)		46.2%		15.4%		15.4%		23.1%	
Personal Emergency Response (n=15)		31.3%	12.5%	31.3%				12.5%	6.3%
Durable Medical Equipment (n=2)		50%	50%						
Column Total	17	56	20	40	4	9	1	5	1

Few diverted customers said they could turn to private pay services in the absence of the current SPFS programs. Family was mentioned most frequently as the alternative source of assistance. Diverted customers believed family was the primary alternative if the formal services were not provided.

Case management was the most frequently mentioned service for which diverted customers had no alternative sources, followed by attendant care, respite and durable medical equipment. Even though the majority of the diverted customers seemed to think they could manage preparing meals by relying on self or an informal support system, over 16% of the diverted customers felt it was difficult to replace the home delivered meals.

Only nine diverted customers considered other formal private pay services as an alternative to meet their needs. Since many of these customers' financial resources are limited to pay for the services, obtaining other formal services means either securing additional financial resources provided by family members or finding very affordable services, which are rare.

Diverted customers were asked to identify the most beneficial service. For the 70% of customers receiving more than one service, diverted customers had difficulty deciding which service they considered to be the most important. One fourth either couldn't choose between the services or counted them as equally essential.

For those who could choose, *attendant care* topped the list as most important. This is not surprising since this service was used almost twice as often as any other and because it involves such a broad range of tasks and service functions. Most diverted customers attributed different benefits to each type of service they received and counted them all as important and valuable.

Although the number of diverted customers who received respite care was small, it seems to be an important service for keeping frail adults in the community. Two customers were approved for respite care services, although one family had not used them at the time of the interview. In both situations, the primary caregiver lived with the customer. Respite care provided a needed break for caregivers who greatly appreciated the help. Two primary caregivers indicated that they would like respite care. However, one indicated that they did not know the service was offered and the other reported that providers were not available for respite care.

Diverted customers reported the impact of SPFS programs on their service related quality of life was very positive. Notably, 92% of diverted customers said that they were better off because of their CBS. Below are several dimensions of customers' quality of life to which SPFS directly contribute. These aspects include safety, general well being, and financial protection.

Safety

The majority of the diverted customers confirmed that they were safer at home because of the SPFS they received.

- Several diverted customers were unable to use the telephone and relied on the personal emergency response device as their sole means of summoning help. Being able to secure immediate help if needed with Lifeline was the most frequently reported response by customers.
- Wellness monitoring gave diverted customers the feeling of being cared for by a professional who could detect problems that family members could not.
- Personal care attendant services, homemaking services, and home delivered meals assisted customers to safely complete their ADLs and IADLs that were otherwise difficult or impossible to complete without help.
 - ❖ Those who utilized attendant care services saw them as vital to being able to attend their hygiene needs without falling or straining physically.
 - ❖ Many diverted customers used homemaking service for help with cleaning and shopping. Maintaining a clean home was seen as important in preventing accidents like falls due to clutter and helped reduce the chance of injury for someone trying to do housework when they weren't physically able.

- ❖ Shopping was also important because many of the service recipients were either homebound or required assistance to leave home.
- ❖ Receiving prepared meals reduced the risk of falls in the kitchen.

Well-being

In addition to decreasing safety risks in the home environment, SPFS contributed to the customers' general well being.

- Many diverted customers said that simply being able to stay at home because of their SPFS gave them a feeling of security and contentment.
- They also felt that they were able to benefit from better nutrition and live in cleaner environments.
- Customers who lived in an AL setting and their caregivers preferred the current care environment as they felt that the AL facility provided more privacy, autonomy, and individual attention to residents.
- Frequently, customers reported that their home care providers took a personal interest in them thus adding a needed social element to the formal services. One customer commented about their care attendant: "the personal touch just like a family provides."

Many customers and caregivers also addressed their concern of depleting their savings in an NF. They predicted that they would quickly spend down their savings, as their monthly income simply would not cover the cost of the NF. Staying home allowed them to keep their home and protect their savings.

In examining service related quality of life, it became clear that CBS are frequently used to complement informal supports. For example, the customers did not depend on home delivered meals as the only source of their nutrition support. Their caregivers usually did grocery shopping and prepared meals for them. The caregivers also did tasks related to homemaking and personal care. Some caregivers used the personal care attendant services visit time as a brief respite to rest or run errands. All combined, various types of assistance from the formal and informal network supplement each other. Vital tasks that ensured their safety in the home environment and complemented older adults' capacity to perform ADLs and IADLs are sustained by a joint effort of informal supports and SPFS. In the following section, a summary of findings concerning the use of informal supports is presented.

3) The Use of Informal Support to Promote Diversion and Community Tenure

Another set of questions in the qualitative interviews was related to customers' use of informal supports. The customers reported the SPFS and the use of informal supports worked together to meet their needs to stay in the community. Qualitative interviews uncovered numerous examples that illustrated how older adults can live alone and remain in the community with a combination of SPFS and informal services.

The questions in the qualitative interview focused mainly on availability and frequency of contact with informal supports. All but two diverted customers among 69 participants stated they had someone that they relied on the most, identified as the primary caregiver for the study.

Table 13 illustrates types of informal support. In some cases one family member is deemed the primary caregiver and another is considered an additional support person.

Older adults rely on a broad range of sources to create their informal support system. Consistent with other studies regionally and nationally, diverted customers rely on their family members for 95% of informal care (Administration on Aging, 1998).

Table 13 (N=69)
Source of Support Other Than Primary
Caregivers and Formal Service Providers

May have more than one response

Source of support	Frequency
Family	45
Neighbors	19
No one	10
Paid/ Hired help	9
Church/Synagogue	7
Friend	3
Assisted Living Facility	2
Community Citizens	2
Psychiatric Nurse	1
Unable to answer/ Do not know	1

Customers had daily contact with their primary caregivers in 71% of the cases. Ninety-three percent of the time primary caregivers and customers were in contact at least weekly. Over half of these contacts (57%), were face to face, and another 40% were by telephone.

- Two-thirds of the diverted customers interviewed for the qualitative analysis lived alone. These diverted customers were not socially isolated as demonstrated by the daily contact by primary caregivers for more than 70% of the customers. Over 50% of the daily contact was face-to-face and 83% of the diverted customers lived within five miles of family.
- Most customers had family living within the same community or very close by. Thirty-eight customers lived within five miles of family and another ten customers had family living between 10-20 miles away. Customers seemed to utilize family often for informal assistance.
- Even without counting the primary caregiver, other family members were frequently supportive. Although living alone is typically considered a risk factor for an NF admission, it was learned that many of these customers lived near family and had frequent contact with them. In addition to using SPFS, these older adults relied on their family members to provide assistance.

Although customers who lived alone relied on family as their main source of informal support, they did not see living with family as an option. Only two diverted customers answered that they

would live with family if they did not receive formal in-home care. One person commented that she would rather live in a nursing home than burden her children. Like other customers, this person did have family living nearby who were already very involved in her care.

C) Supplemental Data Collection

In FY 2002, additional data were collected regarding types, frequency, and sources of informal support. In addition, data collected in FY 2001 was analyzed in reference to funding sources for services. Written as a legislative brief, the findings are summarized below. A copy of the brief is included in Appendix M.

Informal Support

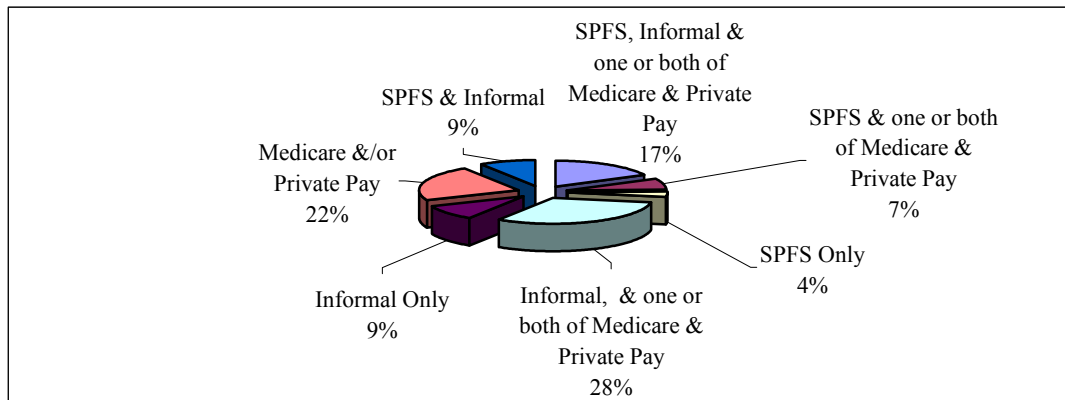
The data for the analysis of informal supports were collected in a telephone survey of diverted customers who agreed to participate in the survey. The analysis of informal support (N = 31) provided some insights about how older Kansans rely on their informal supports to maintain their community tenure. For instance, informal support, by and large, was provided by one family member and complemented SPFS. Any changes in formal services provided must be carefully considered in light of the impact the change would have on the informal caregiving system that helps older adults maintain community tenure and delay an NF admission. These findings highlight the importance of the combination of formal services and informal support older adults receive in maintaining community tenure. The fact that these older adults were residing in the community a year or more after their CARE Assessment points to the beneficial impact the services have in supporting informal caregivers.

Funding Sources for Community-Based Services

In the first year of the study, it was learned that more than 75% of the diverted older adults assessed in May 1999 were getting services from sources (i.e. Medicare, private pay, etc.) other than SGF and/or OAA or Medicaid-HCBS/FE. Therefore, supplemental information was collected at the CARE 30-Day Follow-Up from the August 2000 wave of diverted customers. Diverted customers were asked about funding sources for services (Medicare, Medicaid, State General Fund services, Older Americans Act services, private funding, and informal services) and information about application for Medicaid-HCBS/FE and SGF and/or OAA services. The results are reported in Chart 1.

Chart 1 illustrates the various combinations of funding sources and the percent of diverted customers receiving them. Data in the chart are mutually exclusive.

Chart 1: Source of In-home Services Received at the Time of the CARE 30-Day Follow-Up (N = 86)



The data in Chart 1 show that 32 (37%) of the diverted customers received some type of Medicaid-HCBS/FE, Senior Care Act, Income Eligible or Older Americans Act services (SFPS). The vast majority of customers receiving SFPS were also receiving some other type of service. For instance, diverted customers used Medicare and private pay services in addition to SFPS. The chart also illustrates the combination of formal services and informal services received by diverted customers. In fact, over 50% of the diverted customers received informal services in combination with formal services.

Recommendations for Data Source Enhancements

The reader is directed to the Final Report for discussion of the implications of the overall study findings. This final section focuses on a few of the methodological and data collection issues identified throughout the study. As a result of undertaking this study, there were variables of interest identified by the researchers for which no data were available. For example, marital status is a data element that is not collected during the CARE Assessment. The variable would be helpful to identify one source of social support for older adults. In addition, some data could be enhanced to improve the data analysis findings. For example, information about support availability is collected during the CARE Assessment, however the source(s) of support are not identified. This would add a measure of specificity and detail that would enhance the data analysis findings. Therefore, the following recommendations are offered.

The CARE Assessment dataset would be enhanced if the following data were collected.

- Marital status of the CARE Assessment applicant.
- Place of residence at the time of the CARE Assessment, such as in the CARE Assessment applicant's own home, home of family/others, or an assisted living facility.
- Additional details about support availability, such as the relationship of the support person, their residence, the availability of more than one support person, and the amount and frequency of support to be provided. In addition, it would be valuable to identify how long caregivers have been providing support prior to the CARE Assessment.

- When the CARE 30-Day Follow-Up is completed, more specific details about the funding sources of services would be valuable. In addition, enhancement of the definition of diversion is needed. Specifically, deciding whether informal support should be included in the definition of “in the community with services” would be important. It is recommended that both types of support be identified, but in a way that distinguishes them from each other.
- The MDS dataset would be enhanced if data about Medicaid payment for NF care were included at quarterly assessments.

A Note of Thanks

The staffs at KDOA and the Area Agencies on Aging deserve special thanks for their assistance and cooperation throughout this project. Their guidance in developing the project and data gathering have contributed to the important findings and lessons learned. The staffs in the Evaluation Unit and the Information Services Unit at KDOA have been a tremendous help. They have provided many of the datasets needed to complete the analyses.