

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

**Longitudinal Study of Customers
Diverted through the CARE Program:
Fiscal Year 2000**

Rosemary Chapin, Ph.D.
Mary Zimmerman, Ph.D.
Kelley Macmillan, MSW
Roxanne Rachlin, MHSA
Mitsuko Nakashima, MSW
Jan Moore, MSW
Daisy Schmidt, MSW
Melissa Cline

**This research was supported in part
through a contract with the
Kansas Departments on Aging and
Social and Rehabilitation Services
Topeka, Kansas 66612**

June 2000

Table of Contents

Purpose and Significance of Study.....	1
Purpose.....	1
Significance.....	2
Contents and Format.....	3
Study Overview and Background.....	3
Work Group Formation.....	3
Subgroups.....	4
Advisory Committee on Human Experimentation Process.....	5
Literature Review.....	5
Literature Review on Diversion.....	6
Literature Review on Service Related Quality of Life.....	8
Methodology.....	10
Data Sources.....	10
Sample Selection.....	12
Variable List.....	13
Report Format.....	14
Diversion.....	15
Purpose.....	15
Methodology.....	15
Results and Findings.....	16
Discussion.....	27
Community Tenure.....	30
Purpose.....	30
Background.....	30

Methodology.....	32
Results and Findings.....	34
Service Related Quality of Life.....	38
Purpose.....	38
Methodology.....	38
Results and Findings.....	39
Discussion of Results.....	45
Phase I Summary.....	47
References.....	50

Part I. Purpose and Significance of Study

A.) Purpose

The overall purpose of this project is to examine publicly funded community based services and their relationship to community tenure and diversions for older adults in Kansas. The Kansas Department on Aging (KDOA) administers long term care (LTC) services for all older adults and is interested in knowing more about the preferences and service utilization of older adult consumers of LTC services. In Kansas, all older adults seeking admission to a nursing facility (NF) must have a CARE Assessment prior to NF admission. The Client Assessment, Referral, and Evaluation (CARE) Program is administered by KDOA. The CARE Assessment (See Appendix A) gathers information about the person's functional ability, available support systems, and recent problems and risks. It also provides the older adult with information regarding their LTC options.

KDOA and the Kansas Department of Social and Rehabilitation Services (SRS) have contracted with the Office of Aging and Long Term Care at the University of Kansas School of Social Welfare (OALTC) to conduct this project. This study is known as the Longitudinal Study of Customers Diverted through the CARE Program, or by its short title, Diversion Study. During the study, the OALTC will track a cohort of customers who received the CARE Assessment and were reported to be diverted at 30 days post-assessment. Diverted customers are being tracked for two years in order to monitor service use and length of community tenure. Each year of this longitudinal project will build on the previous year's work and knowledge.

Diversion in this project is defined as "those individuals who have been assessed for potential nursing facility placement, and who were residing in community settings with services or were living in board and care facilities when the 30 day follow-up contact was made." (CARE Annual Report, December 30, 1998, page 5)

The central goals of the three-year project are:

- (a) To identify differences and similarities between customers diverted from nursing facility placement and receiving publicly funded community-based services (i.e., Medicaid Home and Community Based Services for the Frail Elderly (HCBS/FE), Senior Care Act, Income Eligible program and other payer groups) and those who were not diverted;
- (b) To measure the community tenure and service utilization of customers diverted from nursing facilities; and
- (c) To study longitudinally the overall effectiveness of community-based services in reducing nursing facility admissions.

This project is being undertaken in order to provide information about the actual length of NF diversion and the actual services received from a random sample of customers meeting the KDOA definition of diversion. Specifically, it is anticipated that, in addition to other findings, this study will:

- 1) determine how long a person ready for NF admission can be diverted, and
- 2) identify utilization patterns for community-based services and community living placements of diverted customers.

The CARE Program only tracks people to the 30th day and it is believed that information beyond the 30th day will be valuable for analysis and planning.

B.) Significance

As the percentage of older adults increases in the years to come, the understanding of services targeted toward this population will take on more significance. Given the aging population, more services will be needed for people to be able to remain in their homes. In Kansas, the proportion of the older adult population over age 65 is approximately 13.5% compared to 12.7% nationally. Kansas ranked 16th on this indicator in comparison with other states. The oldest old, age 85 and older, are approximately 1.9% of the population in Kansas compared to 1.5% nationally (Administration on Aging, 1999). This issue is particularly important for policy makers in terms of funding long-term care services, such as community-based programs and NF care.

State policy makers are faced with the responsibility of maintaining and developing LTC programs and services while dealing with financial constraints due to funding. Some state programs are funded by the Older Americans Act (OAA), some are funded by state general funds (SGF), and some are funded through a mix of state and federal funds using matching funds from Medicaid. When projecting program-funding needs, policy makers need to assess older adult's needs for care and services, and to consider their preferences about types of services and location of service delivery.

Based on the previously stated project goals, the study will focus on three policy-relevant issues:

- 1) *diversion* from nursing facility placement,
- 2) *community tenure* of diverted individuals, and
- 3) *service-related quality of life*, as described by the older adults who receive publicly funded services (or their caregivers).

Information about customers diverted from nursing facilities and the effectiveness of services in achieving and maintaining nursing facility diversion is of vital importance in helping policy makers target Medicaid and other public funding to the populations and settings where they can have the greatest impact. Generally, older adults prefer to remain in their own homes for the extent of their lives. "Because people generally prefer to live in their own homes rather than in nursing homes, moreover, their life quality is likely to improve" (Kemper, Applebaum & Harrigan, 1987). At the same time, program funding is dependent upon federal and state legislative budgets, which face constraints imposed by voters and tax revenues. Armed with up-to-date information on older adults' service preferences, service use projections, and cost benefit analyses, state policy makers can enter the legislative debate with recommendations for budget funding.

The study is important for several reasons. First, KDOA will be able to provide the Kansas Legislature with information about program value related to services provided and education of consumers on KDOA services. Second, the study will identify the outcomes for consumers who chose community-based services because of personal preference and a desire to remain independent. Finally, the study will analyze the effectiveness of program education regarding LTC options and the provision of community-based services in contributing to ongoing diversion (community tenure) of older adults. Therefore, KDOA and SRS contracted with the OALTC to conduct a study focusing on these specific areas of concern and interest.

C.) Contents and Format of this Report

This report is a summary of the project activities during Phase I* (SFY2000) of the project. The format of the report is as follows. The first section, "Study Overview and Background" lays out the major components and tasks completed during SFY2000, including a review of the literature. It is followed by the general Methodology section which details the data sources used in the project and the selection of the study sample. The report is then divided into three sections related to the major study issues: 1) Diversion, 2) Community Tenure, and 3) Service-Related Quality of Life. Next, preliminary implications based on the findings are provided. It is necessary to state implications as preliminary because the project will involve four waves or cohorts of customers at different times throughout this project. Each cohort of diverted customers will be tracked for a period of 18-24 months so that additional analysis can be conducted. The last section of this report is a summary of Phase I and the next steps for Phase II of the project.

Part II. Study Overview and Background

A.) Work Group Formation

A work group was assembled to plan and oversee the project. The work group membership from the following agencies was based on their areas of expertise and involvement in the project:

- Kansas Department on Aging
 - Program and Policy Commission
 - Community Based Services Staff
 - Nursing Facility and CARE Staff
 - Policy Staff
 - Quality Assurance Commission
 - Program Evaluation Staff
 - Administrative Services Commission
 - Information Services Staff

* Each year of this project is a separate phase.

- Kansas Department of Social and Rehabilitation Services
Economic and Employment Support Division staff
- Area Agency on Aging (AAA)
Case Management Supervisor
CARE Coordinator
- Office of Aging and Long Term Care (OALTC)
Principal Investigator
Methodologist
Project staff

The work group (See Appendix B for list of members) used the proposed outcomes of the project, as spelled out in the contract, to plan the project. The project methodology, designed by OALTC, incorporated these expected outcomes. The work group met regularly to discuss and review the research design before moving to the next steps.

Since the project involved agency staff at local and state levels, the work group recommended key groups be contacted to inform them about the project. Brief meetings were held with the CARE Oversight Council on October 12, 1999, the CARE Coordinators on October 27, 1999, the Case Management Supervisors on November 12, 1999, and the Kansas Association of Area Agencies on Aging on February 24, 2000. A concept-briefing sheet was developed and used for the presentations to provide a succinct overview of the project and goals (See Appendix C).

B.) Subgroups

These groups were developed to deal with components of the project before data collection commenced. The subgroups were 1) a Data Subgroup; and, 2) the Interview Subgroup.

The Data Subgroup included Information Services staff and Program Evaluation staff from KDOA, a CARE Coordinator from an AAA, and staff from the OALTC. The goals of the Data Subgroup were to:

- Identify what data were available in the Client Assessment and Referral System (CARS) database and their benefit and ability to be used in the data analysis;
- Establish the list of data elements to be selected from CARS;
- Identify sources of data for the analysis and report; and,
- Decide upon a format and method for the data download.

The Interview Subgroup included CARE Program staff, an AAA Case Management Supervisor and CARE Coordinator, and staff from the OALTC. The goals of the Interview Subgroup were to:

- Identify what questions were needed to obtain the data for the analysis of the interviews;

- Discuss appropriate questions and wording that would be sensitive to older adults' concerns about participating in the research project and the interview process. The wording of questions was critical because we needed to avoid technical and professional jargon as well as use language and words that accurately reflected the questions' intent;
- Develop the interview guide;
- Determine how to obtain Case Managers' input on whether to interview the customer or interview the primary caregiver;
- Develop a case manager survey to gather updated information about the customers and the services being received; and,
- Develop strategies to gain customer's trust and willingness to consent to the interview.

C.) Advisory Committee on Human Experimentation Process

Since our project involved interviewing older adults or their primary caregivers regarding their perceptions of the services they received, the project required approval from the Advisory Committee on Human Experimentation (ACHE).¹

ACHE's primary mission is to protect research subjects' rights and privacy. In addition, it protects investigators from legal and ethical missteps and safeguards them from the repercussions of such missteps. Investigators conducting research with human subjects must prepare a written proposal of their research and submit it to ACHE for approval. ACHE's review of the proposals is guided by the Code of Federal Regulations (Title 45, Part 46), which sets the minimum standards for protection of human subjects.

Once the project design was established, OALTC staff completed the Institutional Review Board application and submitted it to ACHE. A consent form was developed as part of the application and also submitted (See Appendix D). The OALTC received ACHE approval (See Appendix E) to conduct the CARE interviews in July 1999.

D.) Literature Review

In order to provide further background and conceptual framing for the project, a review of the literature was conducted, focusing on the following questions:

- What are the characteristics of older adults living in the community and what keeps them there?
- Under what circumstances do older adults seek nursing home placement or community-based services?
- When do older adults begin to consider that they may need assistance?
- What is the turning point at which older adults feel that the decision must be made?

¹ 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 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 Advisory Committee on Human Experimentation (ACHE).

- If the preference of older adults is to remain in the community for the extent of their lives, then what makes them willing to leave their homes?
- How long will persons be able to remain in the community with the amount of support that is currently available?
- Is it cost effective for older adults to stay at home?

In conducting the review of the literature, little information was found on community tenure. Therefore, OALTC staff telephoned state aging offices 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 elders diverted from nursing facility admission. The results of these interviews are presented under the Community Tenure section of this report, beginning on page 30. The following literature review is divided into the other two major study issues: diversion and service-related quality of life.

1. Diversion

There have been numerous research studies done to identify risk factors associated with NF admission. The following discussion summarizes what has been learned about risk factors. However, one caveat is the study populations in the literature usually cannot be considered representative of a large older adult population. Many times, the study population was a small segment of a community or individuals who had been admitted to a NF, for example. In addition, many of the studies do not use the same measures, so it becomes difficult to generalize results across studies.

Andersen Model

The Andersen social-behavioral model is frequently used as a theoretical framework of health service use among older adults. Several of the research studies cited in the literature used this model. The Andersen health services utilization model was used for this study because it looks at predisposing factors, enabling factors and need factors, which identify influences for health care related decisions people make. The model categorizes risk factors as predisposing factors, enabling factors or need factors (Andersen & Newman, 1973).

Predisposing factors are characteristics such as age, gender, and ethnicity. Predisposing factors are permanent or unchangeable. Enabling factors include personal and community resources such as income, physician availability and health insurance. Nursing home bed supply and previous LTC admission are also examples of enabling factors. Finally, need factors are 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). Examples of need factors include cognitive impairment and ADL disabilities. Risk factors identified through research as contributing to nursing home placement using the Andersen model are summarized below.

Predisposing Factors

Age is a predisposing risk factor found to be statistically significant in NF admission (Black et al., 1999; Cohen, Tell, & Wallack, 1986; Greene & Ondrich, 1990; Jette, Branch, Sleeper

Feldman, & Sullivan, 1992; Liu, Coughlin, & McBride, 1991; Weissert & Cready, 1989;). Advancing age in 5-year increments (regardless of income level), restricted outside mobility and fear of one's neighborhood were also statistically significant risk factors for institutionalization (Jette et al., 1992). Greene and Ondrich (1990) found the major risk factors to be advancing age and "ethnicity." Blacks and Hispanics were at much lower risk for NF placement while Caucasians were at higher risk.

Enabling Factors

Examples of enabling risk factors from research are nursing home bed supply (Coughlin, McBride, & Liu, 1990; Greene & Ondrich, 1990; Weissert & Cready, 1989), and previous LTC admission (Coughlin et al., 1990; Jette et al., 1992; Liu et al., 1991; Tsuji, Whalen, & Finucane, 1995). Jette, et al. (1992) found that prior institutionalization was the strongest risk factor. For example, they found that persons with a prior LTC admission were five times more likely to be admitted to a NF than those without prior admission. Personal and community resources are also enabling factors found to influence use of health services. Specifically, one study found that "caregiver problems were statistically significant predictors of nursing home placement, but functional disabilities generally were not" (Tsuji et al., 1995, p. 761). Other examples of risk factors of nursing facility admission are being widowed or never married and infrequent contact with relatives. Greene and Ondrich (1990) also found that living alone and not owning a home were major risk factors.

Another finding of interest cited in the literature is that rural dwelling older adults are less likely to use community-based services (Rabiner, 1995). Rabiner concludes that this could be due in part to the lack of available services in rural areas and the lack of transportation. Often times, older adults living in rural areas have more access to a family network. Additional factors that increased risk of nursing facility admission included a cold climate, welfare as payment source, persons with an Alzheimer's diagnosis that also had higher levels of education, and living in a small town (Cohen et al., 1986; Greene&Ondrich, 1990; Miller, Prohaska, Furner, Freels, Brody, & Levy, 1998; Weissert & Cready, 1989).

Need Factors

Need factors can be based on the individual's perception of need or professional assessment of need. Some examples are being a patient in a hospital, use of ambulation aids, impairment in mobility, and low self-rated health status. Furthermore, needs can be based on physical and cognitive deficits (Coughlin et al., 1990; Greene & Ondrich, 1990; Liu et al., 1991; Osterweil, Martin, & Sydulko, 1995; Tsuji et al., 1995; Weissert & Cready, 1989), and care needs such as needing assistance with IADL's and basic ADL disabilities (Black et al., 1999; Jette et al., 1992; Liu et al., 1991; Osterweil et al., 1995).

Weissert and Cready (1989) divided Activities of Daily Living (ADL) disabilities into three categories: help needed in mobility, bathing or dressing, and toileting or feeding. They found that needing human assistance with toileting or feeding is the ADL disability most related to nursing home placement followed by bathing or dressing and mobility. Engle and Graney (1993) add to this in their findings by suggesting that ADL disabilities involving the upper extremities

are more indicative of nursing home placement than disabilities involving just the lower extremities, which is consistent with previously listed indicators. Jette, et al. (1992) found that “one or more basic ADL disabilities resulted in almost 3 times the odds of entering a LTC institution compared with those with no ADL disabilities” (Jette et al., 1992, p.638).

Liu et al. (1991) found that persons with higher levels of ADL deficiency tended to enter nursing homes sooner but were also at risk of dying sooner. They also reported that older adults that were cognitively impaired had the longest length of stay in a nursing home. Cohen et al. (1986) found that being confined to a bed was a greater risk factor than age. “Being 85 and confined to a bed has nearly the same effect on the probability of nursing home entry as being 65 and confined to a bed” (Cohen et al., 1986, p.790).

Jette et al. (1992) found that the two strongest risk factors were age and income interactions and indicators of need (i.e. neurological condition present). For example, the risks of NF placement was more pronounced due to age and high annual income compared to only advancing age in five-year increments. Greene and Ondrich (1990) found the major risk factors of nursing facility admission to be higher levels of cognitive and functional impairment, frequency of physician use, and living in an area with a larger nursing home bed supply.

Persons tend to rate their own health status at a higher level than their physician does; therefore, a low self-rate is noteworthy. “The fact that self-rated health predicted exit but not entry may reflect that nursing home patients make more objective health judgements through being exposed to ongoing professional assessments in an institutional setting” (Green & Ondrich, 1990, p. S256).

From this information, we can extrapolate the characteristics of older adults that are more likely to enter a nursing facility. They are older, have previously been admitted to a long term care facility, are cognitively impaired, have more basic ADL disabilities, are Caucasian, do not own their own home, live alone, need assistance with IADL’s, live in an area with a large nursing home bed supply, and do not have informal caregivers nearby.

2. Service-Related Quality of Life

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

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 as they often suffer from chronic disease and ongoing disability (Guyatt, Eagle, Sackett, Willan, Griffith, McIlroy, Patterson & Turpie, 1993; Pearlman & Uhlman, 1998). However, no single method of conceptualization or operationalization 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 that justifies the choices of methods 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 the older adults primarily target these areas of basic needs. Thus, the community-based in-home services contribute to the quality of life of older adults by supporting their fundamental physical functioning and allowing them to stay in the community. Kemper et al. (1987) noted that people generally prefer to live in their own homes rather than in nursing homes, and moreover, their life quality is likely to improve when older adults live at home irrespective of service use.

Although a number of studies related to quality of life of the elderly 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 the 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 brought benefits to the security of living in their own home, and the meaningful human interactions through contacts with the workers contributed to their emotional well being. The majority of the customers also perceived that maintaining community residence was not possible without the services. These findings reflect the research results by Pan, Yang & Chen (1998) who reported that a need related factor is an important predictor for long-term care utilization among older Americans. Most of the 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).

Although some factors are related to decision making for nursing home placement, it is relatively unknown how older adults participate in the decision making process and choose

whether to enter a nursing home or to remain in the community. Reinardy (1992) reported that those entering from the community participated in the decision more than those from 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) identifies six dimensions of the hospital patients' perceptions of the 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 hypervigilance. The participants of these three studies were all in institutional settings when they confronted the decision, and it is yet unknown how the decision is made by the older adults in home settings who face a major life transition that involves a possibility of nursing home placement.

Previous work has suggested that the community-based services contribute to the quality of life of the elderly recipients, and the role of the family remains crucial during the service provision. There is a need to further examine in what ways the community-based services complement the roles of the informal support system and substitute for the functions that are not provided for the older adults. In addition, an investigation of the decision making process for the older adults in the community will bring forth some new findings that will shed light on the relationship between independent living, the utilization of community-based services (CBS), the service-related quality of life and the family involvement in care. The qualitative inquiry in this research project attempts to draw more information in these areas.

Part III. Overall Methodology

Phase I of this project employed an analysis of a cross-sectional sample of older adults who had a CARE Assessment in May of 1999. This sample was used to address the research questions of the project related to: diversion, community tenure, and customer's perception of service-related quality of life.

A.) Data Sources

Using the research design (See Appendix F) as a guide, the work group identified sources of data for the project. An objective in the project was to use data available from KDOA as much as possible. One reason for this was that older adults who receive services from AAA/KDOA are not able to tolerate extensive assessments or frequent visits due to health problems. Also, older adults might be reluctant to participate in this research project if the data gathering process was time consuming. The work group evaluated current KDOA sources of data that would be available and could provide the variables needed to conduct project analyses. The work group identified the key sources of data from KDOA that would provide the most efficient and effective means to conduct the analyses.

Care Assessment

The CARE Assessment is the primary data source for the project. The CARE assessment is used with all individuals seeking/considering NF admission. It collects comprehensive data

regarding the following: 1) demographics; 2) functional status; 3) cognitive status; 4) problems or risks; and 5) support available. As part of the CARE process, a follow-up contact is made by AAA-based CARE staff to determine who has remained in the community without services or with services. Staff also determine who is living in board and care facilities (diverted) and who entered a NF (non-diverted). Follow-up is conducted within five days before or after the thirtieth day following the initial CARE assessment. This information makes it possible to compare the diverted and non-diverted customers. In addition, it provides a baseline for comparison of the two groups since the CARE data were collected uniformly and during the same time frame for both groups.

CARE assessors include staff and contract staff of the eleven Planning and Service Areas (PSA's), nursing home staff and hospital discharge planning staff. A criterion for being a CARE assessor is either a nursing or social work background. The CARE assessors participate in a CEU accredited training program before conducting CARE assessments. The training by KDOA CARE Program staff offers a level of assurance that all CARE assessors are trained uniformly. In addition, KDOA offers CARE assessor update training, and, if necessary, mandated training when substantial changes are made in the CARE assessment instrument or process.

The KDOA training allows the trainees to complete a sample assessment and then share results within the group for feedback and discussion. The CARE assessment data definitions are provided to the trainees in written form and the trainee has a handbook/manual to take into the field. The data definitions provide clear and specific objective measures, which help to maintain reliability among CARE assessors. An important aspect of the CARE assessment instrument and process is its consistency over time.

Uniform Assessment Instrument (UAI)

The UAI component of the Client Assessment and Referral System (CARS) database at KDOA is the primary data source for diverted customers service use, source of funding (with the exception of Medicaid-HCBS/FE), and duration of service use.

Medicaid Management Information System

The Medicaid-HCBS/FE service utilization and duration for diverted customers is obtained from the Medicaid Management Information System (MMIS) database.

MDS 2.0

The OALTC submitted a Data Use Agreement (DUA) to HCFA requesting use of the Minimum Data Set 2.0 (MDS). This dataset will be used to identify date of entry and functional status upon admission of those individuals who entered nursing facilities.

KDHE Vital Statistics

A request was submitted to KDHE to verify deaths and dates of death of individuals diverted. The data request information covered the period from May 1999 to March 31, 2000.

Qualitative Interviews

Qualitative interviews are the data source for decision-making, service-related quality of life (SRQOL), and informal support. The OALTC staff trained three project staff to conduct the interviews to obtain this information. Staff conducting the interviews had previous social work experience with older adults.

Case Manager Surveys

Prior to conducting interviews, it was important for the OALTC research staff to determine whether the customer or a primary caregiver should be interviewed. A case manager survey was developed for this purpose (see appendix G). Criteria for interviewing the primary caregiver were that cognitive or functional problems would prevent the customer from participating in an interview. Also, case managers were asked for their opinion about the customer's ability to remain in the current setting without in-home services. In addition, information about the services currently being received and the funding sources was verified via the survey. Finally, the case manager updated primary caregiver information.

OALTC Database

The OALTC created a database to incorporate and merge the data obtained from the sources listed above. The database used the Statistical Package for Social Sciences (SPSS) for data entry and analysis.

B.) Sample Selection

Current data from KDOA on the number of CARE Assessments done each month guided the work group when deciding which months to use for each wave or cohort to include in the project. The work group wanted to include months reflecting seasonal variations of older adults considering NF placement and months with higher numbers of CARE Assessments. The work group also anticipated the implementation of the Kansas Aging Management Information System (KAMIS) in the spring of 2000. KAMIS is the new information system at KDOA that will replace the Client Assessment and Referral System (CARS). KAMIS would aid in the extraction of data for analysis components in the project, so the work group recommended selecting waves that came after the proposed KAMIS implementation.

One issue that had to be addressed concerned an HCBS/FE waiting list that had been established for all new HCBS/FE applicants effective July 1, 1999. Preliminary discussion in the work group centered on including some study participants (cohorts) that had had a CARE Assessment prior to the waiting list implementation and some after the implementation. It was clear that the waiting list could have an impact on diversion. Including a cohort group having a CARE Assessment prior to the waiting list implementation could be used as a control group for comparison with cohorts assessed after July 1, 1999. The recommendation was to include one cohort group from a month in the period prior to the implementation of the waiting list.

Once the issues above were considered, the work group recommended all data analysis be based on samples taken from CARE Assessments conducted during these months: May 1999; March 2000; April 2000; and July 2000.

The May 1999 data (cohort 1) were extracted by KDOA on December 17, 1999. It consisted of the CARE Assessment data, the most recent UAI data, and service plans and summary records for each client listing a start date of service, and the type and amounts of each service received per month.

From the initial sample, there were 995 records of customers that had a CARE assessment in May 1999. Of the 995, 76 records were eliminated from the sample because they were under age 60, an eligibility criterion for KDOA services, or the date of birth was missing from the person's record. The remaining 919 records were then classified into three groups depending on their place of residence and service utilization at the time of the CARE 30-day follow-up (See Appendix H). There were 84 records eliminated from the sample at this point because data on their 30-day residential status were missing. Then, those residing in the community but not receiving services were eliminated from the sample (n=31) because they did not meet the KDOA definition of diversion. The reason for eliminating them was that the study sought to determine the effects of publicly funded CBS on diversion and these individuals were not considered diversions as defined by the CARE Program. Finally, eleven records were eliminated because they were referred for a Level II assessment (n=9) or because this information was missing (n=2). This resulted in 793 cases remaining in the database.

Those customers residing in nursing facilities as of the 30th day after the Level I CARE Assessment were coded as "NF" (n=624). Those residing in the community and receiving in-home services or living in board and care facilities were coded as "diverted" (n=169). The 169 older adults diverted were categorized in the following subgroups: in the community with services (n=126) or living in board and care facilities (n=43). Therefore, the study sample of n=793 (79.6%) was used to compare and analyze the diverted customers and NF residents (non-diverted). This dataset (n=793) will be used for several analyses described in this report.

C.) Variable list

The work group and OALTC staff identified the variables to be included in the study for analysis. They are discussed below, divided into quantitative and qualitative categories.

Quantitative Variables

A number of quantitative variables were included in this project. They were analyzed in the Diversion and Community Tenure components of the project. They are summarized below by general area. They are:

- Demographic data such as age, gender, rurality, residential status and whether the older adult lived alone;

- Data regarding service payor sources (i.e. Medicaid, 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. ADL's, IADL's, continence);
- Risk factors such as wandering behavior or a history of abuse, neglect or exploitation (a/n/e);
- Data regarding where the CARE Assessment was conducted and prior hospitalizations or nursing facility admissions;
- Diversion status data (i.e. diverted or non-diverted) and publicly funded service utilization;
- Community tenure variables such as length of time in community; and
- Additional community tenure variables such as death status (and date) and nursing facility admission (and date).

Qualitative Variables

Through the in-home interviews with diverted older adults, qualitative information was collected regarding a number of areas. Older adults were asked about their decision making process that led to them seeking nursing facility placement and their decision to remain in the community. Information was also gathered from the older adults on the availability of formal and informal support. Finally, the older adults provided their perceptions of service-related quality of life. They were asked how the publicly funded services they receive impact their quality of life.

D.) Report Format

The outcomes reported in the next three sections are divided into: 1) Diversion, 2) Community Tenure, and, 3) Service-Related Quality of Life. Each of these three sections of the report will include:

- a) methodology used to address the specific issue (i.e. sampling, data collection, and data analysis);
- b) results and findings; and,
- c) discussion of findings.

Part IV. Diversion

A.) Purpose

This component of the project examines the differences and similarities of older adults who were admitted to nursing facilities compared to those who were diverted* as of the 30th day after the CARE Assessment (completed in May of 1999). The purpose is to determine whether there is a statistically significant difference between the diverted and non-diverted groups of customers (dependent variable) in demographics, levels of functioning, risk factors, and payor status (independent variables). The fundamental question is: *What factors influence older adults to enter nursing facilities or use in-home services and remain in the community?*

This project offers a unique opportunity to study factors related to service use for several reasons. First, KDOA has managed the CARE Program since January 1995. Since the program is statewide, there is the benefit of having a substantially large and diverse population to study. Second, the potential study population is at a point of considering NF admission, so the study population is “captured” for analysis at nearly the same point in the decision-making process. Third, the same assessment instrument has been used since January 1995. This establishes consistency in the database for analysis of individuals assessed at different points in time.

B.) Methodology

The similarities and differences between the diverted (n=169) and non-diverted (n=624) sample of 793 older adults were analyzed using multiple methods. Characteristics of the two groups were compared by cross-tabulating categorical variables and by observing differences in means for continuous variables. Significance tests were performed to determine if the observed differences in these means and cross-tabulations were statistically significant, i.e., to determine the probability that they could have occurred by chance alone. Chi-square tests were performed on cross-tabulations; t-tests (independent samples) were used to compare the means of continuous variables. Variables tested included ADL's, IADL's, support, risk factors and payor status. We also computed the long-term care threshold scores according to the formula followed by KDOA (See Appendix I). The LTC threshold score is comprised of six ADL's, seven IADL's, and five risk factors.

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

- functional assessment;
- current or recent risks and problems;
- support;
- demographic data; and,
- payor sources.

* The definition of diversion used for this project is “diversion from nursing facility are those individuals who have been assessed for potential nursing facility placement, and who were residing in community settings with services or were living in board and care facilities when the 30 day follow-up contact was made.” (CARE Annual Report, December 30, 1998, page 5).

This sample is cross-sectional, representing only one month. Caution must be used in extrapolating these findings. There is no reason to suspect that data from May 1999 differ in substantial or meaningful ways compared to data from other months. It should be noted, however, that the number of diversions in May 1999 (21.3%) was slightly higher than the annual diversion rate for SFY 1999, which was 17.93% (CARE Annual Report, 1999). Additional samples drawn in future phases of the study will allow adjustment for bias that might result from seasonal variation. Until this is done, we caution that the findings are preliminary.

C.) Results and findings

As noted earlier, previous research literature demonstrated that ADL's, IADL's, demographic variables, risk factors, and support systems play a part in NF admission and diversion. These variables were examined as part of our analysis. Table 1 displays the distribution of age, gender, rurality, and whether the person lived alone among the diverted and non-diverted groups.

The table also shows which differences between the diverted and non-diverted groups were found to be statistically significant. The Chi-Square test was used to assess the statistical significance of the findings. It yields a probability value. For example, " $p \leq .05$ " is an expression meaning the probability that this result could have been produced by chance is less than 5%. The smaller the number, the greater the likelihood that the result was not merely due to chance (Vogt, 1999). In addition, the lower the significance level, the more significant the finding is. For example, a finding that is significant at the $p \leq .001$ level is more significant than a finding at the $p \leq .05$ level.

Table 1
Distribution of Diverted and Non-diverted Customers on
Demographic Characteristics (n=793)

Characteristic	Diverted (n=169)		Non-diverted (n=624)	
	Number	(%)	Number	(%)
Age (years)				
Under 65	5	(3.0)	8	(1.3)
65 to 74	23	(13.6)	56	(9.0)
75 to 84	51	(30.2)	203	(32.5)
85 & older	90	(53.3)	357	(57.2)
Gender				
Male	64	(37.9)	208	(33.3)
Female	105	(62.1)	416	(66.7)
Rurality				
Less than 20,000	101	(59.8)	370	(59.3)
20,000 to 100,000	7	(4.1)	24	(3.8)
Greater than 100,000	61	(36.1)	230	(36.9)
Lives alone ^{a*}				
Yes	89	(53.0)	270	(43.3)
No	79	(47.0)	353	(56.7)

p<.05 .

^aThese do not total the “n” because of missing values

As Table 1 illustrates, the age groups were similarly distributed between the diverted and non-diverted age groups with the over 85 group comprising the largest proportion of both. Women and individuals living in communities of less than 20,000 each made up nearly two-thirds of the sample. Diverted individuals were more likely to live alone, which was the only statistically significant difference between the two groups in Table 1. Living alone may be indicative of individuals who function more independently and, therefore, are able to remain in their home and/or the person may have a caregiver who, although not in the home, is nearby. In fact, 75% of the diverted group that lived alone had either regular or intermittent part time support available compared to 64.7% of the non-diverted group that lived alone.

Table 2 displays the distribution of availability of support, the potential payor status, and legal and financial representation among the diverted and non-diverted groups.

* The probability value or “p<.05” value is an expression meaning the probability that this result could have been produced by chance is less than 5%. The smaller the number, the greater the likelihood that the result was not merely due to chance (Vogt, 1999).

Table 2
Distribution of Diverted and Non-diverted Customers on Support, Financial, and Legal Characteristics (n=793)

Characteristic	Diverted (n=169)		Non-diverted (n=624)	
	Number	Percent	Number	Percent
Support Availability ^a				
Full time	55	(32.9)	220	(35.3)
Part time- routine	35	(21.0)	127	(20.4)
Part time- intermittent	49	(29.3)	137	(22.0)
Not available	28	(16.8)	139	(22.3)
Financial/legal variables				
Possible pay status, self-pay *				
Yes	120	(71.0)	387	(62.0)
No	49	(29.0)	237	(38.0)
Possible pay status, Medicaid				
Yes	32	(18.9)	136	(21.8)
No	137	(81.1)	488	(78.2)
Legal and financial representative, self*				
Yes	90	(53.3)	267	(42.8)
No	79	(46.7)	357	(57.2)

*p≤.05.

^aThese do not total the “n” because of missing values

As Table 2 shows, a greater proportion of the diverted group had support available on a part-time, intermittent basis than the non-diverted group. In contrast, there was a higher percent of the non-diverted individuals without any support available compared to the diverted group. When examining the differences, the distribution from full time support to none decreased for both diverted and non-diverted individuals. However, differences in the availability of support were not statistically significant.

Diverted individuals who were self-pay and their own representative in legal and financial matters were in greater proportion than the non-diverted group and the difference between the groups was statistically significant. Individuals who are self-pay may have more financial independence and choose to remain at home. In addition, managing one’s own personal affairs would be indicative of individuals who function more independently and therefore are able to remain in their home.

In order to examine the differences between the diverted and non-diverted groups on characteristics of activities of daily living (ADL), instrumental activities of daily living (IADL), and bladder incontinence and memory/recall capacity, the frequency distributions on all measures for both groups were compared (see Tables 3, 5, & 7). Then, each ADL, IADL, and the two other risk indicators (see Tables 4, 6, & 8) were separately cross-tabulated according to diversion group (diverted or non-diverted). With the exception of incontinence and memory/recall, the CARE Assessor rates the individual’s functional ability as one of four choices: independent; supervision needed; physical assistance needed; or unable to perform.

Table 3
Distribution of Diverted and Non-diverted Customers on ADL Functioning (n=793)

Diverted (n=169)

ADL	Independent	Supervision Needed	Physical Assistance needed	Unable to Perform
Bathing	9.5%	10.7%	70.4%	9.5%
Dressing	18.3%	15.4%	59.2%	7.1%
Toileting	25.4%	17.8%	49.7%	7.1%
Transfer	23.7%	20.1%	49.1%	7.1%
Walking, mobility	17.8%	27.2%	47.3%	7.7%
Eating	54.4%	30.2%	13.6%	1.8%

Non-Diverted (n=624)

ADL	Independent	Supervision Needed	Physical Assistance needed	Unable to Perform
Bathing	2.9%	11.1%	70.8%	15.2%
Dressing	12.2%	14.9%	61.9%	11.1%
Toileting	19.6%	14.4%	56.1%	9.9%
Transfer	16.0%	17.6%	55.8%	10.6%
Walking, mobility	13.0%	20.4%	53.5%	13.1%
Eating	44.2%	33.6%	17.8%	4.3%

As Table 3 shows, a higher proportion of the non-diverted group were unable to perform the ADL's independently. Conversely, a greater percent of the diverted group was independent in each of the ADL's. The greatest differences in independent performance between the two groups appear to be in bathing, transferring, and eating impairments.

Table 4 below displays the results of significance tests conducted on the differences between diverted and non-diverted customers on ADL's. Chi-square statistics were calculated separately for each cross-tabulation.

Table 4
Comparison of Diverted and Non-diverted Groups on ADL Variables (n=793)

ADL	Significance level
Bathing***	.001
Dressing	.114
Toileting	.149
Transfer	.056
Walking, mobility*	.025
Eating	.066

*p<.05. *** p<.001.

Table 4 shows, based on ADL measurement, there was no statistically significant difference between diverted and non-diverted groups' ability to dress, use the toilet, transfer, and eat independently. As expected, a higher percent of the diverted group was independent in each of the ADL's than the diverted group. There were statistically significant differences in bathing and walking/mobility.

Table 5 displays the distribution of IADL impairments among the diverted and non-diverted groups. Table 6 below presents the results of significance tests conducted on the differences between diverted and non-diverted groups on IADL's.

Table 5
Distribution of Diverted and Non-diverted Customers on IADL Functioning (n=793)

Diverted (n=169)				
IADL	Independent	Supervision Needed	Physical Assistance needed	Unable to Perform
Meal preparation	4.1%	4.1%	29.6%	62.1%
Shopping	0.6%	4.7%	30.8%	63.9%
Money management	21.3%	8.9%	21.3%	48.5%
Transportation	5.3%	10.1%	48.5%	36.1%
Telephone	47.9%	21.3%	17.2%	13.6%
Laundry/housekeeping	4.1%	1.2%	24.9%	69.8%
Medication management	18.3%	23.1%	23.1%	35.5%

Non-Diverted (n=624)				
IADL	Independent	Supervision Needed	Physical Assistance needed	Unable to Perform
Meal preparation	1.9%	3.4%	22.6%	72.1%
Shopping	0.6%	2.9%	24.1%	72.4%
Money management	10.3%	10.4%	25.4%	53.9%
Transportation	1.8%	9.6%	52.5%	36.1%
Telephone	34.5%	22.0%	26.8%	16.7%
Laundry/housekeeping	1.1%	2.1%	22.3%	74.5%
Medication management	5.8%	18.8%	27.6%	47.8%

As Table 5 shows, a higher proportion of the non-diverted group were unable to perform the IADL's independently. Conversely, a greater percent of the diverted group was independent in each of the IADL's. The greatest differences between the two groups appear to be money management, telephone, and medication management impairments.

Table 6
Comparison of Diverted and Non-diverted
Groups on IADL Variables (n=793)

IADL	Significance level
Meal preparation	.058
Shopping	.166
Money management**	.002
Transportation	.069
Telephone**	.007
Laundry/housekeeping*	.042
Medication management***	.000

*p≤.05. **p≤.01.*** p≤.001.

Table 6 shows, based on IADL measurement, there was no statistically significant difference between diverted and non-diverted groups' ability to prepare meals, shop and arrange transportation independently. There were statistically significant differences in money management, telephone use, laundry/housekeeping and medication management.

Table 7 displays the distribution of memory/recall and continence impairments among the diverted and non-diverted groups. The memory/recall variable is measuring 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 8 below displays the results of significance tests conducted on the differences between diverted and non-diverted customers for memory/recall and continence problems.

Table 7
Distribution of Memory/Recall and Incontinence (n=793)

Diverted (n=169)

Functional Problem	Scoring of Memory/Recall Problem				
Memory/recall score	0 29.6%	1 17.8%	2 13.0%	3 13.6%	4 26.0%
Continenence (bladder)	Continent 45.2%	Usually Continent 24.4%	Occas. Incontinent 13.7%	Frequent. Incontinent 8.3%	Incontinent 8.3%

Non-Diverted (n=624)

Functional Problem	Scoring of Memory/Recall Problem				
Memory/recall	0 20.3%	1 14.4%	2 11.9%	3 17.6%	4 35.8%
Continenence (bladder)	Continent 36.4%	Usually Continent 16.9%	Occas. Incontinent 15.2%	Frequent. Incontinent 14.6%	Incontinent 16.9%

Table 7 shows that a higher proportion of the non-diverted were experiencing problems with memory/recall and bladder incontinence.

Table 8
Comparison of Diverted and Non-diverted Groups
on Memory/Recall and Incontinence (n=793)

Other functional problems	Significance level
Memory/recall*	.024
Continenence (bladder)**	.002

*p≤.05.** p≤.01.

Table 8 shows, based on continence and memory/recall measurement, there were statistically significant differences between the diverted and non-diverted groups

Table 9 displays the distribution of problems and risk variable impairments among the diverted and non-diverted groups. Table 10 below presents the results of significance tests conducted on the differences between diverted and non-diverted customers for problems and risk variables.

Table 9
Comparison of Diverted and Non-diverted Groups
on Problems and Risk Variables (n=793)

Problem/Risk Present	Diverted (n=169)		Non-diverted (n=624)	
	Number	Percent	Number	Percent
Problems/risks				
Falls, unsteadiness	148	(87.6)	553	(88.6)
Impaired vision	76	(45.0)	278	(44.6)
Impaired hearing	57	(33.7)	208	(33.3)
Wandering	11	(6.5)	82	(13.1)
Social inappropriate	11	(6.5)	58	(9.3)
Self-neglect	11	(6.5)	86	(13.8)
Abuse, Neglect, Exploitation	2	(1.2)	2	(0.3)

As the table shows, the proportion of both groups that were impaired (i.e. falls, impaired vision or hearing) was relatively similar. A larger percent of the non-diverted group had wandering identified as a problem/risk. In addition, the non-diverted group had higher proportions of individuals exhibiting socially inappropriate behaviors and at risk for self-neglect. The number of older adults identified as having problems regarding abuse, neglect, or exploitation by others, regardless of diversion status, was remarkably low.

Table 10
Comparison of Diverted and Non-diverted
Groups on Problems and Risks (n=793)

Problem/Risk Present	Level of significance
Problems/risks	
Falls, unsteadiness	.706
Impaired vision	.923
Impaired hearing	.923
Wandering*	.017
Social inappropriate	.254
Self-neglect**	.010
Abuse, Neglect, Exploitation	.160

*p≤.05. **p≤.01.

Table 10 shows, based on problem and risk variable measurement, there were no statistically significant differences between diverted and non-diverted customers' problems with falls, impaired vision, impaired hearing, socially inappropriate behavior, and abuse, neglect, or exploitation. The differences between diverted and non-diverted groups for the variables wandering and self-neglect were statistically significant.

Table 11 below displays the distribution of the location of the CARE Assessment among the diverted and non-diverted groups.

Table 11
Location Where CARE Assessment Was Completed (n=793)

Location	Diverted (n=169)		Non-diverted (n=624)	
	Number	Percent	Number	Percent
Home	68	(40.2)	251	(40.2)
Nursing Facility	5	(3.0)	22	(3.5)
Hospital	96	(56.8)	351	(56.3)

Although the differences were not statistically significant, they are a comparison worth noting. For example, individuals assessed in all three settings (home, nursing facility and hospitals) were equally diverted and non-diverted. These findings highlight the consistency of the CARE Program in that no matter where an individual was assessed, they were almost equally likely to be diverted.

Long-term Care Threshold Score Analysis

Long-term care threshold (LTC) scores were used to compare the diverted and nondiverted groups in terms of overall functioning. The average LTC scores of the two groups, as well as scores for each of the component measures, differed moderately yet significantly, with the diverted group showing better functioning and less risk.

The primary use of the LTC score is to determine whether an individual being assessed meets the Medicaid functional criteria for HCBS or nursing facility care. The LTC score is a composite of three measures of functioning: ADL's, IADL's and selected risk factors (continence, cognition, falls, abuse/neglect/exploitation, and caregiver support). The highest possible score for an individual is 125.

Using data from May 1999 CARE Assessments, LTC threshold scores were computed for each customer in the study sample according to the above formula (See Appendix I). Mean scores were then computed for the entire sample and for diverted and non-diverted groups. Group means were compared and tested for statistical significance (t-test for independent groups).

Findings

In the sample of 793 customers, ten customers had missing data in at least one of the long-term care threshold variables; therefore, results are based on 783 customers. The scores of the 783 customers were widely distributed, ranging from 4 to 120. The sample mean was 73.5, the median 75.0, and the standard deviation 19.98. Only 12 customers (1.5%) scored lower than the Medicaid nursing facility threshold score of 26. The diverted group minimum score was 7 and the maximum was 113, the non-diverted group minimum score was 4 and the maximum was 120.

Diverted and Non-diverted Group Comparisons

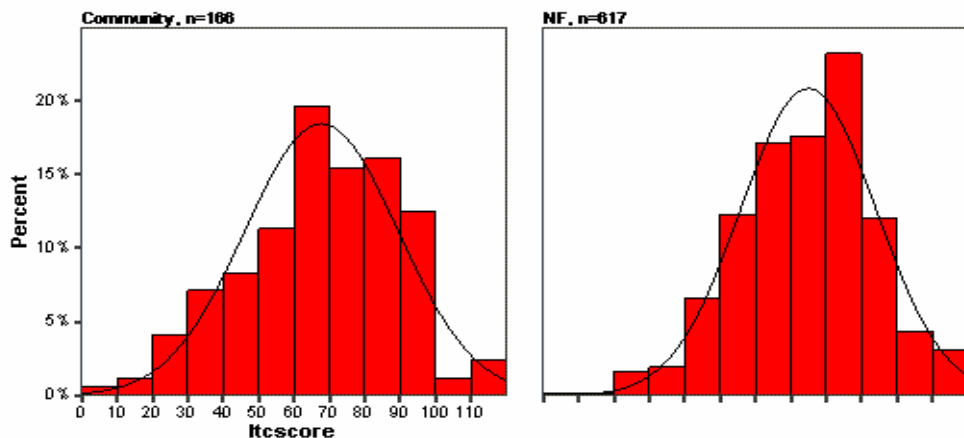
Comparisons of the diverted and non-diverted groups in terms of LTC threshold scores, as well as comparisons of the scores broken down into the three component subscores, consistently showed statistically significant differences (see Table 12). The LTC score mean of the non-diverted group was found to be higher by an average of 7.17 points (95% confidence interval = +/- 3.66). This confidence interval provides 95% assurance that the mean difference between the two groups lies somewhere between 3.52 and 10.83 points. The p value of .001 indicates that there is less than 1 chance in 1000 that these findings are due to random variation. The consistent pattern of group differences across subscores shows that the composite LTC difference between diverted and non-diverted groups was not due to a single component.

**Table 12:
Mean Differences in Long-term Care Threshold Scores (n=783)**

	Mean Score Diverted (n=166)	Mean Score Non-diverted (n=617)	Mean difference	95% Confidence Interval	p
LTC Threshold Score	67.81	74.99	7.17	3.52 –10.83	.000
ADL's	19.43	22.01	2.57	.97 to 4.18	.002
IADL's	34.63	38.15	3.52	1.47 to 5.57	.001
Risk factors	13.75	14.83	1.08	.27 to 1.89	.010

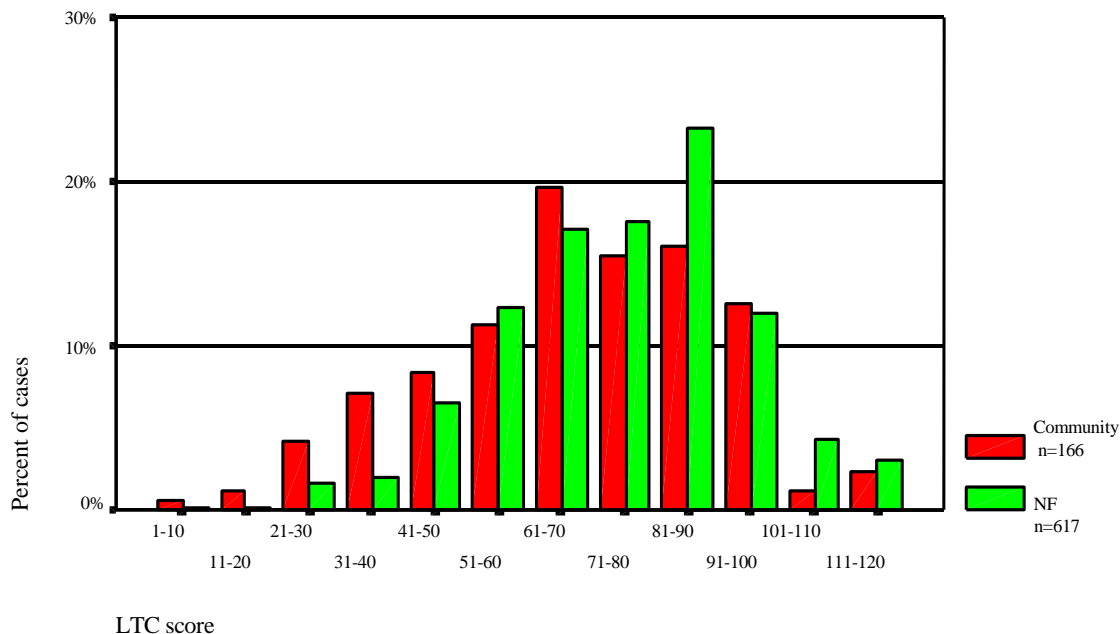
Charts 1 and 2 show that the distributions of LTC scores for both diverted and non-diverted groups approximated a normal distribution. As would be expected, a somewhat greater proportion of the diverted group scored at the lower end of the scale while a greater proportion of the non-diverted group scored at the higher end of the scale.

**Charts 1 and 2:
Comparison of LTC Threshold Scores
for Diverted and Non-diverted Groups
May 1999
(n=783)**



The differences between the two distributions can be more directly compared in Chart 3 below.

**Chart 3:
Comparison of LTC Threshold Scores
of Diverted and Non-diverted Individuals
May 1999 (n=783)**



What are particularly evident in Chart 3 above is the higher percentages of NF placed individuals (non-diverted) among those with higher LTC scores. (For a discussion of individuals living in nursing facilities with LTC scores under 26, please see page 28.) At the same time, there is a small group of diverted individuals still living in the community with among the highest LTC scores (101+). The percentage of customers with LTC scores between 51 and 100 who reside in the community (75.3%) is surprisingly close to the percentage with those scores who reside in nursing facilities (82%). In addition, 42.8% of customers who remained in the community with services had scores above 75 (the median), and almost half (48.5%) of those with scores below 75 entered nursing facilities.

In summary, based on the LTC threshold scores analysis, the difference between the diverted group and non-diverted group is statistically significant, but the difference is modest, unlike what would be expected. This may indicate community-based services enable some diverted individuals to remain in the community despite high LTC scores. These preliminary findings raise questions for the next phase of this project such as what other differences not captured by the CARE Assessment may account for the ability to be successfully diverted.

D.) Discussion

The variables used in this analysis are discussed below using the Andersen model nomenclature describing predisposing, enabling, and need factors. In addition, the results from this study will be compared to other research findings cited in the literature review.

Findings Related to Predisposing Factors

The analysis of differences in age, gender, and rurality variables between the diverted and non-diverted groups in this project did not yield any statistically significant results. This project reported age in four age ranges, although all age frequencies were analyzed and not reported because the results were not statistically significant. Other research found that age was a statistically significant factor (Jette et al., 1992) as was ethnicity (Greene & Ondrich, 1990). We did not analyze ethnicity in this study because 95.9% of the sample were Caucasian and the other ethnic categories were too small to measure significance reliably.

Findings Related to Enabling Factors

The enabling factors studied in this project were whether the older adult lived alone, the level of support available, the pay status of self-pay and Medicaid, and the legal status of responsibility for self. The analysis of diverted customers living alone was statistically significant. However, the level of support available was not statistically significant. These findings are somewhat different than other research findings cited in the literature review. Being widowed or never married was found to be a risk factor (Cohen, M.A., Tell, E. J., & Wallack, S. S., 1986) and Greene and Ondrich (1990) found that living alone was a risk factor. Also caregiver problems, which could be considered a proxy for availability of support, were statistically significant in one study (Tsuji, et al, 1995).

It is important to note that data on marital status was missing on over half of the cases, preventing us from including this variable in our analysis. However, information on the availability of support and the degree to which support is available (full time, part time – routine, part time – intermittent and not available) combined with whether the individual lives alone was used.

Also, this study found that responsibility for legal and financial affairs was statistically significant in the analysis of the difference between the diverted and non-diverted groups. A tentative conclusion is that individuals who are diverted are more independent as demonstrated by responsibility for their own affairs.

A final set of enabling factors analyzed were pay status, specifically self-pay and Medicaid. Only self-pay was statistically significant in the analysis of the difference between the diverted and non-diverted groups. This finding indicates that most individuals who are diverted are not receiving Medicaid. Additionally, KDOA has found that 52% of NF residents are Medicaid eligible compared to this study group that found 22.6% of the non-diverted customers were Medicaid eligible. This difference in findings may be due to “spend down” to Medicaid for non-diverted customers after NF admission.

Findings Related to Need Factors

When analyzing need factors, there were more need factors that were statistically significant between the diverted and non-diverted groups than predisposing and enabling factors. Need factors can be categorized as ADL, IADL, functional problems, and problems and risks. All of these need factors plus the enabling factor of support availability are incorporated into a LTC Threshold score. The analysis of the LTC Threshold score was reported earlier, including how that score is calculated. Overall, the findings from the need factor analysis suggest it is an important factor when examining LTC service use, especially NF, by older adults. The results of this analysis should be considered preliminary because they only represent one month of information. In the next project year (Phase II), additional months or waves will be analyzed. This data will be used to validate the current findings. In addition, a higher level analysis will be conducted to identify actual predictors of nursing facility placement.

Long-term Care Threshold Score Findings

Overall, the difference between the LTC threshold scores for the two groups, while statistically significant, was not extremely large. For the most part, overall functioning is slightly greater for the diverted group. This is a finding that one would expect: i.e., less impaired customers are more likely to remain in the community. However, the analysis did find relatively impaired individuals who were diverted to the community and less impaired individuals who were admitted to nursing facilities. A closer examination of persons in the extreme categories (i.e., those with LTC scores less than 26 who were admitted to nursing facilities or those with LTC scores greater than 100 who were diverted) also suggests that the risk of nursing facility admission is influenced by factors other than level of impairment.

Of the 166 diverted subjects with valid LTC scores (n=3 missing scores), six (2.4%) had scores above 100. Two thirds of these (n=4) were male. The mean age was 84.8. Half lived in cities of greater than 100,000. Only one lived alone, and three had full-time and two part-time caregivers. Their level of impairment was severe: five had maximum cognition difficulty (recall score = 4), four were incontinent at least some of the time, all had fallen recently, and only one person retained control of his own legal affairs. All had multiple potential payers, including six Medicare, four self-pay, three private insurance and one another source (unspecified). For the most part, these individuals did not appear to be receiving publicly funded services: one was receiving numerous Income Eligible services while another had previously (in 1997) received Senior Care Act services. Presumably most of their support was being provided through private services or family members.

Of the 617 non-diverted subjects with valid LTC scores (n=7 missing), six (1.0%) had scores below the Medicaid NF eligibility threshold of 26. Two-thirds (4) were female. Their mean age was 90. All lived in rural areas (population < 20,000). Five lived alone and only one had a full-time caregiver. All were relatively continent (only one “occasionally incontinent”). None had memory impairments, and five of the six managed their own legal and financial affairs. Five were self-pay, four had Medicare, three had private insurance, and three were potentially eligible for Senior Care Act services. Five of the six had received some publicly funded services, including meals, transportation, assessment, homemaker, attendant care, and case management. The fact that almost all of these individuals had received publicly funded services but were now

being admitted to nursing facilities, suggests that services alone were no longer effective in sustaining their community tenure—although, without additional information, we should be cautious in drawing this inference.

While the numbers in these two groups are too small to have statistical power, they do suggest fertile ground for future exploration. Many factors in addition to level of impairment may account for the nursing facility admission decision. These findings highlight the likely influence of factors such as family support, and community-based services on the placement outcome. These need to be explored further in future examination of the nursing facility placement decision, particularly through customer interviews.

Part V. Community Tenure

A.) Purpose

The CARE Program assesses individuals who were considering NF admission and follows up on them at the 30th and 90th day after the CARE Assessment. After these points, it is not known what happens to the customer in terms of their community placement (i.e. did they enter a nursing facility). Therefore, the purpose of this component of the project is to track four cohorts of diverted customers over time in order to measure community tenure. Each cohort of customers diverted will be tracked for a period of 18 to 24 months to determine their residential status or changes therein, and the publicly funded community-based services they received. This complement of data will be used to identify potentially important factors related to community tenure and how people no longer diverted compare to those who are still diverted. The fundamental question is whether state publicly funded community-based services contribute to diverted customer's ability to maintain community tenure.

B.) Background

A review of the research literature did not yield any studies on community tenure. For that reason, calls to state aging offices were made to identify states that may be tracking community tenure. Selection criteria focused on states reputed to have progressive aging programs and states that resemble Kansas demographically and geographically (i.e., rural, Midwestern, with high concentrations of elders). Several were ruled out as either 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).

State Aging and Medicaid agencies were interviewed regarding policies and procedures for tracking the residential status of frail elders diverted from nursing facility admission. The surveys were conducted by telephone between September 23 and October 29, 1999. Nine states were contacted regarding community tenure. The following section provides information on what was learned from the surveys.

The survey inquired whether or not states tracked and measured "community tenure." For the purposes of this study we were interested in the length of time an older adult remains in the community with publicly funded services after applying for and being diverted from nursing facility placement. No attempt was made to distinguish between Medicaid and state-funded programs, although most of the states able to answer these questions did so based on their Medicaid-HCBS program.

Each state was asked a series of questions (See complete questionnaire and a summary of state responses in Appendix J). Questions included:

1. Does your state track nursing facility diversions and, if so, how do you define "diversion";
2. Does your state measure community tenure following a diversion and, if so, how do you define "community tenure";

3. Who manages the process? How is the tracking process managed logistically? Are ad hoc studies performed to collect the data? Are cases tracked individually or in aggregate?; and
4. Who uses the information gathered?

Of the states surveyed, only four states (Missouri, Minnesota, Ohio, and Connecticut) measure nursing facility diversion rates. Wisconsin, Michigan, Oregon, Washington and Iowa do not measure diversion, although the latter is attempting to find a way to do so. The most common definition of a diversion was that the applicant had been referred to the agency, had been found to be at high risk of NF admission, had met financial qualifications for admission to an in-home services program, and had agreed to accept services in lieu of nursing facility care.

Of the nine states interviewed, only Missouri and Connecticut routinely track community tenure—i.e., continuous length of stay in the community. Both stated that they had done so from the beginning of their FE waivers. 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 years.

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 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 costs becomes excessive. 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, the Community Options director stated that their system is outdated and limited in its ability to meaningfully describe client functional status.

The community tenure calculation methods for Connecticut and Missouri bear some further discussion. 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 a 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. Most older adults applying for services in Connecticut have not applied for NF admission before receiving either the 1915C waiver or state funded program. 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. Connecticut calculates the average time on in-home services subsequent to the referral for in-home services. That average time is 35 months. Neither Connecticut nor Missouri calculate diversion/community tenure in the same manner as Kansas.

Because we were unable to interview all states, the information does not provide a complete picture of all state processes. We may have missed a state that has developed an expert data collection method, although it seems unlikely given the general trend, which was not to track community tenure or do so on a limited basis. Locating officials who were knowledgeable about this issue proved difficult. Many officials who indicated an interest did not have the administrative capacity (staff, systems, etc.) to report this information routinely. However, we were able to refine our definitions of diversion and community tenure based on these interviews.

C.) Methodology

The methodology for this component of the project begins with defining community tenure, which is based on several factors. Community tenure is defined as the period of time and terms or conditions under which the diverted person remains in the community with services. The criterion for diversion, as defined by the CARE Program, is that the person had a CARE Assessment and remained in the community with services or was living in a board and care facility when the 30-day follow-up was completed. In this study, diversion from NF is the point at which community tenure is initially determined. The following formula is proposed for analysis of community tenure.

First, the community tenure of an individual would be calculated from the day of the CARE Assessment for that individual if he/she were diverted from NF. Implicit in this calculation is the fact that the person was in the community with services 30 days after the CARE Assessment. The time between the CARE Assessment and the 30-day follow-up is considered diverted time. Second, if a person who is diverted enters a NF at a later time after the 30-day follow-up, and is discharged in less than 90 days, they would still be considered to have maintained community tenure. Professional literature and methods used in Missouri and Connecticut all support this methodology because it recognizes the fact that NF admissions are sometimes used for rehabilitation care and not necessarily as an admission on a permanent basis. Any NF days need to be deducted from the community tenure calculation for the individual. Third, calculating an individual's community tenure also requires tracking diverted individual continuously from SFY to SFY. Finally, the diverted individual must continue to receive in-home services or reside in a board and care facility for them to be considered as having maintained community tenure. When an individual dies, discontinues services, or moves into a NF permanently, their community tenure ends.

Calculating average community tenure (for a specified cohort) requires tracking all diverted individuals over time. When an individual is no longer maintaining community tenure, the number of days they were in the community with services (less any short-term NF stays) are added to the aggregate number of days of community tenure of other individuals no longer maintaining community tenure. Then the aggregate number of days is divided by the total number of individuals no longer maintaining community tenure to compute the average community tenure for the cohort.

At this point in a longitudinal study we cannot yet compute an average community tenure figure because there are still individuals in the community with services or in board and care homes and because we still do not have access to the NF data through the MDS 2.0. We do have

accurate data on those diverted individuals who have died; however other data on numerous individuals diverted in June 1999 (assessed in May 1999) are not available at this time. The preliminary data available are in the results and findings reported below.

In order to construct the community tenure database for analysis of services utilized, length of service use, and residential status, data from a variety of sources were needed. These sources included data from CARS, MMIS, case managers, KDHE, and MDS. A record was created for each individual that was assessed in May 1999 and counted as a diversion at the CARE 30-day follow up point. These baseline data were used to measure community tenure at the 90th day (three-month) and 180th day (six-month) after the 30-day follow-up. The baseline data variables were* :

- CARS data on publicly funded community-based services (CBS) received (Data about SGF CBS are very preliminary and will continue to be updated.):
 - Older American Act (OAA)
 - Senior Care Act (SCA)
 - Income Eligible (IE)
 - Assessment Pool (APOOL)
- MMIS data on Medicaid-HCBS/FE services received:
 - Targeted Case Management (TCM)
 - Health Attendant Care I & II, Wellness Monitoring, Adult Day Care, Personal Emergency Response rental and installation, Respite Care, and Sleep Cycle Support
- Other funding sources at the 30th day after the CARE Assessment such as private pay, Medicare;
- Information about the location of the diverted customer, (i.e. home, board and care facilities, nursing facility) was supplied by case managers; and
- Date of death from KDHE vital statistics record verification.

We summarized information about services received by diverted customers to attempt to identify relationships between service utilization and ability to remain in the community. We validated the dates when changes occurred and client dispositions, when possible, by comparing them to the data submitted by AAA case managers, the CARS database from KDOA, the MMIS for HCBS/FE, and the KDHE database for deaths.

* Minimum Data Set (MDS) 2.0 data have been requested from HCFA, however approval has not yet been received. The MDS data will be used to verify NF admission and admission date.

D.) Results and Findings

Table 13 displays the services received based on funding source of individuals diverted (n=169) at the 30th day after the May 1999 CARE Assessment. You will recall that a person may also be considered diverted if they were living in a board and care facility such as an assisted living facility (ALF) or residential health care facility (RHC).

Table 13
Payor Source of Services Received by
Diverted Individuals at the 30th day (n=169)

Service Received	Number (%)
Medicaid Targeted Case Management	1 (0.6)
Medicaid Home and Community Based Services	1 (0.6)
Medicaid Targeted Case Management and Home & Community Based Services ^a	13 (7.7)
State publicly funded ^b	21 (12.4)
Other funded ^c	133 (78.7)

^a Two customers were getting TCM/HCBS, & State Publicly Funded services (only home delivered meals), but were coded as TCM/HCBS only

^b SCA, IE, OAA, and APOOL

^c Private pay and Medicare

Please note that the figures in Table 13 only list one funding source per customer. There were two customers that had Medicaid and state publicly funded services at the 30-day follow-up. The data in Table 13 indicate that more than 75% of customers assessed in May 1999 were getting services from sources other than Medicaid and state publicly funded programs. A relatively small proportion of the group was receiving Medicaid or other publicly funded services at the 30-day follow up.

Of the 43 diverted individuals in ALF, five were getting Medicaid services and eight were getting publicly funded services at 30 days after the CARE Assessment. Four of the eight were receiving case management services.

Tables 14, 15, and 16 display the 90th and 180th day status of the diverted customers to illustrate their community tenure. The tables are organized by the funding source of the individual. Please note that the majority of data on NF admission is missing at this time because HCFA has not approved the DUA for MDS data by this report date. In a few instances, case managers or OALTC staff noted NF admissions, but they will be confirmed once the MDS data are available.

Table 14 displays the status at 90 days (three months) and 180 days (six months) of those individuals who were private pay (or other funding) at the point of diversion.

Table 14
Community Status of Private Pay and Other Funded
Individuals at 90 & 180 Days After 30 Day CARE Follow-up

Status of customer	90 days (n=133)	180 days (n=120)
In the community and receiving:		
Home and Community Based Services or Targeted Case Management	2	2
State publicly funded ^a	8	1 ^b
Deceased	13	8
In NF ^c	NA	15 ^d
Unknown	110	94

^a SCA, IE, OAA, and APOOL

^b An update of CARS data for the 180th day has not yet been received

^c Not all NF data are available; waiting on MDS 2.0 data

^d Case manager's report

Overall, the diverted individuals who were private pay and other funding to pay for services are difficult to track over time. MDS data may help to locate some individuals. By the 90th day, ten of the private pay individuals were receiving Medicaid or other publicly funded community-based services.

Table 15 displays the status at 90 days (three months) and 180 days (six months) of those individuals who were Medicaid customers at the point of diversion.

Table 15
Community Status of Medicaid Individuals at
90 & 180 Days After 30 Day CARE Follow-up

Status of customer	90 days (n=15)	180 days (n=12)
Still receiving Medicaid service		
Targeted Case Management	1 ^a	0
Home and Community Based Services	2 ^b	3 ^c
Home and Community Based Services and Targeted Case Management ^d	6	5 ^e
Receiving State publicly funded services ^f	0	0 ^g
Deceased	3	2
In NF ^h	NA	NA
Unknown	3	2

^a One person moved from HCBS/TCM to TCM only

^b One person moved from HCBS/TCM to HCBS only

^c Two people moved from HCBS/TCM to HCBS only

^d Does not include one PD waiver person originally diverted at the 30th day.

^e One person moved from HCBS to HCBS/TCM

^f SCA, IE, OAA, and APOOL

^g An update on CARS data for the 180th day has not yet been received

^h Not all NF data are available; waiting on MDS 2.0 data

Of the 15 customers who were receiving some community-based services funded by Medicaid at the 30th day after the CARE Assessment, 60 percent and 53.3 percent were still receiving Medicaid funded services at the 90th and 180th day respectively.

Table 16 displays the status at 60 days (three months) and 180 days (six months) of those customers who were receiving state publicly funded services at the point of diversion. Please note that the update on CARS data for the 180th day has not yet been received. Therefore, the 180th day status most likely underestimates the number of diverted customers.

Table 16
Community Status of State Publicly Funded Individuals at
90 & 180 Days After 30 Day CARE Follow-up

Status of customer	90 days (n=21)	180 days (n=19)
Still receiving State funded service ^a	9	0 ^b
Receiving Medicaid Targeted Case Management or Home and Community Based Services	1	1
Deceased	2	2
In NF ^c	NA	1 ^d
Unknown	9	15

^a SCA, IE, OAA, and APOOL

^b Update on CARS data for the 180th day has not yet been received

^c Not all NF data are available; waiting on MDS 2.0 data

^d OALTC staff confirmed 2 customers were in NF

As Table 16 shows, by the 90th day, 42.9 percent were still receiving state publicly funded services other than Medicaid.

Table 17 summarizes the preliminary community status of the diverted customers by the 180th day. Note these data are preliminary because the MDS data are not yet available and because the updated CARS data for this time period has not been received.

Table 17
Comparison of Community Tenure of the May 1999 Diverted Customers

Status of customer	30 days (n=169)	180 days (n=169)
Medicaid	15	11
State publicly funded	21	1 ^a
Other funded	133	NA
Deceased	N/A	30
In NF	N/A	16 ^b
Unknown	N/A	111

^a Update on CARS data for the 180th day has not yet been received

^b This is a preliminary figure; not all NF data are available; waiting on MDS 2.0 data

Of the total number of customers diverted (n=169), 30 (17.8%) were deceased by the 180th day. Of the 15 customers who were receiving Medicaid services at the point of diversion, eight

of them were still receiving these services at the 180th day. In addition, three other customers were now receiving Medicaid services by this point. However, due to the preliminary nature of the data, it is too early to draw any conclusions regarding the length of community tenure for all these individuals who are not deceased or confirmed as receiving services. Once the additional sources of data are received (i.e. MDS) a more definitive analysis will be conducted.

Part VI. Service-Related Quality of Life

A.) Purpose

The qualitative component of this project focused on service-related quality of life issues. Three areas were of interest related to diverted customers' community tenure and their use of services: (1) the process and factors involved in decision-making regarding nursing facility placement and care setting at the time of CARE assessment; (2) how customers perceived the impact of community-based services on their community tenure and quality of life; and (3) the role of informal support systems in contributing to customers' community tenure. Answers to these questions will provide a clearer picture of how the older adult makes these critical transitions without resorting to permanent nursing home placement. Policy makers can effectively target the areas and specific problems in providing public services to maximize the capacity of older adults to maintain community tenure.

B.) Methodology

Research Design

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. Qualitative research strategies avoid establishing specific questions and response categories ahead of time, rather they "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.

Selection of Interview Subjects

The study was originally designed to use probability sampling to select 30 to 40 customers from the first wave for face to face interviews from a population of one hundred and sixty nine customers diverted in June, 1999. However, due to the extreme high rate of attrition, a purposive sampling method was used to interview all available customers (data on status at six months was reported earlier).

After identifying diversions by PSA, we sent questionnaires to AAA Case Management Supervisors requesting that case managers provide updated information on the diverted customers (See Appendix G). Two of the questions asked were: "Was the customer still living in the community?" and "Was the customer receiving publicly funded community-based services?" We also asked case managers to comment on the customer's cognitive status and his/her appropriateness to be interviewed.

Based on this procedure, we determined that a total of 21 customers still maintained community tenure while receiving one or more community-based service(s) at the time of first contact by CARE project interviewers in the second week of March, 2000. These customers formed the group invited to participate in face-to-face interviews (where necessary, their caregivers acted as proxies). Out of the sample of 21, four customers or caregivers declined the

interview, four customers were not receiving any publicly funded services at the time of the interview, and three customers or caregivers could not be reached. Thus, a total of ten interviews were conducted, six with customers and four with caregivers. Additional interviews are planned for the three subsequent waves and those data will be included in the next FY report.

Data Collection

Interviewers were either MSW or Ph.D. students who have had experience working with older adults. They were trained to conduct interviews with the interview guide in a consistent manner. The face to face interviews were conducted with customers or caregivers at their residence. In cases where the case manager indicated the possibility that the customer might not be appropriate for the interview due to cognitive difficulties, the interviewer met with both customer and caregiver at the same time to assess whether the customer was able to provide accurate information. When it was determined that the customer was not a good candidate for the interview, his/her caregiver was interviewed instead. Each interview took an average of 45 minutes. Written consent for permission to conduct the interview was obtained from either the customer or the caregiver.

During the interview process, questions were asked according to a standardized format (See Appendices K and L). All interviews were tape-recorded. The interviewers also took notes during the interview and coded information after leaving the customer's house. In the section of the interview guide on service-related quality of life and informal support system, short responses were recorded on the interview guide document. More extensive details regarding the decision-making process were written down on the same form.

Data Analysis

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.

In addition, a second type of data analysis was employed. The frequency distribution for the various types of responses was calculated (see tables presented on next page). This analysis helped to discern similarities and differences among respondents' answers, as well as the most frequent types of experiences.

C.) Results and Findings

The interview population from the first wave provided a homogeneous population of female Caucasians. Six customers were interviewed along with four family caregivers who agreed to participate when the customers were determined to be inappropriate interview candidates. Three customers resided in Northeast Kansas (PSA 9), two in the Central Plains (PSA 2) and two in the North Central/Flint Hills PSA areas (PSA 8). The other three lived in Northwest (PSA 3),

Southwest (PSA 6) and Johnson County (PSA 11) areas respectively. Two of the ten customers were residing in an assisted living setting at the time of the interview.

There was a considerable time lapse (approximately ten months) between the CARE Assessments conducted for the first wave customers and the interviews. As a result, the respondents' narratives may have lacked some details of the decision-making process because they could not be recalled. A few people did not remember receiving the CARE Assessment. The time lapse in subsequent waves of this study will be considerably shorter (approximately three months) which should help address the recall issue.

Decision Making Process

Customers were asked questions regarding the decision making process at the time of CARE Assessment. These questions and the customer's responses are displayed in Table 18 below.

Table 18
Response Distribution on Decision Making Questions (n=10)

Question	Frequency
<i>Where were you when the decision to seek nursing facility admission was made?</i>	
Hospital	7
Home	2
Unable to answer	1
<i>What factors were most important in leading up this decision?</i>	
Desire to remain in own home/community	7
Cost of nursing facility compared to CBS	3
Desire to avoid nursing facility placement	6
<i>How did you first learn about in-home services?</i>	
Family member	2
Hospital	1
Home health agency	2
Senior citizen center	2
Don't remember	3
<i>Do you need other in-home services?</i>	
No	8
Yes	2
<i>What types of services do you need?</i>	
Home making services	1
Doctor's house call	1

The majority of respondents interviewed (n=7) faced their decision-making situation in the hospital while two did so at home and one did not remember. When asked what factors affected

their decision to choose in-home services rather than a nursing facility, most expressed their desire to remain in their own home/community (n=7) and/or to avoid nursing home placement (n=6). Three respondents mentioned the cost of the nursing facility compared to CBS. The respondents reported they had learned of CBS from a variety of sources. Most said that they did not need additional services.

Perhaps the most striking similarity among the respondents is that it was during hospitalization that they faced the prospect of moving into a nursing facility. Seven customers were hospitalized between April and May, 1999 due to the exacerbation of a chronic health condition or an injury caused by a fall. Six customers were actually placed in a nursing facility for rehabilitation upon discharge from the hospital, and returned home within 30 days after the CARE Assessment. These customers knew clearly during their discharge planning that they needed to go to a nursing facility temporarily for rehabilitation and recuperation from an illness or an injury. Some felt there was no question about what they needed to do after hospitalization (i.e. go to a NF) and did not see any other options. Therefore, they accepted the necessity of the placement without much deliberation, but expected it to be a temporary placement.

Table 19 shows the perceptions of those interviewed as to which needs or limitations led to the customer having the CARE assessment.

Table 19
Customer's Perception of Problems in Functioning (n=10)

Problem in functioning	Yes	No
changes in customer's health	9	1
cognitive impairment	6	3
cooking	6	3
housework	5	4
bathing	4	6
incontinence	4	5
dressing	3	6
changes in personal caregiver's health	2	7

The majority of the respondents identified declining health status, inability to cook, and cognitive impairment as factors precipitating the CARE assessment. In addition, four of the respondents indicated that incontinence was also a significant factor. Two caregivers that provided information indicated that their own health problems affected their caregiving capacity, and that this change led them to look into an option of nursing home placement.

In the cases of two customers who received a CARE Assessment either at home or in assisted living settings, safety issues were one of the greatest concerns raised by their family members. In these two instances, family members were interviewed and they reported that the customers had experienced a visible decline in their physical health condition and cognitive ability status prior to the assessment. One customer did not remember how to use the emergency alert system installed in her apartment, and was found lying on the floor after a fall. An injury suffered in a fall also precipitated the CARE Assessment for the other customer. They were already receiving CBS such as a personal care attendant and homemaker service at the time of the CARE

Assessment. One customer was living in an assisted living facility and her daughter requested a CARE Assessment because the customer's doctor expected that she would soon need more care than the assisted living facility could provide. Fortunately, her confusion cleared up, and the facility was able to begin providing more personal care with increased hours of HCBS. The other customer moved into an assisted living setting right after the assessment so that she could receive more supervision to enhance her safety. She was interviewed in this setting for our study.

Family members played a significant role in the decision making process for the majority of the customers. Eight customers had a primary caregiver that lives within 20 miles and these family caregivers had been closely involved with the customers' care prior to the CARE Assessment. Some customers were greatly dependent on their family members throughout the decision making process for the following: communicating with health care professionals, sorting out information, and making recommendations to the customer.

Only one respondent, a caregiver, identified a specific factor that would have made the decision-making process easier or smoother. This was a customer's daughter who explained that it would have been easier for her if her brother, who was in denial about the decline of their mother's health, had been more involved in discussions and decision making. Other respondents did not identify any specific factors regarding what would have been more helpful in the decision making process. Two people identified what was actually helpful for them; family support and assistance from health care professionals. For example, one caregiver indicated that talking to nurses in the hospital tremendously helped their decision making as they were very informative and supportive. One customer did not feel that she had experienced a decision making process as it was decided very quickly.

The majority of the customers from the first wave chose in-home services over nursing facility placement because of their desire to avoid a permanent nursing home stay and to remain in their own home and community. There were also individualized reasons behind their decision. The answers of the respondents included: maintaining independence was important; preference of being alone at home; desire to be close to her personal belongings; desire to stay with a spouse; perception of easier accessibility to medical doctors. Three people expressed a concern about the high cost of nursing facility care. The two customers who chose to live in an assisted living setting receive Medicaid to help cover the cost of assisted living. Their caregivers stated that if their mothers did not receive financial assistance to stay in an assisted living facility, there was no question that they would have no choice but to move to a nursing facility. The respondents accessed information on in-home services in various ways. They first learned about the services from family members, hospital workers, home health agency workers, and staff at the senior citizens center, which is part of the aging network.

All respondents but two stated that they had all the services they needed at the time of the interview. Some added that they had enough help from all the different sources combined including family members and hired caregivers. A husband-caregiver responded that he and his wife were both frail but they managed to stay at home by helping each other with the assistance of their daughter who visited them weekly. The two respondents who indicated that they could use additional services respectively listed increased hours of homemaking services and doctors house calls as needed services.

Service-Related Quality of Life

Another aim in our in-depth exploration of customers’ views and experiences with home and community-based services was to provide insight into whether and how these services may have improved customers’ quality of life. In this section, we present information about customers’ perceptions of their use of CBS and the impact of these services on their lives, i.e., service-related quality of life. Specifically, we present findings to the questions customers were asked concerning what services they were receiving and how these needs would be met if the services they were receiving were not available through public funding. They were also asked to describe in what ways each service benefited them and which of the services were most beneficial to them.

Table 20 shows a breakdown of services received by the study population, along with customers’ perceptions of how each service they received would be provided if publicly funded programs were not available.

Table 20
Types of Service Provided and Customers’ Alternative Solutions If the Services Were Not Provided (n=10)

Type of service	<i>How would this task get done if you did not receive the service?</i>				
	Family	Would not get done	Manage on my own	Physician	Do not know
Home delivered meal (n=7)	2	2	1		1
Attendant Care (n=5)	1	2			2
Homemaker (n=3)		3			
Personal Emergency Response (n=1)					1
Wellness monitoring (n=1)				1	
Case Management (n=1)		1			
Custom Care/Environmental Modification (n=1)		1			

Home-delivered meals, attendant care and homemaker services were the most frequently received services. Overall, the respondents indicated that the CBS they receive were very important and that finding another source of help that could provide the same services would be difficult. The services and support that these customers receive could not easily be obtained from another source.

Customers were also asked in what ways each service benefited them. The customers and caregivers who utilized home-delivered meals listed several benefits: having more nutritious meals compared to commercial frozen packages; avoiding safety risks involved in cooking; saving trips to a grocery store; and providing more time for a caregiver to attend to the family business. Customers who received homemaking services noted that the major benefits consisted of getting house chores completed and being able to keep their house clean. The majority of the respondents who utilized the personal care attendant service perceived it as indispensable. Two

daughter-caregivers whose mothers were residing in assisted living facilities felt that receiving the personal care attendant services was the key to enabling their mothers to remain in these facilities. The customer who received case management service appreciated the service as it kept her informed about available services. The customer who received Custom Care/Environmental Modification was able to access a lift chair and stool riser. She felt the service brought great benefits to her life as it gave her more comfort and ensured her safety living in her own home.

Most customers had difficulty in deciding which service was the more important to them. Four people received only home-delivered meals while the others received two or more services. Among the six receiving multiple services, four had trouble in deciding which service was the most important. One customer said, “just about even.” Others seemed to agree that they saw different benefits they received from each type of service. A daughter-caregiver whose mother lives in an assisted living facility felt that her mother needed both personal care attendant and wellness monitoring because both services were vital to maintain the customer’s physical well-being. Two customers answered that home delivered meal was the most vital. One said that having a balanced and nutritious meal was more important. The other respondent was a husband-caregiver who said that he could not cook very well.

Half of the respondents said that the customers would not be able to live at home without the services they receive. Four of them said that customers would have to move to a nursing facility. One caregiver did not know where her mother would live without these services. Only one caregiver thought that the customer was not better off with the services. This caregiver explained that having meals-on-wheels was helpful, but not absolutely essential, as family members could provide meals for the customer. Some answered that having home delivered meals helped them avoid a risk, since they did not have to cook. The majority of the respondents felt that receiving services contributed to their safety.

Informal Support

All but one of the customers interviewed for this portion of the study lived alone. The exception was a woman who lived with her husband-caregiver. Only two customers had primary caregivers that lived outside of their community. These caretakers contacted the customers by phone weekly. All of the caregivers but these two lived within ten miles of the customer’s home, and the majority were able to have daily, face to face contact with them. Customers who had family members in the same local area identified their family as the source of support with the exception of one customer. The two customers whose primary caregiver live outside of the community said that they depend on their neighbors for support. Other identified sources of support include friends, staff in the assisted living facility and family business employees.

The frequency of customers’ outings varied widely. The most common purpose stated for leaving their house was for medical appointments. Other purposes included shopping, visiting, hair-appointments, leisure and recreation, and church services. For those customers with family members in the same community, family members usually accompanied them when they left their house. A few customers mentioned that paid workers or friends accompanied them when they went out.

D.) Discussion of Results

These findings derived from the customers/caregivers interviews must be interpreted with caution due to the small size of the sample population (n=10). However, some tentative implications for policy making regarding community-based services for elderly people in Kansas can be drawn. Findings from this wave will be utilized by the research team to refine the research questions and interview guidelines for the next waves of interviews. In this section, major findings are reviewed and discussed in terms of their considerations for policy-making.

Decision Making Process

1. *A sudden change in the customer's health status seems to be the most substantial factor precipitating a CARE assessment.* The decline of physical health often caused some problems in performing ADL's and cognitive functioning. A combination of different factors that affected their overall functioning jeopardized the capacity of the customers to live independently at home. It was not one or two specific areas in ADL's functioning that had a detrimental impact, but the fact that problems in several areas of functioning were combined to precipitate the perception of incapability to stay at home.
2. *Many customers were unprepared for decision making largely because of the unanticipated changes in their health status.* One customer commented, "You don't plan ahead, except you know what's available." This comment reflects the fact that she had to face decision making suddenly due to the sudden change in her health condition and the following hospitalization, and she was not fully prepared for this task. This finding points to the fact that many elderly people do not plan for a possibility of moving out of their home even if they are aware that their health condition has declined in recent years.
3. *Family members commonly played an important role in the decision making process.* For those customers who were cognitively incapacitated, a family member was a surrogate decision-maker. Even those customers who did not experience detrimental cognitive incapacitation around the time of the CARE assessment greatly depended on family members during the decision making. A high level of family involvement indicates that the customers and family perceive this period a crisis situation, and family is used as the primary source of support for decision making.
4. *The place where the customer was located when s/he received the CARE interview was one of the factors that influenced the decision making process².* The ten customers who were interviewed in our study received the CARE assessment in three different settings; hospital, home and assisted living facility. The majority of these customers who faced the decision in the hospital setting requested a CARE assessment with a definite plan to enter a nursing facility for the purpose of rehabilitation on the skilled floor reimbursed by Medicare. They accepted the nursing home placement as a part of the process for recuperation. Although

² It is important to note that this finding is based on the ten customers who were interviewed for our study. They were all diverted and in the community receiving publicly funded community based services approximately nine months after the CARE Assessment. Therefore, this group of individuals is distinct from the overall study sample of all individuals who received the CARE Assessment in May of 1999.

these customers responded that decision making took place in the hospital, maintaining community tenure depended on their capacity to regain some of the ADL functioning during the nursing home placement, and accessing the resources upon discharge that would support the customers' continuing recuperation. For the customers who lived at home or in an assisted living setting, their safety was the most prominent factor that resulted in the CARE assessment. These customers were already receiving homemaking and/or personal care attendant services. Although these services took care of tasks that these customers were no longer able to perform by themselves, the customers still needed more supervision. Their financial situation was another key factor that influenced whether they would choose a nursing facility or an assisted living facility. They would have moved into a nursing facility without financial assistance through Medicaid to cover the part of the services provided by the assisted living facilities.

5. *Customers' desire to stay in their own home/community is the greatest motivator for them to stay out of the nursing facility.* This, in combination with the financial burden of the placement contributes to elderly people's avoidance of moving into a nursing facility.

Service-Related Quality of Life and Informal Support

6. *For many customers, the different CBS they receive are considered equally important.* According to customers' description of the benefits of each service, each CBS clearly provides distinct benefits and helps the customers by complementing the function they can no longer perform on their own. Home delivered meals, attendant care and homemaking services are the most frequently used services among the customers who participated in the study. However, the frequency does not necessarily represent the priority of importance to these customers. In fact, many respondents could not decide which service had the most value for them when the customer had two or more services.
7. *CBS cannot easily be replaced by customers' available resources.* Even though the majority of the customers in this study had family members living within ten miles who provided a significant amount of support during decision-making, as well as other assistance on a regular basis, family members are not able to provide routine care, such as cooking, shopping, cleaning and personal care, on a daily basis. It appears that the customers maintained community tenure because of the combined support from both CBS and their family. Those customers who lived in the assisted living facilities additionally received assistance from the staff in those facilities.

Part VII. Phase I Summary

A number of important preliminary findings have emerged from our work on the three components to the project during this initial phase. Since these findings are based on only the first project year out of three, any implications must be considered preliminary. However, the research thus far has pointed to some important policy considerations. The following section highlights selected findings and the related policy considerations.

Comparison of Diverted and Non-Diverted Individuals

- *Non-diverted older adults were more likely to have impairments in bathing and walking/mobility, need help with money management, telephoning, laundry/housekeeping, and medication management, be incontinent, and have risk factors of wandering and self-neglect. (n=793)*

These factors may represent potential areas for policy makers to consider development of targeted services. Special efforts could be made to enable individuals with these impairments to reside in the community where possible. For example, these findings suggest a great need to develop effective community medication management services for older adults. Additional examples include developing tailored assessments, information and referral, and other service packages based on these identified problems.

- *Diverted customers were more likely to be self-pay and live alone. (n=793)*

The finding that diverted customers were more likely to be self pay and live alone may be proxies for independence. In addition, it may indicate that older adults who are self-pay may have more opportunities (i.e. greater service availability) to remain in the community. It is interesting to note that nine of the ten customers interviewed for this portion of the study lived alone. However, all of the caregivers but two lived within ten miles of the customer's home, and the majority of the older adults were able to have daily, face to face contact with them. An important distinction needs to be made therefore, in any assessment, between living alone and social isolation. These diverted customers were not isolated. The findings highlight the importance of informal support in helping older adults remain at home.

- *Although the difference in the mean long-term care threshold score of the diverted and non-diverted groups was statistically significant, the means were not very far apart. (n=783)*

The long-term care threshold scores differed only moderately with the customer outcome: i.e., NF admission or diversion. Generally, admitted customers were more heavily impaired than diverted customers were; however, one might have reasonably expected these differences to be greater. In addition, there were relatively impaired individuals who were diverted to the community and less impaired individuals who were admitted to nursing facilities. These findings highlight the likely influence of other factors (i.e. family support, community-based services etc.) on the placement outcome. One interpretation is that community services are providing many of

the supportive services needed by diverted individuals. The qualitative data from our interviews also supports this conclusion.

Given the overlap of LTC threshold scores of diverted and non-diverted customers, particularly in scores between 20 and 70, the potential for cost-effective diversion of more people at the point of CARE Assessment is clear. It is important that we understand what other differences not captured by the CARE Assessment may account for customer's ability to be successfully diverted. As previously discussed, we have some initial findings that help to illuminate those differences. In Phase II, when we have access to MDS 2.0 data on non-diverted individuals, we will have a clearer picture of the differences between the two groups.

Decision Making Process

- ***Most of the customers interviewed were unprepared for decision making largely because of the unanticipated changes in their health status. (n=10)***

If further interview data validate this finding, efforts may be needed to enhance educational programs for older adults and their family members about planning ahead for future transitions caused by health problems, such planning may help to mitigate this issue. They could be better prepared by increasing their awareness of risk factors that jeopardize the independent community living and possible measures they can take to handle both a gradual transition and a crisis situation. An ability to assess the risk factors may help the elderly person and his/her family to better prepare for the transition that is caused by the older person's changes in health conditions and functional abilities. Just as more people have now begun doing pre-retirement planning, people could also develop strategies to deal with health status changes and do prior planning.

- ***Family members commonly played an important role in the decision making process. (n=10)***

Since family plays a critical role in the decision making process for an older family member, it is important to explore family members' perceptions of how they could mobilize the informal and formal resources to keep the older person in the community. Family must be included as a key component in service design for elder care. In addition to family education, support programs that help family better cope with the decision making optimize their ability to make the best decision, possibly leading to the prevention of premature nursing home placement.

Service-Related Quality of Life and Informal Support

- ***For many customers each of the community-based services they receive are very important and cannot be separated and prioritized. (n=10)***

Policy-makers should exercise caution in reaching conclusions about the relative importance of various community-based services. Our initial interview data show that prioritizing community-based services is problematic because these services are mutually reinforcing of the

customer's ability to remain at home. Further, because a service is used more frequently does not necessarily mean that this service is more important.

- ***Customers' available resources cannot easily replace CBS. (n=10)***

Based on the sample of customers that were interviewed, the community-based services they receive are vital for them to maintain community tenure and provide adequate quality of life. Without community-based services, there are very few options for these customers if they wish to stay in their own homes. As a result, most of them have to move into a nursing facility, which incurs high cost often at government expense. Community-based services benefits do not only enhance customers' ADL functioning, they also provide safety and comfort at home. Overall, these services play a critical role in contributing to the customers' quality of life.

Next Steps

During the next two phases of this project data collection and analysis will continue to explore service utilization, changes in plan-of-care, residential status, community tenure and service-related quality of life of diverted customers. In addition, "predictors," or risk factors, of nursing facility admission, will be developed with a particular focus on Medicaid customers. This information can help to determine which customers are at greatest risk of nursing facility placement and to develop cost-effective tailored approaches to maintaining their community tenure. The additional waves of diverted and non-diverted customers will allow initial findings from this first wave to be verified. Policy implications will be developed based on the latest findings.

References

- Administration on Aging. (September 15, 1999). *1998 Census Estimates of the Older Population, for States*. Available from: <http://www.aoa.gov/aoa/stats/98pop/>
- Andersen, R. (1968). *A behavioral model of families' use of health services*. Chicago: Center for Health Administration Studies.
- Andersen, R., & Newman, J.F. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly*, 51, 95-124.
- Beaulieu, J.E. (1991). The quality of home and community-based services. *The Journal of Applied Gerontology*, 10(1), 88-102.
- Black, B.S., Rabins, P.V., & German, P.S. (1999). Predictors of nursing home placement among elderly public housing residents. *The Gerontologist*, 39(5), 559-568.
- CARE Annual Report, 1999
- Carr, A.J., Thompson, P.W., & Kirwan, J.R. (1996). Quality of life measures. *British Journal of Rheumatology*, 35, 275-281.
- Chapin, R., Wilkinson, D.S., Rachlin, R., Levy, M., & Lindbloom, R. (1998). Going home: Community reentry of light care nursing facility residents age 65 and over. *Journal of Health Care Finance*, 25(2), 35-48.
- Cohen, M.A., Tell, E.J., & Wallack, S.S. (1986). Client-related risk factors of nursing home entry among older adults. *Journal of Gerontology*, 41(6), 785-792.
- Coughlin, T.A., McBride, T.D., & Liu, K. (1990). Determinants of transitory and permanent nursing home admissions. *Medical Care*, 28(7), 616-631.
- Coulton, C.J., Dunkle, R.E., Chow, J.C., Haug, M., & Vielhaber, D.P. (1988). Dimensions of post-hospital care decision-making: A factor analytic study. *The Gerontologist*, 28(2), 218-223.
- Degenholtz, H., Kane, R.A., & Kivnick, H.Q. (1997). Care-related preferences and values of elderly community based LTC consumers: Can case managers learn what's important to clients? *The Gerontologist*, 37(6), 767-776.
- Engle, V.F., & Graney, M.J. (1993). Predicting outcomes of nursing home residents: Death and discharge home. *The Journal of Gerontology: Social Sciences*, 48(5), S269-275.
- Faulk, L.E. (1988). Quality of life factors in board and care homes for the elderly: A hierarchical model. *Adult Foster Care Journal*, 2(2), 100-117.

- Fletcher, A.E., Dickinson, E.J. & Philp, I. (1992). Review: Audit measures: Quality of life instruments for everyday use with elderly patients. *Age-Ageing*, 21(2), 142-50.
- Greene, V.L., & Ondrich J.I. (1990). Risk factors for nursing home admissions and exits: A discrete-time hazard function approach. *Journal of Gerontology: Social Sciences*, 45(6), S250-258.
- Gyuatt, G.H., Eagle, D.J., Sackett, B., Willan, A., Griffith, L., McIlroy, W., Patterson, C.J., Turpie, I. (1993). Measuring quality of life in the frail elderly. *Journal of Clinical Epidemiology*, 46(12), 1433-1444.
- Hooyman, N., Gonyea, J., & Montgomery, R. (1985). The impact of in-home services termination on family caregivers. *The Gerontologist*, 25(2), 141-145.
- Jette, A.M., Branch, L.G., Sleeper, L.A., Feldman H., & Sullivan, L.M. (1992). High risk profiles for nursing home admission. *The Gerontologist*, 32(5), 634-640.
- Kansas Department on Aging. (January 13, 1998). *Senior Care Act Program Evaluation Annual Report*. Topeka, KS: State of Kansas.
- Kemper, P., Applebaum, R., & Harrigan, M. (1987) Community care demonstrations: What have we learned? *Health Care Financing Review*, 8(4), 87-100.
- Liu, K., Coughlin, T., & McBride, T. (1991). Predicting nursing home admission and length of stay: A duration analysis. *Medical Care*, 29(2), 125-141.
- Miller, S., Prohaska, T., Furner, S., Freels, S., Brody, J., & Levy, P. (1998). Time to nursing home admission for persons with Alzheimer's disease: The effect of health care system characteristics. *The Journal of Gerontology: Social Sciences*, 53B(6), S341-S353.
- National Center for Health Statistics. Health of the Elderly. Downloaded from the World Wide Web on February 1, 2000: <http://www.cdc.gov/nchs/fastats/elderly.htm>.
- Pan, S.M., Yang, J.T., & Chen, C.C. (1998). The predictors of long-term care service utilization among older americans. *Kaohsiung Journal of Medical Science*, 14, 226-233.
- Pearlman, R.A. & Uhlman, R.F. (1988). Quality of life in the elderly: Comparisons between nursing home and community residents. *Journal of Applied Gerontology*, 7(3), 316-330.
- Osterweil, D., Martin, M., & Syndluko, K. (1995). Predictors of skilled nursing home placement in a multilevel long-term-care facility. *Journal of the American Geriatric Society*, 43, 108-112.

- Rabiner, D.J. (1995). Patterns and predictors of noninstitutional health care utilization by older adults in rural and urban America. *Journal of Rural Health, 11*(4), 259-273.
- Reinardy, J.R. (1995). Relocation to a new environment: Decisional control and the move to a nursing home. *Health and Social Work, 20*(1), 31-38
- Reinardy, J.R. (1992). Decisional control in moving to a nursing home: Postadmission adjustment and well being. *The Gerontologist, 32*(1), 96-103.
- Reinardy, J.R., & Kane, R. A. (1999). Choosing an adult foster home or a nursing home: Residents' perceptions about decision making and control. *Social Work, 44*(6), 571-585.
- Tsuji, E., Whalen, S., & Finucane, T.E. (1995). Predictors of nursing home placement in community-based long-term care. *Journal of the American Geriatric Society, 43*, 761-766.
- Vogt, W. P. (1999) *Dictionary of Statistics and Methodology*, (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Weissert, W.G., & Cready, C.M. (1989). Toward a model for improved targeting of aged at risk of institutionalization. *Health Services Research, 24*(4), 485-510.