

Nursing Homes to Medicaid Waiver in Vermont:

**An Analysis of Nursing Home Residents who
Made the Transition from Institutional Care to
Medicaid Supported Community-Based Care
In State Fiscal Year 1998**

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Executive Summary

Introduction

The Home and Community Based Medicaid (HCBS) and Enhanced Residential Care (ERC) waivers served over 950 individuals during SFY 98. The study group for this report is made up of the ninety individuals who entered these Medicaid Waiver Programs (MWP) directly from a nursing home during SFY 1998. The study group was compared to a control group of three hundred and eighty-five randomly selected nursing home residents.

The typical individual who moved into the community from a nursing home with the help of a Medicaid waiver was a 78 year old woman who required hospitalization because of a health problem. She was admitted to a nursing home from the hospital and stayed in the nursing home less than three months. While in the nursing home, she required assistance in performing activities normally associated with daily living, and was more likely to receive rehabilitation than the average nursing home resident. Despite her physical challenges, her cognitive skills were largely intact and she was most likely continent. She also had a strong preference for receiving her care in the community.

Major Findings

This report was able to generate significant findings in a number of areas. The most interesting findings center on expenditures, and identifying characteristics that differentiate potential waiver candidates from the general nursing home population.

1. Depending on the methodology used, the estimated savings in state Medicaid expenditures for those in the study group who moved from nursing home care to community based care with the help of MWP waivers was between \$423,433 and \$251,583 from June 30, 1997 through October 31, 1998.

There is general agreement that Home and Community-Based Medicaid waivers are a cost-effective way to provide care for individuals who might otherwise be in nursing homes. However, there are few studies or agreement on the exact method of calculating the actual savings generated by MWP waiver services. This research, which used a very conservative methodology, clearly shows that the Medicaid Waiver Programs are effective in helping Vermont residents get the care they need while using fewer state Medicaid dollars.

2. Physical functioning as measured by the MDS 2.0 in the nursing home is not a reliable predictor of candidates for Home and Community-Based Medicaid waivers.

Few would argue that "physical functioning" is an important determinate of how well an individual might function in a community setting. The assessment instrument has a bias, which is likely to maximize the number and amount of physical deficits in the nursing home to waiver population.

The bias is present because of the timing of assessments, which are gathered on admission, quarterly, and in conjunction with an unexpected significant change in health status. The timing of the initial assessment means that all those who enter a nursing home after an acute health incident for recovery or rehabilitation will be assessed on admission, when they are likely to have their greatest physical deficits. In the normal course of events, the scheduled or change-in-status reassessments should correct for the maximization of deficits on the initial assessment. Unfortunately, the criteria for reassessment limits the MDS's ability to collect information on functional improvements for those individuals who are using nursing homes for short-term recovery or rehabilitation.

The reason for the bias in reassessment is that many in the "nursing home to waiver population" are (1) short term nursing home residents who are discharged before a regular reassessment; and (2) nursing homes are exempted from doing a "change in health status" assessment when (a) the change in status is due to an "expected recovery" or if (b) a discharge is being planned. Thus, the method of collecting MDS data on functional deficits in nursing homes is biased and tends to maximize functional deficits which undermines the usefulness of "physical functioning" as an accurate measure for those individuals most likely to leave a nursing home under a Medicaid waiver.

3. Three measures are able to overcome biases in data collection methods. These measures clearly differentiate between those who were able to leave the nursing home via the MWP waiver and the general nursing home population:

Cognitive functioning as measured by the "Morris Cognitive Performance Scale"

The most important indicator of those who were able to move from a nursing home into the community was "cognitive functioning." The study group was more likely to be functioning at an intact level in the key areas of short-term memory, decision making, and communicating skills than the general nursing home population.

Continence

Three quarters of those able to move to the community were continent while less than half of the nursing home population is continent.

Care in the nursing home for a "clinically complex" condition or special rehabilitation

Special rehabilitation and "clinically complex" care categories in the RUGS-44 system characterized over 73% of those who were able to reenter the community from a nursing home while less than 30% of the general nursing home population fell into these categories.

Conclusions

The Home and Community-Based waiver is a cost-effective method for helping Vermont citizens move from nursing homes into the community, and present data sources have the potential to identify individuals in nursing homes who might benefit from MWP waivers.

Nursing Homes to Medicaid Waiver Programs

Goals

This report has three main goals: (1) to examine information about the individuals who entered the Medicaid Waiver Programs (MWP), which include both the Home and Community-Based (HCBS) and the Enhanced Residential Care (ERC) Medicaid waiver programs, directly from a nursing home; (2) to determine if it was possible to combine and link information about these individuals from different data sources; and (3) to determine if expenditures for waiver services had an effect on nursing home use and expenditures.

Data Sources

For the purposes of this study, data were gathered from three primary databases. These databases were the nursing home Minimum Data Set 2.0 (MDS), Medicaid Claims, and the Service Accounting and Management System (SAMS). Each of these databases holds different types of information, is maintained by a different source, and has a different purpose. The MDS is a survey mandated by the **Health Care Financing Administration**, contains over 400 variables and is filled out by nursing home staff. The MDS contains information on demographics, levels of care, cognition, physical impairment, activities of daily living, medications, discharge likelihood, and rehabilitative services. The Medicaid Claims database provides information on all Medicaid payments including dates of service, facility information, and types of service for nursing homes and MWP services. The SAMS database contains assessment and service data on all clients served by the Division of Advocacy and Independent Living. SAMS includes information from the Independent Living Assessment that covers many of the same topics as the MDS. In addition to MDS-type information, SAMS has extensive information on informal supports, home environment, instrumental activities of daily living (IADLs), and nutrition.

Sample Selection

In SFY 1998, the Division of Advocacy and Independent Living (DAIL), which oversees the Medicaid Waiver Programs, authorized a total of 469 priority admissions. Of these, 132 priority admissions were for individuals who were seeking to move from nursing homes to the community. In order to qualify for MWP services, these individuals had to meet both the clinical and financial eligibility requirements for Medicaid-covered nursing home level of care.

The 132 individuals who received priority admission to the waiver program made up the pool from which the study group was selected. Exclusions were made from the pool because some individuals who were granted a priority admission did not actually make use of the waiver. Many factors such as: lack of interest; improvements in physical condition; rapid physical decline; death; and/or lack of family support resulted in waiver services never being used. While some services, usually case management, were delivered to about 113 individuals, substantial MWP waiver services were delivered to 90 individuals. These 90 individuals make up the primary study group for this report.

A second group was randomly selected from the MDS database over a two-year period from July 1996 to July 1998. This group of 380 nursing home residents (n=380) served as a control group. A two-year period was used so that the control group could represent as wide a time frame as practical.

Consumers

The Typical Person who moved from Nursing Home to a MWP Waiver in 1998

The profile of a typical person who moved from a nursing home into MWP services is a 78-year-old woman. She entered the nursing home from a hospital, and was in a nursing home less than 90 days before entering the waiver program. She had an almost 50% chance of having received waiver services at some time in the past. Her ability to understand, communicate, and make decisions was good. While in the nursing home, she probably received special rehabilitation services or care for a clinically complex condition. She also needed extensive assistance in the nursing home with 2.5 activities of daily living (ADL). ADLs are bathing, dressing, transferring, toileting, and eating. She was most likely to need extensive assistance with bathing and limited assistance with dressing, transferring, and toileting. She did not need help with eating. She had a 50% likelihood of being continent in bladder and bowel functions.

This typical MWP individual resembles the typical nursing home resident in some ways; however, she differed from her counterparts in the nursing home in a few important ways. She is younger, has fewer extensive ADL needs (2.5 vs. 3.0), and unlike many of her nursing home counterparts she can eat without help. She has received more rehabilitation therapy, a larger number of medications, is more continent, and is more often able to make independent decisions than the typical nursing home resident. She has a strong preference for care in the community. Additionally, nursing home personnel predicted that she would be discharged within ninety days 30% of the time. This was a much higher percentage than the ninety-day discharge prediction of 10% for the average nursing home resident.

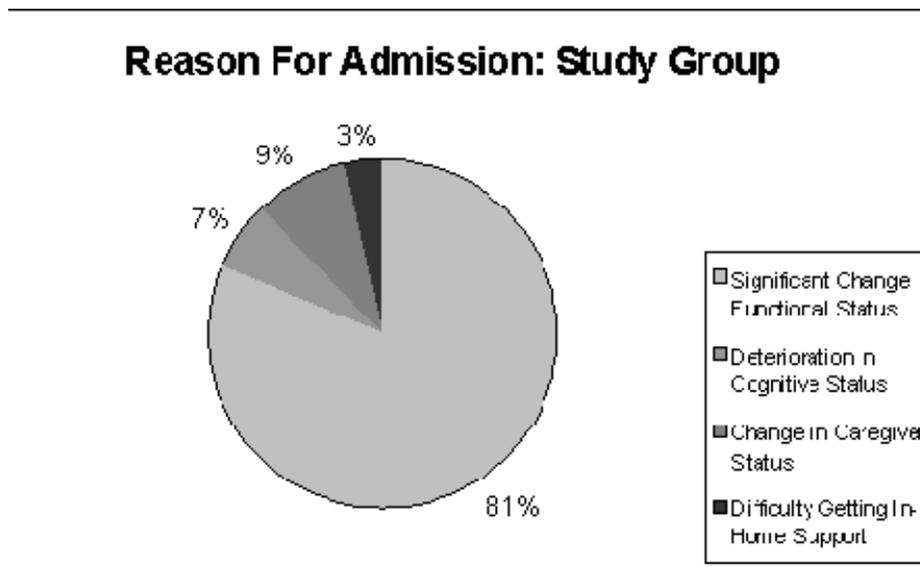
Consumers Profile

The study group was overwhelmingly comprised of women (79%) who ranged in age from 35 to 97 years old, with the average age being 78 and the median age being 82. This was somewhat younger than the median age of the control group of nursing home residents, which was 86 years old.

Length of stay information in the nursing home could not be determined for the control group, but it could be determined for about half of the study group. Length of stay for the study group was calculated as the time between the last nursing home admission and the waiver application date. Using this criterion, 76.7% of the study group were in a nursing home less than 90 days. The median stay was 71 days, and the average length of stay was 85 days. The lengths of stay were between 12 and 239 days. This means that most members of the study group were not very long-term users of nursing homes.

Reason for Admission to Nursing Home

Finding 1: *A change in functional status accounted for over 80% of nursing home admissions for the study group.*

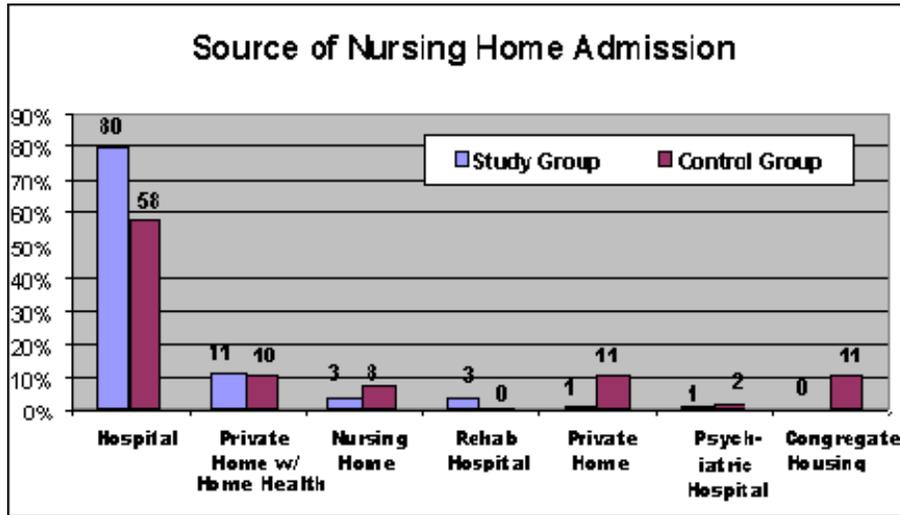


Significant change in functional status is the overwhelming reason for admission to a nursing home. "Change in Status" is cited for over 81% of admissions for the study group when multiple answers to this question were analyzed on a proportional basis.

In those cases where only a single reason for admission to the nursing home was cited, functional status accounted for 66.3% of admissions, followed by change in caregiver status at 4.7%. Cognitive deterioration and difficulty arranging/paying for in-home support were never cited as the sole cause for admission.

Admission Source

Finding 2: *The vast majority of the study group entered the nursing home from a hospital. It is likely that a representative of a home health agency saw 9 out of 10 members of the study group before they entered the nursing home.*

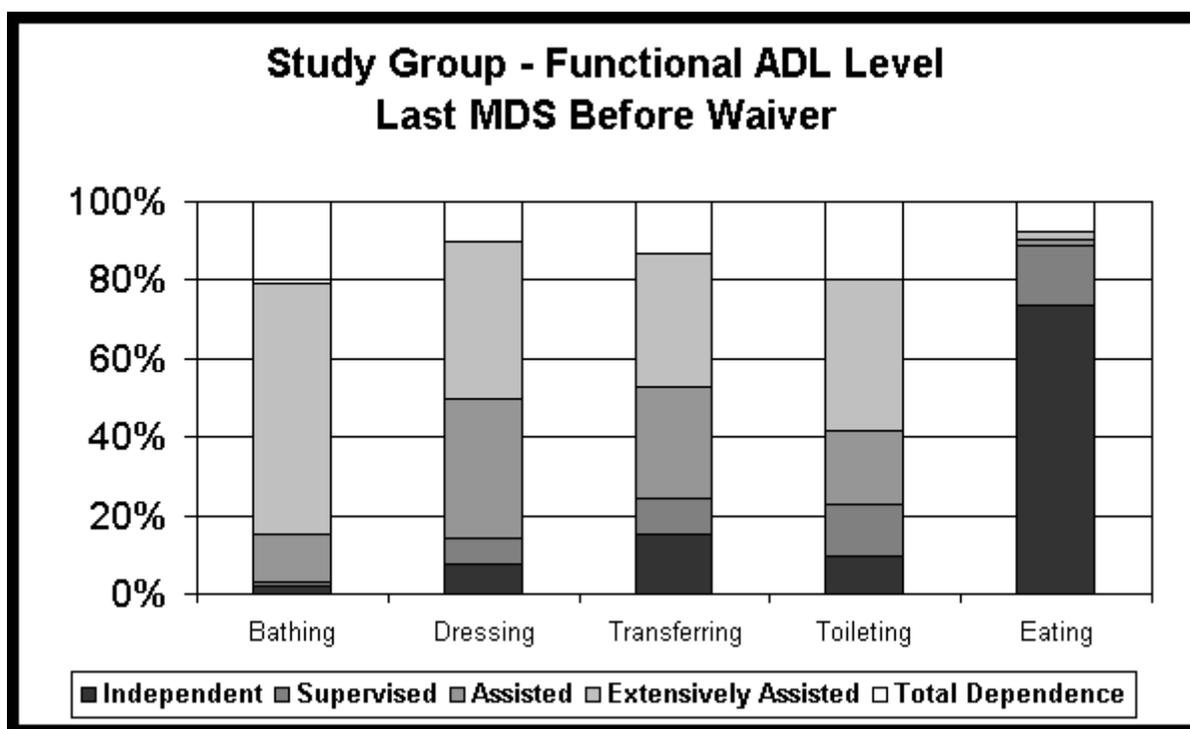


The vast majority of the study group (91%) were admitted to the nursing home from a hospital (80%) or a private home with home health services (11%). This is different from the random nursing home sample where hospitals and households with home health services accounted for a total of only 68% of nursing home admissions. Compared to a similar report produced last year, admissions from hospitals are up by 11%, while admissions from private homes with home health services are 12% lower this year.

Activities of Daily Living

Finding 3: *Activities of Daily Living as measured by the MDS 2.0 are not a reliable predictor of candidates for Home and Community-Based Medicaid waivers.*

Activities of Daily Living (ADL) are a widely accepted standard for assessing functional abilities. The Minimum Data Set, required for all nursing home residents, supplies a clear picture of the level of assistance needed by both the study group and the control group of nursing home residents.



The functional challenges faced by the study group were extensive. The study group's functional deficits appear to be less than the random nursing home sample. However, the differences are not statistically significant as a whole. In spite of this finding, two differences are present: (1) the control group had a higher percentage of individuals who were totally dependent in all ADLs; and (2) the study group had a much higher percentage of individuals who were independent or needed only supervision for eating.

The study group had many functional challenges that required extensive assistance while they were in nursing facilities. With the single exception of eating, supervision and assistance were typically required to complete all ADLs.

Study Group: Most Assistance Needed with any one ADL

Extensive Assistance	Assistance	Supervision	Independent
82	6	2	0

ADL's in Detail

MDS Activities of Daily Living: Study Group

	Bathing	Dressing	Transferring	Toileting	Eating
Independent	2.2%	7.7%	15.4%	9.9%	73.6%
Supervised	1.1%	6.6%	8.8%	13.2%	15.4%
Assisted	12.1%	35.2%	28.6%	18.7%	1.1%
Extensively Assisted	63.7%	39.6%	34.1%	38.5%	2.2%
Total Dependence	20.9%	9.9%	13.2%	19.8%	7.7%
Did Not Occur	0.0%	1.1%	0.0%	0.0%	0.0%

MDS Activities of Daily Living: Control Group

	Bathing	Dressing	Transferring	Toileting	Eating
Independent	0.3%	4.4%	20.3%	14.3%	41.8%
Supervised	2.9%	7.8%	6.2%	5.7%	20.5%
Assisted	4.9%	21.0%	22.3%	15.8%	12.5%
Extensively Assisted	50.6%	39.7%	29.6%	33.5%	10.6%
Total Dependence	41.3%	26.2%	21.3%	30.1%	14.3%
Did Not Occur	0.0%	0.8%	0.3%	0.5%	0.3%

The differences between the study and control group are best characterized as "differences of degree." In general, the control group has only slightly more severe functional challenges on all ADL measures except eating.

ADLs in the Community

Independent Living Assessment

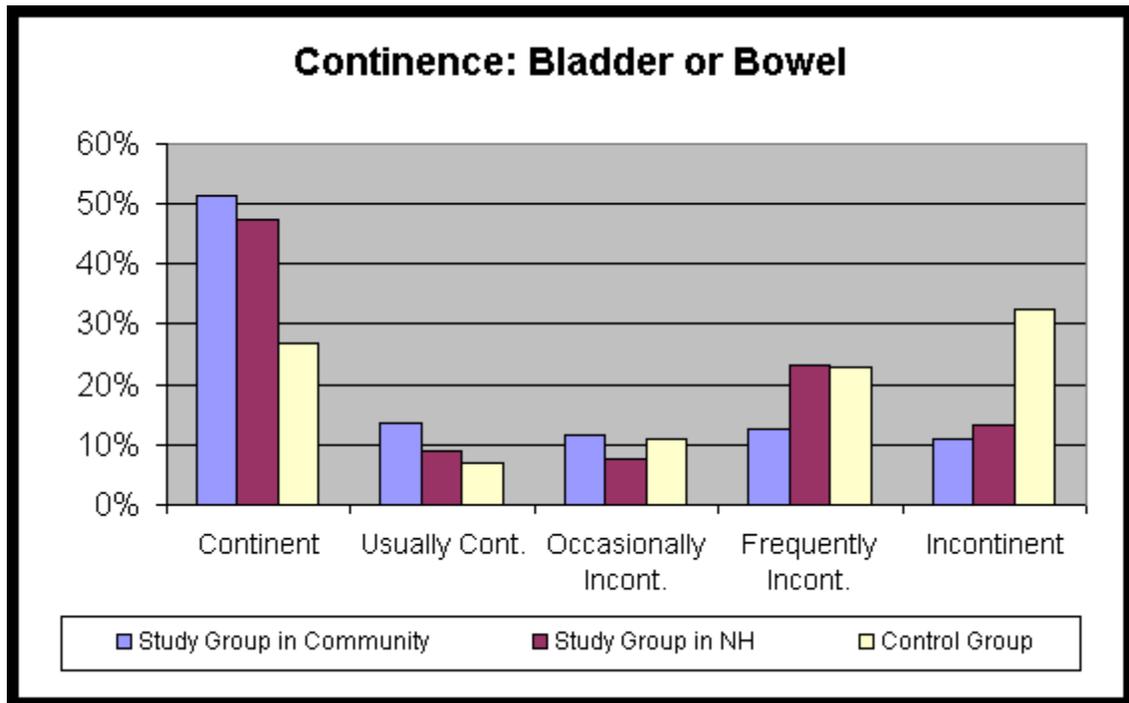
Activities of Daily Living: Study Group in the Community

	Bathing	Dressing	Transferring	Toileting	Eating
Independent	15.3%	38.7%	51.4%	55.0%	69.4%
Supervised	9.0%	8.1%	6.3%	9.0%	4.5%
Assisted	18.9%	18.9%	22.5%	13.5%	19.8%
Extensively Assisted	22.5%	18.0%	4.5%	1.8%	0.9%
Total Dependence	34.2%	16.2%	15.3%	20.7%	5.4%
Did Not Occur	0.0%	0.0%	0.0%	0.0%	0.0%

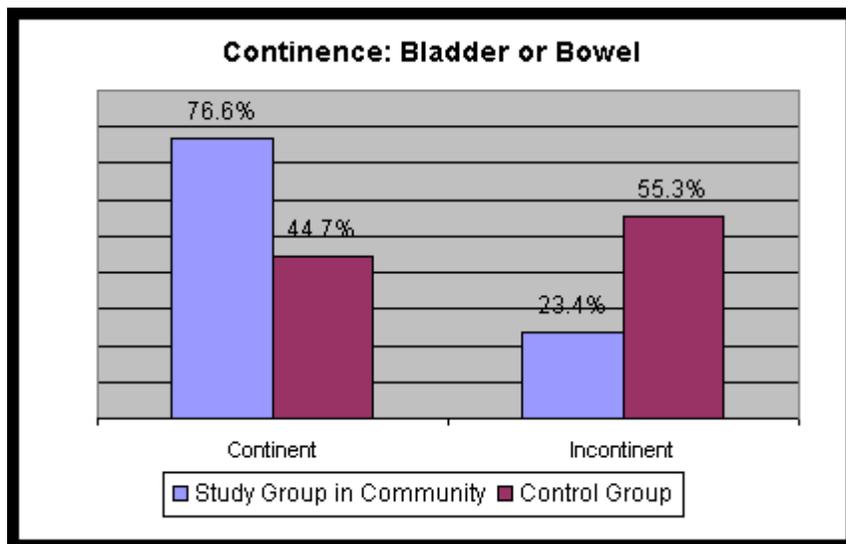
After moving into the community, the percentage of individuals in the study group who are able to function independently seems to increase substantially in all areas except for eating as measured by the Independent Living Assessment.

Continence

Finding 4: *The study group is significantly more continent than the control group, and continence seems to improve in the community.*



The study group has greater continence than the control group. Bladder and bowel continence are combined for this analysis in order to allow comparisons between the study group in the nursing home and after the nursing home. There is a large difference between the study group and the control group with the study group being more continent.

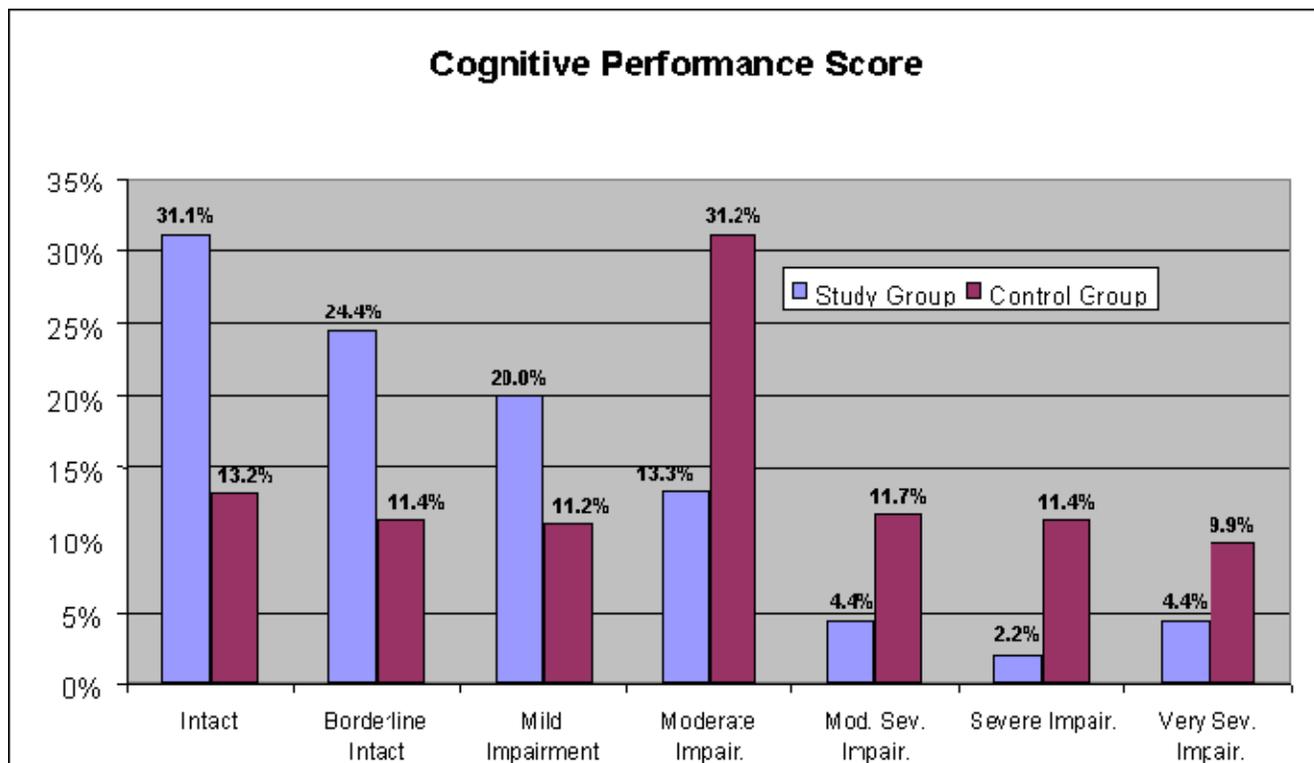


The difference between the groups is dramatic when individuals are placed in two classes, continent and incontinent. More than 3 out of 4 individuals in the study group were continent, while less than half of the control group of nursing home consumers were continent.

Cognition

Finding 5: The study and control groups have very clear and striking differences in cognitive performance. As an individual's cognitive performance scores increase it becomes more likely that they will move from a nursing home to waiver.

The most clearly defined difference between the study sample and the control group was in the area of cognition as measured by the Cognitive Performance Scale. The difference between the two groups is dramatic. In the study group 75.5% scored as intact, borderline intact or mild impairment. Only 38.8% of the control group were in the same categories.

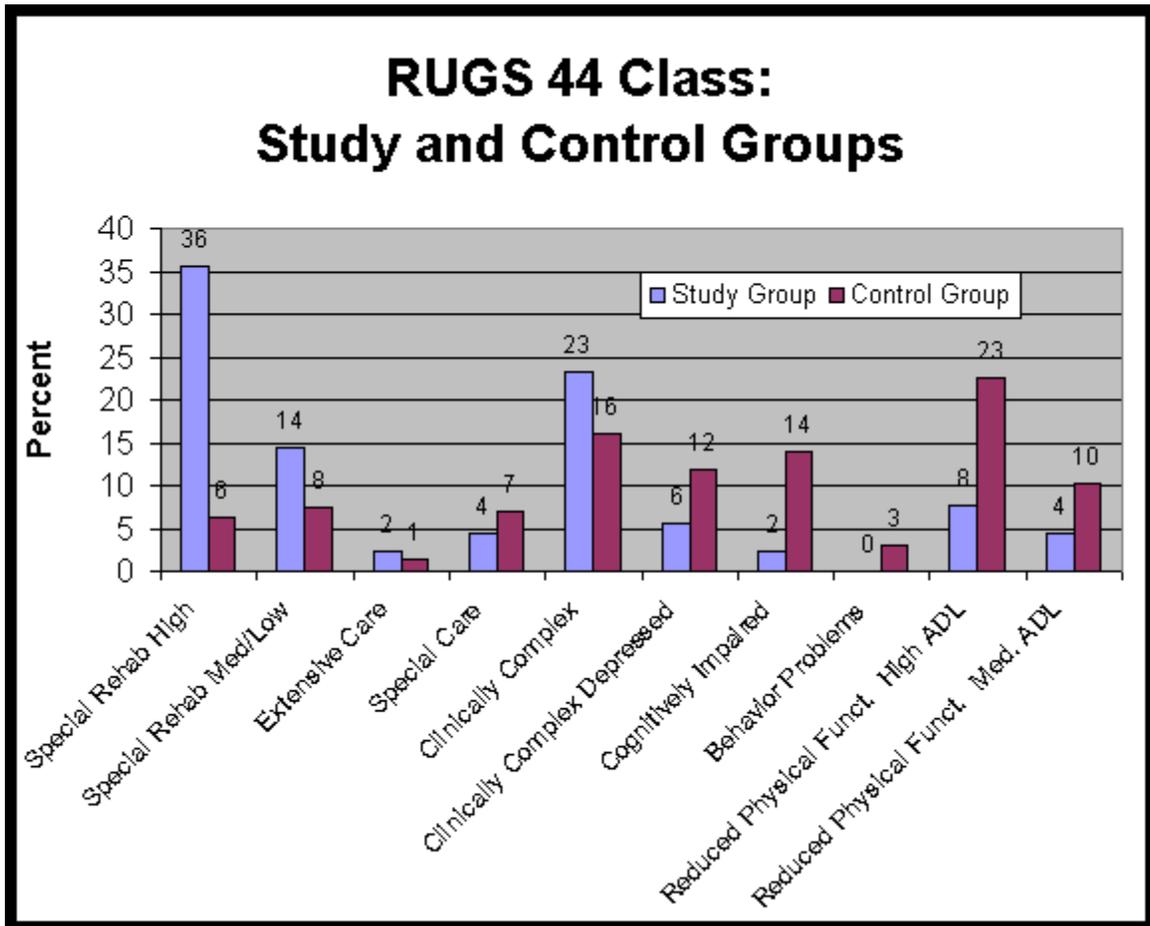


CPS Category Definitions

Intact	Independent in decision making, short term memory, and making self understood
Borderline Intact	Independent in two of the following measures: decision making, short term memory, and making self understood
Mild Impairment	Understood/usually understood by others, and independent/modified in daily decision making
Moderate Impairment	Usually understood by others, or modified independence in daily decision making
Moderately Severely Impairment	Moderate impairment in decision making and sometimes/never understood
Severe Impairment	Severely impaired decision making and not totally dependent for eating
Very Severe Impairment	Severely impaired decision making and totally dependent for eating or comatose

RUGS-44

Finding 6: *Individuals in the study group are much more likely to be receiving rehabilitation or clinically complex care while in the nursing home than those in the control group. These RUGS-44 groupings clearly define the study group as a group where the majority were recovering from an illness, accident or hospital stay.*



The RUGS-44 classifies consumers of nursing home care into 44 separate categories that describe the amount and types of care that each consumer requires. The study group dominates three of the RUGS classes: "Special Rehabilitation High", "Special Rehabilitation Medium" and "Clinically Complex." When the "Rehabilitative" classes and "Clinically Complex" classes are combined, they represent 73.3% of the study group and less than 30% of the control group.

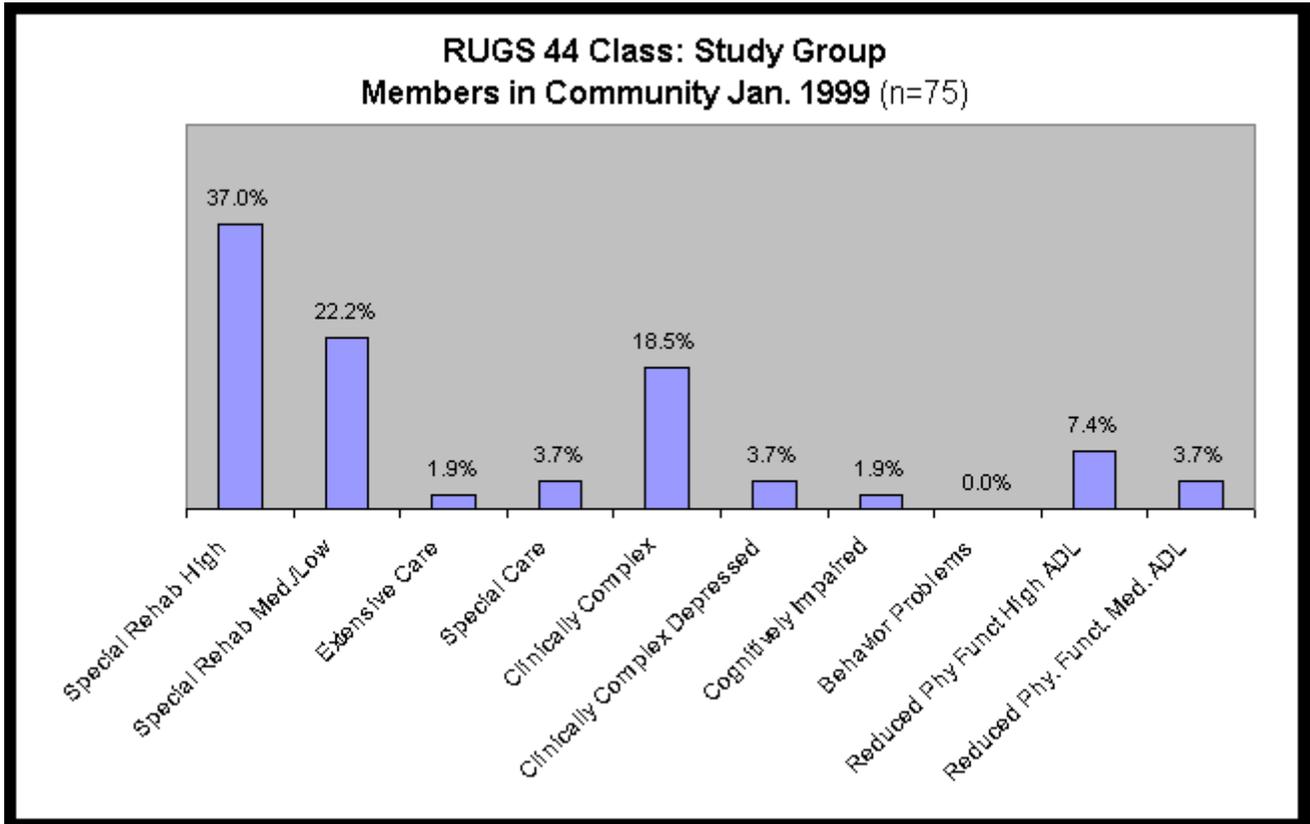
The "Special Rehabilitation" categories include individuals who are receiving physical, occupational, or speech therapy in addition to rehabilitative care activities. The therapies must be at least 45 minutes per week for low intensity, 150 minutes for medium intensity, and over 300 minutes per week for high intensity.

The "Clinically Complex" category covers individuals who are receiving special care for specific illnesses. The majority of those in the study group who were in the "Clinically Complex" category were recovering from strokes and/or heart failure.

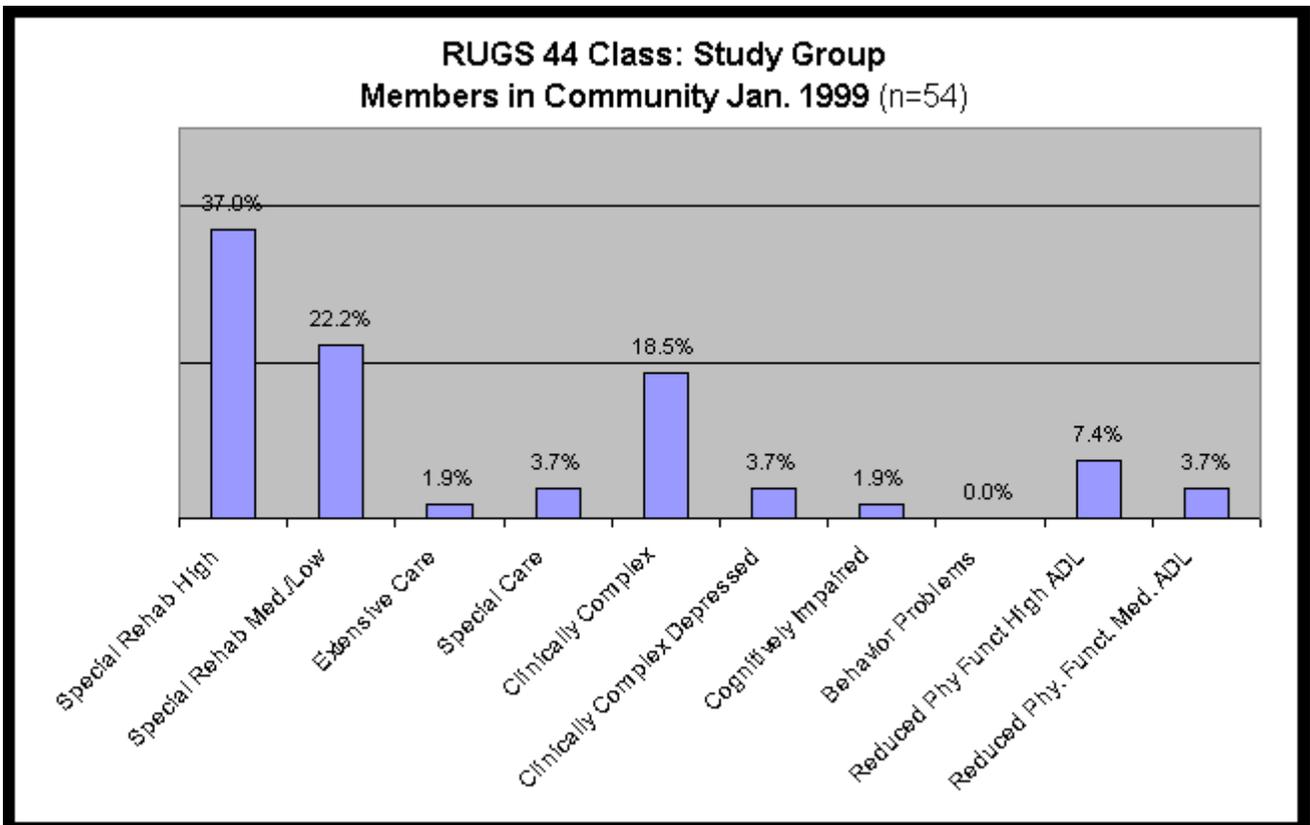
A Retrospective Look

Finding 7: *Those who are in RUGS "Special Rehabilitation" categories are more likely to become "long term users" of the waiver.*

RUGS-44



A look at Medicaid Claims data from January 1999 gives an indication of the individuals in the study group who are able to maintain themselves in the community for a period of time. A review of Medicaid waiver claims indicates that 75 people or about three-fourths of those in the study group are still generating Medicaid waiver claims between six and eighteen months after entering the program.



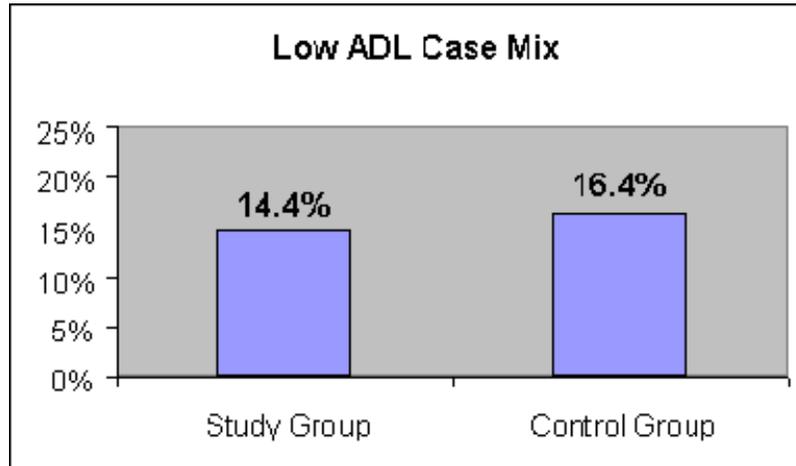
The chart represents the RUGS classes assigned in the nursing home to those with active claims in January, 1999. The individuals who received "Special Rehabilitation" and "Clinically Complex" care account for nearly 78% of those who had active MWP claims in January. This means that the same RUGS classes that differentiate the study and control groups also identify long term MWP users.

RUGS-44: Relative Differences

Study Group and Study Group with Claims in January 1999

	Study Group	Study Group with Claims Jan. 1999
Special Rehab (high)	35.6%	37.0%
Special Rehab (med/low)	14.4%	22.2%
Clinically Complex	23.3%	18.5%
N=	90	75

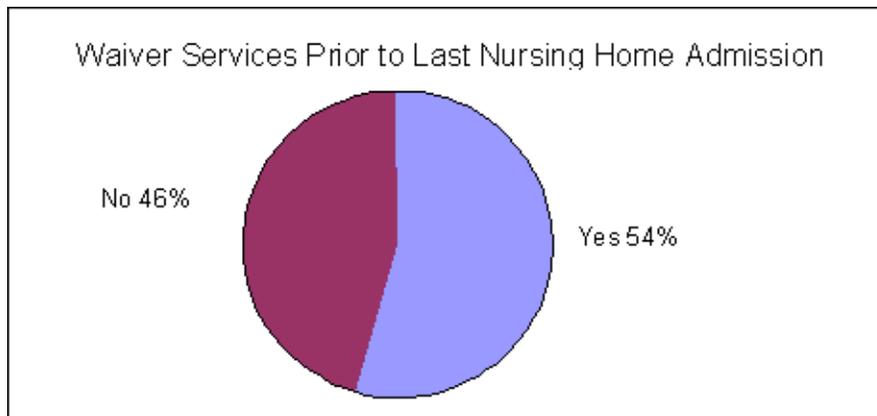
Case Mix



The "Low ADL Case Mix" is a combination of RUGS categories which contain individuals who are most accurately described as having low ADL deficits. The percent of "low ADL" patients in the control group is nearly identical to the control group, 14.4% to 16.4% respectively. This directly contradicts some research which links "lower ADLs" scores with success in community-based placement.

The small differences in the "Low ADL Case Mix Score" point out that low ADLs *as measured by the MDS* are not a primary determinate of whether an individual moved to the community under a MWP waiver.

Prior Waiver Services



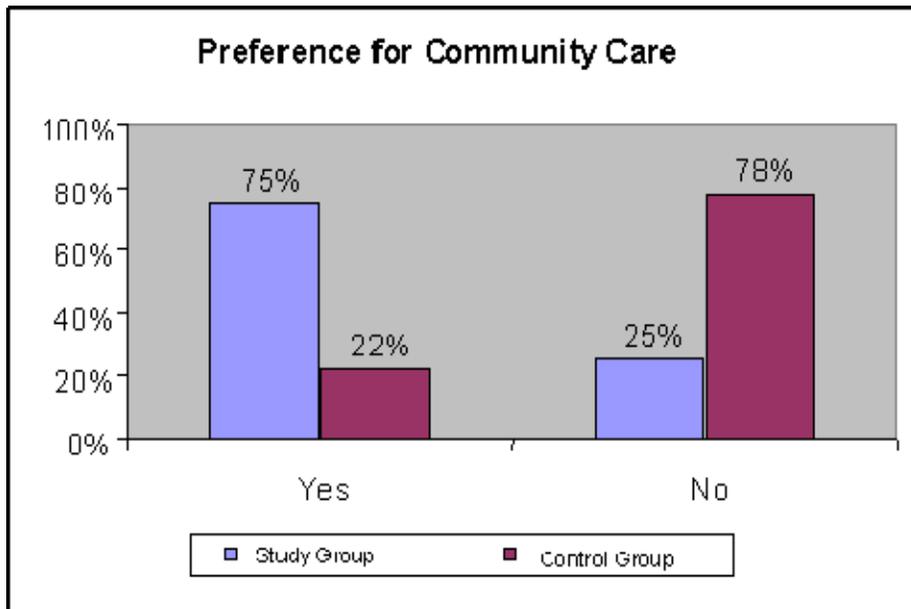
A majority of the individuals (54%) in the study group had received some waiver services before receiving a priority admission to the program in SFY 98. For an individual to be admitted to the program more than once they would have to: 1) terminate the program voluntarily; or 2) have a hospital/nursing home stay over 30 days; or 3) become clinically and/or financially ineligible.

A significant number of the waiver users do move between nursing homes/hospitals and community-based services. This pattern of movement is evidenced in the Medicaid claims that show that more than half of the study group has had some Medicaid waiver claims prior to their nursing home stay. A similar pattern of movement can be seen in claims for SFY 1997.

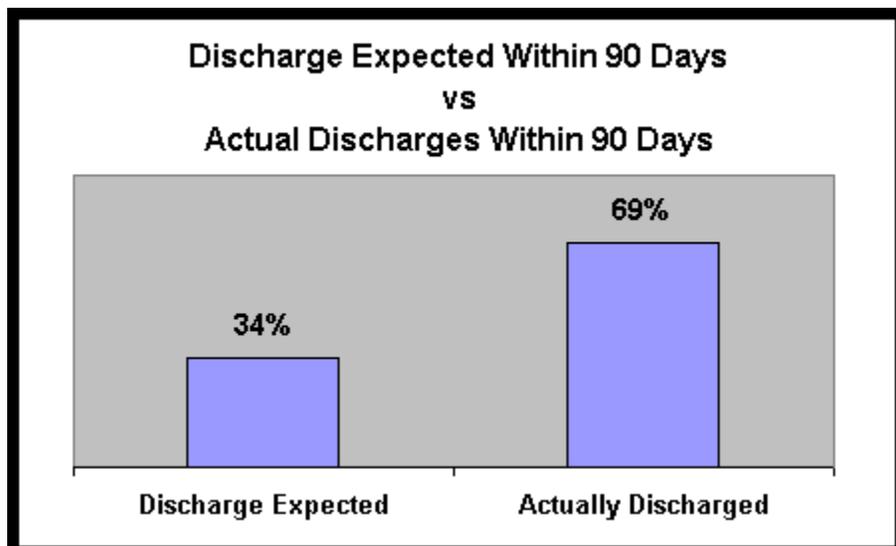
Discharge Planning

Finding 8: *Individuals in the study group are much more likely to prefer a community care setting than the control group. They are also seen as more likely candidates for discharge from the nursing home within 90 days even though nursing home staff did underestimate the likelihood of discharge within 90 days by at least 30%.*

Community Care Preference



As part of the MDS assessment, consumers were asked if they preferred to return to the community. The consumers in the study group had a very strong preference for care in a community setting, nearly the exact opposite of that of the control group.



The individuals in the study group who did make a successful transition to community-based care had their potential for discharge within 90 days rated quite low according to MDS data. There is a wide discrepancy between the percentage of residents that nursing home personnel thought could be discharged (34%) and the percentage (69%) that were actually discharged within 90 days of their MDS assessment.

Providers by Type and Location: Geographic Location and Provider Types

Finding 9: *Home Health agencies as a enroll more consumers into MWP from nursing homes than do Area Agencies on Aging, and there are also regional differences in the nursing home to MWP priority admission rates.*

Home Health and Area Agencies on Aging

In Vermont, two types of agencies are used to administer the MWP waiver. When the data for the study group are analyzed by type of agency, the utilization rate for Home Health Agencies (HHAs) is more than twice that of the Area Agencies on Aging (AAAs). It is difficult to explain why this difference exists because both types of agencies use a team process with team members who represent similar community interest to determine who gets a waiver, and access to the waiver by region is set by the state through a slot allocation process. But it should be noted that HHAs may be advantaged in this process because their presence in hospital discharge planning, and the possibility that they have provided Home Health services to a particular client in the past.

Distribution by Provider Type per 1000 65+ Population

DAA Type	Priority Admissions Nursing Home to Waiver	Study Group	Study Group with Claims Jan 99
AAA	7.81	4.15	3.77
HH	12.98	10.33	8.50

By Region

Differences by county exist in the population standardized rate: (1) for priority admissions to the MWP waiver; (2) by use of the priority admission; and 3) for claims 6 to 18 months after a priority admission to the MWP was granted. Across all measures, Addison County shows the highest rates of utilization of nursing home to MWP waiver while Lamoille and Orange Counties have the lowest.

Distribution per 1000 65+ Population

County	DAA Type	Priority Admissions Nursing Home to Waiver	Received Services	Billing Jan 99
Addison	HH	4.12	3.30	3.30
Orleans	AAA	2.73	1.91	1.91
Franklin	HH	2.50	2.04	1.81
Washington	HH	2.06	1.78	1.10
Chittenden/G.I.	HH	1.44	1.29	0.84
Bennington	HH	1.12	0.93	0.74
Caledonia	AAA	1.00	0.50	0.50
Windsor	AAA	0.84	0.48	0.48
Rutland	HH	1.75	0.98	0.44
Windham	AAA	1.59	0.53	0.35
Lamoille	AAA	0.42	0.42	0.00
Orange	AAA	1.24	0.31	0.00
Average		1.73	1.21	0.96

Expenditures and Estimated Savings

Finding 10: *The estimated savings for the study group from June 30, 1997 through October 31, 1998 was between \$423,433 and \$251,583 depending on the types of Medicaid cost included.*

Background

Few people question the social benefits of community-based care; however, many do ask if community-based care provides an overall cost saving. The answer to this question is open to interpretation; though evidence does suggest that community care for nursing home Medicaid eligible individuals results in lower Medicaid costs.

In nearly all published studies, the "gold standard" for calculating cost savings under the waiver program is: (amount of avoided nursing home cost) minus (cost of community care). An analysis following this basic methodology was developed which compared the actual cost of the Medicaid waiver services with the Medicaid cost for nursing home care that was potentially avoided by members of the study group during a 16-month period. A four-month period after the end of the fiscal year was added so that a portion of the potential savings from individuals who entered the program late in the fiscal year would be represented.

Calculating Days Avoided

The "Days Avoided" are days of Medicaid covered nursing home care that were not needed because of waiver services. They were calculated for the members of the study group by: (1) including only individuals who had Medicaid nursing home billing; (2) including only individuals who received MWP services in a community-based setting; and (3) adding up the days after a nursing home discharge until waiver services were terminated or the study ended (October 31, 1998).

This method for calculating "Days Avoided" is very conservative because (1) it ignores the possibility that waiver services in advance of a nursing home admission delayed the need for nursing home placement and (2) it discounts the possibility that anyone with a nursing home payment source other than Medicaid might have switched to Medicaid at a later date.

Medicaid Nursing Home Days Avoided	Statewide Average Medicaid Expenditure per Nursing Home Bed Day	Avoided Expenditure
8,595	\$85.88	\$738,139

Calculating Cost

Determining the actual Medicaid cost of the waiver program is not entirely straightforward. The main question is one of scope and inclusion. For this reason the cost of the Medicaid waiver program for the study group is calculated in three different ways. One method measures the cost efficiency of the waiver program during nursing home "avoided days," another measures the overall cost efficiency of the waiver for the study population, and the last takes into account both direct and indirect Medicaid costs.

Cost Method 1

This method uses only payments for waiver services when nursing home bed days are avoided. This method measures the basic cost efficiency of the waiver program when the waiver program is directly replacing nursing home care. This method yields the highest efficiency rate, however its scope is limited because it maximizes the savings by eliminating all cost not directly associated with "days avoided." This method is too narrow to be useful except as an indicator of waiver cost vs. nursing home cost on a day to day basis.

Nursing Home Cost Potentially Avoided	Payments for MWP Waiver Services Only during 'nursing home days avoided'	Savings in Medicaid Expenditures (during nursing home days avoided)
\$738,139	\$157,562	\$580,577

Cost Method 2

The second method of cost calculation includes all payments for waiver services for all members of the study group during the entire study period, 7/1/97 to 10/31/98. This method looks at all those who were priority nursing home admissions to the waiver program even if they generated no "nursing home avoided days." By using the cost for all members of the study group, this method acknowledges that while all MWP participants generate waiver expenditures, some MWP participants will not generate savings via avoided nursing home cost.

This method measures the cost efficiency in terms of direct payments for waiver services for the entire "nursing home to waiver population" and is most in line with established case studies of waiver vs. nursing home cost.

Nursing Home Cost Potentially Avoided	Payments for MWP Waiver Services for the entire study group over the entire study period 7/1/97 to 10/31/98	Savings in Medicaid Expenditures
\$738,139	\$314,706	\$423,433

Cost Method 3

The third method includes all payments to waiver providers for the study group during the entire study period and a correction factor that estimates "Other Medicaid" costs associated with the study group. These "Other Medicaid" costs are claims paid by Medicaid for (1) items and services not normally included in the nursing home per diem, or (2) items and services which are not typically included in the service package provided by the Medicaid waiver program.

The inclusion of "Other Medicaid" costs is important because these Medicaid costs are much higher for the typical waiver recipient than the typical nursing home resident. This is because many of the "Other Medicaid" covered expenses used by waiver recipients in the community are included in the cost of nursing home care. An example of an "Other Medicaid" expense for a waiver client could be the routine monitoring of vital signs or administering an injectable medication by a Home Health Agency. This same service in a nursing home would be included under the regular per diem charge. For a waiver recipient, the "Other Medicaid" costs can be for a variety of services and goods including: drugs; doctors visits; short term nursing home care; emergency care; durable medical equipment; home health; and hospital care, while "Other Medicaid" cost for nursing home residents would be everything but Home Health, or durable medical equipment.

The difference in 'Other Medicaid' expenditure between waiver recipients and nursing home residents is substantial. During state SFY 1998 the average waiver recipient had "Other Medicaid" billing of \$5,088 while the average nursing home resident generated 'Other Medicaid' billing of \$1,457.

Statewide Average per Individual Served

	Medicaid Expenses	Other Medicaid Expenses
Waiver	\$7,404	\$5,088
Nursing Home	\$24,218	\$1,457

In order to reflect all Medicaid cost, both the waiver expenditures and "nursing home avoided expenditures" must be adjusted so that they reflect the increased cost represented by "Other Medicaid."

Corrected Cost for "Other Medicaid"

	Payments for Services	Estimated "Other Medicaid" Cost	Corrected Cost
Waiver	\$314,706	\$216,250	\$530,956
Nursing Home	\$738,139	\$44,400	\$782,539

Savings for Entire Study Group including All Medicaid Cost

Nursing Home Cost Potentially Avoided	Estimated Total Medicaid Cost for Study Group	Total Medicaid Savings
\$782,539	\$530,956	\$251,583

Findings, Conclusions and Recommendations for Further Research

Admission Reason, Admission Source, and Care Categories

- A change in functional status accounted for over 80% of nursing home admissions for the study group.
- The vast majority of the study group entered the nursing home from a hospital.
- Individuals in the study group are much more likely to be receiving rehabilitation or clinically complex care while in the nursing home than the control group.
- Those who are in RUGS "Special Rehabilitation" categories are more likely to become long term users of the waiver.

The findings for admission source, reason for admission, and category of nursing home care combine to clearly define the nursing home to waiver population as a group in which the majority were recovering from an illness or accident. This conclusion is further supported by data from the Independent Living Assessment, which suggests that the study group had improvements in Activities of Daily Living and continence status after leaving the nursing home.

Activities of Daily Living and the Nursing Home Minimum Data Set

- Activities of Daily Living as measured by the MDS are not a reliable predictor of candidates for Home and Community-Based Medicaid waiver.

Few measures are considered more important in the literature of long term care than 'activities of daily living' (ADLs). In this analysis, ADLs measures fail to differentiate the study population from the control group. This is not to say that individuals who leave nursing homes for community-based waiver services have exactly the same ADL profile as the general nursing home population, but rather to say that for the study group, the "Nursing Home Minimum Data Set" (MDS) does not measure ADLs in a manner which allows efficient statistical comparisons.

The central reason for the failure of the MDS to measure a difference between the control and study groups is sampling bias associated with when the MDS is administered. The MDS information is collected on admission, quarterly, and in conjunction with an unexpected significant change in health status. A steady and expected recovery from an acute health incident, which characterizes the 'nursing home to waiver' population, does not trigger a reassessment. Thus, MDS data in nursing homes will not capture the health and functional improvements that are expected in a population recovering from a hospital stay. The problem of sampling bias is expected to be corrected in the near future by new rules governing MDS reassessments.

Cognition, Contenance, Classification (RUGS) and Preference are Possible Nursing Home Resident Identifiers of Candidates for MWP Waivers

- The study and control groups have very clear and striking differences in cognitive performance. As an individual's cognitive performance scores increase s/he is more likely to move from nursing homes to waiver.
- The study group is significantly more continent than the control group, and continence seems to improve in the community.
- Individuals in the study group are much more likely to receive rehabilitation or clinically complex care while in the nursing home than is the control group.
- Individuals in the study group are much more likely to prefer a community-based care setting than the control group.

Despite selection bias on the MDS, four classes of variables distinguish themselves, from the eight hundred tested, as being possible predictors of community placement under the waiver program. The variables describing cognition, RUGS-44 class, continence and preference for community-based care showed significant differences between the "nursing home to waiver" and the general nursing home populations.

Further testing will be needed to determine if these variables can be combined to identify specific individuals who would be good candidates for a nursing home to community waiver.

Expenditures

- The estimated savings for the study group from June 30, 1997 through October 31, 1998 was between \$423,433 and \$251,583 depending on the types of Medicaid cost included.

There is general agreement that Home and Community-Based Medicaid waivers are a cost-effective way to provide care for individuals who might otherwise be in nursing homes. This research, which used a very conservative methodology, clearly shows that the MWP waiver is effective in helping some Vermont residents get the care they need while using fewer state Medicaid dollars.

Recommendations for Further Research

There are two recommendations for further research:

- This report found that ADL's, as measured by the MDS 2.0 with its present rules for reassessing individuals, are not able to differentiate between the nursing home population and the "nursing home to waiver" population. New rules requiring more frequent MDS reassessments for some individuals are being implemented, and these rule changes may enhance the ability of the MDS to identify individuals in the "nursing home to waiver" population by ADL's. Additional research is needed to determine if ADL's become a significant measure under the new rules.
- This report found that cognition, continence, RUGS-44 class, and "preference for community care" were different for the "nursing home to waiver population" and the general nursing home population. Further research is needed to determine if these differences can be used to develop a statistical model that can reliably determine if an individual is a likely candidate for a community-based Medicaid waiver.

Technical Supplement

Part A: Expenditure Methodology

It is widely suggested that Medicaid waivers allow states to avoid Medicaid nursing home cost. A number of studies and demonstration projects have shown savings. Some use broad-based trends while others use case studies of projects providing home and community-based services. However, there is little concurrence on either models or results. The largest stumbling block in the case study methodology is that the starting points for case studies were individuals in the community, which inevitably led to difficulties in predicting if anyone in the study would be admitted to a nursing home in the future. The difficulty with the broad-based approach is that it is based on large scale historical trends and cannot account for recent changes in the overall health care system.

The methodology chosen for this report is most closely allied with the case study method, but it differs because:

1. The sample contains only people who have had nursing home care. This eliminates individuals who might receive home and community based services but would never use a nursing home.
2. The days avoided calculation includes only those people who have at least one Medicaid paid nursing home bill. This limits the cost calculations for Medicaid nursing home costs to only those with proven financial and clinical eligibility for Medicaid nursing home care.

Assumptions

Our model rests on two main assumptions:

1. Medicaid nursing home recipients would have remained in the nursing home throughout their time on Medicaid community-based services. It is important to note that financial and clinical eligibility for Medicaid nursing home care and MWP services are exactly the same. It is also important to note that some individuals in the study group were terminated from MWP Medicaid services because their condition improved and they required less than "nursing home level of care."
2. Medicare recipients who move to Medicaid waivers are likely to be discharged from the nursing home to the community even if home and community based waivers were not available. Therefore, Medicare recipients are not included in the nursing home bed days-avoided calculations. This was done to limit the possibility of overcounting the number of nursing home avoided days, because of a high rate of discharges (67.6%) from nursing home to the community while still covered under Medicare.

Calculating Nursing Home Avoided Bed Days

Days Avoided Calculation Criteria:

1. In order to be a candidate for the "days avoided" calculation, an individual had to have a paid Medicaid nursing home claim.
2. Each individual had to have received substantive MWP services in a community setting. This eliminates everyone who received only case management while still in a nursing home.
3. Nursing home "days avoided" started on the day after a nursing home discharge and continued until waiver services were terminated, or October 31, 1998, whichever came sooner.
4. Some individuals in the study group had very short nursing home stays (usually less than 10 days) while receiving waiver services. Any days spent in a nursing home during "days avoided" were subtracted from days avoided.

Part B: Low ADL Case Mix

"Low ADL Case Mix" scores are based on RUGS-44 classification. The RUGS classes included are:

1. REHABILITATION HIGH INTENSITY A
2. REHABILITATION MEDIUM INTENSITY A
3. CLINICALLY COMPLEX A WITHOUT DEPRESSION
4. CLINICALLY COMPLEX A
5. IMPAIRED COGNITION A
6. IMPAIRED COGNITION A WITH 2 NSG REHAB
7. REDUCED PHYSICAL FUNCTIONING A 1

Part C: MDS Cognitive Performance Scale (CPS)

The CPS was developed under a HCFA contract by John Morris, et al, to assess a wide range of cognitive functioning using only the variables collected by the MDS. The CPS was designed to replace two separate tests of cognitive functioning used in nursing homes, which are the Mini Mental Status Exam (MMSE), and Test for Severe Impairment (TSE).

The CPS is based on an interaction of five variables found on the MDS. These variables are:

1. Is patient Comatose - Yes/NO
2. Short Term Memory - OK/ Not OK
3. Decision Making – Range from Independent to Severely Impaired
4. Making Self Understood – Range from Understood to Never Understood
5. Eating – Range from Independent to Total Dependence