



Family Care Independent Assessment:
An Evaluation of Access, Quality and Cost Effectiveness
For
Calendar Year 2002

Presented by
APS Healthcare, Inc.

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I. Executive Summary

APS Healthcare (APS) prepared this report. The Centers for Medicare and Medicaid (CMS) requires an Independent Assessment of access, quality and cost-effectiveness of all 1915(b) waivers. A waiver was granted by CMS to Wisconsin to operate Family Care for the time period of January 1, 2002, through December 31, 2003. This report provides for the Independent Assessment of the Wisconsin Family Care managed care 1915(b) waiver program.

Family Care is Wisconsin's effort in providing comprehensive long-term care services through a managed care delivery system for the aged and physically and developmentally disabled population. As with any new initiative, evaluation may be limited or constrained by start-up issues, such as general Medicaid recipient and provider confusion, difficulties reporting accurate and reliable data, and lag time in reporting.

With these issues and caveats in mind, APS analyzed data collected directly by the Wisconsin Department of Health and Family Services (DHFS), the Family Care programs External Quality Review Organization (EQRO), the Family Care Care Management Organizations (CMOs), as well as information gathered independently by APS.

The following findings emerged from these efforts. This information details where aspects and activities of the Family Care program are successfully contributing to access, quality and cost-effectiveness, as well as areas that are in need of improvement. Specific items are grouped within each of the objectives this Independent Assessment intends to address:

A. *Access to Care*

1. Screening
 - ♦ **The Wisconsin Long-Term Care Functional Screen (LTCFS) is an accurate and reliable instrument for assessing Family Care program eligibility.** The LTCFS is a validated instrument utilized to determine eligibility and assess level of care needs for potential members.
2. Entry into the Program
 - ♦ **The use of independent, third-party "Enrollment Consultants" to ensure potential members and/or their representatives fully understand aspects of the Family Care program and eligibility for other long-term services is valuable.** The function of the Enrollment Consultants proves to be one of significant added value in ensuring that potential Family Care members and/or their representatives have complete understanding of the intricacies of the program, as well as being keenly aware of any other long-term care services that individual might be eligible for.
3. Elimination of Waiting Lists
 - ♦ **A major accomplishment of the Family Care program was elimination of wait lists in the CMO counties by the end of CY 2002.** Waiting lists in the CMO counties were eliminated while the wait lists in the non-CMO counties

continued to increase during this same time. By eliminating the wait lists, individuals in need of services begin receiving them soon after application for Family Care, as opposed to waiting what could be months or years in non-Family Care counties.

4. Access Monitoring

- ♦ **Family Care Access Monitoring Activities need to be strengthened.** DHFS and the EQRO need to enhance the level of access-monitoring activities. DHFS has not been routinely monitoring the 30-day enrollment requirement. It has been recommended that DHFS develop routine reports to monitor access to Family Care on a county-by-county basis.
- ♦ **Family Care CMOs appear to meet requirements for 1) Health Services Availability, Accessibility, and Adequacy, 2) Access Performance Standards.** While APS did not find any indication that these requirements and standards were not met, limited availability of documentation in this area (e.g. the access to care standard was not evaluated by the EQRO during the period of the Independent Assessment) made it difficult to fully assess these requirements. However, the EQRO evaluated service availability and other access issues through care plan reviews and found that the CMOs were sufficiently meeting program requirements.

5. Services Within the Program

- ♦ **Family Care may have increased the number of providers participating in the Medicaid program.** Determining the exact number of providers participating in the Family Care program across the five pilot counties is difficult due to various record keeping efforts. However, information gathered through site visits and meetings with the CMO directors and DHFS revealed that overall, providers are joining the network, are being retained, and meeting both the traditional and more unique service needs of Family Care members.

6. Patterns of Service - (Although these items are issues of Access, this information is detailed in the Cost-Effectiveness section of the report)

- ♦ **Family Care reliance on emergency room utilization did not significantly change over time.** Analysis of Medicaid claims data indicated no significant change in the frequency of use for emergency rooms. A pre- and post-analysis of emergency room visits per member per eligible months indicated no significant reductions in visits.
- ♦ **Family Care seems to have decreased the frequency of visits to physicians.** Although not conclusive, Family Care members appear to be visiting doctors at their office significantly less often than prior to their enrollment in the program. A pre- and post-analysis of physician office visits per member per eligible months indicated a significant reduction of visits. Although less likely to see a physician, those who did, tended to be in the program longer and it is likely Family Care's interdisciplinary team care plan approach, which includes a nurse, is contributing

to this improvement. The impact of Milwaukee county is clearly identified through analyses designed to assess county specific influence.

- ♦ **Family Care hospital lengths of stay decreased.** Analyses of Medicaid claims data indicate that while there is no change in hospital admissions pre- and post-enrollment, hospital lengths of stay significantly decrease following enrollment in the Family Care program.

7. Exit From the Program

- ♦ **DHFS must continue developing strategies to better track and understand reasons for Family Care disenrollments.** Recognizing the need for better data on the reasons why people decide to disenroll from the Family Care program, DHFS worked with Resource Centers to develop new guidelines for recording and reporting disenrollments. In April 2003, Resource Centers implemented a new process to record a single, primary reason for disenrollment. Generally speaking, examining disenrollment data for calendar years 2000 through 2002 accounting for all reasons for disenrollment, including death, rates for the Family Care program appeared high (over 14 percent in 2001 and 2002). However, when disenrollments due to death are excluded rates were nearly cut in half and appear reasonable for the populations served by Family Care as noted in previous research. It is suggested that DHFS utilize historical disenrollment data to identify and address disenrollment trends (“red flags”) that deviate from normal patterns. Further, it is recommended, in accordance with reviewed literature on disenrollments, that DHFS conduct routine surveys for individuals who both voluntarily disenroll and who lose eligibility from Family Care, to better assess patterns that may be occurring for various subgroups within the program.

B. Quality of Services

1. Overall Quality Strengths of the Family Care Program

- ♦ **All five CMOs demonstrate strong “member centered” orientation.** Site visits by DHFS, the EQRO and APS all reveal that each CMO possesses a strong orientation toward member centeredness, which means Family Care members are given the opportunity to take an active role in decision-making regarding the long-term care and health services they need to live as independently as possible.
- ♦ **Family Care’s CMOs demonstrated strengths in care management.** The EQRO’s on-site review of the Family Care CMOs found that care managers were creative and flexible in terms of working for the most appropriate level of services for members.

2. Quality Monitoring

- ♦ **Four of the five CMOs were able to resolve all outstanding issues within three reviews of their Member Centered Assessment and Plan Reviews (MCAP).** While one CMO did not rectify outstanding issues within their care

plans, DHFS, the EQRO and CMO are cooperatively working to resolve these concerns and put aspects into the process to ensure these issues do not return.

- ♦ **Family Care Grievance and Appeal data does not fully reflect the total amount of complaints that have been made.** Thus far, DHFS has begun to analyze grievances and appeals, but only for those that have been filed with the Regional DHFS offices. Plans are in place to utilize other sources of information, such as CMO log books and complaints that have been filed with the Wisconsin Department of Administration's Office of Fair Hearings. DHFS plans to integrate other sources of grievance and appeals data to construct more detailed analyses.
- ♦ **Family Care CMOs have great levels of flexibility and autonomy in terms of meeting quality requirements, as demonstrated by enhanced creativity in serving members, but this has been coupled with problems related to record keeping and data utilization.** DHFS has designed a program that has fostered innovation by CMOs in serving their membership by allowing them the ability to be effective and creative. However, a lack of specificity by DHFS on reporting requirements and data record keeping has resulted in CMOs operating differently in record maintaining efforts. Two such examples include information that needs to be transmitted to the Family Care Enrollment Consultant and record keeping related to contractually required performance measures.

3. Member Outcomes

- ♦ **Family Care members consistently report high levels of “Self-determination and Choice,” and “Health and Safety” outcomes and supports.** Through the use of the Member Outcome Interview surveys, Family Care members are consistently reporting the presence of outcomes and supports in these two areas. While Family Care members have reported lower levels of “Community Integration” outcomes and supports, it is not unreasonable to expect a bit of a “lag time” given that a fundamental principle of the Family Care program is to provide ways to reintegrate institutionalized individuals back into the community.
- ♦ **The more time an individual spent in Family Care resulted in a greater presence of indicators of outcomes and supports being present.** Intuitively, this makes sense in that CMOs and members' care managers would have more time to work with the member to ensure that their individual outcomes and supports were being met, where possible.

4. Members Health and Functioning

- ♦ **Family Care has the potential to reduce costs by improving health care and health outcomes.** Through a path analysis, it was learned that Family Care members saw significant reductions in institutional settings (increased community integration) and significant reductions in functional status impairment¹.

¹ Path analysis is an extension of the regression model, used to test the fit of the correlation matrix against two or more causal models which are being compared by the researcher. The model is usually depicted in a circle-and-arrow figure in which single arrows indicate causation. A regression is done for each variable in the model as a dependent on others which the model indicates

C. *Cost-Effectiveness*

1. Payment Methodology

- ♦ **The Family Care rate setting and capitated payment system methodology is sound.** The Family Care capitation and rate setting process has been continually improving since inception to more accurately reflect the population covered and the services provided under the program. Using encounter data and LTCFS data to risk adjust the rates according to the needs of the members has resulted in improvement.

2. Individual Costs

- ♦ **Total Long-Term Care costs for Family Care members in the four non-Milwaukee CMO counties (Fond du Lac, La Crosse, Portage, and Richland) increased less than for the statewide Comparison Group from pre- to post-enrollment.** Costs for the statewide Comparison Group increased \$238, on average, in non-Family Care counties. Total long-term costs for non-Milwaukee Family Care members increased \$113 per member per month (PMPM) less, on average. The slower growth in costs is not apparent when the Family Care study group is examined as a whole, which includes the Milwaukee County CMO members, only when these counties are studied separately from the Milwaukee CMO cohort.
- ♦ **In the change from pre- to post-enrollment periods, Family Care members experienced increases in spending and utilization rates for Home Health Care visits.** Increases were significant for both the collective Family Care study group (\$35 PMPM) and for the collective non-Milwaukee CMO counties (\$32 PMPM) relative to the statewide Comparison Group. The Milwaukee County CMO had no significant change for this cost or utilization.
- ♦ **Costs for Inpatient Hospital and Physician Office Visits went down for Family Care members, but increased for the Comparison Group during the study period.** Post-enrollment actual spending for these services was less for Family Care members than the Comparison Group. Family Care members' post-enrollment Inpatient Hospital costs and Physician Visits costs were \$21 PMPM and \$17 PMPM, respectively. For the Comparison Group, Inpatient Hospital and Physician Visit costs were \$87 PMPM and \$18 PMPM, respectively.
- ♦ **Prescription Drug costs increased more for Family Care members than the Comparison Group over the study period. However, for those Family Care members in the non-Milwaukee County CMOs Prescription Drug costs decreased during the study period.** When looking at all five CMOs

are causes. The regression weights predicted by the model are compared with the observed correlation matrix for the variables, and a goodness-of-fit statistic is calculated. The best-fitting of two or more models is selected by the researcher as the best model for advancement of theory.

Path analysis requires the usual assumptions of regression. It is particularly sensitive to model specification because failure to include relevant causal variables or inclusion of extraneous variables often substantially affects the path coefficients, which are used to assess the relative importance of various direct and indirect causal paths to the dependent variable.

Prescription Drug costs increased \$34 PMPM more than the Comparison Group. In the four non-Milwaukee CMOs, the cost of prescription drugs decreased \$31 PMPM relative to the Comparison Group.

- ♦ **Geographic differences account for a substantial amount of the changes over time observed in spending and utilization rates by Family Care members.** The Family Care program operates in five diverse counties across the state of Wisconsin. Above and beyond the impacts of the Family Care program itself, services accessed, utilized, and spent for, vary dramatically between these counties. Differences among them contribute a great deal to the variation in spending and utilization rates. Specifically, the Milwaukee CMO illustrated very different findings from other CMO counties that tended to show more consistency when compared to one another.

3. Source of Cost Savings

- ♦ **Family Care members in the four non-Milwaukee CMO counties saw significant decreases for Personal Care and Residential Care services.** In contrast to the Comparison Group, the four non-Milwaukee Family Care CMOs experienced a collective decrease of \$175 PMPM for Personal Care services and \$98 PMPM for Residential Care services while the Milwaukee County CMO individuals saw a significant increase of \$90 PMPM in Residential Care and no significant change for Personal Care costs.
- ♦ **In the change from pre- to post-enrollment periods, Family Care members saw post-enrollment cost and utilization reductions in ICF-MR days.** Through the use of CMO encounter data and Human Services Reporting System (HSRS) data, APS determined that costs (\$62 PMPM) and utilization rates (0.28 days PMPM) significantly declined for this service from the pre- to post-enrollment periods relative to the Comparison Group.
- ♦ **As previously mentioned, Family Care has the potential to effect cost savings through improved member health care and health related outcomes.** Family Care members saw significant reductions in institutional settings (increased community integration) in addition to significant reductions in functional status impairment.

II. Requirements of Independent Assessment

The 1999 Wisconsin Act 9 authorized the Department of Health and Family Services (DHFS) to operate the Family Care program. DHFS is able to offer long-term care services utilizing a capitated payment system after applying for both 1915(b) and a 1915(c) waivers and receiving approval for the waivers from the Center for Medicare and Medicaid Services (CMS). The two 1915(b) waivers (one for individuals age 60 and over in Milwaukee County and one for adults in the other four pilot counties), which allow DHFS to limit the provision of long-term care services in those counties to individuals who enroll in a Care Management Organization (CMO) using a “central broker” (Resource Center). The two 1915(c) waivers (one for individuals with developmental disabilities and one for individuals with physical disabilities) allows DHFS to provide home and community based services, in lieu of institutional placement, for individuals with long-term care needs that would qualify for Medicaid funding in a nursing home. Through these waivers, the Department is able to pay a pre-paid capitation amount to the CMOs who are then responsible for providing the services in the Family Care benefit that are needed by the member. The five Family Care CMOs are Fond du Lac, La Crosse, Milwaukee, Portage and Richland Counties.

CMS requires that an Independent Assessment of the Family Care program be conducted and the findings be submitted as part of the Department’s waiver renewal request. In September 2002, DHFS contracted with Innovative Resource Group d/b/a APS Healthcare, Inc (APS) to fulfill this requirement. APS has been working with DHFS, as well as Metastar, the Family Care External Quality Review Organization (EQRO), to gather data for the Independent Assessment. The goal of the Independent Assessment is to describe the impact the Family Care program has had on long-term care services in Wisconsin in terms of access to services, quality of services and cost effectiveness. This Independent Assessment report will accompany the Department’s application for renewal of the Family Care waivers due to CMS September 30, 2003.

In Fond du Lac, Portage, La Crosse and Milwaukee counties, CMO implementation of Family Care was completed during CY 2000. Richland began operations of its CMO in January 2001. Therefore, while CMOs began operating as early as February 2000, the program was not receiving federal funding under the federal waivers until January 1, 2002². The pilot counties received start-up funding from various sources to plan, develop, and implement the Resource Centers (RCs) and Care Management Organizations (CMOs). The waivers, effective for two years, began January 1, 2002. The 1915 (c) waiver was also approved June 1, 2001 for three years. Therefore, the primary focus of the Independent Assessment is for CY 2002. The Independent Assessment separately addresses Family Care in Milwaukee County and in the rest of the program in order to meet federal requirements for each of the Family Care waivers. Some of the questions addressed in the Independent Assessment include:

- 1) Access – Can people get access to the services they want and/or need?

² See Lewin Group Family Care Implementation Process Evaluation Reports I, II and III (November 2000, 2001, and December 2002) for specific start-up funding tables.

- a) Screening: Is information about the availability of long-term care options, including Family Care and options counseling, effectively reaching those who need to know about their options?
 - b) Entry into the Program: How has Family Care affected access to Medicaid-funded long-term care services, for those who are eligible? In particular, how does Family Care enrollment differ from traditional waiver enrollment – target group, diagnoses, residence, age, and other characteristics?
 - c) Access Monitoring: How do DHFS and the EQRO monitor program access?
 - d) Services within the Program: Once in the program, can individuals get the services that they want and need?
 - e) Patterns of service: How do packages of services delivered to Family Care members differ from those delivered to individuals participating in fee-for-service long-term care, including the traditional waivers?
 - f) Exit from the Program: What are the reasons that individuals disenroll from Family Care?
- 2) Quality – Are the services effective? Is the program achieving its goals?
- a) Member Outcomes: Do Family Care Members achieve their personal outcomes and do they get support for those outcomes?
 - b) Members' health and functioning: Are Family Care members maintaining their level of functioning and staying as healthy as possible?
 - c) Quality Monitoring: How do DHFS and the EQRO monitor program quality?
 - d) Preventive Health Conditions: How does Family Care compare to other long-term care programs, such as Partnership on the utilization of health services for preventable conditions?
- 3) Cost Effectiveness –Is Family Care cost effective?
- a) Payment Methodology: Are the Family Care rate-setting assumptions and methodology reasonable?
 - b) Individuals' costs: Does Family Care restrain Medicaid costs for those individuals who participate in the program?
 - c) Source of Cost Savings: What changes in utilization have contributed to any identified cost savings?

III. Family Care Program Overview

Family Care is a long-term care pilot program operating in selected Wisconsin counties under four federal Medicaid waivers described in Section II. The program is intended to re-design the state's long-term support systems in the pilot counties in order to: provide individuals better choices about their living arrangements and services they receive; improve access to services; improve quality of care including an emphasis on both health and social outcomes; and establish a system that will be cost-effective into the future. Another program goal is to reduce the complexity of the system in order to improve access to services. To achieve this goal, Family Care was developed as a combined, coordinated system of long-term supports, rather than a system made up of discrete, separate elements.

Under Family Care, individuals are entitled to both community-based supports and institutional care, so that they may find the balance that best meets their needs over time. Stakeholder involvement in the design of Family Care was critical to making sure it could meet the needs of the target population. Therefore, input and involvement in program design was sought from individuals who would likely utilize the system: persons with physical disabilities, persons with developmental disabilities, and the frail elderly, as well as representatives for these individuals. It was also determined early on that the program's success would rely, in part, on the "buy-in" of providers serving individuals in the five CMOs. Therefore, the goals and values of the program have been incorporated into the policies and procedures created for participating providers³.

At the local level, two different entities are responsible for implementing Family Care. First, Aging and Disability Resource Centers (Resource Centers) serve as the primary point of entry for accessing long-term care services in nine counties. The Resource Centers are designed to provide information and advice, as well as access, to the full range of resources available within the community for people in need, such as older persons and persons with disabilities. The information Resource Centers provide is essential to allowing individuals to make informed choices about the options that exist for long-term support services. They also provide the key function of performing functional and financial screening that is required to determine eligibility for certain services, such as the Family Care program.

The second entity that is at the core of the Family Care program is the Care Management Organization, or CMO. CMOs serve the purpose of managing the Family Care benefit at the county level (current operating CMOs include Fond du Lac, La Crosse, Milwaukee, Portage and Richland counties). State and Federal funding from a variety of sources are combined into a single capitated payment to the CMO. The CMO is then responsible for providing all needed long-term care services covered by the Family Care benefit (see **Attachment 1** for a list of items covered under the Family Care benefit). A variety of Medicaid services are included in and excluded from the Family Care Benefit Package. In general, long-term care (LTC) services (i.e., Home Health Care, Personal Care and Supportive Home Care services) are included in the Family Care benefit package. Primary and acute care services, including physician and hospital

³ The Lewin Group. Implementation Process Evaluation Reports I, II, and III. November 2000, 2001, and December 2002.

services, are not included in the Family Care benefit package and remain available as a Medicaid fee-for-service benefit.

The CMO then contracts with service providers to form its Provider Network for services included in the benefit package. Provision of a self-directed care option allows a member to arrange, manage and monitor services in the Family Care benefit package directly or with the assistance of another person chosen by the member. The intent of this unique approach is to enable CMOs, and more globally, the Family Care program, to address the specific needs of its members through consumer direction in a cost-effective manner. Primary and acute health care services, such as physician services, hospitals services and prescription drugs are available on a fee-for-service basis to Family Care members who are also Medicaid eligible (approximately 97 percent)⁴. Family Care participants then work with the CMO to choose from the whole range of long-term care options, including both the type of care and the setting in which it is received (individual's home, community residence, institution) and to coordinate other health care services. This arrangement allows long-term supports to be focused upon the needs of the member, rather than being limited by traditional service systems. The program is more flexible than previous waivers and allows individual needs and preferences to become a primary consideration in the delivery of care.

There is also an independent organization that ensures that potential Family Care members fully understand the implications of participating in a managed care program and provides these individuals with information about all available options for which they are eligible, Family Care or otherwise. Individuals serving in this capacity are called Enrollment Consultants. DHFS has contracted with the Southeastern Area Agency on Aging (SWAAA) to carry out this service (see Section V. E. for specific details on Enrollment Consultants).

At the present time, Resource Centers and CMOs are operational in five counties (Fond du Lac, La Crosse, Milwaukee, Portage, and Richland), covering approximately 29 percent of all those individuals statewide who would be eligible for the Family Care benefit⁵. All three target group populations (older persons, persons with developmental disabilities, and persons with physical disabilities) are served in four of the five counties. The fifth, Milwaukee County, is currently only serving older persons. As of August 1, 2003 there were 7,474 individuals cumulatively enrolled in Family Care from all five counties⁶. Over fifty percent of Wisconsin's Family Care members reside in Milwaukee County.

Four additional counties (Jackson, Kenosha, Marathon and Trempealeau) operate Resource Centers, but do not have CMOs. They serve to communicate full information about available community resources, and thus serve the same purpose as the other Resource Centers, except that they do not offer Family Care eligibility testing or enrollment. The following table provides information on start dates for Family Care Resource Centers and CMOs.

⁴ DHFS. Quarterly Family Care Activity Report. For the Quarter ending December 31, 2002.

⁵ Medstat. Promising Practices in Long Term Care Systems Reform: Wisconsin Family Care. March 3, 2002.

⁶ Total CMO enrollment data posted on <http://www.dhs.wisconsin.gov/familycare/enrollmentdata.htm>.

Table 1 Family Care Resource Center and CMO Dates of Initial Operation		
County	Resource Center	CMO
Fond du Lac	1999	February 2000
La Crosse	2000	April 2000
Milwaukee	2000	July 2000
Portage	2000	April 2000
Richland	2000	January 2001

Source: Wisconsin Department of Health and Family Services (DHFS)

A. Eligibility Criteria

CMOs serve people in three primary target groups who have a long-term care condition expected to last for more than 90 days. The three Family Care target groups are:

1. Frail Older Adults (65 years or older; age 60 or older in Milwaukee County);
2. Adults with Physical Disabilities (17 years, 9 months or older);
3. Adults with Developmental Disabilities (17 years, 9 months or older).

In order to be eligible for Family Care an individual must meet the following conditions: have long-term care service needs, be an older adult or an adult with a disability; live in a Family Care pilot county; and meet financial and functional program eligibility requirements. Anyone who qualifies for Medicaid meets the financial eligibility criteria for Family Care. Individuals who are not financially eligible for Medicaid may still qualify for Family Care based on their cost of care needs.

In order to be functionally eligible for Family Care, an individual must meet the following condition(s).

At the comprehensive level, the person has a long-term or irreversible condition that requires ongoing care, assistance or supervision from another person, as is evidenced by any of the following findings from application of the functional screen:

1. The person cannot safely or appropriately perform:
 - 3 or more activities of daily living(ADLs)
 - Two or more ADLs and one or more instrumental activities of daily living(IADLs).
 - Five or more IADLs.
 - One or more ADL and 3 or more IADLs and has cognitive impairment.
 - Four or more IADLs and has cognitive impairment.
2. The individual:
 - Requires frequent medical or social intervention to safely maintain an acceptable health or developmental status; or requires frequent changes in service due to intermittent or unpredictable changes in his or her condition; or requires a range of medical or social interventions due to a multiplicity of conditions; and
 - Has a developmental disability that requires specialized services; or has impaired cognition exhibited by memory deficits or disorientation to person, place or time; or has impaired decision-making ability exhibited by wandering, physical abuse of self or others, self neglect or resistance to needed care.

At the intermediate level, the person has a long term or irreversible condition and is at risk of losing his or her independence or functional capacity unless he or she receives assistance from others, as is evidenced by a finding from application of the functional screen that the person needs assistance to safely or appropriately perform either of the following:

1. One or more ADL, or
2. One or more of the following critical IADLs : management of medications and treatments, meal preparation and nutrition, or money management.

Or to be grandfathered in for Family Care functional eligibility, the person:

1. Has a long-term or irreversible condition.
2. Is in need of services included in the Family Care benefit.
3. On the date that the family care benefit became available in the county of the person's residence:
 - Was a resident in a nursing home, or
 - Had been receiving for at least 60 days, under a written plan of care, long-term care services under any of the following:
 - i. Any Medicaid home and community-based waiver program.
 - ii. The State-funded Community Options Program.
 - iii. The State-funded Alzheimer's Family Caregiver Support Program.
 - iv. Services provided through State- and county-funded Community Aids.
 - v. Services provided through county funding.
4. Be financially eligible for Family Care by:
 - Being financially eligible for Medicaid, or
 - Having case plan costs that exceed her/his gross monthly income plus one-twelfth of his/her countable assets, less deductions and allowances permitted by rule by DHFS.

Most, but not all, individuals who are eligible for Family Care will be eligible for Medicaid. Federal Medicaid matching funds are not claimed for Family Care services provided to individuals who are Family Care-eligible but not Medicaid-eligible. Services for those individuals are funded entirely with state general purpose revenue. Some individuals receiving Family Care benefits may be required to pay a cost share to the CMO depending on their current income level.

The following table provides detailed information on the functional and financial eligibility criteria for Family Care and Medicaid eligibility.

Table 2 Functional and Financial Eligibility Criteria for Family Care and Medicaid			
Target Population	Frail Older Adults	Adults with Physical Disabilities	Adults with Developmental Disabilities
		Age 65+ except Milwaukee age 60+	Age 17 years and 9 months and older
Resource Center (RC) Services			
Eligibility	Individual of all income and functional need can access information and referral services and options counseling		
Care Management Organizations (CMO) Benefits			
Functional Eligibility	Comprehensive Functional Level	Intermediate Functional Level	
	Unable to safely perform any of the following: <ul style="list-style-type: none"> • 3 or more ADLs • 2 or more ADLs & 1 or more IADLs • 5 or more IADLs • One or more ADL(s) and 3 or more IADLs and has a cognitive impairment • 4 or more IADLs and has a cognitive impairment 	Unable to safely perform any of the following: <ul style="list-style-type: none"> • One or more ADL(s) • One of more of the following critical IADLs: <ul style="list-style-type: none"> ➢ Management of medications and treatment ➢ Meal preparation and nutrition ➢ Money management And at least one of the following applies: <ul style="list-style-type: none"> • In need of Adult Protective Services • Qualify for Medical Assistance • Grandfathered from an existing LTC program 	
Financial Criteria	Medical Assistance (Title XIX – Medicaid)		Non-Medical Assistance
	HCBS Waiver/Nursing Facility	Medically Needy	
	Income: 300% of Supplemental Security Income (SSI) limit Individual: \$1,656/mo or \$19,872/yr Couple: \$2,487/mo or \$29,844/yr Resources: Individual: \$2,000 Couple: Spousal impoverishment provisions of \$2,000 + ½ combined countable assets greater than \$100,000 where spouse may retain a minimum of \$50,000 and maximum of \$90,600	Income: Gross monthly income – medical expenses < 591.67/mo. Resources: Individual: \$2,000 Couple: \$3,000 Cost-share/deductible required	Service plan costs < gross monthly income + 1/12 countable resources Cost – share/deductible required

Note: Countable resources include bank accounts, stocks, bonds, and the face value of life insurance policies greater than \$1,500. The value of the individual’s owned primary place of residence, one automobile, burial plots, home furnishings, and personal jewelry are not included.

Source: The Lewin Group. Wisconsin Family Care Final Evaluation Report.

An important role played by CMOs is to assist Family Care members in coordinating their health care to determine and achieve the best possible health for their members. While CMOs do not provide direct health care services, per se, their role in coordinating primary and acute health care services is critical in optimizing social and health-related outcomes for Family Care members.

B. Eligibility Determination Process

There are three steps in determining an individual’s eligibility for the Family Care benefit. Interested individuals are assisted with each step by Resource Center staff.

A trained staff person from the Resource Center will meet with an individual and complete the Long-Term Care Functional Screen to assess the individual’s level of need for services and functional eligibility for the Family Care benefit. Once the individual’s particular needs for long-

term care are determined, the Resource Center will provide advice about the options available to him or her including Family Care (where applicable), other publicly funded LTC programs or services and private pay services available in the community. If the person is interested in Family Care or another Medicaid program, the Resource Center will help the individual contact the county's Economic Support Unit (ES) to continue the eligibility determination process for those programs. The county ES unit makes the final eligibility determination for Family Care and Medicaid. Additionally, the ES unit in CMO counties administer the tracking and resolution of applications for Family Care and Medicaid.

Once functional and financial eligibility is determined, the Resource Center notifies an Enrollment Consultant who is required to contact the person, either by phone or in person. The Enrollment Consultant ensures the person understands what it means to enroll in the Family Care program, become a member of the CMO, and that he or she understands all the options for long-term care available to him or her. If after this consultation, the person decides on pursuing Family Care membership, the Resource Center completes the enrollment process and notifies the CMO of the enrollment date.

C. Quality Assurance – Quality Improvement

The Department's measurement of CMO performance is focused on the health and social outcomes of its members. These measures help determine if the Family Care program is achieving its goal of improved quality of care and services. In consultation with a variety of stakeholders, DHFS established the following Member Personal Outcomes for measuring Family Care quality:

Self-Determination and Choice Outcomes

- People are treated fairly.
- People have privacy.
- People have personal dignity and respect.
- People choose their services.
- People choose their daily routine.
- People achieve their employment objectives.
- People are satisfied with services.

Community Integration Outcomes

- People choose where and with whom they live.
- People participate in the life of the community.
- People remain connected to informal support networks.

Health and Safety Outcomes

- People are free from abuse and neglect.
- People have the best possible health.
- People are safe.
- People experience continuity and security.

These outcomes are measured through member and case manager in-person interviews using a tool developed by The Council on Quality and Leadership ("The Council"), a nationally-

recognized quality assurance organization. Interviewers are trained by The Council. Three rounds of interviews have been completed to date. The third round of 491 member outcome interviews was completed in May 2003, and a fourth round began in July 2003.

In addition to the member outcome interviews, the Family Care quality management system includes certain activities monitored by the EQRO: annual Performance Measures calculated by CMOs and validated by the EQRO, annual Performance Improvement Projects (PIPs) conducted by the CMOs and reviewed by the EQRO, and ongoing EQRO reviews of selected member care plans and other defined quality standards. The EQRO ensures that the quality information provided by CMOs is accurate and reliable, and the EQRO provides constructive feedback to the CMOs for ongoing improvement of their quality monitoring systems.

Performance measures are tied to program participant outcomes and focus on self-determination and program participant rights, community integration and social roles, and health and safety. CY 2002 quality indicators included measuring the turnover of care management staff and immunization rates for influenza and pneumonia. These indicators provide information as to how the CMO is doing in achieving specific member outcomes such as continuity of care and best possible health.

The CMO contract requires the pilot counties to conduct at least one PIP annually. The focus of the PIP must be on at least one program participant outcome: self-determination/choice; community integration; or health and safety. CMOs must then develop specific, quantifiable outcome indicators to measure the progress of their performance in the context of this project. Further, they are required to demonstrate improvement by the end of the following year. The program participant outcome that they choose must be a relevant concern for the CMO. They are required to have a data collection and analysis plan, and implement an improvement plan. In 2002, each CMO worked on two separate projects, so altogether ten performance improvement projects were underway. Examples of PIPs conducted by the CMOs include improving management of congestive heart failure, increasing access to preventive health services, and ensuring appropriateness of residential placements.

The Department also monitors a series of population health indicators for Family Care members. These measures include 17 clinical, functional and preventive health measures. The data for generating these indicators come from administrative data routinely collected by the Department, such as Medicaid claims data, LTCFS data and CMO encounter data.

Member-Centered Care Plan reviews of a five percent sample of new and ongoing waiver participants are conducted by the EQRO annually. This review also includes participants identified at higher risk for health, safety and welfare problems. Care plan reviewers follow a written protocol and use a standardized data collection form. The reviews focus on the extent to which waiver participant needs are met, service plan timelines are met, services are coordinated, and assessment/planning are conducted consistent with a member-centered approach. At the conclusion of a review, case-specific and summary reports are provided to the CMO in writing. In 2002, 436 care plans were reviewed, including plans of 101 new members, 185 continuing members and 150 members identified as high-risk.

The CMOs are also contractually required to demonstrate to the Department that they have the structures and processes in place that are required by state legislation, administrative rules and managed care organization (MCO) contracts. On-site reviews are conducted by DHFS staff prior to an initial contract with a CMO and as a condition of annual contract renewal.

Each CMO receives an annual site review from the Department, which focuses on the CMO's quality assurance/quality improvement program. Included in the review is the adequacy of the CMO's provider network, its monitoring of provider performance, and its safety/risk policies and procedures. In 2002, five quality site visits took place and CMOs have been implementing the Department's recommendations for improvement (More detailed information on these site visits is provided in **Section VIII. A. 1.**).

Finally, as part of its ongoing quality assurance and improvement activities, Department program staff and consultants engaged by the CMOs provide technical assistance to both the CMOs and the Resource Centers on an as-needed basis. Technical assistance addresses problem areas and performance improvement.

IV. Family Care Member Characteristics

In order to understand the impact of Family Care on the delivery of long-term care services in terms of access, quality and cost effectiveness, it is helpful to have an understanding of the characteristics of individuals who demonstrate an interest in program enrollment and those who subsequently enroll in the program. Data on individuals who were screened for Family Care eligibility during calendar year 2002 in the five CMO counties, data on individuals enrolled in Family Care as of July 1, 2002 and data on individuals who met the criteria for inclusion in the IA cost effectiveness analysis (“the Independent Assessment population”) are presented below⁷. Therefore, not all of these tables are descriptive of all individuals enrolled in Family Care during CY 2002.

A. Initial Long-Term Care Functional Screens Completed by Target Group

Individuals who are actively seeking long-term care and exploring their options receive functional screens from Family Care Resource Centers. Not all individuals who are screened are found to meet Family Care financial and functional eligibility criteria. Table 3 provides information on those individuals who were screened in the five CMO counties during CY 2002 by Target Group and CMO.

CMO Counties	Elderly		Developmental Disabilities		Physical Disabilities		Totals	
	CMO Members	CMO Percent	CMO Members	CMO Percent	CMO Members	CMO Percent	CMO Members	CMO Percent
Fond du Lac	455	55.1	259	31.4	112	13.6	826	100.0
La Crosse	476	42.7	312	28.0	327	29.3	1,115	100.0
Milwaukee	4,193	98.5	13	0.3	49	1.2	4,255	100.0
Portage	315	54.8	151	26.3	109	19.0	575	100.0
Richland	125	46.0	78	28.7	69	25.4	272	100.0
All CMO Column Totals	5,564	79.0	813	11.5	666	9.5	7,043	100.0

Note: Actual CY 2002 data were used for this analysis. This table is not based on the sample of Family Care Members used throughout this Independent Analysis. Further, it should be noted that the Milwaukee pilot CMO serves the elderly, hence the large elderly proportion.

Source: APS analysis of Long-Term Care Functional Screen (LTCFS) data.

⁷ Medicaid eligibility data was queried to find July 1, 2002 eligible Family Care members who were selected for the Family Care Independent Assessment analysis sample population (n=6,332).

B. Total CMO Enrollment by Target Group

Implementation of Family Care occurred at different points in time across the five CMO counties:

CMO	Implementation Date
Fond du Lac	February 2000
La Crosse	April 2000
Portage	April 2000
Milwaukee	July 2000
Richland	January 2001

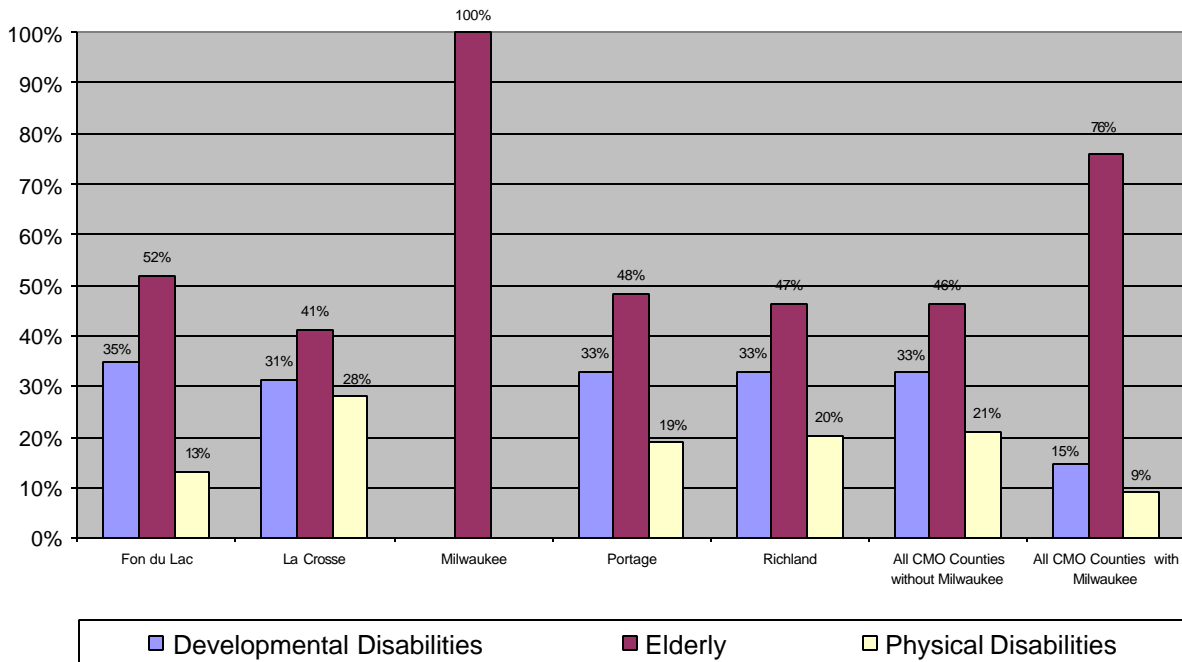
Source: Wisconsin Department of Health and Family Services (DHFS)

Initially, the Resource Centers screened, and the CMOs enrolled, individuals who were already participating in a long-term care waiver program. The next group of individuals to be enrolled were those who were on waiting lists for long-term care waiver services. Finally, individuals who were seeking publicly funded home and community based long-term care for the first time were enrolled. In order to identify potential members, the Resource Centers developed marketing and outreach plans to inform individuals residing in residential long-term care facilities about the availability of Family Care. During CY 2002, all five CMOs completed their waiver conversions and enrolled everyone on their waiting lists into Family Care.

The enrollment approach affected the target group composition of the Family Care membership. Initially, it appeared very similar to the waiver programs that Family Care replaced in those counties. However, the makeup changed as “new” individuals who were seeking community-based long-term care options enrolled. Initially, the majority of the individuals enrolled in Family Care outside of Milwaukee County were individuals with developmental disabilities. The proportion of elderly members has significantly increased over time as the Milwaukee CMO became operational (July 2000). Additionally, contributing factors such as outreach to nursing home residents and the increasing proportion of members from the Milwaukee CMO, the largest of the CMOs, will also be underlying factors. For example, in CY 2002, the elderly represented nearly half of the population. The figure below provides a snapshot of CMO enrollment as of July 1, 2002, by target group.⁸

⁸ These figures include all members whose eligibility for the Family Care benefit had been determined and recorded as of August 8, 2003.

Figure 1: Total CMO Enrollment by Target Group – July 1, 2002



Note: Actual CY 2002 data were used for this analysis. This figure is not based on the sample of Family Care Members used throughout this Independent Analysis. Further, it should be noted that the Milwaukee pilot CMO serves the elderly, hence the large elderly proportion.

Source: APS analysis of Medicaid eligibility data.

C. Most Commonly Occurring Diagnoses

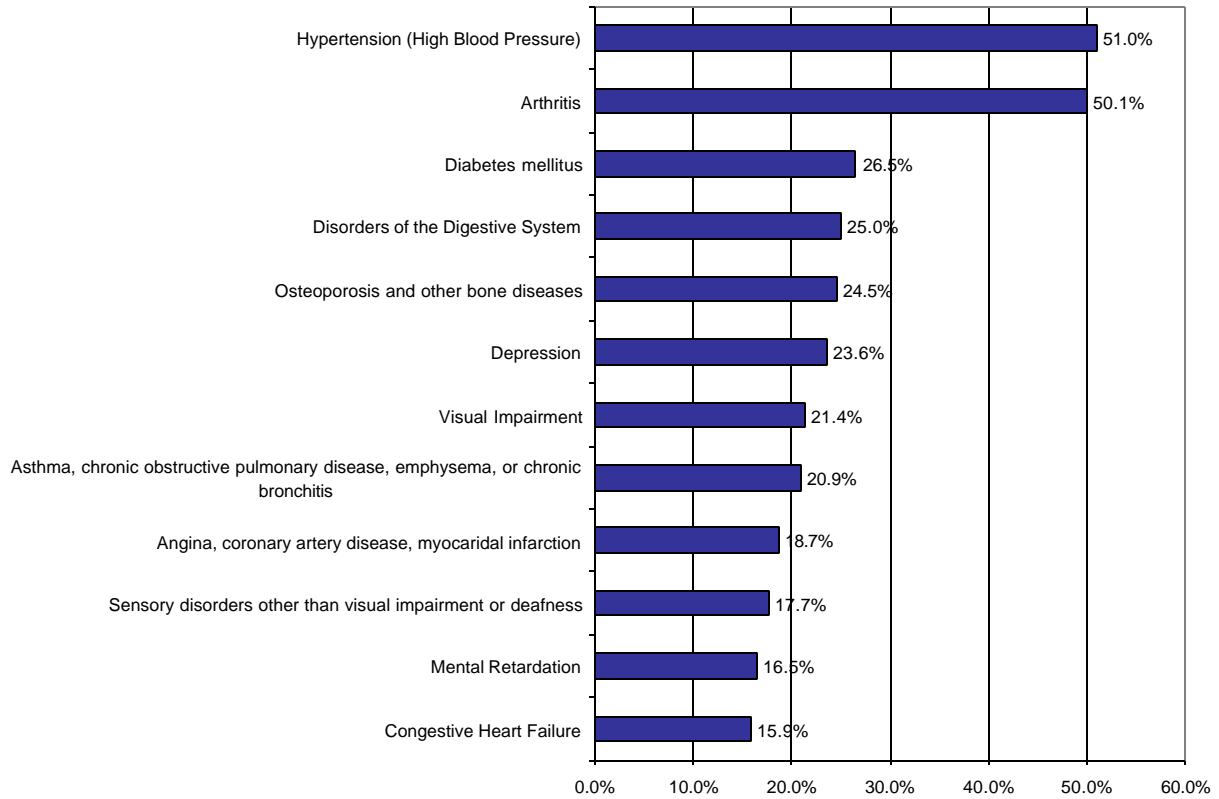
Figure 2 represents the 12 most commonly reported diagnoses among Family Care individuals who are in the Independent Assessment cost-effectiveness analysis and were enrolled as a Family Care member on July 1, 2002⁹. These individuals are able to report, where applicable, multiple diagnoses. DHFS conducted a similar examination of members who were enrolled in Family Care on December 31, 2000.¹⁰ While the three most frequently noted diagnoses are the same at both points in time, there are slight changes that reflect differences between the enrollment patterns that have taken place over this period of time. For example, Visual Impairment was reported by 21.4 percent of the Family Care Independent Assessment population in July 2002 (ranked sixth) and this diagnosis was not reported among the top 15 diagnoses in December 2000. Mental retardation ranks as the fourth most frequent diagnosis in the December 2000 analysis with 21.1 percent of eligible members citing this condition, but moves down to eleventh in July 2002 with 16.5 percent of the Family Care members indicating this diagnosis.

⁹ All analyzed data from this point forward is for the Family Care IA and Comparison Group sample populations. While dementia is prevalent among Family Care members, it does not emerge in this list due to the more than 1 categorizations of dementia within the Long-term Care Functional Screen.

¹⁰ Department of Health and Family Services, Office of Strategic Finance, Center for Delivery Systems Development. *Family Care: A Pilot Program for Redesigned Long-Term Care*. May 2002 Progress Update. Table 3.

In all likelihood, many of these changes can be attributed to the increasing elderly population in the Family Care program.

Figure 2: 12 Most Frequently Reported Diagnoses for Family Care Members Eligible July 2002



Note: Diagnoses are based on percentages for the Family Care Independent Assessment Population (N=3780) who were eligible July 1, 2002. Each individual's most recent LTC Functional Screen was utilized.

Source: APS analysis of Medicaid claims data.

D. Demographics

The majority of Family Care members, as of July 2002, were women. Just over two-thirds (70.2 percent) of the participants were women with a mean age of 74 years. At that time, male participants had a mean age of 64 years, while the overall population had a mean age of 71 years. Collectively, the four non-Milwaukee CMO counties had 64.3 percent of their membership from women while the Milwaukee CMO is made up of 74.9 percent women, reflecting the fact that women, on average, live longer than men and the Milwaukee CMO membership is limited to the elderly (See Table 4 below).

Table 4 Family Care Independent Assessment Population Characteristics						
	Family Care Geographic Compositions			Target Group		
	All CMO Counties	Non-Milwaukee CMO Counties	Milwaukee CMO	Developmental Disabilities	Frail Elderly	Physical Disabilities
Average Age at Enrollment (years)	67	58	76	47	79	53
Gender (% Female)	68	61	76	50.6	76.1	61.9
Percent Waiver or COP eligible in Year Prior to Family Care Enrollment	67	56	78	63.1	66.8	64.4
Percent Institutionalized in the 6 months prior to Family Care Enrollment ¹¹	9	9	10	7.4	9.3	9.1
Percent Medicaid/Medicare Dual Eligible in the 6 months prior to Family Care Enrollment	83	74	92	47.7	72.2	47.1

Source: APS analysis of Medicaid eligibility data.

Among those who were eligible for Family Care in July 2002, 67 percent had utilized Medicaid covered services in the year prior to their enrollment date. There was a noticeable difference between the non-Milwaukee CMOs, who had lower Medicaid utilization (56 percent) in the year preceding Family Care enrollment, where as just over three quarters (78 percent) of the members in Milwaukee had prior Medicaid utilization during this same period. Further, Milwaukee had a much higher percentage of its members who were dually eligible for Medicaid and Medicare in the six months prior to their enrollment (92 percent) compared to 74 percent in the non-Milwaukee CMO counties. This only stands to reason given that the Milwaukee CMO’s primary target group is individuals over the age of 60, the majority of whom are eligible for Medicare coverage.

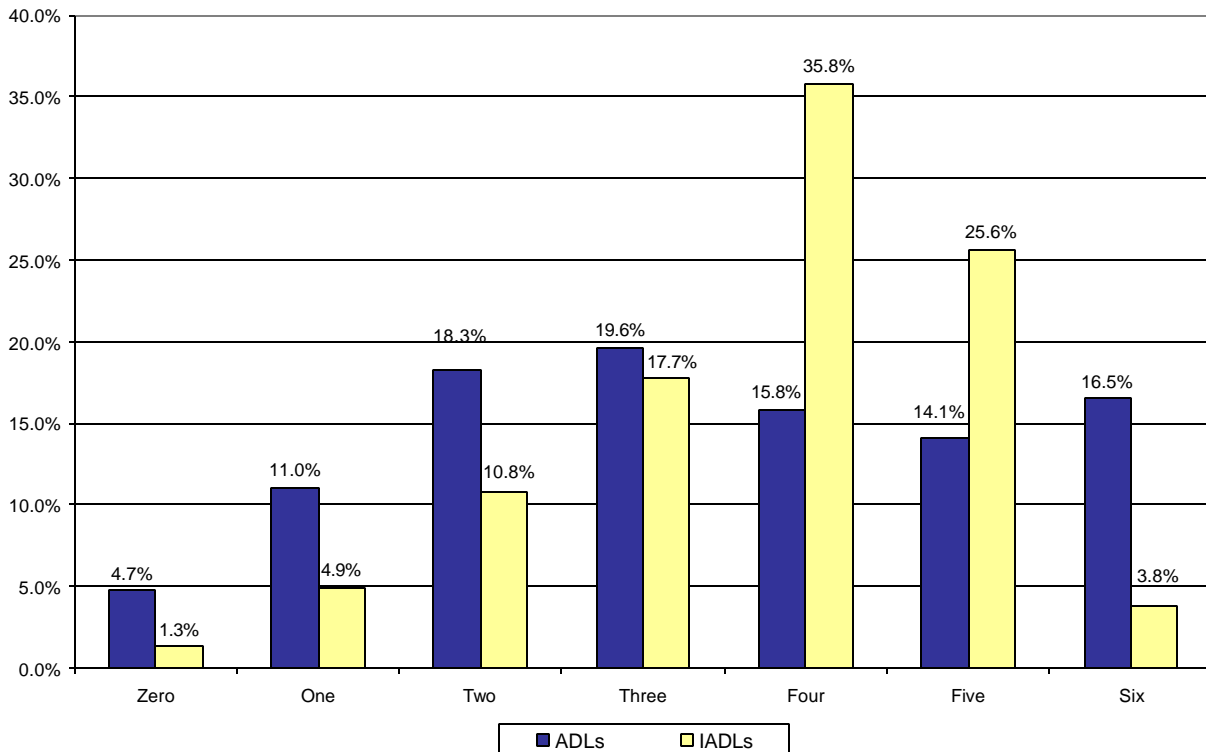
Family Care eligibility designations to the two levels of care (comprehensive or intermediate) were similar for elderly and developmentally disabled members, but those members with physically disabilities had a larger percentage of individuals with an intermediate level of care¹². Among the members with developmentally disabilities, 97.2 percent had comprehensive eligibility. Among the frail elderly members, 6.9 percent were determined to have intermediate

¹¹ For Purposes of the Family Care Independent Assessment Evaluation, residing in an institution is a collapsed figure for Nursing Home or ICF-MR facility or State DD Center. This figure is representative of having any institutionalization in the six months prior to Family Care enrollment. For the study sample, this time frame ranged from August 1999 through July 2002.

¹² Family Care functionally eligible levels — the **comprehensive level** is for persons who have long-term or irreversible conditions that are terminal or expected to last at least 90 days and require ongoing care or assistance or the **intermediate level** for persons with those conditions who are at risk of losing independence or functional capacity. Determinations are made through the Long-Term Care Functional Screen during the eligibility determination process.

eligibility and 93.1 percent with comprehensive. Of the members with physical disabilities, 82.3 percent had comprehensive eligibility and 17.7 percent intermediate eligibility. Further, as Figure 4 illustrates, two-thirds of the Family Independent Assessment population (66 percent) report needing assistance with three or more ADL activities. Over three-fourths of the population (82.9 percent) report requiring aid with three or more IADLs.

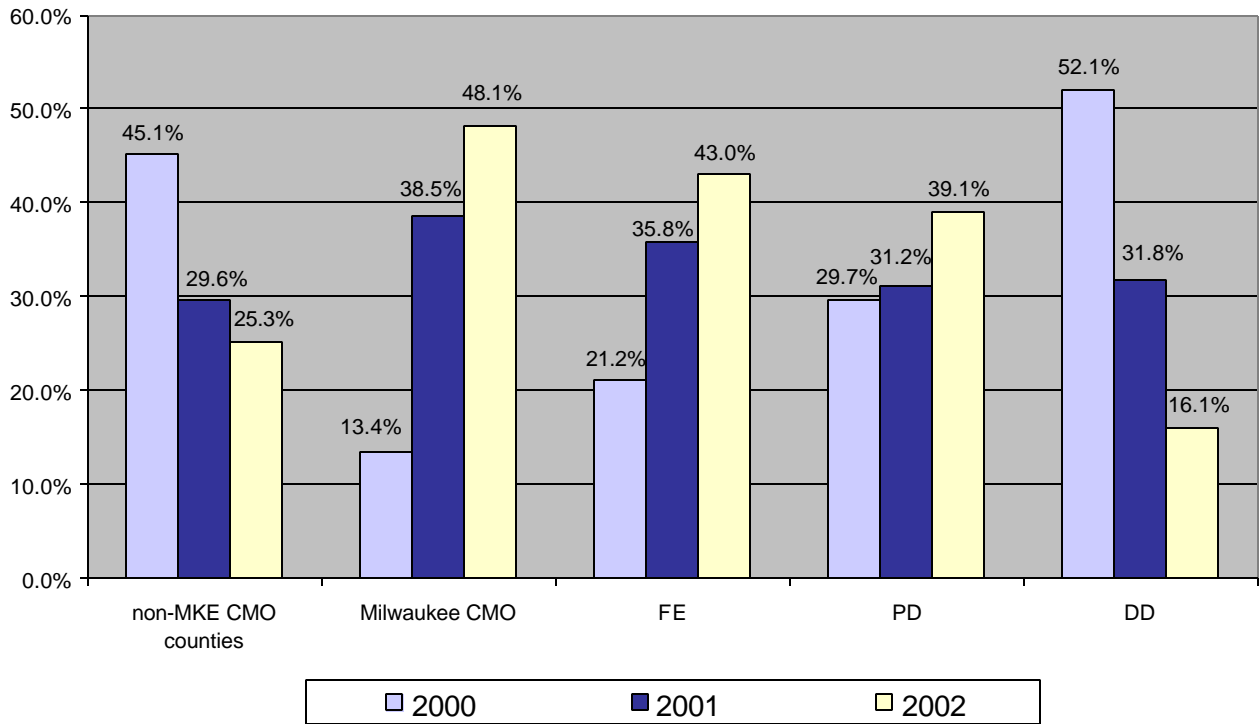
Figure 3: Percent of Family Care Population Reporting Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) Level of Help Counts



Source: APS analysis of Long-Term Care Functional Screen (LTCFS) data.

Finally, observing the enrollment cohorts by year for 2000 through 2002 among target groups, and between the non-Milwaukee and Milwaukee CMOs provides information as to the changes in demand of various services that have taken place during this time. Members with physical disabilities enrollment rose slightly between 2000 and 2001 (29.7 and 31.2 percent, respectively), with a more substantial gain coming in 2002 (39.1 percent). While elderly members saw a steady state of enrollment growth during this three-year period (21.2, 35.7 and 43.0 percents), the enrollment cohorts for Developmentally Disabled members from the Family Care Independent Assessment population experienced rather sharp declines over this same timeframe (52.1, 31.8, and 16.1 percent).

Figure 4: Enrollment Cohort Patterns – CY2000-2002



Source: APS analysis of Medicaid eligibility data.

At the same time, the Milwaukee CMO, which began enrolling members in July 2000, encountered a steady rate of increase in its enrollment through 2002. Comparatively, the non-Milwaukee CMOs (3 of the 4 began operations before Milwaukee) experienced a sharp drop among the Family Care Independent Assessment population enrollment from 2000 to 2001 (45.1 to 29.6 percent, respectively). This decrease continued through 2002 where the non-Milwaukee CMOs reported 25.3 percent.

V. Access to Care

Improving access to services is an important goal of the Family Care program and the program is designed to improve access in a number of different ways. First, the Resource Centers are intended to offer individuals better and more accessible information on available long-term care services. Access to services could also be improved through Family Care because of the expanded benefit package and the designation of an inter-disciplinary team to coordinate service in the Family Care benefit, and primary and acute health care services covered by Medicaid on a fee-for-service benefit. Family Care accomplished one of its primary goals with the elimination of the waiting lists in all CMO counties by the end of CY 2002.

The Independent Assessment review of access to care focuses on the following:

- Family Care Access Component Contract Requirements
- EQRO Site Reviews
- Access Monitoring Activities
- Prevention/Early Intervention Services
- Provider Network Capacity
- Long-Term Care Functional Screen
- Enrollment Consultants
- Disenrollment
- Utilization of Long-Term Care and Other Health Services (presented in the Cost Effectiveness section of the report)

A. *Family Care contract requirements (Access to Care)*

Whether or not Family Care can meet its goal of improving access to services is dependent, in large part, on the CMOs who arrange and pay for long-term care services and coordinate other health services for its members on behalf of the State and on the Resource Centers who are the point of entry for the program. Consequently, there are a number of contractual requirements related to access to care for both the Resource Centers and the CMOs.

Under contract, the Resource Centers are required to have a Family Care access plan, which assures that individuals eligible for Family Care are able to access all benefits available under Family Care. The Resource Centers provide consumers with a screening process, and the major contract requirements relating to access include:

- The LTC Functional Screen, for eligibility, determines if a person qualifies for the comprehensive functional level or the intermediate functional level.
- Financial Options Counseling, used to make a preliminary determination of financial eligibility for Family Care.
- LTC options counseling, which, prior to enrollment, assists consumers in the decision-making process by offering information and counseling regarding their choices. Options counseling is also required of the Resource Center before individuals disenroll from the CMO.
- If an individual is determined to be functionally eligible, but is still awaiting the financial eligibility determination for the Family Care benefit, the Resource Center is required to refer these individuals to the appropriate provider if urgent services are needed. In these

cases, the Resource Center is also responsible for letting the individual know that they will be responsible for any costs for these services if they are determined to be financially ineligible for Family Care.

Some contractual requirements are also made of the CMOs in terms of access. The major access-related requirements are:

- Enrollment must be kept open to all individuals who meet the eligibility requirements.
- The CMO is required to provide, or arrange for the provision of, the services an eligible member qualifies for.
- The CMO is required to coordinate Family Care services with other services the individual receives that are outside the benefit package.
- Coverage is required to be available 24 hours a day, seven days a week.
- A CMO employee is designated as the member advocate.
- Interpreter services must be provided by the CMO when needed.

There are also CMO requirements in terms of access that are related to service providers. The major requirements are:

- The CMO is required to allow free choice of providers for services in the LTC benefit package that relate to intimate personal needs or when a provider frequently comes into the member's home. The CMO shall, upon request of the member, purchase services from any qualified provider who will accept and meet the provisions of the CMO's subcontract for subcontractors of the same service. These services include, but are not limited to, personal care, home health, private duty nursing, supportive home care and chore service.
- The CMO is required to maintain contractual agreements with a network of providers who must meet State requirements.
- The CMO can pay the family members of its clients under certain conditions.
- Both CMO staff and service providers should maintain environments in which cultural competence is promoted.

B. State Monitoring Activities of CMO Access Standards

DHFS also has its own methodology for measuring access to services for CMO members. In order to evaluate whether or not the CMO's provider network is adequate to provide required care to the members, Wisconsin utilizes a range of methods, both before and during the time the contract is in effect.

Before the start of the contract, the CMO is required to perform a needs assessment for its provider network. Also, the CMO has to provide the following, for every service in the benefit package, both before the start of the contract and before it can be renewed:

- For each service, the number of providers under contract.
- What kind or kinds of provider will supply each kind of service.
- Where are the providers physically located, and are they situated inside the CMO's service area.
- Does the provider serve all of the target groups, or only particular groups.
- Does the provider have strengths in cultural and linguistic competencies.

- For residential service providers, how many individuals can they serve, do they have private rooms, and what are their hours of operation.
- Is the provider accepting new members.

This information is provided to DHFS as part of the certification process, and in this manner, the Department can ensure that the full range of covered services will be available to members through the CMO's service provider network, with adequate capacity. This can be fulfilled either by CMO employees, or by providers under subcontract to the CMO. Additional sections of the certification review include a site visit with CMO staff in charge of contracting with providers, and a review of any other materials provided to DHFS by the CMO.

DHFS shares its findings from the review with the CMO, including informing the CMO if any additional documentation is required in order to proceed with signing the contract with the Department. If necessary, the Department requires participation by CMO staff in training and technical assistance sessions. Also, the Department may have specific performance measures for the period of the contract that are tied to the CMO's provider network. These would be part of the contract through an amendment. Progress in these areas is reviewed by the Department during the time of the contract.

DHFS also conducts site visits annually to evaluate the functioning of the CMO. This site visit reviews the geographic coverage provided by the CMO's service provider network, as well as the timeliness of services provided to members. If the CMO uses any providers outside its geographic service area, justification as to why this is necessary and what benefit it provides is required. Overall, the review is a thorough on-site examination of the CMO's policies, procedures and processes, and includes staff interviews.

Additionally, the Department utilizes regular CMO monitoring reports to share the status of access and capacity elements of the program. Annual performance reviews are used to determine if any provider network issues are present. If there are any concerns, the CMO has opportunities to discuss these with the Department and correct them. If the concerns are not remedied in an appropriate or timely manner, DHFS can take steps to address this according to policy.

C. Access Monitoring Activities

Successful access to the Family Care benefit requires coordinated efforts by the local Resource Center, the county's Economic Support Unit (ESU), and the regional Enrollment Consultant. However, the final eligibility determination process that precedes enrollment is the responsibility of the ESU. Enrollment in Family Care can take no longer than 30 days, barring delays sought by the consumer, from the time a consumer first expresses a desire to join Family Care to the date when enrollment is confirmed.

During the first two years of Family Care operations, considerable work was needed to design and implement systems to coordinate enrollment activities among the local agencies. These efforts were described in detail in the Lewin implementation reports¹³.

¹³ The Lewin Group. Wisconsin Family Care Implementation Evaluation Process Update Reports I (November 2000), II (August 2001), III (December 2002).

EQRO activities in 2002 did not include a formal review of program access, but conversations with state-level staff have highlighted a major challenge to monitoring program access and compliance with the 30 day enrollment requirement. Family Care state-level staff have desktop access to an extensive array of Family Care data, such as member level service data and LTCFS data. However, these staff do not have direct access to the Client Assistance for Re-Employment and Economic Support (CARES) system, the data system used by the ESU to determine eligibility and finalize Family Care enrollment. CARES is the only source of information for determining the length of the enrollment process at an individual or aggregate level.

While DHFS did not routinely monitor the 30 day enrollment process in 2002 using data from CARES, staff were made aware of access problems through other mechanisms such as member complaints and grievances. DHFS has indicated that many of the early problems with enrollment processing were resolved by 2003, with the exception of Milwaukee County.

In Milwaukee County, communication and coordination issues between the Resource Center, the Economic Support Unit, and the CMO continued to result in enrollment-processing times that routinely exceeded 30 days. A review of 130 new Milwaukee Family Care enrollments that took place from January 2003 through April 2003 found that 37 percent exceeded 30 days in processing. With concerted technical assistance from Department staff, this proportion fell to 18 percent by June 30, which is an improvement but still out of compliance with expectations and requirements. Milwaukee County submitted a plan for improvements in the Family Care enrollment process to the Department in mid-August 2003, and the Department will require additional specific plans for implementation and monitoring in the near future.

It is recommended that DHFS develop routine CARES reports to monitor access to Family Care at a county level. These reports could be generated monthly to identify the minimum, maximum and average time it takes for an individual to be enrolled in Family Care by county. The report should also identify the number of cases pending for enrollment that have been open for more than 30 days so that DHFS can track these cases and provide technical assistance as needed to maximize compliance.

D. Prevention/Early Intervention Services by Target Group

Family Care places an emphasis on prevention and early intervention services. This is evidenced by the fact that CMOs are contractually required to provide prevention and wellness services to all of their members.

1. Visits to Primary Care Physicians

Visits to a primary care physician are often used as an indicator of program quality. It is thought that these visits can increase opportunities for prevention and early intervention health care services in order to reduce more acute and potentially more costly services down the road.

Among the Family Care Independent Assessment population, 66 percent had at least one visit to a primary care physician during 2002. For those members who had one or more visits, the average number of visits was 5.91. The most discernable difference between those Family Care members who had a visit to a primary care physician and those who did not was the length of

time the individual had been a Family Care member. Those who had at least one visit, were a Family Care member for an average of 24.5 months versus 18.7 months for those who did not visit a primary care physician during the year. It is likely that the interdisciplinary care team approach utilized by the Family Care program is responsible for the outcome that individuals who have been in Family Care longer are more likely to have had a primary care visit.

Further significance testing between these two groups revealed significant differences in Family Care eligibility levels, and reported ADL and IADL counts¹⁴. There were no apparent differences that could be distinguished when looking at characteristics between CMOs. In summary, those who did not have a visit to a primary care physician in 2002 tended to be enrolled in Family Care approximately 6 months less time, were about 5 years older, and had slightly higher ADL and IADL counts with a larger percentage meeting comprehensive eligibility requirements.

Individual Characteristic	At Least 1 Primary Care Physician Visit in 2002	No Primary Care Physician Visit in 2002	Significant Difference
Mean Age	69.4	74.5	
Gender (Percent Female)	70.0	68.0	
Mean ADL Level of Help Count	3.35	3.54	*
Mean IADL Level of Help Count	3.72	3.85	*
Mean Months of Family Care Eligibility	24.5	18.7	**
Percent with Comprehensive Eligibility	90.3	94.6	**

Note: Significance levels = ***<0.01**<0.05; *<0.10. Figures are based on those individuals in the Family Care Independent Assessment Population who were eligible for the Family Care benefit in CY 2002.

Source: APS analysis of Medicaid claims data.

2. CMO Considerations/Situations – Summary of Prevention Literature Review

In order to provide the CMOs with guidance for considerations related to prevention and early intervention strategies, the EQRO conducted a literature review to aid CMOs in their contemplation of what prevention and early intervention projects to undertake¹⁵. It was determined that the CMOs needed to develop strategies that took into account identified best practice and clinical practice guidelines, focused on disease prevention and were well coordinated. It will also be important to ensure that CMO prevention activities can be implemented in such a way that they stay true to the person-centered care plan model.

Research into prevention activities by the EQRO indicates three primary categories of prevention: primary, secondary, and tertiary. Any comprehensive prevention program should include activities covering all three of these categories. Further, the unique needs of the three target populations should also be included as considerations when developing the prevention program. The following items are issues CMOs will need to consider in developing their selection of prevention and early intervention services as identified by the EQRO.

¹⁴ Variables tested for significant differences included the following: Target Group; Age; Gender; Family Care Eligibility Level; and, ADL and IADL counts.

¹⁵ Angie Morgan/Metastar. Report on Best Practice Prevention Activities for Family Care Members. April 28, 2003.

Primary prevention activities are those that are intended to prevent the occurrence of disease and promote health. Thus, this category includes screenings, medical tests and interventions, and lifestyle/behavioral education. For the CMOs, this translates into providing education to members, and ensuring access to primary prevention medical services. According to the EQRO's findings, for the elderly, this means the prevention and wellness programs ought to include, but not be limited to: exercise (prevents functional disability); nutrition education; and age-appropriate disease screening (e.g., cardiovascular disease, dementia). The EQRO report includes specific screening tests and recommended frequencies.

For adults with physical disabilities, there is a limited amount of research regarding primary prevention. In general, it is recommended to follow guidelines for adults in general. For example, this would include blood pressure and cholesterol screening, and smoking cessation counseling, among others.

The situation is considerably different for individuals with developmental disabilities, including mental retardation and Down's Syndrome. Study findings¹⁶ show that there is an increased amount of such health problems as vision impairment, oral health disease, and mental health conditions, like depression in this population. Some of this may be due to lower use of the health care system; therefore, any prevention program will need to include methods of learning about and removing barriers to health care access for these individuals. As with adults with physical disabilities, it is recommended that adults with developmental disabilities should also follow the same guidelines for primary prevention as adults are advised to generally. However, the exception to note is that there are specific guidelines recommended for individuals with Down's Syndrome. These should be noted and utilized in developing prevention programs.

Secondary prevention activities are often referred to as disease management. This aspect of care comes into play when a diagnosis has already been made. The guiding principle in secondary prevention is that diseases or conditions should be identified as early as possible to maximize success in treating or managing the condition and preventing further worsening of the condition or occurrence of sequelae. Therefore, in order to prevent a worsening of the condition, including any resulting disability, activities should include screenings and medical tests, as well as appropriate lifestyle and behavioral education geared toward the specific diagnosis. An example of secondary prevention is diabetes education and insulin treatments to prevent neuropathies and foot deformities. Good disease management programs will take into account the severity and risk factors of each individual in relation to their condition in order to follow the most effective course of action.

Research suggests that CMOs ought to identify disease prevalence among their populations as a first step. They will then need to implement means for identifying and monitoring individuals with those diseases, and then be able to stratify those individuals identified according to their level of severity and attendant risk factors. This will allow for creation of optimal secondary prevention programs.

¹⁶ Horowitz SM, Kerker BD, Owens PL, Zigler E. The Health Status and Needs of Individuals with Mental Retardation. Department of Epidemiology and Public Health, Yale University School of Medicine. Department of Psychology, Yale University. September 15, 2000. Revised December 18, 2000.

Tertiary prevention is focused upon promoting as much independent function as possible while preventing worsening of the condition or disease. This would include, for example, amputating the damaged leg of a person with diabetes-related complications. The key guideline for tertiary prevention activities among all persons is that it should occur with maximum sensitivity to the individual, and timeliness to minimize to the extent possible the need for interventions.

Education for the individual is also extremely important for good outcomes. CMOs should emphasize good access to medical assessment and treatment for members affected by advanced illnesses. In order to maximize the individualized, person-centered approach desired, CMOs should also have strong ties for collaboration with primary and specialty health care providers in order to best tailor management programs for affected persons.

A more thorough description of these recommendations can be found in the EQRO Annual Report. It is anticipated that this literature review will inform future EQRO assessments of CMOs in this area.

E. Long-term Care Functional Screen

The Long-Term Care Functional Screen (LTCFS) serves a dual purpose for the Family Care Program. It is one component of the pre-admission counseling provided by Resource Centers, and it is also used to assess functional eligibility for Family Care participants on an on-going basis. Because Family Care incorporates many different services, funding streams, and populations, DHFS developed a tool that would apply to a range of individual situations and living environments.

This comprehensive screen gathers the following information:

- Demographic characteristics
- Living arrangements
- Activities of Daily Living (ADL)
- Instrumental Activities of Daily Living (IADL)
- Medical diagnoses
- Health-related needs
- Cognitive abilities
- Behavior/lifestyle/risk factors

The length of time required to complete the screen depends on each individual's status at the time of administration. Although the instrument's principal purpose is to assess the functional needs of the individual and to determine eligibility for Family Care, additional information is gathered, which can later be used by CMO staff to assist in determining service needs.

To assure that the screen is completed properly and will produce valid results, those who administer it are required to have a bachelor's degree in health, social services, or a related area. Specific training for the screen, which provides an opportunity to complete trial screens, is also provided. Additionally, a certification exam is required before access to the Functional Screen is granted.

Functional Screen results are very important to CMOs because a portion of the CMO's capitation payment is based upon the functional level of its members as determined by the LTCFS. Even

gradations within levels of care (comprehensive or intermediate) can affect the amount of capitation payments¹⁷.

In calendar year 2002, 7,043 individuals were assessed using the LTCFS. Among those individuals, 79.0 percent were deemed to be frail elderly members, 11.5 percent were determined to be members with developmental disabilities and 9.5 percent were physically disabled members. (Section IV. A.) of this report provides more detailed information of LTCFS results.

F. Enrollment Consultants

Under the Family Care waivers, CMS requires that Family Care applicants receive information about the variety of service options available to them. This information is to be made available by an unbiased enrollment consultant who is charged with protecting the interests of the applicant. CMS has determined that the enrollment consultant cannot be someone who works for the county that operates the CMO.

Beginning in January 2002 (April 2002 for Milwaukee), counties incorporated an independent Enrollment Consultant into the enrollment process for the Family Care benefit. Presently, DHFS contracts for this service in the five Family Care pilot counties with the Southeastern Wisconsin Area Agency on Aging (SEWAAA). The agency employs three full-time equivalent staff to carry out the enrollment consultant function. One full-time staff person covers La Crosse, Portage, and Richland counties. The other two full-time positions are shared among three individuals and serve Milwaukee and Fond du Lac counties.

The Enrollment Consultant enters the process after receiving a referral notification from either the Resource Center or Economic Support Unit after eligibility has been determined for an individual. Then, contact is made with the consumer within three days, on average. The individual chooses whether a meeting with the Enrollment Consultant will occur face-to-face or via telephone conversation, and works with the Enrollment Consultant to determine a convenient time for the meeting. The enrollment consultation generally consists of a single meeting unless the individual requests an additional telephone or face-to-face meeting.

Through their work as the Enrollment Consultant, SEWAAA is contracted to ensure that members are provided with accurate and unbiased information that has been tailored to the potential member's specific circumstances. Further, the Enrollment Consultant is expected to determine how much understanding the potential member has of the Family Care program as well as address any questions about this program or others programs for which he/she might be eligible. Specifically, information the Enrollment Consultant provides the potential member includes the following:

- Outlining aspects of different programs and services, including quality, costs, outcomes, estate recovery, residential services, available resources, and compatibility with the individual's preferred lifestyle.

¹⁷ Family Care functionally eligible levels — the **comprehensive level** is for persons who have long-term or irreversible conditions that are terminal or expected to last at least 90 days and require ongoing care or assistance or the **intermediate level** for persons with those conditions who are at risk of losing independence or functional capacity. Determinations are made through the Long-Term Care Functional Screen during the eligibility determination process.

- Identifying the spectrum of services available should the individual decide not to enroll in the Family Care program, including community services, nursing home, case management, home care and other residential services.
- Detailing consumer rights and responsibilities, including the complaint and grievance and fair hearing procedures.
- Specifying the entirety of publicly funded long-term care program options, including Family Care services and, Medicaid state plan services (as well as the Wisconsin Partnership Program and PACE in Milwaukee county).

For those counties where there is more than one managed long-term care program from which to choose (at the present time, only Milwaukee county), the Enrollment Consultant shares detailed information with the individual that compares and contrasts the various choices, outlining what services each program offers and what services it does not. Further, any confines or restrictions on obtaining certain services and all relevant information about the quality of services in the various programs are specified by the Enrollment Consultant.

Upon the completion of the enrollment consultation, the Enrollment Consultant determines whether or not the individual wants to enroll in a Family Care CMO or a similar managed care organization or program. Should the individual decide not to enroll in the Family Care program, the Enrollment Consultant informs the Resource Center of this decision as soon as possible via a written notice, telephone call, or E-mail message, unless an otherwise specified mode of contact exists within the Family Care Access Plan. Otherwise, the consumer would move on to the CMO for enrollment. At the present time, only Portage and Richland county CMOs are notified when a person decides to enroll. The Richland CMO receives an Enrollment Consultant form through Winzip electronic file transfer and Portage receives one by fax, once again using their own enrollment form that the Enrollment Consultant signs and dates. The CMOs are not notified by Enrollment Consultants in the other pilot counties (La Crosse, Fond du Lac and Milwaukee). Who is contacted when a person does or does not enroll was determined by the Resource Center and CMO during meetings they had with the Enrollment Consultants when the Enrollment Consultant Program began. In sum, the process is different, to some degree, with each county.

1. Value of the Enrollment Consultants

The function the Enrollment Consultants provide is a valuable one. While their purpose is one of quality assurance, guaranteeing that all individuals clearly understand and are presented all relevant information and choices, the Enrollment Consultants provide value added services beyond preventing conflicts of interest. Additionally, the value of this far exceeds the approximate two hours and related cost invested in the Enrollment Consultant.

Prior to the implementation of the Enrollment Consultants, the CMOs had expressed concerns about the introduction of an additional person with whom consumers would interact, which could potentially make the enrollment process overly complex. However, during site visits with the CMO counties and with the Enrollment Consultants, it seems that this concern has not manifested itself. Rather, the Enrollment Consultants seem to provide consumers and their

family members with a face on the system that might not otherwise be present in helping them clearly understand what options they have to choose from.

While they are not serving as an advocate, Enrollment Consultants operate more as an intermediary to ensure clarity for the individual and/or their family. For example, Enrollment Consultants are frequently contacted after initial meetings to address follow-up questions from consumers. In other less frequent instances where consumers died after meeting with the Enrollment Consultant, family members made a point to contact the Enrollment Consultant to alert him/her of this situation. Clearly, this action would indicate that a connection had developed between these parties. Also, where consumers had misunderstandings about their eligibility for certain programs and services, the Enrollment Consultants were able to ensure full understanding of what benefits they were eligible for and those that they were not.

2. Areas for Improvement and Recommendations

Overall, the inclusion of the enrollment consultant within the system is a valuable asset. In addition to ensuring that consumers and their family members are provided with clear and comprehensive information on all eligible managed care programs and services, the Enrollment Consultants also fulfill a void that would otherwise be present. Although the process seems to be stable for the most part, there are certain aspects that DHFS might address for improvement, particularly in the context of considering statewide expansion of the Family Care program.

At the present time, there is no specified or standardized reporting method and format between the Resource Center and Enrollment Consultant. As a result, the Enrollment Consultants receive varying levels of detail and quality of information from each of the pilot counties. For example, the Enrollment Consultants receive information in the form of fax, password encrypted and regular E-mail documentation, and other forms of communication. The lack of continuity of this reporting process can potentially cause the Enrollment Consultants to spend unnecessary time deciphering hand written materials, checking for name misspellings, Medicaid eligibility, incorrect dates of birth or social security numbers. Currently, only Fond du Lac and Richland counties use the detailed, electronic reporting format based on the PACE and Wisconsin Partnership programs, which was provided by DHFS to the CMOs as an example. Investing time up front to accurately complete and detail consumer information will benefit the program by ensuring that participants in all five CMO counties moves through the Enrollment Consultant process at a pace where quality is not compromised.

Finally, Richland County is the only pilot that has regular meetings (twice a month) with their Enrollment Consultant. Granted, Richland is the smallest of the pilot counties and does not face the time and volume constraints larger pilot counties do. However, other pilot counties, as well as those counties poised for expansion of the Family Care program, might benefit from regularly sharing information with an Enrollment Consultant to make certain that any recurring problems or inconsistencies consumers might be facing can be addressed and rectified. For example, it was noted in meetings with the Enrollment Consultants that it is not uncommon for them to meet with consumers who are under the impression they are Medicaid eligible and want Medicaid card services who turn out to be non-Medicaid eligible, but it was not properly indicated in the

correspondence between the Resource Center and the consumer or the Resource Center and the Enrollment Consultant.

G. Provider Network Capacity

In order to assure that members have sufficient access to services, as part of the contract between DHFS and the CMOs, CMOs are required to provide information on their provider network (including provider/agency name, location, services furnished by the provider, and whether the provider is accepting new CMO members or not) as evidence that there is adequate capacity to serve the membership. However, provider network capacity could not be evaluated as part of the Independent Assessment because the provider network data available from the Department was in various documents and was incomplete. For example, only information for two counties (Milwaukee and Portage) was available for CY 2002. A compilation of the available data is provided in **Attachment 2**.

1. Site Visit Comments Pertaining to Provider Networks

Additional pieces of information related to the provider network were gleaned through site visits during the Spring of 2003 (see Section VIII. A. 1. for additional details of these site visits). CMOs noted, in general, to have more providers available than initially expected. Surprising to those counties were services for members with developmental disabilities that had been a difficult area in the past with service providers for these members ended up being more plentiful than anticipated. The most frequently mentioned shortage of a particular type of service provider was that of home health care workers. The primary reason mentioned for this was that the Medicaid reimbursement rate is low¹⁸. An additional noted service that was doing well across counties was that of skilled nursing, a previously unmet need that was now being fulfilled. Access to sufficient numbers of transportation providers was noted by at least one more rural county.

In terms of “buy-in” to the Family Care program by the providers in the CMO counties, supportive employment continues to improve among the counties while pharmacy and durable medical supplies and equipment providers were noted several times as working well with members and embracing the spirit of the program. Additionally, if there is a provider who is outside of the existing network, but is preferred by a CMO member, CMOs indicated a willingness to bring them into the network as long as the provider agrees to meet all of the contractual obligations. This is an aspect of the Family Care program that was noted as very positive by all CMOs and the CMOs cited few instances where members desired a provider not in the network and fewer instances where they could not come to terms with the provider chosen by the member.

2. Variances from Medicaid Payment Rate

For services provided by the CMO under the Family Care capitation rate, the CMO is required to pay the provider the comparable Medicaid rate for that services. For example, if Medicaid pays \$80 for a home health nurse visit, the CMO is supposed to pay \$80 for that same service. In keeping with the goal of making Family Care a flexible program that meets local needs, a provision was created to allow CMOs to seek a waiver from these payment level requirements.

¹⁸ CMOs pay a Medicaid reimbursement rate or seek a waiver.

To date there have only been two instances where CMOs have made a request to deviate from the current Medicaid rate. These requests were made by Portage and Fond du Lac counties. The Portage county CMO asked for a waiver to pay over the Medicaid rate for adult diapers. This request was made so that higher quality diapers could be purchased when necessary. DHFS approved this request with a conditional blanket waiver. The condition of the approval was that the CMO would indicate in its care plan the reason the higher quality product was needed.

The Fond du Lac county CMO requested a transportation variance waiver. The reason for this request was that Medicaid transportation has numerous authorization codes and associated rates. Since each of these codes are associated with a specific set of services within the benefit, the Fond du Lac CMO wanted to collapse categories for a more streamlined process for billing and payment purposes. These five new aggregated categories included Medicaid trip, Medicaid miles, Non-Medicaid trip and Non-Medicaid Miles and Medicaid wait time. This request was approved by DHFS and is presently being utilized in Fond du Lac county.

These two examples illustrate the flexibility the Family Care program offers to better serve program members with higher quality services as well as providing the CMOs with operational flexibility to more efficiently work with providers in their network.

H. Family Care Disenrollment Process

All Family Care members have the right to disenroll from Family Care at any time for any reason. If a Family Care member expresses a desire to disenroll from the program, the CMO makes a referral to the Resource Center for choice counseling and the Resource Center notifies the CMO as to the member's final decision. The CMO is responsible for providing services until the official date of disenrollment. CMOs are prohibited from counseling or otherwise influencing a member regarding disenrollment.

Individuals may be disenrolled from the program if he or she loses eligibility for any of the following reasons:

- The member fails to meet functional eligibility requirements.
- The member fails to meet financial eligibility requirements.
- The member moves out of the CMO service area.
- The member fails to pay or make arrangements to pay any required cost share (the CMO is required to grant a 30 day grace period).
- The member becomes ineligible for Medicaid because they are an inmate of a public institution.
- The member becomes ineligible for Medicaid because they are under the age of 65 and are a patient in an institution for mental diseases (IMD).

Death of a member is also considered a disenrollment for reporting purposes.

A CMO cannot involuntarily disenroll a member from the program without approval from DHFS. If a CMO submits a request for disenrollment to DHFS, the CMO must inform the member of the request and refer the member to the Resource Center for choice counseling and potential transition to fee-for-service Medicaid.

The following table provides a summary of Family Care disenrollments through calendar year 2002:

Table 6 Cumulative Disenrollments through December 31, 2002				
	Deceased	Voluntary Disenrollment	Lost Eligibility	Total
Fond du Lac	171	78	12	261
La Crosse	221	73	40	334
Milwaukee	557	237	96	890
Portage	135	38	5	178
Richland	36	11	1	48
Total	1,120	437	154	1,711

Source: APS analysis of county disenrollment data.

Analyses conducted on cumulative disenrollments for CYs 2000-2002 revealed that when all reasons for disenrollment are included, not excluding a member's death, there was an 11.1 percent total of disenrollments. However, when excluding deceased members from the analysis, the percentage decreased to 5.6 percent¹⁹. This figure is well within national norms for disenrollment rates for members being served by the Family Care program²⁰.

Historically, DHFS has not been able to report comprehensive data on the reasons individuals disenroll from Family Care, because it does not have a system for maintaining disenrollment data. As described above, members who express a desire to disenroll from the program are referred to the Resource Center who is responsible for completing a disenrollment form. These forms are maintained by the counties, unless the county is unable to enter the disenrollment date in CARES, then the form is sent to DHFS for processing. Data from those forms is extracted and maintained by the Department. In addition, Resource Centers report aggregate disenrollment data to DHFS, which is accompanied by a narrative that offers some insight into the reasons for disenrollment.

Based on these narratives and the disenrollment forms received by DHFS, the four most common reasons for disenrollment have been identified as:

1. Member had found other ways of meeting long-term care needs, such as family or friends.
2. Member had concerns about Family Care cost-share and estate recovery requirements.
3. Member prefers fee-for-service care, including nursing home care²¹.
4. Members in Milwaukee County chose to enroll in another Medicaid managed care program, most notably the Partnership Program.

¹⁹ Figures based on APS analysis of disenrollment data through the HSRS LTS query for CYs 2000-2002 for all Family Care members.

²⁰ Perlberg, Art. Presentation the *Serving Persons with Disabilities in Medicaid Managed Care: Assuring Continuity, Quality, and Cost-Effectiveness* Technical Assistance Conference. April 17, 2002. Los Angeles, CA. Co-Sponsored by Health Resources and Services Administration and the Centers for Medicare and Medicaid Services.

²¹ While nursing home care is a covered benefit under Family Care, the CMO may determine that the member can receive appropriate, high-quality care in the community at a lower cost than the nursing home.

The following table provides a summary of disenrollment data extracted from the subset of disenrollment forms processed by the Department, which appear to represent approximately 10% of all disenrollments²². Although DHFS maintains cumulative tabulation of disenrollments, failing to examine and review data for isolated quarterly and annual time periods prevents DHFS from being able to readily identify instances of excessive disenrollment trends and patterns.

	Services Not Needed	Finance-Related	Prefers Other Program*	Prefers FFS Medicaid	Prefers FFS Nursing Home	Dissatisfied with CMO	Unknown Reason/ Multiple Reason
Fond du Lac	0	1	N/A	8	2	1	0
La Crosse	3	1	N/A	0	7	0	1
Milwaukee	11	9	11	0	22	2	26
Portage	2	4	N/A	0	1	1	2
Richland	0	0	N/A	0	0	0	0
TOTAL	16	15	11	8	32	4	29

Note:* Other Medicaid Managed Care programs are only available in Milwaukee County.

While Richland County shows no disenrollments from this 115 sampling, a HSRS query for CY 2002 found that the Richland County CMO had only 1 identifiable disenrollment. The noted reason was involuntary disenrollment.

Source: APS analysis of county disenrollment data.

Recognizing the need for better data on the reasons that people choose to leave Family Care, DHFS has been working with the Resource Centers to develop new guidelines for recording and reporting disenrollments. In April 2003, Resource Centers were instructed to record a single, primary reason for every disenrollment from the following list:

Loss of Eligibility

- Loss of financial eligibility
- Loss of functional eligibility
- Incarceration or IMD placement
- Moved out of service area
- Non-cooperation with re-certification
- Unwilling to pay cost share
- Estate recovery

Personal Choice

- No longer needs services
- Wants to enroll in another program
- Wants fee-for-service care
- Other personal choice disenrollment

When a member cites a reason related to personal choice, the Resource Centers have been asked to ask additional questions to determine whether or not the member was dissatisfied with the

²² DHFS does not maintain disenrollment data by calendar year. The 4th quarter 2001 Family Care Activity Report indicates that there were 651 cumulative disenrollments through February 2002. The 4th quarter 2002 Family Care Activity Report indicates that there were 1,711 cumulative disenrollments through December 2002. A query of HSRS LTS data was conducted by APS Healthcare for CY 2002 and revealed a total of 475 disenrollments.

CMO or the Family Care benefit and, if so, why. Counts of disenrollments by the new reason codes and brief narratives on personal choice disenrollments are forwarded to DHFS quarterly.

In addition, the protocol for member care plan reviews performed by the EQRO has been modified so that assessments and care plans of disenrollees are no longer excluded from the sample. A special review tool was developed for reviewing the records of individuals who are no longer active CMO members and EQRO staff will be looking for apparent quality issues and whether or not disenrollment procedures were followed appropriately.

Finally, DHFS has conducted two ad-hoc reviews to look more closely at instances where an individual disenrolls from Family Care and then immediately receives fee-for-service nursing home care. The Department has found that the circumstances involved a complex set of actions and decisions by the CMO, the member, the member's family and other involved individuals, such as nursing home staff or the member's physician.

Between 2000-2002 among the Family Care Independent Assessment Population, there were 446 unique individuals who disenrolled from the Family Care program. The two most prevalent reasons for disenrollment among these individuals were 'Deceased' (57.8 percent) and 'Voluntary Disenrollment' (20.2 percent), followed by a distant 'Not or No Longer Income Eligible' (5.8 percent).

Over two-thirds of these individuals are elderly (69.7 percent). Of the remaining individuals, 20.9 percent have physical disabilities and 9.4 percent have developmental disabilities. Women accounted for 66.8 percent of individuals who disenrolled. Each of the five CMO pilot counties had some individuals who disenrolled, with La Crosse having the highest percentage (35.4) and Richland the lowest percentage (0.2) among the 446 individuals (Fond du Lac, Milwaukee and Portage had 30.3, 20.0 and 14.1 percent, respectively). Among elderly members, 74.9 percent had three or more ADLs and 86.8 percent had 3 or more IADLs. Members with developmental disabilities had overall ADL and IADL means of 2.83 and 4.43, respectively. Those members with physical disabilities had ADL and IADL means of 3.02 and 2.60.

It is recommended that DHFS establish disenrollment "red flags" based on information that has been collected and analyzed thus far. By utilizing historical data from the program DHFS staff will be better suited to recognize trends and patterns, understand them more thoroughly, and differentiate them from anomalies. Further, while it has been noted that disenrollment rates are one alternative to using satisfaction measures as a proxy for acceptability, these data are not as robust at providing the unique and detailed insight that disenrollment surveys allow²³.

²³ General Accounting Office. (1998, April). Many HMOs Experience High Rates of Beneficiary Disenrollment (Report to the Special Committee on Aging, U.S. Senate). (GAO/HEHS-98-142); Office of the Inspector General, Department of Human Resources. (1995, March). Beneficiary Perspectives of Medicare Risk HMOs; and Tudor,

Therefore, it is also recommended that DHFS survey those individuals who chose to disenroll from the Family Care program as to why and utilize this information to discover areas in where the program can be strengthened and demonstrate greater member retention.

C.G., Riley, G., & Ingbar, M. (1998). Satisfaction with Care: Do Medicare HMOs Make A Difference? Health Affairs. 17(2), 165-176.

VI. Quality of Services

Family Care is expected to improve the quality of services provided to consumers of long-term care by creating a comprehensive and flexible system, which is focused on both health and social services. Since the implementation of the Family Care program, the Department has invested considerable effort and resources to develop a comprehensive quality assurance and quality improvement (QA/QI) system to ensure the program is meeting its quality goals.

The QA/QI programs focus on member health, functioning and satisfaction. Specifically, QA/QI activities are intended to ensure that the program preserves the preferences, rights, and self-determination of members, and also works for the best possible quality of life for every individual. Assuring the safety and rights of members, while maximizing their ability to define and assess their services is also a QA/QI goal. Measurement of these goals is achieved through a multi-level QA/QI system.

Quality assurance is a shared responsibility between DHFS, Resource Centers, and CMOs. In addition, DHFS has contracted with an External Quality Review Organization (EQRO) who is charged with monitoring State, Resource Center and CMO quality activities. EQRO monitoring includes activities, such as member record reviews, staff and member interviews, and procedural reviews. Technical assistance around quality improvement and assurance is provided both formally (e.g. EQRO site reviews, DHFS quality liaison) and informally (e.g. workgroups facilitated by state staff) on an ongoing basis.

The CMO Family Care contract contains very specific QA/QI requirements. One of the contractual requirements related to quality is the development of an annual written QA/QI plan, which is approved by the CMOs governing board and DHFS. The QA/QI plan outlines the CMOs QA/QI goals, the scope of QA/QI activities and associated timelines. At a minimum, the CMO QA/QI plan must include the following activities:

- Conduct performance improvement projects.
- Implement a process to monitor and detect underutilization and overutilization of services.
- Implement a process to monitor and assess the quality and appropriateness of care provided to CMO members.

CMOs are also required to maintain an information system that can support these QA/QI activities. At a minimum, the system must include data on utilization, grievances and appeals and disenrollments.

Through the development of a comprehensive strategy to assess quality in Family Care, the Department is able to address aspects of quality at both the county level and at the individual member level between target groups. In order to assess quality within the Family Care program, APS staff reviewed the following:

- Family Care Quality Assurance Contract Requirements
- Member Outcome Surveys
- EQRO Quality Findings

- Family Care Member Grievances and Appeals
- Measures of Members' Health and Functioning
- Long-term Care Functional Screen Quality Assurance Efforts
- Service Quality

Using available data, APS reviewed quality measures at the CMO and individual level. In addition, when possible, DHFS and EQRO quality monitoring processes were assessed.

A. *CMO Certification Process and Annual Reviews*

CMOs must be certified by DHFS to provide Family Care services. The Department certifies CMOs by evaluating each organization using a set of standards, which are derived from a number of sources. These sources include the Family Care authorizing legislation and administrative rules. In addition to state standards for CMOs, federal regulations require states that use federal Medicaid dollars in a risk-based contracting arrangement to assure that contractors have the capacity to meet federal Medicaid managed care regulations.

1. CMO Certification Process

A primary focus of the certification standards relates to the CMO's provider network. In order to be certified, a CMO must demonstrate that it has adequate availability of providers to meet the preferences and needs of potential enrolled members. To meet the requirements of the Family Care statute, the CMO must submit documentation of its capacity to assure timely provision of Family Care services to the expected enrollment in the CMO's service area. As part of the documentation, the CMO must show that it is not merely creating a situation where members are steered to existing residential slots, but are instead treated as individuals whose preferences are honored. Such documentation may be in the form of written agreements with providers who are available to provide all LTC services in the Family Care benefit in sufficient quantity to meet the needs of the potential enrolled membership or a description of how the CMO plans to provide the service directly to the expected enrollment.

During the pre-certification review State staff evaluate compliance with a number of organizational standards that are established under the CMO contract. These standards cover program dimensions such as financial stability, member rights, appeals and grievance specifications, member safety and risk plans, advance authorization and utilization management systems standards, provider selection and retention policies, QA/QI program and workplan, member information and marketing materials. As part of the pre-contract review, each CMO must submit organizational documents that show that it has the capacity to meet contract requirements. Department staff with specific technical knowledge will review all relevant CMO documentation for consistency with the guiding principles of Family Care, as well as for evidence of adequate capacity to meet state and federal managed care contract requirements.

Subsequent to the review, DHFS notifies the CMO as to whether the CMO's documentation was acceptable or whether additional documentation is needed prior to certification. In some cases, a CMO may be required to participate in technical assistance sessions or attend mandatory training in specified areas. Additionally, a CMO may be required to meet performance expectations during the contract period that are attached to the contract in the form of an amendment. In such

cases, the department conducts reviews and site visits as necessary to validate progress made in those areas.

2. Annual Site Reviews

In addition to site visits conducted during the contract period on an as needed basis to address issues identified through the pre-certification review and the start-up phase, the department also conducts annual reviews of all CMOs. These reviews generally occur on-site and are conducted by review teams composed of DHFS, a relevant LTC provider, a registered nurse, a social worker and a consumer if possible. If it is not possible to secure consumer participation for all site visits, consumer input on relevant materials is obtained off-site. Consumers who participate in this process are compensated.

Annual site reviews emphasize CMO system level issues including such issues as system-wide quality improvement, access, choice, quality of life of members, safety and the system in place to ensure safety and, most importantly, the degree to which Family Care outcomes are being achieved. It is expected that these reviews will incorporate findings of other monitoring and oversight activities undertaken by DHFS and the EQRO.

The annual site visit focuses on the following areas:

CMO QA/QI Program Implementation

In Family Care, the CMO becomes the organization that is responsible for delivering a set of services and supports for a defined population of individuals. The Department, in turn, has an obligation to monitor and assess how the CMO performs as a whole and how it plans to continually improve its performance. The CMO's internal QA/QI program is the mechanism used to monitor and evaluate care delivered to its members and take actions as necessary to improve care rendered by all CMO providers. How the CMO implements its internal QA/QI program is of foremost importance to the Department.

In risk-based contracting situations, managed care organizations are required by federal law to operate a QA/QI programs. The QA/QI program should support a continuous improvement process and involves a number of interrelated activities, such as monitoring basic health and safety, performance measurement and improvement using objective quality indicators, developing standards of care and monitoring providers against established standards, and implementing methods to strengthen consumer involvement in CMO quality activities. The CMO is expected to provide documentation that it has or is actively implementing an internal QA/QI program that meets contract standards and that the CMO has a plan for incorporating the experience of CMO members into the evaluation of the QA/QI program.

As part of its quality monitoring and oversight activities, DHFS reviews, at least annually, how well the CMO is implementing key quality assurance and quality improvement functions CMO-wide, and the impact and effectiveness of the CMO QA/QI program. This monitoring is done on-site and entails interviewing key staff, providers and consumers and reviewing relevant documentation. The review focuses primarily on the assurances made by the CMO during the pre-certification review on the QA/QI plan, access standards and other contractually required standards to assess the CMO's progress on implementation. Also, the Department reviews the CMO's own evaluation of its internal QA/QI program. For example, reviewers assess whether or

not the CMO is completing the activities on its QA/QI workplan on a timely basis and whether or not the CMO's self-evaluation includes recommendations for needed changes.

CMO Provider Network Monitoring

In addition to the pre-certification review, on an annual basis, the department conducts an on-site review to evaluate the geographic distribution of available service providers and whether the CMO is meeting standards for timeliness of services. As part of this review, the DHFS ensures that each CMO's network is structured in a way that considers the geographic location of providers and members, including such factors as distance, travel time, and the means of transportation normally used by members. If the CMO contracts with providers outside its service area, the CMO has to justify these arrangements as either making it easier for some members to reach the particular provider or other reasons such as inability to contract with a sufficient number of providers within the service area.

Monitoring CMO Provider Selection

CMOs are required to have a local process to assure that persons providing services and/or supports are trained and qualified to perform their duties. In part, this consists of verifying that any subcontracted provider meets pre-set CMO specific standards that have been prior approved by DHFS. Additionally, CMOs must evaluate the performance of each subcontracted provider on a periodic basis, using member input on the quality of providers, complaints and grievance reports, performance measures and other information. They also must report to the department whenever a subcontract is terminated because of quality problems with a provider.

During the annual on-site review, State staff interview CMO staff and providers and review CMO documentation to determine if the CMO is adhering to its policies and procedures in this area. DHFS may also conduct a survey of CMO subcontracted providers in order to assess CMO performance from the provider's perspective.

3. Examples of CMOs Success Stories and Performing at Exceptional Levels

Through the assistance of DHFS staff and EQRO Quarterly Reports, APS has been able to compile various stories and activities of how CMOs have gone above and beyond the contract requirements related to quality. While this accounting is by no means comprehensive, it is illustrative of some of the quality work taking place within the pilot counties.

1. All the CMOs have begun developing specialty teams for special or challenging populations. For example, each of the CMOs has developed teams with mental health expertise and some have developed special teams for people with substance abuse issues and people with challenging behaviors.
2. All CMOs now have flexible self-directed support (SDS) programs in place and operational to provide consumers with more input regarding their care providers.
3. All CMOs have learned the value of good data and are in the process of improving data collection and recording to be used more at the local level to assist in making policy and fiscal decisions.

The following are a sample of CMO specific instances, which illustrate how the flexibility of the Family Care benefit has been used to enhance service quality:

In Richland County, a husband and wife both enrolled in Family Care. The wife's physician was recommending that she be hospitalized to deal with her extremely low O₂ saturation levels. She was reluctant; however, as she felt she needed to remain in her home for her husband, who also needed care. Both husband and wife were very private individuals who were very reluctant in general to accept services. Working with the wife, husband and physician, and enlisting the aid of family members, the care management team was able to arrange for both husband and wife to receive services that were able to keep the wife out of the hospital by getting them to accept more services for both of them. It was at this time that it was discovered that the wife provided more care for the husband than was originally thought. Other family members now participate more in the care of both individuals.

In Fond du Lac County, a member was living in his home with his wife. Other family members lived with them and were their primary supports. This situation was historically very trying, as family left them alone without supports in the past. Abuse and neglect allegations by family members were investigated. The member is a mentally ill veteran with significant trust issues. Both he and his wife now have significant physical disabilities as well. There are mobility limitations for both of them.

In May 2002 the member required surgery and his wife moved to a community –based residential facility (CBRF) the day of his surgery. Five days after the surgery, he was transferred to a nursing home. CMO staff visited the nursing home and discovered that the surgery was not entirely successful. The discharge plans from the hospital to the nursing home were also poor.

The nursing home provided excellent care and nearly healed the wound by the end of October, but the member was suffering from a variety of psychiatric issues. The CMO staff assisted the member in finding a new psychiatrist in his area and arranged transportation for the member and wife to be together 2-3 days per week at the nursing home.

Eventually the member was able to leave the nursing home and go to the CBRF where his wife resided. The CMO continuously worked with the CBRF to get him assessed and to coax this process along. The discharge from the nursing home was also very poor, which resulted in the CMO providing significant assistance to obtain correct orders and appropriate supplies. The member is now living with his wife, sharing a room at the CBRF. They are both much happier now after being reunited.

In Portage County, a member was involved in an automobile accident in December 2001. She was comatose for more than one month in the ICU of a local hospital and then was transferred to a coma recovery program in the Milwaukee area where she stayed for 3 months. When she had reached the maximum benefit from this program, she entered an intensive brain injury recovery facility. She made steady gains in her physical and psychological functions, exceeding the expectations of the rehabilitation staff. After 7 1/2 months in this program, she returned to her home in Portage County two weeks before the anniversary of her accident.

The brain injury resulted in physical and cognitive limitations but with the support of Family Care this member was able to return home to her husband and family and resume involvement in day-to-day activities. The CMO provided in-home support to assist her with the follow through

of her current physical and occupational therapy programs. She continued to make gains in her independence and her care provider assisted her with shopping, errands and home management for a family of four. This support allowed the member's husband to maintain his full-time employment.

B. EQRO Quality Findings

On an annual basis, Family Care CMOs, are required to submit self-reported quality assurance and improvement data for specified performance measures, performance improvement projects (PIPs) and other standards measured during the contract year.

1. Performance Measure Rates

For 2002-03, the performance measure focus area was health and safety, and the member outcomes were: people have the best possible health; and, people experience continuity and security.

Specifically, the CMO performance measures were:

1. Care management team turnover - Percent of the care management team members (case managers and registered nurses) who separate during calendar year 2002. High turnover rate results in the reduction of continuity of care for Family Care Members.
2. Influenza vaccination – Percent of CMO members who received a vaccination in the past 12 months.
3. Pneumonia vaccination – Percent of CMO members who received a vaccination in the past 10 years.

Performance measure data submitted by the CMO's is validated by the EQRO to ensure reliability and to provide constructive feedback to the CMOs to assist them in their ongoing quality improvement efforts.

Through the EQRO's data validation review process, it was determined that all the CMOs reported care management team turnover data and vaccination counts²⁴. The EQRO noted that no CMO accurately documented its processes and procedures for the performance measures. EQRO reviewers found that each CMO carried these processes out in an informal and unwritten manner. As a result, it was recommended by the EQRO that the CMOs maintain more accurate documentation and records to ensure that procedures and processes are carried out in consistent and accurate fashion.

²⁴ Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2002.

Care Management Team Turnover

Care management team staff include case managers and nurses. The overall turnover rate for 2002 was four percent for case managers and 5 percent for registered nurses. Table 8 provides a summary of the care management team turnover rates by CMO.

Table 8 CY 2002 Care Management Team Turnover for the 5 CMO counties						
	Overall turnover for 5 counties	Fond du Lac	La Crosse	Milwaukee	Portage	Richland
Case Managers	4% (4/106)	5% (1/21)	3% (1/30)	3% (1/30)	6% (1/16)	0% (0/9)
Registered Nurses	5% (3/61)	0% (0/15)	0% (0/15)	0% (0/15)	0% (0/6)	30% (3/10)

Note: The EQRO noted in its Annual Report that none of the five CMOs had sufficient written documentation of the process and procedures used in preparing the required turnover percentage.

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003

As the table illustrates, the turnover ratio between the five counties is consistent for Case Managers and Registered Nurse with the exception of Richland County. Richland is the outlier with a turnover rate of 0 percent for its case managers and 30 percent turnover rate for its registered nurses. None of the other CMOs had any turnover in their nursing staff for the year.

The findings on team turnover in the EQRO Annual Report did not include an explanation of the circumstances that accounted for the high nurse turnover rate in Richland County. A review of the EQRO quarterly site visit reports for Richland County also did not provide an explanation for these turnovers. However, it was noted in the 2002 Fourth Quarter Report that the presence of several vacancies in Richland County resulted in a care management staffing level that was insufficient, which would challenge other staff to maintain operations until those positions were filled in 2003. Considering that staff turnover rates were one of three stated performance measures for CY 2002 and that extended vacancies can put service quality at risk, it was surprising that a more in-depth review of this situation was not undertaken by DHFS or the EQRO.

Influenza and Pneumonia Vaccinations

The EQRO found that three of the five pilot CMOs did not report credible vaccination data. According to the EQRO, most CMOs' vaccination data had significant problems such that "useful rates" were unable to be calculated. Again, much of the inconsistency resulted from various types of informal, inadequate and inconsistently reported information.

Because much of the vaccination information collected by the EQRO presented in Tables 9 and 10 suffer from a variety of data collection and reporting errors among the CMOs, it is difficult to discern the actual meaning of these values. The EQRO recommended one of eight forms be utilized for future record keeping purposes; choice will be left to the discretion of the individual CMO. While these forms will greatly enhance the utilization of the information that has been kept thus far, if the Department hopes to make use of this information and have consistency of reporting, specific data reporting protocols should be directed to the CMOs to ensure the ability

to compare and examine data across counties within Family Care, as well as counties outside of the program, and statewide and national figures.

Further, while the Department acknowledges the shortcomings of the data, it was decided that it would not be valuable to go back and ask the CMOs to work to correct those figures. Rather, the change to tighten up the reporting specifications as recommended by the EQRO would improve this issue in the future. Additionally, DHFS staff felt that the primary intention of this effort was not one of record keeping, but instead getting the members immunized during high-risk times of the year. It is recommended that continued, annual tracking of these vaccinations take place in each CMO so that valuable longitudinal data across CMOs and target groups can be utilized by both DHFS and the CMOs.

Table 9 Influenza Vaccination Rates For Members Who Received A Vaccine From Sept. 1 Through December 31, 2002						
Target Group	Total # for CMO counties	Fond du Lac	La Crosse	Milwaukee	Portage	Richland
Frail Elderly	3,236	82.0% (337/411)	79	74.8% (2544/3402)	217	50.4% (59/117)
Physical Disabilities	235	61.3% (73/119)	39	60% (30/50)	75	32.7% (18/55)
Developmental Disabilities	469	60.1% (175/291)	142	66.7% (6/9)	113	38.8% (33/85)
All Target Groups	3,940	71.3% (585/821)	260	74.5% (2580/3461)	405	42.8% (110/257)

Note: Data for La Crosse and Portage Counties only reported the total number of vaccinations rather than rates.

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003

Table 10 Pneumonia Vaccination Rates for Family Care Members Who Received A Vaccine Within The Past 10 Years (On Or After January 1, 1992)						
Target Group	Total # for CMO counties	Fond du Lac	La Crosse	Milwaukee	Portage	Richland
Frail Elderly	2,447	55.0% (226/411)	77	61.9% (2107/3402)	18	16.2% (19/117)
Physical Disabilities	127	35.3% (42/119)	36	60% (30/50)	9	18.2% (10/55)
Developmental Disabilities	89	15.5% (45/291)	24	66.7% (6/9)	4	11.8% (10/85)
All Target Groups	2,663	38.1% (313/821)	137	61.9% (2143/3461)	31	15.2% (39/257)

Note: Data for La Crosse and Portage Counties only reported the total number of vaccinations rather than rates.

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003

2. Performance Measure Validation

The EQRO performs Performance Measure Validation to make certain that there is accuracy and data reporting consistency among organizations. In order to validate the vaccination data (for both Influenza and Pneumonia), submitted by the CMO's the EQRO conducted on-site visits to examine the following:

1. How the CMO collected and stored the performance measure source information.
2. How the CMO produced the counts used to calculate performance measure rates.
3. The steps the CMO took to catch and avoid mistakes in collecting and storing that information and producing those counts.

The validation process is conducted via a site visit, which includes interviews with staff, discussion and review of procedures, and demonstrations and reviews of the system. Through this process, the EQRO staff gains an understanding of the methodology employed by the CMO to collect and report data, and then offers recommendations and support for improving the process. A report is shared with the CMO.

For 2002-03, the CMOs all collected and reported data for all three performance measures. They also all produced the required team turnover numbers and vaccination results. In contrast, none of the CMOs provided appropriate documentation of processes and procedures for the performance measures. EQRO staff found the processes and procedures to be informal and not written down. Additionally, for a majority of the CMOs, the vaccination data were found to be unreliable. Data problems made it impossible to calculate valid rates. There were a range of problems noted, including failure to get vaccination information from members or guardians, lack of proper recording of the vaccination status, and differences between information reported and information in the member’s record.

After the on-site review, EQRO reviewers requested service records of 30 randomly selected members and checked each member’s service record to verify that it clearly documented the appropriate vaccination in the appropriate time period. The counties were given a choice to either have an on-site record review or send a copy of the service record. All but Portage County chose not to have the on-site record review. The review findings of the five counties are as follows

Table 11 Unconfirmed Influenza and Pneumonia Vaccination Rates						
	Total for 5 counties	Fond Du Lac	La Crosse	Milwaukee	Portage	Richland
% of un-confirmed Influenza vaccination service records	6.67% (10/150)	3.3% (1/30)	13.3% (4/30)	0% (0/30)	16.6% (5/30)	0% (0/30)
% of un-confirmed Pneumonia vaccination service records	14% (21/150)	3.3% (1/30)	23.3% (7/30)	3.3% (1/30)	40% (12/30)	0% (0/30)

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003.

A difference of five percent or less in the disagreement between the CMO reported data and the service record that documented vaccination status was determined to be acceptable for performance measure validation. As indicated by Table 11, La Crosse and Portage counties failed to meet the requirements for acceptable performance measure validation.

The reviewers found a significant number of errors in the CMO’s data. Some of the common errors, as previously mentioned, included reporting vaccinations for which no documentation could be found in service records or reporting vaccinations for which the service record documented only a plan to get vaccinated. Though reviewers did not find any disagreement between members service records and vaccination data reported by the Richland County CMO, the reviewers found that the CMO’s care managers did not collect vaccination information for many of its members during routine visits during the flu season.

Below is the summary of the quality assessment of the CMO’s processes and procedures for verifying collected data.

Table 12 Quality Assessment of Data Validation					
	Fond du Lac	La Crosse	Milwaukee	Portage	Richland
Performs quality check to validate case management measures	Yes	No	No	Inadequate	Yes
Performs quality check to validate Vaccination measures	No	No	Yes	Inadequate	Yes

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003.

According to Table 12, Richland is the only county where the CMO verified the collected data at several points. It is recommended that the other four CMOs adopt Richland County’s procedures (or something similar) to catch and avoid mistakes in preparing data reports. Richland’s CMO verifies the collected data by the following:

- The turnover information is reviewed by a second employee and compared to monthly member-team assignment lists.
- The vaccination data is quality checked by case managers upon receipt of the initial team-specific member list and reviewed again after compilation of CMO-wide information.

Though Richland CMO’s care management staff prepares their data reports adequately, they, along with the other four counties, do not have a formal written documentation of its processes to produce performance measure data. Lack of written documentation makes it difficult for the CMOs to successfully repeat the processes and procedures needed to produce accurate data.

The primary recommendation from the EQRO to all of the CMOs is that they should develop a system to use written documentation of all of their performance measure data-related process and procedures. CMOs may structure their work differently, so the documentation could include any of the following²⁵:

- Standard operating procedures
- Protocols
- Training manuals

²⁵ Metastar. Family Care Annual Report, August 7, 2003

- Sign-off sheets
- Logs
- Flow charts
- Work plans
- Data dictionaries

For those CMOs that had problems concerning their vaccination data, recommendations were made to assist the CMO in correcting the process errors that contributed to the problem. These recommendations included²⁶:

- Determining the causes of the specific errors found by the reviewers.
- Developing a plan to correct these errors.
- Ensuring that the affected staff understand and follows processes and procedures to correctly produce vaccination data.

The EQRO identified strengths, areas for improvement, and made recommendations for each of the five CMOs. These are summarized below:

Fond du Lac County

Strengths – The CMO was able to provide reliable data for all performance measures. It also piloted a database with a wellness inventory that included vaccination data.

Areas for improvement – The CMO reporting processes are informal, and are not documented.

La Crosse County

Strengths – The CMO had very low staff turnover, and demonstrated that it had made a strong effort to properly record their immunization data.

Areas for improvement – Their vaccination performance measures were inaccurate. This was likely because they did not have sufficient documentation for their processes and procedures, nor sufficient oversight to spot and avoid errors.

Milwaukee County

Strengths – The CMO produced reliable data for all of the performance measures.

Areas for improvement – It is important for the CMO to have written procedures, sufficient training, and functional forms. These will help with consistency.

Portage County

Strengths – The process for gathering the vaccination data is built into the standard operating routine.

Areas for improvement – Vaccination data were not accurate, nor did the CMO document processes and procedures. Lacked needed oversight for catching errors.

Richland County

Strengths – The CMO demonstrated proper reporting of indicator data, and efforts to create standardized immunization forms for the service record.

Areas for improvement – Did not collect vaccination data properly.

²⁶ Metastar. Family Care Annual Report, August 7, 2003

3. National Vaccination Rates and Recommendations

Influenza and Pneumonia vaccinations are an important prevention strategy, particularly for the elderly. Influenza vaccination can reduce both health care costs and productivity losses associated with influenza illness. Economic studies of influenza vaccination of persons aged 65 years and older conducted in the United States have reported overall societal cost savings and substantial reductions in hospitalization and death^{27 28}.

According to the U.S. Centers for Disease Control and Prevention, the lack of influenza vaccinations caused an average of 20,000 deaths per year during influenza epidemics in the U.S. from 1969 to 1996. Adults aged, 65 or older accounted for approximately 90 percent of those deaths²⁹. Pneumococcal disease caused approximately 3,400 deaths among people 65 or older in 1998. An analysis of responses from a random telephone survey of the non-institutionalized civilian U.S. population, the 2001 Behavioral Risk Factor Surveillance System (BRFSS), indicates, at a 95 percent confidence level, that the number of people 65 or older who received influenza vaccination during the preceding year decreased from 66.9 percent in 1999 to 64.9 percent in 2001. However, the number of people 65 or older who ever received pneumococcal vaccination increased from 54.1 percent in 1999 to 60.0 percent in 2001. The decrease in the persons receiving influenza vaccination in 2001 could be related to a slight decrease in the insurance coverage of influenza vaccine.

Overall figures for Wisconsin from the BRFSS reveal that 24.1 percent of all individuals surveyed in 2001 received their pneumococcal vaccination while 32.7 percent had an influenza shot in the last twelve months. Wisconsin's rates of immunization for these two conditions, which are very serious among the elderly, are significantly lower than the national rates.

In the national results, an association between vaccination status and additional variables was also examined. Men were more likely than women to report influenza vaccination and less likely to report Pneumococcal vaccination. Persons with diabetes or asthma were significantly more likely to report influenza and pneumococcal vaccination than those without diabetes and asthma. Coverage with both vaccines increased as education level increased and as self-reported health declined. Also, pneumococcal vaccination coverage was higher among smokers than non-smokers.

National health objectives for 2010 include increasing influenza and pneumococcal vaccination levels to greater than 90 percent, especially among persons aged 65 years or older. In an effort to reach these goals, health care providers are encouraged to offer pneumococcal vaccine year round and should continue to offer influenza vaccine during December and throughout the influenza season. In addition, physicians should access the vaccination status of their patients and offer indicated vaccines. Improved coverage will occur by improving record keeping, standing orders, reminder/recall systems, and offering vaccinations to hospitalized patients

²⁷ Mullooly JP, Bennett MD, Hornbrook MC, et al. Influenza vaccination programs for elderly persons: cost-effectiveness in a health maintenance organization. *Ann Intern Med* 1994;121:947--52.

²⁸ Nichol KL, Wuorenma J, von Sternberg T. Benefits of influenza vaccination for low-, intermediate-, and high-risk senior citizens. *Arch Intern Med* 1998;158:1769--76.

²⁹ MMWR. CDC. Influenza and Pneumococcal Vaccination Levels Among Persons Aged ≥65 Years – United States, 2001. *Journal of the American Medical Association*, December 11, 2002. Volume 288, No. 22.

before discharge. Influenza vaccination can reduce both health care costs and productivity losses associated with influenza illness. Economic studies of influenza vaccination of persons aged 65 years and older conducted in the United States have reported overall societal cost savings and substantial reductions in hospitalization and death^{30 31}.

Recommended future efforts specific to Family Care would include efforts to get all members immunized. Further, efforts to analyze data that breaks out findings by gender to see if male Family Care members are following the pattern reported nationally. Similarly, vaccination coverage should be examined for comparison to national trends. Finally, given the increase in diabetes and asthma reported by Family Care Members over the period from 2000 in the Department's findings to 2002 from findings in this report (see Section IV), and the added risk from flu and pneumonia for these individuals, monitoring vaccination rates for these members will be especially important. In general, Wisconsin should strive to reach the U.S. Healthy People 2010 goals for these immunizations in the Family Care target populations.

4. Performance Improvement Projects

The CMO is required to conduct at least one performance improvement project (PIP) per year. The CMO must also focus a PIP on at least one member outcome, and the CMO is required to develop outcome indicators that will allow them to assess their progress in improving the chosen outcomes. The outcome selected must be from an area of concern for the CMO, such as one identified by consumers or one noted by the CMO. The CMOs are required to have a process for collecting and analyzing data related to the PIP as part of its implementation. CMOs are expected to be able to demonstrate improvement. They must show improvement by the close of the next year.

Similar to the performance measure validation, the EQRO conducted the reviews of the CMOs' PIPs to assess the CMOs ability to implement PIPs that will lead toward improvement. In general, the EQRO reported that the CMOs found the development and implementation of PIPs to be challenging. Only a minority of the PIPs fulfilled all of the review requirements. Because CMOs were in the early stages of learning how to implement PIPs, the EQRO focused on evaluating the CMOs level of understanding regarding the PIP process and the likelihood that selected projects would actually lead to improvement if implemented successfully. However, for the few PIPs that were successful, the EQRO was able to identify a number of common characteristics:

- A designated project team to be responsible for the PIP;
- A data collection plan that was prepared prospectively and modified, as needed, on a timely basis during the project; and
- A data collection plan that identified methods for implementing improvement activities that were based on the finding of the data analysis process.

In general, the EQRO found that additional training is needed to ensure that CMOs have the ability to successfully carry out performance improvement projects. Specifically, additional

³⁰ Mullooly JP, Bennett MD, Hornbrook MC, et al. Influenza vaccination programs for elderly persons: cost-effectiveness in a health maintenance organization. *Ann Intern Med* 1994;121:947--52.

³¹ Nichol KL, Wuorenma J, von Sternberg T. Benefits of influenza vaccination for low-, intermediate-, and high-risk senior citizens. *Arch Intern Med* 1998;158:1769--76.

training is needed to help CMOs with the initial stages of the PIP process and to provide a framework for implementing the PIPs. The EQRO is also working with state staff to develop a typology for executing performance improvement activities. This typology will focus on identification and stratification of the population targeted for improvement, methods for conducting outreach to the target population and strategies for selecting activities that will result in the desired improvement.

The EQRO also recommends that in developing a PIP, the CMO should utilize a project team to answer the following three questions: (1) What are we trying to accomplish? (2) How will we know a change is an improvement? and (3) What changes can we make that will lead to improvement? The EQRO also made a number of recommendations related to data collection. For example, the CMOs should create data indicators that answer the question of how they will know when a change is an improvement. It was also suggested that the CMOs need to review their data collection methods to determine what changes, if any, are needed to provide for more frequent data collection and the ability to trend data.

Presented are key EQRO findings from each of the CMOs:

Fond du Lac County

Strengths – Both PIPs (*Depression Guideline for Prevention and Wellness* and *Members' Use of Preventive Health Measures: Mammogram, Pap Smear, PSA Test*) at this CMO are poised to see improvement over time. They are implementing the PIPs according to the specified process.

Areas for improvement - *Members' Use of Preventive Health Measures: Mammogram, Pap Smear, PSA Test* was lacking a data collection protocol, so that the data collected was not sufficient to show improvement. *Depression Guideline for Prevention and Wellness* has limitations because it does not stratify the target population by severity; thus, it may not reach the maximum level of improvement.

La Crosse County

Strengths – For *Stability of Personal Care Workers* PIP, the data collection process was established to allow for repeated data collection over time to differentiate between short-term events and real improvement. The second PIP - *Reducing Nursing Home Placements* – was identified as having the potential to be successful if the CMO begin the project over again with more focus.

Areas for improvement – The *Stability of Personal Care Workers* PIP did not progress beyond initial data collection and preliminary analysis. This project also did not attain its goal of improving member satisfaction. In general, they did not follow the design and implementation steps for PIPs.

Milwaukee County

Strengths – The *Appropriateness of Residential Facility Permanent Placements* PIP has a strong chance of seeing improvement because the CMO is adhering to the PIP process. The second PIP, *Dementia Early Detection and Referral Process for Individuals with Memory Loss*, is also poised to positively affect members because the CMO has identified that memory loss and dementia affect a significant proportion of their members. Thus, the project is likely to improve

the quality of services to members because the CMO selected a project that focuses on an issue that significantly impacts its members.

Areas for improvement – *Appropriateness of Residential Facility Permanent Placements*, despite being in place for two years, has not passed the stage of collecting initial data. Data collection is not being conducted in a timely manner. *Dementia Early Detection and Referral Process for Individuals with Memory Loss* is lacking a focus, was based on data external to the CMO and is being co-lead by individuals outside the CMO. The scope has become so broad that it may be difficult to measure actual improvement attributable to the project.

Portage County

Strengths – The *Improving Participation in the Life of the Community for CMO Members with Physical Disabilities* PIP, was identified as a good project because it focuses on an area identified as in need of improvement by members. The CMO's second PIP, *Improving the Health Status of Members with CHF by Reducing Emergency Room Visits and Inpatient Hospital Days*, has a good chance of achieving improvement because the CMO has put in place a good method for measuring improvement.

Areas for improvement - *Improving Participation in the Life of the Community for CMO Members with Physical Disabilities* was halted as its scope grew too large. This may have occurred because a team was not assigned specifically to this PIP. *Improving the Health Status of Members with CHF by Reducing Emergency Room Visits and Inpatient Hospital Days* was weakened by the fact that it turned out to be difficult to identify members with the condition of interest. There also was not a team designated for this project.

Richland County

Strengths – The *Reduction of Occurrence of Urinary Tract Infections* PIP, produced useful educational materials for members, as well as a helpful practice guideline. *Improving Timeliness of Assessment and Planning*, the second PIP, is also expected to result in improvement as long as the CMO follows the improvement process, and creates data collection and analysis protocols.

Areas for improvement – The first PIP, *Reduction of Occurrence of Urinary Tract Infections*, ended when data showed there was not room for improvement in this area; however, preliminary data was not collected to test this assumption about this condition. For the second PIP, *Improving Timeliness of Assessment and Planning*, the CMO did not demonstrate that the topic would impact enough members, or significantly improve member health.

5. Member Centered Assessment and Plan Reviews

The EQRO conducts member centered assessment and plan (MCAP) reviews to monitor the care plan development process to assure health and safety of members and to evaluate compliance with contract standards. The review also provides an opportunity for DHFS to learn how the CMOs are using the care planning process to work collaboratively with members to identify and achieve desired outcomes. The reviews are intended to identify opportunities for improvement in the delivery of services.

The MCAP reviews are conducted with an established protocol that has been approved by DHFS. All EQRO plan reviewers have had previous experience with the target groups served

within the Family Care program and have received specific training related to the review guidelines.

There are three components to the MCAP process:

1. All MCAP reviews are conducted on-site at the CMO.
2. If there are no outstanding issues or any outstanding issues have been resolved, then the EQRO reviewer recommends the plan for approval. Any situations that remain unresolved are deemed to be in a “pending” status until the corrective measures have been made.
3. When any and all corrective measures have been finalized, the EQRO will recommend the plan for approval or defer the plan to DHFS for review. Any issues or concerns related to quality or issues that call into concern the health, safety or welfare of members are also referred to DHFS.

The following table illustrates the distribution of MCAP reviews conducted by the EQRO for the 3rd and 4th Quarters of 2002.

Table 13 Review Type by Location Breakdown										
CMO	3 rd Quarter 2002					4 th Quarter 2002				
	New	Targeted	Continuing	Special Targeted	Disenrollment	New	Targeted	Continuing	Special Targeted	Disenrollment
Richland	3	1	5	0	0	3	2	5	0	0
Milwaukee	3	2	5	2	0	3	2	4	0	1
La Crosse	3	53	5	0	0	5	5	12	0	0
Portage	3	1	5	0	0	3	2	5	1	0
Fond du Lac	3	2	5	0	0	1	1	5	0	2

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003.

The table below shows the total number of MCAP reviews that occurred at each CMO for the third and fourth quarters of 2002, by review type.

Table 14 3 rd and 4 th Quarter - 2002 MCAP Reviews					
CMO	New	Target	Continuing	Special Targeted	Disenrollment Pilot Review
Richland	6	3	10	0	0
Milwaukee	6	4	9	2	1
La Crosse	8	58	17	0	0
Portage	6	3	10	1	0
Fond du Lac	4	3	10	0	2
Total	30	71	56	3	3
Total MCAP Reviews = 160					

Source: Metastar, Inc. Family Care Annual Report and Attachments. August 7, 2003.

From the 160 reviews conducted by the EQRO across all five pilot CMOs, more than 50 percent (88 plans) were pending during the first level of the review process. Among those, 51 were potential unmet needs and 23 were related to health and safety. Four of the five CMOs were able to resolve all potential unmet needs and health and safety concerns through additional information and clarification, further documentation of interventions already in place, and further action and/or information from the care management interdisciplinary teams. One CMO (La Crosse County) had unmet needs and health and safety concerns remaining after the third level of review. It is for this reason that La Crosse County had many more targeted reviews as seen in

Table 14. Presently, La Crosse is working with DHFS and the EQRO on a strategy to improve the overall quality of care within the CMO.

The MCAP reviews illustrated a number of strengths. In terms of maintaining a member-centered focus during the care planning process, the CMOs were found to be assuring that family members, friends, and other informal supports assisted in conveying preferences for members when the member could not convey their preferences independently. The CMOs were also successful in providing service substitutions that were agreeable to the member when the CMO could not meet the member's original preference. The CMOs were also rated well by the EQRO on a number of procedural issues such as documenting levels of care and assuring that both a nurse and social worker participate in the assessment process.

However, all of the CMOs had difficulty meeting contract requirements related to specific timeframes for assessment activities. It was recommended that CMOs continue to develop their internal tracking systems so that data can be reviewed more frequently to monitor the assessment and planning process. Improved monitoring systems would also allow the CMOs to identify unmet needs and health and safety concerns earlier than possible under current systems. The EQRO also plans to work with DHFS and the CMOS to better define the essential elements that need to be documented in the care plan, to develop more clear guidelines on when notices of action are required (to ensure that members are informed of their rights) and to better define the roles of the various specialties on the interdisciplinary care planning teams. The 2002 reviews found that there was confusion on these three issues across the CMOs.

The EQRO has identified a number of opportunities for improvement related to the MCAP process, including a review of how well the MCAP process addresses member outcomes. The current process appears to assess the CMO service and support coordination function and specific contract requirements, but it does not appear to measure how well the CMO is doing on meeting member outcomes – a primary focus of the program. This disconnect between the MCAP process and a primary program goal is recognized by the CMOs, DHFS and the EQRO. The EQRO will also be evaluating whether it is necessary to have more than one review tool. Currently, one tool is used for all members selected for review, including new members, members who are enrolled for at least a year and members who have been selected based on a set of risk factors. The “one size fits all” approach may not be efficient. Findings indicate that the use of one tool for all groups can lead to the collection of redundant or irrelevant information, and may also lead to the omission of important data.

For the 2002 reviews, the CMOs were not provided with the findings from the EQRO first and second levels of review and the EQRO did not track the reasons why particular criteria were not met. It has been determined that access to this information would be beneficial to the CMOs quality improvement efforts. It was also discovered that there was no protocol for identifying the circumstances under which the EQRO should perform an intensified or targeted review.

For the 2003 reviews, the EQRO and DHFS worked together to address the areas for improvement. For example, new review tools developed for each of the three groups of members were implemented in the first quarter of 2003 reviews. New protocols are being

developed and the review tool is being further revised to allow for the collection of additional data that would enhance the CMOs quality improvement efforts.

C. Member Outcomes

As discussed previously, measuring member outcomes is an essential component of the Family Care program, which serves to ensure the quality of services and to measure when the program is meeting its goal of providing member-centered services. As was discussed in Section III., the member outcome tool is used with both Family Care members and case managers in order to identify if the outcome is present (member interview) and/or the “support” for the outcome is present (care manager interview).

Broadly speaking, the determination of whether or not an outcome or support is present considers the following questions³²:

- Is each outcome present for each person as he or she defines it?
- Is the organization providing supports and services to promote achievement of those outcomes?

The Department surveys Family Care members on the following 14 items:

Self-Determination and Choice Outcomes

- People are treated fairly.
- People have privacy.
- People have personal dignity and respect.
- People choose their services.
- People choose their daily routine.
- People achieve their employment objectives.
- People are satisfied with services.

Community Integration Outcomes

- People choose where and with whom they live.
- People participate in the life of the community.
- People remain connected to informal support networks.

Health and Safety Outcomes

- People are free from abuse and neglect.
- People have the best possible health.
- People are safe.
- People experience continuity and security.

1. Overview of Member Outcome Results

To date, there have been three rounds of randomly selected Family Care members who have been surveyed: Initial interviews were conducted between November 2000 and January 2001 (N=355); Round 2 interviews occurred between May 2001 and November 2001 (N=492); and, Round 3 interviews happened between January 2003 and June 2003 (N=491). Round 4

³² DHFS. CMO Member Outcomes: The 2001 Assessment. See this document for a more detailed specification of the logic utilized for determining the presence or absence of an outcome or support.

interviews began in the latter part of Summer 2003. In order to ensure the necessary proportions of individuals from each target group are represented, a weighted sampling method was employed for the first two rounds. Interviewers for this survey process are trained in assessment techniques developed and utilized by the Council. With the coordination of the EQRO, Council trainers administer the techniques to be employed when conducting member outcome interviews.

Given the emphasis on member centered quality outcomes in the Family Care program and the intended application of this tool, understanding and interpreting the results is of great importance. In examining the changes between each of the three rounds, the most consistent identifiable pattern is the similarity between outcomes and support during Round 1 and Round 3. Round 2 results tend to spike in both an up and down direction. Department staff have noted concerns that there were differences among interviewers and the training between the three rounds and that these differences, rather than real program effects, are likely to account for differences between the rounds.

Differences between the rounds, included: varying levels of effort to obtain consent from the individuals selected for the interviews, which were voluntary; the period of time during which the interviews were conducted; different instructions given to care managers regarding whether they should consult case notes during the interviews; whether or not care management interviews could be conducted over the telephone (member interviews were always in person); whether interviews were conducted by interviewers familiar or unfamiliar with the program they were assessing; among other minor inconsistencies.

Even with these differences, a comparison of the three rounds does identify a number of outcomes where there is a consistent upward or downward trend over time. Specifically, People Have Privacy-supports and People Remain Connected to Informal Support Networks-outcomes illustrate a steady pattern of increase over the three rounds. Conversely, People Have the Best Possible Health-supports and People are Satisfied with their Services-outcomes demonstrate a steady decrease over the three rounds.

An average for all three rounds has been computed and is displayed in Table 15. Utilizing this combined average over the three rounds helps to account for some of the observed differences between each round over the three rounds. It is recommended that DHFS use this combined average to establish a baseline from which to measure change in all future survey rounds.

When looking at the combined averages across the 14 outcomes, a more consistent pattern is revealed, (see **Attachment 3** for the combined outcome and support table by target group across the three rounds). Those outcomes and supports with the highest findings across all three target groups included People have Privacy outcome and support, People are Free from Abuse and Neglect outcome, and People are Safe outcome. There were clearly some very specific outcomes and supports that raise concern, particularly among the developmentally disabled. In particular, the most troubling findings for the developmentally disabled were People Choose Their Services outcome and support, People Experience Continuity and Security support, People Achieve their Employment Objectives outcome and support, and People Choose Where and With Whom They Live outcome. Those outcomes and supports among the physically disabled that were of most concern included People Participate in the Life of the Community outcome and People

Experience Continuity and Security outcome and support. Finally, the only major concern for the collective three rounds for the elderly was People Choose Their Services outcome. Overall, between target groups no specific trends or patterns are clearly identifiable.

2. Family Care Outcomes Compared to Other Long-Term Care Programs

In addition to Family Care, member outcome interviews have been conducted with participants in the Wisconsin Partnership Program, PACE, COP Waiver and CIP Waivers programs, but not with residents of nursing facilities. While Family Care reported better outcomes than the waivers, any meaningful comparisons between the Family Care members surveyed and individuals from other programs must take many factors into account.

The non-Family Care programs provide a different range of services to different groups of people (levels of disability, age, etc.) in different areas of the state. Statistical analyses to control for these differences, among others, would be necessary before one could definitively conclude that any one of these programs is doing a better or worse job than another.

Although the 14 Family Care outcomes represent basic and nearly universal human values (choosing who one lives with, health, safety, having friends and family, privacy, fairness, respect, etc.), they were explicitly defined for the member outcome tool to be utilized with the Family Care program. For example, by the second year of the Family Care interviews, Family Care managers should have been aware that they could be evaluated on whether or not they ensured that “People are treated with respect,” in all situations by all their caregivers. In contrast, care managers with the CIP or COP waiver program would not have had this awareness and would not have been expected to go beyond their personal responsibility to ensure that waiver-funded personnel were treating members with respect.

Familiarity with the tool that would be used to assess performance may also have affected the different programs’ care managers’ ability or willingness to respond fully. Family Care care managers are aware that their program’s performance is routinely assessed using this tool and by the second-year interviews, many of them had experience with this measurement tool. In contrast, care managers in other programs were participating in what they believed to be one-time interviews unrelated to their program’s normal performance assessment methods. In other words, the outcome interview may have carried more weight with the Family Care managers than staff from other programs and consequently, they may have been more thorough or positive in their response.

As we discussed previously, this method of assessing members’ progress in meeting pre-defined outcomes was developed by the Council. The Council has more than a decade of experience and analysis in using this method with programs serving adults with disabilities and the tool was originally developed to be used with a disabled population. Therefore, the probing questions asked by the interviewers had to be adapted for use with frail elders. However, this set of outcomes and these methods of measurement have not been explicitly tested with frail elders to determine whether they measure their quality of life accurately and reliably. The DHFS is currently planning a project to develop and validate outcomes for the elderly population. Table 15 summarizes the three rounds of Family Care and waiver member outcome results.

Table 15 Member Outcome Results for Family Care and COP/CIP Waiver Programs (Percent With Outcome or Support Present)						
		FC Round 1	FC Round 2	FC Round 3	Average of 3 Rounds	Waiver
Choose Where To Live	Outcomes	65.9%	67.2%	56.4%	61.9%	49.3%
	Supports	61.8%	74.8%	50.5%	61.3%	42.5%
Employment Objectives	Outcomes	59.2%	65.8%	58.0%	58.9%	39.5%
	Supports	59.8%	72.9%	52.7%	59.7%	36.2%
Satisfied with Services	Outcomes	77.8%	71.8%	71.3%	72.2%	63.6%
	Supports	71.4%	79.4%	71.1%	72.6%	63.0%
Choose Daily Routines	Outcomes	78.7%	81.2%	73.5%	77.3%	64.4%
	Supports	74.6%	80.1%	71.3%	74.9%	50.4%
Privacy	Outcomes	89.0%	88.2%	91.0%	88.5%	84.4%
	Supports	76.7%	78.8%	83.3%	79.0%	45.8%
Participate in the Community	Outcomes	55.1%	60.7%	56.0%	56.1%	40.3%
	Supports	55.6%	68.3%	57.6%	59.7%	37.3%
Dignity and Respect	Outcomes	76.5%	76.6%	72.3%	73.8%	65.5%
	Supports	71.6%	74.7%	72.7%	72.2%	32.9%
Choose Services	Outcomes	42.9%	50.4%	45.4%	46.9%	34.5%
	Supports	42.8%	65.3%	43.2%	50.7%	32.9%
Informal Supports	Outcomes	62.8%	64.1%	65.2%	62.5%	46.0%
	Supports	65.8%	75.9%	63.5%	66.7%	49.0%
Safe	Outcomes	73.8%	81.3%	70.5%	74.7%	72.6%
	Supports	67.2%	69.1%	67.2%	67.3%	51.0%
Treated Fairly	Outcomes	78.8%	70.9%	73.7%	72.8%	55.1%
	Supports	62.8%	74.6%	70.9%	69.4%	43.6%
Best Possible Health	Outcomes	63.3%	50.8%	55.4%	55.9%	46.6%
	Supports	70.3%	66.7%	61.7%	66.7%	51.0%
Free from Abuse And Neglect	Outcomes	86.5%	84.3%	86.2%	84.5%	83.8%
	Supports	63.8%	61.4%	74.1%	65.5%	42.5%
Continuity and Security	Outcomes	61.2%	53.1%	56.8%	54.9%	50.1%
	Supports	54.4%	44.6%	54.4%	49.3%	39.2%
Interviews		355	492	491	1338	365
Margin of Error		± 4.5%	± 4.5%	± 8.1%	± 4.9%	± 5.2%

Source: MetaStar, DHFS and APS Healthcare calculations

3. Exploratory Analysis of Member Outcome Results (Rounds 1 – 3)

Initial comparisons after the completion of Round 3 by DHFS and the EQRO of the results from both the collective and individual level data for each round of the Family Care Member Outcome interviews suggest that certain differences and similarities exist within these results.

Specifically, by comparing each round for both outcomes and supports, held side by side for each of the 14 items for both outcomes and supports, Round 2 results appear to differentiate

themselves with substantially greater percentages, particularly in the support results, from Rounds 1 and 3.

A natural next step would be to test for significant differences between rounds of interviews, particularly given some of the previously addressed concerns stemming from each round with inter-rater reliability. Should significant variations exist, it would be important to begin work identifying the source of these (the individual, contextual level aspects, or inconsistencies among interviewers, among others). Therefore, this analysis was conducted to address three specific questions:

1. Do significant proportions of variation in each of the fourteen outcomes and supports exist between each of the CMOs?
2. Do significant proportions of variation in each of the fourteen outcomes and supports exist between each round of the Member Outcome Interviews?
3. If significant differences do exist for the previous questions, what characteristics significantly contribute to this variation?

Analytic Strategy

Using data supplied by the EQRO from the Family Care Member Outcome Interviews (for all 3 Rounds N=1344), a multilevel modeling approach utilizing hierarchical linear modeling (HLM) software was chosen to disentangle effects that might be occurring at the CMO and interview round level that other statistical methodologies are unable to distinguish. The hierarchical nature of Wisconsin's Family Care program, where individuals are nested within CMOs, as well as being nested within interview rounds within the context of the Member Outcome Interviews, readily lends itself to analysis with multilevel modeling. Within the multilevel modeling framework, each level in the data structure (e.g., repeated observations within persons, persons within a CMO or interview round) is formally represented by its own sub-model. Each sub-model represents the structural relations occurring at that level and the variability at that level. Specifically, through this analytical technique, statistical differences and variability between Family Care CMO counties and each round of Member Outcome Interviews can be identified.

This approach accounts for contextual differences above and beyond the individual level. HLM separates out the amount of variance in the dependent variable (in this case, the 14 member outcome and supports) that is explained at each structural level of analysis. Thus, this technique pulls apart the effects on the dependent variable from independent variables measured on the simple level from the interaction of the effects from the same independent variable with unobserved error from a more complex level of analysis.

Results

Substantial significant differences exist on several outcomes and supports when testing for differences between CMOs and between Interview Rounds. Below is a table that identifies significant variation between individuals who were nested into each of these two higher levels. Only three outcomes did not yield significant variation between CMOs and Interview Rounds and are not included in Table 16:

- People are satisfied with services.
- People participate in the life of the community.
- People are free from abuse and neglect.

Table 16 Significant Differences Between CMOs and Interview Rounds on Member Outcomes

Member Outcome Interview Question (Outcome/Support)	Difference Between CMOs	Difference Between Interview Rounds
People are treated fairly – Outcome	**	
People are treated fairly – Support	**	**
People have privacy – Outcome	**	
People have privacy – Support	**	**
People have personal dignity and respect – Outcome	**	
People have personal dignity and respect – Support	**	*
People choose their services – Outcome		**
People choose their services – Support	**	*
People choose their daily routine – Outcome	**	**
People choose their daily routine – Support	**	
People achieve their employment objectives - Outcome	**	**
People achieve their employment objectives – Support	**	**
People are satisfied with services – Support	**	
People choose where and with whom they live - Outcome	**	**
People choose where and with whom they live – Support	*	**
People participate in the life of the community – Support	**	**
People remain connected to informal support networks - Outcome	*	
People remain connected to informal support networks – Support	**	**
People are free from abuse and neglect – Support		**
People have the best possible health – Outcome		**
People have the best possible health – Support	*	*
People are safe – Outcome	**	**
People are safe – Support	*	
People experience continuity and security – Outcome		*
People experience continuity and security – Support	**	**

Note: Significance levels = ***<0.01**<0.05; *<0.10

Source: APS analysis of Department of Health and Family Services (DHFS) Member Outcome data.

Next, for those outcomes and supports with significant variation between CMOs and Interview Rounds, test were conducted to control for and identify the individual level characteristics that significantly contributed to this variation. Initially, five covariates were tested: age (in years at the time of the interview round); gender; Family Care target group membership; a collapsed variable indicating prior waiver, COP or Medicaid participation before Family Care entry; and, total months in the Family Care program (at the time of the interview round). Only two variables, Prior Participation and Months in Family Care yielded substantive contributions in multiple Outcomes and Supports. Results are presented in Table 17.

Table 17 Significant Differences Based on Prior Participation and Months in Family Care for Member Outcome Results				
Member Outcome Interview Question (Outcome/Support)	Difference Between CMOs		Difference Between Interview Rounds	
	Prior Participation	Months in Family Care	Prior Participation	Months in Family Care
People are treated fairly – Outcome		*		
People are treated fairly – Support	*	**	**	*
People have privacy – Outcome		*	*	*
People have privacy – Support	*	**	*	*
People have personal dignity and respect – Outcome	*			
People have personal dignity and respect – Support				*
People choose their services – Outcome	*	*		**
People choose their services – Support		**	*	
People choose their daily routine – Outcome				*
People choose their daily routine – Support	*	**	**	*
People achieve their employment objectives – Outcome				**
People achieve their employment objectives – Support	*	**	**	
People are satisfied with services – Support		**		*
People choose where and with whom they live – Outcome		*		**
People choose where and with whom they live – Support		*	**	
People participate in the life of the community – Support	*	*	*	*
People remain connected to informal support networks - Outcome		*	*	
People remain connected to informal support networks – Support		**		*
People are free from abuse and neglect – Support		*		*
People have the best possible health – Outcome	*			*
People have the best possible health – Support	**	**	**	**
People are safe – Outcome				*
People are safe – Support		*		
People experience continuity and security – Outcome		*		**
People experience continuity and security – Support	*	*	*	

Note: Significance levels = ***<0.01**<0.05; *<0.10

Source: APS analysis of Department of Health and Family Services (DHFS) Member Outcome and Medicaid eligibility data.

Discussion

Overall, a substantial amount of the total variation for each outcome and support stems from differences between the CMOs and the Interview Rounds. These values ranged from fourteen to nearly twenty-nine percent. While one might expect to see some differences between interview rounds, the finding of significant differences does raise questions about the cause of that variation and the possibility of poor inter-rater reliability among interviewers. In order to measure whether or not inter-rater reliability contributed to these differences, contextual level variables (variables unique to the interview round: training, prior experience interviewing, etc.) could be addressed further. Significant differences between the CMOs also warrants further investigation to determine whether these differences are the result of implementation or process differences at the CMO level.

It was not terribly surprising to find that gender, age, and target group membership did not explain differences between the rounds given that the sample selection was based upon replicating the proportions of target group members for each county. Therefore, much of their initial contribution would have already been captured. However, the level of importance that the

length of Family Care participation and whether or not someone had prior participation in Medicaid or a waiver program can not be understated. Each of these variables significantly contributed to accounting for differences at the individual level. The more time an individual spent in Family Care resulted in substantially more frequent indicators of outcomes and supports being present. Intuitively, this makes sense in that CMOs and members' care managers would have more time to work with the member to ensure that their individual outcomes and supports were being met, where possible.

Those individuals coming to Family Care with prior Medicaid or waiver participation tended to have lower reports of outcomes and supports being present. Potential reasons for this might be the presence of a learning curve of sorts or the need to readapt to the Family Care system after having been acquainted with a different system versus the "no prior experience" individual who is starting fresh and has not been entrenched in a previous way of utilizing a publicly funded long-term care system. Further, those individuals with no previous experience might be in higher ranges of functional ability (e.g., the frail elderly having resided in their community and sustained continuous contacts with family and friends) and more inclined to identify the presence of outcomes and supports.

4. Assessment of Member Outcome Tool

The Council is an organization focused on serving people in Intermediate Care Facility/Mentally Retarded (ICF/MR) and it would appear that the analysis they used to develop the Personal Outcome Measures Tool (Gardner, Nudler and Champman, 1997) utilized data from this population³³. The fact that the tool's construct validity was based on data primarily from institutionalized populations and data employed for the analysis was from these specific target group, might be responsible for some of the variation seen between target groups within the Family Care members surveyed. The tool may not be as reliable for measuring outcomes among the elderly population and disabled individuals living in the community. It should also be noted that concerns about the appropriateness of certain questions for Family Care members raised by CMO staff in multiple counties during the Independent Assessment Site Visits, as well as these individuals raising concerns of this nature during other meetings (see Section VIII. A. 1. for details pertaining to Independent Assessment Site Visits)³⁴.

Interviewer Training

Both CMO Member Outcome reports (March 2001 and April 2002) note the Council's experience with people with disabilities, and the Department's efforts "to adapt the assessment techniques to the needs of elderly consumers." Additionally, both documents contain copies of supplemental questions that interviewers can more effectively tailor to one of the three target groups for each of the 14 outcomes.

³³ Gardner, J.F., Nudler, S. and Chapman, M.S. (1997). Personal Outcomes as Measures of Quality. *Mental Retardation*. Vol. 35, No. 4, p. 295-305.

³⁴ CMO Directors Meeting, July 11, 2003, Wisconsin Dells, WI.

Inter-rater reliability

The Council states that inter-rater reliability is achieved through the following process: testing interviewers following their training; and, periodic re-testing throughout the year by someone from the Council or another interviewer who has been “reliabilized” by matching 85 percent or greater of his/her responses to the responses of someone already trained and proven to have been previously reliabilized for this process.

As is the case with any measure, the reliability of observational measures needs to be addressed. The most prevalent approach to assessing the reliability of observational measures is to calculate interobservational agreement.³⁵ The problem is that although interobserver agreement addresses a particular source of error and may be important in its own right, it is not an index of reliability.

Although many interobserver agreement indices have been proposed, they are aimed at estimating percentage agreement among interviewers. Specific indices do differ, among other things, in whether or not they: (a) are sensitive to degrees of agreement, and (b) correct for chance agreement.

In classical test theory, reliability is defined as the ratio of true score variance to observed score variance. Complexity and concern in the administering of the Member Outcome Interviews arise, in part, because more than one interviewer may be used at any one time and more than one observational period may be scheduled. Consequently, measurement errors in the observations may originate from various sources. For example, the interviewers may disagree as to the outcome or support of interest, the outcomes or supports themselves may vary randomly, and/or there may be changes in the circumstances of observation.

Interobserver agreement indices address only potential errors among interviewers. Moreover, these errors reflect interviewer differences in the use of the observation instrument, in its scoring perhaps, rather than in the behaviors themselves. Although agreement among interviewers is certainly important and should be addressed, it does not address broader concerns. Interviewer agreement may be quite high, yet reliability may be low. Potential contributors to low reliability under these conditions include the following: disagreement on individual items, although the total scores are equal to each other; variations in behaviors from one occasion to another; the group being interviewed is relatively homogeneous with respect to the phenomena of interest; and observer drift (the tendency for interviewers to forget their training over time).

5. Recommendations and Next Steps

Clearly, a wealth of information can be derived from the Member Outcome Interviews in helping the Department assess quality of the program and services among the Family Care membership. This tool, over time, can be useful in drawing attention within the Family Care program to areas where quality exists for further replication or where greater attention is needed across counties, particularly as expansion is considered.

³⁵ See Frick and Semmel (1978), for distinctions among criterion related to agreement, intraobserver agreement, and interobserver agreement.

The following recommendations are suggested:

1. Continue to build upon existing Member Outcome Interview rounds for comparative purposes to understand differences over time. In-depth analyses and scrutiny of this nature can only enhance the quality of the program that would be reflected in addressing areas of need or continued building upon existing strengths. Further, identifying differences across interview rounds such as the interviewers themselves, duration of interviews, telephone or in-person follow-ups, who scheduled the interviews and how, among others, will help identify what contextual aspects of each interview round are contributing to significant differences.
2. Benchmarks of quality need to be established jointly by the CMOs and the Department if the Member Outcome Interviews are to be utilized effectively as a measurement of quality in the Family Care program. Failure to establish thresholds and attempts to build upon existing survey rounds for improvements diminishes the value of these results. One solution might be to form benchmarks based upon averages from the first three rounds.
3. At this time, a clear understanding of interpreting meaning and utilizing results at the CMO level does not seem to be present. However, the Department and the EQRO presently are considering offering training to CMO staff, through the Council, on the Member Outcome Interview Survey as well as going to great lengths in helping to flesh out meaning from the Member Outcome Survey results. This clearly seems to be the proper step. CMO staff would benefit immensely from the comprehensive training the Council provides. Efforts such as these will help facilitate greater understanding, dissemination and usefulness of the information at the county level.
4. Future rounds of the Member Outcome Survey should consider ensuring a sample selection from each county that extends beyond just capturing target group proportions. These sample selections should also include individuals, representative of county aggregates, that have been a Family Care member for less than twelve months and those that have been a member twelve months or longer. The importance of Family Care tenure in achieving outcomes and support for outcomes was evident in the analysis conducted for the Independent Assessment.
5. Finally, the Council will be conducting its reliability testing on Family Care Member Outcome Survey interviewers every six months rather than the previous twelve month schedule. While this more frequent reliability testing will likely improve the accuracy of the data collected, it is also recommended that statistical tests (e.g., Cohen's Kappa) be employed to dispel any concerns of inter-rater reliability issues.

D. Grievance and Appeal System

All CMOs are required to have a system in place for members that include a grievance process, an appeal process and access to the State's fair hearing system. This system can be used by Family Care members to seek a reversal of a CMO notice of action (e.g. any act, decision or omission by the CMO, including but not limited to, the quality of care or services provided, and

aspects of interpersonal relationships such as rudeness of a provider or employee, or failure to respect the member's rights).

1. Grievance and Appeal Contract Requirements

The CMO contract defines an appeal as a request for review of an action. The contract defines a grievance as an expression of unhappiness about any matter other than an action. The term is also used to refer to the overall system that includes grievances and appeals handled at the CMO level and the DHFS level, and access to the State fair hearing process. According to the contract, an action can mean the following:

- The denial or limited authorization of a requested service, including the type or level of service.
- The reduction, suspension, or termination of a previously authorized service.
- The denial, in whole or in part, of payment for a service.
- The failure to provide services and support items included in the member's MCP/ISP in a timely manner, as defined by DHFS.
- The failure of a CMO to act within the timeframes established in the contract for resolution of grievances or appeals.
- The development of an individualized service plan that is unacceptable to the member because any of the following apply:
 - ❖ The plan is contrary to a member's wishes insofar as it requires the member to live in a place that is unacceptable to the member.
 - ❖ The plan does not provide sufficient care, treatment or support to meet the member's needs and identified Family Care outcomes.
 - ❖ The plan requires the member to accept care, treatment or support items that are unnecessarily restrictive or unwanted by the member.

Subjects for grievances include any act, decision or omission by the CMO, including but not limited to, the quality of care or services provided, and aspects of interpersonal relationships such as rudeness of a provider or employee, or failure to respect the member's rights.

The member may file an appeal, orally or written, formally or informally to the CMO, and request a DHFS review of the appeal and/or a State fair hearing. The member is required to file the grievance within 45 days from the date on the CMO's notice of action. The notice of the action must explain the CMO's action in writing, reasons for the action and member's rights as well as the procedures for exercising those rights. The notice must be delivered in an appropriate timeframe defined by the contract.

In handling grievances, the CMO is required to provide reasonable assistance needed by the member for the appeal process and ensure the member that the decision-makers are free from conflict of interest. The member should be given access to any documents needed that would serve as evidence in the appeal. The CMO must dispose of each grievance, resolve each appeal and provide notice within the timeframe specified in the contract. The results of the resolution process are then documented and dated. For appeals that are not resolved wholly in favor of the member, the member should be made aware that he/she has a right to request a DHFS review or State fair hearing.

If the CMO determines that following the standard course for resolution may seriously jeopardize the member's life or health or ability to maintain maximum function, they may expedite a review process for the appeal. In case of a denial of a request for expedited resolution of an appeal, the member should be given a prompt oral notice and a written notice within two calendar days.

2. Analysis of Grievance and Appeals Data

DHFS staff in Madison recently began investigating appeals and grievance data filed with the DHFS Regional Offices. While this data has not been routinely collected and analyzed, it appears that the majority of grievances and appeals filed with the Regional Offices have been service and eligibility related. DHFS is currently working to collect and analyze additional data sources that would provide them with a better understanding of the grievance patterns and practices to date. Recent budget cuts and staff reductions at the Regional Offices has necessitated the identification of a new entity to process grievances and appeals at the state level. Beginning July 1, 2003, the Family Care EQRO will be conducting the reviews of the appeals and grievances that would have otherwise been filed with DHFS regional offices. It is hoped that the new process will allow for better data collection on this important program component.

It is DHFS's desire to see grievances and appeals resolved at the local CMO level. While this goal is an admirable one, assurances must be in place to guarantee that the rights of members are not being compromised in any manner. In order to better monitor this process, DHFS plans in the near future to begin efforts to analyze other data sources, including CMO log books and annual summary reports, and those case filed with the Wisconsin Department of Administration's State Fair Hearing office to ensure that members rights are being protected.

DHFS staff also indicate an interest in utilizing the data that is already available to them. One such effort DHFS expressed intention to undertake is that of cross-referencing the various sources of grievance and appeals data with that of the Member Outcome survey results. This plan offers much potential to informing multiple components of the Family Care program to ensure quality for the members. Once this and other planned efforts begin, DHFS will have the ability to utilize various sources of information.

The following table illustrates the number of Family Care appeals and grievances that have been channeled through DHFS regional offices by CMOs. Detailed information of the reason for the grievance or appeal was not available beyond geographic information that makes it difficult to understand the high levels observed in Fond du Lac for CYs 2001 and 2002.

Table 18 Family Care Grievances and Appeals filed with DHFS Regional Offices As of April 4, 2003							
	Fond du Lac	La Crosse	Milwaukee	Portage	Richland	Unknown	Total
CY 2000	4	0	2	3	0	0	9
CY 2001	12	4	4	4	2	0	26
CY 2002	9	3	9	2	2	0	25
CY 2003	1	2	6	0	0	6	15
Total	26	9	21	9	4	6	75

Source: APS analysis of DHFS data.

3. Grievances and Appeals Comparative Illustration

For comparative purposes, the following information on waiver hearings and appeals through the Wisconsin Department of Administration’s fair hearing process is to illustrate the rates of appeals and grievances for other Medicaid managed care or fee-for-service programs. Additionally, further information can be obtained by DHFS on the rates of appeals and grievances for other Medicaid managed care or fee-for-service programs within Wisconsin. This type of information (if converted to per member rates) could be utilized by DHFS in the future to assist in establishing benchmarks as to how the Family Care program compares to other programs in terms of proportions of appeals, grievances and fair hearing requests.

Table 19 Division of Hearing and Appeals COP and COP-Waiver Appeals CYs 2001 and 2002					
Decision	2001 Appeals		2002 Appeals		
	Count	Percent	Count	Percent	
Dismissed	21	47.7%	20	42.6%	
Withdrawn	12	27.3%	18	38.3%	
Remanded	6	13.6%	4	8.5%	
Abandoned	5	11.4%	3	6.4%	
Still Pending	0	0.0%	2	4.3%	
Totals	44	100.0%	47	100.0%	
Description					
Income/Assets Too High	11	25.0%	8	17.0%	
Eligible Through Other Programs	0	0.0%	2	4.3%	
Cost Share Too High/No Paid	8	18.2%	7	14.9%	
Not Functionally Eligible	3	6.8%	1	2.1%	
Denial of Equipment	4	9.1%	2	4.3%	
General Denial	14	31.8%	20	42.6%	
Miscellaneous	4	9.1%	7	14.9%	
Totals	44	100.0%	47	100.0%	

SOURCE: WI DOA Division of Hearings and Appeals

E. Long-Term Care Functional Screen Quality

As the mechanism for determining functional eligibility for Family Care, ensuring the validity and reliability of the LTCFS is a critical quality assurance activity. Ensuring LTCFS quality is a

process that has been on-going for over four years³⁶. Initial efforts began with the state's long-term care redesign and the implementation of the Family Care program.

With the assistance of nursing staff in the DHFS, Bureau of Quality Assurance (BQA), the LTCFS tool was developed to parallel existing Medicaid nursing home "levels of care". Individual responses to the LTCFS are processed, and then a level of care (either intermediate or comprehensive) is generated for the individual. BQA nurses were used to test the logic of the tool and to ensure that it was correlated to the Nursing Home levels of care.

A random sample of individuals from the three Family Care target groups was selected and administered screens to test the logic of the screening tool. Using their nursing expertise, the BQA nurses were asked to determine nursing home level of care, based on screen information. There were two samples of 151 nursing home cases and 131 developmentally disabled cases³⁷. Results were analyzed, and the necessary screen logic adjustments were made until the correlations between the screen logic and the BQA nurses were within acceptable double blind study parameters. There was 84 percent agreement in the nursing home cases and near perfect agreement with the developmentally disabled cases.

An additional study was conducted with two different samples of 79 nursing home and 67 developmentally disabled cases for whom nursing home level of care was established during 1999. The cases were selected to be representative of all regions of the state, as well as institutionalized and community based individuals. Four nurses reviewed the BQA documentation for these individuals and converted core information in these records to the LTCFS information format. A DHFS employee who was unaware of the nursing home level of care determinations ran these information extracts through the LTCFS logic to assign these individuals to levels of care.

Two statistical measures were then used to measure the agreement between the LTCFS determinations and those made by the BQA nurses. Those were the Chi-Square test of association, and the Gamma-Kruskal correlation coefficient (for ordinal data). The analysis yielded a significant association between the level of care determinations of the BQA nurses and the LTCFS, as measured by the Chi-square test. The Gamma coefficients for both the nursing homes, and developmentally disabled samples were 0.93, which was highly significant.

These findings suggest that it was appropriate to use the LTCFS in lieu of the methods used by the BQA nurses to establish nursing home levels of care for both frail elder and people with physical disabilities, as well as the developmentally disabled population.

Since the original development of the LTCFS, there have been a number of revisions. Currently, DHFS is utilizing Version 3 of the LTCFS and continues with efforts in the following areas:

1. On-going assurance of the reliability, validity and overall integrity of the LTCFS.
2. Making certain both experienced and new workers utilizing the LTCFS operate the instrument both accurately and objectively.

³⁶ See **Section VI. f.** for specific details of the LTCFS.

³⁷ DHFS. Testing the Reliability and Validity of the Wisconsin Long Term Care Functional Screen.

To ensure that this process continues to produce valid and reliable findings, DHFS presently utilizes a multiple methodological approach:

1. Methods to ensure validity:
 - More than 100 test scenarios were generated by hand by DHFS to test the logic of Version 3 of the LTCFS.
 - Adjustments to the logic were made, as necessary, and additional scenarios will be generated to test the validity on an on-going basis.
2. Methods to ensure reliability:
 - On a quarterly basis, screen edits are pulled and sorted according to each Resource Center and CMO versus criteria set by DHFS clinical staff where the scoring was either missing or contradictory within the completed screen. If no adjustments were made, the screen lead is required to submit an explanation to the Department.
 - This process has led to the changing of wording on such things as transportation, as well as the expansion of the training manual itself that were identified as being confusing.
3. Methods to ensure adequate qualifications, certification, and training of the screeners:
 - The Department requires screeners to have minimum educational requirements as well as familiarity with the target populations and long-term care resources, including nursing facilities and community alternatives.
 - The web-based screen training enables the screen lead to verify that all potential screeners meet the educational and experience requirements prior to their being able to access the on-line curriculum.
 - The Department monitors the activities of the certified screeners to ensure compliance. The Department conducts semi-annual reviews to ensure the county screener lists are current and accurate compared to the Department's database of certified individuals.
4. Methods to ensure consistent administration of the screen:
 - The computer logic for which the screens are processed contain cross edits to ensure no contradictions occur among clinical items due to screener error or omission. Additional edits are in place to ensure areas such as social security numbers and addresses are not left blank.
 - Resource Centers and CMOs must have a quality plan process to ensure consistent administering of screens by staff as well as a specified process to assure accuracy and timeliness of screens. DHFS reviews and approves the quality plans as long as they contain specific written details and policies.
5. Methods to ensure the quality and integrity of the screening process:
 - In order to ensure reliability, validity and overall integrity of the instrument, the Department mandates the following methodologies:
 - * Simulated case scenarios with measurement of the differences of screener scores from the overall RC or CMO score;
 - * Small scale Inter-Rater Reliability (IR) studies.

On a monthly basis, a DHFS nurse conducts a paper review of individuals who are enrolled in Family Care but have no functional screen history in the data warehouse. The nurse will then confirm there is not a functional screen for the person under a different name and/or social security number and will generate a report detailing the findings of this review.

Working with EDS, the Department maintains quarterly reports in each target area that the DHFS nurse analyzes to identify patterns that appear to be out of the norm. Additional areas of study under this activity include:

- The Department nurse conducts a paper review of a random sample of enrolled individuals who have moved up in their eligibility (changing from intermediate to comprehensive). The nurse is looking for:
 - * A pattern of high percentage moving up in eligibility.
 - * A pattern of rapid increase in ADL or IADL count.
 - * A pattern of frequent change in level of care.
- The Department nurse conducts a paper review of a random sample of individuals who failed to achieve eligibility at the time of the initial or recertification process. The nurse is looking for:
 - * A pattern of high percentage ineligible.
 - * A pattern of 0 percent ineligible.
 - * A pattern of consumers found ineligible in a particular agency that have identical/similar screen details.
- The Department nurse conducts a paper review of initial screens conducted by the RC and amended by screeners at the CMO, with particular emphasis on screens where the additions led to an increase in the level of care for the individual. The nurse is looking for:
 - * A high percentage of the changes increased the level of care.
 - * A pattern that a high percentage of case are amended.
 - * A pattern that a high percentage of cases are amended frequently or quickly.
- The Department nurse conducts a paper review of screens of individuals that have had multiple (e.g., 3 or more) screens in the past quarter. The nurse is looking for:
 - * A pattern where multiple screens were completed in one day.
 - * A pattern where multiple screens completed on the same day were done within a few minutes of one another.
 - * A pattern that eligibility for Family Care or establishment of nursing home level of care is seen after the multiple screens are completed.
- The Department nurse conducts a paper review of enrolled individuals who were recertified in the last quarter, but the recertification was not timely. The nurse is looking for:
 - * A pattern of late recertifications for an agency or particular screener at an agency.
 - * Improvement over time (i.e., fewer numbers of not timely recertifications for an agency or screener if a pattern is identified).
 - * The DHFS nurse conducts a paper review of enrolled individuals whose last screen occurred more than 16 months ago.

In addition to the monthly and quarterly reports, a variety of other screen quality activities are routinely conducted, such as:

- Holding meetings with screen leads from each screening agency to address any emerging concerns.
- Conducting statistical analyses to identify screeners and agencies whose scores on an annual reliability study fall outside of acceptable levels.
- Reviewing screen results for all grievance and appeals pertaining to functional ability.

DHFS also provides a clinical help desk for screener questions.

Overall, the screen quality protocols are thorough and comprehensive. However, a few items warrant consideration by the Department. For example, a screen without a target group designation is considered incomplete and will not be accepted into the Department's electronic data repository. Removing individuals with missing data inhibits some validation efforts to identify false positives.

DHFS might also want to consider additional reliability and validity tests, which use more stringent protocols for statistical measurements. Currently, DHFS uses the Cohen's Kappa as a measure of reliability on various indicators, but there is not an established threshold for measuring inter-rater reliability. DHFS may want to consider establishing a threshold of .75 or higher for the Kappa because this level represents excellent agreement beyond chance, whereas values between .4 and .75 may be interpreted to reflect fair to good agreement beyond chance³⁸. For those values below .75, reliability is efficient, but not without question.

³⁸ Fleiss, J.L. (1981). *Statistical Methods for Rates and Proportions*. New York: John Wiley.

VII. Cost Effectiveness

As a condition of CMS waiver approval, waivers must be either cost neutral or must generate cost savings. In order to meet these criteria, the Cost-Effectiveness component of the Family Care Independent Assessment is focused on the impact of the Family Care program on the cost and utilization of health care services. Specifically, the cost-effectiveness evaluation will measure the impact that Family Care has had on program participants' health care utilization and expenditures before and after Family Care enrollment for individuals eligible during calendar year 2002. This study will examine the utilization of a package of services and of several individual services, and the costs associated with those services for Family Care members along with a sample of long-term care recipients residing in non-Family Care counties throughout Wisconsin (the Comparison Group).

There is a range of ways in which the Family Care Independent Assessment (IA) is different from standard 1915(b) waiver Independent Assessments. These unique qualities mean that the Family Care IA must utilize different cost-effectiveness calculations than other IAs authorized by CMS, which are all required by CMS to include cost-effectiveness analyses.

Family Care is actually a combination 1915(b)(c) waiver. It operates under a managed care and a home- and community-based waiver. There are not explicit guidelines for combination waivers as there are for the cost-effectiveness analysis of 1915(b) waivers.

According to conversations between DHFS and CMS Regional Office staff, Family Care is now viewed as a conversion waiver and is be exempted from the federal standard cost-effectiveness analysis. Timing of changes in federal rules around capitation rate development, and of the Family Care IA, is responsible for this. In essence, before August 2003, capitation rates for Medicaid were allowed to be based on fee-for-service equivalents, upper payment limits, and discounts for managed care. Upper payment limits have been removed, and it is now required that capitation rates must be set in an "actuarially sound" way. Therefore, we examined the rate setting and capitated payment process utilized by the Department as part of our analysis.

One approach for evaluating the cost-effectiveness of Family Care would be to compare the costs of Family Care members to the Medicaid program to the Medicaid costs of individuals who are "like" Family Care members in terms of health status and other characteristics, but are not participating in Family Care. This type of analysis would measure the impact of Family Care on the Medicaid budget, but because a significant portion of the Medicaid Family Care costs are the capitation payment to the CMO, it would provide very limited information on the programs ability to manage the costs and utilization of long-term care services included in the benefit.

Therefore, the Family Care IA cost-effectiveness analysis uses individual-level encounter data from the CMOs to examine the costs and utilization of selected long-term care services covered under the Family Care benefit. The advantage of this analysis is that it allows program managers and stakeholders to evaluate whether or not CMOs are able to manage services covered by the capitation payment cost-effectively. For example, program flexibility may enable CMOs to provide primary and preventive services that reduce the need for other more intensive and expensive services.

A Overview

The Cost-Effectiveness Analysis is presented in three major sections, each of which examines different aspects of cost-savings or cost-neutrality. The three sections and major findings are:

Review and comment on FC rate setting and capitated payment system. Review of legal requirements, data, and methodology by a CPA found that:

- Accuracy has improved over time as more encounter and functional status data become available and are included in risk-adjusted rate calculations.
- Methodology conforms to federal requirements and accepted capitated rate-setting practice standards.

Analysis of individuals' health care service utilization and expenditures. From the beginning to the end of the first year of enrollment, Family Care participants are compared with a group of similar people not enrolled in the program, and after adjusting for individual differences in background factors, it was found that:

- Family Care participants' spending for a selected sub-set of services were higher than Comparison Group members' spending, with most of this difference attributable to community-based residential care facility (CBRF) and supportive home care services, although home health care and prescription drug expenditures were also higher (other things equal).
- Family Care spending per person per month was significantly lower than the Comparison Group for State DD Center care and Intermediate Care Facility days, as well as inpatient hospital care costs.
- There is a significant reduction in institutional residence associated with Family Care participation, which results in reduced nursing home days and expenditures per person per month, if "institutional residence" is not held equal.
- In addition to indirect savings from "deinstitutionalized" nursing home residents, Family Care participants have significantly reduced functional impairment and (not significantly) reduced illness burden. Each of these indirect cost savings offsets some (but not all) of the direct increase in costs for CBRF, supportive home care, home health care, and prescription drugs.
- It may require a longer observation and evaluation period to determine if the "long-term" indirect savings may eventually offset more of the "short-term" direct costs.

Analysis of county-level differences in utilization and expenditure patterns. Hierarchical modeling methods were used to examine whether the utilization and spending patterns of individuals varied systematically among the different groups of Wisconsin counties that administer the program: the Milwaukee CMO, compared to the four other CMO pilot counties, Resource Center only counties, and the remaining non-Family Care counties throughout Wisconsin. It was found that the overall statewide results (discussed in Section VII. D.) are generally supported when county differences are analyzed, with several noteworthy findings:

- Family Care members in the four non-Milwaukee CMO counties (Fond du Lac, La Crosse, Portage, and Richland) experienced a significant reduction in total Long-

- Term Care costs from pre-enrollment to post-enrollment. Milwaukee County CMO members saw no significant change during this time.
- For the statewide analysis, Family Care members tended to have higher CBRF utilization and expenditures; at the county level, the non-Milwaukee County CMOs were significantly decreasing in cost and utilization over this time period while the Milwaukee County CMO significantly increased in CBRF costs. This is an example of the “Milwaukee Effect.”
 - CBRF costs tend to be higher, and SHC costs lower, for individuals with higher illness burden and higher functional impairment; CBRF costs tend also to be higher, and SHC costs lower, in CMO counties than in non-CMO counties, which reflects the fact that costs and utilization are very relative to specific individuals and dependent upon which services are available (CBRF and SHC services are only available through the waiver).
 - The changes in Personal Care (PC) utilization and expenditure significantly increased in the over-all statewide analysis. However, there is a significant interaction between Milwaukee and Personal Care costs and utilization that impacts what is happening in the statewide analysis versus that of the county analysis: in Milwaukee, PC expenditures did not significantly change over time, whereas, PC expenditures and utilizations did significantly decrease in the other CMO counties.
 - A similar “Milwaukee effect” was found for hospital outpatient and physician office visit rates, which declined significantly change for the four non-Milwaukee CMOs, and did not significantly change in the Milwaukee County CMO. In this case, the pattern in Milwaukee dominated the statewide results, which showed significant declines in hospital outpatient and physician office visits per person per month.
 - The differences between CMO counties serve to remind readers that some of the apparent effects or lack of effects for the Family Care program over-all may depend on which Family Care CMO is being considered.

B. Rate Setting and Capitated Payment Process

As part of the Independent Assessment, APS conducted a review of the Family Care capitation rate setting process for calendar years (CY) 2000 through 2003. In addition, a more limited review of the rate setting methodology was conducted then what is expected to be applied in CY 2004 and CY 2005. Family Care calculates specific capitation rates for each of the five CMO counties. This review focused on how well the rate setting design facilitates Family Care goals and how the rate setting methodology transforms over time to meet legal requirements and characteristics of available information to provide sound and appropriate rates for the population covered through the services provided by the Family Care CMOs.

Methods

The evaluation of the rate setting utilized Federal rules and regulations, a review of commonly accepted rate setting methods and DHFS documentation supporting its rates. A matrix was prepared to identify methods, assumptions and adjustments for rate setting from CY 2000 through CY 2005 (see **Attachment 4**). Then using this document, reasons for change in the rate setting process and how they were driven by legal requirements, accepted rate setting principles and the quality of data, were identified and examined.

Further, this review included a variety of reasonableness tests. These examinations assessed increases in rates over time with differences between the fee-for-service rates and functional rates in those years where rates were blended, and comparisons among projected rates with the subsequent actual costs per member per month. Findings that affected the rates in aggregate by five percent or more in any year were considered significant.

The examination of Federal legal requirements included Federal regulations 42 CFR 447.361 and 42 CFR 438.6(c), the final rule amending Medicaid regulations to implement the Balanced Budget Act of 1997 (BBA), and other supplementary information provided by CMS to explain how they plan to implement the BBA. Other sources for rate setting methods in addition to 42 CFR 438.6(c) included A Primer on Capitation Rate Setting for Medicaid, prepared by the Center for Health Care Strategies. This source mostly expanded upon the actuarial methods codified in 42 CFR 438.6(c).

Examination of information provided by DHFS included copies of the following significant rate setting documents:

- The Proposal for a Section 1915(b) Capitated Waiver Program Initial Program Preprint prepared by the Department.
- Family Care CMO Demonstration Final Fee-For-Service Equivalent Calculations and Prospective Capitation Rates for CY 2000 prepared by DHFS.
- 2001 Prospective Rate Development prepared by Milliman.
- Family Care Capitation Rates CY 2002 prepared by Milliman.
- Capitated Contracts Rate Setting Actuarial Certification signed by Milliman for CY 2003.
- Preliminary 2004 rate development slides prepared by Milliman.

The review also included observing meetings conducted by the Department's contracted actuary, Milliman USA, Inc., who detailed the rate setting process to the CMOs for CY 2002 and CY 2003. DHFS staff also conducted four separate briefings for APS staff to explain various aspects of the rate setting process.

Legal Environment

With the implementation of the BBA, the Federal government viewed capitated programs and other programs as equals to be judged on their own merits. Before the implementation of the BBA, the Federal government through, 42 CFR 447.361 required comparison of managed care waiver programs with fee-for-service to demonstrate cost-effectiveness. Rates were required to be less than or equal to the upper payment limit (UPL). The UPL was usually established from fee-for-service data for the subject population trended forward from before the granting of the initial waiver. In August 13, 2002 the BBA went into effect repealing this requirement. In its place, the BBA requires that the methodology used in developing rates must meet the requirements of 42 CFR 438.6(c), must consist of accepted actuarial principles, and practices and must have an actuary who is a Member of the American Academy of Actuaries attest to this fact. To test cost-effectiveness, states must now compare their initially projected rates with what they actually spent over the waiver period. Actual expenditures must be equal to or below the projected amount. States were given until August 13, 2003 to bring all aspects of their state plan into compliance with the final rule provisions.

Transition to Functional Status Rates

DHFS is undergoing a smooth transition from rates derived from fee-for-service cost history to rates that use the functional health status of Family Care members. This transition is accomplished by using fee-for-service rates for a period of two years and then blending fee-for-service and functional status rates for a period of three years. This gradual movement to functional status rates was deemed to be the best way to support the implementation and development of CMO's who had no previous managed care experience. It was decided that time would be necessary to get the beneficiaries enrolled and provide a history of data under managed care to provide a foundation for stable functional rates.

During the period of initial enrollment from CY 2000 to CY 2001, Family Care used risk-adjusted rate band method that updates each enrollee's base year fee-for-service cost for acuity and trends. Justification for this approach is that long-term care costs are highly correlated across years. Current costs can accurately predict future costs for chronically ill or disabled populations two years down the road. Acute costs for which there is less predictability are carved out of this benefit.

To smooth out major fluctuations for the succeeding three years, functional status rates are blended with CY 2001 fee-for-service rates trended forward. The CY 2001 fee-for-service rates are trended forward to CY 2002, 2003 and 2004, and blended with the functional status rates at 80%, 50% and 25%, respectively, during this period. In trending forward of CY 2001 rates, DHFS makes the assumption that enrollment has sufficiently stabilized such that the blending of rates sufficiently accounts for any change in enrollee mix.

The way the acuity factor for changing health status was developed for the CY 2001 rates did have a differential effect on Portage county rates, but not for rates in aggregate. This effect applies only to the fee-for-service portion of their rates. Since fee-for-service rates developed in CY 2001 were trended forward in decreasing amounts for the succeeding three years, this effect will also carry forward to those years. The acuity factor for changing health status was developed based upon the average experience for enrollees in all counties. No allowance was made in the development of this factor that higher cost enrollees are already receiving intensive long term care, while lower cost enrollees have yet to receive this more intensive care as they age. High cost enrollees' acuity factor should, therefore, be lower. This effect would not normally cause an exception except that Portage has a much higher proportion of these high cost enrollees than all other counties, on average. Correction of this anomaly has taken place as the percentage of functional status component has increased in the blended rate. In CY 2002, the functional status component accounted for 20% of the rate and was 15% less than fee-for-service component in the Portage rate. In CY 2003, the functional status component accounted for 50% of the rate and was 21% less than fee-for-service component of the Portage rate. In CY 2005, rates will be fully converted to functional status determination.

Data

In the transition from fee-for-service to functional status rates data used to calculate these rates becomes more identifiable to the Family Care services and population. The same population and array of available services are not present in the fee-for-service environment.

Base year and trended cost data used to calculate CY 2000 and CY 2001 final rates was obtained from the Medicaid Management and Information System (MMIS) and from the Department's Human Sources Reporting System (HSRS). Complex adjustments to account for population and service differences between the base year and the rate year had to be applied to calculate accurate rates.

Base year data used to calculate CY 2002 and CY 2003 functional rates was obtained from HSRS reported CMO costs. This change resulted in the elimination of many cost adjustments, as those costs were part of the CMO data. Data used to trend the rates from the base year to the rate year were developed from non-CMO county MMIS and HSRS data.

Further improvement will come in base year data used to calculate CY 2004 and CY 2005 functional rates, as that data will come directly from the CMOs' own claims payment systems. The data elements and edits in this system are designed specifically to provide more accurate and detailed encounter information for improved rate calculation. Data used to trend the rates from the base year to the rate year will continue to be developed from non-CMO county MMIS and HSRS data until sufficient Family Care experience is available.

Functional Status Rates

The functional status rate setting facilitates two important DHFS goals. First, it provides incentive to manage care effectively so that enrollees' health does not deteriorate to the point where nursing home care is needed. Secondly, it provides incentive to give the most cost-effective mix of services. Traditional rate setting methodology may not promote these goals as effectively.

In a departure from tradition, functional status rate setting does not include service categories except for trending rates forward. Traditional rate setting methodologies might include service categories such as nursing home, home health care, case management, etc. as basic categories for rate determination. Exclusion of these service categories penalizes CMOs that use high cost nursing home care inefficiently. Inefficient use of nursing home care may result from the deterioration of health that could have been prevented by better managed care or due to choice when the community care option is available. Under traditional rate setting, a CMO's inefficient use of the nursing home services would not get penalized, because enrollees' nursing home costs would be included in its own rate calculation category. Increase in nursing home service utilization would be a factor in the rates causing them to increase.

In essence replacing service categories with the use of functional status data in rate setting removes decisions the CMOs make about the setting of care from the calculation of rates while still reimbursing them for the severity of their case mix. The functional status rates are based on a multiple regression analysis of functional status data (collected by the Resource Centers) and CMO reported data. Regression is a statistical technique that produces an estimate of the effect of each factor individually on the cost for an individual. Significant factors are:

- County (while not a functional health measure it is still a statistically significant factor in the determination of cost)
- SNF level of care
- Type of developmental disability for the disabled, if any

- Activities of daily living (ADLs) and their level of help
- Number of instrumental activities of daily living (IADLs)
- Behavior Indicators

Functional status data may not widely be used in rate setting, because this information is not easy to retrieve from medical records and there may not be uniform standards for reporting this information. The Family Care program systematically collects this information in an electronic database from the Resource Centers, which are independent from the CMOs. The fact that functional status data is collected independently from the CMOs and that standards are set for reporting of this information adds to the reliability of the rates. [Note: See Section V.D. for a detailed overview of the Long-Term Care Functional Screen].

In CY 2002 and CY 2003 the county factors were adjusted to move them halfway toward the average value for all CMOs. The smoothing was instituted to account for the effect management has on the level of their costs. The remaining difference in county factors represents difference in the level of cost of services between the counties. Starting in CY 2004, DHFS will use actual differences in prevailing fees outside the control of the CMOs to eliminate the subjectivity in the creation of this factor.

The method also departs from traditional rate setting in that it does not rely on some standard demographic characteristics such as gender and age. These characteristics correlate highly with the functional measures included. They were, therefore, excluded since they do not make the model any more predictive.

Conclusion

In our opinion, the departure from traditional rate setting in the Family Care capitation rate setting process gets to the crux of the problem of providing incentive for CMOs to supply the best mix of cost-effective services to meet the long-term functional health needs of their beneficiaries. The substitution of functional status data for service categories that are normally included in traditional design means that care for the same long-term health needs, whether given in a nursing home or in the recipient's home, results in equal payment. The mode of delivery and type of long-term health care services used both affect the CMOs' bottom line profit and loss.

This review also determined that the Family Care capitation rate setting process has improved over the period under review to more accurately reflect the population covered and the services provided under the program. For this period, there were no identified material instances where these rates were improperly determined according to Federal regulations and policies or according to standards commonly applied in developing Medicaid managed care rates.

C. Analysis of Costs and Utilization

The purpose of the Cost-Effectiveness component of the Family Care Independent Assessment is to determine the impact of the Family Care program on the cost and utilization of health care services. This cost-effectiveness evaluation measures the impact that Family Care has had on program participants' health care utilization and expenditures before and after Family Care enrollment for individuals eligible during calendar year 2002. Changes in Family Care

members' expenditure and utilization patterns are compared with those of similar Medicaid recipients who are not enrolled in Family Care during the same period of time.

Utilization and expenditures are measured using both Medicaid claims and long-term care data collected by the Department for individuals on Medicaid waivers, or data collected by the Family Care CMOs. Categories of service that include most health care expenditures were selected for analysis. Health care services measured by Medicaid fee-for-service claims include the following primary care and acute care services that are not covered by the Family Care benefit:

- Emergency Room Visits
- Hospital Inpatient Stays
- Hospital Outpatient Visits
- Physician Office Visits
- Prescription Drugs

Data collected from the Human Services Reporting System (for Waivers) and the CMOs (for Family Care members) include all long-term care (LTC) services that are covered under the Family Care benefit and additional analyses were undertaken for the following specific services:

- State Center for Developmentally Disabled Days
- Intermediate Care Facility Days
- Nursing Home Days
- Community-Based Residential Care Facility Days
- Supportive Home Care Days
- Home Health Visits
- Personal Care Hours

1. Study Groups

The Family Care members included in the study are those individuals who meet all of the following criteria:

- Were enrolled in the Family Care program at anytime during calendar year (CY) 2002.
- Had at least twelve months of continuous enrollment in Family Care after their initial enrollment (to ensure adequate exposure to the Family Care program).
- Had adequate data to pass quality control checks, such as cross-validation of ID numbers and enrollment dates.

A total of 3,777 Family Care participants qualified for the study during the year following Family Care enrollment.

The *Comparison Group* is comprised of individuals who have the same characteristics as Family Care beneficiaries, but do not participate in the program. This group is comprised of Medicaid recipients similar to Family Care participants (who were on Medicaid prior to Family Care enrollment). There are 9,690 individuals in the Comparison Group who are eligible during the Family Care members' post-enrollment period.

2. Comparison Sample Selection

The *Comparison Group* is selected from those Medicaid recipients who most closely match the Family Care population on the following characteristics:

- Is eligible between 1999 and 2002 (568,271 recipients met this condition).
- Medical Status Code (MSC) is in one of the 44 Medicaid eligibility groups that are significantly related to Family Care enrollment, as determined by a logistic regression of Family Care on 175 MSCs with backward selection.
- Is among the group of Medicaid recipients who are equal to or greater than 95 percent likely to generate a “true positive” similar to Family Care members, based on the sum of their MSC weighted by the logistic regression coefficients (94,869 recipients met this condition).

For that group of candidates, age, sex, and Chronic Disease and Disability Payment System (CDPS) diagnosis-groups were collected, and another logistic regression model was estimated to predict the probability of Family Care given these factors. A total of 63,979 of the Medicaid recipients had a predicted likelihood of being in Family Care as great or greater than 95% of Family Care participants’ predicted probabilities. Of those, only the 48,845 who were eligible during calendar year 2002 were retained for further consideration. Further checks on data quality reduced the Comparison Group to 43,840.

These Comparison Group candidates were matched to Family Care participants’ age, sex, location, disability, and prior experience with Medicaid LTC waivers. A “pseudo-enrollment date” was randomly chosen for Comparison Group members from matching Family Care members’ enrollment dates. The final analytical sample of Comparison Group members with eligibility over-lapping Family Care members was 9,690.

3. Descriptive Statistics: Family Care and Comparison Group Study Populations.

The Comparison Group and Family Care study sample are similarly matched. Table 21 shows descriptive statistics for Family Care and the Comparison Group, broken down by residence in Milwaukee County. Differences between Milwaukee County and other counties are readily apparent, and non-Milwaukee CMO counties tend to look much closer to the overall Comparison Group than the Milwaukee County CMO population. The uniqueness of Milwaukee and the differences among Family Care subgroups warrant analyses that take this difference into account to disentangle the effects of residence in Milwaukee from the effects of Family Care program participation. This “multi-level” type of analysis is presented below in **Section VII. D.** of this report.

A detailed analysis of those Comparison Group members on waiting lists for Medicaid waivers can be found in **Attachment 8.**

Table 20 Comparison Group and Family Care Descriptive Statistics						
Variables	Comparison Group			Family Care		
	All Comparison Group Study Population Members (n=9690)	Milwaukee County Comparison Group (n=1391)	Resource Center Only Counties Comparison Group Members (n=688)	All Family Care Study Population Members (n=3780)	Non-Milwaukee County Family Care Members (n=1851)	Milwaukee County Family Care Member (n=1929)
Illness Burden Index in 6 months prior to Enrollment	1.13	1.24	1.13	1.07	1.10	1.03
Functional Status Impairment Score (Standardized at 0.0)	0.00	0.00	0.00	0.00	-0.07	0.07
% Institutionalized in 6 months prior to Enrollment (1=Yes)	16%	20%	15%	9%	9%	10%
% Medicare Dual Eligibility in 6 months prior to Enrollment (1=Yes)	88%	82%	91%	83%	74%	92%
Rural/Urban Community Type in 6 months prior to Enrollment (1=most urban and 10=most rural)	4.43	1.18	3.84	2.34	3.59	1.04
% Waiver Recipient in 6 months prior to Enrollment (1=Yes)	55%	32%	63%	67%	56%	78%
Average Age on Enrollment Date (Years)	66.2	61.1	68.8	66.8	57.6	76.4
% Male	40%	45%	36%	32%	39%	24%
% Enrolled in CY 2000	48%	45%	51%	47%	66%	27%
% Enrolled in CY 2001	48%	50%	45%	48%	32%	65%
% Enrolled in CY 2002	4%	5%	4%	5%	2%	8%
% Developmentally Disabled	29%	34%	24%	28%	35%	10%
% Frail Elderly	54%	45%	58%	60%	46%	88%
% Physically Disabled	17%	21%	18%	12%	19%	2%

APS Analysis of Family Care IA Study Population

4. Statistical Controls

Because the Family Care and Comparison Group matching algorithm results in two similar, but not identical, groups, further control of individual variation and population composition heterogeneity was accomplished with multiple regression analysis. This technique isolates the effect of Family Care from the many other variables that may confound the relationship between program participation and health care utilization or expenditures. The factors measured and accounted for with this technique are:

Diagnosis-related illness burden- determined using the CDPS to group diagnoses from claims for successive six-month calendar periods. The diagnosis groups for each individual are combined into a weighted-average of expected health expenditures, with weights calibrated to fit the Wisconsin Medicaid adult disabled population in 2002 (see **Attachment 5** for details). A scale value of 1 indicates “average expected illness-related expenditures”, 2 indicates “twice the average” and 0.5 indicates “half the average”, so higher scores (up to 10) indicated greater illness burden.

Health Care Financing Program Participation- including Medicare dual-eligibility, Medicaid LTC Waiver, or Institutional Residence. Analysis of CDPS as a predictor of health care resource consumption revealed that much greater variance in Medicaid claim payments could be accounted for when these factors are considered (see **Attachment 5** for details). These three independent variables are coded as “1” if an individual is dually-eligible for Medicare, on a Medicaid LTC Waiver or, residing in an institution during a six-month time period, or “0” otherwise.

Functional Status Impairment Scale- derived from either the Family Care Functional Screen measures during a six-month calendar period, or the weighted average of at least two Medicare Minimum Data Set (MDS) assessments of activities of daily living (ADL). The scale is standardized to a mean of zero and standard deviation of one to eliminate differences in measurement metric used by the two instruments. See **Attachment 6** for details.

Rural geographic area (rural/urban continuum)- as measured by the RUCA scale of “rurality”, ranging from 1 (most urban) to 10 (most rural) (see **Attachment 7** for details).

Disability Category- determined by evidence of developmental disability-related diagnoses (DD), otherwise frail elderly (FE) if age is greater than 65 years, otherwise qualifying disabled individuals are assumed to have physical disabilities (PD). These categories are not exactly the same measure as “target group”, because our categories rely on diagnosis to re-classify DD.

Last Year of Life fairly complete eligibility data through mid-2003, it was possible to determine for most individuals alive during 2002 and earlier whether or not they were within one year of the date of their death. Since health care spending is known to escalate near the end of life, this factor was identified and accounted for in the regression equations.

Cohort- The year during which an individual enters Family Care may be related to health care resource consumption, especially in counties where those with the most urgent needs were the first to receive program benefits. This kind of “cohort effect” is controlled with the introduction of binary indicator “dummy” variables for the 2000 and 2001 cohorts (compared to 2002).

Missing Data Imputation- About 90% of the study group as a whole had neither MDS nor Family Care functional status measurements on record. It is reasonable to expect that functional screen and MDS data are missing for individuals who never had occasion to receive a functional status screen. To avoid decimating our study group by excluding those with missing data on these variables, we substituted a mean value if the variable was missing. Any bias that might be introduced by this method is controlled by a dummy variable to indicate that the FSIS scores are imputed, rather than measured.

Descriptive statistics for these variables are shown in Table 20 above, for both Family Care and the Comparison Group, by Milwaukee County residence, during the six-month period prior to Family Care enrollment (or Comparison Group pseudo-enrollment).

5. Regression Results

Results of the analysis are presented in two steps: first, the level of expenditure and utilization are compared between Family Care members and the Comparison Group at the end of the first year of Family Care enrollment (or pseudo-enrollment for the Comparison Group). Then the change from before enrollment to one year post-enrollment, and the difference between groups in how their health care spending and utilization patterns changed over time is presented.

Post-Enrollment Levels

Table 21 shows the average level of spending and utilization for each group separately, after adjusting for all of the confounding factors (stated in the bullet list above). The adjustment is made so that the difference between the groups is attributable solely to Family Care participation or non-participation, with “all other things being equal”. All of the adjuster variables in the equation are held equal to the mean value for the population as a whole, so that only the variable “FC” differs between groups (FC is one for Family Care, or zero for control group members). The coefficient of the variable “FC” is thus a measure of the average difference between groups, other things equal, and is shown in the column labeled “Difference” in Table 21. The statistical significance of the difference is also shown, and a reference to the Appendix table (see **Attachment 9**) where the complete regression equation is given.

The rows of Table 21 are grouped into those health services that are covered by the Family Care benefit (long-term care services) and those that are not covered in the Family Care benefit package, but are available to all Medicaid members (primary and acute care services). The rows are also grouped by whether they measure expenditures for health services (in dollars per person per month), or health service utilization (in hours, days, visits, or prescriptions per person per month, depending on the service.)

Table 21 Average Level of Expenditure and Utilization 7-12 Months After Enrollment (Per Member Per Month)					
Source	n=9,690 CG-Adjusted	n=3,780 FC-Adjusted	Difference	Statistical Significance	Label
Table A-1	\$1,491	\$2,246	\$755	***	Monthly Total LTC Expenditures
Table A-2	\$137	-\$50 ³⁹	-\$186	***	Monthly State Center for Developmentally Disabled Expenditure
Table A-3	\$0	\$61	\$60	***	Monthly Home Health Expenditure
Table A-4	\$153	-\$46	-\$199	***	Monthly Intermediate Care Facility Expenditure
Table A-5	\$163	\$145	-\$18	NS	Monthly Nursing Home Expenditure
Table A-6	\$127	\$183	\$56	**	Monthly Personal Care Expenditure
Table A-7	\$130	\$409	\$279	***	Monthly Residential Care Facility Expenditure
Table A-8	\$178	\$512	\$335	***	Monthly Supportive Home Care Expenditure
Table A-9	\$1	\$1	\$0	NS	Monthly Emergency Room Expenditure
Table A-10	\$87	\$21	-\$67	**	Monthly Hosp. Inpatient Expenditure
Table A-11	\$24	\$35	\$11	NS	Monthly Hosp. Outpatient Expenditure
Table A-12	\$18	\$17	-\$2	NS	Monthly Physician Office Expenditure
Table A-13	\$241	\$376	\$135	***	Monthly Prescription Drug Expenditure
Table A-14	0.34	-0.13	-0.46	***	Monthly State Center for Developmentally Disabled Days
Table A-15	0.01	0.97	0.97	***	Monthly Home Health Visits
Table A-16	0.96	-0.23	-1.19	***	Monthly Intermediate Care Facility Days
Table A-17	1.81	1.66	-0.15	NS	Monthly Nursing Home Days
Table A-18	8.19	11.83	3.64	**	Monthly Personal Care Days
Table A-19	1.65	2.66	1.01	**	Monthly Residential Care Facility Days
Table A-20	1.62	5.45	3.83	***	Monthly Supportive Home Care Days
Table A-21	0.01	0.03	0.01	**	Monthly Emergency Room Visits
Table A-22	0.03	0.04	0.01	**	Monthly Hospital Inpatient Admissions
Table A-23	0.22	0.17	-0.04	NS	Monthly Hosp. Inpatient Days
Table A-24	0.19	0.22	0.03	NS	Monthly Hosp. Outpatient Visits
Table A-25	0.41	0.46	0.05	NS	Monthly Physician Office Visits
Table A-26	4.47	6.80	2.33	***	Monthly Prescription Drug Claims Paid

Note 1: significance levels = ***< 0.01 ** < 0.05 ; * < 0.10
 Source: APS analysis of Medicaid claims, HSRS and CMO encounter data.

The total long-term care expenditure per member per month is shown in the top row of Table 21. At the end of their first year Family Care members are spending about \$755 per month more than other similar Medicaid recipients on average, other things equal. Most of the difference is accounted for by higher per capita spending on supportive home care and Community-Based Residential Facilities (CBRF), which are covered under the Family Care benefit. Home health care and prescription drug spending are also significantly higher for Family Care members than for non-members. Significantly less is being spent for State DD Centers and Intermediate Care Facilities (ICF) and also for hospital inpatient care and physician office visits (not covered under the benefit) compared to similar individuals not in Family Care. Differences in utilization between the two groups generally agree with expenditures.

Although care was taken to make a fair comparison between groups, comparison at a single point in time cannot reveal how things came to be. The observed differences one year after Family Care enrollment do not necessarily indicate that the difference is caused by, rather than merely

³⁹ “CG-Adjusted” is the predicted value from the regression equation holding all independent variables equal to the grand mean. Predicted values from a linear regression equation can be negative, so some of the figures in the FC-Adjusted column are less than zero, which should be interpreted as meaning “close to zero”. “FC-Adjusted” is the sum of “CG-Adjusted” and “Difference”.

coincidental with, Family Care program participation. An examination of changes in spending over time is called for to determine if the differences may have existed prior to the program.

Change from Pre- to Post-Enrollment

A more rigorous test of these results is shown in Table 22, which measures differences between group-members' change in spending or utilization over time, after following the study populations for one full year. The first column in Table 22 shows that total monthly long-term care spending increased by an average of \$405 more for those who enrolled in Family Care than for similar people who did not enroll in Family Care (other things equal).

Table 22 Program Effects: Difference Between Total Family Care and Family Care Subgroups in Adjusted Average Change from 1-6 Months Before to 7-12 Months After Enrollment Relative to the Statewide Comparison Group.

All Family Care (n=3780)		Milwaukee Family Care (n=1927)		Non-Milwaukee Family Care (n=1851)		Label
Difference from CG	Statistical Significance	Difference from CG	Statistical Significance	Difference from CG	Statistical Significance	
\$405	***	\$42	NS	-\$113	*	Dif. Mo. Tot LTC Expenditure
-\$21	NS	-\$21	NS	-\$23	NS	Dif. Mo. State Ctr. for Devel. Disab. Expenditure
\$35	***	-\$4	NS	\$32	***	Dif. Mo. Home Health Expenditure
-\$62	***	\$21	NS	\$19	NS	Dif. Mo. Intermed. Care Facility Expenditure
\$4	NS	-\$13	NS	\$28	NS	Dif. Mo. Nursing Home Expenditure
\$33	*	\$45	NS	-\$175	***	Dif. Mo. Personal Care Expenditure
\$208	***	\$90	***	-\$98	***	Dif. Mo. Residential Care Facility Expenditure
\$245	***	\$29	NS	\$55	NS	Dif. Mo. Supportive Home Care Expenditure
\$0	NS	-\$1	**	\$0	NS	Dif. Mo. Emergency Room Expenditure
-\$102	***	\$38	NS	-\$8	NS	Dif. Mo. Hosp. Inpatient Expenditure
\$4	NS	\$8	*	-\$2	NS	Dif. Mo. Hosp. Outpatient Expenditure
-\$7	*	-\$1	NS	-\$7	**	Dif. Mo. Physician Office Expenditure
\$34	***	-\$6	NS	-\$31	**	Dif. Mo. Prescription Drug Expenditure
-0.06	NS	-0.06	*	-0.06	NS	Dif. Mo. State Ctr. for Devel. Disab. Days
0.57	***	-0.10	NS	0.61	***	Dif. Mo. Home Health Visits
-0.28	***	-0.03	NS	0.08	NS	Dif. Mo. Intermediate Care Facility Days
-0.07	NS	-0.28	NS	0.12	NS	Dif. Mo. Nursing Home Days
3.07	**	3.58	*	-10.69	***	Dif. Mo. Personal Care Days
1.30	***	-0.07	NS	1.45	***	Dif. Mo. Residential Care Facility Days
3.06	***	0.84	*	-0.21	NS	Dif. Mo. Supportive Home Care Days
0.00	NS	0.00	NS	0.00	NS	Dif. Mo. Emergency Room Visits
0.00	NS	0.00	NS	0.00	NS	Dif. Mo. Hospital Inpatient Admissions
-0.13	**	0.04	NS	-0.01	NS	Dif. Mo. Hosp. Inpatient Days
-0.01	NS	0.00	NS	-0.06	***	Dif. Mo. Hosp. Outpatient Visits
-0.04	NS	0.00	NS	-0.07	**	Dif. Mo. Physician Office Visits
0.44	***	0.00	NS	0.00	NS	Dif. Mo. Prescription Drug Claims Paid

Note: significance levels = *** < 0.01 ** < 0.05 ; * < 0.10
 Source: APS analysis of Medicaid claims, HSRS and CMO encounter data.

Although the Family Care population as a whole had a significantly higher increase in total long-term care costs relative to the Comparison Group, examination of sub-groups within Family Care shows that this conclusion must be qualified. The second and third column of numbers in Table 22 compare Family Care participants in the Milwaukee CMO to Family Care members in all of the other CMOs combined. Looking at the first row, we see that Family Care members in Milwaukee had a significantly higher increase in long-term care spending than the Comparison Group, but participants in other counties had a significantly *lower* increase, relative to the Comparison Group. Care must be taken when drawing conclusions from the whole Family Care population (the first column), because those results tend to be dominated by the Milwaukee CMO (the second column), which has quite different results compared to the other Family Care CMOs (the third column). The relationship between Family Care program effects and the CMO operating the program are examined more thoroughly in the next section (VII. D.) of this report.

The major differences between Family Care (as a whole) and the Comparison Group in spending and utilization changes over time is in the categories of CBRF care and supportive home care, but personal care and home health care expenditure and utilization also increased more in the Family Care group. Reduced utilization and spending for ICF and hospital inpatient care for this group are consistent with program goals, but these significant reductions do not fully offset the increases in other categories.

Indirect Effects

Conspicuous in absence from the discussion so far, the measures of nursing home utilization and expenditure show no significant difference between the two groups in either the post-enrollment level (Table 21) or rate of change (Table 22). However, we would expect the Family Care program to effect changes there, as one of its principle goals and cost-savings mechanisms is “de-institutionalization”.

Note that the results shown in Tables 21 and 22 are statistically adjusted to account for “all other things” that might explain differences between the two groups. One of those factors is institutional residence. When we compare Family Care members in institutions to members of the Comparison Group who reside in institutions, we are holding “institutional residence” equal, which is the proper way to make a fair comparison between Family Care participants and others. However, it does not fully reflect the program effect if one of its primary effects is to make “institutional residence” *un-equal* between groups.

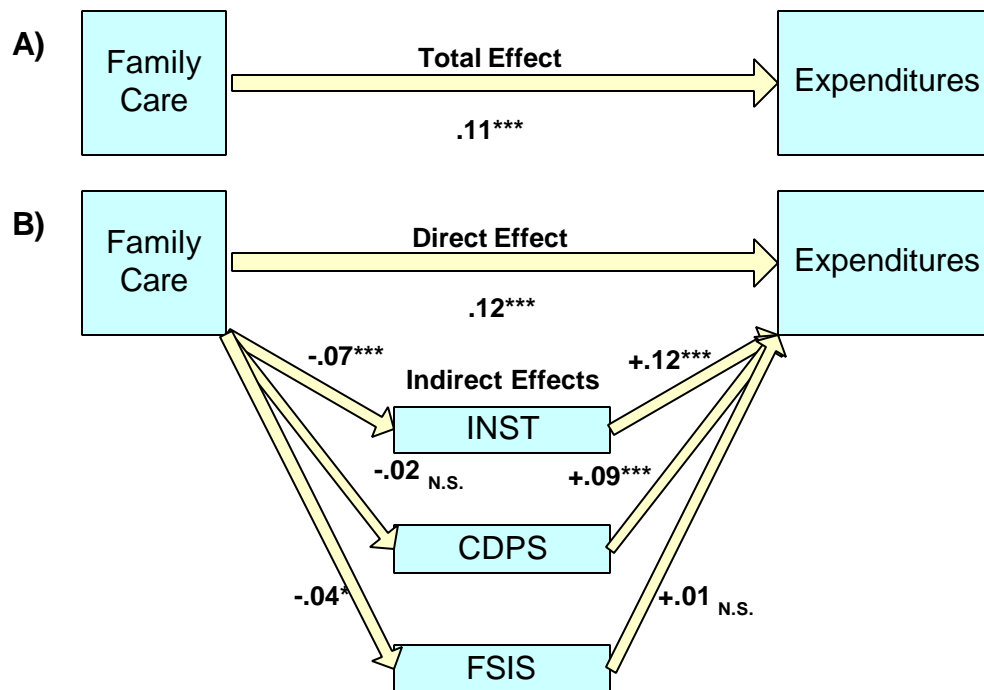
Without adjusting for institutional residence, we find that Family Care members have significantly lower nursing home expenditures and utilization than the Comparison Group, and Family Care members have a significantly greater reduction in nursing home use and spending, relative to the Comparison Group.

This complex relationship between Family Care, nursing homes and health care resource consumption can be examined more clearly using a technique called “path analysis”, which decomposes the *total cost effect* of Family Care into a *direct effect* on spending, and an *indirect effect* on spending that is mediated by “intervening variables”. We conducted a path analysis for the 4,338 individuals (3,732 in Family Care, and 606 in the Comparison Group) who had actual

measures of change in functional status impairment (FSIS), change in illness burden (CDPS), and change in institutional residence (INST) from the pre-enrollment to the post-enrollment period.

The results of this analysis are shown in Figure 5. The numbers next to the arrows are “standardized regression coefficients”, which have the property of the products of indirect effects plus the direct effect sum up to the total effect. In this case, the total effect (.11) is equal to the direct effect (.12) plus the sum of the product of indirect effects (-.07 x .12 - .02 x .09 - .04 x .01). Note that each of the indirect effects of Family Care is *negative*, which indicates a tendency to reduce spending through these three pathways: reducing institutionalization, reducing illness burden, and reducing functional status impairment. Two of these three paths are statistically significant: the reduction in institutional residence (p<.01) and the reduction in functional status impairment (p<.10).

Figure 5: Path Analysis of Total (A), Direct, and Indirect (B) Family Care Cost Effects.



Source: APS analysis of Medicaid claims, HSRS and CMO encounter data.

This path analysis is consistent with the idea that Family Care has the potential to effect cost savings by improving health care and health outcomes. However, it appears that the indirect savings are not sufficient to fully offset the direct increase in costs. The direct cost increase is shown in Tables 21 and 22 are associated primarily with community-based residential facility care and supportive home care covered by the Family Care benefit package.

D. Multilevel Analysis of County Level Differences

Modeling the effects of both individual level and organizational level variables on any type of outcome presents formidable conceptual and methodological problems⁴⁰. Over the past decade, this statistical technique has been developed and utilized to overcome problems in more traditional methods to estimate such models for these organizational units, which are referred to as multilevel or hierarchical linear models (HLMs).

Where difference equations and multiple regression analysis do not allow for the examination of the macro-level variable (e.g., county level effects) impacts, multilevel analysis can enhance the understanding the role counties play in long-term care service delivery. HLM provides a strategy for overcoming many of limitations inherent in the use of single subject research design to evaluate a program's effectiveness⁴¹.

Since Family Care is implemented on a county-by-county basis, this analysis is interested in determining if there are any discernable differences between the counties that have already implemented Family Care, those that are potential sites for future implementation (i.e., the Resource Center Only counties) and other counties across the state. Further, results in several of the regression analyses for both long-term care and primary and acute spending and rates indicated significant contribution from the Community Type (RUCA) variable^{42,43}. This finding, along with the necessity to disentangle the impact of Milwaukee County relative to the other four CMO pilot counties warranted the use of multilevel modeling. Therefore, reasons to conduct a multilevel analysis include the following:

1. HLM provides improved estimation of individual-level parameters predicting long-term care expenditures and utilization.
2. HLM can test whether there is meaningful variation in cost and utilization across counties that are not due simply to individual differences across these counties.
3. HLM is particularly powerful in that it tests whether relationships at the individual level (such as the functional status, disability categorization or chronic illness burden index) are constant across contexts, or are variable (i.e., whether the effect of functional status is stronger in some counties than in others).
4. And finally, if a meaningful variation across contexts is found, HLM can simultaneously estimate the effects of individual-level characteristics, effects of context (county

⁴⁰ Bryk, A.S. and S.W. Raudenbush. 1992. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage.

⁴¹ Nugent, W.R. (1996). Integrating Single-Case and Group-Comparison Designs for Evaluation Research. *Journal of Applied Behavioral Science*, 32(2), 209-226.

⁴² The Rural Urban Commuting Area or RUCA codes a ten-tiered classification system based on census tract and zip code geography. Both population size and commuting relationships are used to classify census tracts and zip codes. First urbanized (continuously built up areas of 50,000 or more), large town (10,000-49,999), and small town (2,500 to 9,999) core tracts are identified. Next, the primary (largest) and secondary (second largest) commuting flows of remaining tracts are examined using the most recently available commuting data. High commuting tracts are those where the primary or largest commuting flow is greater than 30 percent to a core area. Low commuting tracts are those where the largest flow to core areas is 5-30 percent. Isolated rural areas are those with no town greater than 2,500 where the primary commuting flow is local.

⁴³ Ricketts TC, Johnson-Webb KD, Taylor P. Rural definitions for health policy makers. Bethesda (MD): Dept. of Health and Human Services (US), Federal Office of Rural Health Policy; 1998 July.

characteristics) and interactions between the two, in a way that is not possible with traditional regression techniques.

While multilevel modeling was initially developed for researchers to model student-level outcomes within schools (known as within-school models) and then to identify and model any between school differences that arise (known as between-school models) this technique is now being made use of in a variety of areas beyond school related research, including health care. In the case of this study, the organizational unit is individuals nested within counties rather than students nested within schools. This modeling is done by using the estimated values from the within-county model as the dependent variables in the between-county model. Because the within-county model may contain a number of parameters, each parameter produces its own between-county equation. Each equation can contain both fixed and random effects. As with most applications of this methodology, a series of HLM models are estimated that begin with relatively simple models (the null model to identify simple variation between counties with no individual or county-level variables in the model) to the complete models (to help explain between-county differences in long-term care and primary and acute costs and utilizations).

This procedure assists in the ability to determine which individual level variables will be allowed to vary randomly and which ones will remain fixed. By fixing the values, a model in which we assume b_{0j} and b_{1j} do not vary randomly across counties is being tested. In fact, their variance is assumed to be zero, so they are assumed to be constant or “non-varying” across counties. For example, fixed, non-varying intercepts would imply the group average for the dependent variable is assumed to be equal in each group. Although this constraint is typically referred to as “fixing the intercepts” or “fixing the slopes,” the term is somewhat loosely applied, because in actuality, the assumption is they are fixed *and non-varying*.⁴⁴ This is the approach utilized for this study (see **Attachment 9** for example of the full model utilized).

1. Data and Samples

The design of the HLM analyses was to build upon the regression analyses but with the added contribution of disentangling the county-level effects to see what contributions and/or differentiations exist between the non-Family Care counties throughout Wisconsin (N=63), non-Milwaukee Family Care CMO counties (N=4), Resource Center only counties (N=4), and Milwaukee county. Data was only used for individuals with no missing variables. The same sample was used for the multilevel analysis as was used for the regression analyses. These individuals were nested in all 72 of Wisconsin’s counties. Among the counties across the state, Florence County had the fewest (18 or 0.1 percent) and Milwaukee County had the highest (3,238 or 24.0 percent) number of individuals from the sample.

The long-term care and primary and acute costs and utilization results from the difference equations for measurable outcomes and individual characteristics for individuals with valid data in both the 7 to 12 months (the post-enrollment period) after enrollment and the 1 to 6 months prior to enrollment (pre-enrollment period) was utilized.

⁴⁴ In HLM, it is actually possible to have slopes or intercepts vary across groups without being random, but, for now, if a slope or intercept is “fixed” it also does not vary across groups.

In order to efficiently build upon the information garnered from the difference equations and regression analyses, the same set of individual level controls were utilized for the HLM analyses. The individual controls consisted of the differences between the pre- and post-enrollment periods. These included the following individual level variables:

- Difference Illness Burden Index Score
- Difference Functional Status Impairment Score
- Functional Status Impairment Score Imputation (1=Yes)
- Difference Institutionalized (1=Yes)
- Difference Last Year of Life (1=Yes)
- Difference Medicare Dual Eligible (1=Yes)
- Difference Community Type (RUCA Scale based on Zip Code)
- Difference Waiver Recipient (1=Yes)

Additionally, in order to control for the effects of Milwaukee County serving only the frail elderly, the following variables were included at the individual level:

- Frail Elderly (vs. Developmentally Disabled)
- Physically Disabled (vs. Developmentally Disabled)

2. Results from the Long-Term Care and Primary and Acute Multilevel Analyses

The tables found in **Attachment 10** and Table 22 illustrate that there are significant county level differences for selected long-term care and primary and acute care cost and utilization that vary across Wisconsin's 72 counties even when substantially controlling for individual level differences. In other words, after taking into account numerous individual characteristics, a considerable amount of observed variation still remains that can be attributed to differences in attributes of counties. The experiences of the four non-Milwaukee Family Care CMO counties compared to those of the Milwaukee County CMO members clearly illustrate the importance of geographic impact. Moreover, significant differences between the types of Family Care counties (Resource Center only [although this subgroup is part of the Comparison Group study population], non-Milwaukee CMO counties and Milwaukee County) can be seen.

The most noteworthy finding among the multilevel analyses is that of total long-term care costs rate of change between the pre- and post-periods of study. While a combined Family Care study sample found a significant increase of \$405 within the regression analyses, the multilevel analysis reveals that the non-Milwaukee CMO counties are significantly decreasing \$113 over this period of time. This finding clearly demonstrates that these four non-Milwaukee CMO counties possess unique aspects that differentiate them from the Milwaukee County CMO members. It should also be noted that these differences occurred above and beyond the individual level control of community (RUCA index) that was utilized in both the regression analyses and the multilevel analyses. Further, when the Family Care study group is examined collectively, the size and robustness of the Milwaukee County CMO members tends to mask these differences between the other four Family Care CMO counties.

The findings from the individual long-term care (LTC) outcomes study using multilevel analysis further reveal very clear and significant differences not only between the Family Care and non-Family Care counties on an individual outcome basis, but also, distinctions between the various

types of Family Care counties⁴⁵. Although sizeable variation between counties has yet to be explained, the findings from these cost and utilization analyses reveal a wealth of information⁴⁶. Specifically, for Personal Care and Residential Care (CBRF) costs, the four non-Milwaukee CMO counties experienced significantly sizeable reductions (-\$175 and -\$98, respectively). The utilization rate for Personal Care (-10.69 days) also significantly declined during the study period for this group. However, the utilization rate for Residential Care (CBRF) services did increase 1.45 days over the study period might suggest that payment rates were reduced over the study period.

The Milwaukee County CMO members exhibited a significant change only for Residential Care (CBRF) facility costs (increased \$90 PMPM) among the LTC outcomes from the pre- and post-period times of study. While the non-Milwaukee Family Care CMOs demonstrated significant changes for a variety of services. Also, the Milwaukee County CMO members experienced marginally significant increases for Supportive Home Care utilization rates (0.84 days) and for Personal Care days (3.58). The only significant decrease Milwaukee County experienced during the study period was a marginally significant reduction in utilization rates for the State DD Centers (-0.06 days).

Finally for the LTC outcomes, the Resource Center only counties significantly decreased Supportive Home Care costs (-\$66 PMPM) and in utilization rates (-0.69 days) over the duration of the study time frame.

When looking at the primary and acute service outcomes individually, the four non-Milwaukee CMO counties experienced significant decreases among the Prescription Drugs (\$31 PMPM) and the Physician Outpatient costs (-\$7 PMPM). For the utilization rates, both the Outpatient Hospital Visits (-0.06) and Physicians Offices Visits (-0.07) dropped during this time. These findings, for the physician outpatient costs and utilization rates and Outpatient Hospital Visits, support the results from earlier analyses that the longer an individual remains enrolled in the Family Care program, the fewer visits they make to a primary care physician. It is believed this reduction in visits can be attributed to the unique interdisciplinary team the Family Care program offers its members to ensure the receive the most beneficial care plan for their needs rather than making unnecessary visits to doctors and hospitals.

The Milwaukee County CMO residents experienced a significant, albeit minimal, decrease in Emergency Room expenditures (-\$1) between the pre- and post-periods relative to the Comparison Group. Further, this same group experienced a marginally significant increase of \$8 PMPM in Outpatient Hospital Expenditures.

[Please see **Attachment 10** for detailed HLM output tables and Table 22 for detailed comparison of overall Family Care study group outcomes from the regression analyses versus the

⁴⁵ Further exploratory research by APS Healthcare revealed suspicions that when county level variables were interacted with the Illness Burden Index and Functional Status index, costs for the non-Milwaukee CMO counties significantly decreased. This proved true for Home Health Care, Personal Care, Residential Care (CBRF) and Supportive Home Care.

⁴⁶ The range for the proportion of variance explained between counties among all multilevel analyses was from a low of 9.8 percent to a high of 18.9 percent. The introduction of additional county level variables (Level 2) would help increase these figures but was beyond the scope of these analyses.

disentangled results of separating the Milwaukee County CMO members from the four non-Milwaukee CMO counties].

3. Conclusions

Significant differences between counties on several long-term care and primary and acute services remained after stringently controlling for the ten individual characteristics. Further, variables differentiating between Family Care program counties demonstrate significant changes among several long-term care and primary and acute outcomes. While conventional interpretations might lead one to suggest that while some differences in costs and utilization of long-term care services and other health related services can be attributed to such things as the availability of providers, supply is not necessarily the only factor affecting service cost and utilization. Further, the significant contribution of the RUCA variable (one's community type based on zip code of residence) also suggests that there are pockets within counties where differences can be detected.

In summary, after controlling for socio-demographic and health-related factors, geographic differences across the state of Wisconsin and those among the Family Care counties continued to exist. The geographic differences warrant greater scrutiny to gain a better understanding of the specific attributes of counties, above and beyond an individuals' particular health status or individual characteristics, that are attributable to the differences observed between counties. Overall, geographic variation in cost and utilization was relatively strong and directly investigating other factors correlated with long-term care costs and utilization might be productive.

E. Assumptions and Limitations of Analysis

In reviewing the cost-effectiveness analysis and findings, it should be noted that the analysis was limited to selected long-term and primary and acute care services. Due to limited resources and time, it was necessary to limit the scope of the cost-effectiveness analysis. The scope of the analysis was defined in cooperation with DHFS staff. Services that were included in the analysis were selected either due to levels of spending on the service (i.e. services that "cost a lot") or it was expected that the utilization of expenditure for the service would likely be impacted by the Family Care program.

Considerable time was invested in the development of a statistically valid, risk-adjusted Comparison Group. It is hoped that this effort can be leveraged by DHFS in the future to conduct additional analyses, including longitudinal trending of utilization and costs over time and analyses of services outside the scope of the Independent Assessment.

1. Limitations of Costs and Utilization Analysis

Stringent methods to minimize the influence of measurement errors were undertaken, to assure fair comparisons, to observe longitudinal changes over time, and to control the effects of confounding due to extraneous factors, in order to isolate and measure the effects of Family Care on utilization and expenditure. However, readers should be aware of several limitations on the underlying data before drawing strong conclusions. As mentioned already, the scope of the study is limited in duration, and limited to a subset of all possible health services. Additional limits on the conclusions stem from data quality issues.

Data on cost and utilization were combined from several different sources, including Medicaid eligibility files, Medicaid claims files, HSRS LTC Module, CMO data systems, Family Care Functional Screen database, and Medicare Minimum Data Set (MDS). Data quality checks were performed and cases were eliminated for the following reasons:

- Duplicate ID numbers (more than one number per person).
- Discrepancies between enrollment dates and dates of service on claims.
- Individuals with less than two full weeks of enrollment.
- Discrepancies between Family Care enrollment records and LTC waiting lists.

Some restrictions were placed on periods when data were considered valid: any non-null utilization or expenditure data for recipients on Medicaid LTC waivers were ignored if the individual was a confirmed Family Care enrollee, so all post-Family Care data were contributed by the CMO data system, not the HSRS system. Data preceding the enrollment or “pseudo-enrollment” date for individuals identified as “rookies” were ignored if they were within one month before the enrollment date. Otherwise, individuals identified as “rookies” on the basis of Medicaid eligibility files were dropped if they had Medicaid claims data indicating more than one month of Medicaid experience prior to their assigned enrollment date.

If a case had missing data for the Functional Status Impairment Scale, or the CDPS Illness Burden Index, then the grand mean was used for that case and a binary “dummy” variable was set to indicate that data were missing. This allows the rest of the non-missing data for that case to be used in the analysis, with any potential bias removed by the coefficient of the dummy variable. While this method does not bias the estimated coefficients for FSIS or CDPS, it does cause “inefficient estimates” of the standard error and confidence interval: these may be too narrow, thus increasing the chance of “false positive” errors. This problem was avoided in the path analysis by using only those cases that had non-missing data for both FSIS and CDPS.

Further limitations apply to the LTC utilization and expenditure data collected by the CMOs. Range-checking found values out of range for approximately 1% of the cases. These errors were clearly the result of reporting the wrong units of service. Fields that were supposed to represent days of service per month may have had values of 60 days or 90 days, which would seem to indicate the CMO was incorrectly reporting bi-monthly or quarterly billing cycles in some cases. These cases were truncated at the maximum value (usually 31 days per month), with the understanding that regression analysis is fairly robust to errors of measurement in dependent variables. Analysis of regression residuals for influential outliers (with truncation, and without truncation) found no severe problems of potential bias.

Finally, it must be noted that the administrative data sets on which this analysis are based are subject to continuous revision as claims are adjusted and data entry errors corrected over time. The issues of “claims lag” and “data run-out” should be minimal in the Medicaid data sets and the HSRS data set, which achieved “final” status for 2002 before we began the analysis. However, the CMO data set is not as well developed, and is less thoroughly edited for data entry errors. It came to our attention after the conclusion of the analysis presented here that the historical CMO data reported for 2002 may have been incomplete for Portage County.

2. Limitations and Assumptions of Multilevel Analysis

Bryk and Raudenbush (1992) identify five assumptions that should be met for HLM to work successfully:

- A. The error term of each level-1 unit should have a mean of zero and the residuals should be normally distributed. For example, if the level-1 units or individual long-term care and fee-for-service recipients and level-2 units are counties, then the mean of the error within each classroom should be zero, the residuals should be normally distributed, and all counties should have variances equal to the other counties in the sample.
- B. Level-1 predictors are independent of the level-1 error term. That is, the covariance between level-1 predictors and the error term should be zero.
- C. Level-2 error terms each have a mean of zero and adhere to a multivariate normal distribution.
- D. Level-2 predictors are independent of all level-2 error terms. Thus, all variables in the second level of the model are not related to any of the error terms on that level of the model, including the error term for the level-1 intercept, and the error term for any of the slopes of level-1 variables.
- E. The level-1 error terms are independent of level-2 error terms. That is, there is not relationship between the error term at level-1 and the error term in the level-2 equation for the level-1 intercept, or the error term in any of the equations used to estimate the slopes of level-1 variables.

The assumptions that are necessary for linear regression analyses also apply to analyses using HLM, and they can be just as complex. One assumption of linear equations is that the errors- because of measurement noise and omitted variables- are distributed normally and are independent of the variables in the equation. In addition, any assumption that the relationships are linear is often overlooked in regression analyses and HLM.

One assumption that relates only to HLM is also important. The major criterion for HLM analyses is to have appropriate data. This means that the data must be hierarchical, with groups nested within higher-level groups, and with enough cases within and between groups to provide sufficient degrees of freedom for the linear equations. As well, the data must be especially accurate and the variables especially reliable and valid because small inaccuracies at one level can lead to bias in relationships found at the next level.

Finally, like other linear models, level-2 models in HLM are sensitive to large standard errors of the estimates, to omitted variables, and to the transformations of existing variables. All of these factors mentioned display the potential dangers of using this new sophisticated methodology on poor concepts, poor data, or both. Burstein, Kim and Delandshere (1989) remind researchers that the new, more powerful methods can produce very complex, yet very wrong, results if data assumptions are not carefully considered⁴⁷.

⁴⁷ Burstein, L., Kim, K-S., & Delandshere, G. (1988). *Multilevel investigations of systematically varying slopes: Issues, alternatives, and consequences*. In R.D. Bock (Ed.), *Multilevel analysis of educational data*. San Diego: Academic Press.

Concerning the interpretation of HLM there are also some points to be noted. Most importantly, analyses based on this method will always be non-experimental and correlational - not causal. Fortunately or unfortunately, correlation does not prove causation. Therefore, one must proceed with caution when interpreting results from HLM, and not imply any causal effects.

VIII. Lessons Learned

The conclusions of the Independent Assessment are structured into two parts: (1) Lessons Learned and (2) Recommendations. The Lessons Learned section provides an overview of the lessons learned by the Department and CMOs from the implementation and early years of operation of the program. These lessons are particularly relevant in consideration of expanding Family Care to additional counties in the future. These lessons learned have been catalogued by the Department in various formats and others were conveyed to APS staff during site visits to the CMOs and Resource Centers. The Recommendation Section provides recommendations primarily from the Independent Assessment and EQRO activities over the last year.

A. Findings from Site Visits

Site visits were conducted by APS staff during the spring of 2003. These visits were made to all five CMO pilot counties and were held jointly with CMO and Resource Center directors and selected staff. In addition to these five pilot counties, site visits were also made to two Resource Center only counties. Information gathered during these site visits provides good qualitative data on how the program is working from the counties' perspective.

In general, the counties feel that Family Care is working in their county to meet consumer needs. While all of the counties were able to identify challenges and barriers they are working to overcome, they feel in general that the switch to Family Care has been positive and has allowed them to meet the needs of consumers. The following comments are representative of what was reported by the counties as a group.

One county commented that they felt the transition into the program had gone smoothly, and that while they have some questions and concerns, it is largely a matter of learning the new system. Several counties reported that the Family Care program is perceived very positively in their community. Overall, another county feels that they are meeting the needs of their members and keeping them in the community. For one county, although the switch to Family Care has really been a change of culture, they have found that Family Care has been much more palatable for their consumers than other options that existed before the program. In another county, they feel that Family Care has really allowed them to reach populations that would otherwise be on waiting lists. Additionally, a county reported that they believe the program has been effective in de-mystifying the process of accessing long term care services for consumers. Lastly, another frequently heard comment is that implementing Family Care has led to very good working relationships with State staff.

The EQRO activities' emphasis on assessment of CMOs' process and inputs is better suited for primary and acute services evaluation than for community-based long-term care services, which has been a challenge for counties. This comment was heard from nearly every county. One county felt that in terms of member outcomes, working with the EQRO presented a challenge, because there was an emphasis on process measures and that is inconsistent with Family Care program's stated goal of a person-centered approach. Another county found Metastar very thorough in their review, which is very positive, but that the focus on the process measures means this area could still use some refining. Others expressed that the approach

utilized might not be best for people receiving services in their homes, and that the focus on detail has inhibited their ability to “spread their wings.”

They find that the quality assurance process can sometimes be overly burdensome, and that the review process is structured like an audit, which results in a greater focus on process rather than on outcomes, which again seems inconsistent with the program’s goals of achieving member outcomes. CMOs also found that sometimes the EQRO focuses on compliance rather than examining why you might not be in compliance or what specific circumstances are present. This is mainly seen in quality site reviews and care plan reviews. While another county reported that the new care plan review is more meaningful and more easily used than the original, some staff continued to express concerns that it is reverting back toward being an evaluation tool better suited for assessing primary and acute services rather than long-term care benefits.

Counties are finding it challenging to serve so many consumers with mental health and AODA diagnoses. Another common theme heard in site visits was that counties were encountering some challenges relating to members with AODA and mental health diagnoses⁴⁸. One county noted that they had more individuals with these kinds of issues than they had expected, and it negatively affected quality because they had not hired staff with this type of expertise. They reported that case management for this population can be challenging and also time-consuming, causing workload difficulties.

Another county expressed concern that the individuals with dual diagnoses could pose problems down the road for service delivery and finances in that county and across the state, and that there is not the capacity to serve the scope of mental health and AODA needs does not currently exist. It would require more staff time and oversight than is presently available in the Family Care model. While many providers for mental health services will accept the Medicaid rate, some counties anticipate a problem with accessing these services in the future.

In general, the counties felt they needed to learn ways to serve the mental health population better. Additionally, when expansion of the Family Care program was discussed, the issues of mental health and AODA services were noted as issues that must receive greater consideration than they did with the initial roll out of Family Care in the five pilot counties.

The counties find the various Family Care workgroup meetings useful, but offer some suggestions to increase their value⁴⁹. In terms of the workgroups, feelings were generally very positive among the counties, and the overall feedback was that they provided a useful service and that the workgroups have been important to the CMOs and Resource Centers as they have been developing. However, some workgroups were identified as more helpful than others. For example, the Resource Center workgroup was identified frequently as being beneficial, and providing a solid forum to learn from others. The provider network group was noted as similarly

⁴⁸ As noted in Section III., the Family Care program targets the elderly, physically and developmentally disabled. However, individuals who have other conditions such as chronic mental illness might qualify for the program by meeting specified criteria related to age or existing condition.

⁴⁹ Workgroup meetings are administered by the EQRO and DHFS, typically on a monthly basis, for such topic areas as Fiscal, Case Management, Provider Network, Quality, Executive Directors, among others. These meetings are intended to bring individuals together from pilot counties to share their experiences, help develop ideas, and receive feedback from their peers.

helpful. The case management workgroup, however, was said to be the least useful to the counties, in that it seems to be taking on a new, more policy-making orientation and some counties are only sending supervisors to these meetings.

The main issue that came up repeatedly is the time commitment the workgroup meetings require. Since the majority of the meetings are held in Madison, there is considerable travel time required for many of the CMO and RC staff to attend the meetings. Some counties stated that it was challenging to send staff to meetings and still be able to complete necessary work. Sometimes, they also feel they have difficulty determining which workgroup fills which function, and which staff should be at a particular meeting.

One frequent suggestion was to make more use of teleconferences or videoconferences now that the projects are underway. This would save time if staff didn't have to travel to meetings. Perhaps it would also be possible to reduce the number of meetings held, and make the trainings that are held as relevant as possible for appropriate staff. However, it is important to note that while some counties felt some workgroups could have fewer meetings, others felt some workgroups should meet more often. One recommendation was to consider alternating meetings month to month. Another change that might be helpful is to really target the meeting agendas, and make sure that the staff responsible for chairing the meetings have good meeting facilitation skills to help stay on the agenda. Related to the agenda, another comment was that workgroup agendas are set by the Department, and it would be helpful if the counties could have some input on what they would find most beneficial.

Additional suggestions were that workgroups would be good venues to use for strategic planning for the future, and that it might be helpful to periodically bring in non-Family Care counties.

Counties benefit from the sharing of experiences with other counties, and would appreciate even more DHFS facilitation of this activity, including dissemination of best practices and lessons learned. Many counties felt it would be helpful if the Department emphasized even more the dissemination of best practices and lessons learned from all the pilot programs, and provided more time and opportunities for such sharing activities. Sharing of this sort among the counties would help them avoid investing time in reinventing the wheel for some of the issues they encounter. More opportunities for counties to share experiences at trainings and workgroups would be helpful. Another suggestion was that the Department could develop a panel or workshop covering all aspects of Family Care to share with all to help the learning curve.

One suggestion was to videotape the activities of each county relating to IT and other issues, and distribute these videos among the counties as a way of learning from one another. Several counties are also already sharing resources they have developed with other counties, including brochures and marketing and outreach materials, and more of this sort of information sharing would be welcome.

Counties would appreciate more specific minimum standards from DHFS on information technology (IT) issues, as well as generally more concrete direction on other issues as well. In general, counties expressed that it would be helpful to receive more concrete direction from DHFS regarding what the Department needs the county programs to provide in terms of data as they develop the program systems. This would give counties specific guidelines to follow, while still allowing for the development of local methods, appropriate for each particular county program. Counties identified a conflict between the Department's desire to allow individuality and flexibility at the local level at the same time they are establishing a number of specific requirements. Counties find it helpful that they have many different State staff to approach with questions, but they also find that sometimes decisions are being made "by committee," and it can take some time to get a definitive answer.

While this issue came up regarding a range of Family Care program aspects, it came up most often in terms of the counties' IT systems, which is an area that several counties noted as particularly challenging. One recommendation is that the Department could set minimum standards for IT and work to ensure that all counties are at the same level. Another suggestion is that given the data reporting expectations for the Resource Center, the Department could provide specific recommendations of the best software and training to use. They also suggest that more direction in utilizing and focusing on outcome measurements would be helpful. Additionally, the provision of more data they can use to identify outcomes and support, given to them with a relatively quick turnaround, would also be useful.

Counties have concerns about Member Outcome Interviews. Three CMOs noted concerns and/or complaints from consumers about inappropriate questions in the interviews. Most, but not all, counties reported that the member outcome interviews are not really of value. Counties expressed a noted lack of understanding pertaining to the meaning, interpretation and utilization of the findings of the Member Outcome Interviews among the local Long-Term Care Councils, the Resource Centers, and the CMOs. The importance of member outcomes needs to be made more meaningful to these groups for the best results. (see Section VI. C. for more elaborate analysis of Member Outcome Interviews).

B. State Identified Lessons Learned

Annual CMO site visits were conducted by DHFS staff in November and December 2002. These site visits, as well as, Family Care workgroup meetings between CMO, RC and state staff provided a number of opportunities to dialogue about positive and negative aspects of the Family Care program. These dialogues have been distilled into a number of key "lessons learned" by DHFS staff. A summary of these is presented below:

County Issues

Key characteristics of counties that were able to start their CMO successfully have been identified. These are mainly related to having strong leadership within the county that is willing to take a risk in piloting a new program and ending the present system in favor of developing a new model. It was also found to be important for the CMO to have the ability to do detailed strategic planning, and to have the different county agencies affected by the program be able to collaborate well. Strong leaders who would advocate for the needed steps to be taken and were committed to seeing Family Care implemented in their county were also important, as was a priority for serving the needs of the public.

Getting key decision-makers to buy in to the Family Care program was facilitated by educational efforts on the part of stakeholders, and open communication between all parties. This helped to alleviate concerns that accompany change. Additionally, some turf issues have occurred between CMOs and other county agencies involved with the same populations, especially as funding constraints have occurred. Role clarification is required, and this will assist with buy-in among all agencies.

While the CMO governing boards have settled into their oversight role, the long-term care councils are still working at defining and understanding their roles⁵⁰. In order to address the concern that too many local boards are required by Family Care, the pilot sites advise that DHFS should re-evaluate the board structure design currently mandated by Family Care. It is also important to note that funding that already exists in counties for long-term support must not be immediately re-directed to other county programs, due to the fact that funding is necessary for start-up costs. Finally, some unrealistic expectations by stakeholders regarding outcomes and choice in the Family Care Program need to be addressed. It is important not to make too many promises while informing the community about the program. Pilot sites recommend being careful about raising unrealistic expectations about different aspects of the program.

Management and Infrastructure

It is critical to establish a complete management team with clearly defined roles and responsibilities for all areas: interdisciplinary teams; business and fiscal operations; information systems; QI and QA activities; prevention and wellness programs; and SDS. In particular, fiscal management, information technology, and business management tasks were found to be insufficient. Pilot sites suggest that DHFS institute a requirement that new CMOs must have full-time fiscal managers with relevant experience on staff. Additionally, they recommend that the Department require new CMO counties to utilize a business enterprise approach, separate CMO funds from the rest of the county budget, and have independent information systems. They suggested the IT groundwork should be in place ahead of time so the CMO is fully functional at the beginning instead of having to plan and/or develop a new IT system as it moves ahead. They also suggested CMOs have discretion in contracting, procurement and personnel issues, including hiring, which is a particular issue with new emerging staffing needs and a requirement for teamwork. Finally, it was suggested claims management may be best contracted out instead of devoting resources to developing an in-house system. Regardless of which option is used, the system must be responsive to provider concerns.

Eligibility and Enrollment

While the single point of entry has provided improvement for Family Care consumers, the eligibility and enrollment process is not necessarily any simpler than the system in place before the implementation of Family Care. Pilot sites have recommended in particular that Economic Support must be integrated into the planning process at the start.

⁵⁰ As part of the DHFS-CMO contract and the 1999 Wisconsin Act 9, pilot counties are required to appoint a local long-term care councils (LTCCs) to guarantee public input regarding the pilot. LTCCs must include a majority of members who are elderly or disabled or their immediate family members or representatives.

Inter-Disciplinary Teams

Some staff issues emerged related to implementation of the Family Care program. The outcome-based method of care planning, and the resource allocation decision-making process (RAD), presented both new roles and new philosophies for care managers. Interdisciplinary teams require structure and guidance to implement RAD and Family Care. Additionally, rapid expansion required constantly hiring new care managers. For this reason, it will be important to have a standardized training program available to quickly bring in new people.

Nursing input was found to be critical for CMO administrative and interdisciplinary teams. CMO pilots recommend that new sites should have a nurse supervisor in place at the inception, or at minimum that there be nursing participation in the development of the new policies and procedures.

Members with AODA and mental health issues require staff with specific training and support to address the special needs of these individuals. These issues can quickly become overwhelming, so pilot sites suggest training for this should be available early in the process.

Lastly, interdisciplinary teams should not have to focus on business processes. Pilot sites recommend that new CMOs from the start should have someone whose responsibility is to manage claims processing, benefits coordination, and securing authorizations. This will also help with the challenge presented by rapid growth in membership, which has placed a great deal of pressure on staff with little time to regroup as things get busy.

Provider Network

A significant challenge in this area is related to rapid growth in membership, which has made keeping up with provider capacity difficult. Additionally, Family Care presents a different relationship between the CMO and the providers versus that in COP/waivers. Increased competition among providers in response to the emphasis on consumer choice has helped to spur providers to think of new ways to attract consumers and improve quality. If counties had good provider relationships prior to the implementation of Family Care, and emphasized open communication when the transition occurred, they have found it possible to maintain those good relations even with increasing expectations and competition.

Specific suggestions from the pilot sites are:

- New CMOs should be required to have at minimum a full-time provider network developer to deal with provider contracts.
- Collaboration with providers should begin early in the process, and providers should be considered partners and stakeholders in Family Care.
- Claims can present difficulties, so CMOs should work with providers to ensure CMO staff capacity for claims submissions, and responding to provider questions and disputes.
- Keeping in the requirement that new CMOs must use the Medicaid rate.
- Create and support ways to get more complete information on provider costs than is normally available via audits and systematize rate-setting.
- Learn how member outcomes can be achieved by use of informal community supports.

Quality

For CMOs, QA/QI is now viewed as a key element of their programs, and it should be emphasized throughout the Family Care program. However, it can take a significant amount of time to learn about QA/QI. CMO pilots recommend that DHFS can help by providing specific and clear guidance from early on regarding expectations for quality programs. They further suggest that CMOs should have an individual identified at the start whose responsibility is to implement a quality program emphasizing measurable quality indicators. CMOs should be given sufficient time to phase in their quality programs, and fiscal, business, and information technology quality issues should be included in the quality site visit.

It was also emphasized that Family Care's focus on improvement for consumers, as opposed to a regulatory basis, is a key part of Family Care's success and needs to be maintained.

DHFS Role

A critical message is that for counties to take the risk of starting a CMO, there must be a good relationship between DHFS and the counties. The Department faces the challenge of providing enough direction to assist the counties in implementing Family Care, while still maintaining enough flexibility to meet the needs of different counties. It was beneficial that the Department allowed the CMOs to begin slowly and gradually moving toward full implementation. As Family Care expands, DHFS and its staff must maintain this level of commitment and flexibility to ensure the program will work. This will be a challenge, especially as the Department faces possible staffing cuts due to budget issues.

The organization of long term care at the state level is confusing in some regards. Also, DHFS could have provided clearer definitions of roles, responsibilities and expectations for CMO management structure and process development. Now, with experience, both the Department and the CMOs know more about what is needed for information technology, business data analysis, and fiscal management. This last issue must be right from the beginning.

Inconsistency in utilization reports early on made it difficult for CMOs to compare themselves with each other. DHFS could also have provided more facilitation for sharing of best practices and other information among the pilot sites. This will be especially helpful to new CMOs as they are starting – sharing existing experience will help them not have to re-invent the wheel.

These are specific needs around training and technical assistance:

- Training for case managers in identifying outcomes should precede RAD training.
- Continuing training in RAD and risk is critical for optimal case management. It is recommended that DHFS continue to do training on an annual basis, as better results are seen when training is done by the Department.
- A training in the general principles of managed care would be helpful.
- Give to new CMOs a checklist of minimal required functional needs for their information technology system.
- Provide clear expectations to CMOs for what they can expect in terms of technical assistance, so that they do not have inaccurate expectations that will not be met.
- Counties require more direction regarding what to do with information provided in the business systems analysis.

- Pilot sites would have found technical assistance very helpful when contracting for information technology services.

COP/Waiver Counties

CMO pilot sites provide these suggestions, based upon their experience, for counties looking ahead to preparing for Family Care or adopting some of its features:

- Begin to get teams together for case managers and other staff.
- Allow case managers to begin making some independent decisions, and taking responsibility for them. This will help them prepare for the decision-making responsibility that comes with Family Care.
- Put in place a full-time provider network developer, adding quality requirements to provider contracts.
- Pay providers in a per-person per-service basis. This places the risk of having adequate members on the provider, instead of the county.
- Foster growth in expertise about mental health and AODA issues.
- Learn the full meaning and implications of consumer choice.
- Provide training about consumer outcomes, the RAD, and risk agreements.
- Create and support ties between fiscal and case management staff.

IX. Conclusions and Recommendations

The Recommendation Section provides recommendations primarily from the Independent Assessment and EQRO activities over the last year.

A. *Recommendations*

Effective program evaluation is critical to the success and future of the Family Care program. Despite data limitations, it appears that the Family Care program was able to focus on improving access to care and improving quality. Cost effectiveness will require a longer observation and evaluation period to determine the full impact of Family Care on all services covered by Medicaid and the Family Care benefit. Specific recommendations related to access, quality and cost effectiveness are listed below.

1. **Access to Care**

Despite a lack of reliable and comprehensive data, there is no indication that the Family Care program has access to care problems. Future state or independent reviews should have the benefit of more evaluation data to review and analyze.

Recommendation – For the future, DHFS and the EQRO should address and document aspects of access more thoroughly. Access monitoring activities need to be strengthened. One specific area requiring greater attention is the documenting and monitoring of the provider network for each CMO. At this time, DHFS is in the process of enhancing this area in cooperation with the CMOs and EQRO.

Recommendation – The Provider Network within each CMO plays a pivotal role in what services Family Care members can access. Understanding and assessing the reasons various service providers join and remain within a CMOs network could be useful information to enhance access in the future, as well as improving quality. This could be accomplished through provider complaint analyses and provider satisfaction surveys. Additionally, given the minimal research literature on physician satisfaction or physician perceptions regarding the impact of Medicaid managed care on patient care, among other providers, efforts to gather and synthesize this type of information will be of great assistance to pilot CMOs and future CMOs.

Recommendation – In the future, information should be maintained showing reasons why individuals decide not to enroll in the Family Care program. Further, members and individuals who chose not to enroll in the program could be surveyed to assess and evaluate the access process more in depth and to identify areas for improvement.

Recommendation – The Enrollment Consultants are a valuable asset to eventual Family Care members and individuals who ultimately decide not to enroll in the program. This function should remain intact and be fully utilized. Should expansion within the Family Care program occur, special attention will be necessary by DHFS to ensure the current organization has the capacity to deliver this service.

Recommendation – The reporting process between the Enrollment Consultants and the Resource Centers needs to be streamlined so that all counties are reporting information to the Enrollment Consultants in the same fashion.

Recommendation – Presently, Richland County is the only CMO who has regular meetings with Enrollment Consultant staff. It is recommended that pilot counties and other counties where expansion of the Family Care program were to occur conduct these meetings periodically as well.

Recommendation – DHFS should develop routine reports to monitor access to Family Care on a county level.

2. Quality of Services

A considerable amount of attention has been paid to quality related issues by DHFS, much of which is thoroughly detailed by the EQRO in various reports. Additionally, DHFS has given counties substantial amounts of autonomy in the operations of the CMOs which has spurred a great deal of creativity and flexibility.

Recommendation – The EQRO noted several issues related to data quality and record keeping concerns during the site visits for such things as flu and pneumonia vaccinations and in the care plan reviews. As a result, it was recommended that CMOs choose to use one of eight possible forms. These forms might likely minimize many of the difficulties encountered by the CMOs and noted by the EQRO. However, it is difficult to ascertain how utilizing more than one type of reporting mechanism of varying styles will provide DHFS the ability to easily synthesize a variety of data sources and information across CMOs when the potential for each CMO to utilize a different reporting form exists. As a result, it is recommended that this option be narrowed further to one or two similar forms so that information will be utilized more efficiently.

Recommendation – DHFS has been working with the Resource Centers on guidelines to improve upon disenrollment data tracking. It is suggested that DHFS consider surveys or other methods of ascertaining information from those individuals who chose to disenroll to identify trends and patterns and areas for improvement, particularly given the high levels of “voluntary disenrollment” (behind “death”) for those members choosing to disenroll.

Recommendation – CMOs expressed to APS staff during site visit meetings that the value of workgroup meetings varied greatly. Additionally, the location and frequency of the meetings proved to be inconvenient to CMO staff somewhat regularly. While DHFS has been working to improve the quality of these meetings as well as the location of them, it is recommended that DHFS work with the CMOs to better ascertain, for both entities, what meetings might be changed in terms of frequency and necessity.

Recommendation – DHFS should use the combined averages from the first three rounds of Member Outcome Interview surveys to establish a baseline from which to work and assess within counties and between target groups. Not specifying specific parameters from this information diminishes the usefulness and breadth of collecting this data.

Recommendation – In order to ensure the validity of the member outcome interviews, DHFS should request that the EQRO periodically conduct statistical analyses on inter-rater reliability to enhance the present “reliablizing” utilized for this tool.

Recommendation – At the present time, DHFS has begun the fourth round of Member Outcome Interviews. Through this information, there is a great wealth of data to be utilized. It is suggested that DHFS utilize this information to glean longitudinal looks at changes that have occurred over time. One such methodology would be that of growth curve analyses that would enable DHFS to analyze rates of change between target groups and counties, among others. Further, for future survey rounds, DHFS should consider sampling individuals who have less than one year of Family Care membership and greater than one year in order to discern differences between these two groups.

Recommendation – While the focus areas and performance measures CMOs track annually can change, it is suggested that DHFS work with the CMOs and EQRO in determining one or two selected measures that remain consistent on an annual basis. Having data in this longitudinal fashion enables for greater insight to program impact and assessing changes over time. Further, when gathering information on vaccination rates, analyses should be conducted that determine if Family Care members mirror national patterns that are identified in the research literature.

Recommendation – The EQRO made recommendations in its annual report related to performance improvement project training and timeliness issues for assessment activities, among others. DHFS is working cooperatively with the EQRO and CMOs to improve this process. It is recommended that these efforts continue.

Recommendation – DHFS is early on in its evaluation of grievance and appeal data. While plans exist to scrutinize the various sources of data at their disposal, it is recommended that DHFS conduct on-going, frequent analyses of this information using all available sources of data. Further, it is suggested that DHFS also conduct comparative analyses on similar data for other state administered managed care programs to measure rates of grievances and appeals within the Family Care program compared to those of other programs.

3. Cost-Effectiveness

As previously discussed, exhaustive efforts have been made in developing the statistically valid, risk adjusted Comparison Group utilized throughout the Independent Assessment. However, due to the scope of the assessment, only selected long-term care and primary and acute costs and utilizations were analyzed in detail.

Recommendation – It is suggested that DHFS look to fully leverage resources that will enable this work to be utilized in an ongoing manner to examine changes over time among the Family Care counties and across target groups for the long-term care and primary and acute services within this study, as well as conducting more in-depth analyses than could be done within the scope of this Independent Assessment. Examples of such work might include examination of the full set of services within the Family Care program benefit package, additional primary and acute health related services, as well as on-going monitoring of total long-term care costs and program effects.

Recommendation – Given the substantial variation that exists between the Milwaukee County CMO and the other four CMO counties, it is suggested that future analyses take into account these differences and not only look at the program comprehensively, but also examine subgroups among the CMOs. Analyses such as these will enable DHFS to more effectively ascertain more specific differences that might otherwise be masked by a collective overview of the program.

Recommendation – Future analyses by DHFS should include examining and identifying county and regional differences among providers that might impact cost and utilization for various long-term care and primary and acute outcomes. For example, does prescription drug utilization differ between generic and brand name drugs across counties for drugs that provide the same benefit? If this were to be the case, is this a result of doctors in certain counties or regions of the state being more inclined to prescribe generic or brand name drugs which would ultimately impact drug costs across counties, but not utilization.

Recommendation – DHFS should be supported in its efforts to identify and monitor more effective cost-saving mechanisms and cost restraints for delivering long-term care in community settings through unique management practices, organization of delivery systems and organizational incentives. The Department has developed a working document entitled “Mechanisms of Cost Restraint.” This paper begins to identify specific cost-effective ways the Family Care program, as a whole, and individual CMOs can deliver quality long-term care services at an economical cost.

X. Appendix

Attachment 1: Items Covered in the Family Care Benefit Package⁵¹

The Family Care benefit package includes some Medicaid services, Community Options Program (COP) services, and Home and Community-Based Waiver (HCBW) services. The benefit package includes:

- Adaptive Aids (general and vehicle)
- Adult Day Care
- Alcohol and Other Drug Abuse Day Treatment Services (in all settings)
- Alcohol and Other Drug Abuse Services, except those provided by a physician or on an inpatient basis.
- Case Management (including Assessment and Case Planning)
- Communication Aids/Interpreter Services
- Community Support Program
- Counseling and Therapeutic Resources
- Daily Living Skills Training
- Day Services/Treatment
- Durable Medical Equipment, except for hearing aids and prosthetics (in all settings)
- Home Health
- Home Modifications
- Meals: home delivered and congregate
- Medical Supplies
- Mental Health Day Treatment Services (in all settings)
- Mental Health Services, except those provided by a physician or an inpatient basis
- Nursing Facility (all stays including Intermediate Care Facility for People with Mental Retardation (ICF/MR) and Institution for Mental Disease (IMD))
- Nursing Services (including respiratory care, intermittent and private duty nursing) and Nursing Services
- Occupational Therapy (in all settings except for inpatient hospital)

⁵¹ SOURCE: DHFS. <http://www.dhs.wisconsin.gov/familycare/benpackage.htm>

- Personal Care
- Personal Emergency Response System Services
- Physical Therapy (in all settings except for inpatient hospital)
- Prevocational Services
- Protective Payment/Guardianship Services
- Residential Services: Residential Care Apartment Complex (RCAC), Community Based Residential Facility (CBRF), Adult Family Home
- Respite Care (For care givers and members in non-institutional institutional settings)
- Specialized Medical Supplies
- Speech and Language Pathology Services (in all settings except for inpatient hospital)
- Supported Employment
- Supportive Home Care
- Transportation Select Medicaid covered (i.e. Medicaid covered Transportation Services except Ambulance and transportation by common carrier) and non-Medicaid covered

Attachment 2: Provider Network Summary by CMO – 2000 through 2002

Provider Network Summary by CMO – Calendar Year 2000		
Services	FDL	La Crosse
Adaptive AIDS		3
Adult Day Care	1	7
Adult Family Home	11	
Alcohol & Other Drug Use Day Treatment Services		4
AODA Services	1	
CBRF	19	
Chore Services	4	
Communication AIDS/ Interpreter	1	2
Community Support Program		1
Counseling & Therapeutic Resources		13
Daily Living Skills	7	5
Day Services / Treatment	1	5
Disposable Medical Supplies		17
Durable Medical Supplies	2	16
Health Fitness Program	6	
Home Clean / Home Modifications		various
Home Delivered Meals	5	8
Home Health Care Agencies	5	3
Home Oxygen	3	
Medical Supplies/ Specialized Medical Supplies	18	11
Mental Health - Day Treatment Services		1
Mental Health Services		3
Nursing Homes / facilities	10	21
Occupational Therapy Consult	7	
Outpatient MH/AODA	5	
Personal Care	7	5
Personal Emergency Response	5	3
Physical Therapy	7	9
Prevocational Services	3	7
RCAC Residential Services	3	20
Respite Care	10	4
Specialized Medical Vehicle	5	12
Speech & Language Pathology Services	5	6
Supported Employment	4	3
Supportive Home Care	18	10
Transportation	5	

* This list only includes services that were provided by at least one of the counties in the year 2000

Provider Network Summary by CMO – Calendar Year 2001					
Services	FDL	LaCrosse	Milw.	Portage	Richland
Adaptive AIDS		3		5	15
Adult Day Care	1	8	33	2	4
Adult Day Service				4	
Adult Family Home	18				
Alcohol & Other Drug Use Day Treatment Services		3			2
AODA Services	1			3	
Assessment & Case Planning				1	
Care Management Team		1	1	1	1
Care Management Unit			14		
CBRF	24				14
Chore Services	4				
Common Carrier			10		
Communication AIDS/ Interpreter	1	2		4	3
Community Support Program		1		1	1
Contractor			6		
Corporate Guardian			6		
Counseling & Therapeutic Resources		13		2	
Daily Living Skills	7	5	14	5	1
Day Services / Treatment	4	5			2
Developmentally Disabled Day Center			6		
Durable Medical Supplies	2	16		14	12
Health Fitness Program	6		1		
Home Clean / Home Modifications				3	4
Home Delivered Meals	5	6	4	3	3
Home Health Care Agencies	5	3		5	3
Home Oxygen	3				
Licensed Psychologist			2		
Massage Therapist			1		
Medical Supplies/ Specialized Medical Supplies	19	15		4	11
Mental Health - Day Treatment Services		2			
Mental Health Services		5		7	4
Money Management			3		
Movers			1		
Nursing Homes / facilities	12	13		6	10
Nursing Services				4	
Occupational Therapy Consult	7	10		7	4
Outpatient MH/AODA	4				
Personal Care	7	5		4	5
Personal Emergency Response	2	3	10	1	3
Physical Therapy		10		8	4
Prevocational Services	4	2		3	2
Protective Payment / Guardianship Services		4		1	2
RCAC Residential Services	3	16		49	35
Respite Care	6	4		20	23
Specialized Medical Vehicle	5	3			
Speech & Language Pathology Services	5	7		8	6
Supported Employment	5	3		4	2
Supportive Home Care	18	10	37	10	7
Transportation	5	6		8	7

* This list only includes services that were provided by atleast one of the counties in the year 2001

Provider Network Summary by CMO – Calendar Year 2002		
Services	Milwaukee	Portage
Acupuncturist	1	
Adaptive AIDS		7
Adult Day Care	28	2
Adult Family Home	26	37
Alcohol & Other Drug Use Day Treatment Services		2
AODA Services	2	
Care Management Team	14	1
CBRF	4	18
Communication AIDS/ Interpreter		3
Community Support Program		1
Corporate Guardian	5	
Counseling & Therapeutic Resources		2
Daily Living Skills	12	7
Day Services / Treatment		3
Durable Medical Supplies		7
Health Fitness Program	2	
Home Assistance	6	
Home Clean / Home Modifications	1	2
Home Delivered Meals	2	2
Home Health Care Agencies	18	3
Independent Living	2	
Massage Therapist	2	
Medical Supplies/ Specialized Medical Supplies	9	5
Mental Health - Day Treatment Services		1
Mental Health Services	4	4
Money Management	3	
Movers	2	
Nursing Homes / facilities	12	9
Occupational Therapy Consult		4
Personal Care		4
Personal Emergency Response	9	2
Physical Therapy		7
Prevocational Services		3
Protective Payment / Guardianship Services		1
RCAC Residential Services	4	
Respite Care		18
Specialized Day Care	6	
Specialized Medical Vehicle	3	
Speech & Language Pathology Services		4
Supported Employment		5
Supportive Home Care	36	9
Transportation	12	5

* This list only includes services that were provided by at least one of the counties in the year 2002

Attachment 3: Member Outcome Survey Combined Results by Target Group

: Member Outcome Survey Combined Results by Target Group			
Average of Three Family Care Survey Rounds			
Outcomes and Supports	DD Mean (N=460)	FE Mean (N=644)	PD Mean (N=240)
1ChooseLive	.459	.691	.733
1ChooseLiveSupport	.502	.655	.713
2ChooseWork	.417	.720	.567
2ChooseWorkSupport	.483	.685	.579
3Satisfied	.722	.741	.675
3SatisfiedSupport	.672	.770	.713
4ChooseRoutines	.722	.784	.842
4ChooseRoutinesSupport	.674	.772	.833
5Privacy	.848	.916	.871
5PrivacySupport	.728	.832	.796
6Participate	.563	.593	.471
6ParticipateSupport	.593	.613	.562
7Respect	.680	.781	.733
7RespectSupport	.676	.750	.733
8ChooseServices	.420	.478	.538
8ChooseServicesSupport	.437	.522	.604
9InformalNetwork	.591	.658	.600
9InformalNetworkSupport	.604	.705	.683
10Safe	.767	.728	.758
10SafeSupport	.709	.652	.663
11Fair	.672	.781	.696
11FairSupport	.617	.730	.746
12BestHealth	.674	.519	.446
12BestHealthSupport	.691	.629	.721
13FreeAbuse	.828	.868	.817
13FreeAbuseSupport	.637	.677	.629
14ContinuitySecurity	.600	.562	.417
14ContinuitySecurity Support	.489	.522	.421

Attachment 4: Review of Capitation Rates Methods, Assumptions and Adjustments by Year

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
1	Methodology						
	Comprehensive fee-for-service	Historical cost rate bands adjusted to actual mix of enrollees	Historical cost rate bands adjusted to actual mix of enrollees	80% trended 2001 final rates	50% trended 2001 final rates	25% Trended 2001 final rates	Not used
	Comprehensive functional status	Not used	Not used	20% Multiple regression on functional variables	50% Multiple regression on functional variables	75% Multiple regression on functional variables	100% Multiple regression on functional variables
	Intermediate	Historical cost rate band with no adjustments	Historical cost rate band with no adjustments	100% Trended 2001 final rates	100% Trended 2001 final rates	100% Trended 2001 final rates ⁵²	Not yet determined

⁵² Per our interview with OSF, they decided not to rebase 2004 because 2002 CMO actual costs are in line with trended rates.

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
2	Base line data for rates						
	Comprehensive fee-for-service	1998 MMIS & HSRS data for county specific actual enrollees (retrospective)	1999 MMIS & HSRS data for county specific actual enrollees (retrospective)	CY2001 rates trended forward	CY2001 rates trended forward	CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	CY2000 CMO cost reported in HSRS and functional screen data (four counties)	CY2001 CMO costs reported in HSRS and functional screen data (five counties)	CY2002 CMO costs reported in CMO encounter reporting system and functional screen data (five counties)	CY2003 CMO costs reported in CMO encounter reporting system and functional screen data (five counties)
	Intermediate	1998 MMIS data for non-waiver population \$100 to \$600 ⁵³	1999 MMIS & HSRS data for recipients with intermediate functional screens ⁵⁴	CY2001 rates trended forward	CY2001 rates trended forward	CY2001 rates trended forward ⁵⁵	Not yet determined

⁵³ “Family Care CMO Demonstration Final Fee-For-Service Calculations and Prospective Capitation Rates for CY 2000”, DHFS , November 8, 1999, p.6

⁵⁴ Gerber K, Goetch E, Ogden D, “Wisconsin Department of Health and Family Services 2001 Prospective Rate Development”, Milliman, November 20, 2000,

p 1

⁵⁵ See footnote 50

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
3	Base line data for trends and adjustment factors Comprehensive fee-for-service	1995 to 1998 MMIS & HSRS data for state waiver eligibles ⁵⁶	1996 to 1999 MMIS & HISRS data for state waiver eligibles ⁵⁷	1997 to 2000 MMIS & HSRS data for state waiver eligibles excluding 4 CMO counties	1997 to 2001 MMIS & HSRS data for state waiver eligibles excluding 5 CMO counties	1999 to 2002 MMIS & HSRS data for state waiver eligibles excluding 5 CMO counties	Not Used
	Comprehensive functional status	Not used	Not used	Same as fee-for-service	Same as fee-for-service	Same as fee-for-service	Not yet determined ⁵⁸
	Intermediate	Same as fee-for-service	1997 to 1999 data	Same as fee-for-service	Same as fee-for-service	Same as fee-for-service	Not yet determined
4	Services included in capitation	Long term care services only ⁵⁹	No Change	No Change	No Change	No Change	No Change

⁵⁶ FC CMO Demonstration Final for FC 2000, Appendix E

⁵⁷ Goetch E, Ogden D, Smith J, “Department of Health and Family Services Family Care Capitation Rates CY2002” , Milliman, p 3

⁵⁸ Per our interview with OSF, they are interested in using family care experience once the data stabilizes.

⁵⁹ FC CMO Demonstration Final CY 2000, p 1, and appendix A & B. Services are defined from raw data elements found in MMIS and HISRS. Minor modifications are made to this list appear in the FC contract.

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
5	<p>Federal reasonableness requirements</p> <p>Comprehensive fee-for-service and functional status and Intermediate</p> <p>(CY 2000 and CY 2001 functional status not used. CY2005 fee-for-service not used)</p>	Rates less than or equal to the UPL for combined LTC waiver programs	Rates less than or equal to the UPL for combined LTC waiver programs	<p>Demonstrate cost effectiveness of rates on a prospective basis for the initial FC waver⁶⁰</p> <p>Rates certified by an actuary as actuarially sound</p>	Rates certified by an actuary as actuarially sound	<p>Demonstrate cost effectiveness of rates on a prospective basis for the FC waiver renewal</p> <p>Rates certified by an actuary as actuarially sound</p>	Rates certified by an actuary as actuarially sound

⁶⁰ The final rule of the Balanced Budget Act of 1997 had been postponed a number of times. Finally notice of its enactment was given in the following Federal Register citations:
 FR, 6/14/02, Vol.67 No. 115, p 40989. "EFFECTIVE DATE: These regulations are effective on August 13, 2002.

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
6	Retrospective adjustments						
	Comprehensive fee-for-service	Yes, actual enrollees and provider fee increases	Yes, actual enrollees and provider fee increases	Yes, provider fee increases	Yes, provider fee increases	Yes, cost sharing and provider fee increases	Not used
	Comprehensive functional status	Not used	Not used	No	No	Yes, cost sharing	Yes, cost sharing
	Intermediate	No	No	No	No	Yes, cost sharing	Yes, cost sharing
7	Rate Categories						
	Comprehensive Fond du Lac, La Crosse, Portage and Richland starting in 2001	Composite Elderly (65+) & Disabled ⁶¹	Composite Elderly (65+) & Disabled	Composite Elderly (65+) & Disabled	Composite Elderly (65+) & Disabled	Not yet determined	Not yet determined
	Milwaukee	Elderly (60+)	Elderly (60+)	Elderly (60+)	Elderly (60+)	Not yet determined	Not yet determined
	Intermediate	Same as comprehensive	No rate categories due to low volume in base ⁶²	Composite ⁶³	Composite	Not yet determined	Not yet determined

⁶¹FC CMO Demonstration Final CY2000, p 3 states, "Current information systems do not permit reliable breakdown of the disabled population into developmentally and physically disabled sub-groups."

⁶² 2001 Prospective Rate Development, p 6

⁶³ Family Care Capitation Rates CY2002, Exhibit II-2

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
8	HSRS Administrative Adjustment Comprehensive fee-for-service	Add to HSRS 7% that is paid separately from claims except for assessments ⁶⁴	Add to HSRS 7% that is paid separately from claims except for assessments	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	Not applicable. CMO cost is used ⁶⁵	Not applicable. CMO cost is used	Not applicable. CMO cost is used	Not applicable. CMO cost is used
	Intermediate	Not applicable, rates developed from MMIS data.	Not applicable, rates developed from MMIS data.	Not applicable due to trending forward of 2001 rates	Not applicable due to trending forward of 2001 rates	Not applicable due to trending forward of 2001 rates	No adjustment
9	Community Aids Adjustment Comprehensive fee-for-service	Average cost of \$6 per functionally eligible enrollee ⁶⁶	Average cost of \$6 per functionally eligible enrollee	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	No adjustment. Community aids costs is in CMO cost experience	No adjustment. Community aids costs is in CMO cost experience	No adjustment. Community aids costs is in CMO cost experience	No adjustment. Community aids costs is in CMO cost experience
	Intermediate	No adjustment	No adjustment	Not used	Not used	Not used	Not Used

⁶⁴ FC CMO Demonstration Final CY2000, p 9

⁶⁵ CMO administration adjustment is described in item number 14

⁶⁶ FC CMO Demonstration Final CY2000, p 7

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
10	Lag Factor Adjustment						
	Comprehensive fee-for-service	No adjustment for final rates	No adjustment for final rates	No Adjustment	No Adjustment	No Adjustment	Not used
	Comprehensive functional status	Not used	Not used	Milwaukee Co 3.2% ⁶⁷	No Adjustment	Fon du Lac 1% Other counties 0.3%	Not yet determined
	Intermediate	.04 % adjustment	.07% adjustment ⁶⁸	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not yet determined
11	CSDRB Data Adjustment						
	Comprehensive fee-for-service	County specific average percent ⁶⁹	County specific average percent	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	No adjustment CSDRB is in CMO cost experience.	No adjustment CSDRB is in CMO cost experience.	No adjustment CSDRB is in CMO cost experience.	No adjustment CSDRB is in CMO cost experience.
	Intermediate	County specific average percent	County specific average percent	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not yet determined

⁶⁷ Family Care Capitation Rates CY2002, p 6

⁶⁸ 2001 Prospective Rate Development, Exhibit H

⁶⁹ FC CMO Demonstration Final CY2000, p 10

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
12	TCM and CSP Data Adjustments ⁷⁰						
	Comprehensive fee-for-service	40% county share of added to federal share included in MMIS ⁷¹	40% county share of added to federal share included in MMIS	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	No Adjustment. Case mgt & community support are in CMO cost experience.	No Adjustment. Case mgt & community support are in CMO cost experience.	No Adjustment. Case mgt & community support are in CMO cost experience.	No Adjustment. Case mgt & community support are in CMO cost experience.
	Intermediate	40% county share of added to federal share included in MMIS	40% county share of added to federal share included in MMIS	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Not yet determined
13	Acuity Factor Adjustment						
	Comprehensive fee-for-service only	Determined from base line data	Determined from base line data ⁷²	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not used

⁷⁰ Targeted Case Management and Community Support

⁷¹ FC CMO Demonstration Final CY2000, p 10

⁷² 2001 Prospective Rate Development, p 12 & Exhibit C

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
14	General Administrative Adjustment ⁷³						
	Comprehensive Fee-for-service	2% base upon fiscal agent estimate	2% base upon fiscal agent estimate	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not used	12% ⁷⁴	7%, Richland 12% ⁷⁵	7%, Richland 12%	To be based upon 2003 CMO cost experience
	Intermediate	2% base upon fiscal agent estimate	2% base upon fiscal agent estimate	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not yet determined
15	Managed Care Adjustment ⁷⁶						
	Comprehensive fee-for-service	2% Expected Savings due to managed care ⁷⁷	2% Expected Savings due to managed care	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not used
	Comprehensive functional status	Not used	Not Used	No Adjustment	No Adjustment	No Adjustment	No Adjustment
	Intermediate	2% Expected Savings due to managed care	2% Expected Savings due to managed care	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not yet determined

⁷³ 2% Administrative adjustment and 2% Managed care adjustment are offset and eliminated for revised documentation for the BBA per OSF.

⁷⁴ Family Care Capitation Rates CY2002, p 13

⁷⁵ Goetch E, Ogden D, Smith J, "Department of Health and Family Services Family Care Capitation Rates CY2003", Milliman, p 12

⁷⁶ See footnote 22

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
16	New Eligible Factor Comprehensive Fee-for-service only	Determined from base line data ⁷⁸	Determined from base line data	Included in CY2001 rates trended forward	Included in CY2001 rates trended forward	Include in CY2001 rates trended forward	Not used

⁷⁷ FC CMO Demonstration Final CY2000, p 11

⁷⁸ FC CMO Demonstration Final CY2000, Appendix E

Review of Capitation Rates Methods, Assumptions and Adjustments by Year							
Item No	Methods Assumptions and Adjustments	CY2000	CY2001	CY2002	CY2003	Tentative CY2004	Tentative CY2005
17	Cost Sharing Adjustment						
	Historical cost Comprehensive	Included HSRS cost sharing in rates	Included HSRS cost sharing in rates	Excluded from CY2001 rates trended forward ⁷⁹	Excluded from CY2001 rates trended forward	Include cost sharing in rates. Estimate cost share prospectively. Exclude actual cost sharing retrospectively.	Not used
	Comprehensive functional status	Not used	Not used	Excluded cost sharing from rates ⁸⁰	Excluded cost sharing from rates	Include cost sharing in rates. Estimate cost share prospectively. Exclude actual cost sharing retrospectively.	Include cost sharing in rates. Estimate cost share prospectively. Exclude actual cost sharing retrospectively.
	Intermediate	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable.	Not Applicable.

⁷⁹ Family Care Capitation Rates CY2002, p 5

⁸⁰ Family Care Capitation Rates CY2002, p 6

Attachment 5: CDPS Validation Analysis

Problem

The Family Care (FC) financial impact assessment must take account of confounding factors, to rule out the spurious influence of individual differences in diagnostic case-mix and severity on health care spending. The APS Healthcare Independent Assessment (IA) team has utilized a case-mix control strategy based on the Chronic Disease and Disability Payment System (CDPS), which has been developed and tested as a diagnosis-related resource grouper for Medicaid populations (Kronic et al. *HCFR* 2000). This methodological approach will ensure that the Comparison Group utilized in the Family Care IA is a random sample from across the state similar in terms of functional abilities, eligibility, and previous service utilization patterns.

The application of this system to the FC target populations (i.e. developmentally disabled, physically disabled, and frail elderly) is problematic. The illness-burden index weights computed by the program were originally estimated from data that included Medicaid AFDC/TANF and SSI-disabled populations. Additionally, the authors state that the home and community-based (HCBW) waiver population and Medicare/Medicaid dual-eligible population were excluded (Kronic et al. *HCFR* 2000). Therefore, predicted resource use from diagnosis-based CDPS groups may not adequately represent actual resource use for these excluded groups, which comprise the FC population.

To obtain an adequate measure of diagnosis and expenditure-related illness-burden for the FC target populations, the CDPS program must be modified to compute index weights specific to these populations. The purpose of this analysis is to estimate and validate a case-mix index for the population of individuals most like those who are eligible to participate in FC.

Data

Data for the CDPS validation analysis were drawn from the Human Service Reporting System (HSRS) through the Medicaid Evaluation and Decision Support (MEDS) data warehouse for the calendar year 1999. HSRS collects human services data submitted by each Wisconsin County. These data include information on HCBW participation.

The waiver population was defined as anyone in HSRS receiving waiver services (CIP II, COP Waiver, CIP IA, CIP IB, CSLA, and BIW), including the Community Options Program (COP-R) recipients for 1999 who additionally had Medicaid eligibility. Therefore, all waiver eligible months where the recipient was simultaneously Medicaid eligible were included in the analysis.

Costs were calculated as the “Net LTS Costs” reported in HSRS, which represent “the net cost under all LTS programs from the LTS episode level...including the gross total costs and the negating income costs.”(DHFS 2001). All monthly expenses during waiver eligible months were included if the respondent was also Medicaid eligible in that month. If a waiver participant was only eligible for COP-R in 1999, the COP-R costs were also included for all Medicaid eligible months. Additional fee-for-service (FFS) expenses not captured by the HSRS waiver

reporting system, but paid by Medicaid, were selected from the FFS claims data through the MEDS data warehouse.

The Observed Expenditure and Diagnosis were derived from MEDS Claims Analysis Universe for calendar year 1999. Further, Medical Status Code and Medicare Dual-Eligibility (and age and gender) were obtained from the MEDS Recipient Analysis Universe for calendar year 1999. Finally, data were obtained pertaining to Mental Health condition as an individual's primary diagnosis from the Mental Health Module. Because this latter group is not considered to be a FC Target Group, it was necessary to identify them as a separate group of waiver recipients and exclude them from further analysis.

Method

This analysis tested the null hypothesis (H_0) that the average difference between CDPS-predicted expenditures and actual observed expenditures for calendar year 1999 is the same for the waiver and Medicare-eligible populations as it is for the SSI population. If the null hypothesis was true, then waiver and Medicare indicators would not account for significant additional variance in observed expenditures, over and above variance explained by predicted expenditures based on the SSI-only case-mix index. A linear regression model to test this hypothesis is given by:

$$\text{Obs_Expend} = a + b \times \text{CDPSPred} + c \times \text{Waiver} + d \times \text{MC} + e$$

Where:

Obs_Expend = 1999 Actual Observed Expenditure

CDPSPred = 1999 CDPS Predicted Expenditures

Waiver = Dichotomous Variable for 1999 Waiver Eligibility

MC = Dichotomous Variable for 1999 Dual Eligibility.

The null hypothesis is that the coefficients of Waiver and Medicare indicators are equal to zero. Rejecting this hypothesis implies that CDPS-predicted expenditures based on SSI-only weights are inadequate to account for Medicaid expenditures as they relate to case-mix in the FC target populations. If this is the case, then an alternate case-mix index may be developed and tested in a similar manner.

We take a two-step approach using split-half validation. The first step is to test the null hypothesis using the specified model, and the second step is to test the hypothesis that the alternate case-mix index using FC target-group adjusted weights adequately accounts for diagnosis-related Medicaid expenditures. We split the sample into two halves using random assignment, to allow for exploratory model development with the first half, and model confirmation with the second half.

Step 1.

As a first step we used CDPS to compute the case-mix index using the "concurrent" weights supplied with the program. These weights are regression coefficients from an equation that

regressed total expenditures for one year on diagnoses observed during the same year, based on a national population of SSI-eligible disabled adults, under age 65, on Medicaid. We calculated this concurrent-predicted case-mix index for the first randomly-selected sample of Wisconsin Medicaid recipients who were on SSI, waivers, or Medicare-eligible during 1999. We then regressed the actual observed expenditures in 1999 (including Medicaid fee-for-service amounts paid plus total waiver costs) on the concurrent-predicted case-mix index. The index accounts for 17% of variance in observed expenditures (Table 1, first column of data).

Regression of Actual Expenditures (FFS and Waiver) on CDPS "Concurrent" Case-Mix Index and Program –Participation Indicators				
	Model 1 (R²=.14)		Model 2 (R²=.21)	
	Coefficient	Std. Err.	Coefficient	Std. Err.
Intercept	\$8,234	(156)	\$2,548	(256)
Case-Mix	\$4,097	(59)	\$3,553	(57)
On Waiver			\$22,537	(46)
On Medicare			\$3,841	(13)
On Both			\$10,955	(34)

All coefficients are significant at .05 level

To test the hypothesis that this case-mix index works equally well for SSI-eligibles and for the FC target populations, we added “dummy” variables to the equation. These are binary indicators of whether or not individuals are Medicare eligible, Waiver eligible, or waiver eligible with primarily mental health diagnoses (the latter group not being considered one of the FC target groups). The results in Table 1 (second column of data) show that these indicators account for significantly more variance in observed expenditure than is expected based on the SSI-based case-mix index. Therefore, we reject the null hypothesis and conclude that the SSI-derived case-mix index is an inadequate measure of expected resource use for the FC-eligible population.

Step 2.

The previous step not only tested (and rejected) the null hypothesis, but also produced a new set of regression coefficients that can be used to adjust the case-mix index. The new regression of observed expenditures on diagnoses and the program-participation indicators (Waiver, Medicare, or both) constitutes a new set of case-mix weights that is tailored to the Wisconsin FC-eligible population. Table 2 shows the unadjusted SSI-based weights computed from our Wisconsin data for 1999 (shown in the second column of data), compared to the new set of weights, adjusted for program-participation indicators.

Case-Mix index Weights Computed for Wisconsin 1999 SSI, Waiver, and Medicare Population			
Adjusted r-squared		31%	33%
CDPS Group	Description	Unadjusted (SSI-based) Case-Mix Index Weight	Adjusted (FC-eligible) Case-Mix Index Weight
INTERCEPT	Intercept	0.56	0.42
WV			0.72
MC			0.04
WV_MC			0.30
A_15_24F	Female Age 15-24	-0.12	-0.14
A_15_24M	Male Age 15-24	-0.15	-0.16
A_25_44F	Female Age 25-44	-0.19	-0.19
A_45_64F	Female Age 45-64	-0.17	-0.16
A_45_64M	Male Age 45-64	-0.04	-0.01
A_OVER64	Age 65 and over	0.02	0.05
CARVH	Cardiovascular, very high	0.88	0.88
CARM	Cardiovascular, medium	0.12	0.12
CARL	Cardiovascular, low	0.07	0.09
CAREL	Cardiovascular, extra low	-0.09	-0.07
PSYH	Psychiatric, high	0.21	0.27
PSYM	Psychiatric, medium	0.26	0.30
PSYL	Psychiatric, low	0.26	0.26
SKCM	Skeletal, medium	0.24	0.21
SKCL	Skeletal, low	0.23	0.20
SKCVL	Skeletal, very low	0.13	0.12
SKCEL	Skeletal, extra low	-0.03	-0.04
CNSH	CNS, high	1.65	1.51
CNSM	CNS, medium	0.78	0.67
CNSL	CNS, low	0.44	0.41
PULVH	Pulmonary, very high	3.79	3.73
PULH	Pulmonary, high	0.50	0.48
PULM	Pulmonary, medium	0.24	0.22
PULL	Pulmonary, low	0.02	0.02
GIH	Gastro, high	0.64	0.66
GIM	Gastro, medium	0.22	0.21
GIL	Gastro, low	0.03	0.02
DIA1H	Diabetes, type 1 high	-0.12	-0.16
DIA1M	Diabetes, type 1 medium	-0.01	-0.04
DIA2M	Diabetes, type 2 medium	-0.17	-0.19
DIA2L	Diabetes, type 2 low	-0.03	-0.04
SKNH	Skin, high	0.32	0.31
SKNL	Skin, low	0.06	0.03
SKNVL	Skin, very low	0.02	-0.01
RENVH	Renal, very high	0.24	0.22
RENM	Renal, medium	0.28	0.21
RENL	Renal, low	0.00	-0.02
SUBL	Substance abuse, low	0.07	0.11

Case-Mix index Weights Computed for Wisconsin 1999 SSI, Waiver, and Medicare Population			
Adjusted r-squared		31%	33%
CDPS Group	Description	Unadjusted (SSI-based) Case-Mix Index Weight	Adjusted (FC-eligible) Case-Mix Index Weight
SUBVL	Substance abuse, very low	-0.06	-0.02
CANH	Cancer, high	0.25	0.23
CANM	Cancer, medium	-0.11	-0.11
CANL	Cancer, low	0.03	0.02
DDM	DD, medium	2.74	2.62
DDL	DD, low	0.98	0.82
GENEL	Genital, extra low	-0.20	-0.18
METH	Metabolic, high	0.23	0.21
METM	Metabolic, medium	0.23	0.21
METVL	Metabolic, very low	0.03	0.00
PRGCMP	Pregnancy, complete	0.49	0.60
PRGINC	Pregnancy, incomplete	0.17	0.31
EYEL	Eye, low	-0.04	-0.04
EYEVL	Eye, very low	-0.10	-0.10
CERL	Cerebrovascular, low	0.29	0.27
AIDSH	AIDS, high	0.57	0.58
INFH	Infectious, high	0.57	0.58
HIVM	HIV, medium	0.57	0.58
INFM	Infectious, medium	0.57	0.58
INFL	Infectious, low	0.22	0.21
HEMEH	Hematological, extra high	2.81	2.75
HEMVH	Hematological, very high	1.18	1.17
HEMM	Hematological, medium	0.40	0.38
HEML	Hematological, low	0.15	0.13
NC_OVR14	No Claims, Age 15+	-0.21	-0.20

It remains to test the hypothesis that this new “adjusted case-mix index” adequately accounts for actual resource-use in the FC-eligible population defined more broadly to include not only the SSI-disabled, but also the Medicare eligible and home- and community-based waiver program participants. Because the first half of our sample was used to construct the new adjusted case-mix index, we turn to the second half of our sample to perform a confirmatory hypothesis test.

Result

The formula for calculating the new “adjusted case-mix index” was split into two blocks. Block 1 is the weighted sum of all the CDPS diagnostic group indicators, which accounts for 35.4% of variance in the second random sample of Medicaid and waiver expenditures observed in Wisconsin in 1999 (Table 3, first column of data).

Regression of Actual Expenditures (FFS and Waiver) on Adjusted Case-Mix Index Divided into Block 1 (All CDPS Groups) and Block 2 (Participation in Waiver or Medicare)				
	Model 1 (R²=.35)		Model 2 (R²=.39)	
	Coefficient	Std. Err.	Coefficient	Std. Err.
Intercept	\$1,497	(149)	\$(738)	(155)
CDPS Groups	\$16,431	(128)	\$15,083	(129)
On Wavier or Medicare			\$20,783	(508)

All coefficients are significant at .05 level

Block 2 is the weighted sum of program-participation indicator variables. This block is added to the equation to test the hypothesis that the unadjusted case-mix index works equally well for all kinds of program participants in the FC-eligible population (Table 3, second column of data). The coefficient for Block 2 is significantly greater than zero, therefore we reject the null hypothesis. The adjusted case-mix index is significantly better than the unadjusted index.

Conclusion

The results support the use of the adjusted case-mix index, rather than the unadjusted index, as a measure of expected financial resource-use, based on diagnostic and program eligibility criteria. Thus, as the IA team moves on to conduct the FC financial impact assessment, we are confident that the adjusted case-mix index constitutes a valid control for expected financial resource-use in the entire FC-eligible population.

Attachment 6: Functional Status Impairment Scale (FSIS) Construction

Purpose

The purpose of this sub-analysis is to construct a valid and reliable unidimensional multiple-indicator scale of functional status using items measured on the FC-Functional Screen (FC-FS) and the Medicare-Minimum Data Set (MDS) functional status assessment for a common set of individuals. With that scale, we develop a formula to compute functional status impairment scale (FSIS) scores. Then we use the formula to impute functional status scores for cases where MDS data are available but FC-FS data are missing. Finally we use the imputed FSIS as an independent “control” variable in the regression analysis of expenditures, and explore the use of FSIS as an intervening variable in path analysis.

Method

- 1) Six ADL measures are used: dressing, eating, bathing, toilet use, transferring, and mobility.
- 2) Four instruments are used, three versions of the FC-FS (FS1, FS2, FS3) and MDS.
- 3) Each measure assigns a score of 0 for independence (no functional status impairment), the FS2 and FS3 use a scale from 1 to 2 to indicate levels of help (2 = help is needed and helper must be present throughout the task), the MDS uses a scale from 1 to 4 (4 = total dependence). FS1 uses a scale from 1 to 3 to indicate levels of help (3 = extensive or complete hands-on assistance needed), except for transferring, which goes up to 4 (4 = two people required), but was re-coded in those cases to 3.
- 4) The additive scale for ADL limitation from the FC-FS instruments ranges from 0 to 12, while the scale from the MDS ranges from 0 to 24. The FS and MDS instruments must therefore be transformed into a common scale.
- 5) Since occasionally not all 6 ADLs are measured at once, the maximum score for any single screen may be less than the maximum for all screens. Therefore, each screen is transformed into a common scale ranging from 0 to the maximum possible for that screen. The formula for calculating the Functional Status Impairment Scale is:

$$\text{FSIS} = 100 \times \{ \text{Sum(ADLs)} / [\text{Count(ADLs)} \times \text{MaxItem(Instrument)}] \}$$

Where MaxItem(Instrument)=2 for FS2 and FS3 instruments, 3 for the FS1 instrument, and 4 for the MDS instrument; Count(ADLs) is the number of ADLs that were measured in the screen; and Sum(ADLs) is the sum of the impairment scores for the ADLs that were measured in the screen. FSIS ranges from 0 (total independence) to 100 (total dependence) for each screen that was performed.

- 6) The “mobility” ADL is measured with a single item on the FS instruments, and four separate items on the MDS instrument. To assign equal weight to mobility (1/6) in the FSIS, the four mobility items on the MDS instrument are averaged into a single item:

$$\text{Mobility} = \text{Sum(Items)} / \text{Count(Items)}$$

FSIS scores for MDS screens and FS screens for the same individuals were linked together, and 685 sequences were identified where an MDS assessment was followed by a FS screen within one month, followed by another MDS assessment within one month. These 685 observations were randomly split into two samples of 365 and 320 observations, respectively.

Results

The first sample was used to estimate an imputation formula for the FS score as a linear combination of two consecutive MDS scores not more than two-months apart. The estimated imputation formula is: $\text{FSIS} = 7.5 + .38 * \text{MDS1} + .49 * \text{MDS2}$

In the second sample, the formula was used to impute the FS score, and the imputed score was correlated with the observed FS score. The estimated correlation between observed and imputed FS score was .62. This is less than the estimated auto-correlation of .78 between two successive MDS screens not more than two months apart, but it is more than the correlation of .58 between observed MDS screens and observed FS screens not more than one month apart. This suggests that the imputed FS score and an actual FS screen are roughly equally reliable indicators of MDS-assessed functional status.

Conclusion

We imputed FSIS scores for all individuals with two MDS assessments within a period of two months and used this as our measure of functional status in cases where there was no FC-FS screen performed. Mean values were imputed for cases missing FSIS scores, and this mean-substitution was indicated by a dummy variable (MISSFSIS) in the regression to account for any possible bias introduced by mean-substitution.

Attachment 7: Determining a Rural-Urban Classification Systems for the Family Care Independent Assessment

Why a guideline on rural-urban classification systems?

The unique challenges facing rural health care and health care systems are getting more attention. Analysts looking at rural health disparities must choose from several classification systems. Guidelines are useful for promoting consistency and comparability among analyses that look at rural health.

This is uncharted territory. According to two of the country's leading rural health researchers, Dr. Gary Hart at the University of Washington Rural Health Research Center and Dr. Thomas Ricketts at the Sheps Center at the University of North Carolina at Chapel Hill, no one has systematically addressed the question of how to best incorporate rural-urban classification systems into public health assessment.

Which is the best system for identifying rural areas in Wisconsin?

Wisconsin presents unique challenges in classifying rural areas because of the range in the size of its counties. The most common classification systems (for example, Metropolitan vs. Non-Metropolitan) use county geography. County-based systems can misclassify some areas. The likelihood of misclassification increases with the size of the county. Nationally, 14 percent of residents of Metropolitan counties, as defined by the US Office of Management and Budget, are classified as rural by Bureau of Census definitions (Ricketts et al., 1998). Sub-county definitions using ZIP code or census geography are preferable to county-based systems, because they provide greater discrimination between rural and urban areas.

Wisconsin's rural areas are not homogenous. There are significant demographic differences between remote, small-town rural areas, large towns, and urban fringe areas. A simple binary rural-urban classification can obscure important differences. However, the small populations in more remote rural areas often make it impractical to subdivide rural areas too finely. The ideal system would differentiate among different types of rural areas, but should be collapsible into a smaller number of classifications if needed.

The Rural Urban Commuting Area (RUCA) system: a good choice

No systematic study or standards identify which definitions are most appropriate for analyzing specific types of public health data. APS Healthcare recommends using the Rural Urban Commuting Area (RUCA) system for the Family Care Independent Assessment because it is more flexible and precise than available alternatives.

The RUCA system is a ten-tiered classification system based on census tract geography. Both population size and commuting relationships are used to classify census tracts. First, urbanized (continuously built up areas of 50,000 or more), large town (10,000-49,999), and small town (2,500 to 9,999) cores areas are identified. Next, the primary (largest) and secondary (second largest) commuting flows of remaining tracts are examined using the most recently available

commuting data. High commuting tracts are those where the primary or largest commuting flow is greater than 30% to a core area. Low commuting or influence area tracts are those where the largest flow to core areas is 5-30%.

The RUCA system provides a great deal of flexibility as the codes can be collapsed or combined in several different ways.

Suggested four-tiered consolidation of the RUCA system at the sub-county level

Many data sets will not support analysis using a ten-tiered classification system. The RUCA system can be collapsed in several ways. For general analyses of sub-county data, a four-tiered system can be utilized under the RUCA system.

- **Urban Core Areas** - continuously built up areas 50,000 persons or more. These areas correspond to US Bureau of the Census defined Urbanized Areas.
- **Suburban Areas** - areas with high commuting relationships with Urban Core Areas. Suburban areas include Large Town, Small Town and Isolated Rural Areas with high commuting levels to Urban Core Areas.
- **Large Town Areas** - towns with populations between 10,000 and 49,999 and surrounding rural areas with high commuting levels to these towns.
- **Small Town and Isolated Rural Areas** - towns with populations below 10,000 and their commuter sheds and other isolated rural areas.

Other considerations when making rural-urban comparisons

All population-based health indicators comparing urban and rural areas should be age-adjusted, as the proportion of elderly residents in rural areas is higher than in urban areas. Analysts should also keep in mind that, in general, the residents of rural Wisconsin have lower incomes and have completed fewer years of formal education than those in other areas. Differences in health status between rural and urban Wisconsinites may reflect underlying differences in demographics.

Guidelines

- If data are available at the census tract or ZIP code level, use the RUCA system.
- All rural-urban classification systems currently depend on 1990 commuting data. Updated codes are not likely to be available until fall 2002. Until the updated codes are released, the potential for misclassification should be noted in technical notes.
- For routine analyses we suggest collapsing the ten RUCA codes into four categories,
 - Urban Core Areas
 - Suburban Areas
 - Large Town Areas

- Small Town and Isolated Rural Areas
- If data are only available at the county level, we recommend using the Office of Community and Rural Health's Dominant RUCA codes. The potential for misclassification should be discussed.
- Rural-urban differences may reflect underlying differences in demographics. In general, rural-urban comparisons of health indicators should be age-adjusted, as the proportion of elderly residents in rural areas is higher than in urban areas. Analysts should also keep in mind that the residents of rural Wisconsin have lower incomes and have completed fewer years of formal education than those in other areas.
- Document your choice of a rural-urban classification system and be sensitive to each system's limitations.

This ten-tiered classification system was developed in the late 1990s and is rapidly gaining wide use. It is the only system available at the census tract or ZIP code level.

Four-Tiered Consolidation of RUCA Codes: Many data sets will not support analysis using a ten-tiered classification system. The Washington state Office of Community and Rural Health developed a Four-Tiered Consolidation of RUCA codes in 2001 for general analyses of sub-county data.

- **Urban Core Areas** - continuously built up areas 50,000 persons or more. These areas correspond to US Bureau of the Census defined Urbanized Areas.
- **Suburban Areas** - areas with high commuting relationships with Urban Core Areas. Suburban areas also include Large Town, Small Town and Isolated Rural Areas with high commuting levels to Urban Core Areas.
- **Large Town Areas** - towns with populations between 10,000 and 49,999 and surrounding rural areas with high commuting levels to these towns.
- **Small Town and Isolated Rural Areas** - towns with populations below 10,000 and their commuter sheds and other isolated rural areas.

Table 3: Four-Tiered Consolidation of RUCA Codes

Consolidation Class	RUCA Codes
Urban Core Areas	1
Suburban Areas	2, 3, 4.1, 7.1, 8.1, 10.1
Large Town Areas	4, 5, 6, 7.2, 8.2, 10.2
Small Town and Isolated Rural Areas	7.0, 7.3, 7.4, 8, 8.3, 8.4, 9, 9.1, 9.2, 10, 10.3, 10.4, 10.5

Dominant RUCA County Codes: For cases where sub-county data are not available, the Office of Community and Rural Health has classified counties by dominant RUCA codes. To do this, the population of census tracts within counties by RUCA code aggregated. Counties

are classified as predominantly Urban, Large Town, or Small Town Rural, using the following rules:

Table 4: Rules for Assigning Dominant RUCA Codes to Counties

Dominant RUCA Code	Percent County Population	Residing in Tracts with RUCA Codes
Dominant Urban	> 75%	1, 2, 3, 4.1, 7.1, 8.1,10.1
Mixed Urban	50 - 75%	1, 2, 3, 4.1, 7.1, 8.1,10.1
Dominant Large Town Rural	> 75%	4, 5, 6, 7.2, 8.2, 10.2
Dominant Small Town and Isolated Rural	> 75%	7.0, 7.3, 7.4, 8, 8.3, 8.4, 9, 9.1, 9.2, 10, 10.3, 10.4, 10.5
Mixed Rural	50 - 75%	Large Town and Small Town/Rural combined but not meeting Large Town and Small Town Rural Classifications

Counties with less than 75% of the population residing within Urban Core, Suburban RUCAs, Large Town, or Small Town and Isolated Rural RUCAs as defined in the Four-Tiered Consolidation of RUCA Codes system are classified as mixed

REFERENCES

Ricketts TC, Johnson-Webb KD, Taylor P. Rural definitions for health policy makers. Bethesda (MD): Dept. of Health and Human Services (US), Federal Office of Rural Health Policy; 1998 July.

DESCRIPTION OF CODES AND TECHNICAL NOTES**Rural-Urban Commuting Areas**

The attached file with four variables is as follows:

Column 1 = zip code: alpha version

Column 2 = zip code: numeric version

Column 3 = RUCA Code

Column 4 = Population Category

(RUCAs)

These RUCA codes for zip level analysis are derived from the census tract level RUCA codes and the definitions given below apply.

Census tracts are assigned to categories based on commuting data and Census Bureau definitions (e.g., urbanized area and urban place are Census Bureau terms with specific definitions).

1. Urban core Census tract

[primary flow within Census Bureau defined Urbanized Area (metro >= 50,000)]

1.1 *secondary flow (30-50%) to larger urbanized area*

1.0 *otherwise*

2. Census tract strongly tied to urban core

[primary flow to Census Bureau defined Urbanized Area (>30%)]

2.1 *secondary flow (30-50%) to larger urbanized area*

2.2 *combined flows to urbanized areas of >30% and greater than primary flow*

2.0 *otherwise*

3. Census tract weakly tied to urban core

[primary flow to Census Bureau defined Urbanized Area but 5-30%]

3.0 --

4. Large town Census tract

[primary flow within large Census Bureau defined Urban Place (10,000-49,999 & >30%)]

4.1 *secondary flow (30-50%) to urbanized area*

4.0 *otherwise*

5. Census tract strongly tied to large town

[primary flow to large Census Bureau defined Urban Place (>30%)]

5.1 *secondary flow (30-50%) to urbanized area*

5.0 *otherwise*

6. Census tract weakly tied to large town

[primary flow to large Census Bureau defined Urban Place (5-30%)]

6.0 --

7. Small town Census tract

[primary flow within small Census Bureau defined Urban Place (>= 2,500 & <10,000 & >30%)]

7.1 *secondary flow (30-50%) to urbanized area*

7.2 *secondary flow (30-50%) to large urban place*

7.3 *secondary flow (5-30%) to urbanized area*

7.4 *secondary flow (5-30%) to large urban place*

7.0 *otherwise*

8. Census tract strongly tied to small town

[primary flow to a small Census Bureau defined Urban Place (>30%)]

8.1 *secondary flow (30-50%) to urbanized area*

8.2 *secondary flow (30-50%) to large urban place*

8.3 *secondary flow (5-30%) to urbanized area*

8.4 *secondary flow (5-30%) to large urban place*

8.0 *otherwise*

9. Census tract weakly tied to small town

[primary flow to a small Census Bureau defined Urban Place (5-30%)]

9.1 *secondary flow (5-30%) to urbanized area*

9.2 *secondary flow (5-30%) to large urban place*

9.0 *otherwise*

10. Isolated small rural Census tract (remaining rural tracts)

[no primary flows over 5% to any Census Bureau defined Urbanized Area (metro), large Urban Place, or small Urban Place]

10.1 *secondary flow (30-50%) to urbanized area*

10.2 *secondary flow (30-50%) to large urban place*

10.3 *secondary flow (30-50%) to small urban place*

10.4 *secondary flow (5-30%) to urbanized area*

10.5 *secondary flow (5-30%) to large urban place*

10.0 *otherwise*

THE USE OF RUCAS IN HEALTH CARE

The RUCA codes can be used in many different ways in various types of health related research and program development and implementation. There are 30 codes. The large number of codes facilitate the aggregation of the codes to fit specific needs of those using them for health, demographic, geographic, and other types of uses.

In almost all cases, the RUCA codes should be aggregated for use. For instance, it may be appropriate to aggregate them into two groups: rural and urban. In other instances, it may be appropriate to create a specific group for the purposes of targeting a program.

The bottom line from below: Under most circumstances suggested categorizations A, B, and C will be most appropriate for use. There are many ways to aggregate the codes based on purpose. A few examples follow.

The way in which they have been used most is to aggregate the codes into four categories. This is a generally useful aggregation that is useful for most health related work. When this does not fit the bill, the B and C collapsing of the categories is usually satisfactory. This categorization approximates the metro/non metro split at the Census tract (ZIP code) level ([categorization A](#)).

Urban focused: 1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 4.1, 5.1, 7.1, 8.1, and 10.1

Large Rural City/Town focused: 4.0, 5.0, and 6.0

Small Rural Town focused: 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, and 9.2

Isolated Small Rural Town focused: 10.0, 10.2, 10.3, 10.4, 10.5

The percentages of the estimated 1998 US population for these groupings are: urban, 77.6%; large rural, 9.3%; small rural, 6.9%; and isolated, 6.1%. The advantage of this definition is that it splits urban and rural in approximately the same way as does the OMB Metro definition but at the sub county level and it divides rural into three relevant and useful categories. In many studies and programs, it makes sense to separate the large rural cities/towns (say a place of 30,000 population with many medical providers) from those places that have 1000 population and are isolated from

urban places. It is clear that under most circumstances these two types of places differ greatly and should be considered separately.

Alternatively, the small rural and isolated small rural categories can be combined to create a single "small" rural category (categorization B).

Urban: 1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 4.1, 5.1, 7.1, 8.1, and 10.1
 Large Rural City/Town: 4.0, 5.0, and 6.0
 Small Rural Town: 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, 9.2, 10.0, 10.2, 10.3, 10.4, and 10.5

Of course, the four categories can be aggregated. For instance, the three rural categories can be combined to create one "rural" category (this would approximate the standard Metro definition but at the sub county level) (categorization C).

Urban: 1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 4.1, 5.1, 7.1, 8.1, and 10.1
 Rural: 4.0, 5.0, 6.0, 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, 9.2, 10.0, 10.2, 10.3, 10.4, and 10.5

Another alternative is to define urban as all places that have 30% or more of their workers going to a Census Bureau defined Urbanized Area (this is the same as "C" but with code 3.0 being moved to the rural group) (categorization D).

Urban: 1.0, 1.1, 2.0, 2.1, 2.2, 4.1, 5.1, 7.1, 8.1, and 10.1
 Rural: 3.0, 4.0, 5.0, 6.0, 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, 9.2, 10.0, 10.2, 10.3, 10.4, and 10.5

A more complicated approach can be to assign Census tracts (ZIP codes) as in "A" except use the secondary work commuting flows to assign them to the largest place where 30% or more of their population commutes (categorization E).

Urban: 1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 4.1, 5.1, 7.1, 8.1, and 10.1
 Large Rural City/Town: 4.0, 5.0, 6.0, 7.2, 8.2, and 10.2
 Small Rural Town: 7.0, 7.3, 7.4, 8.0, 8.3, 8.4, 9.0, 9.1, 9.2, and 10.3
 Isolated Small Rural Town: 10.0, 10.4, and 10.5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53001	53001	4	10.1
53002	53002	4	6
53003	53003	2	3
53004	53004	4	2
53005	53005	4	1
53006	53006	4	10.5
53007	53007	4	1
53008	53008	1	1
53009	53009	1	5
53010	53010	4	10.5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53011	53011	4	2.2
53012	53012	4	1
53013	53013	4	2
53014	53014	4	3
53015	53015	4	2
53016	53016	3	5
53017	53017	4	2
53018	53018	4	2
53019	53019	4	5
53020	53020	4	2
53021	53021	4	2
53022	53022	4	1
53023	53023	4	2
53024	53024	4	1
53026	53026	2	2
53027	53027	4	7.3
53029	53029	4	2
53031	53031	2	1
53032	53032	4	10.5
53033	53033	4	2
53034	53034	3	10.5
53035	53035	4	10.4
53036	53036	4	6
53037	53037	4	2
53038	53038	4	10.5
53039	53039	4	5
53040	53040	4	5
53042	53042	4	7.4
53044	53044	4	1
53045	53045	4	1
53046	53046	4	1
53047	53047	2	10.5
53048	53048	4	10.5
53049	53049	4	5
53050	53050	4	7
53051	53051	4	1
53052	53052	1	1
53056	53056	2	1
53057	53057	4	5
53058	53058	4	2
53059	53059	4	3
53060	53060	3	5.1
53061	53061	4	7.3
53062	53062	1	7.3
53063	53063	4	5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53064	53064	3	2
53065	53065	4	5
53066	53066	4	2
53069	53069	4	2
53070	53070	4	2
53072	53072	4	1
53073	53073	4	7.1
53074	53074	4	2
53075	53075	4	10.1
53076	53076	4	2
53078	53078	4	3
53079	53079	4	5
53080	53080	4	2
53081	53081	4	1
53082	53082	1	1
53083	53083	4	1
53085	53085	4	1
53086	53086	4	2
53088	53088	3	7.3
53089	53089	4	1
53090	53090	4	4.1
53091	53091	4	10.5
53092	53092	4	1
53093	53093	4	2
53094	53094	4	4
53095	53095	4	4.1
53097	53097	4	1
53098	53098	4	4
53099	53099	2	10.4
53101	53101	2	2.2
53102	53102	1	2.2
53103	53103	4	1
53104	53104	4	2.2
53105	53105	4	3
53108	53108	4	1
53109	53109	2	2.2
53110	53110	4	1
53114	53114	4	10
53115	53115	4	7
53118	53118	4	2
53119	53119	4	2
53120	53120	4	2
53121	53121	4	7
53122	53122	4	1
53125	53125	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53126	53126	4	2
53127	53127	3	2
53128	53128	4	9
53129	53129	4	1
53130	53130	4	1
53132	53132	4	1
53137	53137	4	6
53138	53138	2	3
53139	53139	4	2
53140	53140	4	1
53141	53141	1	1
53142	53142	4	1
53143	53143	4	1
53144	53144	4	1
53146	53146	4	1
53147	53147	4	7
53148	53148	3	10
53149	53149	4	2
53150	53150	4	1
53151	53151	4	1
53152	53152	2	2.2
53153	53153	4	2
53154	53154	4	1
53156	53156	4	4
53157	53157	4	9
53158	53158	3	1
53159	53159	2	2.2
53167	53167	3	2
53168	53168	4	2.2
53170	53170	4	2.2
53171	53171	3	1
53172	53172	4	1
53176	53176	2	10
53177	53177	4	1
53178	53178	4	2
53179	53179	4	2.2
53181	53181	4	2.2
53182	53182	4	2
53183	53183	4	2
53184	53184	4	10
53185	53185	4	2
53186	53186	4	1
53187	53187	1	1
53188	53188	4	1
53190	53190	4	4

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53191	53191	4	10
53192	53192	3	2.2
53194	53194	1	2.2
53195	53195	2	7
53201	53201	1	1
53202	53202	4	1
53203	53203	2	1
53204	53204	4	1
53205	53205	4	1
53206	53206	4	1
53207	53207	4	1
53208	53208	4	1
53209	53209	4	1
53210	53210	4	1
53211	53211	4	1
53212	53212	4	1
53213	53213	4	1
53214	53214	4	1
53215	53215	4	1
53216	53216	4	1
53217	53217	4	1
53218	53218	4	1
53219	53219	4	1
53220	53220	4	1
53221	53221	4	1
53222	53222	4	1
53223	53223	4	1
53224	53224	4	1
53225	53225	4	1
53226	53226	4	1
53227	53227	4	1
53228	53228	4	1
53233	53233	4	1
53234	53234	1	1
53235	53235	4	1
53237	53237	1	1
53259	53259	1	1
53263	53263	1	1
53267	53267	1	1
53268	53268	1	1
53270	53270	1	1
53277	53277	1	1
53278	53278	1	1
53280	53280	1	1
53281	53281	1	1

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53284	53284	1	1
53285	53285	1	1
53288	53288	1	1
53290	53290	1	1
53293	53293	1	1
53295	53295	1	1
53401	53401	1	1
53402	53402	4	1
53403	53403	4	1
53404	53404	4	1
53405	53405	4	1
53406	53406	4	1
53407	53407	1	1
53408	53408	1	1
53501	53501	2	1
53502	53502	4	5
53503	53503	4	3
53504	53504	4	10.5
53505	53505	2	2.2
53506	53506	3	10.4
53507	53507	4	10.4
53508	53508	4	2
53510	53510	4	10
53511	53511	4	1
53512	53512	1	1
53515	53515	4	2
53516	53516	4	10.5
53517	53517	4	3
53518	53518	4	9.1
53520	53520	4	7.4
53521	53521	4	2
53522	53522	4	5
53523	53523	4	2
53525	53525	4	10.1
53526	53526	3	10
53527	53527	4	2
53528	53528	4	2
53529	53529	4	2
53530	53530	4	10
53531	53531	4	2
53532	53532	4	2
53533	53533	4	7.3
53534	53534	4	2
53535	53535	2	10
53536	53536	4	7.3

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53537	53537	3	1
53538	53538	4	4
53540	53540	2	9.1
53541	53541	4	10.5
53542	53542	2	1
53543	53543	4	10.4
53544	53544	3	10.4
53545	53545	4	1
53546	53546	4	1
53547	53547	1	1
53549	53549	4	7.4
53550	53550	4	5
53551	53551	4	7.3
53553	53553	3	10
53554	53554	3	10
53555	53555	4	2
53556	53556	4	9.1
53557	53557	3	10.4
53558	53558	4	1
53559	53559	4	2
53560	53560	4	2
53561	53561	4	10.4
53562	53562	4	1
53563	53563	4	2
53565	53565	4	10
53566	53566	4	4
53569	53569	4	10
53570	53570	4	10.4
53571	53571	2	2
53572	53572	4	2
53573	53573	4	10
53574	53574	4	10.4
53575	53575	4	2
53576	53576	4	2
53577	53577	4	10.4
53578	53578	4	2
53579	53579	4	10.4
53580	53580	2	10
53581	53581	4	7
53582	53582	4	10.4
53583	53583	4	2
53584	53584	2	9.1
53585	53585	4	10
53586	53586	4	10
53587	53587	4	10.5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53588	53588	4	10.4
53589	53589	4	2
53590	53590	4	2
53591	53591	1	2
53593	53593	4	2
53594	53594	4	7.3
53595	53595	1	7.3
53596	53596	1	2
53597	53597	4	2
53598	53598	4	2
53599	53599	2	10.5
53701	53701	1	1
53702	53702	1	1
53703	53703	4	1
53704	53704	4	1
53705	53705	4	1
53706	53706	1	1
53707	53707	1	1
53708	53708	1	1
53709	53709	1	1
53710	53710	1	1
53711	53711	4	1
53713	53713	4	1
53714	53714	4	1
53715	53715	4	1
53716	53716	4	1
53717	53717	4	1
53718	53718	1	1
53719	53719	4	1
53725	53725	1	1
53726	53726	1	1
53744	53744	1	1
53777	53777	1	1
53778	53778	1	1
53779	53779	1	1
53780	53780	1	1
53782	53782	1	1
53783	53783	1	1
53784	53784	1	1
53785	53785	1	1
53786	53786	1	1
53787	53787	1	1
53788	53788	1	1
53789	53789	1	1
53790	53790	1	1

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53791	53791	1	1
53792	53792	1	1
53793	53793	1	1
53794	53794	1	1
53801	53801	3	10
53802	53802	2	8
53803	53803	4	10
53804	53804	4	10
53805	53805	4	7
53806	53806	4	8
53807	53807	4	10
53808	53808	4	10
53809	53809	4	10
53810	53810	3	8
53811	53811	4	2
53812	53812	3	2
53813	53813	4	7
53816	53816	3	10
53817	53817	2	10
53818	53818	4	7
53820	53820	4	10
53821	53821	4	7
53824	53824	1	2
53825	53825	3	10
53826	53826	4	8
53827	53827	2	10
53901	53901	4	7.3
53910	53910	4	10
53911	53911	4	2
53913	53913	4	7
53916	53916	4	4
53917	53917	1	4
53919	53919	4	10.5
53920	53920	3	9.1
53922	53922	4	8.4
53923	53923	4	10.4
53924	53924	4	10
53925	53925	4	10.4
53926	53926	4	10
53927	53927	2	10
53928	53928	2	3
53929	53929	4	10
53930	53930	4	9.1
53931	53931	2	10.5
53932	53932	4	10.4

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
53933	53933	4	5
53934	53934	4	10
53935	53935	2	10.4
53936	53936	4	10
53937	53937	4	10.4
53939	53939	2	10
53940	53940	4	8
53941	53941	4	8
53942	53942	2	8
53943	53943	4	10.4
53944	53944	4	9
53946	53946	4	10
53947	53947	2	10
53948	53948	4	9
53949	53949	4	10.4
53950	53950	4	10.3
53951	53951	4	3
53952	53952	4	10
53953	53953	2	10.4
53954	53954	4	10.4
53955	53955	4	2
53956	53956	4	5
53957	53957	1	5
53959	53959	4	7
53960	53960	4	3
53961	53961	3	9
53962	53962	2	10
53963	53963	4	7
53964	53964	4	10
53965	53965	4	10.4
53968	53968	4	10
53969	53969	3	10.4
54001	54001	4	7
54002	54002	4	10.5
54003	54003	3	6
54004	54004	4	10
54005	54005	4	10
54006	54006	3	10
54007	54007	4	9.2
54009	54009	4	10
54010	54010	2	10.5
54011	54011	4	10.5
54012	54012	3	10.5
54013	54013	4	10.5
54014	54014	4	5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54015	54015	4	10.4
54016	54016	4	2
54017	54017	4	7.4
54020	54020	4	10
54021	54021	4	2
54022	54022	4	4.1
54023	54023	4	10.4
54024	54024	4	10
54025	54025	4	2
54026	54026	4	10
54027	54027	3	10.5
54028	54028	4	10.5
54082	54082	4	2
54101	54101	4	2
54102	54102	3	5
54103	54103	3	10
54104	54104	2	5
54106	54106	4	2
54107	54107	4	10.4
54110	54110	4	7.3
54111	54111	4	10.4
54112	54112	4	10.5
54113	54113	4	1
54114	54114	4	10.5
54115	54115	4	1
54119	54119	2	5
54120	54120	2	5
54121	54121	4	10.2
54123	54123	2	7.3
54124	54124	4	10
54125	54125	2	5
54126	54126	4	2.2
54127	54127	2	10.4
54128	54128	4	10
54129	54129	4	2
54130	54130	4	1
54131	54131	2	2
54135	54135	4	10
54136	54136	4	1
54137	54137	4	10.4
54138	54138	2	10
54139	54139	4	10.5
54140	54140	4	1
54141	54141	4	2
54143	54143	4	4

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54149	54149	2	10.5
54150	54150	3	10
54151	54151	4	10.2
54152	54152	2	7.1
54153	54153	4	7.3
54154	54154	4	7.3
54155	54155	4	1
54156	54156	3	5
54157	54157	4	10.2
54159	54159	4	5
54160	54160	2	7.3
54161	54161	4	10.5
54162	54162	4	2
54165	54165	4	7.1
54166	54166	4	7
54169	54169	4	1
54170	54170	4	2
54171	54171	4	2
54173	54173	4	2
54174	54174	4	10
54175	54175	2	10
54177	54177	4	10.5
54180	54180	4	2
54182	54182	2	10.4
54201	54201	4	7.3
54202	54202	4	10
54203	54203	1	5
54204	54204	4	8.3
54205	54205	4	10.4
54206	54206	4	5
54207	54207	2	10.5
54208	54208	4	2
54209	54209	3	10
54210	54210	3	10
54211	54211	2	10
54212	54212	3	10
54213	54213	4	8.3
54214	54214	3	4
54215	54215	2	10.5
54216	54216	4	10.4
54217	54217	4	10.1
54220	54220	4	4
54221	54221	1	4
54226	54226	2	8
54227	54227	4	5

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54228	54228	4	5
54229	54229	4	2
54230	54230	4	10.5
54232	54232	3	5
54234	54234	4	10
54235	54235	4	7
54240	54240	2	5
54241	54241	4	4
54245	54245	4	5
54246	54246	3	10
54247	54247	4	5
54301	54301	4	1
54302	54302	4	1
54303	54303	4	1
54304	54304	4	1
54305	54305	1	1
54306	54306	1	1
54307	54307	1	1
54308	54308	1	1
54311	54311	4	1
54313	54313	4	1
54324	54324	1	1
54344	54344	1	1
54401	54401	4	1
54402	54402	1	1
54403	54403	4	1
54404	54404	1	4
54405	54405	4	10
54406	54406	4	5
54407	54407	4	5
54408	54408	4	2
54409	54409	4	7
54410	54410	4	10.5
54411	54411	4	10.1
54412	54412	4	10.5
54413	54413	2	6
54414	54414	4	10.4
54415	54415	2	10.5
54416	54416	4	10
54417	54417	2	2
54418	54418	4	10
54420	54420	4	10.5
54421	54421	4	10.4
54422	54422	4	10
54423	54423	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54424	54424	4	8
54425	54425	4	10
54426	54426	4	10.1
54427	54427	3	2
54428	54428	3	8
54429	54429	2	2
54430	54430	1	10
54432	54432	2	2
54433	54433	4	10
54434	54434	2	8
54435	54435	4	8.3
54436	54436	4	10.5
54437	54437	4	10
54439	54439	1	10
54440	54440	4	2
54441	54441	2	4
54442	54442	4	8.3
54443	54443	4	10.5
54444	54444	3	8
54446	54446	4	10.5
54447	54447	3	10
54448	54448	4	10.1
54449	54449	4	4
54450	54450	2	10.4
54451	54451	4	7
54452	54452	4	7.3
54453	54453	1	10.1
54454	54454	4	10.5
54455	54455	4	2
54456	54456	4	7.4
54457	54457	4	5
54458	54458	2	10
54459	54459	4	10
54460	54460	4	10
54462	54462	2	9.1
54463	54463	2	10
54464	54464	2	10
54465	54465	3	9.1
54466	54466	4	6
54467	54467	4	5
54469	54469	4	5
54470	54470	4	8
54471	54471	4	2
54472	54472	1	4
54473	54473	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54474	54474	4	1
54475	54475	4	4
54476	54476	4	1
54479	54479	4	5
54480	54480	4	8
54481	54481	4	4
54482	54482	1	4
54484	54484	4	10.2
54485	54485	2	9.1
54486	54486	4	10.4
54487	54487	4	7
54488	54488	4	10.5
54489	54489	4	5
54490	54490	3	8
54491	54491	3	10
54492	54492	1	4
54493	54493	2	8
54494	54494	4	4
54495	54495	4	4
54498	54498	4	10
54499	54499	4	10.4
54501	54501	4	9
54511	54511	4	10
54512	54512	3	10
54513	54513	3	10
54514	54514	4	8
54515	54515	3	10
54517	54517	2	10
54519	54519	3	10
54520	54520	4	10
54521	54521	4	10
54524	54524	3	8
54525	54525	2	10
54526	54526	3	10.3
54527	54527	4	8
54529	54529	3	10
54530	54530	3	10.3
54531	54531	3	10
54532	54532	1	8
54534	54534	4	10
54536	54536	2	10
54537	54537	3	10
54538	54538	4	10
54539	54539	3	10
54540	54540	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54541	54541	4	10
54542	54542	2	5
54543	54543	2	10
54545	54545	3	10
54546	54546	4	10
54547	54547	3	10
54548	54548	4	10
54550	54550	3	10
54552	54552	4	7
54554	54554	4	10
54555	54555	4	10
54556	54556	4	10
54557	54557	3	10
54558	54558	4	10
54559	54559	3	10
54560	54560	2	10
54561	54561	1	10
54562	54562	4	10
54563	54563	3	10.3
54564	54564	2	9
54565	54565	1	10
54566	54566	4	10
54568	54568	4	10
54601	54601	4	1
54602	54602	1	1
54603	54603	4	1
54610	54610	4	10.4
54611	54611	4	10
54612	54612	4	10
54613	54613	4	10
54614	54614	4	2
54615	54615	4	10
54616	54616	4	10.4
54618	54618	4	10
54619	54619	4	10.4
54620	54620	2	10.4
54621	54621	4	2
54622	54622	4	5
54623	54623	4	2
54624	54624	4	2
54625	54625	2	10.4
54626	54626	3	10
54627	54627	4	10.4
54628	54628	4	10.4
54629	54629	4	10.2

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54630	54630	4	10.4
54631	54631	4	10
54632	54632	4	2
54634	54634	4	10
54635	54635	4	10.4
54636	54636	4	1
54637	54637	2	10
54638	54638	4	8
54639	54639	4	10
54640	54640	2	10.4
54641	54641	2	10.5
54642	54642	4	10.4
54643	54643	2	10
54644	54644	4	2
54645	54645	2	10
54646	54646	4	10.5
54648	54648	4	10
54649	54649	2	8
54650	54650	4	1
54651	54651	4	10
54652	54652	3	10
54653	54653	3	2
54654	54654	2	10.4
54655	54655	4	10
54656	54656	4	7.3
54657	54657	2	10
54658	54658	4	2
54659	54659	4	10.4
54660	54660	4	7
54661	54661	4	10.4
54662	54662	1	10.4
54664	54664	4	10
54665	54665	4	7.3
54666	54666	4	8
54667	54667	4	10.4
54669	54669	4	2
54670	54670	4	10
54701	54701	4	1
54702	54702	1	1
54703	54703	4	1
54720	54720	4	1
54721	54721	4	10
54722	54722	4	10.1
54723	54723	4	5
54724	54724	4	7.1

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54725	54725	4	10.5
54726	54726	4	2
54727	54727	4	2
54728	54728	4	10
54729	54729	4	1
54730	54730	4	5
54731	54731	3	10
54732	54732	4	2
54733	54733	3	10
54734	54734	3	10.5
54735	54735	2	5
54736	54736	4	10.4
54737	54737	3	5
54738	54738	4	10.4
54739	54739	4	5.1
54740	54740	4	10.5
54741	54741	4	10.1
54742	54742	4	2
54743	54743	2	10.4
54744	54744	3	10
54745	54745	4	2
54746	54746	3	8
54747	54747	4	10
54748	54748	3	2
54749	54749	4	10.5
54750	54750	4	10
54751	54751	4	4
54754	54754	4	10
54755	54755	4	10.4
54756	54756	4	10
54757	54757	4	2
54758	54758	4	10.4
54759	54759	4	10
54760	54760	3	10
54761	54761	4	10
54762	54762	4	10
54763	54763	4	10.4
54764	54764	1	5.1
54765	54765	2	10.4
54766	54766	4	10
54767	54767	4	10.5
54768	54768	4	10.4
54769	54769	2	10
54770	54770	4	10.4
54771	54771	4	10.4

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54772	54772	4	10.4
54773	54773	4	10
54774	54774	1	1
54801	54801	4	10
54805	54805	4	10
54806	54806	4	7
54810	54810	4	10
54812	54812	4	7
54813	54813	2	10
54814	54814	4	10
54816	54816	2	10
54817	54817	4	10
54818	54818	2	8
54819	54819	4	10.4
54820	54820	2	2
54821	54821	3	10
54822	54822	4	8
54824	54824	4	10
54826	54826	3	10
54827	54827	2	10
54828	54828	4	10
54829	54829	4	10
54830	54830	4	10
54832	54832	2	10
54834	54834	1	10
54835	54835	4	10
54836	54836	3	2
54837	54837	4	10
54838	54838	2	2
54839	54839	2	10
54840	54840	4	10
54841	54841	2	8
54842	54842	2	2
54843	54843	4	10
54844	54844	2	10.4
54845	54845	2	10
54846	54846	2	8
54847	54847	4	10.4
54848	54848	4	7
54849	54849	4	2
54850	54850	2	7
54851	54851	2	10
54853	54853	4	10
54854	54854	3	2
54855	54855	3	8

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54856	54856	4	10
54857	54857	2	8
54858	54858	4	10
54859	54859	4	10
54861	54861	2	10
54862	54862	2	10
54864	54864	4	2
54865	54865	2	10.4
54867	54867	3	10
54868	54868	4	7
54870	54870	3	9
54871	54871	4	10
54872	54872	4	10
54873	54873	4	2
54874	54874	4	2
54875	54875	4	10
54876	54876	4	10
54880	54880	4	1
54888	54888	4	10
54889	54889	4	10
54890	54890	1	2
54891	54891	4	10
54893	54893	4	10
54895	54895	3	10
54896	54896	4	10
54901	54901	4	1
54902	54902	4	1
54903	54903	1	1
54904	54904	4	1
54906	54906	1	1
54909	54909	4	9.2
54911	54911	4	1
54912	54912	1	1
54913	54913	1	1
54914	54914	4	1
54915	54915	4	1
54919	54919	1	1
54921	54921	4	9.2
54922	54922	4	10.4
54923	54923	4	7
54926	54926	1	10.4
54927	54927	2	2
54928	54928	2	10
54929	54929	4	7
54930	54930	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54931	54931	3	1
54932	54932	4	5
54933	54933	2	10.3
54934	54934	2	2.2
54935	54935	4	4
54936	54936	1	4
54937	54937	4	4
54940	54940	4	2
54941	54941	4	10.5
54942	54942	4	1
54943	54943	4	10
54944	54944	4	2
54945	54945	4	10
54946	54946	2	10
54947	54947	4	2
54948	54948	2	10
54949	54949	4	10.4
54950	54950	4	10.3
54951	54951	2	7.3
54952	54952	4	1
54956	54956	4	1
54957	54957	4	1
54960	54960	4	10
54961	54961	4	7.3
54962	54962	4	10.4
54963	54963	4	2
54964	54964	4	2
54965	54965	4	10
54966	54966	4	10
54967	54967	3	10
54968	54968	4	9
54969	54969	2	2
54970	54970	4	8
54971	54971	4	7.4
54974	54974	4	5
54975	54975	2	3
54976	54976	1	10
54977	54977	4	10
54978	54978	2	10
54979	54979	4	5
54980	54980	2	2
54981	54981	4	9
54982	54982	4	10
54983	54983	4	8
54984	54984	4	10

State of Wisconsin RUCA Codes for Zipcodes

ZIP	ZIPN	POPULATION CATEGORY	RUCA CODE
54985	54985	2	1
54986	54986	4	2
54990	54990	1	10

Attachment 8: Characteristics of Individuals in the Comparison Group who are still on the Waiting List

Among the Comparison Group individuals, 303 individuals were reported as being on a waiting list as of December 31, 2002⁸¹. The average age of these individuals is 62.5 years and the majority (66.1 percent) are female. Nearly all of the individuals (96 percent) reside in a designated urban community⁸². This is consistent with the Family Care Independent Assessment population urban community rate of 97.8 percent. The following table provides additional information on these individuals.

Table A Characteristics of Comparison Group Individuals on Waiting List as of December 31, 2002						
HSRS Waiting List SPC Designation	Percent Female	Mean Age	Frail Elderly (%)	Developmentally Disabled (%)	Physically Disabled (%)	Residing in an Urban Community (%)
Institutional Resident	62.0	60	33.3	36.0	30.7	95.3
Receiving No Public LTC Funding ⁸³	64.9	63	47.3	13.6	39.1	96.0
Receiving Some Public LTC Funding, but No COP or Waiver Funding	69.8	63	50.6	25.0	24.4	96.3

Source: APS analysis of HSRS data.

An examination of the disability categories among this waiting list population finds that they are similar to the non-Milwaukee Family Care Independent Assessment population eligible in 2002 (see Table 4 and Figure 6.) The non-Milwaukee Family Care Independent Assessment elderly population was 46 percent versus 46 percent of the Comparison Group waiting list individuals. Almost 21 percent of the non-Milwaukee Family Care Independent Assessment population was physically disabled and 33 were developmentally disabled. Conversely, 21 percent of the waiting list individuals were developmentally disabled and 33 percent were physically disabled. By way of comparison, among those individuals throughout Wisconsin who were on the waiting

⁸¹ Waiting List determination was based upon the date criteria of an individual having the following HSRS SPC and SPC/Subprogram code designations: 897, 898.01, 898.02, 899.01 and 899.02.

⁸² Geographic types determined from Zip Code membership for individuals home residence and based on the U.S. Health Resources and Services Administration - Federal Office of Rural Health Policy/US Department of Agriculture Economic Research Service's Rural Urban Commuting Areas (RUCA) coding scheme.

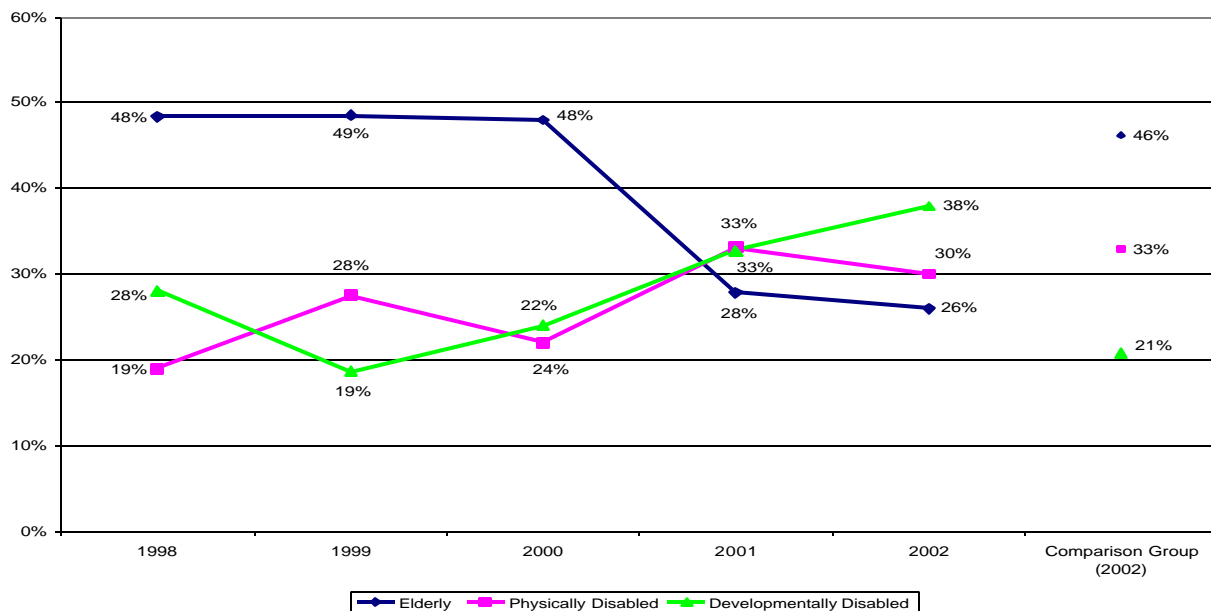
⁸³ While these individuals were selected into the original Comparison Group selection of 48,845, without complete available data for the two time periods examined, these individuals will not be utilized in the cost-effectiveness analysis sample.

list, as of December 31, 2002, 26 percent were elderly, 38 percent were developmentally disabled and 30 percent were physically disabled.

The largest portion of Comparison Group waiting list individuals (51.3 percent) were identified as “Receiving No Public Long-Term Care Funding.” Among the remaining individuals, 15.4 percent were designated as “Residing in an Institution” and 33.3 percent as “Receiving Some Public Long-Term Care Funding, but no COP or Waiver Funding.” Comparatively, among all individuals throughout Wisconsin who were on a waiting list as of December 31, 2002, six percent were residing in an institution, 64 percent received no public long-term care funding, and 29 percent received some public long-term care funding, but not COP or waiver funding.

Figure 1 illustrates the magnitude of individuals on the waiting list as of December 31 for years 1998 through 2002, statewide by target group⁸⁴. It is clearly evident that the elderly experienced a sharp decline from 2000 to 2001 (48 percent v. 28 percent, respectively). This can likely be attributed to the Milwaukee CMO not only being the largest county in Wisconsin, but the biggest Family Care CMO and one that began enrolling members in July 2000 to provide services only to the elderly, not the other two disability categories. Additionally included in this representation are the waiting list percentages for those individuals in this study’s Comparison Group. As the sample selection was designed to select individuals who looked like the Family Care population prior to enrollment began in 2000, it is not surprising to see these figures similar to the statewide figures prior to 2000.

Figure 6: Percent of Individual on Waiting List by Calendar Year and Target Group



Source: APS analysis of DHFS data.

⁸⁴ Wait list Summary Data figures for years 1998-2002 obtained from DHFS, Bureau of Aging and Long-Term Care Resources, Community Options Program updates.

Attachment 9: Difference Equations for Cost Effectiveness Analysis**Part I. Adjusted Average Level of Utilization and Expenditure 7-12 Months After Enrollment**

Table A-1. Post-Enrollment Per Member Per Month Total LTC Expenditures					
Variable	Label	Adj R-Sq	42.13%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-\$522	113.215	-4.610	<.0001
T4_CDPS	Illness Burden Index Score	\$1,100	20.707	53.130	<.0001
T4_FSIS	Functional Status Impairment	\$15	0.914	16.460	<.0001
t4_LYoL	Last year of life	-\$368	219.357	-1.680	0.093
T4_MC	Medicare eligible	-\$286	47.184	-6.060	<.0001
t4_RUCA	Rurality Index Score	-\$39	4.212	-9.330	<.0001
t4_Wavr	Waiver or COP eligible	\$881	36.187	24.340	<.0001
T4_Inst	Institutionalized	\$1,092	42.710	25.570	<.0001
missfsis	FSIS score is imputed	\$539	71.269	7.570	<.0001
DD	Dev. Disabled (v. Elderly)	\$1,115	36.976	30.150	<.0001
PD	Phys. Disabled (v. Elderly)	-\$105	42.738	-2.460	0.014
ed_2000	Year 2000 Cohort (v. 2002)	-\$234	74.688	-3.130	0.002
ed_2001	Year 2001 Cohort (v. 2002)	-\$268	74.139	-3.610	0.000
FC	Family Care	\$755	72.467	10.420	<.0001

Table A-2. Post-Enrollment Per Member Per Month Expenditures For State Center For Developmentally Disabled					
Variable	Label	Adj R-Sq	6.51%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$217	66.749	3.250	0.001
T4_CDPS	Illness Burden Index Score	\$220	12.208	17.990	<.0001
T4_FSIS	Functional Status Impairment	-\$2	0.539	-3.290	0.001
t4_LYoL	Last year of life	-\$95	129.327	-0.740	0.462
T4_MC	Medicare eligible	-\$182	27.819	-6.530	<.0001
t4_RUCA	Rurality Index Score	-\$10	2.483	-3.850	0.000
t4_Wavr	Waiver or COP eligible	-\$264	21.335	-12.380	<.0001
T4_Inst	Institutionalized	\$93	25.181	3.680	0.000
missfsis	FSIS score is imputed	\$23	42.018	0.540	0.589
DD	Dev. Disabled (v. Elderly)	\$152	21.800	6.950	<.0001
PD	Phys. Disabled (v. Elderly)	-\$87	25.197	-3.470	0.001
ed_2000	Year 2000 Cohort (v. 2002)	-\$61	44.034	-1.390	0.163
ed_2001	Year 2001 Cohort (v. 2002)	-\$70	43.710	-1.610	0.107
FC	Family Care	-\$186	42.725	-4.360	<.0001

Table A-3. Post-Enrollment Per Member Per Month Expenditures For Home Health					
Variable	Label	Adj R-Sq	4.06%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-\$67	15.30609	-4.38	<.0001
T4_CDPS	Illness Burden Index Score	\$27	2.79944	9.73	<.0001
T4_FSIS	Functional Status Impairment	\$2	0.12352	14.18	<.0001
t4_LYoL	Last year of life	-\$18	29.65582	-0.6	0.5468
T4_MC	Medicare eligible	-\$30	6.37907	-4.64	<.0001
t4_RUCA	Rurality Index Score	\$1	0.56946	1.59	0.1122
t4_Wavr	Waiver or COP eligible	-\$6	4.89226	-1.25	0.2103
T4_Inst	Institutionalized	-\$24	5.77421	-4.11	<.0001
missfsis	FSIS score is imputed	\$47	9.63517	4.85	<.0001
DD	Dev. Disabled (v. Elderly)	-\$16	4.999	-3.21	0.0013
PD	Phys. Disabled (v. Elderly)	\$29	5.77796	4.95	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	\$14	10.09734	1.42	0.1546
ed_2001	Year 2001 Cohort (v. 2002)	\$5	10.02316	0.47	0.6371
FC	Family Care	\$60	9.79717	6.14	<.0001

Table A-4. Post-Enrollment Per Member Per Month Expenditures For Intermediate Care Facility					
Variable	Label	Adj R-Sq	15.86%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$237	45.11288	5.25	<.0001
T4_CDPS	Illness Burden Index Score	\$137	8.25101	16.57	<.0001
T4_FSIS	Functional Status Impairment	-\$1	0.36405	-3.49	0.0005
t4_LYoL	Last year of life	-\$23	87.40702	-0.26	0.7916
T4_MC	Medicare eligible	-\$332	18.80155	-17.68	<.0001
t4_RUCA	Rurality Index Score	\$1	1.6784	0.89	0.3731
t4_Wavr	Waiver or COP eligible	-\$214	14.41935	-14.84	<.0001
T4_Inst	Institutionalized	\$336	17.01879	19.75	<.0001
missfsis	FSIS score is imputed	-\$17	28.39851	-0.59	0.5582
DD	Dev. Disabled (v. Elderly)	\$225	14.73397	15.26	<.0001
PD	Phys. Disabled (v. Elderly)	-\$56	17.02984	-3.31	0.0009
ed_2000	Year 2000 Cohort (v. 2002)	\$55	29.7607	1.85	0.0648
ed_2001	Year 2001 Cohort (v. 2002)	\$56	29.54206	1.9	0.0572
FC	Family Care	-\$199	28.87601	-6.88	<.0001

Table A-5. Post-Enrollment Per Member Per Month Expenditures For Nursing Home					
Variable	Label	Adj R-Sq	25.99%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$24	38.38219	0.63	0.5315
T4_CDPS	Illness Burden Index Score	-\$26	7.01999	-3.65	0.0003
T4_FSIS	Functional Status Impairment	\$2	0.30973	5.61	<.0001
t4_LYoL	Last year of life	\$202	74.36618	2.72	0.0065
T4_MC	Medicare eligible	\$71	15.99642	4.43	<.0001
t4_RUCA	Rurality Index Score	-\$3	1.42799	-1.76	0.0788
t4_Wavr	Waiver or COP eligible	-\$92	12.26803	-7.47	<.0001
T4_Inst	Institutionalized	\$871	14.47964	60.14	<.0001
missfsis	FSIS score is imputed	\$62	24.16155	2.58	0.0099
DD	Dev. Disabled (v. Elderly)	-\$73	12.53571	-5.82	<.0001
PD	Phys. Disabled (v. Elderly)	\$0	14.48904	0.02	0.9822
ed_2000	Year 2000 Cohort (v. 2002)	-\$28	25.3205	-1.11	0.2691
ed_2001	Year 2001 Cohort (v. 2002)	-\$42	25.13449	-1.66	0.0974
FC	Family Care	-\$18	24.5678	-0.73	0.4651

Table A-6 Post-Enrollment Per Member Per Month Expenditures For Personal Care					
Variable	Label	Adj R-Sq	9.36%	t-value	p-value
		Estimate	Std. Err.		
Intercept	Intercept	-\$161	33.6025	-4.79	<.0001
T4_CDPS	Illness Burden Index Score	\$138	6.1458	22.39	<.0001
T4_FSIS	Functional Status Impairment	\$4	0.27116	16.28	<.0001
t4_LYoL	Last year of life	-\$58	65.10544	-0.89	0.373
T4_MC	Medicare eligible	\$1	14.0044	0.04	0.9693
t4_RUCA	Rurality Index Score	-\$2	1.25016	-1.52	0.1283
t4_Wavr	Waiver or COP eligible	\$154	10.74031	14.33	<.0001
T4_Inst	Institutionalized	-\$146	12.67651	-11.56	<.0001
missfsis	FSIS score is imputed	\$36	21.15274	1.71	0.0877
DD	Dev. Disabled (v. Elderly)	-\$57	10.97465	-5.18	<.0001
PD	Phys. Disabled (v. Elderly)	-\$14	12.68474	-1.09	0.2738
ed_2000	Year 2000 Cohort (v. 2002)	\$28	22.16737	1.25	0.2102
ed_2001	Year 2001 Cohort (v. 2002)	\$40	22.00452	1.8	0.0711
FC	Family Care	\$56	21.5084	2.6	0.0092

Table A-7. Post-Enrollment Per Member Per Month Expenditure For Residential Care Facility					
Variable	Label	Adj R-Sq Estimate	7.35% Std. Err.	t-value	p-value
Intercept	Intercept	-\$107	48.31652	-2.22	0.0267
T4_CDPS	Illness Burden Index Score	\$56	8.83695	6.38	<.0001
T4_FSIS	Functional Status Impairment	\$2	0.3899	5.46	<.0001
t4_LYoL	Last year of life	-\$77	93.61413	-0.82	0.4099
T4_MC	Medicare eligible	\$73	20.13672	3.64	0.0003
t4_RUCA	Rurality Index Score	-\$19	1.79759	-10.7	<.0001
t4_Wavr	Waiver or COP eligible	\$272	15.44332	17.64	<.0001
T4_Inst	Institutionalized	-\$57	18.22736	-3.14	0.0017
missfsis	FSIS score is imputed	\$78	30.4152	2.58	0.01
DD	Dev. Disabled (v. Elderly)	\$166	15.78029	10.52	<.0001
PD	Phys. Disabled (v. Elderly)	-\$106	18.23919	-5.83	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	-\$69	31.87412	-2.18	0.0296
ed_2001	Year 2001 Cohort (v. 2002)	\$2	31.63996	0.08	0.9382
FC	Family Care	\$279	30.9266	9.03	<.0001

Table A-8. Post-Enrollment Per Member Per Month Expenditures For Supportive Home Care					
Variable	Label	Adj R-Sq	7.77%	t-value	p-value
Intercept	Intercept	-\$298	56.92737	-5.23	<.0001
T4_CDPS	Illness Burden Index Score	\$107	10.41184	10.28	<.0001
T4_FSIS	Functional Status Impairment	\$5	0.45939	11.15	<.0001
t4_LYoL	Last year of life	-\$85	110.2978	-0.77	0.4417
T4_MC	Medicare eligible	\$50	23.72544	2.1	0.0356
t4_RUCA	Rurality Index Score	-\$8	2.11795	-3.6	0.0003
t4_Wavr	Waiver or COP eligible	\$398	18.19559	21.87	<.0001
T4_Inst	Institutionalized	-\$161	21.4758	-7.5	<.0001
missfsis	FSIS score is imputed	\$201	35.83572	5.6	<.0001
DD	Dev. Disabled (v. Elderly)	\$37	18.59261	2.01	0.0446
PD	Phys. Disabled (v. Elderly)	\$38	21.48973	1.76	0.079
ed_2000	Year 2000 Cohort (v. 2002)	-\$3	37.55465	-0.09	0.9309
ed_2001	Year 2001 Cohort (v. 2002)	-\$34	37.27875	-0.91	0.3643
FC	Family Care	\$335	36.43827	9.19	<.0001

Table A-9 Post-Enrollment Per Member Per Month Expenditures For Emergency Room					
Variable	Label	Adj R-Sq Estimate	2.3% Std. Err.	t-value	p-value
Intercept	Intercept	-\$0.45	0.32419	-1.38	0.1661
T4_CDPS	Illness Burden Index Score	\$0.65	0.05929	10.93	<.0001
T4_FSIS	Functional Status Impairment	\$0.00	0.00262	-0.79	0.428
t4_LYoL	Last year of life	\$2.14	0.62812	3.4	0.0007
T4_MC	Medicare eligible	\$1.28	0.13511	9.5	<.0001
t4_RUCA	Rurality Index Score	-\$0.05	0.01206	-4.05	<.0001
t4_Wavr	Waiver or COP eligible	\$0.20	0.10362	1.93	0.0538
T4_Inst	Institutionalized	-\$0.13	0.1223	-1.1	0.2716
missfsis	FSIS score is imputed	-\$0.62	0.20408	-3.03	0.0024
DD	Dev. Disabled (v. Elderly)	-\$0.42	0.10588	-3.94	<.0001
PD	Phys. Disabled (v. Elderly)	\$0.51	0.12238	4.2	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	\$0.19	0.21386	0.87	0.3861
ed_2001	Year 2001 Cohort (v. 2002)	\$0.38	0.21229	1.77	0.0769
FC	Family Care	\$0.07	0.20751	0.35	0.725

Table A-10. Post-Enrollment Per Member Per Month Expenditures For Hospital Inpatient					
Variable	Label	Adj R-Sq	3.12%	t-value	p-value
		Estimate	Std. Err.		
Intercept	Intercept	\$329	47.47808	6.92	<.0001
T4_CDPS	Illness Burden Index Score	\$76	8.6836	8.78	<.0001
T4_FSIS	Functional Status Impairment	-\$1	0.38314	-1.34	0.1788
t4_LYoL	Last year of life	\$257	91.98964	2.79	0.0052
T4_MC	Medicare eligible	-\$314	19.78729	-15.86	<.0001
t4_RUCA	Rurality Index Score	-\$6	1.7664	-3.14	0.0017
t4_Wavr	Waiver or COP eligible	-\$29	15.17533	-1.94	0.0528
T4_Inst	Institutionalized	-\$30	17.91106	-1.68	0.0932
missfsis	FSIS score is imputed	-\$31	29.8874	-1.05	0.2955
DD	Dev. Disabled (v. Elderly)	-\$60	15.50645	-3.89	0.0001
PD	Phys. Disabled (v. Elderly)	\$53	17.92269	2.94	0.0033
ed_2000	Year 2000 Cohort (v. 2002)	\$8	31.32101	0.27	0.7908
ed_2001	Year 2001 Cohort (v. 2002)	\$42	31.09091	1.35	0.1761
FC	Family Care	-\$67	30.38993	-2.19	0.0284

Table A-11 Post-Enrollment Per Member Per Month Expenditures For Hospital Outpatient					
Variable	Label	Adj R-Sq Estimate	1.22% Std. Err.	t-value	p-value
Intercept	Intercept	\$111	19.02281	5.84	<.0001
T4_CDPS	Illness Burden Index Score	\$27	3.47921	7.64	<.0001
T4_FSIS	Functional Status Impairment	\$0	0.15351	-0.93	0.3537
t4_LYoL	Last year of life	-\$16	36.85704	-0.42	0.6739
T4_MC	Medicare eligible	-\$61	7.92808	-7.72	<.0001
t4_RUCA	Rurality Index Score	-\$1	0.70773	-1.34	0.1788
t4_Wavr	Waiver or COP eligible	-\$1	6.08023	-0.16	0.8756
T4_Inst	Institutionalized	-\$5	7.17634	-0.64	0.5201
missfsis	FSIS score is imputed	-\$5	11.97484	-0.46	0.6463
DD	Dev. Disabled (v. Elderly)	-\$39	6.2129	-6.3	<.0001
PD	Phys. Disabled (v. Elderly)	\$8	7.181	1.18	0.238
ed_2000	Year 2000 Cohort (v. 2002)	-\$46	12.54924	-3.67	0.0002
ed_2001	Year 2001 Cohort (v. 2002)	-\$43	12.45704	-3.44	0.0006
FC	Family Care	\$11	12.17619	0.9	0.3659

Table A-12. Post-Enrollment Per Member Per Month Expenditures For Physician Office					
Variable	Label	Adj R-Sq	9.64%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$67	4.52217	14.88	<.0001
T4_CDPS	Illness Burden Index Score	\$10	0.82709	11.98	<.0001
T4_FSIS	Functional Status Impairment	\$0	0.03649	-4.51	<.0001
t4_LYoL	Last year of life	\$33	8.76178	3.76	0.0002
T4_MC	Medicare eligible	-\$57	1.88469	-30.03	<.0001
t4_RUCA	Rurality Index Score	-\$1	0.16825	-3.01	0.0026
t4_Wavr	Waiver or COP eligible	\$2	1.44541	1.44	0.1513
T4_Inst	Institutionalized	-\$1	1.70598	-0.47	0.6418
missfsis	FSIS score is imputed	-\$11	2.8467	-3.94	<.0001
DD	Dev. Disabled (v. Elderly)	-\$14	1.47695	-9.26	<.0001
PD	Phys. Disabled (v. Elderly)	\$13	1.70709	7.69	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	\$2	2.98325	0.55	0.5808
ed_2001	Year 2001 Cohort (v. 2002)	\$5	2.96133	1.53	0.1257
FC	Family Care	-\$2	2.89456	-0.63	0.5272

Table A-13 Post-Enrollment Per Member Per Month Expenditures For Prescription Drug					
Variable	Label	Adj R-Sq Estimate	7.4% Std. Err.	t-value	p-value
Intercept	Intercept	\$106	24.28029	4.36	<.0001
T4_CDPS	Illness Burden Index Score	\$76	4.44079	17.09	<.0001
T4_FSIS	Functional Status Impairment	-\$1	0.19594	-4.17	<.0001
t4_LYoL	Last year of life	\$120	47.0435	2.55	0.0108
T4_MC	Medicare eligible	\$24	10.11922	2.36	0.0184
t4_RUCA	Rurality Index Score	\$2	0.90334	2.04	0.0415
t4_Wavr	Waiver or COP eligible	\$67	7.76067	8.69	<.0001
T4_Inst	Institutionalized	\$142	9.15972	15.54	<.0001
missfsis	FSIS score is imputed	\$5	15.28442	0.36	0.7195
DD	Dev. Disabled (v. Elderly)	-\$54	7.93	-6.76	<.0001
PD	Phys. Disabled (v. Elderly)	\$107	9.16566	11.64	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	-\$37	16.01756	-2.32	0.0203
ed_2001	Year 2001 Cohort (v. 2002)	-\$10	15.89989	-0.61	0.5414
FC	Family Care	\$135	15.54141	8.66	<.0001

Table A-14. Post-Enrollment Per Member Per Month Utilization For State Center for The Developmentally Disabled Days

Variable	Label	Adj R-Sq	6.54%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	0.488	0.162	3.01	0.0026
T4_CDPS	Illness Burden Index Score	0.536	0.030	18.09	<.0001
T4_FSIS	Functional Status Impairment	-0.004	0.001	-3.41	0.0006
t4_LYoL	Last year of life	-0.223	0.314	-0.71	0.4768
T4_MC	Medicare eligible	-0.421	0.067	-6.24	<.0001
t4_RUCA	Rurality Index Score	-0.025	0.006	-4.1	<.0001
t4_Wavr	Waiver or COP eligible	-0.647	0.052	-12.51	<.0001
T4_Inst	Institutionalized	0.218	0.061	3.58	0.0003
missfsis	FSIS score is imputed	0.054	0.102	0.53	0.5993
DD	Dev. Disabled (v. Elderly)	0.369	0.053	6.98	<.0001
PD	Phys. Disabled (v. Elderly)	-0.211	0.061	-3.45	0.0006
ed_2000	Year 2000 Cohort (v. 2002)	-0.114	0.107	-1.06	0.2872
ed_2001	Year 2001 Cohort (v. 2002)	-0.138	0.106	-1.3	0.1938
FC	Family Care	-0.464	0.104	-4.47	<.0001

Table A-15 Post-Enrollment Per Member Per Month Utilization For Home Health Visits					
Variable	Label	Adj R-Sq Estimate	6.31% Std. Err.	t-value	p-value
Intercept	Intercept	-0.920	0.160	-5.74	<.0001
T4_CDPS	Illness Burden Index Score	0.221	0.029	7.55	<.0001
T4_FSIS	Functional Status Impairment	0.022	0.001	17.36	<.0001
t4_LYoL	Last year of life	-0.056	0.310	-0.18	0.8567
T4_MC	Medicare eligible	-0.211	0.067	-3.16	0.0016
t4_RUCA	Rurality Index Score	0.014	0.006	2.29	0.0223
t4_Wavr	Waiver or COP eligible	-0.080	0.051	-1.56	0.1194
T4_Inst	Institutionalized	-0.202	0.060	-3.35	0.0008
missfsis	FSIS score is imputed	0.591	0.101	5.86	<.0001
DD	Dev. Disabled (v. Elderly)	-0.077	0.052	-1.48	0.1396
PD	Phys. Disabled (v. Elderly)	0.459	0.060	7.6	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	0.247	0.106	2.34	0.0193
ed_2001	Year 2001 Cohort (v. 2002)	-0.023	0.105	-0.22	0.8271
FC	Family Care	0.966	0.103	9.42	<.0001

Table A-16. Post-Enrollment Per Member Per Month Utilization For Intermediate Care Facility Days					
Variable	Label	Adj R-Sq	19.93%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	1.048	0.258	4.06	<.0001
T4_CDPS	Illness Burden Index Score	0.886	0.047	18.77	<.0001
T4_FSIS	Functional Status Impairment	-0.009	0.002	-4.23	<.0001
t4_LYoL	Last year of life	-0.067	0.500	-0.13	0.8927
T4_MC	Medicare eligible	-1.782	0.108	-16.55	<.0001
t4_RUCA	Rurality Index Score	0.010	0.010	1.05	0.2928
t4_Wavr	Waiver or COP eligible	-1.414	0.083	-17.13	<.0001
T4_Inst	Institutionalized	2.467	0.097	25.33	<.0001
missfsis	FSIS score is imputed	-0.074	0.163	-0.46	0.6474
DD	Dev. Disabled (v. Elderly)	1.523	0.084	18.06	<.0001
PD	Phys. Disabled (v. Elderly)	-0.311	0.097	-3.19	0.0014
ed_2000	Year 2000 Cohort (v. 2002)	0.476	0.170	2.79	0.0053
ed_2001	Year 2001 Cohort (v. 2002)	0.347	0.169	2.05	0.0402
FC	Family Care	-1.188	0.165	-7.19	<.0001

Table A-17. Post-Enrollment Per Member Per Month Utilization For Monthly Nursing Home Days					
Variable	Label	Adj R-Sq	30.92%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	0.007	0.387	0.02	0.9852
T4_CDPS	Illness Burden Index Score	-0.449	0.071	-6.35	<.0001
T4_FSIS	Functional Status Impairment	0.015	0.003	4.9	<.0001
t4_LYoL	Last year of life	2.536	0.749	3.39	0.0007
T4_MC	Medicare eligible	0.989	0.161	6.14	<.0001
t4_RUCA	Rurality Index Score	0.021	0.014	1.43	0.1519
t4_Wavr	Waiver or COP eligible	-1.117	0.124	-9.04	<.0001
T4_Inst	Institutionalized	9.845	0.146	67.5	<.0001
missfsis	FSIS score is imputed	0.840	0.243	3.45	0.0006
DD	Dev. Disabled (v. Elderly)	-0.929	0.126	-7.36	<.0001
PD	Phys. Disabled (v. Elderly)	-0.152	0.146	-1.04	0.2987
ed_2000	Year 2000 Cohort (v. 2002)	-0.158	0.255	-0.62	0.5355
ed_2001	Year 2001 Cohort (v. 2002)	-0.384	0.253	-1.52	0.1289
FC	Family Care	-0.150	0.247	-0.6	0.5456

Table A-18 Post-Enrollment Per Member Per Month Utilization For Personal Care Hours					
Variable	Label	Adj R-Sq	9.22%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-10.604	2.188	-4.85	<.0001
T4_CDPS	Illness Burden Index Score	8.963	0.400	22.4	<.0001
T4_FSIS	Functional Status Impairment	0.276	0.018	15.63	<.0001
t4_LYoL	Last year of life	-3.638	4.240	-0.86	0.3909
T4_MC	Medicare eligible	0.059	0.912	0.06	0.9482
t4_RUCA	Rurality Index Score	-0.127	0.081	-1.56	0.1194
t4_Wavr	Waiver or COP eligible	10.040	0.699	14.35	<.0001
T4_Inst	Institutionalized	-9.595	0.826	-11.62	<.0001
missfsis	FSIS score is imputed	2.417	1.378	1.75	0.0793
DD	Dev. Disabled (v. Elderly)	-3.618	0.715	-5.06	<.0001
PD	Phys. Disabled (v. Elderly)	-0.816	0.826	-0.99	0.3235
ed_2000	Year 2000 Cohort (v. 2002)	1.961	1.444	1.36	0.1744
ed_2001	Year 2001 Cohort (v. 2002)	2.636	1.433	1.84	0.0658
FC	Family Care	3.642	1.401	2.6	0.0093

**Table A-19. Post-Enrollment Per Member Per Month Utilization
For Residential Care Facility Days**

Variable	Label	Adj R-Sq Estimate	7.97% Std. Err.	t-value	p-value
Intercept	Intercept	-0.864	0.469	-1.84	0.0659
T4_CDPS	Illness Burden Index Score	0.242	0.086	2.82	0.0048
T4_FSIS	Functional Status Impairment	0.008	0.004	2.14	0.0325
t4_LYoL	Last year of life	-0.170	0.910	-0.19	0.8514
T4_MC	Medicare eligible	0.506	0.196	2.59	0.0097
t4_RUCA	Rurality Index Score	-0.110	0.017	-6.31	<.0001
t4_Wavr	Waiver or COP eligible	3.564	0.150	23.75	<.0001
T4_Inst	Institutionalized	-0.677	0.177	-3.82	0.0001
missfsis	FSIS score is imputed	0.550	0.296	1.86	0.0627
DD	Dev. Disabled (v. Elderly)	1.332	0.153	8.68	<.0001
PD	Phys. Disabled (v. Elderly)	-1.014	0.177	-5.72	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	0.335	0.310	1.08	0.2793
ed_2001	Year 2001 Cohort (v. 2002)	0.076	0.307	0.25	0.8058
FC	Family Care	1.012	0.301	3.37	0.0008

Table A-20. Post-Enrollment Per Member Per Month Utilization For Supportive Home Care Days					
Variable	Label	Adj R-Sq	12.25%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-2.110	0.416	-5.07	<.0001
T4_CDPS	Illness Burden Index Score	0.744	0.076	9.77	<.0001
T4_FSIS	Functional Status Impairment	0.051	0.003	15.25	<.0001
t4_LYoL	Last year of life	-0.577	0.807	-0.72	0.4746
T4_MC	Medicare eligible	0.326	0.174	1.88	0.0602
t4_RUCA	Rurality Index Score	-0.119	0.015	-7.71	<.0001
t4_Wavr	Waiver or COP eligible	4.188	0.133	31.47	<.0001
T4_Inst	Institutionalized	-1.318	0.157	-8.39	<.0001
missfsis	FSIS score is imputed	2.108	0.262	8.04	<.0001
DD	Dev. Disabled (v. Elderly)	-1.089	0.136	-8.01	<.0001
PD	Phys. Disabled (v. Elderly)	0.207	0.157	1.32	0.1873
ed_2000	Year 2000 Cohort (v. 2002)	-0.239	0.275	-0.87	0.3837
ed_2001	Year 2001 Cohort (v. 2002)	-0.314	0.273	-1.15	0.2496
FC	Family Care	3.828	0.267	14.36	<.0001

Table A-21 Post-Enrollment Per Member Per Month Utilization For Emergency Room Visits					
Variable	Label	Adj R-Sq Estimate	2.35% Std. Err.	t-value	p-value
Intercept	Intercept	0.023	0.009	2.45	0.0142
T4_CDPS	Illness Burden Index Score	0.022	0.002	13.31	<.0001
T4_FSIS	Functional Status Impairment	0.000	0.000	-3.24	0.0012
t4_LYoL	Last year of life	0.029	0.018	1.65	0.0993
T4_MC	Medicare eligible	-0.010	0.004	-2.62	0.0088
t4_RUCA	Rurality Index Score	0.000	0.000	-1.04	0.2999
t4_Wavr	Waiver or COP eligible	0.008	0.003	2.74	0.0062
T4_Inst	Institutionalized	-0.011	0.003	-3.14	0.0017
missfsis	FSIS score is imputed	-0.010	0.006	-1.74	0.0826
DD	Dev. Disabled (v. Elderly)	-0.011	0.003	-3.62	0.0003
PD	Phys. Disabled (v. Elderly)	0.023	0.003	6.7	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	0.004	0.006	0.66	0.5076
ed_2001	Year 2001 Cohort (v. 2002)	0.011	0.006	1.79	0.0739
FC	Family Care	0.012	0.006	2.01	0.0443

**Table A-22. Post-Enrollment Per Member Per Month Utilization
For Hospital Inpatient Admissions**

Variable	Label	Adj R-Sq Estimate	6.42% Std. Err.	t-value	p-value
Intercept	Intercept	0.030	0.006	5.2	<.0001
T4_CDPS	Illness Burden Index Score	0.022	0.001	21.27	<.0001
T4_FSIS	Functional Status Impairment	0.000	0.000	-2.47	0.0136
t4_LYoL	Last year of life	0.102	0.011	9.14	<.0001
T4_MC	Medicare eligible	-0.021	0.002	-8.9	<.0001
t4_RUCA	Rurality Index Score	0.000	0.000	-0.83	0.4051
t4_Wavr	Waiver or COP eligible	0.011	0.002	6.01	<.0001
T4_Inst	Institutionalized	0.007	0.002	3.01	0.0026
missfsis	FSIS score is imputed	-0.008	0.004	-2.22	0.0264
DD	Dev. Disabled (v. Elderly)	-0.029	0.002	-15.63	<.0001
PD	Phys. Disabled (v. Elderly)	0.003	0.002	1.17	0.2413
ed_2000	Year 2000 Cohort (v. 2002)	0.000	0.004	-0.12	0.9049
ed_2001	Year 2001 Cohort (v. 2002)	0.003	0.004	0.9	0.3673
FC	Family Care	0.008	0.004	2.21	0.027

Table A-23. Post-Enrollment Per Member Per Month Utilization For Hospital Inpatient Days					
Variable	Label	Adj R-Sq	3.25%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	0.357	0.077	4.62	<.0001
T4_CDPS	Illness Burden Index Score	0.210	0.014	14.87	<.0001
T4_FSIS	Functional Status Impairment	-0.001	0.001	-1.43	0.1526
t4_LYoL	Last year of life	0.946	0.150	6.32	<.0001
T4_MC	Medicare eligible	-0.295	0.032	-9.16	<.0001
t4_RUCA	Rurality Index Score	-0.011	0.003	-3.67	0.0002
t4_Wavr	Waiver or COP eligible	0.028	0.025	1.14	0.2544
T4_Inst	Institutionalized	0.024	0.029	0.83	0.4039
missfsis	FSIS score is imputed	-0.089	0.049	-1.84	0.066
DD	Dev. Disabled (v. Elderly)	-0.196	0.025	-7.76	<.0001
PD	Phys. Disabled (v. Elderly)	0.037	0.029	1.26	0.2061
ed_2000	Year 2000 Cohort (v. 2002)	0.001	0.051	0.01	0.9921
ed_2001	Year 2001 Cohort (v. 2002)	0.052	0.051	1.04	0.2993
FC	Family Care	-0.044	0.049	-0.89	0.3742

Table A-24 Post-Enrollment Per Member Per Month Utilization For Hospital Outpatient Visits					
Variable	Label	Adj R-Sq	4.75%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	0.354	0.038	9.4	<.0001
T4_CDPS	Illness Burden Index Score	0.111	0.007	16.07	<.0001
T4_FSIS	Functional Status Impairment	-0.001	0.000	-4.53	<.0001
t4_LYoL	Last year of life	-0.006	0.073	-0.08	0.9364
T4_MC	Medicare eligible	-0.188	0.016	-11.94	<.0001
t4_RUCA	Rurality Index Score	-0.002	0.001	-1.4	0.1614
t4_Wavr	Waiver or COP eligible	0.001	0.012	0.08	0.9355
T4_Inst	Institutionalized	-0.032	0.014	-2.22	0.0266
missfsis	FSIS score is imputed	-0.056	0.024	-2.37	0.0178
DD	Dev. Disabled (v. Elderly)	-0.128	0.012	-10.37	<.0001
PD	Phys. Disabled (v. Elderly)	0.108	0.014	7.58	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	-0.061	0.025	-2.44	0.0146
ed_2001	Year 2001 Cohort (v. 2002)	-0.018	0.025	-0.74	0.4577
FC	Family Care	0.028	0.024	1.17	0.2403

**Table A-25. Post-Enrollment Per Member Per Month Utilization
For Physician Office Visits**

Variable	Label	Adj R-Sq Estimate	9.63% Std. Err.	t-value	p-value
Intercept	Intercept	0.860	0.060	14.24	<.0001
T4_CDPS	Illness Burden Index Score	0.225	0.011	20.34	<.0001
T4_FSIS	Functional Status Impairment	-0.004	0.000	-7.47	<.0001
t4_LYoL	Last year of life	0.742	0.117	6.34	<.0001
T4_MC	Medicare eligible	-0.544	0.025	-21.63	<.0001
t4_RUCA	Rurality Index Score	-0.011	0.002	-4.86	<.0001
t4_Wavr	Waiver or COP eligible	0.033	0.019	1.69	0.0906
T4_Inst	Institutionalized	-0.009	0.023	-0.4	0.6925
missfsis	FSIS score is imputed	-0.194	0.038	-5.09	<.0001
DD	Dev. Disabled (v. Elderly)	-0.244	0.020	-12.39	<.0001
PD	Phys. Disabled (v. Elderly)	0.182	0.023	7.99	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	0.014	0.040	0.35	0.7248
ed_2001	Year 2001 Cohort (v. 2002)	0.050	0.040	1.27	0.2036
FC	Family Care	0.046	0.039	1.2	0.2316

**Table A-26. Post-Enrollment Per Member Per Month Utilization
For Prescription Drug Claims Paid**

Variable	Label	Adj R-Sq Estimate	14.29% Std. Err.	t-value	p-value
Intercept	Intercept	3.130	0.273	11.48	<.0001
T4_CDPS	Illness Burden Index Score	0.925	0.050	18.55	<.0001
T4_FSIS	Functional Status Impairment	-0.013	0.002	-6.07	<.0001
t4_LYoL	Last year of life	0.702	0.528	1.33	0.1837
T4_MC	Medicare eligible	0.538	0.114	4.73	<.0001
t4_RUCA	Rurality Index Score	-0.006	0.010	-0.59	0.5533
t4_Wavr	Waiver or COP eligible	2.030	0.087	23.3	<.0001
T4_Inst	Institutionalized	1.648	0.103	16.03	<.0001
missfsis	FSIS score is imputed	-0.189	0.172	-1.1	0.2711
DD	Dev. Disabled (v. Elderly)	-2.461	0.089	-27.64	<.0001
PD	Phys. Disabled (v. Elderly)	0.601	0.103	5.84	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	-0.448	0.180	-2.49	0.0127
ed_2001	Year 2001 Cohort (v. 2002)	-0.183	0.179	-1.03	0.3053
FC	Family Care	2.328	0.175	13.34	<.0001

Part II. Adjusted Average Change from 1-6 Mo. Before to 7-12 Mo. After Enrollment.

Table A-27 Pre- and Post-Enrollment Differences For Total LTC Expenditures					
Variable	Label	Adj R-Sq	4.35%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$112	54.470	2.060	0.039
T42CDPS	Diff. Illness Burden Index	\$78	15.030	5.180	<.0001
T42FSIS	Diff. Functional Status Impairment	\$29	23.540	1.250	0.210
t42LYoL	Diff. Last year of life	\$23	124.357	0.180	0.856
T42MC	Diff. Medicare eligibility	-\$127	62.558	-2.030	0.043
t42RUCA	Diff. Rurality Index Score	-\$89	17.188	-5.160	<.0001
t42Wavr	Diff. Waiver or COP eligible	\$258	24.047	10.740	<.0001
t42Inst	Diff. Institutionalization	\$539	25.344	21.260	<.0001
missfsis	FSIS score is imputed	\$33	37.820	0.880	0.379
DD	Dev. Disabled (v. Elderly)	\$134	19.085	7.030	<.0001
PD	Phys. Disabled (v. Elderly)	-\$33	23.372	-1.410	0.159
ed_2000	Year 2000 Cohort (v. 2002)	\$59	42.215	1.390	0.165
ed_2001	Year 2001 Cohort (v. 2002)	-\$30	42.057	-0.720	0.474
FC	Family Care	\$405	42.834	9.450	<.0001

Table A-28. Pre- and Post-Enrollment Differences For State Center For The Developmentally Disabled Expenditures					
Variable	Label	Adj R-Sq Estimate	0.85% Std. Err.	t-value	p-value
Intercept	Intercept	\$2.83	23.035	0.120	0.902
T42CDPS	Diff. Illness Burden Index	-\$11.53	6.356	-1.810	0.070
T42FSIS	Diff. Functional Status Impairment	\$7.99	9.955	0.800	0.422
t42LYoL	Diff. Last year of life	-\$0.10	52.591	0.000	0.999
T42MC	Diff. Medicare eligibility	-\$27.51	26.456	-1.040	0.299
t42RUCA	Diff. Rurality Index Score	-\$73.25	7.269	10.080	<.0001
t42Wavr	Diff. Waiver or COP eligible	-\$23.15	10.170	-2.280	0.023
t42Inst	Diff. Institutionalization	\$44.08	10.718	4.110	<.0001
missfsis	FSIS score is imputed	-\$7.87	15.994	-0.490	0.623
DD	Dev. Disabled (v. Elderly)	\$11.44	8.071	1.420	0.156
PD	Phys. Disabled (v. Elderly)	\$5.45	9.884	0.550	0.581
ed_2000	Year 2000 Cohort (v. 2002)	\$2.55	17.853	0.140	0.886
ed_2001	Year 2001 Cohort (v. 2002)	-\$0.12	17.786	-0.010	0.995
FC	Family Care	-\$21.50	18.115	-1.190	0.235

Table A-29. Pre- and Post-Enrollment Differences of Monthly Home Health Expenditures					
Variable	Label	Adj R-Sq Estimate	1.46% Std. Err.	t-value	p-value
Intercept	Intercept	-\$12	13.785	-0.840	0.401
T42CDPS	Diff. Illness Burden Index	-\$11	3.804	-2.770	0.006
T42FSIS	Diff. Functional Status Impairment	\$10	5.958	1.750	0.079
t42LYoL	Diff. Last year of life	\$1	31.472	0.050	0.963
T42MC	Diff. Medicare eligibility	-\$24	15.832	-1.500	0.133
t42RUCA	Diff. Rurality Index Score	\$0	4.350	-0.070	0.948
t42Wavr	Diff. Waiver or COP eligible	-\$23	6.086	-3.830	0.000
t42Inst	Diff. Institutionalization	\$0	6.414	0.030	0.975
missfsis	FSIS score is imputed	-\$5	9.572	-0.570	0.568
DD	Dev. Disabled (v. Elderly)	\$9	4.830	1.760	0.078
PD	Phys. Disabled (v. Elderly)	\$34	5.915	5.830	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	\$12	10.684	1.080	0.279
ed_2001	Year 2001 Cohort (v. 2002)	\$4	10.644	0.350	0.727
FC	Family Care	\$35	10.841	3.260	0.001

Table A-30. Pre- and Post-Enrollment Differences of Monthly Intermediate Care Facility Expenditures					
Variable	Label	Adj R-Sq Estimate	.77% Std. Err.	t-value	p-value
Intercept	Intercept	-\$7	26.392	-0.270	0.786
T42CDPS	Diff. Illness Burden Index	\$29	7.282	3.930	<.0001
T42FSIS	Diff. Functional Status Impairment	-\$13	11.406	-1.100	0.272
t42LYoL	Diff. Last year of life	\$0	60.253	0.000	0.997
T42MC	Diff. Medicare eligibility	-\$6	30.310	-0.190	0.850
t42RUCA	Diff. Rurality Index Score	-\$27	8.328	-3.300	0.001
t42Wavr	Diff. Waiver or COP eligible	-\$69	11.651	-5.940	<.0001
t42Inst	Diff. Institutionalization	\$68	12.280	5.550	<.0001
missfsis	FSIS score is imputed	-\$1	18.325	-0.050	0.957
DD	Dev. Disabled (v. Elderly)	\$0	9.247	-0.010	0.993
PD	Phys. Disabled (v. Elderly)	\$2	11.324	0.200	0.845
ed_2000	Year 2000 Cohort (v. 2002)	-\$3	20.454	-0.160	0.873
ed_2001	Year 2001 Cohort (v. 2002)	\$13	20.378	0.630	0.532
FC	Family Care	-\$62	20.754	-2.980	0.003

Table A-31. Pre- and Post-Enrollment Differences of Monthly Nursing Home Expenditures					
Variable	Label	Adj R-Sq Estimate	8.59% Std. Err.	t-value	p-value
Intercept	Intercept	\$5	31.457	0.160	0.876
T42CDPS	Diff. Illness Burden Index	\$16	8.680	1.860	0.063
T42FSIS	Diff. Functional Status Impairment	\$39	13.595	2.860	0.004
t42LYoL	Diff. Last year of life	\$189	71.817	2.630	0.009
T42MC	Diff. Medicare eligibility	-\$51	36.128	-1.410	0.158
t42RUCA	Diff. Rurality Index Score	-\$27	9.926	-2.690	0.007
t42Wavr	Diff. Waiver or COP eligible	-\$113	13.887	-8.120	<.0001
t42Inst	Diff. Institutionalization	\$462	14.637	31.580	<.0001
missfsis	FSIS score is imputed	\$47	21.842	2.130	0.033
DD	Dev. Disabled (v. Elderly)	-\$50	11.022	-4.490	<.0001
PD	Phys. Disabled (v. Elderly)	-\$16	13.498	-1.220	0.222
ed_2000	Year 2000 Cohort (v. 2002)	\$8	24.379	0.320	0.752
ed_2001	Year 2001 Cohort (v. 2002)	-\$1	24.288	-0.030	0.977
FC	Family Care	\$4	24.737	0.170	0.867

Table A-32. Pre- and Post-Enrollment Differences of Monthly Personal Care Expenditures					
Variable	Label	Adj R-Sq	2.07%	t-value	p-value
		Estimate	Std. Err.		
Intercept	Intercept	-\$16	22.647	-0.690	0.489
T42CDPS	Diff. Illness Burden Index	\$11	6.249	1.770	0.077
T42FSIS	Diff. Functional Status Impairment	\$27	9.787	2.720	0.007
t42LYoL	Diff. Last year of life	-\$57	51.704	-1.100	0.270
T42MC	Diff. Medicare eligibility	-\$1	26.010	-0.020	0.985
t42RUCA	Diff. Rurality Index Score	\$21	7.146	2.910	0.004
t42Wavr	Diff. Waiver or COP eligible	-\$68	9.998	-6.850	<.0001
t42Inst	Diff. Institutionalization	-\$72	10.538	-6.830	<.0001
missfsis	FSIS score is imputed	-\$14	15.725	-0.880	0.376
DD	Dev. Disabled (v. Elderly)	-\$26	7.935	-3.210	0.001
PD	Phys. Disabled (v. Elderly)	\$10	9.717	0.980	0.326
ed_2000	Year 2000 Cohort (v. 2002)	\$78	17.552	4.420	<.0001
ed_2001	Year 2001 Cohort (v. 2002)	\$62	17.486	3.530	0.000
FC	Family Care	\$33	17.809	1.840	0.065

Table A-33. Pre- and Post-Enrollment Differences of Monthly Residential Care Facility Expenditure					
Variable	Label	Adj R-Sq Estimate	6.72% Std. Err.	t-value	p-value
Intercept	Intercept	\$41	30.746	1.340	0.180
T42CDPS	Diff. Illness Burden Index	-\$17	8.484	-1.950	0.051
T42FSIS	Diff. Functional Status Impairment	\$47	13.288	3.520	0.000
t42LYoL	Diff. Last year of life	-\$85	70.195	-1.210	0.225
T42MC	Diff. Medicare eligibility	-\$38	35.312	-1.070	0.286
t42RUCA	Diff. Rurality Index Score	-\$5	9.702	-0.480	0.633
t42Wavr	Diff. Waiver or COP eligible	-\$58	13.574	-4.260	<.0001
t42Inst	Diff. Institutionalization	-\$128	14.306	-8.980	<.0001
missfsis	FSIS score is imputed	-\$27	21.348	-1.280	0.200
DD	Dev. Disabled (v. Elderly)	\$57	10.773	5.310	<.0001
PD	Phys. Disabled (v. Elderly)	-\$38	13.193	-2.920	0.004
ed_2000	Year 2000 Cohort (v. 2002)	-\$41	23.829	-1.740	0.082
ed_2001	Year 2001 Cohort (v. 2002)	\$34	23.740	1.430	0.152
FC	Family Care	\$208	24.178	8.620	<.0001

Table A-34 Pre- and Post-Enrollment Differences of Monthly Supportive Home Care Expenditures					
Variable	Label	Adj R-Sq	5.78%	t-value	p-value
		Estimate	Std. Err.		
Intercept	Intercept	\$57	32.487	1.750	0.081
T42CDPS	Diff. Illness Burden Index	-\$24	8.964	-2.640	0.008
T42FSIS	Diff. Functional Status Impairment	\$142	14.040	10.080	<.0001
t42LYoL	Diff. Last year of life	-\$29	74.168	-0.390	0.695
T42MC	Diff. Medicare eligibility	\$18	37.310	0.470	0.639
t42RUCA	Diff. Rurality Index Score	\$19	10.251	1.860	0.063
t42Wavr	Diff. Waiver or COP eligible	-\$38	14.342	-2.630	0.009
t42Inst	Diff. Institutionalization	-\$67	15.116	-4.450	<.0001
missfsis	FSIS score is imputed	-\$7	22.557	-0.320	0.745
DD	Dev. Disabled (v. Elderly)	\$4	11.383	0.340	0.735
PD	Phys. Disabled (v. Elderly)	\$16	13.939	1.120	0.264
ed_2000	Year 2000 Cohort (v. 2002)	-\$30	25.178	-1.210	0.226
ed_2001	Year 2001 Cohort (v. 2002)	-\$45	25.084	-1.790	0.073
FC	Family Care	\$245	25.547	9.580	<.0001

Table A-35. Pre- and Post-Enrollment Differences of Monthly Emergency Room Expenditures					
Variable	Label	Adj R-Sq	0.6%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-\$0.17	0.380	-0.450	0.651
T42CDPS	Diff. Illness Burden Index	\$0.54	0.105	5.190	<.0001
T42FSIS	Diff. Functional Status Impairment	\$0.48	0.164	2.900	0.004
t42LYoL	Diff. Last year of life	\$3.03	0.867	3.500	0.001
T42MC	Diff. Medicare eligibility	\$1.43	0.436	3.280	0.001
t42RUCA	Diff. Rurality Index Score	\$0.14	0.120	1.190	0.235
t42Wavr	Diff. Waiver or COP eligible	\$0.39	0.168	2.350	0.019
t42Inst	Diff. Institutionalization	-\$0.11	0.177	-0.630	0.527
missfsis	FSIS score is imputed	-\$0.15	0.264	-0.580	0.565
DD	Dev. Disabled (v. Elderly)	\$0.23	0.133	1.710	0.087
PD	Phys. Disabled (v. Elderly)	\$0.42	0.163	2.570	0.010
ed_2000	Year 2000 Cohort (v. 2002)	-\$0.08	0.294	-0.260	0.798
ed_2001	Year 2001 Cohort (v. 2002)	\$0.29	0.293	1.000	0.320
FC	Family Care	-\$0.13	0.299	-0.440	0.658

Table A-36 Pre- and Post-Enrollment Differences of Monthly Hospital Inpatient Expenditures					
Variable	Label	Adj R-Sq Estimate	0.75% Std. Err.	t-value	p-value
Intercept	Intercept	\$7	46.124	0.150	0.883
T42CDPS	Diff. Illness Burden Index	\$108	12.727	8.460	<.0001
T42FSIS	Diff. Functional Status Impairment	-\$15	19.933	-0.780	0.437
t42LYoL	Diff. Last year of life	\$200	105.303	1.900	0.058
T42MC	Diff. Medicare eligibility	-\$70	52.973	-1.310	0.189
t42RUCA	Diff. Rurality Index Score	-\$9	14.554	-0.630	0.530
t42Wavr	Diff. Waiver or COP eligible	-\$94	20.363	-4.630	<.0001
t42Inst	Diff. Institutionalization	-\$55	21.461	-2.570	0.010
missfsis	FSIS score is imputed	-\$29	32.026	-0.900	0.368
DD	Dev. Disabled (v. Elderly)	-\$14	16.161	-0.890	0.372
PD	Phys. Disabled (v. Elderly)	\$51	19.791	2.590	0.010
ed_2000	Year 2000 Cohort (v. 2002)	\$6	35.747	0.180	0.858
ed_2001	Year 2001 Cohort (v. 2002)	\$37	35.613	1.030	0.301
FC	Family Care	-\$102	36.271	-2.820	0.005

Table A-37. Pre- and Post-Enrollment Differences of Monthly Hospital Outpatient Expenditures					
Variable	Label	Adj R-Sq	0.11%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$23	9.514	2.370	0.018
T42CDPS	Diff. Illness Burden Index	\$2	2.625	0.710	0.478
T42FSIS	Diff. Functional Status Impairment	-\$1	4.112	-0.210	0.835
t42LYoL	Diff. Last year of life	\$6	21.721	0.290	0.770
T42MC	Diff. Medicare eligibility	-\$17	10.927	-1.520	0.129
t42RUCA	Diff. Rurality Index Score	-\$2	3.002	-0.700	0.486
t42Wavr	Diff. Waiver or COP eligible	\$4	4.200	0.900	0.367
t42Inst	Diff. Institutionalization	\$7	4.427	1.490	0.137
missfsis	FSIS score is imputed	-\$1	6.606	-0.150	0.884
DD	Dev. Disabled (v. Elderly)	\$0	3.334	-0.120	0.907
PD	Phys. Disabled (v. Elderly)	\$11	4.082	2.680	0.007
ed_2000	Year 2000 Cohort (v. 2002)	-\$23	7.374	-3.140	0.002
ed_2001	Year 2001 Cohort (v. 2002)	-\$18	7.346	-2.410	0.016
FC	Family Care	\$4	7.482	0.510	0.611

Table A-38. Pre- and Post-Enrollment Differences of Monthly Physician Office Expenditures					
Variable	Label	Adj R-Sq	.77%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	\$1	4.646	0.270	0.787
T42CDPS	Diff. Illness Burden Index	\$11	1.282	8.550	<.0001
T42FSIS	Diff. Functional Status Impairment	-\$1	2.008	-0.680	0.498
t42LYoL	Diff. Last year of life	\$28	10.607	2.640	0.008
T42MC	Diff. Medicare eligibility	-\$24	5.336	-4.460	<.0001
t42RUCA	Diff. Rurality Index Score	-\$1	1.466	-0.980	0.325
t42Wavr	Diff. Waiver or COP eligible	-\$1	2.051	-0.710	0.475
t42Inst	Diff. Institutionalization	\$2	2.162	1.010	0.313
missfsis	FSIS score is imputed	-\$5	3.226	-1.610	0.106
DD	Dev. Disabled (v. Elderly)	\$1	1.628	0.830	0.408
PD	Phys. Disabled (v. Elderly)	\$2	1.993	1.100	0.270
ed_2000	Year 2000 Cohort (v. 2002)	\$3	3.601	0.910	0.365
ed_2001	Year 2001 Cohort (v. 2002)	\$5	3.587	1.320	0.188
FC	Family Care	-\$7	3.653	-1.950	0.052

Table A-39. Pre- and Post-Enrollment Differences of Monthly Prescription Drug Expenditures					
Variable	Label	Adj R-Sq Estimate	1.6% Std. Err.	t-value	p-value
Intercept	Intercept	\$13	16.536	0.770	0.440
T42CDPS	Diff. Illness Burden Index	\$28	4.563	6.190	<.0001
T42FSIS	Diff. Functional Status Impairment	\$5	7.146	0.670	0.503
t42LYoL	Diff. Last year of life	-\$26	37.752	-0.690	0.489
T42MC	Diff. Medicare eligibility	\$21	18.991	1.110	0.265
t42RUCA	Diff. Rurality Index Score	\$9	5.218	1.660	0.096
t42Wavr	Diff. Waiver or COP eligible	\$1	7.300	0.130	0.900
t42Inst	Diff. Institutionalization	\$77	7.694	10.050	<.0001
missfsis	FSIS score is imputed	\$19	11.481	1.670	0.094
DD	Dev. Disabled (v. Elderly)	-\$14	5.794	-2.330	0.020
PD	Phys. Disabled (v. Elderly)	-\$3	7.095	-0.450	0.650
ed_2000	Year 2000 Cohort (v. 2002)	-\$19	12.815	-1.510	0.130
ed_2001	Year 2001 Cohort (v. 2002)	\$9	12.768	0.740	0.461
FC	Family Care	\$34	13.003	2.610	0.009

Table A-40. Pre- and Post-Enrollment Differences of Monthly State Center For The Developmentally Disabled Days					
Variable	Label	Adj R-Sq	0.82%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-0.013	0.057	-0.230	0.817
T42CDPS	Diff. Illness Burden Index	-0.016	0.016	-1.020	0.306
T42FSIS	Diff. Functional Status Impairment	0.007	0.024	0.270	0.784
t42LYoL	Diff. Last year of life	-0.005	0.129	-0.040	0.967
T42MC	Diff. Medicare eligibility	-0.058	0.065	-0.890	0.376
t42RUCA	Diff. Rurality Index Score	-0.142	0.018	-7.960	<.0001
t42Wavr	Diff. Waiver or COP eligible	-0.073	0.025	-2.910	0.004
t42Inst	Diff. Institutionalization	0.174	0.026	6.620	<.0001
missfsis	FSIS score is imputed	-0.031	0.039	-0.780	0.435
DD	Dev. Disabled (v. Elderly)	-0.013	0.020	-0.680	0.496
PD	Phys. Disabled (v. Elderly)	0.018	0.024	0.750	0.454
ed_2000	Year 2000 Cohort (v. 2002)	0.019	0.044	0.440	0.661
ed_2001	Year 2001 Cohort (v. 2002)	0.032	0.044	0.740	0.458
FC	Family Care	-0.059	0.044	-1.330	0.184

Table A-41. Pre- and Post-Enrollment Differences of Monthly Home Health Visits					
Variable	Label	Adj R-Sq	3.83%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-0.146	0.141	-1.040	0.299
T42CDPS	Diff. Illness Burden Index	-0.169	0.039	-4.340	<.0001
T42FSIS	Diff. Functional Status Impairment	0.219	0.061	3.610	0.000
t42LYoL	Diff. Last year of life	0.151	0.321	0.470	0.638
T42MC	Diff. Medicare eligibility	-0.250	0.162	-1.550	0.122
t42RUCA	Diff. Rurality Index Score	-0.029	0.044	-0.650	0.517
t42Wavr	Diff. Waiver or COP eligible	-0.408	0.062	-6.570	<.0001
t42Inst	Diff. Institutionalization	-0.014	0.065	-0.220	0.826
missfsis	FSIS score is imputed	-0.059	0.098	-0.610	0.545
DD	Dev. Disabled (v. Elderly)	0.122	0.049	2.480	0.013
PD	Phys. Disabled (v. Elderly)	0.505	0.060	8.360	<.0001
ed_2000	Year 2000 Cohort (v. 2002)	0.191	0.109	1.750	0.080
ed_2001	Year 2001 Cohort (v. 2002)	-0.041	0.109	-0.380	0.705
FC	Family Care	0.568	0.111	5.130	<.0001

Table A-42. Pre- and Post-Enrollment Differences of Monthly Intermediate Care Facility Days					
Variable	Label	Adj R-Sq	2.08%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-0.161	0.127	-1.270	0.206
T42CDPS	Diff. Illness Burden Index	0.159	0.035	4.540	<.0001
T42FSIS	Diff. Functional Status Impairment	-0.089	0.055	-1.630	0.103
t42LYoL	Diff. Last year of life	0.006	0.290	0.020	0.983
T42MC	Diff. Medicare eligibility	0.147	0.146	1.010	0.313
t42RUCA	Diff. Rurality Index Score	-0.251	0.040	-6.270	<.0001
t42Wavr	Diff. Waiver or COP eligible	-0.400	0.056	-7.150	<.0001
t42Inst	Diff. Institutionalization	0.665	0.059	11.260	<.0001
missfsis	FSIS score is imputed	0.054	0.088	0.610	0.541
DD	Dev. Disabled (v. Elderly)	-0.094	0.044	-2.100	0.036
PD	Phys. Disabled (v. Elderly)	0.027	0.054	0.500	0.615
ed_2000	Year 2000 Cohort (v. 2002)	0.106	0.098	1.080	0.282
ed_2001	Year 2001 Cohort (v. 2002)	0.053	0.098	0.540	0.591
FC	Family Care	-0.277	0.100	-2.770	0.006

Table A-43. Pre- and Post-Enrollment Differences of Monthly Nursing Home Days					
Variable	Label	Adj R-Sq	12.31%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-0.117	0.259	-0.450	0.650
T42CDPS	Diff. Illness Burden Index	0.145	0.071	2.040	0.042
T42FSIS	Diff. Functional Status Impairment	0.421	0.112	3.760	0.000
t42LYoL	Diff. Last year of life	2.077	0.591	3.520	0.000
T42MC	Diff. Medicare eligibility	-0.248	0.297	-0.830	0.404
t42RUCA	Diff. Rurality Index Score	-0.274	0.082	-3.350	0.001
t42Wavr	Diff. Waiver or COP eligible	-1.202	0.114	10.530	<.0001
t42Inst	Diff. Institutionalization	4.622	0.120	38.400	<.0001
missfsis	FSIS score is imputed	0.427	0.180	2.380	0.017
DD	Dev. Disabled (v. Elderly)	-0.468	0.091	-5.160	<.0001
PD	Phys. Disabled (v. Elderly)	-0.206	0.111	-1.850	0.064
ed_2000	Year 2000 Cohort (v. 2002)	0.383	0.200	1.910	0.056
ed_2001	Year 2001 Cohort (v. 2002)	0.143	0.200	0.720	0.474
FC	Family Care	-0.068	0.203	-0.330	0.739

Table A-44. Pre- and Post-Enrollment Differences of Monthly Personal Care Days					
Variable	Label	Adj R-Sq	1.99%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-2.572	1.565	-1.640	0.100
T42CDPS	Diff. Illness Burden Index	0.826	0.432	1.910	0.056
T42FSIS	Diff. Functional Status Impairment	0.859	0.676	1.270	0.204
t42LYoL	Diff. Last year of life	-3.270	3.572	-0.920	0.360
T42MC	Diff. Medicare eligibility	-0.209	1.797	-0.120	0.908
t42RUCA	Diff. Rurality Index Score	1.326	0.494	2.690	0.007
t42Wavr	Diff. Waiver or COP eligible	-4.501	0.691	-6.520	<.0001
t42Inst	Diff. Institutionalization	-4.923	0.728	-6.760	<.0001
missfsis	FSIS score is imputed	-0.253	1.086	-0.230	0.816
DD	Dev. Disabled (v. Elderly)	-2.365	0.548	-4.310	<.0001
PD	Phys. Disabled (v. Elderly)	0.232	0.671	0.350	0.730
ed_2000	Year 2000 Cohort (v. 2002)	4.792	1.213	3.950	<.0001
ed_2001	Year 2001 Cohort (v. 2002)	4.865	1.208	4.030	<.0001
FC	Family Care	3.072	1.231	2.500	0.013

**Table A-45. Pre- and Post-Enrollment Differences of
Monthly Residential Care Facility Days**

Variable	Label	Adj R-Sq Estimate	1.8% Std. Err.	t-value	p-value
Intercept	Intercept	-0.050	0.263	-0.190	0.848
T42CDPS	Diff. Illness Burden Index	-0.162	0.073	-2.230	0.026
T42FSIS	Diff. Functional Status Impairment	0.149	0.114	1.310	0.189
t42LYoL	Diff. Last year of life	-0.603	0.601	-1.000	0.316
T42MC	Diff. Medicare eligibility	-0.670	0.302	-2.220	0.027
t42RUCA	Diff. Rurality Index Score	0.119	0.083	1.440	0.151
t42Wavr	Diff. Waiver or COP eligible	0.808	0.116	6.950	<.0001
t42Inst	Diff. Institutionalization	-0.820	0.122	-6.690	<.0001
missfsis	FSIS score is imputed	-0.152	0.183	-0.830	0.406
DD	Dev. Disabled (v. Elderly)	0.202	0.092	2.190	0.028
PD	Phys. Disabled (v. Elderly)	0.013	0.113	0.120	0.906
ed_2000	Year 2000 Cohort (v. 2002)	0.419	0.204	2.050	0.040
ed_2001	Year 2001 Cohort (v. 2002)	0.180	0.203	0.890	0.375
FC	Family Care	1.302	0.207	6.290	<.0001

Table A-46. Pre- and Post-Enrollment Differences of Monthly Supportive Home Care Days					
Variable	Label	Adj R-Sq Estimate	9.79% Std. Err.	t-value	p-value
Intercept	Intercept	0.787	0.265	2.970	0.003
T42CDPS	Diff. Illness Burden Index	-0.029	0.073	-0.400	0.688
T42FSIS	Diff. Functional Status Impairment	0.810	0.114	7.080	<.0001
t42LYoL	Diff. Last year of life	-0.204	0.604	-0.340	0.736
T42MC	Diff. Medicare eligibility	0.273	0.304	0.900	0.369
t42RUCA	Diff. Rurality Index Score	0.133	0.084	1.590	0.113
t42Wavr	Diff. Waiver or COP eligible	-0.161	0.117	-1.380	0.168
t42Inst	Diff. Institutionalization	-0.661	0.123	-5.360	<.0001
missfsis	FSIS score is imputed	0.057	0.184	0.310	0.755
DD	Dev. Disabled (v. Elderly)	-0.659	0.093	-7.110	<.0001
PD	Phys. Disabled (v. Elderly)	-0.190	0.114	-1.670	0.094
ed_2000	Year 2000 Cohort (v. 2002)	-0.670	0.205	-3.270	0.001
ed_2001	Year 2001 Cohort (v. 2002)	-0.516	0.204	-2.530	0.012
FC	Family Care	3.062	0.208	14.710	<.0001

Table A-47. Pre- and Post-Enrollment Differences of Monthly Emergency Room Visits					
Variable	Label	Adj R-Sq	.44%	t-value	p-value
Intercept	Intercept	-0.009	0.010	-0.910	0.364
T42CDPS	Diff. Illness Burden Index	0.019	0.003	7.060	<.0001
T42FSIS	Diff. Functional Status Impairment	0.008	0.004	1.950	0.051
t42LYoL	Diff. Last year of life	0.020	0.022	0.930	0.355
T42MC	Diff. Medicare eligibility	0.009	0.011	0.830	0.406
t42RUCA	Diff. Rurality Index Score	0.003	0.003	1.100	0.270
t42Wavr	Diff. Waiver or COP eligible	0.011	0.004	2.620	0.009
t42Inst	Diff. Institutionalization	-0.009	0.004	-2.100	0.036
missfsis	FSIS score is imputed	0.001	0.007	0.140	0.887
DD	Dev. Disabled (v. Elderly)	0.001	0.003	0.410	0.679
PD	Phys. Disabled (v. Elderly)	0.006	0.004	1.560	0.119
ed_2000	Year 2000 Cohort (v. 2002)	0.009	0.007	1.240	0.215
ed_2001	Year 2001 Cohort (v. 2002)	0.007	0.007	1.020	0.309
FC	Family Care	0.005	0.007	0.670	0.506

Table A-48. Pre- and Post-Enrollment Differences of Monthly Hospital Inpatient Admissions					
Variable	Label	Adj R-Sq	3.02%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	-0.001	0.006	-0.100	0.917
T42CDPS	Diff. Illness Burden Index	0.029	0.002	18.350	<.0001
T42FSIS	Diff. Functional Status Impairment	0.006	0.003	2.190	0.028
t42LYoL	Diff. Last year of life	0.093	0.013	7.040	<.0001
T42MC	Diff. Medicare eligibility	0.002	0.007	0.300	0.768
t42RUCA	Diff. Rurality Index Score	-0.003	0.002	-1.690	0.090
t42Wavr	Diff. Waiver or COP eligible	0.003	0.003	0.990	0.321
t42Inst	Diff. Institutionalization	0.002	0.003	0.780	0.434
missfsis	FSIS score is imputed	-0.004	0.004	-0.970	0.333
DD	Dev. Disabled (v. Elderly)	0.001	0.002	0.430	0.666
PD	Phys. Disabled (v. Elderly)	0.002	0.002	0.790	0.427
ed_2000	Year 2000 Cohort (v. 2002)	0.005	0.005	1.170	0.243
ed_2001	Year 2001 Cohort (v. 2002)	0.006	0.004	1.300	0.192
FC	Family Care	-0.003	0.005	-0.660	0.509

Table A-49. Pre- and Post-Enrollment Differences of Monthly Hospital Inpatient Days					
Variable	Label	Adj R-Sq	1.79%	t-value	p-value
		Estimate	Std. Err.		
Intercept	Intercept	0.087	0.075	1.160	0.248
T42CDPS	Diff. Illness Burden Index	0.290	0.021	13.980	<.0001
T42FSIS	Diff. Functional Status Impairment	0.029	0.033	0.890	0.376
t42LYoL	Diff. Last year of life	0.857	0.172	4.990	<.0001
T42MC	Diff. Medicare eligibility	-0.017	0.086	-0.200	0.845
t42RUCA	Diff. Rurality Index Score	-0.031	0.024	-1.290	0.198
t42Wavr	Diff. Waiver or COP eligible	-0.089	0.033	-2.690	0.007
t42Inst	Diff. Institutionalization	0.001	0.035	0.040	0.968
missfsis	FSIS score is imputed	-0.079	0.052	-1.520	0.129
DD	Dev. Disabled (v. Elderly)	-0.045	0.026	-1.710	0.087
PD	Phys. Disabled (v. Elderly)	0.038	0.032	1.170	0.244
ed_2000	Year 2000 Cohort (v. 2002)	-0.018	0.058	-0.310	0.757
ed_2001	Year 2001 Cohort (v. 2002)	0.013	0.058	0.230	0.818
FC	Family Care	-0.135	0.059	-2.280	0.023

Table A-50. Pre- and Post-Enrollment Differences of Monthly Hospital Outpatient Visits					
Variable	Label	Adj R-Sq	.87% Std. Err.	t-value	p-value
Intercept	Intercept	0.019	0.030	0.620	0.533
T42CDPS	Diff. Illness Burden Index	0.079	0.008	9.580	<.0001
T42FSIS	Diff. Functional Status Impairment	-0.010	0.013	-0.740	0.457
t42LYoL	Diff. Last year of life	0.065	0.068	0.950	0.344
T42MC	Diff. Medicare eligibility	-0.081	0.034	-2.370	0.018
t42RUCA	Diff. Rurality Index Score	-0.008	0.009	-0.810	0.415
t42Wavr	Diff. Waiver or COP eligible	-0.003	0.013	-0.240	0.811
t42Inst	Diff. Institutionalization	0.019	0.014	1.350	0.176
missfsis	FSIS score is imputed	0.011	0.021	0.530	0.599
DD	Dev. Disabled (v. Elderly)	0.001	0.010	0.070	0.941
PD	Phys. Disabled (v. Elderly)	0.014	0.013	1.120	0.261
ed_2000	Year 2000 Cohort (v. 2002)	-0.028	0.023	-1.200	0.232
ed_2001	Year 2001 Cohort (v. 2002)	-0.002	0.023	-0.090	0.928
FC	Family Care	-0.012	0.024	-0.510	0.609

Table A-51. Pre- and Post-Enrollment Differences of Monthly Physician Office Visits					
Variable	Label	Adj R-Sq	2.95%		
		Estimate	Std. Err.	t-value	p-value
Intercept	Intercept	0.096	0.049	1.940	0.053
T42CDPS	Diff. Illness Burden Index	0.240	0.014	17.610	<.0001
T42FSIS	Diff. Functional Status Impairment	0.014	0.021	0.630	0.526
t42LYoL	Diff. Last year of life	0.656	0.113	5.810	<.0001
T42MC	Diff. Medicare eligibility	-0.313	0.057	-5.520	<.0001
t42RUCA	Diff. Rurality Index Score	-0.022	0.016	-1.400	0.160
t42Wavr	Diff. Waiver or COP eligible	0.030	0.022	1.390	0.164
t42Inst	Diff. Institutionalization	0.020	0.023	0.870	0.386
missfsis	FSIS score is imputed	-0.056	0.034	-1.620	0.106
DD	Dev. Disabled (v. Elderly)	-0.008	0.017	-0.480	0.632
PD	Phys. Disabled (v. Elderly)	0.008	0.021	0.360	0.721
ed_2000	Year 2000 Cohort (v. 2002)	-0.040	0.038	-1.030	0.301
ed_2001	Year 2001 Cohort (v. 2002)	-0.012	0.038	-0.320	0.751
FC	Family Care	-0.041	0.039	-1.060	0.290

Table A-52. Pre- and Post-Enrollment Differences of Monthly Prescription Drug Claims Paid					
Variable	Label	Adj R-Sq	1.95% Std. Err.	t-value	p-value
Intercept	Intercept	0.446	0.133	3.340	0.001
T42CDPS	Diff. Illness Burden Index	0.323	0.037	8.790	<.0001
T42FSIS	Diff. Functional Status Impairment	0.043	0.058	0.740	0.457
t42LYoL	Diff. Last year of life	-0.253	0.304	-0.830	0.407
T42MC	Diff. Medicare eligibility	0.088	0.153	0.570	0.567
t42RUCA	Diff. Rurality Index Score	-0.108	0.042	-2.560	0.011
t42Wavr	Diff. Waiver or COP eligible	0.152	0.059	2.590	0.010
t42Inst	Diff. Institutionalization	0.657	0.062	10.590	<.0001
missfsis	FSIS score is imputed	0.192	0.093	2.070	0.039
DD	Dev. Disabled (v. Elderly)	-0.137	0.047	-2.930	0.003
PD	Phys. Disabled (v. Elderly)	0.062	0.057	1.080	0.280
ed_2000	Year 2000 Cohort (v. 2002)	-0.150	0.103	-1.450	0.148
ed_2001	Year 2001 Cohort (v. 2002)	-0.177	0.103	-1.720	0.085
FC	Family Care	0.445	0.105	4.240	<.0001

Attachment 10: HLM Equation Illustration

An example of the complete model for Supportive Home Care costs follows. The HLM specification is:

$$Y_{ij} = \beta_{0j} + \beta_{1j} * (\text{CDPS Index Score}) + \beta_{2j} * (\text{Functional Status Impairment Score}) + \beta_{3j} * (\text{Functional Status Imputation}[1=\text{Yes}]) + \beta_{4j} * (\text{Institution}[1=\text{Yes}]) + \beta_{5j} * (\text{Last Year of Life}[1=\text{Yes}]) + \beta_{6j} * (\text{Medicare Dual Eligible}[1=\text{Yes}]) + \beta_{7j} * (\text{Community Type}) + \beta_{8j} * (\text{Waiver}[1=\text{Yes}]) + \beta_{9j} * (\text{Frail Elderly}[1=\text{Yes}]) + \beta_{10j} * (\text{Physically Disabled}[1=\text{Yes}]) + r_{ij}$$

Where “i” refers to the person number and “j” refers to the group number. Since the coefficients $\beta_{0j}, \beta_{1j}, \beta_{2j}, \dots, \beta_{8j}$, change from county to county, they have variability that is attempting to be explained and “r” is the error term.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Non-MKE CMO County}) + \gamma_{02}(\text{MKE County}) + \gamma_{03}(\text{Resource Center Only County}) + \mu_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{Non-MKE CMO County}) + \gamma_{12}(\text{MKE County}) + \gamma_{13}(\text{Resource Center Only County}) + \mu_{1j}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}(\text{Non-MKE CMO County}) + \gamma_{22}(\text{MKE County}) + \gamma_{23}(\text{Resource Center Only County}) + \mu_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

$$\beta_{7j} = \gamma_{70}$$

$$\beta_{8j} = \gamma_{80}$$

$$\beta_{9j} = \gamma_{90}$$

$$\beta_{10j} = \gamma_{100}$$

Note here that the fixed effects for Institution, Last Year of Life, Medicaid Dual Eligible, Community Type, Waiver, Frail Elderly designation, and/or Physically Disabled designation implies no random error in the model for the coefficients $\beta_{3j}, \beta_{4j}, \beta_{5j}, \beta_{6j}, \beta_{7j}, \beta_{8j}, \beta_{9j}$, and β_{10j} . “ u_{ij} ” refers to the random error term. Note also that the models for the CDPS Index Score and Functional Status Index Score reflects the interactions between the Family Care county designation type (non-Milwaukee county CMO county [Fond du Lac, La Crosse, Portage, Richland], Milwaukee County, and Resource Center only county [Jackson, Kenosha, Marathon and Trempealeau]).

Attachment 11: HLM Detailed Results Tables

Long-term Care Multilevel Analysis Coefficient for Cost Differences Between Pre- and Post-Enrollment Date Across Counties								
	Total Long-Term Care Costs	State DD Centers \$	Home Health Care \$	ICF-MR \$	Nursing Home \$	Personal Care \$	Residential Care (CBRF) \$	Supportive Home Care \$
County Type (Level 2)								
Non-Milwaukee CMO County Cost	-\$113*	-\$23	\$32***	\$19	\$28	-\$175***	-\$98***	\$55
Milwaukee County CMO Cost	\$42	-\$21	-\$4	\$21	-\$13	\$45	\$90***	\$29
Resource Center Only County Cost	\$13	-\$1	-\$7	\$20	\$10	-\$23	-\$36	-\$66*
Individual Level Controls (Level 1)								
Intercept	\$238***	\$6	\$1*	-\$23***	\$33***	\$59***	\$77***	\$72***
Diff Illness Burden Index	\$69**	-\$12*	-\$6**	\$29***	\$17**	\$6	-\$19**	-\$24***
Diff Functional Status Impairment Score	-\$173***	\$8	\$11**	-\$12	\$39***	\$27***	\$46***	\$135***
Functional Status Impairment Score Imputation	-\$145	-\$4	-\$10*	\$56***	\$66***	-\$93***	-\$215***	-\$177***
Diff Institutionalized	\$528***	\$45***	-\$3	\$71***	\$468***	-\$71***	-\$131***	-\$78***
Diff Last Year of Life	\$66	\$1	\$1	-\$6	\$186***	-\$57	-\$63	\$0
Diff Medicare Dual Eligible	-\$204**	-\$27	-\$23*	-\$8	-\$51	-\$2	-\$34	\$30
Diff Community Type (RUCA)	-\$77***	-\$74***	-\$1	-\$27***	-\$25**	\$18***	-\$8	\$11
Diff Waiver Recipient	\$118	-\$21**	-\$26***	-\$51***	-\$116***	-\$71***	-\$80***	-\$80***
Frail Elderly (v. DD)	-\$127**	-\$12	-\$1	\$6	\$57***	-\$9	-\$71***	-\$13
Physically Disabled (v. DD)	-\$173**	-\$7	\$25***	\$7	\$34**	\$23**	-\$90***	\$8
Total n = 13,470 (FC=3,780; CG=9,690) Across 72 Counties Proportion of Variance Explained Between Counties 18.9%								

Note: Significance levels = ***<0.01 **<0.05; *<0.10

Long-term Care Multilevel Analysis Coefficients for Utilization Rate (per 1,000) Differences Between Pre- and Post-Enrollment Date Across Counties							
	State DD Centers (per 1,000)	Home Health Care (per 1,000)	ICF-MR (per 1,000)	Nursing Home (per 1,000)	Personal Care (per 1,000)	Residential Care(CBRF) (per 1,000)	Supportive Home Care (per 1,000)
County Type (Level 2)							
Non-Milwaukee CMO County Rate (per 1,000)	-59.1	608.3***	83.5	116.1	-10,693.0***	1,452.1***	-214.1
Milwaukee County CMO Rate (per 1,000)	-62.4*	-96.2	-30.2	-279.9	3,584.5*	-73.5	843.1*
Resource Center Only County Rate (per 1,000)	11.2	-48.6	104.4	29.1	-1,635.7	59.2	-694.0**
Individual Level Controls (Level 1)							
Intercept	2.0	-152.9***	-130.8***	375.3***	2,740.4***	253.7***	717.2***
Diff Illness Burden Index	-13.0	228.4***	158.4***	156.4**	510.5	-123.0*	-55.8
Diff Functional Status Impair.	7.2	-144.7**	-82.2	411.8***	895.6	126.1	752.4***
Functional Status Impairment Score Imputation	-21.5	-40.8	298.3***	611.5***	-5,731.7***	-589.7***	-2,353.1***
Diff Institutionalized	180.4***	122.9	677.7***	4,601.6***	-4,833.1***	-878.3***	-758.0***
Diff Last Year of Life	-5.7	-240.3	-28.5	1,916.9***	-3,236.4	-725.7	77.5
Diff Medicare Dual Eligible	-36.0	-2.2	140.4	-244.7	-343.8	-616.0**	368.1
Diff Community Type (RUCA)	-142.5***	-595.7***	-251.4***	-251.3***	1,162.0**	150.1*	52.1
Diff Waiver Recipient	-67.6***	-67.2	-350.4***	-1,252.5***	-4,586.9***	422.6***	-591.0***
Frail Elderly (v. DD)	14.9	349.7***	103.5**	488.0***	390.1	-76.1	459.8***
Physically Disabled (v. DD)	31.8	228.4***	113.2*	227.3*	1,933.1***	-156.5	444.0***
Total n = 13,470 (FC=3,780; CG=9,690) Across 72 Counties Proportion of Variance Explained Between Counties 16.4%							

Note: Significance levels = ***<0.01 **<0.05; *<0.10

Primary and Acute Multilevel Analysis Coefficients for Cost Differences Between Pre- and Post-Enrollment Date Across Counties					
	Emergency Room \$	Hospital Outpatient \$	Inpatient Hospital \$	Physician Outpatient \$	RX \$
County Type (Level 2)					
Non-Milwaukee CMO County Cost	\$0	-\$2	-\$8	-\$7**	-\$31**
Milwaukee County CMO Cost	-\$1**	\$8*	\$38	-\$1	-\$6
Resource Center Only County Cost	\$0	\$0	\$11	\$0	-\$1
Individual Level Controls (Level 1)					
Intercept	\$0	\$4*	-\$17**	\$2**	\$34***
Diff Illness Burden Index	\$1***	\$2	\$108***	\$11***	\$28***
Diff Functional Status Impair.	\$1***	-\$1	-\$14	-\$1	\$5
Functional Status Impairment Score Imputation	-\$0.19	-\$3	\$47**	-\$4	-\$22***
Diff Institutionalized	-\$0.10	\$7	-\$53**	\$2	\$78***
Diff Last Year of Life	\$3***	\$9	\$187*	\$27***	-\$16
Diff Medicare Dual Eligible	\$1.45***	-\$17	-\$74	-\$24***	\$22
Diff Community Type (RUCA)	\$0	-\$2	-\$8*	-\$1	\$6
Diff Waiver Recipient	\$0.39**	\$5	-\$63***	\$0	\$0
Frail Elderly (v. DD)	-\$0.11	\$1	\$18	-\$2	\$15***
Physically Disabled (v. DD)	\$0.25	\$12***	\$73***	\$1	\$12
Total n = 13,470 (FC=3,780; CG=9,690) Across 72 Counties Proportion of Variance Explained Between Counties 13.6%					

Note: Significance levels = ***<0.01**<0.05; *<0.10

Primary and Acute Multilevel Analysis Coefficients for Utilization Rate (per 1,000) Differences Between Pre- and Post-Enrollment Dates Across Counties						
	Emergency Room Rate (per 1,000)	Hospital Outpatient Rate (per 1,000)	Hospital Admission Rate (per 1,000)	Inpatient Hospital Rate (per 1,000)	Physician Outpatient Rate (per 1,000)	RX Rate (per 1,000)
County Type (Level 2)						
Non-Milwaukee CMO County Rate (per 1,000)	1.0	-57.5***	-4.9	-17.5	-73.3**	0.0
Milwaukee County CMO Rate (per 1,000)	1.3	4.3	0.4	44.7	-5.5	0.0
Resource Center Only County Rate (per 1,000)	1.3	-40.7*	-0.7	62.7	13.5	0.0
Individual Level Controls (Level 1)						
Intercept	2.3	25.2***	3.5**	-9.1*	41.9***	1.0***
Diff Illness Burden Index	18.4***	78.5***	29.3***	289.5***	239.0***	0.3***
Diff Functional Status Impair.	7.9*	-8.9	5.5**	30.5	14.1	0.0
Functional Status Impairment Score Imputation	-1.9	-6.0	-3.7	18.3	-60.4**	-0.1
Diff Institutionalized	-9.1**	20.5	2.3	5.0	21.8	1.0***
Diff Last Year of Life	19.4	68.6	92.6***	843.8***	660.3***	-0.2
Diff Medicare Dual Eligible	9.3	-83.0**	1.9	-21.8	-314.6***	0.1
Diff Community Type (RUCA)	3.2	-8.2*	-3.2*	-29.4**	-23.8	-0.1***
Diff Waiver Recipient	9.8**	5.7	3.4	-52.2*	41.6**	0.1
Frail Elderly (v. DD)	-2.1	-2.6	-1.5	47.1*	5.4	0.1***
Physically Disabled (v. DD)	4.4	17.7	1.1	91.3***	20.0	0.2***
Total n = 13,470 (FC=3,780; CG=9,690) Across 72 Counties Proportion of Variance Explained Between Counties 9.8%						

Note: Significance levels = ***<0.01**<0.05; *<0.10

