

### **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.

	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

	Total for 5 counties	Fond Du Lac	La Crosse	Milwaukee	Portage	Richland
% of unconfirmed 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 unconfirmed 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.

	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 following<sup>25</sup>:

- Standard operating procedures
- Protocols
- Training manuals

<sup>25</sup> 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 included<sup>26</sup>:

- 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.

<sup>26</sup> 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<sup>27 28</sup>.

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 deaths<sup>29</sup>. 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 assess 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

<sup>27</sup> 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.

<sup>28</sup> 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.

<sup>29</sup> MMWR. CDC. Influenza and Pneumococcal Vaccination Levels Among Persons Aged  $\geq 65$  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<sup>30 31</sup>.

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

<sup>30</sup> 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.

<sup>31</sup> 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 3<sup>rd</sup> and 4<sup>th</sup> Quarters of 2002.

CMO	3 <sup>rd</sup> Quarter 2002					4 <sup>th</sup> 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.

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
<b>Total</b>	<b>30</b>	<b>71</b>	<b>56</b>	<b>3</b>	<b>3</b>

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 questions<sup>32</sup>:

- 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

<sup>32</sup> 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.

		FC Round 1	FC Round 2	FC Round 3	Average of 3 Rounds	Waiver
<b>Choose Where To Live</b>	Outcomes	65.9%	67.2%	56.4%	61.9%	49.3%
	Supports	61.8%	74.8%	50.5%	61.3%	42.5%
<b>Employment Objectives</b>	Outcomes	59.2%	65.8%	58.0%	58.9%	39.5%
	Supports	59.8%	72.9%	52.7%	59.7%	36.2%
<b>Satisfied with Services</b>	Outcomes	77.8%	71.8%	71.3%	72.2%	63.6%
	Supports	71.4%	79.4%	71.1%	72.6%	63.0%
<b>Choose Daily Routines</b>	Outcomes	78.7%	81.2%	73.5%	77.3%	64.4%
	Supports	74.6%	80.1%	71.3%	74.9%	50.4%
<b>Privacy</b>	Outcomes	89.0%	88.2%	91.0%	88.5%	84.4%
	Supports	76.7%	78.8%	83.3%	79.0%	45.8%
<b>Participate in the Community</b>	Outcomes	55.1%	60.7%	56.0%	56.1%	40.3%
	Supports	55.6%	68.3%	57.6%	59.7%	37.3%
<b>Dignity and Respect</b>	Outcomes	76.5%	76.6%	72.3%	73.8%	65.5%
	Supports	71.6%	74.7%	72.7%	72.2%	32.9%
<b>Choose Services</b>	Outcomes	42.9%	50.4%	45.4%	46.9%	34.5%
	Supports	42.8%	65.3%	43.2%	50.7%	32.9%
<b>Informal Supports</b>	Outcomes	62.8%	64.1%	65.2%	62.5%	46.0%
	Supports	65.8%	75.9%	63.5%	66.7%	49.0%
<b>Safe</b>	Outcomes	73.8%	81.3%	70.5%	74.7%	72.6%
	Supports	67.2%	69.1%	67.2%	67.3%	51.0%
<b>Treated Fairly</b>	Outcomes	78.8%	70.9%	73.7%	72.8%	55.1%
	Supports	62.8%	74.6%	70.9%	69.4%	43.6%
<b>Best Possible Health</b>	Outcomes	63.3%	50.8%	55.4%	55.9%	46.6%
	Supports	70.3%	66.7%	61.7%	66.7%	51.0%
<b>Free from Abuse And Neglect</b>	Outcomes	86.5%	84.3%	86.2%	84.5%	83.8%
	Supports	63.8%	61.4%	74.1%	65.5%	42.5%
<b>Continuity and Security</b>	Outcomes	61.2%	53.1%	56.8%	54.9%	50.1%
	Supports	54.4%	44.6%	54.4%	49.3%	39.2%
<b>Interviews</b>		355	492	491	1338	365
<b>Margin of Error</b>		± 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, tests 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 population<sup>33</sup>. 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)<sup>34</sup>.

#### 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.

<sup>33</sup> 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.

<sup>34</sup> 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.<sup>35</sup> 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.

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<sup>35</sup> 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
<b>Total</b>	<b>26</b>	<b>9</b>	<b>21</b>	<b>9</b>	<b>4</b>	<b>6</b>	<b>75</b>

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%
<b>Totals</b>	<b>44</b>	<b>100.0%</b>	<b>47</b>	<b>100.0%</b>
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%
<b>Totals</b>	<b>44</b>	<b>100.0%</b>	<b>47</b>	<b>100.0%</b>

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 years<sup>36</sup>. 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 cases<sup>37</sup>. 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.

<sup>36</sup> See Section VI. f. for specific details of the LTCFS.

<sup>37</sup> 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 chance<sup>38</sup>. For those values below .75, reliability is efficient, but not without question.

<sup>38</sup> 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 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=3760)	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.)



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 <sup>39</sup>	-\$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, HRSR 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

<sup>39</sup> "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) Difference from CG	Statistical Significance	Milwaukee Family Care (n=1927)		Non-Milwaukee Family Care (n=1851)		Label
		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.

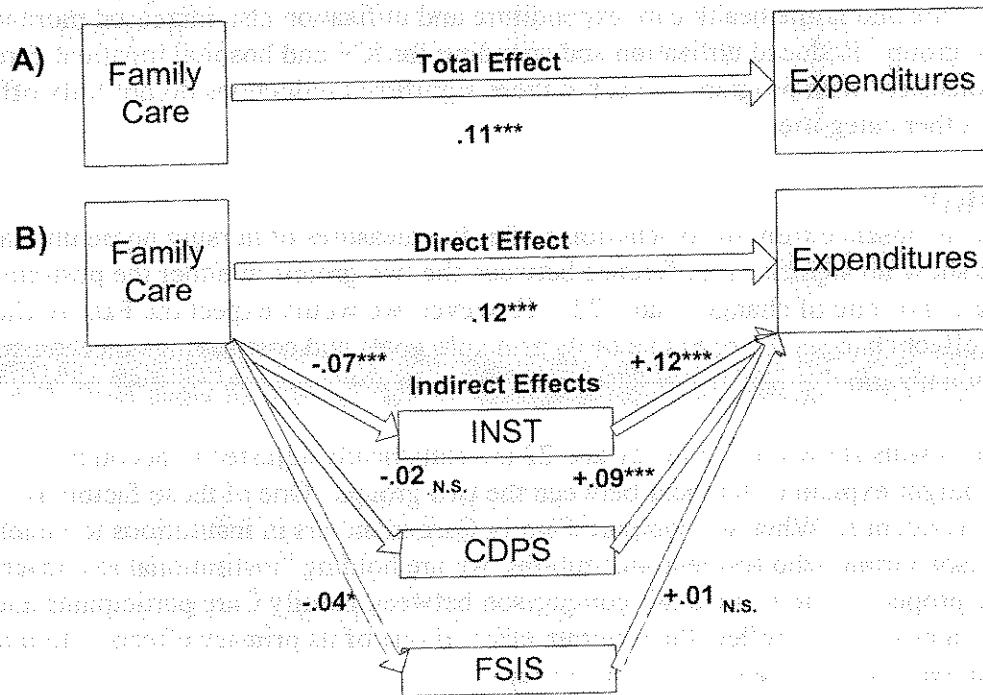
Without adjusting for institutional residence, we find that Family Care members have significantly lower nursing home expenditures and utilization than the Comparison Group, and Family Care members have a significantly greater reduction in nursing home use and spending, relative to the Comparison Group.

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 ( $-.07 \times .12 - .02 \times .09 - .04 \times .01$ ). 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 problems<sup>40</sup>. 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 effectiveness<sup>41</sup>.

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<sup>42,43</sup>. 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

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

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

<sup>42</sup> 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.

<sup>43</sup> 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  $\beta_{0j}$  and  $\beta_{1j}$  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*.<sup>44</sup> 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 use 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.

<sup>44</sup> 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 individuals 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 counties<sup>45</sup>. Although sizeable variation between counties has yet to be explained, the findings from these cost and utilization analyses reveal a wealth of information<sup>46</sup>. 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 they 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

<sup>45</sup> 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.

<sup>46</sup> 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.