A Guide to Implementing a Health-Based Risk-Adjusted Payment System for Medicaid Managed Care Programs

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Preface

Purpose

This manual provides a step-by-step approach for states that are interested in implementing health-based risk adjustment for managed care organizations under contract to provide Medicaid services. This manual describes the information system, financial, and policy issues that states will have to consider. It highlights some of the choices states will have to make when selecting and implementing a particular methodology. It also describes the approaches taken and challenges encountered by states that are currently making health-based risk-adjusted payments.

Target Audience

This manual is written for state staff who would be involved in the implementation of health-based risk adjustment. It assumes that the reader is familiar with managed care and managed care reimbursement. This manual is not intended to be a managed care primer. It discusses issues that decision makers will confront when choosing and implementing a health-based risk adjustment system. It also provides detailed information on the implementation tasks that staff will need to perform to begin making risk-adjusted payments. The manual will also be useful for consultants and researchers involved in the implementation of Medicaid managed care reimbursement methodologies.

Organization

This manual is organized according to the operational activities that must be performed to implement health-based risk adjustment. Early chapters address the initial decisions that will have to be made in order to select a risk adjustment classification system and measure an individual's health status. Middle chapters focus on data and systems issues. Later chapters address reimbursement and financial issues. Final chapters discuss purchaser strategies and quality issues that can be addressed once the decision to implement health-based risk adjustment has been made.

Background

This manual is based on the continually evolving body of knowledge around risk adjustment and on information gathered at two health-based risk adjustment forums. Under contract to the Centers for Medicare & Medicaid Services (CMS), the Center for Health Program Development and Management (Center) sponsored these forums and developed this manual as a sub-contractor to the Actuarial Research Corporation. The forum participants included representatives from the states that had implemented health-based risk adjustment by January 2001. The intent of the forums was to document states' experiences with implementing health-based risk adjustment for their Medicaid population. The Center also conducted a survey of the states that had implemented health-based risk adjustment. See Appendices D and E for the survey and survey responses.

Executive Summary

Health-based risk adjustment uses diagnostic information on beneficiaries' medical conditions to measure their health status when compared to traditional age and demographic adjustments. These measures can be used to better predict future health care costs in order to adjust payment.

Applying risk adjustment to the Medicaid population involves categorizing Medicaid managed care beneficiaries according to their expected health care costs and adjusting payments to reflect the cost differences.

The two main benefits of implementing health-based risk adjustment are to remove the financial incentive gained by enrolling higher numbers of healthy beneficiaries and to provide adequate funding for chronically ill managed care enrollees.

Implementing a health-based risk adjustment system is complex and can be challenging. Understanding several basic elements of health-based risk adjustment will greatly enhance your state's development and implementation efforts. Several of the factors that need to be considered are listed below.

- Evaluate and select a risk adjustment classification system. You should determine objective criteria based on what is important to your state. Use these criteria to evaluate each of the risk adjustment classification systems. When you have chosen a system, be prepared to explain your decision to the managed care organizations and other interested parties.

- Decide which Medicaid eligibility groups will be risk-adjusted. In addition, your state may decide to carve-out beneficiaries with certain conditions from the risk-adjusted group (e.g., AIDS and HIV).

- Evaluate the completeness of your encounter data. Complete, validated encounter data are essential for establishing a good risk adjustment system. You need to develop strategies to evaluate the completeness and accuracy of your encounter data. These strategies need to include validation at both a micro and a macro level.

- Define your payment system. Payments can be made on an individual level basis or an MCO level basis. They can also be made prospectively or concurrently. There are several considerations involved.

- Calculate your managed care capitation rates. Key to developing health-based capitation rates is to identify a base period of complete, valid data to and trend the expenses in the base period to the payment period.

- Prepare your MMIS to make risk-adjusted payments. Determine any additional roles your MMIS will play. Will you use the MMIS strictly to make payments or will you store an individual's risk group/score on the MMIS?

- Decide if you want to include risk-adjusted utilization standards in your managed care contracts.

- Evaluate the impact of risk adjustment on your Medicaid budget. Risk adjustment may require modifications to the way your state makes budget projections. When developing risk-adjusted budget projections, it is important to evaluate the case mix of each MCO.

These items are discussed in detail in this manual, along with the many benefits and challenges you may encounter when implementing a risk-adjusted payment system. Finally, this manual presents state experiences as documented by the states that have already implemented health-based risk adjustment for their Medicaid managed care programs.

Introduction

What is Health-Based Risk Adjustment?

Risk adjustment is a process that can be used to adjust capitation payments to managed care organizations (MCOs) or provider groups to reflect cost differences attributable to their beneficiaries' health conditions. One or more factors are used to identify beneficiaries expected to have higher health care costs compared to those expected to have lower health care costs. Factors can include age, gender, geographic area, or health status. The key to the success of risk adjustment is its ability to identify beneficiary characteristics that have a strong relationship with health care costs.

Health-based risk adjustment uses diagnostic information on beneficiaries' medical conditions to predict future health care costs in order to adjust payment. The primary systems use diagnoses and/or prescription utilization obtained from fee-for-service claims or encounter data. This information is then related to medical costs to understand the relationship between health status and costs. In the remainder of this document, whenever we use the term risk adjustment, we are referring to risk adjusted payment systems based on health status.

Why Risk Adjust?

Risk adjustment is used to modify payments to managed care organizations (MCOs) to reflect the expected health care costs of their enrolled population. This would be unnecessary if the enrolled population in each MCO had the same health status or if the differences in average health status were random. Many states, purchasers, and researchers have observed that this is not the case. Some MCOs persistently enroll a significantly sicker case mix of enrollees than other MCOs. As a result of enrolling a sicker population, these MCOs need higher payments to meet the health care needs of their enrollees. Risk adjustment systems are designed to measure differences in the health status of the enrolled population among different MCOs and adjust their payments accordingly. The major benefits of risk adjustment are described below. (See Appendix F for several article abstracts on reasons to risk adjust.)

Neutralize Selection Bias

Selection bias occurs when an MCO enrolls a population whose health status is significantly different than that of the average Medicaid beneficiary enrolled in managed care. For example, if an MCO primarily enrolls a select population (e.g., Medicaid children with asthma or some other chronic condition), the health status of its enrolled population may not reflect the health status of the average Medicaid beneficiary. If the MCO's enrolled population is healthier,

Selection Bias*: when an MCO enrolls a population whose health status differs from the average beneficiary's*

then the MCO experiences positive selection. If its enrolled population is sicker, the MCO experiences adverse selection.

Positive Selection: *when an MCO's enrolled population is healthier than the average Medicaid beneficiary*

Adverse Selection: *when an MCO's enrolled population is sicker than the average Medicaid beneficiary*

Uniform capitation rates benefit MCOs that enroll a healthier case mix. Traditionally, capitation rates were set based on the expected health care costs of the average beneficiary without adjustments for health status. Adjustments were made based on the age, gender, geographic area of residence, and eligibility status. These demographic adjustments made capitation payments more equitable; however, they still benefited MCOs that enrolled a healthier case mix relative to these actuarial cells. If an MCO attracted a healthier case mix of enrollees, the MCO would be overcompensated. If the MCO experienced adverse selection, the MCO's payment would not be sufficient to cover the health care costs of its sicker enrollee population.

Health-based risk adjusted payment systems are intented to alleviate some of the inequities of selection. If an MCO enrolls a healthier population, the risk adjustment system will lower its payments and reduce overpayments to MCOs that experience positive selection. Likewise, if an MCO experiences adverse selection and consequently enrolls a sicker population, the risk adjustment system will increase its payments to reflect their enrollees' sicker health status.

Reducing the incentive for positive selection is one of the main objectives of implementing health-based risk adjustment. With health-based risk adjustment, MCOs are paid based on the health status of their enrollees. MCOs are not financially rewarded or penalized based on the health status of their enrolled population.

Provide Adequate Funding for Chronically Ill Enrollees

An effective risk-adjusted payment system will provide MCOs with more equitable payments in order to address the health care needs of chronically ill enrollees. With appropriate funding, MCOs can focus on providing services and establishing applicable care management programs. With effective care management programs, MCOs should have sufficient funds to meet the on-going needs of enrollees with chronic diseases.

How Do You Implement Health-Based Risk Adjustment?

The operational tasks that a state will need to perform in order to implement health-based risk adjustment are highlighted in the following sections. A more detailed description of each task is provided in the chapters that follow. The first seven steps are chronological; you need to follow these steps in the order they are

presented to set health-based risk-adjusted capitation rates (for example, you need to choose your risk adjustment system before you can begin setting your rates). The next six activities need not be performed sequentially but can be worked on simultaneously to ensure that the rest of your systems are ready to begin making health-based risk-adjusted payments. For example, you may need to modify your Medicaid Management Information System (MMIS) to begin collecting encounter data or upgrade an existing encounter data collection system. You will need encounter data to risk adjust your enrollees because eventually your FFS claims data will no longer be indicative of your enrollees' current health status.

What Do You Need to Do?

Steps to Setting Health-Based Risk-Adjusted Capitation Rates	**Other Related Implementation Activities**
1. Select a System	1. Modify MMIS
2. Identify Data for Risk Assignment	2. Revise the Financial Reporting System
3. Install Risk Assignment Grouper	3. Modify the Medicaid Budget Forecasts
4. Determine Population and Benefit Carve-Outs	4. Develop a Revenue Forecasting System
5. Evaluate Encounter Data Completeness	5. Establish Contracting and Purchaser Strategies
6. Define Your Payment System	6. Address Policy and Political Issues
7. Establish Payment Rates	

Steps to Setting Health-Based Risk-Adjusted Capitation Rates

Step 1: Select a System

The first step in implementing health-based risk adjustment is to choose a risk adjustment system. Numerous risk adjustment systems have been developed in recent years. In 2001, state Medicaid programs used ACG (Adjusted Clinical Group) and CDPS (Chronic Illness and Disability Payment System). Other systems used commercially are based on prescription utilization, and one is based on use of both diagnostic and prescription utilization. The three most widely used risk adjustment systems are described in detail in Chapter 1.

Step 2: Identify Data for Risk Assignment

All of the risk adjustment systems rely on diagnosis codes and/or prescription utilization from claims or encounter data to determine a beneficiary's health status. You must identify the data required by the system you choose. You will

also need to identify or develop a database to store the necessary data. There are some modest differences in the data requirements of the risk adjustment systems. These differences are discussed in detail in Chapter 2.

Step 3: Install Risk Assignment Grouper

Each risk adjustment system uses a computer program to generate the risk group/score for each beneficiary. This computer program is typically referred to as the grouper. The grouper will need to be installed on one of your computers. Each risk adjustment system has specific computer requirements. You will have to determine which computer you will use for the grouper. This is discussed in Chapter 2.

Step 4: Determine Population and Benefit Carve-Outs

For the population that is enrolled in managed care, you need to decide if all beneficiaries or just certain categories of beneficiaries will be risk-adjusted. You need to determine which services will be included and which will be carved out of the risk-adjusted payment system. Issues pertaining to population and benefit carve-outs are discussed in Chapter 3.

Step 5: Evaluate Encounter Data Completeness

One of the keys to successful implementation of risk adjustment is a functioning encounter data system. A complete picture of an individual's medical conditions must be available to evaluate health status. A FFS claims system can be used to supply this information at the start of a managed care program. As the managed care program progresses, these data will be a less reliable indicator of an enrollee's current health. You will need to rely on encounter data to provide this information. An overview of encounter data collection issues and methods of evaluating your encounter data system are discussed in Chapter 4.

Chapter 4 also includes a discussion of issues related to evaluating encounter data completeness. If your encounter data will be used to make risk assignments on which your capitation payments will be based, you will need to determine the impact that missing encounter data will have on MCO payments.

Step 6: Define Your Payment System

Once the risk assignments have been made for all enrollees, you need to decide if you want to make risk-adjusted payments on an individual level basis or on an MCO level basis. Each payment method requires unique considerations. For example, if you choose to make payments on an MCO level basis, you will have to compute the health status for the average enrollee in an MCO and then make the same payment for all enrollees. These issues and others related to the payment system are discussed in Chapter 5.

Step 7: Establish Payment Rates

Once you have defined your payment system, you need to calculate your payment rates. You must make sure that the methodology you use to calculate the rates is consistent with the way your payment system will function.

You need to develop an expenditure base on which your payment rates will be based and trend expenditures from the base period to the payment period. You may also want to adjust your expenditure base so that it more accurately reflects the financial experience of the MCOs. These and other issues related to the calculation of capitation rates are discussed in Chapter 5.

Other Related Implementation Activities

Activity 1: Modify MMIS

To implement health-based risk adjustment, you will need to modify your payment system (e.g., MMIS). The modifications could be as simple as adding one rate code for the risk-adjusted group. You may also want to design some new MMIS reports to monitor your risk-adjusted payments. The MMIS issues that you will need to consider are discussed in Chapter 6.

Activity 2: Revise the Financial Reporting System

When your state begins to make risk-adjusted payments, you will want to monitor the MCOs' financial experience for the risk-adjusted groups. Financial reports may need to be revised to separately reflect the experience of the risk-adjusted groups. A discussion of these reporting issues and some samples of financial reports are included in Chapter 7.

Activity 3: Modify the Medicaid Budget Forecasts

Making risk-adjusted payments may impact the way a state makes budget projections. The risk adjustment system will allow you to monitor changes in the case mix of the enrolled population. It is important the changes in case mix; if the population is becoming sicker, the result may be higher capitation payments. If the population is becoming healthier, your capitation payments may go down. Also, the frequency with which risk assignments are updated will have budget implications. A discussion of budget issues related to risk adjustment is presented in Chapter 8.

Activity 4: Develop a Revenue Forecasting System

Prior to implementing health-based risk adjustment, you should evaluate its impact on the MCOs. If the MCOs experience losses in revenue, either individually or as a group, you can expect that they will be opposed to the risk adjustment system. You should develop a revenue forecasting system to project MCO revenues each time the risk-adjusted payment rates are updated. This will help evaluate the impact of the new rates and assist in Medicaid budget preparations. These issues and strategies currently being used by states are discussed in Chapter 9.

Activity 5: Establish Contracting and Purchaser Strategies

You may consider including utilization standards in your MCO contracts so that MCOs could then be subject to penalties or incentives for their performance. The risk-adjusted payment system can be used to modify these standards to reflect the case mix of each MCO. For instance, MCOs with sicker case mixes should provide more services than MCOs with healthier case mixes. A discussion of contracting options and some examples of how states are currently approaching these issues are presented in Chapter 10.

Activity 6: Address Policy and Political Issues

When implementing health-based risk adjustment, there may be many policy and political challenges to overcome. The risk-adjusted payment system may have a significant impact (both positive and negative) on the financial revenue of MCOs and their network providers. Depending on this impact, some groups will be supportive of the implementation of the system, and others will be opposed. You will need to address this controversy and gain political support prior to implementing health-based risk adjustment. These issues are discussed in Chapter 11.

Chapter 1: Selecting a Risk Adjustment System

In This Chapter

- Choosing a system
- Three risk adjustment systems

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Once the decision has been made to implement health-based risk adjustment, one of the most critical decisions that you must make early on is which type of risk adjustment system to use. This decision will impact many of the implementation tasks that follow, including payment options, the data needed to support the system, and your approach to rate setting. You must choose the type of system that you want to implement before these other issues can be addressed.

The first section of this chapter discusses the factors to consider when choosing a risk adjustment system for your state. Depending on where your state is in the implementation process, some of these factors may be more important to your evaluation.

The second section of this chapter provides an overview of three health-based risk adjustment systems. Although many health-based risk adjustment systems have been published and implemented, this manual focuses on the systems most used by public payers: ACGs, CDPSs, and DCGs.

The three predominate risk adjustment systems that are being used by public payers:

- **ACG** (Adjusted Clinical Group)
- **CDPS** (Chronic Illness and Disability Payment System) [formerly known as DPS (Disability Payment System)]
- **DCG** (Diagnostic Cost Group)

As of 2001, ten states make risk-adjusted payments in their Medicaid managed care program. Eight of these states use CDPS, and two use ACG.

1.1 Choosing a System

There are several factors to evaluate when choosing a risk adjustment system. Some of these factors may be critical to your decision-making process, whereas others may not. Depending on your particular needs, you will have to determine which of these factors to focus on. For example, if you are just beginning to think about implementing health-based risk adjustment, you should consider all of these factors. If you have already been working on implementing health-based risk adjustment, you may want to focus on the availability of outside support. With this in mind, ask yourself:

- What type of risk adjustment system should I choose?
- In my state, is one system more generally accepted than others?
- Are the MCOs more familiar with, or actual users of, any system?
- Do any of my staff have experience with a health-based risk adjustment system?
- Is outside support available?
- How much will the system's license cost?
- How much of the variation can the system explain?
- What are the data requirements of the system?
- Are these data elements available with sufficient accuracy and uniformity in the data that will be used to determine risk status in the state?
- What incentives will the system generate to miscode diagnostic data or prescribe inappropriately?

1.1.1 What Type of Risk Adjustment System Should You Choose?

The most important characteristics of risk adjustment systems are:

- The information on which risk adjustment is made, especially whether it is based on diagnostic data; prescription utilization; procedure utilization; or some combination thereof, and how this information is combined with the traditional actuarial rating characteristics such as age; gender; basis of Medicaid eligibility; and area of residence.
- The specific choice of system (CDPS, ACG, DCG, etc.)
- Whether the system will be used to predict the relative cost of health care for specific individuals at some future time or applied at the entire MCO level (discussed in Chapter 5).

There are two classifications of risk adjustment systems: categorical and additive.

Categorical	Additive
▪ Uses diagnostic information on individuals and assigns them to a mutually exclusive risk group (category) ▪ May have as few as 20 or as many as 200 risk groups	▪ First assigns a value to each diagnosis an individual has ▪ Next sums the values ▪ Lastly computes a total risk score for each person

Deciding whether you want to assign a beneficiary to a risk group or compute an individual risk score is crucial when choosing a risk adjustment system. Your choice between categorical and additive will affect your future payment options. This is discussed further in Chapter 5.

Categorical

Categorical classification systems can be used to assess the case mix of an MCO by looking at the distribution of enrollees across risk groups. A state has **two payment options** when using a categorical classification system:

- One approach is to compute a payment rate for each of the mutually exclusive risk groups. An MCO's payment would then be the sum of the number of individuals in each mutually exclusive risk group multiplied by the rate for each group.
- Alternatively, a state could use an MCO's distribution of individuals to compute an MCO level payment. This would be done by developing an average payment rate based on the distribution of individuals across the risk groups. The MCO's payment would then be based on the average rate for the MCO multiplied by the number of individuals enrolled in the MCO.

Additive

Additive classification systems result in an enrollee-specific risk score. For a large population, you could get thousands of different individual risk scores. Because the risk scores are not categorized into a finite number of payment groups, you have **two payment options** if you use an additive classification system:

- One approach is to compute the average risk score for all enrollees in each MCO (or for subgroups of enrollees). The average risk scores can then be used to adjust the payments to each MCO.

- Alternatively, you could calculate the risk score for each individual and save the score on your MMIS. This score could then be used to determine each individual's payment. The MCO's payment would then change as its enrollment changes.

1.1.2 In Your State, is One System More Generally Accepted Than Others?

If MCOs within your state have some previous experience with one of the risk adjustment systems, they will be less resistant to the implementation of a risk adjustment system. If the MCOs are using one of the risk adjustment systems for provider profiling, they may already have a good idea of the case mix of their population. In other words, if the MCOs understand the benefits of a health-based risk adjustment system through their own experience, they will be more likely to accept the state's adoption of the same system.

Other stakeholders (e.g., disability advocacy groups) may also have prior experience with a specific risk adjustment system. These other stakeholders may be a valuable resource when discussing your implementation plans with the MCOs. Keep in mind that having "buy-in" from stakeholder groups will be one of your most valuable assets when implementing a health-based risk adjustment system.

1.1.3 Are the MCOs More Familiar With, or Actual Users of, Any System?

A crucial constituency for acceptance of risk adjustment is the MCOs themselves. Some of the risk adjustment systems have been used by other payers or by MCOs for their own purposes. Many MCOs are familiar with the version of the DCG system used by Medicare, and some use the ACG system internally.

1.1.4 Do Any of Your Staff Have Experience with a Health-Based Risk Adjustment System?

One factor you may want to consider when selecting a risk adjustment system is the prior experience of your staff in working with one of the systems. Ask yourself: Have my staff researched health-based risk adjustment systems? Does anyone have experience working with the developers of one of the systems? Previous work experience with one of the developers may reduce concerns about your ability to obtain support or get questions answered when necessary. It may give you more confidence in your ability to run the risk assignment grouper.

1.1.5 Is Outside Support Available?

You may also want to consider the experience of any consultants or actuaries who are going to assist you in implementing the risk adjustment system. Choosing an

actuary who has already implemented one of the systems in another state will help in your implementation efforts. Lessons learned in previous implementations can save a significant amount of time and resources (as implementation and ongoing support can be costly). You may want to question your actuaries and contractors about their ability to support the different risk adjustment systems and explore the ongoing needs and cost of this support. In addition, it is a good idea to question the developers about the level of support you will receive if you need assistance, and the on-going cost for providing this support.

1.1.6 How Much Will the System's License Cost?

The cost of licensing the system varies among the three health-based risk adjustment systems discussed in this chapter. Systems developed by academic institutions are sometimes made available free of charge, whereas the commercially developed systems usually require an annual licensing fee. If you are choosing between two systems and there is a difference in their cost, you may want to assess whether this cost differential is justified. Does the performance of the higher cost system justify its expense? Will the risk assignments of your Medicaid population be more precise and the MCO payments more equitable? Keep in mind, however, that license fees vary by system and can only be determined through discussions with the developers or companies that support the product. See "Helpful Websites" in Section 1.2 for contact information.

Generally speaking, these systems are available at little or no cost for evaluation purposes, but certain requirements must be met. Because developers have their own specific requirements, contact them for more information.

- **CDPSs** do not currently have a licensure fee.
- The sale and marketing of **ACGs** is handled by Computer Science Corporation (CSC); however, Johns Hopkins University (the developer) retains the right to make independent decisions about academic research and government program distribution. The licensure fee is evaluated on a case-by-case basis.
- A base dollar amount is charged (based on the number of covered lives) for **DCGs**. The license agreement includes software with reporting functionality, user documentation, and client support delivered directly from DxCG. The software may also be purchased through third-party vendors who may provide additional support.

1.1.7 How Much of the Variation Can the System Explain?

Health-based risk adjustment systems are designed to explain a greater percentage of the fluctuation in cost than capitation payment systems based on traditional

actuarial cells, such as age, gender, geographic area, cash benefit eligibility, and basis of Medicaid eligibility.

Before making a final decision, you may want to evaluate the explanatory power of each risk adjustment system you are considering. How much of the variation in expense is explained by the risk group or risk score assigned by the risk adjustment system?

Explanatory Power: *the variation in cost between individuals that is "explained by" the system*

You want to evaluate if the risk group or score accurately explains the costs. The higher the explanatory power, the stronger the relationship between the risk assignments (generated by the system) and the beneficiary's health care costs. If you can predict health care costs more accurately, your payments will be more equitable.

In order to gain the most accurate evaluation of the system's explanatory power, it is important to use your own state's data. The data used to develop the system may differ from yours, which may affect the system's explanatory power. In addition, MCOs may be more accepting of the system if they know the evaluation results reflect their state's data.

Statistical Analysis

To evaluate the explanatory power of the system, you will need to develop a statistical model. The statistical model that is commonly used to perform these types of analyses is a regression model.

In order to perform the regression analysis, you must first use the risk adjustment system to assign beneficiaries to risk groups or develop risk scores based on diagnostic data from a risk assignment period (explained in Chapter 2). You will then relate these risk scores to the beneficiaries' costs.

When performing this analysis, there are several factors to consider regarding the data. The calculation of cost should be performed on the most current annual period for which you have complete diagnostic and eligibility data. All aspects of how the risk adjustment system would be applied must be simulated, including any time lags between the risk assignment period and the period used to compute the beneficiaries' costs (which should be the same as the time lag that will exist between the risk assignment period and the payment period when you implement your risk-adjusted payments). This is discussed further in Chapter 2.

Risk Assignment Period: *the time period from which each beneficiary's diagnostic information is used to determine his or her risk group/score*

The calculation of cost should exclude any benefits not included in the MCO benefit package. Also, only include in the analysis beneficiaries who will be risk-adjusted when you implement your risk adjustment system. For example, if your managed care program excludes beneficiaries with AIDS, eliminate these beneficiaries from your analysis.

Resource "Must-Haves"
to perform a regression analysis to evaluate explanatory power

Staff:
- Excellent computer skills (for the necessary data manipulations)
- Strong statistical backgrounds (to perform the analyses)

You will probably need 1 full-time programmer and 1 full-time analyst

Computer:
- Proper hardware and software (such as advanced statistical analysis software)

Time:
- You will need to devote a minimum of one to three months to perform the regression analysis

Regression Results

The results of the regression model will provide you with several statistics that you can use to evaluate the explanatory power of the risk adjustment system. One of the most widely used measures to evaluate the performance of a model is the R-squared statistic.

R-Squared: *proportion of the total variability among one set of scores that can be explained by variability among the other set of scores*

The R-squared statistic can be used to measure the model's explanatory power.

- The closer the R-squared is to 1.0, the greater the system's explanatory power
- If the R-squared is 0.5, then the system "explained" 50 percent of the variation in cost among individual beneficiaries or MCOs

You can evaluate the R-squared statistic from the regression results for each of the risk adjustment systems you are considering. In assessing different R-squared statistics, however, it is essential to keep several properties of this statistic in mind when applied to risk adjustment. Since the R-squared statistic is based on the sum of the squares of differences between actual and formula claims per capita, it tends to stress the performance of the risk adjustment system on a few very large claims and may not reflect the overall performance of the system. When adjusting the payment level between MCOs to reflect the relative risk of their enrollments, it is the average per capita payment that matters. This is more likely to depend more on the relative accuracy of the system with small than large claimants, who are far more numerous. This is especially the case if there is a stop loss or other form of maximum on the proportion of the payments that are risk-adjusted.

A better measure of how well a risk adjustment system adjusts MCO capitation payments is the mean absolute difference between actual and formula claims per capita, or the Mean Absolute Prediction Error (MAPE). This is found by summing the absolute differences (counting negatives as if they were positive) between the

actual and formula claims per capita and dividing by the number of observations. This statistic can be converted to a scale of 0 to 1.0 so that it can be interpreted in a manner similar to R-squared.[1] (MAPE differs from the R-squared by taking the absolute values rather than squares of the errors, thus placing emphasis on proportion to the size of the errors rather than placing most emphasis on very large errors.)

The Mean Absolute Prediction Error (MAPE) provides a measure of the model's explanatory power that is more appropriate for an MCO payment system.

- MAPE directly measures the error in the average per capita payment, the objective of any payment system
- The measure gives equal weight to all prediction errors, rather than giving far greater emphasis to the largest claims

MAPE: *Mean Absolute Prediction Error*

It is important to note that to constitute a relevant measure of the performance of a risk adjustment system, any statistic, including the R-squared and MAPE, must be compiled *at the MCO level*.[2] Such performance will be correlated with statistics generated with respect to individuals, but it is the performance at the MCO level that will determine how effective your risk adjustment system will be.

- Demographically adjusted capitation systems normally explain 3 to 5 percent of the variation in costs
- Health-based risk adjustment systems can explain 14 to 20 percent of the variation in cost when they are used to predict future expenditures (prospective payments)
- When used on a concurrent basis, health-based risk adjustment systems may explain 33 to 55 percent of the variation in cost[3]

Prospective and concurrent payment methods are discussed in Chapter 5

Comparisons of Actual to Projected Costs

One way to measure the performance of the system *for the entire risk-adjusted population in your program* is to compare the projected cost from the risk adjustment system to the actual cost of simulated groups. The ratio of actual to projected costs can then be used to measure the accuracy of the payment for the group as a whole. The closer this ratio is to 1.0, the closer the projected payments are to the actual cost:

[1] Interested parties will want to obtain a copy of the following research study: Robert Bruce Cumming and David J. Knutson; Presentation #80 entitled "Risk Adjusters Update;" Society of Actuaries Spring Meeting - San Francisco; June 25, 2002.

[2] Unfortunately, most statistics now offered to compare the performance of different risk adjustment systems are based on the differences between the actual claims per capita and the estimate of claims per capita generated by the risk adjustment formula for each individual in a population, and few simulate the level of accuracy at the MCO level, which is all that matters to payers.

[3] See Section 5.1.4 in Chapter 5.

- If the ratio exceeds 1.0, then the risk adjustment system under-estimated the cost of the groups
- If the ratio is smaller than 1.0, it over-estimated the cost of the groups

This comparison can also be performed *for subsets of the population* to evaluate the explanatory power of the model:

- Look at the least expensive 20 percent of your risk-adjusted population to see if the risk adjustment system over or under-estimates their costs
- Look at the most expensive 20 percent of your risk-adjusted population to see if their costs are over or under-estimated

If the risk adjustment system underpays for the most expensive cohort and overpays for the cheapest cohort, the risk adjustment system will not generate an equitable distribution of payments across the MCOs. MCOs with a sicker case mix will be underpaid, and those with a healthier case mix overpaid.

However, the most important comparison by far will be between the projected costs for simulated MCO enrollments (or actual MCO enrollments using encounter data). To determine the relative accuracy of a system in the context of your MCOs, you will need to simulate enrollments that differ in the ways that may occur among the MCOs that participate in your program, and then measure the differences between the actual and estimated average MCO-wide cost per capita of the simulated MCOs. In this simulation, it is important to incorporate the types of bias that you or your MCOs have reason to believe may occur in your program that have led you to consider risk adjustment in the first place. For example, if one MCO offers providers that are known to appeal to beneficiaries with certain high cost conditions, it is important to test the extent to which the risk adjustment system will capture the difference in treatment costs between enrollments that include disproportionate numbers of patients with those conditions.[4] This requires statistics generated at the MCO level, not generated from comparing the estimated and actual expenditures of individuals.[5]

When evaluating the performance of the risk adjustment system, your state may also want to examine the effect of other variables that will be part of your payment system.

[4] Enrollments that are generated randomly may provide some insight into the relative accuracy of different systems, but may not measure the capacity of risk adjustment systems to address the sources of bias that lead states to risk adjust payments to MCOs. If enrollments were random with respect to the average cost per capita of services needed by the enrollees, there would be no need for risk adjustment. Commercial reinsurance can address the problem of financing random fluctuations. (It cannot address systematic differences in the costliness of enrollments.)

[5] Unfortunately, most statistics now offered compare the performance of different risk adjustment systems based on the differences between the actual claims per capita and the estimate of claims per capita generated by the risk adjustment formula for each individual in a population, and few simulate the level of accuracy at the MCO level, which is all that matters to payers.

- If you are considering modifying your risk-adjusted payments based on a beneficiary's residence, you need to include residence as part of your evaluation of the risk adjustment system. If you observe significant regional differences in health care costs, geography will probably have a strong relationship with costs and will increase the explanatory power of your regression models.
- Likewise, a beneficiary's category of eligibility will probably have a strong relationship with costs. This relationship needs to be evaluated in your regression model if your system will include beneficiaries from more than one eligibility category.

1.1.8 What are the Data Requirements of the System?

When choosing a risk adjustment system, you need to know the data requirements for that system. The health-based risk adjustment systems are similar in many ways. The health-based risk adjustment systems are similar in many ways. The leading systems are based primarily on diagnostic data, prescription data, or some combination thereof, with some reliance on procedure and demographic data. Those based on diagnostic data all use ICD-9 (International Classification of Diseases) diagnosis codes, age, and gender to assign a risk score to an individual. What these groupers do with the diagnoses varies to some extent, and the critical difference is whether the grouper uses all 15,000 ICD-9 diagnosis codes or a subset. The ACG system uses all of the ICD-9 diagnosis codes when determining a beneficiary's risk group. The CDPS focuses only on a subset of well-defined, high cost diagnoses.

All of the systems use diagnostic information obtained from claim administration data (i.e., outpatient and inpatient claims or encounters, or prescription claims). The Principal Inpatient (PIP) model within the DCG family of models only uses inpatient diagnoses. You will need to determine if any of these variations are better or worse suited to your data. For instance, if you only collect inpatient encounter data, then the PIP model would be more desirable.

Another consideration is the minimum period of time that a beneficiary should be eligible during the risk assignment period. The standard risk assignment period is one year. During this period, some of the systems require that the beneficiary be eligible for the entire year in order to determine a valid risk score. Other systems require six months of eligibility during the risk assignment period. The minimum time period is an important consideration, especially with the TANF population. If the system requires a full year of eligibility and only 60 percent of the your TANF population was eligible for the full year, you will not be able to make risk assignments for a significant portion of your population.

TANF: *Temporary Assistance for Needy Families*

ICD-9-CM (or ICD-9):
International Classification of Diseases – Clinical Modification

- ICD-9-CM is a coding classification system that groups related disease entities and procedures for the reporting of statistical information.
- The clinical modification of the ICD-9 was developed by the National Center for Health Statistics for use in the United States.
- Official code revision packages, referred to as addenda, are published each year prior to October 1.

Source: http://www.ahacentraloffice.org/

If a risk adjustment system uses only a subset of diagnoses, specialty groups that care for individuals with excluded diagnoses may criticize the risk adjustment system as being incomplete. It is important that you understand the logic used by the system when choosing the diagnoses used to determine a beneficiary's risk assignment. You will then be better able to defend your choice of system.

The use of all ICD-9 codes may not significantly improve the performance of the system. The most important element of health-based risk adjustment is to accurately calculate the highest cost subset of the population. It is widely known that for every population, whether commercial, TANF, disabled, or Medicare, approximately 20 percent of the population accounts for 80 percent of the expenditures. Therefore, it is important to "get it right" for the serious, chronic illnesses. The groupers must be able to differentiate costs among high and low cost individuals in order for the risk adjustment system to work.

1.1.9 Are These Data Elements Available with Sufficient Uniformity and Accuracy in the Data That Will be Used to Determine Risk Status in the State?

The fairness and effectiveness of any risk adjustment system depends on the availability, accuracy, and uniformity of the data elements used by the system. By available is meant that the data elements are defined in a manner consistent with those used to determine the effectiveness of the risk adjustment system and contain all detail required by the system, as well as their existence in a form that can be captured economically for data processing. For the risk adjustment systems based on diagnostic data, this means that the claims or encounter data include the minimum number of ICD-9 codes that the system uses and that they be recorded for all encounters that have a significant impact on the risk level attributed to the claimants. For those based on prescriptions, it means that the specific drug dispensed (i.e., the active ingredient by brand or generic name), the form, dosage, and prescription size be identifiable in the information that is routinely coded.[6]

[6] This will normally be the case if payment is made through a pharmacy benefit manager (PBM) intermediary.

Since the primary application of risk adjustment in rate setting is to estimate the relative cost to treat the health conditions of different MCO enrollments (without reflecting the relative cost of their provider panels), consistency of the information reported by the data may be the most essential requirement for valid application. Since the diagnoses recorded on claims or encounter reports are frequently selected from a number of suspected, as well as confirmed conditions, there may be considerable variation in how diagnoses are coded. In addition, the risk adjustment systems were developed from data relating to medical care performed and reported in the absence of any expectation of risk-adjusted capitation rates. In the case of FFS claims, there may have been incentives related to justifying procedures for which payment was requested. Coding may also have been influenced where the diagnoses reported were also used in quality assurance or other administrative proceedings. Further, use of diagnostic data to determine risk-adjusted payment rates will create a different set of financial incentives than affected the data used to develop the systems.

For risk adjustment to produce consistent results when applied to the payment rates to MCOs, the effects of all these sources of variability must even out statistically. That is, they must be randomly distributed with respect to the MCOs' enrollees. Consistency must be a primary concern in the application of risk adjustment to MCO payment rates.

With respect to accuracy, the essential requirement is that the data reported be accurate enough for the risk adjustment system to produce valid assessments of the *relative* cost to treat the overall enrollments of the MCOs. Since the prescription systems utilize the claims for which payment depends on the drug actually dispensed, where fully available, the data will normally be sufficiently accurate. For diagnostic data, however, there is the potential for considerable variation in reporting. In general, diagnosis coding will be more accurate if used for other purposes that are important to the creators, such as clinical applications (as some MCOs use ACGs) or quality control. The quality of diagnostic data is likely to be poor if created solely to satisfy data entry requirements (i.e., to clear editing algorithms), especially if the coders are under pressure to meet minimum processing deadlines or avoid the cost of obtaining clarifications from providers.[7]

Any application of data processing is relative, however, and errors are highly likely. It is the nature and overall impact of the errors that must be of concern. In this respect, consistency between the relative accuracy between what is reported for the enrollees of different MCOs may be far more important than absolute accuracy.

[7] An example of the type of error that may be found when diagnostic data are not used for other purposes or otherwise adequately reviewed is coding incomplete claims with the "diagnosis of the day" (i.e., a code selected only because it will get past the computer editing algorithms).

1.1.10 What Incentives Will the System Generate to Code Diagnostic Data or Prescribe Inappropriately?

The use of diagnostic data or procedure or prescription claim information for risk adjustment creates a different set of financial incentives for MCOs and their provider panels. The potential impact of coding differences is largely untested, and must be of concern.

The upcoding of diagnoses can occur without necessarily influencing the pattern of care delivered. This is not the case for systems based on prescription utilization, for which the data on the drugs dispensed are normally highly specific and accurate. In many situations, there will be a choice of appropriate medication, and some of these choices may lead to substantially higher payment. This is especially the case when "off label" uses of medication are considered. Thus, use of a risk adjustment system based on prescription utilization requires that the state have a rigorous utilization review system in place, with the capacity to assess the appropriateness of prescribing patterns.

State Experience:
Selecting a System

At CMS's spring 2001 risk adjustment forum, states were asked to describe their decision making process when choosing a risk adjustment system. What were the key factors that influenced their choice?

The three most influential factors:

- **Cost**. Several states chose their current system because it was free. They were hesitant to commit to an annual licensing fee. They did not want to rely on future budget approvals for continued funding.
- **Prior experience with system developers**. States that had prior experience with the developers felt comfortable working with them and felt that they could rely on the developer for support if necessary.
- **Previous experience of the consulting actuaries**. States with actuaries who had experience with one of the risk adjustment systems were more likely to choose that system.

How Important is Your Decision Anyway?

When you begin to research the various risk adjustment systems, you will discover that the systems have similar explanatory power. All of the systems discussed in this chapter are excellent risk adjustment systems. After you evaluate each system, you may find that one is marginally better than the others for your

state. It is important to conduct this evaluation because you need to determine which system will work best for your state given the data your state collects.

The success of your system will mainly depend on how you implement the system, not which system you choose. The chapters that follow discuss rate setting issues, information system issues, data requirements, and financial reporting - which will be the main determinants of your success.

So, the real issue in making risk-adjusted payments is how the system is implemented and used.

1.2 Three Risk Adjustment Systems

Although many health-based risk adjustment systems have been published and implemented, this manual focuses on the systems most used by public payers: ACG, CDPS, and DCG. Appendix F contains article abstracts about these systems.

The ten states that use risk adjustment for their Medicaid managed care program use only two systems: ACG and CDPS. See Appendix A for detailed summaries of some states' risk adjustment systems.

State Experience
(as of January 2001)

Colorado	♦	CDPS/DPS
Delaware	♦	CDPS/DPS
Maryland	♦	ACG
Michigan	♦	CDPS/DPS
Minnesota	♦	ACG
New Jersey	♦	CDPS/DPS
Oregon	♦	CDPS/DPS
Tennessee	♦	CDPS/DPS
Utah	♦	CDPS/DPS
Washington	♦	CDPS/DPS

Adjusted Clinical Group (ACG)

The Johns Hopkins University School of Public Health designed and developed Adjusted Clinical Groups (ACGs) in order to pay for health care equitably and efficiently in a variety of settings. Dr. Barbara Starfield conducted the original research on illness burdens of children in managed care settings. This method centered around population-based risk adjustment and case mix analysis, which can be used in different applications such as health management, finance, policy-making, and research.

Reminder: *Two states currently use ACG*

ACGs are a set of statistically valid, diagnostic-based, mutually exclusive health status categories. They are defined by morbidity, age, and gender. ACGs are based on the premise that the level of resources necessary for delivering appropriate health care to a population is correlated with the illness burden of that population.

The ACG system uses diagnostic data to assign an individual to a single, mutually exclusive ACG group. These groups are designed to permit the effects of a

clustering of morbidities to be captured in estimates of resource use. This is done by assigning all ICD-9 codes to one of 32 diagnostic groups known as ADGs (Adjusted Diagnosis Groups). Age and gender factors are then added to arrive at one final ACG category. (There are 93 mutually exclusive ACG categories.) ACGs can be used to create morbidity profiles for population segments, assess provider performance and efficiency, and create capitation payments for enrolled populations.

Chronic Illness and Disability Payment System (CDPS/DPS)

Reminder: *Eight states currently use CDPS*

The University of California, San Diego developed the Chronic Illness and Disability Payment System (CDPS), a diagnostic classification system designed for state Medicaid programs to make health-based capitated payments.

CDPS is based on the Disability Payment System (DPS), also developed at the University of California, San Diego. The DPS was designed specifically for the disabled Medicaid population. CDPS was expanded to include the non-disabled, TANF population. Both the CDPS and DPS models are based on the grouping of selected diagnoses into major categories that correspond to specific types of illnesses or body systems. DPS was designed with 43 mutually exclusive groups; CDPS has 56 diagnostic categories. Additionally, both systems use a subset of ICD-9 codes, focusing on well-defined and high cost diagnoses.

To increase the model's accuracy and sensitivity to various medical conditions, high, medium, and low cost subcategories were created to incorporate more diagnostic detail to an individual's condition. Hierarchies are imposed in such a way that the group corresponding to the most expensive diagnosis is kept. This also minimizes any redundant coding practices.

Diagnostic Cost Group (DCG)

Reminder: *Medicare uses PIP-DCG*

Boston University; Brandeis University; and Health Economics Research, Inc. collaboratively developed Diagnostic Cost Groups (DCGs) to measure relative health status of various populations and predict health resource use. Originally started in 1984 using Medicare data, this diagnostic-based model has developed into a set of more detailed and sophisticated models that can be applied to different populations, including Medicaid and commercial risk adjustment programs.

The DCG system creates clinical profiles and predicts resource use. There are two primary DCG models: Principal Inpatient (PIP-DCG) and Hierarchical Coexisting Condition (HCC-DCG). PIP-DCG models rely exclusively on inpatient diagnostic data, while HCC-DCG models use all primary and secondary diagnoses from inpatient and outpatient data.

PIP-DCG classifies each individual according to the most costly diagnosis recorded as the primary reason for a hospital admission during a one-year base period. This is the original DCG model, and CMS began using it for Medicare payments in 2000.

Both DCG models use diagnoses from the risk assessment period to categorize individuals with similar levels of future health care needs. An appropriate payment level can then be established for each category. HCC-DCG is a better explanatory model than PIP-DCG for high cost individuals because it uses multiple data sources.

Helpful Websites

ACG
www.acg.jhsph.edu

CDPS
www.medicine.ucsd.edu/fpm/cdps

DCG
www.dxcg.com

Systems Based on Prescription Utilization

Many private payers are now using one of several systems that have been demonstrated to be very effective in determining the average future cost for MCO enrollees. Applications include “underwriting” (screening applicants who apply for insurance), renewal rate setting for small groups, provider profiling, trend analysis, and finding candidates for disease management programs, as well as determining risk-adjusted payment rates or employee contribution rates for MCOs or provider groups. Some states have used prescription data to test the effectiveness of rates that are risk-adjusted by one of the leading systems based on diagnostic data.

Risk adjustment systems based on prescription utilization or both diagnostic and prescription data offer many advantages. Some advantages are that:

- Accurate, complete data can usually be obtained in a uniform manner
- Coding is far more precise and reliable, and requires less editing
- Administrative delay in obtaining relatively complete data is much shorter, permitting a relatively short amount of time between the base period and the payment period

- Fewer months of base period data are needed for accurate risk assessments
- Analysis can be completed relatively quickly
- Accuracy of risk adjustment is comparable in the context of pooling of large claims (i.e., when large claims are truncated) in predicting future health needs of specific individuals (although somewhat less accurate when used on a concurrent basis)

There are two sets of problems that must be addressed before adopting one of the systems based on prescription utilization.

- Considering the wide choice of prescriptions that treat the same conditions (especially considering "off label" uses), these systems may provide strong incentives for MCOs to encourage physicians to prescribe medicines that affect the risk profile.
- There is very little experience with these systems in the context of adjusting payment rates to MCOs or provider groups, and consequently, sources of consultation and guidance based on experience.

Accordingly, use of one of the systems based on prescription utilization is not recommended at this time. You would first need to commission a thorough review of the potential for influencing prescribing patterns inappropriately and your capacity to monitor and manage prescribing.

Chapter 2: Making Risk Assignments

In This Chapter

- Preparing data for risk assignment
- Installing the risk assignment grouper

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Once you have selected your risk adjustment system, you can begin the process of making risk assignments. This process entails two steps. The first step is to prepare the data that will be used to make risk assignments. The second step is to install the risk adjustment grouper. You must also be able to use the grouper to make risk assignments using the data identified in the first step. This chapter examines the issues you will have to address when making these choices.

2.1 Preparing Data for Risk Assignment

In order to prepare the data for risk assignment, you must first identify the data that will be used to make risk assignments and build a database that contains this information. Identifying the data that will be used for risk assignments involves several choices: selecting the time period from which data will be used to make risk assignments, determining the data source that will be used to make risk assignments, and deciding which beneficiaries will be risk-adjusted. In addition, you have to decide how long an MCO or beneficiary's risk assignment will remain in effect (i.e., how frequently you will update risk assignments).

2.1.1 Risk Assignment Time Period

Risk adjustment systems use data from a specific period of time, or "base period" (usually a year) to make risk assignments that are applied to payments during a future payment period. As a result of the time required for sufficiently complete, reliable data to become available on which to base risk adjustment, and the additional time required to analyze it and implement the results, there will be an interval of many months. Accordingly, you will have to choose the annual period

for the data you will use to make your risk assignments. In making this selection, there are two criteria that you should take into consideration: (1) data completeness and (2) the delay between the base period in which the assessments of risk status are made and the payment period in which payments are made on the basis of those assessments.

Data Completeness

When choosing the risk assignment time period, you must evaluate the submission time lag on the FFS claims or encounter data that will be used to make risk assignments. In other words, how long does it take for the data in an annual period to be complete so that they accurately reflect the beneficiaries' diagnostic information? To determine this, you can look at the relationship between the date of service and the payment date on the FFS claims. Also, most MMISs produce monthly reports that describe the payment time lag for each category of service. These reports will be useful when determining data completeness.

Measuring the Beneficiary's Current Health Status

The more recent the risk assignment period is, the more reflective risk adjustment based on it will be of the relative cost of the health care required to treat the conditions that existed. Using a recent risk assignment period is especially important in risk adjustment that projects the relative cost of specific individuals. The diagnostic information captured during the risk assignment period will be of the beneficiary's health status at that time. For example, if risk assignments are made using diagnostic information that is five years old, a beneficiary's health status may have changed dramatically. If risk assignments are made using diagnostic information from the previous year, they will be more reflective of the beneficiary's current health status (but some of the beneficiary's diagnoses may be missing as a result of data incompleteness).

Given these choices, you should use data that are as recent as possible, but you also want to make sure that they contain complete diagnostic information. You have to define the lag that will exist between the risk assignment time period and the time period when these risk assignments will be used to represent the beneficiary's health status. You will have to select the combination of data completeness and current information that you feel will give you the best measure of the beneficiary's current health status.

State Experience:
Lag from
Assignment to Payment

Colorado	♦	1 year
Delaware	♦	1 year
Maryland	♦	2 years
Michigan	♦	2 years
Minnesota	♦	1 year
New Jersey	♦	2 years
Oregon	♦	2 years
Tennessee	♦	2 years
Utah	♦	1 year
Washington	♦	1 year

Two Risk Assignment Time Periods

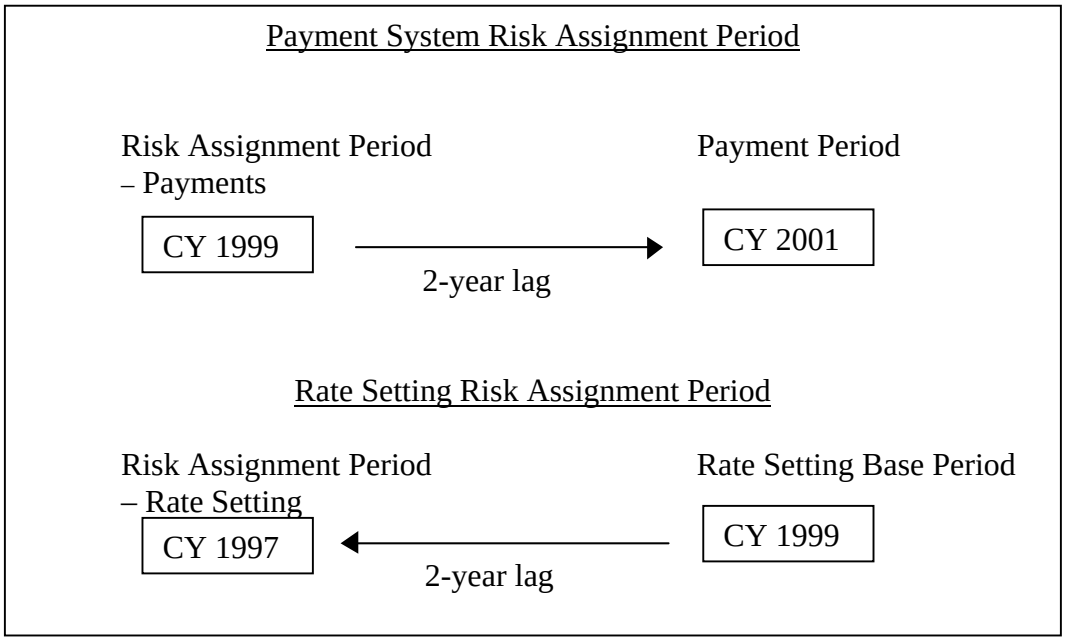
Once you have defined the time lag that you will use to make risk assignments, you can use it to identify two risk assignment time periods: one used for payment purposes and one used for setting capitation rates. The time period that will be used to make risk assignments for payment purposes is referred to as the payment system risk assignment period. You can evaluate the risk assignments made during this period to determine the amount of payments you will generate. The time period that will be used to set your capitation rates is referred to as the rate setting risk assignment period. The time lag that exists in your payment system must be exactly the same as the lag that is used to develop your risk-adjusted capitation rates (see diagram below). Having time lags that are not equal will introduce errors into your capitation rate setting process. Developing rates is discussed in Chapter 5.

Payment System Risk Assignment Period

Identify the time period when you will begin making risk-adjusted payments. From this time period, subtract the time lag that you will use when making your risk assignments. The result will identify the risk assignment period that will be used for the first payment period. The payment system risk assignment period will change over time as the payment period changes.

Rate Setting Risk Assignment Period

The risk assignment time lag will also be used to select the risk assignment period that will be used to develop your capitation rates. You first need to select the time period that will be used to develop your expenditure base upon which your capitation rates will be based (base period). Once the base period has been chosen, the rate setting risk assignment period can be determined by subtracting the risk assignment time lag from your base period.



Length of Assessment-Payment Lag

All of the major risk adjustment systems in use require the accumulation of a number of months of data. The developers of systems based on diagnostic data generally advise a full year for the best results; the developers of systems based on prescription data advise six months. It is many months after the end of the base period, however, before risk adjustment assessments are ready for implementation. This allows time for:

- MCOs to obtain documentation from providers for all services provided during that year (which can require several months)
- MCOs to review data submitted for accuracy and completeness and resolve inconsistencies
- MCOs to convert data elements to the format required by a state and transfer the data
- State authorities (and/or their contractors) to review the data and resolve inconsistencies or incomplete items
- State technicians to analyze the data, prepare projections, and obtain policy review (including vetting of results with plans)

An important implication of these administrative delays is a time difference of many months or years between the base period and the payment period. Further, even if payment could be instantaneously altered as soon as a base year was over, there would be an average delay of 12 months in the information between a base year and a payment year (e.g., from the mid-point of the base year to the mid-point of the payment year). The administrative delays described above mean that the payment year must occur many additional months after the base year. Thus, the average time difference between the mid-point of the base period and the month of payment (or mid-point of the payment year) is likely to be at least 18 months, and is more likely to be 24 months or longer. This average "lag" between the average dates of risk assessment and payment may be referred to as the "assessment-payment lag."

Assessment-Payment Lag: *the average lag between the average dates of risk assessment and payment*

The primary implication of the assessment-payment lag is that the change in health status of an MCO's enrollment must be projected many months from the base period to the payment period. There are two basic approaches to this projection:

- The **Individually Projected Status (IPS) approach**: Project the relative cost to treat each individual in the program in a future payment period, given the individual's health condition during the base period, and pay each MCO on the basis of the average for those individuals actually enrolled.
- The **Projected Plan Profile (PPP) approach**: Project the relative cost to treat the entire enrollment of each MCO compared to all MCOs.

The IPS approach projects the average relative cost to treat each individual at some future time, when their health needs may be very different than in the base period. There is thus a health status adjustment that applies to each enrollee in the future period for whom such past data exists. Payment to an MCO will then be based on the average of the risk scores of the individuals actually enrolled during the payment period. The rationale for this approach is that individuals may change MCOs or leave the managed care program altogether.

The PPP approach is based on the assumption that all of the characteristics of an MCO's enrollment that affect risk status will have similar effects during the payment period as they had during the base period. Each current enrollee is, in effect, assumed to be replaced (at least on the average) by another enrollee who will be in a health status with comparable concurrent treatment costs during the payment period. It is not assumed that any of the enrollees will be the same individuals, or even that if the same individual is enrolled, that their health status will be the same. To the extent that this assumption is met, the average cost to treat the health conditions that exist during the payment period will be the same as the concurrent cost was to treat them during the base period. Risk-adjusted payments can be made for the entire enrollment using data for all enrollees during the base period.

The assessment-payment lag has different implications for these two approaches when projecting future health status of an MCO's enrollment. For the Projected Plan Profile approach, the longer the lag, the more likely the nature of the MCO's enrollment may have changed in some systematic way, so that basing payment on a past risk profile may be inappropriate.[8]

For the Individually Projected Status approach, the assessment-payment lag means that risk assignments can only be made for those who have sufficient months of enrollment during the base year and who remain in the program until the payment period and the health risk adjustment will reflect the cost to care for them years after the assessments are made. This has several important ramifications for your choice of risk assessment period. First, the time lag that exists in your payment system must be exactly the same as the lag that is used to develop your risk-adjusted rates (see diagram below). If this time lag is not the same, the cost of providing services will be calculated incorrectly and will result in inaccurate rates. (Developing rates is discussed in Chapter 5). The shorter the time lag is between the risk assignment period and the payment period, the more accurate the risk assignments will be in reflecting the enrollees' current health status. The problem with having a short lag is that your data used to make the risk assignments will be less complete.[9] The goal is to make the lag as short as possible but still have complete diagnostic data. Your risk adjustment system will not function well if you are missing a significant portion of diagnostic data. Any data deficiencies will make your population look healthier than it really is.

[8] This may especially be a problem if MCOs with high risk profiles close.
[9] As noted, time lags are less important if your risk adjustment is based on prescription utilization.

Another Problem

If you elect to risk adjust specific individuals according to their expected health costs in the payment period, you must simulate the assessment-payment lag in determining the relationship between risk assessment in a base period and health status in a future period. This is likely to require analyzing several years of data. Once you have decided on the payment lag, you can then select the risk assignment period that will be used to develop your capitation rates. You first need to select the base period that will be used to set your capitation rates. Once the base period has been chosen, the risk assignment period can be determined by subtracting the lag that will exist in your payment system. For instance, if there will be a one-year lag in your payment system, the risk assignment period must precede your base period by one year.

2.1.2 Data Source

The risk adjustment system you select will specify the data sources that should be used to make risk assignments. You will need to match these specifications with your data systems to identify the claims/encounters that will be used to make assignments. These specifications are summarized in the table below.

Risk Adjustment System	Data Sources Used
ACG	Inpatient, outpatient diagnoses
CDPS	Inpatient, outpatient diagnoses
HCC-DCG	Inpatient, outpatient diagnoses
PIP-DCG	Inpatient diagnoses

Claims vs. Encounters

The first choice you will face is whether to use FFS claims or encounter data to make your risk assignments. You should use complete and recent FFS data to make your risk assignments and develop your capitation rates. If complete and recent FFS data are not available, then you will have to rely on your encounter data. Please note that encounter data can be used to make accurate risk assignments; however, there are some tests you should perform to assess the completeness of the data. Completeness issues are discussed further in Chapter 4.

Categories of Service

Risk adjustment systems normally use inpatient and outpatient claims/encounters to make risk assignments. You will need to develop the programming logic to select the inpatient and outpatient claims/encounters from your claims/encounters database. Your database may already be organized by category of service or contain a category of service code that can be used to make this job easier. You need to verify that your programming logic collects all the necessary claims.

The identification of inpatient claims should be straightforward. A category of service code or claim type code on the claim should be sufficient to identify inpatient services. The only claims that may be a little more complicated are those in which a hospital provides ancillary services and other related health care services. For example, a claim for a home health visit may be billed by a hospital, but it is not an inpatient service. Your programming logic should exclude these services and only capture inpatient services. You should also examine the coding of hospital-based nursing home stays. Nursing home stays are normally not used by the risk adjustment systems, so you want to ensure that hospital-based nursing home stays are excluded when you select inpatient hospital claims.

Risk adjustment systems typically use the diagnoses from all outpatient visits. This would include physician office visits, hospital-based clinic visits, freestanding clinic visits, and emergency room visits.

The definition of **outpatient visits** usually includes visits when a patient is seen by a physician, nurse practitioner, or physician's assistant for the evaluation or management of a medical problem. This definition usually excludes visits that are solely for the provision of a laboratory test or imaging procedure. *You should check your risk adjustment system's documentation to understand which types of outpatient visits you should include.*

You will need to develop the programming logic to select all physician, hospital-based clinic, freestanding clinic, and emergency room claims/encounters. Taking a closer look at the data will help you identify those claims/encounters that are solely for ancillary services so that you can exclude them from the risk assignment database. You should be able to identify ancillary services using the procedure codes on the claim/encounter. If the claim only contains ancillary procedure codes and no visit procedure codes, the claim should be excluded. It is also a good idea to review your risk adjustment system's documentation and question the developers about including diagnoses from any other categories of service. Other possible categories of service would include home nursing services, occupational and rehabilitation therapies, and other practitioner services. You must also develop the logic to include any additional categories of services and add the claims/encounters to your risk assignment database.

Excluded Benefits

Another consideration when creating your risk assignment database is how you want to treat excluded benefits. Do you want to include or exclude claims for "carved out" services in your risk assignment database? Many states have elected to carve-out mental health services from their managed care benefit package. Their FFS claims database will include these services. You need to decide if you want to use these diagnoses when determining a beneficiary's risk group/score. Most states that are currently making risk-adjusted payments include these claims.

The belief is that the more diagnostic information you have on beneficiaries, the more accurate your risk assignments will be. For example, knowing that a beneficiary has a mental illness will help predict his or her future health care costs, so using these diagnoses will result in a more accurate risk group/score assignment.

2.1.3 Eligibility

In addition to your claims/encounters diagnostic data, the risk adjustment system will require an eligibility database for your beneficiaries. At a minimum, the eligibility database needs to include a beneficiary identification number, age, dates of eligibility and eligibility status (TANF vs. Disabled). A beneficiary's age and eligibility status may influence his or her risk group/score assignment. The beneficiary's identification number will allow you to link the eligibility database with the diagnostic data. The eligibility data are also used to determine a risk group/score assignment for those beneficiaries who did not use any services and had no diagnostic data during the risk assignment period.

You will also use the eligibility information to determine who will be risk-adjusted. If you are only going to risk adjust your disabled population, a beneficiary's eligibility status can be used to exclude him or her.

If you are using an Individually Projected Status approach, you will also have to consider several other factors. One factor is the number of months of eligibility a beneficiary had during the risk assignment period. If your risk adjustment system requires a minimum of six months of eligibility during the risk assignment period, you need to exclude beneficiaries who do not meet these requirements.

Another factor that you may need to consider in an Individually Projected Status approach is the time period that will be used to determine a beneficiary's eligibility status. Do you look at their eligibility during the risk assignment period or during the base/payment period?

When developing capitation rates, most states determine a beneficiary's eligibility based on his or her eligibility during the rate setting base period, not the eligibility during the rate setting risk assignment period. For payment purposes, eligibility is usually based on the beneficiary's eligibility during the payment period, not the payment risk assignment period. When you are making your risk assignments, if a beneficiary's eligibility changed from the risk assignment period to the base/payment period, you will typically classify the beneficiary in the new eligibility category.

You should carefully review your risk adjustment system's documentation with the developers to make sure you are assigning eligibility status correctly.

2.1.4 Risk Assignment Updates

You will need to decide how long your risk assignments will be in effect. Will you update your beneficiaries' risk groups/scores on an annual basis or more frequently? There are several pros and cons that you need to weigh carefully before making your decision.

The benefit of more frequent updates is that the risk assignments will be more current. The more current the assignments, the more accurately they should reflect the beneficiaries' health status.

The downside to more frequent risk updates is the uncertainty it introduces into your risk adjustment forecasts. If you assign enrollees on an annual basis at the beginning of each rate year, you can give the MCOs their risk assignments and revenue projections for the upcoming year. You can also use these assignments to project the impact on your state's Medicaid budget for the same period. However, if the risk assignments are updated every six months, the MCOs and the state will have a limited ability to forecast. It is possible for new risk assignments to result in lower payments for an MCO. If the new risk assignments result in higher (or lower) total payments, it could affect state spending for Medicaid. Preparing risk adjustment assessments and rates is an expensive administrative task for the state and implementing them causes expenses to the MCOs as well. These expenses are increased almost in proportion to the number of times the risk assignments are changed.

Pros of Frequent Updates

- Current risk assignments
- More accurate reflection of beneficiaries' health status

Cons of Frequent Updates

- Uncertain forecasts regarding:
  - Risk assignments
  - MCO Revenue
  - Administrative costs

State Experience:
Risk Assignment Updates

At CMS's spring 2001 risk adjustment forum, states were asked what key factors help determine how often they update their risk assignment. The following are some of the key factors:

- Most states update a beneficiary's risk assignment once a year. One state updates quarterly and two states update on a semi-annual basis.
- For most states, updates to risk assignments correspond with the renewal of MCO contracts.
- One state notices that the year-to-year risk assignment changes are larger when encounter data is used (at the MCO level) than was observed in the historical FFS data.
- One state recommends more frequent updates to accurately reflect the current health status of the population.
- All states agree that the trade-off between the frequency of updates verses the predictability of the budget or maintaining budget neutrality is the major issue for determining when to update risk assignments.

Also see Appendix E, Survey Responses, for detailed information regarding the states' experiences with risk assignments.

2.2 Installing the Risk Assignment Grouper

Grouper: *computer program that is used to generate the risk group/ score for each beneficiary*

Each risk adjustment system will have a computer program containing its risk assignment algorithm. The risk assignment algorithm is typically referred to as the grouper. The algorithm evaluates the beneficiary's diagnostic data and eligibility category to determine his or her risk group/score. You will also need to install this program prior to making risk assignments. You will need to work with the developers of the system to obtain the hardware and software requirements for the grouper. Based on these requirements, you will have to select the computer system on which you will install the grouper.

Hardware requirements for the grouper should be minimal. Most can be run on a desktop PC. The main constraint you will face is storage capacity for the diagnostic data and eligibility files needed to make risk assignments. Software requirements may also influence your choice of computer system. For instance, the CDPS grouper is a SAS (Statistical Analysis System) program, so you will need SAS software installed in order to run the grouper. It may be possible that SAS is only installed on one of your computers because of licensing fees, which will dictate where you will have to install the grouper.

Chapter 3: Population and Benefit Carve-Outs

In This Chapter

- Deciding who to risk adjust
- Benefit package carve-outs

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

When developing your managed care program, you had to decide which populations you wanted to enroll in managed care, as well as the benefit package you wanted the MCOs to provide. When making these decisions, most states "carve out" certain populations and/or services. The reasons for these carve-outs are numerous, ranging from data issues to patient access to political considerations.

Carve-Out: *population or service excluded from a managed care program*

The decision rules that were used to establish the carve-outs for your managed care program need to be applied to your risk adjustment system. You need to decide if you want to make risk-adjusted payments for your entire Medicaid managed care population or just a subset of the population. You also need to decide if your risk-adjusted capitation rates should cover your entire benefit package or if you want to carve out some benefits.

The most common managed care carved-out services are long-term care, mental health services, substance abuse services, and pharmacy benefits.

3.1 Deciding Who to Risk Adjust

There are two major factors that you should consider when deciding which populations to risk adjust. One consideration is which populations have the greatest variation in health status and therefore will benefit from health-based risk adjustment. The second consideration is whether there are any populations whose health status is *not* reflected accurately by the risk adjustment system.

Most states have approached these decisions by looking at (1) the variation in cost within the Medicaid categories of eligibility, and (2) the ability of the risk adjustment system to accurately reflect the cost of treating beneficiaries with high cost diseases and conditions.

3.1.1 Category of Eligibility

The variation in health care costs differs by Medicaid eligibility category. Significant variation has been observed among the Supplemental Security Income (SSI) population. SSI beneficiaries with chronic degenerative diseases can have dramatically higher costs than other SSI beneficiaries. SSI beneficiaries who are blind or have developmental disabilities, although significantly impaired, may have modest medical care needs. As a result of this variation, most states making risk-adjusted payments have chosen to use health status to risk adjust their SSI population.

The TANF population has less variation in health care costs than the SSI population. A larger portion of the TANF population consists of children with routine health care needs. Although the variation is less, health-based risk adjustment can still be a valuable tool for distinguishing between high and low cost beneficiaries. Adults with hypertension and heart disease will consume more resources. Children with asthma and diabetes will be high cost utilizers as well. Your risk adjustment system will help to distinguish these high cost users from the remaining population. These same benefits also apply to risk adjusting your SCHIP population, if this population is included in your Medicaid managed care program.

SCHIP: *State Children's Health Insurance Program*

One population that may require more thought when deciding on which beneficiaries to risk adjust for health status is the SOBRA (Sixth Omnibus Budget Reconciliation Act [1986]) population. The SOBRA population consists of low-income pregnant women who fail to meet the TANF eligibility standards. By definition, all of the SOBRA women must be pregnant in order to meet the program's eligibility requirements. The fact that all of these beneficiaries have the same medical condition mitigates some of the benefits of risk adjustment.

SOBRA Population: *a group of low-income pregnant women who were made Medicaid eligible by the Sixth Omnibus Budget Reconciliation Act of 1986*

To make risk-adjusted payments for the SOBRA population, you have three choices. You could:

- **Include this population with the rest of your risk-adjusted population.** You should carefully evaluate the risk group/score for this group to see if the payment accurately reflects actual cost. Compare historical FFS costs for this population with the payments that members of this group would receive under your risk adjustment system.
- **Risk adjust this group separately.** Develop risk-adjusted rates solely for the SOBRA population. Evaluate the risk adjustment system's ability to

distinguish between high and low cost pregnancies by comparing FFS costs with the risk scores assigned by the system.

- **Establish an average cost rate just for this population.** Create a separate payment rate that would apply just to the SOBRA population. Base the rate on the historical costs of the average beneficiary without any risk adjustment. Establishing a separate payment group is, in effect, a form of risk adjustment.

The other major eligibility group that states may cover under their managed care program is a Medical Assistance only (MA-only) group. The MA-only group consists of beneficiaries whose incomes are too high to meet the income standard for the state's public assistance programs, but low enough to meet the Medical Assistance standards. This population typically has significant medical care needs. They usually apply for the Medicaid program because of ongoing health care needs. These beneficiaries are typically more expensive than the TANF population and less expensive than the SSI population. MA-only beneficiaries are good candidates for risk adjustment as a result of their medical expenses.

MA-Only: *Medical Assistance only*

3.1.2 Diagnoses

Another consideration when deciding which populations to risk adjust is chronic medical conditions. Does the risk adjustment accurately reflect the cost of providing care to beneficiaries with chronic high cost medical conditions? Does the classification system assign beneficiaries a risk score or to a risk group that accurately reflects the cost of treating their condition? Compare historical FFS costs with the payments that would be made under your risk adjustment system. You may decide that there is a subset of beneficiaries with a particularly high cost condition that you want to carve out of your risk adjustment system.

You could carve out a disease group if you feel that you can pay for the group more equitably outside of the risk adjustment system. You could then establish an average cost capitation rate that only includes beneficiaries from the carved-out disease group. This would be a feasible alternative if the disease group satisfies the following conditions:

- There are several thousand members in the group so that an actuarially sound rate could be calculated.
- The disease itself can be precisely defined so that there is no ambiguity when determining the members of the group.
- The existence of the disease is an accurate predictor of future medical care costs. Members of the group must have similar medical care needs and costs.

One example of a disease group in which states have used this approach is the AIDS/HIV population. Many states have a large enough population that they can

establish actuarially sound rates. Group members can be identified using claims/encounter data and public health information. The presence of the disease is a predictor of significant health care needs and expenses. Several states have established unique average cost capitation rates for AIDS/HIV beneficiaries, and carved them out of their other capitation rates. For this disease group, states may also decide to establish separate rates for AIDS and HIV beneficiaries.

Identifying Populations

Age-Sex-Eligibility: Initial managed care payment systems used age, sex, and category of eligibility to distinguish between high and low cost beneficiaries.

Health Status-Based: Risk adjustment systems have been able to offer significant improvements for identifying high and low cost beneficiaries, resulting in improvements in payment equity.

Population Carve-Outs: Carving out expensive populations and or events, like AIDS beneficiaries or maternity payments, can be used to improve the equity of the payment system if populations are not fully identified by the risk adjustment system.

3.2 Benefit Package Carve-Outs

Benefit Package: *services covered by the managed care program*

Another factor to consider when establishing your risk adjustment system is your benefit package. Do you want to have exactly the same benefit package as your current managed care program, or do you want to carve out some benefits? You may want to consider carving out a benefit if it meets the following conditions:

- The individuals accessing this benefit are identifiable.
- The cost of the benefit is stable and predictable.
- The risk adjustment system does not explain significant variation in the cost of the benefit.
- The benefit is short in duration and not indicative of future health care needs.

An example of a benefit that satisfies these criteria is a birth and/or delivery. You could leave these costs in your capitation rates or carve them out and pay for them outside of your risk adjustment system. You could calculate the cost of a birth and/or delivery and pay that amount to the MCO for each event. This payment could cover the inpatient hospital costs for the mother, child, or both. You could also build in the cost of prenatal services provided to the mother. Carving out these costs would enable you to link the payments directly to the events that the payments are intended to cover.

Carving out maternity payments may improve the equity of your payment system, especially if your system is prospective. Prospective systems use diagnoses from previous time periods to determine risk-adjusted payments. If the lag between your risk assignment period and base period is more than nine months, maternity costs may not be accurately represented. Most of the beneficiaries who were pregnant during the risk assignment period will not have any costs associated with that event during the base period. Similarly, many of the beneficiaries with maternity costs during the base period will not have pregnancy diagnoses during the risk assignment period. The consequence will be that some maternity costs will be associated with the other medical diagnoses that these beneficiaries had during the risk assignment period. Carving out maternity payments will ensure that all of these costs are attributed directly to the pregnancy.

Prospective and concurrent payment methods are discussed in Chapter 5

State Experience:
Population and Benefit Carve-Outs

At CMS's spring 2001 risk adjustment forum, states were asked to describe the issues surrounding their decision to identify carve-out populations and benefits from their managed care program. Issues to be aware of include:

- Documenting clear evidence to back-up the need to carve-out diagnoses.
- Political issues surrounding carve-outs, particularly with advocacy groups.
- Certain populations may be better served outside of the managed care setting.
- The impact on rates, which may change as a result of carving out high cost services.
- The statewide availability of services in the managed care benefit package.

The survey responses (Appendix E) provide information on carve-outs.

Chapter 4: Encounter Data

In This Chapter

- Establishing an encounter data collection system
- Editing your encounter data
- Validating your encounter data
- Checking the completeness of your encounter data
- Strategies for improving your encounter data
- Other issues

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

A good encounter data collection system is essential for making risk-adjusted payments. Once your managed care program has been in operation for several years, you will no longer be able to use FFS data to measure health status: you will need to use encounter data. To ensure that you accurately measure health status, your encounter data must be complete and correct.

Encounter Data: *records submitted by MCOs that describe the health care services provided to their enrollees*

This chapter outlines some of the choices you will face when setting up your encounter data system, as well as techniques you can use to test the completeness and accuracy of your data once the system is established. States that are successfully collecting encounter data may want to proceed to Section 4.3. States that do not have an encounter data system or have recently started an encounter data system may find the discussion in Sections 4.1 and 4.2 valuable when confronting some of the decisions involved in establishing an encounter data system.

4.1 Establishing an Encounter Data Collection System

Prior to establishing your encounter data system, you need to address two fundamental questions: (1) what analyses do you want to conduct using your encounter data, and (2) what data elements are required to perform these

analyses? Deciding what you want to do with the data will allow you to choose which data to collect. This decision will determine the volume of data you collect, which will influence how you establish your data processing systems.

4.1.1 What Analyses Do You Want to Conduct With Your Encounter Data?

There are at least three areas in which encounter data can be used to assist you in the administration of your managed care program.

- The diagnosis codes recorded in the encounter data will be needed to assess MCO enrollees' health status for making risk-adjusted payments. If you are going to make risk-adjusted payments, you must collect the encounter data required by your risk adjustment system.
- Encounter data can be used to establish future capitation rates. You can use encounter data to assess the amounts and types of services that are being provided by the MCOs. Then you can assign a cost to each encounter to use in your rate setting efforts.
- Encounter data can be used to monitor the health care services delivered to MCO enrollees. Are they receiving enough primary care services? What percentage of the children got their immunizations on time? How many prenatal care visits are pregnant women receiving? All of these types of questions can be addressed with the appropriate encounter data.

You will be confronted with some difficult choices and compromises. You may prefer to take a comprehensive approach, collecting data so that you can conduct any conceivable data analysis (examples of possible analyses follow). You may be inspired by the old adage that "more is better." While you would like to get as much data as possible, however, you must be sure that they are accurate. Collecting large amounts of inaccurate or incomplete data will not help you in the long run. When asking, "What do I want to do with the data?" you clearly need to prioritize and decide which data analyses will be conducted.

You should not start from a position of expecting to conduct more analyses with your encounter data than you did with your FFS data. If your FFS data have proven inadequate to support a certain analysis, you cannot expect to perform that analysis using encounter data. Because FFS providers have to submit claims to get paid, they have a strong incentive to submit their claims. However, data elements that do not affect their payment are frequently inaccurate or not reported. With encounter data, providers in the MCO's network may not have to submit an encounter to the MCO in order to get paid. In instances where they must submit an encounter to get paid, they may also lack incentive to fill out fields that will not affect their payment. Thus, it is unreasonable to expect your encounter data to support analyses that cannot be conducted with FFS data.

Another factor to keep in mind when deciding what data to collect is your staff's ability to validate the data. You need to validate the completeness and accuracy of the data prior to using them. This validation will require significant staff resources. If you collect large volumes of encounter data, you will have to dedicate even more staff to review activities. Before requesting the data, make sure that you have the staff resources to validate the data prior to their use.

4.1.2 What Data Elements are Required to Perform These Analyses?

Once you have determined the purposes for which you want to collect encounter data, you will need to precisely define the specific data to be collected. You will need to determine the types of health care services for which encounter data will be collected, the specific data elements that will be collected, and the formats that will be used for each data element.

Health Care Services

In order to use your encounter data for making risk assignments, you will need to collect, at a minimum, all inpatient and outpatient encounters. Inpatient encounters should include all hospital admissions paid for by the MCOs. Outpatient encounters should include office-based physician visits, freestanding clinic visits, and hospital-based outpatient department visits. Collecting encounter data for these categories of service will fulfill the data requirements for the risk adjustment systems discussed in this manual. For additional information on the data requirements for each risk adjustment system, refer to Chapter 1.

If you intend to use your encounter data to establish a financial database for rate setting activities, you will need to collect encounters for other health care services that account for significant expenditures by the MCOs. The next most expensive service (after inpatient and outpatient) will most likely be pharmacy. Some of the risk adjustment systems are considering using pharmacy data in their risk assignment algorithms. Other health care services with significant expenses include laboratory, diagnostic imaging, durable medical equipment, home health care services, and long-term care services. For rate setting purposes, collecting encounter data on all of these services would probably account for over 90 percent of health care expenditures.

Data Elements

For each health care service, you need to decide which data elements will be collected. The data elements will vary from service to service because of the claims forms that are used (for example, CMS-1500 [formerly HCFA-1500] and UB-92), and the method of reimbursement may vary. A starting point for selecting data elements would be to use the claim form that is used for the service in the Medicaid FFS program. By looking at the claim form, you will know which

data elements are available and can decide which ones will be used for your analyses.

Each encounter should contain at least four identification numbers:

1. There should be a unique identification number that identifies the encounter itself. This number should be assigned by your computer system.
2. You should also allow for the MCO submitting the claim to include an identification number that it can use to identify the encounter on its system.
3. The encounter should also include a unique enrollee identification number to identify the enrollee receiving the service.
4. The MCO provider number should be included to identify the MCO that submitted the encounter.

Reminder: *you need at least 4 identification numbers*

Each encounter should contain at least three date fields:

1. One date field should identify the beginning date for the health care service.
2. A second date field should identify the ending date for the health care service. For institutional services like inpatient hospital care, these fields would indicate the admission date and discharge date. For outpatient services, the admission and discharge date would be the same.
3. A third date field should indicate the date the encounter was submitted. The beginning and ending dates of service can be used to evaluate the volume of health care services on a date -of-service basis. The encounter submission date can be used to track the volume of encounters submitted and processed on a date-of-payment basis. Both dates are needed to monitor the performance of MCOs in submitting encounter data.

Reminder: *you need at least 3 date fields*

Diagnostic information should be required for most health care services, especially inpatient and outpatient. The encounter should identify the primary diagnosis and may collect as many as three or more additional diagnoses. Inpatient hospital providers may record more than four diagnoses, but the MCO's information systems may only store a limited number of diagnoses. Diagnostic information may not be recorded for some health care services, especially pharmacy, laboratory testing, and diagnostic imaging.

Procedure codes should be collected on most health care services in order to document the services the enrollee received. For health care services like laboratory tests and diagnostic imaging, the procedure codes will describe the tests the enrollee received. For outpatient services, the procedure codes will describe the nature of the visit and any additional procedures that were performed

during the course of the visit. For inpatient services, the procedure codes will also identify surgical procedures or diagnostic tests performed during the stay.

The encounter should also include an identification number for the providers of the services. Providers who have seen Medicaid enrollees on a FFS basis already have a provider number that can be used to identify them. The MCO network, however, may include providers who do not see Medicaid clients on a FFS basis. If an MCO does not use a Medicaid provider number, you will need to create new numbers that can be used to identify these providers. Both the provider and the MCO will need to use this number in order to be identified correctly on the encounter. You also need to decide how specifically you want to identify the provider. Do you want the provider number to represent the hospital clinic or medical group that provided the care? Or, do you want the number to identify the specific physician who saw the enrollee?

Pharmacy encounters will include several fields to indicate the drugs that the enrollee received. In addition to a National Drug Code (NDC) number that describes the drug, you will need a field that indicates the quantity of the drug provided to the enrollee. You may also want the encounter to include the provider number for the prescribing physician. A refill indicator field can be used to note whether a drug is a new prescription or a refill. Pharmacy encounters may also include two service dates: one will be the date the drug was prescribed by the ordering physician, and the second will be the date the prescription was filled by the pharmacy.

The data elements discussed so far should provide you with a lot of information on the health care services your enrollees received. You may want to collect some additional data elements for selected services. For instance, you may want to know which provider ordered a test for laboratory and diagnostic imaging procedures. For inpatient stays, you may want to know the disposition of the enrollee at discharge. When deciding which of these additional data elements to include, you should assess their accuracy in your FFS data. If a data element is frequently missing or contains invalid codes in the FFS program, you will most likely find the same problems in your encounter data.

Record Format

You will need to specify the record format that MCOs must use to submit their encounter data. You have two options:

- Option 1 - use an existing standardized format that is used for FFS claims
- Option 2 - specify your own customized format

Both of these options have advantages and disadvantages, and your choice should be influenced by the data elements you have decided to collect. If you are going to collect many of the data elements on the standardized claim forms, you should

probably use that format. The providers in the MCO's network should already be familiar with the format and may not have to make any changes to their system. The MCO can collect the encounters in the standardized format from its provider network and then follow procedures you establish for submitting the data.

If you have decided to collect encounter data through your MMIS, the standardized format should have minimal impact on your system. This is because your MMIS already accepts records in the standardized format, and the providers in the MCOs are used to submitting claims in the standardized format. Most of the editing rules you use to validate FFS claims can then be used to validate encounter records, but some edits may not be appropriate (see Section 4.2). You have to ensure that processing the encounter does not generate any payments and that the encounters are subject to the appropriate edits. You will also have to ensure that your encounters are processed correctly in your reporting system, so test your system thoroughly. For more information on reporting systems, see Chapter 6.

Record Format: *describes the data elements that are included in the record, their position within the record, and whether the data are numeric, character, or date fields*

If you are only going to collect a small subset of the data elements on the standardized claim forms, you will probably want to specify your own record format. You may also consider this option if you are not going to collect your encounter data through your MMIS. You can use a customized format and collect the data outside of the MMIS to minimize the impact on the MCOs. If you are only collecting a small subset of data elements, using a customized format would make it much easier for the MCOs.

You may consider starting with a limited encounter data set and changing your approach over time. Some states that were only using encounter data for risk adjustment started with a customized format (Option 2). MCOs submitted enrollee, diagnostic, and MCO information directly to the Medicaid agency outside of the MMIS. A challenge may be that, as you expand your use of the encounter data over time, you may eventually want to collect the data through the MMIS and require the MCOs to submit additional data elements.

Data Element Format

In order to minimize the burden of submitting encounter data and to improve the validity of the data, you should use existing standardized formats such as ICD-9 codes for diagnoses and Current Procedural Terminology (CPT) codes for procedures. For other data elements, use the current coding conventions that are used on your FFS claims. Providers will already be familiar with these codes and will have implemented the coding conventions on their systems. In addition, Health Insurance Portability and Accountability (HIPAA) requirements are eliminating the use of codes that are outside of the standardized coding conventions.

CPT Code: *a five-digit code that indicates the medical treatment a person received*

Data Processing Infrastructure

Once your encounter data system has been defined, you can begin specifying your data processing infrastructure. Each state will have a different solution, depending on its existing infrastructure. It is beyond the scope of this manual to address data processing solutions. Your MMIS and data processing staff can address any questions or concerns you may have once you describe the encounter data you will be collecting. Be sure to start these discussions early to allow time for any system changes.

4.2 Editing Your Encounter Data

Your encounter data should be edited prior to their use to ensure that the data have been coded correctly. Encounters that have obvious errors in critical fields should not be accepted by your encounter data system but should be sent back to the MCOs for correction. Identifying the data elements that are critical will depend on the purposes for which you want to use your encounter data. Establishing your editing procedures is a two-step process.

- Step 1 – Decide which fields will be subject to editing
- Step 2 – Decide the disposition for each edit (e.g., if the encounter fails one edit, will you reject or accept the encounter?)

When establishing the settings for your edits (standards for accepting or rejecting encounters when an edit detects an error), you will have to make trade-offs between volume and accuracy. If you set all of your edits to accept and not reject any encounters, you will accept the highest volume of data. If you reject any error you find on an encounter, you will have the most accurate data but a lower volume. A compromise is to reject encounters with errors in critical data fields but accept errors in less important fields.

Critical data fields that provide identifying information must be accurate for the encounter to be used. You must know which MCO submitted the encounter and which enrollee received the service. If these fields are invalid, the encounter should be rejected. Date fields are also critical data elements that should be checked for valid dates in order to know when the service was provided.

Fields that describe the services the enrollee received are also critical. You may compromise; however, and only require that the primary diagnosis and principal procedures be valid codes. For example, an invalid code in the fourth diagnosis could be identified, but the encounter could still be accepted.

Provider identification fields are another area where you may want to compromise accuracy for volume. If the prescribing physician number is invalid but the rest of the data elements are valid, you may want to accept the encounter. Likewise, errors in the referring physician number on a specialty encounter should probably not cause the encounter to be rejected. You also have to decide what to do if the provider identification number is invalid for the provider who provided the service. Do you want to keep an encounter where you do not know what physician the enrollee saw, or what pharmacy dispensed the drug?

Improving Your Data Over Time by Tightening Edits

Initially, it is better to set your edits to reject for encounters with errors in the most critical fields and accept on the remaining fields. Identify the errors that are being accepted by the system and work with the MCOs to correct them. Give the MCOs a period of time to improve their performance and give them constant feedback on how the accuracy of their data is changing. After allowing sufficient time for the MCOs to correct any system issues that are contributing to their errors, an edit can be changed from accept to reject. Prior to changing the setting for the edit, give the MCOs ample warning and several reminders. Over the course of a year or more, you can gradually change your edit settings from accept to reject for the less critical data elements on your encounters.

4.3 Validating Your Encounter Data[10]

The encounter data editing process only ensures that the data elements being reported are valid entries (i.e., that diagnosis codes are valid ICD-9 codes, and that procedure codes are actual CPT codes). The editing process cannot validate that the encounter data submitted are an accurate representation of the services the enrollee actually received. The editing process also does not validate if the diagnostic information on an encounter is consistent with the information recorded in the enrollee's medical record.

The editing process only validates the accuracy of the format of the codes on the encounter data. A separate validation process is needed to see if the codes accurately represent the services the enrollees received.

4.3.1 What the Validation Process Should Evaluate

A validation process that checks the information on the accepted encounters should be put into place. This process should evaluate the following three aspects of the data submitted on the encounters: service provided, consistent coding, and complete coding.

[10] For additional information, see *Validating Encounter Data: A protocol for use in External Quality Review of Medicaid Managed Care Organizations and Prepaid Health Plans*, which can be found at <www.cms.hhs.gov/medicaid/managedcare/mceqrhmp.asp>.

Service Provided

Did the enrollee receive the service indicated by the encounter record? The medical record should show that the enrollee was present on the date indicated on the encounter record.

Consistent Coding

Are the diagnostic and procedure codes on the encounter record consistent with the codes in the medical record? Both records should have the same primary diagnosis codes and the same principal procedure codes.

Complete Coding

Are all of the diagnoses and procedure codes contained in the medical record on the encounter record? The encounter record should include all of the diagnostic and procedure codes that are in the medical record and should not contain codes that do not appear in the medical record.

4.3.2 Validation Strategies

When establishing a validation process, a state can consider several approaches. An ideal system would review the medical record for each encounter and correct any inconsistencies. However, the resources required to conduct this type of review would be extremely prohibitive. States currently cannot afford to do this for their FFS claims. Therefore, states should adopt an approach that employs a combination of a macro look at all of the data and a micro look at subsets of the data.

Macro Validation	**Micro Validation**
Analyzes your encounter data by preparing summaries based on all of your encounter data	Analyzes your encounter data by examining selected individual records

Macro Validation Strategies

Macro validation strategies look at all of the data submitted by an MCO to try to identify inconsistencies in the data that may be indicative of errors. You can identify inconsistencies by comparing the data submitted by one MCO to other sources. You can also compare the MCO against itself to see if there are any trends in the data it is submitting.

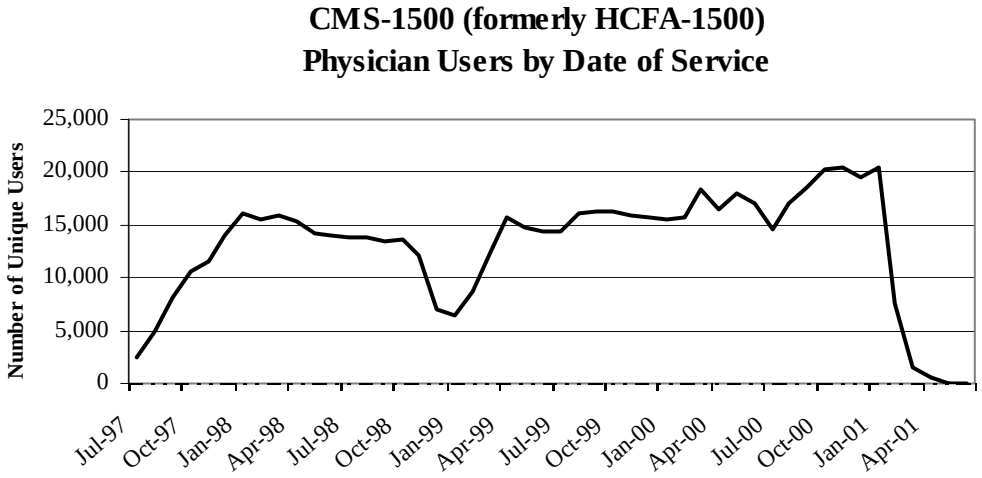
Seven approaches (described in detail below) that are currently being used to validate data at a macro level are: users by month of service, actual vs. expected volumes, network/regional analyses, coding frequencies, diagnoses distribution, disease prevalence, and pharmaceutical evaluation.

1. Users by Month of Service

One way to try to determine if an MCO has been submitting all of its encounter data is to look at its volume of submissions on a month of service. In each service month, compute the number of enrollees who received a specific health care service. How many enrollees visited a doctor during the month? How many enrollees were admitted to a hospital during the month? If the MCO's enrollment has been stable, this number should be relatively consistent from month to month. If you detect months when the number of users was significantly lower, the MCO probably experienced some system problems when submitting the encounters for that month. Sharing this analysis with the MCOs will help them track down and resolve these issues.

In addition to looking at the number of enrollees who used a service, you can also count the number of services enrollees received. Again, this number should be consistent during periods of stable enrollment. Significant fluctuations in volumes will be indicative of system problems.

As an example of this, the following graph shows a "dip" in the data in January 1999. In this case, you would clearly want to investigate the reason behind the dip.



2. Actual vs. Expected Volumes

Another way to calculate whether an MCO has been submitting all of its encounter data is to compare the volume of encounters you receive to the volume you would expect to receive. The analysis discussed in the previous section could be expanded to compare the monthly encounter data volumes to a benchmark of expected volumes. The benchmark could be constructed based on the utilization patterns that existed in the FFS program, or by looking at the volume of data submitted by the "average" MCO. The benchmark would indicate either the expected number of users or the expected number of services in a month. The benchmarks would have to be calculated on a per member basis so that expected volumes could be computed for all different sizes of MCOs.

The construction of the benchmarks should be sensitive to differences in the enrollment mixes between MCOs. You may want to compute separate benchmarks for TANF and SSI enrollees and perhaps adults and children.

To construct the benchmark for the average MCO, you should eliminate any MCOs that have obvious data problems. Compute the monthly percentage of users and services per enrollee for each MCO. Identify any MCOs that are outliers and eliminate them prior to calculating the average. The outliers should primarily consist of MCOs with significantly lower volume. If you identify an MCO as an outlier because it has significantly higher volume, compare it to the FFS program. If the MCO is submitting significantly more encounters than the FFS program, you should also exclude the MCO from the average and investigate why it has such high volume of encounters.

Comparisons of actual volume to expected volume will help identify those MCOs that are not submitting all of their encounter data. The comparisons will also help to quantify the amount of data that are missing. Share this information with the MCOs so that they can try to identify reasons for the data shortfall.

3. Network/Regional Analyses

You can help isolate data problems by repeating approaches 1 and 2 above on a provider network basis or county basis. If the MCO's network consists of individual practice associations (IPAs), medical group practices, or provider sponsored organizations (PSOs), it may be possible to identify these organizations by the provider number submitted on the encounters. The MCO may also be able to provide you with a file that identifies the enrollees being served by each organization. In the absence of provider network information, analyses performed on a county or regional level may be a good proxy. The results of these analyses can be used to identify provider networks that are having difficulty submitting encounter data. The MCO can then focus its efforts on improving the volume of encounter data submitted by these networks.

4. Coding Frequencies

You can take a macro look at the completeness of the MCOs' coding by performing some simple frequency counts. For a health care service, look at how many encounters have a second, third, or fourth diagnosis. How does this reporting compare to the FFS program? Are MCOs reporting a third diagnosis more or less often than was reported in the FFS program? A similar analysis can be performed on procedure codes. Are you getting as many procedure codes on encounter records as you received on FFS claims?

These analyses can be performed on the encounters for all health care services that contain diagnoses and procedure codes. You should look at the frequency counts separately for each MCO. The analyses could also be repeated for each network within the MCO, or if provider network information is not available, on a county or regional basis.

5. Diagnoses Distribution

Another way to take a macro look at the consistency of the diagnosis coding is to look at the distribution of diagnosis codes by medical conditions. You can take the diagnosis codes reported by an MCO and assign them to the Major Diagnostic Category (MDC) Groupings in the ICD-9CM manual. Then you can examine the distribution of diagnoses across these groups. Look at the primary diagnoses and count the number of encounters that are classified in each MDC. Compare this distribution to the FFS program. They should be approximately the same. Compare each MCO's distribution to the FFS distribution and to each other. MCOs that have significantly different distributions require further investigation. Do not forget to standardize your enrollee population before making comparisons to FFS.

For more information on ICD-9 codes, see Chapter 1

This analysis can also be repeated on a provider network basis. Large IPAs and PSOs with several thousand members should have distributions similar to FFS. Specialty or primary case medical groups should have a distribution that is reflective of their specialty. You can evaluate their distribution by examining the diagnostic distribution for similar specialists in the FFS program.

6. Disease Prevalence

The consistency of diagnosis coding can also be examined by looking at the prevalence of chronic diseases. Identify a cohort of enrollees with diabetes, asthma, and other chronic conditions in your historical FFS data. Determine which of these enrollees subsequently enrolled in an MCO. Do the diagnoses on their encounter data indicate the presence of their chronic condition? For instance, a diabetes diagnosis should show up on the outpatient encounters. Compute the percentage of enrollees whose chronic condition can be identified based on their encounters.

This analysis should be performed separately for each MCO. It can also be repeated for provider networks to evaluate their diagnosis coding consistency.

The prevalence of chronic diseases can also be evaluated for an MCO's entire enrollment, in addition to the cohort that enrolled from the FFS program. A significantly different prevalence for a chronic disease may indicate a data problem. If an MCO has no enrollees with asthma or diabetes, there are probably inaccuracies in their diagnosis coding. If an abnormally high percentage of enrollees are reported as having asthma or diabetes, further analysis should be conducted to determine if it is accurate or has been misreported by the MCOs. By reporting more chronic diagnoses, the MCOs will increase the risk score for their enrollees, resulting in an increase in their risk-adjusted payments. Outliers can be identified in the MCOs by comparing them to each other and to disease prevalence in the FFS population.

7. Pharmaceutical Evaluation

If your pharmacy data are complete (which the analyses of service users by month and volume will indicate), they can be used to evaluate the consistency of diagnosis coding and completeness for other categories of service. Look at the pharmacy data for enrollees who are receiving drugs for chronic conditions. Which enrollees are receiving inhalers for asthma, or insulin for diabetes? For these same enrollees, do their outpatient encounters indicate the presence of these chronic conditions? This approach will allow you to look at new enrollees who you were unable to evaluate with the FFS cohort.

You can also use the prescribing physician identification number to evaluate the completeness of encounter data. Look at enrollees who received new prescriptions. Use the prescribing physician number to determine who ordered the test. Then look at the encounter data for that enrollee to see if there was an encounter for the visit with the provider who prescribed the drug. Be aware that prescriptions are sometimes issued without the occurrence of physician visits. In these cases, the prescription is usually phoned in to the pharmacy. You may want to limit your analysis to only include prescriptions that you are reasonably sure would have required a physician visit prior to ordering the prescription.

Micro Validation Strategies

Micro validation strategies entail the examination of individual records. You use these strategies to validate the information on individual encounter data records. Validating the encounters one record at a time will be extremely time consuming and require significant staff resources. For this reason, it is impossible to validate every encounter, so these strategies rely on reviewing a sample of encounter data records.

Two approaches (described in detail below) that are currently being used to validate data at a micro level are: medical chart reviews and targeted quality reviews.

1. Medical Chart Reviews

Medical chart reviews can be used to validate the data elements submitted on your encounters. If you conduct a chart review, you first need to perform a statistical analysis to determine the number of encounters you will need to review. When determining this, think about the resources required for pulling and reviewing medical records. Make sure you choose a statistically valid and administratively feasible number of encounters to review.

A purely random sample of encounters could result in examining one medical record for 200 different doctors. Alternatively, you could draw a random sample of 20 doctors and review 10 medical records for each doctor. Your medical records review staff will have to decide on the combination of statistics and logistics that will enable them to achieve the goals of the reviews.

Medical chart reviews should first validate the existence of encounters. Does the enrollee's chart have a visit recorded on the same date of service as the encounter? Is there evidence that the enrollee was seen?

Medical chart reviews should also validate the accuracy and completeness of the diagnosis and procedure codes. Are the codes in the chart the same as those in the encounter? You also want to compare the number of codes in these two sources. Does the encounter include all of the codes that were found in the medical record? Initially, your reviews may focus on incomplete data. Are the encounters missing information that will affect the risk scores for enrollees and make them appear healthier? Later on, your reviews may focus on "gaming" and making sure that the encounters do not contain codes that are not substantiated by the medical records.

2. Targeted Quality Reviews

Peer review organizations routinely conduct studies to evaluate the quality of care provided by MCOs. The study may focus on a particular medical condition or age cohort. For instance, you may want to know if people with asthma are being seen on a routine basis and receiving the correct medication. Or, did all two-year-olds receive the proper immunizations during the year? The information gathered during these studies can provide you with another opportunity to evaluate your encounter data. If the auditors record all of the visit dates, diagnosis codes, and procedure codes in enrollees' medical records, this information can be compared to their encounter records. This analysis will allow you to evaluate the consistency and completeness of the coding, as well as ensure that a visit occurred.

4.4 Checking the Completeness of Your Encounter Data

The validation process will enable you to assess the accuracy and completeness of your encounter data. It will enable you to quantify the volume of missing encounter data and determine if your diagnostic data are reliable. After these analyses are completed, you will need to address another question: What do the missing data mean for my health-based risk adjustment system? If you have determined that 15 percent of your physician encounters are missing, for example, what does this mean for your risk-adjusted payments?

Your risk adjustment system assigns enrollees a risk group/score based on their unduplicated diagnoses. For the categorical classification systems, including a missing diagnosis may or may not change an enrollee's group assignment. For additive classification systems, adding a missing diagnosis that is similar to existing diagnoses for an enrollee may have no impact on the enrollee's risk score. These factors make it difficult to predict the impact of adding missing encounter data on the risk profiles of an MCO's enrollees.

You need to evaluate the impact of missing encounter data on your risk-adjusted payments. You can evaluate the impact of the missing encounters on a cohort of enrollees for whom you also have complete health status information. Two approaches (described in detail below) that can be used to quantify the effect of missing encounter data are: completeness evaluation using a FFS cohort and completeness evaluation using chart reviews.

1. Completeness Evaluation – FFS Cohort

The completeness of your encounter data can be evaluated using prior FFS data, as long as you have complete FFS data from a recent time period. Find a cohort of enrollees who were enrolled in both your managed care program and FFS program. Select an annual risk assignment period from your FFS program and compute the risk groups/scores for your cohort. Repeat this assignment using an annual risk assignment period for your encounter data. The resulting risk groups/scores can be compared from the two assignment periods to evaluate the impact of the missing diagnostic information.

You should select the annual risk assignment periods using all of the following criteria.

- Select an annual risk assignment period for your encounter data that will be used to make risk-adjusted payments. The results of your evaluation of the completeness of the data can then be used to make the appropriate adjustments to your risk-adjusted payments.

- Include enrollees in the cohort who satisfy the minimum eligibility requirements for your risk assignment system in both the FFS and encounter data risk assignment periods. When choosing your enrollees from the encounter data risk assignment period, include enrollees who were enrolled in the managed care program for at least the minimum eligibility period.
- Choose a FFS period that is as recent as possible but still contains a large cohort of individuals who satisfy the minimum eligibility requirement for your risk adjustment system. Do not select a period that is so recent that many of the enrollees were enrolled in the managed care program and were not in the FFS program long enough to qualify for inclusion in the cohort.

The risk groups/scores for the cohort computed from the FFS data can be used to establish the cohort's health status when you have complete diagnostic information. If the cohort is sufficiently large, this measure of health status should be stable over time. Thus, you would expect to compute similar risk groups/scores from the encounter data if the data are complete. In fact, if the two risk assignment periods are two or more years apart, you would expect the health status of the cohort to be slightly sicker during the later encounter data period, particularly with the SSI population.

Payment Implications

If the risk groups/scores from the encounter data period indicate that the population is healthier, this difference can be used to quantify the financial impact of the missing diagnostic information. Your risk-adjusted payments can be adjusted by this difference if you do not want to penalize the MCOs because of the missing encounter data. This strategy can be employed while the MCOs are in the initial stages of risk adjustment and are beginning to submit encounter data. Over time, this type of an adjustment process can be phased out as the MCOs are given additional time to improve their submission of encounter data.

To compute the potential size of the encounter data adjustment, look at the ratio of the risk-adjusted payments that would have been made using the encounter data versus the FFS data. Use the same risk-adjusted rates to compute the risk-adjusted payment for each time period. If the ratio of encounter to FFS risk-adjusted payments is 90 percent, for example, then based on the encounter data, you will be paying the MCOs 10 percent less than their actual health status. Your risk-adjusted rates could then be adjusted accordingly to bring the MCOs up to 100 percent.

You could also modify your encounter data adjustment to account for the fact that the population may have become sicker since the FFS risk assignment period. To estimate the impact of the change in the health status of the cohort, measure the health status of the cohort in two consecutive annual risk assignment periods in

the FFS program. The change in health status from the first to the second risk assignment period can then be used to interpolate the cohort's health status during the encounter data period. This estimated health status can then be compared to the health status that was measured using the cohort's encounter data to compute the encounter data adjustment.

The following cohort example shows one method that can be used to evaluate data completeness. In this example, the payments for all MCOs are calculated using encounter data from CY 99 and CY 00 and compared to payments based on FFS data from 1997. The payments are calculated using the same cohort of enrollees in all three years and the same risk-adjusted rates. Payments for CY 99 are approximately 92 percent (0.917) of what the payments would be if you used FFS data from 1997. Likewise, in CY 00, the payments for all MCOs using encounter data are approximately 96 percent (0.955) of what the payments would be if you used FFS data from 1997.

FFS vs. Encounter Data Cohort Simulations

	FY97	CY99	CY00	Ratio	Ratio
MCO	**FFS**	**Encounter**	**Encounter**	**CY99/FY97**	**CY00/FY97**
A	$514.97	$475.00	$458.15	0.922	0.890
B	$540.60	$497.28	$521.59	0.920	0.965
C	$383.97	$374.93	$357.33	0.976	0.931
D	$529.42	$506.90	$539.46	0.957	1.019
E	$499.10	$516.90	$547.28	1.036	1.097
F	$544.90	$467.55	$540.15	0.858	0.991
G	$531.38	$470.82	$522.67	0.886	0.984
H	$484.02	$431.22	$452.68	0.891	0.935
All MCOs	**$513.01**	**$470.22**	**$489.74**	**0.917**	**0.955**

2. Completeness Evaluation – Chart Reviews

The information you obtained during your chart reviews can also be used to evaluate the impact of the completeness of your encounter data on your risk-adjusted payments. The medical records were compared to the encounter data to identify those diagnoses that were missing from the encounter data. You can add those diagnoses to the encounter data to determine the impact on each enrollee's risk group/score.

This analysis will give you some insights into the impact of the missing encounter data, but may not give you the total impact. You will have reviewed the charts on a sample of enrollees, but may have only reviewed the charts for a subset of their visits. Therefore, for the enrollees included in the sample, you will have partial knowledge of missing information.

Another potential problem may exist with this chart review approach, depending on how your sample was selected. If the sample was chosen based on a random selection of encounters, you will only be looking at enrollees who had an encounter. You will not be looking to see if there is any missing diagnosis information for enrollees who did not have any encounters submitted. Adding diagnoses for enrollees who had no encounters will increase their risk group/score. Make sure your sampling methodology looks for missing information for enrollees who had no encounters submitted.

4.5 Strategies for Improving Your Encounter Data

States often experience problems when they begin collecting encounter data. It is important that the states and their MCOs work together to overcome these problems. Both the states and the MCOs need to make a significant commitment of staff resources to identify and correct problems affecting encounter data submission. This section discusses some strategies that states have used to give their MCOs assistance and incentives to improve their submission of encounter data.

Require MCOs to Submit Encounter Data

Include a requirement in your MCO contracts for MCOs to submit encounter data. The contract language must clearly spell out the encounter data submission requirements.

Establish Standards

Specify the volume of encounters you expect. The MCOs should have a standard that they are measured against to determine if they are submitting “enough” data.

Provide Feedback

Provide frequent reports to the MCOs that include details about their encounter data submission. The reports should include information on the amount of data received and accepted. The MCOs should receive information on the number of encounters that are failing each edit. State staff should help the MCOs identify problems with their data. The reports should also identify any time period where the volume of accepted data is inconsistent with the volume of the rest of their data.

Use the Data

The MCOs will have strong incentive to submit data if they know the data are going to be used, especially if there are some financial consequences associated with the use of the data. When the data are used to make risk-adjusted payments, as discussed in Chapter 5 of this manual, the MCOs have a significant incentive to

submit encounter data. If you are not using the data for payment purposes, use them for quality monitoring. Enforce any quality standards you have established, and develop a system of incentive payments to reward good performance (or penalties for poor performance).

State Experience:
Encounter Data

At CMS's spring 2001 risk adjustment forum, states discussed various encounter data strategies. Following are some of their comments:

- Using encounter data to make payments is a powerful incentive for MCOs to submit their data.
- Emphasize to MCOs that it is a requirement of the contract to submit encounter data.
- Be very clear when giving MCOs directions about how to submit encounter data.
- Make submitting encounter data as similar to submitting FFS claims as possible.
- Keep the required data fields and edits similar to the FFS program to help ensure consistency across MCOs.
- Using a centralized MMIS to collect data may help with consistency.
- Require a minimum data set.
- Stakeholders may disagree as to whether quality or quantity is more important.
  - It may take an outside mediator to decide this.
- Targeted medical record reviews can be conducted to validate the data (e.g., focus your review on EPSDT services).
- Having a capitated provider network reduces the financial incentives of the providers to submit encounter data.
- Work with your MCOs to create a "Data Quality Improvement Plan."
- Do simulations – show the MCOs what their payments would be if the state used the current encounter data to set rates. This has a strong effect on increasing encounter data submissions because it shows the MCOs how their payments are affected by low data submissions.
- Establish a cut-off date for accepting encounter data.
- Develop financial incentives/sanctions, such as giving bonuses to the MCOs with the highest submission rates or withholding payments (be aware that payment withholdings may have little effect on wealthy MCOs).
- Develop non-financial incentives/sanctions, such as waiving particularly onerous financial reports for the MCOs that have good encounter data submissions or holding auto-assignments to the MCOs that do not submit their encounter data.

4.6 Other Issues

Upcoding: *an attempt by MCOs to make their enrollees appear sicker than they really are by submitting additional diagnostic information*

Most of the focus on encounter data so far has been with measuring data completeness. Once providers are able to submit all of their encounter data, a future cause for concern may be upcoding. There is a concern that providers may attempt to manipulate their risk-adjusted payments by making their enrollees look sicker than they really are. The validation strategies discussed in this chapter can be used to determine if there is any evidence of upcoding by the MCOs. If upcoding is suspected, you can design your risk adjustment system to control for the financial implications of upcoding. Methods of counteracting the effects of upcoding are discussed in Chapter 5.

Additional encounter data information can be found in the state presentations from CMS's spring forum (Appendix C), as well as in the survey responses (Appendix E).

Chapter 5: Setting Risk-Adjusted Capitation Rates

In This Chapter

- Defining your risk-adjusted payment system
- Calculating your risk-adjusted capitation rates

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Purchaser Strategies	Activity 6: Address Policy & Political Issues

The process of setting risk-adjusted capitation rates requires several carefully coordinated steps. This chapter first outlines the choices you have to make when defining your risk-adjusted payment system and then discusses how these choices affect your rate setting process. It focuses on how risk adjustment impacts the rate setting process. It describes the steps that are required with a risk adjustment system that are not necessary with rate cells based on objective characteristics (demographics, geographic area, etc). This chapter is not intended to be a stand-alone manual on rate setting. You should rely on the guidance of an actuary to either direct your rate setting process or set your rates for you.

5.1 Defining Your Risk-Adjusted Payment System

There are several general subjects that you will need to address in order to define your risk-adjusted payment system. You must define the:

- Population to be risk-adjusted
- Benefit package to be risk-adjusted
- Payment system: prospective, retrospective, or combination
- Method to project risk assessments
  - Individually Projected Status (IPS) approach
  - Projected Plan Profile (PPP) approach
- Unit of payment

There are also special issues to consider if you choose to use an IPS approach for risk assessment.

In addition, it is crucial that the method used to adjust rates for risk be consistent with the methods followed in determining the relative risks, and that the administration of the program be consistent with the method of setting the rates.

5.1.1 Population to be Risk-Adjusted

The first issue you need to consider is which types of enrollees will be covered by your risk-adjusted rates. Analytically, this may involve two steps:

- Determining the types of beneficiaries who will be enrolled in MCOs
- Determining which of these are to be risk-adjusted

For example, most states do not risk-adjust MCO payment rates for institutionalized beneficiaries (i.e., those who are confined in a nursing home for more than 30 days). Analytically, this means identifying the types of beneficiaries whose experience is included in your database but for whom payments to MCOs will not be risk-adjusted, and excluding both their claims data and eligibility data from the analysis. Refer to Chapter 4 for a more detailed discussion of your carve-out options.

5.1.2 Benefit Package to be Risk-Adjusted

The next issue is determining the specific MCO services that will be risk-adjusted. These may not be the same as those found in your base data. Accordingly, you may need to exclude those types of services from the base data that will not be risk-adjusted and find a method of estimating the marginal impact of including services that are not included in the base data (e.g., services that MCOs are required to provide that are not recorded in the MMIS).

5.1.3 Payment System: Prospective, Retrospective, or Combination

A payment system can be either fully prospective, fully retrospective, or a combination of prospectively determined interim payments with retrospective adjustments.

Fully prospective systems would determine the final payment per capita for any class of enrollees in advance. This payment would not be altered by the actual diagnoses that occur during the payment period, or for any other differences between the assumptions made in advance to set payment rates and what actually occurs.

In a fully retrospective system, plans are paid on an interim basis and payments are adjusted retroactively to reflect all elements projected, such as trend factors and the actual health status of enrollees during the payment period.

To the extent that payment is not fully prospective, some other basis of payment must be adopted to determine base interim payments to MCOs, and then retroactive adjustments made for the differences between the level indicated by the assumptions underlying the interim payments and what actually occurred. In particular, you could set interim payment rates that reflect all elements other than health status and the numbers and types of enrollees, and subsequently adjust MCO payments to reflect the actual health status through retroactive payments. In practice, most payers adjust the payment level for the number and eligibility class of enrollees retroactively, but the delay is seldom longer than a month or so.

Although there is no technical reason why some or all adjustments for the risk level of enrollments could not be made retroactively, most MCOs have strongly opposed any retroactive adjustments other than for the number of enrollees in each class during a month, and no state currently makes significant retroactive adjustments. Thus, as a practical matter, a risk adjustment system must take into account the average relative risk score most likely to be obtained during some future period for which payment rates are being determined, using data from some past period for which relatively complete data are available and have been analyzed.

Important Distinctions

Prospective vs. Retrospective Payment

- Prospective payment means that the dollar amounts of capitation rates are known before the beginning of the payment period.
- Retrospective payment means that payment is made on an interim basis and adjusted based on data gathered during the payment period.

Prospective vs. Concurrent Risk Assessment

- Prospective risk assessment means that the treatment costs are taken from a period of time after the period from which the diagnoses are assessed, so that the relative amounts paid reflect the treatment cost in a future period.
- Concurrent risk assessment means that the treatment costs are taken from the same period as the diagnoses, so that the relative amounts paid will reflect treatment costs during the same period as the diagnoses.

5.1.4 Method to Project Risk Assessments

Concurrent vs. Prospective Risk Assessment

Risk adjustment payments may be based on the health conditions of enrollees during the payment period or during an earlier period for which reliable data relating to their health conditions are available to be analyzed. Concurrent systems use diagnoses from the same time period as the payment period to assign a risk group/score that reflects the cost to treat enrollees who have the relevant health characteristics during the payment period. Prospective systems use data from a prior period to predict the relative cost to treat the medical conditions that will exist during a subsequent payment period.

Need to Project Risk Assessments

Since data relating to the health conditions of any set of enrollees cannot be available until sometime after payment occurs, payment that reflects the concurrent health status of the same individuals during the payment period would necessarily involve retrospective adjustments. Thus, only a fully retrospective payment system could base payments on the diagnoses concurrent with the payment period. Accordingly, any prospective-based payment system must necessarily involve projecting the future average relative health risk faced by MCOs during the payment period.

Assessment-Payment Lag

All of the major risk adjustment systems in use require the accumulation of a number of months of data. The developers of the systems based on diagnostic data generally advise a full year for the best results. For systems based on prescription data, six months of data is suggested. Because most states are using systems based on diagnostic data, we will refer to the "base year" and the "payment year." The implications of the data obtained from a base year will not be available for many months after the end of the year. For example, it will require a number of months after the last date of service performed in the base year for:

- MCOs to obtain documentation from providers for all services provided during that year
- MCOs to review data submitted for accuracy and completeness and resolve inconsistencies
- MCOs to convert data elements to the format required by a state and transfer the data
- State authorities (and/or their contractors) to review the data and resolve inconsistencies or incomplete items
- State technicians to analyze the data, prepare projections, and obtain policy review (including vetting of results with plans)
- States to implement payment rates based on the new assessments

An important implication of these administrative delays is a time difference of many months or years between the base year and the payment period. Even if payment could be instantaneously altered as soon as the base year was over, there would be an average delay of 12 months between the base and the payment year (e.g., from the mid-point of the base year to the mid-point of the payment year). The administrative delays described above mean that the payment year must occur many additional months after the base year. Thus, the average time difference between the mid-point of the base period and the month of payment (or mid-point of the payment year) is likely to be at least 18 months, and is more likely to be 24-30 months or longer. This "lag" between risk assessment and payment may be referred to as the "assessment-payment lag." The implications of this assessment-payment lag must be taken into account when setting the risk-adjusted payment rates.

For example, if a state sets payment rates annually, and establishes those for CY 2004 based on encounter data from CY 2002, full incurred, cleaned encounter data may not be available to the plans until April, May, or June. Data cannot be made available to the state until later in the year, and additional time will be needed to analyze the data, determine new scores, obtain political review, share findings with MCOs, and reset administrative systems to incorporate the new payment rates. Implementing the new rates for the year 2004 is likely to present an administrative challenge for states initiating risk adjustment.[11]

Projecting the Average Risk Score

There are two basic ways to project the average risk score of an MCO enrollment from a prior period (for which reliable data are available) to the payment period.

- **Individually Projected Status (IPS) approach** – Focus on Individuals: Project the relative cost to treat each individual in the program in a future payment period, given their health condition during the base period, and pay each MCO on the basis of the average for those individuals actually enrolled.

- **Projected Plan Profile (PPP) approach** – Focus on MCOs: Project the relative cost to treat the entire enrollment of each MCO compared to all plans.

[11] There are ways to reduce the average time lag between the period from which diagnoses are taken and the payment period. For example, Medicare is moving to a combination of retroactive adjustments to an interim risk assessment and a short assessment-payment lag. The effect will be to substantially reduce the lag between the midpoint of the assessment data and payment period.

The Individually Projected Status (IPS) approach

The IPS approach projects the average relative cost to treat each individual during a future payment period, based on the individual's health condition during the base period. Risk-adjusted payment is only possible for those with enough enrollment months during the base period for the assessment to be made. Payment to an MCO will then be based on a combination of: (1) the risk scores of the individuals actually enrolled during the payment period (for whom such scores exist), and (2) payment on some other basis for those for whom sufficient data are not available in the base period. For those who are risk-adjusted, payment levels will relate to their health needs long after the diagnoses appear on which the assessments are made.

Advocates of the IPS approach point out that the opening and closing of MCOs may shift the risk for other MCOs in an unpredictable manner.[12] The primary motivation for this approach is to ensure that payment is consistent with the actual health needs of the enrollees who are actually enrolled during the payment period. However, in the context of the Medicaid program, there are some serious drawbacks to the IPS approach:

- Many enrollees cannot be risk-adjusted because there is no past data from the assessment period, which in Medicaid typically includes many of those for whom care will be the most expensive.
- There may be biased selection relative to the payment cell.
- Another practical problem is presented by estimating the relationship between the relative level of health care expenditures during the payment period and the diagnoses in the assessment period, requiring a database that encompasses the base data period, assessment-payment lag period, and the payment period.

Excluding new beneficiaries from risk adjustment presents an especially acute problem in eligibility categories with a high rate of turnover in Medicaid. Since acute health conditions are one of the primary reasons for Medicaid eligibility, MCOs that attract a disproportionate share of such new beneficiaries will never receive full compensation for the higher cost to treat them. This will especially be the case with those who die without the MCO ever receiving a risk-adjusted payment for them.[13]

In the example given above, there can be no risk adjustment based on diagnostic data for all new Medicaid beneficiaries whose eligibility began after June or July of 2000 until 2003. Given the high rates of turnover

[12] The closing of MCOs with high risk profiles has in fact resulted in a shift in the risk profiles of remaining MCOs. (However, the closing of those MCOs may have been the result of inadequate reimbursement for the risks enrolled.)

[13] In the Medicare program, which follows an IPS approach, the problem of new beneficiaries arises only at age 65 or other age of Medicare eligibility.

typically found in Medicaid programs, excluding such a large proportion of new beneficiaries from risk adjustment undermines its effectiveness. Further, some states have found that beneficiaries use more services during the first year or two of eligibility, and these are the beneficiaries that will not be risk-adjusted. If a state is introducing a mandatory Medicaid MCO program to replace a voluntary program, individuals who will not be risk-adjusted may include those who were enrolled in MCOs during the base period.

Payment for new beneficiaries could be based on a traditional demographic capitation rate. The average payment rates for new beneficiaries must, however, take into account the relative expense for such beneficiaries. In addition, care must be taken that the combined payment for both the risk-adjusted and demographically adjusted enrollees produces the desired average rate overall. Even so, a change in the proportion of new enrollees will change the overall level of payment to the MCOs, both relatively and collectively.

The potential for biased selection relative to payment cells arises from differences in the average cost of treatment in the assessment and payment periods. For most beneficiaries with conditions that lead to higher than average medical care, the medical needs 18-30 months later will be significantly lower than they were in the base period. In contrast, for those without significant medical services in the base period, the expected future utilization will be significantly higher. For example, some very expensive conditions will develop among even the beneficiaries with the lowest average future cost, and the cost to treat these conditions will be spread over all those with similar diagnoses during the assessment period.

If there is an MCO that uniquely includes providers that attract those who develop more costly conditions from among the enrollees with relatively low average future health needs, then that MCO will not be compensated for this selection relative to the initial risk assessment. Other MCOs not offering these providers will retain a disproportionate share of those that prove to be less expensive to treat. Thus, an MCO that tends to attract beneficiaries when their conditions become acute will never be fully compensated for the risks enrolled. Medicaid programs will frequently include an MCO that are the only plan that have a provider network that can be expected to attract the sickest among those that develop the conditions in which they specialize.

Modeling the future health status can require several years of data from a consistent data source in which the same enrollees can be identified. In forecasting future health care costs based on conditions during a prior base period, it is important for the accuracy of payment that the time lag be simulated in the analysis of the data used to determine the relationship

between risk status and the cost of care. It is not unusual to require three years of data covering the same individuals accumulated under a program with similar conditions for eligibility (which, as a practical matter, means a Medicaid enrollment with the same general types of beneficiaries), so that the risk scores can be found in the first year and the relative payment level determined from the third.[14]

Perhaps the most important consideration when implementing an IPS approach, however, is the way the risk of enrollees is assessed during a base period and applied to payment during a subsequent payment period be fully simulated. This applies to both (1) algorithms used to determine risk assignments and (2) the lag between the simulated base and payment periods. This requires that each of the technical steps of determining risk adjustment scores be conducted in the same manner with the same algorithms in both simulating the effect of lags and determining the risk scores of enrollees. The same rule of consistency applies equally to all other aspects of the simulation (services carved out, eligibility determinations, new enrollees, retroactive payments, etc.). For example, it is essential that the same algorithm be used to determine relative risk score relationships and to determine which risk class beneficiaries belong in for payment purposes.

The Projected Plan Profile (PPP) approach

Unlike the IPS approach, the PPP approach assumes that on average, the health status of the entire MCO enrollment will be similar during the payment period to what it was during the base period. This approach projects the average risk score of all enrollees of a particular MCO during the fiscal period rather than of each individual. Each enrollee in each health status group during the base period is, in effect, assumed to be replaced during the payment period (at least on the average) by another enrollee who will have a health status with comparable concurrent treatment costs.

It is not assumed that any of the enrollees in the payment period will be the same individuals included in the base period. Further, if an individual is enrolled in both the base and payment periods, it is not assumed that his or her health status will be the same in both periods. Payment is made for the entire MCO enrollment (within each eligibility category) and is based on the concurrent health risk status of the entire MCO enrollment during the base period. Thus, there are no enrollees excluded from the risk adjustment because they have not been enrolled long enough.

[14] Assessment-payment lags between 24 and 36 months can be found by analyzing three years of data and four years of data and interpolating the results. In fact, since the actual assessment-payment lag implemented may vary from that projected, it is wise to be in position to be able to estimate longer than initially planned lags.

The PPP approach projects the concurrent health status of the MCO enrollments during the payment period to be the same as the health status during the base period. Thus, payment will be based on the concurrent health status of the entire enrollment. Payment is based on concurrent scores rather than projected scores, which actuarial studies have found to explain more of the variation in expenditures among enrollees. For example, the 2002 Society of Actuaries Risk Adjuster Study found that concurrent risk scores explained approximately twice as much of the variation in claim costs as prospective risk scores when projected from a base year to the next year using the risk adjustment systems based on diagnostic data. [15]

Risk adjustment system	**Statistic**[16]			
	R-squared		**Mean Absolute Error** [17]	
	Prospective[18]	Concurrent	Prospective	Concurrent
Adjusted Clinical Groups	14.0%	37.6%	17.1%	36.9%
Chronic Illness & Disability Payment System	18.6%	41.8%	18.3%	33.0%
Diagnostic Cost Groups	19.8%	54.7%	19.8%	40.5%

Although these statistics were generated at an individual rather than MCO level, the results suggest that payment to MCOs will also be much more accurate on a concurrent rather than a projected basis. The PPP approach also avoids the need for several years of consistent data on which to model the relationship between current health status and future health services, and permits basing the relative risk scores on the latest full year (or other period used to determine risk adjustment) available.

The rationale for using this method is that the motivation for risk adjustment is to address the financial disadvantage of MCOs that *systematically* attract a disproportionate share of higher cost enrollees. If there are no such MCOs, there is no need for risk adjustment. The payment level for all MCOs will average out over time and the risk of

[15] Source: Robert Bruce Cumming and David J. Knutson; Presentation #80 entitled 'Risk Adjusters Update'; Society of Actuaries Spring Meeting - San Francisco; June 25, 2002.
[16] Claims were truncated at $100,000.
[17] The mean absolute error, based on the average of the absolute differences between predicted and actual claims, provides a better index of performance relative to the average payment per capita.
[18] Payment year is the 12 months following the assessment year, so that average lag between assessment and payment is 12 months.

adverse fluctuations will be of the kind that is better addressed by commercial reinsurance.

Further, any difference in the ratio of the average risk-adjusted payment to the average payment level between the base and payment periods will be made up at least partially when payment is made for the subsequent period in which the payment period becomes the base period. Thus, on a cumulative basis, the aggregate error in payment is limited to the change in average MCO risk score multiplied by the relative change in the enrollment (multiplied by the difference in reimbursement levels adjusted for the time value of money).[19] If the average health status of an MCO's enrollment changes slowly over time, the cumulative error in payment will be very small (and if not acceptably small, a retrospective adjustment could be made for that difference).

There is, however, one potentially significant disadvantage to the PPP approach. The largest potential distortion would occur through the termination of an MCO that had an enrollment with an average risk profile substantially above or below that of the remaining MCOs. All of the other MCOs would be either under-or overpaid during the period before the effects of the termination showed up in the encounter data from the MCOs. Such terminations can be addressed specifically when they occur. In addition, the existence of likely under- or overpayments can be detected through monitoring the accuracy of the payment system.

Another potential problem is determining the basis of payment for a new managed Medicaid program. Similarly, if a mandatory MCO program is replacing a voluntary program, and only FFS data are available to use in determining the risk scores, there will be no basis for determining the initial payment rates. There will be no basis for risk adjusting new MCOs until experience is gained with each MCO (after the full lag between the base period and the payment period).

In assessing the seriousness of these potential problems, one must examine the logic for having risk adjustment in the first place. If the variation in risk level of the enrollees in an MCO were random, there would be no real need for risk adjustment. Such variation would simply be one of the risks addressed routinely by insurance of all types. The reason for risk adjustment is not for such random fluctuations, but to address systematic

[19] Because MCOs are always being compensated for their risk profile in a period that will average 18-30 months earlier, they will be under- or overpaid to the extent that their risk adjustment changes significantly during that period. Over time on a cumulative basis, however, the uncompensated net gain or loss will be limited to the combination of:

- The change in average risk score during the last 18-30 months
- The extent to which their overall enrollment grew or was reduced during that period
- The rate of increase in the average payment per capita in the entire managed Medicaid program relative to the time value of money

differences in the risk level of enrollees that stem from the characteristics of the MCOs, especially the nature of their provider panels. These characteristics, if inherent in the operation of the MCO, will not change substantially from year to year. Thus, the PPP approach addresses the needs of risk adjustment to the extent that a need for risk adjustment exists. For this reason, some states have adopted a PPP approach, and several private organizations that risk adjust payments to provider groups are moving in this direction.

5.1.5 Unit of Payment

Payments that will be made for an MCO's enrollment during a month can be made on the basis of:

- The individual risk scores for those enrolled during that month in that MCO
- The average risk score over a fiscal period (such as a calendar year) of the individuals enrolled during that month
- The average risk score of all individuals enrolled in the MCO during the fiscal period

The first option requires changing the average payment to an MCO for a month to reflect both who is (or is expected to be) enrolled in the MCO in that month and the risk score for that individual in that month. The second requires changing the average payment each month to reflect who is enrolled, but the payment for each individual is only reset at the end of a fiscal period. The last method produces the same average payment for all individuals in each month of a fiscal period, and changes only with the size of the enrollment.

If you use a PPP approach, risk scores may be applied for all enrollees. If you use an IPS approach, risk scores will be applied to the subset of enrollees who have sufficient historical risk data. They can be applied on a purely prospective basis or with retroactive adjustments to reflect the actual composition of the enrollment (by individual and/or current risk status). They can be made for all risk-adjusted enrollees or separately for different eligibility categories (TANF, SSI, HIV, etc.) If applied to only those enrollees with sufficient historical risk data, another method must be used to pay MCOs for those without such data.

Payments made using the IPS approach automatically adjust to changes in membership. When new enrollees join an MCO, the payment to the MCO will reflect the risk group/score of those who were Medicaid beneficiaries during the base period and the demographic (or other basis used) rate for other new enrollees. If an MCO loses enrollees or leaves a service area, its payment will automatically delete the payments for the enrollees who were disenrolled.

Regardless of the method used, however, what matters financially to both the state and the MCO is the amount of the total payment per member per month (PMPM). In fact, most MCOs will not react to a proposed payment methodology until they have estimated how much revenue PMPM it is likely to generate for them. In addition, payment in advance requires that an average rate be set for each MCO for any month, and that the dollar amount be adjusted for changes in enrollment that are not known until after the payment has been made. Administrative simplicity and acceptability to the MCOs are greatly eased if the retroactive adjustments are only for the total months of eligibility rather than for any changes in the composition by risk class of the enrollment. Administrative simplicity also demands that any adjustments for changes projected in average risk from month to month be at least predictable. Preferably, the same average amount will be paid PMPM in each month of a designated period, such as a fiscal or calendar year.

It follows that regardless of the method used to determine the relative risk of each MCO enrollee, practicality of administration leads to bundling payment rates for different individuals into an average rate PMPM for each MCO that is applied during a fiscal period. Further, getting the relative average rates for the risk profiles of the MCOs is the objective of risk-adjusted payment rates.

5.1.6 Payment Groups

Once you have made your carve-out decisions, you can begin to define your payment groups. You will have to define the enrollees who will receive risk-adjusted payments and those who will not. You need to determine the payment groups that you will use for both categories of enrollees.

***Payment Group: a** group of enrollees for which separate capitation rates are created to make payments to MCOs*

Payment Groups for Risk-Adjusted Enrollees

In order to simplify the risk adjustment systems for both ease of operation and explanation to MCOs, you may wish to reduce the number of payment cells to a manageable number. Otherwise, under an IPS approach you would have a hundred or more potential payment rates under a categorical system, and unique risk scores for each enrollee under an additive system, which would have to be stored and used for paying MCOs.[20] With a PPP approach, you may also wish to condense risk scores into payment groups for ease of explanation to MCOs of their risk profiles.

There are several factors that you need to take into consideration when defining your payment groups. Your payment group options will be affected by: (1) the type of risk adjustment classification system you selected, and (2) if you want to establish separate payment groups for different categories of eligibility.

[20] For example, Maryland condenses the 100 ACGs to 9 payment groups for each of the TANF and disabled MCO enrollees.

1. Classification Systems

Categorical Classification Systems

Categorical classification systems assign each enrollee to a mutually exclusive risk group. You can establish a capitation rate for each of these risk groups. You can also combine risk groups with similar costs into a smaller number of groups for payment purposes. Some of the categorical classification systems use as many as 200 mutually exclusive risk groups to classify enrollees. The number of enrollees assigned to some of the groups may be too small to establish actuarially sound rates from the data sources on which you wish to rely. Combining risk groups with similar costs into a payment group can make the payment system easier to administer and/or explain.

Additive Classification Systems

Additive classification systems assign each enrollee a unique risk score and could conceivably generate thousands of unique risk scores for your enrollees. Your payments can be based on the risk score of each individual, the risk score of the average individual, or the average risk score for some other subgroup of individuals (e.g., adults).

Subgroup: *a group of individuals within an MCO that have a common defining characteristic (e.g., adults vs. children)*

To make separate payments for each individual/enrollee under an IPS approach, you would have to store each risk score on your payment system (e.g., MMIS). This score would then have to be multiplied by the average payment rate to determine the individual's payment rate. MCOs would then be paid the sum of the rates for the individuals enrolled. You could also compute the average risk score for all of the enrollees in each MCO and then compute an average payment rate for each MCO. You could also compute the average risk scores for subgroups of individuals, derive separate payment rates for these subgroups, and base payment to MCOs on the number in each subgroup times the subgroup rate.

2. Category of Eligibility

You need to decide if you want to establish separate capitation rates by category of Medicaid eligibility. Most demographic capitation rate systems include separate payment groups for TANF enrollees and SSI enrollees. This distinction can also be mirrored in your risk-adjusted capitation rates. In fact, some risk classification schemes use the enrollee's category of eligibility in calculating his or her risk score. For categorical systems, the cost associated with a risk group can be significantly different for TANF versus SSI enrollees. You should examine this difference when you are defining your payment groups. If you find a significant difference,

you should establish separate payment groups for risk-adjusted TANF and SSI enrollees.

Payment Groups for Non-Risk-Adjusted Enrollees

Your payment system will also have to define the payment groups that will be used for enrollees who are not risk-adjusted. There may be two very different types of non-risk-adjusted enrollees: (1) those in eligibility classes who will not be risk-adjusted, and (2) under an IPS approach, those in eligibility classes who *are* risk-adjusted but for whom sufficient data from a base period are not available to determine their risk scores.

Most states do not risk adjust dually eligible MCO enrollees (mostly disabled beneficiaries or those who are residents of nursing homes). Some states do not risk adjust TANF enrollees, and most states recognize the special problems involved in enrolling those becoming eligible through the various spend-down provisions or with retrospective eligibility.

The absence of data relating to prior health condition prevents the risk adjustment of many enrollees under the IPS approach to projecting the average risk score for MCOs in the payment period.

In either case, you can continue to use the payment groups that were in effect before you began making risk-adjusted payments. You will need to make sure, however, that the overall payments to MCOs are budget neutral (if some beneficiaries in the same eligibility class are risk-adjusted and others are not due to the absence of prior data relating to their health status).

5.1.7 Additional Considerations for the Individually Projected Status Approach

If you use the IPS approach, there are a number of additional issues that you must consider when defining your risk-adjusted payment system. You will have to establish the time lag between the base period and the payment period. In addition, when to update the risk assignments becomes a more important issue.

Risk Assignment Time Lags

Under an IPS approach, another key decision when defining your risk-adjusted payment system is to establish the time lag between the risk assignment period and the payment period.[21]

[21] Risk adjustment based on prescription utilization can be made available much sooner than when diagnostic information is used and requires a much shorter accumulation period (e.g., six months rather than a full year).

In determining the time that will be allowed for the assessment-payment lag, you will need to consider three factors: data completeness, measuring current health status, and the changes in risk scores over time.

Data Completeness

The longer you wait for your FFS or encounter data to be submitted, the more complete your database will be. Naturally, the more complete your database is, the more accurate your risk assignments will be. If you wait 6 to 12 months for diagnostic data to be submitted, the data for the risk assignment period should be 90 to 100 percent complete. Prescription utilization can be made available with a much shorter wait (e.g., only a month or two).

Measuring Current Health Status

In an IPS approach, the longer the time lag from the risk assignment period to the payment period, the less reflective an enrollee's risk group/score may be of his or her current health status. Over the course of one to two years, an enrollee's health status may change considerably. Thus, the more current your risk assignment period is, the more accurately it will measure the enrollee's current health status. On the other hand, too short a time lag may result in incomplete data.

Changes in Risk Scores Over Time

To make fully accurate concurrent payments, you need to use the diagnoses or prescription utilization from the payment period to assign the enrollee's risk group/score. However, since risk adjustment systems typically use all the diagnoses in a calendar year as the basis of classification (some of which will not have occurred at the time of payment) and because of the data submission lag, this information will not be complete until 6 to 12 months following the payment period. It would be impossible to implement a payment system that is 100 percent concurrent since all of the diagnostic information will not be available during the payment period. Similarly, you will have to wait some months after the base period before prescription utilization is complete and available for analysis. You could implement a compromise between a fully concurrent and an IPS approache by using a risk assignment period that is as close to the payment system as possible.

After weighing these three factors carefully and examining your data, define the time lag you will use in making your risk assignments. This lag must be followed exactly when computing your capitation rates (refer to Chapter 2). The relationship between a diagnosis and the costs associated with the diagnosis varies over time. On a concurrent basis, the costs associated with a diagnosis will be

higher because you will be capturing the direct costs of treating the diagnosis. For example, if you look at the relationship between a diagnosis and health care costs one year after the fact, the enrollee's condition may be resolved and there may not be incurring ongoing costs. If you wish to capture these higher concurrent costs for those MCOs that systematically attract the higher cost enrollees and want a prospective payment system, you will need to adopt a PPP approach.

Updates to Risk Assignments

Another issue to consider when defining your payment structure is how often you will update your risk assignments. Will you assign an enrollee to a risk group/score on an annual basis and leave that assignment in effect for a full year? Alternatively, you could update an enrollee's risk group/score on a quarterly or semi-annual basis. These updated risk assignments would then be used to modify the payments made to the MCOs.

When deciding how often to update your risk assignments, there are two factors that you should take into consideration: (1) recognizing changes in health status/data, and (2) predictable revenues.

Recognizing Changes In Health Status/Data

The more often you update your risk assignments, the sooner your payments will reflect changes in the diagnostic information. Diagnostic information may change if an enrollee's health status changed or if the MCO improved its data submission procedures. This is especially true at the beginning of your risk adjustment program when MCOs may be experiencing problems submitting encounter data. Frequent updates of risk assignments can capture improvements in data submission on a timely basis.

Predictable Revenues

Another factor that you need to consider when deciding how often to update your risk assignments is the predictability of the capitation premiums. Risk assignments made on an annual basis will enable you to project your budget liability for the upcoming year and will allow the MCOs to forecast their cash flow for that year. If risk assignments are changed every quarter, you will have less certainty over your budget for the year and the MCO will have a less predictable cost flow. It is possible that the MCO's updated data would show an improvement in health status, and the MCO's premium revenue could decline.

5.2 Calculating Your Risk-Adjusted Capitation Rates

Once your payment structure has been defined, you can begin computing your risk-adjusted capitation rates. Begin by selecting a base year period that will be used to develop your expenditure base. The development of your expenditure base must follow exactly the choices that you made when defining your payment system. Your expenditure base then needs to be trended to your rate period. After trending, you may need to apply state mandated adjustments, such as expected managed care savings or other budgetary adjustments to the computed rates. Similarly, you may need to provide for federal or state imposed maximums (including any that were agreed to in obtaining federal waivers). These factors are discussed in detail in the following sections.

5.2.1 Prepare Base Year Database

The first choice that you must make when establishing your expenditure base is to select the base year time period. Once the time period has been selected, you need to select the data source or sources that will be used to develop your base year expenditures, and the relative cost of health risk status groups. You can either use the historical FFS data, MCO submitted encounter data, or other data sources accepted by CMS. You then need to identify within your base year data the services that will be covered by the MCOs, and the populations that are enrolled and will be eligible to enroll in your managed care program. You must classify beneficiaries into the eligibility categories and payment groups that will be used to pay the MCOs. If your system applies relative cost rates to a projected average MCO-wide rate, you must also determine the average payment per capita for each MCO. The issues related to creating your base year expenditure database are described in the following section.

Base Year Time Period

You should select a time period that will give you the most recent complete data available. The closer the base period is to the rate period, the more accurately it will reflect current health care expenditures. You also need to take into consideration data completeness. Again, with diagnostic data you will need a lag of at least 6 to 12 months for the data to be complete.

You should also take into consideration the completeness of the enrollment reflected in your base year time period, especially if your base year coincides with the beginning of your managed care program. You may have transitional years in which some of your beneficiaries were enrolled in managed care and others remained in the FFS program. A transitional period may be a poor choice for a base period. If you are using encounter data, the data may be incomplete as a result of start-up issues. If you are using FFS data, the number of people in the FFS program may be significantly lower than in previous years. You may be

better off selecting the prior year when your FFS database was larger, in order to improve the validity of your capitation rates.

Selection of Data Source

You also need to decide what data source will be used to develop your base year expenditures. The availability of sufficiently complete data may dictate this choice. For example, if the only relatively complete, reliable data that you have are from a time period that pre-dates your managed care program, you will need to use FFS data (the only reliable guide that will be available on which to base an estimate of what your program would have cost).[22] If your managed care program has been fully implemented for some years, you may not have any relevant FFS data that are recent enough to be a reliable basis and will only have encounter data from the relevant types of beneficiaries. You will then have to attribute to the encounter data some measure of the relative costliness of the procedures performed (i.e., the amounts that would have been paid under the Medicaid FFS program). If you have both a FFS program and a managed care program in operation, and each program had a sufficient number of beneficiaries, you will have to choose the data source that you feel will result in the most accurate and credible projections of the costs to care for the beneficiaries expected to be enrolled in MCOs during the payment period.

The choice of data source will have a significant impact on the amount of effort required to establish your base year expenditure base. If you have a choice between FFS and encounter data, there are four factors that you should take into consideration: assigning costs, identifying covered benefits and populations, accurately measuring the MCOs' costs, eliminating bias in FFS data, and data completeness.

Assigning Costs

Your FFS claims already have a payment amount assigned to them as recorded in your MMIS. As a result, you know the rates and fees that were used to establish the payments. Your encounter data may or may not have payments assigned, and even if payments are assigned, you may not know how they were computed or whether they were computed in a consistent manner for all reporting MCOs. You may thus need to develop a methodology to assign payments to each encounter so that you can check the reasonableness of the existing payments and assign payments where they are missing. If your encounter data are submitted through your MMIS, you could use your MMIS to price encounters the same way it prices FFS claims. If your encounters are submitted outside of your MMIS, you may want to develop a methodology that mirrors your MMIS pricing algorithms. Alternatively, you may want to develop a system that

[22] Using rate "guidelines" or average costs from another state Medicaid program is not recommended.

more accurately measures the relative cost to the MCOs to provide the services implied by the procedure codes recorded on the encounters.[23]

Identifying Covered Benefits and Populations

Your FFS data will contain all claims for all eligible beneficiaries. From this dataset, you will need to identify the claims for services that are not included in the MCO benefit package. You will also need to identify the beneficiaries who are not eligible to enroll in managed care. This step may not be necessary with encounter data because your encounter data should only include covered benefits for eligible populations.

Accurately Measuring the MCOs' Costs

Your FFS data reflect your Medicaid fees and the utilization patterns of FFS beneficiaries. MCOs will have negotiated their own payment arrangements and will have different utilization patterns due to care management and network composition. If you use FFS data to establish capitation rates, your data may need to be adjusted to account for these changes in utilization and payment rates, depending on your state's rate setting policy. You may also need to update the Medicaid payment rates to reflect those currently in use (e.g., your state may have changed the relative level of payment between different types of services). If you use encounter data to establish your capitation rates, they will already reflect MCO utilization patterns.

Eliminating Bias in FFS Data

FFS data may be collected in a manner that is inconsistent with capitation rates. For example, the numbers of member months reported may not reflect the number of capitation payments that would have been made if the beneficiaries had been enrolled in MCOs. Particular care may be needed to examine how the MMIS data reflect changes in enrollment, to be sure that a beneficiary month of eligibility is recorded once and only once and that the services used in deriving expenditure data relate to those months, and in both cases reflect eligibility similar to those enrolled in the MCO program.[24]

[23] In developing the relative cost related to health status, a more accurate basis would be the Medicare Resource Based Relative Values underlying the Medicare fee schedules. But there may not be fees for all procedures found in a Medicaid database, and matching fees to procedures may prove to be a difficult technical task.

[24] For example, one state's MMIS recorded enrollment at both addresses during the month that a beneficiary changed addresses, resulting in an over counting of enrollment months.

Data Completeness

The FFS data should contain all paid claims because providers must submit a claim in order to get paid.[25] Your encounter data may be incomplete. There are several strategies for quantifying the amount of missing data. These strategies are discussed in detail in Chapter 4.

Selection of Data Source

	FFS	Encounter Data
Assigning Costs	Automatically done by payment system	Need to develop algorithms to assign costs to encounters
Identifying Benefits and Populations	Need to develop logic to identify claims for excluded services and beneficiaries	You should only have encounters for covered services and eligible beneficiaries
Reflecting MCO Costs	Utilization patterns and the cost of service in the FFS system may be different than in the managed care program	Already reflects the utilization patterns in the managed care program
Eliminating Bias in FFS Data	Member months may be overstated for individuals whose eligibility changes	Member months may be overstated for individuals who change MCOs
Data Completeness	FFS providers have to submit a claim in order to get paid	MCOs may experience difficulties submitting encounters

Removing Excluded Services and Eligibles

Once you have selected a base year period and data source, you can begin computing your base year expenditures. You want to compute the cost of covered services for the population eligible to enroll. If you are using FFS data, you will need to modify your base year data to exclude some of your claims. If you are using encounter data, this step will not usually be necessary unless you have made changes to your managed care program since the base year. In order to establish a base year expenditure database, you will need to identify claims for excluded services, excluded eligibles, and time periods when the MCO will not be at financial risk.

[25] Care must be taken, however, to make sure that MMIS records are created to reflect all payments by calibrating MMIS data to total payments actually made (as recorded in accounting records, e.g., that ties to HCFA 64 Reports).

Identifying Excluded Services

When establishing your managed care benefit package, you may have excluded certain services. Within each category of service, identify any services that are excluded from the benefit package. You will need to work closely with your payment system staff to precisely define the data elements and codes that can be used to identify the excluded services. You then need to identify claims for these services and exclude them from the base year database.

This step will only be necessary for encounter data if you have decided to exclude services that were covered in the base year benefit package. For example, if you previously covered mental health services but subsequently decided to carve them out, you will need to exclude mental health encounters.

Identifying Excluded Eligibles

When establishing your managed care program, you may have excluded some categories of beneficiaries from enrolling in MCOs. The claims for these beneficiaries need to be identified and excluded from the base year. You will need to work closely with your MMIS and eligibility staff to identify the data elements and codes that can be used to exclude the claims for these beneficiaries.

Time Periods When the MCO is Not at Risk

You may also want to consider excluding claims for time periods when it is not possible for beneficiaries to enroll in MCOs. These exclusions would cover time periods when the MCO would not be at financial risk for the services used by eligible beneficiaries. These time periods may arise during the initial months of eligibility for new eligibles and after a beneficiary exceeds a coverage limitation.

New Eligibles

When new eligibles apply to the Medicaid program, there may be a delay between their approval for coverage and their MCO enrollment. In some instances, beneficiaries may receive retroactive coverage for up to three months prior to their application for Medicaid coverage. After they have applied, it may take one or two months to process their application. Upon approval, they may be given 30 or 60 days to select an MCO, after which they may be automatically assigned to an MCO. Most states do not hold the MCO financially responsible for any health care

services utilized by new beneficiaries prior to their enrollment.[26] If health care services were provided during this time frame, the costs would be covered under the FFS program. You can look at your MCO program and determine how long it takes a new beneficiary to become enrolled in an MCO. For example, if this enrollment lag were two months, you would adjust your base year database to remove claims for the first two months of eligibility for any new eligibles.

Benefit Limits

Many managed care programs contain benefit limits, especially for long-term care services. Once beneficiaries exceed the limit, the MCO is permitted to disenroll them from the MCO. If you have similar policies, your base year database should be adjusted to delete the services that will be in excess of the limits. To do this, you must reprice the services to reflect MCO costs rather than FFS costs (if you have not already done so) to conform to state MCO payment policy. You then need to determine which services will be in excess of the limits. You should keep the claims for eligible beneficiaries up until the time they exceed the benefit limit. Then you should remove any claims subject to the limit for the remainder of the base year period.

Adjustments to FFS Payments Not Recorded in the MMIS

Your Medicaid FFS claims database must reflect the total net payments actually made by Medicaid. The payments recorded in the MMIS may not reflect any offsets subsequently received by Medicaid. The Medicaid payment may also include some components for which the MCOs will not be financially responsible. In either instance, the base year database should be adjusted to reflect what would be the MCO's financial liability. Two areas where these types of adjustments may need to be made are pharmacy rebates and payments for graduate medical education.

Pharmacy claims reflect the full Medicaid fee for prescriptions. Many pharmaceutical manufacturers subsequently rebate the Medicaid programs a portion of the fee. These rebates usually occur after the fact, outside of the payment system, and are not reflected in your FFS claims. Most MCOs also have arrangements with drug manufacturers to receive rebates. States may either delete the rebates from their base for payments or continue to collect them. You may need to modify your base year to reflect state policy, usually by subtracting the value of the rebates from the prescriptions on which they were earned to reflect the net cost of the drugs.

[26] An exception is the Arizona Medicaid system.

Many managed care programs incorporate features that affect payments for graduate medical education programs. Many states remove graduate medical education expenses from their MCO capitation rates and pay the hospitals directly. If your state has a similar provision, you need to adjust your base year expenditures to reflect the shift in liability.[27] The state's approach to disproportionate share payments (DSH) payments may involve a similar set of adjustments. Your FFS claims will reflect the full Medicaid rate, so you may need to modify the payment to remove the components of the rate associated with graduate medical education and DSH.

Adjustments may also be needed to obtain a valid basis for estimating expenditures per capita from MMIS data. For example, some state MMISs fail to record a single month of eligibility for each month that a beneficiary is eligible for services. Problems typically occur when the eligibility record is changed (e.g., enrollment in an MCO may produce an eligibility count for the month of enrollment in both the FFS and MCO databases). Similar problems can occur when the category of eligibility is changed, when there is a change of address, or when there is a change in the choice of MCO. Automatic extensions of eligibility may not be recorded. You should monitor how eligibility is recorded and tabulated from the MMIS data to make sure FFS eligibility is computed in a manner parallel to how payments will be made to MCOs.

5.2.2 Assign Beneficiaries to Payment Groups

Special Timing Problems with an Individually Projected Status Approach

The IPS approach raises many issues relating to the timing of payments relative to the assessment period.[28] Most states following an IPS approach use simplified payment systems that involve grouping risk categories. If so, after you finalize your base year database, you need to assign each beneficiary to a payment group. You need to distinguish between beneficiaries who will be risk-adjusted and those who will not be risk-adjusted. Non-risk-adjusted beneficiaries need to be classified into their payment groups (typically demographic). Risk-adjusted beneficiaries need to have a risk group/score computed. Once all beneficiaries have been assigned to a payment group, you can compute the base year cost for each payment group. As stressed throughout, the most important consideration in implementing an IPS (or any other) approach is to be consistent in all details between the methodology used to determine the relative payments due to risk adjustment and the management procedures followed in implementing the payment system.

[27] Presumably, in the background, the MCO will negotiate payment rates to hospitals that exclude any allowance for GME.

[28] These problems do not arise if you follow a Projected Plan Profile approach, since payments are risk-adjusted for all beneficiaries and there is no lag between the data period used in assignment and that for which payment is to be made.

Assignment of Risk-Adjusted Beneficiaries

The payment group assignment process for risk-adjusted beneficiaries will be influenced by several of the decisions you made in designing your payment system. You have to make sure that you use the same rules in the base year that you will use in the payment period.

Time Lag

Under an IPS approach, the first factor that you need to look at is the time lag that will exist in the payment period. This same lag must be used in the base period. This lag will determine the risk assignment period that you will use to assign beneficiaries a risk group/score. This lag will be determined by whether you are using a prospective system or a concurrent system.

Determining Risk Groups/Scores

Use the diagnostic data from the risk assignment period to generate a risk group/score for each risk-adjusted beneficiary. You need to make sure that beneficiaries meet any minimum eligibility requirements that you may have established for the risk assignment period (in order to be assigned a risk score) (as discussed in Chapter 2). Once you have generated a beneficiary's risk assignment, the assignment needs to be combined with his or her base year expenditure data.

Assignment of Eligibility Group

Each beneficiary needs to be assigned to one eligibility category. Risk-adjusted beneficiaries' eligibility may have changed from the risk assignment period to the base period. When choosing between the two periods, follow the same logic that you will use in making payments. If their payments will be based on their eligibility category during the payment period, you should assign them to the eligibility category that they were in during the base year. For instance, if a beneficiary was TANF eligible during the risk assignment period and SSI eligible during the base period, assign the beneficiary to the SSI category.

New Beneficiaries

Your payment group assignments also need to mirror the payment rules that will be used for new beneficiaries. Under an IPS approach, you will find beneficiaries in the base year that did not exist during the risk assignment period. These beneficiaries need to be assigned to a demographic rate cell if MCOs will get paid demographic rates for new beneficiaries in the payment period. If the MCOs will get paid for new

beneficiaries based on the average risk-adjusted payment rate, you need to exclude the new beneficiaries in the base period. They cannot be used to calculate the average since they do not have a risk group/score assignment.

Assignment of Non-Risk-Adjusted Beneficiaries

Beneficiaries who are not going to be risk-adjusted must be assigned to an appropriate payment cell. For most states, a beneficiary's risk-adjusted status is based on their eligibility. Typically, states have used demographic payment groups that classify beneficiaries based on their age, sex, and region of residence within the eligibility group. Use the classification criteria that are defined in your payment system to assign each beneficiary to the appropriate payment group.

Time Period Used for Assignments

For non-risk-adjusted beneficiaries, you have to determine the length of your payment group assignments. For example, you could make an assignment to a payment group on an annual basis or on a monthly basis. If you make annual assignments, you would look at the beneficiaries' demographic information (age, sex, region of residence, and eligibility) at a point in time during the year and assign them to a payment group. For instance, you could look at their demographic information at the end of the year to determine their payment group assignment. A second option would be to look at their demographic information each month to assign them to a payment group. If you use annual assignments, you will have one base year expenditure file that contains a beneficiary's total expenses for the year. If you make monthly assignments, you will have 12 monthly expenditure files that contain the beneficiary's expenditures for each month.

The choice of whether to place a beneficiary in a risk-adjusted or non-risk-adjusted category should be made on an annual basis. A beneficiary should not switch between the risk-adjusted and non-risk-adjusted groups on a monthly basis because their eligibility changes. The risk group/scores are calculated using diagnostic data from the entire risk assignment period. Diagnoses are not included or excluded based on beneficiaries' eligibility during a month. As a result, their risk groups/scores should then be related to their expenses during the entire base period, not just selected months.

For demographic rate cells, you could change beneficiaries' payment groups when their age changes. In the payment system, beneficiaries will move into another payment group when their age changes and they meet the criteria for the next payment group. This same logic should be mirrored in the assignment to payment groups during the base period.

5.2.3 Compute Member Month Costs

Once your base year database and beneficiaries have been assigned to payment groups, you can compute the average per member per month (PMPM) cost for each MCO or payment group during the base year. Under the IPS approach, the grouping is into the simplified payment cells. Under the PPP approach, the grouping is by MCO. The base year PMPM averages will then serve as a starting point for setting your monthly capitation rates. You need to sum the expenses for the beneficiaries who were assigned to each payment group or MCO. You also need to add the number of months of eligibility for the beneficiaries in each payment group. The total expenses and member months can then be divided to compute the PMPM cost for each MCO or payment group.

$$\text{PMPM} = \frac{\text{Base Year Expenditures}}{\text{Member Months}}$$

$$\$200 = \frac{\$2{,}400}{12}$$

Under the IPS approach, you must also sum the costs for those for whom payment rates are not risk-adjusted. This calculation will be straightforward for your demographic rate cells. For your risk-adjusted payment groups, there are some additional considerations that will vary depending on the type of classification system you use.

Risk-Adjusted Beneficiaries Using Categorical Systems

When using categorical systems, the risk groups can be used the same as any other payment groups for calculating base year PMPM costs. Divide total expenses by member months to compute the PMPM costs. Under PPP, beneficiaries are grouped by MCO. If enrolled in more than one MCO, the enrollment and diagnostic/prescription utilization data are divided between the MCOs accordingly. Under IPS, a beneficiary's risk group assignment places him or her in the payment group for the entire year. You should evaluate the following factors when deciding which eligibility categories and payment groups to use for categorical classifications systems.

Number of Groups

Given the large number of risk groups in some of the categorical risk adjustment systems, you may consider combing groups with similar costs into the same payment group under an IPS approach. (Under the PPP approach, the grouping is necessarily by MCO.) Rank the risk groups according to the PMPM costs you calculated. If the PMPM costs for two risk groups differ by a few dollars, consider combining the risk groups into the same payment group. You can evaluate the impact of combining

risk groups into the same payment group on the explanatory power of the risk adjustment system. Combining the risk groups into a more manageable number of payment groups will not have a significant impact on the explanatory power of the risk adjustment system.

Risk Group 1 PMPM = $70
Risk Group 2 PMPM = $75
Risk Group 3 PMPM = $80
} Payment Group 1 PMPM = $75

Eligibility

You should establish separate payment groups for different eligibility groups. SSI beneficiaries usually have higher medical costs than TANF beneficiaries in the same risk group. You could follow the process described above to collapse risk groups into separate payment groups for SSI and TANF beneficiaries. If the payment groups have significantly different PMPMs when separated by eligibility category, you can consider using eligibility when defining payment groups.

Relative Values

Relative value: *measures the cost of a payment group relative to the cost of the average risk-adjusted beneficiary*

Once you have established the base year costs for your risk-adjusted payment groups or MCOs, you should look at the relationship between them. This can be accomplished by computing the relative value for each group or MCO. The relative value relates the cost for a group or MCO to the cost for the average risk-adjusted beneficiary. That is, relative to the average risk-adjusted beneficiary, how much more (or less) expensive is the cost for a specific payment group? You can compute the average cost for risk-adjusted beneficiaries by dividing the total base year expenditure for risk-adjusted beneficiaries by their member months.

$$\text{Relative Value Payment Group 1} = \frac{\text{PMPM Payment Group 1}}{\text{Average PMPM Risk-Adjusted Beneficiaries}}$$

$$.375 = \frac{\$75}{\$200}$$

This type of relative value calculation allows you to make comparisons across users and between programs. Your rates will differ each year because of inflation, and they will differ between each state because of differences in benefit packages and economic conditions in their health care markets. Although these differences will make it difficult to compare dollars, you can make these comparisons on a relative value basis. Are the relative values for the sickest risk groups similar? How do the relative values compare for the healthiest risk groups? These types of comparisons

are a helpful way to validate your rate calculations. If the relative value differs significantly from year to year or differs significantly from other programs, there may be an error in the programming logic you used to calculate the average costs for your payment groups.

Risk-Adjusting Beneficiaries Using Additive Systems

Additive classification systems based on regressions will generate a risk score for each beneficiary. When computing your base year PMPM costs, you should take the following factors into consideration:

- Determining if you want to either use risk scores that are generated by the grouper based on national data or recalibrate the risk score using your own data
- Merging the scores with the base year expenditure data once the risk scores have been assigned
- Calculating the risk score and the average monthly cost for the average beneficiary
- Computing the average PMPM

Recalibration

You need to decide if you want to use the risk scores generated by the risk assignment grouper, which are derived from national data, or if you want to use your own data to generate the risk scores. If your state has a Medicaid population of a significant size (at least 100,000), you may want to consider recalibrating the risk scores. Risk scores are relative values that measure the effect on treatment costs of the health status of a beneficiary relative to the average beneficiary. Risk scores are calculated by looking at a beneficiary's medical diagnoses or prescription utilization. Each diagnosis (or combination of diagnoses) is assigned a weight based on the average cost to treat patients with that diagnosis in either the same period (PPP) or some future period (IPS).

National weights generated by the risk assignment groupers are constructed using data from a large sample of beneficiaries. The data that were used to develop the national weights may reflect a different benefit package than your managed care program, as well as different economic conditions in the states from which the sample was drawn. As a result, the weight assigned to a diagnosis by the grouper using national data may be different than the relative cost of treating that diagnosis in your state.

National Weights

CDPS national weights are based on a sample of 4 million beneficiaries from 7 states

HCC-DCG national weights are based on a sample of 1 million people

You can recalibrate the weights for each diagnosis by relating the diagnoses from the risk assignment period to the expenditures in the base year period. This recalibration is performed using regressions. Most of the risk assignment groupers provide you with the option of recalibrating the weights using your own data. Refer to the documentation provided by your risk assignment system on the procedures to follow in order to recalibrate the weights.

Beneficiary's Diagnoses	National Weight	State-Specific Weight
Diabetes Type 2 Low	.35	.30
Pulmonary Low	.47	.60
Cardiovascular Low	.50	.80
Risk Score	1.32	1.70

You can evaluate the impact of recalibration by comparing the national weights to the recalibrated weights. Does the recalibration have a significant impact on the risk scores? If the risk scores change, do the changes seem reasonable? You can look at selected subsets of individuals and see if the change in their risk score is consistent with your expectations. If your benefit package excludes mental health services, did the risk scores decrease for beneficiaries with mental illnesses? If your benefit package excludes pharmaceuticals, did you see a reduction in risk scores for AIDS beneficiaries? If the changes in risk scores are significant and consistent with your expectations, consider using the recalibrated weights.

Eligibility Category

You can also determine if you want to make an adjustment for eligibility in your risk-adjusted payments. The additive classification systems factor a beneficiary's eligibility into the calculation of his or her risk score. You can evaluate whether this adjustment is sufficient for your population. Look at the average risk score for TANF and SSI beneficiaries and compute the average PMPM costs. Divide the average cost by the average risk score to determine the average cost for a beneficiary with a risk score of 1 for each eligibility group. Are these costs the same? If there is a significant difference in the costs, you may consider establishing separate payment groups for TANF beneficiaries and SSI beneficiaries.

Average Risk Score

Once you have decided whether or not to calibrate state-specific risk scores and have evaluated the impact of eligibility, you can compute the average risk score for your MCOs or payment groups. You can compare this risk score to prior years and other programs to evaluate the relative health status of your population. The average risk score should change slowly over time unless you have made some significant changes in the eligibility requirements for your program. You would also expect to see similar risk scores for your beneficiaries and comparable beneficiaries in other states. If you observe significant difference in health status, you need to determine if these differences are justified or if there are potential errors in your programming logic. In a PPP approach, the average risk scores should change very slowly over time at the MCO level; if not, the causes of significant change should be investigated and understood before proceeding.

Average PMPM

Normalize: *compute the average PMPM score for a beneficiary with a risk score of 1*

You will also need to compute the average PMPM for each MCO or payment group in the base year. This average will serve as the basis for your capitation payments, which will establish the base year cost for an MCO or beneficiary with the average risk score. You can normalize the cost by dividing the average PMPM by the average risk score to compute the average PMPM score for a beneficiary with a risk score of 1.

$$\text{Normalized PMPM} = \frac{\text{Average Risk-Adjusted PMPM}}{\text{Average Risk Score}}$$

$$\$245.10 = \frac{\$250}{1.02}$$

IPS Non-Risk-Adjusted Beneficiaries

To compute the base year PMPM cost for non-risk-adjusted beneficiaries in an IPS approach, sum their total costs and member months separately for each payment group. Divide member months into expenses to compute the PMPM cost. If you have assigned beneficiaries to different payment groups when their age changed, you have to keep track of the number of months of eligibility for each group.

5.3 Trending From Base Year to Payment Period

As is the case with any payment system, risk-adjusted MCO payments must be projected to reflect inflation and changes in utilization patterns that have occurred between the base year and the payment period. You need to develop trend factors that can be used to trend the base year PMPM to the payment period. You need to understand the interaction of risk adjustment and the underlying causes of trend in health care expenses. You may need the support of an actuary to help you develop these trend factors. The development of trend factors and their application to the base year PMPMs will be dependent on the level of detail that exists in your base year database. The application of the trend factor will also be affected by the type of classification system you selected.

Trend factors: *factors that are applied to a base period to account for changes in inflation and utilization patterns between the base period and the payment period*

5.3.1 Interaction of Risk Adjustment and Trend Factors

There is a fundamental choice in what is included in the trend factors used to project risk-adjusted payments to the future:

- All-inclusive (risk-adjusted) trend factors
- Pure (non-risk-adjusted) trend factors

The difference between these two trend factors is whether they include the cost impact of changes in the composition of the population that is risk-adjusted. Pure trend factors reflect only changes in the general pattern of health care services and prices that affect all patients in the same geographical areas of the state. All-inclusive trend factors also reflect any changes in the composition of the MCO program enrollees according to characteristics that affect their cost of care, including changes in demographic composition, average health status, and so on. Which is appropriate depends on what it is desired to reflect in the trend factors and consistency with the method used to project the average risk scores used in risk adjustment.

Corresponding to the choice of trend factors, there are conceptually two basic methods to project risk-adjusted payment rates that reflect changes in the risk profile of the MCO program.

- Project the average cost per capita of beneficiaries in each eligibility category (independent of any risk adjustment considerations) from the corresponding average cost per capita in the base period, and adjust these by risk adjustment factors that reflect the relative cost of each MCO or payment group.
- Project the payment rate for each MCO or payment group directly from the payment rate for that MCO or payment group in the base period.

The difference between the methods is that the latter will automatically adjust for changes in the risk profile that occur using the IPS approach, and will project changes in risk status to occur in proportion to changes in enrollment shares of MCOs with different average risk scores under the PPP approach. For example, if one of the higher cost IPS payment groups increases as a proportion of the total enrollment and a corresponding decrease occurs in a lower cost payment group, the average payment per capita will increase. Pure trend factors are clearly appropriate in this situation since all-inclusive trend factors would risk-adjust the payments twice. From a policy perspective, the average payment per capita should increase since the average treatment costs of the MCOs will be increased by the shift described. Thus, if the first method is used, all-inclusive trend factors should be used to be fair to the MCOs.[29]

Some states, however, seek to determine the average payment independently of the average costliness of the enrollments, and expect MCOs to adjust.[30] Such states may want to use the first method above with pure trend factors despite the inconsistency and unfairness to MCOs. But implementing this objective presents the practical problem that the distribution by payment group is not known in advance. It is possible to obtain the latest available information concerning the distribution of payment groups from the payment administration systems and project this to the payment period. There will still be uncertainty about the final distribution that will exist during the payment period, which means that the average payment per capita will not be known in advance and hence cannot be made to meet any pre-set average cost per capita exactly.

Under a PPP approach, if the enrollment of an MCO with a higher risk profile increases, and that of another with a lower risk profile decreases, projecting the MCO payment rates directly from the base year will increase the average per capita payment. In this case, it is not clear whether the increase in payment is appropriate. It may be that the enrollment shift reflects more higher cost and fewer lower cost MCO enrollees. But the shift may also be of enrollees who are more expensive than the average of the lower cost profile MCO and less expensive than the average of the higher cost profile MCO. In this case, the average cost profiles of both MCOs should be reduced; continuing the same relative payment will overpay both MCOs. (In either case, any error will be at least partially corrected when the payment year becomes the base year for a subsequent payment year.)

To meet a pre-designated average cost per capita under the PPP approach, changes in enrollment in MCOs with different risk scores must be forecast, and payment rates must be adjusted to offset the change in average payment projected to occur solely as a result of the enrollment changes. If it is desired to project an

[29] There may be problems in explaining the need for an all-inclusive trend factor to state officials and legislatures.

[30] State budget authorities are particularly apt to prefer a method that determines the average payment independent of the risk level faced by MCOs.

anticipated change in the average risk level of the MCO program, this must be done independently (using an all-inclusive trend factor) and used to set the average payment level per capita.

It is helpful to consider each of the cases described above with respect to a recent major change in the Medicaid program that affected the average risk level. The change from AFDC to TANF provides such an example. In many states, TANF reduced the proportion of Medicaid eligibles who were receiving cash benefits and thus were automatically enrolled in Medicaid. Without automatic enrollment, a lower proportion of eligibles who are not receiving medical services are enrolled in the program, increasing the average risk level of those who are. Under the IPS approach, projecting the payment rates for each payment group directly from the base period using pure trend factors would have adjusted the payment level in a way that reflected the program change. Under a PPP approach, an all-inclusive trend factor was needed to adjust the overall payment level for the increase in the average cost of health care attributable to TANF.

5.3.2 Category of Service Trending

When developing your base year database, you can either retain cost and utilization data by category of service or total cost data. If you retain detailed expenditure and utilization information, you can apply trend factors separately for each category of service. If you only retain total costs, then you will have to compute an average trend factor to trend total costs. The average trend factor will be a weighted average based on the percentage of total cost that each category of service represents.

Category of service trends can be used to trend unit costs and utilization in the base year separately for each category of service. For each payment group, calculate the average unit cost and the average utilization PMPM in addition to the average PMPM cost for that category. If calculated correctly, the unit cost times the average utilization PMPM will equal the average PMPM cost.

$$\text{Average Unit Cost} = \frac{\text{Total Dollars}}{\text{Total Service Units}}$$

$$\text{Average Utilization PMPM} = \frac{\text{Total Units}}{\text{Total Member Months}}$$

Service unit: *The unit of payment for a category of service (e.g., visit, day, admission)*

Take the base year unit cost and apply unit cost trend factors that reflect the change in the price of the service to trend the base year unit cost to the rate period.

$$\text{Payment Period Unit Cost} = \text{Base Year Unit Cost} \times \text{Unit Cost Trend Factor}$$

$$\$125 = \$100 \times 1.25$$

The utilization trend factor is applied to the average utilization PMPM in the base year to project average utilization PMPM during the payment period.

Payment Period Utilization PMPM = Base Year Utilization PMPM x Utilization Trend Factors

.33 = .3 x 1.10

Once the unit cost and average utilization PMPM have been trended, they can be multiplied to determine the average cost PMPM in the rate period.

Payment Period PMPM = Payment Period Unit Cost x Payment Period Utilization PMPM

$41.25 = $125 x .33

5.3.3 Total Cost Trending

To trend the total cost for a payment group, you will have to compute a weighted average trend factor. You have to compute category of service weights that equal the percentage of total costs accounted for by each category of service. For each category of service, you will need to compute a PMPM trend factor that combines the impact of the unit cost and utilization trends. The category of service specific PMPM trends are then weighted using the category of service weights to compute an overall PMPM trend. This PMPM trend can then be applied to the base year average cost PMPM to compute the average cost PMPM in the rate period.

Weighted Average Trend Factor: *an average that adjusts for the relative importance of each category of service*

Weighted Average Trend Factor = [(Category 1% of Expenditures) (Category 1 Trend Factor)] + … + [(Category N% of Expenditures) (Category N Trend Factor)]

Category of Service	% of Total Expenditure	PMPM Trend Factor
Inpatient	30%	1.10
Outpatient	25%	1.05
Pharmacy	20%	1.20
Long-Term Care	5%	1.05
Lab & X-ray	5%	1.05
Other	15%	1.08
Weighted Average Trend Factor =		1.0995

Trending Categorical and Additive Classification Systems

Categorical Classification Systems

Categorical classification systems will result in the assignment of beneficiaries to MCOs or payment groups. If assigned to MCOs (i.e., using a PPP approach), the trend factors must be applied at the MCO level (perhaps separately for different categories of eligibility) and will not reflect any overall change in the program-wide risk unless this is incorporated into the trend factors (i.e., using an all-inclusive approach). Under IPS, the payment rate for risk-adjusted payment groups and demographic payment groups can be trended directly. If so, applying trended payment rates will reflect changes in the overall program-wide risk (within each eligibility category). Alternatively, the relative risk scores for each payment group can be applied to the projected average cost per capita of risk-adjusted enrollees in the payment period. But the latter should be trended using an all-inclusive trend factor.

In either case, you can use either category of service or total cost trending, depending on the detail in your base year expenditure database. The resulting trend factors should differ from each risk-adjusted payment group depending on the mix of categories of services utilized by the beneficiaries in each group. Multiply the base year data by the appropriate trend factors to compute the PMPM cost by payment group for the rate period.

Additive Classification Systems

The same choices of trending methods apply to additive classification systems. If the risk assignments found in the base period are applied to an average program-wide cost per capita in each eligibility category, the trend factors must necessarily reflect any changes in the average program-wide risk status during the projection period. Alternatively, under an IPS approach, risk-adjusted payment rates can be trended to the payment period using pure trend factors. You may wish to consolidate the individual risk scores assigned by an additive classification system for trending purposes. These beneficiaries will either be assigned to one MCO or payment group for all beneficiaries or a subgroup of beneficiaries based on category of eligibility and/or age. The risk score for each payment group will then be trended to the payment period using a pure trend factor (since the change in overall risk will be reflected by the proportions in each payment group found in the payment period).

5.3.4 Development of Trend Factors

A variety of data sources can be used to develop your trend factors. If you have an existing FFS program, you can use this experience to develop trend factors from the base period to the most recent period for which complete data are available. If you do not have FFS data, you can use encounter data and MCO financial data to develop trends. You can also use FFS data from other states in your region, as well as surveys of health care inflation.

The process of developing trend factors is a complicated task for which you may wish to retain a qualified actuary. Your staff can prepare the historical data and prepare the data for the actuary to analyze. This process involves preparing the FFS data, encounter data, financial reports, and other state and survey data.

FFS Data

Prepare monthly files that summarize cost and utilization by payment group. For each category of service, compute the total expenditures and total number of service units for each month. Also include the number of eligible months for each payment group. Your expenditure and utilization data should only include services covered in your benefit packages. Only include member months for beneficiaries eligible to enroll in managed care. These files can then be used to compute unit cost and utilization per member per month.

Encounter Data

Prepare monthly files that summarize expenditure and utilization by payment group. Your encounter data should only include covered benefits and eligible beneficiaries, unless there has been a change in your managed care program. Prepare monthly files up to the last month that is complete. You also need to include monthly counts of the number of member months by payment group.

Financial Reports

Your MCO financial reports can be used to evaluate the annual inflation experienced by the MCOs. Depending on your reporting system, you may be able to evaluate their experience at the category of service and payment group levels of detail. If detailed information is not available, you can at least look at the overall rate of inflation experienced by the MCOs.

Other Data

A host of data may be available from within the state that reflects the health care market that the MCOs face. For example, many states have state agencies that keep track of hospital costs. Comprehensive data

relating to the cost to provide services may be available from industry or association sources, or from the Medicare program. In addition, your actuaries may have access to FFS data from other states. These data can serve as an additional benchmark of inflation for the health care sector in your region. Surveys of major insurers may be used to evaluate the rate of growth in managed care premiums as contracts are renewed. This growth in premiums will be an indicator of the health care inflation experience in your region.

5.4 Managed Care Adjustments

If your base period costs were derived from FFS data, managed care adjustments can be used to modify your trended base to reflect the expected cost experience of the MCOs. This may not be necessary if your rates were constructed using encounter data. The managed care adjustments account for differences in unit cost and utilization patterns between FFS and managed care.

Specific managed care adjustments are mandated by some states. In other states, the objective is to adjust from another basis to rates commensurate with the relative cost to provide care through an MCO to a Medicaid enrollment. Managed care adjustments can be made for all services combined or, more accurately, by type of provider and/or service. In each case, adjustments can be made separately for:

- The effects of negotiating lower unit costs for services and managing the average utilization per enrollee
- All enrollees, or different types of enrollee

You should seek the advice of an experienced managed care actuary when making these adjustments, especially if your state requires that the resulting rates be "actuarially sound."

To apply managed care adjustments, start with the trended unit cost and utilization PMPM by category of service for each payment group. Compare these unit costs and utilization amounts to each MCO's financial reports. How do the unit costs compare to the MCO's experience? For some services, the MCO may pay its providers more than in FFS. For other services, the MCO may be able to negotiate discounts from providers. You can apply adjustments to your FFS unit cost to represent the actual MCO experience.

Managed care will also affect the utilization patterns of your beneficiaries. MCOs are usually able to reduce inpatient utilization below FFS levels. An emphasis on primary care usually results in higher physician utilization. FFS utilization can be compared to the MCO's experience to develop managed care adjustment factors from each category of service. An additional managed care adjustment can be applied for administrative cost. The MCO financial reports will give you the

administrative overhead costs of the MCOs. You will need to decide how to include administrative costs in your capitation rates.

5.5 Rate Impact

When your rate setting process is complete, you will need to compare the new rates to the old rates to assess the impact on the MCOs' revenues and the state's budget. You have made many choices about the structure of your payment system, carve-outs, trend factors, and managed care adjustments. In the end, the impact must be reasonable. If your rates decrease by 25 percent, it is likely that all of the MCOs will leave your program and you will no longer have a managed care program. On the other hand, if your rates increase by 25 percent, the legislature may eliminate your managed care program if they feel that they can no longer afford it. You also need to evaluate the impact on each MCO. Will some MCOs prosper while others go bankrupt?

If your analysis shows that the risk-adjusted rates will result in a significant increase or decrease (either overall or on an MCO basis), consider phasing in the rates. You could use a blend of risk-adjusted rates and demographic rates. You could also place limits on the change in the average rate and phase in the rate change over a period of time. For example, you could limit the MCOs to a 7 percent increase or decrease the first year and increase the limits to 10 or 12 percent in the second year. These strategies will give the MCOs some time to adjust to the new methodology and hopefully retain MCO participation in your program.

State Experience:
Rate Setting

At CMS's fall 2001 risk adjustment forum, states discussed various rate setting strategies. Following are some of their comments and suggestions for success:

- Establish a reasonable base rate before adjusting for risk or trends.
- Work with the MCOs to earn their trust and acceptance of the rates.
- Establish a healthy partnership with MCOs by talking monthly.
- Use average MCO score to reduce data requirements and resources.
- Use national weights to minimize workload without significantly compromising results.
- Recalibrate annually.
- Do monthly case mix calculations with budget neutrality normalization to provide for risk adjustment immediately reflecting changes in enrollment size or beneficiary risk mix.
- Develop an approach that is easy to implement – do not include many carve-outs of services or enrollees.
- Phase in risk adjustment slowly to allow for getting used to the data flow and the quarterly revenue fluctuations.

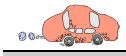
Additional rate setting information can be found in the state presentations (Appendix C), the survey responses (Appendix E), and the article abstracts (Appendix F).

Chapter 6: MMIS Issues

In This Chapter

- Additional modifications
  - MCO capitation payments
  - Benefit package
  - Reporting systems
  - Ease of MMIS implementation

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates



Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

A managed care program requires your MMIS to perform many functions that are not necessary under a FFS program. You have to be able to identify enrollees in managed care and the MCO in which they are enrolled. You need to be able to assign the appropriate capitation rate for each enrollee. You also need to develop programming logic to identify services that should be paid for in the FFS program that are not part of the MCO's benefit package. In addition, you may want to enhance your reporting systems to provide additional reports to monitor the performance of your managed care program.

To implement a risk-adjusted payment system, you will need to make some additional modifications to your MMIS. The extent of these modifications will be determined by the choices that you made when you defined your payment system (see Chapter 5). The areas that you will need to modify in your MMIS in order to implement a risk-adjusted payment system are described in the following sections.

6.1 MCO Capitation Payments

In order to make the correct capitation payments, your MMIS must be able to:

- Identify the enrollees in MCOs. Further, your system must be able to identify the MCOs in which the enrollees are enrolled, and the period of time for which they were enrolled.

- Assign the enrollees to the appropriate payment group. The system must distinguish between risk-adjusted enrollees and non-risk-adjusted enrollees. For risk-adjusted enrollees, the system must be able to assign each enrollee's risk-adjusted payment.

The system requirements to deal with these tasks are described in the following sections.

6.1.1 Enrollment

Implementing a risk adjustment system alone will not have a major impact on your current managed care enrollment process. The procedure to enroll a beneficiary in an MCO should stay the same, regardless of whether the beneficiary is in a risk-adjusted payment group or not. After implementing a risk adjustment system, however, there are a few aspects of your enrollment process that you may want to evaluate, such as enrollment lag, auto assignment, and the disenrollment process.

Enrollment Lag

Enrollment Lag: *the average length of time between being approved for Medicaid and enrolling in an MCO*

During your rate setting process, you may have decided to remove the expenditures incurred during the initial period of eligibility. The enrollment lag is the average length of time between being approved for Medicaid and enrolling in an MCO. The enrollment lag should be evaluated on an ongoing basis. If changes in the enrollment process alter the length of the enrollment lag, the new eligible adjustment should be revised accordingly.

Auto Assignment

If your state has a mandatory managed care program, your enrollment process includes an auto assignment algorithm. This algorithm automatically assigns Medicaid beneficiaries (who have not selected an MCO within a predefined period of time) to an MCO.

The auto assignment algorithm may use several parameters to select the MCO in which the beneficiary will be enrolled. Auto assignment parameters may include existing provider-beneficiary relationships, providers who have traditionally served Medicaid beneficiaries, network membership, network capacity, family member enrollment, quality indicators, enhanced services, and competitive capitation rates. With a risk adjustment system, you should reevaluate the parameters to make sure that they are not affecting the risk distribution of participating MCOs. You want to ensure that all of the sickest beneficiaries are not being enrolled in one MCO and the healthiest beneficiaries in another. The risk adjustment

system will allow you to evaluate the health status of the beneficiaries auto assigned to each MCO. You can assess their risk groups/scores to make sure that there is no bias in the system.

Disenrollment Process

When MCOs leave your managed care program, their enrollees are typically disenrolled and subsequently enrolled in one of the remaining MCOs. When MCOs leave, enrollees are typically given the opportunity to select a new MCO, and those who do not choose are auto assigned. This process may have a considerable impact on the health status of the enrollment of the remaining MCOs. These MCOs could receive a large number of enrollees who, on average, are healthier or sicker than their current enrollees. This disenrollment process may have significant payment implications as discussed below.

As enrollees are assigned among the remaining MCOs, you want to ensure that each MCO's reimbursement reflects the health status of its new enrollment. Depending on your payment system, either MCO payments will adjust automatically, or you may need to update the payment to reflect changes in the MCO's average risk. For instance, if MCOs are paid on an individual basis using a categorical classification system, their payment will automatically adjust when their payment group distribution changes. The same is true for additive classification systems when individual payments are based on the risk score of each enrollee.

If MCOs are paid on a plan level basis, their payment will change when their average risk scores and average payment rates are updated. When defining your risk adjustment system, you also defined the time period used to update risk assignments and payments. If the next update will not be performed for several months, you may want to consider updating the average payment rate. Individual risk groups/scores could remain the same, but the MCO payment could be modified to reflect its new risk distribution.

6.1.2 Assignment to Payment Group

In order to implement health-based risk adjustment, your MMIS must be able to assign enrollees to the correct payment group. The system will need to distinguish between risk-adjusted and non-risk-adjusted enrollees. The system will also need to keep track of the risk group/score for risk-adjusted enrollees. Finally, the system will need to assign the correct capitation rate to each payment group. If you are going to have both risk-adjusted and non-risk-adjusted payment groups, your MMIS must be able to assign an enrollee to the appropriate category. Assignment to these two groups is usually based on eligibility. The rule used to

assign an enrollee to the correct group should be consistent with the criteria used when defining your payment system. These criteria are explained in Chapter 5.

Risk-Adjusted Payment Group

Once you have identified your risk-adjusted enrollees, you have to assign them to the appropriate payment group. This assignment must mirror the payment structure and rate development process described in Chapter 5. The following decisions you made when defining your payment structure will affect this assignment.

MCO vs. Individual Payment

Are you going to make payments on an MCO basis or an individual basis? If payments are made on an MCO basis, your MMIS only needs to maintain the average capitation rate for each MCO. Once identified, each risk-adjusted enrollee in each MCO will receive the same payment. If you are going to make individual payments, the system needs to maintain the risk group/score for each individual in order to determine each individual's payment.

Additive or Categorical Classification System

The type of risk adjustment system you are using also affects your payment group assignment. With categorical classification systems, you will have assigned each enrollee to a risk group. You may have combined the risk groups into a smaller number of payment groups. Therefore, your system needs to keep track of the risk group assignment for each enrollee, as well as the algorithm to translate the risk group into a payment group. Alternatively, the assignment of risk groups into payment groups could occur on another computer system, in which case the MMIS would only have to maintain the final payment group assignment for each enrollee.

For additive classification systems, you need to maintain the risk score for each enrollee. If you make individual level payments, you will need this score to determine each enrollee's risk-adjusted capitation payment. Alternatively, if you make MCO level payments, you will need the individual risk scores to determine the average risk score and payment for each MCO. The average risk score and payment rate could also be calculated on another computer system, in which case the MMIS would only need to store the average payment rate for each MCO.

New Eligibles

When defining your payment system, you needed to decide how to pay for risk-adjusted enrollees who did not qualify for a risk assignment during

the risk assignment period. New eligibles in a risk-adjusted eligibility category will not have a risk group/score that can be used to make risk-adjusted payments.

If you are making MCO level payments, new enrollees could be assigned the average risk score and average risk-adjusted capitation rate for the MCO. Alternatively, you could assign these enrollees a demographic rate cell as discussed in Chapter 5.

If you are making individual level payments, these enrollees will not have a risk group/score assignment. These enrollees could be assigned to a demographic payment group. Alternatively, for additive classification systems, you could assign new eligibles the average risk score for the MCO in which he or she is enrolled. For categorical classification systems, you could create a separate payment group for new eligibles and compute a capitation rate equal to the average capitation rate for the MCO. The average capitation rate would be calculated based on the distribution of enrollees across the risk-adjusted payment groups.

Duration of Risk Assignment Updates

An enrollee's risk assignment is only valid for the duration of the assignment period you specified when defining your risk-adjusted payment system. If risk assignments are updated annually, an enrollee's risk assignment may be valid for the entire payment period. If risk assignments are updated quarterly, an enrollee may have four different risk assignments during the payment period. Your MMIS must be able to determine which risk assignment to use for each payment month.

In order to ensure that the correct risk assignment is used, you can consider two approaches when storing the risk group/score on your system:

- Each risk assignment could have a begin date and an end date. The MMIS could then search the enrollee's risk assignments to determine the correct assignment to use for each month.
- The MMIS could store the current risk assignment for each enrollee. As risk assignments are updated, the new risk assignments would override the previous ones. If an enrollee does not receive an updated risk assignment, the previous risk assignment must be erased to avoid its continued use. In this situation, the enrollee's payment would be determined by the rules you established when defining your payment system for enrollees who do receive a risk assignment.

6.2 Benefit Package

You may decide to modify your benefit package in conjunction with implementing a risk-adjusted payment system. For example, a state that carved

out pharmacy benefits prior to adopting a risk-adjusted payment system may choose to add this benefit back in when changing to a risk-adjusted payment system. When you initially started your managed care program, you may have decided to carve out selected services. Services that are carved-out of the managed care program are paid through the Medicaid FFS program. Your MMIS needs to have programming logic to evaluate FFS claims received for enrollees in an MCO. It must be able to distinguish between carve-outs and services covered under the MCO's benefit package. Fee-for-service claims for carve-outs should be paid, and claims for services covered under the MCO's benefit package should be denied. This logic must be updated whenever your benefit package changes.

6.3 Reporting Systems

MMIS reporting systems provide information on the number of managed care enrollees, managed care payments, and FFS payments for carve-outs. You will need to modify your MMIS reporting systems to generate any additional reports that may be required to monitor your risk-adjusted payment system. The changes required will be determined by the number and complexity of new reports you request.

Your reporting system should, at a minimum, provide you with payments and the number of enrollees by payment group, by MCO, for each service month. This will allow you to track enrollment, the number of risk-adjusted enrollees, and the average PMPM. In addition, reports on average risk scores and risk group distribution will allow you to monitor the health status of each MCO's enrollees.

When deciding on new MMIS reporting requirements, you should evaluate the current demands being placed on your MMIS, the cost of generating the new reports, and the time required to prepare the new reports. Alternatively, you may be able to use capitation claims paid by your MMIS to generate the new reports by using one of your other computer systems. You will have to evaluate the cost and capacity of using alternative computer systems versus using your MMIS.

6.4 Ease of MMIS Implementation

One of the factors that should influence the design of your risk-adjusted payment system is your MMIS's capacity to handle changes. States use several approaches when administering their MMIS. Some states directly employ the staff that administer the MMIS, while others use contractors. States that work with contractors normally define and schedule projects that alter the operations of the MMIS. The MMIS's ability to address new projects depends on the number of projects previously requested. The number of projects currently scheduled is also an issue when working with internal MMIS staff.

If your ability to make changes to your MMIS is limited, consider a design that will have minimal impact. For instance, a system that makes MCO level payments

will be relatively easy to implement. The average risk-adjusted payment rate will have to be computed for each MCO in your rate setting process. Paying the same MCO level rate for all enrollees based on the average risk score of each MCO only requires one new billing code to be added to the MMIS.

A categorical classification system with a limited number of payment groups would be slightly more difficult for your MMIS to implement. The system would have to retain the payment group assignment for each enrollee. New billing codes would have to be created for the new risk-adjusted payment groups. The level of effort required to make individual payments based on risk scores is slightly higher. The risk score would need to be stored for each enrollee, and individual payments would need to be computed.

Your MMIS staff need to be involved at an early stage in the planning process to allow sufficient time for implementation.

It is best to discuss these approaches with your MMIS staff and get their ideas about the system changes required for implementation. The current demands being placed on the system may influences your choices. There will be obvious, serious consequences if your system makes inaccurate payments or is unable to make risk-adjusted payments in a timely fashion.

State Experience:
MMIS Issues

At CMS's fall 2001 risk adjustment forum, states were asked about their experiences with MMIS. The following are some of the key issues:

- Develop a good reporting system using encounter data.
- Storing individuals' risk assignments on MMIS complicates implementation.
- Keeping risk adjustment separate from MMIS allows for quicker development of the system and easier updating/modifications.
- The MCO profile method allows risk adjustment to be implemented without MMIS involvement.
- Most states made no modifications to their MMIS. If they did, the modifications took less than a day.
- A challenge experienced by many states is that the MMIS and staff are accustomed to claims data, not encounter data.
- Many MMISs are designed for claims data, so it is necessary to agree on data standards.

Chapter 7: Financial Reporting System

In This Chapter

- Payment groups
- Category of service reporting
- Actual and estimated expenditures
- Reporting lag
- State experience

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Requiring regular financial reports from MCOs provides states with information about the financial health of their MCOs and also provides an important tool to evaluate the adequacy of capitation rates. With more information provided in the reports, you will be better able to compare MCOs. Detailed financial information will allow you to identify factors that contribute to variations in financial performance among MCOs. In addition, as FFS data are replaced by encounter data, MCO financial reports will play a larger role in both the rate setting process and validation of encounter data.

When you implement health-based risk adjustment, you should evaluate the financial reports you require of your MCOs. You need to determine if the current financial reporting system provides you with enough detail to evaluate the impact of risk-adjusted payments on the MCOs' financial performance. Specifically, you need to be able to determine how much money the MCOs are either making or losing on their Medicaid contracts. The following sections outline factors that you should consider if you need to revise the financial reports you require of your MCOs.

7.1 Payment Groups

The MCOs' financial reports should provide expenditure information separately for subsets of their enrolled population. Ideally, medical expenses should be reported separately for each payment group. This will enable comparison of the

MCO expenses for a payment group with its capitation rate. Depending on your payment system (categorical or additive) and the number of payment groups you have defined, this level of detail may be impractical for the MCOs to report, or it may not be detailed enough for you to analyze.

7.1.1 Categorical Payment Systems

Payment group reporting may be impractical for categorical payment systems. In the case of ACGs, if you established separate payment groups for each risk group, the MCOs would then have to report expenses for over 200 payment groups. This level of detail may be impractical for MCOs to report and for you to analyze. You should consider combing the groups into a more manageable number. If you have already combined risk groups into payment groups, you should be able to use the payment groups you defined. Requesting expenditures for 20 to 50 payment groups is less burdensome on the MCO and is sufficient to identify trends. There should also be enough enrollees in each group so that the MCO's expenditure for each group will be consistent from year to year.

7.1.2 Additive Payment Systems

With additive payment systems, you are either making payments on an individual basis using individual risk scores, or on an MCO basis using the average risk score. You will need to select a manageable number of payment groups between these two extremes for the MCOs to report. You should require information for each category of eligibility and for different age groups.

7.2 Category of Service Reporting

You will have more insight into the financial performance of your MCOs if you collect their expenditures at a category of service level. This will enable you to make comparisons between their actual expenditures for each category of service and the funding included in the capitation rate for each category of service. The more categories of service included in the MCO's report, the more comparisons you will be able to make. This will help you identify services where the actual payment experience differs from the funding included in the capitation rates.

A problem with requesting detailed expenditures by category of service is getting the information reported consistently by all MCOs. MCOs will have different methods of categorizing services within their internal accounting systems. The finer the level of detail you request, the greater the chance that they will define the service differently from you and from other MCOs. For accurate comparisons, definitions for major categories of service should be as consistent as possible. Certain categories of services, such as inpatient, outpatient, home health, and pharmacy, are more likely to be consistently defined by all MCOs. Subcategories, such as primary and specialty physician services, are more likely to have different definitions.

To ensure consistent reporting for subcategories of services, all MCOs need to use common definitions. You may benefit from working with the MCOs to develop the definitions. For MCOs to comply, it is necessary for information on the correct definitions to be available on their systems.

7.3 Actual and Estimated Expenditures

The MCOs' financial reports for recent periods will include a combination of actual and estimated expenditures. The MCOs will include actual expenditures based on bills that have already been paid. The MCOs will also include a projection for services that their enrollees received but for which they have not yet made payments. This projection is based on bills that are currently in their possession that have not yet been processed, and an estimate of outstanding bills that have not been submitted to the MCOs.

The speed with which MCOs process bills for service and the methods for developing projections of unpaid claims will vary. You will gain better insights into their financial performance if you can separate actual expenditures from projected expenditures. In order to be conservative when estimating their financial performance, the MCOs have to make sure that they do not underestimate their outstanding claims. In actuality, this conservative approach tends to overestimate the value of their outstanding claims. By requesting that this information be separately identified, you can do your own evaluation of whether the MCOs' projections of unpaid claims are overstated.

7.4 Reporting Lag

The relationship between actual expenditures and projected expenditures will depend on the time lag that exists in your reporting system. If you want the MCOs to submit a financial report for CY 2001 by March 1, 2002, they will have a substantial volume of unpaid claims. Their report will probably only include claims paid by January 30, 2002 for services provided in CY 2001. Many of the services provided to their enrollees during the end of CY 2001 will still be unpaid and they will have to estimate the value of these services.

Reporting Lag: t*he time lag between the provision of services and claims being paid by the MMIS*

With a six-month lag to report expenditures, the relationship between actual and projected expenditures will change significantly. By June 30, 2002, most of the claims for CY 2001 will have been processed. When deciding on the length of the reporting lag, you need to consider your need for timeliness versus accuracy. The shorter the lag, the more current the reports will be. The longer the lag, the more accurate the reports will be.

It may be possible to achieve both objectives (timeliness and accuracy) by requiring the MCOs to submit two reports. An initial report could be submitted

three months following the end of the reporting period to gain a timely picture of their financial performance. A final report could be submitted one year after the end of the reporting period, after all of their claims have been paid, to gain a more accurate insight into their financial performance.

7.5 State Experience

The states that are currently making risk-adjusted payments have modified their financial reports to collect expenditures on their risk-adjusted payment groups. The level of detail collected varies among states as their risk adjustment systems and payment systems differ. Some examples of financial reports used by the states are provided in Appendix B. See Appendix E for an overview of financial reporting information obtained from the survey.

State Experience:
Financial Reporting

At CMS's fall 2001 risk adjustment forum, states were asked about financial reporting. The following are some of their comments:

- Clearly define financial reporting requirements in the MCOs' contract. This will help obtain comparable reports.
- Develop a data dictionary that clearly defines all data elements that you are looking for.
- Monitor financial reports from period to period to identify problems.
- One state's actuaries provide a list of procedures to include in each category of service, which allows a greater opportunity to compare between MCOs.
- At minimum, a profit/loss statement is needed for the Medicaid line of business for the MCOs. However, because this may be a new requirement for the MCOs, they may have difficulty complying.
- One way to validate financial reports is to examine the data by rate cell and compare financial reports to the encounter data reports.
- Make sure you have the infrastructure in place to analyze, audit, and validate the reports.
- Requiring and isolating category of eligibility on the financial reports will help with analysis.
- States reported that they receive financial reports at a frequency of anywhere between one and six months.
- On-site reviews allow you to examine what is reported and challenge what MCOs are doing.

Chapter 8: Forecasting Medicaid Payments with Risk-Adjusted Payment Systems

In This Chapter

- Capitation projections
- Monitoring capitation payments

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Adopting a health-based risk adjustment system may have minimal or no impact on your Medicaid budgeting system. The impact on your budget process will depend on how you implement your risk adjustment system. If you make payments at an MCO level, your budgeting process could be unaffected. If you make payments at an individual level, your budgeting process will probably be slightly more complex. The frequency with which you update your risk assignments can also have forecasting implications. This chapter discusses some of the ways in which a risk adjustment system affects your budgeting process.

Your current budgeting process probably develops separate projections for your capitation payments and FFS payments. Your capitation projection estimates the payments for all enrollees in your MCO program. Your FFS projection estimates the cost of caring for beneficiaries who are not enrolled in managed care and the cost of services that are excluded from your managed care benefit package. Adopting a risk adjustment system should have no impact on your FFS projections, but you should reevaluate the methods employed to develop your capitation projections.

8.1 Capitation Projections

Your capitation projections are driven by two factors: the number of enrollees and your capitation rates. You must be able to accurately project your enrollment and payment rates. Because risk adjustment systems may potentially impact both of these projections, you must make sure that the process used to develop these projections is consistent with the operation of your payment system.

8.1.1 Enrollment Projections

Your enrollment projections should estimate enrollment by category of eligibility because capitation rates vary significantly by category of eligibility. If you only risk adjust some of your enrollees, category of eligibility projections will allow you to distinguish between risk-adjusted and non-risk-adjusted enrollees.

Your enrollment projections should reflect changes in:

- Medicaid eligibility rules that will increase/decrease the number of eligibles
- The number of participating MCOs
- The counties to be served by MCOs

Your final enrollment projection should be an estimate of the number of enrolled months during the budget period for each category of eligibility. You should develop these projections for your entire managed care program and also develop individual estimates for each MCO. The MCO projections will help you evaluate the impact that rate changes will have on each MCO.

MCO financials are discussed in Chapter 9

8.1.2 Payment Rate Projections

In order to predict your capitation payments, you must project the average capitation rate that will be paid during the budget period. Several factors will affect this average capitation rate and must be accounted for in the development of your rate projections. These factors (described below) are rate cycle, payment groups, and risk assignments.

Rate Cycle

The relationship between your rate setting cycle and your budget period will affect your rate projections. If you have already set the capitation rates that will be in effect during the budget period, those rates can be used to develop your projections. If you have not already set the capitation rates for the budget period, you will need to project what the rates will be in the budget period by using your current capitation rates adjusted for expected rate increases. If possible, you should coordinate your rate setting cycle and budgeting cycle so that the rates are calculated prior to developing your budget estimates. Developing the budget prior to setting your capitation rates may place some restrictions or expectations on the rate increase for the next rate cycle.

Payment Groups

To estimate your average capitation rates, you will need to estimate the number of enrolled months for each payment group. If you only risk adjust a portion of your

enrollees, you will need estimates for the risk-adjusted enrollees and the non-risk-adjusted enrollees. For risk-adjusted enrollees, you will need estimates of enrolled months for each payment group. If you make payments at an MCO level, you will need to estimate the number of enrollees in each MCO because the average payment rate will differ by MCO. If you make estimates at an individual level (using a categorical classification system), you will need estimates of enrolled months for each payment group. The distribution of enrollees across payment groups and MCOs will affect the average capitation rate.

Risk Assignments

Your rate projections will also be affected by updates in your risk assignments. Your rate projections will be most accurate if you use the risk assignments that will be in effect during the budget period. If the risk assignments will change before or during the budget period, you will have to factor in the impact of the risk assignment updates on the average capitation rate. You may want to simulate the effect of the risk assignments during the budget period. This can be done by making simulated risk assignments for a time period that is as close as possible to the actual time period used to make risk assignments during the budget period.

Budget Neutrality: *holding the average risk score constant when risk scores are updated*

Budget Neutrality

Any budget neutrality provisions that are included in your payment system will affect the impact of risk assignment updates on your rate projections.

Some states have included a budget neutrality feature that requires the risk updates for the entire population to remain budget neutral. *This means that the average risk score for the enrolled population is unchanged by risk assignment updates, but the payments to individual MCOs may rise or fall, depending on how their enrollees' risk assignments changed.*

Other states have not included a budget neutrality provision. *This means that as risk assignments are updated, the total amount of money paid out increases or decreases as the average risk score of the enrollees increases or decreases.*

Including a budget neutrality provision reduces the budget uncertainty associated with risk assignment updates but may result in payment inequities because it "ignores" changes made to the risk assignments of the enrolled population. You have to decide if changes made to enrollees' risk assignments are accurate measures of changes in the their health status, or if they are the result of data and coding issues that have affected risk scores. You will have to make this assessment based on your discussions with the MCOs and your analysis of encounter data completeness.

8.1.3 Capitation Forecast

Once you have forecasted your enrollment and average capitation rates, you can combine these forecasts to project your capitation payments. You can do this by multiplying the projected enrolled months for each category of eligibility by the average capitation rate for the category.

> Capitation Payment = Projected Enrolled Months x Average Capitation Rate

The challenges you will face when making these projections will depend on the complexity of your payment system. If you make MCO level payments with budget neutral risk assignment updates, developing the forecast should be relatively straightforward. Individual payments with quarterly risk assignment updates and no budget neutrality provision will require a more complicated forecasting approach because you will also have to predict the changes in the average risk score.

8.2 Monitoring Capitation Payments

Your capitation projections can be monitored during the year using your MMIS reporting system. Track the number of enrollees, average capitation rate, and total payments by category of eligibility. Identify discrepancies between actual and projected payments. Determine if observed differences result from variances in enrolled months or average payment rates. Try to identify the factors that are contributing to the differences so you can modify your forecasting procedures for the following budget cycle.

State Experience:
Budgeting Issues

At CMS's fall 2001 risk adjustment forum, states were asked what budgeting issues they have encountered. The following are some of the key points:

- Provide managed care information seminars for Medicaid budget personnel to help them understand specific managed care issues.
- Develop good models to project enrollment.
- Normalize rates to a statewide average to eliminate much uncertainty.
- Use the budget to establish rates; alternatively, if you set rates before you establish the budget, you will have a better idea of how much money to build into the budget for rates.
- Some states use their actuaries to develop the budgets.
- Work with the state legislature to accurately project inflation.
- Anticipate potential problems if service utilization increases.
- Anticipate potential problems if an MCO leaves the program. For example, if a lower paid MCO leaves and a higher compensated MCO adopts its enrollment, your payment may be higher.
- Monitor payments on a monthly basis to see how the payments correspond to the budget projections.

Chapter 9: Simulating and Monitoring MCO Revenue

In This Chapter

- Simulating MCO revenue
- Monitoring MCO revenue

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

When you first implement a health-based risk adjustment system, participating MCOs will be uncertain about the effect that the system will have on their financial performance. You can reduce this uncertainty by working closely with the MCOs to help them understand the impact that health-based risk adjustment will have on their premium revenue. Using the risk assignments you made for the MCOs' enrollees and the payment rates you calculated, you can estimate the impact that the methodology will have on their revenue. These estimates will be especially important when the methodology is first implemented, but will also be valuable each time the payment rates and/or risk assignments are updated.

When you implement health-based risk adjustment, it is also important that you monitor the MCO's financial performance. You should monitor each MCO to evaluate the impact of the methodology on its revenues. Methods for simulating MCO revenue and monitoring financial performance are described in the following sections.

9.1 Simulating MCO Revenue

You can prepare revenue simulations for each MCO using your capitation rates and each MCO's payment group distribution.

The payment group distribution should be based on the MCO's current enrollees and the risk assignments that will be used for the payment period.

Revenue simulations should be prepared during your rate setting process in order to understand the impact that your capitation rates and risk assignments will have on MCO revenue. Rate simulations should also be prepared each time you update your risk assignments and payment rates. The level of complexity you face when preparing rate simulations will depend on your payment system. The simulations should be easier to prepare if you make MCO level payments than if you make individual level payments.

MCO Enrollment

The first step to preparing revenue simulations is to assign enrollees to an MCO. For future payment periods, you will have to base an MCO's projected enrollment during the payment period on its current enrollment. Look at the MCO's current enrollees and assume that they will be representative of enrollment during the payment period. Evaluate MCO enrollment using the most current, complete month possible. A one- or two-month lag should give you an accurate representation of an MCO's enrollees.

Risk Assignments

When preparing your revenue simulations, you should use the same risk assignment period that will be used to make payments. Determine the risk assignment for each enrollee who meets your eligibility criteria during the risk assignment period as discussed in Chapter 2. These assignments can then be combined with the MCO enrollment information to determine the risk profile for each MCO.

During your initial implementation, your risk assignments will probably be based on historical FFS data. Over time, you will transition from FFS data to encounter data as the source for making risk assignments. When you switch to encounter data, you should consider preparing several revenue simulations using the same risk assignment period to monitor the impact data completeness has on risk assignments. You could prepare an initial simulation shortly after the end of the risk assignment period. Then you could prepare subsequent simulations each time the encounter data for the risk assignment period are updated. The final simulation should be prepared after the cut-off date for submitting encounter data for the risk assignment period. This approach will allow MCOs to see how their efforts to improve the volume of encounter data submissions affect their reimbursement.

Payment Group Distribution

Once your risk assignments are completed, you can determine the payment group distribution for each MCO. For categorical classification systems, determine the number of enrollees in each payment group using the risk group assignment and MCO enrollment information for each enrollee. For additive classification systems, compute the average risk score of the enrollees in each payment group if desired, or the average for each MCO.

Average Payment Rate

Each MCO's enrollment by payment group can be used to compute its average payment rate. The average payment rate can be used to make comparisons among MCOs and over time. It can also be used to simulate the effect of risk updates and rate changes on MCO revenue.

Payment Group	Projected Enrollees	Capitation Rate	Projected Revenue
1	2,500	$75	$187,500
2	1,000	$120	$120,000
3	800	$215	$172,000
4	650	$350	$227,500
5	300	$405	$121,500
6	120	$650	$78,000
Total	5,370		$906,500

Average PMPM = $168.81

The revenue simulations prepared using the above steps should be closely evaluated by both the MCOs and the state. Significant differences between MCOs can be indicative of data submission problems. The simulations can help the state evaluate the impact of its rate updates. Simulations can also be used to verify that risk assignments were made correctly. Significant changes in the average risk score of the enrolled population may be indicative of problems in processing data through the risk assignment grouper.

9.2 Monitoring MCO Revenue

Once the payment period begins, you should monitor the MCOs' revenue against the revenue simulations you prepared. This process will help you refine the methodology used to prepare the simulations and identify potential problems early in the payment period. If an MCO's actual revenue is significantly lower than projected, the MCO may experience financial difficulties during the payment period. If actual revenue exceeds projected revenues for all MCOs, this may be indicative of potential Medicaid budget deficits.

Over time, this process of preparing rate simulations and monitoring MCO revenues will help both you and the MCOs become more familiar with your risk adjustment system. When the system is initially implemented, it may seem somewhat unclear to the MCOs. Exchanging information with the MCOs will help them understand the system better, and you will gain more confidence in your use of health-based risk adjustment.

State Experience:
MCO Revenue

At CMS's fall 2001 risk adjustment forum, states were asked about their methods for simulating and monitoring MCO revenue. The following are some of the answers:

- It is important to do at least one "dry run" to show MCOs their anticipated payments so they have some idea of what to expect.
- You may also decide to only give MCOs the basic rate cell values. The MCOs will then be able to develop their own simulations.
- Simulations will help determine how the enrollment in different rate cells changes and what effect it will have on an MCO's revenue and the overall Medicaid budget.
- Developing simulations and monitoring methods will help the state and the MCOs understand the effect rate changes will have on each MCO.

Also see the monitoring section of the survey responses (Appendix E).

Chapter 10: Using Risk Adjustment for Contracting

In This Chapter

- MCO contracting
- Provider contracting

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Using a health-based risk adjustment system will help you gain a better understanding of the health status of your managed care enrollees and the relative performance of the health plans in achieving your program's goals. You will be able to determine which MCOs have a sicker population and which have a healthier population. Likewise, the MCOs will gain an understanding of the health status of the enrollees that they must care for through their provider network. You can use these insights when contracting with the MCOs, and the MCOs can use them when contracting with their providers.

10.1 MCO Contracting

As managed care programs mature, the focus of the state shifts from enrolling people to monitoring the care that enrollees receive. States want to know if they are getting their money's worth to assure that purchaser value is achieved. For example, are enrollees receiving sufficient access to care? States may want to compare the actual utilization of enrollees with the utilization assumptions that were used to build the capitation rates or with national benchmarks.

Utilization Benchmark: *a utilization standard that defines the amount of services that Medicaid enrollees should receive if they have adequate access to care*

Utilization Benchmarks

Concerns about access to services can be addressed by incorporating utilization benchmarks in your managed care contracts. These standards could be adjusted based on the health status of the enrolled population in each MCO using the enrollees' risk assignments.

Generally, MCOs with sicker populations should provide more services (and possibly a different mix of services) than MCOs with a healthier population.

MCOs that provide fewer services than the benchmark may be withholding necessary services from their enrollees.

Before establishing utilization benchmarks, you must first select the categories of services you want to monitor. MCOs should encourage substituting outpatient, primary, and ambulatory care services for inpatient care. They should promote the use of physician services and community-based services over institutional services. Therefore, you probably want to establish standards for the delivery of physician and other outpatient services rather than inpatient services. You may also want to establish a benchmark for the number of emergency room (ER) visits not to be exceeded by each MCO. MCO enrollees should have fewer ER visits than FFS beneficiaries because regular care from their primary care physicians should reduce the need for ER visits.

Your utilization benchmark can be based on your FFS experience, the MCOs' financial reports, or encounter data. These data sources can be used to compute the utilization of the average beneficiary. You can then require the MCOs to either exceed the average or some standard based on the average (e.g., their utilization must be equal to at least 80 percent of the average). You should either normalize the utilization benchmark (average risk score of 1.0), or calculate the average risk score (for the individual) that was used to develop the benchmark.

See Chapter 5 for additional information about normalizing data

Once the utilization benchmarks have been established, you can tie them to financial or other incentives. For example, MCOs that fail to achieve a benchmark could be subject to a financial penalty. Alternatively, you could offer incentives to MCOs that surpass the benchmarks.

This process of monitoring performance and comparing an MCO to benchmarks assumes that the MCO's encounter data are complete. As discussed in Chapter 4, you should first assess the completeness of your encounter data to ensure that they are reflective of the MCO's performance. A system of penalties/incentives based on performance will also serve as an additional incentive for MCOs to submit their encounter data.

Outcome Measures

Outcome measures that you may include in your MCO contracts probably would not be adjusted by your risk adjustment system. For example, you could include expectations of the percentage of two-year-olds who have received their required vaccines, or the percentage of women who have received a pap smear or a mammogram. A series of penalties and/or incentives could then be established for MCOs based on these standards. When you are counting the number of people

who received a primary care service, there is probably no reason to apply risk adjustment measures (i.e., it is unlikely that you would lower the standards for immunizations because an MCO had a healthier case mix).

10.2 Provider Contracting

The MCOs can use the risk assignments for their enrollees when establishing their contracts with their provider. They can risk adjust their payments to any of the providers they pay on a capitation basis. Providers who care for sicker enrollees would be compensated for the extra care these enrollees require.

The approach that MCOs would use to risk adjust their provider payments depends on your risk adjustment system. If you use a categorical classification system, MCOs could pay their providers a percentage of the premium for each payment group. They could also compute the average premium for the enrollees who are assigned to each provider network and establish the payment as a percentage of their average. If you use an additive classification system, MCOs could make payments based on either the individual risk score or the risk score of the average enrollee in a network.

MCOs that compensate their providers using capitated payments must be sure that their providers understand how important it is to submit encounter data. If the providers do not submit all of their encounters to the MCOs, their enrollees will appear healthier and their risk assignments will result in a lower payment than is appropriate. Both the MCOs and the providers will receive lower compensation than they are entitled to.

State Experience:
Contracting

At CMS's fall 2001 risk adjustment forum, states were asked what contracting and purchasing strategies they have used. The following are some of the strategies:

- MCOs must assume some risk in order to have an incentive to manage care and stay in the program.
- Even if you are not formally negotiating rates, it is important to engage in discussions with the MCOs about how rates affect them.
- It is important to listen to the MCOs' concerns and issues regarding the implementation of risk adjustment.
- Develop clear, consistent, and conceptually oriented policy statements regarding risk adjustment implementation.
- Determine what is important for your state (e.g., quality of service and encounter data) and include enforcement mechanisms in the contracts.

States were also asked about their contracting practices in the survey.
See Appendix E for the responses.

Chapter 11: Policy and Political Implications

In This Chapter

- Gaining support for risk adjustment
- Facing opposition to risk adjustment
- Educating interested parties

Step 1: Select a System	Step 2: Identify Data	Step 3: Install Grouper	Step 4: Determine Pop. & Benefit Carve-outs	Step 5: Evaluate Encounter Data Completeness	Step 6: Define Payment System	Step 7: Establish Payment Rates

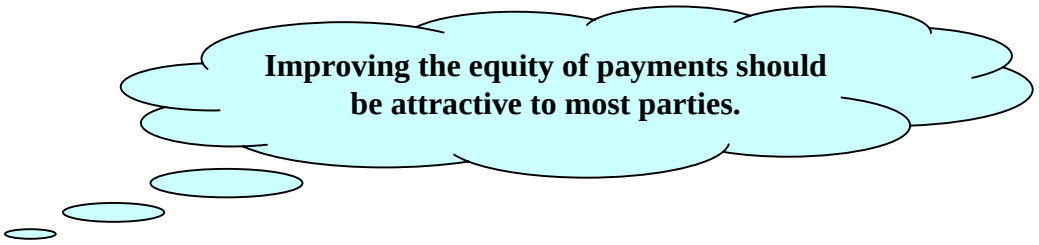
Activity 1: Modify MMIS	Activity 2: Revise Financial Reporting System	Activity 3: Modify Medicaid Budget Forecasts	Activity 4: Develop Revenue Forecasting System	Activity 5: Establish Contracting & Purchaser Strategies	Activity 6: Address Policy & Political Issues

Separate from the technical issues and considerations discussed in this manual, a state's decision to adopt health-based risk adjustment must be evaluated within its unique policy, political, and marketplace context. In particular, a volatile marketplace with diminishing numbers of managed care plans may present both opportunities and challenges for risk adjustment. At the onset, it is important to understand that risk adjustment will reallocate funds among MCOs so that some MCOs will gain and some will lose. If assuring adequate MCO participation is a central goal, decreases in risk adjustment revenue could present a problem. Prior to adopting a risk adjustment system, you must ensure that these consequences are understood and gain political support for implementing the system.

11.1 Gaining Support for Risk Adjustment

Two of the main reasons for implementing a risk adjustment system are to:

- Understand the health status of your enrolled population
- Match payments to health status



State legislative and executive branches will probably favor more equitable payments. This avoids overpayments for healthier enrollees, which may save taxpayer dollars. Alternatively, funding for sicker enrollees can be increased. MCOs will have the means to increase the funding for the specialists and tertiary inpatient facilities that will care for these enrollees. This impact on funding needs to be explained to legislative and executive staff so that they understand the benefits of risk adjustment.

Provider groups and patient advocacy groups should also support the improvement in payment equity. These groups often contend that their members are sicker and that their needs are not being sufficiently funded. Risk adjustment can prove that their members are sicker than the average enrollee, and if this is documented, the payment system should automatically increase the funding for their members. If an MCO is paid on a plan level basis, it may not be able to quantify the additional funding it receives for these members because they will be included in the MCO average. Consequently, it may be helpful to provide additional information to MCOs that shows the build-up from individual risk scores to the MCO level payment. Showing the composition of the MCO's enrollment by payment group and the relative payment level would illustrate how the distribution by health status is driving the payment level, even when payment is based on a Projected Plan Profile approach derived from additive scores.

The MCOs and their affiliated trade associations should also be in favor of improvements in payment equity. Many MCOs are convinced that their enrollees are sicker than average. These MCOs should see a risk adjustment system as an opportunity to increase their funding. MCOs that feel their population is healthier than average will have difficulty arguing against risk adjustment if their only argument is that the improvement in equity will reduce their funding.

Ideally, you should obtain endorsements from all of these parties prior to beginning the task of choosing and implementing a risk adjustment system.

In particular, you should separate the issues of the level of expenditures for Medicaid enrollees that will be risk-adjusted and the distribution of such expenditures among the MCOs. In some states, the legislatures were enthusiastic about implementing a managed Medicaid program with risk adjustment because

the level of expenditures was projected to be reduced in anticipation of managed care savings that had no relationship to risk adjustment. Some MCOs accepted the idea of these reductions on the grounds that risk adjustment would increase their payment level enough to compensate for the reduction in the level of funding. Such experiences suggest that it is best to completely separate the issues of risk adjustment and funding level, and adopt a budget neutral approach that makes this separation clear. All parties should then understand that adopting a risk adjustment system will affect how payments are allocated among MCOs, but will not affect the total level of payments unless the state is willing to increase overall funding.

11.2 Facing Opposition to Risk Adjustment

The groups that feel their funding will be reduced by risk adjustment are the most likely to be opposed to adopting a health-based risk adjustment system. These groups primarily consist of some MCOs and their providers.

MCOs that have enrolled a healthier case mix, and are aware that their enrollees are healthier than average, may anticipate a decline in revenue. These MCOs may have experienced positive selection either by chance or through their marketing efforts and affiliated providers. Demographic rate cells calculated using the utilization of the average enrollee provide the best opportunity for the MCO with a healthier case mix to make a profit. A risk adjustment system that recognizes its enrollees as healthier than average will reduce its revenue and profitability.

MCOs that have trouble collecting encounter data may also be opposed to risk adjustment. They may have sicker enrollees, but if they cannot submit encounter data, they will not be able to document their enrollees' medical conditions. It is important that, as part of your implementation effort, you identify encounter data problems and help MCOs correct the problems.

Some MCOs' providers may also be concerned about reductions in funding. They may feel that more funding will be targeted for tertiary hospitals and specialists. However, their funding should only be affected if they are paid on a capitation basis, and their capitation rate is based on a percentage of the enrollees' premiums. If the providers are paid on a FFS basis or a negotiated capitation rate that is not linked to a premium, their capitation payments will not decline.

11.3 Educating Interested Parties

It is crucial that you gain political support and address the concerns of the parties opposed to risk adjustment prior to implementation. You may want to consider scheduling a series of public meetings to educate and inform all interested parties on the benefits and consequences of risk adjustment. After sufficient public discussion, if you have gained the support of executive and legislative branches (and there is no strong opposition among providers, the community, and

advocates), you can proceed with the implementation process. Public discussion may avoid problems and confrontations once the system is implemented because all interested parties will have been educated on the issues and will have been given the opportunity to provide feedback.

You may also consider holding a series of public meetings during the implementation process. This is an opportunity for you to discuss the risk adjustment systems you have evaluated and your reasons for selecting a particular one. You may also want to explain the reasons for your choices when defining your payment system. During these meetings, you should provide the opportunity for comments and consider revising your choices if the comments you receive offer viable alternatives.

State Experience:
Policy and Political Implications

At CMS's fall 2001 risk adjustment forum, states were asked about policy and political implications they have encountered. The following were stated:

- Advocacy groups may be very helpful with getting risk adjustment accepted by the state and MCOs.
- Managed care MCOs may encourage states to implement risk adjustment if they feel their enrollees are sicker than most.
- It is important not to mix risk adjustment with funding adequacy issues because risk adjustment is really a way of fine-tuning rates.
- You may consider involving your state's quality assurance staff because the quality of encounter data is such a big issue.

Glossary of Terms

A

ACG	(Adjusted Clinical Group). A health-based risk adjustment classification system developed by Johns Hopkins University. ACGs use ICD-9 codes to classify individuals into adjusted diagnosis groups. There are 93 mutually exclusive ACG categories.
Additive Classification System	A risk adjustment system that calculates a risk score for each person based on his or her unique diagnoses. Each unique diagnosis adds to the total risk score.
Adverse Selection	When an MCO's enrolled population is sicker than the average Medicaid beneficiary.
Auto Assignment	The automatic assignment of beneficiaries who do not select an MCO on their own by the end of the selection period to an MCO.

B

Base Year	The time period from which financial data is used to construct the rate setting database. This year serves as the base for the rate calculations.
Beneficiary	A person entitled by law to receive Medicare or Medicaid benefits.
Benefit Package	Services covered by the managed care program. MCOs are responsible for providing these services to their enrollees.
Budget Neutrality	Holding the average risk score constant when risk scores are updated.

C

Capitation	A set dollar payment per patient per unit of time (usually per month) that is paid to cover a specified set of services provided. The services covered may include a physician's own services, referral services, or all medical services. The set dollar payment may be a percent of the premium that the MCO collects for a beneficiary; the capitation received from CMS would be considered a premium for this purpose.

Capitation Rate Setting Risk Assignment Period	The time period that is used to set your capitation rates.
Carve-Out	Population or service excluded from a managed care program.
Case Mix	The distribution of patients into categories reflecting differences in severity of illness or resource consumption.
Categorical Classification System	A risk adjustment system that assigns each beneficiary to a mutually exclusive risk group based on his or her diagnoses.
CDPS	(Chronic Illness and Disability Payment System - formerly known as DPS [Disability Payment System]). A health-based risk adjustment classification system developed at the University of California, San Diego. CDPS is based on selected, high cost, well-defined ICD-9 codes grouped into major categories that correspond to specific types of illnesses or body systems. CDPS has 56 diagnostic categories.
CMS	(Centers for Medicare and Medicaid Services - formerly HCFA [Health Care Financing Administration]). The federal agency responsible for administering Medicare and for overseeing the states' management of Medicaid. This agency is within DHHS (the Department of Health and Human Services).
CMS-1500	(Formerly HCFA-1500). Medicare Part B claim filing form used for Physician Encounter Coding.
Concurrent System	Uses diagnoses from the same time period as the payment period to assign a risk group/score and adjust the payment accordingly.
CPT Code	(Current Procedural Terminology). A five-digit code that indicates the medical treatment a person received.

D

Data Processing Infrastructure	The way an organization manages the technical and operational aspects of data processing.
DCG	(Diagnostic Cost Group). A health-based risk adjustment classification system developed at Boston University; Brandeis University; and Health Economics

	Research, Inc. There are two primary DCG models: Principal Inpatient (PIP-DCG) and Hierarchical Coexisting Conditions (HCC-DCG).
DPS	(Disability Payment System). A health-based risk adjustment classification system developed at the University of California, San Diego. This system was designed specifically for the disabled Medicaid population. DPS was designed with 43 mutually exclusive groups using a subset of ICD-9 codes focusing on the well-defined, high cost diagnoses.

E

Eligibility Database	A computerized file containing information about a person's eligibility status for health care coverage through state Medicaid programs.
Encounter Data	Records submitted by MCOs that describe the health care services provided to their enrollees.
Enrollee	A person entitled by law to receive Medicare or Medicaid benefits who is enrolled in a Medicaid MCO.
Enrollment	The initial process whereby new individuals apply and are accepted as members of a prepayment plan.
Enrollment Lag	The average length of time between being approved for Medicaid and enrolling in an MCO.
Enrollment Projection	A projection of the total number of beneficiaries that will be enrolled in an MCO. This projection may also include an estimate of the number of enrollees in each payment group.
Expenditure Base	The database of expenditure information that is used to derive the managed care rates. This database may be derived from Medicaid FFS data, MCO encounter data, or health plan financial reports.
Explanatory Power	The variation in cost between individuals that is "explained by" the system.

F

FFS	(Fee-for-Service). A plan or Primary Care Case Manager is paid for providing services to enrollees solely through FFS payments plus in most cases, a case management fee.

G

Grouper	Computer program that is used to generate the risk group/ score for each beneficiary.

H

HCC-DCG	(Hierarchical Coexisting Condition-Diagnostic Cost Groups). Usually referred to as HCC, it is part of the DCG health-based risk adjustment model. HCC uses all primary and secondary diagnoses from inpatient and outpatient data.
Health Plan Financial Reports	A series of reports submitted by MCOs that provide information on their medical and administrative expenses. These reports also contain data on the premium revenues and investment income received by the MCOs. These reports can be used to examine the financial position of the MCOs.
Health-Based Risk Adjustment	Uses diagnostic information on a beneficiary's medical conditions to predict future health care costs in order to adjust payment. Diagnoses are used from FFS claims or encounter data. This information is then related to medical costs to understand the relationship between health status and costs.
HIPAA	(Health Insurance Portability and Accountability Act). Broad legislation dealing with a wide set of health policy issues. Major provisions include portability provisions for group and individual health insurance, and providing standardization of health data and privacy of health records.

I

ICD-9-CM	(International Classification of Diseases – 9th edition – Clinical Modification). Classification of diseases by diagnosis codified into six-digit numbers.
Illness Burden	A measure related to case mix that measures the health status of a population.
Individual Level Payment	A payment system where the payments to MCOs are based on the individual. Each individual that an MCO enrolls is reimbursed a specific amount given that individual's demographic characteristics and/or risk group/score.

M

Macro Validation	A look at all of the data submitted by an MCO to try to identify inconsistencies in the data that may be indicative of errors.
MA-Only	(Medical Assistance Only). Refers to a beneficiary who qualifies only for a Medical Assistance benefit and not for any Public Assistance payments.
MCO	(Managed Care Organization). A general term for organizing doctors, hospitals, and other providers into groups in order to enhance the quality and cost-effectiveness of health care. MCOs include HMOs, PPOs, POSs, EPOs, etc.
MCO Level Payment	A payment system where the payments to the MCO is based on the average individual. Each individual is reimbursed at the same payment. The payment is based on the risk score for the average individual.
MDC	(Major Diagnostic Category). A group of similar Diagnosis Related Groups (DRGs) that typically involve the same organ system of the body. [DRG: A group of diseases, disorders, and procedures that are used by hospitals to classify inpatients into a manageable number of categories. DRGs reflect a hospital's resource consumption.]
Micro Validation	A look at individual records to try to identify inconsistencies in the data that may be indicative of errors.
MMIS	(Medicaid Management Information System). The computer system that is used to process payments for services provided to Medicaid beneficiaries.
MMIS Reporting System	The portion of the MMIS that generates reports on the number of claims processed and the level of Medicaid payments.

N

National Weights	Weights based on a national database that are used to derive a member’s risk score. Many additive classification systems give the user the option of either deriving the weights from the user’s database or using the national weights that have been developed for the system.

NDC	(National Drug Code). An American system for enumerating the drug products available for sale in the United States. The system was created by the Food and Drug Administration in 1972 as a result of the Drug Listing Act of that year, which required the FDA to list annually the drug products sold in the United States.
Network Providers	The medical providers that the MCO has contracted with to provide services to enrollees.
New Eligible	A beneficiary who has just gained Medicaid eligibility. These members will not have any diagnostic history that can be used to measure their health status.
Normalize	To compute the average PMPM score for a beneficiary with a risk score of 1.

P

Patient Advocacy Group	A group that ensures that health care consumers get their needs met by helping them gain more control over their interactions with the health care system. Patient advocacy groups provide education, counseling, and tools to help consumers make informed health care decisions.
Payment Group	A group of enrollees for which separate capitation rates are created to make payments to MCOs
Payment Period	The period of time for which payments will be made using the rates that are being developed during the current rate setting cycle.
Payment System Risk Assignment Period	The time period that is used to make risk assignments for payment purposes.
PIP-DCG	(Principal Inpatient-Diagnostic Cost Group). Usually referred to as PIP, it is part of the DCG health-based risk adjustment model. PIP models rely exclusively on inpatient diagnostic data.
PMPM	(Per member per month). Specifically applies to a revenue or cost for each enrolled member each month.
Positive Selection	When an MCO's enrolled population is healthier than the average Medicaid beneficiary.
Prospective System	Uses the diagnoses from a previous period to assign an enrollee's risk group/score. The risk group/score is then

	used to determine the payment for the enrollee.
Provider Group	A group of medical providers that form a group affiliation to help them to reduce overhead costs and assist them in contracting with MCOs.
PSO	(Provider Sponsored Organization). A type of managed care plan that is operated by a group of doctors and hospitals.

R

Rate Cell	A payment group that is used to make reimbursement to an MCO. Members may be assigned to groups based on their region, eligibility category, age, sex, and risk group.
Record Format	Describes the data elements that are included in the record, their position within the record, and whether the data are numeric, character, or data fields.
Regression Model	A statistical model that is used to examine the relationship between multiple variables. The model can be used to examine the statistical significance of the relationship between the variables, and to quantify the magnitude of the relationship.
Relative Value	Measures the cost of a payment group relative to the cost of the average risk-adjusted beneficiary
Reporting Lag	The time lag between the provision of services and claims being paid by the MMIS.
Revenue Simulation	An estimate of what MCOs will be paid under the current capitation rates.
Risk	Potential financial liability, particularly with respect to who or what is legally responsible for that liability.
Risk Adjustment (non-health-based)	A statistical method of paying MCOs different capitated payments based on the composition and relative healthiness of their beneficiaries.
Risk Assignment	The risk group/score determined by the risk assignment grouper that is based on a beneficiary's diagnostic information.
Risk Assignment Period	The time period from which each beneficiary's diagnostic information is used to determine his or her risk group/score.

Risk Assignment Time Lag	The length of time between the risk assignment period that will be used to compute a member's risk group/score and the payment period.
Risk Group	A mutually exclusive group to which categorical classification systems assign members. Risk groups contain members with similar medical histories.
Risk Score	Additive classification systems assign each member a risk score based on their diagnostic history. The risk score is determined using the unique diagnoses for each member.
R-Squared	Proportion of the total variability of one set of scores that can be explained by variability among the other set of scores.

S

SAS	(Statistical Analysis System). A computer program that has been used to develop some of the risk assignment groupers.
SCHIP	(State Children's Health Insurance Program). A provision of the balanced budget act that provides federal funding through CMS to states to expand child health assistance to uninsured, low-income children.
Selection Bias	Occurs when an MCO enrolls a population whose health status is significantly different than the health status of the average Medicaid beneficiary enrolled in managed care.
Service Unit	The unit of payment for a category of service.
SOBRA	(Sixth Omnibus Budget Reconciliation Act [1986]). The SOBRA population is a group of low-income pregnant women who were made Medicaid eligible by this act.
SSI	(Supplemental Security Income). A federal income support program for low income aged, blind, or disabled persons administered by the Social Security Administration. Eligibility for SSI is usually tied to eligibility for Medicaid.
Subgroup	A group of individuals within an MCO that have a common defining characteristic
Subgroup Level Payment	Payments made by calculating separate risk-adjusted rates for each subgroup of enrollees.

T

TANF	(Temporary Assistance for Needy Families). A public assistance program that provides financial assistance for beneficiaries who qualify based on their income, resources, and family situation. Beneficiaries who qualify for this program will normally qualify for Medicaid.
Trend Factor	Factor that is applied to a base period to account for changes in inflation and utilization patterns between the base period and the payment period.

U

UB-92	Standard claim form used for billing inpatient and outpatient services.
Upcoding	An attempt by MCOs to make their enrollees appear sicker than they really are by submitting additional diagnostic information
UPL	(Upper Payment Limit). The Medicaid fee-for-service equivalent costs for the benefit package provided by the MCOs. The UPL calculation must be based on the same set of Medicaid services and the population that will be enrolled in the MCOs.
Utilization Benchmark	A utilization standard that defines the amount of services that Medicaid enrollees should receive if they have adequate access to care.

W

Weighted Average Trend Factor	An average that adjusts for the relative importance of each category of service.
Withhold	The portion of the monthly capitation or FFS payment to physicians that is withheld by an HMO until the end of the year (or other time period) to create an incentive for efficient care. The withhold is “at risk” and can cover all services or be specific to hospital care, laboratory use, or specialty referrals.

Appendix A:
State Summaries

Medicaid Managed Care
Risk Adjustment Implementation
State Choices

State:	Colorado
Risk Adjustment System:	CDPS
Implemented Risk Adjustment:	October 1997
Risk Measure:	Individual risk score
Risk Adjusted Groups:	SSI / TANF
Unit of Payment:	Plan average for age-category of eligibility sub-grouping
Risk Updates:	Semi-annual updates of risk group
MMIS Changes:	The MMIS and a risk-adjusted payment system have not been linked

Summary

Colorado uses the CDPS system to risk adjust their SSI and TANF beneficiaries. They pay each MCO based on a plan level risk score. A beneficiary must be enrolled for a minimum of two months before their score will be included in the plan average calculations. The average risk score is computed for 11 age-sex-eligibility sub-groupings. Factors are also applied to account for differences in the geographical distribution of members. New enrollees assume the MCO's risk score for payment. When calculating MCO risk scores, Colorado adjusts case mix for a potential lack of encounter data.

Note: This information is accurate as of June 2002. As with all payment systems, changes are likely to occur.

Medicaid Managed Care
Risk Adjustment Implementation
State Choices

State:	Maryland
Risk Adjustment System:	ACG
Implemented Risk Adjustment:	July 1997
Risk Measure:	Individual Risk Group
Risk Adjusted Groups:	SSI / TANF
Unit of Payment:	Individual Rate Cell
Risk Updates:	Annual updates of risk group
MMIS Changes:	Individual ACG groups are stored on MMIS

Summary

Maryland uses the ACG system to risk adjust their SSI and TANF beneficiaries. They pay each MCO on an individual basis, based on the risk group for each enrollee. Enrollees who were not eligible for 6 months during the risk assignment period are paid for using demographic rate cells that are based on their age, sex, county of residence, and category of eligibility. An MCO's payment adjusts automatically as its enrollment changes, because of changes in the distribution of its enrollees across the risk-adjusted and demographic rate cells.

Note: This information is accurate as of June 2002. As with all payment systems, changes are likely to occur.

Medicaid Managed Care
Risk Adjustment Implementation
State Choices

State:	Minnesota
Risk Adjustment System:	ACG
Implemented Risk Adjustment:	January 2000
Risk Measure:	Individual risk group
Risk Adjusted Groups:	TANF
Unit of Payment:	MCO level risk score
Risk Updates:	Quarterly
MMIS Changes:	A risk adjustment add-on is updated quarterly

Summary

Minnesota uses the ACG system to risk adjust their TANF beneficiaries. Minnesota phased in risk adjustment based on a percent of payment beginning with 5 percent the first year, 30 percent the second year, and 50 percent the third year. A plan level average rate is calculated based on the ACG groups of the enrolled members. New enrollees get paid at the average rate for the MCO. Beneficiaries must be enrolled a minimum of 1 month before their score will be included in the plan average calculations.

Note: This information is accurate as of June 2002. As with all payment systems, changes are likely to occur.

Medicaid Managed Care
Risk Adjustment Implementation
State Choices

State:	New Jersey
Risk Adjustment System:	CDPS
Implemented Risk Adjustment:	October 2000
Risk Measure:	Individual Risk Score
Risk Adjusted Groups:	Aged, Blind, and Disabled without Medicare coverage
Unit of Payment:	Plan Average
Risk Updates:	Monthly updates of plan average
MMIS Changes:	Individual Risk Scores are stored on MMIS

Summary

New Jersey uses the CDPS system to risk adjust their population. They pay each MCO an average rate based on the average risk score of their enrolled population. Each month they update the MCO's average risk score based on the population they currently have enrolled. Changes in the average risk score of the enrolled population are automatically recognized by the New Jersey system. They normalize the entire risk-adjusted population, FFS and HMO, each month, to a global risk score of 1.0 to protect against code drift.

Note: This information is accurate as of June 2002. As with all payment systems, changes are likely to occur.

Medicaid Managed Care
Risk Adjustment Implementation
State Choices

State:	Oregon
Risk Adjustment System:	CDPS
Implemented Risk Adjustment:	June 1998
Risk Measure:	Individual risk score
Risk Adjusted Groups:	SSI and non-SSI disabled
Unit of Payment:	Average risk score computed for age-sex sub-groupings
Risk Updates:	Annually
MMIS Changes:	Risk adjustment work takes place outside of MMIS - only bottom-line rates for each MCO and the rate group are input into MMIS

Summary

Oregon uses the CDPS system to risk adjust their SSI beneficiaries, presumptive-SSI eligible, and the single adult waivered population. Each MCO has a unique rate for each of the 16 demographic rate groups and each of the 5 regions of the state. New enrollees are paid at the average plan rate. No minimum enrollment is required before the beneficiary is included in the MCO's risk score calculation.

Note: This information is accurate as of June 2002. As with all payment systems, changes are likely to occur.

Appendix B:
State Financial Report Templates

Maryland

HealthChoice Financial Monitoring Report
Section II: Expense and Utilization Structure (Incurred Basis)

Premium Group	Member Months	Earned Premium	Hospital Inpatient			Hospital Outpatient: Clinic		Hospital Outpatient: Emergency Dept.		Primary Care		Specialty Care		Pharmacy		Dental		Other Medical	Total
			Expenses	Admissions	Days	Expenses	Visits	Expenses	Visits	Expenses	Visits	Expenses	Visits	Expenses	Scripts	Expenses	Visits	Expenses	Expenses
Families and Children																			
< Age 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-14 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-14 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-20 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-20 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-44 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-44 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45+ Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45+ Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total F&C Geo/Dem.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disabled																			
< Age 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-14 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-14 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-20 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-20 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-44 Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-44 Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45+ Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45+ Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Disabled Geo/Dem.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

HealthChoice Financial Monitoring Report
Section II: Expense and Utilization Structure (Incurred Basis)

Premium Group	Member Months	Earned Premium	Hospital Inpatient			Hospital Outpatient: Clinic		Hospital Outpatient: Emergency Dept.		Primary Care		Specialty Care		Pharmacy		Dental		Other Medical	Total
			Expenses	Admissions	Days	Expenses	Visits	Expenses	Visits	Expenses	Visits	Expenses	Visits	Expenses	Scripts	Expenses	Visits	Expenses	Expenses
ACG-adjusted cells																			
RAC1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total F&C RAC's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RAC18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Disabled RAC's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others																			
PWC (SOBRA) Mothers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivery(Kick) Payments (Report # of deliveries)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F&C HIV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disabled HIV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Persons with AIDS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recoveries		0																	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Q1: Of the Grand Total Medical Expense Reported in Cell T58, what are the Total Medical Expenses for Services Incurred during the Current Calendar Year? (See Instruction Guidelines for Section II)	0
Q2: Of the Grand Total Premiums Reported in Cell C58, what are the Total Revenues associated with Services Incurred during the Current Calendar Year? (See Instruction Guidelines for Section II)	0

Maryland HealthChoice Program
Rate Comparison as of March 2001Using CY 2000 RAC Assignments
& Est. March 2002 Using CY 2000 RAC Assignments
(Excludes U-1 Transitional Rates)

12/5/01 13:08

MCO	RATECELL	Month 21 CY 99 Assign Mar 01 Actual	Month 9 CY 00 Assign Mar 01 Est.	Month 21 CY 00 Assign Mar 02 Est.	Premiums CY 99 Assign Mar 01 Actual	Premiums CY 00 Assign Mar-01	Premiums CY 00 Assign Mar-02	(CY 01 Rates) CY 99 Assign Mar 01 Actual	(CY 02 Rates) CY 00 Assign Mar-01	(CY 02 Rates) CY 00 Assign Mar-02	(Mar01/Mar01) Chg. In Rates CY 02/01	(Mar02/Mar01) Chg. In Rates CY 02/01
Total MCO												
CITY	F&C HIV	677	677	677	$ 440,290	$ 491,606	$ 491,606	$ 650.70	$ 726.54	$ 726.54	11.7%	11.7%
	F&C RAC	84,846	103,044	95,054	$ 8,010,264	$ 10,842,472	$ 9,896,447	$ 94.41	$ 105.22	$ 104.11	11.5%	10.3%
	F&C Geo/Dem (Ex U1 & SOBRA)	22,206	4,008	11,999	$ 2,797,239	$ 572,876	$ 1,750,733	$ 125.96	$ 142.92	$ 145.91	13.5%	15.8%
	Under 1's	6,894	6,894	6,894	$ 1,421,780	$ 1,519,337	$ 1,519,337	$ 206.22	$ 220.37	$ 220.37	6.9%	6.9%
	SOBRA	1,705	1,705	1,705	$ 611,898	$ 635,787	$ 635,787	$ 358.87	$ 372.88	$ 372.88	3.9%	3.9%
	Total F&C	116,329	116,328	116,328	$ 13,281,471	$ 14,062,077	$ 14,293,909	$ 114.17	$ 120.88	$ 122.88	5.9%	7.6%
	Dis. HIV	871	871	871	$ 1,279,172	$ 1,408,932	$ 1,408,932	$ 1,467.95	$ 1,616.86	$ 1,616.86	10.1%	10.1%
	Dis. RAC	19,134	21,537	18,579	$ 8,549,629	$ 11,312,762	$ 9,610,613	$ 446.83	$ 525.28	$ 517.27	17.6%	15.8%
	Dis. Geo/Dem (Ex U1)	2,704	301	3,258	$ 1,833,149	$ 213,577	$ 2,310,748	$ 678.00	$ 709.16	$ 709.16	4.6%	4.6%
	Under 1's	76	76	76	$ 122,209	$ 126,260	$ 126,260	$ 1,610.55	$ 1,663.94	$ 1,663.94	3.3%	3.3%
	Total Disabled	22,785	22,785	22,785	$ 11,784,158	$ 13,061,531	$ 13,456,553	$ 517.19	$ 573.25	$ 590.59	10.8%	14.2%
	AIDS	1,153	1,153	1,153	$ 2,819,128	$ 3,172,426	$ 3,172,426	$ 2,444.91	$ 2,751.31	$ 2,751.31	12.5%	12.5%
	Deliveries (Placeholder)	479	479	479	$ 4,671,977	$ 5,024,034	$ 5,024,034	$ 9,744.41	$ 10,478.70	$ 10,478.70	7.5%	7.5%
	Total	140,267	140,267	140,267	$ 32,556,734	$ 35,320,068	$ 35,946,922	$ 232.11	$ 251.81	$ 256.28	8.5%	10.4%
ROS	F&C HIV	329	329	329	$ 214,315	$ 239,293	$ 239,293	$ 650.70	$ 726.54	$ 726.54	11.7%	11.7%
	F&C RAC	141,360	194,209	179,551	$ 13,172,757	$ 18,686,430	$ 17,150,808	$ 93.19	$ 96.22	$ 95.52	3.3%	2.5%
	F&C Geo/Dem (Ex U1 & SOBRA)	68,614	15,765	30,423	$ 5,852,261	$ 1,516,348	$ 2,931,226	$ 85.29	$ 96.18	$ 96.35	12.8%	13.0%
	Under 1's	20,137	20,137	20,137	$ 3,273,864	$ 3,498,391	$ 3,498,391	$ 162.58	$ 173.73	$ 173.73	6.9%	6.9%
	SOBRA	8,881	8,881	8,881	$ 2,512,593	$ 2,610,638	$ 2,610,638	$ 282.92	$ 293.96	$ 293.96	3.9%	3.9%
	Total F&C	239,322	239,322	239,322	$ 25,025,789	$ 26,551,100	$ 26,430,355	$ 104.57	$ 110.94	$ 110.44	6.1%	5.6%
	Dis. HIV	335	335	335	$ 491,044	$ 540,856	$ 540,856	$ 1,467.95	$ 1,616.86	$ 1,616.86	10.1%	10.1%
	Dis. RAC	25,027	28,999	25,053	$ 11,352,536	$ 14,133,628	$ 12,032,339	$ 453.61	$ 487.38	$ 480.27	7.4%	5.9%
	Dis. Geo/Dem (Ex U1)	4,807	835	4,781	$ 2,488,324	$ 460,370	$ 2,635,368	$ 517.60	$ 551.19	$ 551.19	6.5%	6.5%
	Under 1's	87	87	87	$ 139,908	$ 144,546	$ 144,546	$ 1,610.55	$ 1,663.94	$ 1,663.94	3.3%	3.3%
	Total Disabled	30,256	30,256	30,256	$ 14,471,812	$ 15,279,400	$ 15,353,109	$ 478.31	$ 505.00	$ 507.44	5.6%	6.1%
	AIDS	376	376	376	$ 852,128	$ 960,500	$ 960,500	$ 2,264.37	$ 2,552.35	$ 2,552.35	12.7%	12.7%
	Deliveries (Placeholder)	1,037	1,037	1,037	$ 7,966,253	$ 8,566,544	$ 8,566,544	$ 7,682.12	$ 8,261.00	$ 8,261.00	7.5%	7.5%
	Total	269,954	269,954	269,954	$ 48,315,981	$ 51,357,544	$ 51,310,508	$ 178.98	$ 190.25	$ 190.07	6.3%	6.2%
State	F&C HIV	1,006	1,006	1,006	$ 654,604	$ 730,899	$ 730,899	$ 650.70	$ 726.54	$ 726.54	11.7%	11.7%
	F&C RAC	226,206	297,253	274,605	$ 21,183,020	$ 29,528,901	$ 27,047,254	$ 93.64	$ 99.34	$ 98.50	6.1%	5.2%
	F&C Geo/Dem (Ex U1 & SOBRA)	90,821	19,774	42,422	$ 8,649,500	$ 2,089,225	$ 4,681,958	$ 95.24	$ 105.66	$ 110.37	10.9%	15.9%
	Under 1's	27,031	27,031	27,031	$ 4,695,643	$ 5,017,727	$ 5,017,727	$ 173.71	$ 185.63	$ 185.63	6.9%	6.9%
	SOBRA	10,586	10,586	10,586	$ 3,124,491	$ 3,246,425	$ 3,246,425	$ 295.15	$ 306.67	$ 306.67	3.9%	3.9%
	Total F&C	355,650	355,650	355,650	$ 38,307,259	$ 40,813,177	$ 40,724,264	$ 107.71	$ 114.19	$ 114.51	6.0%	6.3%
	Dis. HIV	1,206	1,206	1,206	$ 1,770,216	$ 1,949,788	$ 1,949,788	$ 1,467.95	$ 1,616.86	$ 1,616.86	10.1%	10.1%
	Dis. RAC	44,161	50,536	43,633	$ 19,902,165	$ 25,446,390	$ 21,642,952	$ 450.67	$ 503.53	$ 496.03	11.7%	10.1%
	Dis. Geo/Dem (Ex U1)	7,511	1,136	8,040	$ 4,321,473	$ 673,947	$ 4,946,116	$ 575.34	$ 593.05	$ 615.21	3.1%	6.9%
	Under 1's	163	163	163	$ 262,117	$ 270,806	$ 270,806	$ 1,610.55	$ 1,663.94	$ 1,663.94	3.3%	3.3%
	Total Disabled	53,041	53,041	53,041	$ 26,255,970	$ 28,340,931	$ 28,809,662	$ 495.01	$ 534.32	$ 543.16	7.9%	9.7%
	AIDS	1,529	1,529	1,529	$ 3,671,256	$ 4,132,926	$ 4,132,926	$ 2,400.49	$ 2,702.35	$ 2,702.35	12.6%	12.6%
	Deliveries (Placeholder)	1,516	1,516	1,516	$ 12,638,231	$ 13,590,578	$ 13,590,578	$ 8,334.15	$ 8,962.17	$ 8,962.17	7.5%	7.5%
	Total	410,221	410,221	410,221	$ 80,872,716	$ 86,677,812	$ 87,257,430	$ 197.14	$ 211.30	$ 212.71	7.2%	7.9%
		410,221	410,221	410,221								
	Avg. Monthly Supplemental:											
	Statewide				$ 513,025	$ -	$ -					
	Encounter Data Adjust.				$ 316,418	$ -	$ -					
	Transitional Incentive				$ 325,401	$ -	$ -					
	Hepatitis C				$ -	$ 166,667	$ 166,667					
	Subtotal				$ 1,154,844	$ 166,667	$ 166,667					
	Grand Total Including Supplementals	410,221	410,221	410,221	$ 82,027,560	$ 86,844,279	$ 87,424,097	$ 199.96	$ 211.70	$ 213.11	5.9%	6.6%

Rollup

Provider Base Number	RATECELL	CY 99 Assign Mar 01 Actual	CY 00 Assign Mar-01	CY 00 Assign Mar-02	Premiums CY 99 Assign Mar 01 Actual	Premiums CY 00 Assign Mar-01	Premiums CY 00 Assign Mar-02
All MCOs	Under age 1 - City	1,129.13	1,129.13	1,129.13	232,849.19	248,826.38	248,826.38
	Under age 1 - State	2,650.01	2,650.01	2,650.01	430,838.63	460,386.24	460,386.24
	Under age 1 - Retention	507.70	507.70	507.70	82,541.87	88,202.72	88,202.72
	Age 1-5 Male - City	3,380.73	397.94	1,221.78	334,861.31	42,492.03	130,461.95
	Age 1-5 Male - State	10,733.71	2,267.85	4,393.10	838,195.41	190,907.61	369,810.90
	Age 1-5 Male - Retention	1,707.51	-	-	133,339.46	-	-
	Age 1-5 Female - City	3,434.76	424.55	1,319.05	267,464.76	35,611.25	110,642.00
	Age 1-5 Female - State	10,740.56	2,150.10	4,167.07	659,362.98	142,186.11	275,568.28
	Age 1-5 Female - Retention	1,636.46	-	-	100,462.28	-	-
	Age 6-14 Male - City	3,734.79	754.09	2,142.28	339,940.59	71,638.55	203,516.63
	Age 6-14 Male - State	12,294.69	3,597.75	6,911.64	882,266.95	269,435.50	517,612.90
	Age 6-14 Male - Retention	2,147.05	-	-	154,072.31	-	-
	Age 6-14 Female - City	3,785.29	822.76	2,349.49	270,496.82	63,286.70	180,722.70
	Age 6-14 Female - State	12,191.83	3,590.39	6,902.15	686,887.70	217,721.25	418,546.67
	Age 6-14 Female - Retention	2,007.05	-	-	113,077.20	-	-
	Age 15-20 Male - City	1,359.33	285.10	800.87	227,103.26	51,363.62	144,285.03
	Age 15-20 Male - State	3,575.82	1,125.80	2,158.67	470,971.25	159,897.37	306,595.21
	Age 15-20 Male - Retention	644.28	-	-	84,858.12	-	-
	Age 15-20 Female - City	2,081.63	398.86	1,127.16	337,265.69	69,912.18	197,568.55
	Age 15-20 Female - State	4,032.36	1,140.39	2,186.14	515,053.34	157,579.09	302,080.87
	Age 15-20 Female - Retention	809.42	-	-	103,387.22	-	-
	Age 21-44 Male - City	537.36	185.60	610.19	126,166.75	46,949.38	154,353.67
	Age 21-44 Male - State	674.48	349.43	684.39	124,846.25	69,683.33	136,481.53
	Age 21-44 Male - Retention	144.83	-	-	26,808.03	-	-
	Age 21-44 Female - City	3,410.78	599.58	1,967.65	716,980.06	135,834.85	445,770.44
	Age 21-44 Female - State	3,975.46	1,318.37	2,579.17	658,813.23	235,474.07	460,664.89
	Age 21-44 Female - Retention	659.27	-	-	109,254.22	-	-
	Age 45+ Male - City	116.36	38.55	126.74	59,695.01	21,412.60	70,397.38
	Age 45+ Male - State	161.68	77.84	152.46	65,389.86	34,086.14	66,760.99
	Age 45+ Male - Retention	28.94	-	-	11,704.49	-	-
	Age 45+ Female - City	365.46	101.45	333.53	117,265.15	34,375.32	113,014.42
	Age 45+ Female - State	392.35	147.41	288.64	99,248.86	39,377.63	77,103.38
	Age 45+ Female - Retention	56.38	-	-	14,261.88	-	-
	RAC1 - City	47,932.89	53,689.17	48,462.63	2,975,194.48	3,518,788.20	3,176,240.96
	RAC1 - State	66,742.72	105,690.11	95,401.38	4,142,720.63	6,714,492.69	6,060,849.77
	RAC1 - Retention	11,093.24	-	-	688,557.41	-	-
	RAC2 - City	16,254.77	19,394.99	19,249.71	1,446,024.34	1,795,394.22	1,781,945.61
	RAC2 - State	25,524.17	41,234.25	40,925.38	2,270,630.16	3,704,072.68	3,676,326.89
	RAC2 - Retention	5,849.58	-	-	520,378.64	-	-
	RAC3 - City	10,749.58	14,518.96	13,613.94	1,283,607.35	1,774,362.10	1,663,759.38
	RAC3 - State	13,745.22	23,642.31	22,168.60	1,641,316.72	2,817,217.66	2,641,609.79
	RAC3 - Retention	3,234.97	-	-	386,287.77	-	-
	RAC4 - City	5,831.03	8,817.75	7,984.94	1,063,055.08	1,628,814.78	1,474,977.77
	RAC4 - State	7,561.91	14,237.23	12,892.56	1,378,611.81	2,539,067.60	2,299,259.75
	RAC4 - Retention	1,912.64	-	-	348,693.40	-	-
	RAC5 - City	2,903.32	4,398.19	4,008.35	719,529.80	1,100,295.19	1,002,769.22
	RAC5 - State	3,060.81	6,204.86	5,654.88	758,560.54	1,493,323.66	1,360,961.14
	RAC5 - Retention	825.82	-	-	204,662.97	-	-
	RAC6 - City	833.55	1,508.06	1,167.24	290,100.41	525,031.09	406,374.44
	RAC6 - State	988.65	2,106.44	1,630.39	344,079.86	697,315.90	539,723.00
	RAC6 - Retention	216.52	-	-	75,355.46	-	-
	RAC7 - City	240.07	435.89	380.26	156,055.10	285,826.15	249,349.28
	RAC7 - State	327.61	727.68	634.81	212,959.60	455,025.58	396,955.64
	RAC7 - Retention	98.54	-	-	64,054.94	-	-
	RAC8 - City	61.61	166.96	116.34	42,347.02	114,137.20	79,535.50
	RAC8 - State	87.00	215.70	150.31	59,798.58	139,950.47	97,523.26
	RAC8 - Retention	21.00	-	-	14,434.14	-	-
	RAC9 - City	39.00	113.84	70.13	34,350.03	99,822.88	61,494.74
	RAC9 - State	57.00	150.60	92.78	50,203.89	125,963.35	77,598.27
	RAC9 - Retention	13.00	-	-	11,450.01	-	-
	SOBRA - City	1,705.07	1,705.07	1,705.07	611,898.47	635,786.50	635,786.50
	SOBRA - State	7,269.61	7,284.29	7,284.29	2,056,718.06	2,141,289.89	2,141,289.89
	SOBRA - Retention	1,611.32	1,596.64	1,596.64	455,874.65	469,348.29	469,348.29
	DELIVERY - City	479.45	479.45	479.45	4,671,977.40	5,024,034.25	5,024,034.25
	DELIVERY - State	1,021.92	1,021.92	1,021.92	7,850,495.23	8,442,063.01	8,442,063.01
	DELIVERY - Retention	15.07	15.07	15.07	115,757.97	124,480.82	124,480.82
	Under age 1 - City (Disable)	1.26	1.26	1.26	2,029.29	2,096.56	2,096.56
	Under age 1 - State (Disabled)	2.00	2.00	2.00	3,221.10	3,327.88	3,327.88
	Under age 1 - Retention (Disabled)	-	-	-	-	-	-
	Age 1-5 Male - City (Disabled)	81.13	1.98	21.42	46,029.11	1,160.66	12,557.48
	Age 1-5 Male - State (Disabled)	122.84	17.67	101.15	69,693.27	10,357.98	59,293.75
	Age 1-5 Male - Retention (Disabled)	20.19	-	-	11,454.80	-	-
	Age 1-5 Female - City (Disabled)	60.20	3.84	41.55	37,832.69	2,503.03	27,080.98

Rollup

Provider Base Number	RATECELL	CY 99 Assign Mar 01 Actual	CY 00 Assign Mar-01	CY 00 Assign Mar-02	Premiums CY 99 Assign Mar 01 Actual	Premiums CY 00 Assign Mar-01	Premiums CY 00 Assign Mar-02
	Age 1-5 Female - State (Disabled)	106.16	8.79	50.32	66,716.25	5,729.59	32,798.74
	Age 1-5 Female - Retention (Disable	15.00	-	-	9,426.75	-	-
	Age 6-14 Male - City (Disabled)	85.69	17.33	187.50	26,871.53	5,620.81	60,813.19
	Age 6-14 Male - State (Disabled)	198.01	40.04	229.21	62,093.96	12,986.57	74,341.02
	Age 6-14 Male - Retention (Disabled	38.00	-	-	11,916.42	-	-
	Age 6-14 Female - City (Disabled)	34.58	4.85	52.47	12,804.97	1,866.57	20,194.97
	Age 6-14 Female - State (Disabled)	99.01	12.71	72.76	36,663.40	4,891.57	28,001.56
	Age 6-14 Female - Retention (Disabl	11.00	-	-	4,073.30	-	-
	Age 15-20 Male - City (Disabled)	52.86	2.91	31.48	13,435.43	784.45	8,487.18
	Age 15-20 Male - State (Disabled)	192.48	34.06	194.97	48,922.64	9,181.55	52,559.37
	Age 15-20 Male - Retention (Disable	44.00	-	-	11,183.48	-	-
	Age 15-20 Female - City (Disabled)	31.06	3.80	41.11	8,807.37	1,148.93	12,430.61
	Age 15-20 Female - State (Disabled)	132.39	28.42	162.69	37,540.51	8,592.79	49,189.00
	Age 15-20 Female - Retention (Disab	34.65	-	-	9,825.35	-	-
	Age 21-44 Male - City (Disabled)	619.42	95.21	1,030.10	390,414.23	63,945.89	691,849.11
	Age 21-44 Male - State(Disabled)	863.48	175.69	1,005.73	429,063.21	93,026.10	532,523.48
	Age 21-44 Male - Retention(Disabled	138.22	-	-	68,681.52	-	-
	Age 21-44 Female - City (Disabled)	414.88	35.96	389.06	269,618.07	24,873.53	269,113.94
	Age 21-44 Female - State (Disabled)	691.11	139.78	800.16	354,076.39	76,223.43	436,337.42
	Age 21-44 Female - Retention (Disab	132.45	-	-	67,858.11	-	-
	Age 45+ Male - City (Disabled)	707.93	88.62	958.81	578,676.14	76,199.91	824,428.85
	Age 45+ Male - State (Disabled)	705.68	163.18	934.12	454,761.36	110,616.46	633,218.66
	Age 45+ Male - Retention (Disabled)	133.10	-	-	85,773.63	-	-
	Age 45+ Female - City (Disabled)	616.02	46.67	504.94	448,659.69	35,472.93	383,791.93
	Age 45+ Female - State (Disabled)	980.29	214.89	1,230.13	562,862.91	128,764.24	737,104.76
	Age 45+ Female - Retention (Disable	149.32	-	-	85,736.56	-	-
	RAC10 - City	6,507.39	6,147.10	5,135.18	906,609.57	850,758.64	710,708.97
	RAC10 - State	7,272.94	8,324.94	6,954.51	1,013,266.00	1,095,312.36	915,004.89
	RAC10 - Retention	900.09	-	-	125,400.54	-	-
	RAC11 - City	3,103.77	3,099.01	2,910.39	842,394.22	842,434.88	791,159.87
	RAC11 - State	3,791.34	4,571.59	4,293.34	1,029,007.59	1,185,230.42	1,113,091.08
	RAC11 - Retention	627.65	-	-	170,350.49	-	-
	RAC12 - City	2,987.65	3,178.78	2,727.67	1,392,693.05	1,480,230.69	1,270,167.60
	RAC12 - State	3,205.14	4,385.73	3,763.34	1,494,076.01	1,944,983.54	1,668,966.26
	RAC12 - Retention	608.94	-	-	283,857.38	-	-
	RAC13 - City	2,776.07	3,424.10	3,070.94	1,527,282.67	1,880,960.85	1,686,957.65
	RAC13 - State	3,012.42	4,160.06	3,730.99	1,657,312.99	2,178,914.63	1,954,180.33
	RAC13 - Retention	509.22	-	-	280,152.48	-	-
	RAC14 - City	820.08	997.02	839.95	583,831.35	711,463.50	599,376.77
	RAC14 - State	816.94	1,252.12	1,054.86	581,595.92	841,687.59	709,084.84
	RAC14 - Retention	152.36	-	-	108,468.13	-	-
	RAC15 - City	1,355.90	1,943.86	1,698.57	1,085,031.86	1,559,189.54	1,362,442.58
	RAC15 - State	1,717.71	2,877.79	2,514.65	1,374,563.07	2,186,803.84	1,910,861.11
	RAC15 - Retention	355.16	-	-	284,209.69	-	-
	RAC16 - City	582.65	837.78	666.99	549,001.96	784,002.90	624,176.50
	RAC16 - State	546.14	962.69	766.44	514,600.42	849,554.67	676,364.93
	RAC16 - Retention	99.00	-	-	93,282.75	-	-
	RAC17 - City	470.19	815.06	655.71	632,400.85	1,093,989.83	880,111.00
	RAC17 - State	551.90	1,136.37	914.21	742,299.98	1,439,280.79	1,157,896.36
	RAC17 - Retention	119.00	-	-	160,053.81	-	-
	RAC18 - City	530.39	1,093.93	873.97	1,030,383.35	2,109,731.52	1,685,512.27
	RAC18 - State	618.26	1,328.08	1,061.03	1,201,087.52	2,411,859.68	1,926,889.30
	RAC18 - Retention	123.00	-	-	238,950.87	-	-
	Persons with AIDS - City	1,153.06	1,153.06	1,153.06	2,819,127.92	3,172,425.51	3,172,425.51
	Persons with AIDS - State	335.03	335.03	335.03	758,631.88	855,113.82	855,113.82
	Persons with AIDS - Retention	41.29	41.29	41.29	93,495.84	105,386.53	105,386.53
	Persons with HIV - City	676.64	676.64	676.64	440,289.65	491,606.03	491,606.03
	Persons with HIV - State	298.10	298.10	298.10	193,973.67	216,581.57	216,581.57
	Persons with HIV - Retention	31.26	31.26	31.26	20,340.88	22,711.64	22,711.64
	Persons with HIV - City (Disable)	871.40	871.40	871.40	1,279,171.63	1,408,931.80	1,408,931.80
	Persons with HIV - State (Disable)	314.51	314.51	314.51	461,684.95	508,518.64	508,518.64
	Persons with HIV - Retention (Disabl	20.00	20.00	20.00	29,359.00	32,337.20	32,337.20
	Under 1 Transition - City	5,765.35	5,765.35	5,765.35	1,188,930.48	1,270,510.18	1,270,510.18
	Under 1 Transition - State	14,623.63	14,623.63	14,623.63	2,377,509.77	2,540,563.24	2,540,563.24
	Under 1 Transition - Retention	2,355.60	2,355.60	2,355.60	382,973.45	409,238.39	409,238.39
	Under 1 Transition - City (Disable)	74.62	74.62	74.62	120,179.24	124,163.20	124,163.20
	Under 1 Transition - State (Disable)	70.87	70.87	70.87	114,139.68	117,923.43	117,923.43
	Under 1 Transition - Retention (Disab	14.00	14.00	14.00	22,547.70	23,295.16	23,295.16
	Total Including Deliveries	411,737.19	411,737.11	411,737.11	80,872,715.75	86,677,611.73	87,257,429.99

Minnesota

Claims Experience for January 1, 1999 to December 31, 1999

Health Program/Population: _____

Health Plan: _____ Actuarial Template

HOSPITAL INPATIENT

Type of Service	Units/1,000	Cost per Unit	Cost PMPM	
Medical/Surgical				
ICU/CCU				
Maternity				
CD				
MH				
SNF				% of Total
Subtotal				

HOSPITAL OUTPATIENT

Type of Service	Units/1,000	Cost per Unit	Cost PMPM	
Emergency Room				
Lab				
Radiology				
Outpatient Surgery				
Other (specify)				% of Total
Subtotal				

PROFESSIONAL SERVICES

Type of Service	Units/1,000	Cost per Unit	Cost PMPM	
Inpatient Surgery				
Oupatient Surgery				
Office Surgery				
Anesthesia				
Maternity				
Inpatient Visits				
Office Visits				
Consults				
Periodic Exams				
Well Baby Care				
Emergency Room				
CD				
MH				
Refracts				
Lab				
Radiology				
Immunizations/Injections				
Infertility Services				
Home Health/PCA				
Chiropractic				
Physical Medicine				
Dental				
Nursing				
Other (specify)				% of Total
Subtotal				

OTHER SERVICES

Type of Service	Units/1,000	Cost per Unit	Cost PMPM	% of Total
Pharmacy				
Ambulance				
DME/Prosthetics				
Other (specify				
		Grand Total		100%

STATEMENT OF REVENUE, EXPENSES AND NET WORTH

Statement as of December 31, 1999
Name of Health Plan Company:

	1	2	3	4	5	6	7	8	9	10	11	12
	NAIC TOTALS	NON-MINNESOTA PRODUCTS (ELIMINATIONS)	TOTAL MINNESOTA PRODUCTS	COMMERCIAL	MEDICARE	PREPAID MEDICAL ASSISTANCE PROGRAM	GENERAL ASSISTANCE MEDICAL CARE	MNCARE	MSHO	DENTAL	ADMINISTRATIVE SERVICES ONLY	OTHER
DETAILS OF WRITE-INS												
0501 Medicare Cost HCFA Revenue	33,728,012	0	33,728,012	0	33,728,012	0	0	0	0	0	0	0
0502	0	0	0	0	0	0	0	0	0	0	0	0
0503	0	0	0	0	0	0	0	0	0	0	0	0
0504	0	0	0	0	0	0	0	0	0	0	0	0
0505	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
0598 Summary of Remaining Write-Ins for Line 5 Overflow	0	0	0	0	0	0	0	0	0	0	0	0
0599 TOTALS (Lines 0501 through 0505 plus 0598) (Line 5)	33,728,012	0	33,728,012	0	33,728,012	0	0	0	0	0	0	0
0601 Net Income from Subsidiary Operations	0	0	0	0	0	0	0	0	0	0	0	0
0602 Administrative Services Fee Revenue	0	0	0	0	0	0	0	0	0	0	0	0
0603 Dental Risk Sharing Profit	1,224,506	0	1,224,506	0	0	0	0	0	0	1,224,506	0	0
0604	0	0	0	0	0	0	0	0	0	0	0	0
0605	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
0698 Summary of Remaining Write-Ins for Line 6 Overflow	0	0	0	0	0	0	0	0	0	0	0	0
0699 TOTALS (Lines 0601 thru 0605 plus 0698) (Line 6)	1,224,506	0	1,224,506	0	0	0	0	0	0	1,224,506	0	0
1501 Non-Health Plan Clinic Costs	0	0	0	0	0	0	0	0	0	0	0	0
1502 Point of Service or Supplemental Benefit Expenses	0	0	0	0	0	0	0	0	0	0	0	0
1503 Pharmacy	125,852,548	640,696	125,211,852	75,952,464	11,401,950	24,045,779	4,175,719	5,385,114	4,250,816	0	0	0
1504 Mental Health/ Chemical Dependency	36,782,279	219,486	36,562,793	24,454,309	1,484,312	8,222,998	1,092,783	1,108,455	199,958	0	0	0
1505 Dental	9,539,648	0	9,539,648	0	0	6,625,690	880,495	1,811,448	222,015	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
1598 Summary of Remaining Write-Ins for Line 15 Overflow	172,174,475	860,182	171,314,293	100,406,773	12,886,272	38,894,465	6,148,977	8,305,017	4,672,789	0	0	0

STATEMENT OF REVENUE, EXPENSES AND NET WORTH

Statement as of December 31, 1999
Name of Health Plan Company:

	1	2	3	4	5	6	7	8	9	10	11	12
	NAIC TOTALS	NON-MINNESOTA PRODUCTS (ELIMINATIONS)	TOTAL MINNESOTA PRODUCTS	COMMERCIAL	MEDICARE	PREPAID MEDICAL ASSISTANCE PROGRAM	GENERAL ASSISTANCE MEDICAL CARE	MNCARE	MSHO	DENTAL	ADMINISTRATIVE SERVICES ONLY	OTHER
MEMBER MONTHS	5,781,924	45,342	5,736,582	3,877,822	703,045	853,092	55,361	223,639	23,623			
REVENUES:												
1. Premium	962,729,195	4,965,061	957,764,134	629,295,533	74,209,863	194,255,880	18,714,429	31,557,178	9,731,251	0	0	0
2. Fee-For-Service	0	0	0	0	0	0	0	0	0	0	0	0
3. Risk Revenue	141,882,582	0	141,882,582	0	122,829,588	0	0	0	19,052,994	0	0	0
4. Investment	17,952,483	112,068	17,840,415	14,204,060	3,177,470	387,802	41,172	17,952	11,959	0	0	0
5. Aggregate Write-ins for Other Health Care Related Revenues	33,728,012	0	33,728,012	0	33,728,012	0	0	0	0	0	0	0
6. Aggregate Write-ins for Other Revenues	1,224,506	0	1,224,506	0	0	0	0	0	0	1,224,506	0	0
7. TOTAL REVENUES (Lines 1-6)	1,157,516,778	5,077,129	1,152,439,649	643,499,593	233,944,933	194,643,682	18,755,601	31,575,130	28,795,204	1,224,506	0	0
EXPENSES:												
Medical and Hospital:												
8. Physician Services	334,270,317	1,558,407	332,711,910	188,207,128	78,425,828	40,724,503	5,176,148	9,730,362	10,447,941	0	0	0
9. Other Professional Services	217,905,041	910,613	216,994,428	120,185,139	43,735,420	37,527,904	5,247,038	6,410,021	3,888,906	0	0	0
10. Outside Referrals	0	0	0	0	0	0	0	0	0	0	0	0
11. Emergency Room and Out-of-Area	0	0	0	0	0	0	0	0	0	0	0	0
12. Inpatient	269,124,970	1,049,853	268,075,117	132,778,099	75,471,047	42,905,990	4,698,355	5,554,325	6,667,301	0	0	0
13. Incentive Pool and Withhold Adjustments	22,471,354	155,296	22,316,058	18,116,080	4,193,003	6,975	0	0	0	0	0	0
14. Occupancy, Depreciation and Amortization	0	0	0	0	0	0	0	0	0	0	0	0
15. Aggregate Write-ins for Other Medical and Hospital Expenses	172,174,475	860,182	171,314,293	100,406,773	12,886,272	38,894,465	6,148,977	8,305,017	4,672,789	0	0	0
16. Subtotal (Lines 8 to 15)	1,015,946,157	4,534,351	1,011,411,806	559,693,219	214,711,570	160,059,837	21,270,518	29,999,725	25,676,937	0	0	0
LESS												
17. Net Reinsurance Recoveries Incurred	1,178,852	0	1,178,852	1,178,852	0	0	0	0	0	0	0	0
18. Copayments	0	0	0	0	0	0	0	0	0	0	0	0
19. COB and Subrogation	4,727,229	0	4,727,229	2,341,406	1,434,896	707,547	94,027	0	149,351	0	0	0
20. Subtotal (Lines 17 and 19)	5,906,081	0	5,906,081	3,520,260	1,434,896	707,547	94,027	0	149,351	0	0	0
21. TOTAL MEDICAL AND HOSPITAL (Line16 less Line 20)	1,010,040,075	4,534,351	1,005,505,725	556,172,959	213,276,674	159,352,290	21,176,491	29,999,725	25,527,586	0	0	0
22. Administration Expenses	143,727,994	727,691	143,000,303	92,230,973	23,789,305	19,170,179	2,494,425	4,001,950	1,314,971	0	0	0
23. TOTAL EXPENSES (Lines 21 to 22)	1,153,768,070	5,262,042	1,148,506,028	648,403,932	237,065,979	178,522,469	23,670,916	34,001,675	26,841,657	0	0	0
24. NET INCOME OF OPERATIONS (LOSS) (Line 7 less Line 23)	3,748,708	(184,913)	3,933,621	(4,904,339)	(3,121,046)	16,121,213	(4,915,315)	(2,425,945)	1,954,547	1,224,506	0	0
25. Extraordinary Item	0	0	0	0	0	0	0	0	0	0	0	0
26. Provision for Federal Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0
27. NET INCOME (LOSS) (Line 24, less Lines 25 and 26)	3,748,708	(184,913)	3,933,621	(4,904,339)	(3,121,046)	16,121,213	(4,915,315)	(2,425,945)	1,954,547	1,224,506	0	0

Note 1: Currently, Medica's information systems do not have the ability to accurately report the totals for the categories Outside Referrals and Emergency Room and Out-of-Area (lines 10 and 11 above).

Note 2: All other blank rows in the Statement of Revenue, Expenses and Net Worth are blank as the nature of the classification is not applicable to Medica's business.

Oregon

REPORT A2. OMAP MEMBERS APPROACHING OR SURPASSING STOP-LOSS DEDUCTIBLE

Contractor _____

Report Period _____ through _____

Provide the following information about stop-loss claims and reinsurance. If you have more than one stop-loss carrier during the report quarter, fill out Report A2 for each carrier. **Submit Table I quarterly. Submit the information in Section II August 31st of each year.**

I. OMAP Members Stop-Loss Experience - **Quarterly**

		Medical Stop-Loss Claims	Hospital Stop-Loss Claims
1.	Number of OMAP Members with Costs within 20% of Stop-Loss Deductible		
2.	Number of OMAP Members with Costs Surpassing Stop-Loss Deductible		
3.	Number of OMAP Members with Costs Greater than $100,000		
4.	Number of OMAP Members with Costs Greater than Reinsurance Cap.		

II. Provide the following information about reinsurance **annually:**

A. What is the amount of the stop-loss thresholds (i.e. the deductible amounts) and the associated type of stop-loss coverage (hospital, professional or aggregate coverage)?

B. What is the dollar amount of a claim or the percentage of the total claim amount whereby the responsibility for covering the claim reverts back to the Contractor from the reinsurer?

C. What is the calendar year of reinsurance coverage?

D. Who is the carrier?

24. TOTAL ASSETS - the sum of Line 9, Line 17, and Line 23.

REPORT A7. QUARTERLY BALANCE SHEET OF CORPORATE ACTIVITY

Contractor _____

Report Period _____ through _____

		Corporate Activity
CURRENT ASSETS	1. Cash and Cash Equivalents	
	2. Short-term Investments	
	3. Premiums Receivable	
	4. Investment Income Receivables	
	5. Health Care Receivables	
	6. Amounts Due from Affiliates	
	7. Reinsurance Recoverable on Paid Losses	
	8. Other Current Assets	
9. TOTAL CURRENT ASSETS		
	10 Bonds	
	11.1 Preferred Stocks	
	11.2. Common Stocks	
	12. Other Long-Term Invested Assets	
	13. Receivable for Securities	
	14. Amounts Due from Affiliates	
	15. Restricted Cash and Restricted Securities	
	16. Other Assets	
17. TOTAL OTHER ASSETS		
	18. Land, Building and Improvements	
	19. Furniture and Equipment	
	20. Leasehold Improvements	
	21. EDP Equipment	
	22. Other Property and Equipment	
23. TOTAL PROPERTY AND EQUIPMENT		
24. TOTAL ASSETS		

Details of Write-Ins:

REPORT A7. QUARTERLY BALANCE SHEET OF CORPORATE ACTIVITY (continued)

Contractor _____

Report Period _____ through _____

		Corporate Activity
CURRENT LIABILITIES	25. Accounts Payable	
	26. Claims Payable	
	27. Accrued Medical Incentive Pool	
	28. Unearned Premiums	
	29. Loans and Notes Payable	
	30. Amounts Due to Affiliates	
	31. Unauthorized Reinsurance	
	32. Other Current Liabilities	
33. TOTAL CURRENT LIABILITIES		
OTHER LIABILITIES	34. Loans and Notes Payable	
	35. Amounts Due to Affiliates	
	36. Payable for Securities	
	37. Other Liabilities	
38. TOTAL OTHER LIABILITIES		
39. TOTAL LIABILITIES		
NET WORTH	40. Common Stock	
	41. Preferred Stock	
	42. Paid in Surplus	
	43. Contributed Capital	
	44. Surplus Notes	
	45. Contingency Reserves	
	46. Retained Earnings/Fund Balance	
	47. Other Net Worth	
48. TOTAL NET WORTH		
49. TOTAL LIABILITIES AND NET WORTH		

Details of Write-Ins:

REPORT A8. QUARTERLY STATEMENT OF REVENUE, EXPENSES, AND NET WORTH

Contractor _____

Report Period _____ through _____

		OHP Line of Activity	Corporate Activity
REVENUES	1. Premiums		
	2. Fee-For-Service		
	3. Risk Revenue		
	4. Title XIX-Other Medicaid		
	5. Net Investment Income		
	6. Other Health Care Related Revenues		
	7. Other Revenues		
8. TOTAL REVENUES			
MEDICAL AND HOSPITAL EXPENSES	9. Physician Services		
	10. Other Professional Services		
	11. Outside Referrals		
	12. Emergency Room and Out-of-Area		
	13. Incentive Pool and Withhold Adjustments		
	14. Inpatient		
	15. Occupancy, Depreciation and Amortization		
	16. Other Medical and Hospital Expenses		
17. MEDICAL AND HOSPITAL EXPENSES SUBTOTAL			

Details of Write-Ins:

REPORT A8. QUARTERLY STATEMENT OF REVENUE, EXPENSES, AND NET WORTH (continued)

Contractor _____

Report Period _____ through _____

		OHP Line of Activity	Corporate Activity
DEDUCTIONS	18. Reinsurance Recoveries Incurred		
	19. Copayments		
	20. COB		
	21. Subrogation		
22. DEDUCTIONS SUBTOTAL			
23. TOTAL MEDICAL AND HOSPITAL EXPENSES LESS DEDUCTIONS			
24. Compensation			
25. Marketing			
26. Other Administrative Expenses			
27. TOTAL ADMINISTRATIVE EXPENSES			
28. TOTAL EXPENSES			
29. INCOME (LOSS)			
OTHER ITEMS	30. Extraordinary Items		
	31. Provision for Federal Income Taxes		
32. NET INCOME (LOSS)			
NET WORTH	33. Net Worth Beginning of Quarter		
	34. Increase (Decrease) in Common Stock		
	35. Increase (Decrease) in Preferred Stock		
	36. Increase (Decrease) in Paid in Surplus		
	37. Increase (Decrease) in Contributed Capital		
	38. Increase (Decrease) in Surplus Notes		
	39. Increase (Decrease) in Contingency Reserves		
	40. Increase (Decrease) in Retained Earnings/Fund Balance:		
	a. Net Income		
	b. Dividends to Stockholders		
	c. Interest on Surplus Notes		
	d. Change in Non-Admitted Assets		
	e. Change in Unauthorized Reinsurance		
	f. Other Changes		
	41. Other Changes in Other Net Worth Items		
	42. Net Worth at End of Quarter		

Details of Write-Ins:

REPORT A9. CASH FLOW ANALYSIS FOR CORPORATE ACTIVITY

Contractor _____

Report Period _____through_____

Provide the cash flow information for Corporate Activity. **Note that cash flows resulting from an increase in operating assets, a decrease in operating liabilities, and a payment out are debits. Note that cash flows resulting in receipt of cash or proceeds are credits.**

Please note that the allocation method used in Report A9 changes in the OMAP contract year to meet NAIC standards which are changing at the end of the calendar year 2000 from the Indirect Method to the Direct Method. Report A9 covering the report period of October - December 2000 needs to be developed using the Indirect Method. Report A9 covering the report periods of calendar year 2001 needs to be developed using the Direct Method.

Submittal using the Direct Method - cash flow analysis allocated using the Direct Method resulting in the reporting of cash flow on Report A9 for each quarter in the calendar year 2001.

CASH FLOWS PROVIDED BY			Corporate Activity
OPERATING ACTIVITIES		1. Net Income (Loss)	
	Adjustment to reconcile net income(loss to net cash)	2. Depreciation and Amortization	
	(Increase)/Decrease in Operating Assets	3. Premium Receivable	
		4. Due from Affiliates	
		5. Health Care Receivable	
		6. Other (Increase) Decrease in Operating Assets	
	Increase (Decrease) in Operating Liabilities	7. Medical Claims Payable	
		8. Due to Affiliates	
		9. Unearned Premiums	
		10. Accounts Payable	
		11. Accrued Medical Incentive Pool	
		12. Other Increase (Decrease) from Operating Activities	
13. NET CASH PROVIDED (USED) FROM OPERATING ACTIVITIES			

REPORT A9. CASH FLOW ANALYSIS FOR CORPORATE ACTIVITY - (continued)

Contractor _____

Report Period _____through_____

		Corporate Activity
CASH FLOWS PROVIDED BY INVESTING ACTIVITIES	14. Receipts from Investments	
	15. Receipts for Sales of Property, Plant and Equipment	
	16. Payments for Investments	
	17. Payments for Property, Plant and Equipment	
	18. Other Increase (Decrease) in Cash Flow for Investing Activities	
19. NET CASH PROVIDED BY INVESTING ACTIVITIES		
CASH FLOWS PROVIDED BY FINANCING ACTIVITIES	20. Proceeds from Paid in Capital or Issuance of Stock	
	21. Loan Proceeds from Non-Affiliates	
	22. Loan Proceeds from Affiliates	
	23. Principal Payments on Loans from Non-Affiliates	
	24. Principal Payments on Loans from Affiliates	
	25. Dividends Paid	
	26. Principal Payments under Lease Obligations	
	27. Other Cash Flow Provided by Financing Activities	
28. NET CASH PROVIDED BY FINANCING ACTIVITIES		
29. NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS		
30. CASH AND CASH EQUIVALENTS AT BEGINNING OF REPORT PERIOD		
31. CASH AND CASH EQUIVALENTS AT END OF REPORT PERIOD		

Utah

PROVIDER NAME: _____

SERVICE REPORTING PERIOD: BEGINNING _____ ENDING _____

PAYMENT DATES: BEGINNING _____ ENDING _____

ATTACHMENT E
TABLE 1 PAGE 1 OF 1
MEDICAID ENROLLMENT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LINE NO	MONTH	INFANTS 0-12 MOS	AFDC MALE < 21 YEARS > 12 MOS	AFDC MALE 21 + YEARS	AFDC FEMALE < 21 YEARS > 12 MOS	AFDC FEMALE 21 + YEARS	AGED	DISABLED MALE	DISABLED FEMALE	MED NEEDY CHILD	MED NEEDY OTHER	NON AFDC PREGNANT FEMALE (SOBRA)	RESTRICTION CLIENTS	AIDS	MEDICAID TOTAL (SUM OF COLS 3 THRU 15)
1	JULY														0
2	AUGUST														0
3	SEPTEMBER														0
4	OCTOBER														0
5	NOVEMBER														0
6	DECEMBER														0
7	JANUARY														0
8	FEBRUARY														0
9	MARCH														0
10	APRIL														0
11	MAY														0
12	JUNE														0
13	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROVIDER NAME:
SERVICE REPORTING PERIOD: BEGINNING _____ ENDING _____
PAYMENT DATES: BEGINNING _____ ENDING _____

ATTACHMENT E
TABLE 2 PAGE 1 OF 2
REVENUES AND COST

			MEDICAID (CAPITATED ONLY, NO FEE FOR SERVICE)													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
LINE NO	DESCRIPTION	TOTAL UTAH OPERATIONS (INCLUDING ALL MEDICAID)	INFANTS 0-12 MOS	TANF MALE < 21 YEARS > 12 MOS	TANF MALE 21 + YEARS	TANF FEMALE < 21 YEARS > 12 MOS	TANF FEMALE 21 + YEARS	AGED	DISABLED MALE	DISABLED FEMALE	MED NEEDY CHILD	MED NEEDY ADULT	NON TANF PREGNANT FEMALE (SOBRA)	RESTRICTION CLIENTS	AIDS	MEDICAID TOTAL (SUM OF COLS 4 THRU 16)
	REVENUES							ROUND TO THE NEAREST DOLLAR								
1	PREMIUMS															$0
2	DELIVERY FEES (CHILD BIRTH)															$0
3	REINSURANCE															$0
4	STOP LOSS															$0
5	TPL COLLECTIONS - MEDICARE															$0
6	TPL COLLECTIONS - OTHER															$0
7	OTHER (SPECIFY)															$0
8	OTHER (SPECIFY)															$0
9	TOTAL REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	MEDICAL COSTS							ROUND TO THE NEAREST DOLLAR								
10	INPATIENT HOSPITAL SERVICES															$0
11	OUTPATIENT HOSPITAL SERVICES															$0
12	EMERGENCY DEPARTMENT SERVICES															$0
13	PRIMARY CARE PHYSICIAN SERVICES															$0
14	SPECIALTY CARE PHYSICIAN SERVICES															$0
15	ADULT SCREENING SERVICES															$0
16	VISION CARE - OPTOMETRIC SERVICES															$0
17	VISION CARE - OPTICAL SERVICES															$0
18	LABORATORY (PATHOLOGY) SERVICES															$0
19	RADIOLOGY SERVICES															$0
20	PHYSICAL AND OCCUPATIONAL THERAPY															$0
21	SPEECH AND HEARING SERVICES															$0
22	PODIATRY SERVICES															$0
23	END STAGE RENAL DISEASE (ESRD) SERVICES - DIALYSIS															$0
24	HOME HEALTH SERVICES															$0
25	HOSPICE SERVICES															$0
26	PRIVATE DUTY NURSING															$0
27	MEDICAL SUPPLIES AND MEDICAL EQUIPMENT															$0
28	ABORTIONS															$0
29	STERILIZATIONS															$0
30	DETOXIFICATION															$0
31	ORGAN TRANSPLANTS															$0
32	OTHER OUTSIDE MEDICAL SERVICES															$0
33	LONG TERM CARE															$0
34	TRANSPORTATION SERVICES															$0
35	ACCRUED COSTS															$0
36	OTHER (SPECIFY)															$0
37	OTHER (SPECIFY)															$0
38	TOTAL MEDICAL COSTS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROVIDER NAME:
SERVICE REPORTING PERIOD:
PAYMENT DATES:

ATTACHMENT E
TABLE 2 PAGE 2 OF 2
REVENUES AND COST

1	2	3	MEDICAID (CAPITATED ONLY, NO FEE FOR SERVICE)													
LINE NO	DESCRIPTION	TOTAL UTAH OPERATIONS (INCLUDING ALL MEDICAID)	INFANTS 0-12 MOS	AFDC MALE < 21 YEARS > 12 MOS	AFDC MALE 21 + YEARS	AFDC FEMALE < 21 YEARS > 12 MOS	AFDC FEMALE 21 + YEARS	AGED	DISABLED MALE	DISABLED FEMALE	MED NEEDY CHILD	MED NEEDY OTHER	NON AFDC PREGNANT FEMALE (SOBRA)	RESTRICTION CLIENTS	AIDS	MEDICAID TOTAL (SUM OF COLS 4 THRU 16)
	ADMINISTRATIVE COSTS							ROUND TO THE NEAREST DOLLAR								
39	ADMINISTRATION - ADVERTISING															$0
40	HOME OFFICE INDIRECT COST ALLOCATIONS															$0
41	UTILIZATION															$0
42	ADMINISTRATION - OTHER															$0
43	TOTAL ADMINISTRATIVE COSTS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
44	TOTAL COSTS (MED & ADMIN)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
45	NET INCOME [Gain or (Loss)]	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
46	ENROLLEE MONTHS		0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	MEDICAL COST @ ENROLLEE MO															
48	ADMIN COST @ ENROLLEE MO															
49	TOTAL COST @ ENROLLEE MO															
	OTHER DATA															
50	TPL SAVINGS - COST AVOIDANCE **															$0
51	DUPLICATE PREMIUMS ***															$0
52	NUMBER OF DELIVERIES ****															0
53	FAMILY PLANNING SERVICES															$0
54	REINSURANCE PREMIUMS RECEIVED															$0
55	REINSURANCE PREMIUMS PAID															$0
56	ADMINISTRATIVE REVENUE RETAINED BY THE CONTRACTOR															$0

** COST OF SERVICES PROVIDED TO HMO CLIENTS, NOT PAID FOR BY HMO, E.G. "AVOIDED", BECAUSE OTHER INSURANCE PAID FOR IT.
*** CASH AMOUNT RETURNED TO MEDICAID BY HMO BECAUSE HMO CLIENT WAS COVERED IN THE SAME HMO BY ANOTHER CARRIER.
**** NUMBER OF CHILDREN DELIVERED. THIS NUMBER TIMES RATES SHOULD EQUAL DELIVERY REVENUE.

In this Medicaid portion, include only costs for Medicaid clients under the capitation agreement - exclude revenue, costs & TPL categories per this form that do not apply to your organization or contract.

MEDICAL SERVICES REVENUE AND COST DEFINITIONS FOR TABLE 2

REVENUES (Report all revenues received or receivable at the end-of-period date on the form)

1. Premiums

   Report premium payments received or receivable from the DEPARTMENT.

2. Delivery Fees

   Report the delivery fee received or receivable from the DEPARTMENT.

3. Reinsurance

   Report the reinsurance payments received or receivable from the REINSURANCE CARRIER (See Attachment F, Section D, Items 1 and 2).

4. Stop Loss

   Report stop loss payments received or receivable from the DEPARTMENT (See Attachment F, Section D, Item 2).

5. TPL Collections - Medicare

   Report all third party collections received from Medicare.

6. TPL Collections - Other

   Report all third party collections received other than Medicare collections. (Report TPL savings because of cost avoidance as a memo amount on line 48).

7. Other (specify)

8. Other (specify)

   For lines seven and eight: Report all other revenue not included in lines one through six. (There may not be any amount to report; however, this line can be used to report revenue from total Utah operations that do not fit lines one through six.)

9. **TOTAL REVENUES**

   Total lines one through eight.

NOTE: Duplicate premiums are not considered a cost or revenue as they are collected by the CONTRACTOR and paid to the DEPARTMENT. Therefore, the payment to the DEPARTMENT would reduce or offset the revenue recorded when the duplicate premium was received. However, line 49 has been established for reporting duplicate premiums as a memo amount.

MEDICAL COSTS: Report all costs accrued as of the ending date on the form. In the first data column (column 3), report all costs for Utah operations per the general ledger. In the 14 Medicaid data columns (columns 4 through 17), report only costs for Medicaid Enrollees.

10. Inpatient Hospital Services

Costs incurred in providing inpatient hospital services to Enrollees confined to a hospital.

11. Outpatient Hospital Services

Costs incurred in providing outpatient hospital services to Enrollees, not including services provided in the emergency department.

12. Emergency Department Services

Costs incurred in providing outpatient hospital emergency room services to Enrollees.

13. Primary Care Physician Services (Including EPSDT Services, Prenatal Care, and Family Planning Services)

All costs incurred for Enrollees as a result of providing primary care physician, osteopath, physician assistant, nurse practitioner, and nurse midwife services, including payroll expenses, any capitation and/or contract payments, fee-for-service payments, fringe benefits, travel and office supplies.

14. Specialty Care Physician Services (Including EPSDT Services, Prenatal Care, and Family Planning Services)

All costs incurred as a result of providing specialty care physician, osteopath, physician assistant, nurse practitioner, and nurse midwife services to Enrollees, including payroll expenses, any capitation and/or contract payments, fee-for-service payments, fringe benefits, travel and office supplies.

15. Adult Screening Services

Expenses associated with providing screening services to Enrollees.

16. Vision Care - Optometric Services

Included are payroll costs, any capitation and/or contract payments, and fee-for-service payments for services and procedures performed by an optometrist and other non-payroll expenses directly related to providing optometric services for Enrollees.

17. Vision Care - Optical Services

Included are payroll costs, any capitation and/or contract payments and fee-for-service payments for services and procedures performed by an optician and other supportive staff, cost of eyeglass frames and lenses and other non-payroll expenses directly related to providing optical services for Enrollees.

18. Laboratory (Pathology) Services

Costs incurred as a result of providing pathological tests or services to Enrollees including payroll expenses, any capitation and/or contract payments, fee-for-service payments and other expenses directly related to in-house laboratory services. Excluded are costs associated with a hospital visit.

19. Radiology Services

Cost incurred in providing x-ray services to Enrollees, including x-ray payroll expenses, any capitation and/or contract payments, fee-for-service payments, and occupancy overhead costs. Excluded are costs associated with a hospital visit.

20. Physical and Occupational Therapy

Included are payroll costs, any capitation and/or contract payments, fee-for-service costs, and other non-payroll expenditures directly related to providing physical and occupational therapy services.

21. Speech and Hearing Services

Payroll costs, any capitation and/or contract payments, fee-for-service payments, and non-payroll costs directly related to providing speech and hearing services for Enrollees.

22. Podiatry Services

Salary expenses or outside claims, capitation and/or contract payments, fee-for-service payments, and non-payroll costs directly related to providing services rendered by a podiatrist to Enrollees.

23. End Stage Renal Disease (ESRD) Services - Dialysis

Costs incurred in providing renal dialysis (ESRD) services to Enrollees.

24. Home Health Services

Included are payroll costs, any capitation and/or contract payments, fee-for-service payments, and other non-payroll expenses directly related to providing home health services for Enrollees.

25. Hospice Services

Expenses related to hospice care for Enrollees including home care, general inpatient care for Enrollees suffering terminal illness and inpatient respite care for caregivers of Enrollees suffering terminal illness.

26. Private Duty Nursing

Expenses associated with private duty nursing for Enrollees.

27. Medical Supplies and Medical Equipment

This cost center contains fee-for-service cost for outside acquisition of medical requisites, special appliances as prescribed by the CONTRACTOR to Enrollees.

28. Abortions

Medical and hospital costs incurred in providing abortions for Enrollees.

29. Sterilizations

Medical and hospital costs incurred in providing sterilizations for Enrollees.

30. Detoxification

Medical and hospital costs incurred in providing treatment for substance abuse and dependency (detoxification) for Enrollees.

31. Organ Transplants

Medical and hospital costs incurred in providing transplants for Enrollees.

32. Other Outside Medical Services

The costs for specialized testing and outpatient surgical centers for Enrollees ordered by the CONTRACTOR.

33. Long Term Care

Costs incurred in providing long-term care for Enrollees required under Attachment C.

34. Transportation Services

Costs incurred in providing ambulance (ground and air) services for Enrollees.

35. Accrued Costs

Costs incurred for services rendered to Enrollees but not yet billed.

36 & 37. Other

Report costs not otherwise reported.

38. **TOTAL MEDICAL COSTS**

Total lines 10 through 38.

ADMINISTRATIVE COSTS

Report payroll costs, any capitation and/or contract payments, non-payroll costs and occupancy overhead costs for accounting services, claims processing services, health plan services, data processing services, purchasing, personnel, Medicaid marketing and regional administration.

Report the administration cost under four categories - advertising, home office indirect cost allocation, utilization and all other administrative costs. If there are no advertising costs or indirect home office cost allocations, report a zero amount in the applicable lines.

39. Administration - Advertising

40. Home Office Indirect Cost Allocations

41. Utilization

Payroll cost and any capitation and/or contract payments for utilization staff and other non-payroll costs directly associated with controlling and monitoring outside physician referral and hospital admission and discharges of Enrollees.

42. Administration - Other

43. **TOTAL ADMINISTRATIVE COSTS**

Total lines 39 through 43.

44. **TOTAL COSTS (Medical and Administrative)**

Total lines 38 and 44.

45. **NET INCOME (Gain or Loss)**

Line 9 minus line 44.

46. **ENROLLEE MONTHS**

Total Enrollee months for period of time being reported.

47. MEDICAL COSTS PER ENROLLEE MONTH

Line 38 divided by line 46.

48. ADMINISTRATIVE COSTS PER ENROLLEE MONTH

Line 43 divided by line 46.

49. TOTAL COSTS PER ENROLLEE MONTH

Line 44 divided by line 46.

OTHER DATA

50. TPL Savings - Cost Avoidance

51. Duplicate Premiums

Include all premiums received for Enrollees from all sources other than Medicaid.

52. Number of Deliveries

Total number of Enrollee deliveries when the delivery occurred at 24 weeks or later.

53. Family Planning Services

Include costs associated with family planning services as defined in Attachment C (Covered Services, Section V, Family Planning Services).

54. Reinsurance Premiums Received

Include the reinsurance premiums received or receivable from the DEPARTMENT.

55. Reinsurance Premiums Paid

Include reinsurance premiums paid to the REINSURANCE CARRIER.

56. Administrative Revenue Retained by the CONTRACTOR

Include the administrative revenue retained by the CONTRACTOR from the reinsurance premiums received or receivable from the DEPARTMENT.

PROVIDER NAME: _____

SERVICE REPORTING PERIOD: BEGINNING _____ ENDING _____

PAYMENT DATES: BEGINNING _____ ENDING _____

ATTACHMENT E
TABLE 3 PAGE 1 OF 1
UTILIZATION

		< MEDICAID (CAPITATED ONLY, NO FEE FOR SERVICE)													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LINE NO	SERVICE DESCRIPTION (REFER TO THE UNIT OF SERVICE DEFINITIONS IN THE INSTRUCTIONS)	INFANTS 0-12 MOS	AFDC MALE < 21 YEARS > 12 MOS	AFDC MALE 21 + YEARS	AFDC FEMALE < 21 YEARS > 12 MOS	AFDC FEMALE 21 + YEARS	AGED	DISABLED MALE	DISABLED FEMALE	MED NEEDY CHILD	MED NEEDY OTHER	NON AFDC PREGNANT FEMALE (SOBRA)	RESTRICTION CLIENTS	AIDS	MEDICAID TOTAL (SUM OF COLS 3 THRU 15)
1	HOSPITAL SERVICES - GENERAL DAYS														0
2	HOSPITAL SERVICES - DISCHARGES														0
3	HOSPITAL SERVICES - OUTPATIENT VISITS														0
4	EMERGENCY DEPARTMENT VISITS														0
5	PRIMARY CARE PHYSICIAN SERVICES														0
6	SPECIALTY CARE PHYSICIAN SERVICES														0
7	ADULT SCREENING SERVICES														0
8	VISION CARE - OPTOMETRIC SERVICES														0
9	VISION CARE - OPTICAL SERVICES														0
10	LABORATORY (PATHOLOGY) PROCEDURES														0
11	RADIOLOGY PROCEDURES														0
12	PHYSICAL AND OCCUPATIONAL THERAPY SERVICES														0
13	SPEECH AND HEARING SERVICES														0
14	PODIATRY SERVICES														0
15	END STAGE RENAL DISEASE (ESRD) SERVICES - DIALYSIS														0
16	HOME HEALTH SERVICES														0
17	HOSPICE DAYS														0
18	PRIVATE DUTY NURSING SERVICES														0
19	MEDICAL SUPPLIES AND MEDICAL EQUIPMENT														0
20	ABORTIONS PROCEDURES														0
21	STERILIZATION PROCEDURES														0
22	DETOXIFICATION DAYS														0
23	ORGAN TRANSPLANTS														0
24	OTHER OUTSIDE MEDICAL SERVICES														0
25	LONG TERM CARE FACILITY DAYS														0
26	TRANSPORTATION TRIPS														0
27	OTHER (SPECIFY)														0

NOTE: MEDICAL REQUISITIONS HAS BEEN DITCHEDII

MEDICAL SERVICES UTILIZATION DEFINITIONS FOR TABLE 3

MEDICAL SERVICES

1. Hospital Services - General Days

   Record total number of inpatient hospital days associated with inpatient medical care.

2. Hospital Services - Discharges

   Record total number of inpatient hospital discharges.

3. Hospital Services - Outpatient Visits

   Record total number of outpatient visits.

4. Emergency Department Visits

   Record total number of emergency room visits

5. Primary Care Physician Services

   Number of services and procedures defined by CPT-4 codes provided by primary care physicians or licensed physician extenders or assistants under direct supervision of a physician inclusive of all services except radiology, laboratory and injections/immunizations which should be reported in their appropriate section. The reporting of data under this category includes both outpatient and inpatient services.

6. Specialty Care Physician Services

   Number of services and procedures defined by CPT-4 codes provided by specialty care physicians or licensed physician extenders or assistants under direct supervision of a physician inclusive of all services except radiology, laboratory and injections/immunizations which should be reported in their appropriate section. The reporting of data under this category includes both outpatient and inpatient services.

7. Adult Screening Services

   Number of adult screenings performed.

8. Vision Care - Optometric Services

   Number of optometric services and procedures performed by an optometrist.

9. Vision Care - Optical Services

   Number of eye glasses and contact lenses dispensed.

10. Laboratory (Pathology) Procedures

Number of procedures defined by CPT-4 Codes under the Pathology and Laboratory section. Excluded are services performed in conjunction with a hospital outpatient or emergency department visit.

11. Radiology Procedures

Number of procedures defined by CPT-4 Codes under the Radiology section. Excluded are services performed in conjunction with a hospital outpatient or emergency department visit.

12. Physical and Occupational Therapy Services

Physical therapy refers to physical and occupational therapy services and procedures performed by a physician or physical therapist.

13. Speech and Hearing Services

Number of services and procedures.

14. Podiatry Services

Number of services and procedures.

15. End Stage Renal Disease (ESRD) Services - Dialysis

Number of ESRD procedures provided upon referral.

16. Home Health Services

Number of home health visits, such as skilled nursing, home health aide, and personal care aide visits.

17. Hospice Days

Number of days hospice care is provided, including respite care.

18. Private Duty Nursing Services

Hours of skilled care delivered.

19. Medical Supplies and Medical Equipment

Durable medical equipment such as wheelchairs, hearing aids, etc., and nondurable supplies such as oxygen etc.

20. Abortion Procedures

Number of procedures performed.

21. Sterilization Procedures

Number of procedures performed.

22. Detoxification Days

Days of inpatient detoxification.

23. Organ Transplants

Number of transplants.

24. Other Outside Medical Services

Specialized testing and outpatient surgical services ordered by IHC.

25. Long Term Care Facility Days

Total days associated with long-term care.

26. Transportation Trips

Number of ambulance trips.

27. Other (specify)

Appendix C:
State Presentations

State Overview

Delaware
State Overview Presentation
April 30, 2001

State Overview

1. Number of MCOs
   - Two MCOs
2. Number of beneficiaries
   - 81,883 April 2001
3. Percent of the MA population enrolled in MCOs
   - 80%
4. Percent in MCOs that are risk adjusted
   - 100%

State Overview

5. Start Date
   - Program Start 1/1/1996
   - Risk Adjustment Start 7/01/2000
6. Mandatory vs. voluntary
   - Statewide Mandatory
7. Classification System
   - CDPS

Maryland
State Overview

April 30, 2001

Maryland

State Overview

1. Number of MCOs
   - 7 MCOs becoming 6 with recent acquisition
2. Number of beneficiaries
   - 401,000 enrollees
3. Percent of the MA population enrolled in MCOs
   - 72% of Medicaid population enrolled
4. Percent in MCO's that are risk adjusted
   - 69 %

Maryland

State Overview

5. Start Date
   - July 1997
6. Mandatory vs. voluntary
   - Mandatory
7. Classification System
   - ACG Version 4.3

Maryland

Michigan
State Overview

April 30, 2001

Michigan

State Overview

1. Number of MCOs
   - 19
2. Number of beneficiaries
   - 650,000
3. Percent of the MA population enrolled in MCOs
   - 60%
4. Percent in MCO's that are risk adjusted
   - 100%

Michigan

State Overview

5. Start Date
   - 10-1-2000
6. Mandatory vs. voluntary
   - Mandatory
7. Classification System
   - DPS

Michigan

Minnesota
State Overview

April 30, 2001

State Overview

1. Number of MCOs
   - 8
2. Number of beneficiaries
   - 341,000 as of 3/2001
3. Percent of the MA population enrolled in MCOs
   - 62% (FY 2000)
4. Percent in MCOs that are risk adjusted
   - 100%
   - 30% of capitation in 2001
   - 50% of capitation on 2002

State Overview

5. Start Date
   - January, 2000
6. Mandatory vs. voluntary
   - Mandatory
7. Classification System
   - ACG 4.1

New Jersey
State Overview

April 30, 2001

New Jersey

State Overview

1. Number of MCOs
   - 6/7

2. Number of beneficiaries
   - Managed Care - 534,962
   - Risk Adjusted - 18,001 (1/02 - 68,000, est.)

3. Percent of the MA population enrolled in MCOs
   - 68%

4. Percent in MCO's that are risk adjusted
   - 3.4%

New Jersey

State Overview

5. Start Date- Risk Adjustment
   October 1, 2000

6. Mandatory vs. Voluntary
   - Mandatory: TANF, Transitional Medicaid, "SSI" w/o Medicare, Uninsured Low-Income Adults, SCHIP, SOBRA
   - Voluntary: Children under State Protection, Dual Eligibles

7. Classification System
   - DPS moving to CDPS in July 2001

New Jersey

Oregon
State Overview

April 30, 2001

Oregon State Overview

1. Number of MCOs
   - 15 Fully Capitated Health Plans
   - 1 Chemical Dependency Organization
   - 7 Dental Care Organizations (not risk adjusted)
   - 10 Mental Health Organizations (not risk adjusted)

2. Number of beneficiaries (March 2001)
   - Oregon Health Plan Medicaid: 353,000
   - Oregon Health Plan CHIP: 17,000
   - Medically Needy/QMB: 11,000 (limited benefits)

3. Percent of the MA population enrolled in MCOs (March 2001)
   - Health: 70%
   - Dental: 95%
   - Mental Health: 85%

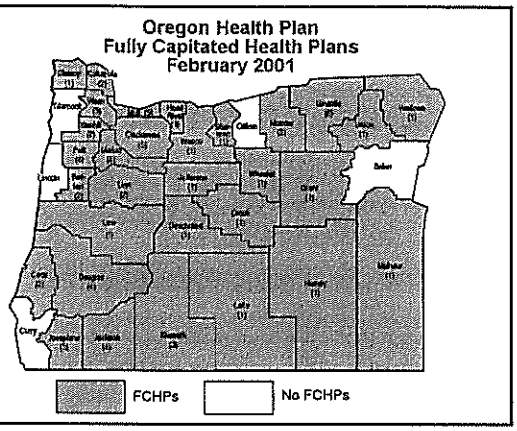
Oregon State Overview

4. Percent in MCO's that are risk adjusted: 23%

5. Start Date
   - Oregon Health Plan: February 1, 1994
   - Risk Adjustment: June 1, 1998

6. Mandatory vs. voluntary
   - 57% mandatory
   - 27% voluntary
   - 16% no managed health care plans

7. Classification System
   - Chronic Disease & Disability Payment System (CDPS)



Tennessee
State Overview

April 30, 2001

Tennessee

State Overview

1. Number of MCOs
   - 10
2. Number of beneficiaries
   - 1.4 million
3. Percent of the MA population enrolled in MCOs
   - 100%
4. Percent in MCO's that are risk adjusted
   - 100%
   - Except Medicare/Medicaid Duals, not risk adjusted

Tennessee

State Overview

5. Start Date
   - January 1, 1994
6. Mandatory vs. voluntary
   - Mandatory
7. Classification System
   - CDPS

Tennessee

Utah
State Overview

April 30, 2001

State Overview

1. Number of MCOs
   - Four

2. Number of beneficiaries
   - 115,124 Urban and Rural
   - 80,461 Urban

3. Percent of the MA population enrolled in MCOs
   - 71% Urban & Rural
   - 93% Urban

4. Percent in MCO's that are risk adjusted
   - 34%

12%	0 – 1	8% Disabled Male
5%	aged	9% Disabled Female

4(a). MCO Enrollment - 81,468 Urban & Rural
75,059 Urban
6,409 Rural

State Overview

5. Start Date
   - 10/95 - 6/96 Mandatory HMO Enrollment

6. Mandatory vs. voluntary
   - Mandatory HMO Enrollment in four urban counties
   - Voluntary enrollment in other twenty-five counties (rural). PCCM, HMO or traditional Medicaid.

7. Classification System
   - Chronic Illness Disability Payment System (CDPS)

State Experience with Encounter Data

Identification of Providers

- Colorado currently cannot discern provider type in the encounter data.
- Colorado does not currently collect a provider number.
- Colorado collects provider name and address.
- How Colorado collects data will change when the MMIS begins encounter collection in July 2001.

Colorado

Encounter Data Collection System

- Manual encounter submission.
- Plans currently submit fixed format text files on compact disc to Colorado Medicaid managed care personnel.
- Data is loaded into MS Access databases and SAS databases for further analysis and storage.
- Again, Colorado encounter data collection methodology will change in July 2001.

Colorado

Encounter Data Submission

- All encounter data is submitted by the plans.
- The plans currently submit 12 months of data based on from date every 6 months.

Colorado

Encounter Data Editing

Edited Data Elements	**Action** (fail/accept)
Missing client ID	fail
Erroneous from date	fail

Further editing is inherent in the encounter data processing that is done before it is run through the DPS grouper.

Electronic collection that will begin in July 2001 will make use of additional edits.

Colorado

Encounter Data Validity

Data Element	**Reliability** (high/low/not used)

The Department's EQRO contractor conducted a one time encounter data validation study using FY 96-97 plan encounter data.

The study used a limited number of data elements such as client ID, from date, date of birth, and diagnostic codes to observe whether an encounter record existed via provider record reviews.

Colorado

Encounter Data Completeness

Evaluated Category of Service	**Measure** (users/claims/service units)

Colorado does not currently require a category of service in the encounter record nor does Colorado assign a category of service to the encounter record.

Colorado measures volume by number of encounter records submitted.

Colorado

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to prior FFS (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
Currently, Colorado's encounter data collection methodology does not allow volume comparison to fee-for-service. The electronic collection methodology proposed to begin in July 2001 will allow the Department to compare plan encounter data submissions to fee-for-service data.	

Colorado

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	Yes
Age	Yes
Sex	Yes
Region	Yes
Other (Specify)	

Colorado

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
Colorado does not currently require a category of service in the encounter record nor does Colorado assign a category of service to the encounter record. The electronic collection methodology proposed to begin in July 2001 will allow the Department to compare plan encounter data submissions to fee-for-service data by category of service.	

Colorado

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
Colorado does not currently require category of service in the encounter record nor does Colorado assign a category of service to the encounter record. Although Colorado reviews financial statements that plans must submit to the Colorado Division of Insurance, no attempt is made to relate findings to plan encounter data submissions.	

Colorado

Medical Records Reviews

Test	Sample Size
A study using FY 96-97 e-data reviewed the following: (1) ***discrepancies*** between reported encounters and their respective medical record (2) ***missing encounter records*** or under-reporting (3) ***missing medical records*** or over-reporting.	
Discrepancies	422 encounter records
Missing encounter records	422 encounter records
Missing Medical records	422 encounter records

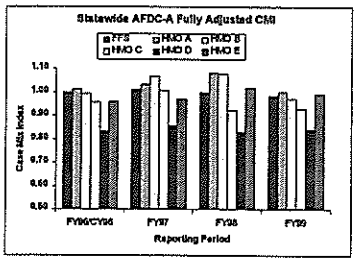
Colorado

Medical Record Reviews – Findings

The findings from (1) reveal a high level of agreement between the reported encounter data and the medical record. Additional analysis also reveals that none of the four HMOs exerted a stronger influence, relative to each other, on the agreement rate.
The findings for goal (2) and (3) reveal that there does exist some under and over reporting of encounter data. The validation analysis demonstrates, with respect to the first goal of this study, that HMO reported encounter data for the year of 1997 could be used with a high degree of confidence to examine or analyze various facets of the Colorado Medicaid program.

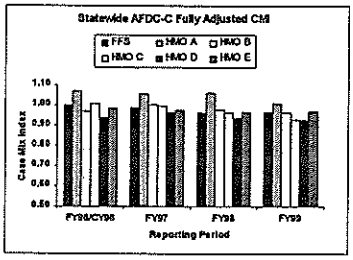
Colorado

Encounter Data Risk Score Comparisons



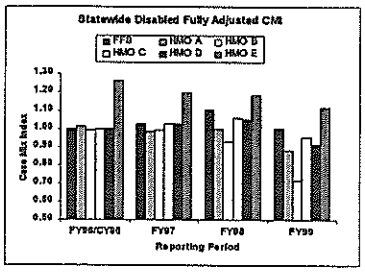
Colorado

Encounter Data Risk Score Comparisons



Colorado

Encounter Data Risk Score Comparisons



Colorado

Data Management

<u>Monitoring Reports</u>

- Communication with the plans involves encounter data group meetings, e-mail, and phone conversations.
- Currently, plans do not receive a file containing regularly reported information.
- If Colorado personnel identify potential data problems, plans are contacted.
- Data flows are monitored. The most common problem affecting data flow concerns plan contracts with providers that are sub-capitated.

Colorado

Strategies for Improving Collection

Strategy	Impact
Process e-data via MMIS	Ability to analyze e-data
Use data for more payments	Greater incentive to report timely

Colorado

Encounter Data Analysis Projects

- Colorado has used the encounter data and the DPS model to look at sub-groupings of clients.
  - A. HIV/AIDS clients
  - B. Primary Care Physician clients vs. Unassigned FFS
  - C. Head/Brain Injury clients
  - D. Home Health recipients

Colorado

Other Encounter Data Issues

- Affiliation of plan providers such that provider data is comparable across plans.
- Pricing encounters.

Colorado

Encounter Data – Keys to Success

- Once again, USE THE DATA!
- Using encounter data for payment whether it is through the creation of a rate, development of risk adjustment case mixes, or to identify deliveries, for example, provides plans with an incentive to submit data and try to improve it.

Colorado

Delaware
Encounter Data Presentation
May 1, 2001

Delaware

Types of Encounter Data Collected

Category of Service	Date Collection Began
Inpt/Outpt Hospital	1/96
Primary Care	1/96
Physicians Services	1/96
Lab/X-Ray	1/96
Therapies	1/96
Em. Ambulance	1/96
DME	1/96
Behavioral Health	1/96

Delaware

Encounter Data Format

Category of Service	Record Format
In-patient/out-patient Hospital	UB-92
Professional Services	
Primary Care	HCFA 1500

Delaware

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9
Procedure Code	HCPCS – CPT-IV Local HCPCS
Local Codes Allowed	Yes ☒ No ☐

Delaware

Identification of Providers

1. - Place of service
   - Provider type code
2. Provider number is collected but not used at this time
3. All of the data required for Medicaid Providers

Delaware

Encounter Data Collection System

- Encounter data is collected as "claims" data in the State MMIS

Delaware

Encounter Data Submission

- MCOs are required to submit complete Encounter data from their providers
- Encounter data is submitted monthly

Delaware

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Procedure code on file	Fail
Diagnosis code on file	Fail
Provider number	Fail
Member number	Fail
Duplicate check	Fail
> 5% Error rate	Fail

Delaware

Encounter Data Validity

Data Element	Reliability (high/low/not used)
Primary care services	Less reliable
All others	High reliability

Delaware

Encounter Data Completeness

Evaluated Category of Service	Measure (users/claims/service units)
Not used	

Delaware

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to prior FFS (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
Not used	

Delaware

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	Not used
Age	
Sex	
Region	
Other (Specify)	

Delaware

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
EQRO studies have compared	Low
All categories compared	Medium

Delaware

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
Not used	

Delaware

Medical Records Reviews

Category of Service	Sample Size
Medical Records Review only done for QA studies	

Delaware

Medical Record Reviews- Findings

Data Elements	Results

Delaware

Encounter Data Risk Score Comparisons

- Used by actuaries to develop risk adjustment

Delaware

Data Management

Monitoring Reports

1. - Email
   - Telephone
   - Letters
2. Plans receive error reports monthly
3. Data flow from MCO to State is monitored- duplicates are an issue

Delaware

Strategies for Improving Collection

Strategy	Impact
Sanction – Hold capitation	

Delaware

Encounter Data Analysis Projects

- EQRO
- Internal Ad Hoc reports
- Problem solving

Delaware

Other Encounter Data Issues

- HIPAA Impact

Delaware

Encounter Data - Keys to Success

- Keep it simple
- Stay with known formats & criteria

Delaware

Maryland
Encounter Data Presentation
May 1, 2001

Maryland

Types of Encounter Data Collected

Category of Service	Date Collection Began
Physician	7/1/97 – First received 5/98
Inpatient	7/1/97 – First received 5/98
Outpatient	7/1/97 – First received 5/98
Pharmacy	7/1/97 – First received 7/98
Lab	7/1/97 – First received 5/98
DME/DMS	7/1/97 – First received 5/98
Dental	7/1/97 – First received 6/98
Ancillary	7/1/97 – First received 5/98
LTC	None accepted

Maryland

Encounter Data Format

Category of Service	Record Format
Physician	HCFA 1500
Inpatient	UB92
Outpatient	UB92
Pharmacy	Pharmacy
Lab	HCFA 1500
DME/DMS	HCFA 1500
Dental	HCFA 1500
Ancillary	HCFA 1500

Maryland

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD 9
Procedure Code	CPT, HCPCS (local codes), Standard Pharmacy (NDC numbers), ADA codes for dental
Local Codes Allowed	Yes [X] No [ ]

Maryland

Identification of Providers

1. Inpatient and outpatient settings are done in various ways:
   A. Physician claims – place of service codes
   B. OPD services must be submitted on UB92
2. Provider number is collected, default number for providers are allowed and have caused some problems
3. Non-Medicaid providers can submit data under default number

Maryland

Encounter Data Collection System

- Central MIS
- Accepted data analyzed at CHPDM

Maryland

Encounter Data Submission

- **HOW:** MCOs are responsible for collecting all encounter data from their networks and submitting that data to the Department of Health and Mental Hygiene

Maryland

Encounter Data Submission (cont.)

- **FREQUENCY:** MCOs have varying frequency of submissions depending on size. The larger plans submit more frequently, occasionally several times a week. Smaller plans submit monthly. Some plans have gone extended periods without submitting

Maryland

Encounter Data Editing

Edited Data Elements	**Action** (fail/accept)
Recipient number	F
Recipient eligibility on date of service	F
Recipient enrollment in MCO on date of service	F
Valid procedure code	F
Valid NDC number	F
Valid diagnosis code	F
Valid provider number	F
Date of Service	F
Various dental/tooth information	F
MCO number	F

Encounter Data Validity

Data Element	**Reliability** (high/low/not used)
Procedure	High
Diagnosis	High
Recipient number	High
Place of service	High (one problem plan)
Provider	Low

Maryland

Encounter Data Completeness

Evaluated Category of Service	**Measure** (users/claims/service units)
Pharmacy	User, services – over time
Physician	User, services – over time
Inpatient	User, services – over time
Outpatient	User, services – over time
Dental	User, services – over time
Ancillaries (lab, x-ray, DME/DMS)	Services per enrollee relative to all plans

Maryland

Comparing Encounter Data to FFS Volume

Category of Service	**Comparison to prior FFS** (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
Pharmacy	90% + (some drop off during a system change)
Physician	80% +
Outpatient	80% +
Inpatient	65% +
Lab	40% – 60%
Dental	60% – 70% (very inconsistent)

Maryland

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	Yes
Age	Yes
Sex	Yes
Region	Yes
Other (Specify)	1) Pre-enrollment period 2) Program expansion – MCHP 3) Previous HMO program (no data)

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
Pharmacy	Low variation
Physician	Low variation with outliers
Outpatient	Low variation with outliers
Inpatient	High variation, but coming down
Dental	High variation
Ancillaries (Lab, DME/DMS, Vision, etc)	High variation

Maryland

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
Physician	EQRO chart pulls, EPSDT, Special payment files, Financial reports
Inpatient	Special payment files (Maternity kick), Hospital rate setting
Outpatient (ER)	Hospital rate setting

Maryland

Medical Records Reviews

Category of Service	Sample Size
Physician (Diagnosis)	Roughly 400

Maryland

Medical Record Reviews – Findings

Data Elements	Results

Maryland

Encounter Data Risk Score Comparisons

- Comparison of a constant cohort to prior FFS experience.
  - Initial year encounter data had lower risk scores
    - Family & Children - 90%
    - Disabled – 83%
  - Second year, encounter data had a risk score of 95% of prior FFS for both eligibility groups

Maryland

Data Management

Monitoring Reports

1. Monthly Data Submission
   - Compared to historic averages
2. Users by date of service
   - For each format
   - Identified possible submission gaps
3. Submissions per enrollee per year broken down by service category and compared to overall averages

Maryland

Strategies for Improving Collection

Strategy	Impact
Regular feedback – immediate on submissions, monthly reports	Huge
Face-to-face technical assistance	Huge
Tie data to payment (rate setting)	Huge
Financial sanctions separate from rate setting	We'll see
Reporting of performance on standard measures	We'll see

Maryland

Encounter Data Analysis Projects

- Evaluate number of users and amount of services received under MCO program vs. prior FFS program

Maryland

Other Encounter Data Issues

- Measuring completeness in out years
- Adjusting for variations in data volume between plans

Maryland

Encounter Data – Keys to Success

1. Feedback, regularly and in as many useful ways as possible
2. Actively develop relationships with MCO technical staff and work with them consistently
3. Plan to use the data, state how it will be used and use it!
4. Use for rate setting

Maryland

Michigan
Encounter Data Templates
May 1, 2001

Michigan

Types of Encounter Data Collected

Category of Service	Date Collection Began
All categories with services included in managed care. All except dental and mental health	1/1/98

Michigan

Encounter Data Format

Category of Service	Record Format
Facility – Inpatient & Outpatient	Customized Form
Professional	Customized Form
Long Term Care	Customized Form
Pharmacy	Customized Form

Michigan

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9 (No header codes)
Procedure Code	ICD-9 Surgical procedure codes, CPT's, HCPC's & the below rated local codes
Local Codes Allowed	Yes. We allow a very limited number of Michigan specific codes. These include codes for Maternal & Infant Support Services, Children's Multidisciplinary Specialty Clinics and selected DME & IV therapy codes.

Michigan

Identification of Providers

- Outpatient settings are distinguished in that the plans must identify the place of service.
- A provider number is required by the plans. However, we prefer Medicaid ID #'s, but will accept less specific numbers, (e.g. license #, tax ID#, etc.)
- We accept each plans' "homegrown" or unique numbering systems but, again, strongly prefer more specific and standardized numbers.

Michigan

Encounter Data Collection System

- Data is stored in an electronic warehouse. Because other programs/departments also store data in this warehouse we would characterize our warehouse as a central MIS system.

Michigan

Encounter Data Submission

- All encounter data is submitted by the MCO's*
- MCO's submit encounter data monthly

* Except inpatient hospital data for plans that elect for MDCH (Michigan Department of Community Health) to process their inpatient hospital claims.

Michigan

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Critical edits include: dates, procedure, revenue and drug codes; diagnosis codes, quantities, provider ID's, unique encounter #'s, beneficiary ID #'s, Health Plan ID #, and Place of Service.	223 edits are in place. In addition to checking for certain general formatting requirements, a wide variety of elements are reviewed.
Currently, certain formatting errors will cause an encounter to be rejected as will an invalid beneficiary ID#, missing dates, missing encounter reference # (or duplicate); or if 2 of 3 following fields missing are invalid; Primary diagnosis, Procedure or revenue code, Provider ID missing	Effective 5/1/01 invalid Primary Diagnosis, Procedure Code, Revenue Code, NOC, service, admission, discharge dates; quantity, metric quantity fields, missing Provider ID; or if 30% of records rejected then entire file is rejected.

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Duplicate records	Approximately 10% of claims are rejected
All other reasons	Another 2% of claims are rejected

Michigan

Encounter Data Validity

Data Element	Reliability (high/low/not used)
Health Plan ID	HIGH
Beneficiary ID	HIGH
Primary Diagnosis	96-97%
NDC	95%
Procedure Code & Revenue Code	90 – 96%
Place of Service	LOW
Provider ID	LOW

All fields are worth collecting--least critical are: provider zip code & county, compound drug code, days supply, prior authorization #.

Encounter Data Completeness

Evaluated Category of Service	Measure (users/claims/service units)
Facility	Number of beneficiaries enrolled
Professional	Number of beneficiaries receiving services
Drug	Volume of pharmacy vs. non-pharmacy services
Long-Term Care	PMPM rate of pharmacy/non-pharmacy services by plan

Michigan

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to prior FFS (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
FFS	Very limited comparison
EPSDT	
Encounter volumes vs FFS	Very limited
Population's composition	Expect that the FFS population may be "sicker", but that has not been determined by comparison of FFS & managed care encounter data.
Pharmacy	Possibly pharmacy data is the most complete, but not verified.

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	Blind and Disabled, Non-Medicare
Age	No
Sex	No
Region	State is divided into two areas
Other (Specify)	No

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
Pharmacy & non-pharmacy (Professional/facility/LTC)	
Rates	Low 0.62 – High 2.48 PMPM
Pharmacy	Less variation – Low 0.32 - High 0.96)

We measure monthly volume for completeness and timeliness. We also compare "per member per month" rates for all plans.

Michigan

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
Emergency Room Services	HEDIS Data
EPSDT	HCFA Data

Michigan

Medical Records Reviews

Category of Service	Sample Size
Well Child	All comparisons were done plan to plan and some selected program wide
Prenatal	
Pediatric	
Asthma	
Diabetes	
Other Ambulatory Services	

Michigan

Medical Record Reviews – Findings

Data Elements	Results

- 1999 EQR Study evaluates services delivered, not accuracy of reporting of particular data elements.
- Report available by contacting: Jackie Prokop at: ProkopJ@state.mi.us or (517) 335-5233

Michigan

Encounter Data Risk Score Comparisons

- Risk scores were computed using the encounter data
- Comparisons to the risk scores have been computed using other sources

Michigan

Data Management

Monitoring Reports

- Specific Reports are presented to plans every 6 months during an on-site visit.
- Each Plan receives a detailed error report (4410) electronically transmitted for each batch of encounter data transmitted. Details show if record is rejected or requires some type of correction.
- Data flow volumes are summarized monthly for each plan. Health plans confirm that it is difficult to obtain complete data from their capitated (at-risk) providers.

Michigan

Strategies for Improving Collection

Strategy	Impact
31 new edits will be implemented on 5/1/01.	
Strengthen fields so that invalid/missing data in 5 critical areas will be rejected.	Prior to 5/1/01 we requested plans to make corrections to data in warehouse as soon as possible.
Plans that meet certain criteria for timeliness/completeness	Increased auto-assignments
Plans that have the largest drops in ER utilization	One-time bonus
Submission of encounter data with low error rates for Primary Diagnosis, Procedure Codes and Revenue Codes.	Quarterly reporting is waived for plans which demonstrate consistent reporting with low error rates

Michigan

Encounter Data Analysis Projects

- Other than for risk adjustment, Encounter data is used for External Quality Review;DQIP's; EPSDT (a HCFA requirement).
- Through the Data Quality Improvement (DQIP's) process, we have encouraged plans to correct numerous data problems. As a result, error rates have continued to decline in critical areas, including Primary Diagnosis; Revenue, Procedure and Drug Codes
- The timeliness with which encounters are transmitted continues to improve.

Michigan

Other Encounter Data Issues

- Although plans were notified well in advance, the requirement that MCO's submit using standard codes (with only a limited number of local codes) has required a considerable effort and time on their part.

Michigan

Encounter Data – Keys to Success

- Strong Points of our approach to encounter data are: the semi-annual on-site visits to each plan is extremely valuable in improving the quality of encounter data submitted to the State. Similarly, the transmission of an electronic report detailing all errors whenever a batch of encounter data is transmitted to the State, is a critical feedback mechanism.
- If we were to do encounter data differently: Edits in certain critical errors should have been strengthened right from the inception of the encounter data system. Also, sanctions due to insufficient or poor quality encounter data should be strengthened and/or publicized or implemented.

Michigan

Minnesota
Encounter Data Presentation

May 1, 2001

Minnesota

Types of Encounter Data Collected

Category of Service	Date Collection Began
Inpatient, Outpatient, Hospice, LTC, Rural Health, ASC, Renal, IHS, FQHC, Lab	6/94
Physician, Vision, Chiropractic	6/94
Dental	6/94
Pharmacy	6/94

Minnesota

Encounter Data Format

Category of Service	Record Format
Inpatient, Outpatient, Hospice, LTC, Rural Health, ASC, Renal, IHS, FQHC, Lab	UB-92
Physician, Vision, Chiropractic	HCFA 1500
Dental	ADA
Pharmacy	NCPDP

Minnesota

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9
Procedure Code	CPT, HCPCS, NDC, ICD-9
Local Codes Allowed	Yes ☐ No ☒ State standard local code only

Minnesota

Identification of Providers

- 1. Standard FFS format requirements
- 2. Collect provider or pseudo-provider number which includes partial information on type of provider:
  - A. most encounters have good pay-to providers
  - B. 6 of 8 plans have good treating providers
  - C. other 2 temporarily provide pseudo-numbers
- 3. All standard provider information

Minnesota

Encounter Data Collection System

- Encounter data collected and stored on state MMIS system

Minnesota

Encounter Data Submission

1. All encounter data are submitted by MCOs or their subcontractors
2. Submitted monthly

Minnesota

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
If data format is wrong or the health plan ID is wrong	Batch is sent back for correction
All data elements are edited	Any of 100 standard edits cause denial of claim
< 10% of claims denied in a batch	Batch is accepted
> 10% of claims denied	Batch is sent back for correction

Minnesota

Encounter Data Validity

Data Element	Reliability (high/low/not used)
Dx codes, recipient ID, procedure codes	High
Provider number	Initially was low. However, now 6 of 8 plans are using their actual treating provider numbers, and all are using their actual pay-to provider numbers.
We collect all the data currently	

Minnesota

Encounter Data Completeness

Evaluated Category of Service	Measure (users/claims/service units)
All Categories of Service	Users, pattern of encounter submission, Number of claims by category of service within plan Number of Dxs per claim by category of service within plan

Minnesota

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to prior FFS (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
We do not do a comparison of FFS volume and encounter data volume on an individual enrollee basis.	
We have been in Managed Care too long to do this	
An RFP has been issued and proposals are currently being evaluated to compare encounter data volumes to FFS benchmarks	

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	
Age	
Sex	
Region	
Other (Specify)	

RFP has been issued to contract for this

Minnesota

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
RFP has been issued	to contract for this

Minnesota

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
RFP has been issued	to contract for this

Minnesota

Medical Records Reviews

Category of Service	Sample Size
RFP has been issued	to contract for this

Minnesota

Medical Record Reviews – Findings

Data Elements	Results
RFP has been issued	to contract for this

Minnesota

Encounter Data Risk Score Comparisons

- From the beginning (January,2000), plan risk scores have been computed quarterly using their submitted encounter data
- Comparisons of risk scores from other data sources has not been done

Minnesota

Data Management

<u>Monitoring Reports</u>

- Remittance advice of data submitted is produced monthly. Includes information on how encounters were processed
- Quarterly tapes of recipients included in the risk assessment, including ACG category, diagnoses, and ACG weight.
- Risk scores for all plans reported
- Do not evaluate data flow of the MCOs

Minnesota

Strategies for Improving Collection

Strategy	Impact
An RFP has been issued to examine data submissions and recommend changes needed.	

Plans that submit higher volume of encounter data with more diagnoses included will get a higher risk score. Plans have incentive to submit as much data as they have.

Minnesota

Encounter Data Analysis Projects

- Encounter data are being used to do plan HEDIS measurement, and to measure performance for contractual incentives
- Child and Teen Check Up screening rates in 1999 were measured using encounter data. Performance incentives in the contract resulted in higher rates of screening from prior years.

Minnesota

Other Encounter Data Issues

- Data quality standards to recalibrate the weights are different and more stringent than the requirements for risk assessment. The RFP we have issued will address this issue.

Minnesota

Encounter Data – Keys to Success

- Uses standard transactions and MMIS for processing
- Plans have built in incentives to submit all encounter data they have in a timely way, so their risk factors are as high as possible.
- Do differently:
  A. Have providers submit data directly to DHS, bypassing MCOs or to both simultaneously
  B. have encounter providers in an encounter provider file instead of the MMIS provider file.

Minnesota

Risk Adjustment and Encounter Data

—

Oregon

May 1, 2001

Oregon

Types of Encounter Data Collected

Category of Service	Date Collection Began
Physician/Medical	1994
Inpatient	1994
Outpatient	1994
Prescription Drugs	October 2001?

Oregon

Encounter Data Format

Category of Service	Record Format
Medical/Professional	NSF
DME	NSF
Inpatient	UB-92
Outpatient	UB-92
Dental	NSF
Outpatient Dental	UB-92
Lab	NSF

Oregon

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9-CM to highest specificity
Procedure Code	CPT, HCPCS, CDT-3
Local Codes Allowed	Yes (mostly mental health)

Oregon

Identification of Providers

- Managed care providers are not required to be Medicaid FFS providers
  A. Plans must identify providers for audit purposes
- Plans are sanctioned if more than 10% of encounters have an unidentifiable provider number
- Non-FFS providers may apply for an "encounter only" provider number

Oregon

Encounter Data Collection System

- MCOs must submit electronically
  A. Bulletin board
  B. Tape cartridge
- Encounters are processed by MMIS with edits similar to fee-for-service
- Additional validation and reports created from Sybase data warehouse

Oregon

Encounter Data Submission

- Generally takes 6 months to 1 year before plans are submitting all claims regularly
- Staff work closely with plan on system issues and testing (telephone, on-site)
- Regular encounter data workgroup meetings
- Plans must retest when they acquire a new submitter or have substantial staffing turnover

Oregon

Encounter Data Editing

Edited Element	Action
Health Plan Number	Fail
Patient Name	Accept
Recipient Number	Fail
Disposition (plan accepted/rejected)	Fail
Disposition Reason	Fail
Performing Provider	Fail
Attending Physician	Accept
Billing Provider	Fail
Diagnosis Code(s)	Fail
Date of Service	Fail
Modifiers	Fail
Revenue Center Code	Fail
Line item charges	Accept
Units of Service	Accept
HCPCS Procedure Code	Fail
ICD-9 Procedure Code	Accept
Type of Admission	Fail
Patient Discharge Status	Fail

Encounter Data Validity

Data Element	Reliability (high/low/not used)
Dates of Service	High
Diagnosis Code(s)	High
Procedure Code(s)	High

Oregon

Encounter Data Completeness
(1999 Data, based on external quality review)

Encounter Type	Omission Rate
Inpatient	7.9%
Outpatient	24.7%
Medical	13.0%
Overall	15.8%

Oregon

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to FFS*
Physician/Medical	84.8%
Inpatient	76.9%
Outpatient	98.2%

** "Prior" FFS would be 8 or more years old. This comparison is to current FFS submission rates. The comparison is to the same range of services in FFS as is covered in managed care (i.e., carved-out services are ignored).*

Oregon

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility	no
Age	no
Sex	no
Region	no
Health Status	no

Oregon

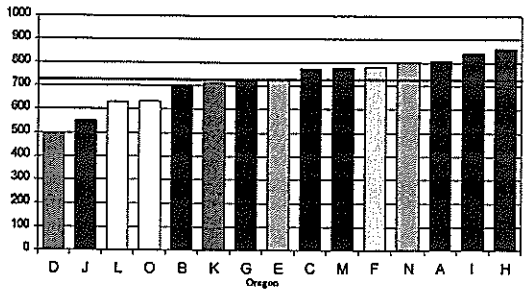
Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
Physician/Medical	498–861 encounters/1000/yr.
Inpatient	8–17 encounters/1000/yr.
Outpatient	23–249 encounters/1000/yr.

Oregon

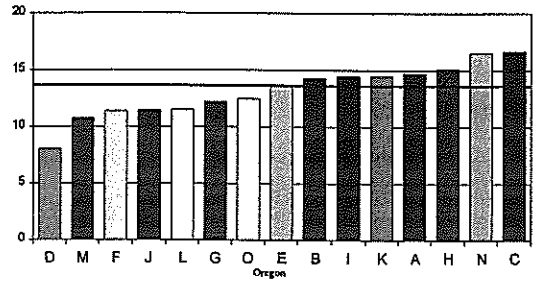
Professional Encounters per 1000 Members

Risk Adjustment Data, 10/1/99-9/30/00



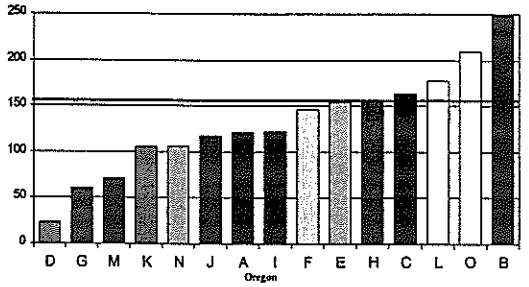
Inpatient Encounters per 1000 Members

Risk Adjustment Data, 10/1/99-9/30/00



Outpatient Encounters per 1000 Members

Risk Adjustment Data, 10/1/99-9/30/00



Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
Inpatient admissions	Financial solvency reports
Methadone dispensing and other chemical dependency treatment	Client Process Monitoring System (CPMS) reported by CD treatment providers
Births	Eligibility/enrollment files

Oregon

Medical Records Reviews

Category of Service	Sample Size
All except DME, ancillary	515 enrollees

Oregon

Medical Record Reviews – Findings

Data Elements	Results
Service Start Date	99.0%
Service End Date	98.9%
5-digit Diagnosis Code	88.2%
3-digit Diagnosis Code	91.0%
Procedure Code	99.4%
Overall Accuracy Rate	82.0%
1995-96 Overall Accuracy Rate	43.9%

Oregon

Encounter Data Risk Score Comparisons

Comparison of Plan Rankings

Overall CDPS vs. Encounter Data Volume

Plan	Risk Adj. Rank	Inpatient Data Rank	Outpatient Data Rank	Professional Data Rank
A	14	15	15	15
B	15	12	10	14
C	8	9	3	13
D	6	10	2	12
E	1	7	1	11
F	12	11	14	10
G	13	5	12	9
H	3	8	8	8
I	11	1	4	7
J	7	14	13	6
K	9	13	7	5
L	10	2	11	4
M	2	4	9	3
N	5	6	6	2
O	4	3	5	1

Data Management

Monitoring Reports

- Ensure regular submissions for each claim type
- Failed claims to identify problems and find solutions
- Ensure claims are collected in a timely manner
- Test reasonableness of data

Oregon

Data Management

Monitoring Reports (continued)

- Contract compliance
- Ensure appropriate billing practices
  - A. Up-coding
  - B. Unbundling
  - C. Professional and hospital claim for surgeries
  - D. Sufficient diagnosis codes
  - E. Completeness (all provider and service types)
- Begin corrective action when necessary

Oregon

Strategies for Improving Collection

Strategy	Impact
Require plans to have up-front edits and validation	Fewer failed claims
Enforce sanctions	Financial penalties
Comprehensive chart validation	Identify unknowns
Provide complete training manuals	Fewer failed claims
Tighten system edits	Cleaner claims
Improved feedback	Cleaner claims
Get plan input	Cleaner claims

Encounter Data Analysis Projects

- Comparison of OMAP data with plan data
- Review of medical standards
  - A. e.g., % of appendectomies with complications vs. without
- Compare submissions of capitated providers vs. FFS within plan

Oregon

Other Encounter Data Issues

- How to incentivize capitated providers to submit claims
- Commercial plans leaving Medicaid managed care

Oregon

Encounter Data – Keys to Success

- Provide feedback to plans
- Training
- Involve plans in solutions
- Share information: Let plans compare themselves to other plans
- More training

Oregon

The "Skeleton Key" to Success

- ***Base payment on encounter data***

Oregon

Tennessee
Encounter Data Presentation
May 1, 2001

Tennessee

Types of Encounter Data Collected

Category of Service	Date Collection Began
All covered Benefits	January 1, 1994

Tennessee

Encounter Data Format

Category of Service	Record Format
Institutional Services	UB-92
Professional Services	HCFA-1500
Dental	ADA
Pharmacy	

Tennessee

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9-CM DSM- IV
Procedure Code	CDT-2, HCPS ICD-9-CM
Local Codes Allowed	Yes ☒ No ☐

Tennessee

Identification of Providers

- Plans are required to electronically submit provider records to the TennCare Bureau in a common format.
- All provider records must include the Medicare # or a TennCare assigned provider number.
- The common TennCare/Medicare number allows TennCare to identify providers across plans(regardless of the individuals number's assigned to them by each plan.

Tennessee

Encounter Data Collection System

- Modified MMIS processing

Tennessee

Encounter Data Submission

- 15th of each month following payment

Tennessee

Encounter Data Editing

D=2%, T=80%, F=1 occurence

Edited Data Elements	Action (fail/accept)
From Date of Service	D
Thru Date of service	D
ICN	D
Pricing level	D
Billing amount	D
Total MCO payment	D
MCO pay status	D
Facility, UB only	D

Tennessee

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Bill Class, UB only	D
Frequency, UB only	D
Diagnosis	D
Drug code, pharmacy only	D
Recipient SSN	D
HCPCS procedures	D
Date of birth	D
Sex, UB only	D

Tennessee

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Admission date, UB only	D
Patient status, UB only	D & T
Cov/Non-Cov Days, UB only	T
MCO paid date	D
Allowed Amounts	D & T
Provider Specialty	T
# of errors and error codes	D
Reciept date	D & F

Tennessee

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Billing provider	D
Servicing provider (HCFA only)	D

Tennessee

Encounter Data Validity

Data element reliabilty is based upon error percentage levels. All 2% threshold data elements are reliable to that level, 80% threshold items have a low/ not used reliability

Tennessee

Encounter Completeness

- Comparison to history
- Statistical monitoring
- Manual audit

- All categories of services-- inpatient, out patient, home health, mental health,professional, durable medical equipment, vision, lab, community health, transportation, dental, pharmacy, hospice, rural health, et.-- are evaluated using the same tools.

Tennessee

Strategies for Improving Collection

Strategy	Impact
Withholds	Positive
Publishing reports	
Making special payments	
Rate settings	

Tennessee

Encounter Data – Keys to Success

- Specifically define
- Provide technical assistance
- Reasonable edits & audits
- Enforce contractual requests
- Benchmarks validity
- Validity w/ other data sources
- Use data for clinical analysis

Tennessee

Utah
Encounter Data Presentation
May 1, 2001

Utah

Types of Encounter Data Collected

Category of Service	Date Collection Began
Hospital – Inpatient Outpatient	January 1999
Physician & EPSDT	"
Medical Supplies	"
Home Health	"
Laboratory	"
Radiology	"
Vision Care	"
Therapies – Speech, Physical	"

Utah

Encounter Data Format

Category of Service	Record Format
Inpatient	UB-92 ANSI 837A
Physician & EPSDT	HCFA-1500 ANSI 837B
Medical Supplies	HCFA-1500 ANSI 837B
Home Health	" "
Lab	" "
Radiology	" "
Vision	" "
Therapies – Speech/Physical	" "

Utah

Data Element Coding

Data Element	Coding Convention
Diagnosis	ICD-9
Procedure Code	HCPCS
Local Codes Allowed	Yes ☒ No ☐

Utah

Identification of Providers

1. We distinguish between different outpatient settings by the value in the place of service field.
2. We collect provider number, but it is not edited.
3. Currently, we do not collect data on providers who are not Medicaid providers. However, our new MMCS will capture data on all MCO providers. Data elements will include provider type, languages spoken, financial arrangements with MCO, hospital affiliation, FQHC status, office address, etc. For PCPs, there will be an indicator noting whether the MD is accepting new patients.

Utah

Encounter Data Collection System

1. Our encounter data is collected and stored in a special encounter system that does not provide for common access through the MMIS.

Utah

Encounter Data Submission

1. All encounter data is submitted by the MCOs, not by providers in the MCOs network.

2. MCOs submit encounter data quarterly.

Utah

Encounter Data Editing

Edited Data Elements	Action (fail/accept)
Client ID must be valid and client must be enrolled in MCO.	If client is not enrolled in the MCO during date of service, it fails.
Diagnosis codes	If diagnosis is not in our MMIS Reference File or it fails.
Procedure codes	If procedure code is not in our MMIS Reference File or it fails
Date of service	Must meet logical date of service edits or it fails
Units of service	Must be one or greater or it fails
Amount billed	Cannot be blank
NOTE: Each submission must	be 98% error free.

Utah

Encounter Data Validity

Data Element	Reliability (high/low/not used)
Place of service	low
Servicing provider ID	low
Identification of duplicate records	low
Diagnosis	High
Procedure code	High
Client ID	High
Dates of service	High
NOTE: We are requiring MCOs to submit only those fields that we find useful	

Utah

Encounter Data Completeness

Evaluated Category of Service	Measure (users/claims/service units)
PMHP only: outpatient mental health	Users, service utilization, diagnostic codes
Inpatient mental health	Length of stay, diagnosis, admissions

Utah

Comparing Encounter Data to FFS Volume

Category of Service	Comparison to prior FFS (ex: 50% -75% FFS, 75% -90% FFS, above 90%)
We have not conducted comparisons against prior FFS scores.	

Utah

Comparing Encounter Data to FFS Controlling for Case Mix Changes

Potential Source of Variation	Controlled for in Comparison (yes/no)
Eligibility N/A	
Age	
Sex	
Region	
Other (Specify)	

Utah

Comparing Encounter Data Across Plans

Category of Service	Variation (high/low)
We have not yet conducted comparisons among plans to evaluate completeness of data.	

Utah

Comparing Encounter Data to Other Data Sources

Category of Service	Data Sources
All	aggregate cost/revenue/ utilization data
Inpatient hospital	hospital discharge data
Physician	HEDIS measures such as well-child visits, prenatal care, etc.
NOTE: These will be done in the future.	

Utah

Medical Records Reviews

Category of Service	Sample Size
We have not conducted medical record reviews.	

Utah

Medical Record Reviews – Findings

Data Elements	Results
N/A	

Utah

Encounter Data Risk Score Comparisons

1. Yes, we have computed risk scores using encounter data. See Risk Adjustment and Risk Assignment section.
2. We have not conducted comparisons to risk scores using other data sources.

Utah

Data Management

Monitoring Reports

1. & 2. We mail the MCOs hard copy reports with information such as the number of records received, number of records accepted (error free) versus rejected (with errors).Another report provides detail of the incorrect data in each field; i.e, the field in error and a description of why it is in error. There is a "field error summary" showing the name of each field with errors, the # of records with each error and the percentage of all records with each error.
3. We do not evaluate the data flows of the MCOs and its providers

Utah

Strategies for Improving Collection

Strategy	Impact
One-on-one communication	Has helped
Workshops	Has helped

No system of penalties or rewards other than the effect of the volume on the risk adjustment

Utah

Encounter Data Analysis Projects

1. Program evaluation:
   Data from the PMHPs has been used to look at trends in utilization, penetration rates, types of services provided, plan to plan comparisons, rural vs. urban comparisons, trending across contract years, type/quantity of services to children.
2. We have discovered possible access to care problems for children and required PMHPsto implement action plans.

Utah

Other Encounter Data Issues

Utah

Encounter Data – Keys to Success

1. Working closely with MCOs.

2. Would have helped if we'd provided clearer instructions to the MCOs on all aspects of submitting the data. Also, we should have processed the data more timely so that the MCOs could have been given more timely feedback on the quality of their data.

NOTE: Encounter data needs to be a priority of the Medicaid agency.

Utah

State Experience with Rate Setting

Calculation of Relative Values for Base Period – Data Sources

- Data is calibrated using state specific data.
- FFS only
- Risk assignments are made prospectively.
- Each year used in the base rate is converted to get a case mix index equal to 1.
- Case mix index of 1.0 is benchmarked in 1996 using diagnoses from 1995.

Calculation of Relative Values for Base Period – Population Subsets

- If relative values can be interpreted as health status: risk scores are developed for AND/AB, TANF-adults and children.
- Yes.
- The lack of data on dual eligibles is a problem.

Calculation of Relative Values for Payment Period

- Encounter data.
- FFS data is used to develop the risk adjustment coefficients.
- Weights are developed with state specific data. Problems with children data originating locally, costs may be higher than national averages from local institutions.

Adjustments for Data Completeness

- An IBNR triangle is calculated for each category of service.
- The completion factor generated from the triangle is applied to the base rate.
- Data reporting adjustment.
- No IBNR in member months, due to retroactive months being removed.

Payment System

- Rate cells are calculated for the 11 aid categories, with the AND/AB, OAP-A, and OAP-B populations separated into four rate cells each depending on TPL status and Institutional status. A Metro and non-Metro rate is also calculated for each cell. The children categories are broken into under one year of age and one and over years of age. Plan specific adjustments are also made for risk adjustment and the durational lag component.
- Annual…
- Yes, everything but health status, not so much a modification but a re-classification.
- Assume they look like clients already enrolled.
- Their risk adjustment score will be affected.

Other Rate Setting Issues

Keys to Success – Rate Setting

- Duration adjustments, Risk adjustments, Trending by service and aid category…
- Risk adjust more aid categories, break drugs into two categories: Antipsychotics and all other drugs, Breaking the under-one year children rate into four quarters…
- Aggregating children
- Adding HCBS to MCO benefit package.

Delaware

Forum II - Day 1

State Rate Setting Approaches

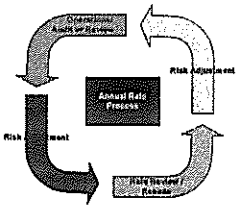
Presentation

Brief Rate Change Chronology

- CY96 - Original Rates Set
- CY97 - Rates Maintained
- CY98 - Increase given for expanded population
- CY99 - Rates re-based using encounter data
  - Regional offset introduced
  - Plans given responsibility for full PDN benefit
- CY00 - Rate Methodology Changed
  - Moved to SFY basis
  - Implemented risk adjusting
  - Plans given increase for CPI and administration
  - Established small reinsurance program
- SFY02 - Rate Methodology Changed
  - Regional offset removed
  - Increase given based on plan negotiations
- SFY03 - Rate re-base planned

Process That is Evolving

- Recalculate risk factors every 6 months
- Annual rate review (trend and program change update) or rebase (detailed encounter analysis)
- Annual Operational and Financial review to gather / validate plan data



Establishment of Base Rates

- Rates established using SFY97 encounter data
- Rates implemented in CY99
- Rate rebase originally planned for SFY02 moved to SFY03

Base Modifications for Selection Bias

- Not necessary b/c there was never a voluntary HMO program
- Should the State introduce a PCCM program in the future it will be risk adjusted like an HMO

Modifications for Population Changes

- Adjusted original rates (est. 1996) for expanded population using disease state analysis (pharmacy based risk adjusting)

Trending the Base Rate

- CY99 rates developed by population / service trends
- CPI and Administration given to plans in CY00 - SFY01
- Increase given to plans in SFY02 based on plan negotiations

Calculation of Relative Values

- Plan encounter data
- Factors developed for SSI / TANF

Adjustments for Data Completeness

- SFY97 data adjusted for completeness by evaluating plan financial information, rates in neighboring states, and FFS data from 1995 and 1996

Payment System

- Demographic rate cells adjusted using CDPS system
- Maternity payment for all delivery related expenses

Other Rate Setting Issues

- Goals for the future
  - Improve financial reporting
  - Implement operational review process
  - Investigate PCCM
  - Implement managed long term care

Keys to Success – Rate Setting

- Data, Data, Data
  - Financial
  - Operational
  - Clinical
- Partnership established with plans

Maryland

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- Base rates were established using SFY 97 FFS data.
- Separate rates were established for each RAC and GeoDemographic rate cell.

Base Modifications for Plan Exposure

- The first 2 months of expenditures were removed for new eligibles during the base period.
- The period up to the first 30 days of a nursing home admission were included in the base. Any expenditures the recipient incurred for the remainder of the year were excluded.

Base Modifications for Selection Bias

- Positive selection in the voluntary HMO program was used to reduce the base.
- A welfare reform adjustment increased the base for adult TANF recipients.

Modifications for Population Changes

- Population changes will be accounted for in the payment period by the rate cell distribution.

Trending the Base Rate

- FFS expenditures were trended by category of service at a rate cell level.
- Trend factors were based upon historical Medicaid FFS, encounter data and national and regional surveys.

Calculation of Relative Values for Base Period – Data Sources

- Relative values were established during the base period based upon Maryland specific FFS data.
- ACG assignments during the base period were established using SFY 95 diagnostic information.

Calculation of Relative Values for Base Period – Population Subsets

- Relative values were established separately for the TANF and SSI population for each of the 9 RACs established for these groups.

Calculation of Relative Values for Payment Period

- Relative values were not recalculated for the RACs for the payment period.

Adjustments for Data Completeness

- RAC rates were adjusted to account for incompleteness in the encounter data.
- A completion factor was applied to each RAC rate based upon a cohort analysis that compared the previous FFS RAC assignments with current encounter data RAC assignments.

Payment System

- 9 RAC rate cells for TANF
- 9 RAC rate cells for SSI
- GeoDem rate cells for new members
- AIDs/HIV, SOBRA and newborn kick payments
- RAC assignments are updated annually
- Member mix changes are accounted for automatically by changes in rate cell distributions.

Other Rate Setting Issues

- Low FFS fees included in the UPL are a constraint on establishing rates that reflect the MCOs cost of providing services.

Keys to Success – Rate Setting

- Plan involvement in the rate setting steps helps to gain their acceptance of the new rates.

Michigan

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- Michigan establishes payment rates through a competitive bid process
- To support that process, historical Fee-for-Service (utilization rates and expenditures) and encounter data (utilization rates only) are provided for prospective bidders.
- For each of the 10 geographic regions, Michigan has its bid process structured into three composite rates for the TANF, blind and disabled and aged populations respectively, along with a maternity case rate for the TANF. The blind and disabled rate has an overall diagnostic risk adjustment factor applied while the TANF composite is converted into 16 age and gender categories applying standard risk adjustment factors.

Base Modifications for Plan Exposure

- Persons were removed from the base period if they were institutionalized in a long term care setting. In addition, only certain provider types had their diagnostic history included. The most significant example is mental health services which are excluded because they fall into a service carve-out.

Base Modifications for Selection Bias

- Michigan's system compares HMOs to each other with a budget neutral principle applied to HMO payments in the aggregate
- The only comparison of FFS and HMO populations is in the estimate of the 100% FFSE when evaluating HMO bids.

Modifications for Population Changes

- Not applicable in Michigan

Trending the Base Rate

- Not applicable in Michigan

Calculation of Relative Values for Base Period – Data Sources

- State specific data
- FFS data only
- Prospective Regression
  - 6/30/96 FYE for diagnostic mix
  - 6/30/97 FYE for prospective regression of costs

Calculation of Relative Values for Base Period – Population Subsets

- Blind and disabled only
- A single set of relative values

Calculation of Relative Values for Payment Period

- MCO enrollee diagnostic experience taken from most recently available 12 months of encounter and Fee-for-Service data
- State specific FFS experience from 96/97 used to calculate weights for diagnosis groups
- Only apply diagnostic risk adjustment to blind and disabled so single set of relative values or weights.

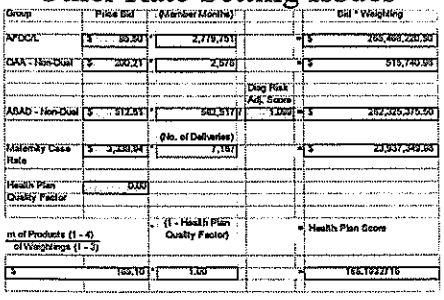
Adjustments for Data Completeness

- No adjustment for data completeness primarily because this is a zero sum game for HMOs as a whole.
- Risk corridors limit impact on HMOs with incomplete data.

Payment System

- Michigan pays a single risk adjusted rate (in each geographic region) to each HMO for all blind and disabled persons. The rate is the amount bid by each HMO. Diagnostic risk adjustment is applied to normalize the competitive bid rate.
- Generally, updates are planned to be on an annual basis. This would include both the rates themselves and the diagnostic risk adjustment factors. For FY 2002 (FYE 9/30/02) there will be no rate adjustment or diagnostic risk adjustment update due to budget limitations.

Other Rate Setting Issues



Fill In Price Bids Fill In Health Plan Quality Factor Fill In Diag. Risk Adj. Score

Outline of the Case Mix Factor Development

Step 1:

- Determine the average case mix factor for each QHP. This is called the "raw" case mix.

Step 2:

- Standardize the "raw" case mix factors.

Step 3:

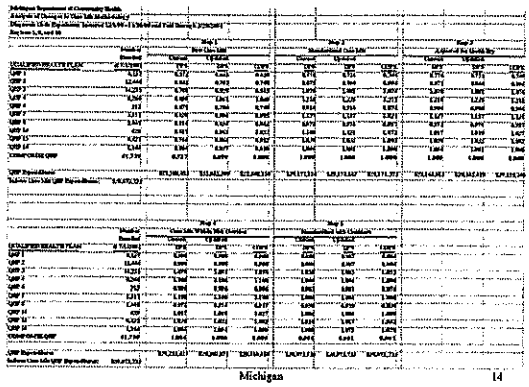
- Apply credibility to the standardized case mix factors.

Step 4:

- Apply the risk corridor to the credibility-adjusted case mix factors.

Step 5:

- Standardize the case mix factors from Step 4 to be budget neutral within each region.



Keys to Success – Rate Setting

- The market is the basis for rates. Limits negotiations and, to some extent, conflict with health plans.
- I would prefer consistent updates which is more in line with a better budget environment.

Minnesota

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- Historical FFS (1990-93) used as the base through 2000 for rate setting
- Beginning 2001, the base health plan experience was used, obtained from statutory financial reports provided by plans
- Demographic base rate component (70%) differs for 3 geographic regions
- Risk adjusted base rate is a single statewide rate for the MA population

Base Modifications for Plan Exposure

- 7-month lag in submission of encounter data by the health plans
- Lag in data submission is kept to 7 months by updating the assessment every three months

Base Modifications for Selection Bias

- Only the services covered by managed care and FFS-eligible individuals who would be managed care eligible were included in the data for the base rates and risk weights.

Modifications for Population Changes

- Adjustments in the rates made annually for population changes and case mix changes: (e.g., in 2001, children in foster care and adoption were added to managed care.) The base rate was adjusted for their anticipated impact

Trending the Base Rate

- Trending of the rates is done on a statewide basis within major population sub groups.
- Through 2000, used estimated FFS combined cost and utilization trend
- Beginning with 2001, the health plans actual medical expense trend for 1997-1999 was used. One time adjustment for past trend "miss" was also factored in.

Calculation of Relative Values for Base Period – Data Sources

- Relative values (risk weights) established from 1996 FFS data. Minnesota-specific, and based on non-Twin Cities data
- Weights determined concurrently. Diagnoses and costs taken form the same time period. At least one month of eligibility required but not more than a year.

Calculation of Relative Values for Base Period – Population Subsets

- Dual eligible elderly were excluded from risk adjustment. All other MA enrollees were included. Relative values calculated on the entire non-excluded MA population

Calculation of Relative Values for Payment Period

- Payments to health plans are based on the average risk of the enrollees historically
- Encounter data from the plans includes diagnoses, age, gender of enrollees.
- ACG for each enrollee is determined.
- Average ACG weight of all enrollees in the plan determine the risk factor
- Current enrollees' specific ACG not used in making the monthly payment only the plan risk factor from the prior period is used.

Adjustments for Data Completeness

- No adjustment for data completeness

Payment System

- Demographic rates (70%) are distinguished by age, gender, program, institutional status, and Medicare eligibility. Updated annually or if leg. changes require it. New eligibles get the appropriate rate for their demographics
- Risk adjusted rates (30%) are a single add-on specific for each health plan, based on the historic risk of the h.p. Updated quarterly. Neweligibles get the same add-on as everybody else.

Other Rate Setting Issues

Keys to Success – Rate Setting

- Minnesota's approach is relatively easy to implement. No carve outs of services or enrollees.
- Phasing in risk adjusted payments gives health plans time to get used to the concept and the revenue fluctuations, and to get the encounter data flowing.

New Jersey

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- NJ risk adjusts only the non-institutionalized Aged, Blind and Disabled populations without Medicare coverage (ABD)
- Base rates for these were developed using FFS claims for the period CY95 - CY97 with reviews of CY98-CY99 claims for rate adequacy. Encounter data were reviewed but found unreliable.
- There are two base rates: one for ABDs who are also clients of the Division of Developmental Disabilities (DDD) and one for all other ABDs.

Base Modifications for Plan Exposure

- Because NJ recalcs case mix monthly and excludes persons in LTC from managed care, there is no reason to make risk-adjustment-related alterations in base capitation rates.
- Unless we miss the meaning of the question

Base Modifications for Selection Bias

- No, not necessary

Modifications for Population Changes

- No, not necessary

Trending the Base Rate

- Trend rates based on projected trends in both utilization rates and reimbursement rates per unit of service on a service category basis.

Calculation of Relative Values for Base Period – Data Sources

- The current weights for the CDPS grouper are national weights. Originally used State weights.
- The individual risk scores are based on prospectively developed weights from FFS claims and encounter data for the period 10/99 - 9/00.

Calculation of Relative Values for Base Period – Population Subsets

- Originally, yes, there were separate weights for the DDD and non-DDD populations. Have since moved to a single set of weights.
- Individual risk scores have as arguments age, sex, region and C-DPS clinical categories.

Calculation of Relative Values for Payment Period

- N/A for CDPS approach, we believe.

Adjustments for Data Completeness

- Beneficiaries with less than 6 months of eligibility during the 12 month risk assessment period do not have a calculated risk score. These individuals receive the average case mix score of the HMO in which they are enrolled. If not enrolled, they receive a risk score of 1.0.
- Surely you're not asking at this point about whether or not we complete the original claims data in constructing capitation rates.

Payment System

- See Slide 2 for rate cells.
- HMO casemix calculated monthly; member mix therefore reflected monthly.
- New eligibles (without scores) are imputed a score of 1.0 in FFS and their HMO's average casemix when enrolled.
- Disenrollments captured in monthly casemix calculation.

NJ CASE MIX TABLE

- See handout
- This Table provides the methodology for the calculation of the monthly HMO case mix value and budget neutrality process.

Keys to Success – Rate Setting

- The HMO case mix is calculated monthly with budget neutrality normalization
- This provides for risk adjustment immediately reflecting changes in enrollment size or beneficiary risk mix, while protecting the State against "scoring creep".

Forum II - Day 1
State Rate Setting Approaches

Presentation

State of Oregon

Establishment of Base Rates

- Encounter data, FFS data, Medicare payment data are most important data sources
- Each rate group has a distinct base rate
- Children and adults are not separated in TANF and SSI

Base Modifications for Plan Exposure

- Using encounter data for utilization rates eliminated the need to make adjustments for lag between eligibility and enrollment
- It is unnecessary to make other adjustments; e.g., long term care admission does not affect plan's responsibility to provide/pay for acute care services

Base Modifications for Selection Bias

- We made no modifications in the base rate for selection bias since managed care data are the primary data source

Modifications for Population Changes

- The base rate has changed to account for changing enrollment criteria
  - One eligibility group was recently excluded from managed care enrollment for the first 6 months of eligibility if they become eligible through an inpatient admission

Trending the Base Rate

- Trending is at the category of service level (inpatient, outpatient, physician, drug, dental, mental health/chemical dependency)
- Separate cost and utilization trends
- Trends vary by managed care/fee-for-service and dual/non-dual eligibility

Calculation of Relative Values for Base Period – Data Sources

- Relative cost values for CDPS are based on national weights with separate models for TANF adults, TANF children and SSI
- The risk assignment data period is later than the base data period and is one year rather than two

Calculation of Relative Values for Base Period – Population Subsets

- Relative cost values for CDPS are based on national weights with separate models for TANF adults, TANF children and SSI
- CDPS applies only to Disabled and related categories

Calculation of Relative Values for Payment Period

- Risk adjustment is done among managed care program enrollees only
- National weights are used
- A relative risk score is developed for each plan/eligibility category and used for all relevant enrollees for the year

Adjustments for Data Completeness

- We have not made explicit adjustments for data completeness
- The risk corridor partially addresses the data completeness issue
- We have measured encounter data completeness in 1996 and 1999 and consider the current data set to be 90%+ complete

Payment System

- Each health plan has a unique rate for each of 16 rate groups and each of 5 regions of the state
- Rates are updated yearly, although mid-contract changes in coverage area trigger rate modifications
- New eligibles are not distinguished from existing eligibles by payment rate

Other Rate Setting Issues

- Active involvement of plans in advisory committee complicates rate development process

Keys to Success – Rate Setting

- Use of national weights minimizes work load without significantly compromising results
- Annual recalibration may be reviewed, small plans are concerned about turnover issues
- Use of average plan score reduces data requirements and resource needs, appears to provide directionally correct results

Utah

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- Historical FFS. Utah uses plan financial/utilization reports to validate reasonableness of rates.
- Separate rates for different aide categories. Eleven rate cells.

0-1	**Disabled Male**
1-21 TANF Males	**Disabled Female**
1-21 TANF Female	**Medically Needy Child**
21&over TANF Male	**Medically Needy Adult**
21&over TANF Female	**Non-TANF Pregnant**
Aged	

Base Modifications for Plan Exposure

- HMO is not at risk until the date of enrollment.
- Between date of eligibility and date of enrollment FFS applies.
- Clients institutionalized in a LTC facility are exempt from HMO enrollment. Exception: An HMO member may be admitted to LTC facility for a period of 30 days or less and the HMO pays the LTC facility.
- LTC Flex plan enrollees are enrolled in an HMO.

Base Modifications for Selection Bias

- Initial base rates were not modified for bias selection
- In base period clients were in both FFS and HMO systems however over 75% were in FFS.
- No adjustment was made to base data
- No, 0-1 rate cell problem.

Modifications for Population Changes

- The eleven rate cells adjusted for demographic differences as age, sex, geographic location

Note: mandatory HMO enrollment in urban areas.

Trending the Base Rate

- Historically used a composite weighted increase that is comparable to FFS increases.

Calculation of Relative Values for Base Period – Data Sources

Risk Adjustment

- Used data from several state Medicaid programs
- Encounter data only
- For FY 2002 rates, used FY 2000 encounter data
- Prospectively

Calculation of Relative Values for Base Period – Population Subsets

Risk Adjustment

- Each rate cell had a unique relative value; 0-1, TANF, medically needy, aged and disabled.
- All rate cells had different risk adjustment values

Calculation of Relative Values for Payment Period

- Establish the average rates for each rate cell.
- Factor up or down based on the reported profit or loss in each rate cell using the composite of all HMOs.
- Apply the risk adjusters for each HMO.

Adjustments for Data Completeness

Risk Adjustment

- No adjustments made for data completeness
- Encounter data completeness measured against Attachment E – Plan specific aggregate cost and utilization data.

Payment System

- Rate Cells

0 – 1	**Disabled Male**
TANF 1-21 Male	**Disabled Female**
TANF 1-21 Female	**Medically Needy Child**
TANF 21&over Male	**Medically Needy Adult**
TANF 21&over Female	**Non TANF Pregnant**
Aged	**Restriction Program**

* Rates updated Annually
- Not necessary with varied rate cells
- Payment based on rate cell eligible fall into
- No adjustment for disenrollments

Other Rate Setting Issues

- Importance of establishing reasonable, accurate base rates before adjusting for risk or trends (inflation & utilization)

Keys to Success – Rate Setting

- Fair rate setting methodology in conjunction with earned trust

Washington

Forum II - Day 1

State Rate Setting Approaches

Presentation

Establishment of Base Rates

- CY 2002 flat rates were based on the results on the plan's aggressive bidding for 2001 and modified by the plan's geographical experience.
- One statewide rate was established for all the categorically needy non-SSI population with factors for geographical, age, gender and plan's health risk status.

Base Modifications for Plan Exposure

- Base rates effective January 1, 2002 will be based on health status information for the twelve months ended March 31, 2001.
- Base rates will be updated effective April 1, 2002 with health status information for the twelve months ended September 30, 2001.
  - When recipients were not eligible, their health status was not reviewed.

Base Modifications for Selection Bias

- For the most part all of our members were enrolled with a plan. Exceptions would be some geographical areas which will probably remain fee for service in 2002.

Modifications for Population Changes

- Each year modifications are made in the rate for changes in the demographic mix because of age and urban/rural distribution.

Trending the Base Rate

- Initially we trended our historical rates from SFY 93 to CY 96 by category of service and eligibility type. We used these historical rates as shadow rates to negotiate rates through CY 2000. These historical rates were trended forward by using the fee for service utilization rates for the same eligibility types.

Calculation of Relative Values for Base Period – Data Sources

- State specific data was used to establish the relative values for each year.
- In the early years (1993-2000), FFS only was used. In 2002, both FFS and Encounter Data were used (modified slightly by plan experience data).
- Payments for the period January 1, 2002 through March 31, 2002, diagnostic information for the twelve month period ending March 31, 2001 was used. For the period April 1, 2002 through December 31, 2002, diagnostic information for the twelve month period ending September 30, 2001 will be used. Risk assignments will be made prospectively.

Calculation of Relative Values for Base Period – Population Subsets

- Washington does not establish separate relative values for subsets of the populations. SSI is covered only by FFS.
- Age/gender factors are developed for all clients covered.

Calculation of Relative Values for Payment Period

- Relative values are developed based on the previous year's expenditures statewide per person per month adjusted by the demographical changes from the previous year to the year and the increase granted by the legislature.
- Only state specific data is used to establish the relative values.
- SSI is not covered under managed care.

Adjustments for Data Completeness

- In 2001, modifications were made to adjust for encounter data incompleteness. The modifications were a dampening of the plans' risk score. The dampening held the risk scores within a tight corridor. Data completeness was measured by huge gaps in the data (especially by geographical area or by provider).

Payment System

- Single overall plan rate is used to make payments to Washington's managed care plans.
- Once a year but in 2002, the health status factor will be updated effective April 1, 2002.
- The plan receives a health status factor for each enrollee
- No adjustments are planned for 2002.

Other Rate Setting Issues

Keys to Success – Rate Setting

- The extremely aggressive bidding for 2001 gave the state of Washington more information than probably could have been obtained in any other matter.

Appendix D:
Survey

Risk Adjustment Survey

This spring the Health Care Financing Administration (HCFA) with assistance from the Actuarial Research Corporation and the Center for Health Program Development and Management (CHPDM) will be conducting two forums on risk adjusted payment systems. These forums will gather the risk adjustment experts from each State Medicaid agency currently using a risk adjustment payment methodology to pay Managed Care Organizations (MCO). At these forums we will identify and analyze the challenges and successes each State experienced while implementing a risk adjusted payment system.

We have created the following survey to help us better understand how the risk adjustment payment system was developed in your State. Your answers will guide us when we develop the agenda for the forums.

As you answer these questions please base your responses on your most recent rate setting cycle/methodology. Also, please base your responses on your rate setting program for fully capitated MCOs.

If you have questions regarding this survey please contact Andrea Schumacher at the Center for Health Program Development and Management at 410-455-6534 or at andreas@chpdm.umbc.edu. Thank you for your efforts on this important survey.

The attached questions are grouped in the following categories:

A. General Questions
B. Eligibility
C. Enrollment
D. Benefits Package
E. Payment Mechanism
F. Assignment of Risk Category
G. Calculation of Relative Values & Payment Rates
H. Financial Reporting
I. Contracting
J. Implementation
K. Monitoring

A. GENERAL QUESTIONS

1. Which classification system do you use for risk adjustment *(for example: ACG, DPS, HCC)*?

2. At this time how many MCOs participate in your Medicaid managed care program?

3. How many of your MCOs have other lines of business *(for example: Medicare, commercial)*?

4. Are your risk adjusted rates set by State staff or do you use an outside firm?

   State staff ☐ (proceed to question 5) Outside firm ☐ (proceed to question 7)

5. If your rates are set by State staff, which office has primary responsibility for setting rates?

6. If your rates are set by State staff, please provide the name and phone number of the primary contact (proceed to question 8).

A. GENERAL QUESTIONS (cont.)

7. If your rates are set externally, please provide the name of the organization with whom you contract and the name and phone number of the primary contact.

8. What is your estimate about the number of Medicaid beneficiaries enrolled in an MCO and what percent are they of the total MCO enrollment?

9. What is your estimate of the number of Medicaid beneficiaries enrolled in an MCO **and** under a risk adjusted payment mechanism? What percent are they of the total Medicaid MCO enrollment?

B. Eligibility

1. What Medicaid eligibility categories are targeted for risk adjustment *(for example: Family and Children, SSI)*?

2. Is any category of the Medicaid population enrolled in MCOs excluded from your risk adjustment rate methodology?

   Yes ☐ (proceed to question 3) No ☐ (proceed to Section C)

3. If any categories of the enrolled Medicaid population are excluded from risk adjustment, please list which categories are excluded *(for example: AIDS, under age 1, deliveries).*

C. Enrollment

1. Is enrollment in an MCO mandatory or voluntary for Medicaid beneficiaries?

   Mandatory ☐ statewide Voluntary ☐ statewide Mandatory & voluntary depending on region ☐

2. How much time is given to a Medicaid beneficiary to choose an MCO?

3. If a Medicaid beneficiary does not choose an MCO are they automatically assigned?

   Yes ☐ (proceed to question 4) No ☐ (proceed to question 6)

4. If Medicaid beneficiaries are automatically assigned to an MCO, please describe the factors that are taken into consideration in your automatic assignment algorithm.

5. During the last quarter what percent of Medicaid beneficiaries were automatically assigned an MCO?

6. Are Medicaid beneficiaries allowed to change to a different MCO?

Yes ☐ (proceed to question 7)

No ☐ (proceed to question 10)

C. Enrollment (cont.)

7. If Medicaid beneficiaries are allowed to change MCOs, is there a specific "open enrollment" timeframe?

Yes ☐ (proceed to question 8) No ☐ (proceed to question 9)

8. What is the "open enrollment" timeframe?

9. How often are Medicaid beneficiaries allowed to change MCOs?

10. How are members transitioned to other MCOs if an MCO decides to no longer participate in your managed care program?

D. Benefits Package

1. Does your managed care benefits package exclude any services that are included in your State's Medicaid plan?

   Yes ☐ (proceed to question 2) No ☐ (proceed to question 3)

2. Please summarize which benefits are excluded from your managed care benefits package that are included in your State's Medicaid plan *(for example: substance abuse, mental health, dental).*

3. Does your State offer stop loss reinsurance to participating MCOs?

   Yes ☐ (proceed to question 4) No ☐ (proceed to Section E)

4. Please summarize your State's stop loss reinsurance program *(for example: mandatory vs. voluntary, stop loss limit, category of service used to calculate stop loss premium).*

E. Payment Mechanism

1. What is the basis of payment to MCOs in your State *(is payment based on individual lives or an MCO risk score)*?

   Individual ☐ MCO Risk Score ☐ Other (please explain) ☐

2. Are payments to the MCOs made prospectively by using previously collected program data to determine a beneficiary/MCO risk score?

   Yes ☐ (proceed to question 4) No ☐ (proceed to question 3)

3. Are payments to the MCOs finalized retrospectively by calculating a beneficiary/MCO risk score using actual enrollment and utilization data?

   Yes ☐ No ☐

4. When the payment rates were being developed did you make any adjustments to compensate for incomplete data *(for example: if you used encounter data to develop your rates and you knew you did not have a complete data set, did you make adjustments)*?

   Yes ☐ (proceed to question 5) No ☐ (proceed to question 7)

5. When you risk adjusted your payment rates, did the risk adjusted rate apply to all categories of eligibility (as an aggregate), or did the risk adjustment only apply to a specific cohort or eligibility group?

Aggregat☐ Cohor☐

(proceed to question 7) (proceed to question 6)

E. Payment Mechanism (cont.)

6. Which cohorts or eligibility groups are paid using risk adjusted rates?

7. Is there a blending of risk adjustment payments with non-risk adjusted payments?

Yes ☐ No ☐

(proceed to question 8) (proceed to Section F)

8. Please explain the rate cells that are used to make non-risk adjusted payments *(for example: age-sex demographic, TANF/SSI).*

F. Assignment of Risk Category

1. What was the time period of data (sometimes referred to as base year) used to determine the risk adjustment category/score for Medicaid beneficiaries for your current risk adjusted payments *(for example: calendar year 1999)*?

2. What data is used to determine an Medicaid beneficiary's risk adjustment category/score?

   a. Please check all that apply

Fee-For-Service data only	
Encounter data only	
Combination of FFS and Encounter data	
Other (explain)	

   b. What categories of service were used to determine an Medicaid beneficiary's risk adjustment category *(for example: inpatient, outpatient)*?

   c. Were any categories of service that are carved – out of your managed care benefit package used in determining a beneficiary's risk adjustment category/score?

   Yes ☐ (proceed to question d) No ☐ (proceed to question 3)

   d. Please explain which categories of service that are carved – out were used in determining a beneficiary's risk score *(for example: mental health)*.

3. How often do you update a person's risk assignment category?

Monthly ☐ Quarterly ☐ Yearly ☐ Other ☐
(please explain)

F. Assignment of Risk Category (cont.)

4. How do you make risk category assignments and payments for new Medicaid beneficiaries for whom you have no prior data?

5. Do you adjust an MCO's risk score when beneficiaries disenroll *(for example: death, open enrollment, or MCO withdrawals)*?

   Yes ☐ (proceed to question 6) No ☐ (proceed to Section G)

6. Please explain how you adjust an MCO's risk score when beneficiaries disenroll.

G. Calculation of Relative Values & Payment Rates

1. What was the time period of data (sometimes referred to as base year) used to determine the current reimbursement rates for MCOs *(for example: calendar year 1999)*?

2. What is the rate year for your current MCO rates?

3. What data were used to determine the relative values for your risk adjustment categories? *(please check all that apply)*

Fee-For-Service data	
Priced encounter data	
National Weights	
MCO financials	
Other (explain)	

4. Does your payment methodology result in rates for specific risk adjustment groups that are used to make payments for individuals or does it result in an MCO risk score and payment rate?

Rates for ☐ risk adjustment groups (proceed to question 5)

MCO rate ☐ based on their risk score (proceed to question 6)

5. How did you trend the rates for a risk group from the base period to the rate period?

Trended average PMPM and then used relative values to establish rates ☐

Trended individual rate cells from base year to rate year ☐

Other (please explain) ☐

G. Calculation of Relative Values & Payment Rates (cont.)

6. How did you trend the per member per month (PMPM) cost for the average eligible from the base period to the rate period?

Trended average PMPM and then used relative risk scores to establish payments ☐

Trended average PMPM by eligibility class then used relative risk scores to establish payments ☐

Other (please explain) ☐

7. If you make payments based on overall risk score, do you make any adjustments in your rate methodology for changes in the case mix of the Medicaid population from the base period to the rate period?

Yes ☐ (proceed to question 8)

No ☐ (proceed to Section H)

8. Please explain how you adjust your rates when the case mix of the Medicaid population changes from the base period to the rate period.

H. Financial Reporting

1. Are you receiving financial reports from your MCOs? If yes, please attach a blank report or send a blank report via e-mail to andreas@chpdm.umbc.edu.

   Yes ☐ (proceed to question 2) No ☐ (proceed to Section I)

2. How frequently are MCOs responsible for submitting financial reports?

   Monthly ☐ Quarterly ☐ Yearly ☐ Other ☐ (please explain)

3. How often are MCO financial reports audited?

   Monthly ☐ Quarterly ☐ Yearly ☐ Other ☐ (please explain)

4. Do you collect cost and utilization data separately for any risk adjustment categories?

   Yes ☐ (proceed to question 5) No ☐ (proceed to Section I)

5. If cost and utilization data are collected separately, is the Medicaid line of business reported separately?

   Yes ☐ No ☐

I. Contracting

1. Do you allow MCOs to use capitated payments to reimburse providers in their networks?

   Yes ☐ (proceed to question 2) No ☐ (proceed to Section J)

2. Do you allow MCOs to set global capitation rates for providers in their network?

   Yes ☐ No ☐

3. Are there limitations on the amount of risk an MCO can pass down to a provider?

   Yes ☐ No ☐

4. Do your MCOs risk adjust the payments they make to their providers?

   Yes ☐ (proceed to question 5) No ☐ (proceed to question 6)

5. Please describe how your MCOs risk adjust payments to providers.

6. Are there differences in the quantity and/or quality of encounter data you receive from MCOs based on their contracted arrangements with providers *(for example: globally capitated providers submit more data)*?

   Yes ☐ (proceed to question 7) No ☐ (proceed to Section J)

7. Please summarize any differences in the quantity and/or quality of the data.

J. Implementation

1. Was risk adjustment phased-in?

   Yes ☐ (proceed to question 2) No ☐ (proceed to question 6)

2. How long was the phase-in process?

3. Did you phase-in risk adjustment by applying risk adjustment to specific Medicaid beneficiary eligibility categories or by phasing-in risk adjusted payments?

   Eligibility Category ☐ (proceed to question 4) Payment ☐ (proceed to question 5) Other ☐ (please describe)

4. Please describe how you phased-in eligibility categories *(for example: risk adjustment only applied to SSI or TANF).*

5. Please describe how you phased-in payments *(for example: blended rates with 5% risk adjusted payment).*

6. When you implemented risk adjustment, did you build in any payment protection mechanism for MCOs *(for example: risk corridor)*?

Yes ☐ (proceed to question 7)

No ☐ (proceed to question 8)

J. Implementation (cont.)

7. Please summarize your payment protection mechanism.

8. Did you hire any additional staff in order to implement your risk adjustment payment methodology? If yes, how many additional FTEs did you hire?

9. Please summarize any organizational changes you made in order to implement a risk adjusted payment methodology *(for example: creating a separate unit).*

K. Monitoring

1. Do you use a risk adjustment methodology for purposes other than payment *(for example: provider profiling, quality assurance, utilization standards, etc)*?

Yes ☐ (proceed to question 2) No ☐ (proceed to question 3)

2. Please describe for what other purpose you use a risk adjustment methodology.

3. Do you project MCO enrollment by risk-adjusted group or overall MCO risk score?

Risk – Adjusted group ☐ MCO risk score ☐ We do not project ☐ MCO enrollment (proceed to next page)

4. Do you share these projections with the MCOs?

Yes ☐ No ☐

5. Do you compare these projections against actual enrollment/risk scores?

Yes ☐ No ☐

Thank you for completing this survey.

If you would please respond to just a few more questions:

What are the names and titles of the individuals who completed this survey? (continue on back if necessary)	May we contact you at a later time? Yes No		What is the preferred method of contacting you?	Would you be interested in participating in the two forums? Yes	No

As mentioned in the introduction this information will be used to direct the agenda at two risk adjustment payment methodology forums. Are there any topics, not addressed in this survey, that you think should be included in the forums?

Please return this survey at your earliest convenience using the enclosed envelope or mail your responses to:

Andrea Schumacher
UMBC – CHPDM
Social Sciences 309
1000 Hilltop Circle
Baltimore, MD 21250

Please attach a blank copy of your financial monitoring report.

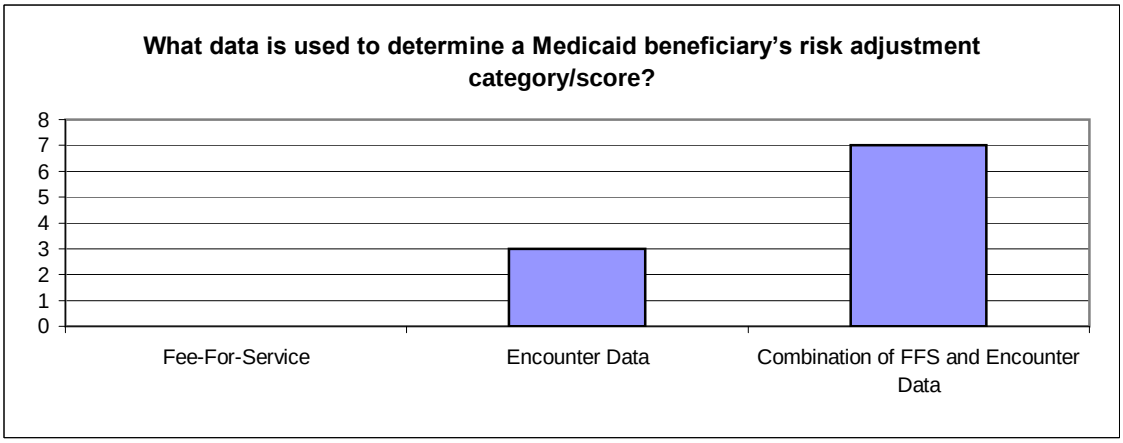
Again, thank you for your attention to this survey. You will be contacted very shortly regarding the Spring 2001 Risk Adjustment Forums.

Appendix E:
Survey Responses

Section F: Assignment of Risk Category

Risk Assignment Period

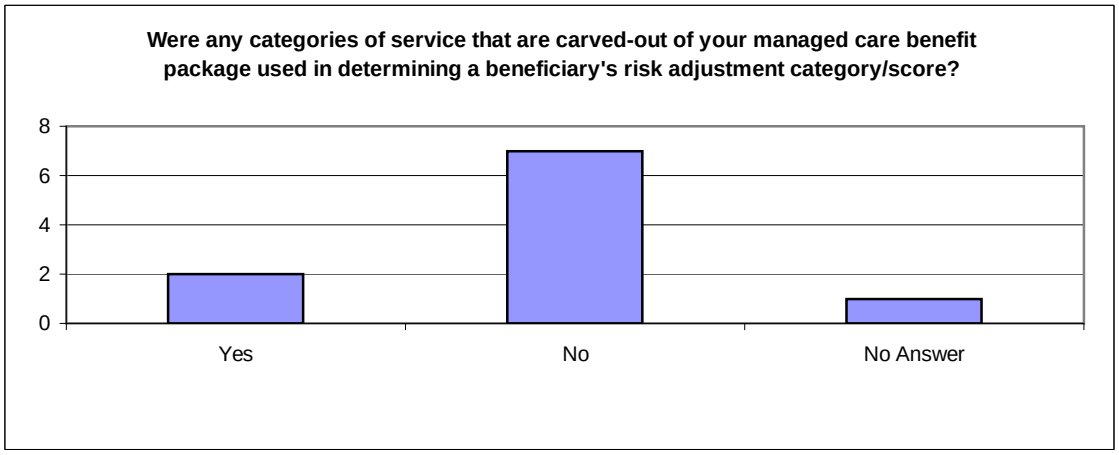
Colorado	FFS: FY 1997-1999 Encounter: FY 2000
Delaware	CY 2000
Maryland	CY 1999
Michigan	July 1998 - June 1999
Minnesota	July 1999 - June 2000
New Jersey	CY 1999
Oregon	October 1998 - September 1999
Tennessee	CY 1999
Utah	July 1999 - June 2000
Washington	July 1999 - June 2000

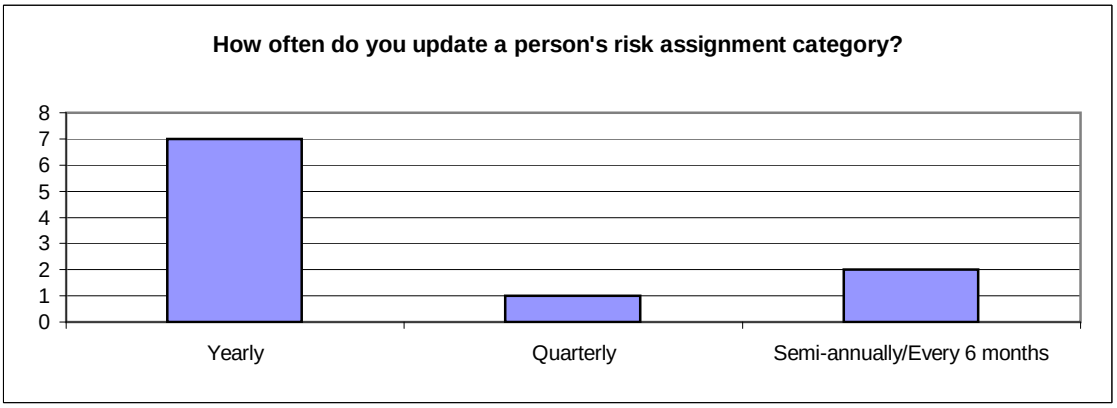


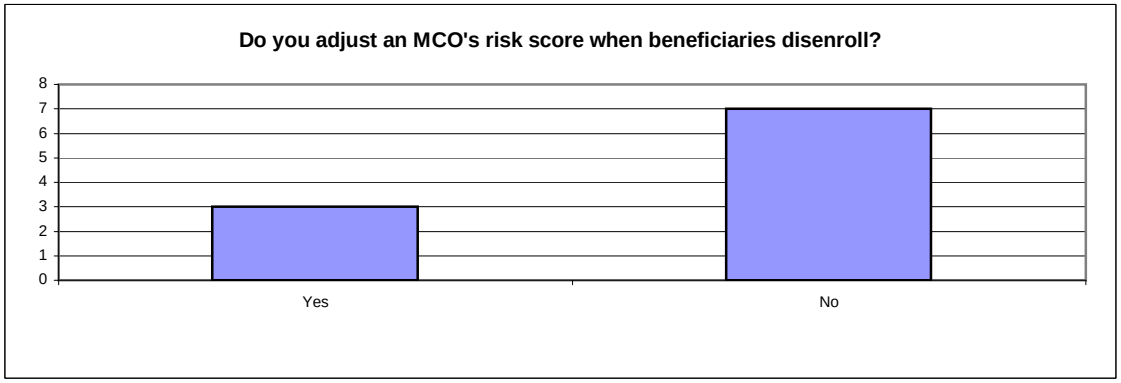
Categories of service used in risk assignment

State	*Inp*	*Out*	*Phy*	*Phar*	*Other*
Colorado	■	■	■		
Delaware	■	■	■		
Maryland	■	■	■		
Michigan	■	■	■		
Minnesota	■	■	■	■	All, except lab & x-ray
New Jersey	■	■	■		All with diagnoses
Oregon	■	■	■		Professional
Tennessee					
Utah	■	■	■		Contract Covered
Washington	■	■	■		

Section F: Assignment of Risk Category (continued)


Were any categories of service that are carved-out of your managed care benefit package used in determining a beneficiary's risk adjustment category/score?
8
6
4
2
0
Yes
No
No Answer


How often do you update a person's risk assignment category?
8
7
6
5
4
3
2
1
0
Yearly
Quarterly
Semi-annually/Every 6 months


Do you adjust an MCO's risk score when beneficiaries disenroll?
8
7
6
5
4
3
2
1
0
Yes
No

Appendix F:
Selected Article Abstracts

List of Selected Article Abstracts
(Alphabetical by Title)

1. Application of the ambulatory care groups in the primary care of a European national health care system: does it work?
2. Capitation and risk adjustment in health care financing: an international progress report.
3. Characteristics of risk adjustment systems.
4. A comparison of ambulatory Medicaid claims to medical records: a reliability assessment.
5. Comparison of risk-adjustment systems for the Medicaid-eligible disabled population.
6. Correlation of risk adjustment measures based on diagnoses and patient self-reported health status.
7. Cost - minimizing risk adjustment
8. Cross-national comparison of capitation funding: the American, British and Dutch experience.
9. The development of a risk-adjusted capitation payment system: the Maryland Medicaid model.
10. Diagnosis-based risk adjustment for Medicaid capitation payments.
11. Diagnostic risk adjustment for Medicaid: the disability payment system.
12. Evaluating diagnosis-based case-mix measures: how well do they apply to the VA population?
13. Formal risk adjustment by private employers.
14. Health-based risk adjustment: is inpatient and outpatient diagnostic information sufficient?
15. History of risk adjustment in the US
16. Implementing risk assessment and risk adjustment for people with disabilities in state programs: six case studies.
17. Measuring health status for risk adjusting capitation payments.
18. New risk-adjusted Medicare payment system promises more accurate patient profiles.
19. Performance of the ACG case-mix system in two Canadian provinces.
20. Prepare now by learning the ABCs of PIP-DCGs (principal inpatient diagnostic cost groups).
21. Prevalence of health problems and primary care physicians' specialty referral decisions.
22. Principal Inpatient Diagnostic Cost Group model for Medicare risk adjustment.
23. Refinements to the Diagnostic Cost Group (DCG) model.
24. Risk adjustment alternatives in paying for behavioral health care under Medicaid.
25. Risk adjustment of mental health and substance abuse.
26. Risk-adjusted capitation based on the Diagnostic Cost Group model: an empirical evaluation with health survey information.

27. Risk-adjusted Medicare capitation rates using ambulatory and inpatient diagnoses.
28. Taking health status into account when setting capitation rates; a comparison of risk-adjustment methods [see comments].
29. Use and costs of medical care for children and adolescents with and without Attention-Deficit/Hyperactivity Disorder.
30. Use of risk adjustment in setting budgets and measuring performance in primary care I: how it works.
31. Use of risk adjustment in setting budgets and measuring performance in primary care II: advantages, disadvantages, and practicalities.
32. Who cares for Medicaid-enrolled children with chronic conditions?

Title: Application of the ambulatory care groups in the primary care of a European national health care system: does it work?

Source: Med Care 1999 Mar; 37(3):238-48

Author(s): Orueta, JF; Lopez-De-Munain, J; Baez, K; Aiarzaguena, JM; Aranguren, JI; Pedrero, E

Abstract: BACKGROUND: Ambulatory Care Group (ACG), a US case-mix system that uses the patient as the unit of analysis, is particularly appropriate for health care systems in which physicians serve a defined list of patients. OBJECTIVE: To determine the extent to which the categorization of patients according to ACGs would account for the utilization of primary care services in a national health care system within the European Union. METHODS: Of all subjects continuously assigned to 9 physicians from public primary health care centers in Bizkaia, Basque Country (Spain) over a 12-month period, those visited at least once (n = 9,093) were included. According to the subject's age, sex, and ICD-9-CM diagnoses assigned during a year of patient-provider encounters, patients were classified by means of the ACG system. RESULTS: Multiple linear regression analyses indicated that age and sex did not explain more than 7.1 percent of the variance in annual visits made by adults and 25.7 percent by children to primary care physicians. However, the R2 adjusted to the ACG model was 50 percent and 48 percent, respectively, and even higher, 58 percent and 64 percent for another component of the system, the Ambulatory Diagnostic Groups (ADGs). CONCLUSIONS: Those results support the inadequacy of using the patient's age and sex alone to estimate physicians' workload in the primary health setting and the need to consider morbidity categories. The ACG case-mix system is a useful tool for incorporating patients' morbidity in the explanation of the use of primary health care services in a European national health system.

Title: Capitation and risk adjustment in health care financing: an international progress report.

Source: Milbank Quarterly, Mar2001, Vol. 97 Issue 1,p81, 33p

Author(s): Rice, Nigel; Smith, Peter C.

Abstract: Reviews and examines the methods of capitation and risk adjustment used to distribute health care funds to health care plans in developed nations. Experiences across a wider range of health care systems; Objectives attached to capitation schemes; Methods for setting capitation payments; Needs factors used to determine capitation payments.

Title: Characteristics of risk adjustment systems.

Source: Working paper Series, #2 Division of Child Health Services Research and Evaluation Institute for Child Health Policy University of Florida

Author(s): Shenkman, PhD., Elizabeth A; Breiner, Ph.D., Judith R

Abstract: Although most children are healthy and consume relatively few health care resources, children with special health care needs and adolescents (ages 12 through 18) have increased needs for health care services. These increased needs may place insurers and health care providers at financial risk, particularly within managed care arrangements. Reimbursement within managed care is frequently provided in the form of capitated payments. However, standard methods to adjust capitation payments to health plans or providers only take into consideration age, gender, geographic region, and welfare category, which typically explain less than 6 percent of the variation in health care expenditures.

Various methods have been proposed to assess the likelihood, or "risk," of future health care use by enrollees. Insurers commonly used demographic data such as age and gender as risk-adjusters. However, these measures explain less than 4 to 6 percent of the variance in health care use. Diagnostic-based approaches, as the name implies, use diagnoses or combinations of diagnoses assigned by clinicians I outpatient and inpatient settings to predict the need for health care services both in the same year in which the diagnosis was assigned (concurrent use) and at some time in the future (prospective use).

These approaches are attractive because: 1) they rely on data readily available in most third party payers' claims and encounter databases, thereby reducing the need for additional costly data collection; 2) they are an improvement over traditional demographic adjusters; and 3) some systems are either in use or are being tested with third party payers who insure large numbers of children and adolescents.

Currently, health care plans and providers face strong financial disincentives when caring for those with increased health care needs, such as adolescents. Greater precision can be achieved in predicting health care use and charges by using diagnostic-based approaches to risk adjustment, and altering capitation payments accordingly. Several diagnostic-based systems are available and some are widely used.

Title: A comparison of ambulatory Medicaid claims to medical records: a reliability assessment.

Source: Am J Med Qual 1998 Summer;13(2):63-9

Author(s): Steinwachs, DM; Stuart, ME; Scholle, S; Starfield, B; Fox, MH; Weiner, JP

Abstract: This study compares the documentation of ambulatory care visits and diagnoses in Medicaid paid claims and in medical records. Data were obtained from Maryland Medicaid's 1988 paid claims files for 2,407 individuals who were continuously enrolled for the fiscal year, had at least one billed visit for 1 of 6 indicator conditions, and had received the majority of their care from one provider. The patients sampled were also stratified on the basis of the case-mix adjusted cost of their usual source of care. The medical records for these individuals as maintained by their usual source of care were abstracted by trained nurse reviewers to compare claims and record information. Linked claim and medical record data for sampled patients were used to calculate: (i) the percent of billed visits documented in the record, (ii) the percent of medical record visits where both the date and the diagnosis agreed with the claims data, and (iii) the ratio of medical record visits to visits from billed claims. Included in the analysis were independent variables specifying place of residence, type and costliness of usual care source, level of patient utilization, and indicator condition on which patient was sampled. Ninety percent of the visits chronicled in the paid claims were documented in the medical record with 82 percent agreeing on both date and diagnosis. Compared to the medical records kept by private physicians and community health centers, a significantly lower percent of hospital medical records agreed with the claims data. Total volume of visits was 2.6 percent higher in the medical records than in the claims. Claims data substantially understated visits in the medical record by 25 percent for low cost providers and by 41 percent for patients with low use rates (based on claims information). Conversely, medical records substantially understated billed visits by 19 percent for rural patients and by 10 percent for persons with high visit rates. Although Medicaid claims are relatively accurate and useful for examining average ambulatory use patterns, they are subject to significant biases when comparing subgroups of providers classified by case-mix adjusted cost and patients classified by utilization rates. Medicaid programs are using claims data for profiling and performance assessment need to understand the limitations of administrative data.

Title: Comparison of risk-adjustment systems for the Medicaid-eligible disabled population.

Source: Med Care 2000 Apr; 38(4):422-32

Author(s): Payne, SM; Cebul, RD; Singer, ME; Krishnaswamy, J; Gharrity, K

Abstract: OBJECTIVE: To compare two approaches for subjecting capitation rates for disabled Medicaid-eligible patients in managed care plans to risk adjustment, the Disability Payment System (DPS) and the Ohio Prior Expenditure System (OPES). DESIGN: This was a retrospective cohort. SETTING AND SUBJECTS: The subjects were 157,142 non-elderly disabled individuals eligible for > or =1 month during state fiscal year 1995 (SFY95) for a 3-county Ohio Medicaid managed care demonstration project. DATA SOURCE: Data were from the Ohio Medicaid eligibility and fee-for-service claims files. ANALYSIS: As per OPES policy, individuals were classified by the duration of their eligibility in SFY93 as "old" eligibles (> or =6 months) or "new" eligibles (<6 months). Published relative payment weights for each system were adjusted and used to predict SFY95 expenditures in a budget-neutral comparison. Measures were variance in SFY95 expenditures explained by predicted payments (R2) and predictive ratios (predicted payment/actual SFY95 expenditure). Individuals with HIV/AIDS and hematological conditions, who enrolled disproportionately across the demonstration counties, were analyzed separately. RESULTS: Of the 157,142 individuals, 56.4 percent were new eligibles; 40.1 percent of the old eligibles had no claims-documented chronic disease diagnosis in the baseline year. The overall R2 was 0.091 with OPES and 0.057 with DPS. Neither system predicted >1 percent of individual-level expenditures for new eligibles. OPES severely underpaid for eligibles in the top percentile of predicted expenditures; DPS had mixed results. DPS predicted SFY95 expenditures substantially better than OPES for the enrollment bias categories. CONCLUSIONS: Before Medicaid programs move to full-risk capitation for disabled populations, better risk-adjustment methods are needed, especially for eligible patients with little claims experience, high-predicted expenditures, or enrollment-bias conditions.

Title: Correlation of risk adjustment measures based on diagnoses and patient self-reported health status.

Source: Health Services and Outcomes Research Methodology, December 2000, vol. 1,no. 3/4 pp.251-265 (15)

Author(s): Wang, M.C.; Rosen, A.K.; Kazis, L; Loveland; S; Anderson, J; Berlowitz, D.

Abstract: Case-mix adjustments have traditionally used diagnosis-based models such as Diagnostic Cost Groups (DCGs). The recent development and availability of reliable and valid patient self-reported health status measures such as the Veterans SF-36 (Short Form Health Survey) may be useful in complementing existing diagnostic information in describing patients' health status for purposes of risk adjustment. However, the correlation between these two approaches has not been explored. We collected SF-36 data from 31,419 veterans nationwide based on a national probability sample of veterans receiving ambulatory care to assess the physical (PCS) and mental (MCS) component of patient self-reported health status. In addition, we used inpatient and outpatient diagnoses from one year (1/1/97 to 1/198) to calculate DCG relative risk scores, with the 1991 Medicare beneficiary population as the benchmark. We found that higher DCG related risk scores were associated with worse PCS ($r=-0.223$, $p<0.05$) and MCS ($r=-0.174$, $p<0.05$) scores. Further examination of the distribution of MCS categories (MCS 40) across the five psychiatric hierarchical condition categories (HCCs) in the DCG/HCC model showed small association between MCS category and disease severity level. These results suggest that risk adjustment approaches based on patient self-reported health status and diagnoses convey different case-mix information, specifically for patients with psychiatric conditions. These two approaches can be used as the basis for the development of a more comprehensive risk adjustment model that incorporates both the providers' and the patients' perspectives in predicting resource utilization.

Title: Cost - minimizing risk adjustment.

Source: November 2001. Boston University School of Public Health. Center for Health Quality, Outcomes and Economic Research

Author(s): Shen, Yujing; Ellis, Randall P.

Abstract: Conventional risk adjustment, which sets capitation payments equal to the average cost of individuals with similar observable characteristics, is not optimal if health plans can use private information to select low–cost enrollees. "Cost–minimizing risk adjustment" minimizes the sum of capitated HMO premiums plus FFS costs by balancing the gains from HMO cost efficiency against the overpayments that result from HMO selection. Estimations using privately–insured data suggest that cost–minimizing risk-adjusted premiums reduce total sponsor costs as much as 25.6 percent below conventional risk-adjustment premiums.

Title: Cross-national comparison of capitation funding: the American, British and Dutch experience.

Source: Health Serv Manage Res 1999 May;12(2):121-35

Author(s): Persaud, D; Narine, L

Abstract: In this paper we review the performance of the capitation payment systems of three countries: the Adjusted Average Per Capita Cost (AAPCC) system used in the United States to reimburse Health Maintenance Organizations (HMOs) for insuring Medicare recipients; a somewhat similar system in the Netherlands that reimburses third-party payers for insuring the entire population; and a weighted system used in Britain for regional funding. Our review revealed significant problems with the current version of the AAPCC formula, as there is evidence of the biased selection of beneficiaries and actual losses to Medicare through its use. Furthermore, several studies show that the demographic adjusters utilized in the AAPCC formula are extremely poor predictors of future healthcare utilization relative to the potential of direct and indirect health status measures. The Dutch experience with capitated funding has been similar to that of the United States. While Dutch researchers have built on the work of their American counterparts, they acknowledge that further work is needed before a fully functional system is implemented. Britain's weighted system has fulfilled its original mandate to redistribute healthcare resources based on population need but recent changes giving increased influence to age weighting could reverse some of these gains. A number of proposed improvements to these risk adjustment problems were reviewed, including the development of diagnostic cost groups, the coexisting hierarchical conditions model, and the use of community-rated high-risk pooling. The findings from this study can help others narrow the alternatives they need to consider when thinking of introducing capitation funding or refining already existing systems.

Title: The development of a risk-adjusted capitation payment system: the Maryland Medicaid model.

Source: J Ambulatory Care Manage 1998 Oct;21(4):29-52

Author(s): Weiner, JP; Tucker, AM; Collins, AM; Fakhraei, H; Lieberman, R; Abrams, C; Trapnell, GR; Folkemer, JG

Abstract: This article describes the risk-adjusted payment methodology employed by the Maryland Medicaid program to pay managed care organizations. It also presents an empirical simulation analysis using claims data from 230,000 Maryland Medicaid recipients. This simulation suggests that the new payment model will help adjust for adverse or favorable selection. The article is intended for a wide audience, including state and national policy makers concerned with the design of managed care Medicaid programs and actuaries, analysts, and researchers involved in the design and implementation of risk-adjusted capitation payment systems.

Title: Diagnosis-based risk adjustment for Medicare capitation payments.

Source: Health Care Financing Review 1996 Spring;17(3):101-28

Author(s): Ellis, RP; Pope, GC; Iezzoni, L; Ayanian, JZ; Bates, DW; Burstin, H; Ash, AS

Abstract: Using 1991-92 data for a 5-percent Medicare sample, we develop, estimate, and evaluate risk-adjustment models that utilize diagnostic information from both inpatient and ambulatory claims to adjust payments for aged and disabled Medicare enrollees. Hierarchical coexisting condition (HCC) models achieve greater explanatory power than diagnostic cost group (DCG) models by taking account of multiple coexisting medical conditions. Prospective models predict average costs of individuals with chronic conditions nearly as well as concurrent models. All models predict medical costs far more accurately than the current health maintenance organization (HMO) payment formula.

Title: Diagnostic risk adjustment for Medicaid: the disability payment system.

Source: Health Care Financing Review 1996 Spring;17(3):7-33

Author(s): Kronick, R; Dreyfus, T; Lee, L; Zhou, Z

Abstract: This article describes a system of diagnostic categories that Medicaid programs can use for adjusting capitation payments to health plans that enroll people with disability. Medicaid claims from Colorado, Michigan, Missouri, New York, and Ohio are analyzed to demonstrate that the greater predictability of costs among people with disabilities makes risk adjustment more feasible than for a general population and more critical to creating health systems for people with disability. The application of our diagnostic categories to State claims data is described, including estimated effects on subsequent-year costs of various diagnoses. The challenges of implementing adjustment by diagnosis are explored.

Title: Evaluating diagnosis-based case-mix measures: how well do they apply to the VA population?

Source: Medical Care July; 39(7): 692-704

Author(s): Rosen, Amy K; Loveland, Susan; Anderson, Jennifer J; Rothendler, James A; Hankin, Cheryl S; Rakovski, Carter C; Moskowitz, Mark A. MD; Berlowitz, Dan R

Abstract: BACKGROUND: Diagnosis-based case-mix measures are increasingly used for provider profiling, resource allocation, and capitation rate setting. Measures developed in one setting may not adequately capture the disease burden in other settings. OBJECTIVES: To examine the feasibility of adapting two such measures, Adjusted Clinical Groups (ACGs) and Diagnostic Cost Groups (DCGs), to the Department of Veterans Affairs (VA) population. RESEARCH DESIGN: A 60 percent random sample of veterans who used health care services during FY 1997 was obtained from VA inpatient and outpatient administrative databases. A split-sample technique was used to obtain a 40 percent sample (n = 1,046,803) for development and a 20 percent sample (n = 524,461) for validation. METHODS: Concurrent ACG and DCG risk adjustment models, using 1997 diagnoses and demographics to predict FY 1997 utilization (ambulatory provider encounters, and service days-the sum of a patient's inpatient and outpatient visit days), were fitted and cross-validated. RESULTS: Patients were classified into groupings that indicated a population with multiple psychiatric and medical diseases. Model R-squares explained between 6 percent and 32 percent of the variation in service utilization. Although reparameterized models did better in predicting utilization than models with external weights, none of the models were adequate in characterizing the entire population. For predicting service days, DCGs were superior to ACGs in most categories, whereas ACGs did better at discriminating among veterans who had the lowest utilization. CONCLUSIONS: Although "off-the-shelf" case-mix measures perform moderately well when applied to another setting, modifications may be required to accurately characterize a population's disease burden with respect to the resource needs of all patients.

Title: Formal risk adjustment by private employers.

Source: Inquiry. 38(3) Fall, 299-309.

Author(s): Ellis, Randall P.

Abstract: This paper explores explanations for why few private employers have adopted formal risk adjustment. The lack of data, challenges of using highly imperfect signals, and absence of market power are not compelling explanations. Alternative strategies that reduce selection problems are clearly important. The central argument is that US health markets are not in equilibrium, but rather are changing rapidly. Since many agents – consumers, employers, health plans, and providers – do not currently demand formal risk adjustment, it is not surprising that recent adoption has been slow. Recent changes in health plan markets may change the demand and accelerate future adoption.

Title: Health-based risk adjustment: is inpatient and outpatient diagnostic information sufficient?

Source: Inquiry 38: 423-431 (Winter 2001/2002)

Author(s): Lamers, Leida M.

Abstract: Adequate risk adjustment is critical to the success of market-oriented health care reforms in many countries. Currently used risk adjusters based on demographic and diagnostic cost groups (DCGs) do not reflect expected costs accurately. This study examines the simultaneous predictive accuracy of inpatient and outpatient morbidity measures and prior costs. DCGs, pharmacy cost groups (PCGs), and prior year's costs improve the predictive accuracy of the demographic model substantially. DCGs and PCGs seem complementary in their ability to predict future costs. However, this study shows that the combination of DCGs and PCGs still leaves room for cream skimming.

Title: History of risk adjustment in the US

Source: Risk Adjustment in Health Care Purchasing. 1 June 2002; Vol 6, No 3

Author(s): Rogal, Deborah L

Abstract: It has long been recognized that risk segmentation in health insurance markets is problematic, often resulting in the sickest individuals being denied health insurance coverage. Over the last several decades a variety of attempts have been made to address the problems of risk segmentation in the health insurance market in the United States, as researchers, policy-makers, and health plan representatives have attempted to increase health coverage and improve the efficiency of the market. A variety of tools have been developed for assessing risk in different population groups and risk pools. These tools, in turn, have been used as part of risk adjustment mechanisms in the private market, for state employee groups, for Medicaid, and for Medicare. Great strides have been made toward addressing risk segmentation in the US. However, despite significant investment in the development of risk assessment tools and strategies for implementation, health-based payments have not been widely adopted in the private insurance market, nor universally adopted among public payers.

Title: Implementing risk assessment and risk adjustment for people with disabilities in state programs: six case studies.

Source: National Rehabilitation Hospital Center for Health & Disability Research. November 2001.

The National Institute on Disability and Rehabilitation Research (NIDRR) supported the development and publication of this document under grant #H133G970072-99. This is our analysis and recommendations, and you should not assume endorsement by NIDRR or the Federal Government.

Author(s): Palsbo, PhD, Susan; Post, BA, Rachael

Abstract: As a group, people with disabilities are disproportionately enrolled in state Medicaid programs. Different states pay physicians and providers using different means, either a fixed amount per person regardless of why or how often the person is being seen (capitation), or a fixed amount per procedure (fee-for-service). We interviewed six state Medicaid programs to learn about their approaches to payment for people with disabilities.

Title: Measuring health status for risk adjusting capitation payments.

Source: Measuring Health Status for Risk Adjusting Capitation Payments Informed Purchasing Series WORKING PAPER

Author(s): Madden, Ph.D., Carolyn W.; Mackay, Ph.D., Bret P.; Skillman, M.S., Susan M.

Abstract: Prospective risk adjustment is a tool implemented in recent years to encourage managed care plans to enroll all individuals, whether they are sick or well. The addition of health status data to prospective risk assessment models through classification systems called "groupers" improves the results of these models compared with models that use demographic (i.e., age and sex) data alone. Health status groupers vary in their use of diagnosis, procedure, and demographic information, and these differences, as well as differences in the characteristics of the population to which the groupers are applied, can affect the outcome of the prospective risk adjustment.

All six groupers examined in this report (DPS, ACG v.3, ACG v.4, DCG, HCC, and CRG) provide reasonable means of measuring health status for purposes of risk assessment in the two populations studied.

Users of risk adjustment protocols for capitation should choose a health status measure based on the context within which the grouper will be implemented (e.g., if the intent is to reward health plans for bearing the financial risk of chronically higher cost enrollees, methods that predict low cost acute conditions may not be appropriate).

Risk adjustment is often accomplished using a statistical prediction model. Of the two models tested in this report, ordinary least squares (OLS) and a two-part generalized linear model (2-part GLM), the two-part GLM model fit the distribution of expenses better than OLS for the two Medicaid populations examined.

The use of stop-loss adjustments (truncating expenses at a threshold level) makes little difference to the prediction models for the populations examined in this study.

Title: New risk-adjusted Medicare payment system promises more accurate patient profiles.

Source: Public Sect Contract Rep 1998 Dec; 4(12): 185-7

Abstract: Use your knowledge of PIP-DCGs to bolster rate negotiations with your plan. A researcher with experience in operating a plan under Medicare's new risk-adjusted payment methodology reveals what you need to know about principal inpatient diagnostic cost groups.

Title: Performance of the ACG case-mix system in two Canadian provinces.

Source: Medical Care 2001 Jan; 39(1): 86-99

Author(s): Reid, Robert J; MacWilliam, Leonard; Verhulst, Lorne; Roos, Noralou; Atkinson, Michael

Abstract: BACKGROUND: While the adjusted clinical group (ACG) system has been extensively validated in the United States, its use in other developed nations has been limited. This article examines the performance of the system in two Canadian provinces and assesses the extent to which ACGs can account for same-year and next-year health care expenditures. METHODS: The study population included all residents of Manitoba and British Columbia who were continuously enrolled in the provincial health plans from April 1, 1995, to March 31, 1997. ACGs were assigned through diagnoses from fee-for-service physician claims and hospital separation records. "Physician" costs were calculated from the fee-for-service tariffs, and for Manitobans, "total" costs were also computed by combining physician and hospital costs. Linear regression was used to examine the ability of the ACG system to explain variation in individual costs (truncated at the 99th percentile). RESULTS: The British Columbia and Manitoba data were generally acceptable, with fewer than 2 percent rejected diagnoses. Higher costs were associated with both the accumulation of morbidities and their relative severity. For physician costs, the ACG system explained 50 percent and 25 percent of the variation in same-year and next-year truncated costs, respectively. For total costs, the system explained 40 percent and 14 percent of these respective costs. CONCLUSIONS: The application of ACGs in Canada is feasible using existing data. The ability of the ACG system to explain variation in costs is similar to that found in US health systems. While application of ACGs in Canada shows promise, further research is required to examine how closely they reflect population morbidity burdens and health care needs.

Title: Prepare now by learning the ABCs of PIP-DCGs (Principal Inpatient Diagnostic Cost Groups).

Source: Public Sect Contract Rep 1998 Jun; 4(6):86-7

Abstract: The ABCs of PIP-DCGs: How will HCFA's new Medicare payment system work? An expert who developed the new pay rate based on hospital diagnoses explains what it is and how it works.

Title: Prevalence of health problems and primary care physicians' specialty referral decisions.

Source: The Journal of Family Practice. May 2001. 50 (5).

Author(s): Forrest, MD, Ph.D., Christopher B.; Reid, MD, Ph.D., Robert J.

Abstract: OBJECTIVE: We tested the hypothesis that the frequency with which patients present to primary care physicians with certain types of health problems is inversely related to the chances of specialty referral during an office visit. STUDY DESIGN: Cross-sectional analysis. POPULATION: The researchers used a data set composed of 78,107 primary care visits from the 1989 to 1994 National Ambulatory Medical Care Surveys. The physicians completed questionnaires after office visits. OUTCOMES MEASURED: The frequency of a health problem's presentation to primary care (practice prevalence) was defined as the percentage of all visits made to family physicians, general internists, and general pediatricians for that particular problem. The researchers estimated the correlation between a condition's practice prevalence and its referral ratio (percentage of visits referred to a specialist) and used logistic regression to estimate the effect of practice prevalence on the chances of referral during a visit. RESULTS: The practice prevalence of a condition and its referral rate had a strong inverse linear relationship ($r=-0.87$; $P<.001$). Compared with visits made for the uncommon problems, the odds of referral for those with intermediate or high practice prevalence were 0.49 ($P=.004$) and 0.22 ($P<.001$), respectively. Surgical conditions were referred more often than medical conditions, and a greater burden of comorbidities increased the odds of referral. CONCLUSIONS: Primary care physicians are more likely to make specialty referrals for patients with uncommon problems than those with common conditions. This finding highlights the responsible judgment primary care physicians employ in recognizing the boundaries of their scope of practice. Practice prevalence is a defining feature of the primary care-specialty care interface.

Title: Principal Inpatient Diagnostic Cost Group model for Medicare risk adjustment.

Source: Health Care Financing Review, Spring 2000, Vol. 21 Issue 3, p93, 26p

Author(s): Pope, Gregory C.; Ellis, Randall P.; Ash, Arlene S.; Liu, Chuan-Fen; Ayanian, John Z.; Bates, David W.; Burstin, Helen; Iezzoni, Lisa I.; Ingber, Melvin J.

Abstract: The Balanced Budget Act (BBA) of 1997 required HFCA to implement health-status-based risk adjustment for Medicare capitation payments for managed care plans by January 1, 2000. In support of this mandate, HCFA has been collecting inpatient encounter data from health plans since 1997. Theses data include diagnoses and other information that can be used to identify chronic medical problems that contribute to higher costs, so that health plans can be paid more when they care for sicker patients. In this article, the authors describe the risk-adjustment model HCFA is implementing in the year 2000, known as the Principal Inpatient Diagnostic Cost Group (PIP-DCG) model. [ABSTRACT FROM AUTHOR]

Title: Refinements to the Diagnostic Cost Group (DCG) model.

Source: Inquiry 1995-96 Winter; 32(4):418-29

Author(s): Ellis, RP; Ash, A

Abstract: The Diagnostic Cost Group (DCG) model, originally developed by Ash et al. (1986, 1989), has been proposed as an alternative to the existing payment system for reimbursing Medicare health maintenance organizations, the Adjusted Average Per Capita Cost (AAPCC). The DCG model is a linear regression model that uses both demographic and diagnostic information to predict total plan payments for health care. This paper extends previous work by estimating the model using 1984-85 data and by developing a more thorough method for classifying hospitalizations by degrees of discretion. It also explores the loss of predictive power resulting from not using diagnoses for the most discretionary hospitalizations for calculating payments. The paper examines a number of extensions and refinements to the basic DCG model.

Title: Risk adjustment alternatives in paying for behavioral health care under Medicaid.

Source: HSR: Health Services Research. Vol. 36 No 4; August 2001, p793

Author(s): Ettner, Susan L; Frank, Richard G; McGuire, Thomas G; Hermann, Richard C

Abstract: OBJECTIVE: To compare various risk adjustment models in behavioral health applications, such as setting mental health and substance abuse (MH/SA) capitation payments or overall capitation payments for populations including MH/SA users. DATA SOURCES/STUDY DESIGN: The 1991-93 administrative data from the Michigan Medicaid program were used. We compared mean absolute prediction error for several risk adjustment models and simulated the profits and losses that behavioral health care carve-outs and integrated health plans would experience under risk adjustment if they enrolled beneficiaries with a history of MH/SA problems. Models include basic demographic adjustment, Adjusted Diagnostic Groups, Hierarchical Condition Categories, and specifications designed for behavioral health. PRINCIPAL FINDINGS: Differences in predictive ability among risk adjustment models were small and generally insignificant. Specifications based on relatively few MH/SA diagnostic categories did as well as or better than models controlling for additional variables such as medical diagnoses at predicting MH/SA expenditures among adults. Simulation analyses revealed that among both adults and minors, considerable scope remained for behavioral health care carve-outs to make profits or losses after risk adjustment based on differential enrollment of severely ill patients. Similarly, integrated health plans have strong financial incentives to avoid MH/SA users even after adjustment. CONCLUSIONS: Current risk adjustment methodologies do not eliminate the financial incentives for integrated health plans and behavioral health care carve-out plans to avoid high-utilizing patients with psychiatric disorders.

Title: Risk adjustment of mental health and substance abuse payments.

Source: Inquiry 1998 Summer; 35(2):223-39

Author(s): Ettner, SL; Frank, RG; McGuire, TG; Newhouse, JP; Notman, EH

Abstract: This study used 1992 and 1993 data from private employers to compare the performance of various risk adjustment methods in predicting the mental health and substance abuse expenditures of a non-elderly insured population. The methods considered included a basic demographic model, Ambulatory Care Groups, modified Ambulatory Diagnostic Groups and Hierarchical Coexisting Conditions (a modification of Diagnostic Cost Groups), as well as a model developed in this paper to tailor risk adjustment to the unique characteristics of psychiatric disorders (the "comorbidity" model). Our primary concern was the amount of unexplained systematic risk and its relationship to the likelihood of a health plan experiencing extraordinary profits or losses stemming from enrollee selection. We used a two-part model to estimate mental health and substance abuse spending. We examined the R2 and mean absolute prediction error associated with each risk adjustment system. We also examined the profits and losses that would be incurred by the health plans serving two of the employers in our database, based on the naturally occurring selection of enrollees into these plans. The modified Ambulatory Diagnostic Groups and comorbidity model performed somewhat better than the others, but none of the models achieved R2 values above .10. Furthermore, simulations based on actual plan choices suggested that none of the risk adjustment methods reallocated payments across plans sufficiently to compensate for systematic selection.

Title: Risk-adjusted capitation based on the Diagnostic Cost Group model: an empirical evaluation with health survey information.

Source: Health Serv Res 1999 Feb; 33(6):1727-44

Author(s): Lamers, LM

Abstract: OBJECTIVE: To evaluate the predictive accuracy of the Diagnostic Cost Group (DCG) model using health survey information. DATA SOURCES/STUDY SETTING: Longitudinal data collected for a sample of members of a Dutch sickness fund. In the Netherlands, the sickness funds provide compulsory health insurance coverage for the 60 percent of the population in the lowest income brackets. STUDY DESIGN: A demographic model and DCG capitation models are estimated by means of ordinary least squares, with an individual's annual healthcare expenditures in 1994 as the dependent variable. For subgroups based on health survey information, costs predicted by the models are compared with actual costs. Using stepwise regression procedures a subset of relevant survey variables that could improve the predictive accuracy of the three-year DCG model was identified. Capitation models were extended with these variables. DATA COLLECTION/EXTRACTION METHODS: For the empirical analysis, panel data of sickness fund members were used that contained demographic information, annual healthcare expenditures, and diagnostic information from hospitalizations for each member. In 1993, a mailed health survey was conducted among a random sample of 15,000 persons in the panel data set, with a 70 percent response rate. PRINCIPAL FINDINGS: The predictive accuracy of the demographic model improves when it is extended with diagnostic information from prior hospitalizations (DCGs). A subset of survey variables further improves the predictive accuracy of the DCG capitation models. The predictable profits and losses based on survey information for the DCG models are smaller than for the demographic model. Most persons with predictable losses based on health survey information were not hospitalized in the preceding year. CONCLUSIONS: The use of diagnostic information from prior hospitalizations is a promising option for improving the demographic capitation payment formula. This study suggests that diagnostic information from outpatient utilization is complementary to DCGs in predicting future costs.

Title: Risk-adjusted Medicare capitation rates using ambulatory and inpatient diagnoses.

Source: Health Care Financ Rev 1996 Spring;17(3):77-99

Author(s): Weiner, JP; Dobson, A; Maxwell, SL; Coleman, K; Starfield, B; Anderson, GF

Abstract: Researchers at The Johns Hopkins University (JHU) developed two new diagnosis-oriented methodologies for setting risk-adjusted capitation rates for managed care plans contracting with Medicare. These adjusters predict the future medical expenditures of aged Medicare enrollees based on demographic factors and diagnostic information. The models use the Ambulatory Care Group (ACG) algorithm to categorize ambulatory diagnoses. Two alternative approaches for categorizing inpatient diagnoses were used. Lewin-VHI, Inc. evaluated the models using data from 624,000 randomly selected aged Medicare beneficiaries. The models predict expenditures far better than the Adjusted Average per Capita Cost (AAPCC) payment method. It is possible that risk adjusted capitation payments could encourage health plans to compete on the basis of efficiency and quality and not risk selection.

Title: Taking health status into account when setting capitation rates: a comparison of risk-adjustment methods [see comments].

Source: JAMA 1996 Oct 23-30; 276(16):1316-21

Author(s): Fowles, JB; Weiner, JP; Knutson, D; Fowler, E; Tucker, AM; Ireland, M

Abstract: OBJECTIVE: To compare performance of different health status measures for risk-adjusting capitation rates. DESIGN: Cross-sectional study. Health status measures derived from 1 year were used to predict resources for that year and the next. SETTING: Group-network health maintenance organization in Minnesota. PARTICIPANTS: Sample of 18- to 64-year-old (n=3825) and elderly (aged > or = 65 years; n=1955) members enrolled in a network-model health maintenance organization in Minnesota. MAIN OUTCOME MEASURES: Total expenditures in the year concurrent with the health status survey (July 1991 through June 1992) and total expenditures in the year following the survey (July 1992 through June 1993). RESULTS: Capitation adjustment based on demographic measures performed least well. Both self-reported health status measures and diagnoses predicted future expenditures twice as well as demographics. When predicting costs for groups of patients rather than individuals, the demographic model worked well for average groups but tended to over-predict healthier groups and under-predict sicker groups. Ambulatory Care Groups based on diagnoses performed better than self-reported health status both in the retrospective models and across healthier and sicker groups. CONCLUSIONS: Without risk adjustment, capitation rates are likely to overpay or underpay physicians for certain patient groups. It is possible to improve prediction using health status measures for risk adjustment. When selection bias is suspected and administrative data are available, we recommend a risk-adjustment method based on diagnostic information. If diagnostic data are not available, we recommend a system based on simple self-reported measures, such as chronic conditions, rather than complex functional status measures.

Title: Use and costs of medical care for children and adolescents with and without Attention-Deficit/Hyperactivity Disorder.

Source: JAMA: Journal of the American Medical Association, 1/3/2001, Vol. 285 Issue 1, p60, 7p, 1 chart, 2 graphs

Author(s): Leibson, Cynthia L.; Katusic, Slavica K.; Barbaresi, William J.; Ransom, Jeanine; O'Brien, Peter C.

Abstract: Compares medical use and costs among persons with and without attention-deficit/hyperactivity disorder (ADHD). Conclusion is that persons with ADHD made greater use of medical care in multiple care delivery settings.

Title: Use of risk adjustment in setting budgets and measuring performance in primary care I: how it works.

Source: BMJ: British Medical Journal, 9/15/2001, Vol. 323 Issue 7313, p604, 4p

Author(s): Majeed, Azeem; Bindman, Andrew B; Weiner, Jonathan P

Abstract: Discusses attempts by Great Britain and the United States to increase the efficiency of medical care. Addresses risk adjustment systems used in the United States and whether they can be adopted in Great Britain. Also explores information regarding capitation based budgets in England, including how they work; Diagnostic groups in risk adjustment.

Title: Use of risk adjustment in setting budgets and measuring performance in primary care II: advantages, disadvantages, and practicalities.

Source: BMJ: British Medical Journal, 9/15/2001, 9/15/2001, Vol. 323 Issue 7313, p607, 4p

Author(s): Majeed, Azeem; Bindman, Andrew B; Weiner, Jonathan P

Abstract: Discusses the benefits and problems of risk adjustment in medical care and how the United States system would work in Great Britain. Also discusses potential advantages of risk adjustment, including fairer methods of resource allocation for health services; and potential disadvantages, including adding administrative complexity to healthcare systems. Questions whether risk adjustment models can be used in Great Britain.

Title: Who cares for Medicaid-enrolled children with chronic conditions?

Source: Pediatrics, Oct2001, Vol. 108 Issue 4, p906, 7p, 5 charts

Author(s): Kuhlthau, Karen; Ferris, Timothy G.G.; Beal, Anne C.; Gortmaker, Steven L.; Perrin, James M.

Abstract: Focuses on the Medicaid-enrolled children with chronic conditions. Discusses the association of demographics and urban resident with pediatric sub-specialist care; need of children with chronic conditions for primary care; and variations of hospital care for children.