March 28, 2003

NOTE TO: Medicare+Choice Organizations and Other Interested Parties

SUBJECT: Advance Notice of Methodological Changes for Calendar Year (CY) 2004 Medicare+Choice (M+C) Payment Rates

In accordance with Section 1853(b)(2) of the Social Security Act (the Act), we are notifying you of proposed changes in the M+C capitation rate methodology and risk adjustment methodology for CY 2004. Preliminary estimates of the various national per capita M+C growth percentages and the methodology changes for CY 2004 are also attached. For 2004 and 2005, CMS will announce the M+C rates on the second Monday in May before the calendar year concerned, in accordance with Section 532 of P.L. 107-188, the Public Health Security and Bioterrorism Response Act of 2002. This Advance Notice is published 45 days before that date.

Attachment I shows the preliminary estimates of the national per capita growth percentage for both the blend rates and the floor amount. Attachment II of this Notice includes a detailed discussion of the new CMS-HCC risk adjustment model that will be in effect for CY 2004, the new ESRD payment approach, and various implementation issues affecting CY 2004 payments.

We will continue paying M+C organizations in 2004 on a fee-for-service basis for covered clinical trial items and services provided to their members.

Comments or questions may be addressed to:
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In order to receive consideration prior to the May 12, 2003 announcement of M+C capitation rates, comments must be received by April 14, 2003.

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Attachments

Attachment 1
Preliminary Estimate of the National Per Capita Growth Percentage for Calendar Year (CY) 2004

Payments to Medicare+Choice (M+C) organizations are based on the highest of three amounts specified in statute for each payment area (generally a county): (1) a "blended rate" based on both national and local data; (2) a "floor" amount specified in statute; and (3) an amount representing 102 percent of the prior year's rate. Both the blended rate and the floor amount are annually adjusted based on the national per capita M+C growth percentage defined in Section 1853(c)(6) of the Social Security Act (the Act), while the blend amount is subject to a separate adjustment under section 1853(c)(5) intended to make aggregate payments the same as they would be if area-specific rates were used. In this notice, we provide preliminary estimates of the national per capita M+C growth percentages in CY 2004, and the increase in the floor payment rates in CY 2004. Each of these estimates reflects the components required by the BBA: an underlying trend change for CY 2004; and an adjustment for changes in the estimates of prior years' growth percentages. The underlying trend change for CY 2004 and the revision to the CY 2003 estimate reflect changes made by the Consolidated Appropriations Resolution, 2003, (Public Law 108-7) enacted on February 20, 2003.

The current estimate of the change in the national per capita M+C growth percentage for aged enrollees in CY 2004 is 9.5 percent. This estimate reflects an underlying trend change for CY 2004 in per capita costs of 3.7 percent and an adjustment for the fact that the current estimate of prior years' cumulative aged M+C growth percentages (for CYs 1998 through 2003) is 5.6 percent higher than the estimates actually used in calculating the CY 2003 capitation rate book that was published March 1, 2002 (as required by Section 1853(c)(6)(C) of the Act).

The table below shows the increases in the national per capita growth percentages for the aged, disabled, ESRD, and the combined aged + disabled.

The preliminary estimate of the floor for aged beneficiaries in CY 2004 is $592.29 for any area in an MSA within the 50 States and the District of Columbia with a population of more than 250,000, and $535.88 for all other areas within the 50 States. In both cases this represents a 8.2 percent increase over the respective CY 2003 floors of $547.54 and $495.39. As with the estimate of the national per capita M+C growth percentage, this estimate reflects an underlying trend change for CY 2004 in per capita costs of 3.7 percent. The total change for the floors includes an adjustment of 4.3 percent for revised estimates of prior years' aged M+C growth percentages only for 2002 and 2003, since legislation reestablished the base floor amounts in 2001.

The following tables summarize the estimates for the change in the national per capita M+C growth percentage and the floor increase.

National Per Capita Growth Percentage (for Blend)

	Aged	Disabled	ESRD	Aged+Disabled
2004 Trend Change	3.7%	3.8%	2.9%	3.7%
Revision to CY 1998 Estimate	0.1%	-0.4%	-1.8%	0.0%
Revision to CY 1999 Estimate	0.4%	0.8%	-0.9%	0.5%
Revision to CY 2000 Estimate	-0.3%	0.0%	3.7%	-0.3%
Revision to CY 2001 Estimate	1.1%	3.1%	-4.7%	1.3%
Revision to CY 2002 Estimate	2.1%	1.4%	6.2%	1.9%
Revision to CY 2003 Estimate	2.2%	3.4%	1.2%	2.4%
Total Change	9.5%	12.7%	6.3%	9.8%

National Per Capita Growth Percentage (for Floor)

	Aged	Disabled	ESRD	Aged+Disabled
2004 Trend Change	3.7%	3.8%	2.9%	3.7%
Revision to CY 2002 Estimate	2.1%	1.4%	6.2%	1.9%
Revision to CY 2003 Estimate	2.2%	3.4%	1.2%	2.4%
Total Change	8.2%	8.8%	10.6%	8.2%

Note: The above percentages are multiplicative not additive.
These estimates are preliminary and could change before the final rates are announced on May 12, 2003. Further details on the derivation of the national per capita M+C growth percentage will also be presented in the May 12 announcement.

Attachment 2
Changes in Methodology Since Calendar Year (CY) 2003 Rates

There are a number of changes in M+C payment methodology for CY 2004. Section A discusses the new risk adjustment model to be implemented in 2004, Section B describes refinements to this model for the ESRD population, and Section C discusses the frailty adjuster to be introduced in the PACE program and certain other demonstrations. Section D reviews a range of implementation issues. Section E discusses Medicare as Secondary Payer, and Section F describes the new method for estimating costs of National Coverage Determinations and other legislative changes in benefits. Section G provides an overview of public comments on the February 3, 2003 public meeting on risk adjustment.

A. The new CMS-HCC risk adjustment model.

Background. The Balanced Budget Act of 1997 (BBA) mandated that a risk adjustment payment methodology, incorporating information on beneficiaries' health status, be implemented in the Medicare+Choice (M+C) program no later than January 2000. The BBA timelines for data collection indicated that initially risk adjustment of M+C payments should be based only on data from enrollees' inpatient hospital stays, with later implementation of risk adjustment based on data from additional sites of care. CMS (formerly the Health Care Financing Administration) selected the Principal Inpatient Diagnostic Cost Group (PIP-DCG) model as the risk adjustment method to be implemented in 2000. This model recognizes diagnoses for which inpatient care is most frequently appropriate and which are predictive of higher future costs. Until October 2002 M+C organizations submitted to CMS encounter data on enrollees' inpatient hospitalizations only (analogous to claims), which CMS processed through the PIP-DCG model to calculate payments to M+C organizations.

To assist managed care organizations, CMS provided for a gradual phase-in of the effects of risk-adjustment, initially adjusting only a portion of the total payment based on the new PIP-DCG methodology, with the remainder still adjusted under the pre-BBA method based only on demographic information. This element of the risk adjustment methodology provided a safeguard against abrupt changes in payments to M+C organizations. For 2000, the transition schedule called for basing 90 percent of the prospective monthly payment per enrollee on the demographic-only method and 10 percent on the PIP-DCG risk adjustment method. The demographic-only portion of the payment was adjusted for age, gender, Medicaid eligibility, institutional status, and working aged status. The risk adjusted portion of the payment, under the PIP-DCG model, was adjusted for age, gender, Medicaid eligibility, whether originally entitled to Medicare due to disability, and working aged status, as well as health status.

The Balanced Budget Refinement Act of 1999 adopted CMS's "phase in" concept in statutory language, but altered CMS's proposed timing by mandating that the 90/10 blend would continue through 2001. Most recently, the Benefits Improvement and Protection Act of 2000 (BIPA) again modified the phase-in schedule to further soften the financial impact of risk adjustment on M+C organizations. Under BIPA, the 90/10 blend continues through 2003. In 2004 the risk

adjusted portion of the M+C payment increases to 30 percent, in 2005 to 50 percent, in 2006 to 75 percent, and in 2007 to 100 percent.

Although the PIP-DCG model was an improvement over the previous demographic payment model, CMS recognized that its utility was limited by only using inpatient hospital data and providing additional payment for only a small number of high cost seriously ill beneficiaries. Subsequently, BIPA required the implementation of a model using not only diagnoses from inpatient hospital stays, but also from ambulatory settings beginning in 2004. To prepare for implementation in 2004 of a risk adjustment model based on multiple sites of care, in 2001 CMS required M+C organizations to begin submitting data on enrollees' hospital outpatient and physician office encounters. Although these encounters would have provided additional data for quality measures and re-estimation of payment weights for future risk adjustment models, CMS was concerned about the administrative data burden on M+C organizations.

Physician encounter data collection began in October 2000 and hospital outpatient encounter data collection began in April 2001. In response to concerns of M+C organizations, in May 2001 Secretary Thompson suspended the requirement for submission of hospital outpatient and physician office encounter data in order to allow CMS the opportunity to "explore and implement a risk adjustment process for M+C payments that balances accuracy and administrative burden."

As a result, we have selected a new risk adjustment model for 2004 (described below) as well as significantly reducing the administrative burden on M+C organizations. By redesigning our data collection and processing systems, we now require that only a few data elements besides diagnoses be submitted for payment purposes. Fewer diseases will be used by the new model (compared to other comprehensive risk adjustment models) and the requirement to report each encounter has been removed. In addition, CMS requires that relevant diagnoses be submitted for each beneficiary only once during a data collection period. Also, M+C organizations may choose to submit diagnoses on a quarterly basis.

Selection of the new CMS-HCC risk adjustment model . Our goal was to select a clinically sound risk adjustment model that improved payment accuracy while minimizing the administrative data burden on M+C organizations. CMS worked with a number of outside researchers to develop a more comprehensive risk adjustment model using inpatient and ambulatory data. We also sought public input on model selection via consultations with industry trade groups and staff from different M+C organizations, a public meeting (conducted on January 16, 2002), publication of a Federal Register notice, and solicitation of public comments on the meeting and Notice. (For information CMS published during 2002 on the development of the more comprehensive risk adjustment model, see the Risk Adjustment web page at http://www.cms.hhs.gov/healthplans/riskadj/.)

The payment models CMS considered used only demographic and diagnosis data to avoid incentives related to tying payment to treatment modalities. CMS chose one of the comprehensive models that would lend itself most easily to necessary modifications that would be clear to analysts and physicians. The resulting model is a CMS modification of the comprehensive model created by Health Economics Research (now a division of RTI), which

also developed the PIP-DCG model currently being used for M+C payment. We will refer to this model as the CMS-HCC model.

CMS-HCC Model Characteristics

The CMS-HCC model is a selected significant disease type of model because it incorporates a selected subset of ICD-9-CM diagnosis codes and places them into approximately 64 disease groups called Hierarchical Condition Categories (HCCs). Each disease group includes conditions that are related clinically and have similar cost implications. (See **Exhibit 1** for a draft list of coefficients for each disease group. A final list of disease groups, their coefficients, and a crosswalk to the required ICD-9 codes will be available in the May 12 Announcement of M+C Payment Rates and on the CMS website. These annual coefficients will be used to calculate per person per month payments to M+C organizations. At that time, CMS will also make available for public use risk adjustment payment software that will appropriately assign diagnoses to CMS-HCC groups to identify relevant disease hierarchies and calculate risk scores for each enrollee.)

The model is prospective in the sense that it uses diagnosis information from a base year to predict costs and adjust payments for the next year. Models of this type are largely driven by the costs associated with chronic diseases, and they capture the systematic risk (costs) associated with Medicare populations. CMS will make available a full report on the CMS-HCC model. For a description of the underlying principles and development methods for the selected model, see the report on earlier versions of the HCC model, "Diagnostic Cost Group Hierarchical Condition Category Models for Medicare Risk Adjustment (Final Report); December 2000", available from the CMS website at http://www.cms.hhs.gov/researchers/projects/.

As in the PIP-DCG model, there are demographic variables for age and sex, Medicaid eligibility, and originally disabled status. There is also an adjustment for working-aged status. The recognition of the additional costliness to the Medicare program of people characterized by Medicaid eligibility is maintained as it was in the PIP-DCG model. Note, however, that this variable has less importance (less incremental cost) in models that recognize health status using disease groups because more of the dollars in the model are associated with specific diseases rather than demographic categories. As in PIP-DCG, the Medicaid payment adjustment is triggered by a beneficiary having Medicaid status any one month in the data collection year.

We also continue to recognize that those eligible for Medicare due to disability continue to be more expensive for their age after 65. There are variables in the model capturing that the original reason for Medicare entitlement was disability.

Unlike the PIP-DCG model, which does not have an institutional status adjuster, the CMS-HCC model has a modification that distinguishes the community-dwelling Medicare population from the long-term institutionalized populations. This long-term institutional adjuster differs from the institutional factor used in the demographic-only payment model. The new institutional adjuster is explained at the end of this section.

Clinical Features of the CMS-HCC Model

HCCs are disease groups broadly organized into body systems, somewhat analogous to the ICD-9-CM major diagnostic categories. Unlike the ICD-9-CM categories, however, the diagnoses within each disease group are related clinically and in terms of cost to the Medicare program.

Whereas the PIP-DCG model places a person in only a single cost group based on his/her principal inpatient diagnosis with the greatest cost implications, the CMS-HCC model is structured so that each disease group contributes its incremental predicted cost to payment amounts. Conceptually, disease groups are not mutually exclusive because unrelated disease processes each contribute to the predicted costs of care. The CMS-HCC model uses diagnoses from physician visits and hospital inpatient and outpatient stays to assign each beneficiary to none, one, or more than one disease group. For example, an M+C enrollee with heart disease, cerebrovascular disease, and cancer would be assigned to three separate disease groups, and CMS's payment for this enrollee will reflect increments for each of these conditions. We refer to this as an additive model because, in general, each additional diagnosis results in an increased payment.

In some cases, however, an additional diagnosis does not trigger an additional payment increment because a more severe diagnosis supercedes a less serious one. That is, the CMS-HCC model also can characterize a beneficiary's illness level within a disease process. In some disease groups the diagnoses are clinically related and ranked by (cost) severity in a hierarchy, since the more severe manifestations of a disease process principally define the impact of that disease group on cost.

An example is the diabetes hierarchy. Diabetes diagnoses are organized into four severity groups, ranked from uncomplicated diabetes to diabetes with renal manifestations (highest cost implications). A person may be coded with diagnoses in any or all of the four severity groups, but only the highest code in the hierarchy is used to increment payment for diabetes. There are similar hierarchies among cancers and cardiac diseases. In short, costs are additive across hierarchies and disease groups, but not within hierarchies. (See **Exhibit 2** for a draft list of the disease groups that have hierarchies.)

CMS-HCC Model Refinement.

In the original HCC model developed by Health Economics Research, there were approximately 5,000 ICD-9 codes grouped into about 100 disease clusters used for payment, which is about a third of the approximately 15,000 possible codes in ICD-9-CM. The developers isolated and excluded codes that were vaguely defined, only represented signs or symptoms, and did not contribute significantly to the predictive power of the model. They made decisions about how to cluster codes and which to exclude in consultation with a panel of physicians using statistical information and clinical input.

CMS was able to reduce further the size of the original HCC model, with only a modest effect on the power of the model to predict costs, by taking into account the clinical and cost significance of various disease groups relative to the model's overall performance and clinical coherence. The CMS-HCC model categorizes a reduced set of ICD-9-CM diagnosis codes (approximately 3,300 codes grouped into a reduced set of about 800 codes) into approximately 64 disease groups

(HCCs). (The draft list of the reduced code set that triggers payment in the CMS-HCC model was published in April 2002 on the CMS website at http://www.cms.hhs.gov/healthplans/riskadj/. The final list of codes for 2004 will be published May 12, 2003 in the Announcement of M+C Payment Rates. Each year we will issue a list of required diagnoses to take into account new ICD-9 codes.) CMS analysts used both statistical information and clinical input from physicians to trim the original HCC model. The general principles for trimming the model included: retaining disease categories from each body system; not disrupting hierarchies; removing the categories with the smallest cost and predictive power implications; removing categories with very few people unless very costly; removing marginal categories that require a large number of codes; and including categories based on clinical judgment.

The clear structure of the original HCC model allowed us to associate diseases categories with incremental costs and construct tables to show how often certain disease groups occur in the Medicare population (based on a 5 percent fee-for-service sample of Medicare beneficiaries). We used stepwise regression, a technique that ranks the variables by their predictive power, to identify the disease groups that were weakest from a statistical point of view, i.e., the groups with the least predictive power.[1] Based on the results of this analysis, we produced a range of possible models from one with very few disease groups to a full comprehensive model, and discussed the advantages and disadvantages of each with a panel of physicians from within and outside CMS. Most of the panelists preferred the more comprehensive models because they were more clinically defensible and less subject to gaming. However, they found that a model such as the CMS-HCC version presented here was a reasonable compromise, given the need to balance improved payment accuracy with minimizing administrative data burden.

Since the initial selection of the CMS-HCC model, CMS has continued to refine the model, addressing concerns about coding practices and model performance. CMS contracted with an independent group to study issues of coding practice and its effect on how the model would perform when applied. Based on the findings, CMS modified the cancer and diabetes hierarchies. For example, metastatic (secondary site) cancer codes are not reported as frequently as they should be in fee-for-service claims data, so the distinction between multiple primary sites and metastases is poor in the Medicare data. Reflecting this, the secondary site codes have been merged with other costly primary cancers. For diabetes, further study of the costs and coding resulted in a reordering of the codes within the diabetes hierarchy. We will continue to assess the need for improvements in the model in 2004 and beyond.

CMS also incorporated some interactive terms in the model to capture the combined effects on cost of certain diseases. In most instances, simply adding the incremental costs of multiple diseases captures the combined effect that individual diseases have on costs. However, research

[1] Regression analysis is a technique used to predict outcomes, measure the strength of the association between independent variables (predictors, e.g., demographic variables) and the dependent variable (outcome, i.e. Medicare expenditures), and, to identify the subset of independent variables that are most effective for estimating the outcome. Stepwise regression is a form of this technique that is used to identify the subset of variables that is most effective for estimating the outcome. It works by eliminating those independent variables from the regression that contribute least to explaining the outcome.

has shown that some combinations of diseases are more or less costly to treat than the sum of the costs of individual diseases. Thus, interactive terms representing combined effects are in the model. The diseases involved are diabetes, congestive heart failure, chronic obstructive pulmonary disease, cerebrovascular disease, renal failure, and coronary artery disease. There are also terms in the model that distinguish the costs of the disabled (under 65) from the aged for specific diseases. These are disorders that typically have more expensive treatment patterns in the younger population, e.g., drug and alcohol psychosis and dependence, opportunistic infections, and cystic fibrosis.

See the end of this section for information on another CMS refinement of the HCC model – the addition of an adjuster for long-term institutional status.

Estimation methods. The fee-for-service data used to calibrate the models are from 1999 and 2000. The diagnoses and Medicaid status are from 1999, and the total costs for each beneficiary are from 2000. ESRD patients were excluded from calibration of the CMS-HCC model. They will be paid under an alternative payment methodology to reflect their unique costs, described in Section B.

Decedents in 2000 are included and treated as they were in the previous payment models. First, their costs were annualized, i.e., inflated to correspond to a full 12-month period. Then, when the model was estimated, the decedents were assigned a weight according to the proportion of the year they were alive. M+C enrollees and hospice patients are treated similarly: their costs are included until they enter hospice or enroll in an M+C organization. All claim types were used to compute costs. Hospital inpatient, outpatient and clinical practitioner claims were used to collect diagnoses. Principal and secondary diagnoses were used from institutional bills and the diagnoses from claim headers were used from the practitioner bills. Fully denied claims were not used. However, diagnoses were accepted from claims that had Medicare Secondary Payer as the reason for denial.

The estimation was done using the weighted least squares method. The cost variable was annualized and weights were set to the fraction of the year in months that each person was alive and not in a hospice or M+C organization. Annualization and weighting was also done to reflect a beneficiary's time and expenditures in the community or institutionalized status category. The expenditures in each status were summed separately. Statistical formulations more elaborate than weighted linear regression have been researched but did not improve the performance of risk adjustment models significantly or consistently.

When models are estimated using the regression method, each characteristic (demographic or diagnostic) is estimated to determine its marginal costliness to the Medicare program. Use of the regression method produces a coefficient for each variable (characteristic), which represents the marginal (additional) effect of each variable in predicting program costs. These coefficients are then converted to relative cost factors, because in order to use the model as an adjuster to a base rate, costs must be converted to relative costs – i.e., risk adjustment factors. This is done by dividing the marginal costs by the average per capita costs in fee-for-service Medicare. For example, if the average per capita cost in Medicare is $5000, a marginal cost of $1000 for some characteristic becomes a relative risk factor of 0.2. To arrive at a beneficiary's total risk

adjustment factor, add the factors associated with each applicable demographic characteristic and each applicable disease group.

Adjustment for coding intensity and population changes. We believe that there have been sufficient changes in the national average predicted expenditures from 1997 to 2004 that it may not be appropriate to use the 1997 national average predicted expenditures to calculate the relative risk factors for the 2004 CMS-HCC model. These changes are related to changes in fee-for-service-population data attributable to changing demographics, average disease burdens, and coding patterns (i.e., later data tends to reflect more precise coding).

The CMS-HCC risk adjustment model is calibrated on expenditures and disease patterns for 1999 and 2000. When the coefficients from that calibration are used to predict expenditures from earlier or later periods, the model would predict the same mean were it not for the factors above. However, the predicted means from earlier years tend to be lower than those from later years. Fee-for-service coding intensity and specificity, particularly in physician claims, has increased over time. In other words, if we created relative risk factors for our 2004 CMS-HCC model using 2000 claims data on a sample of fee-for-service beneficiaries and then used these risk factors to calculate the risk scores for a 2004 sample fee-for-service beneficiaries with exactly the same demographic and actual disease profile as the 2000 sample, the 2004 group would still have higher risk scores than the 2000 group.

When calculating the ratebook for 1997, we are exploring using the national means from each of three years to compute the relative risk scores for the counties. This method would make the mean relative risk factor for fee-for-service equal to 1.0 for that period. It is desirable that the mean relative score stay at this value, so CMS will consider an actuarial adjustment to the national mean predicted expenditures used to calculate relative risk factors so that the mean relative risk factor in fee-for-service remains close to 1.0 for the payment period. Note that any changes in population demographics and rising coding intensity are happening in the fee-for-service population, which is the basis for the risk adjustment model.

Adjustment for long-term institutionalization. In the course of our research addressing other characteristics distinguishing cost among beneficiaries, we found further evidence for differences in cost between the community population and the long-term institutionalized (defined as those in institutions more than 90 days) within the same disease groups. The direct recognition of health status in the model results in a large overprediction for the long-term institutionalized if not controlled for in the model. We also found that the costs for the short-term institutionalized resemble the costs for beneficiaries with similar health status residing in the community.[2] These findings do not show that the long-term institutionalized are not expensive to Medicare. What we are recognizing is that people in the community are even more expensive to the program than equally ill people (in the same disease groups) who are long-term institutionalized.

Institutional status is recognized in the payment year, not the prior year. To implement an adjuster without creating burden for the M+C organizations, CMS is using the Minimum Data Set (MDS) collected routinely from nursing homes to identify the population of long-term

[2] Hereafter, the term "community" will be used to refer to community-based and short-term institutionalized populations.

institutionalized. MDS assessments are sent to the States and CMS on at least a quarterly basis. CMS is using the presence of a 90-day assessment in the payment year to identify the long-term residents for payment purposes. Payment at the long-term rate would start in the month following the assessment. Once persons are so identified, they remain in long-term status until discharged home for more than fourteen days. Note that this marker is different from the institutionalized marker used in the demographic system. That marker largely captured the higher costs of older and sicker people who go into skilled or unskilled levels of care. In the risk adjustment model, the health status markers capture most of these characteristics. We are concentrating on long-term residents and their cost patterns, after controlling for disease.

The CMS-HCC model has been calibrated separately for the community and long-term institutionalized populations. Disease-related incremental payments for the community population are generally higher than those for the institutionalized. The age/sex payments are higher for the institutionalized than the community population. The costs associated with high mortality rates in the long-term institutionalized group are all captured in this calibration, which included only the institutional months for this population. The CMS-HCC model for the institutionalized has been simplified even further than the community model. The same diseases are captured, but many disease groups have been merged to assure stable coefficients. The resulting model is similar to some of the reduced models that were researched for the whole population.

B. New payment methodology for M+C ESRD enrollees.

Simultaneous with the implementation of the CMS-HCC model for risk adjustment, we are implementing a new approach to improve payments on behalf of enrollees with End Stage Renal Disease (ESRD). Section 605 of BIPA required CMS to adjust our approach to computing ESRD payment rates to reflect the method used in the ESRD social HMO (S/HMO) demonstration then in place. We interpret this to mean that ESRD payments to M+C organizations should employ the same basic approach as under the ESRD demonstration referenced in section 605. To implement the BIPA provision for 2002, CMS increased the base rates by three percent and began adjusting payments with age and sex factors, while continuing to review other options. Effective January 2004, M+C enrollees with ESRD will be incorporated into diagnosis-based risk adjustment using a different version of the CMS-HCC model. (See **Exhibit 3** for a draft list of coefficients for each disease group.) The new ESRD payment model will align us further with the method used in the ESRD S/HMO demonstration by allowing us to capture co-morbidity information in addition to demographic information and basic disease markers for ESRD beneficiaries. ESRD status is recognized in the payment year. The data for 100 percent of ESRD beneficiaries were used to develop the model. The three parts of the ESRD CMS-HCC model are:

1. A full risk adjustment model for people on dialysis that is calibrated only on this population, so the payment weights are unique to these beneficiaries. A rescaled state-level ratebook will be created to reflect this population's program costs.
2. A series of lump-sum payments to reflect costs associated with transplant procedures. Transplant costs associated with the month of transplant and two following months are carved out of expenditures for the ESRD population to allow CMS to make larger

transplant-specific payments (outside of the risk adjustment model) over a three-month window.

3. A modified version of the regular CMS-HCC model for people who have successful kidney transplants. The model has an additional term to recognize the extra costs of immunosuppressive drugs and higher intensity of care for this group.

We developed this three-part model in response to our findings on expenditures patterns for ESRD beneficiaries. Dialysis patients have high ongoing costs, while transplant patients incur a very high one-time cost. Functioning graft patients are much more similar to the general population than they are to dialysis patients. Using the same payment weights for all three groups would lead to over- or underpayments to M+C organizations that do not have enough ESRD enrollees to have an average mix. To address this problem, CMS developed separate payment approaches for these three populations.

Risk adjustment model for dialysis patients. The dialysis model has the same HCC categories as the CMS-HCC model for the non-ESRD population, except that HCCs with kidney disease diagnoses are excluded (HCC128 to HCC132). The model is calibrated only on dialysis patients, so the disease weights used for payment recognize disease and expenditure patterns unique to this population.

The data used for calibrating the ESRD models were 1999 (diagnostic) and 2000 (cost) data on fee-for-service ESRD beneficiaries. For example, expenditures for a fee-for-service beneficiary on dialysis from January through August 2000 who received a transplant in September 2000 are included in the dialysis group for eight months, but then are excluded. From September through November 2000, this beneficiary's costs are included in the transplant data to determine estimated average transplant costs. As of December 2000, this beneficiary is included in the functioning graft model.

Transplant patients. To pay more accurately for the high costs of kidney transplants, CMS will make transplant-specific payments to M+C organizations for three months for each member who received a transplant, beginning in the month of transplant. CMS calculated a national average cost for three months (the transplant month and two subsequent months) and divided the average for the three months by three to get the average monthly cost. CMS converted the average monthly cost to a relative factor. The ratio of this monthly cost to the national average monthly cost for dialysis patients is the factor. This factor multiplies the rates in the dialysis ratebook to determine payment. No additional ratebook is needed, as this method produces a payment that is the national rate, geographically adjusted.

For example, assuming that the national average three-month program cost for a transplant is $40,000 and that the national average monthly cost for a dialysis patient is $3,500, the relative factor would be 3.81 (i.e., [40,000/3]/3500). Payments for a transplant for a resident of a nationally average county would be 3.81 x 3,500 = $13,335 for each of three months. Payments in higher or lower cost counties would vary.

See Section D.6 for information on a new option M+C organizations may choose to adopt for reporting dialysis and transplant status of members.

Functioning graft beneficiaries. The model for functioning graft enrollees is based on the model for the general population, except that HCCs for kidney transplant status, dialysis status and renal failure are excluded. This means that for their members with functioning grafts, M+C organizations will be paid in 2004 based on the diseases reported for functioning graft members recorded in 2003 (the reporting year for 2004). However, CMS also will make an add-on payment for each functioning graft enrollee to recognize the extra costs associated with immunosuppressive drugs and additional intensity of services for this population. The payment model is a slight modification of the regular model; all the coefficients are the same (with the exclusions above) but a term with a factor for the average additional costs of these beneficiaries is included.

The functioning graft payment automatically begins the month after the third transplant payment unless CMS hears from the M+C organization or the CMS data system that the member has returned to dialysis. Anytime a functioning graft patient returns to dialysis, payment is made using that model.

Since Section 605 of BIPA required CMS to adjust our approach to computing ESRD payment rates to reflect the method used in the ESRD social HMO (S/HMO) demonstration then in place, we interpret this to mean that the new three-part model will be implemented at 100 percent of payments for 2004, just as the 2002 changes to the ESRD methodology per BIPA were implemented at 100 percent. See Section E for a discussion of Medicare Secondary Payer status.

C. Changes in Methodology for PACE and certain Demonstrations

Background.
Overview: CMS has developed a Medicare payment approach that adjusts the payment to an organization according to the frailty of an organization's enrollees. The frailty adjustment approach will be applied to the PACE program in 2004. The current PACE demonstrations are expected to transition to PACE program status during 2003. New PACE demonstrations will be paid under the same approach as the PACE program in 2004.

The current social HMO (S/HMO) demonstration is scheduled to end by December 31, 2003. In the absence of a legislative extension, we plan to continue the S/HMO demonstration with the risk adjusted payment methodology incorporating the frailty adjustment approach. The current waiver for the Wisconsin Partnership Program (WPP) demonstration expires on December 31, 2003. Pending a decision on the extension of the waivers, we intend to apply the frailty adjustment approach to the WPP demonstration in 2004. The adjustment approach will also apply to the Minnesota Senior Health Options (MSHO) and the Minnesota Disability Health Options (MnDHO) demonstrations in 2004.

The Balanced Budget Act of 1997 (BBA) mandated that Medicare capitated payments to PACE organizations be based on M+C payment rates, adjusted to account for the comparative frailty of PACE enrollees. The payment approach described herein is a further refinement to risk

adjustment to ensure that capitated payments to organizations that serve frail community-based populations are accurate.

The frailty adjustment approach is to be applied in conjunction with the CMS-HCC risk adjustment model. As mentioned above, the CMS-HCC model has been designed to pay appropriately for the long-term institutionalized population. Therefore, the frailty adjustment approach will apply only to community-based and short-term institutionalized enrollees[3] (i.e., the frailty adjustment for long-term institutionalized enrollees is zero). Risk adjustment predicts (or explains) the future Medicare expenditures of individuals based on diagnoses and demographics. But risk adjustment may not explain all of the variation in expenditures for frail community populations. The purpose of frailty adjustment is to predict the Medicare expenditures of community populations with functionally impairments that are unexplained by risk adjustment.

Basic Approach: The first step in the estimation of an adjuster was determining the measures that were candidates for frailty adjustment. Certain measures of functional impairment (such as activities of daily living (ADLs)) were considered to be the most meaningful for purposes of payment. Beneficiary characteristics (such as age and gender) were also considered. In order to develop the frailty adjustor, CMS needed a database that linked measures of functional impairment to Medicare expenditures at the individual level. The Medicare Current Beneficiary Survey (MCBS) included the necessary linked information. Therefore, the candidate functional impairment measures were selected from among those collected by MCBS.

The next step was finding the relationship between the above measures or characteristics and the Medicare expenditures that were unexplained by risk adjustment. For example, the actual Medicare expenditures for each group of people with similar functional impairments were compared to the expenditures predicted by the CMS-HCC model for that group. As described below, the frailty adjustor was designed to explain (or adjust for) the average difference between the predicted and actual expenditures for each group.

The final step in the estimation was to select the appropriate measures from among the candidates. The selection process considered a number of criteria such as face validity, reliability, appropriate incentives, fairness, simplicity, and gameability. The measures(s) that best met the criteria were to be included in the frailty approach. The frailty model was to consist of a set of factors (one factor for each group) for the measure(s) that were selected.

Consistent with the way diagnosis data are used in risk adjustment, the frailty adjuster was designed to be prospective. That is, prior-year functional impairment data were used to predict the next-year's payment adjustment.

Estimating the Frailty Model

Calibration of Frailty Factors: The draft frailty factors were developed using the MCBS cost and use files for 1994 through 1997. Since the model was prospective, information from the "base year" was used to predict payment in the following year. Prior-year diagnosis and functional impairment information were linked to next-year Medicare expenditures to create

[3] Hereafter, the term "community" will be used to refer to community-based and short-term institutionalized populations.

three data sets with person-year observations: 1994-95, 1995-96, and 1996-97. These data sets were pooled, and Medicare payments were predicted for these person-years using the CMS-HCC model. The difference of actual payments and predicted payments for each person-year (residual expenditures) was then related to beneficiary functional and institutional status using regression modeling. The frailty factors were derived from these regression coefficients and reflect the mean Medicare payments related to functional status that are not explained by the CMS-HCC model.

The residual expenditures for the MCBS institutionalized population were virtually zero. That is, the CMS-HCC model accurately predicted the average expenditures for this population. Therefore, the frailty adjuster applies only to the community population.

The frailty model was based on Activities of Daily Living (ADLs) as the core measure of functional impairment. Individuals were grouped according to their difficulty with 0 ADLs, 1 to 2 ADLs, 3 to 4 ADLs, and 5 to 6 ADLS. CMS considered whether the frailty model could be improved by including other measures and characteristics interacting with ADLs. Among other things, these included demographics, self-reported health status, chronic conditions, needing help or special equipment with ADLs, and physical measures of impairment (such as walking 2-3 blocks). In general, adding other measures did not appear to improve the frailty model. Some interaction terms were not statistically significant. That is, they did not improve the explanatory power of the model once ADLs were taken into account. Some measures lacked face validity, i.e., greater functional impairment failed to be associated with greater expenditures. Others were not considered reliable in that they could potentially suffer from a large degree of random variation due to small sample sizes. And still others were potentially gameable or provided incentives for inappropriate utilization. Therefore, CMS decided to base the frailty model on ADL groupings only.

Frailty Factor for the Under-55 Disabled: CMS analyzed the residual expenditures for the Medicare disabled population in MCBS. For the 55-and-over population, the residuals were significantly different from zero for all ADL groups. But for the under-55 population, the residuals were not significantly different from zero regardless of the degree of functional impairment. That is, the CMS-HCC model appears to adequately predict the expenditures of the under-55 population without the need for an additional frailty adjuster. Therefore, the frailty factor for this population is zero.

Mortality: The MCBS observations included persons who died in the payment year. The higher expenditures of these persons were included in the frailty model, using the same approach for treating the deceased as was used for the CMS-HCC model. Each ADL group in MCBS has an inherent mortality rate. To test whether the inherent mortality rates were reasonable, CMS investigated whether these mortality rates were representative of the mortality rates for the PACE program. The MCBS mortality rates for each ADL group were applied to the distribution of PACE enrollees by ADL group. This yielded a predicted mortality rate for PACE (i.e., the mortality rate that PACE would have experienced if it had the same rate of mortality as the MCBS population). The predicted mortality was similar to the actual mortality rate across all PACE organizations. That is, once ADLs were accounted for, the PACE mortality rate was

similar to the MCBS mortality rate. Frailty adjustment appears to adequately account for the rate of mortality for frail populations.

Draft Frailty Factors: The draft frailty factors for the 55-and-over community populations are as follows:

Difficulty in ADLs	Frailty Factors
0	-0.14
1-2	0.17
3-4	0.34
5-6	1.09

The final factors will be published in the May 12, 2003 Announcement of M+C Payment Rates.

D. CMS-HCC Model Implementation Issues

CMS will implement the CMS-HCC risk adjustment model following the approach used to estimate the model (as described above). The model will apply to M+C organizations and PACE organizations. The Evercare Demonstration is currently scheduled to end December 31, 2003. Pending a decision on the extension of the waivers, we intend to implement the CMS-HCC model for Evercare in 2004. The CMS-HCC model will also apply to the S/HMOs, WPP, MSHO, and MnDHO demonstrations, as mentioned in Section C. In determining a risk score for a beneficiary, we will determine the status of each variable included in the model based on the same definitions used to estimate the model. For example, in determining a beneficiary's Medicaid status, we will determine whether the beneficiary was eligible for Medicaid for at least one month during the data collection period. Then, the beneficiary's status on each variable in the model (i.e., age, sex, original reason for entitlement, Medicaid eligibility, institutional status (long-term versus community and short-term), and diagnoses) will be used to determine his/her risk factor. The risk factor (and frailty factor, if applicable) is then multiplied by the correct rate book amount to determine the risk adjusted payment. The demographic portion of the payment will continue to incorporate demographic variables such as age, sex, Medicaid eligibility, and institutional status. The final step is to implement the correct transition blend (see section D.7).

1. New Enrollee Factor.

If a beneficiary has less than 12 months of enrollment in Part A and Part B during the data collection period, then he/she will be assigned a new enrollee factor. During the payment year, a new enrollee factor will also be assigned to any beneficiary whose risk score is not available. In this case, the beneficiary's correct risk score will be determined during the next reconciliation. For ESRD payments, the dialysis and functioning graft models will have new enrollee factors for enrollees whose risk scores are not available.

2. Addressing Age Weights

In the past, CMS has recognized that people have birthdays that put them into age groups during a given year by either switching the payment group during the year in the demographic payment model or by paying a weighted average of the 2 groups each month to avoid having to switch age

groups during the year (as the PIP-DCG model does). In response to industry feedback, CMS will now base payments on the age an enrollee attains as of February 1st of each year. This change will help simplify the M+C payment system.

3. Reporting Institutional Status.
As described above, CMS is incorporating institutional status into the CMS-HCC risk adjustment model. Under risk adjustment, institutional status will be determined from information included in the Minimum Data Set (MDS) that is reported by Medicare certified nursing homes. As described in the previous section, presence in the MDS of the 90-day assessment for an individual will be used to determine his/her long-term institutional status.

Under risk adjustment, M+C organizations will not have to report the institutional status of their enrollees monthly as they do for the institutional adjustment under the demographic-only method. Thus, under risk adjustment the reporting burden on M+C organizations will not be increased. Note that M+C organizations may continue to track the institutional status of their enrollees to ensure that CMS correctly identifies institutional status.

Currently, most M+C organizations have a small proportion of long-term institutionalized enrollees. In fact, less than 20 organizations currently have more than 5 percent long-term institutionalized. In order to minimize the number of adjustments to monthly payments, CMS will assume that all enrollees in most M+C organizations are community-based. Payments will be based during the payment year on the community version of the risk adjustment model. The final reconciliation for 2004 will determine the correct institutional status for each enrollee for each month.

For the small number of M+C organizations who have a larger proportion of long term institutionalized enrollees (e.g., between 5 and 75 percent), we will determine the enrollees who are long-term institutionalized as of a point in time in the prior year (e.g. June 30, 2003 for the 2004 payment year). We are still determining the appropriate approach for applying the institutional adjuster for this group of enrollees. We would appreciate comments on this issue.

Finally, for M+C organizations or demonstrations where a majority of enrollees are long-term institutionalized persons, we will assume that all of their enrollees are institutionalized during the payment year. Again, in reconciliation, these M+C organizations will receive an adjustment reflecting the correct monthly institutional status for each person for each month for 2004 as reported through the MDS.

4. Elimination of the Data Lag.
The CMS-HCC risk adjustment model was calibrated using diagnostic data from the prior calendar year to predict resource use for the subsequent calendar year. While CMS's initial PIP-DCG risk adjustment model was calibrated on a calendar year basis, it was implemented with a six month "lag" between the data collection year and the payment year. This implementation approach was preferred (at that time) by M+C organizations. However, risk adjustment models estimated with no lag are more accurate in predicting payments than those models that incorporate a lag because the prediction period is closer to the data collection period. Therefore,

beginning in 2004 CMS will eliminate the lag to improve the accuracy of payments under the CMS-HCC model.

CMS will initially implement payments in 2004 based on diagnoses occurring between July 1, 2002 and June 30, 2003. Beneficiaries' statuses on all variables will also be determined based on that data collection period. Initially in 2004, M+C organizations will be paid based on this lagged data collection period. Then, in order to eliminate the data lag, CMS will recalculate risk factors for all enrollees, moving the data collection period to the immediate preceding calendar year (i.e., for 2004, the immediately preceding calendar year is January 1, 2003 to December 31, 2003). This process will eliminate the lag. During 2004, CMS also expects to reconcile payments back to January 2004 based on these new factors.

5. Reconciliation of Late Risk Adjustment Data.

Because M+C organizations have only three months after the end of a data collection year to submit the diagnostic data that is used to develop risk factors, the final reconciliation for a year allows all the late diagnostic data to be incorporated into the enrollee's risk score. For example, M+C organizations must submit risk adjustment data from the January 1, 2003 through December 31, 2003 data collection period by March 5, 2004 in order for the data to be included in the preliminary risk factor based on non-lagged data for 2004. Diagnostic data submitted after this date will not be incorporated into initial payments based on this data collection period. However, CMS will accept late data for the 2003 calendar year through March 31, 2005. After this date, CMS will no longer accept data for risk adjustment for CY 2004.

The reconciliation incorporates all the diagnoses from the correct data collection period in addition to other changes in enrollee's status (e.g., age, gender, Medicaid eligibility) to be factored into each enrollee's risk factor. Then, adjustments are made to ensure that M+C organizations' final payments for a year are correct. There is a single final reconciliation for each payment year. The final reconciliation for 2004 payments will be conducted in the spring of 2005, with final reconciled payments for 2004 provided to M+C organizations in the August 2005 payments.

6. Reporting Timely End-Stage Renal Disease (ESRD) Status.

In moving to the implementation of the new ESRD risk adjustment method, CMS will utilize the existing systems for identification of enrollees receiving dialysis services. Currently, M+C enrollees are assigned ESRD status as a result of a physician certifying their ESRD status on CMS Form 2728, the End Stage Renal Disease Medical Evidence Report. The ESRD facility sends Form 2728 to the Renal Network, which then transmits the status to CMS systems where various databases are updated to record the ESRD status. Payments for dialysis are triggered by this system.

The ESRD information system would also remain the standard for identifying enrollees who received a transplant. However, M+C organizations would be given the opportunity to notify CMS directly of a transplant in order to receive more timely payments for a transplant. We are examining different ways of implementing more timely reporting of transplant status and will provide information on this process soon. Ultimately, M+C organization-reported ESRD status

will be reconciled against CMS's existing ESRD information reporting system to determine final ESRD status for payment.

7. Transition Payment Blends.
For M+C organizations, in 2004 the CMS-HCC model will be implemented at a 30 percent risk adjusted payment, with the remaining 70 percent being a demographic payment. The portion of risk adjusted payment will increase to 50 percent in 2005, to 75 percent in 2006 and finally to 100 percent in 2007. However, the ESRD models for dialysis, transplant, and functioning graft payments will be implemented at a 100 percent level. See Section B for further information.

The same 30 percent risk adjusted and 70 percent demographic payment schedule will apply to EverCare and S/HMOs, but the non-risk adjusted portion of the payment will be based upon their current payment methodology rather than the demographic payment. For S/HMOs a frailty adjuster will also be applied.

For PACE organizations and certain demonstrations, i.e. WPP, MSHO and MnDHO, an alternative transition payment blend will be used, so that full implementation of risk/frailty adjustment for PACE and these demonstrations will occur in 2008 instead of 2007. In 2004, the CMS-HCC model with a supplemental frailty adjustor will be implemented at a 10 percent risk adjusted payment, with the remaining 90 percent being based on the plan's current payment methodology. The transition blends for PACE and certain demonstrations are discussed in more detail in Section D.9 below. See **Exhibit 4** for a chart summarizing the transition payment blends being used for various plans.

8. Budget Neutrality.
In 2004, risk adjustment will be implemented in a budget neutral manner in an effort to further stabilize the M+C program. The implementation of risk adjustment budget neutral to the M+C program will ensure that risk adjustment does not reduce the aggregate amount of payments to M+C organizations. The Office of the Actuary (OACT) will estimate the amount of adjustment to be incorporated into the rescaling factor, which for 2004 redistributes estimated payment reductions that would result from risk adjustment without this adjustment. The estimate is the difference between the aggregate M+C payments that would be made using the demographic-only method for 100 percent of payments versus the aggregate payments that would be made using 100 percent of risk adjusted payments. The budget neutrality estimate is a multiplier applied to the rescaling factor.

M+C organizations will be required to reflect budget neutrality payments for 2004 in their 2004 Adjusted Community Rate Proposals (ACRPs). The ACRPs for 2004 are due by statute in September 2003. M+C organizations will see payments that reflect this budget neutral approach in the beneficiary-level amounts that are shown on the Monthly Membership Reports (MMR.), beginning in January 2004. The reports for January 2004 will be available for downloading in late December 2003.

9. Application of Frailty Model
To apply the frailty adjuster, it was necessary to develop an approach for collecting functional impairment data for an organization's enrollees. Initially, the Health Outcomes Survey (HOS)

was considered as a potential source of the data for PACE. However, the historical HOS response rates for PACE (generally under 50 percent) have been considered too low to be useful for payment adjustment. Therefore, CMS developed an alternative survey instrument that was much shorter than the HOS. This instrument was pilot tested on a sample of the PACE population in 2002, resulting in substantially higher response rates (68 percent). The PACE Health Survey (PHS) will be administered in 2003 to support PACE payment adjustment in 2004.

9a. PACE

The PHS will be administered in 2003 to support PACE payment adjustment in 2004. The PHS will be administered to PACE organizations that were active as of January 1, 2002. Responses from participants residing in the community will be used to determine the organization-level frailty scores. Once the data are collected, they will be applied to the frailty model to determine a frailty "score" for each organization. The organization-level frailty score will be calculated as the weighted average frailty factor across all community survey respondents for that organization, as follows. The number of community respondents with difficulty in 0 ADLs, 1 to 2 ADLs, 3 to 4 ADLs, and 5 to 6 ADLs will be counted. These counts will be multiplied by the corresponding frailty factor. The resulting products will be summed for each organization. This sum will be divided by the number of community respondents, yielding a weighted average factor (or frailty score) for each PACE organization. The same frailty score will be used for all respondents and nonrespondents who reside in the community. This frailty score will be added to the risk score of each community enrollee in the organization (including only those ESRD beneficiaries in post-transplant status), resulting in a risk+frailty score for each individual. Payments to these plans will be the product of this score and the risk adjusted county rate.

For new PACE organizations not active as of January 1, 2002, the frailty score will be the weighted average factor across all community respondents of all PACE organizations.

Exhibit 5 illustrates how the payment for each PACE organization will be calculated. Each enrollee's risk score will be determined based on demographics, diagnoses and residence (community or institutional). The organization-level frailty score (calculated as above) will be added to each 55-and-over community enrollee's risk score, while zero will be added to the risk score of each institutional enrollee. This "risk+frailty" score will be multiplied by the restandardized county rate to produce the frailty-adjusted payment for each enrollee. This approach will be similarly applied to the demonstrations below.

To lessen the initial negative impact of frailty adjustment on some organizations, the phase-in schedule for frailty adjustment will lag the phase-in of M+C risk adjustment by one year. In 2004, the PACE Medicare capitation payment will be a blended payment consisting of 90 percent of the current payment (i.e., 2.39 times the demographic ratebook amount) plus 10 percent of the frailty adjusted payment. In 2005, the blend will be 70 percent current payment and 30 percent frailty adjustment. The blend will be 50/50 in 2006 and 25/75 in 2007. In 2008, frailty adjustment will be fully phased in for PACE.

Pace Health Survey (PHS) Nonresponse Bias: During the pilot test there was no evidence of significant survey nonresponse bias. Based on assessment data from the medical records, the

functional status of survey respondents was similar to that of nonrespondents. After the 2003 PHS has been administered, CMS will again examine nonresponse bias for PACE. If significant nonresponse bias is detected, PACE payments in 2004 could be adjusted as part of reconciliation.

9b. Other Demonstrations.
S/HMO Demonstrations: CMS intends to collect HOS data in 2003 to support frailty adjustment for Social HMO organizations (S/HMOs) in 2004. The project's 2001 Report to Congress indicated that S/HMO members were not significantly different than beneficiaries enrolled in M+C organizations. Therefore, the phase-in schedule for S/HMOs will be consistent with the M+C program. The blend in 2004 will be 70 percent current payment and 30 percent frailty adjustment. The blend will be 50/50 in 2005 and 25/75 in 2006. In 2007, frailty adjustment will be fully phased in for S/HMOs.

WPP Demonstrations: CMS intends to collect PHS data in 2003 to support frailty adjustment for WPP organizations in 2004. The WPP demonstration has a health care delivery model that is similar to PACE and serves a population that is identical to the PACE population. Therefore, the phase-in schedule for WPP will be consistent with the PACE phase-in schedule. That is, the blend will be 90/10 in 2004 and will continue to lag the M+C phase-in schedule by one year through 2008.

MSHO and MnDHO Demonstrations: CMS intends to collect PHS data in 2003 to support frailty adjustment for MSHO and MnDHO in 2004. These are dual eligible demonstrations that have community-frail populations that are similar to PACE but also serve community-well and institutionalized beneficiaries. We are considering approaches for determining the frailty score for new demonstrations. The phase-in schedule will be consistent with the PACE phase-in schedule. The blend will be 90/10 in 2004, and will lag the M+C phase-in schedule by one year through 2008.

9c. Biases in Survey Responses
The frailty factors were estimated using MCBS. They will be applied to payment using the PHS or the HOS. Differences in survey questions of mode of administration between MCBS and PHS or HOS could result in biased payments. Preliminary research indicates that HOS respondents may report a significantly greater degree of functional impairment than MCBS respondents. This disparity suggests that the organization-level frailty scores should be adjusted downward for HOS respondents to account for this effect. CMS intends to study this issue further, as well as HOS nonresponse bias. We welcome any comments on this issue.

E. Medicare Secondary Payer status in M+C payments.

CMS currently makes beneficiary-level adjustments to M+C payments based on whether members are working aged or not. We will continue to work with the industry on approaches to adjusting for working aged status. For example, we are considering whether to replace the monthly beneficiary level adjustment with an annual, plan-specific prospective factor representing the proportion of working aged in the plan.

We are still determining the appropriate approach for handling Medicare as Secondary Payer (MSP) status for M+C ESRD beneficiaries when calibrating the new ESRD payment models. To date, we have conducted a separate analysis to ensure we did not underestimate average transplant costs. When identifying the population used to calculate average transplant costs, we excluded any beneficiaries with MSP during their transplant period and any beneficiaries with transplant costs that were too low even if they were not identified as MSP in our system.

We would appreciate comments on this issue. After reviewing public comments, we may announce working aged/MSP policies in the May 12 Announcement of M+C rates

F. New approach to accounting for costs of National Coverage Determinations.

When "the Secretary makes a determination with respect to [Medicare] coverage or there is a [statutory] change in benefits required to be provided [by M+C organizations] that the Secretary projects will result in a significant increase in. . .costs," section 1853(c)(7) of the Act requires the Secretary to "adjust appropriately" M+C payments to reflect these new significant costs. CMS has interpreted what constitutes "significant" costs for these purposes in regulations at 42 C.F.R. §422.109. Under these provisions, the costs of a coverage change are considered significant if the average cost of providing the service exceeds as specified threshold, or if the total cost exceeds an aggregate cost threshold. Currently, the costs of newly covered services are taken into account annually when OACT estimates the M+C growth rate. The costs of new benefits thus are built into the M+C growth rate. However, the growth rate is only used to update the floor rates and blended rates. Changes in the growth rate do not affect payment in counties where the payment amount is based on the minimum two percent update to the prior year's rate.

CMS has determined that payments in counties in which payment is based on the minimum two percent update rate is not appropriately adjusted to reflect new coverage costs as required by section 1853(c)(7). Historically, most M+C enrollees have lived in counties receiving the two percent rate, and in 2003 all counties in the country but six received the two percent rate.

Beginning in 2004, CMS will apply a "bundled NCD factor" to the two percent minimum update rates each year. OACT would calculate a factor representing the percent of total Medicare costs attributed to the aggregate costs of all significant NCDs and legislative changes in benefits in a given year. For example, for those counties that will be minimum update counties in 2004, we would apply the 2002 bundled NCD factor to the 2003 minimum update rates, and then update the rates by two percent. We expect to provide details on the calculation and application of the NCD factor in the May 12 Announcement of M+C rates. Also, we are considering changing the definition of "significant cost" in the regulation to include all NCDs in the prior year. Should CMS's definition of significant cost change in 2003, the new policy would automatically apply to M+C payments for CY 2004.

G. Responses to Public Comments

We solicited comments to the proposed approach for 2004 from interested parties via a Federal Register notice (67 FR 79122), posted on December 27 and at our public meeting conducted on February 3. We received 21 comments by the end of the two-week comment period, which ended on February 19. The comments included six from PACE plans, two from SHMO plans, two from WPP plans, one from MSHO, one from EverCare, three from M+C organizations and six from other interested parties.

Most of the comments related to the implementation of a frailty adjustor for PACE, SHMO, and certain other specialty demonstration sites and the proposed payment blend schedule. Many of these comments appeared to indicate the need for more discussions with the affected plans. CMS intends to conduct additional outreach with these plans to provide more information. Three commenters were concerned about the elimination of the lag between the data collection period and the payment year and were concerned about the increased administrative burden of this approach, as well as the possible impacts on plan revenues as the data collection period on which the risk factor was based is moved. CMS will address issues related to the lag at the time of the final notice. Other commenters requested additional information regarding the proposed ESRD payment methodology. We have provided draft coefficients for that model in this notice. Other general issues raised by these commenters (e.g., inclusion of the institutional factor, measurement of Medicaid status) will be addressed in the final notice.

EXHIBIT 1. Draft Community And Institutional Annual Coefficients for the CMS-HCC Model with Constraints And Demographic/Disease Interactions, used in Calculation of Monthly M+C Payments[1]

Variable	Disease Group	Community Estimate	Institutional Estimate
Age/Sex Coefficients			
Female0-34		$600	$5,500
Female35-44		1,000	5,500
Female45-54		1,100	5,500
Female55-59		1,400	5,500
Female60-64		1,900	5,500
Female65-69		1,600	6,000
Female70-74		2,000	6,000
Female75-79		2,500	5,100
Female80-84		2,900	4,800
Female85-89		3,400	4,500
Female90-94		4,100	4,000
Female95+		4,100	3,000
Male0-34		300	5,700
Male35-44		600	5,700
Male45-54		1,000	5,700
Male55-59		1,400	5,700
Male60-64		1,800	5,700
Male65-69		1,800	7,400
Male70-74		2,300	6,400
Male75-79		3,000	6,200
Male80-84		3,400	6,200
Male85-89		4,100	6,400
Male90-94		4,600	5,400
Male95+		5,300	4,300
Medicaid & Originally Disabled Interactions with Age & Sex			
Medicaid Female, Disabled		1,100	0
Medicaid Female, Aged		900	0
Medicaid Male, Disabled		600	0
Medicaid Male, Aged		900	0

Variable	Disease Group	Community Estimate	Institutional Estimate
Originally-Disabled Female		1,200	0
Originally-Disabled Male		800	0
Disease Group Coefficients[2]			
HCC1	HIV/AIDS	3,500	6,900
HCC2	Septicemia/Shock	4,600	4,900
HCC5	Opportunistic Infections	3,300	6,900
HCC7 or 8	Metastatic Cancer, Acute Leukemia, and Other Severe Cancers	7,500	2,800
HCC9	Lymphatic, Head and Neck, Brain, and Other Major Cancers	3,500	2,300
HCC10	Breast, Prostate, Colorectal and Other Cancers and Tumors	1,200	1,300
HCC15	Diabetes with Renal or Peripheral Circulatory Manifestation	3,900	3,100
HCC16	Diabetes with Neurologic or Other Specified Manifestation	2,800	3,100
HCC17	Diabetes with Acute Complications	2,000	3,100
HCC18	Diabetes with Ophthalmologic or Unspecified Manifestation	1,800	3,100
HCC19	Diabetes without Complication	1,000	1,300
HCC21	Protein-Calorie Malnutrition	4,700	2,200
HCC25	End-Stage Liver Disease	4,600	1,400
HCC26	Cirrhosis of Liver	2,600	1,400
HCC27	Chronic Hepatitis	1,800	1,400
HCC31	Intestinal Obstruction/Perforation	2,100	1,400
HCC32	Pancreatic Disease	2,300	1,400
HCC33	Inflammatory Bowel Disease	1,600	1,400
HCC37	Bone/Joint/Muscle Infections/Necrosis	2,500	2,500
HCC38	Rheumatoid Arthritis and Inflammatory Connective Disease Tissue	1,700	1,500
HCC44	Severe Hematological Disorders	5,200	2,300
HCC45	Disorders of Immunity	4,300	2,300

Variable	Disease Group	Community Estimate	Institutional Estimate
HCC51	Drug/Alcohol Psychosis	1,800	1,100
HCC52	Drug/Alcohol Dependence	1,400	1,100
HCC54	Schizophrenia	2,800	1,100
HCC55	Major Depressive, Bipolar, and Paranoid Disorders	2,200	1,100
HCC67 or 68	Quadriplegia/Paraplegia/Extensive Paralysis	6,100	500
HCC69	Spinal Cord Disorders/Injuries	2,500	500
HCC70	Muscular Dystrophy	2,000	500
HCC71	Polyneuropathy	1,400	500
HCC72	Multiple Sclerosis	2,700	500
HCC73	Parkinsons and Huntingtons Diseases	2,400	500
HCC74	Seizure Disorders and Convulsions	1,400	500
HCC75 (applies only to institutional)	Coma, Brain Compression/Anoxic Damage	NA	500
HCC75 or 154 (applies only to community)	Severe Head Injury, Coma, Brain Compression/ orAnoxic Damage	2,900	NA
HCC77	Respirator Dependence/Tracheostomy Status	10,800	7,300
HCC78	Respiratory Arrest	7,300	7,300
HCC79	Cardio-Respiratory Failure and Shock	3,500	1,500
HCC80	Congestive Heart Failure	2,100	900
HCC81 or 82	Acute Myocardial Infarction/ or Unstable Angina and Other Acute Ischemic Heart Disease	1,800	1,500
HCC83	Angina Pectoris/Old Myocardial Infarction	1,200	1,500
HCC92	Specified Heart Arrhythmias	1,400	1,000
HCC95	Cerebral Hemorrhage	2,000	800
HCC96	Ischemic or Unspecified Stroke	1,600	800
HCC100	Hemiplegia/Hemiparesis	2,200	500
HCC101	Cerebral Palsy and Other Paralytic Syndromes	800	500
HCC104	Vascular Disease with Complications	3,500	2,600
HCC105	Vascular Disease	1,800	600

Variable	Disease Group	Community Estimate	Institutional Estimate
HCC107 or 108	Chronic Obstructive Pulmonary Disease/ or Cystic Fibrosis	1,900	1,200
HCC111	Aspiration and Specified Bacterial Pneumonias	3,600	2,400
HCC112	Pneumococcal Pneumonia, Empyema, Lung Abscess	1,000	2,400
HCC119	Proliferative Diabetic Retinopathy and Vitreous Hemorrhage	1,800	5,100
HCC130	Dialysis Status	15,800	16,000
HCC131	Renal Failure	3,000	2,200
HCC132	Nephritis	1,400	2,200
HCC148	Decubitus Ulcer of Skin	5,300	1,600
HCC149	Chronic Ulcer of Skin, Except Decubitus	2,500	1,300
HCC150	Extensive Third-Degree Burns	4,900	1,300
HCC154 (institutional only)	Severe Head Injury	NA	1,300
HCC155	Major Head Injury	1,200	1,300
HCC157	Vertebral Fractures without Spinal Cord Injury	2,500	500
HCC158	Hip Fracture/Dislocation	2,000	0
HCC161 or 177	Traumatic Amputation/ or Amputation Status, Lower Limb/Amputation Complications	4,300	1,300
HCC164	Major Complications of Medical Care and Trauma	1,300	1,300
HCC174	Major Organ Transplant Status	3,700	4,500
HCC176	Artificial Openings for Feeding or Elimination	4,100	4,500
Disabled/Disease Interactions			
D-HCC5	Disabled*Opportunistic Infections	4,000	0
D-HCC44	Disabled*Severe Hematological Disorders	4,600	0
D-HCC51	Disabled*Drug/Alcohol Psychosis	2,600	0
D-HCC52	Disabled*Drug/Alcohol Dependence	2,100	0
D-HCC107	Disabled*Cystic Fibrosis	9,500	0

Variable	Disease Group	Community Estimate	Institutional Estimate
Disease Interactions			
INT1	DM*CHF[4]	1,300	1,100
INT2	DM*CVD	600	0
INT3	CHF*COPD	1,200	1,900
INT4	COPD*CVD*CAD	400	0
INT5	RF*CHF[4]	1,200	0
INT6	RF*CHF*DM[4]	4,400	

NOTES

[1] The dollar amounts in this table will be converted to relative risk scores for the May 12 Announcement of M+C Rates. That is, these dollar amounts will be divided by the national average predicted expenditures to get relative risk scores we will report May 12.

[2] All estimates are rounded to the nearest hundred dollars.

[3] Beneficiaries with HCC128 Kidney Transplant Status were excluded from the sample because they will be included in the ESRD model sample.

[4]Beneficiaries with the three-way interaction RF*CHF*DM are excluded from the two-way interactions DM*CHF and RF*CHF. Thus, the three-way interaction term RF*CHF*DM is not additive to the two-way interaction terms DM*CHF and RF*CHF. Rather, it is hierarchical to, and excludes these interaction terms. A beneficiary with all three conditions is not "credited" with the two-way interactions. All other interaction terms are additive.

DM= diabetes mellitus (HCCs 15-19)
CHF= congestive heart failure (HCC 80)
COPD= chronic obstructive pulmonary disease (HCC 108)
CVD= cerebrovascular disease (HCCs 95-96, 100-101)
CAD= coronary artery disease (HCCs 81-83)
RF= renal failure (HCC 131)

Source: RTI Analysis of 1999/2000 Medicare 5% Sample

EXHIBIT 2. Draft List Of Disease Groups (HCCs) with Hierarchies

DRAFT DISEASE HIERARCHIES		
If the Disease Group is Listed in This Column…		**…Then Drop the Associated Disease Group(s) Listed in This Column**
Disease Group (HCC)	**Disease Group Label**	
5	Opportunistic Infections	112
7/8	Metastatic Cancer, Acute Leukemia, and Other Severe Cancers	9,10
9	Lymphatic, Head and Neck, Brain and Other Major Cancers	10
15	Diabetes with Renal Manifestations	16,17,18,19
16	Diabetes with Neurologic or Other Specified Manifestation	17,18,19
17	Diabetes with Acute Complications	18,19
18	Diabetes with Ophthalmologic Manifestations	19
25	End-Stage Liver Disease	26,27
26	Cirrhosis of Liver	27
51	Drug/Alcohol Psychosis	52
54	Schizophrenia	55
67/68	Quadriplegia/Paraplegia/Extensive Paralysis	69,100,101,157
69	Spinal Cord Disorders/Injuries	157
77	Respirator Dependence/ Tracheostomy Status	78,79
78	Respiratory Arrest	79
81	Acute Myocardial Infarction	82,83
82	Unstable Angina and Other Acute Ischemic Heart Disease	83
95	Cerebral Hemorrhage	96
100	Hemiplegia/Hemiparesis	101
104	Vascular Disease with Complications	105,149
111	Aspiration and Specified Bacterial Pneumonias	112
130	Dialysis Status	131,132
131	Renal Failure	132
148	Decubitus Ulcer of the Skin	149
154	Severe Head Injury, Coma, Brain Compression/Anoxic Damage	75,155

How Payments are Made with a Disease Hierarchy

EXAMPLE: If a beneficiary triggers Disease Groups 148 (Decubitus Ulcer of the Skin) and 149 (Chronic Ulcer of Skin, Except Decubitus), then DG 149 will be dropped. In other words, payment will always be associated with the DG in column 1, if a DG in column 3 also occurs during the same collection period. Therefore, the M+C organization's payment will be based on DG 148 rather than DG 149.

EXHIBIT 3. Draft Annual Coefficients for CMS-HCC End Stage Renal Disease Model for Dialysis Patients

Variable	Disease Group	Estimates
Age/Sex Coefficients		
Male, 0 to 34		28,600
Male, 35 to 44		28,300
Male, 45 to 54		29,600
Male, 55 to 59		30,200
Male, 60 to 64		31,100
Male, 65 to 69		31,000
Male, 70 to 74		31,300
Male, 75 to 79		32,000
Male, 80 to 84		33,400
Male, 85 to 89		34,800
Male, 90 to 94		33,400
Male, 95 and older		35,900
Female, 0 to 34		30,200
Female, 35 to 44		30,600
Female, 45 to 54		31,400
Female, 55 to 59		32,100
Female, 60 to 64		33,100
Female, 65 to 69		32,500
Female, 70 to 74		33,300
Female, 75 to 79		34,500
Female, 80 to 84		34,400
Female, 85 to 89		34,900
Female, 90 to 94		37,800
Female, 95 and older		33,000
Medicaid & Originally Disabled		
Medicaid status in 1996		3,200
Originally entitled due to disability		1,800
Disease Coefficients		
HCC1	HIV/AIDS	8200
HCC2	Septicemia/Shock	5400
HCC5	Opportunistic Infections	2800
HCC7 or 8	High Cancer	6600
HCC9	Medium Cancer	3300
HCC10	Low Cancer	1600
HCCDIAB1	Diabetes: Renal and Circulatory Complications	5900
HCCDIAB2	Diabetes: Neurological and Other And Specified Complications	3800

Variable	Disease Group	Estimates
HCCDIAB3	Diabetes:Ketoacidosis and Other Ophthalmologic Complications	2300
HCCDIAB4	Diabetes: Uncomplicated	1900
HCC21	Protein-Calorie Malnutrition	5300
HCC25	End-Stage Liver Disease	7600
HCC26 or 27	Cirrhosis Liver/Chronic Hepatitis	3900
HCC31	Intestinal Obstruction/Perforation	4400
HCC32	Pancreatic Disease	3800
HCC33	Inflammatory Bowel Disease	4200
HCC37	Bone/Joint/Muscle Infections/Necrosis	5600
HCC38	Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	2500
HCC44	Severe Hematological Disorders	1400
HCC45	Disorders of Immunity	200
HCC51 or 52	Drug/Alcohol/Psychosis/Dependence	4200
HCC54 or 55	Schizo.& Major Depressive Disorders	5000
HCC67 or 68	Quad & Paraplegia	8500
HCC69	Spinal Cord Disorders/Injuries	4900
HCC70	Muscular Dystrophy	2700
HCC71	Polyneuropathy	3000
HCC72	Multiple Sclerosis	6700
HCC73	Parkinson's and Huntington's Diseases	4100
HCC74	Seizure Disorders and Convulsions	3800
HCC75	Coma, Brain Compression/Anoxic Damage	8300
HCC77 or 78	Resp. Depend / Resp. Arrest	10600
HCC79	Cardio-Respiratory Failure and Shock	5700
HCC80	Congestive Heart Failure	3500
HCC81 or 82 or 83	AMI Angina Isch Heart Disease Ang Pect	3500
HCC92	Specified Heart Arrhythmias	3400
HCC95 or 96	Cerebral Hemorrhage/Ischemic or Uns. Stroke	2800
HCC100	Hemiplegia/Hemiparesis	5300
HCC101	Diplegia (Upper), Monoplegia, and Other Paralytic Syndromes	1600
HCC104	Vascular Disease with Complications	8100
HCC105	Vascular Disease	4200
HCC107 or 108	CF/COPD	1000
HCC111	Aspiration and Specified Bacterial Pneumonias	4000
HCC112	Pneumococcal Pneumonia, Empyema, Lung Abscess	3000
HCC119	Proliferative Diabetic Retinopathy and Vitreous Hemorrhage	1300
HCC128	Kidney Transplant Status	NA[1]
HCC130	Dialysis Status	NA[1]

Variable	Disease Group	Estimates
HCC131	Renal Failure	NA[1]
HCC132	Nephritis	NA[1]
HCC148	Decubitus Ulcer of Skin	9800
HCC149	Chronic Ulcer of Skin, Except Decubitus	5700
HCC150	Extensive Third-Degree Burns	6800
HCC154	Severe Head Injury	6000
HCC155	Major Head Injury	3600
HCC157	Vertebral Fractures	5300
HCC158	Hip Fracture/Dislocation	5100
HCC161 or 177	Traumatic/Lower Limb Amputation	5500
HCC164	Major Complications of Medical Care and Trauma	3800
HCC174	Major Organ Transplant Status	1100
HCC176	Artificial Openings for Feeding or Elimination	3600
Disabled & Disease Interactions[2]		
D-HCC107	Disabled with Cystic Fibrosis	10200
DM * CHF	Diabetes and Congestive Heart Failure	1500
DM * CVD	Diabetes and Cardiovascular Disease	1800
CHF * COPD	CHF and chronic obstructive pulmonary disease	1900
COPD*CVD *CAD	COPD, CVD, and Coronary Artery Disease	500

Notes

[1] The dialysis model has the same HCC categories as the CMS-HCC model for the non-ESRD population, except that HCCs with kidney disease diagnoses are excluded (HCC128 to HCC132). The model is calibrated only on dialysis patients, so the disease weights used for payment recognize disease and expenditure patterns unique to this population.

[2] DM= diabetes mellitus (HCCs 15-19)
CHF= congestive heart failure (HCC 80)
COPD= chronic obstructive pulmonary disease (HCC 108)
CVD= cerebrovascular disease (HCCs 95-96, 100-101)
CAD= coronary artery disease (HCCs 81-83)

Exhibit 4. Summary Chart of Transition Payment Blends For Risk/Frailty Adjustment in 2004

	Risk adjustment with a frailty adjuster?	**Is there a need to further adjust aggregate risk adjusted payments?**	**Transition Blend- representing the percentage of current versus risk adjusted payment to be used in 2004**
Medicare+Choice organizations	No, risk adjustment only	No	70/30%
Program of All-inclusive Care For the Elderly (PACE)	Yes	No, but CMS will evaluate on an annual basis.	90/10%
Wisconsin Partnership Program (WPP)	Yes	No	90/10%
Minnesota Senior Care Options (MSHO) and Disability Health Options (MnDHO)	Yes	No	90/10%
Massachusetts Senior Care Options	Yes	No	90/10%
Social Health Maintenance Organizations (S/HMOs)	Yes	No	70/30%
Evercare	No, risk adjustment only	No	70/30%

**Includes only those ESRD members in post-transplant status

Exhibit 5. Payment Methodology under Frailty Adjustment