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Information and
Insurance Oversight

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methodology) are finalized. Responses to the white paper may be submitted on an ongoing basis in advance of the draft notice, slated for Fall 2012.

Section 1343 of the Affordable Care Act provides for a program of risk adjustment for all non-grandfathered plans in the individual and small group market both inside and outside of the Exchanges. The Affordable Care Act directs the Secretary, in consultation with the States, to establish criteria and methods to be used in determining the actuarial risk of plans within a State. States electing to operate a risk adjustment program, or HHS on behalf of States not electing to operate a risk adjustment program, will assess charges to plans that experience lower than average actuarial risk and use them to make payments to plans that have higher than average actuarial risk. Thus, the risk adjustment program is intended to reduce or eliminate premium differences between plans based solely on expectations of favorable or unfavorable risk selection or choices by higher risk enrollees in the individual and small group market.[1] The risk adjustment program also serves to level the playing field inside and outside of the Exchange, reducing the potential for excessive premium growth or instability in markets inside or outside of the Exchange.

In the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM (p. 41940), we have outlined several goals for risk adjustment programs:

- Accurately explain cost variation within a given population.
- Choose risk factors that are clinically meaningful to providers.
- Encourage favorable behavior and discourage unfavorable behavior.
- Limit gaming.
- Use data that is complete, high in quality and available in a timely fashion.
- Provide stable risk scores over time and across plans.
- Minimize administrative burden.

The NPRM proposes that HHS develop a Federally-certified risk adjustment methodology and outlines a process whereby States can request that an alternate risk adjustment methodology be certified.

Several issues particular to the Affordable Care Act must be addressed in developing a risk adjustment methodology. First, in contrast to some current risk adjustment methodologies, the Affordable Care Act program is designed to be budget neutral plans with a lower risk will be charged and those funds from collected charges will be used to make payments to higher risk plans. Secondly, risk adjustment must be done in the context of standardized plan

[1] States can elect one single or two separate risk pools for the individual and small group markets.

levels, metal levels, which establish different levels of benefits at relative actuarial values. Finally, the risk adjustment methodology must
to make limited rating adjustments based on factors such as age and smoking status.
Below, this paper first discusses methodological decisions in developing a risk adjustment model. Next, the paper identifies options for calculating and balancing payments and charges. Last, the paper addresses permissible rating variation. The Appendix, Parts 1 through 4 provide greater detail and examples of calculations for payments and charges and permissible rating variation.

Risk adjustment models use groupings of disease factors and demographic characteristics to

calculated using (1) the output of a risk adjustment
factors. Risk adjustment models are calibrated so that the resulting risk scores have a specific
for example, a risk score
of 1.2 would mean that such an individual is predicted to cost 20% more than the average person. The Appendix, Part 1 provides additional background regarding risk adjustment model development and discusses currently available models that states may wish to use if they consider developing alternative methodologies to be certified.

Section 1343 of the Affordable Care Act directs the Secretary to establish criteria and methods

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considering using Hierarchical Condition Categories (HCCs) to develop the Federal risk adjustment model. The Medicare Part C and Part D risk adjustment models use HCCs. The HCCs used in Part C and Part D and their ongoing maintenance processes are already publicly available, and therefore familiar to issuers.

The specific groupings, components, and weighting within the HCC models vary depending on the population being assessed and use of the model. We are considering using data from the privately insured population (as opposed to the Medicare population) to develop HCC groupings and calibrate weights more appropriate to the population covered in the individual and small group markets. We are also exploring options for developing the risk adjustment model and methods to accommodate the differences permitted by or required by the Affordable Care Act. These issues are discussed further below.

The following section discusses major methodological decisions that are under consideration in developing the Federal risk adjustment model, and it is expected that States will consider similar

decisions if they consider developing alternative methodologies to be certified. These issues include:

- Prospective and concurrent data and weights for risk adjustment
- Accounting for transitional reinsurance payments in risk adjustment
- Addressing limited claims experience
- Adjusting for receipt of cost sharing reductions
- Pharmacy data in risk adjustment
- Accounting for differences in plan benefit structure
- Risk adjustment for catastrophic plans
- Transitional versus steady state model

Prospective and concurrent data and weights for risk adjustment

Risk adjustment models can be estimated and applied concurrently or prospectively. Estimating a risk adjustment model produces a set of factor weights that are combined to calculate a risk score for each individual. A risk adjustment model that uses data from the prior year to predict expenditures in the current year results in prospective weights. A model that uses data in the current year to predict expenditures in the current year produces concurrent weights. Prospective weights place greater emphasis on ongoing chronic conditions that persist from the prior year into the current year, since those types of conditions are more predictive of costs in the following year than more acute conditions. Concurrent weights place greater weight than does a prospective model on certain acute conditions that occur in a given year. For example, the concurrent approach will reflect average costs of a heart attack that occurs in the benefit year. The prospective approach will reflect the average costs of care in the benefit year attributable to a heart attack that occurred prior to the benefit year. Risk adjustment weights can be applied to prior year or current year data. Different combinations of current or prior year data and concurrent or prospective weights create several options for risk adjustment.

A purely prospective model would use prior year data with prospective weights. An approach

that year because diagnoses that occur in that year are more highly correlated with current year costs. Since some types of health care expenses are random (for example, those due to an accident), a concurrent model can be developed excluding such conditions so that risk adjustment does not remove the insurance risk from spending due to unforeseen events.

Another approach is to use a hybrid approach where prospective data and weights are used but the model also includes adjustments for select concurrent conditions, such as pregnancy and newborn care. This approach would ensure that risk adjustment recognizes the costs of medical conditions that are predictable to the enrollee and could influence enrollment decisions but may not appear in prior year diagnoses.

Another possibility is to use a lagged concurrent approach where payments for the current year are based on a risk score calculated using concurrent weights applied to data from a prior year. For example, in payment year 2016, plan-level risk scores could be calculated using concurrent weights applied to 2014 data.

Regardless of the approach, it is likely that issuers will develop their pricing well before the final risk adjustment revenue is calculated and their estimated risk adjustment payments or charges will be reflected in their premiums.

Questions for comment:

- What are the tradeoffs to using a prospective, concurrent, hybrid, or lagged concurrent approach? Do the tradeoffs differ in the initial years of implementation versus in the long term? Are there additional options that should be considered?
- What are the implications of using concurrent and prospective weights and data given other methodological choices in developing a risk adjustment model?

Accounting for transitional reinsurance payments in risk adjustment

The Affordable Care Act establishes a 3-year transitional reinsurance program in the individual market, raising the question of whether to account for reinsurance payments when developing the Federal risk adjustment model. Some reinsurance payments will be directed toward low-risk individuals with unexpected high-cost expenditures (for example due to an accident) that may not be accounted for in the risk adjustment model. However, plans that receive risk adjustment payments due to higher than average risk enrollees may also be eligible to receive reinsurance payments for the same high risk enrollees. Adjusting for reinsurance payments in the Federal risk adjustment model would address some of the concerns that reinsurance and risk adjustment could compensate twice for the same high-risk individuals.

One potential approach is to remove claims eligible for reinsurance payments from the data used to calibrate the risk adjustment model. Prior research shows that truncating expenditures can improve model prediction.[1] Removing expenditures eligible for reinsurance may also alter the relative factors in the risk adjustment model. For example, the relative weight on simple diabetes may increase versus cancer if a portion of cancer expenditures are paid for by reinsurance and the risk adjustment model accounts for reinsurance payments.

Accounting for reinsurance payments raises practical considerations. The approach to remove expenditures eligible for reinsurance would need to reflect the proposed approach to reinsurance which pays a portion of costs after a threshold and subject to a cap. In addition, accounting for reinsurance, which is only in the individual market, would require separate risk adjustment

calibrations for the individual and small group markets. Under the proposed rule, States running their own reinsurance program are also allowed to use additional or different parameters for their reinsurance program. To the extent that the parameters of the reinsurance program vary across States, separate calibrations might be needed to reflect that variation, as well as the variation from 2014 to 2016 as the size of the reinsurance pool declines. Further, the methodology to account for reinsurance payments would be a temporary modification to the Federal risk adjustment model since reinsurance is a three year program. We intend to conduct analyses to determine whether removing anticipated reinsurance payments alters model weights.

Questions for comment:

- Should the risk adjustment model adjust for reinsurance?
- What are the tradeoffs of adjusting for reinsurance payments? Are there additional options that should be considered?

Addressing limited claims experience

Another methodological choice is how to address individuals with limited claims experience in the year in which risk scores are estimated. Individuals will shift in and out of plans in the individual and small group markets due to changes in employment (e.g., movement to or from a large employer plan) or income (e.g., movement to or from Medicaid). We expect substantially more movement into and out of the individual and small group market than in and out of the Medicare Advantage program, but less movement than in and out of the Medicaid program.

There are a variety of potential approaches to address this issue. Demographic information only could be used for individuals with claims history below a threshold number of months. If some plans have healthier or sicker average enrollee mix, however, this approach may over compensate favorably selected plans and under compensate adversely selected plans. Another option would be to assign the average risk factor for the plan by age band to individuals with claims history below a threshold number of months. For these approaches, the threshold number of months (for example, 6 months) would also need to be decided.

Some State Medicaid programs ignore people with less than a threshold number of months in the risk adjustment calculations, and assess risk only on enrollees with adequate exposure, implicitly assuming that if the enrollees who can be observed are 10% sicker than average, that the new enrollees are also 10% sicker than average.

Questions for comment:

- What are the tradeoffs to the approaches to address individuals with limited claims experience?
- Are other empirical assessments of various thresholds for minimum claims data available?

- What is the best approach for new plan enrollees who have no diagnostic or claims data in the data collection year relevant for the benefit year?

Adjusting for receipt of cost sharing reductions

A further question in developing a risk adjustment model is whether to adjust for receipt of cost sharing reductions. The Affordable Care Act establishes cost sharing reductions for enrollees in individual market plans in Exchanges based on their income. Since individuals who qualify for cost sharing reductions will have reduced cost sharing, their utilization of health care services may be higher than it would be in the absence of cost sharing reductions. Adjusting for receipt of cost sharing reductions would only account for differences in utilization due to receipt of subsidies among individuals in the individual market in the Exchanges. Since individuals in the small group market are not eligible for cost sharing reductions, separate risk adjustment models for individual and small group would be needed. At present, we are considering whether the Federal risk adjustment model should include receipt of cost sharing reductions as a factor in the model to account for the utilization differences of those individuals.

Questions for comment:

- Should receipt of cost sharing reductions be included in the risk adjustment model?
- Are there alternate options to address income in the risk adjustment model, in light of data limitations and differences between individual and small group market provisions regarding cost sharing reductions?

Pharmacy data in risk adjustment

As identified in the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM, another issue to be resolved in creating a risk adjustment model is whether or not to supplement diagnostic claims data with prescription drug utilization data. While we do not anticipate using a stand-alone pharmacy model, pharmacy data could be used in conjunction with claims data. Pharmacy data has been shown to produce risk adjustment results nearly as accurate as those based on diagnostic data.[2] Furthermore, these data are often readily available in electronic format and easily and quickly collected.

Including prescription data in a risk adjustment model, however, could offer powerful incentives to steer treatment toward pharmaceutical therapy in order to identify risk of the enrolled population. For example, physicians could advise patients to manage type II diabetes behaviorally with diet and exercise or prescribe insulin. For many patients, managing behaviorally may be clinically preferable. If prescription data is included as a source of diagnoses in risk adjustment, absent any other claims with a diabetes diagnosis code, the issuer

would receive additional risk adjustment funds if the physician prescribes insulin and would not receive additional funds if the physician recommends diet and exercise. Given these issues, it may make sense to use pharmacy data only for drug classes where there is virtually universal clinical agreement about when they should be used and/or to use pharmacy data in a transitional model only. A further consideration is that clinical indications for a given pharmaceutical may change over time, prompting the need for more frequent modifications to the risk adjustment model than if pharmaceutical data were not used. The risk adjustment models for Medicare Parts C and D do not use prescription drug utilization data to identify enrollee diagnoses.

Questions for comment:

- Should pharmacy data be used in the risk adjustment model?
- Are there classes of drugs for which there is agreement among physicians concerning the indications for use?
- How do we minimize incentives to alter prescribing patterns in ways that are not clearly clinically beneficial to patients?

Accounting for differences in plan benefit structure

A further question in designing the risk adjustment model is whether to account for differences

Affordable Care Act.

To consider the potential impact of plan benefit structure differences, it is important to differentiate between plan liability and total medical expenditures. Since a platinum plan will cover 90 percent of the actuarial value of covered expenses, plan liability for a platinum plan will be closer to total medical expenditures than a bronze plan, which covers 60 percent of the actuarial value of covered expenses. Thus, in a platinum plan, deductibles will be lower and plan liability will track closely with total medical expenditures across expenditure levels. In contrast, a higher deductible in a bronze plan will result in a greater share of initial spending paid by the enrollee, such that bronze plan liability will be, on average, lower. Not only will average plan expenditures be lower in the bronze versus the platinum plans, but total expenditures for different conditions will exceed the deductible at varying rates, with the result that plans may have different liability for high versus low risk individuals depending on benefit design. Thus, the relative expenditures for low and high risk individuals will be farther apart in a bronze plan than in a platinum plan.

The first issue to consider when determining whether to adjust for benefit structures is whether to design the risk adjustment model to predict plan liability or total medical expenditures (i.e., whether the dependent variable in the regression is plan liability or total medical expenditures).

Basing a model on plan liability could result in higher relative weights for conditions with costs above the deductible amount in a bronze plan, compared to relative weights for a platinum plan.

One approach is to develop a total expenditure model without adjusting for benefit structure differences. If the model does not adjust for these differences, however, the risk scores from the

for low cost enrollees. Because of this, the relative risk of an enrollee with cancer may be much higher in a bronze plan than in a gold plan. Thus, average weights from a total expenditure risk adjustment model would result in weights that are too low for the cancer patient in the bronze plan due to the nonlinear nature of plan liability in the bronze plan. Given this issue, we are considering options that include an adjustment for metal level in the risk adjustment methodology that would recognize that the relationship between diagnoses and expenditures will vary by metal level.

Questions for comment:

- What are the tradeoffs to adjusting for differences in plan liability at different metal levels? What alternatives should be considered to do so?
- What are the implications of adjusting for differences in plan liability at different metal levels in combination with methods to remove rating factors and calculate payments and charges?
- What are the tradeoffs to developing the risk adjustment model based on total plan expenditures versus calibrating various models to directly reflect plan liability?
- If there is no adjustment for metal levels, what portion of total covered cost (enrollees + plan) should be predicted by the risk adjustment model? Should the risk adjustment model predict total costs for all covered services, the average plan-covered portion of total costs, or plan-covered costs for a specific metal level? If the latter, which metal level?

Risk adjustment for catastrophic plans

The Affordable Care Act specifies that certain individuals (those under age 30 and others meeting certain affordability standards) may enroll in catastrophic plans inside and outside the Exchange. These plans may have actuarial values and premiums that are lower than bronze plans. Because the Affordable Care Act does not set actuarial values for catastrophic plans, the actuarial value, benefits structures, and premiums may vary substantially between plans.

If catastrophic plans enroll young, lower risk individuals and they are included in risk adjustment with bronze through platinum plans with sicker enrollees, catastrophic plans will by design pay risk adjustment charges corresponding to their lower risk. Catastrophic plans would then be

likely to increase premiums (perhaps substantially) to cover their obligation to pay risk adjustment charges, raising premiums for these plans. As premiums increased, they could become less affordable for these groups and enrollment would decline, thus undermining the goal of supporting enrollment in affordable health insurance.

One way to avoid this would be to include catastrophic plans in a separate risk pool for risk adjustment. Assuming catastrophic plans enroll low-risk individuals, this would result in lower premiums for the select individuals eligible for catastrophic plans, while premiums would be higher among bronze through platinum plans.

Questions for comment:

- Should catastrophic plans be included in a separate risk pool for risk adjustment? What are the implications for issuers given provisions in section 1312(c) of the Affordable Care Act?
- What impact, and on what scale of magnitude, would inclusion/separation have on premiums and enrollment patterns in catastrophic and other plans?

Transitional versus steady state model

Another methodological question is how a transitional model should vary from a steady-state risk adjustment model.

One way in which the model could differ in the initial years is by phasing in diagnosis-based risk adjustment over time, for example beginning with 25 percent diagnosis-based and 75 percent demographic risk adjustment, with phase-in complete over a set period of time.

Phasing in diagnosis-based risk adjustment would allow time for claims data to become available and would give issuers the opportunity to become familiar with the risk adjustment methodology and account for risk adjustment in pricing over a longer time period. It would also minimize the impact of diagnosis-based risk adjustment on payments and charges in the early years when there will be fewer months of diagnostic data available before enrollment stabilizes. Demographic models explain less of the cost variation than diagnosis based models.[3] Issuers with lower than average risk would retain excess funds if diagnosis-based risk adjustment were phased in, while issuers with higher than average risk would lose funds than they would receive if diagnosis-based risk adjustment were fully implemented without phase-in.

The advantage of phasing in diagnosis-based risk adjustment is that at the time plans are making their pricing decisions, they can be relatively sure what their revenue will be; the disadvantage of phasing in diagnosis-based risk adjustment is that plans that expect to attract sicker than average enrollees may need to raise their premiums in order to meet their revenue targets. If diagnosis-

based risk adjustment is phased in, plans expecting to attract higher than average risk will likely charge higher premiums than they would if diagnosis-based risk adjustment is not phased in. However, if diagnosis-based risk adjustment is not phased in, the uncertainty associated with the unknown amount of charges or payments may cause all plans (both low and high risk) to add a margin to their premium to account for the uncertainty.

Other potential choices that could differ between transitional and steady state models include, for example, that pharmacy data could be included in the initial years of the program, but not after the market has stabilized. Further, a concurrent model could be used for the transitional model, while the steady state model could be a prospective or hybrid prospective-concurrent model.

Questions for comment:

- What are the consequences of phasing in diagnosis-based risk adjustment? If adopted, how should phase-in occur?
- To what extent is it important to minimize differences between the transitional and steady state risk adjustment models?
- What factors should differ for the transitional model (phase-in of diagnosis-based risk adjustment, use of pharmacy data, or other design choices such as concurrent versus prospective risk adjustment, other)?

The Affordable Care Act directs States to make payments to higher than average actuarial risk health plans and health insurance issuers and assess charges against lower than average actuarial risk health plans and health insurance issuers. Risk will be measured at a plan level and compared to the market average (typically set at 1.0). Generally, plans with below average (below 1.0) risk will be charged, while plans with above average (above 1.0) risk will receive payments. Payments and charges will be calculated by multiplying plan risk relative to the market will be calculated in a zero sum, budget-neutral manner.

Issuers generally set plan premiums based on the anticipated revenue needs for their enrolled population, including anticipated risk adjustment payments or charges. The aim of the risk adjustment methodology is to result in plan premiums that differ due to benefit levels and efficiency, but not the risk of their enrolled population.

Two issues arise in developing the methodology to calculate payments and charges. As discussed above, payments and charges are calculated by multiplying plan risk relative to the market by a premium amount baseline

premium. Since transfers are budget neutral, the second issue is how to balance payments and charges. Below we propose multiple options for each of these issues and summarize potential effects of these options on plan premiums. A more detailed discussion of the underlying calculations is available in the Appendix, Parts 2 and 3. We seek comment on these options.

The Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM identified two basic approaches to establish the baseline premium; this section expands discussion. The first approach is to use an average premium. This average can be set using a State-weighted average or a rating area weighted average, with or without adjustment for actuarial value. The

Option 1a: Weighted State average premiums. This approach would calculate the baseline premium according to the enrollment-weighted average premium in the State. The State average could be calculated with or without adjustment for actuarial value of plans. Using a State average (without actuarial value adjustment) would result in balanced payments and charges, because the State average is a single dollar amount for all plans, and plan risk scores average to 1.0.

Option 1b: Weighted rating area average premiums

Conversely, among two plans with the same healthier than average risk mix, a lower premium plan would have lower charges, potentially creating incentives for low-risk plans to operate more efficiently and/or set lower premiums.

Since payment and charge transfers will be budget neutral, a method is needed to balance them if payments are greater than charges or vice versa. Balancing is needed for all options to establish a baseline premium, except for the State average (without actuarial value adjustment). Since the State average is a single dollar amount for all plans, and plan risk scores average to 1.0, the payments and charges are equal in this approach.

The method of calculating and balancing payments and charges will affect the extent of transfers between plans, and thus will affect the premiums set by high and low risk plans. Options to balance payments and charges are described in the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM; this section expands discussion. The options are:

Payments greater than charges

- Decrease plan payments on a pro-rated basis to equal plan charges. In this option, high risk plans receive lower payments than originally calculated.
- Increase plan charges on a pro-rated basis to equal plan payments. In this option, low risk plans pay more charges than originally calculated.
- Split the shortfall between high-risk and low-risk plans and pro-rate in both directions. In this option, the shortfall is shared between high- and low-risk plans.

Charges greater than payments

- Reduce gross plan charges on a pro-rated basis such that the net plan charges are sufficient to cover total plan payments. In this option, low risk plans pay lower charges than originally calculated, while high risk plans receive the originally calculated amount of payments.
- Put excess plan charges in a reserve account. Charges and payments would not be altered from the originally calculated amounts, and reserve funds could prevent the need to alter originally calculated amounts to balance payments and charges in future years.

Considering the methodologies to calculate and balance payments and charges together illustrates the implications for plans of the alternate options. For illustrative purposes, the table

below shows how payments and charges may differ depending on the combination of options for calculating and balancing payments and charges when total payments are greater than charges.

Table 1. Interactions of Methodologies to Calculate and Balance Payments and Charges

	State Average Premium (Automatically balanced)	**Pa O Pe (Pae ts Greater than Charges)**	
		Balance by decreasing payments	**Balance by increasing charges**
Low risk plan with low premiums	Charged more	Charged less	Charged more
High risk plan with high premiums	Lower payments	Lower payments	Higher payments

When payments are greater than charges, a low risk plan with low premiums would be charged compared to what the plan would be charged if the baseline premium is the State average payments. Conversely, a high risk plan with high premiums would receive higher payments if the to payments, as compared to the payments the plan would receive if the baseline premium is the State average charges. The Appendix, Parts 2 and 3 create examples to examine implications of the approaches to calculate and balance payments and charges in greater detail.

Questions for Comment:

We seek comment on the methods described, and any alternative methods that could be used to calculate payments and charges that would reduce uncertainty for plans.

- What are the tradeoffs to the proposed options? Are there alternatives that should be considered?
- What are implications of each option for calculating and balancing payments and charges for plans of differing metal levels and relative risk
    - In the first year
    - Over time with shifts in enrollment and premiums
    - In markets with one dominant issuer
    - In markets with multiple issuers

- Are there linkages between the methodologies to remove rating factors, and to calculate payments and charges?
- To what extent should payments and charges reflect differences across metal levels beyond differences in health risk, such as higher plan liability or potentially higher utilization due to higher benefit levels?
- What intentional and unintentional consequences from the use of the proposed options to calculate and balance payments and charges may occur?

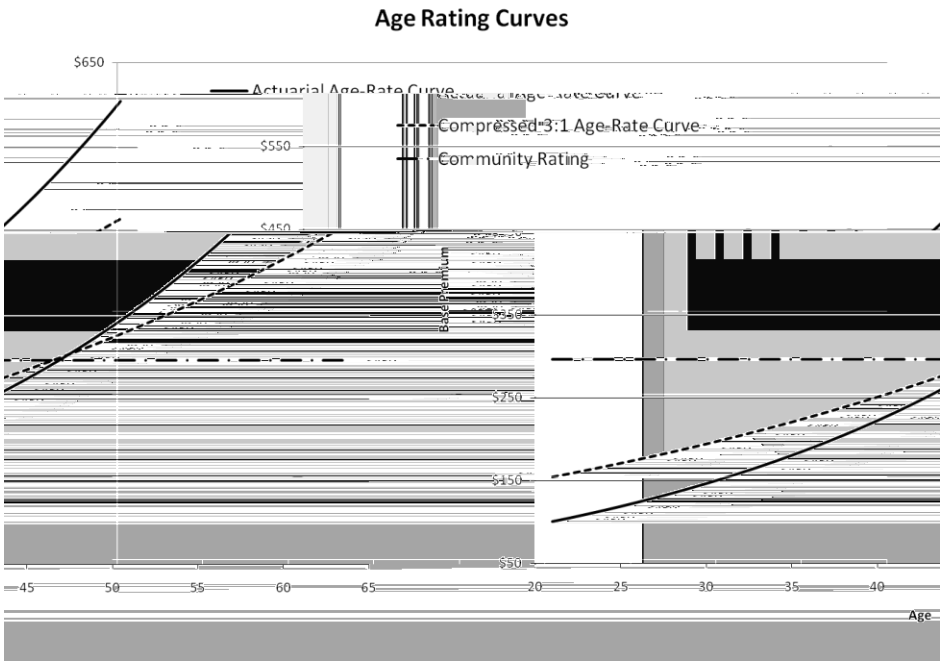
Under section 2701 of the Public Health Service Act (PHS Act), as amended by the Affordable Care Act, issuers may vary rates within defined maximum ranges based on age and tobacco use. Plans may also vary rates by geographic rating area and family size.[2] Thus, it is important to consider how to develop methods in light of this allowed variation in rating. Below, we discuss the rationale and potential methods for removing permissible age rate variation from risk scores. Next, we raise issues regarding rating variation for smoking, tobacco use, geographic areas, and family size.

Rationale for removing age rating factors

To illustrate the rationale for removing variable rating factors for age, Figure 1 below shows three age rating curves. A rating curve reflects the base rate charged to each enrollee given his or her age. The solid line is an example of an actuarial age-rate curve, which reflects relative expenditures across ages. Without risk adjustment or constraints on age-based underwriting, issuers charge premiums according to the actuarial age-rate curve. In this example, expenditures for the top age group are 6 times those of the youngest age group. The horizontal line is a community rate, the average rate across all ages, hence the line holding at the same premium: it is the same for all enrollees regardless of age. Risk adjustment revenues are calculated using the community rate because risk scores from the risk adjustment model are relative to community average expenditures. Thus, unadjusted risk adjustment revenues typically reflect the difference between the community rate and the actuarial age-rate curve.

[2] All discussion of premium rating requirements is for illustrative purposes only; CMS plans to issue guidance on section 2701 of the PHS Act in the future.

Figure 1.



In 2014, issuers will be able to charge up to a 3:1 difference in premiums based on age for adults.[3] The dashed line is an example of an age rate curve compressed to a 3:1 ratio. If issuers set premiums according to a 3:1 ratio, their premiums already reflect some of the higher costs of older enrollees, and some of the lower costs of younger enrollees, relative to the community rate.

However, unadjusted risk scores reflect the full expenditure difference between the community rate and the actuarial age-rate curve.

Thus, if issuers set premiums at a 3:1 ratio and age rating factors were not removed, for older individuals, the net revenue to issuers from premiums plus risk adjustment payments would be too high, and the net revenue for younger individuals would be too low. For older individuals, net revenue would be too high because risk adjustment would result in an increase in revenue relative to the average community rate, yet if issuers set rates according to 3:1 rating, the premiums issuers charge to older individuals would already be higher than the community rate. For younger individuals, the net revenue from premiums minus risk adjustment charges would be too low because risk adjustment would result in a decrease in revenue relative to the average community rate, yet given 3:1 rating, the premiums issuers charge to younger individuals will be lower than the community rate.

Thus, if rating factors are not removed, instead of setting rates at a 3:1 ratio, in theory, issuers may reduce premiums for older individuals, and increase premiums for younger people, such that

[3] It is possible that some States could choose to require issuers to use ratios lower than 3:1 for adults. Section 2701 does not specify the rating factors applicable to children.

premiums for young and old individuals would be closer together (or even the same for all ages). In other words, if rating factors are not removed from risk adjustment, plans may be more likely to set rates at lower than a 3:1 ratio.

The purpose of removing age rating factors would be to adjust risk scores so that risk adjustment revenue reflects the difference between the compressed 3:1 rating curve (where plan premiums are set) and the actuarial age-rate curve (rather than the difference between a community rate and the actuarial age-rate curve). If issuers set premiums according to a 3:1 ratio and age rating - the revenue gained or lost through the risk adjustment process), should approximate the actuarial age-rate curve for a given age category.

Two potential approaches to remove rating factors are discussed below: establishing an allowed rating curve and removing rating factors; and using regression to set and remove rating factors.

Approach I: Establish the allowed rating curve and remove rating factors

The first approach is to establish an allowed rating curve for risk adjustment purposes and apply

risk adjustment model. Within this approach, the allowed rating curve can be established using average issuer rating factors or by setting a rating curve a priori from national data. Below we discuss approaches to establish a rating curve and discuss the methodology to adjust risk scores based on that rating curve.

<u>Establishing the allowed rating curve</u>

<u>Option 1a: Calculate the average allowed rating factor curve to remove rating factors.</u> This approach would remove rating factors from plan risk scores based on the national average of issuer rating methods. The average allowed rating factor curve would be calculated based on the rating approaches of all issuers, weighted for enrollment. We anticipate that this information will be available from the data issuers submit to healthcare.gov. Using the average would mean that in g
risk adjustment obligations. Further, using a national average means that no single issuer will drive the average.

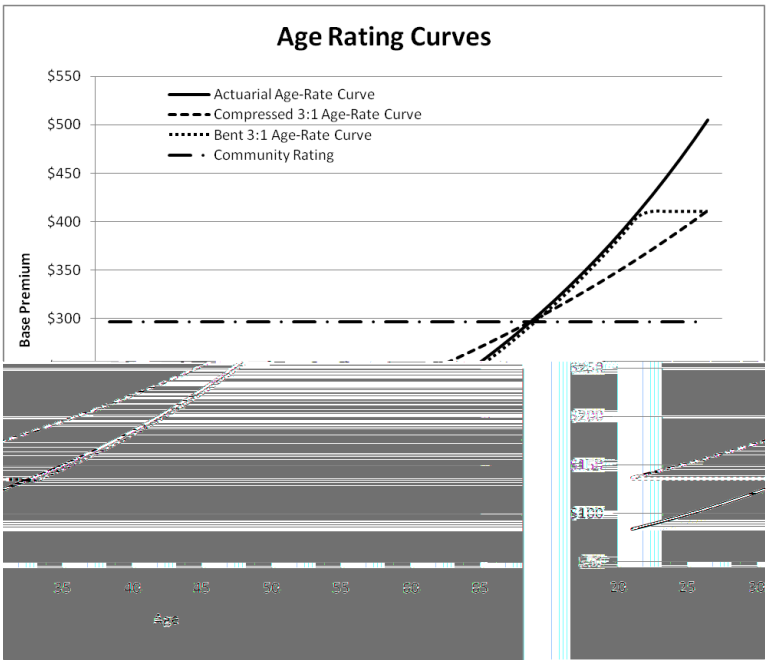
<u>Option 1b: Set and modify a baseline allowed rating factor curve a priori to remove rating factors.</u> This approach would set and modify a baseline allowed rating factor curve. To set a baseline rating curve, one could derive the rating curve from a large claims database, from data submitted to the Exchange and to healthcare.gov, from the State rate filings of a number of individual market issuers, or based on the expertise of actuarial consulting firms that have developed individual market rating curves.

To modify the baseline rating curve to account for rating restrictions, one approach would be to

the highest ages would be reduced, and the premium for the lowest ages would be increased, such that those changes are premium neutral for a population and the rates for the middle of the age distribution are unchanged. An alternate approach to set a rating curve would be to compress the entire rating curve. For example for age, premiums would be increased through the entire lower half of the age distribution, and reduced through the entire upper half of the age distribution. The approach to compress the curve could follow the actuarial practice of exponential curve fitting.

Figure 2 below shows illustrative examples of a baseline rating curve, an allowed rating factor curve with bent ends, and an allowed rating factor curve that is compressed throughout.

Figure 2.



Option 1c: R Another approach is

Under this approach, risk adjustment revenues are influenced by how plans set their rating curves and their pricing strategy. As such, while we seek comment on it, this approach may not meet our goals for a methodology.

Calculation to remove allowed rating factors

After the allowed rating curve is established, the second step would be to adjust the plan average risk score calculated from the risk adjustment model. In this option, the allowed rating curve

average rating factor would be removed from the plan average risk score, so that the remaining risk score reflects the risk not already priced into premiums. The specific calculations to adjust risk scores are described in the Appendix, Part 4.

Approach II: Set and remove age rating factors as part of the risk adjustment model

An alternative approach to removing rating factors is to estimate a constrained regression, in which the predicted risk scores for the older age groups are constrained to reflect the ability of plans to use 3:1 age rating. In this approach, the estimated weights for conditions that most often affect older individuals will be smaller than would be the case if weights were estimated without constraints. That is, the weights for diagnoses such as heart disease that are relatively rare among young people will be smaller than they would be if weights were developed without constraints. In the approach described above, the removal of the rating factors effectively reduces the risk score, that is, the weights for all diagnoses and for the age coefficients among 55-64 year olds, and effectively increases the risk score calculated from the age and diagnosis weights for the young. In the constrained regression approach, the weights are estimated under constraints, providing a potentially more sensitive calibration of the model to diseases of the young and old.

Currently, not all issuers rate for smoking even though states may allow it. In 2014, issuers will be able to charge higher rates to smokers than nonsmokers, but only up to a 1.5 to 1 ratio. However, States can choose to require issuers to charge a ratio lower than 1.5 to 1. We are considering removing permissible rating variation for all issuers in the risk adjustment methodology. For issuers, particularly those outside the Exchange that do not collect information on smoking rates, one option would be to assume an average rate of smoking by State. To remove rating factors, one option would be to set a rating factor for smokers vs. nonsmokers either based on an average of issuer rates, or to set a rating factor by examining data on current rating practices for smoking. Rating factors for smoking would be removed after adjustments for age rating are made. This approach presumes, consistent with current practice in States, that rating restrictions are multiplicative (such that a 64-year old smoker could be rated at 4.5 times the rate of a 21 year old non-smoker). One implication of this approach is that there may be underreporting of smoking rates among plans that collect the information from enrollees, relative to using a State average smoking rate. We seek comments on this approach and suggestions on alternatives.

The recently released Exchanges NPRM (45 CFR Parts 155 and 156) proposes that issuers can set up to 4 separate family type rates inside the Exchanges (for individual, two adults, one adult plus one or more children, and all other families). However, rates must reflect Section 2701(a)(4)

of the Affordable Care Act where the premium for each family accounts for the premium of each member in proportion to their expected cost to the premium. Since issuers can set rates at desired levels, we are considering that, initially, we would not remove rating factors for family size. In this option, we would calculate risk scores for each plan enrollee, regardless of whether they are part of a single or family policy. We would then apply age and smoking rating factor adjustments to each individual and calculate the plan average of the adjusted risk scores. We propose to examine methods to remove variable rating for family size for inclusion in the future, but may not establish a methodology in 2014 because of the complexity of developing a method that addresses the different ways issuers may rate for families with multiple children (oldest child, youngest child, etc). Again, we seek comments on this approach and suggestions on alternatives.

Currently, geographic differences in rating are driven by differences in actuarial risk and underlying cost structure. To the extent that risk differs across areas, use of a State-wide risk adjustment pool would allow risk adjustment to account for risk differences between areas. Therefore, rating differences in 2014 would be driven solely by underlying cost differences. The option to calculate payments and charges using rating area premiums addresses underlying cost differences across areas, as does the option to use plan specific premiums. Therefore, one possibility is that the risk adjustment process should not specifically remove area rating factors. Transfers would occur from higher risk to lower risk areas based on risk differences, not cost differences.

<u>Questions for Comment:</u>

- What are the tradeoffs to the proposed options for removing rating factors for age, tobacco, family size, and geographic area? Are there alternatives that should be considered? What incentives do the proposed approaches create in terms of how issuers set premiums?
- If States have set rating limits that are lower than what is permitted in the Affordable Care Act, should state policies be addressed in the federally certified methodology? If so, how?

  What are implications of each option for plans with different approaches to rating
  - In the first year
  - Over time with shifts in enrollment and premiums
  - In markets with one dominant issuer
  - In markets with multiple issuers

In summary, there are many issues to consider in developing an effective risk adjustment methodology. We will be evaluating the options raised and considering additional options as we develop a proposed methodology. The purpose of this paper is both to provide context for individuals to submit comments regarding the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM, as well as provide a structure for ongoing discussions as we develop the Federal risk adjustment methodology.

While this white paper may inform comments to the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM, comments in response to the NPRM should be submitted through the regulations.gov website by September 28, 2011. Responses to this white paper, which will not become a part of the formal NPRM comment process or be used to finalize policies in the NPRM, can be sent to RiskAdjustmentIssues-2011@cms.hhs.gov. Comments sent in response to the white paper will inform the HHS-developed Federally-certified risk adjustment methodology, which will be released as part of a Federal Payment Notice that will appear in the Federal Register, and will include a draft notice and a comment period before the notice (and methodology) are finalized. Responses to the white paper may be submitted on an ongoing basis in advance of the draft notice, slated for Fall 2012. We welcome formal comments on the Standards Related to Reinsurance, Risk Corridors and Risk Adjustment NPRM as well as ongoing input as we develop the Federal risk adjustment methodology.

[1] Winkleman, R and S Mehmud. (2007) A Comparative Analysis of Claims-Based Tools for Health Risk Assessment. Society of Actuaries. Available at: http://www.soa.org/files/pdf/risk-assessmentc.pdf.

[2] u Œ] v u Ç } (š µ Œ] • X ^ Z] • l • • • • u v š v Z] • l i µ • š u v š X _ / • • µ Œ] 2010. Available at http://www.actuary.org/pdf/health/Risk_Adjustment_Issue_Brief_Final_5-26-10.pdf

[3] Winkleman, R and S Mehmud. (2007) A Comparative Analysis of Claims-Based Tools for Health Risk Assessment. Society of Actuaries. Available at: http://www.soa.org/files/pdf/risk-assessmentc.pdf.

The following discussion provides background information about risk adjustment model development and currently available models.

Model Development

Risk adjustment models use groupings of disease factors to estimate the relationship between health status and health care costs. Health status is typically assessed using a variety of factors, including demographic and diagnostic-based factors. Risk adjustment models are predictive in the sense that they capture, based on actual data, the relationship between health status factors and medical expenditures; model developers calculate standardized factors representing these relationships that can be applied to payments. The key output of a risk adjustment model is the risk score
risk across all individuals.

Risk adjustment models include a group of health status-related factors, such as demographic characteristics, and diagnostic-related groups. Diagnosis-based models group ICD-9 diagnosis codes in ways that make sense, both clinically and in terms of their effect on costs. Clinical conditions that significantly predict expenditures are candidates for inclusion in the model. In addition to clinical and cost coherence, other general principles for diagnosis-based models include encouragement of accurate coding.

After factors are chosen and the model is estimated, each factor, or group of factors, in a model is assigned a weight -- the weight is included in the calculation of the risk score when the individual whose score is being calculated meets the criteria for that factor. The weight is *relative* to an overall expenditure mean. In most models, factor weights are *marginal* in that they add incrementally to the risk score the cost associated only with that condition. For example, while diabetics can be expensive, part of the expense is related to other conditions that such an individual may concurrently have. The coefficient for diabetes would therefore represent only the additional expenditures contributed by the diabetes diagnoses. Some other types of models combine all risk factors to assign a person to a mutually exclusive risk category.

Calculating a Risk Score

A isk score is calculated using (1) the output of a risk adjustment model (factor . Risk scores are often additive, though interaction terms may be included to capture either factors whose costs are closely aligned with one another or

costs that are non-linear. For additive factors, if the person had factors A and B, and the weights

+ 0.4 = 1.2). Risk scores are calculated by taking into accou
characteristics and health status (diagnoses, or other health status measures). Risk adjustment models are calibrated so that the resulting risk scores have a specific mean, such as 1.0. An
ve to this mean for example, a risk score of 1.2 would mean that such an individual is predicted to cost 20% more than the average person.

Evaluating Performance of Risk Adjustment Models

The performance of risk adjustment models is evaluated in several ways. One common method is the R^2 for the model. The R^2 represents the ability of a model to predict individual expenditures. While individual risk scores are calculated with a model, payment accuracy is measured over groups of enrollees. Since risk adjustment models are used to adjust payments for groups of plan enrollees, in conjunction with R^2 statistics, predictive ratios are used to measure model performance over groups of individuals. The
cost to its average actual cost and measures the accuracy of a model in predicting the average costs of a group. Model performance is considered in the context of the overall risk adjustment goals described above, to accurately explain cost variation within a given population; choose risk factors that are clinically meaningful to providers; encourage favorable behavior and discourage unfavorable behavior; limit gaming; use data that is complete, high in quality and available in a timely fashion; provide stable risk scores over time and across plans; and minimize administrative burden. For example, choosing narrower disease groupings may enhance model performance, but creates greater potential for upcoding.

Existing Risk Adjustment Models

The following are brief overviews of selected risk adjustment models that are currently being used by States or the federal government for health plan payment. There are additional models in the commercial market, but our list is limited to those in use by government purchasers.

These risk adjustment models rely primarily or exclusively on age, sex, and diagnosis codes from claims and enrollment data to derive a risk score for individuals. They are also similar in that each model groups diagnosis codes into an aggregated condition category, however defined by the logic of the tool. An occurrence of the diagnosis code in the assessment period (often a year) will trigger the inclusion of the pertinent condition category. Additional occurrences of a specific diagnosis or of other diagnoses that map to the same condition category will produce no additional factor weight. In addition to developing a grouping system, each model specifies condition categories, demographics, and other variables that are included in the risk adjustment model.

Adjusted Clinical Groups (ACGs) were developed by Jonathan Weiner and colleagues at the Johns Hopkins University.[1] Diagnosis codes are initially grouped into clinically related categories called Adjusted Diagnosis Groups (ADGs). These can be used as independent variables in a regression model. The ACG software combines ADGs in various combinations with age and sex to produce Adjusted Clinical Groups (ACGs), which are mutually exclusive groupings of patients that have a similar level of risk.

The Chronic Illness and Disability Payment System (CDPS) is a regression-based risk assessment model developed by Richard Kronick and colleagues at the University of California, San Diego.[2] This model was originally developed for use with Medicaid populations, including disabled and Temporary Aid for Needy Families (TANF) populations. The CDPS model assigns selected major diagnosis codes into diagnostically-related categories. Each member is assigned to an age/gender category. Additional risk is added for each new diagnosis group triggered by a new diagnosis. To account for related conditions that may be manifestations of the same underlying condition, some diagnosis groups are placed in hierarchies. If two or more diagnosis groups have been triggered in a hierarchy, only the risk of the highest cost category is added to

Clinical Risk Groups (CRGs) was developed by 3M Health Systems. All diagnoses are mapped into unique clinical groups.[3] Each individual is ultimately assigned to a single Clinical Risk Group. CRGs offer the user the choice of alternative models for both prospective and retrospective applications.

Diagnosis Cost Groups (DCG) was developed by Arlene Ash and Randall Ellis of Boston University.[4] All diagnosis codes are grouped into diagnostically homogeneous groups. These groups are further mapped into 184 condition categories. Each individual is initially assigned to one age/gender category. Additional risk is added for each new condition category triggered by a new diagnosis. Hierarchies are imposed for related condition categories, resulting in Hierarchical Condition Categories (HCCs).

The CMS-HCC Risk Adjustment Model, which employs a variant of the HCCs, is used by Medicare for the risk adjustment of health plan capitation payments.[5] As a first step, every ICD-9 diagnosis code is grouped based on clinical similarities. These diagnosis groupings are then mapped to 184 condition categories based on similar clinical characteristics and severity, and cost implications. Both a panel of clinicians and analyses of cost data informed the creation of the condition categories. Hierarchies are imposed on the condition categories, so that the most ted to the risk score. In addition to the demographic and condition categories, interaction terms are included to capture either costs that are closely aligned with one subgroup compared to another, or costs that are non-linear.

The Episode Risk Groups (ERGs) is a risk assessment model developed by Symmetry Health Data Systems, a subsidiary of UnitedHealth Group.[6] ERGs are based on the Episode Treatment Groups (ETGs) model, also developed by Symmetry, which groups medical services into episodes of care based on diagnoses. Using ETGs, diagnoses, and some procedures as building blocks, individuals are assigned to a single ERG category based on the combination of ETGs.

[1] Weiner J P, Starfield B H, Lieberman R N. (1992) Johns Hopkins Ambulatory Care Groups (ACGs): A Case-Mix System For UR, QA, and Capitation Adjustment. HMO Practice, 6(1), 13-19. http://www.ncbi.nlm.nih.gov/pubmed/10119658

[2] Kronick R, T Gilmer, T Dreyfus, L Lee. (2000) Improving Health Based Payment for Medicaid Beneficiaries: CDPS. Health Care Financing Review. 21(3): 29-64.

[3] Hughes JS, RF Averill, J Eisenhandler, et. al. (2004) Clinical Risk Groups (CRGs): a classification system for risk-adjusted capitation-based payment and health care management. Medical Care. 42(1):81-90

[4] Ash A, RP Ellis, L Iezzoni (1990) Clinical Refinements to the Diagnostic Cost Group Model. Final report submitted to the Health Care Financing Administration No. 18-C-9852i6/1-03.

[5] Pope GC, J Kautter, RP Ellis, et. al. (2004) Risk Adjustment of Medicare Capitation Payments Using the CMS-HCC Model. Health Care Financing Review. 25(4): 119-141.

[6] Symmetry Episode Risk Groups: A successful Approach to Health Risk Assessment. (2008) Ingenix. Available at: http://www.ingenix.com/~/media/Ingenix/Resources/Downloads/Symmetry_ERG_70_WhitePaper.pdf

This appendix provides more detail regarding the calculations underlying the options presented in the body of this white paper and presents a simplified comparison of different methods for calculating and balancing risk adjustment payments and charges. The purpose of the appendix is to facilitate feedback on the specific formulas and calculations and on the approach used here to examine how various policy choices would affect risk adjustment transfer amounts and plan premiums. The examples are for illustrative purposes only and do not represent anticipated results.

This appendix is organized as follows. We begin the analysis with a set of assumptions for the market structure, reflected in parameters assigned to eight different health insurance plans offered by two issuers, presented in Table 1. Next, we show the impacts of three different ways of calculating risk adjustment payments/charges:

A) ,

B) Payments/charges based on the State average premium (Table 2B), and

C) Payments/charges based on the State actuarial value (Table 2C).

Then, following Tables 2A and 2C, in which aggregate risk adjustment payments may exceed risk adjustment charges, we consider different options for balancing payments and/or charges to

1) Decreasing payments,

2) Increasing charges, and

3)

The combinations of these policy options are shown in the different versions of Table 2. For example, table 2A shows transfers based on the plan own premium with no rebalancing. Table 2A-

to compare how much each policy affects relative premiums.

As noted above, all tables are provided as a starting point to facilitate discussion of the methodology and are not a definitive analysis of the impacts of each policy. Also, this analysis does not address the option to calculate payments and charges using a rating area average premium; this option is addressed in Appendix Part 3. Further, it does not address implications of options if charges are

Table 1: Summary of Assumptions

Table 1 presents the basic assumptions for the scenario analyzed in this appendix. We consider a simplified State-wide market in which two issuers, Issuers A and B, each offer four plans, one at each benefit tier (t
adjustment transfers will impact different types of issuers, we assume that Issuer A is smaller than Issuer B, and also experiences favorable selection by attracting lower risk enrollees.

Enrollment. First, we assume that most consumers will choose plans with higher cost sharing and lower premiums. Enrollment would be distributed as shown in the first column, with Bronze plans having the greatest enrollment (100,000 + 400,000 = 500,000 member months), and

are otherwise arbitrary.

Risk

diagnostic indicators to predict medical costs. The eight values in this column are chosen to reflect reasonable assumptions about the competitive landscape. Higher-risk people tend to choose more generous insurance coverage; as a result, we assume that the higher metal levels enroll higher-risk populations than the lower metal levels. The other assumption these risk scores reflect is that Issuer A attracts lower risk enrollees than Issuer B; this may happen by design or by chance. This assumption is evident from the fact that risk scores for Issuer A are lower than

To perform risk adjustment, normalized risk scores are used. Normalized risk scores show risks relative to the overall enrollment-weighted State average risk, and thus the average normalized risk score in a State is exactly 1.0, by definition. These are the values presented on the table and used throughout this analysis. (In this simplified example, the risk scores do not take into account permissible rating variation, which is addressed in Part 4).

stay in the market). These revenue requirements will later become the basis for calculating the premiums each plan will charge.

Base expenditures. rovides a baseline value for the expected

which we interpret as the average or expected medical costs incurred by an individual whose normalized risk score is exactly 1.0.

Cost factors. The actual costs plans will face, however, will vary due to three factors:

1) *Induced Demand*. More generous insurance coverage is typically associated with higher health care utilization. This pattern is reflected in the column la
which arbitrarily indicates that Gold enrollees will incur 10% more claims expense than Bronze or Silver enrollees, and Platinum enrollees will incur 25% more. Note that this induced demand is a distinct reason for higher costs, separate from the greater health risks that are also found in the more generous metal tiers.

2) *Plan Costs*. Some issuers impose tighter utilization and cost controls than others. In this example, we assume Issuer A achieves lower costs through these types of methods, and

   are assumed to be 4% above average. (Note that the State average across all enrollees is approximately 1.00 because Issuer B is so much larger than Issuer A.)

3) *Actuarial Value* (not shown). The distinguishing feature of the metal levels is their actuarial value, measured as the percent of total claims expense that the plan will pay for. Bronze plans are required to have an actuarial value of 60%, which means that the plan pays 60% of eligible claims expense, while the enrollee is responsible for the other 40% out of pocket. Higher metal levels indicate higher actuarial values: 70%, 80% and 90%, respectively, for Silver, Gold and Platinum. Plans with higher actuarial values will need more revenue to cover their costs.

Again, these examples are for illustrative purposes only.

Aggregate plan revenue requirement. Using these cost factors, we compute the aggregate revenue requirement for each plan. Conceptually, this dollar figure measures how much total revenue each plan will need to cover its operating expenses before any payments or charges are incurred from risk adjustment.

Mathematically, the aggregate plan revenue requirement is calculated as the product of all the assumptions made for each plan:

Aggregate plan revenue requirement =
(Base expenditure)
× *(Normalized risk score)*
× *(Induced demand)*
× *(Plan cost factor)*
× *(Actuarial value)*
× *(Member months)*

The final two columns on this table show two different measures of premiums charged per

Revenue required

would charge its actual enrollees to cover its revenue requirement. This value is calculated as the aggregate plan revenue requirement divided by the number of member months.

Risk-standardized revenue required

plan would need to charge if members had an average risk score of 1.0, rather than their actual

ronze plan can cover its costs with a premium of $229.

average risks (1.0), the plan would need $229 ÷ 0.90 = $255 per member per month to cover its expected costs. This measure is the most appropriate way to compare premiums across plans,

y risky

populations and no risk adjustment were necessary. It is thus used as a point of comparison, or benchmark, of the impact of the payments and charges options on premiums.

f „ Ž ‡ x ã ‹ • • *f* † Œ — • – • ‡ • – ' *f* › • ‡ • – • … Š *f* ” ‰ ‡ • „ *f* • ‡ † balancing *f* • • ï ' ™ • ' ” ‡

This table presents the first of the possible policy combinations for computing risk adjustment payments/charges and balancing those payments and charges to achieve budget neutrality. For ease of comparison, these tables all present the same information: estimates of the premiums that each plan would choose after anticipating its own costs including risk adjustment payments and charges.

Each version of Table 2 begins with a column showing the **a eee eee** ,
including any anticipated payments/charges from risk adjustment. In essence, these totals are a result of plan managers estimating their operating expenses and adding any expected risk transfer charges (or subtracting any expected payments) to arrive at required revenues. This is the premium revenue that each plan will need to collect from its members.

risk adjustment payment or charge under the calculation method being described. For Table 2A, risk adjustment payments and charges are based o

Plans with above average risk receive risk adjustment payments; plans with below average risk

al risks are; negative values indicate a plan with lower-than-average risks, and positive values indicate plans with higher-risk enrollees.[4] This difference is

-months, to arrive at the total risk adjustment payment (or, if negative, charge) due to each plan.

[4] The plan average normalized risk score is the À Œ P } (‰ o v [• v Œ } o o Œ] • l • } Œ • (Œ } u š Z model. In this simplified example, the risk scores do not take into account permissible rating variation, which is addressed in Part 4.

An algebraic restatement of the above description is as follows:

Risk adjustment payment or charge =
(Normalized risk score - 1)
× *(Plan premium)*
× *(Member months)*

The baseline premium, which in this option is a plan premium, is the part of the calculation that changes as we move to Tables 2B and 2C, in which risk adjustment payments/charges are based on *State average* premiums. will be based on the amount risk adjustment payments or charges, and the amount of the

participating in the risk adjustment mechanism, we calculate premiums iteratively. Computationally, the premium for each plan is estimated based on its revenue requirements prior to the implementation of risk adjustment. Risk adjustment payments and charges are then estimated and premiums are recalculated. Risk adjustment payments and charges are then re-estimated based on the new premiums, and premiums are again recalculated. This process continues until no changes in estimated risk-adjustment payments and charges are observed.

The second column of Table 2A shows these risk transfer payments and charges using the above calculation method. Three plans have average risk scores lower than 1.0, and as a result they face risk adjustment charges. The other five plans have risk scores greater than 1.0, and risk adjustment will provide these plans with extra revenue to cover their risk-driven costs. Note that the total payments and charges do not net out to zero. (This is not true when payments and charges are calculated from State average premiums; see Table 2B.) Because payments and charges are designed to be
methods will be discussed with Tables 2A-1 through 2A-3; here in Table 2A, we consider the effects of risk adjustment without any re-balancing.

sion-making process by working through these three columns backwards. Based on assumptions presented earlier, plans know their expected liabilities before risk adjustment (the third column), and they want to set premiums such that they have this much revenue available after a risk adjustment payment or charge is imposed. The risk adjustment payments and charges are shown in the second column, which implies each plan will **Revenue requirement including risk payment (charge)**

Revenue available after risk payment (charge) =
Revenue requirement including risk payment (charge)
+ *Risk adjustment payment (charge)*

Implications for premiums

The second section of this table illustrates the effect of risk adjustment payments or charges on monthly premiums. We use the risk-standardized required revenue as a benchmark for comparisons in all versions of these calculations. These values, calculated in Table 1, allow us to compare premiums across plans while controlling for enrollee risk variation. In some sense, it -risky populations. Other factors that affect costs and therefore premiums are allowed to remain, but these risk-

with an average risk score equal to 1.0.

Premium after risk payment (charge)

premiums will change depending on the method of calculating payments and charges. This is the including any anticipated risk payment or charge divided by the number of member months. Intuitively, the plan sets its premium such that total revenue generated (first column), adjusted by its risk payment or charge (second column), leaves enough revenue to cover anticipated costs (third column). Ideally, these premiums should closely approximate the benchmark premiums, which, as mentioned above, show the premiums if all plans enrolled members with the same average risks and thus no risk adjustment were necessary.[5]

before accounting for the need to balance payments and charges, the actual premiums will coincide with the benchmark values. Plans will set their premiums as if they were expecting their enrollees to have an average level of risk. This is logical, because risk adjustment should remove

However, the results shown here are incomplete as a real-world policy because the risk adjustment payments and charges do not sum to zero; the payments due to high-risk plans are greater than the charges collected from low-risk ones. To address the imbalance, payments will need to be reduced, charges will need to be increased, or both. These three calculations are the scenarios presented in Tables 2A-1, 2A-2 and 2A-3.

The last two columns in Table 2A compare the premiums after risk payment (charges) to the benchmark premiums. One comparison is the difference in dollar terms, and the other shows percentage differences. These are included to provide an indication of how much each payment and charge method causes premiums to differ from the benchmark value. Again, in this version,

[5] In practice, plans would not necessarily charge the same premiums even if risk adjustment completely compensated for risk selection differences. This is because of allowed variations in rating by factors such as age, tobacco use, and geography. The methods to address permissible rating variation are discussed in Part 4 of this appendix.

which does not yet account for the balancing options, the observed premiums exactly match the benchmarks, so these differences are all zero.

Table 2A- w ã ‹ • • ƒ † Œ — • – • ‡ • – ’ ƒ › • ‡ • – • … Š ƒ ” ‰ ‡ • „ ƒ • ‡ † ‘ • ’ Ž ƒ • • ï ‘ ™ • ’ ” ‡ • decreasing payments

unbalanced, meaning that they do not sum to zero. Table 2A-1 illustrates one option for rebalancing the payments and charges: decreasing payments to equal the funds available from charges.

To rebalance payments, the imbalance is distributed across all the above-average-risk plans in proportion to the risk payment each would have received before balancing. In the second column of Table 2A-1, we can see the effect of this rebalancing as a reduction in all the positive risk adjustment payment values, while the negative values (charges) remain unchanged.

To offset the lower expected payments, these five plans would need to generate more revenue

(column 5) would rise accordingly.

The overall impact of this policy would be an increase in premiums for plans with high-risk enrollees. Plans that rely on risk transfer payments to cover a large share of their costs would need to impose the largest increases in premiums, relative to the benchmark, to offset the losses 5 (7.7%) higher than the benchmark risk-standardized premium before risk adjustment.

Table 2A-2: Ris• ƒ † Œ — • – • ‡ • – ’ ƒ › • ‡ • – • … Š ƒ ” ‰ ‡ • „ ƒ • ‡ † ‘ • ’ Ž ƒ • • ï ‘ ™ • ’ ” ‡ • ‹ — increasing charges

Table 2A-2 illustrates a second approach to rebalancing payments and charges: increase the charges imposed on the below-average risk plans to match the payments awarded to the high-risk plans. To rebalance payments, the imbalance is distributed across all the below-average-risk plans in proportion to the risk charge each would have received before balancing. In the second column of Table 2A-2, we can see the effect of this rebalancing as an increase in all the negative risk adjustment values (charges), while the positive values (payments) remain unchanged.

Compared to the previous rebalancing example (decreasing payments), the same funding gap will now be spread among the much larger populations in the three low-risk plans, resulting in smaller premium increases. The largest increase would be $12 (4.7%) above the unbalanced premium ($255) shown in table 2A. However, these increases would affect a much larger population than we observed in the decreasing-payments approach and affect the plans with the lowest premiums.

Table 2A- y ã ‹ • • ƒ † Œ — • – • ‡ • – ' ƒ › • ‡ • – • … Š ƒ " ‰ ‡ • „ ƒ • ‡ † ' • ' Ž ƒ • • ï ' ™ • ' " ‡ •
increasing charges & decreasing payments

The third and final rebalancing option is to essentially split the shortfall between the first two. Instead of imposing the entire shortfall on one subset of the plans, the gap is divided equally between both subsets: payments are reduced and charges are increased. Compared to the no-rebalancing case, premiums are higher for all plans; however, the increases are shared across low and high risk plans.

Table 2B: Risk adjustment payments (charges) based on weighted State average premium; no balancing of payments & charges

Table 2B presents a second method for calculating risk adjustment payments and charges: using weighted State

Column 3 of Table 2B is identical to Table 2A; after risk adjustment, each plan still needs the same amount of revenue to pay its expected costs. The risk adjustment calculations in column 2 drive all other changes in the table. The new calculation differs in only one way: instead of using enrollment weighted State average premium.[6]

The calculation is:

Risk adjustment payment or charge =
(Normalized risk score - 1)
× *(Weighted State average plan premium)*
× *(Member months)*

This approach of using weighted State average premiums causes two d
own-
from its choice of what premium to charge. Another difference is that the payments and charges now balance. This happens because the payments and charges are all calculated from the same dollar value for premiums, rather than from eight different plan-specific premiums. This, combined with the fact that plan risk scores average 1.0, yields the zero-sum result.

[6] µ • ‰ o v [• ‰ Œ u] µ u • Á] o o • } v š Z u } µ v š } (‰ o v [• Œ] • l i µ • š u µ • š Z u } µ v š } (š Z ‰ o v [• Œ] • l i µ • š u v š ‰ Ç u v š • } Œ Z Œ P • Á] o o all plan participating in the risk adjustment mechanism, we calculate premiums iteratively. Computationally, the premium for each plan is estimated based on its revenue requirements prior to the implementation of risk adjustment. Risk adjustment payments and charges are then estimated and the premiums are recalculated. Risk adjustment payments and charges are then re-estimated based on the new premiums, and the premiums are again recalculated. This process continues until no changes in estimated risk-adjustment payments and charges are observed.

The weighted State average basis for these calculations has a straightforward effect: those low-risk plans whose premiums are below average will see their charges increase, while high-risk plans with above-average premiums will collect smaller payments. As a result, all eight plans must generate more revenue from premiums. We can see this impact in columns 5 through 7, where the premiums after risk adjustment are above the benchmark premiums for all plans. In Table 2A-3, in which rebalancing was achieved by charging more from the low-risk plans and paying less to the high-risk ones.

Compared to Table 2A- State average calculations in Table 2B result in greater premium increases among plans whose premiums are far from the State average. with the highest premium among the eight plans must charge $71 (12.1 extremely low-premium Bronze plan is expected to charge an additional $8 (3.2%) relative to the benchmark. On the other hand, plans whose premiums are close to the State average are able to charge premiums that closely approximate their benchmark values.

Because payments and charges will always sum to zero under the weighted State-average premium calculation method, there is no need to rebalance them.

Table 2C: Risk adjustment payments (charges) based on weighted State average premium adjusted for actuarial value; no balancing of payments & charges

The 2C series of tables presents a third method for calculating risk adjustment payments and charges: using weighted State average premiums *adjusted for actuarial value*. This option adds one change to the method presented in Table 2B, in which payments and charges were based on (unadjusted) State average premiums.

This measure of State-wide average costs would control for these variations in plan design reflected in their actuarial values. m[7] is divided by the actuarial value proportion: 60%, 70%, 80% or 90%, depending on the metal level.

Plan premium adjusted for AV =
(Plan premium)
÷ Actuarial value

[7] µ• ‰o v[• ‰Œ u]µu• Á]oo • }v šZ u}µvš }(‰o v[• Œ]•l iµ•šu µ• šZ u}µvš }(šZ ‰o v[• Œ]•l iµ•šu vš ‰ Çu vš• }Œ Z ŒbyP • Á]oo all plan participating in the risk adjustment mechanism, we calculate premiums iteratively. Computationally, the premium for each plan is estimated based on its revenue requirements prior to the implementation of risk adjustment. Risk adjustment payments and charges are then estimated and the premiums are recalculated. Risk adjustment payments and charges are then re-estimated based on the new premiums, and the premiums are again recalculated. This process continues until no changes in estimated risk-adjustment payments and charges are observed.

The weighted State average premium adjusted for actuarial value, therefore, provides an indicator of average plan costs, controlling for any plan design differences. However, risk adjustment should not compensate plans for expenses that they would not cover, so the payments and charges calculations must take actuarial value into account. As a result, the formula becomes:

Risk adjustment payment or charge =
(Normalized risk score ±1)
× *Weighted State average plan premium adjusted for AV*
× *Actuarial value*
× *Member months*

The key difference in this formula compared to Table 2B is the multiplic

there is no reason to offer 100% compensation for risk-driven costs if the plan will actually be responsible for only 90% or 80% of those costs.

adjustment, we calculate premiums iteratively by including the amount of payment or charge the plan would receive under each approach to calculate and balance payments and charges.

Table 2C presents the results without any rebalancing of the payments and charges. Note that the amount of imbalance, $2,000,091, is considerably smaller than the imbalance in Table 2A when t-risk adjustment plan premiums are generally close to the benchmark values, though once again we see that the very high-risk and very low-risk plans are the ones for which the deviations will be largest. This continues to be a result of their premiums being farthest from the State average, even though the State average is computed slightly differently in this option.

Tables 2C-1, 2C-2 and 2C-3: Risk adjustment payments (charges) based on weighted State average premium adjusted for actuarial value; various methods for balancing payments and charges

As we saw in the 2A series of tables, rebalancing is again necessary to correct for the shortfall of charges relative to payments. Tables 2C-1, 2C-2 and 2C-3 show calculations using the same three possible approaches to this problem: decreasing payments, increasing charges, or a combination of both.

Once again, the rebalancing effectively intensifies the premium adjustments issuers make in response to risk adjustment. An imbalance creates the need for additional funds which must be -risk plans by decreasing the payments they receive, those plans must raise their premiums to compensate. This

method is illustrated in Table 2C-1, where we again
Platinum plan, whose $645 premium would be $60 (10.3%) above its benchmark level. Table 2C- -risk plans by increasing their charges. The biggest impact is evident in the lowest-risk plan, Issuer whose premium would be $13 (5.2%) above its benchmark value. Finally, the split-the-shortfall rebalancing divides the $2,000,091 gap between the three low-risk and the five high-risk plans. The resulting premium impacts shown on Table 2C-3 are moderated versions of those seen in Tables 2C-1 and 2C-2.

Table 3: Impact of risk adjustment on ratio of post-risk payment (charge) premium to risk-standardized premium before risk payment (charge)

Table 3 provides a summary of previous results to enable comparisons across policy options. The -risk adjustment premiums relative to the risk-standardized benchmark that represents the value offered by each plan. These values are expressed as a percent deviation from the benchmark. As noted earlier, all tables are provided as a starting point to facilitate discussion of the methodology. This simplified example is not a definitive analysis of the impacts of each policy.

The first column shows the premium-benchmark ratio in the absence of any risk adjustment. It presents how far premiums would deviate from the benchmark values without any risk adjustment taking place. Note that these values are equal to the normalized risk scores minus 1 of each plan. This reflects the fact that the deviation of premiums from the benchmark value is due to the variation in enrollee risks across plans. These are the premium variations that risk adjustment seeks to erase.

The subsequent three blocks of premium-benchmark ratio values illustrate to what extent each combination of risk adjustment payments and charges and rebalancing methods is able to remove the effects of variation in risk across plans on premiums. As noted previous
premiums depends on the amount received from risk adjustment, we calculate premiums iteratively by including the amount of payment or charge the plan would receive under each approach to calculate and balance payments and charges.

The first block presents all three different payment/charge calculations using the same rebalancing method: reducing payments to high-risk plans. As a result, the post risk adjustment premiums are greater than the benchmark in the high-risk plans. For example, - premium case, post risk adjustment premiums are the same as the benchmark (all have values of 0), and the impact on premiums occurs entirely among the five high-risk plans, whose premiums are all above their benchmark values because their payments were reduced to the amount collected in charges.

The second block presents results for all three payment/charge calculations after rebalancing by increasing charges. In these scenarios, the rebalancing requires low-risk plans to increase their premiums to make up for the additional risk adjustment charges. As a result, their premiums are relatively higher than in the first block, while premiums for high risk plans are relatively lower than in the first block.

Finally, the third block presents the -the-
risk adjustment is shared across all eight plans.

Note that the middle columns in each of the
are identical to each other when the risk adjustment payment or charge is based on the weighted average premium. As seen in Table 2B, this is because calculating payments and charges from weighted State average premiums (unadjusted for actuarial value) results in balanced, zero-sum payments and charges. As a result, no rebalancing is needed.

Introduction

This appendix creates a new market scenario, repeats the prior options for calculating and balancing payments and charges, and adds two new options for calculating the baseline premium: rating area average premiums, and rating area average premiums adjusted for actuarial value. A rating area is a geographic area smaller than a State in which issuers may set similar prices. Part 2 of this appendix illustrated risk adjustment within a State that consisted of a single rating area. Part 3 illustrates risk adjustment in a State that consists of multiple rating areas. This illustration is important because most States will include multiple rating areas, and most States will exhibit wide variation in costs across these rating areas. This example addresses implications of alternative methods across rating areas with different expenditure patterns.

This appendix has a similar structure and builds on the calculations presented in Part 2. We begin by describing a new set of assumptions for the insurance market participants in three different rating areas, described in Table 1. Next, we show the impacts of five different methods for calculating risk adjustment payments/charges:

A)

B) Payments/charges based on the weighted State average premium (Table 2B)

C) Payments/charges based on the weighted rating area average premium (Table 2C)

D) Payments/charges based on the weighted State average premium with an adjustment for

E) Payments/charges based on the weighted rating area average premium with an adjustment

Then, following each of the tables in which aggregate risk adjustment payments may exceed risk adjustment charges, we consider different options for balancing payments and/or charges to

1) Decreasing payments,

2) Increasing charges, and

3)

Table 2D-3: Risk adjustment payments (charges) based on weighted State average premium adjusted for actuarial value; balanced by increasing charges and decreasing payments

Table 2E: Risk adjustment payments (charges) based on weighted rating area average premium adjusted for actuarial value; no balancing of payments & charges

Table 2E-1: Risk adjustment payments (charges) based on weighted rating area average premium adjusted for actuarial value; balanced by decreasing payments

Table 2E-2: Risk adjustment payments (charges) based on weighted rating area average premium adjusted for actuarial value; balanced by increasing charges

Table 2E-3: Risk adjustment payments (charges) based on weighted rating average premium adjusted for actuarial value; balanced by increasing charges and decreasing payments

Table 3: Post risk-adjustment payment (charge) premium as a percent of risk-standardized premium before risk adjustment payment (charge)

Table 1: Summary of Assumptions

Table 1 presents the basic assumptions for the scenario analyzed in this appendix. In this example, we consider a simplified State-wide market in which two issuers, Issuers A and B, each offer two plans, Bronze and Silver, at different prices.

Rating Areas. The main difference between this example and those in Part 2 of the Appendix is the presence of geographically-distinct rating areas. Rating area 1 is the largest with total enrollment in its four plans of 673,000 member months, followed by Rating area 2 with 425,000 member months in four plans, and Rating Area 3 is the smallest with only one issuer (A) offering plans and 80,000 member
rating areas, with Issuer B completely absent from Rating area 3. As will be described below, the rating areas are also distinguished by varying enrollee risks and base monthly expenditures.

Enrollment. As before, we continue to assume that most consumers will choose plans with

Bronze plan
area.

Risk
distributed across issuers, plans and rating areas. (In this simplified example, the risk scores do not take into account permissible rating variation, which is addressed in Part 4). We continue to assume that higher-risk people will tend to choose more generous insurance coverage. As a result, within each rating area, each i
Bronze plan. In addition, we allow one Issuer (B) to systematically attract lower risks than the
Issuer
Finally, we also allow slight variations in mean risk scores across rating areas, with Rating area

reflects historical patterns of utilization.

The next section of t

stay in the market). These revenue requirements will later become the basis for calculating the premiums each plan will charge.

Base expenditures

average or expected medical costs incurred by an individual whose normalized risk score is exactly 1.0. We assume these costs are equal across plans and metal levels, but they are allowed to vary across rating areas. Specifically, we expect that providing health services is costlier in

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would charge its actual enrollees to cover its revenue requirement. This value is calculated as the aggregate plan revenue requirement divided by the number of member-months.

Risk-standardized revenue required

plan would need to charge if its members had an average risk score of 1.0, rather than their actual risks. So for examp Rating area 2 can cover its costs with a premium

had average risks (1.0), the plan would need $218 ÷ 0.85 = $255 per member per month to cover its expected costs. This measure is the most appropriate way to compare premiums across plans,

stributed if they all enrolled equally risky

populations and no risk adjustment were necessary. It is thus used as a point of comparison, or benchmark, of the impact of the payments and charges options on premiums.

Table 2A: Risk adjustment payments (char ‰ ‡ • „ ƒ • ‡ † ‘ • ’ Ž ƒ • • ï ‘ ™ • ’ ” ‡ • ‹ — • • â • ‘ „ ƒ Ž ƒ •

This table presents the first of the possible policy combinations for calculating and balancing payments and charges. For ease of comparison, these tables all present the same information: estimates of the premiums that each plan would choose after anticipating its own costs including risk adjustment payments and charges.

Each version of Table 2 begins with a block of three columns showing the **a eee requirements** before and after any anticipated payments/charges from risk adjustment. In essence, these totals are a result of plan managers estimating their operating expenses and adding any expected risk transfer charges (or subtracting any expected payments) to arrive at required revenues. This is the premium revenue that each plan will need to collect from its members.

risk adjustment payment or charge under the calculation method being described. For Table 2A, risk adjustment payments and charges are based on each

Plans with above average risk receive risk adjustment payments; plans with below average risk

gives an indicator of how far from average t

plan with lower-than-average risks, and positive values indicate plans with higher-risk enrollees.[8]

-months,

to arrive at the total risk adjustment payment (or, if negative, charge) due to each plan.

An algebraic restatement of the above description is as follows:

[8] d Z ‰ o v À Œ P v } Œ u o] Ì Œ] • l • } Œ] • š Z À Œ P } (‰ o v [• v Œ } o o model. In this simplified example, risk scores do not take into account permissible rating variation, which is addressed in Part 4 of this appendix.

Risk adjustment payment or charge =
(Normalized risk score ±1)
× *(Plan premium)*
× *(Member months)*

The baseline premium, which in this option is the plan premiums, is the part of the calculation that changes as we move to Tables 2B through 2E, in which risk adjustment payments/charges are based on weighted *State or rating area average* premiums.

Becaus

on the premiums charged by all plan participating in the risk adjustment mechanism, we calculate premiums iteratively. Computationally, the premium for each plan is estimated based on its revenue requirements prior to the implementation of risk adjustment. Risk adjustment payments and charges are then estimated and the premiums are recalculated. Risk adjustment payments and charges are then re-estimated based on the new premiums, and the premiums are again recalculated. This process continues until no changes in estimated risk-adjustment payments and charges are observed.

The second column of Table 2A shows these risk adjustment payments and charges using the above calculation method. Five plans
Rating area 3 have average risk scores lower than 1.0, and as a result they face risk adjustment charges. The other five plans have risk scores greater than 1.0, and risk adjustment will provide these plans with extra revenue to cover their risk-driven costs. Also, the rating area totals indicate that Rating area 1 is a net recipient of payments, while Rating areas 2 and 3 are charged. Note that the total payments and charges do not net out to zero. (This is not true when payments and charges are calculated from State average premiums; see Table 2B.) Because these payments and charges will
be discussed with Tables 2A-1 through 2A-3; here in Table 2A, we consider the effects of risk adjustment without any re-balancing.

In a sense, we can follow the plans -making process by working through these three columns backwards. Based on assumptions presented earlier, plans know their expected liabilities (the third column, evenue available after risk payment) and they want to set premiums such that they have this much revenue available after a risk adjustment payment or charge is imposed. The payments and charges are shown in the second column, which implies each plan will set premiums to generate the dollar amounts shown in the first column, labeled

Revenue available after risk payment (charge) =
Revenue requirement including risk payment (charge)
+ *Risk adjustment payment (charge)*

Implications for premiums

The second section of this table illustrates the effect of risk adjustment payments/charges on monthly premiums. We use the risk-standardized required revenue as a benchmark for comparisons in all versions of these calculations. These values, calculated in Table 1 and re- chmark: risk-
to compare premiums across plans while controlling for enrollee risk variation. In some sense, nrolled
equally-risky populations. Other factors that affect costs and therefore premiums are allowed to remain, but these risk-
enrolled a membership with an average risk score equal to 1.0.

Premium after risk payment (charge)
premiums will change depending on the method of calculating payments and charges. Its value is including any anticipated risk payment or charge divided by the number of member months. Intuitively, the plan sets its premium such that total revenue generated (first column), adjusted by its risk payment or charge (second column), leaves enough revenue to cover anticipated costs (third column). Ideally, these premiums should closely approximate the benchmark premiums, which, as mentioned above, show the premiums if all plans enrolled members with the same average risks and thus no risk adjustment were necessary.[9]

results provide a starting point for the later comparisons. Once again we can see that, before accounting for the need to balance payments and charges, the actual premiums will coincide with the benchmark values. Plans will set their premiums as if they were expecting their enrollees to have an average level of risk. This is logical, because risk adjustment should remove

However, the results shown here are incomplete as a real-world policy because the risk adjustment payments and charges do not sum to zero; the payments due to high-risk plans are $2,832,386 greater than the charges collected from low-risk ones. To address the imbalance, payments will need to be reduced, charges will need to be increased, or both. These are the scenarios presented in Tables 2A-1, 2A-2 and 2A-3.

Table 2A-w ã ‹ • • ƒ † Œ — • – • ‡ • – ’ ƒ › • ‡ • – • … Š ƒ ” ‰ ‡ • „ ƒ • ‡ † ‘ • ’ Ž ƒ • • ï ‘ ™ • ’ ” ‡ •
decreasing payments

As described above, the raw payments
unbalanced, meaning that they do not sum to zero. Table 2A-1 illustrates one option for

[9] In practice, plans would not necessarily charge the same premiums even if risk adjustment completely compensated for risk selection differences. This is because of allowed variations in rating by factors such as age, tobacco use, and geography. The methods to address permissible rating variation are discussed in Part 4 of this appendix.

rebalancing the payments and charges: reducing payments to equal the funds available from charges.

To rebalance payments, the imbalance is distributed across all the above-average-risk plans in proportion to the risk payment each would have received before balancing. In the second column of Table 2A-1, we can see the effect of this rebalancing as a reduction in all the positive risk adjustment payment values, while the negative values (charges) remain unchanged.

To offset the lower expected payments, these five plans would need to generate more revenue from premiums in order to fully cover their costs. As a result, their premiums after risk payment (column 5) would rise.

The overall impact of this policy to balance payments and charges by reducing payments would be an increase in premiums for plans with high-risk enrollees. Plans that rely on risk transfer payments to cover a large share of their costs would need to impose the largest increases in premiums, relative to the benchmark, to offset the losses from rebalancing. For example, in R ts benchmark value of $411, indicating that this plan must raise its premiums to offset some of the risks not compensated by risk adjustment payments.

Note that since this example differs from the scenario in Part 2, the premium impacts cannot be compared to those in Part 2. The current scenario includes only Bronze and Silver plans with relatively smaller differences in risk as compared to the Bronze through Platinum plans in Part 2.

Table 2A- x ã ‹ • • ƒ † Œ — • – • ‡ • – ’ ƒ › • ‡ • – • … Š ƒ ” ‰ ‡ • „ ƒ • ‡ ‚ ‘ • ‚ ‘ ž ƒ • ï ‘ ™ • ’ ” ‡ • increasing charges

Table 2A-2 illustrates a second approach to rebalancing the imbalance in payments and charges: increase the charges imposed on the below-average risk plans to match the payments awarded to the high-risk plans. To rebalance payments, the imbalance is distributed across all the below-average-risk plans in proportion to the risk charge each would have received before balancing. In the second column of Table 2A-2, we can see the effect of this rebalancing as an increase in all the negative risk adjustment values (charges), while the positive values (payments) remain unchanged.

Compared to the previous rebalancing example (decreasing payments), the same funding gap will now be spread among the much smaller populations in the five low-risk plans, resulting in larger premium increases per member. The largest increase would be $17 (6.7%) above the Rating area 2. These increases would affect a much smaller population than we observed in the decreasing-payments approach, and affect the plans with the lowest premiums.

Table 2A- y ã ‹ • • ƒ † Œ — • – • ‡ • – ’ ƒ › • ‡ • – • … Š ƒ ” ‰ ‡ • „ ƒ • ‡ † ‘ • ’ Ž ƒ • • ï ‘ ™ • ’ ” ‡ • increasing charges & decreasing payments

The third and final rebalancing option is to essentially split the shortfall between the first two. Instead of imposing the entire $2,832,386 shortfall on one subset of the plans, the gap is divided equally between both subsets: payments are reduced by $1,416,193 (15.4%), and charges are increased by $1,416,193 (22.2%). Compared to the no-rebalancing case, premiums are higher for all plans; however, the increases are shared across low and high risk plans.

Table 2B: Risk adjustment payments (charges) based on State average premium; no balancin g of payments & charges

Table 2B presents a second method for calculating risk adjustment payments and charges: using State
described in Table 2B presented in Part 2.

Column 3 of Table 2B is identical to Table 2A; after risk adjustment payments, each plan still needs the same amount of revenue to pay its expected costs. The risk adjustment calculations in column 2 drive all other changes in the table relative to 2A. The new calculation differs in only

State average premium, as shown:

Risk adjustment payment or charge =
(Normalized risk score ±1)
× *(Weighted State average premium)*
× *(Member months)*

The State average premium is calculated from the premiums[10] of all plans in the State, weighted by the enrolled member-months:

its choice of what premium to charge. Another difference is that the Statewide payments and charges now balance. This happens because the payments and charges are all calculated from the same dollar value for premiums, rather than from ten different plan-specific premiums. This, combined with the fact that plan risk scores average 1.0, yields the zero-sum result. As discussed earlier, Statewide risk adjustment calculations make no allowance for geographically-driven cost differences across rating areas. Thus plans located in very inexpensive rating areas will generally see their risk adjustment payments or charges inflated relative to the plan own premium calculation in Table 2A, whereas those in high-cost rating areas will see their payments or charges attenuated.

Table 2C: Risk adjustment payments (charges) based on rating area average premium; no balancing of payments & charges

The 2C series of tables presents a new method for calculating payments and charges not seen in the previous set of tables: using rating-area average premiums as the basis for risk adjustment. As described earlier, this method bases payments and charges on the prevailing costs in their own geographic area, rather than the Statewide method that averages plan premiums which may reflect different underlying costs.

Again, column 3 of Table 2C is unchanged; before risk adjustment payments, each plan still needs the same amount of revenue to pay its expected costs. The risk adjustment calculations in Tables 2A and 2B. Instead of usi
rating area average premium, as shown:

Risk adjustment payment or charge =
(Normalized risk score ±1)
× *(Weighted rating area average plan premium)*
× *(Member months)*

The rating area average premium is calculated from the premiums[11] of all plans in that rating area, weighted by enrolled member-months:

[11] µ• ‰o v[• ‰Œ u]µu• Á]oo • }v šZ u}µvš }(‰o v[• Œ]•l iµ•šu µ• šZ u}µvš }(šZ ‰o v[• Œ]•l iµ•šu vš ‰ Çu vš• }Œ Z ŒP • Á]oo all plan participating in the risk adjustment mechanism, we calculate premiums iteratively. Computationally, the premium for each plan is estimated based on its revenue requirements prior to the implementation of risk adjustment. Risk adjustment payments and charges are then estimated and the premiums are recalculated. Risk adjustment payments and charges are then re-estimated based on the new premiums, and the premiums are again recalculated. This process continues until no changes in estimated risk-adjustment payments and charges are observed.

Rating area average premium =

Sum over all plans in the rating area (Plan premium × Plan member months)
÷ Sum over all plans in the rating area (Plan member months)

-risk adjustment premiums compared to the risk-standardized benchmarks. A comparison to the premiums in the State-average calculation (Table 2B) is illustrative. Because they operate in a high-cost region, plans in Rating area 1 will see their payments or charges increase relative to the previous, State-average-based calculations. Plans in the low-cost Rating area 3, on the other hand, will receive or pay smaller amounts than before. In addition, the total imbalance between charges and payments ($946,279) is far smaller

being ten widely-dispersed values, compared to only three rating area average values. As a result of this small imbalance, the effects of re-balancing, shown in Tables 2C-1, 2C-2 and 2C-3, will be small.

Tables 2C-1, 2C-2 and 2C-3: Risk adjustment payments (charges) based on rating area average premium; various methods for balancing payments and charges

As in Table 2A, the gap between aggregate charges and payments must be returned to balance in this case. Tables 2C-1, 2C-2 and 2C-3 illustrate the effects of the same three possible methods: decreasing payments to high-risk plans, reducing charges against low-risk plans, and an equal combination of both. Table 2C-2 shows that in this example the impact of rebalancing on individual plan premiums is largest in the increasing charges case, because the missing revenue must be collected from plans with small enrollments. This result is qualitatively similar to what

Table 2D: Risk adjustment payments (charges) based on State average premium adjusted for actuarial value; no balancing of payments & charges

The 2D series of tables presents a third method for calculating risk adjustment payments and charges: using weighted State average premiums *adjusted for actuarial value*. This adds one change to the method presented in Table 2B, in which payments and charges were based on (unadjusted) State average premiums.

In essence, some plans have high costs because they are designed to offer more generous coverage, rather than because of any inherent efficiency differences. An alternative measure of market-wide average costs would control for these variations in plan design reflected in their actuarial values.

plans, and 70% for Silver.

Plan premium adjusted for AV =
(Plan premium)
÷ Actuarial value

Note that the adjustment for actuarial value removes the variation in *what portion* of claims expense each plan will *actually* pay. The State average premium adjusted for actuarial value, therefore, provides an indicator of the average costs, controlling for plan benefit differences. This State-wide cost indicator provides a basis for calculating compensation for risk-driven cost variation across plans (rather than cost variation due to benefit differences). However, risk adjustment should not compensate plans for expenses that they would not cover, so the payments and charges calculations must take actuarial value into account. As a result, the formula becomes:

Risk adjustment payment or charge =
(Normalized risk score ±1)
× State average plan premium adjusted for AV
× Actuarial value
× Member months

The key difference in this formula compared to the one in Table 2B, in addition to the actuarial-value adjusted average p

100% compensation for risk-driven costs if the plan will actually be responsible for only 60% or 70% of those costs.

adjustment, we calculate premiums iteratively by including the amount of payment or charge the plan would receive under each approach to calculate and balance payments and charges.

Table 2D presents the results without any rebalancing of the payments and charges. Note that the amount of imbalance, $765,810, is considerably smaller than the imbalance in Tables 2A or 2C, though they do not net to zero as in the weighted State average unadjusted for actuarial value case. The plan premiums after risk payment, although they are generally close to the benchmark values, are not meaningful because they do not reflect any rebalancing.

Tables 2D-1, 2D-2 and 2D-3: Risk adjustment payments (charges) based on weighted State average premium adjusted for actuarial value; various methods for balancing payments and charges

As we saw in the 2A and 2C series of tables, rebalancing is again necessary to correct for the shortfall of charges relative to payments. Tables 2D-1, 2D-2 and 2D-3 show these rebalancing

calculations using the same three possible approaches to this problem: decreasing payments, increasing charges, or a combination of both.

Once again, the rebalancing effectively intensifies the premium adjustments issuers make in response to risk adjustment. An imbalance creates the need for additional funds which must be

-risk plans by reducing the payments they receive, those plans must raise their premiums to compensate. This example is illustrated in Table 2D-1. Table 2D-2 shows rebalancing by increasing charges on the low-risk plans, and Table 2D-3 shows rebalancing by covering the shortfall with a combination of lower payments and higher charges.

Table 2E: Risk adjustment payments (charges) based on rating area average premium adjusted for actuarial value; no balancing of payments and charges

The fifth and final method for calculating risk adjustment payments and charges is a variation on

e actuarial value adjustment were discussed above, in Table 2D. The result is a geographic area-specific measure of average premiums, while taking into account the variation in actuarial value across plans.

Tables 2E-1, 2E-2 and 2E-3: Risk adjustment payments (charges) based on rating area average premium adjusted for actuarial value; various methods for balancing payments and charges

As in the previous non-zero balance examples, rebalancing is again necessary to correct for the shortfall of charges relative to payments. Tables 2E-1, 2E-2 and 2E-3 show these rebalancing calculations using the same three possible approaches to this problem: decreasing payments, increasing charges, or a combination of both.

Table 3: Post risk-adjustment payment (charge) premium as a percent of risk-standardized premium before risk adjustment payment (charge)

Table 3 provides a summary of results to enable comparisons across policy options. As noted above, this simplified example is not a definitive analysis of the impacts of each policy. Further, since this example differs from the scenario in Part 2, the premium impacts cannot be compared to those in Part 2. The current scenario includes only Bronze and Silver plans with relatively smaller differences in risk as compared to the Bronze through Platinum plans in Part 2.

-risk adjustment premiums relative to the risk-standardized benchmark. A positive value indicates the premium will be above the benchmark; a negative value indicates the opposite.

The first column shows the premium-benchmark ratio in the absence of any risk adjustment. It presents how far premiums would deviate from the benchmark values if no risk adjustment takes

place. Note that these values are equal to the normalized risk scores minus 1 of each plan. This reflects the fact that the deviation of premiums from the benchmark value is due to the variation in enrollee risks across plans. These are the premium variations that risk adjustment seeks to erase.

The subsequent three blocks of premium-to-benchmark ratio values illustrate to what extent each combination of risk adjustment and rebalancing methods is able to remove the effects of variation in risk across plans on premiums.
depends on the amount received from risk adjustment, we calculate premiums iteratively by including the amount of payment or charge the plan would receive under each approach to calculate and balance payments and charges.

The first block presents all five different payment/charge calculations after rebalancing by decreasing payments to high-risk plans. The second block presents results for all payment/charge calculations after rebalancing by increasing charges. In these scenarios, the rebalancing requires low-risk plans to increase their premiums to make up for the additional risk adjustment charges. Note that when the relatively small low-risk plans are forced to raise their premiums to cover the payments-over-charges shortfall, the premium increases are large, because the dollar amount of the shortfall must be spread across relatively few enrollees. This is where we see some of the highest premium increases
2 indicating the plans must set premiums well above the benchmarks in order to obtain revenue to offset the large charges imposed.

-the-
risk adjustment is shared across all 10 plans.

Further, we assume that expected medical costs are the only costs insurers face. Because medical

the amount of revenue an issuer would need to exactly cover its expected costs per enrollee each month.

Because Plan A enrolls only young people, its average enrollee cost is $114, whereas the all-old population in Plan B causes its average cost to be $686 per enrollee.

Revenues. Next, we construct plan revenue. We choose premiums such that Statewide average premiums will equal $400, equal to the level of average enrollee costs.

Premiums. As mentioned earlier, the only hard constraint on premiums is that the rating based on age cannot exceed 3:1 from highest to lowest premium. Because the ratio of expected costs is even greater at 6:1, we expect insurers will choose premiums at the highest possible rating ratio. This implies monthly premiums of $600 for an old enrollee and $200 for a young one, a 3:1 ratio. Because the population is divided in half between these two groups, the overall State average premium will be $400. Meanwhile, the average premiums for Plan A will be $200, and Plan B will be $600, reflecting their exclusively young or old enrollment.

State average premium =
(Plan A average premium × Plan A enrollment share)
+ (Plan B average premium × Plan B enrollment share)

Rating curve. We assume the rating curve is established with a factor of 1.5 for old, and 0.5 for young, based on a State average approach. Once again, taking into account the complete segregation of young enrollees into Plan A and old ones into Plan B, the average rating factor for these plans will be 0.50 for Plan A and 1.50 for Plan B.

Plan average rating factor =
(Plan % old enrollees × State old rating factor)
+ (Plan % young enrollees × State young rating factor)

Plan risk scores. The risk adjustment model will produce normalized individual risk scores for each enrollee; these will be averaged to create a plan-level normalized risk score. Normalized risk scores are scores that have been calculated to assure a Statewide average equal to 1.0. In this example, to approximate risk adjustment model risk scores, we derive risk scores that conform to our assumption that the expected cost ratio between old and young enrollees is 6:1. The old and young risk scores are therefore 1.714 and 0.286, respectively. This means that the expected costs of an old enrollee ($686) will be 71.4% above the State average ($400) and six times the expected costs of a young enrollee. For a young enrollee, costs will be 71.4% below the State

0.286.

Adjusted risk scores and uncompensated risk
risk score to produce an adjusted risk score[12] and a measure of uncompensated risk.

71.4% above the State average, but its rating factor of 1.50 is only 50% above the State average rating. The difference, +0.214, is the amount of uncompensated risk Plan B faces, and the amount that risk adjustment should provide transfers to compensate for.

Uncompensated risk =
(Risk score)
±(Rating factor)

State average.

Adjusted risk score =
1 + (Uncompensated risk)

Risk adjustment payments (charges) are computed based on the uncompensated risks or, equivalently, on the adjusted risk score minus 1. Using the State average premium as the baseline for calculating payments and charges,

Risk adjustment payments (charges) per member-month =
(Uncompensated risk)
× (State average monthly premium)

State average $400 premium, would provide a risk adjustment payment of $86 per member-month, which would bring its average revenues to $686 equired revenue. For Plan A, uncompensated risks are negative (-0.214), which would create an $86 charge per member-month, reducing its actual revenues to $114, the same as its required revenues. After risk adjustment, both plans would have enough revenue to exactly cover their costs.

Alternative calculation: division risk .
As shown below the main body of Table 1, an alternative method of calculating risk transfers can n Risk

[12] The adjusted risk score would replace the normalized risk score in the calculations of payments and charges shown in Appendix Parts 1 and 2.

difference
between the average risk score and the average rating factor, this calculation considers the *share* of risk that is accounted for by rating variation. This calculation is applicable when using a

the State average premium used in the calculation above.

a measure which is akin to the adjusted risk score described earlier indicates the ratio of the average risk score to the average premium rating factor. Intuitively, it measures what portion of the rating variation across plans is justified by their risk burdens.

Division risk =
(Plan average risk score)
÷ (Plan average rating factor)

Division risk difference =
(Division risk ±1)

14.3%. These values are l

Finally, risk transfer payments are calculated by multiplying these division risk differences by

the same premiums in each ag
adjustment charge of $86, the same value calculated in the main part of the model. This charge
-month down to its required level, $114. The same outcome is seen for Plan B.

Table 1. Summary of assumptions

	Member months	Norm. risk score	Base exp.	Induced demand	Plan cost factor	Aggregate plan revenue requirement	Revenue required PMPM	Risk-std revenue required PMPM
Issuer A								
Bronze	100,000	0.90	$500	1.00	0.85	$22,872,236	$229	$255
Silver	50,000	0.98	$500	1.00	0.85	$14,612,817	$292	$298
Gold	8,000	1.09	$500	1.10	0.85	$3,258,749	$407	$374
Platinum	2,000	1.17	$500	1.25	0.85	$1,123,190	$562	$478
Issuer B								
Bronze	400,000	0.96	$500	1.00	1.04	$119,935,086	$300	$312
Silver	225,000	1.08	$500	1.00	1.04	$88,327,194	$393	$364
Gold	34,000	1.12	$500	1.10	1.04	$17,443,892	$513	$458
Platinum	14,000	1.28	$500	1.25	1.04	$10,494,320	$750	$585
Total	833,000	1.00	$500			$278,067,484		

Table 2A. Risk adjustment payments (charges) based on plans' own premiums
No balancing of payments & charges

	All amounts before balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$25,500,000	($2,627,764)	$22,872,236	$255	$255	$0	0.0%
Silver	$14,875,000	($262,183)	$14,612,817	$298	$298	$0	0.0%
Gold	$2,992,000	$266,749	$3,258,749	$374	$374	$0	0.0%
Platinum	$956,250	$166,940	$1,123,190	$478	$478	$0	0.0%
Issuer B							
Bronze	$124,800,000	($4,864,914)	$119,935,086	$312	$312	$0	0.0%
Silver	$81,900,000	$6,427,194	$88,327,194	$364	$364	$0	0.0%
Gold	$15,558,400	$1,885,492	$17,443,892	$458	$458	$0	0.0%
Platinum	$8,190,000	$2,304,320	$10,494,320	$585	$585	$0	0.0%
Total	$274,771,650	$3,295,834	$278,067,484				

Tab. 2A-1. Risk adjustment payments (charges) based on plans' own premiums
Balanced by decreasing payments

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$25,500,000	($2,627,764)	$22,872,236	$255	$255	$0	0.0%
Silver	$14,875,000	($262,183)	$14,612,817	$298	$298	$0	0.0%
Gold	$3,073,428	$185,321	$3,258,749	$374	$384	$10	2.7%
Platinum	$1,004,577	$118,613	$1,123,190	$478	$502	$24	5.1%
Issuer B							
Bronze	$124,800,000	($4,864,914)	$119,935,086	$312	$312	$0	0.0%
Silver	$83,875,434	$4,451,759	$88,327,194	$364	$373	$9	2.4%
Gold	$16,122,444	$1,321,448	$17,443,892	$458	$474	$17	3.6%
Platinum	$8,816,600	$1,677,720	$10,494,320	$585	$630	$45	7.7%
Total	$278,067,484	$0	$278,067,484				

Tab. 2A-2. Risk adjustment payments (charges) based on plans' own premiums
Balanced by increasing charges

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,692,050	($3,819,814)	$22,872,236	$255	$267	$12	4.7%
Silver	$14,979,472	($366,655)	$14,612,817	$298	$300	$2	0.7%
Gold	$2,992,000	$266,749	$3,258,749	$374	$374	$0	0.0%
Platinum	$956,250	$166,940	$1,123,190	$478	$478	$0	0.0%
Issuer B							
Bronze	$126,799,312	($6,864,226)	$119,935,086	$312	$317	$5	1.6%
Silver	$81,900,000	$6,427,194	$88,327,194	$364	$364	$0	0.0%
Gold	$15,558,400	$1,885,492	$17,443,892	$458	$458	$0	0.0%
Platinum	$8,190,000	$2,304,320	$10,494,320	$585	$585	$0	0.0%
Total	$278,067,484	$0	$278,067,484				

Tab. 2A-3. Risk adjustment payments (charges) based on plans' own premiums
Balanced by increasing charges & decreasing payments

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,144,173	($3,271,937)	$22,872,236	$255	$261	$6	2.5%
Silver	$14,932,458	($319,641)	$14,612,817	$298	$299	$1	0.4%
Gold	$3,029,215	$229,534	$3,258,749	$374	$379	$5	1.2%
Platinum	$978,068	$145,122	$1,123,190	$478	$489	$11	2.3%
Issuer B							
Bronze	$125,895,186	($5,960,100)	$119,935,086	$312	$315	$3	0.9%
Silver	$82,804,317	$5,522,876	$88,327,194	$364	$368	$4	1.1%
Gold	$15,814,961	$1,628,931	$17,443,892	$458	$465	$8	1.6%
Platinum	$8,469,105	$2,025,215	$10,494,320	$585	$605	$20	3.4%
Total	$278,067,484	$0	$278,067,484				

Table 2B. Risk adjustment payments (charges) based on average premium
No balancing of payments & charges

	All amounts before balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,312,180	($3,439,944)	$22,872,236	$255	$263	$8	3.2%
Silver	$14,907,003	($294,186)	$14,612,817	$298	$298	$1	0.2%
Gold	$3,020,662	$238,087	$3,258,749	$374	$378	$4	1.0%
Platinum	$1,006,637	$116,553	$1,123,190	$478	$503	$25	5.3%
Issuer B							
Bronze	$125,140,146	($5,205,060)	$119,935,086	$312	$313	$1	0.3%
Silver	$82,432,989	$5,894,205	$88,327,194	$364	$366	$2	0.7%
Gold	$16,068,445	$1,375,447	$17,443,892	$458	$473	$15	3.3%
Platinum	$9,179,422	$1,314,898	$10,494,320	$585	$656	$71	12.1%
Total	$278,067,484	$0	$278,067,484				

Table 2C. Risk adjustment payments (charges) based on average premium adj. for AV
No balancing of payments & charges

	All amounts before balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,018,323	($3,146,087)	$22,872,236	$255	$260	$5	2.0%
Silver	$14,926,715	($313,898)	$14,612,817	$298	$299	$1	0.3%
Gold	$2,968,417	$290,332	$3,258,749	$374	$371	($3)	-0.8%
Platinum	$963,295	$159,895	$1,123,190	$478	$482	$4	0.7%
Issuer B							
Bronze	$124,695,505	($4,760,419)	$119,935,086	$312	$312	($0)	-0.1%
Silver	$82,038,052	$6,289,142	$88,327,194	$364	$365	$1	0.2%
Gold	$15,766,626	$1,677,266	$17,443,892	$458	$464	$6	1.3%
Platinum	$8,690,460	$1,803,860	$10,494,320	$585	$621	$36	6.1%
Total	$276,067,394	$2,000,091	$278,067,484				

Tab. 2C-1. Risk adjustment payments (charges) based on average premium adj. for AV
Balanced by decreasing payments

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,038,241	($3,166,005)	$22,872,236	$255	$260	$5	2.1%
Silver	$14,928,702	($315,885)	$14,612,817	$298	$299	$1	0.4%
Gold	$3,023,755	$234,994	$3,258,749	$374	$378	$4	1.1%
Platinum	$993,771	$129,419	$1,123,190	$478	$497	$19	3.9%
Issuer B							
Bronze	$124,725,643	($4,790,557)	$119,935,086	$312	$312	($0)	-0.1%
Silver	$83,236,776	$5,090,418	$88,327,194	$364	$370	$6	1.6%
Gold	$16,086,316	$1,357,576	$17,443,892	$458	$473	$16	3.4%
Platinum	$9,034,280	$1,460,040	$10,494,320	$585	$645	$60	10.3%
Total	$278,067,484	$0	$278,067,484				

Tab. 2C-2. Risk adjustment payments (charges) based on average premium adj. for AV
Balanced by increasing charges

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,814,628	($3,942,392)	$22,872,236	$255	$268	$13	5.2%
Silver	$15,006,166	($393,348)	$14,612,817	$298	$300	$3	0.9%
Gold	$2,966,128	$292,621	$3,258,749	$374	$371	($3)	-0.9%
Platinum	$962,035	$161,156	$1,123,190	$478	$481	$3	0.6%
Issuer B							
Bronze	$125,900,413	($5,965,327)	$119,935,086	$312	$315	$3	0.9%
Silver	$81,988,472	$6,338,722	$88,327,194	$364	$364	$0	0.1%
Gold	$15,753,403	$1,690,489	$17,443,892	$458	$463	$6	1.3%
Platinum	$8,676,240	$1,818,080	$10,494,320	$585	$620	$35	5.9%
Total	$278,067,484	$0	$278,067,484				

Tab. 2C-3. Risk adjustment payments (charges) based on average premium adj. for AV
Balanced by increasing charges & decreasing payments

	All amounts after balancing			Comparison to benchmark			
	Revenue requirement including risk payment (charge	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Issuer A							
Bronze	$26,426,135	($3,553,899)	$22,872,236	$255	$264	$9	3.6%
Silver	$14,967,404	($354,587)	$14,612,817	$298	$299	$2	0.6%
Gold	$2,994,964	$263,785	$3,258,749	$374	$374	$0	0.1%
Platinum	$977,915	$145,275	$1,123,190	$478	$489	$11	2.3%
Issuer B							
Bronze	$125,312,575	($5,377,489)	$119,935,086	$312	$313	$1	0.4%
Silver	$82,613,105	$5,714,089	$88,327,194	$364	$367	$3	0.9%
Gold	$15,919,988	$1,523,904	$17,443,892	$458	$468	$11	2.3%
Platinum	$8,855,398	$1,638,922	$10,494,320	$585	$633	$48	8.1%
Total	$278,067,484	$0	$278,067,484				

Table 3. Post risk payment (charge) premium as a percent of risk-standardized premium before risk payment (charge)

	Bench-mark premium PMPM @ std. risk	Premium PMPM without risk adj	Balance by decreasing payments			Balance by increasing charges			Decr. payments/incr. charges		
			Plan owr premium	State average premium	State average AV adj. premium	Plan owr premium	State average premium	State average AV adj. premium	Plan owr premium	State average premium	State average AV adj. premium
Issuer A											
Bronze	$255	-10.3%	0.0%	3.2%	2.1%	4.7%	3.2%	5.2%	2.5%	3.2%	3.6%
Silver	$298	-1.8%	0.0%	0.2%	0.4%	0.7%	0.2%	0.9%	0.4%	0.2%	0.6%
Gold	$374	8.9%	2.7%	1.0%	1.1%	0.0%	1.0%	-0.9%	1.2%	1.0%	0.1%
Platinum	$478	17.5%	5.1%	5.3%	3.9%	0.0%	5.3%	0.6%	2.3%	5.3%	2.3%
Issuer B											
Bronze	$312	-3.9%	0.0%	0.3%	-0.1%	1.6%	0.3%	0.9%	0.9%	0.3%	0.4%
Silver	$364	7.8%	2.4%	0.7%	1.6%	0.0%	0.7%	0.1%	1.1%	0.7%	0.9%
Gold	$458	12.1%	3.6%	3.3%	3.4%	0.0%	3.3%	1.3%	1.6%	3.3%	2.3%
Platinum	$585	28.1%	7.7%	12.1%	10.3%	0.0%	12.1%	5.9%	3.4%	12.1%	8.1%

The comparisons in this table are specific to this example and should not be read as an analysis of the impact of payments and charges in general.

Table 1. Summary of assumptions

		Member months	Norm. risk score	Base exp.	Induced demand	Plan cost factor	Aggregate plan revenue requirement	Revenue required PMPM	Risk-std revenue required PMPM
Rating Area 1									
Issuer A	Bronze	400,000	1.01	$559	1.00	1.05	$142,896,512	$357	$352
Issuer A	Silver	225,000	1.05	$559	1.00	1.05	$97,489,731	$433	$411
Issuer B	Bronze	34,000	0.92	$559	1.00	0.85	$8,956,465	$263	$285
Issuer B	Silver	14,000	0.96	$559	1.00	0.85	$4,489,686	$321	$333
Area 1	Total	673,000	1.02	$559			$253,832,394		
Rating Area 2									
Issuer A	Bronze	200,000	1.00	$500	1.00	1.05	$63,294,443	$316	$315
Issuer A	Silver	100,000	1.04	$500	1.00	1.05	$38,398,629	$384	$368
Issuer B	Bronze	100,000	0.85	$500	1.00	0.85	$21,776,302	$218	$255
Issuer B	Silver	25,000	0.89	$500	1.00	0.85	$6,650,312	$266	$298
Area 2	Total	425,000	0.97	$500			$130,119,686		
Rating area 3									
Issuer A	Bronze	50,000	0.92	$412	1.00	1.05	$11,988,712	$240	$259
Issuer A	Silver	30,000	1.01	$412	1.00	1.05	$9,213,065	$307	$303
Area 3	Total	80,000	0.96	$412			$21,201,777		
State	Total	1,178,000	1.00	$528			$405,153,856		

Table 2A. Risk adjustment payments (charges) based on plans' own premiums
No balancing of payments & charges

		All amounts before balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,823,529	$2,072,983	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$92,415,441	$5,074,290	$97,489,731	$411	$411	$0	0.0%
Issuer B	Bronze	$9,690,000	($733,535)	$8,956,465	$285	$285	$0	0.0%
Issuer B	Silver	$4,655,000	($165,314)	$4,489,686	$333	$333	$0	0.0%
Area 1	Total	$247,583,971	$6,248,424	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,000,000	$294,443	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,750,000	$1,648,629	$38,398,629	$368	$368	$0	0.0%
Issuer B	Bronze	$25,500,000	($3,723,698)	$21,776,302	$255	$255	$0	0.0%
Issuer B	Silver	$7,437,500	($787,188)	$6,650,312	$298	$298	$0	0.0%
Area 2	Total	$132,687,500	($2,567,814)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$12,970,588	($981,876)	$11,988,712	$259	$259	$0	0.0%
Issuer A	Silver	$9,079,412	$133,653	$9,213,065	$303	$303	$0	0.0%
Area 3	Total	$22,050,000	($848,223)	$21,201,777				
State	Total	$402,321,471	$2,832,386	$405,153,856				

Table 2A-1 Risk adjustment payments (charges) based on plans' own premiums
Balanced by decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,471,699	$1,424,813	$142,896,512	$352	$354	$2	0.5%
Issuer A	Silver	$93,960,000	$3,529,731	$97,489,731	$411	$418	$7	1.7%
Issuer B	Bronze	$9,690,000	($733,535)	$8,956,465	$285	$285	$0	0.0%
Issuer B	Silver	$4,655,000	($165,314)	$4,489,686	$333	$333	$0	0.0%
Area 1	Total	$249,776,699	$4,055,695	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,092,696	$201,747	$63,294,443	$315	$315	$0	0.1%
Issuer A	Silver	$37,255,171	$1,143,457	$38,398,629	$368	$373	$5	1.4%
Issuer B	Bronze	$25,500,000	($3,723,698)	$21,776,302	$255	$255	$0	0.0%
Issuer B	Silver	$7,437,500	($787,188)	$6,650,312	$298	$298	$0	0.0%
Area 2	Total	$133,285,367	($3,165,682)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$12,970,588	($981,876)	$11,988,712	$259	$259	$0	0.0%
Issuer A	Silver	$9,121,202	$91,863	$9,213,065	$303	$304	$1	0.5%
Area 3	Total	$22,091,790	($890,013)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Table 2A-2 Risk adjustment payments (charges) based on plans' own premiums
Balanced by increasing charges

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,823,529	$2,072,983	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$92,415,441	$5,074,290	$97,489,731	$411	$411	$0	0.0%
Issuer B	Bronze	$9,992,495	($1,036,030)	$8,956,465	$285	$294	$9	3.1%
Issuer B	Silver	$4,719,228	($229,542)	$4,489,686	$333	$337	$5	1.4%
Area 1	Total	$247,950,694	$5,881,701	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,000,000	$294,443	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,750,000	$1,648,629	$38,398,629	$368	$368	$0	0.0%
Issuer B	Bronze	$27,220,464	($5,444,162)	$21,776,302	$255	$272	$17	6.7%
Issuer B	Silver	$7,777,793	($1,127,481)	$6,650,312	$298	$311	$14	4.6%
Area 2	Total	$134,748,257	($4,628,572)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,375,494	($1,386,782)	$11,988,712	$259	$268	$8	3.1%
Issuer A	Silver	$9,079,412	$133,653	$9,213,065	$303	$303	$0	0.0%
Area 3	Total	$22,454,906	($1,253,129)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Table 2A-3 Risk adjustment payments (charges) based on plans' own premiums
Balanced by increasing charges & decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,121,488	$1,775,024	$142,896,512	$352	$353	$1	0.2%
Issuer A	Silver	$93,120,869	$4,368,862	$97,489,731	$411	$414	$3	0.8%
Issuer B	Bronze	$9,855,717	($899,252)	$8,956,465	$285	$290	$5	1.7%
Issuer B	Silver	$4,690,457	($200,771)	$4,489,686	$333	$335	$3	0.8%
Area 1	Total	$248,788,531	$5,043,863	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,042,683	$251,759	$63,294,443	$315	$315	$0	0.1%
Issuer A	Silver	$36,981,087	$1,417,542	$38,398,629	$368	$370	$2	0.6%
Issuer B	Bronze	$26,427,781	($4,651,478)	$21,776,302	$255	$264	$9	3.6%
Issuer B	Silver	$7,622,743	($972,431)	$6,650,312	$298	$305	$7	2.5%
Area 2	Total	$134,074,294	($3,954,609)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,192,409	($1,203,697)	$11,988,712	$259	$264	$4	1.7%
Issuer A	Silver	$9,098,622	$114,442	$9,213,065	$303	$303	$1	0.2%
Area 3	Total	$22,291,031	($1,089,255)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Table 2B. Risk adjustment payments (charges) based on state average premium
No balancing of payments & charges

		All amounts before balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,871,372	$2,025,141	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$93,240,719	$4,249,012	$97,489,731	$411	$414	$4	0.9%
Issuer B	Bronze	$9,841,684	($885,219)	$8,956,465	$285	$289	$4	1.6%
Issuer B	Silver	$4,660,685	($170,999)	$4,489,686	$333	$333	$0	0.1%
Area 1	Total	$248,614,459	$5,217,935	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$62,972,955	$321,488	$63,294,443	$315	$315	($0)	-0.0%
Issuer A	Silver	$36,855,720	$1,542,908	$38,398,629	$368	$369	$1	0.3%
Issuer B	Bronze	$26,798,675	($5,022,372)	$21,776,302	$255	$268	$13	5.1%
Issuer B	Silver	$7,560,364	($910,052)	$6,650,312	$298	$302	$5	1.7%
Area 2	Total	$134,187,713	($4,068,028)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,290,504	($1,301,792)	$11,988,712	$259	$266	$6	2.5%
Issuer A	Silver	$9,061,179	$151,886	$9,213,065	$303	$302	($1)	-0.2%
Area 3	Total	$22,351,684	($1,149,907)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Table 2C. Risk adjustment payments (charges) based on rating area average premium
No balancing of payments & charges

		All amounts before balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,724,657	$2,171,856	$142,896,512	$352	$352	($0)	-0.1%
Issuer A	Silver	$92,932,892	$4,556,839	$97,489,731	$411	$413	$2	0.6%
Issuer B	Bronze	$9,905,815	($949,350)	$8,956,465	$285	$291	$6	2.2%
Issuer B	Silver	$4,673,073	($183,387)	$4,489,686	$333	$334	$1	0.4%
Area 1	Total	$248,236,437	$5,595,958	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,000,067	$294,376	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,985,839	$1,412,790	$38,398,629	$368	$370	$2	0.6%
Issuer B	Bronze	$26,375,121	($4,598,819)	$21,776,302	$255	$264	$9	3.4%
Issuer B	Silver	$7,483,616	($833,304)	$6,650,312	$298	$299	$2	0.6%
Area 2	Total	$133,844,643	($3,724,957)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,035,575	($1,046,863)	$11,988,712	$259	$261	$1	0.5%
Issuer A	Silver	$9,090,923	$122,142	$9,213,065	$303	$303	$0	0.1%
Area 3	Total	$22,126,498	($924,721)	$21,201,777				
State	Total	$404,207,577	$946,279	$405,153,856				

Tab. 2C-1. Risk adjustment payments (charges) based on rating area average premium
Balanced by decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,961,120	$1,935,392	$142,896,512	$352	$352	$0	0.1%
Issuer A	Silver	$93,429,023	$4,060,708	$97,489,731	$411	$415	$5	1.1%
Issuer B	Bronze	$9,908,630	($952,165)	$8,956,465	$285	$291	$6	2.3%
Issuer B	Silver	$4,673,617	($183,931)	$4,489,686	$333	$334	$1	0.4%
Area 1	Total	$248,972,390	$4,860,005	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,032,510	$261,933	$63,294,443	$315	$315	$0	0.1%
Issuer A	Silver	$37,141,540	$1,257,088	$38,398,629	$368	$371	$4	1.1%
Issuer B	Bronze	$26,381,859	($4,605,557)	$21,776,302	$255	$264	$9	3.5%
Issuer B	Silver	$7,484,837	($834,525)	$6,650,312	$298	$299	$2	0.6%
Area 2	Total	$134,040,746	($3,921,060)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,036,248	($1,047,536)	$11,988,712	$259	$261	$1	0.5%
Issuer A	Silver	$9,104,473	$108,592	$9,213,065	$303	$303	$1	0.3%
Area 3	Total	$22,140,721	($938,944)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Tab. 2C-2. Risk adjustment payments (charges) based on rating area average premium
Balanced by increasing charges

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,723,484	$2,173,029	$142,896,512	$352	$352	($0)	-0.1%
Issuer A	Silver	$92,930,431	$4,559,300	$97,489,731	$411	$413	$2	0.6%
Issuer B	Bronze	$10,021,218	($1,064,753)	$8,956,465	$285	$295	$10	3.4%
Issuer B	Silver	$4,695,365	($205,680)	$4,489,686	$333	$335	$3	0.9%
Area 1	Total	$248,370,498	$5,461,896	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$62,998,573	$295,870	$63,294,443	$315	$315	($0)	-0.0%
Issuer A	Silver	$36,978,669	$1,419,960	$38,398,629	$368	$370	$2	0.6%
Issuer B	Bronze	$26,957,531	($5,181,229)	$21,776,302	$255	$270	$15	5.7%
Issuer B	Silver	$7,589,149	($938,837)	$6,650,312	$298	$304	$6	2.0%
Area 2	Total	$134,523,922	($4,404,236)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,169,248	($1,180,536)	$11,988,712	$259	$263	$4	1.5%
Issuer A	Silver	$9,090,189	$122,876	$9,213,065	$303	$303	$0	0.1%
Area 3	Total	$22,259,437	($1,057,660)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Tab. 2C-3. Risk adjustment payments (charges) based on rating area average premium
Balanced by increasing charges & decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,840,203	$2,056,309	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$93,175,324	$4,314,407	$97,489,731	$411	$414	$3	0.8%
Issuer B	Bronze	$9,966,034	($1,009,569)	$8,956,465	$285	$293	$8	2.8%
Issuer B	Silver	$4,684,706	($195,020)	$4,489,686	$333	$335	$2	0.6%
Area 1	Total	$248,666,267	$5,166,127	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,015,291	$279,152	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$37,058,905	$1,339,723	$38,398,629	$368	$371	$3	0.8%
Issuer B	Bronze	$26,674,499	($4,898,197)	$21,776,302	$255	$267	$12	4.6%
Issuer B	Silver	$7,537,863	($887,551)	$6,650,312	$298	$302	$4	1.3%
Area 2	Total	$134,286,559	($4,166,873)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,103,799	($1,115,087)	$11,988,712	$259	$262	$3	1.0%
Issuer A	Silver	$9,097,232	$115,833	$9,213,065	$303	$303	$1	0.2%
Area 3	Total	$22,201,031	($999,254)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Table 2D. Risk adjustment payments (charges) based on state average premium adj. for AV
No balancing of payments & charges

		All amounts before balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,982,938	$1,913,574	$142,896,512	$352	$352	$0	0.1%
Issuer A	Silver	$92,805,645	$4,684,086	$97,489,731	$411	$412	$2	0.4%
Issuer B	Bronze	$9,792,917	($836,452)	$8,956,465	$285	$288	$3	1.1%
Issuer B	Silver	$4,678,194	($188,508)	$4,489,686	$333	$334	$2	0.5%
Area 1	Total	$248,259,694	$5,572,700	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$62,990,666	$303,777	$63,294,443	$315	$315	($0)	-0.0%
Issuer A	Silver	$36,697,735	$1,700,893	$38,398,629	$368	$367	($1)	-0.1%
Issuer B	Bronze	$26,521,989	($4,745,687)	$21,776,302	$255	$265	$10	4.0%
Issuer B	Silver	$7,653,548	($1,003,236)	$6,650,312	$298	$306	$9	2.9%
Area 2	Total	$133,863,938	($3,744,252)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,218,788	($1,230,076)	$11,988,712	$259	$264	$5	1.9%
Issuer A	Silver	$9,045,627	$167,438	$9,213,065	$303	$302	($1)	-0.4%
Area 3	Total	$22,264,415	($1,062,638)	$21,201,777				
State	Total	$404,388,046	$765,810	$405,153,856				

Tab. 2D-1. Risk adjustment payments (charges) based on state average premium adj. for AV
Balanced by decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,146,913	$1,749,600	$142,896,512	$352	$353	$1	0.2%
Issuer A	Silver	$93,207,025	$4,282,706	$97,489,731	$411	$414	$4	0.9%
Issuer B	Bronze	$9,794,414	($837,949)	$8,956,465	$285	$288	$3	1.1%
Issuer B	Silver	$4,678,531	($188,846)	$4,489,686	$333	$334	$2	0.5%
Area 1	Total	$248,826,883	$5,005,511	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,016,696	$277,746	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,843,485	$1,555,144	$38,398,629	$368	$368	$1	0.3%
Issuer B	Bronze	$26,530,484	($4,754,182)	$21,776,302	$255	$265	$10	4.0%
Issuer B	Silver	$7,655,344	($1,005,032)	$6,650,312	$298	$306	$9	2.9%
Area 2	Total	$134,046,009	($3,926,324)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,220,990	($1,232,278)	$11,988,712	$259	$264	$5	1.9%
Issuer A	Silver	$9,059,975	$153,090	$9,213,065	$303	$302	($1)	-0.2%
Area 3	Total	$22,280,964	($1,079,188)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Tab. 2D-2. Risk adjustment payments (charges) based on state average premium adj. for AV
Balanced by increasing charges

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,979,184	$1,917,328	$142,896,512	$352	$352	$0	0.1%
Issuer A	Silver	$92,796,456	$4,693,274	$97,489,731	$411	$412	$2	0.4%
Issuer B	Bronze	$9,874,745	($918,280)	$8,956,465	$285	$290	$5	1.9%
Issuer B	Silver	$4,696,635	($206,950)	$4,489,686	$333	$335	$3	0.9%
Area 1	Total	$248,347,021	$5,485,373	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$62,990,070	$304,373	$63,294,443	$315	$315	($0)	-0.0%
Issuer A	Silver	$36,694,399	$1,704,230	$38,398,629	$368	$367	($1)	-0.2%
Issuer B	Bronze	$26,986,251	($5,209,949)	$21,776,302	$255	$270	$15	5.8%
Issuer B	Silver	$7,751,693	($1,101,381)	$6,650,312	$298	$310	$13	4.2%
Area 2	Total	$134,422,413	($4,302,727)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,339,124	($1,350,412)	$11,988,712	$259	$267	$7	2.8%
Issuer A	Silver	$9,045,298	$167,766	$9,213,065	$303	$302	($1)	-0.4%
Area 3	Total	$22,384,422	($1,182,646)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Tab. 2D-3. Risk adjustment payments (charges) based on state average premium adj. for AV
Balanced by increasing charges & decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,063,056	$1,833,457	$142,896,512	$352	$353	$1	0.2%
Issuer A	Silver	$93,001,758	$4,487,972	$97,489,731	$411	$413	$3	0.6%
Issuer B	Bronze	$9,834,576	($878,111)	$8,956,465	$285	$289	$4	1.5%
Issuer B	Silver	$4,687,583	($197,897)	$4,489,686	$333	$335	$2	0.7%
Area 1	Total	$248,586,973	$5,245,421	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,003,384	$291,059	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,768,948	$1,629,680	$38,398,629	$368	$368	$0	0.1%
Issuer B	Bronze	$26,758,348	($4,982,046)	$21,776,302	$255	$268	$13	4.9%
Issuer B	Silver	$7,703,514	($1,053,202)	$6,650,312	$298	$308	$11	3.6%
Area 2	Total	$134,234,195	($4,114,509)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,280,052	($1,291,340)	$11,988,712	$259	$266	$6	2.4%
Issuer A	Silver	$9,052,637	$160,427	$9,213,065	$303	$302	($1)	-0.3%
Area 3	Total	$22,332,689	($1,130,912)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Table 2E. Risk adjustment payments (charges) based on rating area average premium adj. for AV
No balancing of payments & charges

		All amounts before balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge)	Risk adjustment payment (charge)	Revenue available after risk payment (charge)	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,849,308	$2,047,204	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$92,478,544	$5,011,187	$97,489,731	$411	$411	$0	0.1%
Issuer B	Bronze	$9,851,328	($894,863)	$8,956,465	$285	$290	$5	1.7%
Issuer B	Silver	$4,691,358	($201,672)	$4,489,686	$333	$335	$3	0.8%
Area 1	Total	$247,870,538	$5,961,856	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,014,626	$279,816	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,831,895	$1,566,734	$38,398,629	$368	$368	$1	0.2%
Issuer B	Bronze	$26,147,669	($4,371,367)	$21,776,302	$255	$261	$6	2.5%
Issuer B	Silver	$7,574,417	($924,105)	$6,650,312	$298	$303	$5	1.8%
Area 2	Total	$133,568,607	($3,448,921)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$12,970,588	($981,876)	$11,988,712	$259	$259	$0	0.0%
Issuer A	Silver	$9,079,412	$133,653	$9,213,065	$303	$303	$0	0.0%
Area 3	Total	$22,050,000	($848,223)	$21,201,777				
State	Total	$403,489,145	$1,664,712	$405,153,856				

Tab. 2E-1. Risk adjustment payments (charges) based on rating area average premium adj. for AV
Balanced by decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,221,017	$1,675,496	$142,896,512	$352	$353	$1	0.3%
Issuer A	Silver	$93,388,419	$4,101,312	$97,489,731	$411	$415	$4	1.1%
Issuer B	Bronze	$9,855,752	($899,287)	$8,956,465	$285	$290	$5	1.7%
Issuer B	Silver	$4,692,355	($202,669)	$4,489,686	$333	$335	$3	0.8%
Area 1	Total	$249,157,543	$4,674,851	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,066,003	$228,440	$63,294,443	$315	$315	$0	0.1%
Issuer A	Silver	$37,119,559	$1,279,070	$38,398,629	$368	$371	$4	1.0%
Issuer B	Bronze	$26,158,339	($4,382,037)	$21,776,302	$255	$262	$7	2.6%
Issuer B	Silver	$7,576,673	($926,361)	$6,650,312	$298	$303	$6	1.9%
Area 2	Total	$133,920,573	($3,800,888)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$12,971,639	($982,927)	$11,988,712	$259	$259	$0	0.0%
Issuer A	Silver	$9,104,101	$108,964	$9,213,065	$303	$303	$1	0.3%
Area 3	Total	$22,075,740	($873,963)	$21,201,777				
State	Total	$405,153,856	$0	$405,153,856				

Tab. 2E-2. Risk adjustment payments (charges) based on rating area average premium adj. for AV
Balanced by increasing charges

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$140,847,304	$2,049,208	$142,896,512	$352	$352	$0	0.0%
Issuer A	Silver	$92,473,638	$5,016,093	$97,489,731	$411	$411	$0	0.1%
Issuer B	Bronze	$10,048,521	($1,092,056)	$8,956,465	$285	$296	$11	3.7%
Issuer B	Silver	$4,735,799	($246,113)	$4,489,686	$333	$338	$6	1.7%
Area 1	Total	$248,105,261	$5,727,133	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,012,042	$282,400	$63,294,443	$315	$315	$0	0.0%
Issuer A	Silver	$36,817,427	$1,581,201	$38,398,629	$368	$368	$1	0.2%
Issuer B	Bronze	$27,154,942	($5,378,640)	$21,776,302	$255	$272	$17	6.5%
Issuer B	Silver	$7,787,354	($1,137,042)	$6,650,312	$298	$311	$14	4.7%
Area 2	Total	$134,771,766	($4,652,080)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,198,879	($1,210,167)	$11,988,712	$259	$264	$5	1.8%
Issuer A	Silver	$9,077,950	$135,115	$9,213,065	$303	$303	($0)	-0.0%
Area 3	Total	$22,276,829	($1,075,052)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Tab. 2E-3. Risk adjustment payments (charges) based on rating area average premium adj. for AV
Balanced by increasing charges & decreasing payments

		All amounts after balancing			Comparison to benchmark			
		Revenue requirement including risk payment (charge	Risk adjustment payment (charge	Revenue available after risk payment (charge	Benchmark risk-std. premium before risk transfer	Premium after risk payment (charge)	Dollar difference between benchmark and premium	Percent difference between benchmark and premium
Rating Area 1								
Issuer A	Bronze	$141,030,807	$1,865,705	$142,896,512	$352	$353	$1	0.1%
Issuer A	Silver	$92,922,820	$4,566,911	$97,489,731	$411	$413	$2	0.5%
Issuer B	Bronze	$9,954,216	($997,751)	$8,956,465	$285	$293	$8	2.7%
Issuer B	Silver	$4,714,545	($224,860)	$4,489,686	$333	$337	$4	1.3%
Area 1	Total	$248,622,389	$5,210,005	$253,832,394				
Rating Area 2								
Issuer A	Bronze	$63,038,679	$255,764	$63,294,443	$315	$315	$0	0.1%
Issuer A	Silver	$36,966,570	$1,432,059	$38,398,629	$368	$370	$2	0.6%
Issuer B	Bronze	$26,664,702	($4,888,399)	$21,776,302	$255	$267	$12	4.6%
Issuer B	Silver	$7,683,717	($1,033,406)	$6,650,312	$298	$307	$10	3.3%
Area 2	Total	$134,353,668	($4,233,982)	$130,119,686				
Rating area 3								
Issuer A	Bronze	$13,086,921	($1,098,209)	$11,988,712	$259	$262	$2	0.9%
Issuer A	Silver	$9,090,878	$122,186	$9,213,065	$303	$303	$0	0.1%
Area 3	Total	$22,177,799	($976,022)	$21,201,777				
State	Total	$405,153,856	($0)	$405,153,856				

Table 3. Post risk payment (charge) premium as a percent of risk-standardized premium before risk payment (charge) (3 pages)

		Bench-mark premium PMPM @ std. risk	Premium without risk adj	Balance by decreasing payments				
				Plan owr premium	State average premium	Rating area average premium	State average AV adj. premium	Rating area AV-adj premium
Rating Area 1								
Issuer A	Bronze	$352.06	1.5%	0.5%	0.0%	0.1%	0.2%	0.3%
Issuer A	Silver	$410.74	5.5%	1.7%	0.9%	1.1%	0.9%	1.1%
Issuer B	Bronze	$285.00	-7.6%	0.0%	1.6%	2.3%	1.1%	1.7%
Issuer B	Silver	$332.50	-3.6%	0.0%	0.1%	0.4%	0.5%	0.8%
Area 1	Total							
Rating Area 2								
Issuer A	Bronze	$315.00	0.5%	0.1%	-0.0%	0.1%	0.0%	0.1%
Issuer A	Silver	$367.50	4.5%	1.4%	0.3%	1.1%	0.3%	1.0%
Issuer B	Bronze	$255.00	-14.6%	0.0%	5.1%	3.5%	4.0%	2.6%
Issuer B	Silver	$297.50	-10.6%	0.0%	1.7%	0.6%	2.9%	1.9%
Area 2	Total							
Rating area 3								
Issuer A	Bronze	$259.41	-7.6%	0.0%	2.5%	0.5%	1.9%	0.0%
Issuer A	Silver	$302.65	1.5%	0.5%	-0.2%	0.3%	-0.2%	0.3%
Area 3	Total							

The comparisons in this table are specific to this example and should not be read as an analysis of the impact of payments and charges in general.

Table 3. Post risk payment (charge) premium as a percent of risk-standardized premium before risk payment (charge) (3 pages)

		Bench-mark premium PMPM @ std. risk	Premium without risk adj	Balance by increasing charges				
				Plan owr premium	State average premium	Rating area average premium	State average AV adj. premium	Rating area AV-adj premium
Rating Area 1								
Issuer A	Bronze	$352.06	1.5	0.0%	0.0%	-0.1%	0.1%	0.0%
Issuer A	Silver	$410.74	5.5	0.0%	0.9%	0.6%	0.4%	0.1%
Issuer B	Bronze	$285.00	-7.6%	3.1%	1.6%	3.4%	1.9%	3.7%
Issuer B	Silver	$332.50	-3.6%	1.4%	0.1%	0.9%	0.9%	1.7%
Area 1	Total							
Rating Area 2								
Issuer A	Bronze	$315.00	0.5	0.0%	-0.0%	-0.0%	-0.0%	0.0%
Issuer A	Silver	$367.50	4.5	0.0%	0.3%	0.6%	-0.2%	0.2%
Issuer B	Bronze	$255.00	-14.6%	6.7%	5.1%	5.7%	5.8%	6.5%
Issuer B	Silver	$297.50	-10.6%	4.6%	1.7%	2.0%	4.2%	4.7%
Area 2	Total							
Rating area 3								
Issuer A	Bronze	$259.41	-7.6%	3.1%	2.5%	1.5%	2.8%	1.8%
Issuer A	Silver	$302.65	1.5	0.0%	-0.2%	0.1%	-0.4%	-0.0%
Area 3	Total							

The comparisons in this table are specific to this example and should not be read as an analysis of the impact of payments and charges in general.

Table 3. Post risk payment (charge) premium as a percent of risk-standardized premium before risk payment (charge) (3 pages)

		Bench-mark premium PMPM @ std. risk	Premium without risk adj	Decrease payments & increase charges				
				Plan owr premium	State average premium	Rating are average premium	State average A' adj. premium	Rating are AV-adj premium
Rating Area 1								
Issuer A	Bronze	$352.06	1.5	0.2%	0.0%	0.0%	0.2%	0.
Issuer A	Silver	$410.74	5.5	0.8%	0.9%	0.8%	0.6%	0.
Issuer B	Bronze	$285.00	-7.6%	1.7%	1.6%	2.8%	1.5%	2.
Issuer B	Silver	$332.50	-3.6%	0.8%	0.1%	0.6%	0.7%	1.
Area 1	Total							
Rating Area 2								
Issuer A	Bronze	$315.00	0.5	0.1%	-0.0%	0.0%	0.0%	0.1
Issuer A	Silver	$367.50	4.5	0.6%	0.3%	0.8%	0.1%	0.
Issuer B	Bronze	$255.00	-14.6%	3.6%	5.1%	4.6%	4.9%	4.
Issuer B	Silver	$297.50	-10.6%	2.5%	1.7%	1.3%	3.6%	3.
Area 2	Total							
Rating area 3								
Issuer A	Bronze	$259.41	-7.6%	1.7%	2.5%	1.0%	2.4%	0.
Issuer A	Silver	$302.65	1.5	0.2%	-0.2%	0.2%	-0.3%	0.1%
Area 3	Total							

The comparisons in this table are specific to this example and should not be read as an analysis of the impact of payments and charges in general.

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