

**Commonwealth of Massachusetts  
Notice of Benefit and Payment Parameters  
2014**

Risk Adjustment Methodology & Operation



April, 2013

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## Executive Summary

The Commonwealth of Massachusetts has elected to establish a state-specific risk adjustment program using an alternate risk adjustment methodology. This decision builds on the flexibility that states have under the Patient Protection and Affordable Care Act (“ACA”) and as defined by the Federal Department of Health and Human Services (“HHS”). Specifically, a state may establish and run its own risk adjustment program and tailor risk adjustment to meet the state’s particular needs. A state may pursue such flexibility if it elects to operate a state-based, ACA-compliant Exchange.

The Commonwealth Health Insurance Connector Authority (“Health Connector”), which has been serving as the health insurance exchange in the state of Massachusetts since 2006, has been authorized by the Commonwealth’s Legislature to administer the ACA-required risk adjustment program for the small and non-group health insurance market in Massachusetts starting in 2014. As of December 2012, the Health Connector has received conditional approval by the Center for Consumer Information and Insurance Oversight (“CCIIO”) as an ACA-compliant state Exchange.

A multi-agency workgroup co-led by the Health Connector and the Massachusetts Division of Insurance (“DOI”) developed the blueprint of a state-based risk adjustment program. The alternate methodology developed by the workgroup is largely consistent with the federal risk adjustment methodology, but provides for certain state-specific enhancements and variations, intended to:

- Appropriately reflect the unique market characteristics of the Commonwealth, recognizing its merged small group and non-group market, as well as its plans to provide additional premium and cost-sharing subsidies for certain eligible low-income individuals to enhance coverage affordability beyond those provided for under the ACA;
- Calibrate the risk adjustment models to the specific experience of the Massachusetts small group and non-group populations; and
- Leverage the Commonwealth’s existing All-Payer Claims Database (“APCD”) infrastructure and maximize administrative simplicity.

On January 6, 2013, the Health Connector submitted to CCIIO its application for federal certification of the Massachusetts state-based alternate risk adjustment methodology. As indicated in the HHS Notice of Benefit and Payment Parameters for 2014 Final Rule (“Federal Payment Notice”), published in the Federal Register on March 11, 2013, HHS has certified the Commonwealth’s proposed alternate risk adjustment methodology as a “Federally certified methodology for use in Massachusetts.” The Massachusetts methodology is the first such alternate methodology to be federally certified, and is the only alternate methodology to be proposed by a state for 2014.

The Federal Payment Notice further indicated that Massachusetts is required to publish a State Notice of Benefit and Payment Parameters (“State Payment Notice”) within 30 days of the publication of the Federal Payment Notice. This document constitutes the State Payment Notice for the 2014 Benefit Year. It includes a description of the major components of the methodology and accompanying rationale, along with technical details of the code set, mapping algorithms, calculations of member-level risk scores, and risk adjustment funds transfer calculations.

On April 5<sup>th</sup>, 2013, the Commonwealth was notified by HHS that issuers in Massachusetts are afforded a 3-year transition period to phase out certain small group rating factors that are currently permissible under the Massachusetts state law but are otherwise not permitted under the ACA. In light of this flexibility, the Commonwealth will continue to operate a merged small and non-group market, and allow during the transition period the use of certain “transitional rating factors”. Having balanced the implementation and operational considerations against the limited potential gain in risk adjustment program precision, the Health Connector, in consultation with HHS, has made the decision not to include the transitional rating factors in the risk adjustment funds transfer calculation.

While the overall framework of the risk adjustment methodology provided in this document is intended to support the program on an ongoing basis, this State Payment Notice specifically focuses on detailed program parameters that apply to the 2014 risk adjustment cycle. Future amendments to the methodology, as applicable, will be addressed through the annual State Payment Notice process pursuant to 45 CFR 153.100.

## 1. Background

### 1.1 ACA Requirements for Risk Adjustment

Sections 1341, 1342, and 1343 of the Affordable Care Act (“ACA”) respectively address and create specific risk mitigation mechanisms involving “transitional reinsurance,” “risk corridors,” and “risk adjustment” (commonly referred to as the “3Rs”). The Federal Department of Health and Human Services (“HHS”) has indicated that a key goal of these programs is to help the post-2014 small and non-group market achieve greater premium stability and certainty.

Risk adjustment is a permanent program designed to transfer premium revenue from health plan issuers that serve members with lower actuarial risk to those issuers that serve members with higher actuarial risk. Effective 2014, risk adjustment applies to all non-grandfathered health benefit plans offered in the small group and non-group market, both inside and outside the Exchange.

While the ACA requires that a risk adjustment program be established in each state, it gives states that operate exchanges flexibility as to whether to operate their own risk adjustment programs or to have HHS operate the program on their behalf. States that operate their own risk adjustment programs may use the risk adjustment methodology developed and published by HHS, but also have the flexibility, subject to HHS certification, to develop an alternative risk adjustment methodology.

Working collaboratively with other state agencies and a broad base of stakeholders, the Health Connector explored different risk adjustment program options permissible under the ACA and submitted an application of a state-based risk adjustment methodology to HHS for federal certification. The approach took into account Massachusetts’s unique market characteristics, data infrastructure, experience with administering and applying risk adjustment in health care reform, and considerations with respect to administrative simplicity. The methodology received official certification by HHS on March 1<sup>st</sup>, 2013 and was incorporated in the HHS’s Notice of Benefit and Payment Parameters for 2014 Final Rule (“Federal Payment Notice”), published in the Federal Register on March 11, 2013. In accordance with Federal requirements, the Health Connector is issuing this State Notice of Benefit and Payment Parameters for 2014 within 30 days from the publication of the Federal Payment Notice.

### 1.2 Agency to Administer Risk Adjustment

Massachusetts enacted legislation in July 2012 that designated the Health Connector as the agency to administer the ACA risk adjustment program for the Commonwealth. The designation recognized the Health Connector’s considerable experience administering risk adjustment for its Commonwealth Care program since 2009, as well as its integral role as the Commonwealth’s Exchange in the overall implementation of the ACA. Our successful fulfillment of this role is critically dependent on support from other state agencies and the broader market. Consistent with our model to date, the Health Connector is fully committed to a collaborative and transparent approach to administering the risk adjustment program.

## 2. Policy Goals of the Massachusetts State Alternate Risk Adjustment Methodology

### 2.1 Core Elements of the Massachusetts Alternate Methodology

As part of the Federal certification process, Massachusetts was required to demonstrate that its alternate methodology achieved a range of policy goals, which HHS found to be in alignment with those of the Federal risk adjustment methodology. Yet, while starting from the same conceptual foundation as the HHS risk adjustment program and achieving similar policy goals as the Federal model, Massachusetts' alternate methodology is designed to address a number of Massachusetts-specific market characteristics and leverage existing data infrastructures to reduce the administrative burden for health plan issuers as well as for the Health Connector who will be administering the program. The core elements of the Commonwealth's alternative methodology are highlighted below:

<u>Feature</u>	<u>Summary Rationale</u>
Models and factors were calibrated to data from Massachusetts	Utilize available data through the Commonwealth's APCD and the Commonwealth Care program, and maximize the risk adjustment models' reflection of Massachusetts's specific experience
More expansive set of condition categories	A more expansive condition set in risk adjustment models increases predictive accuracy. Efforts were taken to achieve the appropriate balance between 1) the need for appropriate exclusion of certain conditions ( <i>e.g.</i> , vague or discretionary coding); and 2) the recognition that other efforts in Massachusetts's market environment ( <i>e.g.</i> , payment reform and broad adoption of risk adjustment) have likely left the market with diminished room for coding related concerns
More flexible criteria with respect to claims/encounters to be used in risk adjustment	Ensure that risk adjustment does not create unintended consequences with respect to how care is accessed. For example, allow encounters/diagnoses arising from nurse practitioners and physician assistants, long-term care facilities such as skilled nursing facilities, and ambulatory surgical centers
Eligibility duration adjustment	Improves risk adjustment models' predictive accuracy with respect to members with partial-year eligibility – based on prior risk adjustment experience with other programs ( <i>e.g.</i> , Commonwealth Care)
Modified/extrapolated induced utilization demand factors in payment transfer calculation	Reflects data-driven analysis that accounts for risk selection issues unique to the merged market (that are not addressed through premiums), and

	the Commonwealth’s plan to implement premium and cost-sharing subsidies for certain eligible low-income enrollees above and beyond Federal cost-sharing reduction
Applying the risk adjustment model for Bronze plans to Catastrophic plans in initial years	Data limitations constrain our ability to calibrate a separate model for Catastrophic plans at the present. Consistent with the HHS methodology and pending final State and Federal market rules, Massachusetts intends to keep the Catastrophic plans in their own risk adjustment pool. Separating Catastrophic plans from metal level plans in risk adjustment will help ensure affordability of the Catastrophic plans and the accuracy of risk adjustment calculations
Use of Gold plan as the benchmark for calculating geographic cost factors	Empirically, there are very few Silver-like plans in the Massachusetts merged market today. Therefore, using Gold plans as the benchmark will likely provide a larger, more credible sample for benchmarking regional premium differences
Use of the APCD to support risk adjustment data collection	Utilize the existing infrastructure to maximize administrative simplicity of risk adjustment operation. We also plan to create transitional data collection mechanisms for very small health plan issuers and new market entrants who might not be submitting data to the APCD initially

**2. 2 Special considerations with Regard to the Transition Years of Market Rule Implementation**

Similar to the HHS risk adjustment methodology, the Massachusetts alternate methodology is designed to be applied in coordination with the ACA market reform rules, which require that premium variation in the small and non-group market be permissible only based on a restricted set of statutorily allowed rating factors.

In an effort for Massachusetts to effectively transition to ACA compliance while preserving its nation-leading health reform success achieved to date, the Patrick Administration, representing strong interest shared by stakeholders across the market, worked collaboratively with HHS to identify opportunities to pursue a glide path for the Commonwealth to align certain aspects of its existing market rules with the ACA in a way that recognizes the importance of market stability in a state that had been succeeding in expanding affordable coverage to its residents. On April 5<sup>th</sup>, 2013, the Commonwealth was notified by HHS that issuers in Massachusetts were afforded a 3-year transition period to phase out certain small group rating factors that are currently permissible under the Massachusetts state law but are otherwise not permitted under the ACA. In light of this flexibility, the Commonwealth will continue to operate a merged small and non-group market, and allow during the transition period the use of small group rating factors that differentiate premium based on industry, group size, participation, intermediary

discount and small business cooperative discount, hereby collectively referred to as “transitional rating factors”.

From a risk adjustment perspective, this phase-in period (for coverage effective on or after January 1<sup>st</sup>, 2014 and before January 1<sup>st</sup>, 2016) creates a special timeframe during which transitional rating factors will be applied to premium pricing. Conceptually, premium variations that result in risk selection should be removed through the risk adjustment payment transfer calculations to avoid the effect of “double counting”. This is the same concept that underlies the adjustment for age rating as detailed in Subsection 3.5 of this State Payment Notice.

The Health Connector, in consultation with HHS, has taken into consideration a number of relevant factors in evaluating its options and finalized its approach for 2014 as summarized below. The goal of this decision is to balance the need to strive for risk adjustment precision and the importance of maintaining operational feasibility, which is a high priority for the Health Connector as well as stakeholders, as the market works together towards a successful launch of risk adjustment in accordance with the required timeline. Specific aspects of the decision regarding the 2014 risk adjustment methodology are:

- 1) The Health Connector will implement the risk adjustment methodology as certified by HHS and reflected in the Federal Payment Notice, with the exception of (4) below;
- 2) Consistent with the HHS methodology, risk adjustment payment transfer will adjust for age rating. Tobacco use and wellness programs will not be accounted for;
- 3) The payment transfer formula will NOT adjust for the transitional rating factors that are allowed for the phase-in period;
- 4) Within the induced demand adjustment, “non-group selection” is a component of the federally-certified, Massachusetts state-based methodology and will remain part of the risk adjustment design that applies to the merged market in the long term. For the 2014 risk adjustment cycle, however, non-group selection adjustment will not be applied. This is due to the fact that issuers will be able to apply group size factors in their premium rating and therefore largely account for the elevated actuarial risk of non-group members that are not captured by the risk adjustment models.

Our decision not to include the transitional rating factors in the payment transfer formula reflects a careful balance of the following considerations:

- *Transition stability:* The transitional rating factors are expected to phase out over a three-year period. Not unlike the approach taken by both HHS and the Commonwealth with respect to transitional reinsurance, keeping the risk adjustment methodology free of mechanisms that address influences that are short term in nature helps maximize the predictability of risk adjustment impact from issuers’ perspective.
- *Limitation in incremental precision:* In theory, risk based factors that cannot be reflected in premiums should be accounted for in risk adjustment. The age factor, which is used for premium rating but subject to a limited band, is a perfect example of how the methodology should work

from a theoretical standpoint and in practice. The transitional rating factors, however, are different from age factors in that they reflect both cost drivers that are health-status-related and those that are not. As an example, the cost of serving a small group varies by the size of the group in part due to administrative cost differences. As such, the proper way to account for these factors in risk adjustment would be to isolate the selection-related components from other components. This exercise, we hypothesize, may lead to a marginal increase in the precision of risk adjustment given that the current permissible ranges associated with the transitional rating factors are relatively narrow and required to ramp down over the next two years. In addition, the analysis would take a significant amount of time, which makes its feasibility questionable in light of the implementation timeline the Commonwealth has set for risk adjustment.

- *Operational Constraints:* The theoretical alternative to our chosen approach would be to capture the necessary data elements and inputs relating to the transitional rating factors. Some of these data elements may need to be collected directly from carriers as they are not currently collected by the Commonwealth's All Payer Claims Database ("APCD"). This process would need to be completed in a very tight timeframe in order for the transitional rating factors to be included in risk adjustment starting in 2014, posing significant operational challenges for issuers.

The Health Connector is mindful of the fact that HHS's approval on the Commonwealth's use of the transitional rating factors was received very recently and that our decision on the 2014 risk adjustment methodology has not yet been thoroughly vetted with the market at the time that this State Payment Notice is released. While this document serves as the official communication of the finalized risk adjustment methodology for 2014, we are soliciting comments from issuers and other stakeholders with regard to the appropriateness of the approach, and will take comments into account, as appropriate, to the extent feasible against the implementation timeline.

### 3. Massachusetts State Alternate Risk Adjustment Methodology

As noted, the Massachusetts Alternate Risk Adjustment Methodology is broadly consistent with the Federal risk adjustment methodology. The key similarities are:

- Same or similar overarching policy goals of stabilizing premiums for the individual and small group market
- Claim-based, using medical diagnosis codes from administrative datasets to assess member-level health risks
- Concurrent risk adjustment models that use current year’s claims and membership data to determine risk adjustment funds transfers for the same year
- Risk adjustment models are based on the Hierarchical Condition Categories (“HCC”) methodology, following the same principles described in the Federal risk adjustment methodology
- Risk adjustment models predict plan liability, with separate models provided for each ACA-defined metallic tier
- Separate treatment for risk adjustment purposes of Catastrophic plans
- Same conceptual framework in the calculations of funds transfer, such as allowing for additional adjustment for induced demand as it relates to benefit level differences and cost-sharing reduction, geographic cost variation, allowable age rating, and family size for families with more than 3 dependents under the age of 21, etc.

Our methodology deviates from the federal methodology in two main areas:

- The risk adjustment models and additional adjustment factors are calibrated using data from Massachusetts, reflecting Massachusetts’s experience with healthcare reform, its existing individual mandate, subsidized insurance, payment reform, risk adjustment, and other healthcare reform initiatives already present in the market today
- An intermediate data collection approach that utilizes the Commonwealth’s existing APCD data collection channels

In the sections below, we will describe each component of the Massachusetts Alternate Risk Adjustment Methodology. We will also make a few minor technical corrections and clarifications to the models and funds transfer formula to what was published in the Federal Payment Notice for Massachusetts.

#### 3.1 Conceptual Framework for Risk Adjustment Funds Transfer

Conceptually, risk adjustment funds transfer is based on the average premium of all risk adjustment covered plans in Massachusetts and should provide plans with payments to help cover excess actuarial risk due to risk selection; that is, risk exposure beyond the premiums issuers can charge reflecting allowable rating and their applicable cost factors. Illustratively,



For the purpose of risk adjustment, Massachusetts will have a single, merged risk adjustment pool for small group and non-group health plans in Bronze, Silver, Gold and Platinum metal levels as defined by the ACA. To help ensure the accuracy of risk adjustment calculations and affordability, Catastrophic plans in Massachusetts will be kept in their own risk adjustment pool.

Due to the lack of empirical data, we are unable to calibrate a separate risk adjustment model for Catastrophic plans for 2014. We will use the Bronze risk adjustment model and an actuarial value adjustment factor of 0.57 in the funds transfer calculation for Catastrophic plans and revisit this approach in future recalibrations when empirical data is available.

Student health plans and plans that are not subject to the ACA market reform rules due to coverage limitations or effective date are not considered risk adjustment covered plans. Please refer to Appendix II for more information on risk adjustment covered plans.

### 3.2 Data Used to Develop Risk Adjustment Methodology

We used data from three different sources to develop the risk adjustment models and additional adjustment factors in the Commonwealth's alternate risk adjustment methodology:

- Calendar Year 2010, and 7/1/2011 to 6/30/2012 membership and claims data from the Massachusetts APCD. We obtained data extracts on non-group policyholders and small group members for group size up to 100<sup>1</sup> and eligible for medical and pharmacy coverage during the two observation periods. Collectively, we think they are representative of a significant portion of the population that is subject to the risk adjustment program under the ACA. About 700,000 unique individuals were included in the model development sample.
- Fiscal Years 2010 and 2011 Commonwealth Care<sup>2</sup> program's membership and claims. More than 100,000 unique members from Commonwealth Care met the selection criteria and were included in the model development sample.

Commonwealth Care is a subsidized insurance program created as part of the 2006 Massachusetts health care reform law. It is administered by the Health Connector, and serves individuals with income up to 300% FPL who are not eligible for Medicaid and generally do not have access to employer-sponsored health insurance. As of April 2013, there are approximately 200,000 members enrolled in the program. Effective on January 1, 2014, a portion of the current Commonwealth Care members will enroll in the expanded Medicaid program, and the remaining members will access subsidized Qualified Health Plans ("QHPs") through the Exchange. These QHP enrollees will be subject to Federal Advance Premium Tax Credits ("APTC") and cost-sharing reduction ("CSR") via Silver Plan Variations. To strengthen coverage affordability for this population, Massachusetts will offer additional premium and cost-sharing "wrap" subsidies to eligible Exchange members with income up to 300% FPL beyond those provided for under the

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<sup>1</sup> The APCD differentiates many group sizes including individual (or non-group), groups of 1, groups of 1-50 and groups of 51-99, etc. In our analysis we treated groups of 1 as individual or non-group policies.

<sup>2</sup> More information on Commonwealth Care can be found at <https://www.mahealthconnector.org>.

ACA such that their post-2014 plan benefit level is comparable to what is currently provided under the Commonwealth Care program.

Most health plan issuers that participate in the current Commonwealth Care program are local Medicaid managed care organizations (“MMCOS”) whose provider reimbursement level is typically lower than that of the commercial payers in Massachusetts for the same types of services. To normalize plan paid amount between the APCD data and the Commonwealth Care data, we re-priced Commonwealth Care claims using unit prices derived from the APCD data. This was done using the Milliman Health Cost Guidelines® (“HCG”) Grouper. The HCG categorizes claims into more than 80 types of services, allowing us to directly compare unit prices by service type between the Commonwealth Care claims and the APCD claims. There were service types with very few members in either dataset. To obtain robust unit cost estimates, we consolidated them with other service types that are similar in nature.

To determine credible unit price differentials, we calculated the differentials at the level of four major categories: inpatient facility, outpatient facility, professional, and other services. We derived these differentials by weighting the unit prices using Commonwealth Care utilization, which allowed us to neutralize utilization pattern differences between Commonwealth Care and the commercial plans represented by the APCD. The final Commonwealth Care-to-commercial unit price differential results were:

- Inpatient Facility: 66%
  - Outpatient Facility: 80%
  - Professional: 75%
  - Rx: 100%
  - Other: 92%
- Calendar Year 2010 Truven Health Analytics MarketScan® Commercial Claims and Encounters database for New England states. We selected members who were eligible for medical and pharmacy coverage in PPO or Comprehensive plan type, and re-sampled them to match the age/gender distribution of the APCD data. The primary reason for using the MarketScan® data was to obtain a larger sample size which allowed for calibrating more robust risk adjustment models and to strengthen the data quality of the overall model development sample. We note that data from MarketScan® mostly represent large group experience. However, we think that it is still a useful additional data source. More than 700,000 unique members were included from the MarketScan® New England states.

The consolidated claims data was then processed again through the Milliman Health Cost Guidelines® grouper system. The results from the grouper were compared to regional cost and utilization benchmarks and checked for reasonability. In this process, we excluded some commercial payers in the APCD data, as well as certain claim lines in the MarketScan® data.

### 3.3 Metal Level Assignment in Model Development Sample

The Massachusetts Alternate Risk Adjustment Methodology contains four risk adjustment models calibrated by metal level – Bronze, Silver, Gold and Platinum. Due to the lack of empirical data on Catastrophic plans in the Commonwealth, we will apply the Bronze model for Catastrophic plans in 2014, monitor closely and reexamine in the future when a sufficient amount of data becomes available.

When we were developing the risk adjustment models, plan benefit design data was not available for more than 90 percent of the members in the data sample. Additionally, the Federal actuarial value (“AV”) calculator had not been released. Due to these limitations, we estimated actuarial value as the sum of plan paid amount for all members in a plan divided by the sum of allowed amount for those members.

When the proposed Federal AV Calculator was published, for the plans where we had plan design information, we compared results with those from the proposed Federal AV Calculator. There were differences at the plan level, but in total across all plans there was no significant difference.

After calculating the AV, we assigned members in the model development sample into one of the four metal levels, using the AV ranges in Table 1.

**Table 1 - AV Range and Member Count by Metal Level**

<b>Metal Level</b>	<b>AV Range</b>	<b>Counts of Unique Members</b>
<b>PLATINUM</b>	0.88-0.92	344,469
<b>GOLD</b>	0.78-0.82	171,206
<b>SILVER</b>	0.68-0.72	415,245
<b>BRONZE</b>	0.58-0.62	193,725

### **3.4 Risk Adjustment Models**

#### **3.4.1 HCC Clinical Classification**

Using claims from clinically valid sources (*e.g.*, laboratory, radiology, durable medical equipment, and transportation are not considered clinically valid), we grouped diagnosis codes using the HCC classification system. We referenced the HCC classification system in Pope et al (2000)<sup>3</sup>, a federally funded research study that laid the foundation for the CMS HCC risk adjustment payment system for Medicare Advantage. The classification system in Pope et al (2000) contains approximately 780 DxGroups which are then aggregated to more than 180 condition categories (“CC”s). Clinical hierarchies are then applied on the CCs to create HCCs. Because the HCC classification system was originally designed for the senior population, the designs of the condition categories may not be fully reflective of the characteristics of the commercial population. Through an iterative process using the model

<sup>3</sup> <http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/downloads/04summerpg119.pdf>

development sample, we identified 20 DxGroups that were not very well predicted under the original HCC grouping and promoted them into their own HCCs.

When determining acceptable types of claims for grouping the HCCs, we modified the approach outlined by Pope et al (2000) to ensure that risk adjustment does not create unintended consequences with respect to how care is accessed in the current Massachusetts market environment. For example, we accepted diagnosis codes from visits/encounters with nurse practitioners and physician assistants, recognizing that in patient-center medical home and ACO care settings, nurse practitioners and physician assistants play active and important roles in preventive care and chronic care management. We also accepted diagnosis codes in claims from skilled nursing facilities and ambulatory surgical centers if the claims were coded by a clinician.

In the process of revising the original HCCs to better reflect the characteristics of the commercial population, we followed the following 10 principles for designing a risk adjustment classification system:

Principle 1 - Diagnostic categories should be clinically meaningful.

Principle 2 - Diagnostic categories should predict medical (including drug) expenditures.

Principle 3 - Diagnostic categories that will affect payments should have adequate sample sizes to permit accurate and stable estimates of expenditures.

Principle 4 - In creating an individual's clinical profile, hierarchies should be used to characterize the person's illness level within each disease process, while the effects of unrelated disease processes accumulate.

Principle 5 - The diagnostic classification should encourage specific coding.

Principle 6 - The diagnostic classification should not reward coding proliferation.

Principle 7 - Providers should not be penalized for recording additional diagnoses (monotonicity).

Principle 8 - The classification system should be internally consistent (transitive).

Principle 9 - The diagnostic classification should assign all ICD-9-CM codes (exhaustive classification).

Principle 10 - Discretionary diagnostic categories should be excluded from payment models.

Risk adjustment is a premium redistribution process that equalizes actuarial risks amongst health plan issuers and helps stabilize premiums under modified community rating and an individual mandate. Conceptually, risk adjustment models should be as accurate as possible while minimizing the potential for "gaming" and coding creep. A more accurate model typically requires a higher number of predictive factors, and in the case of the HCCs, more HCCs. However, having more HCCs may also open up more opportunities for coding creep and gaming of the system. Therefore, a careful balance must be achieved.

We intentionally "dampened" the models to discourage coding creep and gaming. This was achieved in a number of ways:

- (1) Only certain claim types coded by certain provider types are used. Diagnosis codes from laboratory, radiology, pathology, durable medical equipment, and transportation provider claims are not included in constructing the HCCs as they are typically coded by non-clinicians or otherwise meant to be "ruled out".

- (2) Diagnosis codes are used to construct HCCs as long as they are coded once in an acceptable type of claim. Timing or frequency of the diagnoses does not contribute toward the calculation of risk scores. This helps mitigate the risk of “paying” for repeated unnecessary visits.
- (3) We impose clinical hierarchies such that a condition will not be counted (or paid) if there are more severe conditions present in the same hierarchy. This helps ensure clinical validity of the classification and models.
- (4) Vague diagnosis and codes for ill-defined conditions are excluded. This helps mitigate gaming of the system.

Risk adjustment is not new to the Massachusetts health insurance market, where many issuers have in place risk adjustment based pay-for-performance and global payment programs, which are expected to further expand as a result of the newly enacted Health Care Cost Containment Act of 2012. Issuers in general are familiar with risk adjustment and the importance of good documentation of clinical practice in claims data, and many have invested in improving data capture. Based on these considerations, we hypothesize that the opportunity for coding creep is relatively small and will further decrease over time. We also plan to implement a rigorous data validation process to further mitigate the impact of coding creep on the risk adjustment program.

The ACA risk adjustment program is designed to be a budget-neutral revenue redistribution mechanism among issuers. Health plan issuers expect fair and adequate transfer of funds; *i.e.*, member risk profiles should be accurately stratified and correctly ranked. As such, with the appropriate mechanisms to control for “gaming” risk (as described above), we believe that the pursuit of higher predictive accuracy is justified.

The complete list of the condition categories included in our models is provided in Appendix III, Table A.6. We note that most commercial risk adjustment models use almost twice as many condition categories as we propose.

### **3.4.2 HCC Models**

We calibrated models for Bronze, Silver, Gold and Platinum benefit tiers separately based on actuarial value. As mentioned previously, we did not calibrate a separate risk adjustment model for Catastrophic plans due to limitations in data and plan to apply the Bronze model to Catastrophic plans instead. Please refer to Section 3.1 on the treatment of Catastrophic plans in risk adjustment.

The model dependent variable is total plan paid amount, or “plan liability”. Factors or explanatory variables included in the risk adjustment models are – 1 constant term, 2 age/gender factors, 162 HCCs and 2 disease interaction terms. We have 4 models, one for each metal level. The Bronze model applies to both the Bronze plans and the Catastrophic plans.

In risk adjustment modeling, partial-year eligibility is typically addressed by annualizing the dependent variable and weighting the least squares regressions by the fraction of eligibility. We began our modeling using this approach and found that the predictive accuracy for members with short eligibility, especially newborns, was low. Upon further analyses, we believe that this was related to annualizing the

dependent variable and using eligibility duration as a weight in regressions. As a result we explored nonlinear modeling techniques and developed a set of factors to adjust for partial-year eligibility.

Our thinking on this issue reflects the Commonwealth’s experience with programs that have high turnover rates, such as the Commonwealth Care program. We believe that prediction biases associated with partial-year eligibility could aggravate selection issues if not addressed adequately.

We took an iterative approach to developing the risk adjustment models. With each iteration, factors with negative and/or statistically insignificant coefficients and factors without adequate sample size were either excluded or combined with other factors. The unique feature of the HCC risk adjustment methodology is the clinical hierarchy -- that is, the coefficient of a less severe condition category should not exceed the coefficient of a more severe condition in the same clinical hierarchy. This ensures clinical validity and preserves healthcare resource for treating more severe medical conditions. We ensured that all coefficients follow the clinical hierarchy. Where they did not, we forced monotonicity in the regression coefficients using restricted regressions.

Because the models are by metal level, one HCC may receive 4 different risk weights in the 4 models. Under the assumption that an HCC treated in a lower metal level plan should not lead to higher plan liability than if it were treated in a higher metal level plan, we also forced monotonicity by HCC across metal levels.

In the final models, all factors have non-negative and statistically significant coefficients, and have met the monotonicity requirements of the HCCs and the monotonicity requirements we imposed by metal level. We also checked that the member-level total predictions are monotonic across benefit tiers by age/gender groups. Please refer to the example in Appendix III, Step 4.

**3. 4. 3 Predictive Accuracy**

The final model R-Squared is provided in Table 2 below.

**Table 2 - Risk Adjustment Model R-Squared Statistic**

	Counts of Unique Members	Model R-Squared for Predicting Paid \$PMPY
<b>Platinum</b>	344,472	48.54%
<b>Gold</b>	171,207	52.91%
<b>Silver</b>	415,245	46.66%
<b>Bronze</b>	193,725	47.58%

These are comparable to the R-Squared levels observed in many commercial risk adjustment models. We also validated the models using a more recent data extract from the Commonwealth’s APCD and obtained similar R-Squared values.

### 3.5 Adjusting for Allowable Rating Factors

The only allowable rating factor accounted for in the Massachusetts Alternate Risk Adjustment Methodology is age rating subject to the Commonwealth’s uniform age curve. Please refer to the uniform age curve published by the Massachusetts Division of Insurance for details. Consistent with the HHS approach, tobacco use and wellness programs will not be accounted for in the risk adjustment program in Massachusetts. Please also refer to subsection 2.2 for considerations regarding the transitional rating factors and the approach to addressing them in the transfer formula.

### 3.6 Adjusting for Induced Demand

There are three major selection issues impacting healthcare utilization that are accounted for in the Commonwealth’s risk adjustment methodology:

- Health status - everything else equal, sicker members tend to have a higher level of utilization and spending than healthier members. Risk adjustment models account for this difference by allowing risk scores to increase with age and with medical comorbidities.
- Benefit design and cost-sharing reductions - everything else equal, individuals in richer benefit plans tend to have higher levels of utilization. Risk adjustment models do not account for this difference.
- Non-group selection - in a merged small and non-group market, everything else equal, individuals purchasing non-group policies have more discretion to choose health plans that better align with their immediate healthcare needs than individuals in group policies. They are also more likely to opt in and out of coverage than those in group policies, even in the presence of structured open enrollment periods. Risk adjustment models do not account for this difference. Most recently, HHS has afforded issuers in the Commonwealth the flexibility to use five transitional rating factors during a 3-year period, and group size adjustment is one of the factors. As discussed in the Executive Summary Section 2.2, having balanced the cost and benefit of different options, the Health Connector will not include the transitional rating factors in risk adjustment for the 2014 Benefit Year.

#### 3.6.1 Induced Demand Factors Relating to Benefit Design by Metal Level

Plan liability varies due to differences in benefit design. We will use the factors in Table 3 to account for induced demand as it relates to the benefit design differences across metal levels.

**Table 3 - Induced Demand Factors by Metal Level**

Metal Level	Induced Demand Factor
-------------	-----------------------

Catastrophic and Bronze	1.00
Silver	1.03
Gold	1.08
Platinum	1.15

### 3. 6. 2 Cost-Sharing Reduction Adjustment Factors Relating to State Wrap Subsidies

Massachusetts will provide additional premium and cost-sharing wrap subsidies to eligible low-income Exchange enrollees up to 300% FPL as part of its subsidized coverage configuration for 2014 and beyond, such that these members will have access to coverage that is comparable to the current Commonwealth Care program in terms of premium and cost-sharing affordability. The target AVs for eligible members after the wrap subsidies are – approximately 99.6% for eligible members in 0-100% FPL of household income, approximately 95.0% for eligible members in 101-200% FPL of household income, and approximately 92.5% for eligible members in 201-300% FPL of household income. We used data from the APCD and the Commonwealth Care program to empirically estimate the CSR adjustment factors, which are provided in Table 4 below.

**Table 4 - Cost-Sharing Reduction Adjustment Factors**

Plan AV	Induced Demand Factor
92.5% (for eligible members in 201-300% FPL of household income )	1.137
95.0% ((for eligible members in 101-200% FPL of household income )	1.158
99.6% (for eligible members in 0-100% FPL of household income )	1.200

### 3.6.3 Non-Group Selection Adjustment

In the Massachusetts risk adjustment methodology that was certified and published by HHS in March 2013, we included an adjustment factor of 1.057 applicable to Platinum plans offered to members in the individual market to account for non-group selection. As discussed previously, issuers in Massachusetts are allowed to retain five otherwise unallowable rating factors under the ACA during a three-year transition period, with group size being one of these factors. As discussed in the certified methodology, the non-group selection adjustment was designed to capture cost variation between small group and non-group members, specifically in a merged-market environment where group size rating factors are not allowed. In light of the transitional period, the Health Connector is making a technical correction in this State Payment Notice to remove the 1.057 adjustment factor from risk adjustment funds transfer calculations for the 2014 Benefit Year. We plan to evaluate the non-group selection issue on an ongoing basis, with a plan to reintroduce non-group selection adjustment for subsequent years. To develop non-group selection adjustment, we expect to use a similar methodology that was used to estimate the 1.057 adjustment factor, but with more up-to-date data from the merged market and based on the latest federal actuarial value calculator at that time.

### 3. 7 Funds Transfer Calculation

In this section, we provide the formulae for calculating risk adjustment funds transfer and make a few minor technical corrections and clarifications to the formulae published in the Federal Payment Notice for the Massachusetts Alternate Risk Adjustment Methodology.

#### Per Member Per Month and Total Plan Transfer Amount

Risk adjustment funds transfer will be calculated by plan and by geographic rating area. For instance, if a plan is offered in two rating areas, there will be two separate plan liability risk scores calculated, one for each rating area. Formula (1) below will be used calculate per member per month (PMPM) risk adjustment funds transfers by rating area. In Massachusetts, Catastrophic plans and the other metal level plans are kept in two separate risk adjustment pools, therefore, Formula (1) applies to each risk adjustment pool separately.

$$T_i^{PMPM} = \left[ \frac{PLRS_i \cdot IDF_i \cdot GCF_i}{\sum_i (S_i \cdot PLRS_i \cdot IDF_i \cdot GCF_i)} - \frac{AV_i \cdot ARF_i \cdot IDF_i \cdot GCF_i}{\sum_i (S_i \cdot AV_i \cdot ARF_i \cdot IDF_i \cdot GCF_i)} \right] \bar{P} \quad (1), \text{ where}$$

$T_i^{PMPM}$  is Plan  $i$ 's per member per month risk adjustment transfer amount for a rating area.

Formula (1) on Page 116 of the Federal Payment Notice did not specify that this was a PMPM amount. We are clarifying in this State Payment Notice that Formula (1) is intended for calculating the PMPM transfer amount for Plan  $i$  in a rating area.

We further clarify that the total transfer amount for Plan  $i$  is calculated using Formula (2) below.

$$T_i = T_i^{PMPM} \times \sum_b M_b \quad (2), \text{ where}$$

$\sum_b M_b$  is Plan  $i$ 's total billable member months in a rating area.

Below we define all factors and notations in Formula (1).

#### State Average Premium

The state average premium,  $\bar{P}$ , is calculated using Formulae (3) and (4) below:

$$\bar{P} = \sum_i S_i \bar{P}_i \quad (3), \text{ and}$$

$$\bar{P}_i = \frac{\sum_s (M_s \cdot P_s)}{\sum_b M_b} \quad (4), \text{ where}$$

$S_i$  is Plan  $i$ 's share of total billable months in the entire;  $\sum_i S_i = 1$  state;

$\bar{P}_i$  is the average premium for Plan  $i$  calculated using Formula (4); it is summed across all subscribers and divided by total billable member months;

$M_s$  is the number of billable member months for subscriber  $s$  enrolled in Plan  $i$ ;

$M_b$  is the number of months billable member  $b$  enrolled in Plan  $i$  by rating area during the risk adjustment period, and billable members excludes children who do not count towards family rates;

$P_s$  is the premium for subscriber  $s$ ;

$s$  indexes all subscribers enrolled in the plan; and

$b$  indexes all billable members.

Please note that in Massachusetts, two separate state average premiums would be calculated, one for the metal level plans, and one for the Catastrophic plans.

Plan Liability Risk Score (PLRS)

$PLRS_i$  in Formula (1) is Plan  $i$ 's plan liability risk score by rating area. At a conceptual level, it is the plan average risk score, adjusted by total member months versus total billable member months due to family rating, by non-group selection, and by cost-sharing reduction. Please note that the  $PLRS$  is the only component in the funds transfer calculation that has the adjustment by total member months and by total billable months. All other components are averaged using total billable months.  $PLRS$  is calculated using Formula (5) below:

$$PLRS_i = \frac{\sum_e (M_e \times F_e \times PLRS_e)}{\sum_b M_b} \quad (5), \text{ where}$$

$M_e$  is the number of months enrollee  $e$  is enrolled in Plan  $i$  by rating area during the risk adjustment period;

$M_b$  is the number of months billable member  $b$  is enrolled in Plan  $i$  by rating area during the risk adjustment period, and billable members excludes children who do not count towards family rates;

$PLRS_e$  is member  $e$ 's risk score from the risk adjustment model that applies based on the metal level of the plan;

$F_e$  is the adjustment factor to  $PLRS_e$  if member  $e$  is eligible for CSR (in Table 4). For all other members, use 1.000 as the adjustment factor.

Induced Demand Factors (IDF) by Metal Level

$IDF_i$  in Formula (1) is Plan  $i$ 's induced demand factor due to benefit design differences at the metal level. Please look up the factors in Table 3 for the appropriate  $IDF$  to apply.

Plan Actuarial Value (AV) Adjustment

$AV_i$  in Formula (1) is Plan  $i$ 's metal level AV. The plan AV adjustment factors are provided in Table 5 below.

**Table 5 - Plan AV Adjustment Factors**

Catastrophic	0.57
Bronze	0.60
Silver	0.70

Gold	0.80
Platinum	0.90

### Allowable Rating Factor (ARF) Adjustment

$ARF_i$  in Formula (1) is Plan  $i$ 's allowable rating factor by rating area weighted by billable months in a rating area, using the specific uniform age curve defined by the Massachusetts Division of Insurance (DOI). The  $ARF$  does not include tobacco use or wellness discounts.

### Geographic Cost Factor (GCF) Adjustment

$GCF_i$  in Formula (1) is Plan  $i$ 's geographic cost factor by rating area. It is intended to reflect the geographic variation in input prices or utilization rates that are likely to affect plan premiums.  $GCF$  will be calculated for each DOI-established rating area in a risk adjustment pool, using the Gold plans in a rating area as benchmark for metal level plans, and using the Catastrophic plans in a rating area as benchmark for Catastrophic plans. We clarify that calculations of the  $GCF$  involves three steps.

- In the first step, the average premium,  $\bar{P}_g$ , is computed for each Gold (or Catastrophic) plan  $g$  in each rating area, using Formula (4) in the above;
- In the second step, generate a set of age-standardized plan average premiums,  $\bar{P}_g^{AS}$ , for the Gold (or Catastrophic) Plan  $g$ , using Formula (6).

$$\bar{P}_g^{AS} = \bar{P}_g / (ARF_g) \quad (6), \text{ where}$$

$\bar{P}_g$  is the average premium for Gold (or Catastrophic) Plan  $g$  as calculated by Formula (4) in the first step; and

$ARF_g$  is the allowable rating factor (age factor) for Gold (or Catastrophic) Plan  $g$ .

- In the third and final step, compute a  $GCF$  for each area  $a$  in each risk adjustment pool and assign it to all plans in that area using Formula (7) below:

$$GCF^a = (\sum_a S_g^a \bar{P}_g^{AS}) / (\sum_i S_i \bar{P}_i^{AS}) \quad (7), \text{ where}$$

$S_g^a$  is Gold (or Catastrophic) Plan  $g$ 's share of total billable months in area  $a$ ;  $S_i$  is Plan  $i$ 's share of total billable months Massachusetts.

The numerator in Formula (7) is the enrollment-weighted average of age-standardized Gold (or Catastrophic) plan premium in a geographic rating area  $a$ . The denominator is the average age-standardized plan premium in Massachusetts across all plans in a risk adjustment pool. At the end of this step, a unique  $GCF$  value is calculated for each rating area in each risk adjustment pool. This value will then be applied to all plans in a rating area of a risk adjustment pool, or,  $GCF_i = GCF^a$  for Plan  $i$  in area  $a$ .

### 3.8 Data Collection Approach

The risk adjustment data collection in the Massachusetts risk adjustment program will largely utilize the Commonwealth's existing APCD as a venue for data submission. This approach facilitates Massachusetts's policy goal of administrative simplicity and minimizing the number and types of data submissions by health plan issuers. It also facilitates the use of data that is complete, high in quality, and available in a timely fashion. Moreover, as elaborated below, use of the APCD ensures that the Commonwealth does not as part of risk adjustment data collection store any personally identifiable information for use as a unique identifier (except as may be required for data validation).

The APCD is maintained by the Massachusetts Center for Health Information and Analysis (CHIA) and requires data submission from the following entities: public payers, commercial insurance issuers, health maintenance organizations, third-party administrators ("TPAs"), and self-insured plans. Data submissions must be filed monthly.

The APCD collects payer data for all members living in Massachusetts<sup>4</sup>. Health plan issuers and other payers submit five files each month: member eligibility, medical claims, pharmacy claims, dental claims and provider details. Product description files from all of the payers are submitted to the APCD on a quarterly basis. Detailed data submission requirements are in place and available for review on CHIA's website (<http://www.mass.gov/chia/researcher/health-care-delivery/hcf-data-resources/apcd/>). Members of a Massachusetts employer group who live out of state are currently excluded unless the payer also holds a contract with the Commonwealth's employee health administrator to provide data for state-covered non-resident individuals. The Health Connector and CHIA are working actively together along with the affected data submitters to have this resolved before 2014 to ensure the accuracy of risk adjustment.

The APCD already collects most of the data elements to support risk adjustment, and nearly all other elements have to this date been scheduled to be added as part of APCD collection. As part of data intake, automated data quality checks are performed by CHIA. Once data are quality checked the subset required for risk adjustment are processed for purposes of creating an extract for risk adjustment calculations. Creation of the extract signifies the beginning of the risk adjustment data collection process. The extract provides only those data elements that are necessary for risk adjustment and contains no personally identifiable information for use as a unique identifier for an enrollee's data.

Using the data extract from the APCD, the Health Connector will be responsible for performing all risk adjustment calculations<sup>5</sup> as well as facilitating payment and charge transactions. The data extracts will be maintained in a secure environment that meets applicable Federal and State security standards.

Below we describe the data elements currently submitted to the APCD that will be used to create the risk adjustment extract. We also review the Health Connector's authority to use the APCD to support risk

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<sup>4</sup> With the exception of residents covered by Veterans' Affairs, the Federal Employee Health Program and TriCare and residents covered in a variety of small/limited groups such as self-administered student health programs, self-administered union programs, etc.

<sup>5</sup> The Health Connector may leverage CHIA and/or another resource in running the risk adjustment models and doing parts of the calculations.

adjustment data collection, and provide additional details on data quality monitoring and control, data privacy and security standards, and the data management plan for risk adjustment operations.

### **3. 8. 1 Available Data in APCD for Risk Adjustment**

As noted, the APCD already collects most of the data elements needed for risk adjustment. Member files include member and subscriber identifiers, relationships, demographics, information about the payer, product and coverage, and duration of enrollment. Claims files include all paid claims (including encounter data on capitated services) for covered services, including but not limited to institutional and professional services, therapies, durable medical equipment (“DME”), transportation, laboratory services, imaging, and skilled nursing. Pharmacy files include all prescribed and dispensed medications. Dental claims files include all treatments and services. Provider files support the identification of providers by specialty and location. Product files provide limited information about the different insurance products that correspond to the Member file.

Note that data used for the risk adjustment extract reflect a subset of the data provided as part of the APCD process and are provided in a different for or level of aggregation. For instance, member age would be included in the extract instead of detailed member date of birth, and a code for a member’s geographic rating area will be included in the extract instead of detailed member zip code information.

There are data elements required to calculate risk adjustment funds transfer that the APCD currently does not collect, such as monthly premium, CSR eligibility, and AV. CHIA has issued an advanced notice to health plan issuers in the Commonwealth regarding the plan to collect these data elements or collect the raw data elements that will be used to infer these data element starting October 1, 2013.

In addition, certain plans may not have sufficient claims experience reported in the APCD. This gap may occur because plans may be exempt from data submission or are new to the Massachusetts market. Current APCD regulations exempt small plans with less than 1,000 covered lives in Massachusetts-based plans from submitting regular data files. This exemption recognizes the administrative cost of programming and providing regular data extracts. Health plan issuers that are new to the Massachusetts market will need to take time to build up the capacity to submit data to the APCD on a regular basis. As such, we will establish a method for small and new-to-market plans to submit minimally necessary data for risk adjustment through an alternate mechanism than the regular APCD submissions. The specifications for this alternate submission, the secure data transfer methodology, and the communication of results to the issuers will be announced later this year.

### **3. 8. 2 Legal Authority for the Health Connector to Access APCD Data for Risk Adjustment**

Massachusetts General Laws (M. G. L.) Chapter 118G§6 authorized the Division of Health Care Finance and Policy (“DHCFP”) to collect uniform information from public and private health care payers and to operate the Commonwealth’s APCD. The Commonwealth’s authority to collect, analyze and report health care cost and utilization was further expanded with the passage and subsequent enactment of Chapter 224 of the Acts of 2012. Section 19 of this law established “CHIA” (the Center for Health Information and Analysis as noted above) with broad responsibility for health care data collection,

analysis and reporting, including the APCD. CHIA assumes all of the data collection, management and analysis tasks previously performed by DHCFP. Among other things, the statute emphasizes use of the APCD to minimize duplicate requests for data, providing that “ All other agencies, authorities, councils, boards and commissions of the Commonwealth seeking health care data that is collected pursuant to this section shall, whenever feasible, utilize such data prior to requesting data directly from health care providers and payers.” As an example, the Massachusetts Division of Insurance is currently using APCD data to analyze health care cost and utilization trends. In addition, the statute enables CHIA to provide government agencies and other parties access to data for the purpose of lowering total medical expenses, coordinating care, benchmarking, quality analysis and other research, for administrative or planning purposes. CHIA may also provide information to and work with other state agencies to “collect and disseminate data concerning the cost, price and functioning of the health care system in the Commonwealth and the health status of individuals.”

The Health Connector and CHIA are developing an agreement to obtain CHIA data management and analytic support to administer the risk adjustment program, consistent with M. G. L. ch. 12C which gives CHIA the authority to enter into interagency service agreements with other Massachusetts agencies “for transfer and use of data.”<sup>6</sup>

### **3. 8. 3 Data Security and Privacy Protection**

As noted, under existing law and regulation, the Commonwealth already collects a range of data through its APCD and protects this information as described below.

Specifically in relation to data collection under risk adjustment and Federal requirements, the risk adjustment extract created through the APCD will not use or store any personally identifiable information for use as a unique identifier for an enrollee’s data. Only those data fields that are reasonably necessary as part of the risk adjustment methodology will be included in the extract.

CHIA is an experienced custodian of protected health information of the type that is collected through the APCD process. Since 1982, CHIA (as DHCFP) has served as the repository for the state’s Hospital Discharge Data, Emergency Room Data and Outpatient Observation Data. CHIA has extensive claims processing experience as the operator of the state’s Health Safety Net program. CHIA has passed two independent third party security audits – a HIPAA security audit and a SAS-70 Type 2 audit. In addition, PCI security audits are done quarterly on CHIA’s web portal.

As indicated above, the data extract produced by the APCD on behalf of the Health Connector for calculating risk adjustment funds transfer will contain no personally identifiable information for use as a unique identifier for an enrollee’s data. All personal identifiers will be replaced with a scrambled Unique Member Identification number that is created independent of any HIPAA Protected Health Information or other personally identifiable information. This number will be a string of letters, numbers and symbols that cannot be “de-encrypted” to yield decipherable data.

The risk adjustment data extract will be securely transmitted into a secure data environment that will be established by the Health Connector. Calculations of plan actuarial risks and funds transfer will take

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<sup>6</sup> M.G.L. c. 12C, § 12(a) (emphasis added).

place in this secure environment, with no personally identifiable information used as a unique identifier. Massachusetts has a fully HIPAA-compliant facility and data infrastructure in active use for operating the risk adjustment program for the Commonwealth Care program, which can be used for administering the ACA risk adjustment program. The Health Connector is also in active discussions with CHIA on the possibility of establishing a dedicated secure data environment for risk adjustment at CHIA's Data Center.

Finally, leveraging funding applied through the Health Connector's Level 2 Exchange Establishment Grant (currently under CCHIO review), CHIA plans to upgrade its disaster recovery program to meet the performance requirement necessary for supporting risk adjustment.

### **3. 8. 4 Data Quality Control**

The APCD data intake and warehousing operation incorporates data quality evaluation and monitoring processes to ensure the integrity and accuracy of downstream files.

CHIA has published a set of data completeness checks containing nearly 800 unique automated tests that are conducted at intake within the secure processing environment. These checks are used to assess the file's compliance with minimum standards. A full list of these checks is available on CHIA's website: <http://www.mass.gov/chia/researcher/health-care-delivery/hcf-data-resources/apcd/submitting-data-to-the-apcd.html>

When this evaluation process is complete, a report is generated for the payer's review. The report shows the test results and whether the file "passes" and can move forward into the next phase of processing. If a file does not pass at any point in this process, the APCD does not conduct any further processing and notifies the payer that errors must be corrected and the files resubmitted. Full resubmission of a file is required in order to maintain file integrity.

CHIA expects to be working collaboratively with any payer that is unable to meet the benchmark standards for data submission that are required to support the risk adjustment program. If a data submitter is unable to provide certain data because the information is not captured in the plan's member eligibility or claims data systems, CHIA expects that the payer will offer alternative data submissions that meet the necessary data requirements.

### **3. 8. 5 Data Collection Timeline**

We plan to provide quarterly funds transfer calculation summaries to each issuer that is subject to risk adjustment and will be working with the issuers to determine the appropriate content and level of detail for the quarterly report summaries. The timeline for processing and analyzing APCD data for Calendar Year 2014 for the purpose of risk adjustment is illustrated below. We are in discussions with CHIA and the issuers regarding the timeline and also plan to conduct test runs to ensure the feasibility of the timeline and quality of the data collection process.

#### **Illustration 1 -Timeline for Risk Adjustment Data Collection**

Time Period	Activity
Each quarter: Months 1,2,3	Issuers submit data. Data submitters submit on a monthly basis.
Month 3+1 month (Month 4)	Claims run <sup>7</sup> out period
Month 3+2 months (Month 5)	<ul style="list-style-type: none"> <li>Quality checks at designated points in current APCD process</li> <li>Member identity resolution and de-identification via removal of personal identifiers</li> <li>CHIA creates extract with minimally necessary data elements and sends to Connector or Connector's designee to calculate risk adjustment</li> <li>Quality review by the Connector or its designee. The purpose here is to determine whether data meets quality standards for risk adjustment purposes. Identified issues and recommended action steps will be sent to CHIA and the issuers regarding resubmission</li> </ul>
Month 3+3 months (Month 6)	<ul style="list-style-type: none"> <li>Conducts all calculations relating to risk adjustment</li> <li>Sends a preliminary report to data submitters for review and discusses results and observations with issuers</li> </ul>
January through March of the following year	Claims run-out period. The data submission deadline is March 31 of the following year, <i>i. e.</i> , 3 months claims runout <sup>8</sup>
April of the following year	Filing deadline for claims paid through March 31 of the following year
May of the following year	<ul style="list-style-type: none"> <li>Quality assurance process and creation of data extract</li> <li>Grouping and review with data submitters</li> </ul>
June of the following year	Funds transfer settlements calculated and reports generated by June 30 of the following year

### 3. 9 Schedule of Calibration and Recalibration

The risk adjustment models and the additional adjustment factors will need to be calibrated and recalibrated periodically to be reflective of current market conditions, the evolving insured population, medical technology and other secular trends in Massachusetts. We propose to evaluate the goodness of fit of the risk adjustment models and the appropriateness of the additional adjustment factors on an

<sup>7</sup> CHIA is working with payers to determine the feasibility and added value of a 4-month run out rather than a 3-month run out period.

<sup>8</sup> See prior footnote.

ongoing basis and recalibrate every three years if the evaluation justifies. On October 1, 2014, the entire country is expected to transition to ICD-10-CM coding. We expect to update the current clinical classification system such that it can group ICD-10-CM diagnosis codes into the existing HCCs in 2014. However, we do not plan to recalibrate the risk factors in the models due to the lack of claims experience under the new coding system.

### **3.10 Data Validation**

Section 153.350 of the Federal Premium Stabilization Rule published in March 2012, as referenced in the Federal Notice of Benefit and Payment Parameters Final Rule, requires states operating a risk adjustment program to conduct data validation and provide an appeals process. The Federal Notice stated Massachusetts would provide an overview of current considerations in the State's Notice of Benefit and Payment Parameters.

A key objective from Massachusetts' perspective, as reflected in the Federal Notice, is to strike a balance between a data validation process that optimizes the effectiveness of error identification and the goal of implementing a workable system that is not administratively burdensome and that recognizes the zero sum nature of risk adjustment transfers among health insurance issuers. Thus, we are focusing on identifying an approach that encourages accuracy and preserves a level playing field, while ensuring the data validation process itself contributes to the overarching goal of encouraging affordability through premium stabilization rather than serve as a source of material cost.

The Federal approach as outlined in the HHS Final Payment Notice contains annual primary and secondary level audits of all issuers on a random sample of enrollees in risk adjustment covered plans. While we consider the federal approach the baseline of what could be applied in Massachusetts, as an alternative we are also assessing the potential for a methodology that relies more heavily on data screening supported by random and targeted audits.

Below we provide a conceptual outline of the data screening option, as well as other options more closely aligned with the Federal approach.

#### Option 1: Data Screening, Targeted & Random Audits

The basic approach being contemplated would feature routine data screening, combined with random and targeted medical record audits. We would also seek to align the process with the quarterly reporting we plan to provide health insurance issuers with respect to their relative risk scores.

The goal would be to provide an approach to data validation that relies on administrative data analytics and healthcare statistics to flag potential data errors. Such an approach would be in keeping with trends in the development of compliance monitoring that increasingly rely on data screening as an efficient and effective way of monitoring and encouraging compliance. We note that while statistically based data screening has to date not been implemented in risk adjustment data validation, CMS has used statistical methods to establish the coding intensity adjustment factors in Medicare Advantage risk adjustment. More broadly, statistical methods have been used in health care and other lines of business to support fraud, waste and abuse detection.

Specifically, using large sets of longitudinal commercial claims data, the Commonwealth could establish statistical baselines for disease prevalence and progression by age and gender and coding patterns by healthcare service categories. In conjunction with this work algorithms would be developed to flag coding changes or outliers that fall significantly outside predicted ranges by comparing carriers' data to the benchmarks. When a potential data error is identified the carrier would be subject to a targeted audit process, which would likely include a review of medical records. In other words, Option 1 uses data screening to lead to targeted audits where carriers would be asked to substantiate HCCs submitted for risk adjustment purposes. As indicated, error rates would be determined as a result of the audit triggered by the data screening.

The error rate findings from a given benefit year can potentially be linked to the threshold of targeted audits in the subsequent year(s). For example, if a carrier is identified with higher-than-average error rate in the first year, the screening algorithm can be adjusted so that the carrier is more likely to be subject to targeted audit in the following year.

The data screening approach would be coupled with a process of random audit at least for a transitional period. The random audit element recognizes the potential for two types of errors as part of the data screening process, which can be analogized to classic "False Positives" and "False Negatives" in statistical screening. The null hypothesis here would be that there is no data error. In this context, a "False Positive" would mean that the null hypothesis is wrongly rejected such that a data error is identified when in actuality none exists. Likewise, a "False Negative" would be the risk that a data error goes through the screen without detection. At the start of data screening it might make sense to set the screening in a way that lessens the chance of a False Positive (*e.g.*, to lessen the chance of an unnecessary audit), but manages any additional risk of a False Negative through the random audit. Accordingly, the random audit may be performed more frequently in the initial years of the risk adjustment program. As the data screening process becomes more effective over time, the frequency and scope of the random audit is expected to decrease.

Overall, a positive attribute of this approach is that it would seek to limit the number of instances where reliance on medical records information is required and it avoids the need for an annual audit of each carrier, therefore making the process less burdensome and hopefully less costly to operate. At the same time, because it involves analysis of comprehensive data for all carriers it would seem to meet the regulatory standard outlined in the Premium Stabilization Rule, which requires that a statistically valid sample of data for all issuers be validated every year.

#### Option 2: HHS-Like Approach with Initial & Second Level Audits

This would essentially follow the HHS approach outlined in the Federal Final Notice. Under this approach, all health insurance issuers with respect to their risk adjustment covered plans would retain auditors to conduct initial level audits. A second-level audit would be performed by the State using State-retained auditors. One potential change from the Federal approach, however, would be to specify a State-based sampling methodology (as opposed to having the sample specified by HHS), and for the Commonwealth to potentially modify the standards against which the audit is conducted.

#### Option 3: Annual Single Level Audits with Auditors Hired by the State

This Option is similar to Option 2, but instead of having two levels of audits, there would be a single level audit, conducted by auditors retained by the State. If this option were chosen, the State might require all affected issuers to pay a user fee to support the audit (which may shorten the data validation cycle and still prove more cost effective relative to Option 2 in which issuers hire auditors for an initial level audit and undergo a second level audit).

#### Development and Implementation Timeline

Massachusetts intends for data validation to be conducted for the 2014 and 2015 benefit years. However, consistent with the Federal approach, we also intend to refrain from applying the results of any risk adjustment data validation process from these first two benefit years to payments and charges.

At this point we are inclined to explore Option 1 as described above as a potential long-term solution. However, recognizing that this Option will take time to develop, we anticipate implementing either Option 2 or 3 for the 2014 benefit year. We note in this regard that data validation is a retrospective process such that data validation for the 2014 benefit year will occur in 2015. Key considerations we expect to balance in making a final decision include factors relating to the level of operational complexity and associated costs, the expected effectiveness of different data validation methods, as well as further details on the federal approach that are relevant to our decision.

One reason why Option 1 will take some time to develop is that the country is scheduled to implement ICD-10 in the fall of 2014. Coding conversion has the potential to complicate data validation particularly with respect to a data screening approach that is primarily claims based. This is due to the potential for initial instability in coding patterns related to the transition and our desire to avoid developing data screening algorithms that would quickly become outdated.

We plan to publish final details regarding this decision along with implementing guidance by the end of this year, and expect to take into account input provided by stakeholders in finalizing the approach.

#### Appeals Process

As indicated in the Final Notice, the State is required to provide an administrative process to appeal data validation findings. We will be developing an appropriate appeals process which, consistent with the Federal approach, may be limited to instances in which an audit was not conducted in accordance with the standards we establish.

#### Education on Risk Adjustment Data Quality

Accurate and appropriate diagnosis coding along with maximum transparency about the risk adjustment methodology and relationship to coding is essential to ensuring a fair outcome in risk adjustment. To that end, we plan to provide training and education to the broad stakeholder community on risk adjustment and coding on an ongoing basis. The intent of this educational effort is to ensure all issuers and related stakeholders have a full understanding of risk adjustment and how risk scores are impacted by risk adjustment data quality and coding practice.

## **4.0 Caveats and Limitations**

In preparing this State Payment Notice, we relied on data from Massachusetts APCD, Commonwealth Care and Marketscan® New England in developing the risk adjustment models and additional adjustment factors, and as such the results may not apply to other states' risk adjustment programs. Additionally, there are limitations in the datasets which may affect the accuracy and robustness of the models and factors presented here.

The tables provided in the separately attached Excel workbook should be treated as part of this payment notice. The data is provided for informational purposes only. The workbook should only be used and interpreted by people with proper knowledge in risk adjustment and health care claims data. The Connector does not advise users to use the workbook or this notice out of context. The Health Connector cannot be held responsible for any wrongful use of the data contained in the workbook. Users of the workbook and the notice agree that the Health Connector shall not be responsible for damages of any kind occurring from the use of this workbook or this notice.

## Appendix I: Abbreviations

ACA .....	Patient Protection and Affordable Care Act
APCD .....	All-Payer Claims Database
APTC .....	Advance Premium Tax Credits
AV .....	Actuarial Value
AWSS .....	Alien with Special Status
CSR .....	Cost Sharing Reduction
CY .....	Calendar Year
CHIA .....	Center for Health Information and Analysis
CCIIO.....	Center for Consumer Information and Insurance Oversight
DME .....	Durable Medical Equipment
DOI .....	Division of Insurance
FPL .....	Federal Poverty Level
FY .....	Fiscal Year
GIC .....	Group Insurance Commission
Health Connector .....	Massachusetts Commonwealth Health Insurance Connector Authority
HCC .....	Hierarchical Condition Category
HCG .....	Milliman Health Cost Guidelines Grouper
HHS .....	United States Department of Health and Human Services
MMCO .....	Medicaid Managed Care Organization
QHP .....	Qualified Health Plans
TPA .....	Third Party Administrator

## Appendix II: Risk Adjustment Covered Plans

Risk adjustment does not apply to all plans. As such, it is important to clarify what plans are covered by risk adjustment. In this section we provide the relevant regulatory language that defines a “risk adjustment covered plan.”

The Code of Federal Regulations (“CFR”), as amended in the HHS Notice of Benefit and Payment Parameters, Final Rule (“Final Notice”), defines a “risk adjustment plan” as:

Any health insurance coverage offered in the individual or small group market with the exception of grandfathered health plans, group health insurance coverage described in § 146.145(c) of this subchapter [excepted benefits in the group market], individual health insurance coverage described in § 148.220 of this subchapter [excepted benefits in the individual or non-group market], and any plan determined not to be a risk adjustment covered plan in the applicable Federally certified risk adjustment methodology.<sup>9</sup>

Thus, the regulatory text creates three explicit exemptions from the risk adjustment program:

- Grandfathered health plans;
- HIPAA excepted benefits; and
- Other plans specified in the Federally-certified risk adjustment methodology (whether created by HHS or a state)

The preamble to the Final Notice expands on this concept, stating that, at least under the Federal methodology, student health plans and plans not subject to the health insurance “market reforms” and essential health benefit package requirements would not be subject to risk adjustment charges and would not receive risk adjustment payments.<sup>10</sup> The Final Notice also makes it clear, in the context of small group coverage, that enrollees in a risk adjustment covered plan must be assigned to the applicable risk pool in the State in which the employer’s policy was filed and approved (see 45 CFR 153.360).

Combining the regulatory text and the preamble language of the Final Notice, the following types of plans thus appear to be exempt from risk adjustment under the Federal rules:

- Grandfathered health plans
- HIPAA excepted benefits
- Student health plans
- Plans not yet subject to the ACA’s market reforms or essential health benefit requirements

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<sup>9</sup> 45 CFR 153.20, as amended in Final Notice, 78 FR 15525.

<sup>10</sup> 78 FR 15418-19.

A state risk adjustment methodology could (subject to federal approval) take a different approach to applicability – either by including plans that are exempt under the Federal methodology or by excluding additional plans.<sup>11</sup> The Commonwealth is not contemplating making any modifications to applicability in this regard.

### **Appendix III: Risk Adjustment Models Algorithms Description**

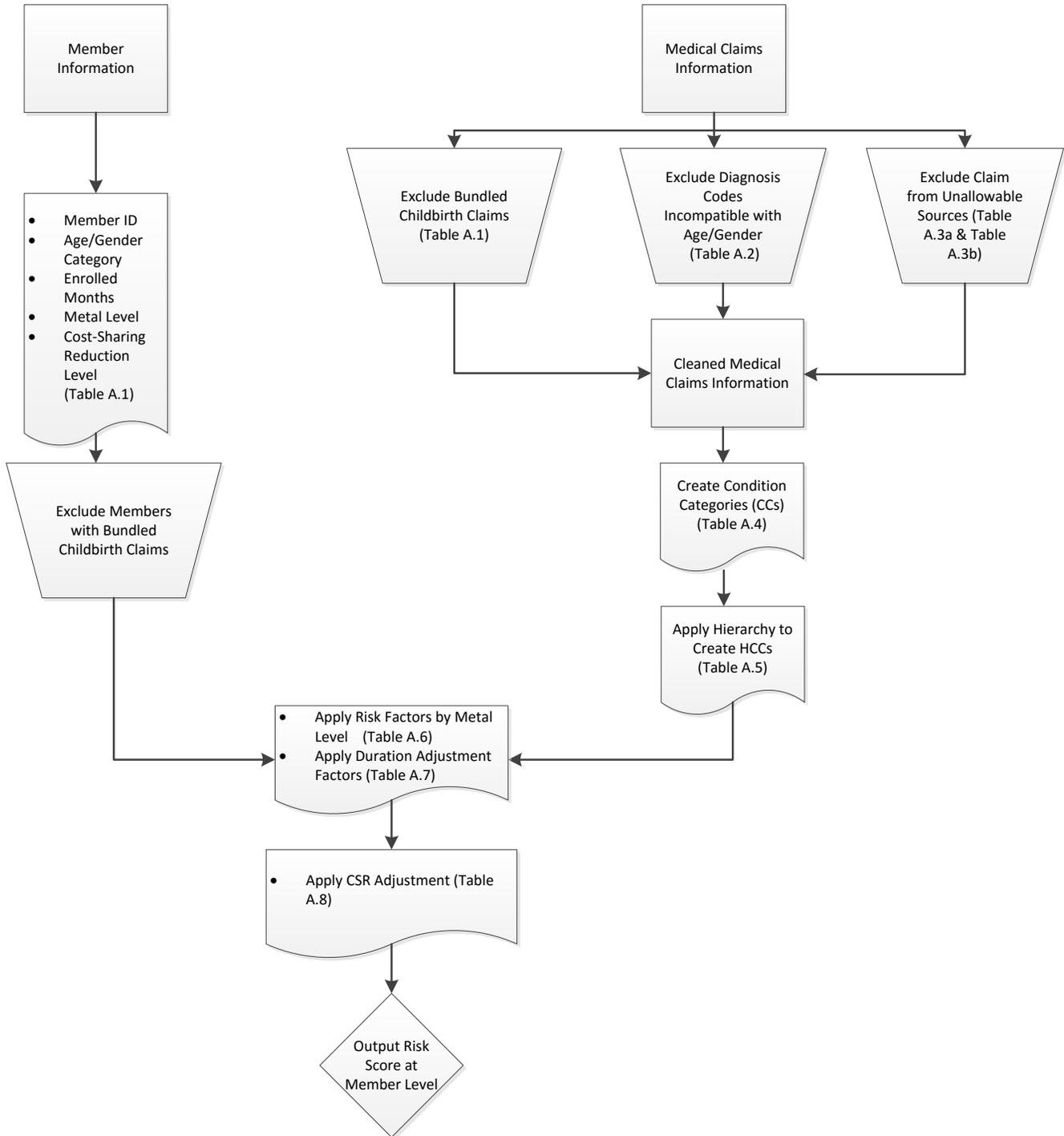
In this appendix, we describe the definitions, algorithms and analytic steps involved in calculating a member-level risk score. The flowchart in Illustration A.1 illustrates how the different steps are linked together. Please note that between the generation of member risk scores and the determination of final payment transfer amounts at the carrier level, additional adjustments and calculation steps occur. For details on these additional adjustments and calculations, please refer to Section 3 of this document.

This is intended to provide health insurance issuers with the information they need to calculate their own risk scores utilizing their own data. It is not reflective of the risk adjustment data collection process described in this Notice.

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<sup>11</sup> “For a number of plans, such as student health plans and plans not subject to the market reform rules, we will not transfer payments under the HHS risk adjustment methodology. However, as discussed above, we believe that States should have the flexibility to submit a methodology that transfers funds between these types of plans (either in their own risk pool or with the other metal levels).” 78 FR 15435.

### Illustration A.1 - Risk Score Calculation Flowchart



## **Step 1 - Input Data Manipulation**

The starting point, or input, for calculating member level risk scores is member demographic and medical claims information.

### **(1) Member Demographic Information (Refer to Table A.1)**

From member demographic information, using the definitions in Table A.1, data values for a member's age-gender category, enrolled months, health plan metal level as defined by the ACA, and cost-sharing reduction level can be populated. The "grouped" member information should be contained in a data file that is one member per record line.

It is important to note that the member information should be specific to a benefit plan. For instance, John Doe enrolled in Carrier ABC's plans in a benefit year but had two benefit plans throughout the year. For risk adjustment purposes, John Doe should be viewed as two different members, one under each plan. In other words, the member identifier should be unique to a member-plan combination instead of at the carrier level.

Please note that for calculating a member's age-gender category, age is calculated as of the last month of enrollment in a benefit year. This age is called "AGE\_LAST". For determining whether a diagnosis code is compatible with the age and gender of a member, age is calculated as of the first month of enrollment in a benefit year. This age is called "AGE\_FIRST" in Table A.1.

Risk scores are calculated at the member level. As such, bundled childbirth claims where a mother's diagnosis codes for completed pregnancy are listed together with a newborn's diagnosis codes cannot be used to calculate risk scores for the mother and the newborn separately. Members with bundled childbirth claims will be excluded from risk adjustment, unless a carrier separates the claims prior to submitting to the APCD. Rows 15 to 33 provide the logic for identifying and excluding bundled childbirth claims.

The Commonwealth will provide additional subsidies to eligible members beyond what is provided under the ACA such that their plan benefit levels would resemble what the Commonwealth Care ("CommCare") program currently offers by household income. To account for the impact of induced utilization associated with Cost-sharing reduction ("CSR"), a set of CSR adjustment factors are defined (see Table A.8), which will be multiplied to unadjusted risk scores from the risk adjustment models. The CSR levels need to be properly populated at the member level for eligible members. Rows 37 to 39 in Table A.1 provide the definitions for CSR levels.

The Health Connector plans to use the enrollment and eligibility information collected by the Health Information Exchange to infer CSR eligibility. CSR eligibility status will then be passed onto CHIA to be merged with the member and claims information and to create the risk adjustment data extract.

### **(2) Medical Claims Information (Refer to Tables A.2, A.3A and A.3B)**

The Commonwealth's risk adjustment models are based on diagnosis codes in medical claims that are clinically confirmed and valid. As illustrated in Illustration A.1, there are three types of exclusions that will be applied to medical claims - bundled childbirth claims, diagnosis codes that

are incompatible with the age and gender of the member, and diagnosis codes that were not from clinically valid sources.

To identify and exclude bundled childbirth claims, please refer to Table A.1, Rows 15-33 and the related discussions in the above. To identify and exclude diagnosis codes incompatible with a member's age and gender, please refer to Table A.2, Columns C and D for the age/gender restrictions. Diagnosis codes on lab, radiology, durable medical equipment, transportation, etc., are either to be ruled out or considered as coded by nonclinicians. They are not confirmed or clinically valid from a risk adjustment perspective. Table A.3A provides the revenue codes that will be used to exclude such diagnosis codes on facility claims. Table A.3B provides the CPT/HCPSC codes that will be used to exclude such diagnosis codes on professional claims.

After the above exclusions, the medical claims data is fully cleansed. The cleansed medical claims data should remain in the similar file structure as the original claims data, that is, multiple record lines per member and each record line either represent a claim or a line underneath a claim.

## **Step 2 - Diagnosis Grouping and Hierarchies**

### **(1) Grouping to CCs (refer to Table A.4)**

From the cleansed medical claims file, the diagnosis codes are grouped into Condition Categories (CCs) using the mapping logic in Table A.4. Please note that there are instances where one ICD-9-CM diagnosis code may be mapped to more than 1 CCs. Column C shows how a diagnosis code is mapped to the first CC. Column D shows the additional CC a diagnosis code may be mapped to. After this step, the data structure will be one member per record line, and a member be flagged as having a string of 167 binary indicators for the CCs in the Commonwealth's risk adjustment models.

### **(2) Applying Clinical Hierarchies (refer to Table A.5)**

From the CC data file, using the logic contained in Table A.5, clinical hierarchies will be imposed such that the most severe level of CC that a member was diagnosed with will be flagged out and the less severe one(s) will be suppressed. After this step, CCs become Hierarchical Condition Categories (HCCs). The data file layout after this step should be one member per record line with a string of 167 binary HCC indicators. Column D in Table A.5 contains the sample SAS code for imposing hierarchies.

## **Step 3 - Creating Main Analytic File**

Once the demographic and HCC files are ready, the main analytic file can be created which links the two sets of information together by the common plan-specific member identifier. Please refer to related plan-specific member identifier discussions earlier in this document. This file should contain all the member demographic data values and the string of 167 binary HCC indicators at the member level, and should be one member per record line. This file will be used in the next step to calculate member-level risk scores.

## **Step 4 - Calculating Risk Scores**

(1) Calculating Unadjusted Risk Scores (refer to Tables A.6 and A.7)

The unadjusted risk scores can be calculated using Tables A.6 and A.7. There are four sets of risk factors in Table A.6, which vary by metal level. Bronze and Catastrophic plans will be assessed using the same risk adjustment model in Column F. The other metal levels have their own separate risk factors. Similarly, there are four sets of duration adjustment factors in Table A.7, which vary by metal level. To calculate the unadjusted risk score for a member, first factors, sum up the risk factors for only the HCCs that the member has, then divide by the duration adjustment factor for the member based on his/her duration of enrollment, then add the Constant Term and the Infant Demographic Factor. Below is an example:

Member 001, male, 25 years old, enrolled in GOLD program for 6 months, and with three medical conditions HCC5, HCC 32, and HCC72.

$$\begin{aligned}\text{Unadjusted Risk Score} &= \text{Constant Term} + \text{Infant Demographic Factor} + \text{Sum (of applicable} \\ &\text{medical risk factors)}/\text{Duration adjustment factor} \\ &= 0.108697780 + 0 + (4.203378342 + 1.093277436 + 4.0254037460)/0.742261785 \\ &= 12.667689382\end{aligned}$$

(2) Applying Cost-Sharing Reduction (CSR) Adjustments (refer to Table 8)

From the unadjusted risk score, apply the appropriate factors if a member is eligible for CSR. Table 8 contains the induced demand factors by CSR and the corresponding AV. As discussed previously, the Commonwealth will provide additional wrap subsidies to eligible members such that their benefit level is equivalent to what CommCare currently offers. Table 8 contains the CSR levels, the estimated AVs for eligible members based on CommCare's plan design and the proposed Federal AV Calculator, and the corresponding adjustment factor using the induced utilization curve in the Commonwealth's proposed risk adjustment methodology. Given that the Federal AV Calculator is not yet finalized, we are providing the CSR adjustment factors in ranges instead of point estimates. The CSR adjustment factor should be multiplied to the unadjusted risk scores from the previous step to arrive at adjusted member level risk scores.