



Actuarial Analysis: Impact of the Massachusetts Risk
Adjustment Program on the Merged Market

Subject to Client-Attorney Privilege

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Prepared for:

Bowditch & Dewey, LLP
Bulkley, Richardson and Gelinas, LLP
Susan E. Brown, Esq.

Prepared by:

Wakely Consulting Group
Julia Lambert, FSA, MAAA
Kelsey Stevens, FSA, MAAA

www.wakelyconsulting.com

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1. EXECUTIVE SUMMARY

Wakely Consulting Group (“Wakely”) was asked by Bowditch & Dewey, LLP, Bulkley, Richardson and Gelinas, LLP, and Susan E. Brown, Esq. on behalf of their clients, Fallon Community Health Plan, Health New England and Minuteman Health (“Clients”) to analyze the impact of the Massachusetts Risk Adjustment Program, as approved by HHS in March 2013, on Massachusetts’ non-group and small-group merged market. This report presents the results of Wakely’s work.

The Federal Department of Health and Human Services (HHS) indicated that a key goal of the Affordable Care Act (ACA) 3 Rs is to help the small and non-group market achieve greater premium stability and certainty. The risk adjustment funds transfer is intended to provide issuers 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 characteristics and their applicable cost factors.

Wakely analyzed several aspects of the Massachusetts risk adjustment methodology and the associated risk transfer formula. This report and the summarized results provide background and detail to assess how well the Massachusetts risk adjustment program aligns with the aforementioned goals.

Furthermore, risk adjustment has critical public policy implications. It is imperative that stakeholders evaluate any constraints and/or potential biases and understand the repercussions of each.

Findings of our work:

1. Due to the prior existence of the exchange in Massachusetts (the Connector) and many of the associated rating policies, risk adjustment in Massachusetts does not meet the intended goals of the ACA 3 Rs and in fact produces diametric results. Risk adjustment was introduced into an otherwise stable market in Massachusetts where many ACA provisions were already implemented; therefore consideration should have been given to limiting its impact.
2. Data issues in the All Payer Claims Database (APCD) and data issues resulting from the Connector website difficulties have produced unreliable risk adjustment results. Due to the Massachusetts model construct, diagnoses data errors in the Massachusetts model produce more radical results than the same data errors would produce in the Federal model.
3. The combined effect of statutory rating policies, rate filing requirements, rate review procedures and risk adjustment procedures prevented effective 2014 rate setting.
 - a. Although theoretically available, reliable risk adjustment data was not provided to plans in time to incorporate into the 2014 rate development.
 - b. The Division of Insurance may not have allowed the needed rate filing adjustments for plans with low risk scores.
 - c. Mandated narrow network pricing requirements may not be actuarially feasible.

- d. The ultimate risk pool for risk adjustment is different than what was originally announced in the rate notice.
4. Massachusetts rating rules prevent financial recovery from losses due to risk adjustment.
5. The Massachusetts rating policies and risk adjustment methodology contain many of the same biases found in the Federal model.
 - a. Low cost and low risk score regions have higher payment transfers as a percent of collected premiums than those in high cost regions.
 - b. Risk adjustment transfers are based on statewide premiums, not claims, which results in a payment transfer of premiums related to administrative fees, not just claims.
 - c. A portion of risk transfer payments for low cost and low risk score issuers subsidize higher cost issuers and is unrelated to risk scores or health status.
 - d. Regional differences in coding, risk, and demographics may result in payment transfers that create subsidies between regions.
6. The Massachusetts rating policies and risk adjustment methodology contain biases not found in the Federal model.
 - a. Transitional rating factors are not accounted for in the payment transfer formula, causing an unequal playing field for issuers and greater transfers than may be necessary.
 - b. New issuers were not allowed to incorporate any transitional rating factors into their rate setting during 2014 so the unequal playing field was more pronounced for these plans.
 - c. Data issues have a larger impact on the Massachusetts model than in the Federal model.

Discussions regarding each of our findings are included in Section 5 of the report.

1.1 Data Reliance

Wakely relied on the following information when performing this review:

Publicly Available Data

- Commonwealth of Massachusetts Notice of Benefit and Payment Parameters 2014
- Department of Health and Human Services (HHS) Notice of Benefit and Payment Parameters for 2014 final rule (CMS-9964-F), which was published in the Federal Register on March 11, 2013.
- The Commonwealth of Massachusetts General Laws Part I Administration of the Government, Title XXII Corporations, Chapter 176J Small Group Health Insurance:
 - Section 3 Health benefit plan premiums for eligible small businesses
 - Section 6 Approval of health insurance policies; eligibility criteria; submission of information; approval of changes to small group product base rates or rating factors
 - Section 9 Health care cost growth benchmark; modification
 - Section 11 Reduced or selective network plans; tiered network plans; smart tiering plans

- Small Group/Individual Membership Report Covered Lives by County Summary – based on the 2013 Small Group/Individual Annual Reports currently on file with the Division
- Health Insurance Marketplace Summary Enrollment Report - HHS Office of the Assistant Secretary for Planning and Evaluation (ASPE)
- Center for Health Information and Analysis (CHIA) Overview of the Massachusetts APCD
- “Regional Variations in Diagnostic Practices” – The New England Journal of Medicine
- Division of Insurance (DOI) Bulletin regarding Transition Period Rating Rules issued May 7, 2013
- Health Insurance Coverage of the Total Population – Kaiser Family Foundation
- Year-end Financial Statements for Massachusetts issuers

Data from Clients

- Health Connector Risk Score Simulation Summary Reports by Client
- Competitor Rate Filings – SERFF PDF Pipeline Reports for several Massachusetts Carriers
- Area Factor Detail – Lindsay Spencer, Minuteman

Other Data

- MarketScan Data: Copyright @ 2015 TRUVEN HEALTH. All Rights Reserved.

1.2 Limitations, Disclosures, and Key Assumptions

Wakely relied on others for the information used in performing this review and preparing this report. See the Data Reliance section for a list of the information considered and reviewed. Any data received were reviewed for reasonableness, but were not audited. Wakely has assumed this information was accurate and complete.

Wakely’s review and this report comply with all applicable Actuarial Standards of Practice (ASOPs). A list of the applicable ASOPs is presented in the section titled Comments Relative to Applicable ASOPs below.

The scope of our analysis was impacted by the timeframe provided to do the work. The list below provides areas where we made assumptions in order to complete the work in a timely manner. Although we endeavored to make assumptions only on items that were not critical to the outcomes of the report, some of these items, especially those that were not included in the report, could have material impacts on results or could have important implications in Massachusetts.

- We assumed the prevalence of each HCC is similar in every region and by every metal tier unless otherwise noted.
- Our model uses a baseline distribution of Massachusetts membership by metal tier, region, and small group and individual membership based on research of available information. Reliable information was difficult to obtain, but we do not believe these assumptions are material to our results.

- Cost-sharing reduction (CSR) membership was generally not included in our modeling unless otherwise noted. This was assumed because the Commonwealth Care membership was not ultimately a part of the risk pool in 2014.
- We developed our own Structured Query Language (SQL) code for the Massachusetts risk score algorithm in applying it to the Truven MarketScan data. We reviewed the results for reasonableness, but the timeframe prevented us from auditing our results against other Massachusetts issuer results.
- We were not able to study coding differences between regions.
- We have not analyzed whether there are differences by age across the regions. However, our analysis indicates that there may be age biases in the Massachusetts risk adjustment model relative to the Federal model. Age bias may be an area worth further investigation.

This report is for the exclusive use of the Clients. Wakely's consent to any distribution of this report (whether herein or in the written agreement pursuant to which this report has been issued) to parties other than the Clients does not constitute advice by Wakely to any such third parties and shall be solely for informational purposes and not for purposes of reliance by any such third parties. Wakely assumes no liability related to third party use of this report or any actions taken or decisions made as a consequence of the results, advice or recommendations set forth herein. This report should not replace the due diligence on behalf of any such third party.

The opinions expressed in this report are valid only for the purpose stated herein and as of the date of this report. No obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.

1.3 Comments Relative to Applicable ASOPs

The following ASOPs were considered during our review:

- ASOP No. 8, Regulatory Filings for Health Plan Entities.
- ASOP No. 23, Data Quality.
- ASOP No. 25, Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages.
- ASOP No. 41, Actuarial Communications.
- ASOP 45, The Use of Health Status Based Risk Adjustment Methodologies

2. OVERVIEW OF MASSACHUSETTS MERGED MARKET

In understanding the impact of risk adjustment in Massachusetts, it's important to understand the landscape of the Massachusetts market. This section provides an overview of the market in terms of demographics and population mix, benefits offered, pre-ACA rating policies, and changes required by the ACA.

The rating policies, eligibility, and benefits in Massachusetts historically have been similar in principle to market reforms under the ACA; indeed, Massachusetts is commonly acknowledged as the model for national reform of non-group and small-group coverage in Title I of the ACA. However, there are important differences that have evolved between Massachusetts and Federal reform. Throughout the overview, we highlight some of these differences.

2.1 Market Composition

Group, Non-group, On and Off exchange.

Effective in 2007, Massachusetts became one of the few states with a merged non-group and group market. Since then, the small-group market (size 1 to 50 employees, including sole proprietorships) has held relatively steady, and the commercial non-group market has grown significantly. Although Massachusetts considered splitting the merged market into its group and non-group components with the introduction of the ACA, ultimately they decided to maintain the merged market, and they remain today one of only a few states where both small group and individual business are merged, resulting in pooled rating and risk adjustment and the same benefits offered in both markets.

According to the December 2014 Health Connector Risk Score Simulation Summary reports¹, there were 1,290,400 members, including Commonwealth Care members, in the Massachusetts merged market in 2014. Key demographic facts are:

- Group business dominates non-group in the merged market in almost a 4:1 ratio.
- Virtually the entire small-group market is outside the Connector, which results in the exchange being composed of predominately non-group business.

While the Risk Score Simulation Summary reports do not provide detail regarding the proportion of membership on-exchange versus off-exchange, the Department of Health and Human Services (HHS) Office of the Assistant Secretary for Planning and Evaluation (ASPE) reported in May 2014 that 31,695 individuals enrolled in Qualified Health Plans (QHPs) in 2014. Footnotes in that report explained that this count did not include 160,000 new applicants above 133% FPL who were in Temporary Subsidized Coverage. These individuals were to be processed for QHP eligibility determination and potential coverage retroactive to the 2014 reporting period. Additionally, the footnotes noted that there were also more than 112,192 people between 133% and 300% FPL in the extended Commonwealth Care program, described in the next paragraph. Together these data imply that less than 30% of the market is on-exchange.

Commonwealth Care

¹ Provided by Clients

Commonwealth Care was a subsidized insurance program administered by the Health Connector. It was initially slated to end on December 31, 2013, but was extended through January 31, 2015 as a result of website problems and other difficulties with transitioning members to ACA-compliant plans. This program served individuals with income up to 300% FPL who were not eligible for Medicaid and generally did not have access to employer-sponsored health insurance.

The plan for transitioning the Commonwealth Care members to ACA-compliant plans included moving a portion of the members to the expanded Medicaid program, and the remaining members to subsidized QHPs through the Exchange. Due to their low-income status, the QHP enrollees would receive Federal Advance Premium Tax Credits (APTC) and cost-sharing reduction (CSR) via Silver Plan Variations. Massachusetts offers additional premium and cost-sharing wrap subsidies to eligible Exchange members with income up to 300% FPL beyond those provided for under the ACA such that their post-2014 plan benefit level is comparable to what was previously provided under the Commonwealth Care program. The plans eligible for these wrap subsidies are commonly referred to as ConnectorCare plans. Due to the website issues mentioned briefly above, only a small number of people actually transitioned successfully to ConnectorCare in 2014.

Uninsured Rates in Massachusetts

Massachusetts experienced an exceptional drop in the number of uninsured members within a year of implementation of Massachusetts health reform. Since then, Massachusetts has retained the lowest rate of uninsured residents in the country; see Table 1. According to the Kaiser Family Foundation, the nationwide average uninsured rate was 13.4% in 2013, with 50% of states falling between 9.6% and 14.8% uninsured. At 20.3%, Texas had the highest uninsured rate in the country. At the other end of the spectrum, the Massachusetts uninsured rate of 3.6% was the lowest among all states nationwide. A primary goal of the ACA was to reduce the overall number of uninsured individuals across the country. In Massachusetts, however, the majority of individuals and small groups were already participating in the market and have had long-standing access to health coverage.

Table 1	
Subset of Population	Percent Uninsured
Minimum = MA	3.6%
First Quartile	9.6%
Median	12.0%
Third Quartile	14.8%
Maximum	20.3%
The United States	13.4%

2.2 Benefits

Similar to the Federal requirements, Massachusetts requires all benefit plans to have actuarial values of one of the metal tiers (Platinum, Gold, Silver, Bronze). Essential Health Benefits are also similar to national determinations.

2.3 Rates and Rating Requirements

Rating Policies²

Massachusetts operates a merged market with a single risk pool for all eligible individuals and small groups. In developing premium rates, carriers must develop a base premium and use only the following rate adjustment factors.

1. Standard age rate adjustment – The Massachusetts standard age rate adjustment factor table is structured such that the ratio of the highest factor for adults over age 20 compared to the lowest factor for adults over age 20 does not exceed a ratio of 2-to-1.
2. Area rate adjustment - There are seven distinct and standard rating regions in Massachusetts; carriers may establish area rate adjustments for each distinct region, as long as the values fall in the range of 0.8 to 1.2.
3. Benefit level rate adjustment – Carriers may apply benefit level rate adjustments that represent the relative actuarial value of the benefit plan being priced.
4. Family Rating - Total premium for family coverage must be determined by summing the premiums for each individual family member, up to a maximum of 3 children under 21.
5. Transitional Rating Factors – CMS has allowed Massachusetts to implement a three year transition of certain other rating factors (i.e. account group size, industry, participation rate, and allowing the use of intermediary and small group purchasing cooperative factors) that were in effect for issuers on July 1, 2013.³ Issuers may use 2/3 of these factors for policy years beginning in 2014, 1/3 of these factors will be allowed for policy years beginning in 2015. These factors only apply to group business.

² The Commonwealth of Massachusetts General Laws Part I Administration of the Government, Title XXII Corporations, Chapter 176J Small Group Health Insurance, Section 3 Health benefit plan premiums for eligible small businesses

³ Division of Insurance (DOI) Bulletin 2013-05 Transition Period Rating Rules, issued on May 7, 2013.

Massachusetts law also restricts administrative costs and contributions to surplus.⁴ When a carrier files a base rate change, it will be presumptively disapproved by the commissioner if:

1. The administrative expense loading component, excluding taxes and assessments, increases by more than the most recent calendar year's percentage increase in the New England medical Consumer Price Index (CPI), or
2. The carrier's reported contribution to surplus exceeds 1.9 percent, or
3. The aggregate medical loss ratio for all plans is less than the minimum required loss ratio.

Some exceptions to these rules exist:

1. If the carrier's Risk Based Capital (RBC) ratio falls below 300% for the most recent four (4) consecutive quarters, the reported contribution to surplus may exceed 1.9%, but still may not exceed 2.5% and the high minimum medical loss ratio requirements described below still apply.
2. If a carrier's base rate change is presumptively disapproved for failure to meet only the aggregate medical loss ratio threshold, then the carrier's base rates shall not be presumptively disapproved as excessive if the carrier's aggregate medical loss ratio for all plans is at least 1 percent higher than the carrier's equivalent medical loss ratio was 12-months prior to the carrier's present rate filing. In this case the carrier would satisfy the Adjusted Minimum Medical Loss Ratio requirement.

According to the legislation⁵, the Health Policy Commission Board shall establish each year a health care cost growth benchmark for the average growth in total health care expenditures in the Commonwealth for the next calendar year. Wakely understands that while this benchmark is not technically a rate cap, the benchmark does apply to all healthcare entities, including payers. The Clients have reported that for the last few years, the DOI has informally enforced the benchmark as a rate cap (e.g., rates cannot increase by a rate higher than the benchmark). They explained that the DOI handles this through verbal conversations, rather than written conversations.

Massachusetts has high minimum loss ratio requirements

⁴ The Commonwealth of Massachusetts General Laws Part I Administration of the Government, Title XXII Corporations, Chapter 176J Small Group Health Insurance, Section 6 Approval of health insurance policies; eligibility criteria; submission of information; approval of changes to small group product base rates or rating factors

⁵ The Commonwealth of Massachusetts General Laws Part I Administration of the Government, Title XXII Corporations, Chapter 176J Small Group Health Insurance, Section 9 Health care cost growth benchmark; modification

The minimum medical loss ratio (MLR) requirements under Federal law are 85% for large group business and 80% for small group and individual business. Massachusetts has a separate minimum MLR rebate threshold for its merged market.

The Massachusetts minimum required MLR is:

- 90% for the period through December 31, 2013;
- 89% for the period from January 1, 2014 through December 31, 2014; and
- 88% from January 1, 2015 and forward.

As mentioned in the Rating Policies Overview above, carriers who fail to meet the minimum loss ratio requirements can also satisfy the adjusted minimum medical loss ratio requirement without having their base rates presumptively disapproved as excessive. That is, if the carrier’s aggregate medical loss ratio for all plans is at least 1 percent higher than the carrier’s equivalent medical loss ratio was 12-months prior to the carrier’s present rate filing, rates will not be presumptively disapproved as excessive.

Since the Massachusetts MLR requirement is higher than the Federal mandate, the Massachusetts MLR standard applies to this market segment.

A higher MLR suggests a higher proportion of expenditures on medical care, presumably resulting in greater consumer value. Beginning in 2012, insurers failing to meet the applicable MLR standard were required to pay rebates to their consumers. Since the Commonwealth of Massachusetts is requiring a large portion of their premium revenues to be spent on health care, rather than administration or profit, it is unlikely that any issuers are accumulating large profits in this market.

Comparison of Rating to Federal Requirements

The table below indicates the difference in rating allowed in Massachusetts versus the Federally Facilitated Marketplace (FFM).

Table 2: Massachusetts versus FFM Rating Differences		
Description	Massachusetts	FFM Requirement
Age Curve	2:1	3:1
Tobacco Rating	Not allowed	1.5:1
Transitional Factors	3 Year Transition of factors in effect 7/1/2013	Not allowed
Regional Rating	Limited to a 1.2 : 0.8	Unlimited
Risk Adjustment	State model	Federal model
MLR	88%-90% for the merged market	80% individual/sm. grp. 85% large group

3. MASSACHUSETTS RISK ADJUSTMENT PROGRAM

3.1 Risk Adjustment Overview

Risk Adjustment was introduced in the ACA as one of the three risk sharing mechanisms addressing the uncertainties in the market. These provisions (risk adjustment, risk corridors and reinsurance) are intended to mitigate risks resulting from significant changes in the market, which include guarantee issue, prohibiting the use of pre-existing conditions, and rating restrictions. The 3 R's are aimed at protecting insurers financially and bringing premium stability to consumers.

Risk adjustment is a transfer mechanism designed to transfer funds from health plan issuers that enroll lower risk enrollees to those issuers that enroll higher risk enrollees. Because of the dollar transfer, issuers cannot set a low premium and target the healthiest risks in the market as the risk transfer at the end of the year would require significant dollars to be transferred out of the plan and result in financial losses. If a plan assumed it would attract the healthiest enrollees, the premium would need to be set to cover both the health risks of the enrollees and the risk adjustment payment transfer that happens at the end of the year. Starting with rates in 2014, issuers must effectively set premiums based on the average (1.0) risks of the state. Risk adjustment applies to all non-grandfathered and non-transitional health benefit plans offered in the small group and non-group market, both inside and outside the Exchange.

Assuming issuers know the risk of their enrollees, small group and individual premiums under the ACA should reflect the real cost difference of the issuer and not the average risk of the members the issuer has attracted. If risk adjustment works perfectly, issuers should not be concerned about enrollee risk. Instead plans would compete on a basis of quality and medical and administrative efficiencies.

As permitted under the ACA, The Commonwealth of Massachusetts has established a state-specific risk adjustment program using an alternate risk adjustment methodology.

3.2 Massachusetts Risk Adjustment Model in Comparison to the Federal Model

The Massachusetts alternative methodology is similar to the Federal methodology in many ways:

1. Both use medical diagnosis codes from medical records to assess member-level health risks. Pharmacy data is not used to determine risk of members.
2. Both models are used to estimate the Plan Liability Risk Scores ("PLRS" or simply "risk scores"). PLRS include the impact of the value of the benefit plan as well as a measure of the members' risk. Therefore, a member's risk score if they are in a Platinum plan will be greater than that same member's risk score in a Bronze plan, and the ratio of the risk scores approximates the actuarial value of benefit differences between the plans.
3. They both include induced utilization factors.

4. Both use current year claims and membership data to determine risk adjustment transfers for the same year (they are concurrent models).
5. Both are based on coefficients on Hierarchical Condition Categories (“HCC”),
6. Both use separate models for each ACA-defined metallic tier.
7. The fundamentals of the risk transfer payment calculations are the same under both methodologies. In general, the risk transfers sum to zero at the statewide level (not regional level) and are based on the average statewide premium levels.

While the Massachusetts alternate methodology shares many similarities with the Federal risk adjustment methodology, it differs in the following ways:

- Models and factors were calibrated to data from Massachusetts in an effort to maximize the model’s reflection of Massachusetts’s specific experience.
- The alternate methodology uses a more extensive set of condition categories.
- The alternate methodology employs more flexible criteria with respect to claims/encounters to be used in risk adjustment.
- The alternate methodology includes an eligibility duration adjustment intended to improve predictive accuracy with respect to members with partial year eligibility (adjustment applies to members with 1-5 months of eligibility only). This adjustment increased risk scores by:
 - 91% for members with 1 member month of eligibility;
 - 55% for members with 2 member months of eligibility;
 - 45% for members with 3 member months of eligibility;
 - 33% for members with 4 member months of eligibility; and
 - 26% for members with 5 member months of eligibility.
- Different induced utilization demand factors in payment transfer calculation to account for premium and cost sharing subsidies offered in Massachusetts beyond Federal cost-sharing subsidies.
- The alternate methodology uses Gold plans, rather than Silver plans, as the benchmark for calculating geographic cost factors because there are very few Silver-like plans in the Massachusetts merged market today. Using Gold plans as the benchmark should provide a more credible sample for benchmarking regional premium differences.
- The alternate methodology uses the APCD to support risk adjustment data collection.
- The alternate methodology includes a constant term that varies by metal level but not by age and a separate demographic factor for infants only, whereas the Federal method includes a demographic factor that varies by metal level, gender, and age band.

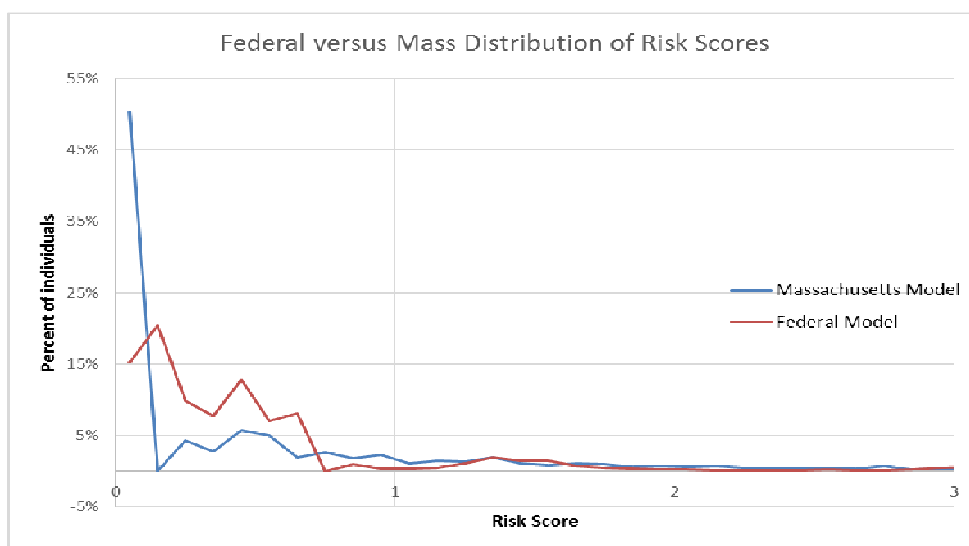
In order to understand how these differences in the model are affecting average risk scores and the risk adjustment transfers, we have compared a few statistics of both models. Primarily we looked at the following metrics:

- Distribution of risk scores for an average population

- Prevalence of Each HCC
- Average risk score by age
- Comparison of risk scores under each metal tier

Distribution of Risk Scores

The distribution of risk scores for the Massachusetts model is significantly different than the distribution of risk scores for the Federal model, especially at the lower end of risk scores. The graph below shows the percent of individuals in each 0.1 risk score band for member scores using the Silver model methodology. For example, the Massachusetts model assigned approximately 50% of the population a risk score between 0 and 0.1 whereas the Federal model assigns approximately 15% of members to this same risk score band. Note, that the comparative distributions for other models (Bronze, Gold, and Platinum) are similar.



The high number of members in Massachusetts at the lowest end of the risk score band is due to the methodology that the Massachusetts model uses to assign risk scores to enrollees who do not have any assigned HCCs. The Massachusetts risk score calculation contains a constant term that varies by metal level, but not by age. That is, within the same metal level all people receive an identical constant term regardless of their age (with the exception of infants who get a unique infant demographic factor). By contrast, the Federal risk score calculation includes a demographic factor that increases as the age of the individual being scored increases. This results in a high percentage of members (all members without any HCCs) being grouped together in the Massachusetts distribution.

Prevalence of HCC

Another significant difference between the Massachusetts risk adjustment model and the Federal risk adjustment model is a large increase in the portion of members having at least one HCC in the Massachusetts model. In a five million member sample (MarketScan Data: Copyright @ 2015 TRUVEN

HEALTH. All Rights Reserved), 21% of members had at least one HCC in the Federal model, while 48% of the same members had at least one HCC in the Massachusetts model.

Table 3 shows the top 15 CC's by prevalence rate in the member set under the Federal model. Diabetes without complication (CC021) is the most prevalent at 4.38%, and only four CC's have a prevalence rate of more than 1% in the population.

Table 3: Federal Top 15 CC's By Prevalence				
Rank	Diagnosis Claim Based Condition Categories	CC	Count of Members	Percent of Members
1	Diabetes without Complication	CC021	218,786	4.38%
2	Asthma	CC161	193,750	3.88%
3	Major Depressive and Bipolar Disorders	CC088	133,080	2.66%
4	Completed Pregnancy with No or Minor Complications	CC209	53,257	1.07%
5	Chronic Obstructive Pulmonary Disease, Including Bronchiectasis	CC160	41,138	0.82%
6	Diabetes with Chronic Complications	CC020	47,797	0.96%
7	Breast (Age 50+) and Prostate Cancer, Benign/Uncertain Brain Tumors, and	CC012	44,100	0.88%
8	Term or Post-Term Singleton Newborn, Normal or High Birthweight	CC249	37,013	0.74%
9	Specified Heart Arrhythmias	CC142	36,020	0.72%
10	Seizure Disorders and Convulsions	CC120	30,387	0.61%
11	Rheumatoid Arthritis and Specified Autoimmune Disorders	CC056	30,062	0.60%
12	Congestive Heart Failure	CC130	28,348	0.57%
13	Completed Pregnancy With Complications	CC208	27,915	0.56%
14	Systemic Lupus Erythematosus and Other Autoimmune Disorders	CC057	20,592	0.41%
15	Inflammatory Bowel Disease	CC048	20,043	0.40%

In order to compare the Federal and Massachusetts models, the Massachusetts model was applied to the same five million members in the Truven Marketscan database. The results of the Massachusetts application are shown in Table 4. Please note that the condition category names and numbers are different in each of the two models; i.e. CC021 in the Federal model is not the same condition as CC021 in the Massachusetts model.

Table 4: Massachusetts Top 15 CC's By Prevalence				
Rank	Diagnosis Claim Based Condition Categories	CC	Count of Members	Percent of Members
1	Other Gastrointestinal Disorders	CC036	667,450	13.35%
2	Other Lung Disorders	CC115	373,551	7.47%
3	Diabetes with No or Unspecified Complications	CC019	225,954	4.52%
4	Asthma	CC110	202,595	4.05%
5	Mononeuropathy, Other Neurological Conditions/Injuries	CC076	201,523	4.03%
6	Depression	CC058	184,428	3.69%
7	Urinary Tract Infection	CC135	172,292	3.45%
8	Disorders of the Vertebrae and Spinal Discs	CC039	168,103	3.36%
9	Other Neoplasms	CC013	159,003	3.18%
10	Cellulitis, Local Skin Infection	CC152	149,687	2.99%
11	Major Depressive, Bipolar, and Paranoid Disorders	CC055	134,963	2.70%
12	Attention Deficit Disorder	CC066	118,662	2.37%
13	Anxiety Disorders	CC059	115,526	2.31%
14	Uncompleted Pregnancy With No or Minor Complications	CC147	101,034	2.02%
15	Pelvic Inflammatory Disease and Other Specified Female Genital Disorders	CC138	95,662	1.91%

In Table 4, Diabetes with no or unspecified complications (CC019) fell to the third most prevalent instead of first. CC036, named "Other Gastrointestinal Disorders", has the largest share of either model with 13.35% of members under the Massachusetts methodology. This high rate is driven by the 163 accepted diagnoses that trigger CC036, including:

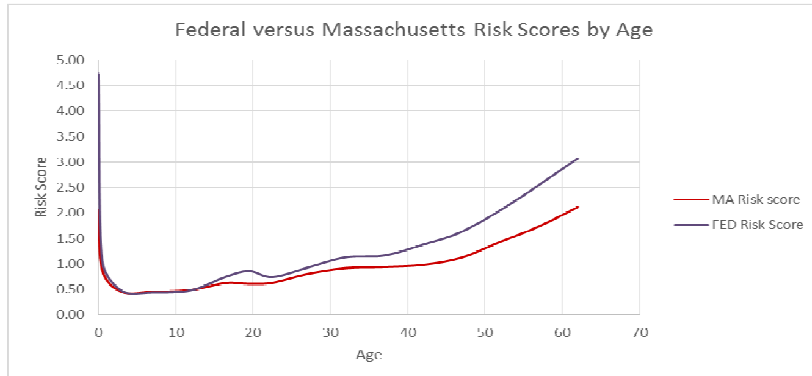
- ICD-9 53081 Esophageal Reflux (Acid Reflux)
- ICD-9 78791 Diarrhea
- ICD-9 78702 Nausea Alone
- ICD-9 78703 Vomiting Alone
- ICD-9 7871 Heartburn

These ICD-9 codes all relate to more common temporary ailments. However, HCC036 increases a member's risk score by around 0.4 (ranges from 0.377 to 0.406 depending on their metal tier) in the Massachusetts model.

Overall, while only four CC's had over 1% prevalence in the Federal model, 33 CC's had over 1% prevalence in the Massachusetts model.

Average Risk Score by Age

The two previous distributions for Massachusetts (risk score distribution heavily weighted at the lower end of the risk score scale and a higher prevalence by HCC) should somewhat offset each other – the idea being that although the risk scores for members without HCCs are lower, a higher percentage of people in Massachusetts get assigned an HCC. As a last comparison, we reviewed the average risk score by age, as shown in the diagram below. This comparison reflects the 2014 baseline mix of Massachusetts issuers, regions and membership for both the Federal and Massachusetts models.

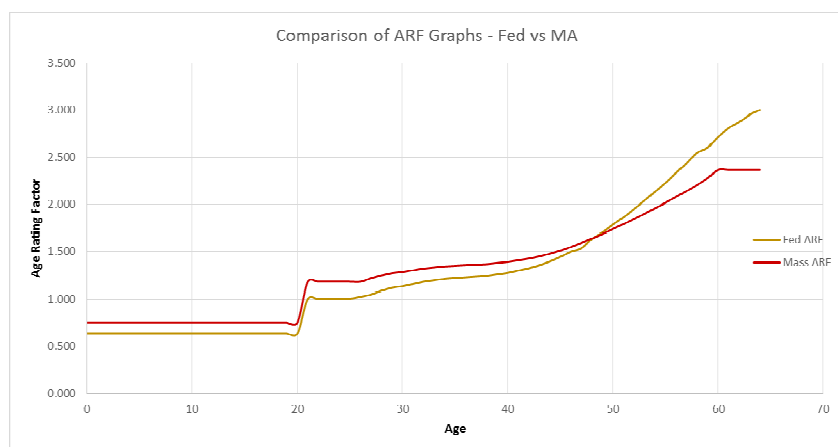


This comparison indicates the following:

- 1) Despite the different assignment of HCCs and risk scores for members with no HCCs, the shape of the risk scores by age curve is similar between the Federal and the Massachusetts risk adjustment models.
- 2) The Federal model implies a steeper claims cost curve by age than the Massachusetts model. The Federal model implies that the claims cost difference between the oldest and the youngest adult ages are 3.1:0.7. That is, the highest cost adult is almost four and half times the youngest adult. The Massachusetts model implies a ratio of highest to lowest cost adult of 2.1:0.6. Here the age curve implies the oldest adult is about 3.3 times the cost of the youngest adult. Both of

these curves are flatter than age curves traditionally used in actuarial pricing (before the ACA), which had similar ratios of up to 5 or 6 times.

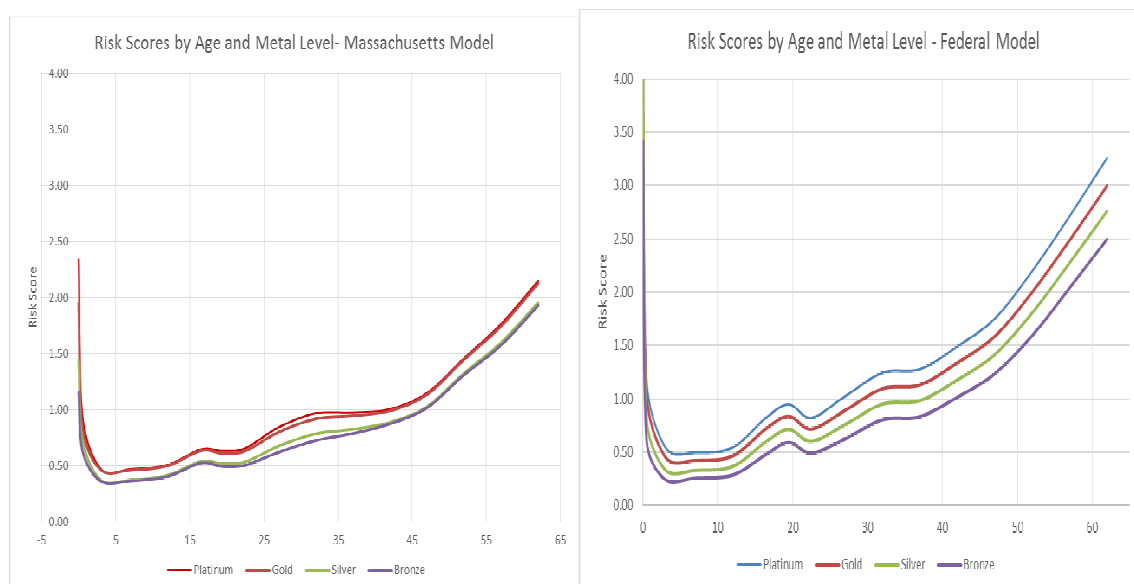
- 3) A greater portion of the Massachusetts risk scores is dependent on the HCCs. In the Federal model, approximately 67% of the average risk score is attributable to HCCs (as opposed to demographics or other). In Massachusetts, approximately 93% of the average risk score is attributable to HCCs.
- 4) The average PLRS for the Massachusetts risk adjustment model is about 27% lower than the average PLRS for the Federal risk adjustment model. While on the surface this may seem to be an issue, a comparison of the Age Rating Factor (“ARF”) curve between Massachusetts and Federal shows a similar relationship.



These differences in the risk score and age rating curves prompted us to investigate biases in risk adjustment for older and younger ages. See section 5.6 below for our conclusions of that work.

Comparison of Risk Scores under each Metal Tier

A comparison of risk scores by metal level indicates a key difference between the Federal Model and the Massachusetts Model. In the Massachusetts Model, the differences in risk scores are similar between the Gold and Platinum and again similar between the Bronze and Silver. In the Federal Model, all plan risk scores are equally spaced. The graphs below detail the risk scores by age for each of the Massachusetts and Federal Model respectively. Note that all graphs reflect the same population morbidity.



These graphs indicate that the relative plan transfers for various metal tiers will be different between the Massachusetts and Federal Model. However, without knowledge of the relative risk of the membership in each metal tier, it's difficult to draw additional conclusions.

In addition to the differences by metal tier, the steeper risk score curve in the Federal Model will also result in different transfers than those that result from the flatter risk score curve.

This may warrant additional study for Massachusetts issuers as there likely are winners and losers based on metal tier and age relative to what the transfers would be under the Federal Model.

3.3 All-Payer Claims Database

The Massachusetts APCD is a comprehensive database comprised of medical, pharmacy, and dental claims information from both public and private payers. It also includes information about member eligibility, providers, and benefit plans. This database was initially chartered in 2009 and the initial release occurred in 2012. It is primarily intended to simplify the process by which payers submit claims data to various Massachusetts agencies. Additional goals include improving quality, reducing costs, and promoting transparency.

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

The Massachusetts Health Connector partnered with CHIA and used the existing APCD to develop a Massachusetts specific risk adjustment model as a part of the implementation of the ACA. The existing

APCD already contained most of the data elements needed to support risk adjustment. Certain data elements like monthly premium, CSR eligibility, and AV were not already a part of the standard APCD collection process but have been added since.

Starting in 2013, CHIA performed automated data quality checks and periodically shared results of the Data Quality Assessments with the plans. Wakely's understanding is that these reports were made available in October 2014 and February 2015. Detailed risk scores by enrollee were released for the first time near year-end 2014. The detailed risk score data by enrollee has just recently allowed issuers to identify various issues in the data that were not apparent from the Data Quality Assessments.

4. METHODOLOGY AND ASSUMPTIONS

Wakely utilized its Simulation Testing of Risk Adjustment and Payment Transfer (STRAP) model to test several hypotheses related to the Massachusetts risk adjustment methodology. This technical testing process is described in detail herein:

First, a five million member national data set (MarketScan Data: Copyright @ 2015 TRUVEN HEALTH. All Rights Reserved) including both eligibility and diagnoses information was used to calculate the overall prevalence of each of the Massachusetts condition categories within a given population. Then the Wakely STRAP model randomly generates members and assigns their age, gender, and specific condition categories according to the distributions represented within this large scale sample of individuals. Other attributes are randomly assigned based on a common set of assumptions intended to best represent the overall composition of the Massachusetts market. The model allows for users to input premiums and risk of a target population relative to the market as a whole. It calculates a risk score for every randomly generated member as well as the overall payment transfers by company, region, and metal level. The simulations were used to help understand the resulting risk adjustment payment transfers and how they change when populations and premiums are adjusted.

The STRAP model simulates 100,000 unique individuals at a time. Before relying on results, Wakely tested and confirmed that the distribution of results among several runs of 100,000 lives closely resembles the distribution of results among several runs of 500,000 lives or more. Ten percent of the time the randomly simulated members are assigned to Company 1 and the rest of the time they are categorized as remainder of market. To create an initial or baseline scenario, all members in the population, including both Company 1 and the remainder of the market, were created using an identical set of demographic assumptions. The STRAP model was run 32 times and the resulting Company 1 per member per month (PMPM) risk adjustment funds transfers were compared across all sets of results. The highest and lowest observations were excluded and the remaining 30 sets of 100,000 lives represented the baseline data set for hypothesis testing and comparison purposes. For this baseline scenario, the Company 1 PMPM risk adjustment transfer ranged from (\$0.03) to \$0.02, with the average falling right at \$0.00; i.e. no transfer. This result is to be expected since the risk and demographic assumptions did not vary between Company 1 and the remainder of the market. The model assumed equivalent actuarial risk across the market.

Each time Wakely changed a set of assumptions to test a particular hypothesis, 32 more samples of 100,000 lives were generated and each time, consistent with the methodology used to develop a baseline scenario, the results associated with the highest and lowest Company 1 transfer were discarded. Potential technical transfer formula issues are discussed in the sections below. Whenever possible, Wakely used the STRAP model to better understand the implications of changing variables and to test theories.

5. ANALYSIS OF RISK ADJUSTMENT METHODOLOGY IN RELATION TO STATED PROGRAM GOALS

5.1 Risk adjustment does not meet defined goals

Finding 1: Due to the prior existence of the exchange in Massachusetts (the Connector) and many of the associated rating policies, risk adjustment in Massachusetts does not meet the intended goals of the program and in fact produces diametric results. Risk adjustment was being introduced into an otherwise stable market in Massachusetts where many ACA provisions were already implemented; therefore consideration should have been given to limiting its impact.

Several aspects of health care reform were already in existence in Massachusetts long before the ACA was signed into law in March of 2010. Comprehensive health reform was passed in Massachusetts in 2006 in an effort to provide near-universal health coverage for state residents. This effort was successful as the Commonwealth experienced an exceptional drop in the number of uninsured within a year of implementation.

Prior to the introduction of the ACA, Massachusetts reform included the following key components:

1. Subsidies for Private Coverage – The Commonwealth Care Health Insurance Program provided subsidized health coverage for individuals with incomes below 300% of the Federal Poverty Level (FPL).
2. Insurance Market Reforms – Massachusetts required guarantee issue. Additionally, Massachusetts implemented coverage and affordability standards, defining what constitutes minimum credible coverage and the maximum amount residents can be charged for it.
3. Employer Requirements – Employers with 11 or more employees must contribute toward health insurance coverage for their employees or pay a “Fair Share” contribution of up to \$295 annually per employee.
4. Individual Mandate – All adults in the state are required to purchase health insurance or face a financial penalty of up to 50% of the lowest cost premium an individual would have qualified for through programs offered by the Connector. A few exceptions exist related to religious objections and financial hardships.

5. State-based Exchange – The Connector was established as a state-based health insurance exchange, allowing consumers to compare standardized benefit packages.
6. Rating Restrictions – Massachusetts already had mandated community rating by class, allowing for limited variation of premium rates within a given area and prohibiting insurers from increasing rates based on individual health status or claims history. Many of the rating restrictions were already implemented in the Massachusetts Market, including a limited rating band for the combination of age and other factors, limitations on increases in premiums, and defined rating regions.
7. Low Uninsured Rates – Massachusetts had already attained a low uninsured rate prior to the ACA.

Most states were facing the new implementation all of the provisions above with the introduction of the ACA whereas Massachusetts had operated under the majority of these provisions since 2007. The provisions above caused a significant amount of uncertainty in rating and enrollment in the new FFM. The final 2014 Benefit and Payment Parameter Rule explains that risk adjustment was intended to mitigate the impact of possible adverse selection and stabilize the premiums in the individual and small group markets as these health insurance market reforms were implemented. Federal regulation on the ACA⁶ indicated “the overarching goal of the premium stabilization programs and Exchange-related provisions and policies of the Affordable Care Act is to make affordable health insurance available to individuals who do not have access to affordable employer sponsored coverage.”

In contrast to the FFM, Massachusetts was unique in that many reforms had already been in place for a number of years. Massachusetts’ premiums and enrollment were stable. The uninsured rates were the lowest in the nation, and a much smaller proportion of individuals with unmet health care needs were expected to enter the system in the Commonwealth of Massachusetts as compared to other state markets. The existence of these provisions dampens, and some would argue eliminates, the need for market stabilization initiatives, like risk adjustment, relative to other markets within the country.

In fact, risk adjustment introduced uncertainty into what was otherwise a stable market. With the implementation of risk adjustment, issuers now needed to understand how their existing membership compared to the average risk of the statewide merged market. This information was critical to appropriately rating for the expected risk payment that would take place.

⁶ 79 FR 13825: Vol 79, No. 47 March 11, 2014

When risk adjustment has been implemented into what otherwise is a stable market, it is common to see some limitation on risk adjustment, either through corridors or another phased in approach. An Issue Brief on Risk Adjustment from the SOA⁷ indicates:

When a risk-adjustment system is first put into place, complete data on health-based information may not be available for many plan enrollees, and health plan diagnosis data may not be fully coded. Therefore, it may be appropriate to phase in implementation of a risk-adjustment payment system over a period of time. During the initial years, demographic and other non-health based information can be used, with claims-based risk-adjustment models phasing in over time. The Medicare Advantage program has taken this approach.

Risk adjustment payments in Massachusetts are not subject to any limits (percent of premium, percent of plan reserves, etc.). Transfer amounts are calculated on a per member per month (PMPM) basis and the resulting amount is then multiplied by total billable member months and by the statewide average premium in order to arrive at the total risk transfer amount. For lower premium plans, this statewide average premium piece of the calculation results in transfer amounts that represent a magnified portion of company premium. That is, the range of risk transfer amounts on a percent of premium basis is wider for lower cost plans than it is for plans with average premium levels. This added volatility makes risk transfer a greater risk for lower cost plans.

A review of the 2014 year-end NAIC financial statements indicate that the risk adjustment payables reduced the RBC levels of surplus for seven of the nine companies reviewed in Massachusetts. Table 5 below indicates that for these seven companies reviewed, the risk adjustment payable reduced the RBC percentages between 4% and 161%.

	BC/BS	BMC	Fallon	HMO Blue	HNE	HPHC	MHI	NHP	Tufts
Per 2014 Year-end Financial Statement									
a. Total Adjusted Capital	671,173,241	204,244,791	168,437,584	1,124,246,078	47,982,467	548,653,033	9,256,909	128,717,496	765,026,261
b. Authorized control level risk-based capital	123,367,495	61,958,763	38,114,791	167,650,572	22,071,456	83,247,922	767,336	65,968,602	141,426,258
c. RBC Percentage	544.0%	329.6%	441.9%	670.6%	217.4%	659.1%	1206.4%	195.1%	540.9%
d. Risk Adjustment Payable (Receivable)	-500,000	5,215,288	12,189,000	-49,500,000	7,571,866	7,812,000	1,234,242	30,942,988	5,163,000
Calculation of RBC Without Risk Adjustment Payable/Receivable									
e. Surplus without Risk Adjustment Payable (a - d)	670,673,241	209,460,079	180,626,584	1,074,746,078	55,554,333	556,465,033	10,491,151	159,660,484	770,189,261
f. ACL (assuming no change) (= b)	123,367,495	61,958,763	38,114,791	167,650,572	22,071,456	83,247,922	767,336	65,968,602	141,426,258
g. Original RBC Percentage Estimate (e/f)	543.6%	338.1%	473.9%	641.1%	251.7%	668.4%	1367.2%	242.0%	544.6%
h. Reduction (Addition) in RBC Percentage (g - c)	-0.4%	8.4%	32.0%	-29.5%	34.3%	9.4%	160.8%	46.9%	3.7%

The issuers with the lowest RBC levels, Health New England and Neighborhood Health Plans, are two of the hardest hit by the risk adjustment payables. For these two issuers, the RBC levels are 34.3% and

⁷ http://www.actuary.org/pdf/health/Risk_Adjustment_Issue_Brief_Final_5-26-10.pdf

46.9% lower than they would have been had the risk adjustment program not been implemented. On the other hand, the two issuers that expect a risk adjustment receivable are Blue Cross Blue Shield and HMO Blue. These two issuers have two of the highest RBC percentages. From a financial solvency perspective, the risk adjustment program is not financially stabilizing the market, but rather exposing the issuers that are most vulnerable to further insolvency risk.

5.2 Risk adjustment results to date have been unreliable

Finding 2: Data issues in the APCD and resulting from the Connector website difficulties have produced unreliable risk adjustment results. Due to the Massachusetts model construct, diagnoses data errors in the Massachusetts model produce more radical results than the same data errors would in the Federal model.

Uncertainty in risk scores does not depend entirely on the quality of the risk adjustment model being used. It also depends on the quality of the data being entered into the model. Per the Massachusetts Association of Health Plans, “the organization [that] advocated for a state-specific formula in 2012, said it didn’t anticipate the significant market disruption the failure of the Connector website would have caused or the data quality and credibility issues that have been acknowledged.”⁸ To the extent that one or more carriers had data quality issues, the relative risks for every carrier would be in question. Whether in actuarial standards, or statutory requirements regarding choosing an alternative risk adjustment methodology⁹, or CHIA’s own presentation on risk adjustment¹⁰, the data quality comments are always the same: credible risk adjustment methodologies depend on the quality of the data. Given the expected significant changes in risk adjustment results for 2014 in the next run, the existing data screening checks and error flagging capabilities are not yet adequate.

The Clients mentioned that the issuers did not receive member level detail until the very end of 2014. In order for Massachusetts health plans to prepare actuarially sound rates that plan appropriately for anticipated risk transfer amounts, the timing and communication of data needs to improve.

5.3 Effective 2014 Rate Setting Difficult

Finding 3: The combined effect of statutory rating policies, rate filing requirements, rate review procedures and risk adjustment procedures prevented effective 2014 rate setting.

⁸ <http://wwlp.com/2015/01/15/mass-insurers-seek-delay-in-aca-risk-adjustment-plan/>

⁹ § 154.330 State alternate risk adjustment methodology.

¹⁰ <https://www.nahdo.org/sites/nahdo.org/files/APCD%20Council%20April%2010%202014%20as%20of%20April%2009%20Compatibility%20Mode.pdf>

This finding is based on the following circumstances:

- a. Although theoretically available, reliable risk adjustment data was not provided to plans in time to incorporate into the 2014 rate development.
- b. The Division of Insurance may not have allowed the needed rate filing adjustments for plans with low risk scores.
- c. Mandated narrow network pricing requirements may not be actuarially feasible.
- d. The ultimate risk pool for risk adjustment is different than what was originally announced in the rate notice.

Risk Adjustment Data was not provided in a timely manner.

The Center on Budget and Policy Priorities indicated both the Federal and State implementation rules for risk adjustment will be needed well in advance of the date by which insurers are required to quote their premium rates for 2014.¹¹ The need to understand risk adjustment ahead of the plan rating period is supported in Medicare Advantage. There, Federal statute requires advance and final notice of all rate changes for the contract year by the first Monday of the preceding April. In fact, CMS goes so far as to provide risk scores for the previous year's population under the contract year risk model.

Although the FFM did not provide any information to issuers regarding risk adjustment in time for 2014 rate filings, Massachusetts was unique in that it at least had an opportunity to provide the needed information. With only 5% of the population uninsured, and the majority of the RACP population in either CommCare or existing health plans, the data for performing risk adjustment was prospectively accessible.

The Division of Insurance would not have allowed the needed rate filing adjustments for plans with low risk scores.

Conceptually it is possible for carriers to rate for expected risk adjustment transfers, but the unwritten rule regarding Benchmark cap hinders this capability. Wakely's understanding of the 2014 rate process is that the Division of Insurance constrained plan increases to be under the Health Care Cost Growth Benchmark, regardless of the risk adjustment transfer estimate. While this process was verbal, and not documented through written correspondence, issuers consistently provided Wakely with the same account regarding the limited increases in rates allowed by the Division of Insurance.

By limiting overall rate increase amounts, issuers may have been unable to prepare actuarially sound rates to support expected risk payment transfers.

¹¹ <http://www.cbpp.org/cms/?fa=view&id=3497>

Mandated narrow network pricing requirements may not be actuarially feasible.

According to statute,¹² any carrier that meets minimum enrollment thresholds and offers a health benefit plan that provides for the delivery of health care services through a closed network of health care providers shall offer to all eligible individuals and small businesses in at least one geographic area at least one plan with either:

- (1) a reduced or selective network of providers;
- (2) a smart tiering plan in which health services are tiered and member cost sharing is based on the tier placement of the services; or,
- (3) a plan in which providers are tiered and member cost sharing is based on the tier placement of the provider.

The base premium rate for the reduced or selective or tiered network plan must be at least 14 percent less than the base premium of the carrier's most actuarially similar plan with the carrier's non-selective or non-tiered network of providers. The savings may be achieved by excluding providers with similar or lower quality with higher relative prices or by increasing member cost-sharing for members who utilize providers for non-emergency services with similar or lower quality with higher relative prices.

Such selective or tiered network plans tend to attract lower risk individuals whereas higher risk individuals are more likely to choose richer, broader-network options. As such, when carriers offer these plans, they are likely to end up with lower average risk scores and lower average premium. Historically, the combination of lower risk members and tiered cost-sharing allowed the narrow network plans to achieve the 14 percent less base premium. However, under the terms of risk adjustment, whenever a carrier's average premium is lower than the market average, risk adjustment transfers will represent a greater proportion of their premium than they would for carriers with average overall premium levels. Table 6 below indicates various scenarios of how pre-ACA narrow network products may be obtaining their 14% premium differential, and how much additional cost-savings would be needed beginning in 2014 in order to maintain the required 14% premium differential.

¹² The Commonwealth of Massachusetts General Laws Part I Administration of the Government, Title XXII Corporations, Chapter 176J Small Group Health Insurance, Section 11 Reduced or selective network plans; tiered network plans; smart tiering plans

Table 6: Analysis of Narrow Network Product Premium Differentials						
Scenario	Pre-ACA Premium Differential Due to			Post ACA Requirements		
	a. Contracts and Cost-sharing incentives	b. How much healthier risk?	c. Total Premium Differential	d. Amount needed to pay risk adjustment transfer [1]	e. Additional amount of savings needed to maintain 14% premium differential (same as d.)	f. Total Amount of savings needed from Contracts and cost-sharing incentives to Maintain 14% premium differential (a. + e.)
1	12%	2%	14%	2.3%	2.3%	14.3%
2	10%	4%	14%	4.7%	4.7%	14.7%
3	8%	6%	14%	7.0%	7.0%	15.0%
4	6%	8%	14%	9.3%	9.3%	15.3%
5	4%	10%	14%	11.6%	11.6%	15.6%
6	2%	12%	14%	14.0%	14.0%	16.0%

[1] Calculated as (Expected Risk Payment)/(1-0.14). Expected Risk payment equals the amount of healthier risk attracted into the plan. Because the premiums are at least 14% below comparable non-narrow network plans, we have assumed that they are 14% below Statewide averages.

Under Scenario 1, if the current 14% differential is primarily driven by contract and cost-sharing incentives, it may be feasible to find another 2-5% of savings. However, if the premium differential is primarily driven by healthier risks, it will be unlikely that the narrow network plan premium differential can be maintained.

Preliminary analysis indicates at least 6% (Scenario 3) of premium differential in narrow network plans is due to selection. In this scenario, an additional 7% of savings are needed to maintain the required rating differential. We are not confident that this amount of additional savings can be achieved for the narrow network products.

The ultimate risk pool for risk adjustment is different than what was originally announced in the rate notice.

The commercial risk pool is distorted by the absence of the Commonwealth Care and Temporary Coverage populations since health plan pricing actuaries planned for these members to be included in the single risk pool for risk adjustment purposes. The prevailing thought was that the Commonwealth Care membership was less healthy than the rest of the merged market. Removing them from risk adjustment changes the risk profile of the statewide average risk member. In theory this should change the premium rates, which are based on that average risk profile. The change not only impacts the issuers who were intending to pick up these members in the merged market, but all issuers in the market via their evaluation of the 1.0 statewide risk. To reduce bias and improve rating accuracy, the application of risk adjustment models should always be consistent with the procedures and assumptions used to set rates.

5.4 Financial Recovery Challenging

Finding 4: Massachusetts rating rules prevent financial recovery from losses due to risk adjustment.

Per the 2014 NAIC financial statement results, several plans who have outgoing risk adjustment payment transfers are incurring losses on their commercial block of business. The Massachusetts' rating rules prevent issuers from making a financial recovery in prospective years:

- The MLR requirement does not allow for any additional profit to be built into retention beyond the 12% limit on total administrative and margin.
- Profit guidance prohibits any profits more 1.9% of premium.

Both of these restrictions limit the amount of profit needed to recover from the financial losses incurred. So in addition to destabilizing the market with unknown risk payment transfers and creating a challenging rate-setting situation, Massachusetts then on the back-end restricts issuers' ability to recover from losses. For those issuers required to make significant payments for risk adjustment, this seems to be the perfect storm. Issuers without excess surplus to fund the losses could face insolvency.

5.5 Similar Biases Exist in the Massachusetts and Federal Model

Finding 5: The Massachusetts rating policies and risk adjustment methodology contain many of the same biases found in the Federal model.

Low cost and low risk score regions have higher payment transfers as a percent of collected premiums than those in high cost regions.

One hypothesis that was suggested was that health plans in lower cost regions may be disadvantaged by the Massachusetts risk adjustment methodology and the associated risk transfer formula. The PMPM risk adjustment funds transfer by rating area is multiplied by billable member months and by the statewide average premium to compute the total transfer amount. This means that total risk transfer amounts in lower cost regions represent a disproportionate share of company premium all else equal. Since the transfer formula results sum to zero at the statewide single risk pool level, rather than at the region level, regional bias may exist.

Our analysis showed that companies concentrated in lower cost regions incurred total risk transfers centered on zero, i.e. no transfer, even when their membership resided entirely in a lower cost region. The conclusion is that health plans are not more or less likely to pay into the risk adjustment system solely as a result of offering lower average premiums. Positive or negative risk adjustment transfers only occur when the health risk as defined by the Massachusetts Risk adjustment Model is different than the statewide average.

In addition to reviewing the PMPM transfer amounts that resulted for these scenarios, Wakely also reviewed the results on a percent of premium basis. At the ends of the spectrum, where carriers were paying in on average, or receiving money on average, payment transfers represented a larger proportion of company premium for the lower cost plans. On a percent of premium basis, the transfer results were more extreme for a company with lower average premium than they were for a company with market

average premium levels. That is, more volatility, and therefore more risk, exists for lower cost plans relative to higher cost plans. More volatility in the payment transfer does increase the need for higher margins in lower cost plans relative to higher than average cost plans.

Risk adjustment transfers are based on statewide premiums, not claims, which results in a payment transfer of premiums related to administrative fees, not just claims.

In the same fashion as the Federal model, the payment transfer formula for Massachusetts calculates a positive (receivable) or negative (payable) relative percentage. For example, if the relative risk of an issuer’s population is 5% above average and the issuer could rate for 3% of this above average risk through rating adjustments, the payment transfer formula would indicate that the issuer should receive 2% receivable (5% less 3%) for the risk that they received that was not rated for. This percentage is then multiplied by the statewide average premium rate.

Much discussion has taken place regarding whether the 2% receivable should be based on the total premium or only the claims portion of the premium. The decision to use premium, rather than claims, results in a transfer of administrative fees, and not just claims from those plans who have healthier than average risk. Our opinion is that the transfer of administrative expenses is unwarranted, and that the transfers should be made based on only the medical component of the premium amount. This adjustment is easy to effectuate, and would also reduce the level of expected payment transfers.

In addition to the transfer of administrative expenses, lower cost health plans with risk transfer payables actually end up subsidizing higher cost plans. The further a carrier’s average premium drops below the statewide average premium, the greater the proportion of its risk transfer payable that can be attributed to subsidizing higher cost health plans who may simply have higher cost providers or higher administrative cost levels. This portion of the transfer is unrelated to health status differences.

Table 7 below shows what portion of the risk transfer pmpm (\$13.08 in this case) can be attributed to actual health status (lower risk) versus administrative costs and or subsidization. It demonstrates that the further a carrier’s average premium is below the statewide average premium level, the larger the proportion of the transfer that is unrelated to health status.

Table 7: Transfer Amounts for Low Cost Issuers					
	Carrier Premium	Transfer PMPM	Transfer Attributable to:		
			lower risk/lower claims	administrative costs	subsidizing higher cost plans
5% lower	\$414.20	\$13.08	\$10.56	\$1.86	\$0.65
10% lower	\$392.40	\$13.08	\$10.01	\$1.77	\$1.31
15% lower	\$370.60	\$13.08	\$9.45	\$1.67	\$1.96
30% lower	\$305.20	\$13.08	\$7.78	\$1.37	\$3.92
Statewide Average	\$436.00				

Regional differences in coding, risk, and demographics may result in payment transfers that create subsidies between regions.

Since the transfer formula results sum to zero at the statewide single risk pool level, rather than at the regional level, the formula can result in overall subsidies between the regions. Regional differences in risk score may not reflect true morbidity differences, but rather differences in provider behaviors, coding practices, extent of adoption or use of electronic medical records, or size and structure of practices. Any differences in risk scores driven by factors other than underlying health status have the potential to disrupt the market and cause biases for and against certain counties or regions; thereby working against the policy goals of risk adjustment. It is important to study and strive to understand the impact that such variables can have on risk adjustment and, wherever possible, adjustments should be put into place.

The article, “Regional Variations in Diagnostic Practices,” published in The New England Journal of Medicine in July of 2010, described a study performed to measure trends in diagnostic practices for Medicare beneficiaries. According to this article, regions were organized into five distinct groupings according to the intensity of hospital and physician services that beneficiaries in the region received. Beneficiaries within each grouping who moved during the study period to regions with a higher or lower intensity of practice had similar numbers of diagnoses and similar HCC risk scores before their move. The number of diagnoses and the HCC measures increased as the cohort aged, but they increased to a greater extent among beneficiaries who moved to regions with a higher intensity of practice than among those who moved to regions with the same or lower intensity of practice.

The conclusion was that significant differences in diagnostic practices are observed across the country. It is believed that similar diagnostic differences exist within the Massachusetts market as well. The supposition is that the intensity of practice is greater in the Boston regional area than in the more rural, Western areas. The use of clinical diagnoses in risk adjustment may distort results and introduce bias.

5.6 Additional Biases Exist in the Massachusetts Model

Finding 6: The Massachusetts rate policies and risk adjustment methodology contains biases not found in the Federal model.

Transitional rating factors are not accounted for in the payment transfer formula, causing an unequal playing field for issuers and greater transfers than may be necessary.

As discussed earlier, the Commonwealth will continue to 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, collectively referred to as transitional rating factors for policies renewed prior to January 1, 2016. In general, transitional factors:

- decrease small group premiums relative to individual premiums,

- vary group premiums based on assumed selection associated with industry and participation, and
- reduce group premiums based on lower administrative fees related to group purchasing cooperatives.

Conceptually, premium variations that compensate for risk selection should be accounted for through the risk adjustment payment transfer calculations to avoid the effect of double counting. However, the Commonwealth's payment transfer formula does not adjust for the transitional rating factors that are allowed during the phase-in period.

The biases associated with allowing transitional rating factors depend on whether the transitional rating factors are effective in valuing risk that is not otherwise captured in rate setting. Prior to the ACA (in the absence of risk adjustment), it's commonly agreed that these factors successfully captured some risk differences inherent in small group versus individual enrollees as well as between small groups. However, after the ACA, it is unclear whether these factors are necessary for capturing risk not included in risk adjustment. Even the methodology prescribed with the Massachusetts rate notice has wavered on whether an adjustment for individual versus small group is needed in the risk adjustment model. Originally, the Massachusetts Payment Notice as published in the Federal register included a factor of 1.057 applied to risk scores for individuals choosing the Platinum plan. But the Final Massachusetts Payment Notice removed the factor.¹³

There are two results worth noting regarding transitional rating factors:

1. Assuming the transitional factors are directionally correct and not overestimated, excluding these factors from the Payment Transfer formula causes more extreme values to be transferred than if the transitional factors were included in the payment transfer formula.
2. The transitional factors allow for variation in rates and create an unequal playing field for risk selection in marketing, especially for issuers new to the market. This could impact selection of members into plans.

Item 1 can be explained by a review of the payment transfer formula. On a simplistic basis, the payment transfer formula reflects the general format of:

$$(\text{PLRS relative risk} - \text{Rating Factor relative risk}) * \text{Statewide average premium}$$

If the transitional factors were to be included in the formula, they would be included in the Rating Factor relative risk term. If a higher than average risk is computed in the left hand term of the payment transfer formula (the PLRS term), and this is due to factors that are incorporated by the transitional

¹³ MANoticeofBenefitPaymentParameters.pdf

rating factors, the right had term of the payment transfer formula would increase, resulting in a lower transfer.

On the low risk side, if the risk is healthier than average, the PLRS term would be less than 1. Assuming that the transitional factors again would capture some of that healthier than average risk, the transfer would be less negative if the transitional factor was included in the relative risk term of the formula.

Item 2 is a direct result of the fact that in the marketplace, issuers are allowed different transitional rating factors, and these factors may encourage or discourage enrollees into their benefit plans. This unequal playing field is most pronounced for new issuers, who were not allowed to incorporate any transitional rating factors into their rate setting during 2014.

New plans are more susceptible to inaccurate risk scores and low risk score members. The durational adjustment's ability to offset biases for low duration members is unconfirmed.

We believe that new plans have two characteristics that may cause risk adjustment to be biased against them.

1. New plans have a higher proportion of newly eligible members. Due to the lag in obtaining diagnostic information as they learn their benefits, find a doctor, schedule their appointments, etc., their ability to obtain HCCs is more limited than for members who are enrolled for the entire year.
2. Risk scores more accurately predict expenditures and risk for larger populations. To the extent that new issuers have lower membership than other issuers in the market, risk adjustment will be less accurate and may result in erroneous payments.

The Massachusetts model, unlike the Federal Model, applies an eligibility duration adjustment factor for members with less than nine months of eligibility in an attempt to improve predictive accuracy for such members. The Massachusetts Payment notice indicates the following regarding partial year membership

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.

Wakely was not able to study whether this adjustment to risk scores is warranted under the terms of this engagement, but with the resulting large increases to risk scores for enrollees with low membership durations, this is an important issue to understand.

Regarding the second issue of risk adjustment credibility, we reviewed a research project sponsored by the Society of Actuaries titled “Uncertainty in Risk Adjustment.”¹⁴ The research indicated that risk scores have more predictability of cost when applied to larger populations. The following table, taken from the report, indicates the confidence intervals of relative risk for various population sizes for the Medicare HCC model. The confidence intervals reduce as the population size increases.

Figure 3: 90% Confidence Intervals by Group Size

Medicare 5% Sample and CMS-HCC Model

Group Size	Confidence Interval
1	Score + {-1.6,2.81}*
2	Score + {-1.25,2.21}
5	Score + {-0.89,1.51}
25	Score + {-0.49,0.69}
50	Score + {-0.37,0.49}
250	Score + {-0.19,0.21}
1,000	Score + {-0.097,0.1}
5,000	Score + {-0.042,0.046}
10,000**	Score + {-0.033,0.038}
25,000**	Score + {-0.022,0.023}
50,000**	Score + {-0.016,0.016}
100,000**	Score + {-0.012,0.011}

Although this study was performed on the CMS-HCC model for Medicare Advantage, the results are also applicable to the HHS-HCC model and the Massachusetts model for risk adjustment. For issuers with small numbers of enrollees, the research indicates the payment transfers may inaccurately measure the relative risk of the population and result in higher or lower payment transfers than may be warranted.

Data issues have a larger impact in the Massachusetts model than in the Federal model.

¹⁴ <https://www.soa.org/research/research-projects/health/uncertainty-risk-adjustment.aspx>

As indicated earlier, a greater portion of the risk scores are due to diagnoses and HCCs in the Massachusetts Model than in the Federal Model. Therefore, if there are data issues that are preventing diagnoses from being adequately captured in the APCD, these missing diagnoses will have a greater impact on the risk scores in the Massachusetts Model than in the Federal Model.

Model is biased against members with zero condition categories.

Wakely summarized the members in the five million member sample referenced earlier (MarketScan Data: Copyright @ 2015 TRUVEN HEALTH. All Rights Reserved) by number of condition categories (0, 1, 2, etc.). For each category of members, paid claims per member per month were compared to a proxy for risk adjusted premium, calculated as PLRS divided by average PLRS multiplied by statewide average premium. All beneficiaries were assumed to be silver members and the overall target loss ratio was set equal to 85% of premium. One would expect the average loss ratio to be close to this overall target of 85% for every category of members regardless of the number of condition categories they receive. For members with one or more condition categories this was in fact the case, but for members receiving zero condition categories the average loss ratio was over 200%. Details are provided in the table below.

That is, after risk adjustment, issuers are losing money on those members who are not assigned any HCCs. To the extent that an issuer has a larger proportion of zero condition category members than the market as a whole, the issuer is being penalized by the risk adjustment transfer formula. This issue is also apparent in the Federal model, but to a much lesser extent. The demographic factor included in the Federal model dampens this issue.

Table 8: Loss Ratio by CC Count						
#CC	Member Months	Portion of MM	Risk Score	Paid Claims PMPM	Risk Adjusted Premium PMPM	Loss Ratio
0	26,864,336	50%	0.059	\$66	\$29	224%
1	11,937,796	22%	0.549	\$224	\$274	82%
2	6,309,152	12%	1.142	\$431	\$569	76%
3	3,472,054	6%	1.853	\$697	\$924	75%
4	1,991,471	4%	2.651	\$1,024	\$1,321	78%
5	1,151,439	2%	3.581	\$1,399	\$1,785	78%
6	674,360	1%	4.630	\$1,831	\$2,308	79%
7	404,801	1%	5.893	\$2,359	\$2,937	80%
8	248,595	0%	7.400	\$3,019	\$3,688	82%
9	159,191	0%	8.983	\$3,732	\$4,477	83%
10+	386,401	1%	17.933	\$7,993	\$8,938	73%
Total	53,599,596	100%	0.875	\$371	\$436	85%