

CMS - Baltimore, Maryland

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# HHS-OPERATED RISK ADJUSTMENT METHODOLOGY MEETING

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MARCH 31, 2016

# Purpose

The purpose of this training is to provide issuers, states, and other interested stakeholders information about the HHS-Operated Risk Adjustment Methodology and gather feedback on the March 31, 2016, HHS-Operated Risk Adjustment Methodology Meeting Discussion Paper that will be issued in March 2016

# Meeting App

During the meeting, attendees may use **SimplyAttend**, a new app for download for Apple, Android or Windows mobile devices. Search for “SimplyAttend” in your mobile device’s app store to fully participate during the meeting

# Materials Received at Registration

- **Name Badge**
- **Materials Folder:**
  - Agenda
  - Presentation Slides
  - Q&A Cards
  - Evaluation Survey

**John Smith**

ARD<sub>U</sub>

*Elegant solutions to today's challenges*

Team members are available to assist you with meeting information and respond to your needs

# Agenda – Thursday, March 31, 2016

Time (ET)	Topic
9:10 a.m. - 9:20 a.m.	Welcome
9:20 a.m. - 10:00 a.m.	Conference Introduction & 2014: What We Know and What We Have Done
<b>10:00 a.m. - 10:15 a.m.</b>	<b>Break</b>
10:15 a.m. - 12:15 p.m.	Introduction to Current Risk Adjustment Model and Model Exploration Topics
<b>12:15 p.m. - 1:15 p.m.</b>	<b>Lunch</b>
1:15 p.m. - 2:15 p.m.	Collecting Enrollee Level Data for Future Recalibration of Risk Adjustment Data
2:15 p.m. - 3:15 p.m.	Risk Adjustment Transfer Discussion
3:15 p.m. - 4:00 p.m.	General Audience Q&A/Discussion
4:00 p.m. - 4:15 p.m.	Closing Remarks and Next Steps

# Presentation Materials

Presentation slides and the March 31, 2016, HHS-Operated Risk Adjustment Methodology Meeting Discussion Paper are available in the REGTAP Library at <https://www.REGTAP.info>

# Wireless Internet Access

To access CMS Wi-Fi manually add a network and enter SSID “FREEDOM” to connect. Use the following credentials and follow the instructions below:

**USERNAME:** cmsguest

**PASSWORD:** CMSGuestWireless2016

**SECURITY CODE:** WPA2-Enterprise or 802.1x EAP (Whichever appears on your device)

- Ensure the User Authentication is selected in Advanced Settings
- Under PEAP Properties, ensure “Validate server certificate” is unchecked
- Under MSCHAPv2 configuration, ensure “Automatically use my Windows logon and password (and domain if any)” is unchecked
- Ensure “Connect even if this network is not broadcasting” is selected if applicable to your device

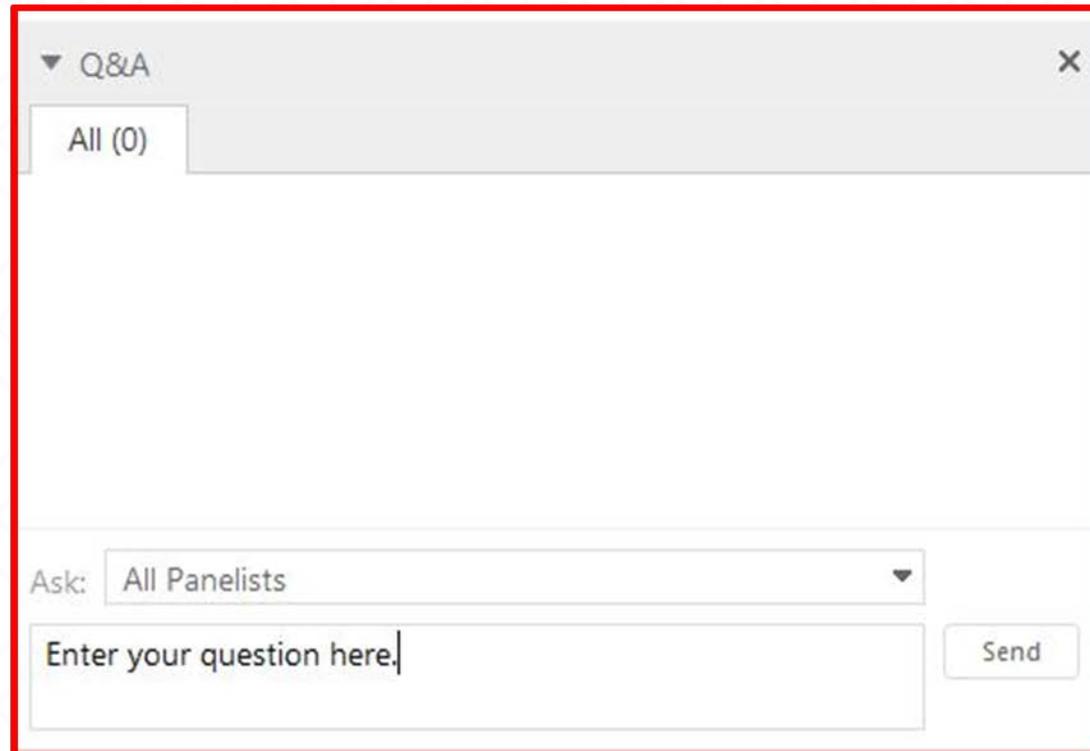
# Need Assistance ?

- Please visit the Registration Desk located in the foyer with questions or requests
- Remote participants may contact the Registrar at 800-257-9520 or [Registrar@REGTAP.info](mailto:Registrar@REGTAP.info)

# Questions

- CMS will answer questions submitted during the session from both in-person participants and remote participants
- Use question cards distributed during registration and made available during the conference to present your questions
  - Please note your name and organization on the question cards

Remote participants may submit questions using the Q&A feature of the online webinar



A screenshot of a Q&A interface. At the top left, there is a dropdown menu labeled "Q&A" with a downward arrow. To its right is a close button "X". Below this is a tab labeled "All (0)". The main area is empty. At the bottom, there is a section labeled "Ask:" with a dropdown menu showing "All Panelists" and a downward arrow. Below that is a text input field containing the placeholder text "Enter your question here." and a "Send" button to its right. A red arrow points from the left towards the text input field.

Submit questions or comments to  
[hhshccraops@cms.hhs.gov](mailto:hhshccraops@cms.hhs.gov) or to the  
Inquiry Tracking Management  
System (ITMS) in REGTAP at  
<https://www.REGTAP.info>  
by April 22, 2016

# Lunch

(12:15 p.m. - 1:15 p.m. ET)

The cafeteria is  
located within the  
building on the  
lower level



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# ATM

For your convenience  
there is an ATM available  
in the cafeteria



# Restrooms

Located outside the Auditorium to the right, then down the hall on the left



# No Eating

No food or  
beverage allowed  
in the auditorium



# Secure Valuables

Please secure all valuables as CMS is not responsible for any lost or stolen items



# Silence Electronics

Please silence all  
electronic devices  
and disengage  
alarms



# Emergency

In case of an emergency,  
look for illuminated exit  
signs and walk, not run,  
to your nearest exit



# We Appreciate Your Feedback

- Please complete feedback by the conclusion of the meeting
- Remote participants will receive a request for feedback at the conclusion of the meeting



Welcome  
Presented by Dr. Mandy Cohen

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**HHS-OPERATED RISK ADJUSTMENT  
METHODOLOGY MEETING**

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Conference Introduction & 2014:  
What We Know, What We Have Done  
Presented by Jeffrey Grant, MPA

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HHS-OPERATED RISK ADJUSTMENT  
METHODOLOGY MEETING

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- Section 1343 of the Affordable Care Act provides for a permanent risk adjustment (RA) program
  - Applies to non-grandfathered individual and small group plans inside and outside of the Marketplaces
  - Transfers funds from plans with relatively lower risk enrollees to plans with relatively higher risk enrollees to protect against adverse selection
  - Provides payments to health insurance issuers that disproportionately attract higher-risk populations (such as individuals with chronic conditions)
- RA methodology was developed with a 2012 White Paper followed by rulemaking through the HHS Notice of Benefit and Payment Parameters for 2014 finalized in March 2013
  - Subsequent Payment Notices have updated and clarified policy

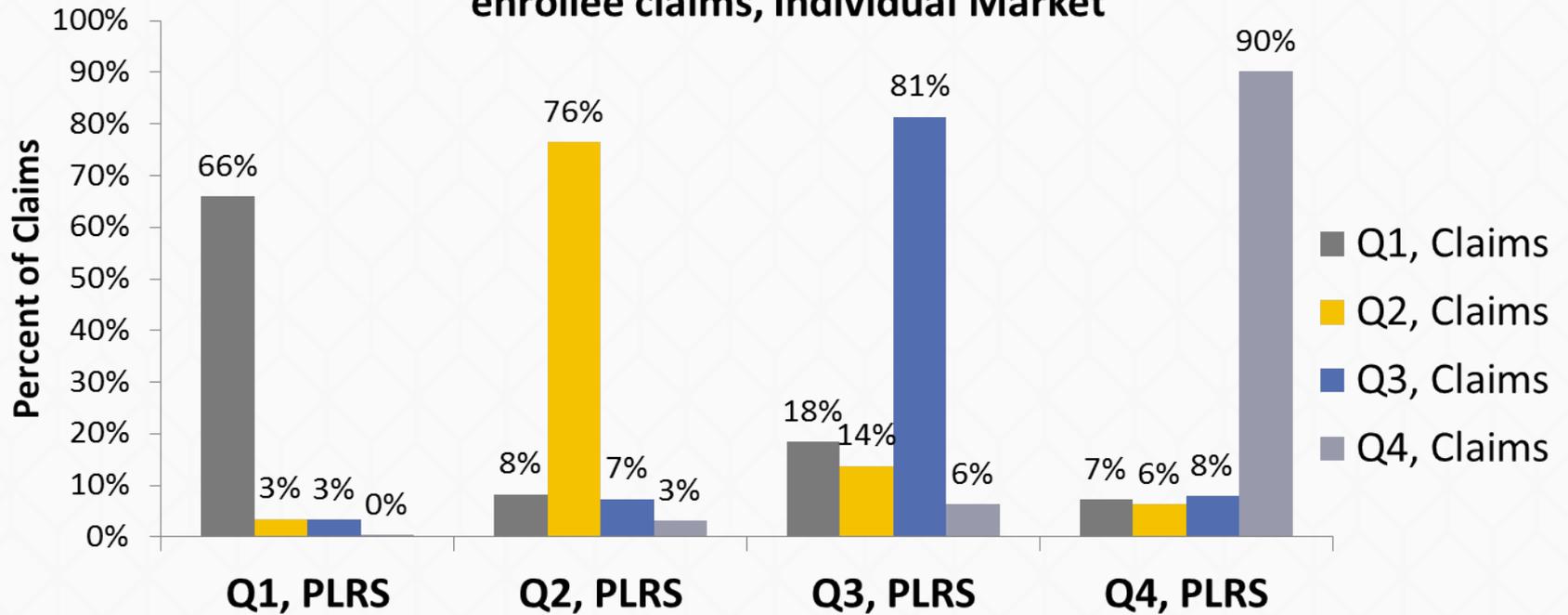
- CMS implemented RA in 49 states plus DC
  - Standard model and transfer formula for all states and markets
  - Massachusetts operated its own RA program
- RA calculated \$4.6 billion in total transfers in the ACA-compliant individual and small group markets
  - \$3.5 billion individual
  - \$1.1 billion small group

- Reviewed issuer discrepancy filings and appeals
- Received informal feedback from variety of sources
  - Individual health insurance companies
  - Trade associations
  - Actuarial groups
  - Health plan coalitions
- Feedback has been mixed
  - Many positive accolades for the operational successes and the general operation of the model and transfers
  - Specific concerns have been raised about the predictive power of the model and the functioning of the transfer equation

- Interim risk transfer results distributed to issuers in 20 states and the District of Columbia on March 18, 2016
  - In states that did not meet the CMS credibility threshold, no issuers received interim transfer results
  - In states that did, only issuers that had 90% of claims and enrollment data on their EDGE servers received results
- CMS released a White Paper discussing potential future changes to the risk adjustment program
  - Available at: <https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/RA-March-31-White-Paper-032416.pdf>
- Today's national conference is to discuss the paper and receive initial feedback from the public

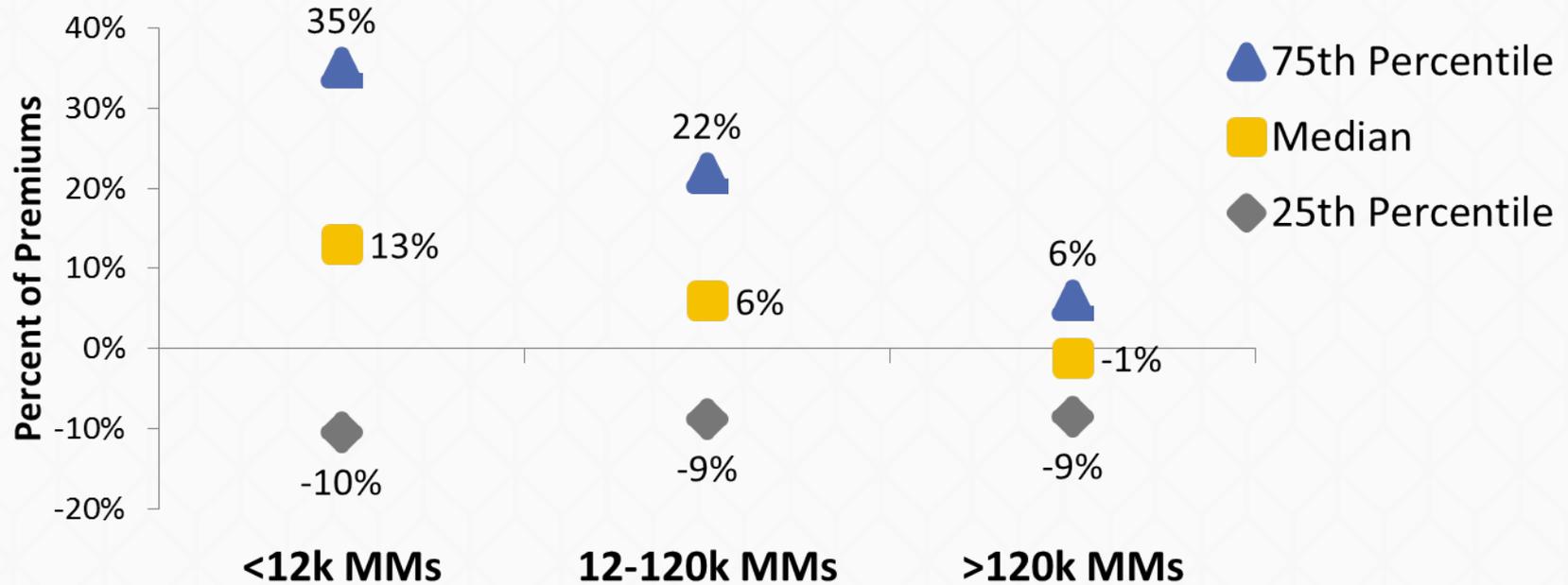
- Risk adjustment transfers went from issuers with low claims costs to those with high claims costs
- In the individual market, small plans received payments more frequently than large plans; opposite was true in small group market
- Small plans tend to vary from the mean more than large, and thus saw a greater percent of premium transferred
- In general, higher actuarial value (AV) plans had higher risk scores
  - The risk transfer formula neutralizes some of the effect of the higher risk scores through higher transfers, on average, to higher AV plans
  - However, within each metal level, there were still transfers from issuers with low-risk enrollment to issuers with high-risk enrollment

### Distribution of issuers by quartile of PLRS and quartile of per enrollee claims, Individual Market



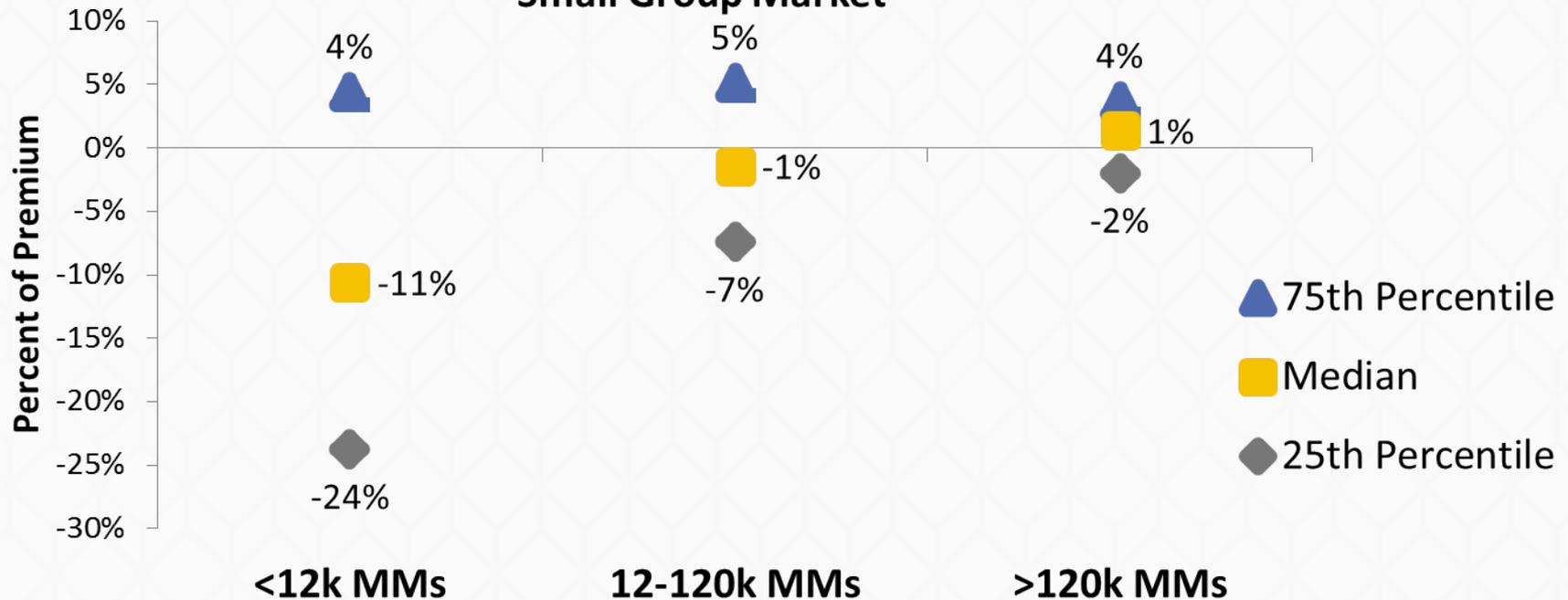
Amounts shown are at the issuer level and weighted by billable MMs of enrollment  
 Data tabulated by the Agency for Healthcare Research and Quality (AHRQ)

### Distribution of transfers as % of premium, by issuer size, Individual Market



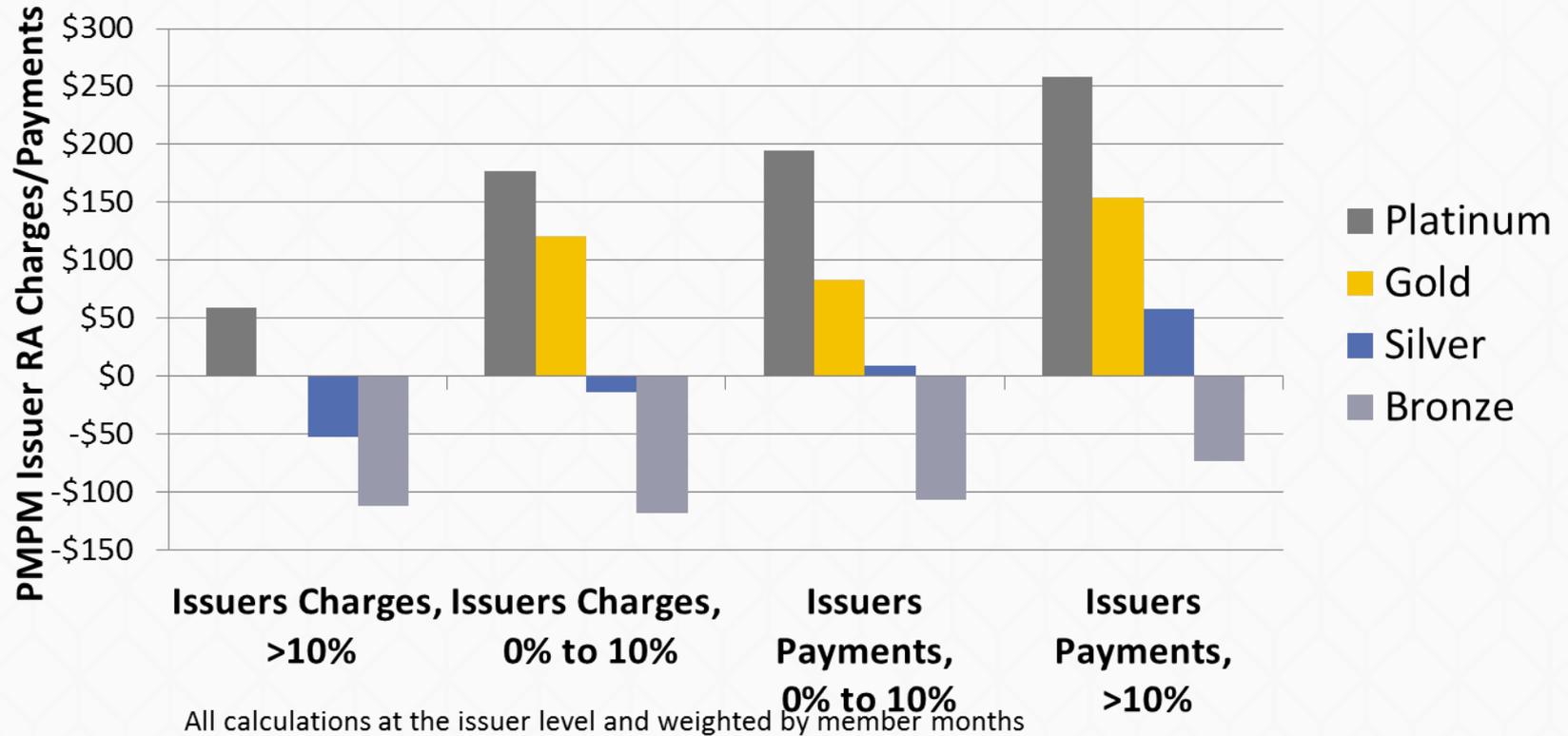
Amounts shown at issuer level and weighted by billable members months of enrollment  
 Data tabulated by AHRQ

### Distribution of transfers as % of premium, by issuer size, Small Group Market

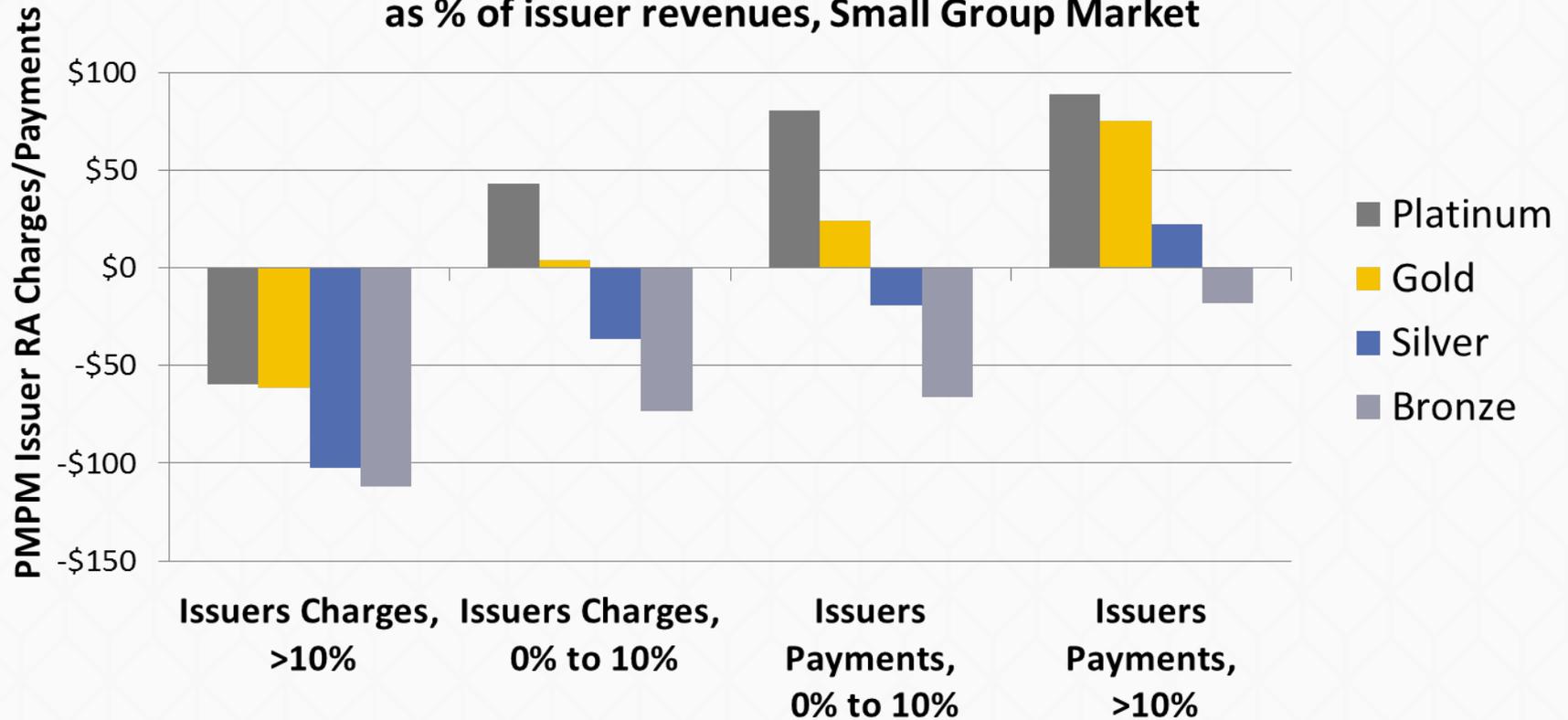


Amounts shown at issuer level and weighted by billable members months of enrollment  
 Data tabulated by AHRQ

### RA payment by metal level and by transfers as % of issuer revenues, Individual Market

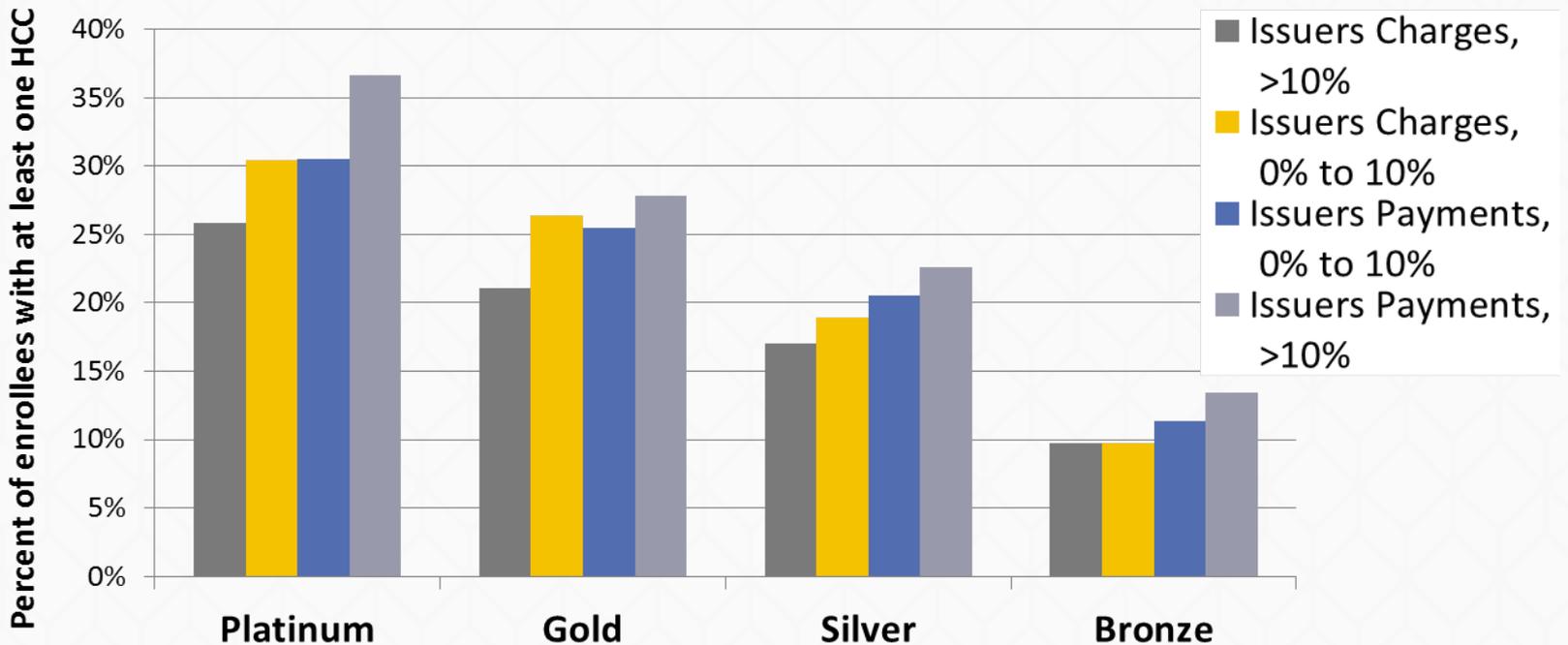


### RA payment by metal level and by transfers as % of issuer revenues, Small Group Market



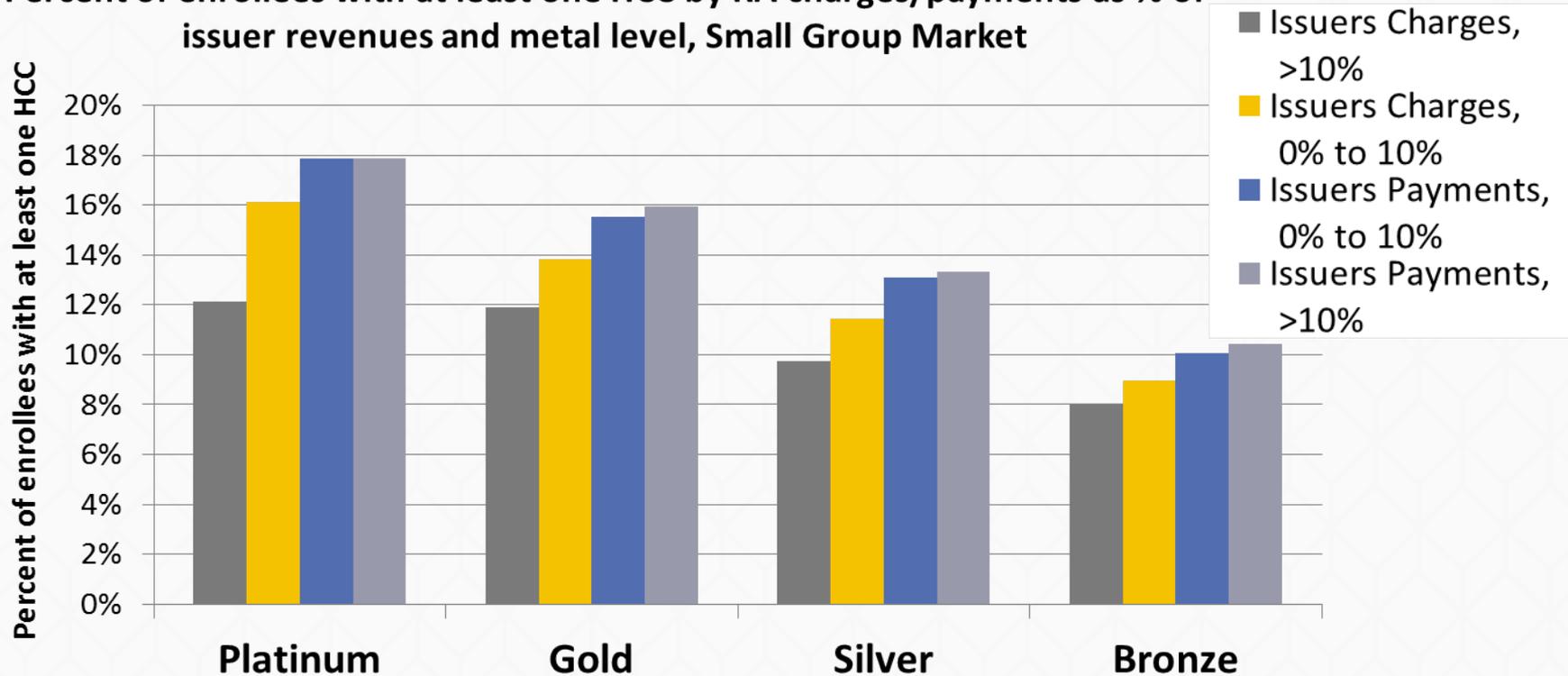
All calculations at the issuer level and weighted by member months  
Data tabulated by AHRQ

### Percent of enrollees with at least one HCC by RA charges/payments as % of issuer revenues and metal level, Individual Market



At issuer level and weighted by member months. Payments/receipts as a percent of all plans' premiums  
Data tabulated by AHRQ

**Percent of enrollees with at least one HCC by RA charges/payments as % of issuer revenues and metal level, Small Group Market**



At issuer level and weighted by member months. Payments/receipts as a percent of all plans' premiums  
Data tabulated by AHRQ

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# QUESTIONS

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# BREAK

Thank you for joining the Meeting.

The next session will begin at 10:15 a.m. ET

Questions	Contact Information
Registration and Logistics	E-mail: <a href="mailto:Registrar@REGTAP.info">Registrar@REGTAP.info</a> Phone: 800-257-9520

# Introduction to Current Risk Adjustment Model and Model Exploration Topics

Presented by Krutika Amin & Kelly Drury

HHS-OPERATED RISK ADJUSTMENT  
METHODOLOGY MEETING

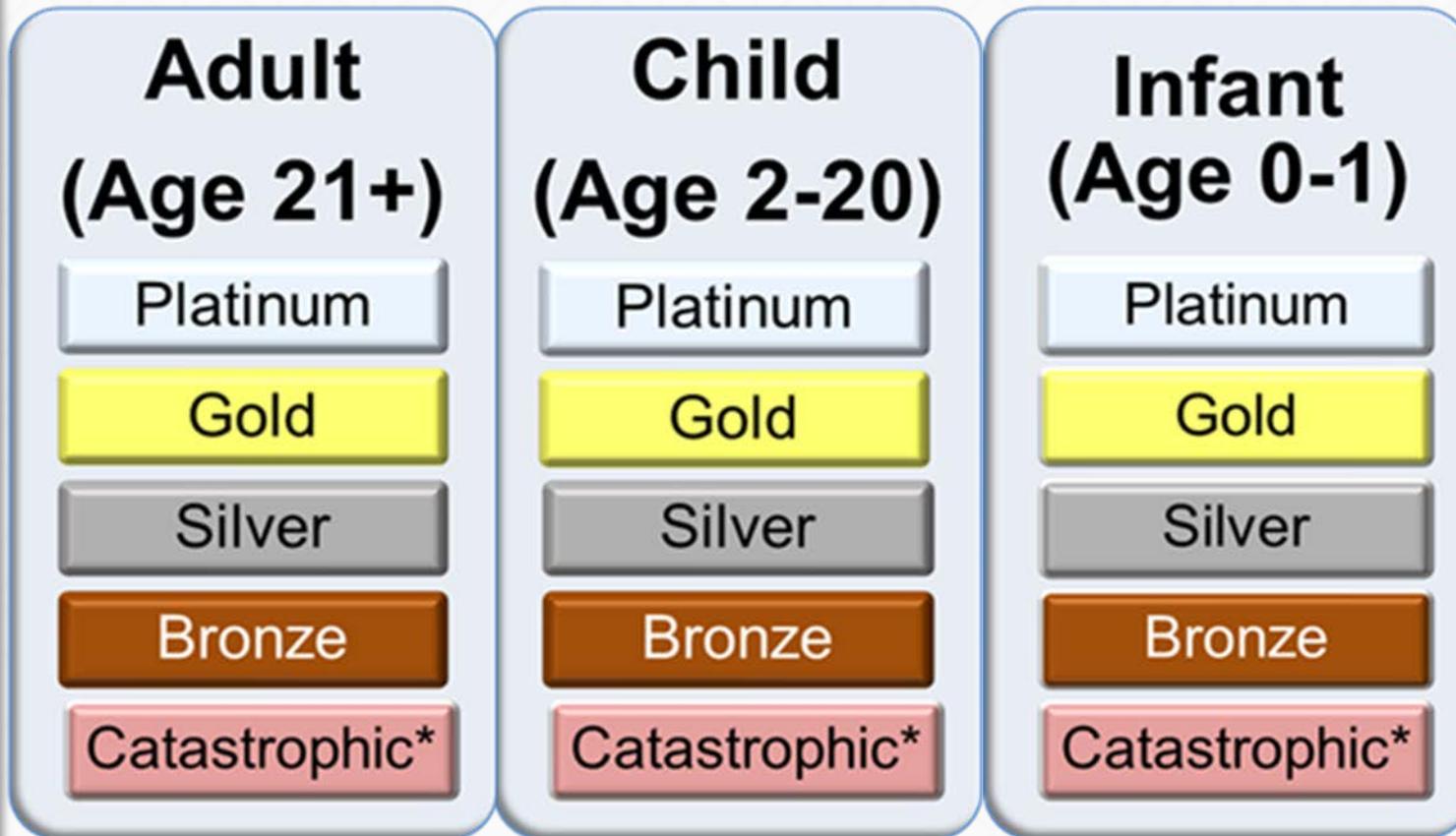
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# INTRODUCTION TO CURRENT RISK ADJUSTMENT MODEL

- The HHS-developed risk adjustment (RA) model is used when the Department of Health and Human Services (HHS) is operating RA on behalf of any State
- The primary source for RA model calibration is MarketScan® data which includes:
  - Data from employers and health plans
  - Health Insurance Portability and Accountability Act (HIPAA) de-identified data
  - Data from all 50 states and Washington D.C.
- The concurrent model uses data from the current benefit year to predict enrollee health care costs in the same year

Each RA model predicts individual-level risk scores, but is designed to predict average group costs to account for risk across plans



\*Catastrophic plans are in the individual market only

### Adult

### Child

### Infant

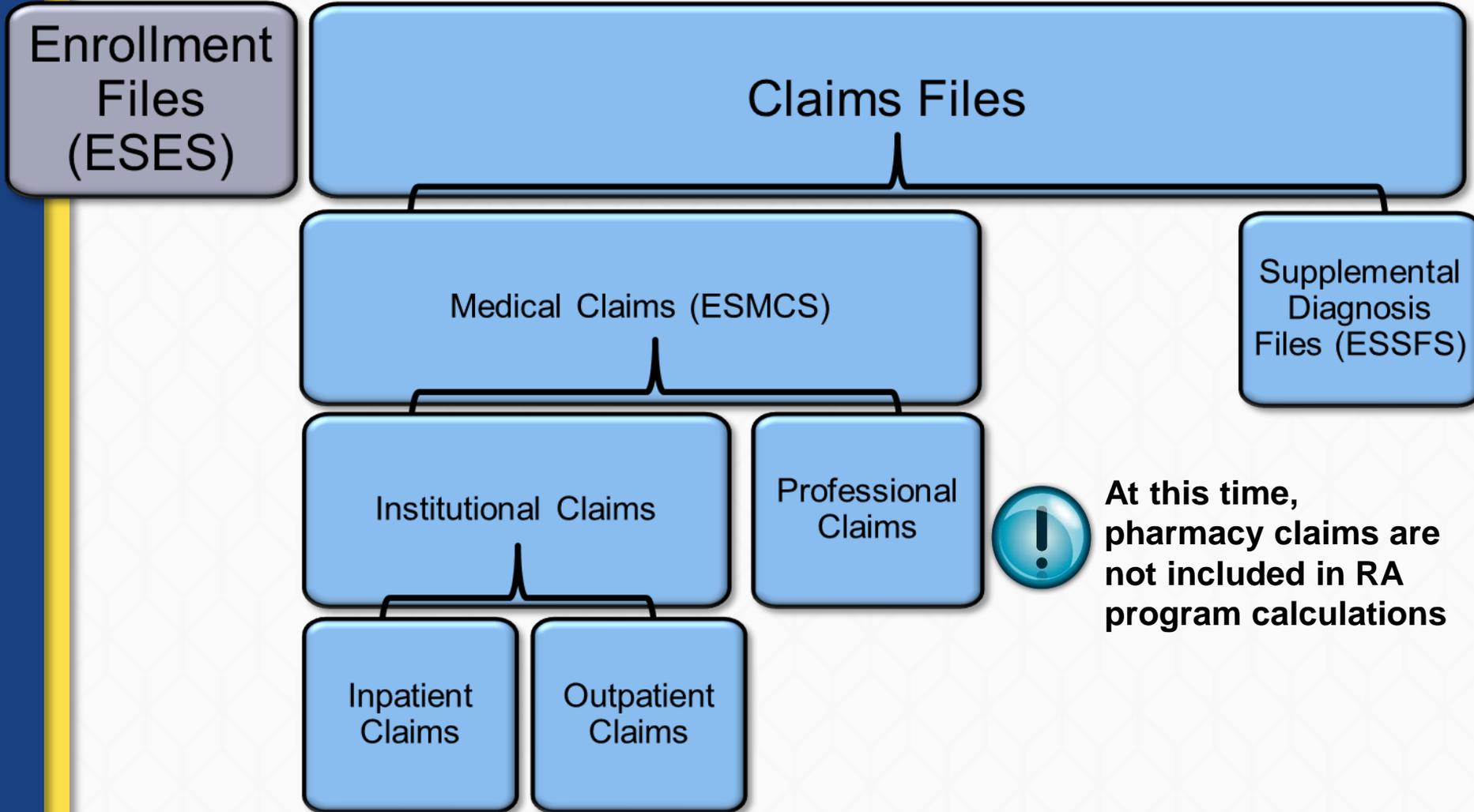
Model is additive based on relative predictive costs assigned to an enrollee's age, sex, and diagnoses	Model is additive based on relative predictive costs assigned to an enrollee's age, sex, and diagnoses	Model is categorical based on birth maturity, disease severity, and age
Utilizes interaction terms for severe illness and selected HCCs	Does not utilize interaction terms for severe illness and selected HCCs	Utilizes interaction terms for birth maturity and disease severity
Risk score is determined by adding factors together	Risk score is determined by adding factors together	Risk score is determined by one of 25 categories and adding age factor for males



**Unadjusted risk scores** are multiplied by a Cost-sharing Reduction (CSR) factor (if applicable) to yield an **adjusted risk score** to account for induced utilization

# Data Required For Risk Score Calculation

## HHS-OPERATED RISK ADJUSTMENT METHODOLOGY MEETING



Adult = 21+

1 Assign HCCs Based on Condition Categories

2 Assign HCC Groups

3 Assign Severity HCCs (if present)

4 Identify HCC Interactions

5 Assign Single Highest Severity Level

Child = 2 – 20

1 Assign HCCs Based on Condition Categories

2 Assign HCC Groups

Infant = 0 – 1

1 Assign Maturity Level

2 Assign Severity Level

3 Assign Single Highest Interaction of Maturity and Severity

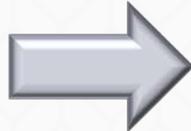


**Diagnostic factors are assigned based on the enrollee's diagnosis codes**

- The adult model includes enrollees with an age greater than 21
- The RA model only includes diagnosis codes that have passed RA software edits

1

Assign HCCs Based on  
CCs



- RA-eligible diagnosis codes are converted to condition categories (CCs).
- Related CCs may be grouped into a hierarchy; using the hierarchy to assign the highest of those CCs creates a hierarchical condition category (HCC)

2

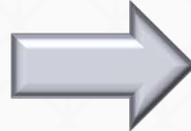
Assign HCC Groups



- Some HCCs have interactions with others. Some groups of HCCs are used as severity markers and are interacted with other HCCs

3

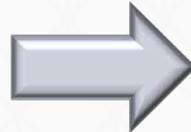
Assign Severity HCCs  
(if present)



- Some HCCs may have an interaction term with severe illness indicator. The RA software will flag those HCCs

4

Identify HCC  
Interactions



- A severity flag may be either H (high) or M (medium)

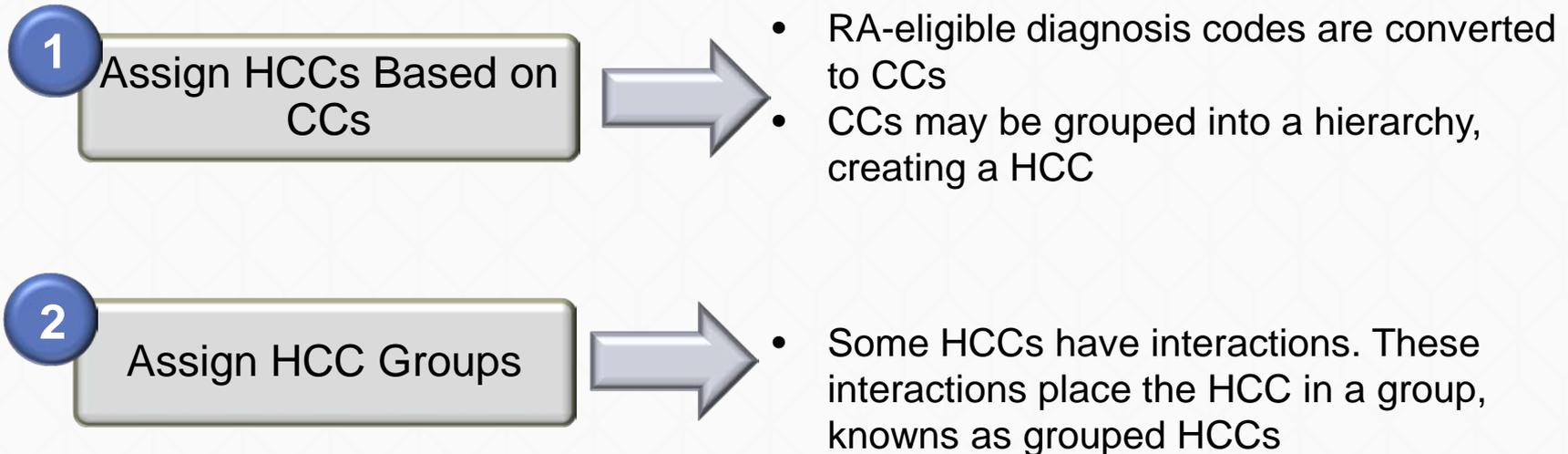
5

Assign Single Highest  
Severity Level

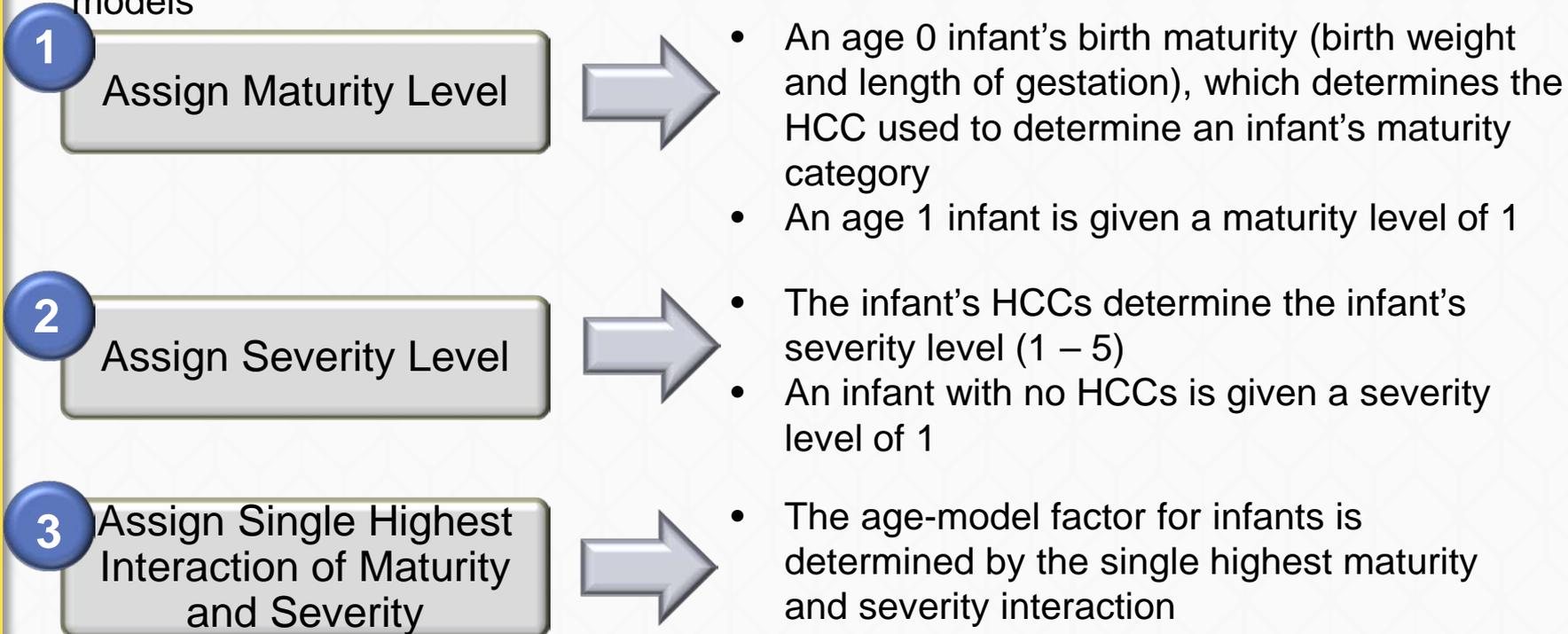


- An enrollee will not have both high and medium severity indicators, but will instead be assigned the single highest severity level

- The child model includes enrollees ages 2 – 20
- Like the adult model, the child model is additive
- However, the child model does not include severe illness interaction terms



- The infant model includes infants age 0 – 1
- The infant's diagnosis codes are mapped to CCs and HCCs, as in the adult and child models



- $PLRS_i$  = Plan Liability Average Risk Score
- The  $PLRS_i$  describes the overall level of risk associated with each plan:
  - $PLRS_i$  is the average enrollee risk score in the plan
  - Risk scores are weighted by billable member months, so that enrollees who are in the plan longer have more weight in their scores

$$PLRS_i = \frac{\sum_e (M_e \times PLRS_e)}{\sum_b M_b}$$

- $PLRS_i$  = plan's Plan Average Liability Risk Score
- $M_e$  = number of months during the payment year that each enrollee is enrolled in the plan
- $\sum_e$  = sum for all enrollees in the plan
- $PLRS_e$  = individual risk score for each enrollee
- $M_b$  = number of months during the payment year that each billable member is enrolled in the plan

CSR Adjustment: A multiplicative adjustment to the risk score is made for enrollees in individual market cost-sharing plan variations in Marketplaces because individuals who qualify for cost sharing reductions may utilize health care services at a higher rate

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# MODEL EXPLORATION TOPICS

### Model Exploration Proposals:

1. Partial year enrollment
2. Prescription drug model
3. High risk enrollee pooling in HHS risk adjustment
4. Discussion of concurrent and prospective risk adjustment models
5. Recalibration of the 2018 risk adjustment model

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# PARTIAL YEAR ENROLLMENT

### **Feedback/Comments on Partial Year Enrollment:**

- Some issuers experienced higher than expected claims costs for partial-year enrollees for the initial year of the risk-adjustment program
- Some stakeholders believe the methodology does not capture enrollees with chronic conditions who may not have accumulated diagnoses in their partial year enrollment. On the other hand, compared to full year enrollees of the same relative risk, partial year enrollees are less likely to have spending that exceeds the deductible or annual limitation on cost sharing
- Comments have stated that enrollees with partial year enrollments of 6 months or less yielded high medical loss ratios (MLRs) and financial losses for issuers

- We sought comment in the 2017 Notice of Benefit and Payment Parameters:
  - Generally supported addressing partial year enrollment in RA model
  - Commenters suggestions for how to account for partial year enrollment
    - Use of prescription drug claims could help capture a partial year enrollee with a chronic condition who does not have a provider encounter with a documented diagnosis
    - Consider member-level adjustments or duration adjustments, (E.g., Massachusetts' RA methodology that includes a duration adjustment for partial year enrollment)
    - Ensure any changes to the model to account for partial year enrollment improve reliability and predictive power and do not influence clinical judgment or plan behavior

- We conducted the following analyses to assess whether and how to account for **partial year enrollment**:

1

For 2014 adults, predicted and actual expenditures, and predictive ratios by enrollment duration (ED) group;

2

2014 adult silver model with enrollment duration indicator variables added as additional risk factors; and

3

Separate 2014 adult silver models based on enrollment periods (months 1-4, months 5-8, and months 9-12)

### **Predicted and actual expenditures, and predictive ratios predicted/actual) by enrollment duration (ED)**

#### **Adults in Concurrent Model**

- Expenditures for each 1-11 month ED groups: Underpredicted
  - Expenditures for 12 month ED group: Overpredicted
- 
- Enrollees will tend to be coded with HCCs for expensive, acute events (e.g., Opportunistic Infections) when they have the high cost, acute event. For enrollees with full enrollment, the costs of these expensive, acute events are spread out over the entire risk adjustment year. However, for enrollees with partial year enrollment, those costs will largely be concentrated in a shorter period

### 2014 adult silver model, but with enrollment duration indicator variables added as additional risk factors in the model

- The factors themselves did not appear to reflect noticeably higher costs associated with partial year enrollees, perhaps because the factors incorporate the risk of both partial year enrollees with no payment HCCs and partial year enrollees with payment HCCs, two populations with risk effects that tend to offset each other

<b>Enrollment duration factor</b>	<b>Parameter Estimate</b>	<b>Enrollment duration factor</b>	<b>Parameter Estimate</b>
1 month	0.424	7 months	0.175
2 months	0.368	8 months	0.101
3 months	0.275	9 months	0.092
4 months	0.227	10 months	0.098
5 months	0.196	11 months	0.111
6 months	0.174	12 months (reference group)	0.000

### Separate 2014 adult silver models based on enrollment periods (months 1-4, months 5-8, and months 9-12)

#### Pros

Other things being equal, separate models by enrollment duration are preferred, since they will predict accurately by ED groups

#### Concerns

May present false precision in predicting the costs associated with some conditions, particularly conditions with small sample sizes

Add to complexity of the RA methodology (currently calibrating 45 RA models)

### **Separate 2014 adult silver models based on enrollment periods (months 1-4, months 5-8, and months 9-12)**

- When we created separate risk adjustment models based on enrollment duration, we found in many cases very different coefficients for expensive, acute conditions by duration as compared to chronic conditions, which appeared to be relatively stable
- We note that these model results may not fully reflect the experience of some commenters, because we continue to conduct our modeling on a commercial dataset, with largely employer plans, which may not reflect the unique enrollment duration and health status of the individual and small group markets

### Next Steps:

- We are also considering a hybrid approach combining enrollment duration adjustment factors and separate models. We are evaluating the feasibility of using enrollment duration factors in the model that would be interacted with individual HCCs and/or groupings of HCCs, where selected HCCs are determined by their sensitivity to the separate, partial year models' predicted parameters or coefficients. We are in the process of examining the parameters and results of this method, where the groupings are based on HCCs' sensitivity to enrollment duration (1-4 months, 5-8 months, 9-12 months)
- We continue to evaluate the most appropriate way to account for partial year enrollees in the risk adjustment models, without inadvertently discouraging issuers from retaining enrollees or misrepresenting risk adjustment coefficients as a result of small sample sizes

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# PRESCRIPTION DRUG MODEL

### **Feedback/Comments on Prescription Drugs:**

- Supported incorporating prescription drugs as predictors in the risk adjustment model
- Suggestions that prescription drugs be included as quickly as possible while others supported 2018 implementation with CMS providing additional detail through the rulemaking process
- Suggestions that HHS include prescription drug data in a limited manner
- Suggestions that including prescription drugs could increase payment accuracy
- Suggestions that including prescription drugs as a proxy for missing diagnoses could level the playing field for issuers
- Shared HHS' concerns about creating incentives to modify discretionary prescribing

### **Benefits of and Concerns About Adding Prescription Drug Utilization to the HHS-HCC Risk Adjustment Model**

#### **Benefits**

- Imputing Missing Diagnoses
- Severity Indicator for a Specific Diagnosis
- Higher Quality, More Timely Data
- Mitigates the Financial Disincentive to Prescribe Expensive Medications

#### **Concerns**

- Gaming and Perverse Incentives
- Sensitivity of Risk Adjustment to Variations in Prescription Drug Utilization
- Added Complexity to Maintain Model
- Availability of Outpatient Drug Data Only
- Multiple Indications for Most Drugs

### **Criteria for Evaluating Risk Adjustment Models Incorporating Prescription Drug Utilization**

- Criterion 1: Clinical/Face Validity
- Criterion 2: Empirical/Predictive Accuracy
- Criterion 3: Incentives for Prescription Drug Utilization
- Criterion 4: Sensitivity to Variations in Prescription Drug Utilization
- Criterion 5: Incentives for Diagnosis Reporting

### Principles for RXC Classification

- **Principle 1**—RXC categories should be clinically meaningful
- **Principle 2**—RXC categories should predict total medical and drug expenditures
- **Principle 3**—RXC 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 RXC where appropriate, while the effects of unrelated prescriptions accumulate
- **Principle 5**—The RXCs should not reward prescription proliferation

### Principles for RXC Classification

- **Principle 6**—Providers should not be penalized for prescribing additional National Drug Codes (monotonicity)
- **Principle 7**—The classification system should be internally consistent (transitive)
- **Principle 8**—The classification should assign all NDCs (exhaustive classification)
- **Principle 9**—The classification should assign NDCs to only one RXC (mutually exclusive classification)
- **Principle 10**—Discretionary drug categories should be excluded from payment models

### Selecting Drug-Diagnosis Pairs for a Hybrid HHS-HCC Risk Adjustment Model

#### We would:

- Seek to select drugs with patterns of non-discretionary prescribing
- Seek to avoid drugs where there are incentives for over-prescribing
- Seek to avoid drugs where there are variations in prescribing across providers, practices, and areas, which depends in part on whether prescription decisions are discretionary
- Carefully consider selection of high-cost drugs, as these costs may be the types of health risk variation across enrollee populations that risk adjustment is designed to account for; however, if issuers know that risk adjustment transfers will compensate for the costs of these expensive drugs, then this compensation may reduce the incentives for issuers to strive for greater efficiency in choosing treatments

### Selecting Drug-Diagnosis Pairs for a Hybrid HHS-HCC Risk Adjustment Model

#### **We would also:**

- Seek to avoid drugs indicated for multiple diagnoses
- Seek to avoid drugs indicated for diagnoses not included in the HHS-HCC model
- Carefully consider selection of drugs in an area exhibiting a rapid rate of technological change to the extent possible, as a drug class that is associated with a specific, costly diagnosis in one year may no longer be commonly used for that condition the next, in which case the cost predictions based on previous years of data would be inaccurate

- **Empirical Framework**

- Counts and mean expenditures by RXC
- Drug-diagnosis associations
- Stepwise regressions with drug classes and drug-diagnosis interactions
  - Adding drug classes to the current HHS-HCC model results in modest, but not trivial, improvements in the model's overall predictive accuracy ( $R^2$ )
  - Most of the incremental predictive power from adding drugs to the HHS-HCC model is captured by a relatively small number of drug classes

- **Clinical Considerations**

- Clinical input on up to date treatments and protocols
- Input on how discretionary, variable, or “gameable” a drug is

- **Additional Considerations**
  - Imposing restrictions based on days' supplied or number of prescriptions
  - Subdividing/splitting RXCs, or including individual drugs
  - Imputation only versus imputation-severity relationship
  - Prophylactic use of drugs
  - Multiple indications for drugs



# Incorporating Prescription Drug Utilization (continued)

## HHS-OPERATED RISK ADJUSTMENT METHODOLOGY MEETING

RXC	Label	HCC	HCC label	Relationship	HCC	Counts		# of imputations	Imputations as % of HCC count	Positive predictive value
						RXC	HCC and RXC			
8.03	HIV	001	HIV/AIDS	imputation/severity	29,247	36,274	25,497	10,777	0.368	0.703
8.11	Hep C Antivirals	037	Chronic Hepatitis	imputation/severity	26,722	6,218	3,268	2,950	0.110	0.526
24.01	Class IB and Class III Antiarrhythmics	142	Specified Heart Arrhythmias	imputation/severity	164,261	20,229	16,481	3,748	0.023	0.815
28.14	Antimanic agents	088	Major Depressive and Bipolar Disorders	imputation/severity	414,119	25,308	18,203	7,105	0.017	0.719
40.03	ESRD	184	End Stage Renal Disease	imputation/severity	12,840	8,941	6,761	2,180	0.170	0.756
48.05	Cystic Fibrosis tranmembrane conductance regulator agents	159	Cystic Fibrosis	imputation/severity	1,609	72	65	7	0.004	0.903
56.04	Anti-Inflammatory Agents Used to Treat Inflammatory Bowel Disease	048	Inflammatory Bowel Disease	imputation/severity	85,772	53,854	37,056	16,798	0.196	0.688



# Incorporating Prescription Drug Utilization (continued)

## HHS-OPERATED RISK ADJUSTMENT METHODOLOGY MEETING

RXC	Label	HCC	HCC label	Relationship	HCC	Counts		# of imputa-tions	Imputa-tions as % of HCC count	Positive predictive value
						RXC	HCC and RXC			
68.06 or 68.07	RXC group: Insulins and Antidiabetics	019 OR 020 OR 021	HCC Group: Diabetes	imputation/ severity	1,056,797	1,022,463	815,060	207,403	0.196	0.797
92.05	Biologic Response Modifiers Acting on the Central Nervous System	118	Multiple Sclerosis	imputation/ severity	39,414	25,666	23,357	2,309	0.059	0.910
92.06	Disease-modifying antirheumatic drugs (DMARDs)	056	Rheumatoid Arthritis and Specified Autoimmune Disorders	imputation/ severity	134,683	71,864	45,293	26,571	0.197	0.630
24.06	High Severity Diuretic	130	Congestive Heart Failure	severity only	128,602	331,625	49,595	--	--	0.150
40.06	Ammonia Detoxicants	036	Cirrhosis of Liver	severity only	12,772	18,906	788	--	--	0.042
92.06	Disease-modifying antirheumatic drugs (DMARDs)	048	Inflammatory Bowel Disease	severity only	85,772	71,864	10,952	--	--	0.152

- **Imputation Only Model**

- Presumes that any individual with a particular health condition should be predicted to have the same incremental costs regardless of whether the condition is identified by a diagnosis, a drug prescription, or both
- Equal value for HCC only, RXC only, or both
- Most constrained
- Predicted costs for someone with chronic hepatitis in the baseline HHS-HCC model is \$16,634; however, when imputed by drug presence in RXC 8.11 (hepatitis C antivirals), the predicted incremental expenditures for this health condition are \$25,425 regardless of whether the condition is identified by the drug indicator, the diagnosis, or both
- Large increase in the size of the predicted expenditures compared to the baseline most likely reflects the extremely high costs of the hepatitis C drugs in this RXC
- R-squared: 0.3640 (Baseline R-squared: 0.3678)

- **Rx Dominant Model**

- Less restrictive version (than imputation only) of the hybrid model
- Estimate a predicted incremental expenditure for people who are identified by their HCC flag, and estimate a different predicted expenditure for people who are identified by their RXC flag
- “Drug-dominant,” because the cost prediction is the same when the drug use is present, whether or not the diagnosis is present
- Individuals with only the chronic hepatitis HCC 37 (and not the hepatitis C drug class) are predicted to have an additional \$2,436 of expenditures
- Individuals flagged with RXC 8.11 (hepatitis C antivirals), however, are predicted to generate \$109,789 of incremental expenditures (with or without the diagnosis)
- Large gap is primarily due to the high costs of recent drugs to treat hepatitis C
- R-squared: 0.3845 (Baseline R-squared: 0.3678)

- **Flexible Hybrid Model**

- Allows for three different predicted levels of incremental expenditure: enrollees with the diagnosis only, enrollees with prescription drug claim only, and a third level for enrollees with both indicators
- Typically incremental predicted cost between HCC only (lowest), RXC only, and HCC and RXC (highest)
- However, possibility that a risk score could actually be reduced by the presence of a diagnosis in the enrollee's claims, which violates one of the basic principles of risk adjustment modeling, which is that there should be no penalty for recording additional (accurate) diagnoses
  - Occurs for chronic hepatitis and multiple sclerosis (lower incremental predicted cost for RXC and HCC than RXC only)
- R-squared: 0.3861 (Baseline R-squared: 0.3678)

- **Severity Only Hybrid Model**

- Presence of a Rx in the drug class signals a more severe case of the related diagnosis, and thus is likely to incur greater medical expenditures relative to someone without the drug
- Does not impute the diagnosis in cases where diagnostic information is not available
- Only model of the four hybrid models to include the “severity only” drug-diagnosis pairs on the previous slide:
  - High-severity diuretics (RXC)/congestive heart failure (HCC)
  - Ammonia detoxicants (RXC)/cirrhosis of liver (HCC)
  - DMARDs (RXC)/inflammatory bowel disease (HCC)

- **Severity Only Hybrid Model, continued**
  - These pairs are not included in the previous three hybrid models because the drug class does not reliably impute the diagnosis (because these drug classes are used for other diagnoses)
  - Most people taking disease-modifying antirheumatic agents (DMARDs) do not have inflammatory bowel disease (HCC 48). People with HCC 48 who take DMARDs, however, are likely to have more severe cases of this condition than those who are not taking the drug.
  - R-squared: 0.3776 (Baseline R-squared: 0.3678)

### **Initial Evaluation of Alternative Hybrid Drug-Diagnosis Risk Adjustment Models**

- Models that utilize drugs to indicate severity likely have greater degree of clinical face validity
- Models have broadly similar predictive accuracy (R-squared); however, most constrained (imputation) has least predictive accuracy
- For some groups that the hybrid models are adjusting for (e.g., individuals utilizing hepatitis C antivirals in an Rx dominant model), there will be substantial gains in predictive accuracy
- Models that add most predictive accuracy predict higher expenditures for enrollees utilizing expensive drug classes
- Imputation and severity only models create least strong incentives to overprescribe

### Moving Ahead

- CMS would first assess several factors:
  - The operational costs, both for issuers as well as for CMS data operations;
  - What drug classes, or drug-diagnosis pairs, should be incorporated into the model; and
  - Whether the model should take an imputation approach, a severity approach, or a combination of both. For example, restricting ourselves to a relatively limited number of drug classes in the model specification seems advisable.
- The research discussed has been conducted with the HHS risk adjustment adult models and sample; we would need to verify whether drug information can improve the performance of the child model as well, and also consider whether there is a role for drug utilization measures in the infant model

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# HIGH RISK ENROLLEE POOLING IN HHS RISK ADJUSTMENT

- Traditional risk adjustment does not predict the presence of extremely high-cost enrollees with precision
- Currently, the inclusion of high cost outliers in recalibration inflates the average predicted costs of conditions in the model, without providing adequate additional compensation for issuers to cover these high costs
- We are considering recalibrating the HHS risk adjustment model by imposing a threshold to prevent high costs in the data – this would limit the magnitude of the outliers and their impact on predicted expenditures
- Issuers would be liable for a percentage of outlier enrollee costs above the threshold and a pool would be created to cover the balance

### **Applying the Pool Uniformly**

- Factors to consider whether this pool should exist at the State or national level:
  - National pool and adjustment to all risk adjustment issuers will provide the best protection for outliers and would likely allow for a relatively smaller adjustment than if multiple outliers occurred in a market in a State
  - Percent of costs to be reimbursed from the pool above the constraint
  - Manner in which pool would be allocated across all issuers

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# DISCUSSION OF CONCURRENT AND PROSPECTIVE RISK ADJUSTMENT MODEL

- We have received feedback that HHS should use a prospective model, rather than a concurrent model, for risk adjustment.
- **Concurrent Models**
  - Current year information to predict current year costs
  - Better explain variation in current (acute) costs, reducing unsystematic risk which may benefit small plans without enough enrollees to diversify away unsystematic risk
  - Our use of a concurrent model supports the intent of the Affordable Care Act – encouraging choice, competition, and growth in plans

- **Prospective Models**

- Favored because tend to emphasize the impact of ongoing chronic conditions on costs (as opposed to random current year costs that can be pooled as “insurance risk”)
- Predict on the basis of prior encounters for conditions, the individuals who will experience such events in the coming year
- Significant challenges due to the lack of previous year information on health status (diagnoses), and also the fact that unlike Medicare, people move in and out of enrollment in the individual and small group markets, so prior year diagnostic data is not available for all enrollees

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# RECALIBRATION OF THE 2018 RISK ADJUSTMENT MODEL

### Feedback/Comments on Recalibration

- Reduce data lag
- More heavily weight most recent year of MarketScan data
- Finalize recalibration approach in final Payment Notice and issuing updated factors with even more recent data closer to implementation of the benefit year in sub-regulatory guidance
- In the event we can accommodate the 2018 Payment Notice on an earlier schedule, 2015 MarketScan data will not be available for 2018 recalibration (available in December 2016)
- Considering recalibration of the 2018 risk adjustment model using 2014 MarketScan<sup>®</sup> data only (rather than the three most recent years of MarketScan<sup>®</sup> data)

### Considerations

- Small sample sizes
- 2014 data only does not reduce data lag, but avoids blending with even older years
- Considering approach of finalizing recalibration methods in future Payment Notices, but updating coefficients off-cycle with most recent data, closer to implementation year

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# QUESTIONS

# LUNCH BREAK

Thank you for joining the Meeting.

The next session will begin at 1:15 p.m. ET

Questions	Contact Information
Registration and Logistics	E-mail: <a href="mailto:Registrar@REGTAP.info">Registrar@REGTAP.info</a> Phone: 800-257-9520

# COLLECTING ENROLLEE LEVEL DATA FOR FUTURE RECALIBRATION OF RISK ADJUSTMENT DATA

Presented by Bobbie Knickman

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HHS-OPERATED RISK ADJUSTMENT  
METHODOLOGY MEETING

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# BACKGROUND AND CURRENT EDGE DATA ENVIRONMENT

- The Affordable Care Act established risk adjustment (RA) and reinsurance (RI) programs to help stabilize the insurance market
- Program implementation requires claims and enrollment data from issuers in states where HHS is operating the RA and RI programs
- The decision to use a distributed data approach was finalized in the Premium Stabilization Final Rule, 77 FR 17220 (March 23, 2012)
- In May 2012, in Bulletins on the Risk Adjustment Program and the Transitional Reinsurance Program, CMS proposed and sought comment on a distributed data collection approach

- Section 1321 (a) of the Patient Protection and Affordable Care Act (ACA) establishes the authority for the Department of Health and Human Services (HHS) to regulate standards and implementation of Premium Stabilization Programs payment systems
  - The establishment of this authority created the need for HHS to procure an efficient, practical and secure approach to collecting issuers' data



- CMS established a distributed data collection approach, known as the External Data Gathering Environment (EDGE) server
- The EDGE server is used for both the risk adjustment (RA) and reinsurance (RI) programs
- The EDGE server:
  - ensures minimal transfer of protected health information between issuers and CMS
  - lowers privacy and security risks
  - standardizes business processes, timing, and rules

- When HHS operates RA or RI for a state, issuers must establish an External Data Gathering Environment (EDGE) server to submit enrollment, pharmacy, medical and supplemental claims data to CMS
- The EDGE server runs CMS-developed software to verify submitted data and execute RA and RI processes



**Option 1: Amazon EDGE**, a cloud server provisioned by Amazon Web Services

**OR**

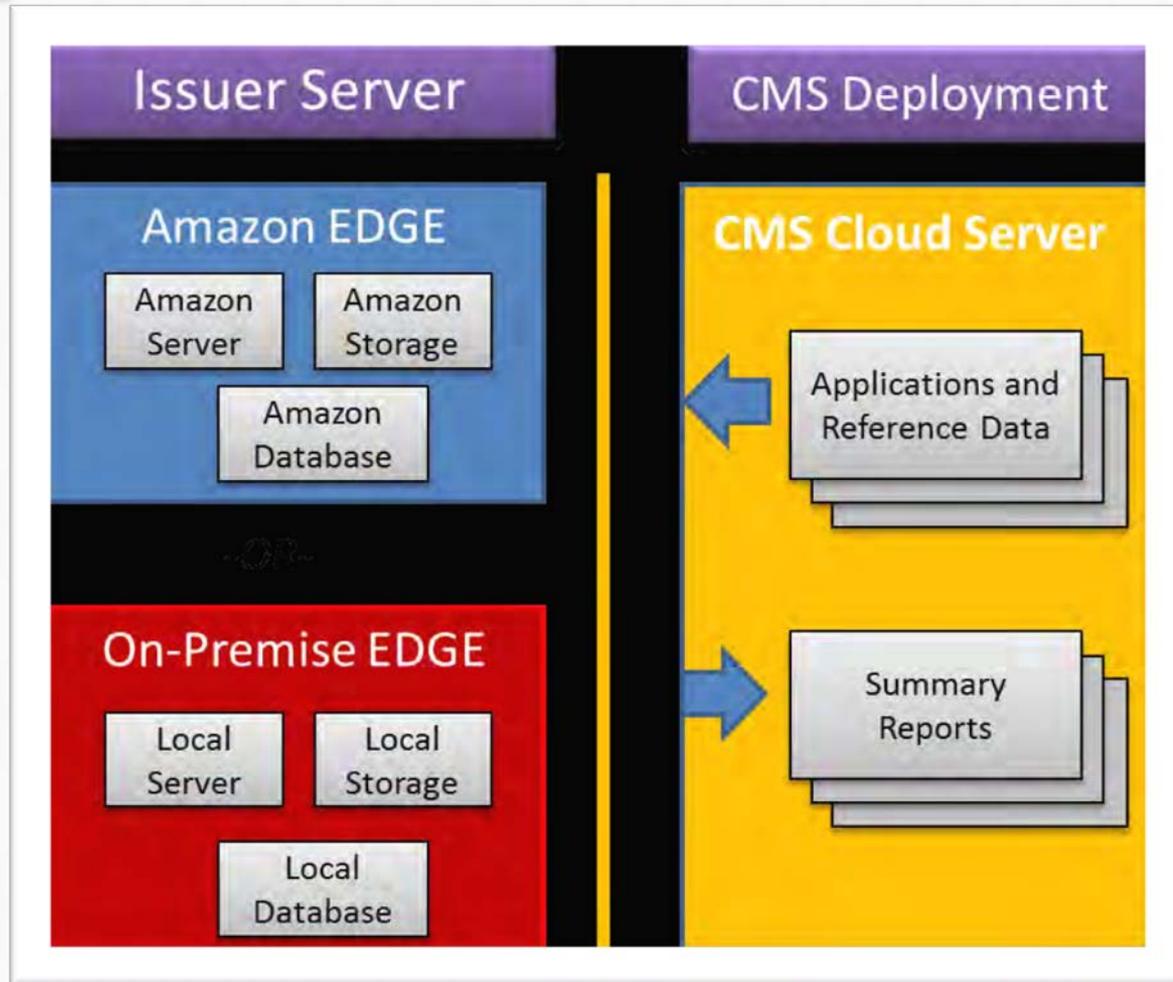


**Option 2: On-Premise EDGE** (may be physical or virtual) managed and provisioned by an issuer, or Third Party Administrator (TPA) on their behalf



**Note: In both solutions, only the issuer has access to raw issuer data and detailed reports**

Issuers are able to select the EDGE Server option that works best for them



CMS will send initial software and updates to issuers

Issuers will only be able to access information specific to their profile

- Issuers submit enrollment, claims and supplemental diagnosis data to their EDGE server
- Detailed enrollee data, file processing metrics, and outbound data files are provided to issuers
- CMS only receives plan summarized and file processing metrics
- CMS does not receive any individual-level data

- Lack of access to enrollee level data limits CMS' ability to utilize EDGE data for recalibration
- Current RA model recalibration uses commercial data to approximate the individual and small group market populations
- Using EDGE data would allow use of the most current and relevant data for recalibration

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# RECALIBRATION USING EDGE RISK ADJUSTMENT DATA

- We propose using EDGE server data to recalibrate the risk adjustment model beginning with the 2019 benefit year
- Advantages of using this data:
  - Use the current data submission process for enrollment, medical claims, pharmacy claims, and supplemental diagnoses
  - No additional burden on issuers
  - Data aligns with the RA model

The EDGE data elements we are considering are identified by EDGE server submission file type and available in Chapter 4 of the HHS-Operated Risk Adjustment Methodology Meeting Discussion Paper

### **Enrollment File Key Elements**

- Birth Date
- Gender
- Enrollment Dates
- Premium Amount

### **Medical Claim Key Elements**

- Bill Type
- Diagnosis Code
- Statement Dates
- Service Codes
- Service Dates
- Claim Amounts

### **Pharmacy Claim Key Elements**

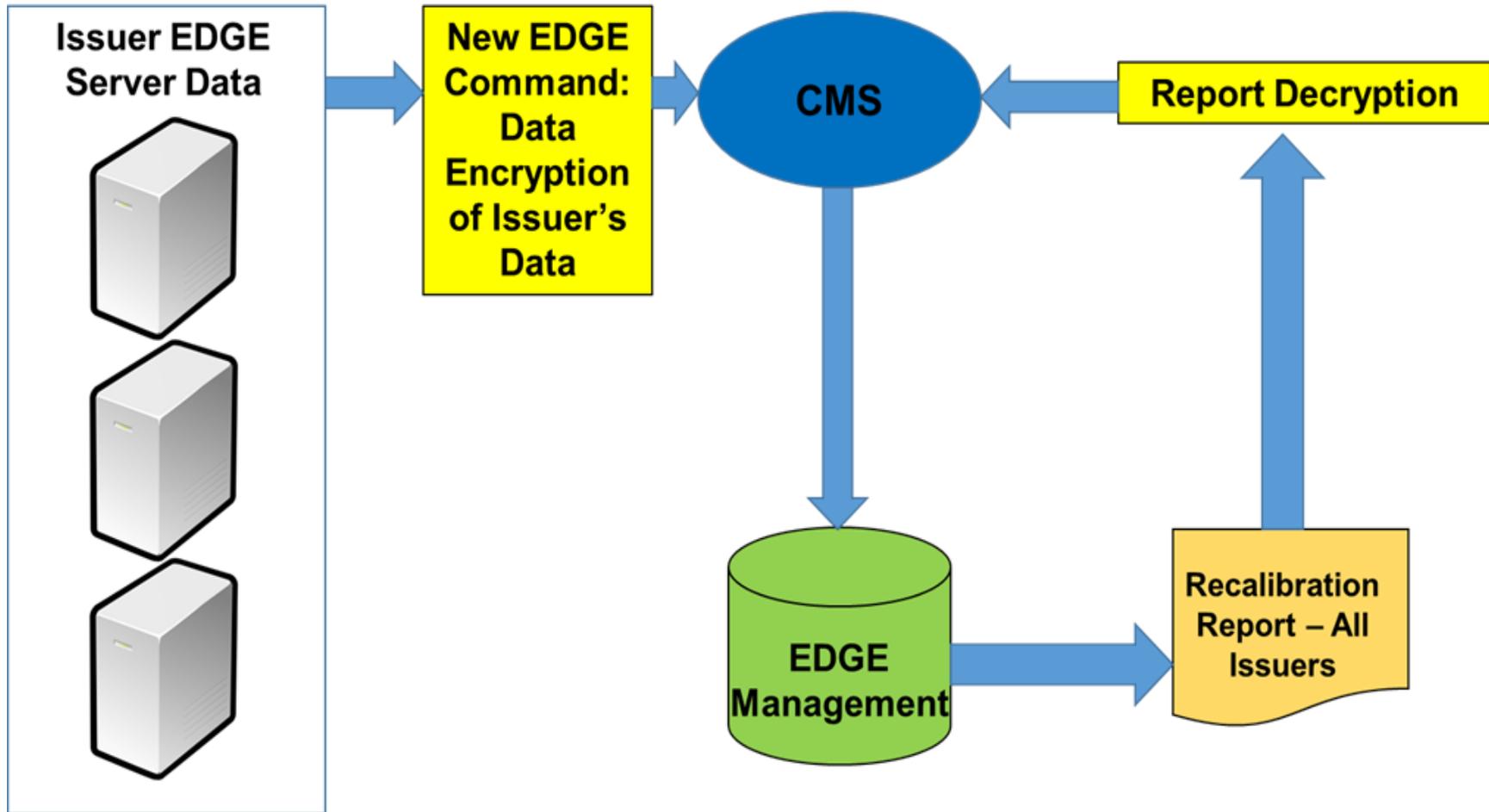
- National Drug Code
- Fill Date
- Dispensing Status Code
- Claim Amounts

### **Supplemental Diagnoses**

- Diagnosis Code

- CMS would establish a new EDGE server report for the specific purpose of recalibration
- A new EDGE server command would be used to create the report
- Privacy and security would be ensured through the use of a 256 bit encrypted string using the combination of the masked enrollee ID + Issuer ID + EDGE server ID
- The report would be encrypted once it is created and before it is sent to CMS

- CMS would not have access to geographic rating area, state, enrollee, plan, or issuer identifiers for any of the potential enrollee-level data
- The result would be a national dataset based on EDGE server data
- This proposed extraction and reporting process is the least disruptive approach to accessing the most appropriate source data for recalibration while ensuring the privacy and security of the data



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# QUESTIONS

# Risk Adjustment Payment Transfer Methodology

Presented by Michael Cohen

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HHS-OPERATED RISK ADJUSTMENT  
METHODOLOGY MEETING

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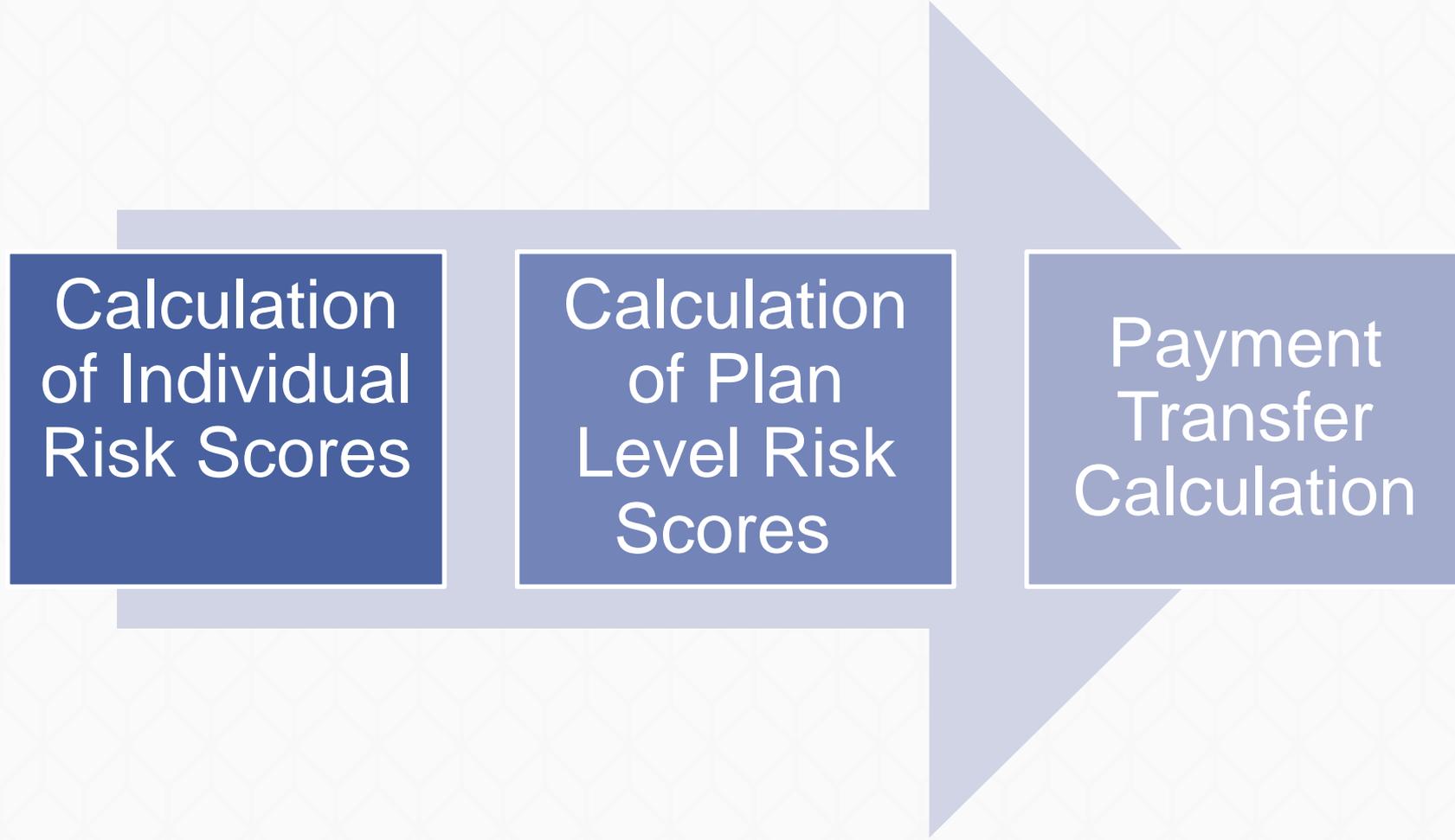
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# OVERVIEW OF PAYMENT TRANSFERS AND FORMULA

- The RA methodology is designed to mitigate potential adverse selection
- RA transfers are intended to compensate for liability that is not built into a plan's rating structure
- Aim for the transfers is for premiums not to reflect differences in relative health status of the enrolled population

- The payment transfer formula determines the amount of payments and charges assigned to each plan within a risk pool
- Payment transfers preserve premium differences associated with cost factors ***not attributable to risk selection***, such as differences in premium due to actuarial value or permissible rating variation
- The transfer formula averages all individual risk scores by the risk adjustment covered plans and uses the plan average risk scores, combined with other factors to calculate the funds transfers between plans



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graph LR; A[Calculation of Individual Risk Scores] --> B[Calculation of Plan Level Risk Scores]; B --> C[Payment Transfer Calculation];
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Calculation of Individual Risk Scores

Calculation of Plan Level Risk Scores

Payment Transfer Calculation

- Payment transfers compare the plan's average liability and the average risk pool liability
- Generally, the difference results in a payment or charge
  - If a plan's relative risk is high, the plan will receive a payment
  - If a plan's relative risk is low, the plan will pay a charge
- Payments and charges must net to zero





- The formula for a plan's per member, per month (PMPM) payment transfer amount ( $T_{PMPM}$ ) is the premium with risk selection minus the premium without risk selection, multiplied by the state average premium

$$T_{PMPM} = \left[ \frac{PLRS_i * IDF_i * GCF_i}{\sum_j (s_j * PLRS_j * IDF_j * GCF_j)} - \frac{AV_i * ARF_i * IDF_i * GCF_i}{\sum_j (s_j * AV_j * ARF_j * IDF_j * GCF_j)} \right] \bar{P}_s$$

Where:

$\bar{P}_s$  = state average premium

$PLRS_i$  = plan's PLRS

$AV_i$  = plan's metal level actuarial value

$ARF_i$  = plan's allowable rating factor

$IDF_i$  = plan's induced demand factor

$GCF_i$  = plan's geographic cost factor

$s_i$  = plan's share of state enrollment

$T_{PMPM}$  = plan's PMPM transfer amount

$\sum_j$  = sum of the plans

- The plan liability risk score (PLRS) represents the plan's overall risk exposure, or actuarial risk
- Induced demand (or induced utilization) reflects differences in enrollee spending patterns attributable to differences in the generosity of plan benefits (cost sharing)
- The allowable rating factor (ARF) adjustment in the transfer formula accounts for differences in premium due to age rating
- The actuarial value (AV) adjustment in the transfer formula accounts for relative differences in plan liability due to differences in the percentage of enrollees' expenditures that the plan covers
- The geographic cost factor (GCF) adjustment in the transfer formula accounts for differences in premium due to geography

- After the PMPM transfer is calculated, the PMPM amount is multiplied by the plan's total billable member months for the rating area
- The final transfer formula is:

$$T_i = T_{\text{PMPM}} * \sum_b M_b$$

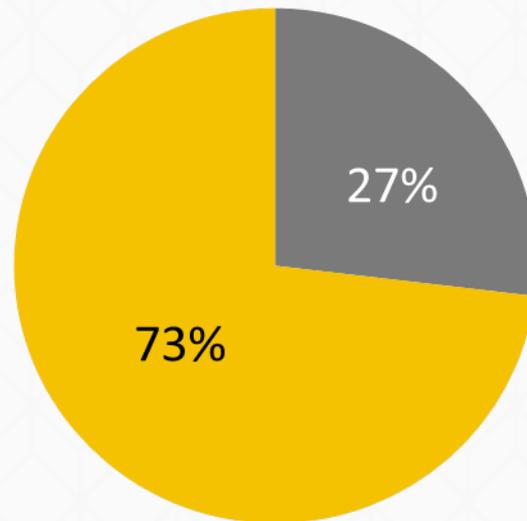


The final amount may be a payment or a charge

- **Key Findings from 2014 Benefit Year**
  - On average, in the individual market, smaller issuers received transfer payments while larger issuers paid into risk adjustment
  - Issuers with greater than average proportions of members in gold and platinum plans are more likely to receive transfer payments
  - Metal level is not destiny – selection within metal level matters as well

- Metal Level is not destiny – issuer selection matters

### **Percent variation in issuer risk scores explained by enrollment across metal level tiers, Individual Market**

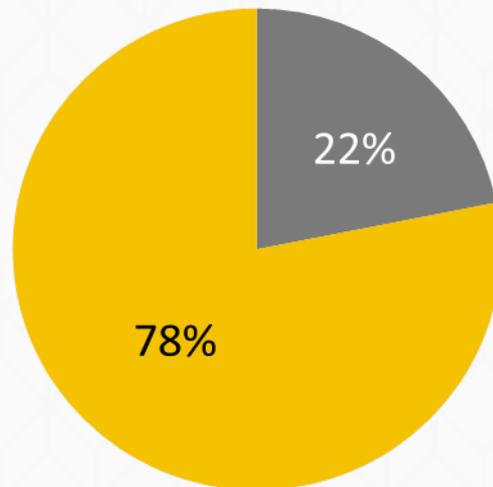


- Percent of variation explained by distribution across metal levels
- Percent of variation unexplained by distribution across metal levels

Variation arising from metal level enrollment obtained by regressing risk score relative to market mean on the shares of issuer enrollment in each metal level

- Metal Level is not destiny – issuer selection matters

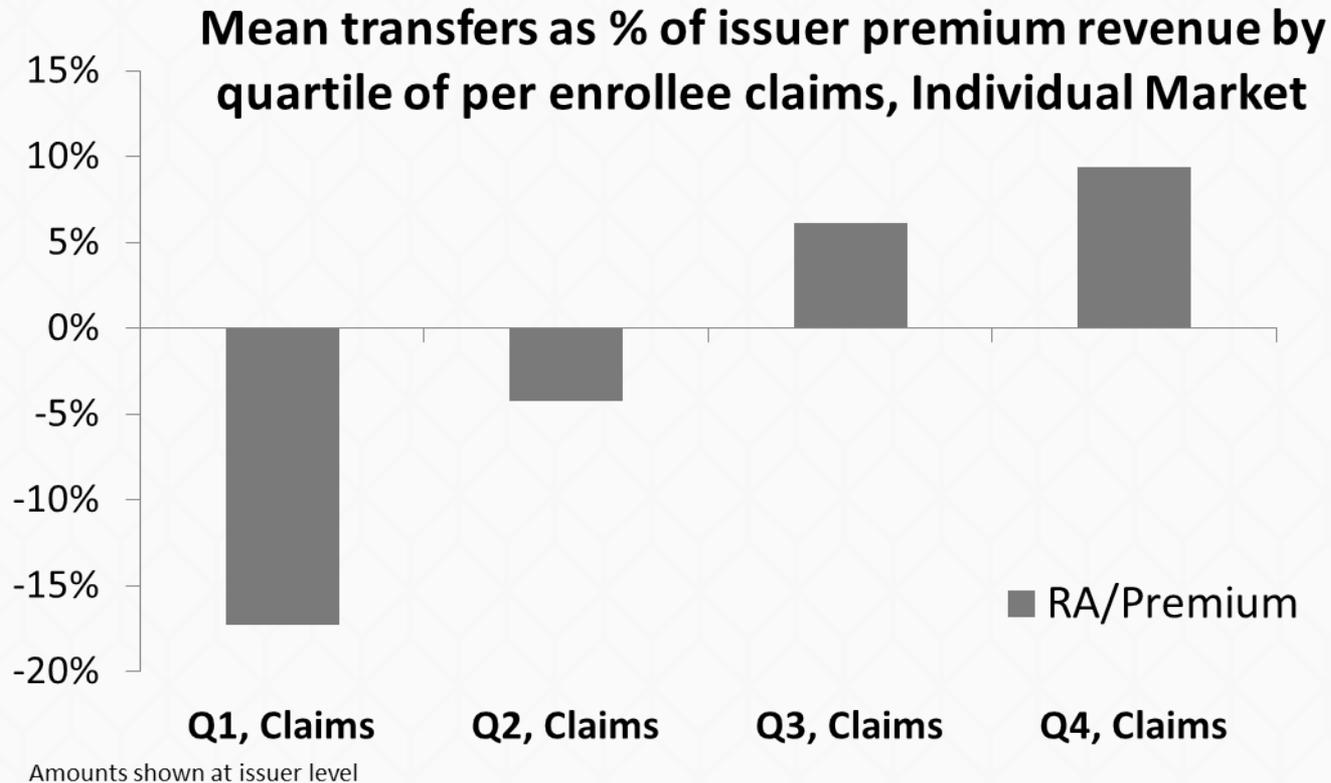
### **Percent variation in issuer risk scores explained by enrollment across metal level tiers, Small Group Market**



- Percent of variation explained by distribution across metal levels
- Percent of variation unexplained by distribution across metal levels

Variation arising from metal level enrollment obtained by regressing risk score relative to market mean on the shares of issuer enrollment in each metal level

- Issuers with higher relative claims per enrollee were more likely to receive risk adjustment payments



- Adjustment to State Average Premium to Account for Administrative Costs
  - We received comments stating that the inclusion of administrative costs in the Statewide average premium may increase transfers based on costs that are unrelated to risk
  - We believe that there is a difference in fixed administrative costs and variable administrative costs related to enrollee risk; removing fixed administrative costs from the Statewide average premium may be warranted in the future
  - We are currently studying on the feasibility of accurately measuring fixed administrative costs

- Use of Plan Average Premium Rather than State Average Premium
  - We received comments that factors such as network differences, plan efficiency, or effective care coordination or disease management are not currently captured by the methodology
  - We are exploring a number of ways of addressing such plan differences in our methodology, perhaps by modifying the equation using a plan's own premium
  - However, we note that the current transfer formula was carefully crafted to balance a number of complex factors and inequalities in the markets that we would need to consider in developing a new formula that would also balance, while considering the impacts and complexities of each risk pool

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# QUESTIONS