Session 77PD, Risk Adjustment and the Impact on Value-Based Payments

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Risk Adjustment and the Impact on Value-Based Payments

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Limitations

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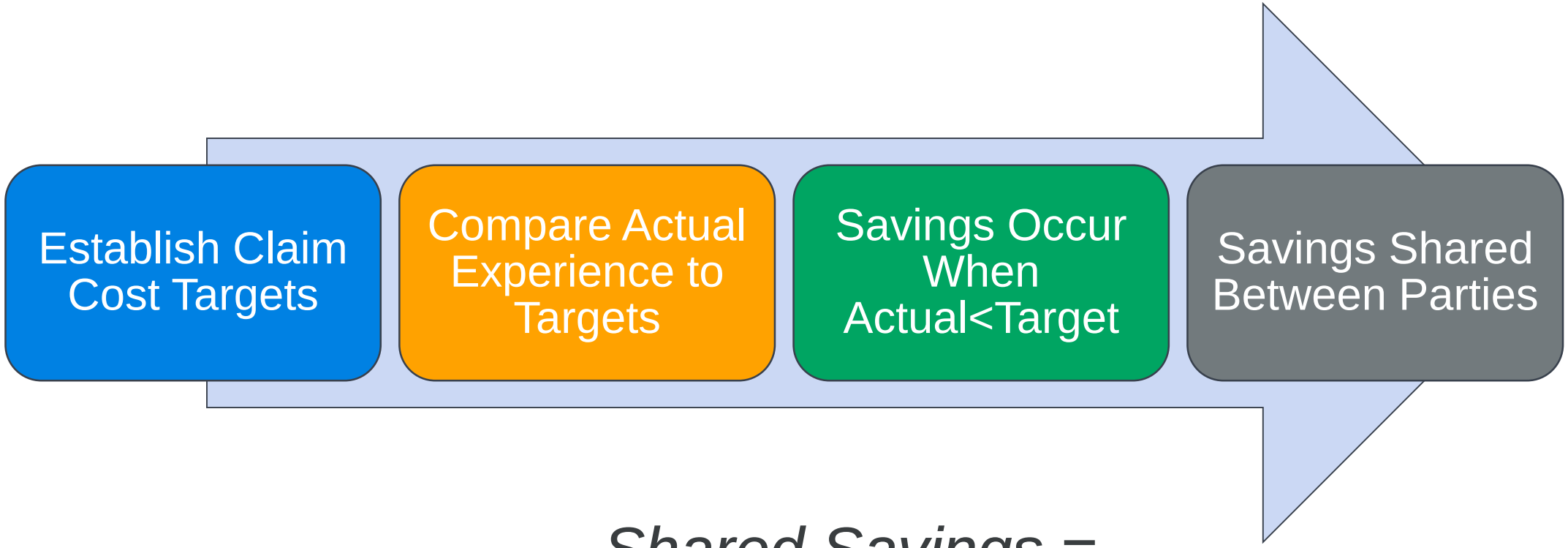
Agenda

1. The basic setup
2. Real world examples
3. Case study comparisons
4. Take aways

Fundamental Concepts
Reviewing the Basics



Shared Savings =
Max[(Target – Actual claim costs),0] x Savings %

The Need for Risk Adjustment
Why make things more complicated?

- Cohort method
  - Only members attributed in both base and measurement periods are used
  - Issues:
    - Aging and likelihood of additional diagnoses
    - General changes in health status
- Total attributable population method
  - All members attributed in the base and measurement periods are used
  - Issues:
    - Changes in the population demographics
    - Perceived incentive to underserve patients
- In either case, we need risk adjustment!

Cast of Characters

Claim Costs	Member Months	Risk Adjustment
Payment for medical services	Adjustment for the volume of exposure	Accounts for variations in the health status of the population being measured

Risk-Adjusted Claim Costs PMPM
(i.e., the "Actual")

Risk Adjustment Issues
Confidence Intervals

- Risk adjusters are commonly based on statistical models
- Risk scores should be considered point estimates within a confidence interval

95th Percentile of Error by Group Size
Simulated Random Groups – Concurrent Models (Uncensored)
Diagnosis-Based Models

Group Size (Lives)	ACG System	CDPS	DxCG	HHS-HCC	MARA	Truven	Wakely
1,000	17.2%	21.0%	16.2%	18.8%	16.0%	16.8%	17.7%
10,000	5.6%	6.5%	5.4%	5.9%	5.4%	5.1%	6.0%

*Society of Actuaries, *"Accuracy of Claims-Based Risk Scoring Models,"* October 2016

Savings can be highly leveraged on risk scores
Translating uncertainty in risk scores

SCENARIO		BASELINE	SCENARIO A	SCENARIO B
Base Period Claim Cost PMPM	(a)	$350.00	$350.00	$350.00
Target Claim Cost PMPM	(b)=(a) x 1.03	$360.50	$360.50	$360.50
Experience Period Claim Cost PMPM	(c)	$350.00	$350.00	$350.00
Risk Adjustment Factor	(d)	1.000	0.980	1.020
Risk Adjusted Target Claim Cost PMPM	(e)=(b) * (d)	$360.50	$353.29	$367.71
Savings PMPM	(f)=(e) – (c)	$10.50	$3.29	$17.71
Shared Savings Percentage	(g)	50%	50%	50%
Shared Savings for 120,000 Member Mos.	**(h)=(f) x (g) x 120,000**	**$630,000**	**$197,400**	**$1,062,600**

Other Risk Adjustment Wild Cards

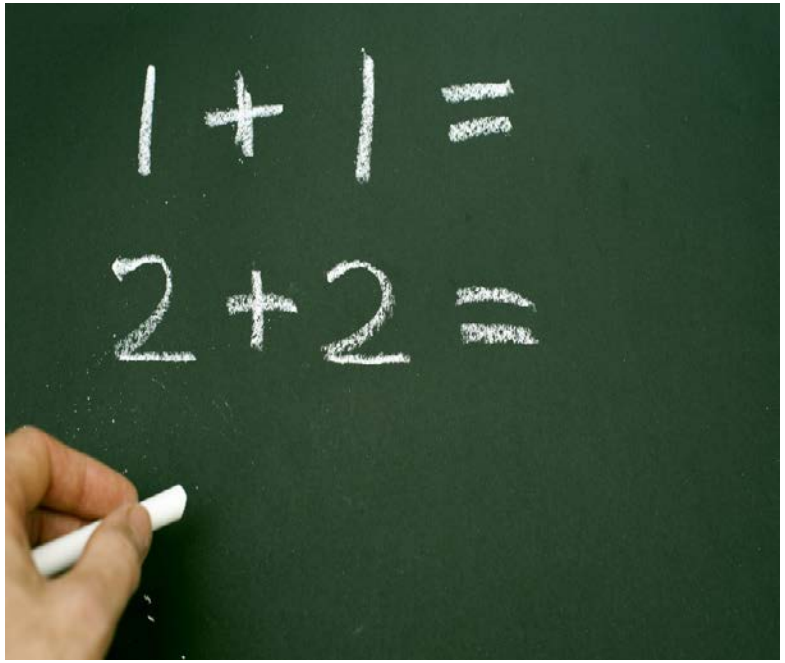
- High cost individuals
- Data issues
  - Data quality and the impact on calculated risk adjustors
  - Partial year membership
  - Appropriate amount of run-out
- Code creep
  - Accounting for trends in diagnosis coding
- What about member cost sharing?

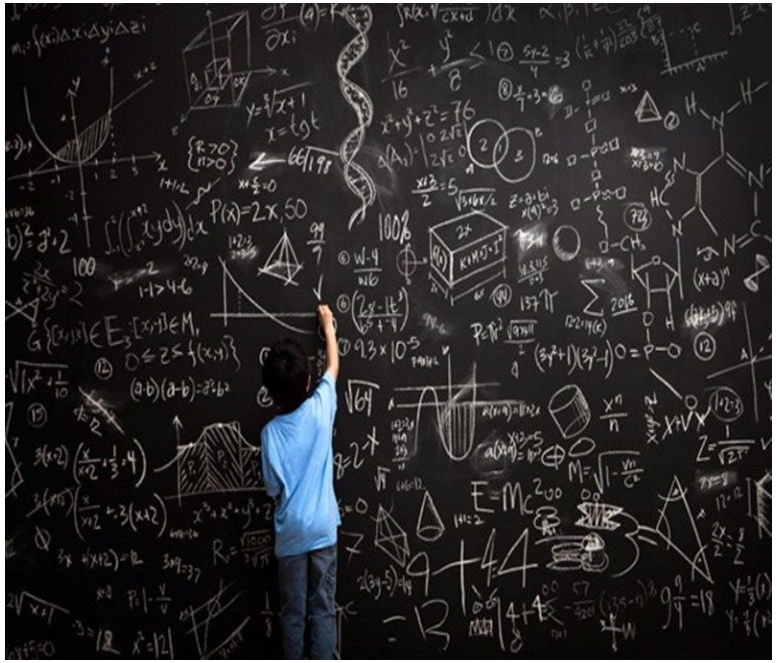
What's Being Done Today?
Real world examples

1. Simplified approaches
2. Truncation
3. Removing outliers
4. Dampening
5. Normalization

Current Practices Vary

What Problem? → **We Did Something!** → **Sophisticated Estimate**





Simplified Approaches
Who's in control here?

- No risk adjustment; simply adjust the baseline for trend and aging
  - The entity passing along the risk likely has significant leverage
- Adjust the baseline and measurement period populations using a full risk score and apply a target trend to the baseline claims
  - May put too much weight on risk adjustment
  - High claimants could have a big impact
  - Ignores some potential issues with population or data quality changes

Truncation and Thresholds
Trimming the excess

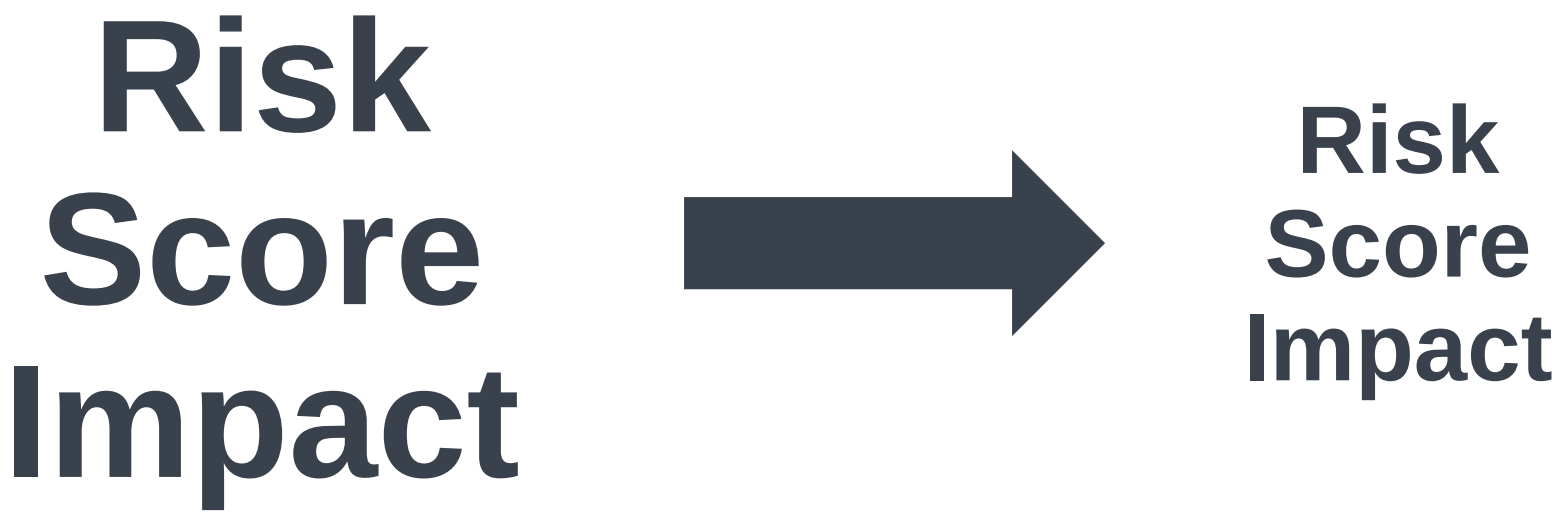
- Use the full risk score to adjust, but truncate claims beyond a certain amount PMPY
  - Removes large claim amounts, but creates theoretical mismatch between claims and risk scores
  - The truncation level is often chosen using judgement rather than statistical methods
- Use the full risk score, but apply threshold limits to its annual change, possibly conditioned on direction of change
  - The limit is typically negotiated
  - Might mask a real population change that should be recognized
- Truncate both claims and risk scores
  - More statistically appropriate
  - More complicated to do in practice
  - More complicated to explain to stakeholders

Remove Outliers
Out of sight, out of mind?

- Exclude members from claim and risk score calculations if their annual allowed exceeds a predetermined limit
  - Simpler than truncating claims and risk scores
  - Ignores the opportunity for savings that may exist with high cost members
- Exclude partial year members
  - But this excludes most neonates and decedents – two very important populations to manage
- Exclude members with conditions that are known to be difficult to control from a cost perspective

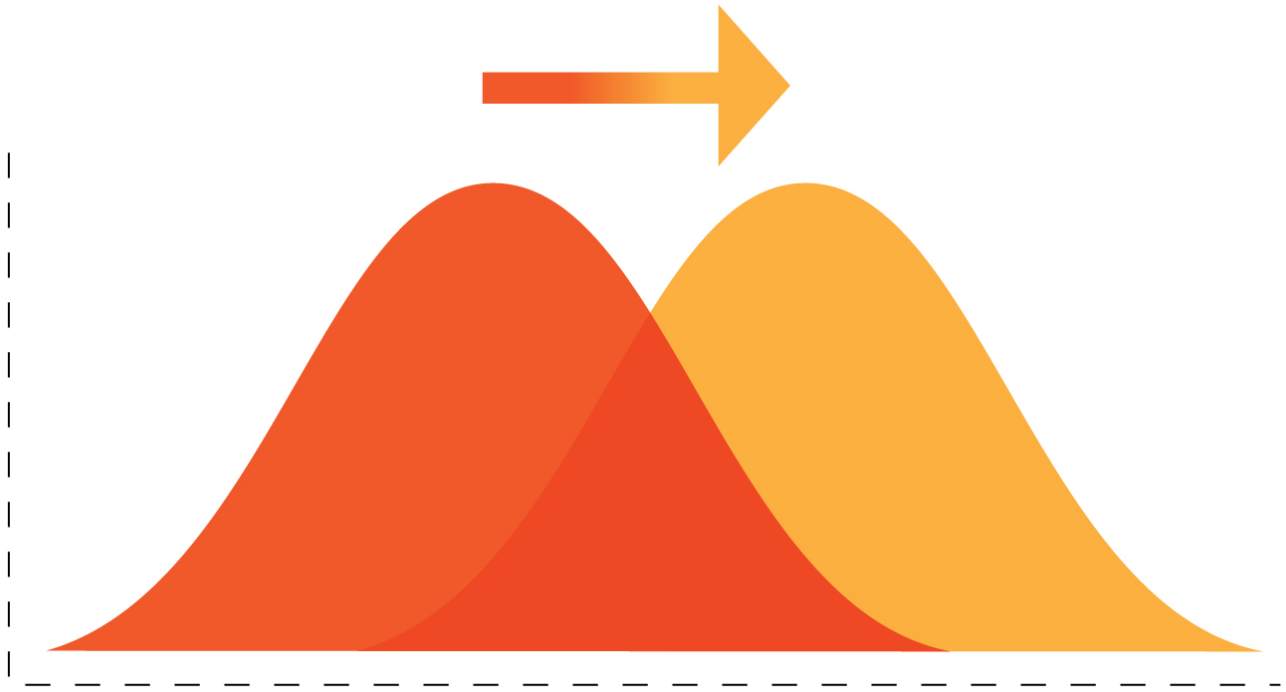
Dampening the Impact
Tone it down a bit

- Dampen the impact of the risk score by a set percentage (i.e. only 50% of the change in risk score is applied)
- Only adjust for risk score changes greater than X%, then dampen those changes by Y%



Normalization
Accounting for the impact of market trends

- Use a drug-based risk score or change in age-gender factor for a stable reference population to estimate and remove coding trends from diagnosis-based adjuster



Case Studies
Four scenarios based on actual observed practices

- Base Scenario
  - Apply a naïve formula, no adjustments
- Scenario 1
  - Adjust the baseline and measurement periods using full risk scores
  - Truncate claims at $350,000 PMPY
  - No comparable adjustment made to risk scores
- Scenario 2
  - Adjust the baseline and measurement periods using full risk scores
  - Exclude members from claim and risk score calculations if annual allowed is over $250,000
- Scenario 3
  - Normalize risk scores for coding trend using a market comparison group
  - No other adjustments
- Scenario 4
  - Only apply risk score changes over X% and dampen them by Y%

Case Study – Background

Year	MMs	Allowed PMPM	Risk Factor
Baseline	107,922	$364.78	1.176
Measurement	104,763	$390.04	1.261

- Two years of concurrent risk scores
- Risk score increased by more than allowed

Baseline PMPM	(a)	$364.78
Target Trend Factor	(b)	1.03
Change in Risk Factor	(c)	1.073
Target Claim Cost PMPM	(d)=(a)*(b)*(c)	$402.98
Measurement PMPM	(e)	$390.04
Savings PMPM	(f)=(d)-(e)	$12.94

Case Study – Scenario 1

Before Adjustment

Year	MMs	Allowed PMPM	Risk Factor
Baseline	107,922	$364.78	1.176
Measurement	104,763	$390.04	1.261

Truncate claims at $350,000 PMPY

Year	MMs	Allowed PMPM	Risk Factor
Baseline	107,922	$363.63	1.176
Measurement	104,763	$384.58	1.261

- Measurement period impacted more than baseline
- Reduces the increase in claims

Case Study – Scenario 1

		Base	Scenario 1
Baseline PMPM	(a)	$364.78	$363.63
Target Trend Factor	(b)	1.03	1.03
Change in Risk Factor	(c)	1.073	1.073
Target Claim Cost PMPM	(d)=(a)*(b)*(c)	$402.98	$401.71
Measurement PMPM	(e)	$390.04	$384.58
Savings PMPM	(f)=(d)-(e)	$12.94	$17.13
Shared Savings Percentage	(g)	50%	50%
Measurement Member Months	(h)	104,763	104,763
Aggregate Shared Savings	(i)=(f)*(g)*(h)	$677,815	$897,372

Case Study – Scenario 2

Before Adjustment

Year	MMs	Allowed PMPM	Risk Factor
Baseline	107,922	$364.78	1.176
Measurement	104,763	$390.04	1.261

Remove Member if Allowed > $250K

Year	MMs	Allowed PMPM	Risk Factor
Baseline	107,838	$344.19	1.152
Measurement	104,686	$364.49	1.248

- Reduced the increase in claims on a percentage basis
- Higher increase in risk scores on a percentage basis

Case Study – Scenario 2

		Base	Scenario 1	Scenario 2
Baseline PMPM	(a)	$364.78	$363.63	$344.19
Target Trend Factor	(b)	1.03	1.03	1.03
Change in Risk Factor	(c)	1.073	1.073	1.083
Target Claim Cost PMPM	(d)=(a)*(b)*(c)	$402.98	$401.71	$383.81
Measurement PMPM	(e)	$390.04	$384.58	$364.49
Savings PMPM	(f)=(d)-(e)	$12.94	$17.13	$19.33
Shared Savings Percentage	(g)	50%	50%	50%
Measurement Member Months	(h)	104,763	104,763	104,686
Aggregate Shared Savings	(i)=(f)*(g)*(h)	$677,815	$897,372	$1,011,591

Case Study – Scenario 3

Comparison Group

Year	MMs	Diagnosis RS	RX-Based RS
Baseline	421,438	1.109	1.000
Measurement	430,725	1.250	1.087

- Comparison group is assumed to be steady-state
- Comparison diagnosis-based risk score increased by 12.7%
- Comparison drug-based risk score increased by 8.7%

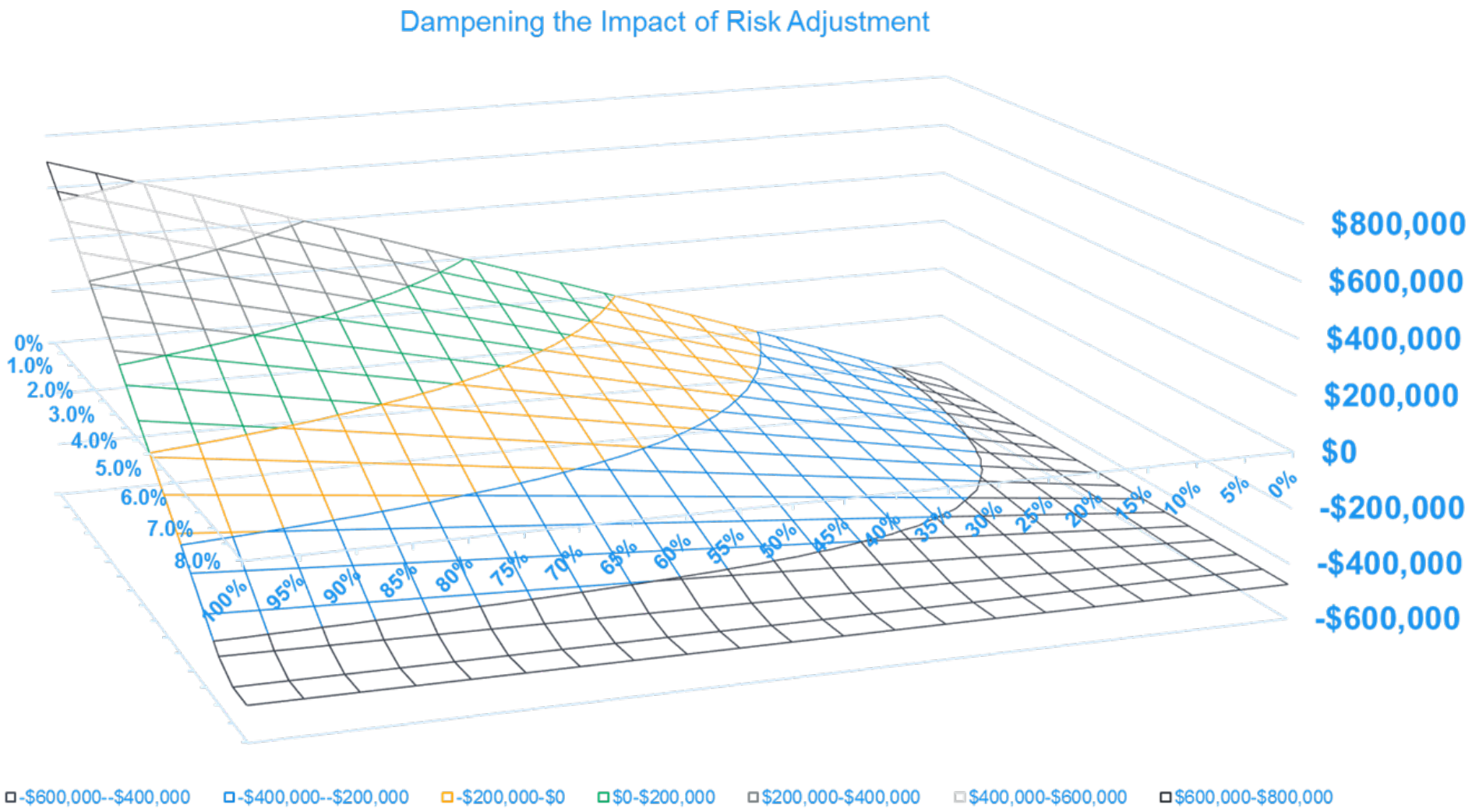
Case Study – Scenario 3

Comparison Group		
Baseline Dx Risk Score	(a)	1.109
Measurement Dx Risk Score	(b)	1.250
Baseline Rx Risk Score	(c)	1.000
Measurement Rx Risk Score	(d)	1.087
Increase in Rx Risk Score	(e)=(d)/(c)-1	8.7%
Adj. Measurement Dx RS	(f)=(b)/(1+(e))	1.150
Calc'd Coding Trend	(g)=(f)/(a)-1	3.7%
Study Group		
Measurement Risk Factor	(h)	1.261
Adjusted Risk Factor	(i)=(h)/(1+(g))	1.217

Case Study – Scenario 3

		Base	Scenario 1	Scenario 2	Scenario 3
Baseline PMPM	(a)	$364.78	$363.63	$344.19	$364.78
Target Trend Factor	(b)	1.03	1.03	1.03	1.03
Change in Risk Factor	(c)	1.073	1.073	1.083	1.034
Target Claim Cost PMPM	(d)=(a)*(b)*(c)	$402.98	$401.71	$383.81	$388.65
Measurement PMPM	(e)	$390.04	$384.58	$364.49	$390.04
Savings PMPM	(f)=(d)-(e)	$12.94	$17.13	$19.33	-$1.40
Shared Savings Percentage	(g)	50%	50%	50%	50%
Measurement Member Months	(h)	104,763	104,763	104,686	104,763
Aggregate Shared Savings	(i)=(f)*(g)*(h)	$677,815	$897,372	$1,011,591	-$73,143

Case Study – Scenario 4

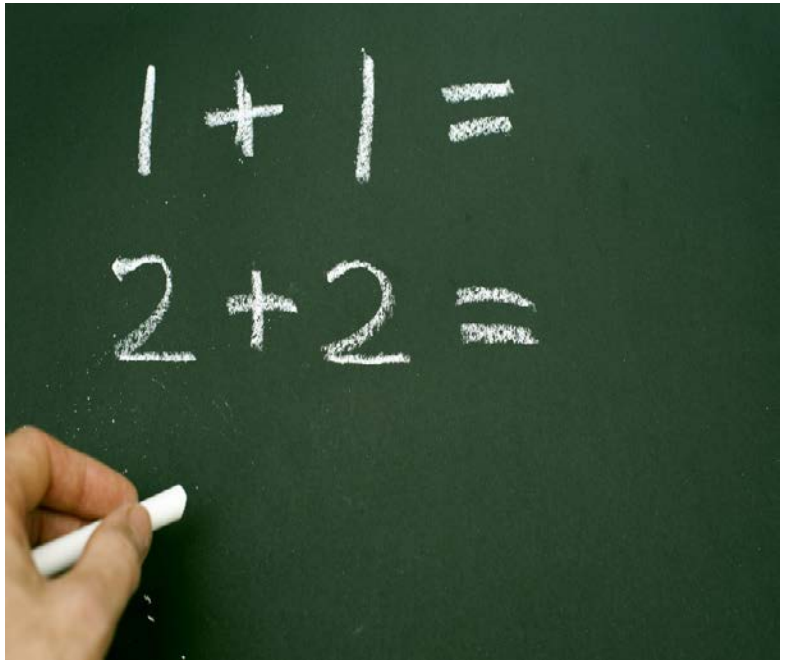


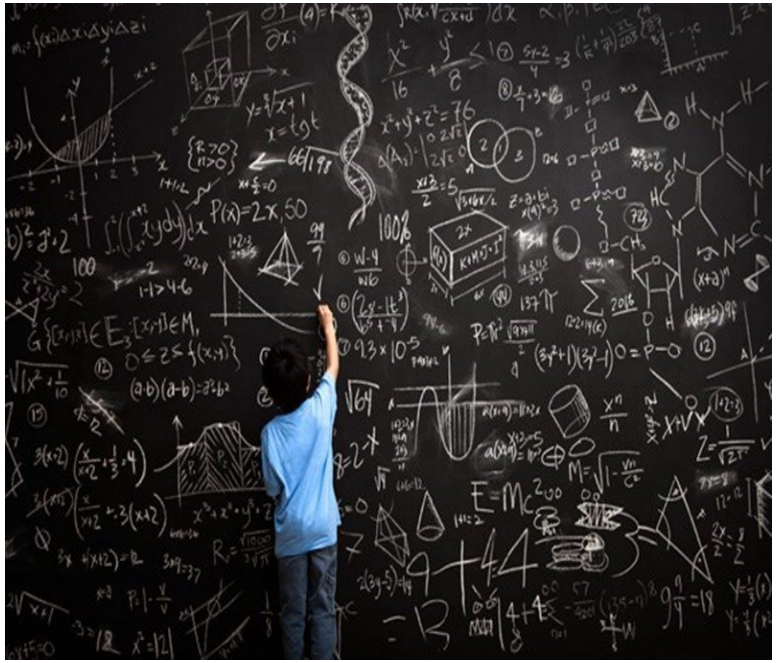
Best Practices

So what's the right answer?

Current Practices Vary

What Problem? → **We Did Something!** → **Sophisticated Estimate**





Best Practices
So what's the right answer?

- Each situation is unique
- What level of rigor is appropriate and acceptable for the size and scope of this arrangement?
- How do I want to prioritize stability of results vs. statistical accuracy?
- What's stability worth?
- How do I want to balance stability while creating the right incentives?
- Practical operational questions:
  - Can I do it successfully?
  - Can I explain it successfully?

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Thank you

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