MILLIMAN WHITE PAPER

How employers can address plan selection bias with risk adjustment

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Employers want their employees to have meaningful plan choices for medical coverage, but not adjusting for morbidity may result in selection bias that ultimately limits those choices

When it comes to health benefits, employees value choice. Choice of company. Choice of provider. Choice of benefit structure. When employers facilitate these choices, the method for setting employee premium contributions can create selection bias toward certain options. Selection bias happens when a sicker and more costly population tends to choose one option over another. A common example is when a more open network preferred provider organization (PPO) attracts those employees who want a broader range of providers and use their benefits more than those choosing a limited network health maintenance organization (HMO).

In order to reduce the selection bias, employers should adjust each option for morbidity. Because selection bias does not change the overall morbidity of the group, it is important to set the premium contributions without consideration for how healthy the subpopulation is within any one option. Otherwise, the option with the sicker subgroup will become more and more costly.

For example, if the PPO claims experience is $200 per member per month (PMPM) and the HMO is $150, you might assume the PPO is 33% more expensive. However, if the PPO has 25% higher morbidity (and expected costs), then a better comparison is to standardize the PPO costs for the morbidity difference to $160 ($200/1.25) to highlight that the PPO is still more expensive but by only 7% rather than 33%. Setting the employee premium contributions relative to the $200 PMPM and $150 PMPM costs will exacerbate selection, possibly to the point where the PPO is eliminated as a medical coverage option.

WHAT IS RISK ADJUSTMENT?

Risk adjustment is used to adjust the costs of two or more cohorts of people so all cohorts can be compared as if each had the same morbidity. A risk score is calculated for each person using age, gender, and medical conditions. Depending on which benefit option each person selects, risk adjustment identifies whether the benefit option has attracted the higher-risk or lower-risk people.

WHY DO RISK ADJUSTMENT?

Risk adjustment is a way to level the playing field so that the cost differences among options reflects benefit differences as well as network and operational performance differences, but not morbidity differences. It can help employers understand whether a benefit option is a higher-cost option due to having a higher share of sicker individuals or is higher cost due to inefficient operations. Risk adjustment helps manage selection bias that could lead to higher costs for one benefit plan and ultimately limit choices in employee plan options.

WHY NOT JUST USE BENEFIT RELATIVITIES?

It is worth noting that the same effect of risk adjustment can be achieved by using actuarial pricing relativities between the benefit offerings and adjusting both options' claim costs to match the total expected claim costs. This would require accurate information on unit price and efficiency differences among the offerings, and we note that these are often harder to estimate than risk adjustment.

Risk adjustment illustration

For our discussion, we will assume an employer has two different carriers: one offering a deductible and coinsurance PPO and the other a closed network, low-copay HMO (more carriers and plan design options could be considered as well). The table in Figure 1 summarizes hypothetical costs for each option. Note that per employee per month (PEPM) costs are also included.

FIGURE 1: ILLUSTRATIVE PLAN OPTION ENROLLMENT AND COSTS

PPO

Tier	Employees	Members	PEPM Cost	PMPM Cost
Single	100	100	$440.00	$440.00
Family	100	200	$760.00	$380.00
Total	**200**	**300**	**$600.00**	**$400.00**

HMO

Tier	Employees	Members	PEPM Cost	PMPM Cost
Single	100	100	$330.00	$330.00
Family	100	200	$570.00	$285.00
Total	**200**	**300**	**$450.00**	**$300.00**

The example assumes that more of the expensive people choose the PPO, the HMO provides lower copays, and the HMO costs are lower than the PPO.

First, we will demonstrate how costs and contributions for the PPO and the HMO would be calculated without risk adjustment. Then we will take the same two plans and illustrate how adjusting for risk helps remove selection bias from the contribution development and manage the risk of either option being selected against.

NO RISK ADJUSTMENT

We assume the employer's defined contribution is $300 for each tier and benefit option. This results in the employer and employee contributions by plan and tier shown in Figure 2.

FIGURE 2: EMPLOYER AND EMPLOYEE CONTRIBUTIONS

PPO

Tier	Original PEPM	Employer Contribution	Employee Contribution
Single	$440.00	$300.00	$140.00
Family	$760.00	$300.00	$460.00

HMO

Tier	Original PEPM	Employer Contribution	Employee Contribution
Single	$330.00	$300.00	$30.00
Family	$570.00	$300.00	$270.00

Given the lower costs for the HMO with no adjustment for risk, equal employer contribution amounts result in employee contribution amounts that are much lower for the HMO. This approach will lead to selection against the PPO because the younger and healthier people will most likely choose the less expensive option.

RISK ADJUSTED

Keeping the same enrollment and costs for the PPO and the HMO, this example takes risk differences into account to adjust costs prior to setting the employee contribution amounts. We assumed that overall the employees and dependents in the HMO are younger and healthier than those in the PPO. In Figure 3, we divided the costs for each option by the risk score to calculate the risk-adjusted PEPM.

FIGURE 3: RISK-ADJUSTED COSTS

PPO

Tier	Original PEPM	Risk Score	Adjusted PEPM
Single	$440.00	1.10	$400.00
Family	$760.00	1.10	$690.00

HMO

Tier	Original PEPM	Risk Score	Adjusted PEPM
Single	$330.00	0.89	$370.00
Family	$570.00	0.89	$640.00

Note that the values in all figures are rounded to the whole dollar.

With the adjusted PEPMs standardized for the morbidity of each option, we apply the fixed $300 employer contribution to determine the risk-adjusted employee (EE) premium contributions, shown in Figure 4.

FIGURE 4: RISK-ADJUSTED EMPLOYEE CONTRIBUTIONS

PPO

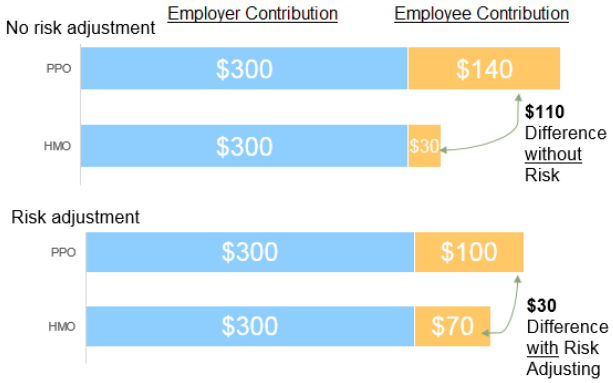
Tier	Standardized PEPM	Employer Contribution	Adjusted EE Contribution
Single	$400.00	$300.00	$100.00
Family	$690.00	$300.00	$390.00

HMO

Tier	Standardized PEPM	Employer Contribution	Adjusted EE Contribution
Single	$370.00	$300.00	$70.00
Family	$640.00	$300.00	$340.00

Comparing the adjusted employee contributions to those from Figure 2 above, Figure 5 shows that the PPO has a decrease in the employee contributions while the lower-cost HMO has an increase in employee contributions. These adjusted employee contributions now reflect the morbidity of the entire group and are closer to reflecting the true cost performance of each option.

FIGURE 5: ORIGINAL VS. ADJUSTED EE CONTRIBUTIONS



This example illustrates that, even though the PPO is the higher-cost option, much of the cost difference is attributed to having older and/or sicker employees and dependents in that plan. To avoid driving further selection against that option, the risk-adjusted employee contributions allow the employer to set employee contributions based on the overall composite risk of the employer's group, not just the risk of those who are selecting a specific benefit option. This results in the adjusted employee contribution for the HMO subsidizing the higher costs in the PPO but creates a strategy that will reduce the risk of any option getting selected against.

Mixed funding arrangements

We can extend the without risk adjustment example to consider a mix of funding arrangements for the plans. If the HMO is fully insured and does not consider all of the favorable morbidity, in the pricing of premiums, that results in higher costs for the employer. If the PPO is self-insured, then without risk adjustment the plan will incur higher and higher PMPM costs as the morbidity increases. If the fully insured HMO premiums do not go down with the favorable morbidity, then the employer has higher costs for both the HMO and PPO when the funding arrangements are mixed.

Net employer cost impact

For an extreme example, consider a PPO employee with $0 incurred costs moving to a fully insured HMO. That will increase net costs by the HMO premium. Risk adjustment will partially address this issue because the HMO would have to price the employer cost with the favorable morbidity or be at a disadvantage.

These selection and cost issues arise even when the HMO is also self-insured or tightly experience-rated. If there is a large employee contribution differential between the high-cost option and the low-cost option, then a $0 cost employee would likely choose the lower-cost option. Having the $0 cost employee chose the low-cost option doesn't change the employer's total costs, but now employee contributions are lower, resulting in higher net costs for the employer. Risk adjustment will mitigate some of this risk, but precisely estimating the benefit plan migration is the only way to fully mitigate the cost impact of selection bias.

Summary

If an employer takes the approach of not risk adjusting costs when setting premium contributions, it is potentially driving selection against the plan with higher morbidity. This can lead to a situation where only the highest-cost employees will remain in the high-cost plan until the employee contributions increase to the point where it is no longer a reasonable option for employees.

Risk adjustment can help employers that offer multiple benefit options from different payers to determine a strategy for employee contributions that will be based on the overall composite risk of the employer's covered population and avoid adverse selection for any single option. This approach helps employers continue to offer meaningful choice to their employees at a fair cost for each health benefit plan option.

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