



New CMS Guidance for Medicaid Managed Care Medical Loss Ratio Calculations

By Paul Houchens, Ian McCulla and Amber Kerstiens



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On May 15, 2019, the Centers for Medicare and Medicaid Services (CMS) released an Informational Bulletin¹ clarifying how payments to subcontracted vendors should be accounted for in the medical loss ratio (MLR) calculation required by 42 CFR §438.8 as established by the Medicaid and Children's Health Insurance Program (CHIP) managed care final rule published on May 6, 2016.² In the bulletin of May 15, 2019, CMS focuses on the responsibilities of a subcontractor in providing data and the proper accounting of subcontractor payments for purposes of MLR reporting. While the provisions outlined in the May 15, 2019, bulletin apply to all subcontractor relationships, CMS specifically highlights pharmacy benefit manager (PBM) arrangements that may include "spread pricing" and rebate retention.

The final rule requires states to complete MLR reporting for the first contract period beginning on or after July 1, 2017.³ It is anticipated that many state Medicaid programs will be providing MLR data to CMS for the first reporting period during calendar year 2019. Therefore, states should clearly articulate this guidance to contracted managed care plans and modify data collection processes and vehicles to collect the necessary detail to meet CMS requirements. Please note that, per CMS definitions, this analysis concerns "managed care plans," including managed care organizations (MCOs), prepaid inpatient health

plans (PIHPs), prepaid ambulatory health plans (PAHPs) and primary care case management (PCCM) entities.

HOW DOES CMS DEFINE A SUBCONTRACTOR AND WHAT ARE ITS GENERAL RESPONSIBILITIES UNDER A MANAGED CARE CONTRACT?

The final rule defines a subcontractor as:

Subcontractor means an individual or entity that has a contract with a MCO, PIHP, PAHP, or PCCM entity that relates directly or indirectly to the performance of the MCO's, PIHP's, PAHP's, or PCCM entity's obligations under its contract with the State. A network provider is not a subcontractor by virtue of the network provider agreement with the MCO, PIHP, or PAHP.⁴

The final rule further stipulates in 42 CFR §438.230(b)(1) that a managed care plan must ensure that its subcontractors fully

The bulletin indicates CMS will conduct financial audits of Medicaid managed care plans' MLR calculations, with a specific focus on proper reporting of subcontractor expenditures.

comply with all terms and conditions of its contract with a state and must comply with all applicable Medicaid laws and regulations (including sub-regulatory guidance).⁵ These provisions in the final rule eliminate the possibility that a managed care plan could circumvent its state and federal obligations by delegating its services to a subcontractor. Note that the above requirements do not differ between sub-capitated and non-risk-based subcontracted vendors.

One area in which managed care plans commonly use subcontractors is in the delivery of pharmacy benefits. A managed care plan generally contracts with a pharmacy benefit manager (PBM) to provide state plan-covered pharmacy services to the managed care plan's covered Medicaid beneficiaries. While the PBM does not actually dispense prescription drugs to beneficiaries (and therefore is not considered a network provider), it maintains and develops the pharmacy network, negotiates rebates with drug manufacturers, and performs other activities that support the managed care plan's obligations under its contract with the state.

When contracting with PBMs, managed care plans often offer two pricing structures: pass-through and traditional. A pass-through pricing structure generally includes a specified administrative fee, such as a per member per month (PMPM) amount, and the benefit costs are "passed through" directly to the managed care plan. Conversely, a traditional pricing structure typically contains contractually defined aggregate discount guarantees between the managed care plan and the PBM. These guarantees mean that the managed care plan is contractually obligated to pay the PBM (in aggregate) a negotiated discount price for medications regardless of what the PBM pays the pharmacy. Under a traditional (or spread pricing) arrangement, this may result in a difference between what the managed care plan pays the PBM for individual drugs and what the pharmacies receive as payment for those same drugs.

ACCOUNTING FOR SUBCONTRACTOR PAYMENTS WITHIN MLR REPORTING

The CMS bulletin clarifies that a managed care plan's MLR calculation "may only include in incurred claims for Medicaid covered services the amount that the subcontractor actually pays the medical provider or supplier for providing Medicaid covered services to enrollees."⁶ Subcontractors (such as PBMs) performing administrative functions in addition to providing Medicaid-covered services are required to appropriately classify and report the payments from the managed care plans into expenditures for incurred claims and activities that improve healthcare quality so that they may be included in the numerator of the MLR calculation. States should also collect non-benefit administrative cost or other non-benefit costs from the managed care plan's subcontractors to ensure complete reporting of total expenditures as required by the medical loss ratio standards.

Exceptions to this guidance do exist. A subcontractor who provides Medicaid-covered services directly to Medicaid enrollees

is an exception to the general rule noted above. An example of this type of arrangement would be a managed care plan contracting with a physician clinic at a set per member per month amount (a sub-capitated arrangement with a medical provider). The entire sub-capitated payment, including administrative expenses that are attributable to the direct provision of Medicaid services, would be allowable in the MLR calculation as long as the functions are performed by the subcontractor's own employees and not through a contracted network of providers.

In cases where a subcontractor supplies delegated managed care services as well as acting as a health care provider that provides direct covered services to enrollees, 42 CFR 438.230(c)(1)⁷ requires that the managed care plan subcontractor agreement must clearly define the subcontractor's delegated activities or obligations, as well as the related reporting requirements. Because the costs of the delegated managed care activities cannot be included in the managed care plan's medical loss ratio calculation (with the exception of quality improvement activities), they should not be classified as incurred claims by the subcontractor/provider. States should monitor managed care plans and subcontractors for this distinction, given the intention of CMS financial audits to be specifically focused on subcontractor expenditures.

IMPLICATIONS ON PBM SPREAD PRICING

As noted above, PBMs often contract with managed care plans using pricing structures commonly referred to as "spread pricing." The spread pricing structure allows a PBM to charge set fees to the managed care plan, regardless of what is paid to the pharmacies providing the retail drugs. The "spread" is the difference between the amount paid to the pharmacy and the fee the managed care plan pays to the PBM. The spread amount is used by the PBM to support administrative functions the managed care plan has delegated to the PBM such as claim processing, utilization management, reporting and network development. However, the final rule's MLR provision specifically excludes amounts paid to third-party vendors for network development, administrative fees, claim processing, and utilization management from incurred claims included in the numerator of the MLR calculation.⁸

Without detailed reporting requirements for managed care plans and their subcontractors, this type of arrangement does not allow the managed care plan to easily distinguish incurred claim costs and non-benefit administrative costs implicitly paid to the PBM. For example, it is frequently observed that pharmacy paid amounts included in reported encounter files submitted to a state reflect the amounts paid by the managed care plan to the PBM (rather than the amount paid by the PBM directly to the pharmacy). This overstates the pharmacy benefit cost reported to a state because the reported paid amount also includes the spread (which funds non-benefit expenses related to the PBM's administration of the pharmacy benefit).

The CMS bulletin clarifies that managed care plans and their subcontractors continue to be subject to MLR reporting requirements when they enter into sub-capitated or spread pricing agreements. In reporting, it says, “the PBM must calculate incurred claims as the amounts paid to the retail or mail-order pharmacy (e.g., drug ingredient costs and dispensing fees) minus any prescription drug rebates.”⁹

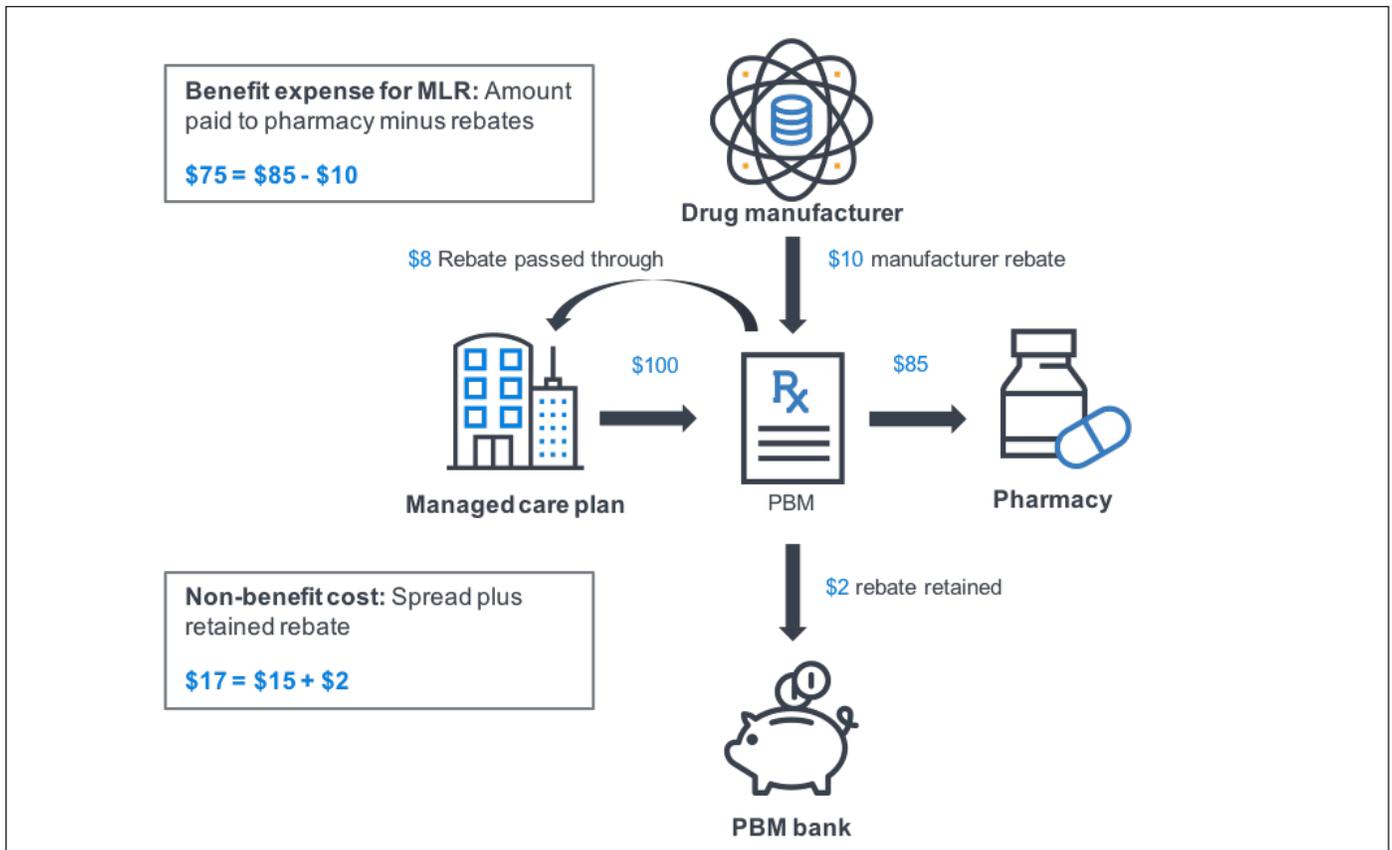
PRESCRIPTION DRUG REBATES

Manufacturers offer rebates for competitive high-cost drugs (rebates are rarely offered for generics) to incentivize PBMs and managed care plans to include the manufacturer’s products in a preferred “tier” placement.¹⁰ PBMs may also have contractual arrangements with managed care plans that allow for the retention of all or a portion of pharmacy rebates. The CMS bulletin clarifies that prescription drug rebates received and accrued must be deducted from incurred claims regardless of the source of the rebate (manufacturer, retail pharmacy, incentive payments, or other items of value) and regardless of whether the managed care plan received the rebate or the rebate was retained by a third-party vendor. Therefore, if a PBM is retaining pharmacy rebates or other items of value in lieu of charging a separate administrative fee, then the amount of the rebates retained would need to be treated as a reduction to incurred expenses for

MLR reporting purposes. The retained rebates or other items of value should be considered non-benefit administrative costs of the managed care plan (assuming the PBM would assess explicit charges to the managed care plan in the absence of the retention of rebates or other items).

Figure 1 illustrates a sample flow of funds for a PBM and how those expenditures should be reported in the MLR calculation. It shows that the benefit cost plus non-benefit cost (\$75 plus \$17 equals \$92) is equal to the net amount paid by the managed care plan (\$100 to PBM minus \$8 rebate passed through to the managed care plan). This example is for illustrative purposes only and does not reflect an estimate of aggregate market experience.¹¹ Actual rebates and discounts paid to the pharmacy will vary by drug within the contract between the managed care plan and the PBM. As noted, the benefit expense that should be reported in the MLR calculation is the amount paid to the pharmacy less the total of the rebates (both those retained by the managed care plan and the PBM). The pharmacy spread amount and PBM-retained rebates should be considered non-benefit expenses.

Figure 1
Flow of Funds



Note: This example is for illustrative purposes only and does not reflect an estimate of aggregate market experience.

SUMMARY

The clarifications in the CMS bulletin are effective for Medicaid MLR reporting in contracts beginning on or after July 1, 2017. The first round of MLR reporting will soon be necessary and states need to ensure that contracted managed care plans are fully meeting reporting requirements, including the accurate reporting of costs incurred by subcontractors. ■



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ENDNOTES

- 1 CMS (May 15, 2019). Medical Loss Ratio (MLR) Requirements Related to Third-Party Vendors. Informational Bulletin. Retrieved May 31, 2019, from <https://www.medicaid.gov/federal-policy-guidance/downloads/cib051519.pdf>.
- 2 The full text of the final rule is available at <https://www.federalregister.gov/documents/2016/05/06/2016-09581/medicaid-and-childrens-health-insurance-program-chip-programs-medicaid-managed-care-chip-delivered>.
- 3 For background information on Medicaid MLR reporting requirements, please see <http://www.milliman.com/uploadedFiles/insight/2016/medical-loss-ratio-in-mega-reg.pdf>.
- 4 §438.8: Medical loss ratio (MLR) standards. Available at: https://www.ecfr.gov/cgi-bin/text-idx?SID=f8e57d29f9326a1fdab3a10e3df95a1d&mc=true&node=se42.4.438_18&rgn=div8.
- 5 §438.230: Subcontractual relationships and delegation. Available at: https://www.ecfr.gov/cgi-bin/text-idx?SID=f8e57d29f9326a1fdab3a10e3df95a1d&mc=true&node=se42.4.438_1230&rgn=div8.
- 6 CMS Informational Bulletin, op cit.
- 7 §438.230, op cit.
- 8 §438.8, op cit.
- 9 CMS Informational Bulletin, op cit.
- 10 Dieguez, G., Alston, M., & Tomicki, S. (May 21, 2018). A Primer on Prescription Drug Rebates: Insights Into Why Rebates Are a Target for Reducing Prices. Milliman White Paper. Retrieved May 31, 2019, from <http://www.milliman.com/insight/2018/A-primer-on-prescription-drug-rebates-Insights-into-why-rebates-are-a-target-for-reducing-prices/>.
- 11 For reference, while experience in each state Medicaid program is likely to differ, the presentation available at <https://apps.legislature.ky.gov/CommitteeDocuments/309/11792/Feb%2027%202019%20Medicaid%20Prescription%20Drug%20Expenditures%20Steckel%20PowerPoint.pdf> documents spread pricing percentages in the Commonwealth of Kentucky's Medicaid program during calendar year 2018. Among the four managed care entities reporting experience, spread percentages ranged from approximately 10% to 15% of the managed care plan's pharmacy costs.



Underwriting Gain in Managed Medicaid: Starting the Conversation

By Sabrina Gibson, Jim Piekut and Jared Simons

For managed care organizations (MCOs) serving Medicaid populations, underwriting gain is a regulatory requirement¹ and a broadly accepted component of capitation rates. However, the capitation rate development processes, as documented in various actuarial rate certifications and memoranda, usually contain little to no details on the derivation of the underwriting gain assumption. Further, actuarial publications pertaining to Medicaid managed care rate development do not specify the calculation techniques that should be used to develop underwriting gain.

According to the Actuarial Standards Board's Actuarial Standard of Practice No. 49 (ASOP 49), actuarially sound capitation rates will include a provision for underwriting gain in order to provide compensation for the risks assumed by an MCO.² However, there is no generally accepted method for quantifying underwriting gain in managed Medicaid capitation rates. To begin to address this void, we developed a model to calculate underwriting gain. The model was developed by researching existing financial literature and performing a statistical analysis of industry data to build out a framework that can be leveraged to estimate underwriting gain.

The methodology outlined here may serve as a starting point for actuaries to determine the appropriate level of underwriting gain for a particular Medicaid program. Further details and an accompanying model that can be used to estimate underwriting gain can be found on the Medicaid Health Plans of America (MHPA) publications page.³

WHAT IS UNDERWRITING GAIN?

The primary actuarial guidance on developing managed Medicaid capitation rates is ASOP 49, which states that underwriting

gain provides compensation for the risks assumed by an MCO and is comprised of two components:⁴

- Cost of capital
- Margin for risk or contingency

The cost-of-capital component of underwriting gain essentially pays shareholders, investors and lenders for the use of funds invested in a Medicaid product. MCOs are required by states to hold capital in support of their Medicaid business to meet obligations and ensure solvency of the organization. The cost of capital is the cost of setting aside such funds.

Margin for risk or contingency, commonly referred to as risk margin, is needed in capitation rate development to account for the program risks. Risk margin is quantified by calculating the likelihood that actual experience will deviate adversely from projected experience. Actual experience may deviate from expectations for various reasons such as the actual medical cost trend exceeding the assumed trend rates, an inability to accurately predict the impact of program and policy changes, or limitations of risk-adjustment mechanisms to sufficiently predict costs.

WHY IS UNDERWRITING GAIN NECESSARY?

Of chief importance, ASOP 49 requires that capitation rates include a provision for underwriting gain to provide for the risks assumed by the MCO.⁵ This includes providing for cost of capital, but there are also other considerations that establish the need for underwriting gain in Medicaid capitation rates.

Medicaid managed care is unique from other health insurance in that the entity setting the capitation rates (price) is not usually the entity bearing the mispricing risk. Since the rate-setting actuaries do not bear the financial risk of mispricing, they do not have the same economic incentive to include margins for deviation as does a pricing actuary working in other lines of health insurance. Since Medicaid MCOs rely on the state's actuary to develop capitation rates at levels that adequately fund the program, even in years of adverse deviation, explicit inclusion of an adequate risk margin in the capitation rates is especially important.

Another unique aspect of Medicaid capitation rate setting is that the state actuary often develops rates for the program overall, rather than for each specific MCO, using the combined experience of all MCOs in the program. This further increases the risk that the rates for any one MCO within the program may not be adequate. Not only will actual results vary from expected results

for the entire Medicaid program, but results will vary by each individual MCO. Some of the variation is due to factors that generally exist across all types of health insurance and are outside the MCOs' control, such as anti-selection or the inability of risk-adjustment mechanisms to fully capture membership risk, which further supports the need to include risk margin.

Finally, it is common to think of the underwriting gain components in the capitation rates as being equal to the expected MCO net income. However, Medicaid programs have changed such that there are now common limitations in Medicaid contracts (e.g., risk sharing and withholds) which cause the amount of underwriting gain in the rates to not result in the MCO percentage of net income. Therefore, a more precise analysis is required to determine an appropriate underwriting gain assumption.

COMPONENTS OF UNDERWRITING GAIN: COST OF CAPITAL

As mentioned previously, cost of capital is an MCO's cost of setting aside capital in support of its Medicaid business. Companies can raise capital to fund investments into business ventures by issuing debt (e.g., bonds or loans) and/or equity (e.g., stock). The total cost of these financial instruments is called the cost of capital.

MCO investments in managed Medicaid contracts are the funds the MCO holds in reserve as risk-based capital (RBC)⁶ or other equity requirements imposed by the state and any additional funds that must be invested in the program if the revenues from the contract are less than the expenses of the contract. These are the amounts on which the MCO expects to earn a return.

The most common approach to calculating the cost of capital is to use the weighted average cost of capital (WACC). Under this method, all sources of financing—equity and debt—are included in the calculation and each source is given a weight commensurate with its proportion in the company's capital structure.⁷ The following formula can be used to determine WACC:

$$\text{WACC} = \text{Cost of Equity} \times \text{Weight of Equity} + \text{Cost of Debt} \times \text{Weight of Debt}$$

Typically, in the context of corporate financing, the WACC is reported on an after-tax basis. However, since the underwriting gain capitation rate component must be developed on a before-tax basis, the formula must be altered from the normal formula to produce a before-tax percentage. This is done by grossing up the cost of equity for taxes before blending it with the before-tax cost of debt.

The components of WACC are:

- **The cost of debt.** This can be determined by dividing the total interest a company is paying on debts by those debts.

- **The cost of equity.** This is the expected rate of return for the company's shareholders and can be quantified by calculating the stock's expected return, including consideration for volatility, grossed up to a before-tax basis. The following formula can be used to determine the cost of equity:

$$\text{Cost of Equity} = \frac{\text{Equity Risk Premium} \times \text{Beta} + \text{Risk-Free Rate}}{(\text{After-Tax Yield})}$$

where

$$\text{Equity Risk Premium} = \text{Market Expected Return Rate} - \text{Risk-Free Rate}$$

and

$$\text{After-Tax Yield} = 1 - [\text{Federal Tax Rate} + \text{State Tax Rate} \times (1 - \text{Federal Tax Rate})]$$

Equity risk premium is the difference between the stock's expected return and the risk-free rate. The market expected return rates for stock companies can be found using sources such as Pimco,⁸ Voya⁹ and Bloomberg.¹⁰ The risk-free rate is commonly represented by the U.S. Treasury rate, which can be found on the U.S. Treasury site.¹¹ Beta is a measure of a stock's volatility of returns relative to the entire market index, such as the S&P 500. A beta greater than one means that the stock is potentially more volatile than the market and has unsystematic risk. A stock company's historical beta can be found on the Bloomberg website.¹² The after-tax yield formula assumes that the federal tax is deductible from the state tax calculation.

Once the WACC is determined, it can be used to develop the cost-of-capital assumption for the underwriting gain used in the managed Medicaid capitation rates.

To determine the amounts of capital on which to apply the WACC, the actuary must estimate the amount of capital held in reserves to support the Medicaid business. This includes capital held in reserves as RBC and other forms of equity held as required by the Medicaid contract or state regulatory agencies. To determine the amount of cost of capital needed in the capitation rates, the actuary should estimate the ratio of the capital held to the premium, which will be referenced as the RBC/equity ratio. The load to include in the capitation rates for cost of capital can then be expressed as:

$$\text{Cost of Capital} = \text{RBC/Equity Ratio} \times \text{WACC}$$

The RBC/equity ratio should be based on all capital investments of the MCO, not just the minimum required by statute. MCOs typically hold more than the minimum capital requirements for multiple reasons such as the chance of a loss in a particular year, late payment of capitation rates and industry expectations. Hold-



ing RBC/equity levels at more than what is statutorily required reduces the risk of default and leads to a lower cost of debt, which offsets the cost of holding the higher level of reserves.

Table 1 is an illustrative example of how cost of capital may be calculated, beginning with the calculation of WACC.

Table 1
Assumptions Used in WACC Calculation

Assumptions	Percents
Risk-free rate	2.8%
Market expected return	13.2%
Beta	0.94%
Cost of debt (borrowing rate)	5%
Debt as a percent of total	20%
Federal tax rate	21%
State tax rate	5%

WACC Calculation Example

With the numbers assumed in Table 1, we can now calculate WACC.

$$\begin{aligned} &\text{Equity Risk Premium} \\ &= \text{Market Expected Return Rate} - \text{Risk-Free Rate} \\ &= 13.2\% - 2.8\% = \mathbf{10.4\%} \end{aligned}$$

$$\begin{aligned} &\text{After-Tax Yield} \\ &= 1 - [\text{Federal Tax Rate} + \text{State Tax Rate} \times (1 - \text{Federal Tax Rate})] \\ &= 1 - [21\% + 5\% \times (1 - 21\%)] = \mathbf{0.751} \end{aligned}$$

$$\begin{aligned} &\text{Cost of Equity} \\ &= \frac{\text{Equity Risk Premium} \times \text{Beta} + \text{Risk-Free Rate}}{\text{After-Tax Yield}} \\ &= \frac{10.4\% \times 0.94 + 2.8\%}{0.751} = \mathbf{16.8\%} \end{aligned}$$

$$\begin{aligned} &\text{WACC} \\ &= \text{Cost of Equity} \times \text{Weight of Equity} + \text{Cost of Debt} \times \text{Weight of Debt} \\ &= 16.8\% \times 80\% + 5.0\% \times 20\% = \mathbf{14.4\%} \end{aligned}$$

Cost-of-Capital Calculation Example

Once the WACC is developed, the cost of capital can be calculated. Table 2 is an example of the calculation of the cost of capital where MCOs hold on average 350 percent of RBC and 100 percent of RBC equates to approximately 4 percent of revenue.

Table 2
Assumptions Used in Cost-of-Capital Calculation

Assumptions	Percents
RBC/equity MCOs hold	350%
100% RBC/equity ratio	4.0%
WACC	14.4%

In this example, 2.02 percent is the before-tax cost of capital, as a percentage of revenue, to use in the underwriting gain assumption:

$$\begin{aligned} &\text{Cost of Capital} \\ &= (\text{Required Capital} \times 100\% \text{ of RBC as a Percent of Revenue}) \times \text{WACC} \\ &= \text{RBC/Equity Ratio} \times \text{WACC} \\ &= (350\% \times 4.0\%) \times 14.4\% \\ &= 14.0\% \times 14.4\% = \mathbf{2.02\%} \end{aligned}$$

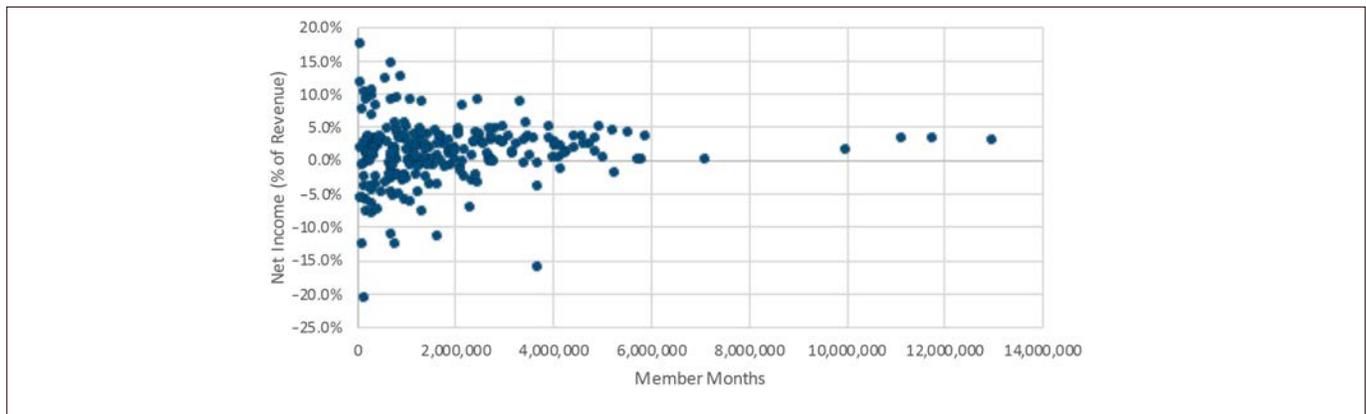
COMPONENTS OF UNDERWRITING GAIN: RISK MARGIN

Risk margin, the second component of underwriting gain, is needed in capitation rate development to account for the program risks. It is quantified by calculating the likelihood that actual experience will deviate adversely from projected experience.

In practice areas other than Medicaid, premium rates are often developed using pricing assumptions that include implicit margin. This implicit margin offsets risk associated with adverse deviation. The Center for Medicare & Medicaid Services (CMS) provides guidance on Medicaid managed care rate setting that can be interpreted to limit the use of implicit margin in the pricing assumptions; therefore, in Medicaid capitation rate development, an explicit risk margin should be included as a separate component of the underwriting gain assumption.

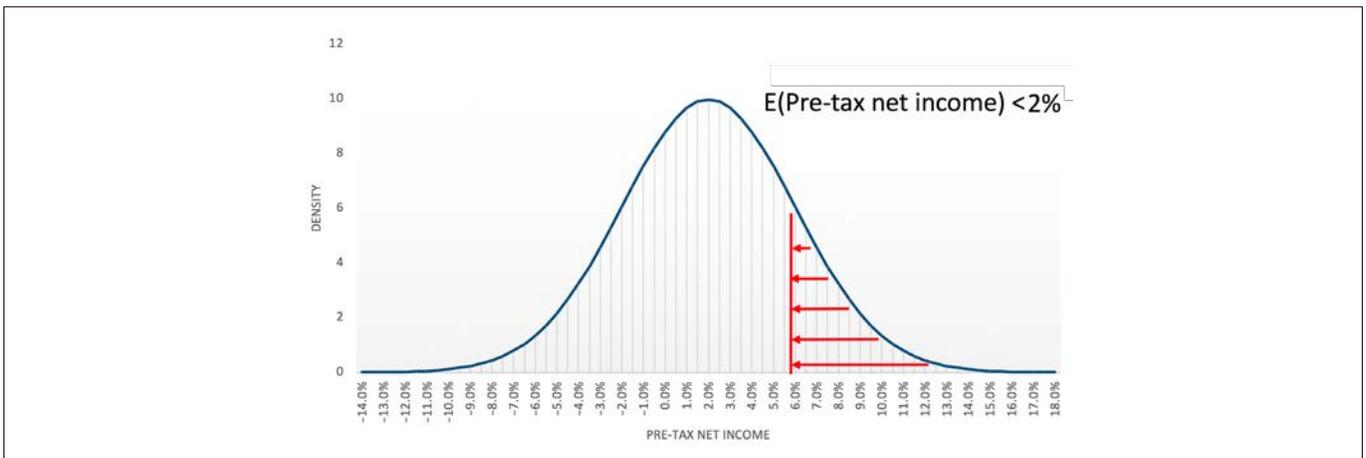
While there is no direct formula for risk margin that captures the unique risks of a given Medicaid program, historical financial experience in the Medicaid MCO industry can be used to determine an appropriate risk margin. An example of Medicaid MCO financial experience of net income by MCO member size is shown in Figure 1. Such experience can be used to develop a statistical model that estimates probabilities of future financial results, while taking into account the unique design of a given Medicaid program.

Figure 1
MCO Net Income as a Percent of Revenue Versus Enrollment, 2013–2015



Source: Gibson, Sabrina H., James R. Piekut and Jared Simons. 2019. Underwriting Gain Development for Managed Medicaid Capitation Rates. Medicaid Health Plans of America (MHPA). https://www.medicaidplans.org/_docs/MHPA_Underwriting_Gain_Development_Report_June_2019_FINAL.pdf.

Figure 2
Pre-Tax Net Income Distribution



Note: $\mu = 2\%$; $\sigma = 4\%$; Max PTNI = 6%

As mentioned earlier, the underwriting gain assumption may be thought of as being analogous to expected MCO net income, however, Medicaid programs have changed such that there are now common limitations in Medicaid contracts which cause the amount of underwriting gain in the rates to differ from the expected MCO percentage of net income. These include:

- **Risk-sharing** provisions that limit profit or losses and often create an asymmetry in the distribution of gains and losses for an MCO and for the Medicaid program. Minimum MLRs and other risk-sharing remittance requirements limit MCO profits and the state's exposure to overpricing risk. Minimum MLR remittance has become a common element of Medicaid managed care contracts. Maximum MLRs, which are less common than minimums, protect the MCOs from specified levels of loss. Minimum MLRs increase the level of risk margin required, while maximum MLRs reduce the level.

- **Withholds** from the capitation rates that are not expected to be earned back by the MCOs reduce the overall capitation received by an MCO. Lower capitation increases the probability of loss and lowers the expected net income. Additional risk margin is required to maintain the intended expected net income.

ASOP 49 requires the actuary to consider risk sharing and withholds when developing the underwriting gain. The impact of these provisions limits the potential gain and loss of any given MCO in the program. Figure 2 illustrates how these limitations can impact the expected pre-tax net income when the maximum profit is limited by program policy.

The underwriting gain model is a statistical model that determines the probability of an MCO achieving any given medical loss ratio between 50 percent and 150 percent based on the inputs into the model. The model further calculates the impact of program policies on the net income in each scenario to de-

termine the expected net income. As the risk margin changes, the premium changes, so the model calculates the risk margin through an iterative process.

One additional component should be considered as part of the underwriting gain—the cost-of-capital infusions. These infusions occur when an MCO experiences a loss. Losses incurred by an MCO are paid for with the capital reserves discussed earlier. Therefore, an MCO must raise additional capital to maintain the RBC/equity requirements. This additional capital, the infusion, is added to the cost of capital on the initial investment to determine the total cost-of-capital component. The model assumes this additional capital can be raised at the same WACC as the initial investment.

The final underwriting gain load in the rates is determined by summing the cost of capital and the risk margin with adjustments for withholds and risk sharing if needed.

DEVELOPMENT AND OPERATION OF THE MODEL

The model was developed in Microsoft Excel to perform the calculations needed to produce the underwriting gain for managed Medicaid capitation rates using the method described previous-

ly. This model and an accompanying report can be found on MHPA’s publications page.¹³ The model is open source, allowing users to modify the model as needed to align with the structure of any given Medicaid program. Users are urged to review the report and model in detail prior to making any modifications.

The model calculates the components of underwriting gain to achieve a target pre-tax net income set by an actuary. The model determines the cost of capital and risk margin components separately. Cost of capital is determined on the initial investment and the infusions separately.

The final underwriting gain load in the rates is determined by summing the cost of capital and the risk margin. Figure 3 is the summary output of an illustrative example. In this example, the pre-tax net income target was set to 2.0 percent. The cost of capital is 1.74 percent, the risk margin is 0.90 percent, and the cost-of-capital infusions is 0.06 percent, bringing the final underwriting gain to 2.70 percent. This means that for the given example, the actuary setting the capitation rates should consider including a 2.70 percent provision in the rates for underwriting gain to establish an assumption in the rates of an expected net income of 2.0 percent.

Figure 3
Summary Output of Illustrative Example From the Model

UW Gain (rate component) of 2.70% produces Expected Pre-Tax Net Income of 2.00%		STATISTICAL SUMMARY	
UNDERWRITING (UW) GAIN		Gain Interval	Probability
Cost of Capital: Initial Investment	1.74%	0-2%	24.2%
Cost of Capital Infusions	0.06%	2-4%	25.2%
Margin for Risk & Contingency	0.90%	4-6%	16.9%
UW Gain	2.70%	6-8%	10.3%
EXPECTED PRE-TAX NET INCOME		8-10%	0.0%
UW Gain (Rate Component)	2.70%	10+%	0.0%
Less Withhold Not Achieved	-0.50%	Probability of Gain	76.6%
Less Capital Infusions	-0.06%	Expected Gain Given Gain	3.2%
Less MLR Cap(s)	-0.14%	Loss Interval	Probability
Expected Net Income (Before Tax)	2.00%	0-2%	14.0%
		2-4%	6.3%
		4-6%	2.4%
		6-8%	0.6%
		8-10%	0.1%
		10+%	0.0%
		Probability of Loss	23.4%
		Expected Loss Given Loss	-2.0%
		Ruin Loss Indicators	Probability
		RBC/Equity reduced below min required	8.85%
		RBC/Equity reduced below 200%	1.48%
		Total Loss of RBC/Equity	0.00%

Actuarial judgment is required to adjust this result to take other factors into consideration that may not be as easily quantified, such as aggressiveness or conservatism of trend and other actuarial assumptions, maturity of the program, population or benefits, and volatility in the current health care environment. Applicable regulatory requirements should also be considered. The model summary provides additional statistics on the probability of gain or loss to aid the actuary in making these judgments.

CONCLUSION

Underwriting gain is a necessary component of managed Medicaid capitation rates. It ensures MCO solvency, stabilizes Medicaid financial results, provides market-required rates of return on capital invested in the Medicaid programs, and allows for choice among MCOs due to the availability of competition. Methods for developing the underwriting gain assumption have not historically been shared publicly so the concepts discussed here attempt to contribute to a discussion on this subject.

Changes in recent years to the contractual structure of Medicaid programs (e.g., withholds, risk sharing) require actuaries to reconsider prior approaches to setting underwriting gain assumptions. As Medicaid programs have evolved and begun limiting the potential gains or losses of the MCOs in the program, the actuary should use more rigorous approaches to determine the impact of these program requirements.

As the discussion on underwriting gain advances, the method presented here is an analytical, statistics-based starting point for actuaries to determine the appropriate level of underwriting gain for a particular Medicaid program. Wherever the discussion goes from here, the addition of data and analytics will help Medicaid actuaries live the creed emblazoned on many Fellow of the Society of Actuaries certificates: “The work of science is to substitute facts for appearances, and demonstrations for impressions.” ■



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ENDNOTES

- 1 42 CFR 438.6 (a).
- 2 “The underwriting gain provision provides compensation for the risks assumed by the MCO.” Actuarial Standards Board (ASB). 2015. Actuarial Standards of Practice (ASOP) No. 49: Medicaid Managed Care Capitation Rate Development and Certification, Section 3.2.12 b. http://www.actuarialstandardsboard.org/wp-content/uploads/2015/03/asop049_179.pdf.
- 3 Medicaid Health Plans of America (MHPA). Publications. <https://www.medicaid-plans.org/communications/publications>. (Accessed Aug. 12, 2019.) See Gibson, Sabrina H., James R. Piekut and Jared Simons. 2019. Underwriting Gain Development for Managed Medicaid Capitation Rates. Medicaid Health Plans of America (MHPA). https://www.medicaidplans.org/_docs/MHPA_Underwriting_Gain_Development_Report_June_2019_FINAL.pdf; and accompanying Excel file.
- 4 ASB. ASOP 49.
- 5 Ibid., Section 3.2.12 b.
- 6 “Risk-based capital (RBC) is a method of measuring the minimum amount of capital appropriate for a reporting entity to support its overall business operations in consideration of its size and risk profile. RBC limits the amount of risk a company can take. It requires a company with a higher amount of risk to hold a higher amount of capital. Capital provides a cushion to a company against insolvency. RBC is intended to be a minimum regulatory capital standard and not necessarily the full amount of capital that an insurer would want to hold to meet its safety and competitive objectives.” National Association of Insurance Commissioners (NAIC). Risk-Based Capital. https://www.naic.org/cipr_topics/topic_risk_based_capital.htm. (Accessed Feb. 3, 2019.)
- 7 CFI. What is Cost of Capital? <https://corporatefinanceinstitute.com/resources/knowledge/finance/cost-of-capital/>. (Accessed Dec. 2, 2018.)
- 8 <https://www.pimco.com/en-us/>.
- 9 <https://www.voya.com/>.
- 10 <https://www.bloomberg.com/>.
- 11 U.S. Department of the Treasury. Daily Treasury Yield Curves. <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>.
- 12 <https://www.bloomberg.com/>.
- 13 Supra note 3