Colorado HCPF

OSA Extrapolation Report

Summary of Concerns with OSA Sampling and Findings

June 1, 2020

Prepared by:
Zachary Aters, **Optumas**
Barry Jordan, **Optumas**

Executive Summary

Objective

The Office of the State Auditor (OSA) has historically performed audits on behalf of the Colorado Department of Health Care Policy and Financing (Department). Recently, these audits have extrapolated small findings into significant findings, for example, a $100M+ finding. Currently, there are concerns with the appropriateness of the extrapolation approach, both from a technical and conceptual perspective.

OSA has completed an audit on behalf of the Department for State Fiscal Year 2019. This audit has relied upon a sample size of 125 Colorado Medicaid beneficiaries (out of a total of more than 1 million beneficiaries) and produced an extrapolated finding of "questioned costs" across the entire Medicaid population. Furthermore, the extrapolated costs themselves are based on a finding of only seven members who were found to have "questioned costs" within the sample.

OSA notes that this audit resulted in projected "questioned costs" for the full Medicaid population as an *"estimate with 90 percent confidence that the Department paid at least $80,255,528, but not more than $485,851,363, with likely questioned costs of $283,053,446, on behalf of ineligible beneficiaries between July 1, 2018, and March 31, 2019."* It is important to note that these costs should not be interpreted strictly as inappropriate payments, as five out of the seven identified members had errors resulting from information missing within their documentation, which does not necessarily mean that the members would have been ineligible had the documentation been provided during the application process.

The Department has requested **Optumas** prepare a narrative summarizing the findings and considerations pertaining to the review of the OSA audit and extrapolation process. The Department provided **Optumas** with available reports and summaries related to the OSA extrapolation approach along with results of its findings. This served as the baseline for **Optumas** to further understand the process OSA has taken to identify eligibility issues, as well as the approach taken to extrapolate these to program-wide estimated eligibility errors and financial impacts.

Sample Design and Results

An important part of designing a "sample design" is to ensure that the sample design considers the unique characteristics of the population being sampled. Medicaid is a complex program that is comprised of various populations each containing unique characteristics. Sampling the entire Medicaid population and then extrapolating without considering which populations are being represented within the sample will likely result in skewed financial estimates when extrapolating.

Optumas observed that the small sample size of 125 individuals that was selected, was extrapolated to the entire Medicaid population without consideration for differences in population characteristics or regional differences within the State. This observation is important for two main reasons:

1) There is a significant difference in the expected average cost and underlying risk characteristics for members who meet the various criteria to be eligible for the Medicaid program. Medicaid covers a broad array of individuals, from newborn children, to low-income adults, individuals with SSI, and Nursing Home residents, among others.

2) There are differences in the pathway to eligibility for members in different population groups (e.g., SSI and AFDC), as well as the applicability of errors between populations.

This report discusses these concepts in more detail, including issues related to both the sample size used, as well as the lack of stratification of key types of populations.

Professionalism

Professionalism is a key component of ensuring a credible analysis has been conducted, and that the background and experience of an individual fits the analysis forming the findings or opinions being presented. From the perspective of actuarial capitation rate development within the Medicaid program, there are several key requirements.

An actuary is required to perform an independent analysis of a state's Medicaid program. However, the actuary is bound to adhere to Actuarial Standards of Practice (ASOPs) and CMS guidance, including the following:

1) Be qualified and have the appropriate knowledge of the Medicaid program.
2) Document an analysis such that another qualified actuary can replicate the analysis.
3) Defend/substantiate the analysis through a professional peer review process. CMS reviews all rate submissions to ensure that applicable standards of practice were adhered to in rate development.
4) Be a member of the Society of Actuaries and a member of the American Academy of Actuaries.

Given the described approach and perceived lack of understanding of Medicaid within the OSA findings, it appears that the financial estimates are being skewed due to this lack of understanding surrounding the nuances of acuity differentials across populations. It is recommended that the auditor participate in a professional peer review process to add credibility to the findings, if not already done so. Additionally, it is recommended that the auditor describe his/her credentials and experience within the Statistical arena and the Medicaid arena to ensure that the extrapolations are conducted with all the appropriate considerations given the complex nature of the Medicaid population.

Conclusion

We believe the current approach and findings in the OSA audit result in skewed results due to the limited sample size and lack of recognition of acuity differences across the various types of populations found within Medicaid. The level of rigor underlying the analysis used in the OSA extrapolation is significantly less than the rigor required and used in the development of Colorado's Medicaid capitation rates. This inherent difference in rigor surrounding expenditure projections for the same Medicaid population is concerning. It is imperative that the statistician performing the extrapolation have intrinsic understanding of the Medicaid programs to ensure that the extrapolation considers all the nuances associated with the Medicaid population and mitigates projection error.

Additionally, we believe that it is important to highlight the fact that OSA's findings are noted as "questioned costs", and should not be interpreted as a statement that any specific amounts were in fact overpaid by the State and the Federal government. Our interpretation of OSA's results suggest that the observed "questioned costs" represent costs that should be further explored, or that process improvements should be made in the Member application and documentation processes. This is

distinctly different from claiming that there is an explicit overpayment within the Medicaid program, and this nuance should be fully recognized by the audiences reviewing the OSA findings.

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1. Introduction and Background

The Office of the State Auditor (OSA) has historically performed audits on behalf of the Colorado Department of Health Care Policy and Financing (Department). Recently, these audits have extrapolated small findings into significant findings, for example, a $100M+ finding. Currently, there are concerns with the appropriateness of the extrapolation approach, both from a technical and conceptual perspective.

OSA has completed an audit on behalf of the Department for State Fiscal Year (SFY) 2019. This audit has relied upon a sample size of 125 Colorado Medicaid beneficiaries (out of a total of more than 1 million) and produced an extrapolated finding of known "questioned costs" across the entire Medicaid program. Furthermore, the extrapolated costs themselves are based on only seven members with identified "questioned costs" within the sample. It is important to note that these costs should not be interpreted strictly as inappropriate payments, as five out of the seven identified members had errors that were a result of information missing within their eligibility documentation. This does not necessarily mean that the members would have been ineligible had the documentation been provided during the application process.

The Department provided **Optumas** with available reports and summaries related to the OSA extrapolation approach along with results of its findings. This served as the baseline for **Optumas** to further understand the process OSA has taken to identify eligibility issues, as well as the approach taken to extrapolate these to program-wide estimated eligibility errors and financial impacts.

OSA notes that this audit resulted in projected "questioned costs" for the full Medicaid population as an *"estimate with 90 percent confidence that the Department paid at least $80,255,528, but not more than $485,851,363, with likely questioned costs of $283,053,446, on behalf of ineligible beneficiaries between July 1, 2018, and March 31, 2019."*

As noted above, this is based on an extrapolation of seven individuals with "questioned costs." At a "likely" amount of $283 million in "questioned costs," driven by findings of seven individuals, this suggests that each one of these seven individuals contribute more than $40 million in extrapolated "questioned costs" to the entire Medicaid population, which is comprised of more than 1 million individuals.

Optumas has noted the following key concepts in our review of the documentation provided, related to the audit.

1) **Unique Population Risks:**

   The selected sample does not account for the differences in risk and characteristics of the various subpopulations within Medicaid. This item is critical, since the Medicaid program covers a broad array of individuals, including newborn children, low-income adults, individuals with SSI, and Nursing Home residents, among others. The requirements and pathway to eligibility vary between these populations. We believe this nuance is important in particular for this audit since the findings are based upon a review of individuals' eligibility files and determination of whether applicable documentation or processes were completed in determining eligibility. For example,

one of the audit findings was specific to eligibility requirements for members receiving long-term support services (LTSS). These requirements are not all applicable to most Medicaid recipients, since the population receiving coverage for LTSS comprises only approximately 5% of the Medicaid population. We believe that sampling should be conducted at a population-specific level.

2) **Sample Size:**

The overall sample size used for extrapolation is small. Common statistical practices suggest the ideal use of a sample size that gets as close as possible to a 3% margin of error, with a 95% confidence interval. This would require a sample size of 1,067 individuals. The use of 125 individuals in this audit at the 90% confidence interval noted in the audit findings, suggests a margin of error of 7.4%. In addition to sampling at a population-specific level, we believe that a larger sample size should be considered to enhance the credibility of the extrapolated results.

3) **Interpretation of Extrapolated Dollars:**

We believe that it is important to highlight the fact that OSA's findings are classified as "questioned costs," and do not reflect a statement that they are indicative of specific amounts that were in fact overpaid by the State and the Federal government. Our interpretation of OSA's results suggest that the observed "questioned costs" represent costs that should be further explored, or that process improvements should be made in the member eligibility application and documentation processes. This is different from claiming that there is a specific amount of overpayment within the Medicaid program, and should be fully recognized by the audiences reviewing the OSA findings.

4) **Professionalism**:

Professionalism, in part demonstrated by qualifications, is a key component of ensuring a credible analysis has been conducted, and that the background and experience of an individual fits the analysis forming the findings or opinions being presented. Given the described approach and perceived lack of understanding of some of the nuances within the Medicaid program within the OSA findings (as evidenced by what appears to be an inappropriate aggregation of the entire population for sampling) it appears that the financial estimates are being skewed. To the extent that this approach is not skewing the results, the auditor should explicitly note why this is believed to be the case. Additionally, it is recommended that the auditor participate in a professional peer review process to add credibility to the findings, if not already done so. It is also recommended that the auditor describe his/her credentials and experience within the Statistical arena and the Medicaid arena to ensure the auditor has an adequate level of expertise from a technical perspective (e.g., standard practices of extrapolation) and conceptual perspective (e.g., knowledge of Medicaid).

Based on the observations noted above, we believe the current approach and findings in the OSA audit result in skewed results and carry with them the potential for improper interpretation of the results. This is due to the limited sample size and lack of recognition in the differences in the various types of populations within Medicaid. The subsequent report discusses these points in further detail.

2. Sample Design and Results

An important part of creating a sample design is to ensure that the sample design considers the unique characteristics of the population being sampled. Medicaid is a complex program that is comprised of various populations each containing unique characteristics. Sampling the entire Medicaid population and then extrapolating without considering which populations are being represented within the sample will result in skewed financial estimates.

Sample Design

Optumas observed that the small sample size of 125 individuals selected in the OSA audit was extrapolated to the entire Medicaid population, without consideration for differences in population characteristics or regional differences within the State. This observation is important for two main reasons:

1) Medicaid covers a broad array of individuals including newborn children, low-income adults, individuals with SSI, and Nursing Home residents, among others. There is a significant difference in the expected average cost for members who meet the different eligibility criteria and therefore, who have different underlying risks within the Medicaid program.

    - To illustrate this point, OSA noted that the average cost per member in the sample size is roughly $60,000 for 9 months. This could then be approximated as an annualized amount of $80,000 for a 12-month period. In SFY19, the members with the top 1% of annual spend in Colorado Medicaid had an average cost of approximately $80,000. This suggests that the population underlying the sample of 125 members reflects a unique subset of the overall Medicaid population.

2) There are differences in the pathway to eligibility for members in different population groups (e.g., SSI and AFDC), as well as the applicability of errors between populations.

    - This is an important nuance to consider for this audit since the findings are based upon a review of individuals' eligibility files and determination of whether applicable documentation or processes were completed. For example, one of the audit findings was specific to eligibility requirements for members receiving long-term support services (LTSS); these requirements are not all applicable to the vast majority of Medicaid recipients, since the population receiving coverage for LTSS comprises only approximately 5% of the Medicaid population.

To illustrate how the distribution of members with varied levels of expenditures looks within the program, the following figures have been included: Figure 1 shows the distribution of members that fall into each annual spend band (e.g., $0-$10,000 in annual claims costs) based on SFY19 Colorado Medicaid Claims data provided by HCPF. Figure 2 shows the portion of members in SFY19 that had costs in excess of a given threshold (e.g., 0.9% of the population had costs in excess of $80,000 over the course of the year).

Figure 1. Percentage of Medicaid Members by Annual Spend

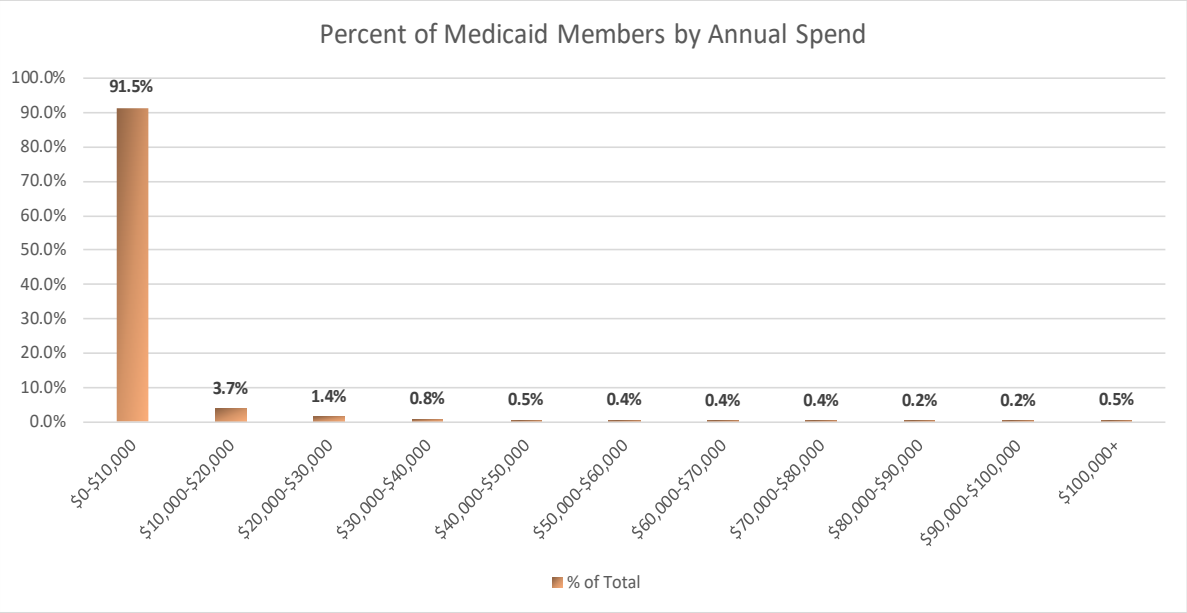
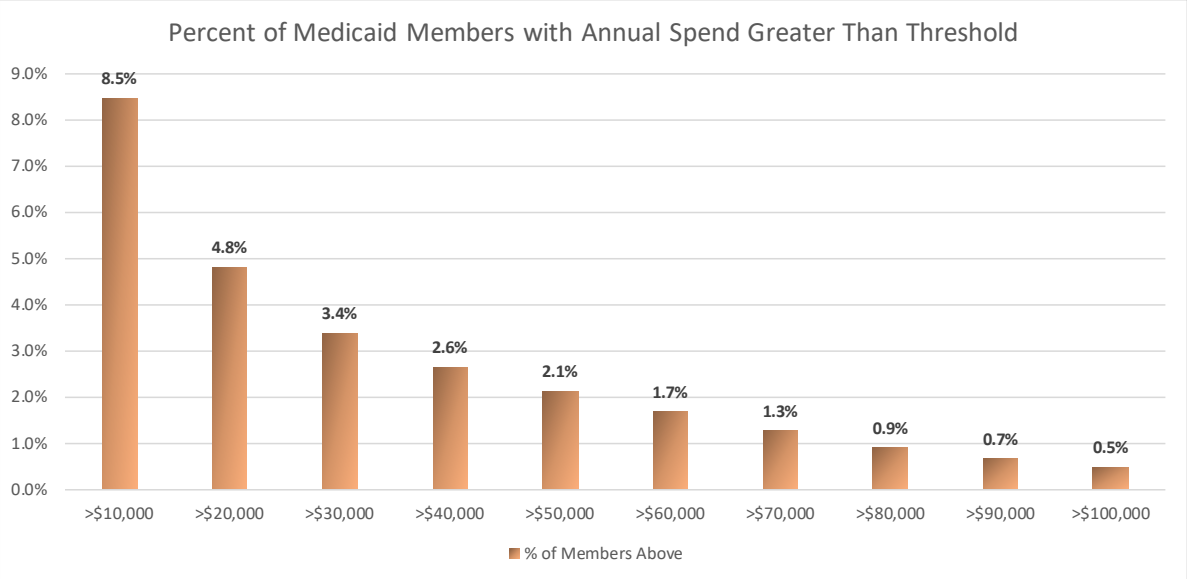


Figure 2. Percentage of Medicaid Members with Annual Spend Greater Than Threshold



The figures above highlight the fact that the average cost of the sampled individuals being $60,000 over the course of 9 months (or approximately $80,000 annualized), suggests that a very unique population has been sampled and used to extrapolate to the entire Medicaid program.

Unique Population Risks

As noted above, Medicaid is a complex program that is comprised of various populations each containing unique characteristics. For this reason, actuaries are required by the Centers for Medicare and Medicaid Services (CMS) to certify capitation rates at the rating cohort (population) level. A

common approach used in Medicaid capitation rate development is to stratify populations into various 'Categories of Aid', comprised of factors such as age, gender, and eligibility type. These stratifications minimize the impact of population 'mix risk' when determining appropriate capitation rates to make to managed care organizations as populations change over time. For example, a member who resides in a Nursing Home may be expected to incur Medicaid costs of roughly $70,000 - $80,000 per year on average. Alternatively, a MAGI adult member may be expected to incur closer $4,000 - $5,000 per year on average. This is a primary indication that these populations have drastically different risks and underlying characteristics, requiring independent consideration.

The current sampling technique implies that observed costs from a Nursing Home resident may be used to extrapolate to a population with drastically different risk characteristics and expected costs. To be consistent with the federal guidance provided to state actuaries for assessing Medicaid risk, the sampling and extrapolation should be rating cohort (population) specific.

Sample Size

To expand upon the sample size concern, common statistical practices suggest the ideal use of a sample size that gets as close as possible to a 3% margin of error, with a 95% confidence interval. This would require a sample size of 1,067 individuals. While the 3% margin may not be always be achievable, expanding the margin of error to at least 4-5% would result in the use of a sample size of 384 to 600 individuals.

The use of 125 individuals in this audit at the 90% confidence interval noted in the audit findings, suggests a margin of error of 7.4%. The current approach, independent of the fact that it does not factor in population nuances within Medicaid, further contributes to uncertainty over the audit findings.

The formulas below show the general target sample size calculation for large populations, at a 95% confidence interval. The first is a generic calculation, while the second shows the values at a 4% margin of error target resulting in the 600 individual sample size noted above:

$$Target\ Sample\ Size = \frac{1.96^2 * 0.5^2}{(Percent\ Margin\ of\ Error\ Target)^2};\ 600 = \frac{1.96^2 * 0.5^2}{0.04^2}$$

OSA notes that this audit resulted in projected "questioned costs" for the full Medicaid population as an *"estimate with 90 percent confidence that the Department paid at least $80,255,528, but not more than $485,851,363, with likely questioned costs of $283,053,446, on behalf of ineligible beneficiaries between July 1, 2018, and March 31, 2019."* As noted previously in this report, this amount is based on an extrapolation of a finding of seven individuals with "questioned costs." This suggests that each one of the seven individuals contribute more than $40 million in extrapolated "questioned costs" to the entire Medicaid population, a population that is comprised of more than 1 million individuals across the entire state. This means that, if just one of these randomly sampled members had not been found to have had an eligibility error, the estimated "questioned costs" would be reduced by more than 14% from the current estimate. This further speaks to the concern of both the small sample size, compounded with the fact that no population stratification has been done to reflect nuances between subpopulations.

For additional perspective on other credibility thresholds, CMS requires 2,000 average monthly members for historical experience to be deemed 100% credible for Medicare Advantage bids. This is in place to limit variability in projected costs from year to year.

Additionally, published studies suggest that full credibility for Medicaid populations varies by type of population ranging between 1,000 and 5,000 members. These are thresholds that apply to each type of population rather than Medicaid as a whole. This would coincide with the idea noted previously in this report, of selecting separate risk/population groups to conduct extrapolation analysis. For example, selecting a sample of AFDC members for which to conduct an extrapolation for all AFDC members, and then separately selecting a sample of SSI members to extrapolate to all SSI members, etc.

Interpretation of Extrapolated Results

The observations described above were related to the sample design, and the lack of stratifying unique populations compounded with a small starting sample size. Those observations highlight the concerns with the approach and outcome of the results of the audit.

Furthermore, we believe that it needs to be ensured that the intent of the findings be properly interpreted. It is important to highlight that OSA's findings are noted as "questioned costs", and do not directly imply that any specific amounts were in fact overpaid by the State and the Federal government. The following excerpt was provided by OSA:

> *"The projected amount of $283,053,446 is based on a mathematical calculation of costs that does not correlate to specific payments made to providers. This does not result in specific over expenditures of state General Funds or federal funds. However, this calculation indicates that if we tested the entire population, there is a 90 percent likelihood of finding the true amount of questioned costs to be between $80,255,528 and $485,851,363 and would most likely be close to $283,053,446 in erroneous payments. There is a 5 percent chance the true amount of questioned costs is less than $80,255,528 and a 5 percent chance the true amount is over $485,851,363."*

Additionally, when addressing the definition of "questioned costs":

> *"OSA notes that this is defined in federal regulations [Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) 2 CFR 200.84], is "a cost that is questioned by the auditor … (a) Which resulted from a violation or possible violation of a statute, regulation, or the terms and conditions of a Federal award, including for funds used to match Federal funds; [or] (b) Where the costs, at the time of the audit, are not supported by adequate documentation…"*

Our interpretation of OSA's results suggest that the observed, and therefore extrapolated, "questioned costs" represent costs that should be further explored, or that process improvements should be made in the Member application and documentation processes. This is not the same as claiming that there is an explicit overpayment within the Medicaid program, and this difference should be fully recognized by the audiences reviewing the OSA findings.

To expand upon this idea, OSA noted that five out of the seven identified members had errors which were a result of information missing within the documentation in their eligibility files, for example a lack of a birth certificate on file or failure to obtain/maintain adequate documentation to substantiate reported self-employment income. The fact that these documents were not on file does not necessarily mean that the members would have all been ineligible had the documentation been provided during the application process. As previously discussed, the extrapolation suggests that each one of the seven individuals contribute more than $40 million in extrapolated "likely" "questioned costs" to the entire Medicaid population of more than 1 million individuals, meaning that the impact of one identified error in this sample results in substantial extrapolated dollars.

Additionally, it should be noted that the focus of the audit was on a sample of individuals deemed eligible during the period audited. In prior OSA audits/findings, it has been observed that certain eligibility errors were present in a sample population which had resulted in ineligibility of an individual, when in fact the individual should have been eligible at the time of a service. As a result, it is reasonable to expect that this dynamic results in lower Medicaid expenditures, as dollars would not have been paid for these individuals when they could have, had those eligibility issues not been present. The OSA audit for SFY19 does not include any direct offset (reduction) to the computation for such eligibility errors. While we recognize that it was not the intent of the audit to conduct such a review, it is important to note that in order to fully understand the estimated financial implications of eligibility errors present, errors that result in both savings and costs should be considered.

3. Professionalism

Professionalism is a key component of ensuring a credible analysis has been conducted. From the perspective of actuarial capitation rate development, the following discusses some of the key requirements that must be satisfied prior to capitation rate approval by CMS.

An actuary is required to perform an independent analysis of a state's Medicaid program. The actuary is also bound to adhere to Actuarial Standards of Practice (ASOPs) and CMS guidance. Some of the main aspects of this guidance are that the actuary needs to satisfy the following:

1) Be qualified and have the appropriate knowledge of the Medicaid program.
2) Document an analysis such that another qualified actuary can replicate the analysis.
3) Defend/substantiate the analysis through a professional peer review process. CMS reviews all rate submissions to ensure that applicable standards of practice were adhered to in rate development.
4) Be a member of the Society of Actuaries and a member of the American Academy of Actuaries.

Based on the review of the described approach and perceived lack of understanding of some of the nuances within the Medicaid program in the OSA findings (as evidenced by what appears to be an inappropriate aggregation of the entire population for sampling) it appears that the financial estimates are being skewed. To the extent that this approach is not skewing the results, the auditor should explicitly note why this is believed to be the case.

Additionally, it is recommended that the auditor participate in a professional peer review process to add credibility to the findings, if not already done so. It is also recommended that the auditor describe his/her credentials and experience within the Statistical arena and the Medicaid arena to ensure the auditor has an adequate level of expertise from a technical perspective (e.g., standard practices of extrapolation) and conceptual perspective (e.g., knowledge of Medicaid).

4. Conclusion

We believe the current approach and findings found within the OSA audit narrative are skewed results due to the limited sample size and lack of recognition of varying acuity levels across the various types of populations within Medicaid. The approach undertaken within the audit does not appropriately reflect the fact that the Medicaid population consists of several unique types of beneficiaries, and furthermore reflects a sample size smaller than ideal standard practices would suggest. As discussed in this report, we believe that sampling for the Medicaid population should be stratified by major population/risk group and also reflect a larger sample size than currently in force. The level of rigor underlying the analysis used in the OSA extrapolation is significantly less than the rigor required and used in the development of Colorado's Medicaid capitation rates. This inherent difference in rigor surrounding expenditure projections for the same Medicaid population is concerning. It is imperative that the statistician performing the extrapolation have intrinsic understanding of the Medicaid programs to ensure that the extrapolation considers all the nuances associated with the Medicaid population and mitigates projection error.

Furthermore, we reiterate the importance of highlighting that OSA's findings are noted as "questioned costs," and not a statement that any specific amounts were in fact overpaid by the State and the Federal government. Our interpretation of OSA's results suggest that the observed "questioned costs" represent costs that should be further explored, or that process improvements should be made in the Member application and documentation processes. This is distinctly different from claiming that there is an explicit overpayment within the Medicaid program, and should be fully recognized by the audiences reviewing the OSA findings.