



January 12, 2023

Mark Scott
Regional University System of Oklahoma
305 NW 5th Street, #407
Oklahoma City, OK 73102

Re: Oklahoma Higher Education – Medical and Prescription Drug IBNR Reserve Estimate – As of December 31, 2022

Dear Mark:

Arthur J. Gallagher’s Healthcare Analytics Consulting (HCA) was retained by Oklahoma Higher Education to provide an estimate of its medical and prescription drug reserves for incurred but not reported claims (IBNR) for Oklahoma Higher Education’s self-funded employee health plan. This letter documents the process performed to estimate the reserve and presents the results.

Reserve Estimate

The reserve estimate as of December 31, 2022 is \$1.4 million (\$1.5 million with 10% IBNR margin). The results are broken down by benefit in the table below. Details of the reserve development are provided in the attached exhibits.

| | IBNR Estimate (without margin) | IBNR Estimate (with 10% margin) |
|----------------------------------|---|--|
| Medical | \$1,178,000 | \$1,295,000 |
| Prescription Drug | \$205,000 | \$225,000 |
| Total – December 31, 2022 | \$1,383,000 | \$1,520,000 |

Methodology and Assumptions

The attached exhibit provides the following information for each incurred month: number of employees (exposure units), paid-to-date claims by incurred date, completion factors, incurred claims, outstanding claim reserve, and per exposure unit values.



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Deriving the IBNR estimate uses a blending of methods. For more stable patterns of payments the development method is used. This method uses historical claim payment patterns to develop completion factors used to calculate monthly ultimate incurred estimates.

For the more recent months, where experience is more variable or insufficient to produce credible completion factors, a projection method is used. Thus, an estimate of ultimate incurred claims per employee per month (PEPM) is determined based on historical ultimate incurred claims.

Adjustments for claims trend, backlog and seasonality are also made where appropriate. Excess claims over stop loss insurance specific deductible limit have been removed from the medical lag triangles. The specific deductible is \$300,000.

We have also added a 10% margin to the IBNR reserve estimate to reflect expected variability from our estimate.

Data

The medical and prescription drug analyses are based on historical data incurred and paid for the period from December 1, 2020 through November 30, 2022, trended forward one month to December 31, 2022. Enrollment information was provided for the same period. Medical and prescription drug claim information was provided by Blue Cross Blue Shield of Oklahoma. Run-out administrative and stop loss fees are not included.

Reliance and Limitations

The purpose of this letter is to present the results of the reserve estimate and to document the methods and assumptions employed. Any other use of this memorandum is inappropriate. The IBNR calculation uses claims processed as of the valuation date and would not include analysis on items used (e.g., outstanding checks issued) in an Incurred but not Paid (IBNP) reserve calculation.

The estimate relies upon the accuracy of the claim and enrollment data provided by Blue Cross Blue Shield of Oklahoma. We have not independently performed a claim audit or cash flow testing. However, we have no reason to doubt the accuracy of the data at this time.



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Actuarial Certification

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The valuation has been conducted in a consistent manner and accordance to generally accepted actuarial principles and practices as set forth in the Actuarial Standards of Practice No. 5 - Incurred Health and Disability Claims.

While we have used our best professional judgment in all instances, estimates of ultimate losses are inherently uncertain because of the random nature of claims occurrences. We therefore cannot warrant that actual developments will not vary from our estimates, perhaps significantly. For these reasons, we recommend that regular reserve testing be applied to detect any deviations from expected results and apply appropriate corrective measures as early as possible.

Please contact me if you have any questions.

Sincerely,

John Albrecht, ASA, MAAA
Consulting Actuary

Attachment

Cc: Hannah Rosser, AJG Healthcare Analytics



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Oklahoma Higher Education IBNR Analysis Based on Medical Claims Paid Through November 30, 2022

| Incurral Month | Exposure Unit | Paid to Date Claims by Incurral Date | Completion Factor | Incurred Claims | Outstanding Claim Reserve | Outstanding Claim Reserve | Monthly Paid Claims | Paid to Date Claims Per Unit | Incurred Claims Per Unit | Rolling Twelve Months Incurred Claims Per Unit | Rolling Six Months Incurred Claims Per Unit | Rolling Three Months Incurred Claims Per Unit |
|----------------|---------------|--------------------------------------|-------------------------|-----------------|---------------------------|---------------------------|---------------------|------------------------------|--------------------------|--|---|---|
| | (Employees) | | 6 of 8 Months Averaging | | (Before Margin) | (Margin Applied) | | PEPM | PEPM | PEPM | PEPM | PEPM |
| Dec-20 | 3,534 | \$1,655,413 | 1.0000 | \$1,655,413 | \$0 | \$0 | \$555,991 | \$468 | \$468 | | | |
| Jan-21 | 3,513 | \$1,095,174 | 1.0000 | \$1,095,174 | \$0 | \$0 | \$997,149 | \$312 | \$312 | | | |
| Feb-21 | 3,522 | \$1,358,056 | 1.0000 | \$1,358,056 | \$0 | \$0 | \$951,014 | \$386 | \$386 | | | \$389 |
| Mar-21 | 3,516 | \$1,266,012 | 1.0000 | \$1,266,012 | \$0 | \$0 | \$1,315,177 | \$360 | \$360 | | | \$353 |
| Apr-21 | 3,514 | \$1,483,509 | 1.0000 | \$1,483,509 | \$0 | \$0 | \$1,407,843 | \$422 | \$422 | | | \$389 |
| May-21 | 3,494 | \$1,378,623 | 1.0000 | \$1,378,623 | \$0 | \$0 | \$1,099,247 | \$395 | \$395 | | \$390 | \$392 |
| Jun-21 | 3,454 | \$1,411,989 | 1.0000 | \$1,411,989 | \$0 | \$0 | \$1,380,972 | \$409 | \$409 | | \$380 | \$409 |
| Jul-21 | 3,413 | \$1,283,486 | 1.0000 | \$1,283,486 | \$0 | \$0 | \$1,277,978 | \$376 | \$376 | | \$391 | \$393 |
| Aug-21 | 3,359 | \$1,490,694 | 0.9991 | \$1,492,060 | \$1,366 | \$1,503 | \$1,573,264 | \$444 | \$444 | | \$401 | \$409 |
| Sep-21 | 3,450 | \$1,499,841 | 0.9991 | \$1,501,207 | \$1,366 | \$1,503 | \$1,516,784 | \$435 | \$435 | | \$413 | \$418 |
| Oct-21 | 3,467 | \$1,816,039 | 0.9990 | \$1,817,810 | \$1,770 | \$1,948 | \$1,411,665 | \$524 | \$524 | | \$431 | \$468 |
| Nov-21 | 3,468 | \$2,170,183 | 0.9986 | \$2,173,241 | \$3,058 | \$3,364 | \$1,979,293 | \$626 | \$627 | \$430 | \$470 | \$529 |
| Dec-21 | 3,474 | \$1,740,036 | 0.9976 | \$1,744,231 | \$4,195 | \$4,614 | \$1,739,535 | \$501 | \$502 | \$432 | \$485 | \$551 |
| Jan-22 | 3,399 | \$1,152,992 | 0.9954 | \$1,158,290 | \$5,299 | \$5,829 | \$1,644,624 | \$339 | \$341 | \$435 | \$480 | \$491 |
| Feb-22 | 3,391 | \$1,192,661 | 0.9951 | \$1,198,507 | \$5,846 | \$6,431 | \$1,323,076 | \$352 | \$353 | \$433 | \$465 | \$400 |
| Mar-22 | 3,393 | \$1,338,868 | 0.9940 | \$1,346,895 | \$8,027 | \$8,830 | \$1,847,778 | \$395 | \$397 | \$436 | \$458 | \$364 |
| Apr-22 | 3,375 | \$984,716 | 0.9922 | \$992,433 | \$7,717 | \$8,489 | \$1,137,701 | \$292 | \$294 | \$425 | \$420 | \$348 |
| May-22 | 3,362 | \$1,512,470 | 0.9909 | \$1,526,319 | \$13,848 | \$15,233 | \$1,386,300 | \$450 | \$454 | \$430 | \$391 | \$382 |
| Jun-22 | 3,325 | \$1,305,426 | 0.9893 | \$1,319,522 | \$14,097 | \$15,506 | \$1,419,970 | \$393 | \$397 | \$429 | \$373 | \$381 |
| Jul-22 | 3,298 | \$1,239,142 | 0.9831 | \$1,260,397 | \$21,255 | \$23,380 | \$1,434,045 | \$376 | \$382 | \$430 | \$379 | \$411 |
| Aug-22 | 3,270 | \$1,643,646 | 0.9697 | \$1,694,941 | \$51,295 | \$56,424 | \$1,532,819 | \$503 | \$518 | \$436 | \$407 | \$432 |
| Sep-22 | 3,352 | \$1,445,464 | 0.9501 | \$1,521,337 | \$75,873 | \$83,461 | \$1,622,580 | \$431 | \$454 | \$438 | \$416 | \$451 |
| Oct-22 | 3,367 | \$1,102,376 | 0.8572 | \$1,286,057 | \$183,681 | \$202,049 | \$1,411,245 | \$327 | \$382 | \$426 | \$431 | \$451 |
| Nov-22 | 3,365 | \$711,289 | 0.4794 | \$1,483,792 | \$772,502 | \$849,752 | \$1,312,058 | \$211 | \$441 | \$410 | \$429 | \$426 |

| | | | | | | | | | | | | |
|------------------|--------|--------------|--------|--------------|-------------|-------------|--------------|-------|-------|--|--|--|
| Dec-20 to Nov-22 | 82,075 | \$33,278,106 | 96.60% | \$34,449,302 | \$1,171,195 | \$1,288,315 | \$33,278,106 | \$405 | \$420 | | | |
| As of Dec-22 | | | | | \$1,177,634 | \$1,295,397 | | | | | | |

| | |
|--|------------|
| 12 Months Incurred Claims PEPM - 11/1/2021 to 10/31/2022 | \$426 |
| Midpoint of Experience Period | 5/1/2022 |
| Midpoint of Rating Period | 11/15/2022 |
| Months to Trend | 6.5 |
| Assumed Annual Trend | 6.80% |
| Underwriting Adjustment | 1.00 |
| PEPM Trended Claims for November 2022 | \$441 |

| | |
|---------------------------------------|-------------|
| Base Claim Reserve @ 11/30/2022 | \$1,171,195 |
| 6-Month Average Monthly Paid Claims | \$1,455,453 |
| Reserve Expressed as Months of Claims | 0.80 |
| Margin Used | 10.00% |

This analysis is for illustrative purposes only, and is not a guarantee of future expenses, claims costs, managed care savings, etc. There are many variables that can affect future health care costs including utilization patterns, catastrophic claims, changes in plan design, health care trend increases, etc. This analysis does not amend, extend, or alter the coverage provided by the actual insurance policies and contracts. Please see your policy or contact us for specific information or further details in this regard.



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Oklahoma Higher Education IBNR Analysis Based on Rx Claims Paid Through November 30, 2022

| Incurral Month | Exposure Unit | Paid to Date Claims by Incurral Date | Completion Factor | Incurred Claims | Outstanding Claim Reserve | Outstanding Claim Reserve | Monthly Paid Claims | Paid to Date Claims Per Unit | Incurred Claims Per Unit | Rolling Twelve Months Incurred Claims Per Unit | Rolling Six Months Incurred Claims Per Unit | Rolling Three Months Incurred Claims Per Unit |
|----------------|---------------|--------------------------------------|-------------------------|-----------------|---------------------------|---------------------------|---------------------|------------------------------|--------------------------|--|---|---|
| | (Employees) | | 6 of 8 Months Averaging | | (Before Margin) | (Margin Applied) | | PEPM | PEPM | PEPM | PEPM | PEPM |
| Dec-20 | 3,534 | \$817,329 | 1.0000 | \$817,329 | \$0 | \$0 | \$479,824 | \$231 | \$231 | | | |
| Jan-21 | 3,513 | \$638,582 | 1.0000 | \$638,582 | \$0 | \$0 | \$813,608 | \$182 | \$182 | | | |
| Feb-21 | 3,522 | \$600,585 | 1.0000 | \$600,585 | \$0 | \$0 | \$566,280 | \$171 | \$171 | | | \$195 |
| Mar-21 | 3,516 | \$793,449 | 1.0000 | \$793,449 | \$0 | \$0 | \$693,067 | \$226 | \$226 | | | \$193 |
| Apr-21 | 3,514 | \$675,028 | 1.0000 | \$675,028 | \$0 | \$0 | \$794,523 | \$192 | \$192 | | | \$196 |
| May-21 | 3,494 | \$662,210 | 1.0000 | \$662,210 | \$0 | \$0 | \$670,954 | \$190 | \$190 | | \$199 | \$202 |
| Jun-21 | 3,454 | \$734,896 | 1.0000 | \$734,896 | \$0 | \$0 | \$619,505 | \$213 | \$213 | | \$195 | \$198 |
| Jul-21 | 3,413 | \$653,183 | 1.0000 | \$653,183 | \$0 | \$0 | \$787,107 | \$191 | \$191 | | \$197 | \$198 |
| Aug-21 | 3,359 | \$743,760 | 1.0000 | \$743,760 | \$0 | \$0 | \$669,672 | \$221 | \$221 | | \$205 | \$208 |
| Sep-21 | 3,450 | \$704,194 | 1.0000 | \$704,194 | \$0 | \$0 | \$659,586 | \$204 | \$204 | | \$202 | \$206 |
| Oct-21 | 3,467 | \$759,660 | 1.0000 | \$759,660 | \$0 | \$0 | \$839,901 | \$219 | \$219 | | \$206 | \$215 |
| Nov-21 | 3,468 | \$656,189 | 1.0000 | \$656,189 | \$0 | \$0 | \$642,015 | \$189 | \$189 | \$202 | \$206 | \$204 |
| Dec-21 | 3,474 | \$863,802 | 1.0000 | \$863,802 | \$0 | \$0 | \$893,363 | \$249 | \$249 | \$204 | \$212 | \$219 |
| Jan-22 | 3,399 | \$683,294 | 1.0000 | \$683,294 | \$0 | \$0 | \$630,938 | \$201 | \$201 | \$205 | \$214 | \$213 |
| Feb-22 | 3,391 | \$674,741 | 1.0000 | \$674,741 | \$0 | \$0 | \$741,373 | \$199 | \$199 | \$208 | \$210 | \$216 |
| Mar-22 | 3,393 | \$783,602 | 1.0000 | \$783,602 | \$0 | \$0 | \$627,018 | \$231 | \$231 | \$208 | \$215 | \$210 |
| Apr-22 | 3,375 | \$750,308 | 1.0000 | \$750,308 | \$0 | \$0 | \$855,946 | \$222 | \$222 | \$211 | \$215 | \$217 |
| May-22 | 3,362 | \$781,333 | 1.0000 | \$781,333 | \$0 | \$0 | \$767,676 | \$232 | \$232 | \$214 | \$222 | \$229 |
| Jun-22 | 3,325 | \$755,589 | 1.0000 | \$755,589 | \$0 | \$0 | \$690,201 | \$227 | \$227 | \$216 | \$219 | \$227 |
| Jul-22 | 3,298 | \$717,866 | 1.0000 | \$717,866 | \$0 | \$0 | \$779,694 | \$218 | \$218 | \$218 | \$222 | \$226 |
| Aug-22 | 3,270 | \$870,962 | 1.0000 | \$870,962 | \$0 | \$0 | \$729,381 | \$266 | \$266 | \$221 | \$233 | \$237 |
| Sep-22 | 3,352 | \$767,026 | 0.9999 | \$767,122 | \$96 | \$105 | \$916,046 | \$229 | \$229 | \$223 | \$232 | \$237 |
| Oct-22 | 3,367 | \$855,975 | 0.9999 | \$856,029 | \$54 | \$60 | \$856,822 | \$254 | \$254 | \$226 | \$238 | \$250 |
| Nov-22 | 3,365 | \$637,113 | 0.7585 | \$840,007 | \$202,893 | \$223,183 | \$856,177 | \$189 | \$250 | \$231 | \$241 | \$244 |

| | | | | | | | | | | | | |
|------------------|--------|--------------|--------|--------------|-----------|-----------|--------------|-------|-------|--|--|--|
| Dec-20 to Nov-22 | 82,075 | \$17,580,675 | 98.86% | \$17,783,718 | \$203,043 | \$223,348 | \$17,580,675 | \$214 | \$217 | | | |
| As of Dec-22 | | | | | \$204,585 | \$225,043 | | | | | | |

| | |
|--|------------|
| 12 Months Incurred Claims PEPM - 11/1/2021 to 10/31/2022 | \$226 |
| Midpoint of Experience Period | 5/1/2022 |
| Midpoint of Rating Period | 11/15/2022 |
| Months to Trend | 6.5 |
| Assumed Annual Trend | 9.50% |
| Underwriting Adjustment | 1.05 |
| PEPM Trended Claims for November 2022 | \$250 |

| | |
|---------------------------------------|-----------|
| Base Claim Reserve @ 11/30/2022 | \$203,043 |
| 6-Month Average Monthly Paid Claims | \$804,720 |
| Reserve Expressed as Months of Claims | 0.25 |
| Margin Used | 10.00% |

This analysis is for illustrative purposes only, and is not a guarantee of future expenses, claims costs, managed care savings, etc. There are many variables that can affect future health care costs including utilization patterns, catastrophic claims, changes in plan design, health care trend increases, etc. This analysis does not amend, extend, or alter the coverage provided by the actual insurance policies and contracts. Please see your policy or contact us for specific information or further details in this regard.