

Commonwealth of Kentucky

Kentucky Employees' Health Plan

**Actuarial Reserve Study
December 31, 2023**

**Three Alliance Center
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February 2024

Commonwealth of Kentucky

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EXECUTIVE SUMMARY

Aon has conducted an actuarial valuation of the incurred, but not paid, claims as of December 31, 2023, for the medical and prescription drug benefits provided by Kentucky Employees' Health Plan (KEHP) and administered through Humana and Express Scripts (ESI) prior to 2015. Beginning from 2015, medical and prescription drug benefits are administered through Anthem and Caremark.

The results show a projected total reserve of approximately \$130.8 million. This figure includes \$6.2 million as an explicit provision for adverse experience. Claims that have been processed and paid, and invoiced to KEHP but not yet paid are excluded from these actuarial estimates, though this may represent an additional liability outside the scope of this actuarial review. The estimates provided also exclude unallocated amounts, which are believed to be immaterial to the Plan.

The details of the Unpaid Claim Reserve are shown in separate exhibits for Medical, Pharmacy, CDHP Health Reimbursement Arrangement (HRA) and the Waiver Credit HRA.

The traditional actuarial loss developmental method and Bornhuetter-Ferguson method were the basis of our calculation. The loss development uses historical paid claims information by incurred date. This method is consistent with reserve calculations within the industry, and best reflects the impact on claim payment patterns and accounts for the cyclical nature of the Plan's claims.

In accordance with GASB 10, to the extent that future billed premiums for the 2023 plan year are not sufficient to cover future incurred claims and administrative fees for the 2023 plan year, a "premium deficiency reserve" (PDR) in the amount of the difference should be estimated. As the Commonwealth's plan year end is December 31, 2023, there are no longer any "future" claims, admin fees, or premiums relate to the 2023 plan year. Therefore, there is no estimated premium deficiency reserve as of December 31, 2023.

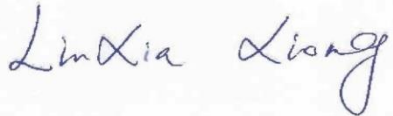
Also included in this report are the actual Rx rebates paid from January 1, 2020 to June 30, 2023 and the estimated Rx rebate from July 1, 2023 to December 31, 2023.

The results mentioned above are contingent upon future events. Consequently, actual results will differ from projected results. These deviations may be material. KEHP staff should monitor emerging experience and take appropriate actions as required.

**ACTUARIAL CERTIFICATION
STATEMENT OF OPINION**

Aon has been retained by the Commonwealth of Kentucky to study the actuarial reserves for incurred but not paid claims as of December 31, 2023, for the medical and prescription drug benefits provided by Kentucky Employees' Health Plan. I am employed by Aon. I am a Member of the Society of Actuaries and am qualified by education and experience to make the statements of actuarial opinion contained herein.

In performing our reserve study, we have relied upon reports and information provided by Merative, the carriers and The Commonwealth of Kentucky. We have not audited this data beyond general tests for reasonableness. The results are our best estimate of incurred but unpaid claims with explicit margins for adverse deviation. The techniques and methodology used are reasonable and in accordance with generally accepted actuarial principles and practice.



February 28, 2024

LinXia Xiong, FSA, MAAA
Vice President

Date



February 28, 2024

Colleen M. Huber, FSA, MAAA
Senior Vice President

Date

DATA AND ASSUMPTIONS

Commonwealth of Kentucky Medical and Pharmacy benefits are administered through Anthem and Caremark beginning from 2015. Below is all data source we have used:

- Monthly enrollment provided by Merative.
- Transactional and eligibility data was provided by KEHP.
- Medical and Pharmacy claims incurred and paid from January 1, 2021 to December 31, 2023 provided by Anthem and Caremark.

No adjustment for interest was used in this analysis. Anthem and Caremark don't charge administrative fees for processing run-out claims so no administrative fee reserve is required.

METHODOLOGY

The unpaid claim liability (UCL), also called the incurred but not reported (IBNR) reserve, at a specified date is essentially the estimated claims incurred up to that date less the claims that have been (incurred and) paid to that date. Since the incurred and paid claims are known, the UCL is easily determined once the incurred claims have been estimated.

The traditional loss development method uses historical claim payment patterns to develop completion factors that are used to estimate incurred claims. The claims incurred in a given month and paid by the end of the experience period are divided by the completion factor to estimate the incurred claims for that month. The UCL for that month is subsequently determined by subtracting the known incurred and paid claims from the estimated incurred claims. The total UCL is merely the sum of all the appropriate monthly UCL estimates.

This method is relatively easy to understand and is effective when the historical claim payment patterns are deemed to be stable enough to estimate current/future claim payment patterns and when several months of claim payments (run-out) after the incurred month are available. When the run-out for any month is limited, this month is called immature and the associated completion factor is significantly less than one. The resulting incurred claim estimate is unstable. Consequently, a secondary method has traditionally been used to estimate the immature months.

The secondary method for health claims is often an average of historical incurred claims adjusted for claim trend and enrollment between the historical period and the time of interest. One of the shortcomings of this secondary method is that the available claim payment information for the month being estimated is not used. Another problem is that the line of demarcation between mature months and immature months is as much art as science.

The Bornhuetter-Furgeson Method (BFM) addresses both of these issues by blending the loss development method and the secondary method. The BFM uses the available incurred and paid data and the expected UCL developed from the secondary method to estimate incurred claims. This method generally provides a more stable estimate than the pure loss development method, a more responsive estimate than the secondary method, and a reasonable technique for blending the results of both methods.

Using the BFM with claims paid through December 31, 2023, the resulting UCL for December 31, 2023 was approximately \$124.6 million. In addition, an explicit margin for adverse deviation of 5.0% of claims unpaid on December 31, 2023 has been used.

RESULTS

The result of our reserve analysis shows the following components of our December 31, 2023 reserve for the Kentucky Employees' Health Plan.

Exhibit 1

Kentucky Employees' Health Plan Terminal Liability Calculation as of December 31, 2023				
	Unpaid Claims Liability as of December 31, 2023	Margin (5%)	Administrative Fees for Processing Runout Claims	Total IBNR Reserve (Rounded to Nearest \$1,000)
Medical	\$120,552,540	\$6,027,627	\$0	\$126,580,000
Pharmacy	\$727,096	\$36,355	\$0	\$763,000
CDHP HRA	\$1,869,527	\$93,476	\$0	\$1,963,000
Waiver HRA	\$1,480,552	\$74,028	\$0	\$1,555,000
Grand Total	\$124,629,714	\$6,231,486	\$0	\$130,861,000

* Claims that have been processed and paid, and invoiced to KEHP but not yet paid are excluded from these actuarial estimates, though this may represent an additional liability outside the scope of this actuarial review. The estimates provided also exclude unallocated amounts, which are believed to be immaterial to the Plan.

**No administrative fees are required from Anthem or Caremark for processing runout claims.

Exhibit 2a

Kentucky Employees' Health Plan Medical and Pharmacy Terminal Liability Calculation as of December 31, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jan-21	140,547	\$123,036,369	1.000	\$123,036,369	\$0
Feb-21	140,166	\$118,057,653	1.000	\$118,057,653	\$0
Mar-21	140,054	\$139,645,035	1.000	\$139,645,035	\$0
Apr-21	139,665	\$139,406,521	1.000	\$139,406,521	\$0
May-21	139,369	\$137,350,081	1.000	\$137,350,081	\$0
Jun-21	139,022	\$155,947,127	1.000	\$155,947,127	\$0
Jul-21	138,284	\$152,992,632	1.000	\$152,992,632	\$0
Aug-21	137,179	\$157,117,028	1.000	\$157,117,028	\$0
Sep-21	136,596	\$151,379,831	1.000	\$151,379,831	\$0
Oct-21	138,675	\$158,093,617	1.000	\$158,093,617	\$0
Nov-21	138,498	\$164,104,478	1.000	\$164,104,478	\$0
Dec-21	138,422	\$182,853,072	1.000	\$182,853,072	\$0
Jan-22	139,271	\$119,549,481	1.000	\$119,549,481	\$0
Feb-22	138,919	\$120,305,386	1.000	\$120,282,374	\$23,013
Mar-22	138,935	\$145,211,386	1.000	\$145,163,434	\$47,953
Apr-22	138,732	\$138,128,555	0.999	\$138,049,483	\$79,072
May-22	138,533	\$145,394,515	0.999	\$145,245,590	\$148,924
Jun-22	138,120	\$156,136,381	0.999	\$155,902,308	\$234,073
Jul-22	137,350	\$147,243,648	0.998	\$146,980,117	\$263,530
Aug-22	136,362	\$157,934,808	0.998	\$157,582,121	\$352,687
Sep-22	135,557	\$153,786,185	0.997	\$153,286,542	\$499,643
Oct-22	137,962	\$159,228,178	0.997	\$158,727,327	\$500,851
Nov-22	138,038	\$167,254,047	0.997	\$166,793,646	\$460,401
Dec-22	138,200	\$176,655,199	0.997	\$176,079,822	\$575,377
Jan-23	138,657	\$129,365,343	0.996	\$128,895,061	\$470,283
Feb-23	138,390	\$133,731,316	0.995	\$133,074,733	\$656,583
Mar-23	138,646	\$161,813,522	0.993	\$160,692,648	\$1,120,874
Apr-23	138,642	\$152,121,821	0.992	\$150,851,627	\$1,270,194
May-23	138,525	\$164,636,828	0.989	\$162,875,212	\$1,761,616
Jun-23	138,392	\$174,742,416	0.987	\$172,440,260	\$2,302,156
Jul-23	138,166	\$169,137,621	0.983	\$166,205,913	\$2,931,708
Aug-23	137,374	\$180,605,769	0.975	\$176,164,323	\$4,441,446
Sep-23	136,796	\$166,321,491	0.963	\$160,191,982	\$6,129,509
Oct-23	139,327	\$185,148,997	0.940	\$174,048,400	\$11,100,597
Nov-23	139,556	\$189,644,729	0.886	\$167,946,053	\$21,698,675
Dec-23	139,704	\$193,733,710	0.669	\$129,523,238	\$64,210,472
Total		\$5,567,814,775		\$5,446,535,139	\$121,279,636

Exhibit 2b
Kentucky Employees' Health Plan
Medical
Terminal Liability Calculation as of December 31, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jan-21	140,547	\$84,637,361	1.000	\$84,637,361	\$0
Feb-21	140,166	\$80,169,266	1.000	\$80,169,266	\$0
Mar-21	140,054	\$93,224,422	1.000	\$93,224,422	\$0
Apr-21	139,665	\$93,357,601	1.000	\$93,357,601	\$0
May-21	139,369	\$92,676,498	1.000	\$92,676,498	\$0
Jun-21	139,022	\$108,212,507	1.000	\$108,212,507	\$0
Jul-21	138,284	\$106,822,190	1.000	\$106,822,190	\$0
Aug-21	137,179	\$109,749,456	1.000	\$109,749,456	\$0
Sep-21	136,596	\$104,430,974	1.000	\$104,430,974	\$0
Oct-21	138,675	\$110,102,818	1.000	\$110,102,818	\$0
Nov-21	138,498	\$113,852,212	1.000	\$113,852,212	\$0
Dec-21	138,422	\$128,014,683	1.000	\$128,014,683	\$0
Jan-22	139,271	\$79,319,297	1.000	\$79,319,297	\$0
Feb-22	138,919	\$80,874,829	1.000	\$80,858,806	\$16,023
Mar-22	138,935	\$98,021,758	1.000	\$97,990,652	\$31,106
Apr-22	138,732	\$93,763,030	0.999	\$93,707,726	\$55,304
May-22	138,533	\$98,525,900	0.999	\$98,411,767	\$114,133
Jun-22	138,120	\$107,323,137	0.998	\$107,133,835	\$189,302
Jul-22	137,350	\$100,394,843	0.998	\$100,192,811	\$202,032
Aug-22	136,362	\$107,405,058	0.998	\$107,138,745	\$266,313
Sep-22	135,557	\$104,439,601	0.996	\$104,040,125	\$399,476
Oct-22	137,962	\$109,949,705	0.996	\$109,562,948	\$386,757
Nov-22	138,038	\$116,866,552	0.997	\$116,535,152	\$331,400
Dec-22	138,200	\$123,776,449	0.997	\$123,348,924	\$427,525
Jan-23	138,657	\$82,023,067	0.996	\$81,694,807	\$328,260
Feb-23	138,390	\$86,366,829	0.994	\$85,860,013	\$506,816
Mar-23	138,646	\$105,447,179	0.991	\$104,512,697	\$934,482
Apr-23	138,642	\$97,706,603	0.989	\$96,622,543	\$1,084,060
May-23	138,525	\$104,130,150	0.985	\$102,581,094	\$1,549,057
Jun-23	138,392	\$113,427,810	0.982	\$111,351,619	\$2,076,190
Jul-23	138,166	\$109,887,195	0.975	\$107,172,217	\$2,714,978
Aug-23	137,374	\$116,120,815	0.964	\$111,914,308	\$4,206,507
Sep-23	136,796	\$107,207,105	0.945	\$101,297,496	\$5,909,609
Oct-23	139,327	\$119,204,622	0.909	\$108,354,305	\$10,850,317
Nov-23	139,556	\$125,761,358	0.829	\$104,305,146	\$21,456,212
Dec-23	139,704	\$128,518,701	0.482	\$62,002,021	\$66,516,680
Total		\$3,741,711,581		\$3,621,159,041	\$120,552,540

Exhibit 2c
Kentucky Employees' Health Plan
Pharmacy
Terminal Liability Calculation as of December 31, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jan-21	140,547	\$38,399,008	1.000	\$38,399,008	\$0
Feb-21	140,166	\$37,888,387	1.000	\$37,888,387	\$0
Mar-21	140,054	\$46,420,614	1.000	\$46,420,614	\$0
Apr-21	139,665	\$46,048,920	1.000	\$46,048,920	\$0
May-21	139,369	\$44,673,583	1.000	\$44,673,583	\$0
Jun-21	139,022	\$47,734,620	1.000	\$47,734,620	\$0
Jul-21	138,284	\$46,170,442	1.000	\$46,170,442	\$0
Aug-21	137,179	\$47,367,571	1.000	\$47,367,571	\$0
Sep-21	136,596	\$46,948,857	1.000	\$46,948,857	\$0
Oct-21	138,675	\$47,990,799	1.000	\$47,990,799	\$0
Nov-21	138,498	\$50,252,265	1.000	\$50,252,265	\$0
Dec-21	138,422	\$54,838,388	1.000	\$54,838,388	\$0
Jan-22	139,271	\$40,230,184	1.000	\$40,230,184	\$0
Feb-22	138,919	\$39,430,557	1.000	\$39,423,568	\$6,989
Mar-22	138,935	\$47,189,628	1.000	\$47,172,782	\$16,846
Apr-22	138,732	\$44,365,525	0.999	\$44,341,757	\$23,768
May-22	138,533	\$46,868,615	0.999	\$46,833,823	\$34,792
Jun-22	138,120	\$48,813,244	0.999	\$48,768,473	\$44,771
Jul-22	137,350	\$46,848,805	0.999	\$46,787,306	\$61,498
Aug-22	136,362	\$50,529,751	0.998	\$50,443,376	\$86,374
Sep-22	135,557	\$49,346,584	0.998	\$49,246,417	\$100,167
Oct-22	137,962	\$49,278,473	0.998	\$49,164,379	\$114,094
Nov-22	138,038	\$50,387,495	0.997	\$50,258,494	\$129,001
Dec-22	138,200	\$52,878,750	0.997	\$52,730,898	\$147,852
Jan-23	138,657	\$47,342,276	0.997	\$47,200,254	\$142,022
Feb-23	138,390	\$47,364,486	0.997	\$47,214,719	\$149,767
Mar-23	138,646	\$56,366,344	0.997	\$56,179,951	\$186,392
Apr-23	138,642	\$54,415,218	0.997	\$54,229,084	\$186,134
May-23	138,525	\$60,506,678	0.996	\$60,294,119	\$212,559
Jun-23	138,392	\$61,314,606	0.996	\$61,088,641	\$225,965
Jul-23	138,166	\$59,250,426	0.996	\$59,033,696	\$216,730
Aug-23	137,374	\$64,484,954	0.996	\$64,250,016	\$234,939
Sep-23	136,796	\$59,114,386	0.996	\$58,894,486	\$219,900
Oct-23	139,327	\$65,944,375	0.996	\$65,694,096	\$250,280
Nov-23	139,556	\$63,883,371	0.996	\$63,640,907	\$242,464
Dec-23	139,704	\$65,215,009	1.035	\$67,521,217	(\$2,306,208)
Total		\$1,826,103,194		\$1,825,376,098	\$727,096

Exhibit 3

Kentucky Employees' Health Plan Terminal Liability Calculation as of December 31, 2023

Health Reimbursement Arrangements

CDHP HRA				
Period	Paid To Date	Completion Factor	Total Incurred	Unpaid Claim Reserve
Oct-Dec 2020	\$11,006,273	100.0%	\$11,006,273	\$0
Jan-Mar 2021	\$16,397,794	100.0%	\$16,397,794	\$0
Apr-Jun 2021	\$15,462,852	100.0%	\$15,462,852	\$0
Jul-Sep 2021	\$12,037,415	100.0%	\$12,037,415	\$0
Oct-Dec 2021	\$11,003,369	100.0%	\$11,003,369	\$0
Jan-Mar 2022	\$17,815,700	100.0%	\$17,814,143	(\$1,558)
Apr-Jun 2022	\$16,173,982	100.0%	\$16,172,532	(\$1,450)
Jul-Sep 2022	\$11,829,294	100.0%	\$11,828,201	(\$1,093)
Oct-Dec 2022	\$10,844,381	100.0%	\$10,848,482	\$4,100
Jan-Mar 2023	\$18,720,743	98.4%	\$19,024,377	\$303,634
Apr-Jun 2023	\$15,480,236	97.9%	\$15,809,266	\$329,030
Jul-Sep 2023	\$11,508,511	97.0%	\$11,861,053	\$352,541
Oct-Dec 2023	\$10,190,075	92.0%	\$11,074,396	\$884,321
Total	\$178,470,627		\$180,340,154	\$1,869,527

Waiver HRA				
Plan Year	Paid To Date	Completion	Total Incurred	Unpaid Claim
2020	\$36,232,583	100.0%	\$36,232,583	\$0
2021	\$35,920,332	100.0%	\$35,920,332	\$0
2022	\$35,207,933	100.0%	\$35,207,933	\$0
2023	\$34,519,912	95.9%	\$36,000,465	\$1,480,552
Total	\$141,880,760		\$143,361,313	\$1,480,552

Exhibit 4

Kentucky Employees' Health Plan Rx Rebates as of December 31, 2023

Plan Year	Rebate Amount		
	Accounting	Incurred	
Q1 2020	\$35,062,495	\$44,376,478	Actual/Estimate
Q2 2020	\$41,193,980	\$45,265,406	Actual/Estimate
Q3 2020	\$38,937,487	\$45,827,667	Actual/Estimate
Q4 2020	\$59,869,128	\$47,402,023	Actual/Estimate
Q1 2021	\$43,236,360	\$42,457,931	Actual/Estimate
Q2 2021	\$43,485,834	\$46,194,540	Actual/Estimate
Q3 2021	\$46,018,808	\$46,312,611	Actual/Estimate
Q4 2021	\$53,715,648	\$49,067,882	Actual/Estimate
Q1 2022	\$46,693,187	\$53,180,438	Actual/Estimate
Q2 2022	\$52,280,271	\$56,196,094	Actual/Estimate
Q3 2022	\$56,253,088	\$58,900,993	Actual/Estimate
Q4 2022	\$64,784,729	\$59,268,631	Actual/Estimate
Q1 2023	\$57,552,152	\$65,065,700	Actual/Estimate
Q2 2023	\$65,764,561	\$74,720,291	Actual/Estimate
Q3 2023	\$72,171,819	\$79,882,166	Estimate/Estimate
Q4 2023	\$86,782,443	\$81,684,823	Estimate/Estimate

Exhibit 5
Kentucky Employees' Health Plan
Premium Deficiency Reserve as of December 31, 2023

Calculation of the Premium Deficiency Reserve	
(figures in \$millions)	
Revenue	
Medical and Pharmacy Premiums	\$1,840.4
HRA Waiver Premiums	\$50.8
Interest Income	\$16.8
Pharmacy Rebates	\$282.3
Total Revenue (a)	\$2,190.3
Expenses	
Medical and Pharmacy Claims	\$2,018.6
Administrative Fees (Medical & Pharmacy)	\$83.9
Operating Expenses/ERRP	\$8.6
HRA (waiver & select) Claims	\$93.8
Total Expenses (b)	\$2,204.9
Net Gain/(Loss) (a) - (b)	(\$14.6)

* As of December 31, 2023, there are no longer any “future” claims, admin fees, or premiums relate to the 2023 plan year. Therefore, there is no estimated premium deficiency reserve as of December 31, 2023. Above is the revenue and expenses experience of plan year 2023.