

Commonwealth of Kentucky

Kentucky Employees' Health Plan

**Actuarial Reserve Study
June 30, 2023**

**Three Alliance Center
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August 2023

Commonwealth of Kentucky

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EXECUTIVE SUMMARY

Aon has conducted an actuarial valuation of the incurred, but not paid, claims as of June 30, 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 \$151.2 million. This figure includes \$7.2 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 of June 30, 2023, due to the estimated revenue (\$1,070.5 million) being insufficient to cover the estimated program expenses (\$1,185.4 million), there is an additional premium deficiency reserve of \$114.9 million.

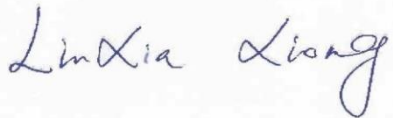
Also included in this report are the actual Rx rebates paid from January 1, 2020 to December 31, 2022 and the estimated Rx rebate from January 1, 2023 to June 30, 2023.

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 June 30, 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.



August 9, 2023

LinXia Xiong, FSA, MAAA
Vice President

Date



August 9, 2023

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 July 1, 2020 to June 30, 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 June 30, 2023, the resulting UCL for June 30, 2023 was approximately \$144.0 million. In addition, an explicit margin for adverse deviation of 5.0% of claims unpaid on June 30, 2023 has been used.

RESULTS

The result of our reserve analysis shows the following components of our June 30, 2023 reserve for the Kentucky Employees' Health Plan.

Exhibit 1

Kentucky Employees' Health Plan Terminal Liability Calculation as of June 30, 2023				
	Unpaid Claims Liability as of June 30, 2023	Margin (5%)	Administrative Fees for Processing Runout Claims	Total IBNR Reserve (Rounded to Nearest \$1,000)
Medical	\$141,474,798	\$7,073,740	\$0	\$148,549,000
Pharmacy	\$95,122	\$4,756	\$0	\$100,000
CDHP HRA	\$1,323,945	\$66,197	\$0	\$1,390,000
Waiver HRA	\$1,087,355	\$54,368	\$0	\$1,142,000
Grand Total	\$143,981,220	\$7,199,061	\$0	\$151,180,000

* 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 June 30, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jul-20	141,962	\$144,829,720	1.000	\$144,829,720	\$0
Aug-20	140,842	\$141,502,577	1.000	\$141,502,577	\$0
Sep-20	140,163	\$145,708,888	1.000	\$145,708,888	\$0
Oct-20	141,430	\$149,885,430	1.000	\$149,885,430	\$0
Nov-20	141,248	\$142,942,757	1.000	\$142,942,757	\$0
Dec-20	140,996	\$165,712,288	1.000	\$165,712,288	\$0
Jan-21	140,547	\$122,998,517	1.000	\$122,998,517	\$0
Feb-21	140,166	\$118,024,277	1.000	\$118,024,277	\$0
Mar-21	140,054	\$139,555,841	1.000	\$139,555,841	\$0
Apr-21	139,665	\$139,400,143	1.000	\$139,400,143	\$0
May-21	139,369	\$137,271,947	1.000	\$137,271,947	\$0
Jun-21	139,022	\$155,798,723	1.000	\$155,798,723	\$0
Jul-21	138,284	\$152,988,369	1.000	\$152,988,369	\$0
Aug-21	137,179	\$156,911,823	1.000	\$156,894,971	\$16,852
Sep-21	136,596	\$151,167,108	1.000	\$151,138,326	\$28,782
Oct-21	138,675	\$158,077,381	1.000	\$158,020,248	\$57,133
Nov-21	138,498	\$164,221,111	0.999	\$164,118,260	\$102,850
Dec-21	138,422	\$182,699,108	0.999	\$182,500,516	\$198,592
Jan-22	139,271	\$119,655,364	0.999	\$119,478,800	\$176,564
Feb-22	138,919	\$120,387,541	0.998	\$120,149,100	\$238,441
Mar-22	138,935	\$145,382,252	0.997	\$144,973,815	\$408,437
Apr-22	138,732	\$137,484,070	0.997	\$137,078,984	\$405,086
May-22	138,533	\$145,480,098	0.997	\$145,018,380	\$461,718
Jun-22	138,120	\$156,886,260	0.996	\$156,240,075	\$646,184
Jul-22	137,350	\$147,969,873	0.996	\$147,304,155	\$665,718
Aug-22	136,362	\$158,158,946	0.994	\$157,143,387	\$1,015,559
Sep-22	135,557	\$153,963,355	0.992	\$152,680,236	\$1,283,119
Oct-22	137,962	\$159,449,651	0.988	\$157,599,733	\$1,849,918
Nov-22	138,038	\$168,335,885	0.984	\$165,714,853	\$2,621,032
Dec-22	138,200	\$178,226,749	0.978	\$174,369,244	\$3,857,505
Jan-23	138,657	\$131,286,590	0.973	\$127,683,517	\$3,603,073
Feb-23	138,390	\$137,064,648	0.958	\$131,299,265	\$5,765,383
Mar-23	138,646	\$167,414,668	0.933	\$156,140,877	\$11,273,791
Apr-23	138,642	\$154,529,259	0.902	\$139,444,422	\$15,084,837
May-23	138,525	\$172,417,413	0.840	\$144,784,590	\$27,632,823
Jun-23	138,392	\$177,356,145	0.638	\$113,179,625	\$64,176,520
Total		\$5,401,144,776		\$5,259,574,856	\$141,569,920

Exhibit 2b
Kentucky Employees' Health Plan
Medical
Terminal Liability Calculation as of June 30, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jul-20	141,962	\$99,869,565	1.000	\$99,869,565	\$0
Aug-20	140,842	\$97,450,465	1.000	\$97,450,465	\$0
Sep-20	140,163	\$100,281,886	1.000	\$100,281,886	\$0
Oct-20	141,430	\$103,190,181	1.000	\$103,190,181	\$0
Nov-20	141,248	\$97,063,767	1.000	\$97,063,767	\$0
Dec-20	140,996	\$115,489,433	1.000	\$115,489,433	\$0
Jan-21	140,547	\$84,600,029	1.000	\$84,600,029	\$0
Feb-21	140,166	\$80,136,469	1.000	\$80,136,469	\$0
Mar-21	140,054	\$93,136,314	1.000	\$93,136,314	\$0
Apr-21	139,665	\$93,354,113	1.000	\$93,354,113	\$0
May-21	139,369	\$92,601,384	1.000	\$92,601,384	\$0
Jun-21	139,022	\$108,066,689	1.000	\$108,066,689	\$0
Jul-21	138,284	\$106,879,326	1.000	\$106,879,326	\$0
Aug-21	137,179	\$109,646,260	1.000	\$109,632,864	\$13,396
Sep-21	136,596	\$104,303,581	1.000	\$104,280,981	\$22,600
Oct-21	138,675	\$110,179,782	1.000	\$110,134,705	\$45,077
Nov-21	138,498	\$114,055,942	0.999	\$113,981,559	\$74,384
Dec-21	138,422	\$127,926,243	0.999	\$127,774,072	\$152,171
Jan-22	139,271	\$79,450,411	0.998	\$79,324,360	\$126,051
Feb-22	138,919	\$80,935,858	0.998	\$80,765,210	\$170,648
Mar-22	138,935	\$98,135,255	0.997	\$97,819,344	\$315,911
Apr-22	138,732	\$93,048,068	0.997	\$92,741,581	\$306,486
May-22	138,533	\$98,535,742	0.996	\$98,188,055	\$347,687
Jun-22	138,120	\$108,019,872	0.995	\$107,473,200	\$546,672
Jul-22	137,350	\$101,127,785	0.994	\$100,543,523	\$584,262
Aug-22	136,362	\$107,642,065	0.991	\$106,712,618	\$929,446
Sep-22	135,557	\$104,658,360	0.989	\$103,469,915	\$1,188,445
Oct-22	137,962	\$110,198,241	0.984	\$108,457,107	\$1,741,134
Nov-22	138,038	\$117,990,672	0.979	\$115,494,263	\$2,496,409
Dec-22	138,200	\$125,396,263	0.970	\$121,689,081	\$3,707,181
Jan-23	138,657	\$83,964,281	0.959	\$80,513,501	\$3,450,780
Feb-23	138,390	\$89,663,195	0.938	\$84,071,519	\$5,591,676
Mar-23	138,646	\$111,059,438	0.901	\$100,013,204	\$11,046,234
Apr-23	138,642	\$100,122,408	0.852	\$85,294,518	\$14,827,890
May-23	138,525	\$111,899,236	0.755	\$84,519,131	\$27,380,104
Jun-23	138,392	\$116,010,535	0.428	\$49,600,383	\$66,410,152
Total		\$3,676,089,113		\$3,534,614,315	\$141,474,798

Exhibit 2c
Kentucky Employees' Health Plan
Pharmacy
Terminal Liability Calculation as of June 30, 2023

Month	Enrollment	Estimated Incurred Claims	Completion Factor	Actual Paid	Total Unpaid Claim Reserve
Jul-20	141,962	\$44,960,155	1.000	\$44,960,155	\$0
Aug-20	140,842	\$44,052,111	1.000	\$44,052,111	\$0
Sep-20	140,163	\$45,427,002	1.000	\$45,427,002	\$0
Oct-20	141,430	\$46,695,249	1.000	\$46,695,249	\$0
Nov-20	141,248	\$45,878,990	1.000	\$45,878,990	\$0
Dec-20	140,996	\$50,222,855	1.000	\$50,222,855	\$0
Jan-21	140,547	\$38,398,488	1.000	\$38,398,488	\$0
Feb-21	140,166	\$37,887,808	1.000	\$37,887,808	\$0
Mar-21	140,054	\$46,419,527	1.000	\$46,419,527	\$0
Apr-21	139,665	\$46,046,030	1.000	\$46,046,030	\$0
May-21	139,369	\$44,670,563	1.000	\$44,670,563	\$0
Jun-21	139,022	\$47,732,034	1.000	\$47,732,034	\$0
Jul-21	138,284	\$46,109,043	1.000	\$46,109,043	\$0
Aug-21	137,179	\$47,265,563	1.000	\$47,262,106	\$3,457
Sep-21	136,596	\$46,863,528	1.000	\$46,857,346	\$6,182
Oct-21	138,675	\$47,897,598	1.000	\$47,885,543	\$12,055
Nov-21	138,498	\$50,165,168	0.999	\$50,136,702	\$28,467
Dec-21	138,422	\$54,772,865	0.999	\$54,726,444	\$46,421
Jan-22	139,271	\$40,204,953	0.999	\$40,154,440	\$50,513
Feb-22	138,919	\$39,451,683	0.998	\$39,383,890	\$67,792
Mar-22	138,935	\$47,246,997	0.998	\$47,154,470	\$92,527
Apr-22	138,732	\$44,436,002	0.998	\$44,337,403	\$98,600
May-22	138,533	\$46,944,356	0.998	\$46,830,325	\$114,031
Jun-22	138,120	\$48,866,387	0.998	\$48,766,875	\$99,513
Jul-22	137,350	\$46,842,088	0.998	\$46,760,632	\$81,456
Aug-22	136,362	\$50,516,881	0.998	\$50,430,769	\$86,112
Sep-22	135,557	\$49,304,994	0.998	\$49,210,321	\$94,673
Oct-22	137,962	\$49,251,410	0.998	\$49,142,626	\$108,784
Nov-22	138,038	\$50,345,213	0.998	\$50,220,590	\$124,623
Dec-22	138,200	\$52,830,487	0.997	\$52,680,163	\$150,323
Jan-23	138,657	\$47,322,309	0.997	\$47,170,016	\$152,293
Feb-23	138,390	\$47,401,454	0.996	\$47,227,746	\$173,707
Mar-23	138,646	\$56,355,230	0.996	\$56,127,673	\$227,557
Apr-23	138,642	\$54,406,851	0.995	\$54,149,904	\$256,947
May-23	138,525	\$60,518,178	0.996	\$60,265,458	\$252,719
Jun-23	138,392	\$61,345,610	1.036	\$63,579,242	(\$2,233,632)
Total		\$1,725,055,663		\$1,724,960,541	\$95,122

Exhibit 3

Kentucky Employees' Health Plan Terminal Liability Calculation as of June 30, 2023

Health Reimbursement Arrangements

CDHP HRA				
Period	Paid To Date	Completion Factor	Total Incurred	Unpaid Claim Reserve
Apr-Jun 2020	\$13,049,919	100.0%	\$13,049,919	\$0
Jul-Sep 2020	\$11,579,779	100.0%	\$11,579,779	\$0
Oct-Dec 2020	\$11,004,219	100.0%	\$11,004,219	\$0
Jan-Mar 2021	\$16,396,704	100.0%	\$16,396,713	\$9
Apr-Jun 2021	\$15,461,825	100.0%	\$15,461,833	\$8
Jul-Sep 2021	\$12,036,616	100.0%	\$12,036,622	\$6
Oct-Dec 2021	\$11,002,638	100.0%	\$11,002,615	(\$23)
Jan-Mar 2022	\$17,817,183	100.0%	\$17,812,530	(\$4,652)
Apr-Jun 2022	\$16,175,327	100.0%	\$16,178,179	\$2,851
Jul-Sep 2022	\$11,830,278	99.8%	\$11,857,675	\$27,397
Oct-Dec 2022	\$10,845,538	99.3%	\$10,922,213	\$76,675
Jan-Mar 2023	\$18,509,449	98.4%	\$18,813,203	\$303,754
Apr-Jun 2023	\$14,857,600	94.2%	\$15,775,521	\$917,921
Total	\$180,567,075		\$181,891,021	\$1,323,945

Waiver HRA				
Plan Year	Paid To Date	Completion	Total Incurred	Unpaid Claim
2020	\$36,228,454	100.0%	\$36,228,454	\$0
2021	\$35,913,665	100.0%	\$35,913,665	\$0
2022	\$35,212,007	99.6%	\$35,336,188	\$124,181
2023	\$15,772,859	94.2%	\$16,736,033	\$963,175
Total	\$123,126,984		\$124,214,340	\$1,087,355

Exhibit 4
Kentucky Employees' Health Plan
Rx Rebates as of June 30, 2023

Plan Year	Rebate Amount		
	Accounting	Incurred	
Q1 2020	\$35,062,495	\$44,361,802	Actual/Estimate
Q2 2020	\$41,193,980	\$45,360,687	Actual/Estimate
Q3 2020	\$38,937,487	\$46,078,034	Actual/Estimate
Q4 2020	\$58,968,227	\$47,552,755	Actual/Estimate
Q1 2021	\$43,236,360	\$42,602,569	Actual/Estimate
Q2 2021	\$43,485,834	\$46,222,549	Actual/Estimate
Q3 2021	\$46,018,808	\$46,482,042	Actual/Estimate
Q4 2021	\$53,774,503	\$49,411,872	Actual/Estimate
Q1 2022	\$46,693,187	\$53,083,310	Actual/Estimate
Q2 2022	\$52,280,271	\$56,092,417	Actual/Estimate
Q3 2022	\$56,253,088	\$58,786,111	Actual/Estimate
Q4 2022	\$57,634,335	\$59,217,970	Actual/Estimate
Q1 2023	\$53,534,458	\$65,092,464	Estimate/Estimate
Q2 2023	\$59,940,136	\$74,391,065	Estimate/Estimate

Exhibit 5
Kentucky Employees' Health Plan
Premium Deficiency Reserve as of June 30, 2023

Calculation of the Premium Deficiency Reserve	
(figures in \$millions)	
Revenue	
Medical and Pharmacy Premiums	\$920.1
HRA Waiver Premiums	\$24.9
Interest Income	\$3.5
Pharmacy Rebates	\$122.0
Total Revenue (a)	\$1,070.5
Expenses	
Medical and Pharmacy Claims	\$1,093.3
Administrative Fees (Medical & Pharmacy)	\$44.2
Operating Expenses/ERRP	\$4.3
HRA (waiver & select) Claims	\$43.6
Total Expenses (b)	\$1,185.4
Net Gain/(Loss) (a) - (b)	(\$114.9)

* As of June 30, 2023, due to the estimated revenue (\$1,070.5 million) being insufficient to cover the estimated program expenses (\$1,185.4 million), there is an additional premium deficiency reserve of \$114.9 million.