

**NEBRASKA HOSPITAL-MEDICAL LIABILITY ACT
EXCESS LIABILITY FUND**



**ANNUAL REPORT
As of December 31, 2021**

INTRODUCTION

The Excess Liability Fund (the Fund) is one of several Enterprise Funds maintained by Nebraska to account for operations that are financed and operated in a manner similar to private business enterprises—where the costs of providing goods and services to users are financed primarily through user charges.

The Nebraska Department of Insurance administers the Fund, as required by the Nebraska Hospital-Medical Liability Act (adopted in 1976). Revenues are mainly from surcharges paid by Nebraska health care providers participating voluntarily in the Excess Liability Fund. A small revenue stream comes from Nebraska health care providers unable to buy primary coverage from a licensed insurer. Expenses include administrative costs and payments to cover malpractice judgments or settlements against Fund members.

For health care providers participating in the Fund, malpractice damages are statutorily capped at \$2.25 Million per plaintiff, per occurrence. To participate, eligible providers pay a premium (“the surcharge”) and submit proof of financial responsibility in the form of an underlying professional liability policy that pays \$500,000 per occurrence, with annual aggregate limits of \$3 Million for hospitals and \$1 Million for other health care providers. For each plaintiff, the Fund provides excess coverage above the underlying \$500,000, up to the \$2.25 Million cap.

This report is about the Fund’s assets, operating results, liabilities, and operating reserve. The terms “estimated” or “expected” refer to actuarially derived averages of possible future outcomes. The future may turn out to be significantly better or worse than our best current estimates and expectations. Supporting commentary and history are in Appendices A (on the Fund’s Reserves and Risks), B (the Fund’s limits and underlying coverage requirements) and C (historical surcharge rates).

FINANCIAL POSITION- Assets and Operations

The Fund began the year with assets of \$95.06 Million and ended with \$100.86 Million. Table 1 shows ten years’ results on a cash basis. Since 2015, assets dipped from \$92.9 Million to \$84.2 Million in 2019 before surging in 2020-2021 to \$100.86 Million. We attribute both slow claims payout and favorable investment results in 2020-2021 primarily to the COVID-19 pandemic and its consequences.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Calendar Year	Beginning Cash & Invested Assets	Cash Revenue Net of Reinsurance	Paid Loss and Loss Expense Net of Reinsurance	Administrative Expenses	Underwriting Cash Flow Net of Reinsurance	Investment Activity	Annual Change in Assets	Year End Cash & Invested Assets
2012	89,872,354	4,769,655	9,100,443	173,464	(4,504,251)	5,960,884	1,456,632	91,328,986
2013	91,328,986	4,849,128	4,799,715	185,739	(136,326)	7,214	(129,112)	91,199,874
2014	91,199,874	4,490,594	6,584,786	180,851	(2,275,043)	4,025,164	1,750,121	92,949,995
2015	92,949,995	4,768,232	5,961,007	254,576	(1,447,351)	1,186,121	(261,229)	92,688,766
2016	92,688,766	4,212,816	11,057,285	244,811	(7,089,280)	3,742,312	(3,346,969)	89,341,797
2017	89,341,797	4,860,418	4,991,220	284,614	(415,417)	1,561,334	1,145,917	90,487,714
2018	90,487,714	7,222,447	11,532,756	288,121	(4,598,431)	813,790	(3,784,640)	86,703,074
2019	86,703,074	7,853,896	15,183,389	328,639	(7,658,132)	5,129,720	(2,528,413)	84,174,661
2020	84,174,661	8,650,695	4,372,633	350,546	3,927,516	6,955,315	10,882,831	95,057,493
2021	95,057,493	9,331,693	3,791,425	320,768	5,219,500	582,253	5,801,753	100,859,245
10 Yrs		61,009,573	77,374,659	2,612,129	(18,977,215)	29,964,107	10,986,892	

The Fund's cash revenue in Col. (2) is net of reinsurance cost since May 1, 2016, when the Common Loss reinsurance treaty was first effective. Briefly, a common loss is the sum of all loss and loss adjustment expense directly associated with any one or a series of similar or related medical incidents. The Fund's retention per common loss is \$4.5 Million and the treaty limit is \$20.0 Million. For the 2021 renewal, only 95.75% of the treaty could be placed despite a 10% rate increase. We placed 100% of the 2022 renewal with a further 2% rate increase. So far, the Fund has ceded no loss or adjustment expenses.

Underwriting cash flow in Col. (5), was negative yearly from 2012-2019 -- \$28.1 Million in total, averaging \$3.5 Million per year. In 2020, efforts to mitigate the pandemic slowed all the normal steps to investigate, negotiate and resolve claims. The slowdown continued through most of 2021, with very few trials scheduled. Reported claims dropped 20%. Paid losses dropped from \$15.2 Million in 2019 to \$4.4 Million in 2020 and \$3.8 Million in 2021. 2020-2021 underwriting cash flows were positive, totaling \$9.1 Million.

Investment activity produced \$6.96 Million in 2020 but just \$580 Thousand in 2021. Interest income and investment expenses are relatively constant year-to-year compared to realized and unrealized gains (or losses) on long-term investments. After gains in 2019-2020, the long-term bonds' value decreased by \$704 Thousand in 2021. Bond values are vulnerable to potentially higher interest rates. Assets are invested by the Nebraska Investment Council, whose investment policies and quarterly reports are posted at <https://nic.nebraska.gov/>.

FINANCIAL POSITION- Liabilities and Operating Reserve

Claims Known to the Fund

**Table 2. Claims Made Coverage Ultimate Loss & Adjustment Expense
Ratios of Estimated Ultimate Amounts (000's) to Net Earned Premium**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				= (2) - (3)			= (3) + (6)	= (7) / (1)
Report Year	Net Claims Made Earned Premium (000's)	Actuarial Estimated Ultimate Net Claims-Made Incurred	Cum. RY Net Paid Indemnity and Expense	Actuarial Estimated Net Claims Made Reserve	Adjusters' Net Estimated Claims Made Case Reserves	Best Estimate Net Claims-Made Reserve	Best Estimate Ultimate Net Claims-Made Incurred	Estimated Ultimate Net Indemnity and Claims Expense Ratio
2012	4,948	5,613	5,613	-	-	-	5,613	113.4%
2013	4,684	6,963	6,463	500	500	500	6,963	148.6%
2014	4,474	10,390	10,179	210	200	204	10,384	232.1%
2015	4,500	9,000	8,982	18	-	-	8,982	199.6%
2016	3,979	11,285	11,251	34	-	-	11,251	282.7%
2017	4,492	7,711	6,230	1,481	1,450	1,462	7,693	171.2%
2018	5,560	9,280	5,379	3,901	3,891	3,895	9,274	166.8%
2019	7,415	10,618	4,659	5,958	5,050	5,413	10,073	135.8%
2020	7,935	10,714	355	10,359	10,245	10,291	10,646	134.2%
2021	9,880	11,256	-	11,256	10,950	11,072	11,072	112.1%
5 Yrs	35,284	49,578	16,623	32,955	31,586	32,134	48,757	138.2%
10 Yrs	57,869	92,829	59,111	33,717	32,286	32,838	91,949	158.9%

Table 2 addresses the liability for claims already presented to the Fund. Net earned premium in Column (1) for each year is greater than in the 2020 report, due to more precise unearned premium reserve calculations implemented during 2021.

The Fund's yearend liability for known claims under Claims-Made coverage was \$33.7 Million per actuarial estimates, \$32.3 Million per adjusters' case estimates and a similar selected \$32.8 Million "best estimate." Appendix A outlines the actuarial analysis and its uncertainties. Adjusters' case estimates rely on experience, judgment and facts available for individual cases.

Column (8) shows annual ratios of estimated ultimate net Claims-Made paid loss and claims expense to the Fund's Claims-Made earned premium, net of reinsurance cost. In the past 10 years, the lowest loss and claims expense ratio was 113% in 2012. Despite surcharge rate increases and fewer reported claims in 2020-2021, the five-year loss ratio is still 138%. That means, net of reinsurance cost, the Fund's incurred loss and adjustment expense for Claims Made coverage was 38% more than surcharge revenues.

\$32.3 Million of the Fund's \$32.5 Million case reserve is for Claims Made coverage. The remaining case reserves are \$200,000 for Excess Occurrence coverage and \$23,000 for Primary Residual coverage.

Claims Anticipated, but Not Yet Reported to the Fund

The Fund also anticipates some claims to emerge later. "IBNR" means "Incurred but not reported."

- 1) Claims-Made IBNR: The Fund's Excess coverage follows participants' primary coverage, which is generally on a Claims-Made basis. When written by a primary insurer, Claims-Made coverage by definition should generate no IBNR claims. The Fund, however, will wait while the primary carrier records a claim, investigates it, prepares to defend its policyholder, and in setting case reserves identifies it as one of the few likely to exceed the Fund threshold. I estimate this waiting time to average 3 months, and this portion of the Fund's IBNR to be \$2.44 Million.
- 2) Occurrence IBNR: A small volume of occurrence coverage is underwritten by primary insurers including the Fund's Residual Authority. I estimate the associated IBNR to be \$200 Thousand for excess occurrence coverage.
- 3) Tail IBNR: "Tail" or "extended reporting endorsement" coverage is provided by the Fund, excess over primary insurers' tail coverage. Typically, the insured pays for tail coverage when switching insurers, but "free tail" may be available for a covered provider who retires, dies, or becomes disabled. "Free tail" is more frequently issued at the end of any internships or temporary (locum tenens) engagements. I estimate the Fund's liability for issued tail coverage to be \$820,000.
- 4) Primary Residual Business: The Fund's Residual Authority writes a small volume of occurrence coverage, for which I estimate the associated IBNR to be \$91 Thousand.
- 5) Bulk Provision for Known Claims: As stated above, I estimate adjusters' case reserves, plus a small \$550 Thousand bulk provision (within the carried IBNR) will be sufficient to resolve all cases known to the Fund.
- 6) Unpaid Adjustment Expense: Following an independent reviewer's recommendation I added a new provision for future adjustment expenses to handle claims already incurred. My estimate is \$401 Thousand.

These six components add up to \$4.5 Million, my estimate of the Fund's IBNR liability. Supporting actuarial exhibits are not published with this report, but Appendix A includes discussion of the IBNR analysis and its uncertainties.

Unearned Premiums

In 2021 following an independent reviewer's recommendation, I recalculated all historical unearned and earned premium using each provider's type of coverage, coverage effective dates and days of coverage provided. Methods and assumptions employed historically are memorialized in the 2020 Annual Report. Effects of this change on Tables 2 and 4 are disclosed in Columns (6) and (9) below:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Calendar Year	Direct Written Premium	Reinsurance Ceded Written Premium	Net Written Premium	Net Earned Premium	2020 Annual Report Net Earned Premium	Change in Methods Effect on Net Earned Premium	Net Unearned Premium Reserve	2020 Annual Report Unearned Premium Reserve	Effect of Change in Methods on Unearned Premium
2012	5,181,386	0	5,181,386	5,249,404	5,291,452	(42,048)	1,681,365	2,384,828	(703,463)
2013	4,844,616	0	4,844,616	4,938,540	4,956,815	(18,275)	1,587,441	2,424,564	(837,123)
2014	4,757,666	0	4,757,666	4,760,318	4,673,426	86,892	1,584,790	2,245,297	(660,507)
2015	4,826,703	0	4,826,703	4,744,906	4,847,606	(102,700)	1,666,587	2,384,116	(717,529)
2016	4,872,883	800,000	4,072,883	4,139,564	4,008,519	131,045	2,379,905	3,252,938	(873,034)
2017	5,554,213	533,333	5,020,880	4,654,441	4,298,365	356,076	2,746,344	3,849,893	(1,103,548)
2018	8,263,464	900,000	7,363,464	5,752,740	5,538,857	213,883	4,357,069	5,618,822	(1,261,754)
2019	8,810,310	900,000	7,910,310	7,580,997	7,390,827	190,170	4,686,381	6,184,947	(1,498,566)
2020	9,946,120	1,000,000	8,946,120	8,141,552	7,936,064	205,489	5,490,949	7,077,533	(1,586,585)
2021	10,994,254	1,100,000	9,894,254	10,138,543			5,246,659		

The Fund's Operating Reserve

The operating reserve equals year-end assets minus estimated year-end liabilities:

	(1)	(2)	(3)	(4)	(5) = (1) - (2) - (3) - (4)	(6)
Calendar Year	Year End Fund Assets	Unpaid Reported Loss & LAE	IBNR	Unearned Premiums	Operating Reserve	Annual Change
2012	91,328,986	19,275,299	1,630,000	1,681,365	68,742,323	3,252,208
2013	91,199,874	17,954,231	1,350,000	1,587,441	70,308,201	1,565,879
2014	92,949,995	15,495,242	1,720,000	1,584,790	74,149,963	3,841,762
2015	92,688,766	17,522,088	2,140,000	1,666,587	71,360,091	-2,789,873
2016	89,341,797	24,819,871	1,835,129	2,379,905	60,306,892	-11,053,198
2017	90,487,714	23,703,004	2,344,009	2,746,344	61,694,357	1,387,465
2018	86,703,074	25,233,063	3,721,556	4,357,069	53,391,386	-8,302,971
2019	84,174,661	27,450,000	4,481,095	4,686,381	47,557,185	-5,834,201
2020	95,057,493	32,147,368	6,479,104	5,490,949	50,940,072	3,382,887
2021	100,859,245	32,509,365	4,499,913	5,246,659	58,603,308	7,663,236

The 2021 operating reserve is \$58.6 Million, up \$7.7 Million from 2020 and up \$11.0 Million from 2019. These comparisons are in addition to small increases caused by the change to unearned premium calculations.

Maintaining a strong operating reserve is one prudent method of addressing future uncertainties such as unanticipated fluctuations in claim costs, operational expenses or investment activity. The ideal operating reserve for the Fund can be debated, but it clearly must be a significant amount. The operating reserve has been above \$35 Million since 2007, and its 2014 estimate peaked at \$74.1 Million.

Two important forces drove the Fund's operating reserve to its peak at 2014. First, the Fund's investment activity in 2009-2010 reflected bond prices' recovery from losses in 2008, and second, the Fund's loss ratios were under 70% from 2007-2010 (see previous years' Table 2). Those forces stopped favoring the Fund in 2011. Bonds came to yield little with high market values that are vulnerable to increasing interest rates.

For the five years ending 2019 (pre-pandemic), the operating reserve suffered losses totaling \$26.6 Million. In 2020-2021, gains were \$3.4 Million and \$7.7 Million totaling \$11.0 Million. The operating reserve as of 2021 is \$58.6 Million, 21.0% below its 2014 peak, but increased 23.2% from 2019. Apparently, COVID-19 and its mitigation disrupted the Fund's multi-year pattern of losses.

Nebraska MPL Primary Market

From 2018-2019 I tested whether the Nebraska Medical Professional Liability (MPL) market was healthy, using calendar year experience by state that is readily available from the insurers' NAIC Annual Statements. In the Nebraska primary MPL market:

- From 2013 to 2016, Written Premium volume decreased by \$4.88 Million, or 13.3%.
- Loss and DCC Ratios increased from profitable levels to 105.4% in 2019, and 87.5% for the five years ending 2019.
- Commission/Brokerage ratios accelerated in 2015-2018 to 16.3% but receded to 10.1% in 2019.
- The remainder of premium available for other expenses and profit decreased from 42.4% in 2009-2013 to just 14.5% in 2014-2015 and minus 17.3% in 2017-2019.

In 2020 and 2021:

- Nebraska written premiums increased respectively 8.9% and 23.0%.
- The Loss and DCC Ratio for 2020 improved to 99.6%, and again in 2021 to 92.9%.
- Commission and Brokerage was 9.3% of written premium in both years and Taxes/Licenses & Fees ratios were 1.9% in 2020 and 1.5% in 2021.
- With 23.0% more written premium in 2021, the remainder available for other expenses and profit improved from minus 10.8% to plus 9.6%. This metric had been below zero for five years, so 2021 was much improved.

Conclusions

On Table 2 the Fund's past five report years' net loss ratios for claims made coverage are respectively 171%, 167%, 136% 134% and 112%. More accurate earned premium helped (see Table 3). Primarily, improvement is due to what appears to be COVID-19 mitigation effects in 2020-2021, and surcharge rates increased from 22% in 2015 to the 50% statutory maximum in 2020-2022.

Primary market rate increases in 2021 do not appear to have benefitted the Fund:

- AM Best's observed, in its 2022 MPL Segment Report, that 2021 written premium went up due to rate increases, but rate increases for physicians were constrained by ample capacity and competition. About 75% of the Excess Fund's written premium is from MD's and DO's.

The Fund's 138% five-year loss ratio is better than last year's 200%, but still reflects insufficient pricing for future costs in the Fund's excess coverage layer.

I believe this report reasonably states the Fund's results and position as of 12/31/2021. Currently, I see some primary market hardening but it is mainly affecting providers and institutions not eligible to participate in the Fund. Based on my reserve estimates, the 2020-2021 Fund results have helped mitigate the adverse pre-pandemic trend. Nevertheless, I believe there is enough uncertainty about the Fund's post-pandemic future to prevent a forward-looking opinion.



Gordon Hay, FCAS, MAAA, CPCU
Senior Casualty Actuarial Examiner

Nebraska Department of Insurance
1526 K Street, Suite 200
PO Box 95087
Lincoln, Nebraska 68509-5087
SWITCHBOARD: 402-471-2201

Appendix A. COMMENTARY – Reserves and Risks

This appendix covers four topics. The first topic is data organization, and refinements to it in 2015 and 2021. The second topic is actuarial methods and risks in estimating the Fund’s liability for known claims on Claims-Made coverage. The third topic is actuarial reserving for IBNR claims. The fourth topic is additional actuarial disclosures.

The Department’s actuarial work was performed by Gordon Hay, Senior Casualty Actuarial Examiner within the Department, a Fellow of the Casualty Actuarial Society, Member of the American Academy of Actuaries, and Chartered Property and Casualty Underwriter.

Data Organization

Before 2015, the Fund’s entire loss history, including combined Excess and Primary Residual business, was grouped by report-year to estimate the adequacy of case reserves for known claims. This involved an assumption that occurrence coverage (including Primary Residual) always made a negligible contribution to the body of experience. The same data was then regrouped by accident-year for IBNR analysis. That IBNR analysis rested in part on two key assumptions: 1) that 16% of Fund business was due to occurrence coverage and 2) that the actual emergence of historical claims did not depend on whether the claims arose from Claims-Made versus occurrence coverage. While such underlying assumptions were not unreasonable, it was difficult to validate them and strictly not possible to reconcile them.

As of December 2015, I divided the historical data into three segments: excess Claims-Made, excess occurrence and residual primary. This data segmentation was possible for premium data as of the current accounting date and loss data for the years 2010, 2011, 2012, 2013, 2014 and 2015. The result is a workable volume of excess Claims-Made data, but small volumes of excess occurrence and residual primary data. The impact on analysis and methods at 2015 was as follows:

- For the excess Claims-Made analysis, the “15 year least-squares regression method” was deleted. The 2014 Annual Report described that method. Briefly, the method relied on loss evaluations at age 12 months that are not available from the reorganized data.
- For the excess Claims-Made analysis, the “5 years least-squares method” was modified and renamed “3 years least-squares method.” The credibility complement, previously using a five-year moving average, was changed to a three-year moving average.
- IBNR estimations for excess occurrence and primary residual business were separated and calculated using their own data from the Fund’s history.
- Prior to 2015, a reserve provision for “Tail” or “Extended Reporting Endorsement” (ERE) coverage was implicit in the 16% assumption described above. Since 2015 I have made explicit reserve estimates for “Tail” coverage. The reserve analysis for known claims includes provision for Tail or ERE claims that have already been reported to the Fund. The new estimates provide for claims expected to emerge in the future due to 1) “Free Tail” coverage commitments already made (typically issued when the insured ultimately retires, dies, becomes disabled (so-called “DDR” endorsements), 2) “Paid Tail” coverage that has already been issued and 3) “Free Tail” coverage that has already been issued.

At June 2017, for the excess Claims-Made analysis, I reverted to the “5 years least-squares method.”

In Fall 2021, I made additional refinements:

- I used individual providers' effective dates and coverage periods to more accurately calculate the historical unearned premiums and earned premiums, following an independent reviewer's recommendation. This produced lower unearned premium estimates and slightly higher earned premium amounts.
- I combined several separate excel workbooks to simultaneously calculate and summarize all of the Fund's premium metrics. That single workbook titled "Excess B Query J YYYYMMDD.xlsx" includes a managed and extended version of the NIIMS data file named "Excess B Query.xlsx," with pivot tables generating the premium metrics needed elsewhere for Excess, Tail Issued and Primary Residual coverages. Those metrics (by coverage) are written premium and provider years, unearned premium and provider years, and earned premium and provider years.
- In particular, the written and earned provider years are important to the Fund's reinsurers, the Nebraska Medical Association and periodically to complete a report for the Nebraska Unicameral.
- NIIMS is the Fund's policy processing system, and the source for actuarial premium metrics. I adjusted the NIIMS data in two ways. 1) NIIMS Residual Fund often do not separate the Excess from Primary premium and provider years, and in those cases I separated them and retained the adjusted history. 2) NIIMS records for certain hospital systems have at times been highly summarized, so that hundreds of their Fund-participant employees were uncounted. For calendar years 2016-2019 I estimated those counts and made "bulk" records for the largest hospital systems. In 2020 and 2021, the Fund-participants employees' individual data was captured in NIIMS, which is cost-justified when negotiating the price and terms of ceded reinsurance.

Known Claims on Claims-Made Coverage

The estimates in Column (2) of Table 2 summarize results of applying multiple actuarial methods to Fund data accumulated since July 1976.

Statistical and predictive challenges are inherent in actuarial analysis of claims data, and estimates of future payouts may turn out to be insufficient. The Fund may suffer from years of bad experience, and did so in 2002, largely due to about \$9.3 Million from a Hepatitis "C" outbreak that arose at a clinic in Fremont. The Fund's most obvious viability concern is one or more many-defendant/many-plaintiff cases.

A stable environment contributes to certainty in actuarial estimates, but the medical malpractice insurance environment has been dynamic and at times very challenging actuarially. Claims-Made coverage has almost replaced occurrence coverage, reducing the Fund's exposure to IBNR. In 2016 to at least 2019, the Fund suffered while Nebraska (and Countrywide) MPL insurance was highly competitive and quite unprofitable. For physicians, the competitive market appears to have persisted through 2020-2021. Ever-changing health care provider practices including risk management improvements should help contain insurance costs, but the Fund's costs have been trending above expectations. Since about 2015, my bulk provision for future case reserve migrated upward, with a belief that case estimates were on average strong enough to help fund IBNR, to a current belief that case estimates are on average a bit short of what must ultimately be paid. In 2020, efforts to mitigate the COVID-19 pandemic interrupted the normal flow of medical procedures and legal/claims activities, so that claims information surfaced slowly in 2020 and into 2021. Case and actuarial estimates have always required a mix of data-driven calculations versus judgments. With information surfacing more slowly in 2020-2021, an extra layer of judgment was necessary to help mitigate the Fund's risk of adverse deviation. As in the past, I deployed multiple actuarial methods to test and mitigate each method's inherent assumptions and risks.

Alternative estimates for each report year appear on Table 6 below. Columns (1) to (7) show estimated ultimate amounts for known claims from seven methods, and Column (8) shows my selection. The methods and their descriptions are:

Traditional paid loss and ALAE development method: This assumes that over time, the future payment pattern as a report year matures will be like historical payment patterns as previous report years matured. This method's ultimate loss and expense estimates by report year appear in Column (1) of Table 6. Traditional LDF methods provide opportunities for actuarial judgment.

Traditional reported loss and ALAE development method: Adjusters' case reserves are included prior to measuring development. We're assuming adjusters' case reserving practices and estimates have been consistent over time. From at least 2006 to 2016, the assumption appeared valid, but in retrospect case adequacy eroded and may currently be recovering. In 2020-2021, pandemic conditions generally delayed MPL claims processes, including the discovery of information to support case estimates. This method's estimated ultimate loss and expense (000's) by report year are shown in Column (2) of Table 6.

5 Years Least-squares regression method – primary premium basis: Least-squares estimation (LSE) uses a weighted average of two measures: for each report year, the first estimate is from a pre-determined LDF formula, and the second is derived from the prior five years' moving average. Both measures are taken in units of loss and ALAE per dollar of Fund participants' primary written premium which does not respond to annual changes in the Fund's surcharge rate. The Least-Squares-Estimate of the report year's ultimate amount is a weighted average, with a small "credibility weight" on the first measure when there was low correlation in the past between report years' cumulative loss and ALAE at a given age and good current estimates of the ultimate amounts. This method produces stable estimates regardless of limited information available in recent years but responds slowly to any emerging trends. After application to the Fund's paid versus reported loss ratios to primary premium, the resulting estimates appear in Column (3) for paid data and Column (4) for reported data.

Paid versus Reported LDF Methods with Partial Credibility: Columns (5) and (6) combine the traditional LDF estimates with the credibility weights derived in the Least Squares methods. The credibility weights estimate how much confidence the traditional LDF estimates deserve, and where the credibility weight is low, the calculation relies instead on the prior five years moving average. Here, selected estimates for individual report years and their prior five-year moving averages incorporate actuarial judgments, in contrast with a predetermined formula embedded in the more theoretical LSE methods.

Frequency and Severity: Using estimated ultimate claims counts, this method compares the ultimate average claim severities implied by the previous methods. The steps are 1) estimate the ultimate paid/closed claim count by report year using a traditional reported LDF method, 2) divide the estimated ultimate dollars from the previous six methods by those estimated ultimate claim counts, 3) compare the methods' severity trends including and excluding the most recent years, 4) consider the development implications for most recent years, if previous years' severity trends were to continue and 5) select an estimated ultimate severity for each report year. The estimated ultimate amount for each report year is the product of my selected severity and my estimated ultimate claim count. By explicitly accounting for any observed trend in claims reported, or a given year's unusual number of claims, the previous six methods' implications for report year severities and severity trends can be compared, and adjustments can be made in case of anomalies.

**Nebraska Department of Insurance
Nebraska Medical-Hospital Liability Act**

**Table 6. Claims Made Coverage - Estimated Ultimate Liability for Claims Known to the Fund
Actuarial, Adjusters' and Selected Reserve Estimates (\$000's)**

Report Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Ultimate Incurred Indemnity and Expense - Alternative Estimation Methods								** Note	= (8) - (9)		*** Note
	Paid LDF Method	Reported LDF Method	5 Year Paid LSE Method	5 Year Reported LSE Method	Paid LDF with Partial Credibility Method	Rept'd LDF with Partial Credibility Method	Frequency & Severity Method	Actuarial Selected Ultimate	Cumulative Paid-to-Date	Actuarial Unpaid Estimate	Adjusters' Unpaid Estimate	Selected Best Estimate
1999	6,946	6,946					6,946	6,946	6,946	-	-	-
2000	7,977	7,977					7,977	7,977	7,977	-	-	-
2001	7,362	7,362					7,362	7,362	7,362	-	-	-
2002	13,244	13,244					13,244	13,244	13,244	-	-	-
2003	6,767	6,767					6,767	6,767	6,767	-	-	-
2004	8,002	8,002					8,002	8,002	8,002	-	-	-
2005	11,412	11,412					11,412	11,412	11,412	-	-	-
2006	11,100	11,100					11,100	11,100	11,100	-	-	-
2007	7,176	7,176					7,176	7,176	7,176	-	-	-
2008	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870	-	-	-
2009	4,574	4,574	4,574	4,574	4,574	4,574	4,574	4,574	4,574	-	-	-
2010	5,620	5,620	5,620	5,620	5,620	5,620	5,620	5,620	5,620	-	-	-
2011	9,818	9,818	9,818	9,818	9,818	9,818	9,818	9,818	9,818	-	-	-
2012	5,613	5,613	5,613	5,613	5,613	5,613	5,613	5,613	5,613	-	-	-
2013	6,463	6,963	6,463	6,963	6,463	6,963	6,713	6,963	6,463	500	500	500
2014	10,383	10,390	10,383	10,390	10,383	10,390	10,386	10,390	10,179	210	200	204
2015	9,528	9,000	9,528	9,000	9,528	9,000	9,264	9,000	8,982	18	-	-
2016	12,770	11,285	11,965	11,211	12,770	11,285	11,845	11,285	11,251	34	-	-
2017	7,991	7,711	7,185	7,716	8,077	7,711	7,766	7,711	6,230	1,481	1,450	1,462
2018	8,646	9,316	7,186	9,155	8,327	9,030	9,280	9,280	5,379	3,901	3,891	3,895
2019	12,504	9,570	8,219	9,076	8,761	9,245	10,618	10,618	4,659	5,958	5,050	5,413
2020	1,965	10,431	8,208	8,961	8,860	9,382	10,714	10,714	355	10,359	10,245	10,291
2021	-	10,931	9,717	10,536	10,640	10,659	11,256	11,256	-	11,256	10,950	11,072
10 Years	75,863	91,210	84,466	88,620	89,422	89,278	93,453	92,829	59,111	33,717	32,286	32,838

Note: The current case reserves total 32.29 Million compared to an estimated ultimate 32.84 Million required.
As of December, my IBNR estimate includes a bulk provision for known claims development of 0.55 Million.

** Selected = (2) for Rep't Yrs 1999-2017, and (7) for Rep't Yrs 2018-2021.

Case reserving is historically more consistent over time than paid claims timing. The Frequency and Severity Method (Column 7, added at Yearend 2019) is valuable in years with unusually few or many reported claims."

The Frequency and Severity Method considers estimated ultimate severity by report year, which equals estimated ultimate dollars divided by estimated ultimate counts. These estimated ultimate dollars take into consideration each of the "dollars-only" methods summarized above.

For 2008 to 2021, selected Frequency and Severity estimates above average six of eight methods, with highest and lowest excluded. The first six methods provide severity trends, used in the last two methods to estimate ultimate amounts for the least mature four years.

*** Selected = zero for Report Years with no open claims, or 60% (11) vs. 40% (10) for Report Years with open claims.

In all cases, the actual ultimate payouts will differ from the estimates. For any given report year, or for all report years combined, it is possible that actual ultimate payouts will exceed, even significantly exceed actuarial estimates, adjusters' case estimates, or both.

Both actuarial and adjusters' estimated reserves, shown in Columns (10) and (11), are reasonable. However, actuarial methods' estimates differ most for the three most recent report years, reflecting inherent uncertainty when the least mature report years have low volume data. In earlier years, it is prudent to consider adjusters'

estimates for any cases still pending. For the three least mature report years, adjusters' case estimates and actuarial best estimates are currently close to each other. When the adjusters' estimate is greater than zero, the formula in Column (11) of Table 6 gives 40% weight to the actuarial estimate and 60% weight to the adjusters' estimate.

IBNR

IBNR Summary

Five IBNR components' current values are reported above in the section titled "Claims Anticipated, but Not Yet Reported to the Fund." The supporting IBNR analyses are subject to uncertainties, including the usual statistical and predictive challenges inherent in actuarial analysis of claims data and dynamic factors in medical malpractice insurance outlined above.

1) Excess Claims-Made Coverage: Lagged reporting to Fund

Since Claims-Made coverage by definition responds to claims reported within the policy period, there would logically be no IBNR. Assuming this is so at the primary carrier level, the Fund nevertheless waits for claim reports while primary carriers record, investigate, and at some point identify the few cases they present as claims to the Fund. The Fund cannot measure those elapsed times, because the Fund's actuarial data does not capture primary carriers' claim report dates. I roughly estimate the average delay to be 3 months. My estimate of this is 25% of an average report year's loss, or 5% of the most recent five years' estimated ultimate excess claims-made ultimate incurred.

2) Excess Occurrence Coverage

With insufficient Fund data to support an independent analysis, it is reasonable to assume the Fund's losses will develop similarly to the industry. I used occurrence coverage development history from Nebraska's leading Medical Professional Liability insurers, to derive estimated industry loss development factors (LDF's). I used traditional paid loss development, traditional reported loss development and Bornhuetter-Ferguson (BF) methods. In the traditional methods, I applied the industry paid LDF's to the Fund's excess occurrence paid-to-date data, and industry reported LDF's to the Fund's occurrence reported-to-date data. The BF methods also apply separately to paid and reported data. To support these methods, I used expected losses that are equal to earned premium times a conservative 50% loss ratio. I also used the industry loss emergence patterns to estimate, for each accident year, the unpaid percent of ultimate for the paid BF method and un-emerged percent of ultimate for the reported BF method. Then, in the Paid BF method, for each accident year the estimated ultimate paid loss equals paid-to-date plus the product of expected losses and the unpaid percent of ultimate. For the Reported BF method, for each accident year the estimated ultimate reported amount equals reported-to-date plus the product of expected losses and the un-emerged percent of ultimate. For each of these methods (traditional paid LDF, traditional reported LDF, paid BF and reported BF), the estimated IBNR equals estimated ultimate minus reported-to-date. From these multiple methods, a selection must be made. The Excess Occurrence coverage IBNR estimate is roughly \$200,000 based on a small but steady share of the Fund's excess surcharge revenue.

3) Extended Reporting Endorsements (Tail Coverage)

As stated above, "Tail" or "Extended Reporting Endorsement" (ERE) coverage arises when a Claims-Made insured switches insurers, retires, dies, or becomes disabled. The reserve analysis for known claims includes provision for ERE claims that have already been reported to the Fund. Additional provisions are needed for claims expected to emerge in the future due to 1) "Free Tail" coverage commitments already made but with

coverage to be issued in the future when the insured retires, dies, becomes disabled, completes an internship or leaves a temporary (locum tenens) engagement, 2) “Paid Tail” coverage that has already been issued and 3) “Free Tail” coverage that has already been issued.

The reserving methods are quite specialized. First, for the issued tail policies, the IBNR liability is estimated by accident year and the accident years’ contributions are summed. Each accident year’s contribution equals expected losses on issued tail policies times a percent unreported factor. The expected losses are derived by multiplying each accident year’s issued tail policy count by an appropriate estimated pure premium, and the percent unreported factors are derived from industry loss development patterns. The estimate can be sensitive to an unusual number of newly issued tail policies, or changes in the estimated accident year pure premium and loss development factors.

Second, “Free Tail” policies are guaranteed to be issued by the primary insurer in case of the insured’s death, disability or retirement (DDR). This also happens when internships and other temporary employment ends. At 2016, to be consistent with statutory accounting, I moved the “Free Tail” provision into Unearned Premium (from IBNR). I calculate the “Free Tail” contribution to Unearned Premium Reserves for each accident year, and the accident years’ contributions are summed. Each accident year’s contribution equals expected losses on an occurrence basis for all providers inforce at the time, multiplied by a “percent unreported” factor, and further multiplied by the estimated combined frequency of death, disability and retirement. The expected losses are equal to the product of inforce exposure counts and an appropriate estimated pure premium, and the “percent unreported factors” are derived from industry loss development patterns. With methods and assumptions similar to Tail IBNR, the “Free Tail” estimate is similarly sensitive to policyholder demographics and changes in the estimated accident year pure premium or loss development factors.

4) Primary Residual (Occurrence) Coverage

The methods and assumptions for Primary Residual data are identical to those for excess occurrence data, except for the BF methods I used an experience-based assumed loss ratio of 30.0% to calculate expected losses. With a small and unsteady flow of direct primary premium and low observed claim frequency, my selected IBNR liability estimate tends to be approximately \$100,000.

5) Unpaid Unallocated Loss Adjustment Expense Reserve

Following an independent reviewer’s recommendation in 2020, a reserve for unpaid Unallocated Loss Adjustment Expense (ULAE) was established. The provision anticipates future payments necessary to negotiate and settle claims that have already occurred. The amount required assumes 50% of ULAE is expended when a new claim is reported and investigated, and the remainder is associated with negotiation when the claim is closed. This is a traditional approach broadly accepted by casualty actuaries in the US.

Actuarial Disclosures

The Fund’s Annual Report is an Actuarial Report within the definition stated in Section 2.4 of Actuarial Standard of Practice No. 41 *Actuarial Communication*. The findings herein include unpaid claim estimates, so applicable standards include Actuarial Standard of Practice No. 43 *Property/Casualty Unpaid Claim Estimates*. In addition to commentary elsewhere in this Annual Report, the following formal disclosures are required under Actuarial Standards of Practice No. 41 and 43:

I, Gordon Hay, am Sr. Casualty Actuarial Examiner for the Nebraska Department of Insurance. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The actuarial report comprises the following documents:

- This Annual Report
- The excel file “Summary Exhibits 20220302.xlsx”
- The excel file “Residual Primary Analysis 20220302.xlsx”
- The excel file “CM & OCC Analyses 20220302.xlsx”
- The excel file “Tail Reserves 20220302.xlsx”
- The excel file “Earned Premium and UEPR 20220302.xlsx”

This Annual Report’s intended users are the Director of the Nebraska Department of Insurance, affected Nebraska professional trade associations, medical professionals who are eligible to participate in the Fund, interested legislators, the Fund’s reinsurance providers and interested members of the Nebraska general public.

From an actuarial standpoint, the scope and intended purpose is to review the estimated liabilities of the Excess Liability Fund as of December 31, 2021. The Fund’s Annual Report depends on such actuarially estimated liabilities. In reviewing the Fund’s estimated liabilities, I relied on the following information:

- Historical premium data for the Fund, from 1998 through 2020 evaluated at March 2, 2022, provided by Mark Peterson, I.S. Analyst, Nebraska Department of Insurance.
- Annual claims lists with information dates December 31, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020 and 2021 provided by Michael Davlin, claims administrator for the Fund.
- Cash basis accounting summaries for the Fund provided by Robin Edwards, Accounting and Finance Manager, Nebraska Department of Insurance.

Appendix B. History of Underlying Coverage Requirements and the Cap

To participate in the Fund, a health care provider must submit proof of financial responsibility in the form of an underlying professional liability policy with specified coverage limits and pay a premium (“the surcharge”) to the Fund. Following widespread practice in general liability insurance, the underlying required limits are expressed in two amounts separated by a slash mark. The first applies under a provider’s policy per occurrence, and the second is an annual aggregate limit for two or more occurrences. The Nebraska Hospital-Medical Liability Act also establishes a cap on the damages any single plaintiff could recover from all qualified health care providers. The Legislature has updated the underlying policy limit requirements and the damages cap over the years:

- When the Fund was established in 1976, these limits were set at \$100,000/300,000 for physicians and nurse anesthetists and \$100,000/1,000,000 for hospitals, with a \$500,000 cap on the amount a plaintiff could recover from all qualified health care providers.
- LB 692 passed by the 1984 Legislature raised the cap to \$1,000,000 for incidents occurring after January 1, 1985.
- LB 1005 passed by the 1986 Legislature increased the amount of required underlying insurance to \$200,000/600,000 for physicians or nurse anesthetists and \$200,000/1,000,000 for hospitals effective January 1, 1987.
- LB 1006 passed by the 1992 Legislature then raised the cap to \$1,250,000 for incidents occurring after January 1, 1993.
- LB 146 passed by the 2003 Legislature raised the cap to \$1,750,000 for incidents occurring after January 1, 2004.
- LB 998 in 2004 raised the underlying coverage requirement to \$500,000/\$1,000,000 for all providers other than hospitals, and to \$500,000/\$3,000,000 for hospitals. The effective date of this change was the date of the provider’s first qualification on or after January 2, 2005.
- LB 961 in 2014 raised the cap to \$2,250,000 for any occurrence after December 31, 2014. This increased the Fund’s actuarially estimated future average claim severity by 8.1%.

Appendix C. History of Surcharge Rates

<u>Hospital Surcharge</u>	<u>Time Period</u>	<u>Surcharge for Physicians & Others</u>
15%	Original	50%
10%	1/1/1981	25%
1%	1-1-82 - 12-31-84	1%
50%	1-1-85 - 12-31-87	50%
50%	1/1/1988	45%
45%	1/1/1989	45%
40%	1/1/1990	40%
35%	1/1/1991	35%
40%	1-1-92 - 12-31-93	40%
30%	1-1-94 - 12-31-94	30%
15%	1-1-95 - 12-31-95	30%
10%	1-1-96 - 12-31-96	10%
5%	1-1-97 - 12-31-00	5%
20%	1-1-01 - 12-31-01	20%
35%	1-1-02 - 12-31-02	35%
50%	1-1-03 – 12-31-05	50%
45%	1-1-06 – 12-31-06	45%
40%	1-1-07 – 12-31-07	40%
35%	1-1-08 – 12-31-10	35%
20% (corrected from 2010 Rep't)	1-1-11 – 12-31-2012	20%
18%	1-1-13 – 12-31-2014	18%
20%	1-1-15 – 12-31-2015	20%
22%	1-1-16 – 12-31-2016	22%
26%	1-1-17 – 12/31/2017	26%
40%	1-1-18 – 12/31/2018	40%
45%	1-1-19 – 12-31-2019	45%
50%	1-1-20 – until revised	50%

The Act allows surcharge rates no greater than 50%. The Legislature provided no initial fund to pay claims, so initially the surcharge rate was 50% to build capacity. As originally written, the Act placed a statutory cap of \$5 million on the Fund's assets, and as the Fund's assets approached \$5 million in 1980, the surcharge for 1981 was reduced. A further reduction to the minimum surcharge of 1% was made for 1982 as the amount in the Fund exceeded \$5 million. In 1984, the Fund paid its first six claims. Also in 1984, the Legislature passed LB 692, allowing the Fund's assets to anticipate future claim costs, and the surcharges were raised to the maximum 50% effective January 1, 1985. With favorable experience in succeeding years, the Fund's assets increased and surcharge rates decreased. Starting with 2001, surcharges increased again due to significantly increasing losses and unfavorable reserve development. The 50% maximum was once again in place from 2003-2005.

LB 998, passed in 2004, increased the underlying coverage requirement to \$500,000 per occurrence from \$200,000 on a phased-in basis during 2005. Subsequent incremental reductions took the surcharge rate to 18% from 2013-2014. In 2014, LB 961 raised the damages cap per plaintiff to \$2,250,000, with an estimated increase in costs to be funded by raising the surcharge rate to 20%.

A 22% surcharge rate for 2016 was expected to generate 27% less premium than the Fund's estimated 2016 ultimate costs, but the revenue shortfall was mitigated by the Fund's current size combined with its potential for capital gains. The 2017 increase to 26% was to support the Fund's new Common Loss Treaty, initially effective 5/1/2017.

The actuarially indicated 2018 rate was 52%, up sharply after numerous cases emerged from July 2016 through June 2017. We raised the surcharge rate to 40%. The 2019 indicated rate was 53.2%, and due to concerns about severity trend and reinsurance cost, we raised the surcharge rate to 45%.

The 2020-2022 surcharge rates are the 50% statutory maximum, well below the actuarially indicated rates. The 2018 - 2020 increases were due to the frequency and severity of newly reported claims, together with broadly unprofitable conditions in the primary underlying Nebraska Medical Professional Liability market.