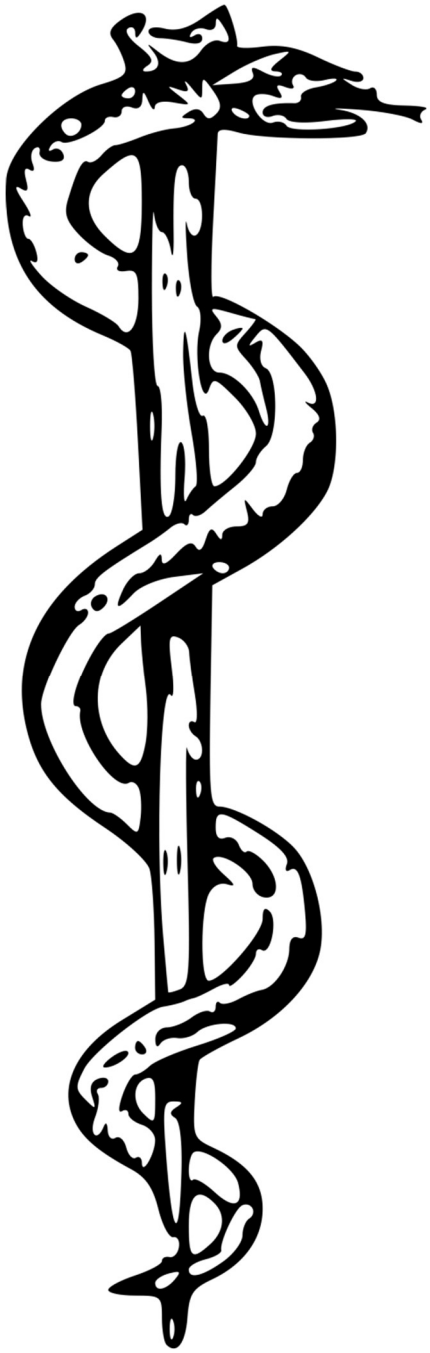
NEBRASKA HOSPITAL-MEDICAL LIABILITY ACT
EXCESS LIABILITY FUND



ANNUAL REPORT
As of December 31, 2020

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 that participate in the Fund, malpractice damages are statutorily capped at $2.25 Million per plaintiff, per occurrence. In order to participate in the Fund, 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.

The body of the report focuses on the Fund's assets, operating results, liabilities and operating reserve. In this report, 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 $84.17 Million, and ended with $95.06 Million. Table 1 shows ten years' results on a cash basis. Since 2015, assets dipped from $92.7 Million to $84.2 Million in 2019 before surging in 2020 to $95.1 Million. COVID-19 and its impacts are discussed within this report.

Table 1. Assets and Operations of the Fund -- Cash Basis

	(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	Admin-istrative Expenses	Underwriting Cash Flow Net of Reinsurance	Investment Activity	Annual Change in Assets	Year End Cash & Invested Assets
2011	86,235,403	5,313,025	4,355,554	188,727	768,744	2,868,206	3,636,951	89,872,354
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
10 Yrs		56,990,905	77,938,788	2,480,088	(23,427,970)	32,250,060	8,822,090	

Underwriting cash flow was plus $3.9 Million in 2020, versus minus $7.7 Million in 2019. The primary reason is only $4.4 Million of paid losses in 2020 versus $15.2 Million in 2019. Efforts to mitigate the COVID-19 pandemic slowed all the normal steps to investigate, negotiate and resolve each claim.

Investment activity produced $6.96 Million in 2020 following $5.1 Million in 2019. Interest income and investment expenses are relatively constant year-to-year compared to realized and unrealized gains (or losses) on long-term investments. Decreasing interest rates (and increasing bond valuations) are often transitory effects of Federal Reserve actions. Despite gains in 2019-2020, long-term bonds' values are vulnerable to potentially higher interest rates. The Fund's assets are invested by the Nebraska Investment Council, which publishes investment policies and quarterly reports on its web site https://nic.nebraska.gov/.

FINANCIAL POSITION- Liabilities and Operating Reserve

The Fund's Liabilities include: 1) Claims Known to the Fund, 2) Claims Incurred But Not Reported (IBNR) to the Fund and 3) Unearned Premiums. These Liabilities are described below.

Claims Known to the Fund – Current Year End

Table 2, below, shows ten years' historical Claims-Made experience evaluated as of current year end, net of the Fund's Common Loss reinsurance treaty. The Fund's yearend liability for known claims under Claims-Made coverage was $33.9 Million per actuarial estimates, $32.1 Million per adjusters' case estimates and a similar selected $32.9 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.

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
2011	6,878	9,818	9,818	-	-	-	9,818	142.7%
2012	4,917	5,613	5,613	-	-	-	5,613	114.1%
2013	4,627	6,969	6,463	507	500	503	6,965	150.5%
2014	4,338	10,400	10,179	221	200	208	10,388	239.4%
2015	4,408	9,260	8,982	278	250	261	9,243	209.7%
2016	3,721	11,296	10,751	545	500	518	11,269	302.8%
2017	4,092	9,169	6,230	2,939	1,750	2,225	8,456	206.6%
2018	5,332	11,247	4,370	6,877	7,150	7,041	11,411	214.0%
2019	7,120	12,935	2,526	10,409	9,550	9,893	12,420	174.4%
2020	7,585	12,163	3	12,160	12,247	12,213	12,215	161.0%
5 Yrs	27,851	56,810	23,880	32,930	31,197	31,890	55,770	200.2%
10 Yrs	53,019	98,870	64,935	33,935	32,147	32,863	97,797	184.5%

Column (8) shows annual ratios of estimated ultimate net Claims-Made paid loss and claims expense to the Fund's Claims-Made net earned premium, with five and ten year totals. In the past 10 years, the lowest loss and claims expense ratio was 114% in 2012. Surcharge rate increases improved 2019 and 2020, but the five year loss ratio is still 200%. In other words, surcharge revenues (net of reinsurance cost) fund just half of the Fund's Claims Made coverage incurred loss and adjustment expenses.

The Common Loss reinsurance treaty was first effective on May 1, 2016 and so far, the Fund has ceded no loss or adjustment expenses. All treaty terms and conditions are specified in the reinsurance contract. 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% increase in premium, so effectively, the Fund's effective retention and limit are respectively about $4.31 Million and $19.15 Million.

The Fund has also insures modest volumes of Excess Occurrence coverage and Primary Residual coverage, with currently no case estimates carried. The Fund's $32.1 Million case reserve is for Claims Made coverage. This is a $4.7 Million increase from 2019, which was itself up $2.2 Million over 2018. Indications show claims severity was at a high point in report year 2016, but perceived improvements to severity were not great enough to offset the increasing number of claims reported in 2017-2020.

Claims Anticipated, but Not Yet Reported to the Fund

Table 2 addressed the liability for claims already presented 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 $2.79 Million.
2) Occurrence IBNR: A small volume of occurrence coverage is underwritten by primary insurers including the Fund's Residual Authority. The Fund estimates the associated IBNR to be $326 Thousand, equal to the sum of $119 Thousand for primary residual coverage and $207 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" coverage is often issued when the insured retires, dies or becomes disabled. We estimate the Fund's liability for issued tail coverage to be $2.22 Million.
4) As stated above, we estimate adjusters' case reserves, plus a small $71 Thousand bulk provision (within the carried IBNR) will be sufficient to resolve all cases known to the Fund.

Adding 1), 2) and 3), then subtracting 4), our estimate of the Fund's IBNR liability is $6.04 Million. Supporting actuarial exhibits are not published with this report, but Appendix A includes discussion of the IBNR analysis and its uncertainties.

Unearned Premiums

Before 2016, the Fund's unearned premium reserve estimate was half of its annual revenue or written premium. In 2016, the Fund began buying reinsurance and initiated reinsurance accounting. Also in 2016, the Fund began accounting for Death, Disability and Retirement (DDR) reserves within unearned premium,

which prompted the Fund to make separate unearned premium calculations for DDR, Paid Tail, Excess Claims Made, Excess Occurrence and Primary Residual coverages. The estimated unearned premium reserve, starting with 2016, is the sum of those components. Table 3 shows summarized results:

Table 3. Written and Earned Premium, and Unearned Premium Reserve

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Calendar Year	Direct Written Premium	Reinsurance Ceded Written Premium	Net Written Premium	Est. Net Earned Premium	Est. Net Unearned Premium Reserve	Historical Est. Unearned Premium Reserve	Effect of Change in Methods on Unearned Premium
2011	5,341,757	0	5,341,757	7,425,343	2,456,243	2,656,512	(200,269)
2012	5,263,830	0	5,263,830	5,291,452	2,428,621	2,384,828	43,794
2013	4,820,225	0	4,820,225	4,956,815	2,292,032	2,424,564	(132,532)
2014	4,794,109	0	4,794,109	4,673,426	2,412,714	2,245,297	167,418
2015	4,741,048	0	4,741,048	4,847,606	2,306,156	2,384,116	(77,960)
2016	4,975,301	800,000	4,175,301	4,008,519	3,252,938		
2017	5,428,652	533,333	4,895,319	4,298,365	3,849,893		
2018	8,207,786	900,000	7,307,786	5,538,857	5,618,822		
2019	8,856,952	900,000	7,956,952	7,390,827	6,184,947		
2020	9,828,650	1,000,000	8,828,650	7,936,064	7,077,533		

To avoid restating the Fund's Operating Reserve history in Table 4 (below), I have used historical estimates in Column (6) for years 2015 and prior, then switch exclusively to the new methods in column (5) starting with calendar year 2016.

The Fund's Operating Reserve

The operating reserve equals year-end assets minus estimated year-end liabilities. This year, the Fund's operating reserve is $49.4 Million, up $3.3 Million from 2019 but down $2.8 Million from 2018.

Table 4. The Fund's Operating Reserve

	(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
2011	89,872,354	20,327,494	2,305,362	2,656,512	64,582,985	-1,145,271
2012	91,328,986	19,275,299	1,630,000	2,384,828	68,038,860	3,455,875
2013	91,199,874	17,954,231	1,350,000	2,424,564	69,471,079	1,432,219
2014	92,949,995	15,495,242	1,720,000	2,245,297	73,489,456	4,018,378
2015	92,688,766	17,522,088	2,140,000	2,384,116	70,642,561	-2,846,895
2016	89,341,797	24,819,871	1,835,129	3,252,938	59,433,859	-11,208,703
2017	90,487,714	23,703,004	2,344,009	3,849,893	60,590,808	1,156,950
2018	86,703,074	25,233,063	3,721,556	5,618,822	52,129,633	-8,461,176
2019	84,174,661	27,450,000	4,481,095	6,184,947	46,058,619	-6,071,013
2020	95,057,493	32,147,368	6,457,104	7,077,533	49,375,488	3,316,869

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 at 2014 it peaked at $73.5 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 have come to yield little and their high market values are vulnerable to increasing interest rates.

Except for 2016 and 2020, the operating reserve took annual losses during 2015 to 2020. Since the $73.5 Million high mark at December 2014, the operating reserve has lost $24.1 Million, down 33%. Currently it is below 2010 by $16.4 Million, down 25%.

Recall from Table 2 that the Fund's past five report years' net loss ratios for claims made coverage are respectively 303%, 207%, 214%, 174% and 161%. The Fund's surcharge rate increased from 22% in 2015 to 26% in 2016, 40% in 2018, 45% in 2019 and in 2020-2021 and it is at the 50% statutory maximum.

The Fund's 200% five-year loss ratio reflects insufficient pricing for future costs in its excess coverage layer. Adequate pricing for the Fund depends at least in part on conditions in the underlying primary market.

At 2018 it was prudent to test whether the Nebraska Medical Professional Liability market is healthy, by reviewing trends in Nebraska calendar year experience. Regarding the Nebraska primary MPL market, observations were:

- From 2013 to 2016, Written Premium volume decreased by $4.88 Million, or 13.3%.
- Loss and DCC Ratios sharply higher and sustained, with an 83.0% average in 2015-2018.
- Commission/Brokerage ratios rose slowly at first and accelerated in 2015-2018.
- 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 5.5% in 2017-2018.

So, in aggregate, Nebraska MPL carriers' costs materially exceeded their rates in at least 2017-2018. A quick review at 2019 showed an increase in industry-wide Nebraska written premium, but losses increased faster:

- 2019 Written Premium was up 7.7% from 2016, leaving 2019 $0.5 Million below 2014.
- Loss and DCC Ratios continued upward to 105.4% in 2019 and an 87.5% 5-year average.
- The 10.1% Commission and Brokerage ratio in 2019 was down from last year's 16.3% high mark.
- The remainder of premium available for other expenses and profit was minus 10.1% for 2017-2019 and minus 17.3% in 2019.

After 2020:

- 2020 Written Premium was up 8.9% from 2019 and up 17.3% from its 2016 low point.
- The industry Loss and DCC Ratio for 2020 improved to 99.6%, but the 5-year average still increased to 92.2%.
- Commission and Brokerage ratio down a bit more to 9.3% and no material change in Taxes/Licenses & Fees ratio.
- The remainder available for other expenses and profit improved to minus 10.8% for 2020 alone, following minus 17.3 in 2019 and four years in a row below zero.

Excess Fund participation is voluntary. Since 2016, as surcharge rates increased, participation decreased from 68% to 52% (see Appendix D). Under foreseeable market conditions and the current structure, despite some primary market rate relief in 2020 and favorable investment results in 2019-2020, the Fund will likely continue to consume its operating reserve.

Questions? – Contact Gordon Hay, Gordon.Hay@nebraska.gov, Nebraska Department of Insurance, PO Box 82089, Lincoln, NE 68501-2089.

Appendix A. COMMENTARY – Reserves and Risks

This appendix covers four topics. The first topic is data organization, and how it was refined in 2015. 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 Refined at 12/31/2015

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.

The solution at 2015 year end was to divide 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. At 2015 we began making 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 only when the insured ultimately retires, dies or becomes disabled), 2) "Paid Tail" coverage that has already been issued and 3) "Free Tail" coverage that has already been issued.

Known Claims on Claims-Made Coverage

The estimates in Column (2) of Table 2, in the body of the report above, 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 recent years, Nebraska medical malpractice insurance has been unprofitable. 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. In recent years, my bulk provision for future case reserve migrated upward, from believing case estimates were on average strong enough to help fund IBNR, to currently believing 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 in 2020 was slower to surface. Every year, case and actuarial estimates require a combination of data-driven calculations and judgments. In 2020 an extra layer of judgment was necessary, increasing the Fund's risk of adverse deviation to an extent that we can't measure although it may have been material. As in the past, I deploy multiple actuarial methods in an effort to test and mitigate each method's inherent assumptions and risks.

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

Traditional paid loss and ALAE development method: This assumes that over time, the future paid loss and ALAE as a report year matures will be similar to historical paid loss and ALAE as previous report years matured. This method's estimated ultimate loss and expense ('000's) by report year are shown 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. 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: Briefly, the Frequency and Severity Method combines findings about severity from the previous methods in light of estimated ultimate claims frequencies. Mechanically, 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 our 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 that selected severity and our estimated ultimate claim count. Several advantages flow from separately estimating the ultimate number of paid claims versus their estimated ultimate average paid severity. Separate claim frequency estimates can be made to explicitly account for any observed trend in claims frequency or a given year's unusual number of claims. With the number of claims as a basis, the previous six methods' implications for report year severities and severity trends can be assessed, and adjustments 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)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Ultimate Incurred Indemnity and Expense - Alternative Estimation Methods							** Note		= (8) - (9)		*** Note
Report Year	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
2011	9,915	9,818	9,915	9,818	9,915	9,818	9,866	9,818	9,818	-	-	-
2012	5,669	5,613	5,669	5,613	5,669	5,613	5,641	5,613	5,613	-	-	-
2013	6,657	6,969	6,657	6,969	6,657	6,969	6,813	6,969	6,463	507	500	503
2014	10,906	10,400	10,906	10,400	10,906	10,400	10,653	10,400	10,179	221	200	208
2015	10,297	9,260	9,712	9,261	10,297	9,260	9,649	9,260	8,982	278	250	261
2016	13,926	11,296	11,116	11,389	13,926	11,296	12,037	11,296	10,751	545	500	518
2017	10,125	8,020	8,398	8,542	9,859	8,024	9,169	9,169	6,230	2,939	1,750	2,225
2018	11,845	11,222	8,201	10,449	10,883	10,114	11,247	11,247	4,370	6,877	7,150	7,041
2019	14,401	12,229	8,371	10,086	11,318	9,808	12,935	12,935	2,526	10,409	9,550	9,893
2020	190	12,599	8,432	9,215	10,419	8,982	12,163	12,163	3	12,160	12,247	12,213
10 Years	93,929	97,426	87,377	91,742	99,848	90,285	100,173	98,870	64,935	33,935	32,147	32,863

Note: The current case reserves total 32.15 Million compared to an estimated ultimate 32.86 Million required.
As of December, my IBNR estimate includes a bulk provision for known claims development of 0.71 Million.

** Selected = (2) for Rep't Yrs 1998-2016, and (7) for Rep't Yrs 2017-2020.

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 2007 to 2020, 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 1994-2012 (no open claims remain) and 60% (11) vs. 40% (10) for Report Years 2013-2019.

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 vary 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 give consideration to 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

The four IBNR components' current values are reported above in the section titled "Claims Anticipated, but Not Yet Reported to the Fund." As stated there, the Fund's estimated IBNR liability equals the sum of components 1), 2) and 3) minus component 4). 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 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 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 only in the future when the insured retires, dies or becomes disabled, 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 fairly 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). At 2016, 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.

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 20210301.xlsx”
- The excel file “Residual Primary Analysis 20210301.xlsx”
- The excel file “CM & OCC Analyses 20210301.xlsx”
- The excel file “Tail Reserves 20210301.xlsx”
- The excel file “Earned Premium and UEPR 20210301.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, 2020. 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 3/01/2021, 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 and 2020 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

Hospital Surcharge	Time Period	Surcharge for Physicians & Others
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 2020-2021 surcharge rates are the 50% statutory maximum, well below the actuarially indicated rates. The 2018 and 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.

Appendix D. Surcharge Rates and Voluntary Participation

	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) X (4)	(5)	(6) = (5) / (4)
Calendar Year	Medical Professional Direct Premiums Written (excl. Residual Primary)	Residual Primary Direct Written Premiums	Medical Professional Direct Premiums Written	Nebraska Excess Liability Fund Surcharge Rate	Fund Excess Written Premium at 100% Participation Would Be:	Actual Nebraska Excess Fund Written Premium	Actual Market Participation (Written Premium Basis)
2003	32,008,670	725,145	32,733,815	50%	16,366,908	9,837,031	60.1%
2004	34,071,147	765,999	34,837,146	50%	17,418,573	10,159,778	58.3%
2005	36,804,243	1,395,503	38,199,746	50%	19,099,873	12,452,392	65.2%
2006	37,643,926	1,229,964	38,873,890	45%	17,493,250	12,499,080	71.5%
2007	36,964,825	705,020	37,669,845	40%	15,067,938	10,528,481	69.9%
2008	35,935,098	491,138	36,426,236	35%	12,749,183	8,850,785	69.4%
2009	36,400,709	387,184	36,787,893	35%	12,875,763	8,868,293	68.9%
2010	36,885,608	488,784	37,374,392	35%	13,081,037	9,101,569	69.6%
2011	36,321,600	297,420	36,619,020	20%	7,323,804	5,044,337	68.9%
2012	35,474,134	225,838	35,699,972	20%	7,139,994	5,037,992	70.6%
2013	36,601,858	197,939	36,799,797	18%	6,623,963	4,622,286	69.8%
2014	34,629,414	342,975	34,972,389	18%	6,295,030	4,451,134	70.7%
2015	33,171,281	293,684	33,464,965	20%	6,692,993	4,447,364	66.4%
2016	31,717,384	174,639	31,892,023	22%	7,016,245	4,800,662	68.4%
2017	32,096,874	123,695	32,220,569	26%	8,377,348	5,304,957	63.3%
2018	33,581,647	141,090	33,722,737	40%	13,489,095	8,066,696	59.8%
2019	34,154,634	254,800	34,409,434	45%	15,484,245	8,602,152	55.6%
2020	37,191,561	93,276	37,284,837	50%	18,642,419	9,735,374	52.2%
5 Years	168,742,100	787,500	169,529,600	37%	63,009,352	36,509,842	57.9%
15 Years	528,770,553	5,447,446	534,217,999	32%	168,352,307	109,961,164	65.3%

In comparing the Surcharge Rates in column (4) with the Actual Market Participation rates in column (6), it stands to reason that very low surcharge rates might encourage market participation whereas maximum 50% surcharge rates (2003 to 2005 and 2020-2021) might discourage participation. In 2005, the primary market was transitioning to current minimum limits per LB998 required to qualify for participation. Subsequently, participation rates settled near 70%. Participation from about 2006 to 2016 was apparently not very sensitive to the Department's selected surcharge rate, but in 2017-2020 participation dropped to 63%, 60%, 56% and 52%.

At 70% participation, about $11.2 Million of the $37 Million market would non-participate. Enduring reasons include ineligible health care providers (all but MD's, Hospitals, Osteopaths, CRNA's and qualified Professional Corporations), and a minority of eligible providers who consistently choose not to participate. 2020's actual 52% represents an additional $6.7 Million or a 60% increase since 2016 in the market share of those who are either not eligible or choosing not to participate. Contributing factors include individual choices not to participate, but also more premium growth from

insurers who don't typically write NELF participants, and less adequate rates (higher combined ratios) from insurers who do write most of the NELF participants.