

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



**ANNUAL REPORT
As of December 31, 2018**

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 \$90.49 Million, and ended with \$86.70 Million. Table 1 shows ten years’ results on a cash basis. In the past three years, assets decreased by \$5.99 Million or 6.5%.

	(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
2009	62,173,601	9,298,293	5,857,305	185,933	3,255,054	9,681,857	12,936,912	75,110,513
2010	75,110,513	8,485,764	5,483,546	218,014	2,784,204	8,340,686	11,124,890	86,235,403
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
10 Yrs		58,270,372	69,723,618	2,204,850	(13,658,096)	38,187,569	24,529,473	

This year's underwriting cash flow was minus \$4.598 Million, equal to revenue of \$8.12 Million minus ceded reinsurance (\$0.90 Million), paid losses and claims adjustment expenses (\$11.53 Million) and administrative expenses (\$0.29 Million).

Investment activity generated \$814 Thousand, equal to short term interest of \$495 Thousand plus long term interest of \$1.197 Million long term interest minus investment expense of \$105 Thousand and a loss of \$772 Thousand on long term investments. Assets are invested by the Nebraska Investment Council, which publishes investment policies and quarterly reports on its web site at <http://www.nic.ne.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

The actuarially estimated liability for claims already presented to the Fund under Claims-Made coverage is \$22.780 Million. Appendix A outlines the actuarial analysis and its uncertainties. 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. Adjusters' case estimates add up in Column (5) to \$24.929 Million. Our current best estimate in Column (6) is \$24.048 Million, and the \$.900 Million difference will help defray the Fund's estimated IBNR.

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
2009	8,638	4,621	4,574	47	-	-	4,574	53.0%
2010	8,783	5,678	5,620	58	-	-	5,620	64.0%
2011	6,878	9,817	9,818	(0)	-	-	9,818	142.7%
2012	4,917	5,348	4,040	1,308	1,341	1,328	5,368	109.2%
2013	4,627	6,767	6,357	410	500	464	6,821	147.4%
2014	4,338	10,755	10,179	576	650	620	10,800	248.9%
2015	4,408	7,967	6,027	1,940	1,750	1,826	7,853	178.1%
2016	3,721	9,813	4,350	5,463	6,400	6,025	10,375	278.8%
2017	4,092	9,035	5,072	3,963	4,588	4,338	9,410	230.0%
2018	5,329	9,016	-	9,016	9,700	9,426	9,426	176.9%
5 Yrs	21,889	46,585	25,628	20,958	23,088	22,236	47,864	218.7%
10 Yrs	55,732	78,816	56,037	22,780	24,929	24,028	80,064	143.7%

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. For each of the past eight report years, the estimated loss and claims expense ratio in column (8) exceeds 100% of net earned premium. The five year loss ratio is now 218.7%, so net Claims-Made premiums funded less than half of incurred loss and adjustment expenses. The multi-year trend is primarily due to increased claims costs.

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.

The Fund has also insures modest volumes of Excess Occurrence coverage and Primary Residual coverage, which have combined case estimates totaling \$0.304 Million. Including this, the Fund's case reserve is \$25.233 Million. This is a \$1.530 Million increase from prior year end.

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 \$2.39 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 \$538 Thousand, equal to the sum of \$120 Thousand for primary residual coverage and \$190 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 \$1.92 Million.
- 4) As stated above, we expect adjusters' case reserves to provide for all Claims-Made claims already reported to the Fund, with \$0.9 Million extra to partially provide for the Fund's IBNR.

Adding 1), 2) and 3), then subtracting 4), our estimate of the Fund's IBNR liability is \$3.72 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
2009	9,255,477	0	9,255,477	9,263,163	4,300,166	4,649,146	(348,980)
2010	9,590,353	0	9,590,353	9,350,690	4,539,829	4,734,385	(194,556)
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	5,379,467	533,333	4,846,134	4,286,069	3,813,004		
2018	8,251,354	900,000	7,351,354	5,536,095	5,628,262		

To avoid restating the Fund's Operating Reserve history in Table 4 (below), I will use 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 down \$8.5 Million, from \$60.6 Million to \$52.1 Million. In the past three calendar years, the operating reserve declined \$18.5 Million, or 26%.

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
2009	75,110,513	14,637,643	978,127	4,649,146	54,845,596	13,743,076
2010	86,235,403	14,772,762	1,000,000	4,734,385	65,728,256	10,882,660
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	3,813,004	60,627,697	1,193,839
2018	86,703,074	25,233,063	3,721,556	5,628,262	52,120,193	-8,507,505

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 Table 2). Those forces stopped operating in the Fund’s favor in 2011. Bonds now typically produce low yields and their market value is vulnerable to increasing interest rates.

After decreases of \$2.8 Million in 2015 and \$11.2 Million in 2016, the \$1.1 Million recovery in 2017 and this year’s \$8.5 Million decrease, the operating reserve is now \$2.7 Million lower than at December 2009.

Recall from Table 2 that the five year loss ratio is now 218.7%, after multiple years of increasing claims costs. The Fund’s loss ratios reflect its ability to price adequately for future costs in its excess coverage layer, and that ability depends at least in part on conditions in the underlying primary market.

We want to assume the Nebraska Medical Professional Liability market is healthy. This year, we tested that assumption by reviewing trends in Nebraska calendar year experience:

Calendar Year	Written Premium	Combined Market Share	Earned Premium	Incurred Loss & DCC Ratio	Comm & Brokerage Ratio	Taxes, Licenses & Fees Ratio	Balance Available (See Note)
2009	36,400,709	100.0%	37,067,415	50.0%	6.5%	1.6%	41.9%
2010	36,885,608	100.0%	36,200,378	38.2%	6.8%	1.9%	53.1%
2011	36,321,600	100.0%	36,953,172	56.6%	6.5%	1.5%	35.4%
2012	35,474,134	100.0%	35,286,140	40.9%	6.5%	1.9%	50.7%
2013	36,601,858	100.0%	36,482,101	60.4%	6.7%	1.9%	31.0%
2014	34,629,414	100.0%	35,014,861	47.7%	6.9%	1.5%	43.9%
2015	33,171,281	100.0%	33,685,760	78.4%	8.0%	2.1%	11.5%
2016	31,723,984	100.0%	32,746,402	72.4%	8.5%	1.5%	17.6%
2017	32,096,874	100.0%	31,903,265	96.5%	9.2%	1.9%	-7.6%
2018	33,581,647	100.0%	32,200,913	85.2%	15.8%	2.4%	-3.4%
First 5 Years	181,683,909		181,989,206	49.3%	6.6%	1.8%	42.3%
Last 5 Years	165,203,200		165,551,201	75.5%	9.7%	1.9%	12.9%

* Balance Available for Other Acq, General, Dividends, ULAE & Profit = 1 - sum of the three ratios given. Loss and DCC Ratios are to Earned Premium while Commission/Brokerage and TLF Ratios are to Written Premium, but the ratios' denominators are not materially different.

Regarding the health of the Nebraska primary MPL market:

- 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, to administer the Excess Fund, we cannot assume that underlying primary market rates will be adequate. In aggregate, Nebraska MPL carriers' costs materially exceeded their rates in at least 2017-2018.

From Table 2, the Fund's past four years' net loss ratios for claims made coverage are respectively 178%, 279%, 230% and 177%. Having raised the Fund's surcharge rate from 22% in 2015 to 26% in 2016, 40% in 2018 and 45% in 2019, we are close to the 50% statutory maximum.

From Table 4, the Fund's \$52 Million current operating reserve is giving us time. In 2019, movement toward healthier results is an important goal for both the Excess Fund and the primary Nebraska MPL market.

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, who is 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. During the Fund’s history, Claims-Made coverage has almost replaced occurrence coverage, reducing the Fund’s exposure to IBNR. Insurance markets are not always healthy, but in recent years Nebraska medical malpractice insurance has been profitable. Ever-changing health care provider practices including risk management improvements should help contain insurance costs. Reversals on any of these fronts could cause increases in cost that erode the adequacy of an actuarial estimate.

Alternative estimates of each report year’s future ultimate payout for known claims appear on Table 6 below. Three actuarial methods shown in Columns (1) to (4) support this year’s actuarial known claims estimates, with Column (5) showing the actuary’s selection based on results from the three methods:

- 1) 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.
- 2) Traditional reported loss and ALAE development method: Adjusters’ case reserves are added to cumulative paid-to-date data prior to measuring development. This assumes that adjusters’ case reserving practices and estimates have been consistent over time. Case reserving was not consistent over the Fund’s early history, but appears to have been consistent since at least 2006. This method’s estimated ultimate loss and expense (000’s) by report year are shown in Column (2) of Table 6.
- 3) 3 Years Least-squares regression method – primary premium basis: Least-squares estimation (LSE) uses a weighted average of two measures: first an estimated ultimate amount from a traditional loss-and-ALAE development method, and second, an average ultimate amount from previous report years. Both measures are taken in units of loss and ALAE per dollar of Fund participants’ primary written premium. The actuary avoided dividing losses by the Fund’s revenue because that revenue reflects the surcharge rates. The Least-Squares-Estimate of the report year’s ultimate amount is a weighted average of the two measures, with the weight on the first measure being great when there was high correlation between historical report years’ cumulative loss and ALAE at a given age and historical ultimate amounts. This method is applied to three-year histories of the Fund’s paid versus reported loss ratios to primary premium. This method’s estimated ultimate loss and expense (000’s) by report year are shown in Column (3) for paid data and Column (4) for reported data.

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					** See Note.		= (5) - (6)		*** See Note
			5 Year						
			5 Year Paid LSE Method Ult. - Primary Revenue Base	Reported LSE Method Ult. - Primary Revenue Base	Selected Ult. Incurred Indemnity & Expense	Cumulative Report Year Paid Indemnity and Expense	Actuarially Estimated Known Claims Reserve	Adjusters' Estimated Case Reserves	Selected Best Estimate Known Claims Reserve
Report Year	Paid LDF Dollars	Ult. Reported LDF Ult. Dollars	Revenue Base	Revenue Base	Expense	Expense	Reserve	Reserves	Reserve
2009	4,621	4,621	4,621	4,621	4,621	4,574	47	-	-
2010	5,678	5,678	5,678	5,678	5,678	5,620	58	-	-
2011	9,984	9,817	9,984	9,817	9,817	9,818	(0)	-	-
2012	4,109	5,348	4,109	5,348	5,348	4,040	1,308	1,341	1,328
2013	6,604	6,767	6,457	6,882	6,767	6,357	410	500	464
2014	11,002	10,754	10,693	10,757	10,755	10,179	576	650	620
2015	7,934	8,144	7,434	7,790	7,967	6,027	1,940	1,750	1,826
2016	8,692	10,516	7,088	9,110	9,813	4,350	5,463	6,400	6,025
2017	21,407	9,927	9,123	8,143	9,035	5,072	3,963	4,588	4,338
2018	-	10,107	7,129	7,924	9,016	-	9,016	9,700	9,426
10 Years	80,031	81,678	72,317	76,070	78,816	56,037	22,780	24,929	24,028

Note: The current case reserves total 24.93 Million compared to an estimated ultimate 24.03 Million required. I expect this estimated case reserve redundancy to fund 0.9 Million of the Fund's IBNR liabilities.

** Selected = (2) for Rep't Yrs 1996-2013 and average of (2), (3) and (4) for Rep't Yrs 2014-2018.

In the December 2018 review, the actuary added (3) to the selected average, which previously included (2) and (4).

The change is expected to yield more stable estimated ultimate amounts.

*** Selected = zero for Report Years 1994-2011 (no open claims remain) and 60% (8) vs. 40% (7) for Report Years 2012-2018.

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 (7) and (8), 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 would be prudent to give consideration to adjusters' estimates for any cases still pending. For the three least mature report years, adjusters' case estimates have historically been a bit conservative so some credence is due to the lower actuarial estimates for recent years. Currently, an effective balance is achieved in Column (11) of Table 6, by placing 40% weight on actuarial and 60% weight on adjusters' estimates for historical report years with any unpaid claims.

IBNR

IBNR Summary

IBNR components are described below. The Excess Fund components total \$4.505 Million, which is partially offset by an estimated \$0.90 Million excess of adjuster's case reserves over the amount required,

leaving an IBNR provision of \$3.60 Million. We add \$117 Thousand estimated IBNR for Primary Residual business. The resulting \$3.72 Million is the Fund's carried IBNR, which appears in Table 4 Column (3).

The supporting IBNR analyses are subject to uncertainties, including the usual statistical and predictive challenges inherent in actuarial analysis of claims data, dynamic factors in medical malpractice insurance outlined above.

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. Currently, this amounts to 25% of an average report year's loss or about \$2.39 Million of IBNR liability for excess claims-made coverage.

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 development history from leading Medical Professional Liability insurers with a combined 61% share of the 2017 Nebraska market, 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 60% 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. My selected IBNR liability estimate is \$192 Thousand for excess occurrence coverage.

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. Briefly, for the issued tail policies (combination of 2) and 3)), the 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. My estimated liability for issued tail policies is \$1.920 Million.

For the yet-to-be-issued “Free Tail” policies, 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 derived by multiplying inforce exposure counts by an appropriate estimated pure premium, and the “percent unreported factors” are derived from industry loss development patterns. My estimated liability for yet-to-be-issued “Free Tail” policies is \$1.320 Million.

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 35.0% to calculate expected losses. My selected IBNR liability estimate is \$117 Thousand for primary residual occurrence coverage.

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 20190304.xlsx”
- The excel file “Residual Primary Analysis 20190304.xlsx”
- The excel file “CM & OCC Analyses 20190304.xlsx”
- The excel file “Tail Reserves 20190304.xlsx”
- The excel file “Earned Premium and UEPR 20190304.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, 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, 2018. 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 2018 evaluated at 3/04/2019, 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 and 2018 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 increases 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 – until revised	45%

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%.

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)
1999	18,732,040	22,734	18,754,774	5%	937,739	598,447	63.82%
2000	20,093,240	24,466	20,117,706	5%	1,005,885	614,988	61.14%
2001	24,110,258	269,190	24,379,448	20%	4,875,890	3,197,000	65.57%
2002	26,540,646	773,939	27,314,585	35%	9,560,105	6,326,199	66.17%
2003	32,008,670	725,145	32,733,815	50%	16,004,335	9,837,031	61.46%
2004	34,071,147	765,999	34,837,146	50%	17,035,574	10,159,778	59.64%
2005	36,804,243	1,395,503	38,199,746	50%	18,402,122	12,452,392	67.67%
2006	37,643,926	1,229,964	38,873,890	45%	16,939,767	12,499,080	73.79%
2007	36,964,825	705,020	37,669,845	40%	14,785,930	10,528,481	71.21%
2008	35,935,098	491,138	36,426,236	35%	12,577,284	8,850,785	70.37%
2009	36,400,709	387,184	36,787,893	35%	12,740,248	8,868,293	69.61%
2010	36,885,608	488,784	37,374,392	35%	12,909,963	9,101,569	70.50%
2011	36,321,600	297,420	36,619,020	20%	7,264,320	5,044,337	69.44%
2012	35,474,134	225,838	35,699,972	20%	7,094,827	5,037,992	71.01%
2013	36,601,858	197,939	36,799,797	18%	6,588,334	4,622,286	70.16%
2014	34,629,414	342,975	34,972,389	18%	6,233,295	4,451,134	71.41%
2015	33,171,281	293,684	33,464,965	20%	6,634,256	4,447,364	67.04%
2016	31,717,384	174,639	31,892,023	22%	6,977,824	4,800,662	68.80%
2017	32,096,874	74,510	32,171,384	26%	8,345,187	5,304,957	63.57%
2018	33,581,647	190,275	33,771,922	40%	13,432,659	8,061,079	60.01%
5 Years	165,196,600	1,282,496	166,272,683	25%	41,623,221	27,065,196	65.02%
15 Years	528,299,748	11,592,258	535,560,620	32%	167,961,589	114,230,190	68.01%

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) might have discouraged 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, participation dropped to about 64%. 2018 participation, at 60%, was a low mark comparable to 2003-2004.